



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

www.ct.gov/csc

December 21, 2012

Jennifer Young Gaudet
HPC Wireless Services
46 Mill Plain Road, Floor 2
Danbury, CT 06811

RE: **EM-SPRINT-007-121203** – Sprint Spectrum, L.P. notice of intent to modify an existing telecommunications facility located at 1657 Wilbur Cross Highway, Berlin, Connecticut.

Dear Ms. Gaudet:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- Subsequent to the installation of the proposed antennas, Sprint shall cause a tower climb to be conducted to verify the placement of this tower's existing antennas and equipment and shall inform the Council of the results of this tower climb.
- Any deviation from the proposed modification as specified in this notice and supporting materials with Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Not more than 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration;

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated November 30, 2012. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the



closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Very truly yours,



Linda Roberts
Executive Director

LR/CDM/cm

c: The Honorable Adam P. Salina, Mayor, Town of Berlin
Hellyn Riggins, Town Planner, Town of Berlin



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CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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E-Mail: siting.council@ct.gov

www.ct.gov/csc

December 3, 2012

The Honorable Adam P. Salina
Mayor
Town of Berlin
240 Kensington Road
Kensington, CT 06037

RE: **EM-SPRINT-007-121203** – Sprint Spectrum, L.P. notice of intent to modify an existing telecommunications facility located at 1657 Wilbur Cross Highway, Berlin, Connecticut.

Dear Mayor Salina:

The Connecticut Siting Council (Council) received a request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72, a copy of which has already been provided to you.

If you have any questions or comments regarding the proposal, please call me or inform the Council by December 17, 2012.

Thank you for your cooperation and consideration.

Very truly yours,

Linda Roberts
Executive Director

LR/cm

c: Hellyn Riggins, Town Planner, Town of Berlin



ORIGINAL

November 30, 2012

RECEIVED
DEC - 3 2012

VIA OVERNIGHT COURIER

Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051
Attn: Ms. Linda Roberts, Executive Director

CONNECTICUT
SITING COUNCIL

Re: Sprint Spectrum, L.P. – exempt modification
1657 Wilbur Cross Highway, Berlin, Connecticut

Dear Ms. Roberts:

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 Mayor of the Town of Berlin.

Sprint plans to modify the existing wireless communications facility owned by the Berlin Volunteer Fire Department, Inc. and located at 1657 Wilbur Cross Highway in the Town of Berlin (coordinates 41°-36’-22.38”, 72°-44’-58.87”). Attached are a compound plan and elevation 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).

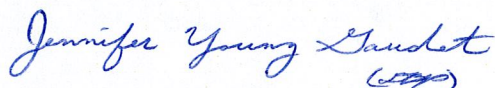
1. Sprint will add three (3) dual-band panel antennas to the existing platform at a center line of approximately 150’. Six (6) RRHs (remote radio heads) and three (3) notch

filters will be mounted behind the antennas. The existing GPS antenna will be removed from the tower. During an interim period of up to one year, the six (6) existing CDMA antennas will remain. Sprint will also install three (3) hybridflex cables along the existing coaxial cable run, and will remove the coaxial cable at the end of the interim period. The proposed modifications will not extend the height of the approximately 175' structure.

2. The proposed changes will not extend the site boundaries. Sprint will, in two stages, replace two (2) existing cabinets with two (2) new cabinets, will install a new GPS antenna, and will mount a fiber distribution box on a new H-frame placed on the existing steel frame. These changes 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 14.398%; the combined site operations will result in a total power density of approximately 64.908%.

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

cc: Honorable Adam P. Salina, Mayor, Town of Berlin
Denise McNair, Town Manager, Town of Berlin
Berlin Volunteer Fire Department, Inc. (underlying property owner)

Sprint
 NETWORK SERVICES DIVISION
 1 INTERNATIONAL BLVD., SUITE 800
 MAHWAH, NJ 07495
 OFFICE: (201) 684-4000
 FAX: (201) 684-4223

Alcatel-Lucent
 10000 ROUTE 208
 FORT LEE, NJ 07024

HPO
 WIRELESS SUPPLIES

TECTONIC
 TECTONIC ENGINEERING & SURVEYING CONSULTANTS P.C.
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SUBMITTALS

NO.	DATE	DESCRIPTION	BY
0	11/25/12	FOR COMMENT	UP
1	11/26/12	PER COMMENTS	14R

SEAL

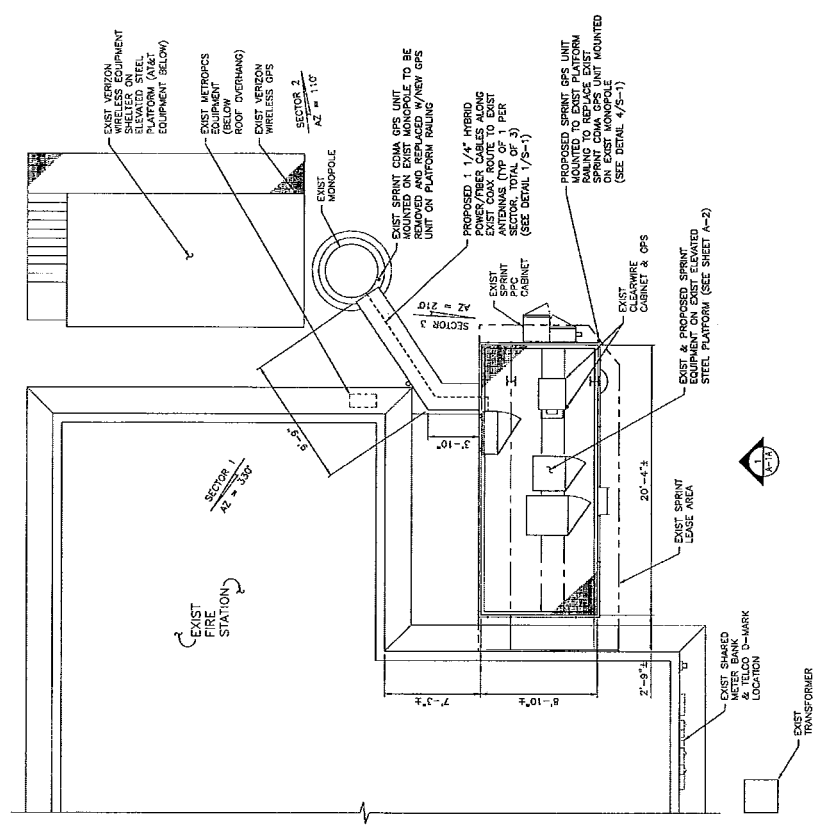
SITE NUMBER:
 C743XC846
 SITE NAME:
 BERLIN/F15/FIRE DEPT

SITE ADDRESS:
 1857 HULLBROTHERS
 BERLIN, CT 06037

SHEET TITLE:
 SITE PLAN

SHEET NO.
 A-1

NORTH NOTE:
 NORTH SHOWN HAS BEEN ESTABLISHED USING THE USGS QUADRANGLE 7.5 MINUTE MAPS AND IS APPROXIMATE. VERIFY TRUE NORTH PRIOR TO INSTALLATION OF ANTENNAE.



1 SITE PLAN
 SCALE: 1/4" = 1'-0"

Sprint
 NETWORKS, VERIZON WIRELESS, AT&T
 1 INTERNATIONAL BLVD., SUITE 600
 MAHWAH, NJ 07435
 OFFICE: (201) 964-4000
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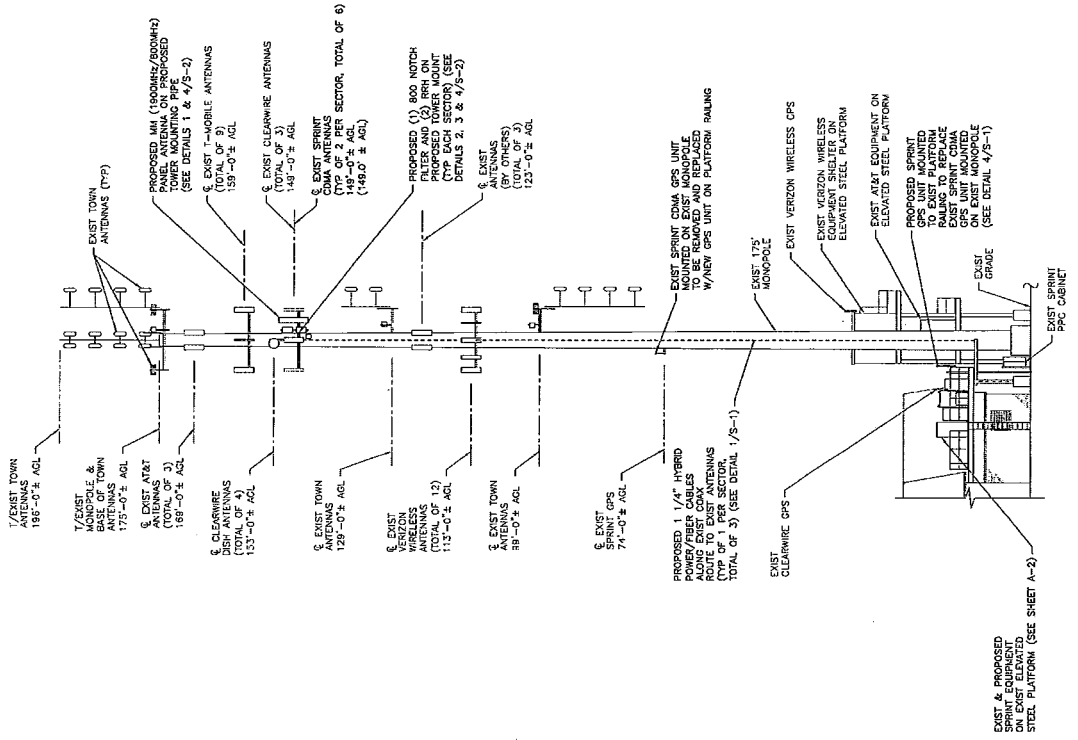
SUBMITTALS

NO.	DATE	DESCRIPTION	BY
0	9/25/12	FOR COMMENT	LP
1	11/26/12	FOR COMMENTS	MUR

PROJECT NO: A318.00-046	
NO.	DATE
BY	
LP	
MUR	

SCALE

SITE NUMBER: CT430C046
 SITE NAME: BERLIN/RT15/FIRE DEPT
 SITE ADDRESS: 1657 WILBUR CROSS
 BERLIN, CT 06037
 SHEET TITLE: ELEVATION
 SHEET NO: A-1A



NOTE: SEE STRUCTURAL ANALYSIS BY TECTONIC ENGINEERING, DATED 11/16/12.

