



HPC Wireless Services
22 Shelter Rock Lane.
Building C
Danbury, CT, 06810
P.: 203.797.1112

June 5, 2013

VIA OVERNIGHT COURIER

Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051
Attn: Ms. Melanie Bachman, Acting Executive Director

Re: Sprint Spectrum, L.P. – exempt modification
45 Maple Ridge Road, Farmington, Connecticut

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of Sprint Spectrum, L.P. ("Sprint"). Sprint is undertaking modifications to certain existing sites in its Connecticut system in order to implement updated technology. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction that constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the Chairperson of the Town Council of the Town of Farmington.

Sprint plans to modify the existing wireless communications facility owned by The Connecticut Light and Power Company and located at 45 Maple Ridge Road, Farmington (coordinates 41°-43'-5.15" N, 72°-46'-05 W"). Attached are plan and elevation drawings depicting the planned changes, and documentation of the structural sufficiency of the structure to accommodate the revised antenna configuration. Also included is a power density report reflecting the modification to Sprint's operations at the site.

The changes to the facility do not constitute a modification as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. Sprint will replace three (3) existing CMDA antennas with three (3) dual-band panel LTE antennas at a centerline height of approximately 98'. The proposed modifications will not extend the height of the approximately 102' structure.

2. Sprint will replace two (2) existing cabinets with two (2) new cabinets. Sprint will also install two H-frames on the existing concrete pad to which a fiber/power distribution box, six (6) RRHs (remote radio heads) and three (3) notch filters will be attached. The existing GPS antenna will be replaced by a new GPS antenna on the existing ice bridge post. The proposed modifications will have no effect on the site boundaries.

3. The proposed changes will not increase the noise level at the existing facility by six decibels or more. The incremental effect of the proposed changes will be negligible.

4. The changes to the facility will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site. As indicated on the attached report prepared by EBI Consulting, Sprint's operations at the site will result in a power density of approximately 52.947%; the combined site operations will result in a total power density of approximately 75.917%.

Please feel free to contact me by phone at (860) 798-7454 or by e-mail at jgaudet@hpcwireless.com with questions concerning this matter. Thank you for your consideration.

Respectfully yours,



Jennifer Young Gaudet

Attachments

cc: Honorable Jeffrey J. Hogan, Chairperson, Town Council, Town of Farmington
Ms. Kathleen Eagen, Town Manager, Town of Farmington
The Connecticut Light & Power Company (underlying property owner)



Northeast
Utilities System

107 Selden Street, Berlin, CT 06037

Northeast Utilities Service Company
P.O. Box 270
Hartford, CT 06141-0270
(203) 665-5000

May 1, 2013

Ms. Jennifer Gaudet
HPC Development

Sprint,
1 International Blvd.
Suite 300
Mahwah NJ
07495

RE: Sprint Antenna Site, CT-53XC965, 45 Maple Ridge Rd, Farmington CT, structure 8012.

Dear Ms. Gaudet:

Based on our reviews of the site drawings, the structural analysis and base reactions reviewed by Laminated Wood Systems, we have reviewed for acceptance this modification.

Since there are no outstanding structural issues to resolve at this time please contact Mr. O'Brien (860-665-6987) to resolve any lease issues; once the lease amendment is secured you may then contact Mr. John Landry directly (860-665-5425) to begin the construction arrangements.

Sincerely,

Robert Gray

Transmission Line Engineering

REF: NV_CT58XC965_Prelim_CD_Final_ver1_01.23,13_56458201312416129486.23,13.pdf

Sprint
 INTERNATIONAL BLVD., SUITE 900
 MAHWAH, NJ 07465
 OFFICE (907) 984-4000
 FAX (201) 984-4223

Alcatel-Lucent
 1000 ROUTE 100
 Basking Ridge, NJ 07005
 TEL (973) 382-7000

HPCC
 HANSON PAPER SERVICES
 1000 ROUTE 100
 Basking Ridge, NJ 07005
 TEL (973) 382-7000

TECHNICAL SERVICES
 1000 ROUTE 100
 Basking Ridge, NJ 07005
 TEL (973) 382-7000

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SUBMITTALS

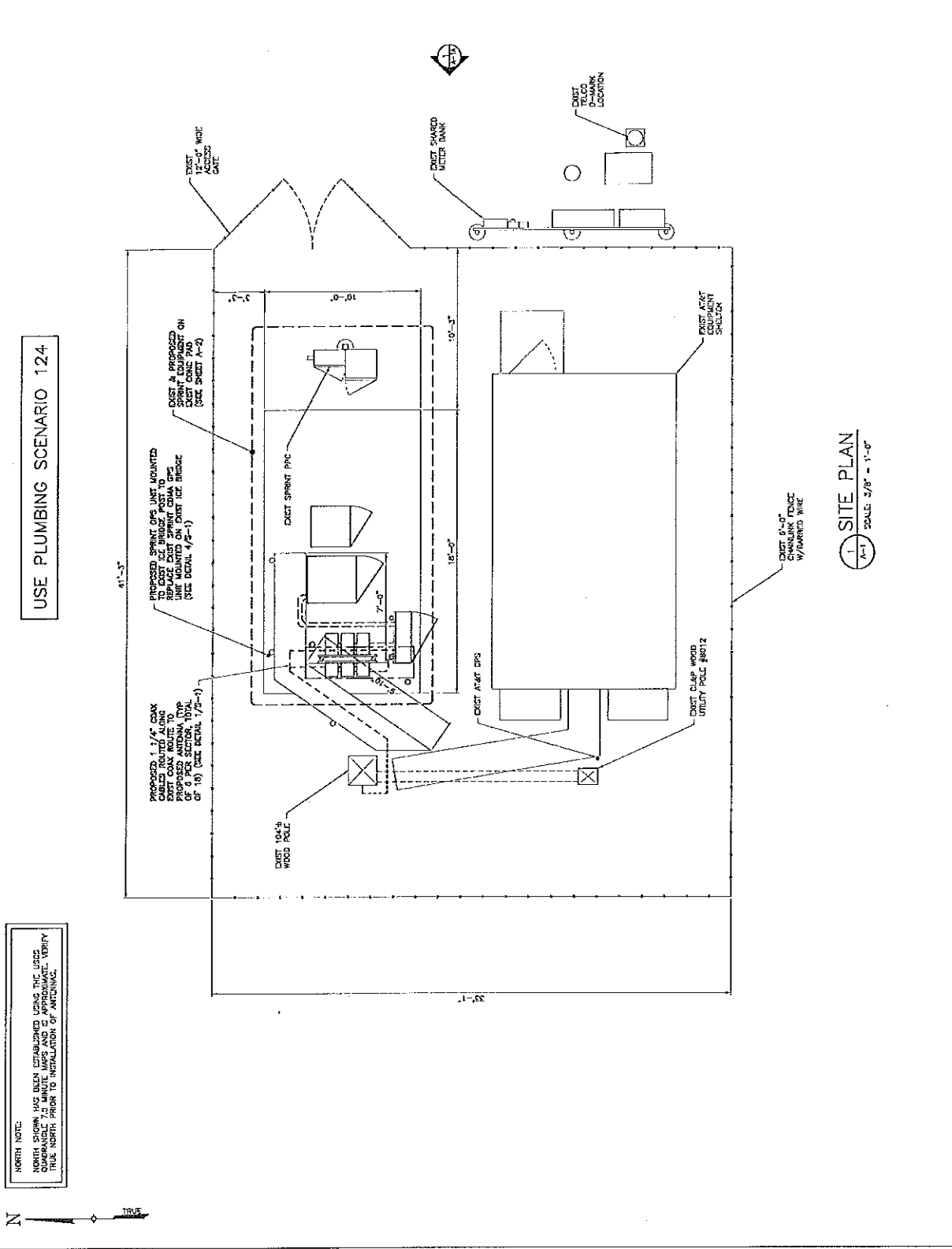
NO.	DATE	DESCRIPTION	BY
0	10/26/07	FOR COMMENT	UP
1	11/17/07	PER COMMENTS	DAE
2	10/25/08	PER COMMENTS	HP
3	10/25/08	REVISED PER COMMENTS	HP

SCALE

PROJECT NO. 0708X0985
 1000 ROUTE 100
 BASKING RIDGE, NJ 07005
 45 MAPLE RIDGE ROAD
 FARMINGTON, CT 06032

SHEET TITLE
 SITE PLAN

SHEET NO.
 A-1

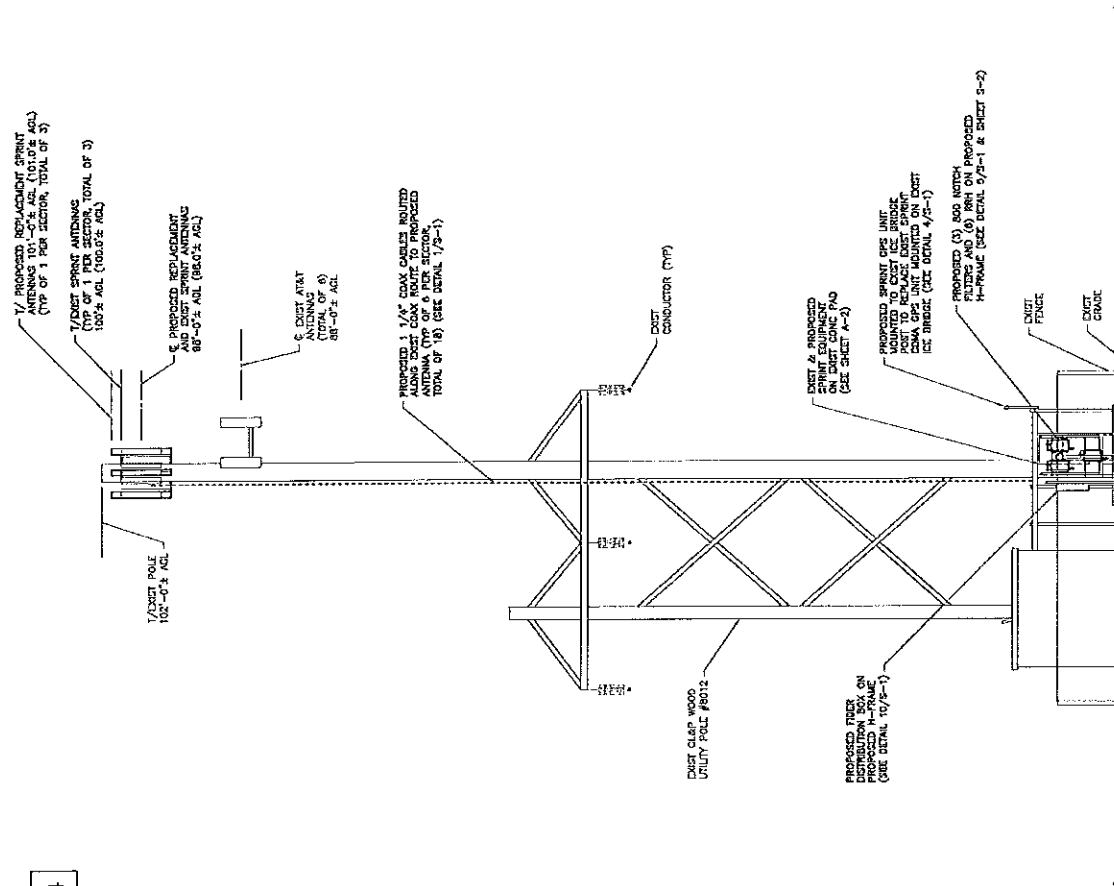


NORTH NOTE:
 NORTH SHOWN HAS BEEN ESTABLISHED USING THE LINES
 OF THE BUILDING. THE USER SHALL VERIFY
 TRUE NORTH PRIOR TO INSTALLATION OF ANTENNA.



SITE PLAN
 SCALE: 3/8" = 1'-0"

USE PLUMBING SCENARIO 124



1 ELEVATION
A-1-A SCALE: 3/16" = 1'-0"

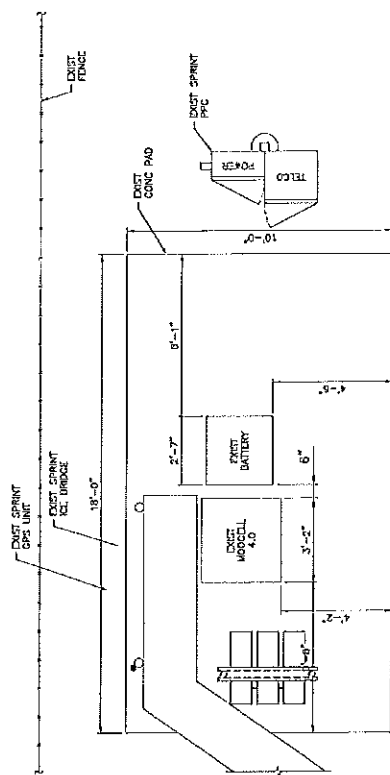


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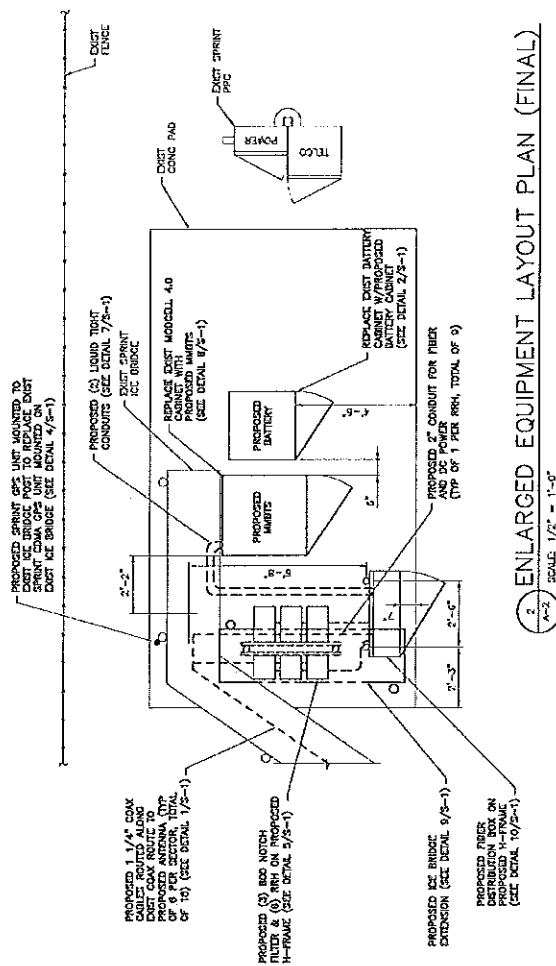
SUBMITTALS			
NO.	DATE	DESCRIPTION	BY
1	9/29/15	FOR COMMENT	UP
2	10/12/15	FOR COMMENT	ONE
3	10/12/15	FOR COMMENT	MP
4	10/12/15	REVISED PLOTS	MP
5			
6			
7			
8			
9			
10			

SEAL

PROJECT NO: 075326365 [22] CT2123 TO CT502065 E. FARMINGTON-NC #8012 ARE ANTENNA 45 MAJOR EXIST TOWER FARMINGTON, CT 06032	SHEET TITLE ELEVATION	SHEET NO: A-1-A
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ENLARGED EQUIPMENT LAYOUT PLAN (EXIST)



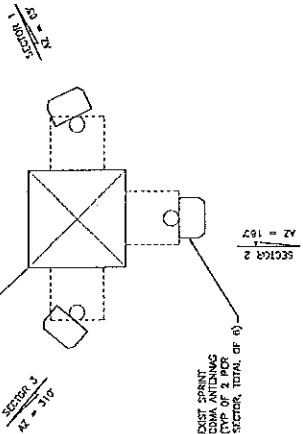
ENLARGED EQUIPMENT LAYOUT PLAN (FINAL)

[illegible]

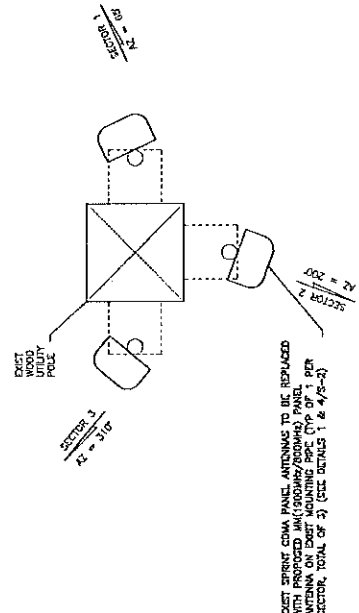


THE PROPOSED INSTALLATION &
EXISTING WOOD UTILITY POLE
SHALL BE ANALYZED BY A
PROFESSIONAL ENGINEER LICENSED
IN THE STATE OF CONNECTICUT
(TO BE COORDINATED BY OTHERS).

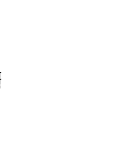
USE PLUMBING SCENARIO 124



1 ANTENNA LAYOUT PLAN (EXIST)



2
A-J

[illegible]

7. **Figure 1**

SITE NUMBER: C758XC865
 SITE NAME: (22E) C758XC865
 2. FARMINGTON-NU #8012
 SITE ADDRESS: 45 MAPLE RIDGE ROAD
 FARMINGTON, CT 06032

SHEET TITLE:	ANTENNA LAYOUT PLANS
SHEET NO:	A-3

Matthew J. Young – Professional Engineer

571 238th Road – Milford, NE 68405

Telephone: 402-643-4708 Fax: 402-643-4374

e-mail: myoung@lwsinc.com

Alcatel - Lucent

ATTN: Jennifer Gaudet – HPC Wireless

Westford, MA

April 2, 2013

RE: Northeast Utilities–Site # CT58XC965 – Str. # 8012

I have reviewed the proposed modification to the laminated wood pole that is shown on drawing # NESC-0028.04A1. I understand that the uppermost antennas are being replaced with the following attachments:

--- (3) APXVSPP-18-C-A20 panel antennas

--- All equipment referenced above to be mounted at a centerline height of approximately 98' AGL

--- In addition, this analysis also includes the proposed AMB-TBS-AD 86' AGL colocation that was proposed for the original design in 2003.

Most Recent LWS Drawing Revision Date = 10/8/2010

Most Recent Point Load Update = 10/15/2010

Most Recent LWS Analysis Date = 11/29/2010

The laminated wood poles DO have adequate capacity to support the additional load caused by the proposed equipment.

This analysis was based on the updated conductor loading that was developed by Northeast Utilities, dated 9/16/2010 in conjunction with the proposed antenna loading as described above.

This analysis was based on the following parameters:

Pole groundline dimensions of 22 1/4" x 23 3/8" and 12 1/4" x 16 1/2"

Analyzed per: NESC Heavy and NESC Extreme Wind (110 mph)

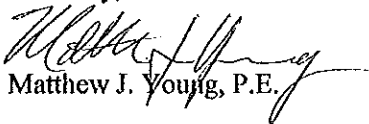
Maximum Pole Usage = 81%

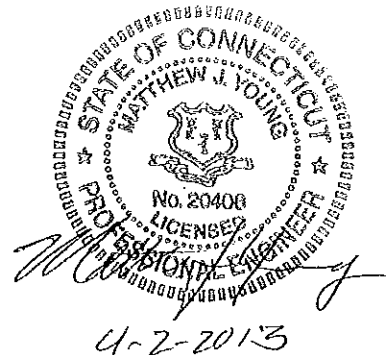
Maximum Element Usage = 81% (102' AGL pole)

Foundation Usage = acceptable (based on reported soil conditions)

If you have any questions, please call or e-mail.

Sincerely,


Matthew J. Young, P.E.





Laminated Wood Systems, Inc.

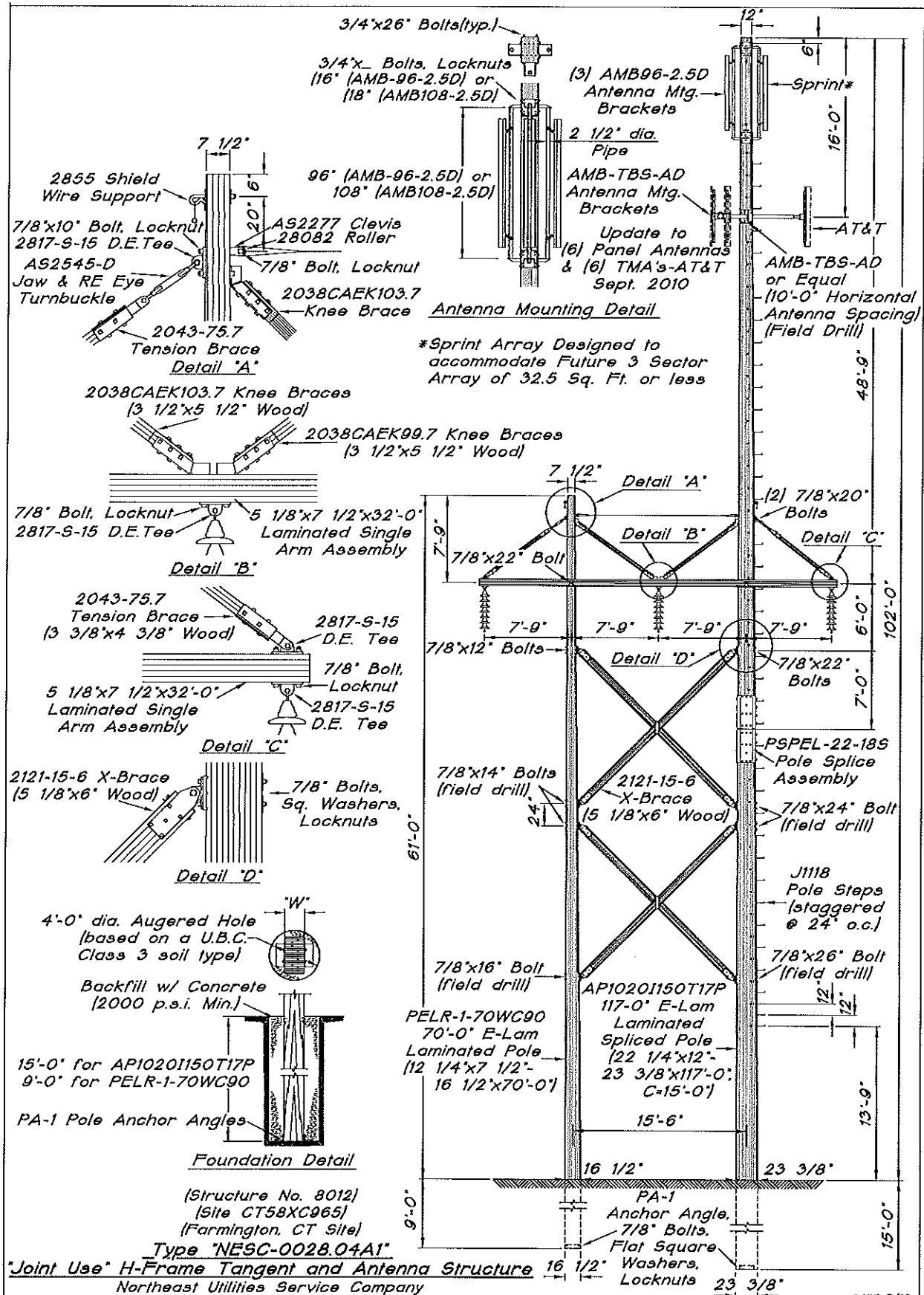
1327 285th Road • P.O. Box 386 • Seward, NE 68434 • 800-949-3526 • Fax 402-643-4374 • Email sales@lwsinc.com • www.lwsinc.com

E-Lam[®]
Laminated Wood
Pole Analysis
for

Northeast Utilities
Site # CT58XC965
Str. # 8012
Farmington Site

Design Drawing and Calculations
(27 Pages + Cover Sheet)





Laminated Wood Systems, Inc.			
E-LAM			
P.O. BOX 386, SEWARD, NE 68434		1-800-949-ELAM	
DRAWN J. Baack		DATE 7-15-03	
NO.		DWG. NO. NESC-0028.04A1	
ACAD DWG. FILE: NESC2804A1			
5.	Changed AT&T bracket from AMB108-2.5D to AMB-TBS-AD	10-8-10	
4.		9-28-10	
3.	Revised right knee brace length	11-4-03	
2.	added foundation detail	10-1-03	
1.	replaced amb-er44 with amb96-2.5D	9-23-03	
NO.	REVISION	DATE	CK.

3/27/2013

APXVSPP18-C-A20 Antennas (proposed)

Str. # 8012 - CT58XC965 - Farmington

Wind Load Calculation

Ext. Wind Speed = 110 MPH					
Ext. Wind	Height Above Ground (ft.)	Kz	Grf-Str	Shape Factor	Wind Pressure (p.s.f.)
O.L.F.					
1.00	98.00	1.16	0.87	1.6	50.08
				Projected Area (sq. ft.)	Equiv. Point Load (lbs.)
(3) flush-mount panel antennas and brackets				11.3	566
NESC Zone		Basic Pressure (p.s.f.)	O.L.F.	Shape Factor	
		4.00	2.50	1.60	16.0
				Projected Area (sq. ft.)	Equiv. Point Load (lbs.)
(3) flush-mount panel antennas and brackets				11.3	181
0.00					

3/26/2013

AT&T Antennas (existing)

Str. # 8012 - CT358C965 - Farmington

Wind Load Calculation

Ext. Wind Speed = 110 MPH					
Ext. Wind	Height Above Ground (ft.)	Kz	Grf-Str	Shape Factor	Wind Pressure (p.s.f.)
O.L.F.					
1.00	86.00	1.13	0.88	1.6	49.32
				Projected Area (sq. ft.)	Equiv. Point Load (lbs.)
(6) panels antennas, (6) TMAs, and brackets				32.3	1,593
NESC Zone		Basic Pressure (p.s.f.)	O.L.F.	Shape Factor	
		4.00	2.50	1.60	16.0
				Projected Area (sq. ft.)	Equiv. Point Load (lbs.)
(6) panels antennas, (6) TMAs, and brackets 0.00				32.3	517

3/26/2013

Exposed Cables

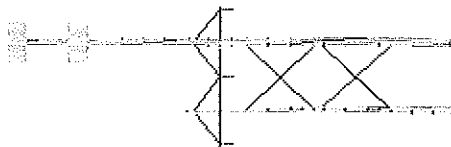
Str. # 8012 - CT58XC965 - Farmington

Wind Load Calculation

Ext. Wind Speed = 110 MPH					
Ext. Wind	Height Above Ground (ft.)	Kz	Grf-Str	Shape Factor	Wind Pressure (p.s.f.)
O.L.F.					
1.00					
	51.00	1.01	0.93	1.6	46.28
				Projected Area (sq. ft.)	Equiv. Point Load (lbs.)
(max. cable project = 3")				12.8	590
NESC Zone		Basic Pressure (p.s.f.)	O.L.F.	Shape Factor	
		4.00	2.50	1.60	16.0
				Projected Area (sq. ft.)	Equiv. Point Load (lbs.)
(max. cable project = 3")				12.8	204
0.00					

 * PLS-POLE
 * POLE AND FRAME ANALYSIS AND DESIGN
 * Copyright Power Line Systems, Inc. 1999-2011
 * *****

Project Name : NESC/Sprint - Joint Uno - Farmington, CT Site - # 8012
 Project Notes:
 Project File : h:\pic\examples\old_files\pls_pole\projects\nesc\hnc8012_march2013.pol
 Date run : 9:54:39 AM Tuesday, April 02, 2013
 by : PLS-POLE Version 12.30
 Licensed to : Laminated Wood Systems
 Successfully performed nonlinear analysis
 The model has 0 warnings.



Modeling options:
 Offset Arms from Pole/Want: Yes
 Offset Braces from Pole/Want: Yes
 Offset Guy from Pole/Want: Yes
 Offset Strain from Pole/Want: Yes
 Use Alternate Convergence Process: No

Laminated Wood Pole Properties:

Property Number	Pole Stock Type	Pole Length (ft)	Default Embedded Stop Dist. (ft)	Taper Length From Butt (ft)	Long. Tip Dim. (in)	Trans. Tip Dim. (in)	Long. Base Dim. (in)	Trans. Base Dim. (in)	Long. Default Dim. (in)	Trans. Default Dim. (in)	Modulus of Elasticity (ksi)	Density (lbm/ft³)	Trans. MOR (ksi)	Long. MOR (ksi)
PELR-1-70XC90	SVP	70.00	9	9.00	7.5	12.25	16.5	23.38	12.25	1.60	2400	46	7.6	8
AF10C0150T17P	SVP	117.00	15	15.00	12	22.25	23.38		22.25	1.60	2400	46	7.6	8

Laminated Wood Pole Connectivity:

Pole Label	Tip Base X of Y of 2 of Inclin. (ft)	Base Base X of Y of 2 of Inclin. (ft)	Inclin. (deg)	Property Set	Attach Labels	Base Connect	Embed & Embed C. Override (ft)
Left	0	-7.75	0	0	PELR-1-70XC90	7 Labels	Fixed
Right	0	7.75	0	0	AF10C0150T17P	10 Labels	Fixed

Relative Attachment Labels for Laminated Wood Pole "Left":

Joint Label	Distance From Origin/Top Joint (ft)	Global Z of Attach (ft)
Left: SW	0.50	0.00
Left: DRACE	2.00	0.00
Left: ARM	7.75	0.00
Left: AX	13.75	0.00

Left:X1B 29.25 0.00
 Left:X2T 31.25 0.00
 Left:X2B 46.75 0.00

Relative Attachment Labels for Laminated Wood Pole "Right":

Joint Label	Distance From Origin/Top Joint (ft)	Global Z of Attach (ft)
Right:ANT1	2.00	0.00
Right:ANT2	16.00	0.00
Right:ISM	41.50	0.00
Right:IBRACH	43.00	0.00
Right:ANT	49.75	0.00
Right:X1B	54.75	0.00
Right:X2T	70.25	0.00
Right:X2B	72.25	0.00
Right:X2H	87.75	0.00
Right:ceblloc	51.00	0.00