ELEVATION
 A-1A SCALE: 3/32" = 1'-0"

NETWORK DESIGN/INSTALL/LAUNCH
 1 INTERNATIONAL BLDG., SUITE 600
 BAHAMAS NJ 07488
 PHONE: (973) 274-1000
 FAX: (973) 274-4223

ALCATEL-LUCENT
 1 WEBSTER ROAD
 TELFORD, NJ 07090

HPO
 WIRELESS SERVICES

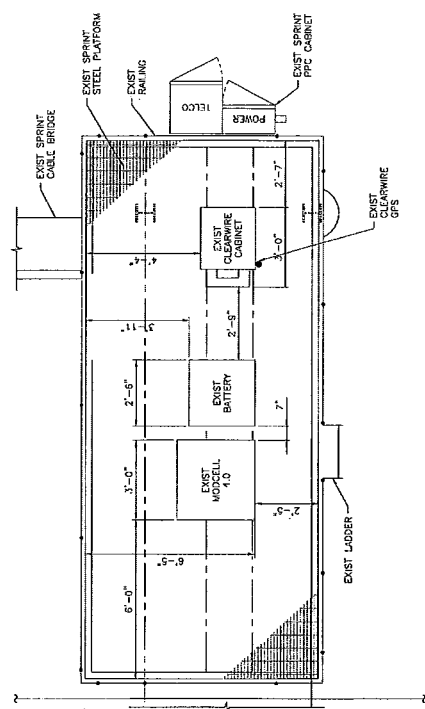
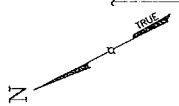
TECTONIC
 1000 W. 10TH ST.
 ST. LOUIS, MO 63104
 PHONE: (314) 345-1000
 FAX: (314) 345-1001

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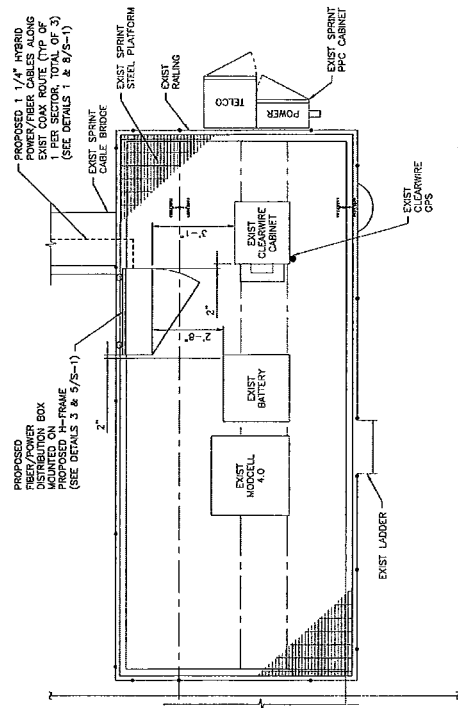
SUBMITTALS			
NO	DATE	DESCRIPTION	BY
0	9/25/12	FOR COMMENT	LP
1	11/28/12	FOR COMMENTS	PLR

PROJECT NO: 638143-846

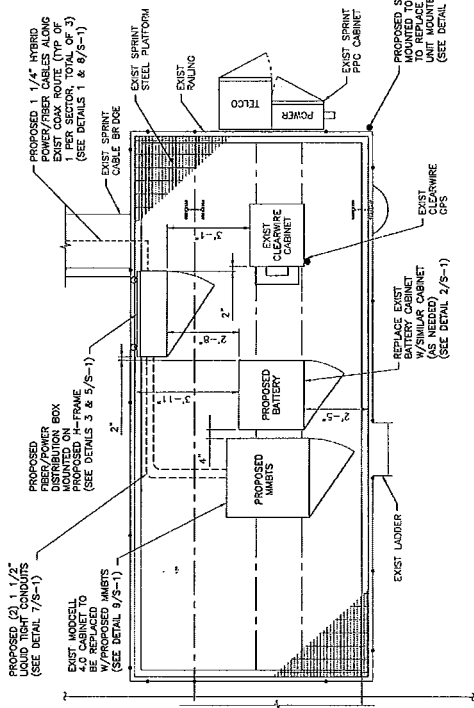
SITE NUMBER: CT143XC846
 SITE NAME: BERLIN/RT15/FIRE DEPT
 CITY ADDRESS: 1857 WILBUR CROSS
 BERLIN, CT 06037
 SHEET TITLE: EQUIPMENT LAYOUT PLANS
 SHEET NO: A-2



1 ENLARGED EQUIPMENT LAYOUT PLAN (EXIST)
 SCALE: 1/2" = 1'-0"



2 ENLARGED EQUIPMENT LAYOUT PLAN (INTERIM)
 SCALE: 1/2" = 1'-0"



3 ENLARGED EQUIPMENT LAYOUT PLAN (FINAL)
 SCALE: 1/2" = 1'-0"

PROPOSED SPRINT GPS UNIT MOUNTED TO EXIST PLATFORM RAILING NOT SHOWN ON EXIST MOBILE (SEE DETAIL 4/S-1)

REPLACE EXIST BATTERY CABINET W/ SIMILAR CABINET (SEE DETAIL 2/S-1)

STRUCTURAL ANALYSIS SUMMARY REPORT

SPRINT NETWORK VISION

EXISTING 175 FEET MONOPOLE

SPRINT SITE NO: CT43XC846, BERLIN / RT15 / FIRE DEPT

1657 WILBUR CROSS

BERLIN, CT 06037

NOVEMBER 16, 2012

TEC W.O. 6318.43-846

TECTONIC

Practical Solutions, Exceptional Service

STRUCTURAL ANALYSIS SUMMARY REPORT (CONT.)

W.O.:	6318.43-846	Report Date:	11/16/2012
Client:	Sprint	Revision:	0
Site Name:	Berlin / Rt.15 / Fire Dept.		

Existing Appurtenances					
Antennas:					
Height (ft.)	Carrier	Qty	Manufacturer	Model	Mount
175 (base)	Town	1	Telewave	ANT150D6-9 or Similar	(1) 12' Low-Profile Platform
		1	Unknown	8' Dipole Antenna	
		2	Unknown	8' Omni Antennas	
		2	Unknown	4' Omni Antennas	
		2	Unknown	18"x18" Panel Antenna	
		2	Kathrein Scala	MF-900B or Similar	
169	AT&T	3	Powerwave	7770	(3) Pipe Mounts
		6		LGP21401 TMA's	
159	T-Mobile	6	Unknown	60"x12" Panel Antenna	(3) 12' Wide Standoff Arms
		6	Decibel	PCS 1900 TMA	
	Town	1	Telewave	ANT120D3 or similar	
		1	Kathrein	MF-900B or Similar	
153	Sprint	2	Andrew	VHLP2.5 Dish	(1) 12' Low-Profile Platform
		3	Unknown	3' Dish	
		6	DAPA	48000	
149	Sprint	3	Kathrein	840 10054	(1) 12' Low-Profile Platform
		3	Samsung	RRH	
129	Town	1	Telewave	ANT120D3 or Similar	(1) 6' Standoff Arm
		1	Unknown	18"x18" Panel Antenna	
123	Pocket	3	Kathrein	742 213	(3) Pipe Mounts
		4	Verizon	LPA 60063/6CF	
1	Antel	BXA-185060/12CF		(1) 12' Low-Profile Platform	
2	Decibel	DB844H90E-XY			
3	Commscope	LNx-6514DS-T4M-750 4			
2	Unknown	90"x8" Panel Antennas			
99	Town	1	Telewave	ANT150D6-9 or Similar	(1) 6' Standoff Arm
		1	Kathrein	MF-900B or Similar	
74	Sprint	1	Unknown	18"x18" Panel Antenna	(1) 2' Standoff Arm
				GPS	

*Elevation above base of pole

Cables:			
Height (ft.)	Qty	Nom. Size	Location / Support
176	10	1-5/8" dia	Along the interior of the pole
170	6	1-5/8" dia	Along the interior of the pole
160	24	1-5/8" dia	Along the interior of the pole
160	2	1-5/8" dia	Along the interior of the pole
153	4	1/2" dia	Along the interior of the pole
150	12	1-5/8" dia	Along the interior of the pole
150	6	CAT 5 cables	Along the interior of the pole
130	2	1-5/8" dia	Along the interior of the pole
124	6	1-5/8" dia	Along the exterior of the pole stacked in two rows
114	12	1-5/8" dia	Along the interior of the pole
100	2	1-5/8" dia	Along the interior of the pole
75	1	1/2" dia	Along the interior of the pole

Step Bolts:	Yes	Lights:	No
Lightning rod:	No	Safety Cable:	Yes

STRUCTURAL ANALYSIS SUMMARY REPORT (CONT.)

W.O.	6318.43-846	Report Date:	11/16/2012
Client:	Sprint	Revision:	0
Site Name:	Berlin / Rt.15 / Fire Dept.		

Proposed Upgrade

Sprint is proposing to upgrade its existing installation in two stages. In the initial stage, Sprint is proposing to add three (3) panel antennas, one (1) antenna per sector on the existing low profile platform. In addition, the following appurtenances will also be added. The configuration during the interim stage is as follows:

Stage 1: Interim Configuration

Antennas:

Height (ft.)	Carrier	Qty	Manufacturer	Model	Mount
153	Sprint	2	Andrew	VHLP2.5 Dish	(1) 12' Low-Profile Platform
		3	Unknown	3' Dish	
3		Kathrein	840 10054		
6		DAPA	48000		
150		3	Samsung	RRH	
		3	RFS	APXVSP18-C-A20	
		3	Alcatel Lucent	800 MHz RRH	
		3	Alcatel Lucent	1900 MHz RRH	

Cables:

Height (ft.)	Qty	Nom. Size	Location / Support
153	4	1/2" dia	Existing to remain
150	12	1-5/8" dia	Existing to remain
150	6	CAT 5 cables	Existing to remain
150	3	1-1/4" Hybriflex	Along the interior of the pole

Stage 2: Final Configuration

Sprint is proposing to subsequently remove six (6) existing panel antennas in the second stage of its upgrade. The final Sprint configuration upon upgrade will be as follows:

Antennas:

Height (ft.)	Carrier	Qty	Manufacturer	Model	Mount
153	Sprint	2	Andrew	VHLP2.5 Dish	(1) 12' Low-Profile Platform
		3	Unknown	3' Dish	
3		Kathrein	840 10054		
3		Samsung	RRH		
150		3	RFS	APXVSP18-C-A20	
		3	Alcatel Lucent	800 MHz RRH	
	3	Alcatel Lucent	1900 MHz RRH		

Cables:

Height (ft.)	Qty	Nom. Size	Location / Support
153	4	1/2" dia	Existing to remain
150	12	1-5/8" dia	Existing to remain
150	6	CAT 5 cables	Existing to remain
150	3	1-1/4" Hybriflex	Along the interior of the pole

Analysis Criteria

Design Standard: TIA/EIA-222-F-1996
 Building Code: 2003 International Building Code with 2005 Connecticut Supplement

	Capacity (no ice)	Capacity w/ ice
Wind Speed:	85 mph	74 mph
Basic Ice Thickness:	0 inch	0.5 inch

- Assumptions:
1. The monopole was designed and constructed in accordance with the applicable codes and standards.
 2. The foundation was designed and constructed based on site-specific geotechnical information.
 3. The slip jointed splices were assembled in accordance with the manufacturer's specifications.
 4. The yield stress for the pole shaft is 65 ksi.
 5. Anchor bolts are ASTM A615 Grade 75.
 6. Some appurtenance and mounting frame sizes have been estimated.
 7. Pole properties and appurtenances are based on the previous analysis report referenced above and information provided by the client.