Detailed Laminated Wood Properties:

Element Label	Pole Feature	Dist. From Ground (ft)	Dist. From Pole (ft)	Trans. Dia. (in)	Long. Dia. (in)	Area (in ²)	Trans. Section Modulus (in ³)	Long. Section Modulus (in ³)	Trans. Inertia (in ⁴)	Long. Inertia (in ⁴)	Trans. MOR (ksi)	Long. MOR (ksi)	Trans. Moment Capacity (ft-k)	Long. Moment Capacity (ft-k)
Left	Left:ISW	61.00	0.00	7.50	12.25	91.88	114.84	187.58	430.66	1148.92	7.600	8.000	72.734	125.052
Left	Left:ISW	60.50	0.50	7.57	12.25	91.78	117.11	189.42	443.50	1160.22	7.600	8.000	74.172	126.282
Left	Left:IBRACH	59.00	2.00	7.80	12.25	95.49	124.06	194.96	483.52	1194.12	7.600	8.000	78.570	129.972
Left	Left:ISW	58.50	2.50	7.82	12.25	100.89	127.93	205.57	566.93	1259.10	7.600	8.000	87.354	137.045
Left	Left:ABW	53.25	7.75	8.64	12.25	105.88	132.53	216.18	659.39	1324.08	7.600	8.000	96.303	144.117
Left	Left:ISW	47.25	13.75	9.53	12.25	111.30	168.55	227.25	765.74	1391.88	7.600	8.000	106.750	151.497
Left	Left:X1T	42.25	18.75	10.27	12.25	125.76	215.19	256.77	1104.61	1572.70	7.600	8.000	117.404	158.977
Left	Left:ISW	37.25	23.75	11.00	12.25	134.80	247.23	275.22	1360.25	1685.70	7.600	8.000	126.286	171.178
Left	Left:ISW	34.50	26.50	11.41	12.25	139.77	265.79	285.36	1516.33	1747.86	7.600	8.000	136.333	180.243
Left	Left:X1B	31.75	29.25	11.82	12.25	144.74	285.03	295.51	1683.91	1840.01	7.600	8.000	140.520	190.008
Left	Left:X1T	29.75	31.25	12.11	12.25	148.36	299.45	302.89	1813.25	1855.22	7.600	8.000	149.650	197.028
Left	Left:ISW	27.75	33.25	12.40	12.25	152.98	313.88	317.42	1986.58	1970.45	7.600	8.000	158.671	205.048
Left	Left:X1T	19.75	41.25	13.50	12.25	166.43	376.85	339.70	2559.38	2081.22	7.600	8.000	218.071	226.558
Left	Left:X2T	17.00	44.00	13.90	12.25	171.40	399.70	349.94	2796.25	2143.39	7.600	8.000	233.342	233.594
Left	Left:X2H	14.25	46.75	14.40	12.25	176.37	423.22	360.09	3046.63	2205.54	7.600	8.000	248.036	240.059
Left	Left:X2B	9.25	51.75	15.14	12.25	185.41	467.70	378.54	3539.35	2318.55	7.600	8.000	266.207	252.359
Left	Left:ISW	4.62	56.37	15.82	12.25	191.77	510.82	395.61	4039.97	2423.08	7.600	8.000	303.518	263.736
Left	Left:ISW	0.00	61.00	16.50	12.25	202.13	555.84	412.67	4585.71	2527.62	7.577	8.000	350.952	275.114
Right	Right:ISW	102.00	0.00	12.00	22.25	267.00	534.00	900.10	3204.00	11035.14	7.600	8.000	338.109	560.082
Right	Right:ANT1	100.00	2.00	12.22	22.25	271.90	554.00	1008.53	3386.00	11219.87	7.600	8.000	328.388	572.151
Right	Right:ANT2	95.00	7.00	12.78	22.25	284.17	605.74	1054.54	3370.95	11731.71	7.600	8.000	330.633	703.023
Right	Right:ISM	90.50	11.50	13.28	22.25	295.54	654.24	1095.94	4344.96	12192.36	7.600	8.000	414.351	730.627
Right	Right:ANT2	86.00	16.00	13.78	22.25	306.70	704.61	1137.35	4856.40	12653.01	7.600	8.000	446.253	758.232
Right	Right:ISM	81.00	21.00	14.34	22.25	319.11	762.77	1183.36	5469.78	13164.85	7.600	8.000	483.086	788.904
Right	Right:IBRACH	76.00	26.00	14.90	22.25	331.51	823.23	1229.36	6132.88	13676.68	7.600	8.000	521.380	819.575
Right	Right:ISW	71.00	31.00	15.46	22.25	343.92	886.00	1275.37	6847.52	14188.52	7.600	8.000	561.134	850.247
Right	Right:ISW	66.00	36.00	16.01	22.25	356.33	951.08	1321.38	7615.63	14700.35	7.599	8.000	602.294	880.919
Right	Right:ISW	61.00	41.00	16.57	22.25	369.77	1025.33	1371.99	8524.60	15243.37	7.571	8.000	624.397	897.918
Right	Right:IBRACH	59.00	43.00	16.80	22.25	373.70	1046.06	1385.79	8784.47	15416.92	7.563	8.000	646.977	913.658
Right	Right:ISM	56.13	45.88	17.12	22.25	380.83	1086.38	1412.25	9297.21	15711.23	7.549	8.000	659.297	924.959
Right	Right:ABW	53.25	48.75	17.44	22.25	387.96	1127.46	1438.70	9829.53	16005.53	7.535	8.000	693.416	941.495
Right	Right:IBRACH	51.00	51.00	17.69	22.25	393.55	1160.14	1459.40	10560.02	16235.86	7.524	8.000	707.944	959.132
Right	Right:X1T	47.25	54.75	18.11	22.25	402.85	1215.65	1493.91	11005.12	16610.73	7.507	8.000	760.451	995.938
Right	Right:ISM	42.25	59.75	18.66	22.25	415.26	1291.68	1539.92	12053.52	17131.57	7.484	8.000	805.564	1026.609
Right	Right:ISW	37.25	64.75	19.22	22.25	427.66	1370.02	1595.92	13166.48	17643.40	7.462	8.000	851.977	1057.281
Right	Right:ISW	34.50	67.50	19.53	22.25	434.94	1414.08	1611.23	13806.82	17924.91	7.450	8.000	877.108	1074.150
Right	Right:X1B	31.75	70.25	19.83	22.25	441.31	1458.85	1636.53	14467.50	18206.42	7.438	8.000	904.300	1093.020
Right	Right:X2T	29.75	72.25	20.06	22.25	446.27	1491.94	1654.94	14963.17	18411.16	7.430	8.000	923.719	1103.589
Right	Right:X2T	24.75	77.25	20.61	22.25	458.68	1575.94	1700.94	16243.96	18922.99	7.410	8.000	973.120	1133.960
Right	Right:X2B	19.75	82.25	21.17	22.25	471.09	1662.35	1746.95	17598.05	19434.83	7.390	8.000	1023.738	1164.632
Right	Right:X2H	17.00	85.00	21.48	22.25	477.91	1710.86	1772.25	18372.89	19716.34	7.379	8.000	1052.096	1181.501
Right	Right:X2B	9.25	92.75	22.34	22.25	497.14	1851.31	1843.57	20682.31	20509.68	7.350	8.000	1133.986	1229.043
Right	Right:ISW	4.62	97.38	22.86	22.25	508.62	1937.77	1886.23	21447.33	20983.13	7.334	8.000	1184.228	1257.414
Right	Right:ISW	0.00	102.00	23.38	22.25	520.09	2026.20	1926.60	22681.20	21436.58	7.317	8.000	1235.352	1285.785

Equipment Library:

Equipment Label	Stock Weight (lbs)	Wind Area (ft ²)	Ice Area (ft ²)	EIA Antenna Type Coef.	EIA Antenna Height (ft)
AVO-ES44	2000.0	0.0	0.0	Square	1.00
Cable_25	2000.0	25.00	0.00	Circle	1.00

Equipment Connectivity:

Equipment Label	Attach Equipment Label	EIA Antenna Height (ft)	Property Orientation (deg)

Brace Properties:

Brace Property Label	Stock Number	Cross Section Area (in ²)	Length (ft)	Depth (in)	Width (in)	Weight (lbs)	Unit Wt. (lbm/ft)	Modulus of Elasticity (ksi)	Drag Coef.	Strength Type	Use S.F.	Tension Capacity (lbs)	Compression Capacity (lbs)	Net Design Area (in ²)	X-Moment Inertia (in ⁴)	Z-Moment Inertia (in ⁴)	Unbraced Length Ratio-X	Unbraced Length Ratio-Z
ten2043	2043-75.7	14.76	9.1	4.375	3.375	47	0	1600	1.6	Nominal	No	30000	16505	0	0	0	0	0
ten2043L	2043-75.7	14.76	9.1	4.375	3.375	47	0	1600	1.6	Nominal	No	30000	16505	0	0	0	0	0
x1211	2018-15-6	10.72	24.1	5	5.125	200	0	1600	1.6	Nominal	No	35000	60950	0	0	0	0	0
x1211L	2018-15-6	10.72	24.1	5	5.125	200	0	1600	1.6	Nominal	No	35000	60950	0	0	0	0	0
vee2030L	2030CNV15.6	19.25	9.4	5.5	3.5	59	0	1600	1.6	Nominal	No	30000	23141	0	0	0	0	0

Brace Connectivity:

Brace Label	Origin Label	End Label	Element Property Type
ten2043	ten2043L	ten2043	Standard
vee2030	vee2030L	vee2030	Standard
x1211	x1211L	x1211	Standard
x1211	x1211L	x1211	Standard
x1211	x1211L	x1211	Standard
x1211	x1211L	x1211	Standard
x1211	x1211L	x1211	Standard
x1211	x1211L	x1211	Standard

X-Arm Properties:

Cross Arm Label	Stock Number	Cross Section Area (in ²)	X Inertia (in ⁴)	Z Inertia (in ⁴)	Weight (lbs)	Depth (in)	Width (in)	Length (ft)	Modulus of Elasticity (ksi)	Drag Coef.	Strength Type	Use S.F.	Vertical Capacity (lbs)	Horizontal Capacity (lbs)	Long. Design Capacity (lbs)	Section Normal Stress (ksi)	Section Modulus (in ³)	Section Ratio-X	Section Ratio-Z
NESC32	38.4	84.1	180.2	393	7.5	5.125	32	2100	1.6	7	Pointed Calculated	No	0	0	0	8000	32.83	48.04	0

Joint Relative to the Origin for Cross Arm Property "NESC32":

Joint Offset

Label (ft)

11	0.5
12	8.12
13	16
14	16
15	17
16	17
17	23.75
18	31.5

X-Arm Connectivity:

X-Arm Label	X-Arm Property	X-Arm Attach Labels	Connects
NESC32	NESC32	0	9 connections

X-Arm Connections for "NESC32":

Attach Offset Label	Offset (ft)	Connect Code	Connection Type
NESC32:0	0.000	Pinned	X
NESC32:1	0.500	Pinned	X
NESC32:2	8.120	Pinned	X
NESC32:3	15.000	Pinned	X
NESC32:4	16.000	Pinned	X
NESC32:5	16.000	Pinned	X
NESC32:6	17.000	Pinned	X
NESC32:7	17.000	Pinned	X
NESC32:8	23.750	Pinned	X
NESC32:9	31.500	Pinned	X
NESC32:10	32.000	Pinned	X

*** Insulator Data

Supportion Properties:

Label Number	Stock Length (ft)	Weight (lbs)	Top Rect (ft)	Rect Area (ft ²)	Rect Height (ft)	Rect Width (ft)	Rect Depth (ft)	Rect Volume (ft ³)	Rect Weight (ft)
SUSW	0.25	3	0.1	6e-004	0	0	0	0	0
SUS	3.5	50	2	6e-004	0	0	0	0	0

Suspension Insulator Connectivity:

Suspension Label	Structure Attach Label	Tip Property Cond.	Cond. 1 Minimum (deg)	Cond. 1 Maximum (deg)	Cond. 2 Minimum (deg)	Cond. 2 Maximum (deg)	Cond. 3 Minimum (deg)	Cond. 3 Maximum (deg)	Cond. 4 Minimum (deg)	Cond. 4 Maximum (deg)	Min. Required Vertical Load (uplift)	
SUSGSM1	Left:ISM	SWL	SUSGSM	-90.00	90.00	-90.00	90.00	-90.00	90.00	-180.00	180.00	No Limit
SUSGSM2	Right:ISM	SWL	SUSGSM	-90.00	90.00	-90.00	90.00	-90.00	90.00	-180.00	180.00	No Limit
L1	NESC21:11	L1	SWL	-90.00	90.00	-90.00	90.00	-90.00	90.00	-180.00	180.00	No Limit
L2	NESC21:23	L2	SWL	-90.00	90.00	-90.00	90.00	-90.00	90.00	-180.00	180.00	No Limit
L3	NESC21:23	L3	SWL	-90.00	90.00	-90.00	90.00	-90.00	90.00	-180.00	180.00	No Limit
ANT1	RIGHT:ANT1	ANT1	SUSGSM	-90.00	90.00	-90.00	90.00	-90.00	90.00	-180.00	180.00	No Limit
ANT2	RIGHT:ANT2	ANT2	SUSGSM	-90.00	90.00	-90.00	90.00	-90.00	90.00	-180.00	180.00	No Limit
cables Right:cables			SUSGSM	-90.00	90.00	-90.00	90.00	-90.00	90.00	-180.00	180.00	No Limit

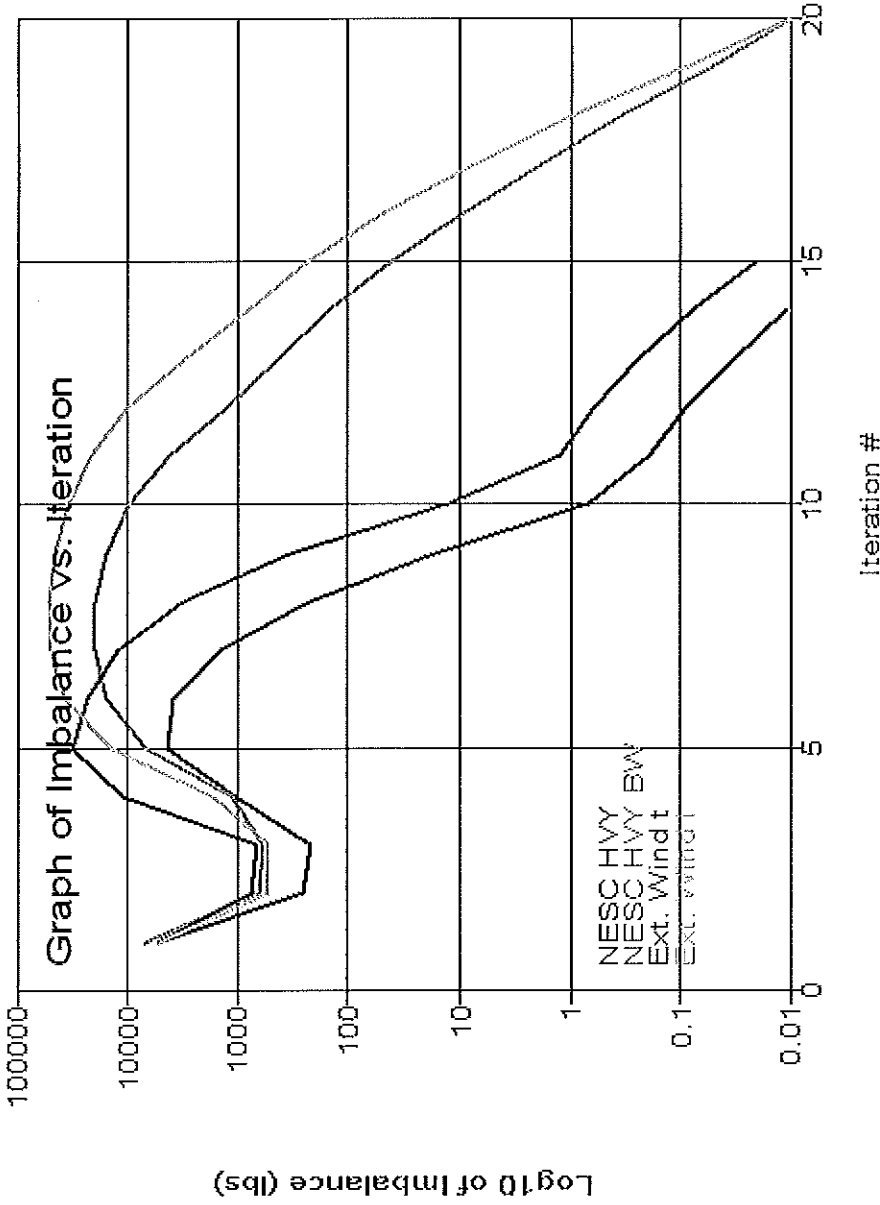
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Page 7/23

Left	Left:XB	Left:XB	34.50	31.75	33.12	11.613	9.73e+005	1.600	31.30	0.00	124.97	133.28	0.00	0.47	133.27
Left	Left:XB	Left:XB	31.75	29.75	30.75	11.963	1e+006	1.600	31.30	0.00	93.63	95.85	0.00	0.34	99.85
Left	Left:XB	Left:XB	29.75	24.75	27.25	12.250	1.03e+006	1.600	31.30	0.00	244.17	260.41	0.00	0.00	0.85 260.41
Left	Left:XB	Left:XB	24.75	19.75	22.25	12.250	1.03e+006	1.600	31.30	0.00	258.61	275.80	0.00	0.00	0.85 275.80
Left	Left:XB	Left:XB	19.75	17.00	18.37	12.250	1.03e+006	1.600	31.30	0.00	148.39	158.25	0.00	0.00	0.47 158.25
Left	Left:XB	Left:XB	17.00	14.25	15.62	12.250	1.03e+006	1.600	31.30	0.00	152.75	162.91	0.00	0.00	0.47 162.91
Left	Left:XB	Left:XB	14.25	9.25	11.75	12.250	1.03e+006	1.600	31.30	0.00	288.52	308.13	0.00	0.00	0.95 308.13
Left	Left:XB	Left:XB	9.25	4.25	11.75	12.250	1.03e+006	1.600	31.30	0.00	288.52	308.13	0.00	0.00	0.95 308.13
Left	Left:XB	Left:XB	4.25	0.00	2.31	12.250	1.03e+006	1.600	31.30	0.00	292.45	311.89	0.00	0.00	0.72 311.89
Right	Right:XB	Right:XB	102.00	100.00	101.00	12.122	1.03e+006	1.600	31.30	0.00	172.17	181.09	0.00	0.00	0.62 181.09
Right	Right:XB	Right:XB	100.00	95.00	97.50	12.502	1.05e+006	1.600	31.30	0.00	444.59	460.88	0.00	0.00	1.55 460.88
Right	Right:XB	Right:XB	95.00	90.50	92.75	13.022	1.07e+006	1.600	31.30	0.00	416.81	444.74	0.00	0.00	1.39 444.74
Right	Right:XB	Right:XB	90.50	86.00	88.25	13.533	1.10e+006	1.600	31.30	0.00	432.86	454.16	0.00	0.00	1.39 454.16
Right	Right:XB	Right:XB	86.00	81.00	83.50	14.003	1.12e+006	1.600	31.30	0.00	490.78	521.45	0.00	0.00	1.52 521.45
Right	Right:XB	Right:XB	81.00	76.00	78.50	14.522	1.15e+006	1.600	31.30	0.00	529.59	575.99	0.00	0.00	1.55 575.99
Right	Right:XB	Right:XB	76.00	71.00	73.50	15.042	1.18e+006	1.600	31.30	0.00	573.17	630.08	0.00	0.00	1.55 630.08
Right	Right:XB	Right:XB	71.00	66.00	68.50	15.570	1.21e+006	1.600	31.30	0.00	550.33	598.36	0.00	0.00	1.52 598.36
Right	Right:XB	Right:XB	66.00	63.25	64.63	16.168	1.25e+006	1.600	31.30	0.00	516.02	565.55	0.00	0.00	0.85 565.55
Right	Right:XB	Right:XB	63.25	60.50	61.89	16.475	1.28e+006	1.600	31.30	0.00	522.02	589.08	0.00	0.00	0.85 589.08
Right	Right:XB	Right:XB	60.50	59.00	59.75	16.742	1.3e+006	1.600	31.30	0.00	478.17	504.62	0.00	0.00	0.46 504.62
Right	Right:XB	Right:XB	59.00	56.13	57.56	16.956	1.32e+006	1.600	31.30	0.00	546.48	603.44	0.00	0.00	0.89 603.44
Right	Right:XB	Right:XB	56.13	53.25	54.69	17.276	1.35e+006	1.600	31.30	0.00	553.03	607.29	0.00	0.00	0.89 607.29
Right	Right:XB	Right:XB	53.25	51.00	52.13	17.562	1.37e+006	1.600	31.30	0.00	590.86	644.91	0.00	0.00	0.70 644.91
Right	Right:XB	Right:XB	51.00	48.75	49.75	17.834	1.39e+006	1.600	31.30	0.00	577.17	630.08	0.00	0.00	1.56 630.08
Right	Right:XB	Right:XB	48.75	46.25	47.75	18.094	1.41e+006	1.600	31.30	0.00	551.17	598.36	0.00	0.00	1.55 598.36
Right	Right:XB	Right:XB	46.25	43.75	45.75	18.342	1.43e+006	1.600	31.30	0.00	573.17	630.08	0.00	0.00	1.55 630.08
Right	Right:XB	Right:XB	43.75	41.25	43.75	18.582	1.45e+006	1.600	31.30	0.00	578.09	632.35	0.00	0.00	0.85 632.35
Right	Right:XB	Right:XB	41.25	38.75	40.75	18.813	1.47e+006	1.600	31.30	0.00	584.68	635.87	0.00	0.00	0.85 635.87
Right	Right:XB	Right:XB	38.75	36.25	38.75	19.046	1.49e+006	1.600	31.30	0.00	583.53	636.48	0.00	0.00	0.62 636.48
Right	Right:XB	Right:XB	36.25	33.75	36.25	19.276	1.51e+006	1.600	31.30	0.00	722.71	824.35	0.00	0.00	1.55 824.35
Right	Right:XB	Right:XB	33.75	31.25	33.75	19.506	1.53e+006	1.600	31.30	0.00	742.52	835.98	0.00	0.00	1.55 835.98
Right	Right:XB	Right:XB	31.25	28.75	30.75	19.736	1.55e+006	1.600	31.30	0.00	816.83	944.75	0.00	0.00	0.85 944.75
Right	Right:XB	Right:XB	28.75	26.25	28.75	20.000	1.57e+006	1.600	31.30	0.00	816.83	944.75	0.00	0.00	0.85 944.75
Right	Right:XB	Right:XB	26.25	23.75	26.25	20.263	1.59e+006	1.600	31.30	0.00	782.93	868.23	0.00	0.00	1.82 868.23
Right	Right:XB	Right:XB	23.75	21.25	23.75	20.522	1.61e+006	1.600	31.30	0.00	782.93	868.23	0.00	0.00	1.82 868.23
Right	Right:XB	Right:XB	21.25	18.75	20.75	20.782	1.63e+006	1.600	31.30	0.00	742.97	836.25	0.00	0.00	1.43 836.25
Right	Right:XB	Right:XB	18.75	16.25	18.75	21.042	1.65e+006	1.600	31.30	0.00	759.92	846.20	0.00	0.00	1.43 846.20
Right	Right:XB	Right:XB	16.25	13.75	16.25	21.302	1.67e+006	1.600	31.30	0.00	759.92	846.20	0.00	0.00	1.43 846.20
Right	Right:XB	Right:XB	13.75	11.25	13.75	21.562	1.69e+006	1.600	31.30	0.00	759.92	846.20	0.00	0.00	1.43 846.20
Right	Right:XB	Right:XB	11.25	8.75	11.25	21.822	1.71e+006	1.600	31.30	0.00	759.92	846.20	0.00	0.00	1.43 846.20
Right	Right:XB	Right:XB	8.75	6.25	8.75	22.082	1.73e+006	1.600	31.30	0.00	759.92	846.20	0.00	0.00	1.43 846.20
Right	Right:XB	Right:XB	6.25	3.75	6.25	22.342	1.75e+006	1.600	31.30	0.00	759.92	846.20	0.00	0.00	1.43 846.20
Right	Right:XB	Right:XB	3.75	1.25	3.75	22.602	1.77e+006	1.600	31.30	0.00	759.92	846.20	0.00	0.00	1.43 846.20
Right	Right:XB	Right:XB	1.25	0.00	2.31	22.862	1.79e+006	1.600	31.30	0.00	759.92	846.20	0.00	0.00	1.43 846.20

*** Analysis Results:

Maximum element usage is 61.13% for Laminated Wood Joint "Right" in Load case "Ext. Wind 1"
Maximum insulator usage is 11.561 for Suspension "SUSWR" in Load case "NESC HVY BW"



*** Analysis Results for Load Case No. 1 "NESC HVY" - Number of iterations in GAP3 14

Equilibrium Joint Positions and Rotations for Load Case "NESC HVY":

Joint Label	X-Displ (ft)	Y-Displ (ft)	Z-Displ (ft)	X-Rot (deg)	Y-Rot (deg)	Z-Rot (deg)	X-Pos (ft)	Y-Pos (ft)	Z-Pos (ft)
Left:G	0.006307	0.01143	0	0.0000	0.0000	0.0000	0.006307	-7.732	0
Left:SW	0.006239	0.01388	0.001509	0.2809	0.0078	0.0021	0.006239	-7.736	60.5
Left:UBACE	0.006035	0.02127	0.001531	0.2800	0.0078	0.0021	0.006035	-7.729	59
Left:ARM	0.005256	0.03978	0.001568	-0.0110	0.0077	0.0021	0.005256	-7.71	53.25
Left:XIR	0.004455	0.05538	0.001565	-0.1328	0.0076	0.0017	0.004455	-7.725	47.25
Left:XIR	0.002455	0.0707	0.001325	-0.0016	0.0070	0.0009	0.002455	-7.732	31.75
Left:XIR	0.002455	0.0707	0.001325	-0.0016	0.0070	0.0009	0.002455	-7.732	31.75
Left:XIR	0.002455	0.0707	0.001325	-0.0016	0.0070	0.0009	0.002455	-7.732	31.75
Left:XIR	0.002455	0.0707	0.001325	-0.0016	0.0070	0.0009	0.002455	-7.732	31.75
Right:G	0.01224	0.4963	-0.004437	-0.6901	0.0091	0.0004	0.01224	8.246	102
Right:ARM	0.01182	0.4722	-0.004292	-0.6901	0.0091	0.0004	0.01182	8.232	100
Right:ARM	0.009594	0.1062	-0.003252	-0.6567	0.0091	0.0004	0.009594	8.056	86
Right:SW	0.005649	0.07204	-0.001937	-0.2201	0.0085	0.0004	0.005649	7.823	60.5

Joint Support Reactions for Load Case "NEEC XVI":Detailed Laminated Wood Pole Design for Load Case "NTSC HV":