STRUCTURAL ANALYSIS SUMMARY REPORT (CONT.)

W.O.	6318.43-846	Report Date:	11/16/2012
Client:	Sprint	Revision:	0
Site Name:	Berlin / Rt.15 / Fire Dept.		

Analysis Results

The analysis results listed below are for the interim configuration (Stage 1). The total wind area of the appurtenances after the final upgrade will be less than the interim installation. Therefore we can safely conclude that the stresses in the pole shaft, anchor bolts and foundation will be less than the values listed below.

Pole Shaft:

Section	Maximum Usage (%)
1	55
2	90
3	98
4 (Base)	96

Foundation Reactions (Envelope):

Pole Base	Current Analysis
Vertical	62.1 kips
Shear	46.7 kips
Moment	5169.0 kip-ft

Anchor bolts: 99 % of capacity

Conclusions

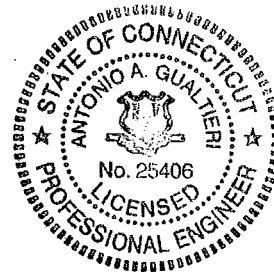
Based on our analysis, the existing pole has adequate capacity to support the proposed Sprint antenna upgrade as described herein in accordance with current code requirements.

Based on a review of the foundation information, the existing foundation also has adequate capacity to support the proposed Sprint upgrade.

This report and the structural analysis performed are based on a limited visual inspection from the base of the tower and the information provided by Sprint. If the existing conditions are not as represented in this report, the design engineer should be immediately notified prior to installation of new appurtenances.

Prepared by: Cliff Gunther
Structural Engineer

Reviewed by: Kelly Schuman
Structural Engineer



Approved by:

Antonio A. Gualtieri, P.E.
Sr. VP-Telecommunications/Structural/Energy

Date:

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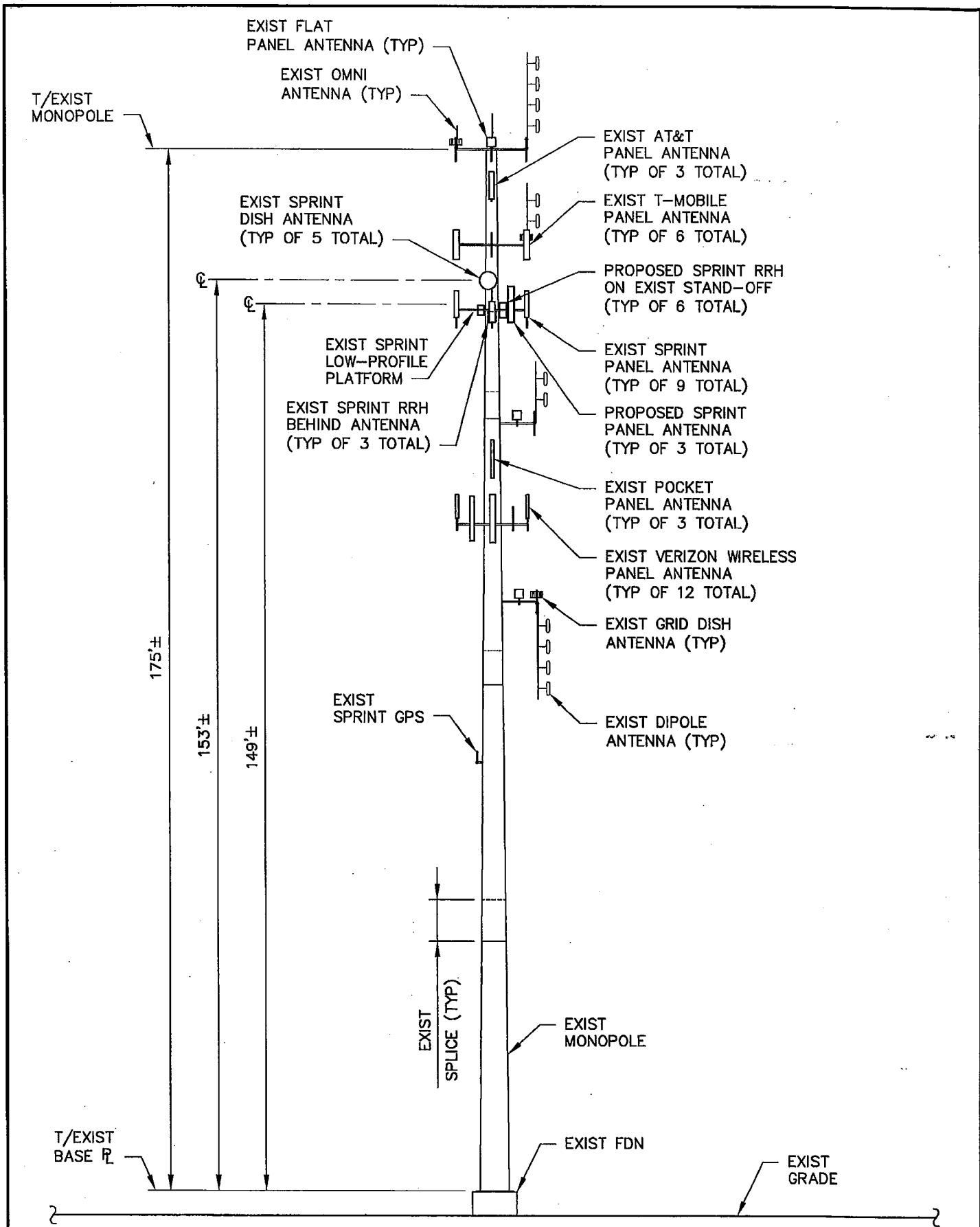
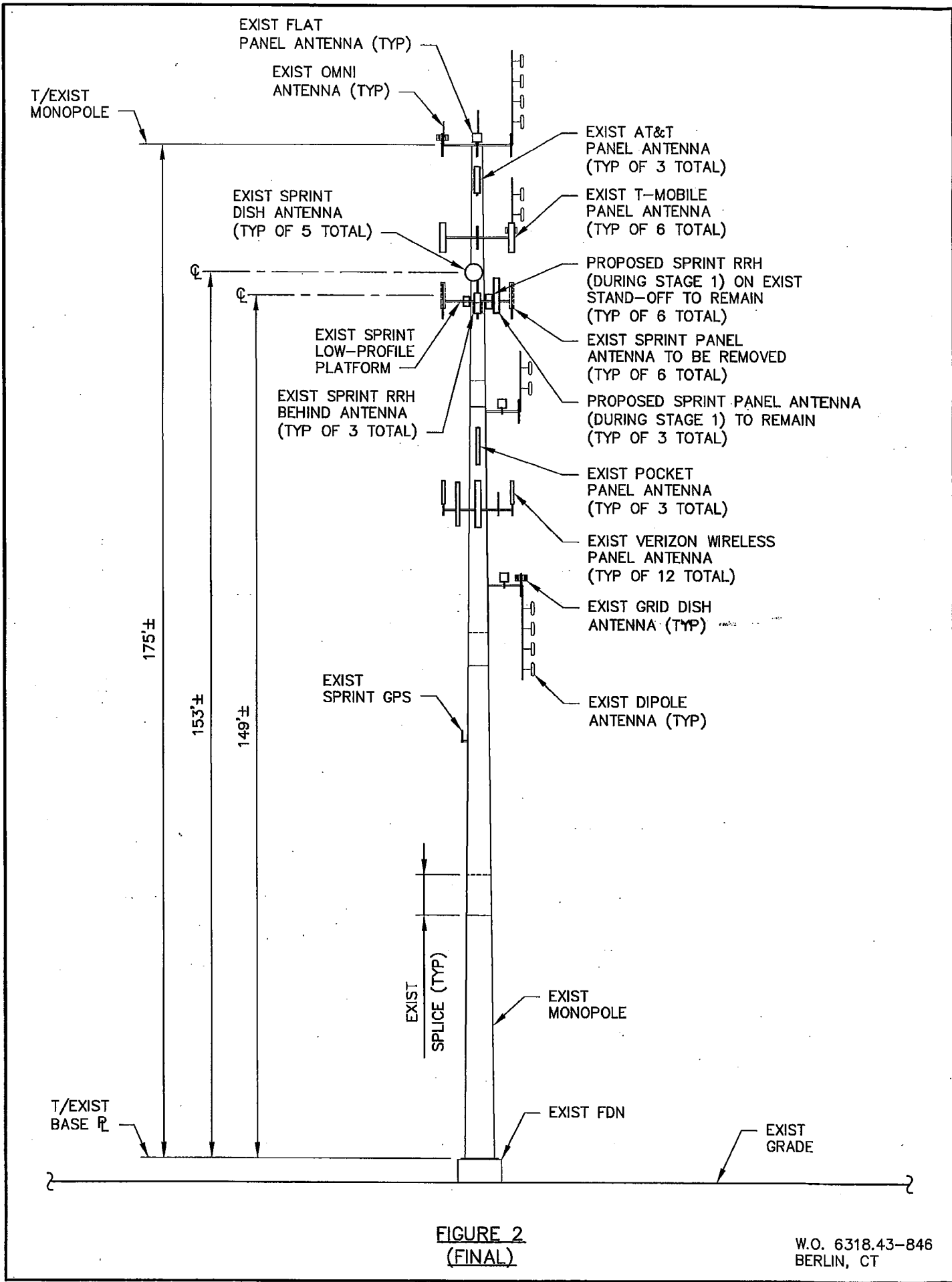