Element Label	Joint Label	Joint Position	Rel. Trans. Dist. (ft)	Long. Dist. (in)	Vert. (in)	Trans. (ft-k)	Long. (ft-k)	Tors. (ft-k)	Joint Force (kip)	Trans. (kip)	Long. (kip)	Angle	
Left	Left:1	Origin	0.00	0.24	0.08	0.02	0.00	0.00	0.0	0.01	0.00	0.0	
	Left:2	End	0.50	0.17	0.07	0.02	0.00	-0.00	0.0	-0.01	0.00	0.0	
	Left:3	Origin	0.50	0.17	0.07	0.02	0.00	-0.00	0.0	-0.67	0.60	0.1	
	Left:4	End	2.00	0.26	0.07	0.02	0.93	-0.00	0.0	0.67	0.60	1.9	
	Left:5	Origin	2.00	0.26	0.07	0.02	-0.04	-0.00	0.0	-0.67	0.60	0.1	
	Left:6	End	4.98	0.41	0.07	0.02	-8.87	-0.00	0.0	-0.02	-3.07	0.00	1.9
	Left:7	Origin	4.98	0.41	0.07	0.02	-8.87	-0.00	0.0	-0.12	-3.03	0.00	1.7
	Left:8	End	7.96	0.48	0.06	0.02	-17.57	-0.01	0.0	-0.10	-4.51	0.00	2.0
	Left:9	Origin	7.96	0.48	0.06	0.02	-17.57	-0.01	0.0	-0.10	-4.51	0.00	2.0
	Left:10	End	10.75	0.41	0.06	0.02	-4.05	-0.01	0.0	0.10	4.21	0.00	5.9
Left	Left:11	Origin	10.75	0.41	0.06	0.02	-4.05	-0.01	0.0	0.10	4.21	0.00	5.9
	Left:12	End	13.75	0.30	0.05	0.02	9.61	-0.01	0.0	0.00	4.56	0.00	11.6
	Left:13	Origin	13.75	0.30	0.05	0.02	7.35	-0.01	0.0	5.54	-0.67	0.00	10.6
	Left:14	End	18.75	0.22	0.05	0.02	4.01	-0.01	0.0	5.54	-0.67	0.00	5.4
	Left:15	Origin	18.75	0.22	0.05	0.02	4.01	-0.01	0.0	5.54	-0.67	0.00	5.4
	Left:16	End	23.75	0.21	0.04	0.02	1.12	-0.02	0.0	5.34	-0.58	0.00	1.9
	Left:17	Origin	23.75	0.21	0.04	0.02	1.12	-0.02	0.0	5.34	-0.58	0.00	1.9
	Left:18	End	26.50	0.21	0.03	0.02	-0.30	-0.03	0.0	5.18	-0.41	0.00	1.0
	Left:19	Origin	26.50	0.21	0.03	0.02	-0.30	-0.03	0.0	5.18	-0.41	0.00	1.0
	Left:20	End	29.25	0.21	0.03	0.02	-1.50	-0.04	0.0	2.65	-0.47	0.00	2.1
Left	Left:21	Origin	29.25	0.21	0.03	0.02	-1.50	-0.04	0.0	2.65	-0.47	0.00	2.1
	Left:22	End	31.25	0.21	0.03	0.02	-4.52	-0.04	0.0	10.90	5.20	0.00	5.4
	Left:23	Origin	31.25	0.21	0.03	0.02	-4.52	-0.04	0.0	10.90	5.20	0.00	5.4
	Left:24	End	33.25	0.21	0.03	0.02	5.68	-0.05	0.0	10.90	5.20	0.00	6.3
	Left:25	Origin	33.25	0.21	0.03	0.02	2.56	-0.05	0.0	17.32	-0.75	0.01	4.4
	Left:26	End	36.25	0.22	0.02	0.01	-1.21	-0.07	0.0	17.32	-0.75	0.01	3.1
	Left:27	Origin	36.25	0.22	0.02	0.01	-1.21	-0.07	0.0	17.07	-0.67	0.01	3.1
	Left:28	End	41.25	0.22	0.02	0.01	-4.58	-0.10	0.0	17.07	-0.67	0.01	5.0
	Left:29	Origin	41.25	0.22	0.02	0.01	-4.58	-0.10	0.0	16.87	-0.62	0.01	5.0
	Left:30	End	44.00	0.20	0.01	0.01	-6.28	-0.12	0.0	16.87	-0.62	0.01	2.8
Left	Left:31	Origin	44.00	0.20	0.01	0.01	-6.28	-0.12	0.0	16.87	-0.62	0.01	2.8
	Left:32	End	46.75	0.19	0.01	0.01	-9.60	-0.12	0.0	16.72	-0.58	0.01	6.7
Left	Left:33	Origin	46.75	0.19	0.01	0.01	-9.60	-0.12	0.0	16.72	-0.58	0.01	6.7
	Left:34	End	49.50	0.18	0.01	0.01	-9.45	-0.14	0.0	19.13	2.01	0.01	7.7
Left	Left:35	Origin	49.50	0.18	0.01	0.01	-9.45	-0.14	0.0	19.13	2.01	0.01	7.7
	Left:36	End	51.75	0.10	0.00	0.00	0.61	-0.19	0.0	19.13	2.01	0.01	2.5
Left	Left:37	Origin	51.75	0.10	0.00	0.00	0.61	-0.19	0.0	19.13	2.01	0.01	2.5
	Left:38	End	56.38	0.03	0.00	0.00	10.27	-0.25	0.0	18.84	2.09	0.01	6.9
Left	Left:39	Origin	56.38	0.03	0.00	0.00	10.27	-0.25	0.0	18.84	2.09	0.01	6.9
	Left:40	End	61.00	0.00	0.00	0.00	20.35	-0.30	0.0	18.55	2.18	0.01	10.9
Left	Left:41	Origin	61.00	0.00	0.00	0.00	20.35	-0.30	0.0	18.55	2.18	0.01	10.9
	Left:42	End											
Right	Right:1	Origin	0.00	3.96	0.15	0.05	0.00	-0.00	0.0	-0.09	0.03	0.0	
	Right:2	End	2.00	3.67	0.14	-0.05	0.06	-0.00	0.0	-0.09	0.03	0.0	
Right	Right:3	Origin	2.00	3.67	0.14	-0.05	0.06	-0.00	0.0	-0.09	0.03	0.0	
	Right:4	End	4.99	4.17	0.14	0.02	0.96	-0.00	0.0	-2.39	0.34	0.0	
Right	Right:5	Origin	4.99	4.17	0.14	0.02	0.96	-0.00	0.0	-2.39	0.34	0.0	
	Right:6	End	7.00	4.94	0.13	-0.05	1.78	-0.01	0.0	-2.82	0.49	0.0	
Right	Right:7	Origin	7.00	4.94	0.13	-0.05	1.78	-0.01	0.0	-2.82	0.49	0.0	
	Right:8	End	11.50	4.30	0.12	-0.04	3.98	-0.02	0.0	-3.82	0.40	0.0	
Right	Right:9	Origin	11.50	4.30	0.12	-0.04	3.98	-0.02	0.0	-3.82	0.40	0.0	
	Right:10	End	15.50	4.00	0.12	0.02	4.90	0.00	0.0	-3.24	0.63	0.0	1.7
Right	Right:11	Origin	15.50	4.00	0.12	0.02	4.90	0.00	0.0	-3.24	0.63	0.0	1.7
	Right:12	End	16.00	3.67	0.12	-0.04	6.80	-0.03	0.0	-3.74	0.63	0.0	2.6
Right	Right:13	Origin	16.00	3.67	0.12	-0.04	6.80	-0.03	0.0	-3.74	0.63	0.0	2.6
	Right:14	End	21.00	3.00	0.11	-0.03	13.35	-0.05	0.0	-5.70	1.31	0.00	2.7
Right	Right:15	Origin	21.00	3.00	0.11	-0.03	13.35	-0.05	0.0	-5.70	1.31	0.00	2.7
	Right:16	End	23.00	3.00	0.11	-0.03	13.35	-0.05	0.0	-5.70	1.31	0.00	4.6
Right	Right:17	Origin	23.00	3.00	0.11	-0.03	13.35	-0.05	0.0	-5.70	1.31	0.00	4.6
	Right:18	End											

Detained with X-ray photos of X-ray film.

Summary of Suspension Capacities and Usage for Load Case "XAL 038N" - "XAL 038N" - "XAL 038N"

Suspension Label	Tension (kips)	Input Tension Capacity (kips)	Factored Tension Capacity (kips)	Usage %
SUSGWL	0.859	60.00	60.00	1.43
SUSGMR	0.859	60.00	60.00	1.43
L1	1.146	60.00	60.00	1.91
L2	1.146	60.00	60.00	1.91
L3	1.146	60.00	60.00	1.91
ANT1	2.008	60.00	60.00	3.35
ANT2	2.066	60.00	60.00	3.44
caption	4.904	60.00	60.00	8.17

Equilibrium Joint Positions and Rotations for Load Case *NESC HVI BW*:

Joint Label	X-Disp (ft)	Y-Disp (ft)	Z-Disp (ft)	X-Rot (deg)	Y-Rot (deg)	Z-Rot (deg)	X-Def (ft)	Y-Def (ft)	Z-Def (ft)	X-Rot (deg)	Y-Rot (deg)	Z-Rot (deg)	X-Def (ft)	Y-Def (ft)	Z-Def (ft)
Left:1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Left:2	1.401	0.009867	-0.01778	0.2546	1.9130	-0.4677	1.401	-7.74	60.98	0	0	0	0	0	0
Left:3	1.384	0.01222	-0.01749	0.2546	1.9130	-0.4677	1.384	-7.738	60.48	0	0	0	0	0	0
Left:4	1.367	0.01457	-0.01716	0.2546	1.9130	-0.4677	1.367	-7.734	59.98	0	0	0	0	0	0
Left:5	1.350	0.01692	-0.01683	0.2546	1.9130	-0.4677	1.350	-7.730	59.48	0	0	0	0	0	0
Left:6	1.333	0.01927	-0.01649	0.2546	1.9130	-0.4677	1.333	-7.726	58.98	0	0	0	0	0	0
Left:7	1.316	0.02162	-0.01615	0.2546	1.9130	-0.4677	1.316	-7.722	58.48	0	0	0	0	0	0
Left:8	1.299	0.02397	-0.01581	0.2546	1.9130	-0.4677	1.299	-7.718	57.98	0	0	0	0	0	0
Left:9	1.282	0.02632	-0.01547	0.2546	1.9130	-0.4677	1.282	-7.714	57.48	0	0	0	0	0	0
Left:10	1.265	0.02867	-0.01513	0.2546	1.9130	-0.4677	1.265	-7.710	56.98	0	0	0	0	0	0
Left:11	1.248	0.03102	-0.01479	0.2546	1.9130	-0.4677	1.248	-7.706	56.48	0	0	0	0	0	0
Left:12	1.231	0.03337	-0.01445	0.2546	1.9130	-0.4677	1.231	-7.702	55.98	0	0	0	0	0	0
Left:13	1.214	0.03572	-0.01411	0.2546	1.9130	-0.4677	1.214	-7.698	55.48	0	0	0	0	0	0
Left:14	1.197	0.03807	-0.01377	0.2546	1.9130	-0.4677	1.197	-7.694	54.98	0	0	0	0	0	0
Left:15	1.180	0.04042	-0.01343	0.2546	1.9130	-0.4677	1.180	-7.690	54.48	0	0	0	0	0	0
Left:16	1.163	0.04277	-0.01309	0.2546	1.9130	-0.4677	1.163	-7.686	53.98	0	0	0	0	0	0
Left:17	1.146	0.04512	-0.01275	0.2546	1.9130	-0.4677	1.146	-7.682	53.48	0	0	0	0	0	0
Left:18	1.129	0.04747	-0.01241	0.2546	1.9130	-0.4677	1.129	-7.678	52.98	0	0	0	0	0	0
Left:19	1.112	0.04982	-0.01207	0.2546	1.9130	-0.4677	1.112	-7.674	52.48	0	0	0	0	0	0
Left:20	1.095	0.05217	-0.01173	0.2546	1.9130	-0.4677	1.095	-7.670	51.98	0	0	0	0	0	0
Left:21	1.078	0.05452	-0.01139	0.2546	1.9130	-0.4677	1.078	-7.666	51.48	0	0	0	0	0	0
Left:22	1.061	0.05687	-0.01105	0.2546	1.9130	-0.4677	1.061	-7.662	50.98	0	0	0	0	0	0
Left:23	1.044	0.05922	-0.01071	0.2546	1.9130	-0.4677	1.044	-7.658	50.48	0	0	0	0	0	0
Left:24	1.027	0.06157	-0.01037	0.2546	1.9130	-0.4677	1.027	-7.654	49.98	0	0	0	0	0	0
Left:25	1.010	0.06392	-0.01003	0.2546	1.9130	-0.4677	1.010	-7.650	49.48	0	0	0	0	0	0
Left:26	0.993	0.06627	-0.00969	0.2546	1.9130	-0.4677	0.993	-7.646	48.98	0	0	0	0	0	0
Left:27	0.976	0.06862	-0.00935	0.2546	1.9130	-0.4677	0.976	-7.642	48.48	0	0	0	0	0	0
Left:28	0.959	0.07097	-0.00901	0.2546	1.9130	-0.4677	0.959	-7.638	47.98	0	0	0	0	0	0
Left:29	0.942	0.07332	-0.00867	0.2546	1.9130	-0.4677	0.942	-7.634	47.48	0	0	0	0	0	0
Left:30	0.925	0.07567	-0.00833	0.2546	1.9130	-0.4677	0.925	-7.630	46.98	0	0	0	0	0	0
Left:31	0.908	0.07802	-0.00799	0.2546	1.9130	-0.4677	0.908	-7.626	46.48	0	0	0	0	0	0
Left:32	0.891	0.08037	-0.00765	0.2546	1.9130	-0.4677	0.891	-7.622	45.98	0	0	0	0	0	0
Left:33	0.874	0.08272	-0.00731	0.2546	1.9130	-0.4677	0.874	-7.618	45.48	0	0	0	0	0	0
Left:34	0.857	0.08507	-0.00697	0.2546	1.9130	-0.4677	0.857	-7.614	44.98	0	0	0	0	0	0
Left:35	0.840	0.08742	-0.00663	0.2546	1.9130	-0.4677	0.840	-7.610	44.48	0	0	0	0	0	0
Left:36	0.823	0.08977	-0.00629	0.2546	1.9130	-0.4677	0.823	-7.606	43.98	0	0	0	0	0	0
Left:37	0.806	0.09212	-0.00595	0.2546	1.9130	-0.4677	0.806	-7.602	43.48	0	0	0	0	0	0
Left:38	0.789	0.09447	-0.00561	0.2546	1.9130	-0.4677	0.789	-7.598	42.98	0	0	0	0	0	0
Left:39	0.772	0.09682	-0.00527	0.2546	1.9130	-0.4677	0.772	-7.594	42.48	0	0	0	0	0	0
Left:40	0.755	0.09917	-0.00493	0.2546	1.9130	-0.4677	0.755	-7.590	41.98	0	0	0	0	0	0
Left:41	0.738	0.10152	-0.00459	0.2546	1.9130	-0.4677	0.738	-7.586	41.48	0	0	0	0	0	0
Left:42	0.721	0.10387	-0.00425	0.2546	1.9130	-0.4677	0.721	-7.582	40.98	0	0	0	0	0	0
Left:43	0.704	0.10622	-0.00391	0.2546	1.9130	-0.4677	0.704	-7.578	40.48	0	0	0	0	0	0
Left:44	0.687	0.10857	-0.00357	0.2546	1.9130	-0.4677	0.687	-7.574	39.98	0	0	0	0	0	0
Left:45	0.670	0.11092	-0.00323	0.2546	1.9130	-0.4677	0.670	-7.570	39.48	0	0	0	0	0	0
Left:46	0.653	0.11327	-0.00289	0.2546	1.9130	-0.4677	0.653	-7.566	38.98	0	0	0	0	0	0
Left:47	0.636	0.11562	-0.00255	0.2546	1.9130	-0.4677	0.636	-7.562	38.48	0	0	0	0	0	0
Left:48	0.619	0.11797	-0.00221	0.2546	1.9130	-0.4677	0.619	-7.558	37.98	0	0	0	0	0	0
Left:49	0.602	0.12032	-0.00187	0.2546	1.9130	-0.4677	0.602	-7.554	37.48	0	0	0	0	0	0
Left:50	0.585	0.12267	-0.00153	0.2546	1.9130	-0.4677	0.585	-7.550	36.98	0	0	0	0	0	0
Left:51	0.568	0.12502	-0.00119	0.2546	1.9130	-0.4677	0.568	-7.546	36.48	0	0	0	0	0	0
Left:52	0.551	0.12737	-0.00085	0.2546	1.9130	-0.4677	0.551	-7.542	35.98	0	0	0	0	0	0
Left:53	0.534	0.12972	-0.00051	0.2546	1.9130	-0.4677	0.534	-7.538	35.48	0	0	0	0	0	0
Left:54	0.517	0.13207	-0.00017	0.2546	1.9130	-0.4677	0.517	-7.534	34.98	0	0	0	0	0	0
Left:55	0.500	0.13442	0.00017	0.2546	1.9130	-0.4677	0.500	-7.530	34.48	0	0	0	0	0	0
Left:56	0.483	0.13677	0.00051	0.2546	1.9130	-0.4677	0.483	-7.526	33.98	0	0	0	0	0	0
Left:57	0.466	0.13912	0.00085	0.2546	1.9130	-0.4677	0.466	-7.522	33.48	0	0	0	0	0	0
Left:58	0.449	0.14147	0.00119	0.2546	1.9130	-0.4677	0.449	-7.518	32.98	0	0	0	0	0	0
Left:59	0.432	0.14382	0.00153	0.2546	1.9130	-0.4677	0.432	-7.514	32.48	0	0	0	0	0	0
Left:60	0.415	0.14617	0.00187	0.2546	1.9130	-0.4677	0.415	-7.510	31.98	0	0	0	0	0	0
Left:61	0.398	0.14852	0.00221	0.2546	1.9130	-0.4677	0.398	-7.506	31.48	0	0	0	0	0	0
Left:62	0.381	0.15087	0.00255	0.2546	1.9130	-0.4677	0.381	-7.502	30.98	0	0	0	0	0	0
Left:63	0.364	0.15322	0.00289	0.2546	1.9130	-0.4677	0.364	-7.498	30.48	0	0	0	0	0	0
Left:64	0.347	0.15557	0.00323	0.2546	1.9130	-0.4677	0.347	-7.494	29.98	0	0	0	0	0	0
Left:65	0.330	0.15792	0.00357	0.2546	1.9130	-0.4677	0.330	-7.490	29.48	0	0	0	0	0	0
Left:66	0.313	0.16027	0.00391	0.2546	1.9130	-0.4677	0.313	-7.486	28.98	0	0	0	0	0	0
Left:67	0.296	0.16262	0.00425	0.2546	1.9130	-0.4677	0.296	-7.482	28.48	0	0	0	0	0	0
Left:68	0.279	0.16497	0.00459	0.2546	1.9130	-0.4677	0.279	-7.478	27.98	0	0	0	0	0	0
Left:69	0.262	0.16732	0.00493	0.2546	1.9130	-0.4677	0.262	-7.474	27.48	0	0	0	0	0	0
Left:70	0.245	0.16967	0.00527	0.2546	1.9130	-0.4677	0.245	-7.470	26.98	0	0	0	0	0	0
Left:71	0.228	0.17202	0.00561	0.2546	1.9130	-0.4677	0.228	-7.466	26.48	0	0	0	0	0	0
Left:72	0.211	0.17437	0.00595	0.2546	1.9130	-0.4677	0.211	-7.462	25.98	0	0	0	0	0	0
Left:73	0.194	0.17672	0.00629	0.2546	1.9130	-0.4677	0.194	-7.458	25.48	0	0	0	0	0	0
Left:74	0.177	0.17907	0.00663	0.2546	1.9130	-0.4677	0.177	-7.454	24.98	0	0	0	0	0	0
Left:75	0.160	0.18142	0.00697	0.2546	1.9130	-0.4677	0.160	-7.450	24.48	0	0	0	0	0	0
Left:76	0.143	0.18377	0.00731	0.2546	1.9130	-0.4677	0.143	-7.446	23.98	0	0	0	0	0	0
Left:77	0.126	0.18612	0.00765	0.2546	1.9130	-0.4677	0.126	-7.442	23.48	0	0	0	0	0	0
Left:78	0.109	0.18847	0.00799	0.2546	1.9130	-0.4677	0.109	-7.438	22.98	0	0	0	0	0	0
Left:79	0.092	0.19082	0.00833	0.2546	1.9130	-0.4677	0.092	-7.434	22.48	0	0	0	0	0	0
Left:80	0.075	0.19317	0.00867	0.2546	1.9130	-0.4677	0.075	-7.430	21.98	0	0	0	0	0	0
Left:81	0.058	0.19552	0.00901	0.2546	1.9130	-0.4677	0.058	-7.426	21.48	0	0	0	0	0	0
Left:82	0.041	0.19787	0.00935	0.2546	1.9130	-0.4677	0.041	-7.422							

Summary of Brace Forces and Unages for Load Case "NESC SVY BW"														
Brace Label	Forces (kips)	Allowable Tension (kips)	Allowable Compression (kips)	Unage %										
Left	41.25	0.21	2.39	-0.01	-4.18	-36.62	-3.5	15.99	-0.07	-0.20	22.7			
Left16	End													
Left16	Origin	41.25	0.21	2.39	-0.01	-4.18	-36.62	-3.5	15.99	-0.07	-0.20	22.7		
Left17	End	44.00	0.20	1.80	-0.01	-5.98	-29.22	-3.5	15.78	-0.02	-0.95	22.6		
Left17	Origin	44.00	0.20	1.80	-0.01	-5.98	-29.22	-3.5	15.78	-0.02	-0.95	22.6		
Left18	End	46.75	0.17	1.29	0.00	-7.47	-23.22	-3.5	15.63	-0.58	-0.98	24.6		
Left18	Origin	46.75	0.17	1.29	0.00	-7.47	-23.22	-3.5	15.63	-0.58	-0.98	24.6		
Left19	End	49.50	0.15	0.80	0.00	-8.99	-11.93	-3.5	17.96	1.94	-1.07	27.6		
Left19	Origin	49.50	0.15	0.80	0.00	-8.99	-11.93	-3.5	17.96	1.94	-1.07	27.6		
Left20	End	52.25	0.13	0.56	0.00	-7.72	-37.27	-3.5	17.97	2.04	-1.15	32.0		
Left20	Origin	52.25	0.13	0.56	0.00	-7.72	-37.27	-3.5	17.97	2.04	-1.15	32.0		
Left21	End	55.00	0.11	0.34	0.00	-10.05	-42.61	-3.5	17.67	2.02	-1.15	31.4		
Left21	Origin	55.00	0.11	0.34	0.00	-10.05	-42.61	-3.5	17.67	2.02	-1.15	31.4		
Left22	End	57.75	0.09	0.14	0.00	-10.07	-48.36	-3.5	17.38	2.11	-1.24	37.4		
Left22	Origin	57.75	0.09	0.14	0.00	-10.07	-48.36	-3.5	17.38	2.11	-1.24	37.4		
Right	41.25	0.21	2.39	-0.01	-4.18	-36.62	-3.5	15.99	-0.07	-0.20	22.7			
Right16	End													
Right16	Origin	41.25	0.21	2.39	-0.01	-4.18	-36.62	-3.5	15.99	-0.07	-0.20	22.7		
Right17	End	44.00	0.20	1.80	-0.01	-5.98	-29.22	-3.5	15.78	-0.02	-0.95	22.6		
Right17	Origin	44.00	0.20	1.80	-0.01	-5.98	-29.22	-3.5	15.78	-0.02	-0.95	22.6		
Right18	End	46.75	0.17	1.29	0.00	-7.47	-23.22	-3.5	15.63	-0.58	-0.98	24.6		
Right18	Origin	46.75	0.17	1.29	0.00	-7.47	-23.22	-3.5	15.63	-0.58	-0.98	24.6		
Right19	End	49.50	0.15	0.80	0.00	-8.99	-11.93	-3.5	17.96	1.94	-1.07	27.6		
Right19	Origin	49.50	0.15	0.80	0.00	-8.99	-11.93	-3.5	17.96	1.94	-1.07	27.6		
Right20	End	52.25	0.13	0.56	0.00	-7.72	-37.27	-3.5	17.97	2.04	-1.15	32.0		
Right20	Origin	52.25	0.13	0.56	0.00	-7.72	-37.27	-3.5	17.97	2.04	-1.15	32.0		
Right21	End	55.00	0.11	0.34	0.00	-10.05	-42.61	-3.5	17.67	2.02	-1.15	31.4		
Right21	Origin	55.00	0.11	0.34	0.00	-10.05	-42.61	-3.5	17.67	2.02	-1.15	31.4		
Right22	End	57.75	0.09	0.14	0.00	-10.07	-48.36	-3.5	17.38	2.11	-1.24	37.4		
Right22	Origin	57.75	0.09	0.14	0.00	-10.07	-48.36	-3.5	17.38	2.11	-1.24	37.4		
Right23	End	60.50	0.07	0.00	0.00	-12.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right23	Origin	60.50	0.07	0.00	0.00	-12.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right24	End	63.25	0.05	0.00	0.00	-15.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right24	Origin	63.25	0.05	0.00	0.00	-15.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right25	End	66.00	0.03	0.00	0.00	-17.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right25	Origin	66.00	0.03	0.00	0.00	-17.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right26	End	68.75	0.01	0.00	0.00	-20.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right26	Origin	68.75	0.01	0.00	0.00	-20.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right27	End	71.50	0.00	0.00	0.00	-22.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right27	Origin	71.50	0.00	0.00	0.00	-22.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right28	End	74.25	0.00	0.00	0.00	-25.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right28	Origin	74.25	0.00	0.00	0.00	-25.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right29	End	77.00	0.00	0.00	0.00	-27.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right29	Origin	77.00	0.00	0.00	0.00	-27.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right30	End	79.75	0.00	0.00	0.00	-30.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right30	Origin	79.75	0.00	0.00	0.00	-30.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right31	End	82.50	0.00	0.00	0.00	-32.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right31	Origin	82.50	0.00	0.00	0.00	-32.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right32	End	85.25	0.00	0.00	0.00	-35.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right32	Origin	85.25	0.00	0.00	0.00	-35.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right33	End	88.00	0.00	0.00	0.00	-37.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right33	Origin	88.00	0.00	0.00	0.00	-37.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right34	End	90.75	0.00	0.00	0.00	-40.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right34	Origin	90.75	0.00	0.00	0.00	-40.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right35	End	93.50	0.00	0.00	0.00	-42.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right35	Origin	93.50	0.00	0.00	0.00	-42.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right36	End	96.25	0.00	0.00	0.00	-45.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right36	Origin	96.25	0.00	0.00	0.00	-45.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right37	End	99.00	0.00	0.00	0.00	-47.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right37	Origin	99.00	0.00	0.00	0.00	-47.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right38	End	101.75	0.00	0.00	0.00	-50.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right38	Origin	101.75	0.00	0.00	0.00	-50.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right39	End	104.50	0.00	0.00	0.00	-52.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right39	Origin	104.50	0.00	0.00	0.00	-52.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right40	End	107.25	0.00	0.00	0.00	-55.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right40	Origin	107.25	0.00	0.00	0.00	-55.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right41	End	110.00	0.00	0.00	0.00	-57.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right41	Origin	110.00	0.00	0.00	0.00	-57.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right42	End	112.75	0.00	0.00	0.00	-60.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right42	Origin	112.75	0.00	0.00	0.00	-60.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right43	End	115.50	0.00	0.00	0.00	-62.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right43	Origin	115.50	0.00	0.00	0.00	-62.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right44	End	118.25	0.00	0.00	0.00	-65.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right44	Origin	118.25	0.00	0.00	0.00	-65.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right45	End	121.00	0.00	0.00	0.00	-67.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right45	Origin	121.00	0.00	0.00	0.00	-67.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right46	End	123.75	0.00	0.00	0.00	-70.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right46	Origin	123.75	0.00	0.00	0.00	-70.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right47	End	126.50	0.00	0.00	0.00	-72.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right47	Origin	126.50	0.00	0.00	0.00	-72.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right48	End	129.25	0.00	0.00	0.00	-75.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right48	Origin	129.25	0.00	0.00	0.00	-75.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right49	End	132.00	0.00	0.00	0.00	-77.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right49	Origin	132.00	0.00	0.00	0.00	-77.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right50	End	134.75	0.00	0.00	0.00	-80.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right50	Origin	134.75	0.00	0.00	0.00	-80.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right51	End	137.50	0.00	0.00	0.00	-82.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right51	Origin	137.50	0.00	0.00	0.00	-82.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right52	End	140.25	0.00	0.00	0.00	-85.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right52	Origin	140.25	0.00	0.00	0.00	-85.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right53	End	143.00	0.00	0.00	0.00	-87.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right53	Origin	143.00	0.00	0.00	0.00	-87.50	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right54	End	145.75	0.00	0.00	0.00	-90.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right54	Origin	145.75	0.00	0.00	0.00	-90.00	-6.0	-0.00	-0.00	-0.00	-0.00	0.0		
Right55	End	148.50	0.00	0.00	0.00	-92.50	-6.0	-0.00	-0.00	-0.				

NESC12	#NESC12:10	Origin 4.38	0.45	13.34	-0.33	-0.36	-0.11	-0.0	-2.07	0.04	-0.03	54	130	26.3	4.0
NESC12	NESC12:PL	End 8.25	0.44	13.71	-0.16	0.52	0.21	-0.0	-2.07	0.04	-0.03	54	130	53.7	5.7
NESC12	NESC12:11	Origin 11.25	0.44	13.71	-0.16	0.62	1.70	0.6	5.21	-0.30	0.63	1.4e+002	231	924	24.8
NESC12	NESC12:11	End 15.00	0.44	13.71	-0.16	0.62	1.70	0.6	5.21	-0.30	0.63	1.4e+002	231	924	24.8
NESC12	NESC12:11	Origin 11.63	0.45	14.12	0.01	0.39	1.57	0.6	5.21	-0.30	0.63	1.4e+002	142	392	12.9
NESC12	NESC12:11	End 15.00	0.44	14.60	0.12	1.58	0.52	0.6	5.21	-0.35	0.62	1.4e+002	577	322	12.2
NESC12	NESC12:11	Origin 15.00	0.44	14.60	0.12	1.58	0.52	0.6	5.21	-0.35	0.62	1.4e+002	577	322	12.2
NESC12	NESC12:11	End 16.00	0.44	14.75	0.12	1.97	1.14	0.6	5.21	-0.35	0.62	1.4e+002	721	264	21.9
NESC12	NESC12:12V	Origin 16.00	0.44	14.75	0.12	1.97	1.14	0.6	5.21	-0.35	0.62	1.4e+002	721	264	21.9
NESC12	NESC12:12V	End 17.00	0.44	14.86	0.11	1.68	1.72	0.6	1.99	0.23	0.59	52	614	430	21.1
NESC12	NESC12:12V	Origin 17.00	0.44	14.86	0.11	1.68	1.72	0.6	1.99	0.23	0.59	52	614	430	21.1
NESC12	NESC12:12V	End 20.38	0.44	15.26	-0.03	-0.77	3.69	0.6	1.99	0.27	0.58	52	281	921	24.1
NESC12	NESC12:12	Origin 20.38	0.44	15.26	-0.03	-0.77	3.69	0.6	1.99	0.27	0.58	52	281	921	24.1
NESC12	NESC12:12	End 23.75	0.44	15.44	-0.25	0.00	-5.62	0.6	1.99	0.23	0.57	52	182	921	24.1
NESC12	NESC12:12	Origin 23.75	0.44	15.44	-0.25	0.00	-5.62	0.6	1.99	0.23	0.57	52	182	921	24.1
NESC12	NESC12:12	End 27.63	0.44	15.50	-0.25	-0.24	-0.30	0.0	-0.54	-0.01	0.04	14	86.8	79.8	2.4
NESC12	#NESC12:13	Origin 27.63	0.44	15.50	-0.47	0.21	0.15	0.0	-0.54	-0.01	0.04	14	78	37	2.5
NESC12	NESC12:13	End 31.50	0.44	15.58	-0.65	-0.00	0.00	0.0	-0.54	-0.06	0.04	14	0.562	0.0154	0.3
NESC12	NESC12:13	Origin 31.50	0.44	15.58	-0.65	-0.00	0.00	0.0	-0.54	-0.06	0.04	14	0.562	0.0154	0.3
NESC12	NESC12:13	End 32.00	0.44	15.59	-0.68	0.00	0.00	-0.0	0.00	0.00	0.00	0.00031	0.562	0.0154	0.0
NESC12	NESC12:18	Origin 32.00	0.44	15.59	-0.68	0.00	0.00	-0.0	0.00	0.00	0.00	0.00031	1.9e-005	1.79e-005	0.0

Summary of Suspension Capacities and Usages for Load Case "NESC HYV DW".