FIGURE 1
(INTERIM)



LOAD CALCULATIONS

Appearance Information

No Ice											
Appearance	Length or Diameter (ft)	Width (in)	Depth (in)	Flat or Cylindrical?	Antenna Ca (ft*2)	Antenna Aa (ft*2)	Antenna Caa (ft*2)	Antenna Weight (lb)			
a. (E) Telewave ANTI150D6-9 or similar	16.25	3.00	3.00	Cylindrical	1.20	3.30	3.95	23			
b. (E) 18"x18" Panel Antenna	1.50	18.00	2.00	Flat	1.40	2.25	3.15	15			
c. (E) 8' Omni Antenna	8.00	3.00	3.00	Cylindrical	1.20	2.00	2.40	20			
d. (E) 4' Omni Antenna	4.00	3.00	3.00	Cylindrical	1.00	1.00	1.00	15			
e. (E) 8' Dipole Antenna	8.00	4.00	4.00	Cylindrical	1.18	2.67	3.14	30			
f. (E) Powerwave 7770	4.58	11.00	5.00	Flat	1.40	4.20	5.88	39			
g. (E) LSP 21401 TMA's or similar	0.67	2.00	2.00	Flat	1.40	0.33	0.47	6			
h. (E) 60"x12" Panel Antenna	6.00	2.00	3.00	Flat	1.40	6.00	8.40	35			
i. (E) 1900 PCS TMA or similar	1.00	10.00	3.50	Flat	1.40	0.83	1.17	10			
j. (E) ANTI20D3 or similar	10.33	3.00	3.00	Flat	1.20	1.90	2.28	15			
k. (E) DAPA 48000	4.44	8.70	2.70	Flat	1.40	3.20	4.48	28			
l. (P) RFS APX/SPP18-C-A20	6.00	11.80	7.00	Flat	1.40	5.80	8.26	67			
m. (P) 800 MHz RRR	2.46	14.00	15.00	Flat	1.40	2.87	4.02	100			
n. (P) 800 MHz RRR	1.64	13.00	15.20	Flat	1.40	1.78	2.49	34			
o. (E) Kathrein 84010054	3.50	12.70	2.80	Flat	1.40	3.70	5.19	34			
p. (E) Samsung RRR or similar	1.75	18.00	8.00	Flat	1.40	2.63	3.68	40			
q. (E) Kathrein 742 213	6.41	6.10	2.80	Flat	1.59	3.26	5.17	29			
r. (E) Antel LPA 800636CF	5.91	15.00	13.10	Flat	1.40	7.39	10.34	37			
s. (E) Decibel DB868H9E-XY	8.04	6.00	8.50	Flat	1.40	2.00	2.80	20			
t. (E) Comscope LNX-6514DS-74M-750_4	6.03	11.85	7.10	Flat	1.44	7.93	11.41	60			
u. (E) Antel BXA-18506012CF	7.50	8.00	4.10	Flat	1.58	3.07	4.79	15			
v. (E) 90"x8" Panel Antennas	0.83	2.00	2.00	Flat	1.54	5.00	7.71	35			
w. (E) GPS Antenna	6.00	2.88	2.88	Cylindrical	0.80	0.14	0.11	10			
x. (E) 2.375" OD Mounting Pipe	6.00	2.88	2.88	Cylindrical	1.20	1.44	1.73	22			

0.5" Ice											
Amount of Radial Ice: 0.50 in											
Appearance	Length or Diameter (ft)	Width (in)	Depth (in)	Flat or Cylindrical?	Antenna Ca (ft*2)	Antenna Aa (ft*2)	Antenna Caa (ft*2)	Antenna Weight (lb)			
a. (E) Telewave ANTI150D6-9 or similar	16.33	4.00	4.00	Cylindrical	1.20	5.44	6.53	63			
b. (E) 18"x18" Panel Antenna	1.58	19.00	3.00	Cylindrical	0.80	2.51	2.01	29			
c. (E) 8' Omni Antenna	8.08	4.00	4.00	Cylindrical	1.18	2.69	3.19	37			
d. (E) 4' Omni Antenna	4.08	4.00	4.00	Cylindrical	0.92	1.36	1.25	24			
e. (E) 8' Dipole Antenna	8.08	5.00	5.00	Cylindrical	1.08	3.37	3.62	52			
f. (E) Powerwave 7770	4.67	12.00	6.00	Cylindrical	0.80	4.67	3.73	72			
g. (E) LSP 21401 TMA's or similar	0.75	7.00	3.00	Cylindrical	0.80	0.44	0.85	9			
h. (E) 60"x12" Panel Antenna	6.08	13.00	4.00	Cylindrical	0.80	6.59	5.27	74			
i. (E) 1900 PCS TMA or similar	1.08	11.00	4.50	Cylindrical	1.20	0.99	0.79	17			
j. (E) ANTI20D3 or similar	10.42	4.00	4.00	Cylindrical	0.80	3.66	2.83	51			
k. (E) DAPA 48000	4.53	9.70	3.70	Cylindrical	1.20	3.47	4.17	37			
l. (P) RFS APX/SPP18-C-A20	6.08	12.80	8.00	Cylindrical	0.80	6.49	5.19	117			
m. (P) 800 MHz RRR	2.54	15.00	16.00	Cylindrical	0.80	3.39	2.71	136			
n. (P) 800 MHz RRR	1.73	14.00	16.20	Cylindrical	0.80	2.33	1.86	128			
o. (E) Kathrein 84010054	3.58	13.70	3.80	Cylindrical	0.80	4.09	3.27	58			
p. (E) Samsung RRR or similar	1.83	19.00	9.00	Cylindrical	0.80	2.90	2.32	84			
q. (E) Kathrein 742 213	6.49	7.10	3.80	Cylindrical	0.89	3.84	3.41	54			
r. (E) Antel LPA 800636CF	5.99	16.00	14.10	Cylindrical	0.80	7.99	6.39	111			
s. (E) Decibel DB868H9E-XY	4.08	7.00	9.50	Cylindrical	0.80	3.23	2.59	46			
t. (E) Comscope LNX-6514DS-74M-750_4	8.12	12.86	8.10	Cylindrical	0.81	8.69	7.07	126			
u. (E) Antel BXA-18506012CF	6.12	7.10	5.10	Cylindrical	0.87	3.62	3.16	42			
v. (E) 90"x8" Panel Antennas	7.56	9.00	4.50	Cylindrical	0.87	5.69	4.94	73			
w. (E) GPS Antenna	0.92	3.00	3.00	Cylindrical	0.80	0.23	0.18	11			
x. (E) 2.375" OD Mounting Pipe	6.08	3.88	3.88	Cylindrical	1.06	1.96	2.09	34			

Mount Information

Member sizes have been estimated

(E) Town Low Profile Platform
 Mount Center Line: 175'
 Manufacturer: Unknown
 Mount Type: 12' Low Profile Platform

Mount Part	Total Qty	Flat or Cylindrical air?	Approx Angle btw member & Vertical plane	Actual Length (ft)	Projected Length (ft)	Width (in)	Depth (in)	Weight (lb/ft)	CA	No Ice			0.5" Ice		
										Area, Ac (ft ² , no ice)	Projected Area, Ac of ice (ft ² , 0.5" ice)	Volume of ice (ft ³ , 0.5" ice)	Total Weight (lb)	CaAc (ft ²)	Total Weight (lb)
HSS 3.5x3.5x0.25 standoff	1	F	90	5.00	0.00	3.50	3.50	10.48	1.74	0.00	0.00	52	0.00	68	0.00
HSS 3.5x3.5x0.25 standoff	2	F	30	5.00	4.33	3.50	3.50	10.48	1.74	2.53	3.25	105	5.64	136	5.64
HSS 3.5x3.5x0.25 face	1	F	0	12.00	12.00	3.50	3.50	10.48	2.00	3.50	4.50	126	9.00	163	9.00
HSS 3.5x3.5x0.25 face	2	F	30	12.00	10.39	3.50	3.50	10.48	2.00	6.06	7.79	252	15.59	326	15.59
2.375" OD Mounting Pipes	7	C	0	5.00	5.00	2.38	2.38	3.65	1.20	6.93	9.84	128	11.81	189	11.81
Grating	1											180		180	
Mounting Bracket	1											150		150	
Add 10% for Miscellaneous (For Weight Only)												66.22		88	
										31.8	1058	42.0	1301		

(E) T-Mobile T-Arms
 Mount Center Line: 159'
 Manufacturer: Unknown
 Mount Type: 12' Wide Standoff Arm

Mount Part	Total Qty	Flat or Cylindrical air?	Approx Angle btw member & Vertical plane	Actual Length (ft)	Projected Length (ft)	Width (in)	Depth (in)	Weight (lb/ft)	CA	No Ice			0.5" Ice		
										Area, Ac (ft ² , no ice)	Projected Area, Ac of ice (ft ² , 0.5" ice)	Volume of ice (ft ³ , 0.5" ice)	Total Weight (lb)	CaAc (ft ²)	Total Weight (lb)
HSS 4x4x1/4 horiz standoff	1	F	90	3.00	0.00	3.50	3.50	10.48	1.51	0.00	0.00	31	0.00	41	0.00
2.875" OD Horiz Face Pipe	1	C	0	12.00	12.00	2.88	2.88	5.79	1.20	2.88	3.88	69	4.65	94	4.65
2.375" OD Mounting Pipe	2	C	0	6.00	6.00	2.38	2.38	3.65	1.20	2.38	3.38	44	4.05	65	4.05
2.375" OD Mounting Pipe shielded	1	C	90	6.00	0.00	2.38	2.38	3.65	1.20	0.00	0.00	22	0.00	32	0.00
Mounting Bracket	1											50		50	
Add 10% for Miscellaneous (For Weight Only)												14.47		20	
Values For One T-Arm										6.3	231	8.7	302		

(F) Sprint Low Profile Platform
 Mount Center Line: 149'
 Manufacturer: Unknown
 Mount Type: 12' Low Profile Platform