Suspension Label	Tension	Input Tension	Factored Usage
		Capacity (kips)	Capacity (kips)
SUSW1	0.859	60.00	1.43
SUSW2	0.937	60.00	11.56
L1	1.146	60.00	1.91
L2	1.146	60.00	1.91
L3	1.146	60.00	1.91
AW1	2.008	60.00	3.35
AW2	2.066	60.00	3.44
Cables	4.904	60.00	8.17

*** Analysis Results for Load Case No. 3 "Ext. Wind t" - Number of iterations in GAPS 15

Equilibrium Joint Positions and Rotations for Load Case "Ext. Wind 1":

[illegible]

Joint Support Reactions for Load Case "Ext. Wind b";

Joint	X Force Usage (kips)	Y Force Usage (kips)	Z Comp. Force Usage (kips)	Uplift Force Usage (kips)	Result. Force Usage (kips)	X-Moment Usage (ft-k)	Y-Moment Usage (ft-k)	Z-Moment Usage (ft-k)	Max.
Left-S	-0.02	0.0	5.23	0.0	0.0	49.04	0.0	-0.3	0.0
Right-S	-0.03	0.0	-14.67	0.0	0.0	79.20	0.0	-1.6	0.0
Left-T	-0.02	0.0	5.23	0.0	0.0	49.04	0.0	-0.3	0.0
Right-T	-0.03	0.0	-14.67	0.0	0.0	79.20	0.0	-1.6	0.0

Detailed Laminated Wood Pole Usages for Load Case "Ext. Wind 3":

Element Label	Joint Label	Joint Position	Rel. Dist. (ft)	Trans. Dist. (in)	Long. Dist. (in)	Vort. Dist. (in)	Trans. Dist. (%)	Mem. Dist. (%)	Long. Dist. (%)	Forw. Dist. (%)	Axial Force (Kips)	Trans. Force (Kips)	Shear Force (Kips)	Long. Usage
Left	Left:SN	Origin	0.00	0.14	0.08	0.95	0.01	-0.00	-0.0	-0.0	-0.01	0.01	-0.00	0.0
Left	Left:SN	End	0.50	0.27	0.07	0.95	0.01	-0.00	-0.0	-0.01	0.01	-0.00	0.0	0.0
Left	Left:SN	Origin	0.50	0.27	0.07	0.95	0.01	-0.00	-0.0	-0.18	0.47	-0.00	0.0	0.0
Left	Left:BRACE	End	2.00	0.46	0.07	0.95	0.71	-0.00	-0.0	-0.18	0.47	-0.00	0.0	1.2
Left	Left:BRACE	Origin	4.98	0.67	0.07	0.95	2.33	-0.00	-0.0	4.80	7.36	-0.00	0.0	3.1
Left	Left:BRACE	End	4.98	0.67	0.07	0.95	2.33	-0.00	-0.0	4.80	7.36	-0.00	0.0	3.1
Left	Left:0	Origin	4.98	0.98	0.07	0.95	22.49	-0.01	-0.0	4.65	7.25	-0.00	0.0	6.6
Left	Left:0	End	7.75	1.07	0.06	0.95	43.33	-0.01	-0.0	4.65	7.25	-0.00	0.0	6.6
Left	Left:ARM	Origin	7.75	1.07	0.06	0.95	43.33	-0.01	-0.0	5.74	10.86	0.00	0.0	60.7
Left	Left:ARM	End	10.75	0.93	0.06	0.95	40.74	-0.01	0.0	5.74	10.86	0.00	0.0	44.3
Left	Left:1	Origin	10.75	0.93	0.06	0.95	40.74	-0.01	0.0	5.67	11.00	0.00	0.0	14.3
Left	Left:1	End	13.75	0.69	0.05	0.95	22.26	-0.00	0.0	5.67	11.00	0.00	0.0	26.1
Left	Left:X1T	Origin	13.75	0.69	0.05	0.95	22.26	-0.00	0.0	5.67	11.00	0.00	0.0	26.1
Left	Left:X1T	End	16.75	0.92	0.05	0.95	29.03	-0.00	0.0	5.67	11.00	0.00	0.0	21.9
Left	Left:2	Origin	16.75	0.92	0.05	0.95	29.03	-0.00	0.0	39.19	1.24	-0.00	0.0	11.4
Left	Left:2	End	18.75	0.45	0.04	0.95	9.01	-0.01	0.0	39.19	1.24	-0.00	0.0	11.4
Left	Left:1	Origin	18.75	0.45	0.04	0.95	9.01	-0.01	0.0	39.19	1.24	-0.00	0.0	4.8
Left	Left:1	End	21.75	0.46	0.04	0.94	2.81	-0.02	0.0	39.19	1.24	-0.00	0.0	4.8
Left	Left:3	Origin	21.75	0.46	0.04	0.94	2.81	-0.02	0.0	39.03	1.03	-0.00	0.0	4.8
Left	Left:3	End	26.50	0.46	0.03	0.94	0.00	-0.02	0.0	39.03	1.03	-0.00	0.0	2.4
Left	Left:4	Origin	26.50	0.46	0.03	0.94	0.00	-0.02	0.0	38.91	0.89	-0.00	0.0	2.3
Left	Left:4	End	29.25	0.46	0.03	0.94	-2.47	-0.03	0.0	38.91	0.89	-0.00	0.0	4.1
Left	Left:X1B	Origin	29.25	0.46	0.03	0.94	-2.47	-0.03	0.0	30.75	1.52	-0.00	0.0	3.8
Left	Left:X1B	End	31.25	0.46	0.03	0.94	15.68	-0.01	0.0	30.75	1.52	-0.00	0.0	3.8
Left	Left:X2T	Origin	31.25	0.46	0.03	0.94	5.65	-0.04	0.0	44.44	0.25	-0.00	0.0	1.2
Left	Left:X2T	End	31.25	0.46	0.03	0.94	5.65	-0.04	0.0	44.44	0.25	-0.00	0.0	1.2
Left	Left:5	Origin	36.25	0.48	0.02	0.93	-3.08	-0.06	0.0	44.44	1.75	-0.01	0.0	6.8
Left	Left:5	End	36.25	0.48	0.02	0.93	-3.08	-0.06	0.0	44.19	1.75	-0.01	0.0	6.8

Left	Left:6	End	41.25	0.48	0.01	0.03	-10.65	-0.10	0.0	41.15	-1.51	-0.01	10.5
Left	Left:6	Origin	41.25	0.48	0.01	0.03	-10.65	-0.10	0.0	41.15	-1.51	-0.01	10.5
Left	Left:7	End	44.00	0.46	0.01	0.02	-14.38	-0.12	0.0	43.98	-1.00	-0.01	11.5
Left	Left:7	Origin	44.00	0.46	0.01	0.02	-14.38	-0.12	0.0	43.98	-1.00	-0.01	11.5
Left	Left:1X3	End	46.75	0.40	0.01	0.02	-17.03	-0.14	0.0	46.63	-1.25	-0.01	12.0
Left	Left:1X3	Origin	46.75	0.40	0.01	0.02	-17.03	-0.14	0.0	46.63	-1.25	-0.01	12.0
Left	Left:1X8	End	46.75	0.40	0.01	0.02	-21.35	-0.24	0.0	46.43	-0.44	-0.01	15.5
Left	Left:1X8	Origin	46.75	0.40	0.01	0.02	-21.35	-0.24	0.0	46.43	-0.44	-0.01	15.5
Left	Left:18	End	51.75	0.23	0.00	0.01	1.11	-0.19	0.0	49.49	4.74	-0.01	5.2
Left	Left:18	Origin	51.75	0.23	0.00	0.01	1.11	-0.19	0.0	49.49	4.74	-0.01	5.2
Left	Left:19	End	56.38	0.07	0.00	0.01	23.03	-0.25	0.0	49.21	4.74	-0.01	13.9
Left	Left:19	Origin	56.38	0.07	0.00	0.01	23.03	-0.25	0.0	49.21	4.74	-0.01	13.9
Left	Left:19	End	61.00	0.00	0.00	0.00	46.41	-0.13	0.0	48.92	5.02	-0.02	21.9
Left	Left:19	Origin	61.00	0.00	0.00	0.00	46.41	-0.13	0.0	48.92	5.02	-0.02	21.9
Right	Right	Origin	0.00	16.83	0.15	-0.27	0.00	0.00	0.0	0.08	0.10	0.00	0
Right	Right:AS1	End	2.00	15.98	0.14	-0.25	0.19	0.00	0.0	-0.08	0.10	0.00	0
Right	Right:AS1	Origin	2.00	15.98	0.14	-0.25	0.19	0.00	0.0	-0.08	0.10	0.00	0
Right	Right:10	End	7.00	13.87	0.13	-0.22	5.53	0.01	0.0	-2.36	1.07	-0.00	0.2
Right	Right:10	Origin	7.00	13.87	0.13	-0.22	5.53	0.01	0.0	-2.36	1.07	-0.00	0.2
Right	Right:11	End	21.50	11.99	0.12	-0.18	12.38	-0.02	0.0	-2.77	1.52	-0.00	2.1
Right	Right:11	Origin	21.50	11.99	0.12	-0.18	12.38	-0.02	0.0	-2.77	1.52	-0.00	2.1
Right	Right:12	End	11.00	11.99	0.12	-0.18	12.38	-0.02	0.0	-3.19	1.95	-0.00	4.1
Right	Right:12	Origin	11.00	11.99	0.12	-0.18	12.38	-0.02	0.0	-3.19	1.95	-0.00	4.1
Right	Right:12	End	10.16	10.16	0.11	-0.12	21.46	0.00	0.0	-3.19	1.95	-0.00	6.5
Right	Right:12	Origin	10.16	10.16	0.11	-0.12	21.46	0.00	0.0	-3.19	1.95	-0.00	6.5
Right	Right:12	End	13.00	8.20	0.11	-0.12	41.97	-0.06	0.0	-5.59	4.02	-0.00	3.6
Right	Right:12	Origin	13.00	8.20	0.11	-0.12	41.97	-0.06	0.0	-5.59	4.02	-0.00	3.6
Right	Right:13	End	23.00	8.20	0.11	-0.12	41.97	-0.05	0.0	-6.09	4.51	-0.01	11.8
Right	Right:13	Origin	23.00	8.20	0.11	-0.12	41.97	-0.05	0.0	-6.09	4.51	-0.01	11.8
Right	Right:13	End	26.00	6.38	0.10	-0.09	64.11	-0.08	0.0	-6.62	4.99	-0.01	16.7
Right	Right:13	Origin	26.00	6.38	0.10	-0.09	64.11	-0.08	0.0	-6.62	4.99	-0.01	16.7
Right	Right:14	End	31.00	4.74	0.09	-0.07	89.05	-0.11	0.0	-6.62	4.99	-0.01	21.5
Right	Right:14	Origin	31.00	4.74	0.09	-0.07	89.05	-0.11	0.0	-6.62	4.99		

Summary of Brace Forces and Moments for Load Case "Ext. Wind 1":

Brace Label	Force (kips)	Allowable Allowable Usage		Z Torn. (ft-k)	X Shear (kips)	Z Shear (kips)	P/A (psi)	Max/Sx (psi)	Max/Sy (psi)	Max. Usage %
		Compression (kips)	Tension (kips)							
TNRL	0.92	16.50	30.00	4.07						
TNRR	0.72	16.50	30.00	3.20						
VEER	-7.24	30.00	30.00	1.44						
VEER	12.72	23.14	30.00	53.54						
X1T1	-18.96	66.95	35.00	37.75						
X1T2	16.62	66.95	35.00	62.93						
X2T1	-18.72	66.95	35.00	37.27						
X2T2	8.19	66.95	35.00	31.20						

Detailed X-Brace Usages for Load Case "Ext. Wind 1"

X-Brace Label	Joint Label	Joint Position (ft)	Rel. Defl. (in)	Trans. Defl. (in)	Long. Defl. (in)	Z Torn. (ft-k)	X Shear (kips)	Z Shear (kips)	P/A (psi)	Max/Sx (psi)	Max/Sy (psi)	Max. Usage %
NES02	NES02J10	0.00	1.07	0.07	-0.83	0.00	0.00	0.00	0.0005	2.628-505	1.328-505	0.0
NES03	NES03J12	0.00	0.50	1.07	0.07	-0.79	0.00	0.00	0.00	0.00	0.00	0.0
NES02	NES02J11	0.50	1.07	0.07	-0.79	0.00	0.00	0.00	0.0005	2.628-505	1.328-505	0.0
NES03	NES03J11	0.50	1.07	0.07	-0.79	0.00	0.00	0.00	0.00	0.00	0.00	0.0
NES02	NES02J10	End	4.38	1.07	0.06	-0.43	0.82	0.00	0.1	-1.38	0.21	-0.00
NES03	NES03J10	End	4.38	1.07	0.06	-0.43	0.82	0.00	0.1	-1.38	0.21	-0.00

Detailed X-Arm Usages for Load Case "Ext. Wind L"

[illegible]