Mount Part	Total Qty	Flat or Cylindrical air?	Approx Angle btw member & Vertical plane	Actual Length (ft)	Projected Length (ft)	Width (in)	Depth (in)	Weight (lb/ft)	CA	No Ice			0.5" Ice		
										Area, Ac (ft ² , no ice)	Projected Area, Ac of ice (ft ² , 0.5" ice)	Volume of ice (ft ³ , 0.5" ice)	Total Weight (lb)	CaAc (ft ²)	Total Weight (lb)
HSS 3.5x3.5x0.25 standoff	1	F	90	5.00	0.00	3.50	3.50	10.48	1.74	0.00	0.00	52	0.00	68	0.00
HSS 3.5x3.5x1/4 standoff	2	F	30	5.00	4.33	3.50	3.50	10.48	1.74	2.53	3.25	105	5.64	136	5.64
HSS 3.5x3.5x0.25 face	1	F	0	12.00	12.00	3.50	3.50	10.48	2.00	3.50	4.50	126	9.00	163	9.00
HSS 3.5x3.5x0.25 face	2	F	30	12.00	10.39	3.50	3.50	10.48	2.00	6.06	7.79	252	15.59	326	15.59
3.5" OD Mounting Pipe	3	C	0	6.00	6.00	3.50	3.50	7.58	1.10	5.25	6.75	136	7.44	180	7.44
2.375" OD Mounting Pipe	2	C	0	6.00	6.00	2.38	2.38	3.65	1.20	2.38	3.38	44	4.05	65	4.05
2.375" OD Mounting Pipe Shielded	4	C	90	6.00	0.00	2.38	2.38	3.65	1.20	0.00	0.00	88	0.00	130	0.00
Grating	1											180		180	
Mounting Bracket	1											150		150	
Add 10% for Miscellaneous (For Weight Only)												96.23		125	
										32.1	1231	41.7	1523		

(E) Town Standoff Arm A
 Mount Center Line: 129'
 Manufacturer: Unknown
 Mount Type: 6' Standoff Arm

Mount Part	Total Qty	Flat or Cylindrical air?	Approx Angle btw member & Vertical plane	Actual Length (ft)	Projected Length (ft)	Width (in)	Depth (in)	Weight (lb/ft)	CA	No Ice			0.5" Ice		
										Area, Ac (ft ² , no ice)	Projected Area, Ac of ice (ft ² , 0.5" ice)	Volume of ice (ft ³ , 0.5" ice)	Total Weight (lb)	CaAc (ft ²)	Total Weight (lb)
HSS 3x3x1/4 horiz	1	F	90	6.00	0.00	3.00	3.00	8.3	1.97	0.00	0.00	50	0.00	66	0.00
2.375" OD Vert Pipe	1	C	0	2.00	2.00	2.38	2.38	3.65	0.87	0.00	0.00	7	0.00	11	0.00
Add 10% for Miscellaneous (For Weight Only)												5.71		8	
										0.3	63	0.5	85		

Loading Information: 90 mph 1.690 Gh=
Basic Wind Speed Thickness of Radial Ice: 0.00 in

Item Number	Make and Model	Quantity	Z (ft)	Length (ft)	Width or Diameter (ft)	Depth (ft)	Flat or Cylindrical?	Net Weight (each, lb)	Ca-Aa (each, ft ²)	Total Weight (lbs.)	Kz	qz	Total F (lbs.)
1	a. (E) Telewave ANTI50D6-3 or similar	1	183		See Appurtenance Info spreadsheet			28	3.96	28	1.631	33,828	226
2	b. (E) 18"x18" Panel Antenna	2	179		See Appurtenance Info spreadsheet			15	3.15	30	1.621	33,615	358
3	c. (E) 8' Omni Antenna	20	179		See Appurtenance Info spreadsheet			20	2.40	40	1.621	33,615	273
4	d. (E) 4' Omni Antenna	2	179		See Appurtenance Info spreadsheet			15	1.00	30	1.621	33,615	114
5	e. (E) 8' Dipole Antenna	30	179		See Appurtenance Info spreadsheet			30	3.14	30	1.621	33,615	178
6	f. (E) Powerwave 7770	3	169		See Appurtenance Info spreadsheet			39	5.88	117	1.595	33,068	740
7	g. (E) LGP-21401 TMAs or similar	6	169		See Appurtenance Info spreadsheet			6	0.47	33	1.595	33,068	117
8	j. (E) ANTI20D3 or similar	1	164		See Appurtenance Info spreadsheet			15	2.28	15	1.591	32,785	95
9	h. (E) 80"x12" Panel Antenna	6	159		See Appurtenance Info spreadsheet			35	8.40	210	1.567	32,496	2076
10	i. (E) 1900 PCS TMA or similar	6	159		See Appurtenance Info spreadsheet			10	1.17	60	1.567	32,496	288
11	k. (E) DAPA 48000	6	149		See Appurtenance Info spreadsheet			28	4.48	168	1.538	31,899	1087
12	l. (P) RFS APXVSP-18-C-A20	3	149		See Appurtenance Info spreadsheet			67	8.28	201	1.538	31,899	1002
13	m. (P) 1900 MHz RRH	3	149		See Appurtenance Info spreadsheet			100	4.02	300	1.538	31,899	487
14	n. (P) 800 MHz RRH	3	149		See Appurtenance Info spreadsheet			100	2.49	300	1.538	31,899	302
15	o. (E) Kathrein 84010054	3	149		See Appurtenance Info spreadsheet			34	5.19	102	1.538	31,899	629
16	p. (E) Samsung RRH or similar	3	149		See Appurtenance Info spreadsheet			40	3.68	120	1.538	31,899	446
17	j. (E) ANTI20D3 or similar	1	134		See Appurtenance Info spreadsheet			15	2.28	15	1.492	30,946	119
18	b. (E) 18"x18" Panel Antenna	1	129		See Appurtenance Info spreadsheet			15	3.15	15	1.476	30,612	163
19	q. (E) Kathrein 742 213	3	123		See Appurtenance Info spreadsheet			29	5.17	86	1.456	30,198	594
20	r. (E) Antel LPA 80063/6CF	4	113		See Appurtenance Info spreadsheet			37	10.34	148	1.421	29,475	1545
21	s. (E) Decibel DB868H90E-XY	2	113		See Appurtenance Info spreadsheet			20	2.80	40	1.421	29,475	209
22	t. (E) Commscope LNX-6514DS-T4M-750_4	3	113		See Appurtenance Info spreadsheet			60	11.41	180	1.421	29,475	1279
23	u. (E) Antel BXA-185060/12CF	1	113		See Appurtenance Info spreadsheet			15	4.79	15	1.421	29,475	179
24	v. (E) 90"x8" Panel Antennas	2	107		See Appurtenance Info spreadsheet			35	7.71	70	1.421	29,475	576
25	a. (E) Telewave ANTI150D6-3 or similar	1	107		See Appurtenance Info spreadsheet			28	3.96	28	1.398	29,019	164
26	b. (E) 18"x18" Panel Antenna	1	99		See Appurtenance Info spreadsheet			15	3.15	15	1.368	28,382	161
27	w. (E) GPS Antenna	1	74		See Appurtenance Info spreadsheet			10	0.11	10	1.260	26,117	5
Mounts:													
1	(E) Town Low Profile Platform	1	175.00		See Mount Info spreadsheet			1058	31.83	1058	1.611	33,389	1204
2	(E) AT&T Mounting Pipes	3	169.00		x. (E) 2.375" OD Mounting Pipe			22	1.73	66	1.595	33,068	107
3	(E) T-Mobile T-Arms	3	159.00		See Mount Info spreadsheet			231	6	693	1.567	32,496	778
4	(P) Sprint Low Profile Platform	1	149.00		See Mount Info spreadsheet			1231	32	1231	1.538	31,899	1161
5	(E) Town Standoff Arm A	1	129.00		See Mount Info spreadsheet			63	0	63	1.476	30,612	18
6	(E) Pocket Wireless Mounting Pipes	3	123.00		x. (E) 2.375" OD Mounting Pipe			22	2	66	1.456	30,198	177
7	(E) Verizon Low Profile Platform	1	113.00		See Mount Info spreadsheet			1246	29	1246	1.421	29,475	961
8	(E) Town Standoff Arm B	1	99.00		See Mount Info spreadsheet			63	3	63	1.369	28,382	159
9	(E) GPS Standoff	1	74.00		See Mount Info spreadsheet			19	1	19	1.260	26,117	28
Appurtenances													
Height (ft)													
DL													
Wind Load													
Total Dead 6911 lbs													
Total Wind 18024 lbs													
Total 18024													

GH= 1.890

Loading Information:
 Basic Wind Speed 78.30 mph
 Thickness of Radial Ice: 0.50 in

Item Number	Make and Model	Quantity	Z (ft)	Length (ft)	Width or Diameter (in)	Depth (in for cylindrical) Cylindrical?	Flat or Cylindrical?	Net Weight (each, lb)	CaAs (each, ft ²)	Total Weight (lbs.)	Kz	Gz	Total F (lbs.)
1	a. (E) Telewave ANT150D6-9 or similar	1	183			See Appurtenance info spreadsheet		63	6.53	63	1.631	25,605	283
2	b. (E) 18"x18" Panel Antenna	2	179			See Appurtenance info spreadsheet		29	2.01	58	1.621	25,443	172
3	c. (E) 8' Omni Antenna	2	179			See Appurtenance info spreadsheet		37	3.19	74	1.621	25,443	274
4	d. (E) 4' Omni Antenna	2	179			See Appurtenance info spreadsheet		24	1.25	47	1.621	25,443	107
5	e. (E) 8' Dipole Antenna	1	179			See Appurtenance info spreadsheet		52	3.62	52	1.595	25,029	355
6	f. (E) Powerwave 7770	3	169			See Appurtenance info spreadsheet		9	0.35	27	1.581	24,815	87
7	g. (E) LGP 21401 TMA's or similar	3	169			See Appurtenance info spreadsheet		37	4.17	111	1.567	24,596	131
8	h. (E) 60"x12" Panel Antenna	1	164			See Appurtenance info spreadsheet		74	5.27	74	1.538	24,144	985
9	i. (E) ANT120D3 or similar	6	159			See Appurtenance info spreadsheet		17	0.79	103	1.538	24,144	149
10	j. (E) 1900 PCS TMA or similar	6	149			See Appurtenance info spreadsheet		117	2.93	303	1.538	24,144	537
11	k. (E) DAPA 48000	6	149			See Appurtenance info spreadsheet		51	5.19	306	1.538	24,144	477
12	l. (P) RPS APXXSPP18-C-A20	3	149			See Appurtenance info spreadsheet		136	2.71	409	1.538	24,144	249
13	m. (P) 1900 MHz RRH	3	149			See Appurtenance info spreadsheet		126	1.86	378	1.538	24,144	171
14	n. (P) 800 MHz RRH	3	149			See Appurtenance info spreadsheet		58	3.27	174	1.538	24,144	300
15	o. (E) Kathrein 84010054	3	149			See Appurtenance info spreadsheet		37	4.17	111	1.492	23,423	165
16	p. (E) Samsung RRR or similar	3	134			See Appurtenance info spreadsheet		29	2.01	87	1.476	23,170	79
17	q. (E) ANT120D3 or similar	1	129			See Appurtenance info spreadsheet		29	3.41	163	1.456	22,857	237
18	r. (E) 18"x18" Panel Antenna	1	123			See Appurtenance info spreadsheet		54	6.39	146	1.421	22,310	723
19	s. (E) Kathrein 742 213	3	113			See Appurtenance info spreadsheet		46	2.59	138	1.421	22,310	146
20	t. (E) Anitel LPA 800636CF	4	113			See Appurtenance info spreadsheet		111	7.07	445	1.421	22,310	600
21	u. (E) Decibel DB66H9DE-XY	2	113			See Appurtenance info spreadsheet		45	3.16	90	1.421	22,310	89
22	v. (E) Commscope LNX-8514DS-TAM-750_4	3	113			See Appurtenance info spreadsheet		126	4.94	377	1.399	21,965	243
23	w. (E) Antel BXA-18506012CF	1	113			See Appurtenance info spreadsheet		73	6.53	146	1.369	21,482	73
24	x. (E) Telewave ANT150D6-9 or similar	2	107			See Appurtenance info spreadsheet		63	2.01	126	1.260	19,768	6
25	y. (E) 18"x18" Panel Antenna	1	99			See Appurtenance info spreadsheet		11	0.18	11			
26	z. (E) GPS Antenna	1	74			See Appurtenance info spreadsheet		11		11			
27		1	175.00			See Mount info spreadsheet		1301	42.05	1301	1.611	25,280	1204
28		1	169.00			See Mount info spreadsheet		34	2.09	907	1.595	25,029	178
29	(E) Town Low Profile Platform	3	159.00			See Mount info spreadsheet		302	9	907	1.567	24,596	314
30	(E) AT&T Mounting Pipes	3	149.00			See Mount info spreadsheet		1623	42	4569	1.538	24,144	1141
31	(E) T-Mobile T-Arms	1	149.00			See Mount info spreadsheet		85	0	85	1.476	23,170	19
32	(P) Sprint Low Profile Platform	1	129.00			See Mount info spreadsheet		34	2.09	34	1.456	22,857	162
33	(E) Town Standoff Arm A	3	123.00			See Mount info spreadsheet		1575	39	4725	1.421	22,310	993
34	(E) Pocket Wireless Mounting Pipes	1	113.00			See Mount info spreadsheet		85	4	85	1.369	21,482	161
35	(E) Verizon Low Profile Platform	1	99.00			See Mount info spreadsheet		27	1	27	1.260	19,768	28
36	(E) Town Standoff Arm B	1	74.00			See Mount info spreadsheet		27	1	27			
37	(E) GPS Standoff	1	74.00			See Mount info spreadsheet		27	1	27			
38		1	16118					16118		16118			12025
39		1	12025					12025		12025			12025

DL	Wind Load	Height (ft)	Quantity	Total Weight (lbs.)	Total Wind (lbs)
1595	2196	175.00	1	1301	1204
1173	599	169.00	3	907	178
5154	2080	159.00	3	4569	314
1891	3088	149.00	1	85	19
101	459	129.00	1	34	19
4888	2831	123.00	3	4725	162
1187	476	113.00	1	85	993
119	34	99.00	1	27	161
11	34	74.00	1	0	28
16118	12025	74.00	1	11	6

SUMMARY RESULTS

Project Name : 6318.43-846 Berlin/RT 15/Fire Dept
 Project Notes: 175' Monopole, Hartford County CT
 Project File : G:\Newburgh\Projects\6318-HPC-NY&CT (TN)\43-846\Structural\6318.43-846 analysis.pol
 Date run : 3:08:54 PM Friday, November 16, 2012
 by : PLS-POLE Version 12.10
 Licensed to : Tectonic Engineering

Successfully performed nonlinear analysis

The model has 0 warnings.

Loads from file: g:\newburgh\projects\6318-hpc-ny&ct (tn)\43-846\structural\pole loads rev f.eia

*** Analysis Results:

Maximum element usage is 98.00% for Steel Pole "PoleA" in load case "DL + WL"

Summary of Joint Support Reactions For All Load Cases:

Load Case	Joint Label	Long. Force (kips)	Tran. Force (kips)	Vert. Force (kips)	Shear Force (kips)	Tran. Moment (ft-k)	Long. Moment (ft-k)	Vert. Moment (ft-k)	Bending Moment (ft-k)	Found. Usage %
DL + WL	PoleA:g	-46.71	0.00	47.84	46.71	0.00	-5169.03	0.00	5169.03	0.00
DLi + WLi	PoleA:g	-35.42	0.00	62.07	35.42	0.00	-3934.18	0.00	3934.18	0.00

Summary of Tip Deflections For All Load Cases:

Note: positive tip load results in positive deflection

Load Case	Joint Label	Long. Defl. (in)	Tran. Defl. (in)	Vert. Defl. (in)	Resultant Defl. (in)	Long. Rot. (deg)	Tran. Rot. (deg)	Twist (deg)
DL + WL	PoleA:t	140.22	0.00	-6.31	140.36	6.91	-0.00	-0.00
DLi + WLi	PoleA:t	107.87	0.00	-3.78	107.93	5.38	-0.00	-0.00

Tubes Summary:

Pole Label	Tube Num.	Weight (lbs)	Load Case	Maximum Usage %	Resultant Moment (ft-k)
PoleA	1	3197	DL + WL	54.66	431.14
PoleA	2	5923	DL + WL	90.10	1548.54
PoleA	3	8966	DL + WL	98.00	3056.16
PoleA	4	12599	DL + WL	95.77	5169.03

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

Summary of Steel Pole Usages:

Steel Pole Label	Maximum Usage %	Load Case	Segment Number	Weight (lbs)
PoleA	98.00	DL + WL	41	30685.1

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Usage %	Element Label	Element Type
DL + WL	98.00	PoleA Steel Pole	
DLi + WLi	75.43	PoleA Steel Pole	

Summary of Steel Pole Usages by Load Case:

Load Case	Maximum Usage %	Steel Pole Label	Segment Number
DL + WL	98.00	PoleA	41
DLi + WLi	75.43	PoleA	41

*** Weight of structure (lbs):
Weight of Steel Poles: 30685.1
Weight of Equipment: 340.0
Total: 31025.1

*** End of Report

DETAILED RESULTS

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*
* PLS-POLE
* POLE AND FRAME ANALYSIS AND DESIGN
* Copyright Power Line Systems, Inc. 1999-2011
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Project Name : 6318.43-846 Berlin/RT 15/Fire Dept
Project Notes : 175' Monopole, Hartford County CT
Project File : G:\Newburgh\Projects\6318-HFC-NY&CT
Date run : 3:08:54 PM Friday, November 16, 2012
by : PLS-POLE Version 12.10
Licensed to : Tectonic Engineering

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Successfully performed nonlinear analysis
The model has 0 warnings.

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Modeling options:
Offset Arms from Pole/Mast: Yes
Offset Braces from Pole/Mast: Yes
Offset Guys from Pole/Mast: Yes
Offset Posts from Pole/Mast: Yes
Offset Strains from Pole/Mast: Yes
Use Alternate Convergence Process: No
Steel poles checked with ANSI/TIA 222-F

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Default Modulus of Elasticity for Steel = 29000.00 (ksi)
Default Weight Density for Steel = 490.00 (lbs/ft^3)

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Steel Pole Properties:

Steel Pole Property Label	Stock Length (ft)	Default Embedded Length (ft)	Base Shape	Tip Diameter (in)	Base Diameter (in)	Taper (in/ft)	Default Drag Coef.	0	4	8	Tubes Elasticity Override (ksi)	Modulus of Elasticity (ksi)	Weight Density Override (lbs/ft^3)	Shape At Base	Strength Check Type	Distance From Tip (ft)	Ultimate Load (kips)	Ultimate Long Load (kips)
Pole 1	175.00	0	NO	21	60.5	0	0	0	4	8	0	0	0	Shape At Base	Calculated	0.000	0.0000	0.0000

Steel Tubes Properties:

Property No.	Pole Tube Length (ft)	Thickness (in)	Lap Length (ft)	Yield Moment (ft-k)	Cap. Override (ft-k)	Tube Weight (lbs)	Center of Gravity (ft)	Taper Diameter (in)	Top Tube Bot. 1.5x Diam. Diameter Lap Length (ft)
Pole 1	1	45.25	0.25	4.500	0.000	65.000	24.17	0.23643	21.00
Pole 1	2	49.12	0.3125	5.750	0.000	65.000	25.89	0.23643	30.13
Pole 1	3	48.88	0.375	7.000	0.000	65.000	25.48	0.23643	39.76
Pole 1	4	49	0.4375	0.000	0.000	65.000	25.37	0.23643	48.91

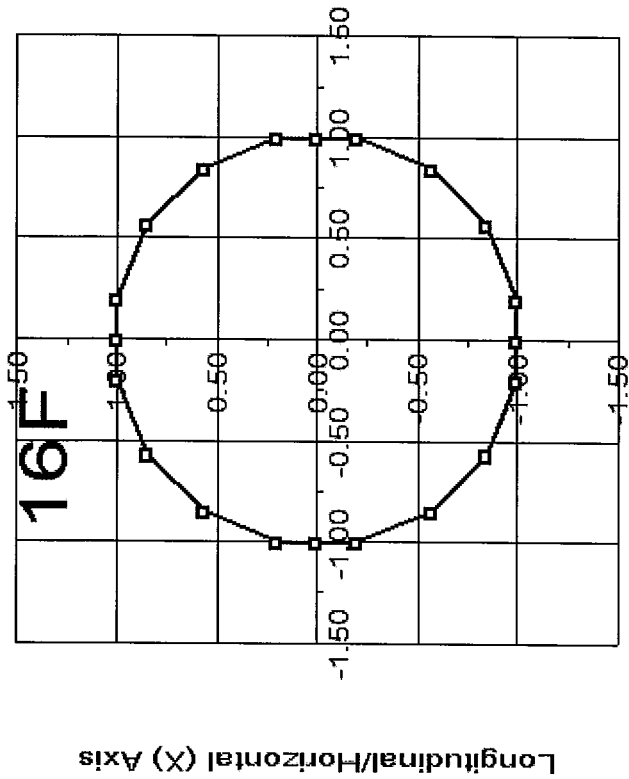
Steel Pole Connectivity:

Pole Tip Base X of Y of Z of Incln. Incln. Property Attach. Base Embed & Embed C.
 Label Joint Joint Base Base About X About Y Set Labels Connect Override Override (ft)

PoleA 0 0 0 0 0 Pole 1 12 labels Fixed 0.00 0

Relative Attachment Labels for Steel Pole "PoleA":

Joint Label	Distance From Origin/Top Joint (ft)	Global Z of Attach (ft)
PoleA:Town175	0.00	174.90
PoleA:AT&T	0.00	169.00
PoleA:TMobile	0.00	159.00
PoleA:Dish-Sp	0.00	153.00
PoleA:SprintA	0.00	149.00
PoleA:Town130	0.00	129.00
PoleA:Pocket	0.00	123.00
PoleA:Verizon	0.00	113.00
PoleA:Town100	0.00	99.00
PoleA:SprintB	0.00	74.00
PoleA:Climb	0.00	10.00
PoleA:Port	0.00	5.00



Transverse/Vertical (Y) Axis

Pole Steel Properties:

Warning: Capacities and usages printed in splices are listed for the inner tube except at the splice top which uses the outer tube. ??