NESC12	#NESC12:0	Origin	4.38	0.16	31.02	-0.30	-0.22	-0.72	-0.0	-0.47	0.02	-0.31	12	80	179	4.5
NESC12	NESC12:PL	End	8.25	0.16	30.43	-0.06	0.29	1.91	-0.0	-0.47	0.02	-0.31	12	105	477	9.9
NESC12	NESC12:PL	Origin	8.25	0.16	30.43	-0.06	0.08	1.44	0.5	-0.84	0.01	-0.48	22	28.1	858	15.1
NESC12	#NESC12:1	End	11.25	0.16	29.80	-0.03	0.03	1.60	0.5	-0.84	0.01	-0.48	22	10.7	451	8.1
NESC12	#NESC12:1	Origin	11.25	0.16	29.80	-0.03	0.03	1.60	0.5	-0.84	0.01	-0.48	22	10.3	451	8.1
NESC12	#NESC12:BR	End	15.00	0.15	29.25	-0.10	0.09	0.20	0.5	-0.84	0.02	-0.50	22	10.3	451	8.1
NESC12	#NESC12:BR	Origin	15.00	0.15	29.25	-0.10	0.09	0.20	0.5	-0.84	0.02	-0.50	22	10.3	451	8.1
NESC12	#NESC12:BR	End	16.00	0.15	29.05	-0.78	0.13	0.86	0.5	-0.84	0.04	-0.66	22	33.4	43.6	1.7
NESC12	NESC12:LV	End	16.00	0.15	29.05	-0.78	0.13	0.86	0.5	-0.84	0.04	-0.66	22	47.9	215	4.8
NESC12	NESC12:BR	End	17.00	0.15	28.87	-0.78	0.05	1.79	0.5	-0.26	0.08	-0.23	6.8	48	215	4.5
NESC12	NESC12:BR	Origin	17.00	0.15	28.87	-0.78	0.05	1.79	0.5	-0.26	0.08	-0.23	6.8	19.7	447	7.9
NESC12	#NESC12:2	End	20.38	0.14	28.32	-0.76	0.14	5.16	0.5	-0.26	0.06	-1.00	6.9	50.1	1.29e+003	22.4
NESC12	#NESC12:2	Origin	20.38	0.14	28.32	-0.76	0.14	5.16	0.5	-0.26	0.06	-1.00	6.9	49	1.29e+003	22.4
NESC12	NESC12:PR	End	23.75	0.14	28.04	-0.77	0.13	8.16	0.5	-0.27	0.02	-1.10	7.1	80.5	2.22e+003	38.5
NESC12	NESC12:PR	Origin	23.75	0.14	28.04	-0.77	0.13	8.16	0.5	-0.27	0.02	-1.10	7.1	22	178	3.6
NESC12	#NESC12:3	End	27.63	0.14	28.01	-0.80	0.08	0.71	-0.0	-0.35	0.06	0.31	9.1	28	178	3.6
NESC12	#NESC12:3	Origin	27.63	0.14	28.01	-0.80	0.08	0.71	-0.0	-0.35	0.06	0.31	9.1	28	178	3.6
NESC12	NESC12:LV	End	31.50	0.14	28.02	-0.84	0.00	0.00	-0.0	-0.35	0.02	0.18	9.1	0.454	1	0.2
NESC12	NESC12:LV	Origin	31.50	0.14	28.02	-0.84	0.00	0.00	-0.0	-0.35	0.02	0.18	9.1	0.454	1	0.2
NESC12	NESC12:LV	End	35.00	0.14	28.03	-0.85	0.00	0.00	-0.0	0.00	0.00	0.01	6.5e-005	0.454	1	0.0
NESC12	NESC12:LV	Origin	35.00	0.14	28.03	-0.85	0.00	0.00	-0.0	0.00	0.00	0.01	6.5e-005	0.454	1	0.0

Summary of Suspension Capacities and Usage for Load Case "Ext. Wind 1"

Suspension Label	Tension	Input Capacity	Factored Tension	Usage
(kips)	(kips)	(kips)	%	
SUS10L	0.140	60.00	60.00	0.23
SUS10R	0.140	60.00	60.00	0.23
L1	0.265	60.00	60.00	0.44
L2	0.265	60.00	60.00	0.44
L3	0.265	60.00	60.00	0.44
AWT1	2.079	60.00	60.00	3.46
AWT2	2.557	60.00	60.00	4.26
Cables	4.935	60.00	60.00	8.23

*** Overall summary for all load cases - Usage = Maximum Stress / Allowable Stress

Summary of Laminated Wood Pole Usages:

Laminated Wood Pole Maximum Load Case Segment Weight			
Label Usage %	Number	(lbs)	
Left 61.55 Ext. Wind t	18	3445.6	
Right 81.39 Ext. Wind t	27	15315.2	

Summary of X-Arm Usages:

X-Arm Maximum Load Case Segment Weight			
Label Usage %	Number	(lbs)	
NESC32 41.78 Ext. Wind t	6	393.0	

Summary of Brace Usages:

Brace Maximum Load Case Weight			
Label Usage %		(lbs)	

TENL 6.94 NESC RY BW	47.0		
TENR 6.28 NESC RY 47.0			
VEEL 53.04 Ext. Wind t	59.0		
VERL 53.04 Ext. Wind t	59.0		
X1T1 37.76 Ext. Wind t	200.0		
X1T2 62.93 Ext. Wind t	200.0		
X2T1 37.27 Ext. Wind t	200.0		
X2T2 31.20 Ext. Wind t	200.0		

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case Maximum Element	Element		
Usage % Label	Type		
NESC RY 36.36 X1T2	Brace		
NESC RY BW 59.54	Right Laminated Wood		
Ext. Wind t 62.93 X1T2	Brace		
Ext. Wind t 81.39	Right Laminated Wood		

Summary of Laminated Wood Pole Usages by Load Case:

Load Case Maximum Laminated Wood Pole Segment			
Usage % Label Number			
NESC RY 28.02	Left	4	
NESC RY BW 59.54	Right	27	
Ext. Wind t 60.74	Left	5	
Ext. Wind t 81.39	Right	27	

Summary of X-Arm Usages by Load Case:

Load Case Maximum X-Arm Segment			
Usage % Label Number			
NESC RY 17.30 NESC32	6		
NESC RY BW 27.99 NESC32	9		
Ext. Wind t 41.78 NESC32	6		
Ext. Wind t 38.47 NESC32	9		

Summary of Brace Usages by Load Case:

Load Case Maximum Brace			
Usage % Label			
NESC RY 36.36 X1T2			
NESC RY BW 33.76 X1T2			
Ext. Wind t 62.93 X1T2			
Ext. Wind t 3.23 VERL			

Summary of Insulator Usages:

Insulator Maximum Load Case Weight			
Label Type Usage %		(lbs)	
SUSM Suspension	1.43	NESC RY	3.0
SUSNR Suspension	11.56	NESC RY BW	3.0
I1 Suspension	1.91	NESC RY	50.0
I2 Suspension	1.91	NESC RY	50.0
ANT1 Suspension	1.91	NESC RY	50.0
ANT2 Suspension	1.43	NESC RY	3.0
Cables Suspension	4.26	Ext. Wind t	3.0
	8.23	Ext. Wind t	3.0

Loads At Insulator Attachments For All Load Cases:

Load Case	Insulator Label	Insulator Type	Structure Attach Label	Structure Attach X (kipm)	Structure Attach Y (kipm)	Structure Attach Z (kipm)	Structure Attach X (kipm)	Structure Attach Y (kipm)	Structure Attach Z (kipm)
NESC RVY	SUSMRL	Suspension	Left:SW	0.000	0.586	0.628	0.586	0.628	0.859
NESC RVY	SUSMRL	Suspension	Right:SW	0.000	0.586	0.628	0.586	0.628	0.859
NESC RVY	NESC32:1L1	L1 Suspension	NESC32:1L1	0.000	0.692	0.913	0.692	0.913	1.146
NESC RVY	NESC32:1L2V	L2 Suspension	NESC32:1L2V	0.000	0.692	0.913	0.692	0.913	1.146
NESC RVY	NESC32:1L3	L3 Suspension	NESC32:1L3	0.000	0.692	0.913	0.692	0.913	1.146
NESC RVY	ANT1	Antenna	Right:ANT1	0.000	0.514	2.000	0.514	2.000	2.008
NESC RVY	ANT2	Antenna	Right:ANT2	0.000	0.514	2.000	0.514	2.000	2.008
NESC RVY	cablen	cablen	Right:cablen	0.000	0.294	4.900	0.294	4.900	4.904
NESC RVY BW	SUSMRL	Suspension	Left:SW	0.000	0.586	0.628	0.586	0.628	0.859
NESC RVY BW	SUSMRL	Suspension	Right:SW	0.000	0.586	0.628	0.586	0.628	0.859
NESC RVY BW	NESC32:1L1	L1 Suspension	NESC32:1L1	0.000	0.692	0.913	0.692	0.913	1.146
NESC RVY BW	NESC32:1L2V	L2 Suspension	NESC32:1L2V	0.000	0.692	0.913	0.692	0.913	1.146
NESC RVY BW	NESC32:1L3	L3 Suspension	NESC32:1L3	0.000	0.692	0.913	0.692	0.913	1.146
NESC RVY BW	ANT1	Antenna	Right:ANT1	0.000	0.514	2.000	0.514	2.000	2.008
NESC RVY BW	ANT2	Antenna	Right:ANT2	0.000	0.514	2.000	0.514	2.000	2.008
NESC RVY BW	cablen	cablen	Right:cablen	0.000	0.294	4.900	0.294	4.900	4.904
NESC RVY t	SUSMRL	Suspension	Left:SW	0.000	0.409	0.140	0.409	0.140	0.432
NESC RVY t	SUSMRL	Suspension	Right:SW	0.000	0.409	0.140	0.409	0.140	0.432
NESC RVY t	NESC32:1L1	L1 Suspension	NESC32:1L1	0.000	0.644	0.265	0.644	0.265	0.696
NESC RVY t	NESC32:1L2V	L2 Suspension	NESC32:1L2V	0.000	0.644	0.265	0.644	0.265	0.696
NESC RVY t	NESC32:1L3	L3 Suspension	NESC32:1L3	0.000	0.644	0.265	0.644	0.265	0.696
NESC RVY t	ANT1	Antenna	Right:ANT1	0.000	0.566	2.000	0.566	2.000	2.079
NESC RVY t	ANT2	Antenna	Right:ANT2	0.000	0.566	2.000	0.566	2.000	2.079
NESC RVY t	cablen	cablen	Right:cablen	0.000	0.520	0.140	0.520	0.140	0.548
NESC RVY t	SUSMRL	Suspension	Left:SW	0.000	0.000	0.140	0.000	0.140	0.140
NESC RVY t	SUSMRL	Suspension	Right:SW	0.000	0.000	0.140	0.000	0.140	0.140
NESC RVY t	NESC32:1L1	L1 Suspension	NESC32:1L1	0.000	0.000	0.265	0.000	0.265	0.265
NESC RVY t	NESC32:1L2V	L2 Suspension	NESC32:1L2V	0.000	0.000	0.265	0.000	0.265	0.265
NESC RVY t	NESC32:1L3	L3 Suspension	NESC32:1L3	0.000	0.000	0.265	0.000	0.265	0.265
NESC RVY t	ANT1	Antenna	Right:ANT1	0.566	0.000	2.000	0.566	0.000	2.079
NESC RVY t	ANT2	Antenna	Right:ANT2	1.523	0.000	2.000	1.523	0.000	2.557
NESC RVY t	cablen	cablen	Right:cablen	0.590	0.000	4.900	0.590	0.000	4.935

Overturning Moments For User Input Concentrated Loads:

Moments are static equivalents based on central axis of 0,0 (i.e. a single pole).

Load Case	Total Trans. Long. Vert. Overt. Moment (kipm)	Total Trans. Long. Vert. Overt. Moment (ft-k)	Total Trans. Long. Vert. Overt. Moment (ft-k)
NESC RVY	4.150	0.000	12.835
NESC RVY BW	3.806	6.930	12.477
NESC RVY t	5.499	0.000	9.975
Ext. Wind 1	0.000	2.749	9.975
*** Weight of Structure (lbs):			
Weight of Pole:			1012.0
Weight of X-Arms:			193.0
Weight of Laminated Wood Pole:			10760.0
Weight of Equipment:			2000.0
Weight of Suspension:			165.0
Total:			22330.0

*** End of Report



EBI Consulting

environmental | engineering | due diligence

RADIO FREQUENCY EMISSIONS ANALYSIS REPORT EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

Sprint Existing Facility

Site ID: CT58XC965

East Farmington NU
45 Maple Ridge Road
Farmington, CT 06032

May 24, 2013



EBI Consulting

environmental | engineering | due diligence

May 24, 2013

Sprint

Attn: RF Engineering Manager

1 International Boulevard, Suite 800

Mahwah, NJ 07495

Re: Emissions Values for Site: CT58XC965 – East Farmington NU

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 45 Maple Ridge Road, Farmington, CT, for the purpose of determining whether the emissions from the proposed Sprint equipment upgrades on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limit for the cellular band is approximately $567 \mu\text{W}/\text{cm}^2$, and the general population exposure limit for the PCS band is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.



Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed upgrades to the existing Sprint Wireless antenna facility located at 45 Maple Ridge Road, Farmington, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario. Actual values seen from this site will be dramatically less than those shown in this report. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

For all calculations, all emissions were calculated using the following assumptions:

- 1) 5 CDMA Carriers (1900 MHz) were considered for each sector of the proposed installation.
- 2) 1 CDMA Carrier (850 MHz) was considered for each sector of the proposed installation
- 3) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 4) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The actual gain in this direction was used per the manufactures supplied specifications.
- 5) The antenna used in this modeling is the APXVSPP18-C-A20. This is based on feedback from the carrier with regards to anticipated antenna selection. This antenna has a 15.9 dBd gain value at its main lobe at 1900 MHz and 13.4 dBd at its main lobe for 850 MHz. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario.

- 6) The antenna mounting height centerline of the proposed antennas is **98 feet** above ground level (AGL)
- 7) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

All calculation were done with respect to uncontrolled / general public threshold limits

Site ID CTSBK2965 - East Farmington, NJ Site Address 45 Maple Ridge Road, Farmington, CT 06032 Site Type Utility Pole												
Sector 1												
Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain In direction of sample point (dBi)	Antenna Height (ft)	Cable Size	Cable Loss (dB)
1a	RFS	APXSPP18-C-A20	RRH	1500 MHz	CDMA / LTE	20	5	100	15.9	98	1/2"	0.5
1a	RFS	APXSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	98	1/2"	0.5
Sector total Power Density Value: 17.649%												Power Density Value 147.2754
Power Density Percentage 14.72754%												2.92131%
Sector 2												
Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain In direction of sample point (dBi)	Antenna Height (ft)	Cable Size	Cable Loss (dB)
2a	RFS	APXSPP18-C-A20	RRH	1500 MHz	CDMA / LTE	20	5	100	15.9	98	1/2"	0.5
2a	RFS	APXSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	98	1/2"	0.5
Sector total Power Density Value: 17.649%												Power Density Value 147.2754
Power Density Percentage 14.72754%												2.92131%
Sector 3												
Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain In direction of sample point (dBi)	Antenna Height (ft)	Cable Size	Cable Loss (dB)
3a	RFS	APXSPP18-C-A20	RRH	1500 MHz	CDMA / LTE	20	5	100	15.9	98	1/2"	0.5
3a	RFS	APXSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	98	1/2"	0.5
Sector total Power Density Value: 17.649%												Power Density Value 147.2754
Power Density Percentage 14.72754%												2.92131%

Site Composite MPE %		
Carrier	MPE %	
Sprint	52.947%	
AT&T	22.970%	
Total Site MPE %	75.917%	



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Summary

All calculations performed for this analysis yielded results that were well within the allowable limits for general public exposure to RF Emissions.

The anticipated Maximum Composite contributions from the Sprint facility are **52.947 % (17.649 % from each sector)** of the allowable FCC established general public limit considering all three sectors simultaneously sampled at the ground level.

The anticipated composite MPE value for this site assuming all carriers present is **75.917%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

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RF Engineering Director

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