Element Label	Joint Label	Joint Position	Rel. Dist. (ft)	Outer Diam. (in)	Area (in ²)	Inertia (in ⁴)	L-Moment (in ⁴)	D/t	W/t Max.	Fy (ksi)	Fa Min. (ksi)	Trans. (ft-k)	Cap ASCE (ft-k)
PoleA	PoleA:t	PoleA:t Ori	0.00	21.00	16.51	900.37	900.37	0.00	14.7	65.00	65.00	464.47	464.47
PoleA	PoleA:Town175	PoleA:Town175 End	0.10	21.02	16.53	903.45	903.45	0.00	14.7	65.00	65.00	465.54	465.54
PoleA	#PoleA:0	Tube 1 End	0.10	21.02	16.53	903.45	903.45	0.00	14.7	65.00	65.00	465.54	465.54
PoleA	PoleA:AT&T	Tube 1 Ori	3.05	21.72	17.08	997.53	997.53	0.00	15.3	65.00	65.00	497.51	497.51
PoleA	PoleA:AT&T	PoleA:AT&T End	6.00	22.42	17.64	1097.92	1097.92	0.00	15.9	65.00	65.00	530.55	530.55
PoleA	#PoleA:1	Tube 1 End	10.00	23.36	18.39	1244.50	1244.50	0.00	16.6	65.00	65.00	577.04	577.04
PoleA	#PoleA:2	Tube 1 Ori	10.00	23.36	18.39	1244.50	1244.50	0.00	16.6	65.00	65.00	577.04	577.04
PoleA	#PoleA:3	Tube 1 End	13.00	24.07	18.95	1362.61	1362.61	0.00	17.2	65.00	65.00	613.19	613.19
PoleA	#PoleA:4	Tube 1 Ori	13.00	24.07	18.95	1362.61	1362.61	0.00	17.2	65.00	65.00	613.19	613.19
PoleA	PoleA:TMobile	PoleA:TMobile End	16.00	24.78	19.52	1487.96	1487.96	0.00	17.7	65.00	65.00	650.43	650.43
PoleA	#PoleA:3	Tube 1 End	19.00	25.49	20.08	1620.78	1620.78	0.00	18.3	65.00	65.00	688.78	688.78
PoleA	#PoleA:3	Tube 1 Ori	19.00	25.49	20.08	1620.78	1620.78	0.00	18.3	65.00	65.00	688.78	688.78
PoleA	PoleA:Dish-Sp	PoleA:Dish-Sp End	22.00	26.20	20.65	1761.28	1761.28	0.00	18.9	65.00	65.00	728.22	728.22
PoleA	PoleA:Dish-Sp	PoleA:Dish-Sp Ori	22.00	26.20	20.65	1761.28	1761.28	0.00	18.9	65.00	65.00	728.22	728.22
PoleA	PoleA:SprintA	PoleA:SprintA End	26.00	27.15	21.40	1960.92	1960.92	0.00	19.6	65.00	65.00	782.52	782.52
PoleA	PoleA:SprintA	PoleA:SprintA Ori	26.00	27.15	21.40	1960.92	1960.92	0.00	19.6	65.00	65.00	782.52	782.52
PoleA	#PoleA:4	Tube 1 End	30.00	28.09	22.15	2175.10	2175.10	0.00	20.4	65.00	65.00	838.78	838.78

PoleA	#PoleA:4	Tube 1 Ori	30.00	28.09	22.15	2175.10	2175.10	0.00	20.4	65.00	65.00	838.78
PoleA	#PoleA:5	Tube 1 End	34.00	29.04	22.91	2404.35	2404.35	0.00	21.1	65.00	65.00	896.98
PoleA	#PoleA:5	Tube 1 Ori	34.00	29.04	22.91	2404.35	2404.35	0.00	21.1	65.00	65.00	896.98
PoleA	#PoleA:5	Tube 1 End	37.38	29.84	23.54	2609.86	2609.86	0.00	21.8	65.00	65.00	947.61
PoleA	#PoleA:5	Tube 1 Ori	37.38	29.84	23.54	2609.86	2609.86	0.00	21.8	65.00	65.00	947.61
PoleA	#PoleA:7	SpliceT End	40.75	30.63	24.18	2826.76	2826.76	0.00	22.4	65.00	65.00	999.63
PoleA	#PoleA:7	SpliceT Ori	40.75	30.63	24.18	2826.76	2826.76	0.00	22.4	65.00	65.00	999.63
PoleA	#PoleA:8	Tube 1 End	43.00	30.67	30.19	3522.93	3522.93	0.00	17.5	65.00	65.00	1244.52
PoleA	#PoleA:8	Tube 1 Ori	43.00	30.67	30.19	3522.93	3522.93	0.00	17.5	65.00	65.00	1244.52
PoleA	#PoleA:9	SpliceB End	45.25	31.20	30.72	3711.40	3711.40	0.00	17.9	65.00	65.00	1288.75
PoleA	#PoleA:9	SpliceB Ori	45.25	31.20	30.72	3711.40	3711.40	0.00	17.9	65.00	65.00	1288.75
PoleA	PoleA:Town130	PoleA:Town130 End	46.00	31.38	30.89	3775.69	3775.69	0.00	18.0	65.00	65.00	1303.66
PoleA	PoleA:Town130	PoleA:Town130 Ori	46.00	31.38	30.89	3775.69	3775.69	0.00	18.0	65.00	65.00	1303.66
PoleA	#PoleA:10	Tube 2 End	49.00	32.08	31.60	4040.26	4040.26	0.00	18.4	65.00	65.00	1364.17
PoleA	#PoleA:10	Tube 2 Ori	49.00	32.09	31.60	4040.26	4040.26	0.00	18.4	65.00	65.00	1364.17
PoleA	PoleA:Pocket	PoleA:Pocket End	52.00	32.79	32.30	4316.91	4316.91	0.00	18.9	65.00	65.00	1426.06
PoleA	PoleA:Pocket	PoleA:Pocket Ori	52.00	32.79	32.30	4316.91	4316.91	0.00	18.9	65.00	65.00	1426.06
PoleA	#PoleA:11	Tube 2 End	56.00	33.74	33.25	4705.04	4705.04	0.00	19.5	65.00	65.00	1510.70
PoleA	#PoleA:11	Tube 2 Ori	56.00	33.74	33.25	4705.04	4705.04	0.00	19.5	65.00	65.00	1510.70
PoleA	#PoleA:12	Tube 2 End	59.00	34.45	33.95	5010.92	5010.92	0.00	19.9	65.00	65.00	1575.79
PoleA	#PoleA:12	Tube 2 Ori	59.00	34.45	33.95	5010.92	5010.92	0.00	19.9	65.00	65.00	1575.79
PoleA	PoleA:Verizon	PoleA:Verizon End	62.00	35.16	34.66	5329.79	5329.79	0.00	20.4	65.00	65.00	1642.25
PoleA	PoleA:Verizon	PoleA:Verizon Ori	62.00	35.16	34.66	5329.79	5329.79	0.00	20.4	65.00	65.00	1642.25
PoleA	#PoleA:13	Tube 2 End	66.00	36.10	35.60	5775.60	5775.60	0.00	21.0	65.00	65.00	1733.00
PoleA	#PoleA:13	Tube 2 Ori	66.00	36.10	35.60	5775.60	5775.60	0.00	21.0	65.00	65.00	1733.00
PoleA	#PoleA:14	Tube 2 End	70.00	37.05	36.54	6245.60	6245.60	0.00	21.6	65.00	65.00	1826.20
PoleA	#PoleA:14	Tube 2 Ori	70.00	37.05	36.54	6245.60	6245.60	0.00	21.6	65.00	65.00	1826.20
PoleA	#PoleA:15	Tube 2 End	73.00	37.76	37.24	6614.36	6614.36	0.00	22.0	65.00	65.00	1897.69
PoleA	#PoleA:15	Tube 2 Ori	73.00	37.76	37.24	6614.36	6614.36	0.00	22.0	65.00	65.00	1897.69
PoleA	PoleA:Town100	PoleA:Town100 End	76.00	38.47	37.95	6997.36	6997.36	0.00	22.5	65.00	65.00	1970.56
PoleA	PoleA:Town100	PoleA:Town100 Ori	76.00	38.47	37.95	6997.36	6997.36	0.00	22.5	65.00	65.00	1970.56
PoleA	#PoleA:16	Tube 2 End	80.00	39.41	38.89	7530.64	7530.64	0.00	23.1	65.00	65.00	2069.85
PoleA	#PoleA:16	Tube 2 Ori	80.00	39.41	38.89	7530.64	7530.64	0.00	23.1	65.00	65.00	2069.85
PoleA	#PoleA:17	Tube 2 End	82.06	39.90	39.37	7815.54	7815.54	0.00	23.4	65.00	65.00	2121.94
PoleA	#PoleA:17	Tube 2 Ori	82.06	39.90	39.37	7815.54	7815.54	0.00	23.4	65.00	65.00	2121.94
PoleA	#PoleA:18	SpliceT End	84.12	40.39	39.86	8107.55	8107.55	0.00	23.7	65.00	65.00	2174.68
PoleA	#PoleA:18	SpliceT Ori	84.12	40.39	39.86	8107.55	8107.55	0.00	23.7	65.00	65.00	2174.68
PoleA	#PoleA:19	Tube 2 End	86.99	40.44	47.82	9723.65	9723.65	0.00	19.5	65.00	65.00	2604.63
PoleA	#PoleA:19	Tube 2 Ori	86.99	40.44	47.82	9723.65	9723.65	0.00	19.5	65.00	65.00	2604.63
PoleA	#PoleA:20	SpliceB End	89.87	41.12	48.63	10226.93	10226.93	0.00	19.8	65.00	65.00	2694.16
PoleA	#PoleA:20	SpliceB Ori	89.87	41.12	48.63	10226.93	10226.93	0.00	19.8	65.00	65.00	2694.16
PoleA	#PoleA:21	Tube 3 End	93.87	42.07	49.76	10955.61	10955.61	0.00	20.3	65.00	65.00	2821.24
PoleA	#PoleA:21	Tube 3 Ori	93.87	42.07	49.76	10955.61	10955.61	0.00	20.3	65.00	65.00	2821.24
PoleA	#PoleA:22	Tube 3 End	97.44	42.91	50.77	11633.53	11633.53	0.00	20.8	65.00	65.00	2936.97
PoleA	#PoleA:22	Tube 3 Ori	97.44	42.91	50.77	11633.53	11633.53	0.00	20.8	65.00	65.00	2936.97
PoleA	PoleA:PrintB	PoleA:PrintB End	101.00	43.75	51.77	12338.85	12338.85	0.00	21.2	65.00	65.00	3055.03
PoleA	PoleA:PrintB	PoleA:PrintB Ori	101.00	43.75	51.77	12338.85	12338.85	0.00	21.2	65.00	65.00	3055.03
PoleA	#PoleA:23	Tube 3 End	105.00	44.70	52.90	13163.53	13163.53	0.00	21.7	65.00	65.00	3190.26
PoleA	#PoleA:23	Tube 3 Ori	105.00	44.70	52.90	13163.53	13163.53	0.00	21.7	65.00	65.00	3190.26
PoleA	#PoleA:24	Tube 3 End	109.00	45.65	54.03	14024.17	14024.17	0.00	22.2	65.00	65.00	3288.42
PoleA	#PoleA:24	Tube 3 Ori	109.00	45.65	54.03	14024.17	14024.17	0.00	22.2	65.00	65.00	3288.42
PoleA	#PoleA:25	Tube 3 End	113.00	46.59	55.16	14921.52	14921.52	0.00	22.7	65.00	65.00	3469.51
PoleA	#PoleA:25	Tube 3 Ori	113.00	46.59	55.16	14921.52	14921.52	0.00	22.7	65.00	65.00	3469.51
PoleA	#PoleA:26	Tube 3 End	117.00	47.54	56.29	15856.36	15856.36	0.00	23.2	65.00	65.00	3613.53
PoleA	#PoleA:26	Tube 3 Ori	117.00	47.54	56.29	15856.36	15856.36	0.00	23.2	65.00	65.00	3613.53
PoleA	#PoleA:27	Tube 3 End	121.00	48.48	57.41	16829.45	16829.45	0.00	23.7	65.00	65.00	3760.48
PoleA	#PoleA:27	Tube 3 Ori	121.00	48.48	57.41	16829.45	16829.45	0.00	23.7	65.00	65.00	3760.48
PoleA	#PoleA:28	Tube 3 End	123.50	49.07	58.12	17457.40	17457.40	0.00	24.0	65.00	65.00	3853.81
PoleA	#PoleA:28	Tube 3 Ori	123.50	49.07	58.12	17457.40	17457.40	0.00	24.0	65.00	65.00	3853.81
PoleA	#PoleA:29	SpliceT End	126.00	49.66	58.83	18100.77	18100.77	0.00	24.4	65.00	65.00	3948.28
PoleA	#PoleA:29	SpliceT Ori	126.00	49.66	58.83	18100.77	18100.77	0.00	24.4	65.00	65.00	3948.28
PoleA	#PoleA:30	Tube 3 End	129.50	49.74	68.65	21137.27	21137.27	0.00	20.6	65.00	65.00	4603.44
PoleA	#PoleA:30	Tube 3 Ori	129.50	49.74	68.65	21137.27	21137.27	0.00	20.6	65.00	65.00	4603.44
PoleA	#PoleA:31	SpliceB End	133.00	50.57	69.80	22219.44	22219.44	0.00	21.0	65.00	65.00	4759.94
PoleA	#PoleA:31	SpliceB Ori	133.00	50.57	69.80	22219.44	22219.44	0.00	21.0	65.00	65.00	4759.94
PoleA	#PoleA:32	Tube 4 End	137.00	51.52	71.12	23500.71	23500.71	0.00	21.4	65.00	65.00	4942.00
PoleA	#PoleA:32	Tube 4 Ori	137.00	51.52	71.12	23500.71	23500.71	0.00	21.4	65.00	65.00	4942.00
PoleA	#PoleA:33	Tube 4 End	141.00	52.46	72.44	24830.31	24830.31	0.00	21.9	65.00	65.00	5127.47
PoleA	#PoleA:33	Tube 4 Ori	141.00	52.46	72.44	24830.31	24830.31	0.00	21.9	65.00	65.00	5127.47

Property Label	Stock Weight (lbs)	Wind Area (ft ²)	Ice Area (ft ²)	EIA Antenna Type	Shape or Drag Diameter Height (ft)	Coef.	Quantity	Shape	Location	Unit Width or Perimeter (in)	Weight Diameter (lbs/ft)	(in)
#PoleA:34	Tube 4 End 145.00	53.41		73.75	26209.14	26209.14	0.00	22.3	65.00	65.00	5316.37	5316.37
PoleA	Tube 4 Ori 145.00	53.41		73.75	26209.15	26209.15	0.00	22.3	65.00	65.00	5316.37	5316.37
#PoleA:35	Tube 4 End 149.00	54.35		75.07	27638.10	27638.10	0.00	22.7	65.00	65.00	5508.68	5508.68
PoleA	Tube 4 Ori 149.00	54.35		75.07	27638.10	27638.10	0.00	22.7	65.00	65.00	5508.68	5508.68
#PoleA:36	Tube 4 End 153.00	55.30		76.39	29118.08	29118.08	0.00	23.2	65.00	65.00	5704.40	5704.40
PoleA	Tube 4 Ori 153.00	55.30		76.39	29118.08	29118.08	0.00	23.2	65.00	65.00	5704.40	5704.40
#PoleA:37	Tube 4 End 157.00	56.24		77.70	30649.97	30649.97	0.00	23.6	65.00	65.00	5903.55	5903.55
PoleA	Tube 4 Ori 157.00	56.24		77.70	30649.97	30649.97	0.00	23.6	65.00	65.00	5903.55	5903.55
#PoleA:38	Tube 4 End 161.00	57.19		79.02	32234.66	32234.66	0.00	24.0	65.00	65.00	6106.11	6106.11
PoleA	Tube 4 Ori 161.00	57.19		79.02	32234.66	32234.66	0.00	24.0	65.00	65.00	6106.11	6106.11
#PoleA:39	PoleA:Climb End 165.00	58.14		80.34	33873.06	33873.06	0.00	24.4	65.00	65.00	6312.09	6312.09
PoleA	PoleA:Climb Ori 165.00	58.14		80.34	33873.06	33873.06	0.00	24.4	65.00	65.00	6312.09	6312.09
#PoleA:40	Tube 4 End 167.50	58.73		81.16	34924.73	34924.73	0.00	24.7	65.00	65.00	6442.56	6442.56
PoleA	Tube 4 Ori 167.50	58.73		81.16	34924.73	34924.73	0.00	24.7	65.00	65.00	6442.56	6442.56
#PoleA:41	PoleA:Port End 170.00	59.32		81.98	35997.95	35997.95	0.00	25.0	65.00	65.00	6574.36	6574.36
PoleA	PoleA:Port Ori 170.00	59.32		81.98	35997.95	35997.95	0.00	25.0	65.00	65.00	6574.36	6574.36
#PoleA:42	Tube 4 End 172.50	59.91		82.81	37092.92	37092.92	0.00	25.3	65.00	65.00	6707.50	6707.50
PoleA	Tube 4 Ori 172.50	59.91		82.81	37092.92	37092.92	0.00	25.3	65.00	65.00	6707.50	6707.50
#PoleA:43	PoleA:G End 175.00	60.50		83.63	38209.89	38209.89	0.00	25.5	65.00	65.00	6841.98	6841.98
PoleA												

Equipment Library:

Equipment Label	Attach Label	Equipment Property Set	EIA Antenna Type	Shape or Drag Diameter Height (ft)	Coef.
Andrew VHLP2.5-180			EIA Microwave Shroud MaxCA	2.50	2.50
Grid Dish			EIA Microwave Grid MaxCA	2.00	1.50
3` Dish			EIA Microwave Radome MaxCA	3.00	3.00

Equipment Connectivity:

Equipment Label	Attach Label	Equipment Property Set	EIA Antenna Angle (deg)	From	To	Quantity	Shape	Location	Unit Width or Perimeter (in)	Weight Diameter (lbs/ft)	(in)
TownGrid 175`A	PoleA:Town175	Grid Dish	0.00			10	Round	Inside	0.82	0	0
TownGrid 175`B	PoleA:Town175	Grid Dish	0.00			6	Round	Inside	0.82	0	0
Grid 159`A	PoleA:TMobile	Grid Dish	0.00			24	Round	Inside	0.82	0	0
Grid 113`A	PoleA:Town100	Grid Dish	0.00			2	Round	Inside	0.82	0	0
3`Dish 149`A	PoleA:Dish-Sp	3` Dish	0.00			3	Round	Inside	0.7	1.54	4.838
3`Dish 149`B	PoleA:Dish-Sp	3` Dish	0.00			4	Round	Inside	0.25	0	0
3`Dish 149`C	PoleA:Dish-Sp	3` Dish	0.00			6	Round	Inside	0.58	1.97	6.189
2.5`Dish 149`A	PoleA:Dish-Sp Andrew VHLP2.5-180		0.00			12	Round	Inside	0.82	0	0
2.5`Dish 149`B	PoleA:Dish-Sp Andrew VHLP2.5-180		0.00			2	Round	Inside	0.82	0	0
						4	Round	Outside	0.82	1.97	6.189
						12	Round	Inside	0.82	0	0
						2	Round	Inside	0.82	0	0
						12	Round	Inside	0.82	0	0
						1	Round	Inside	0.25	0	0

Linear Appurtenances:

Description	From	To	Quantity	Shape	Location	Unit Width or Perimeter (in)	Weight Diameter (lbs/ft)	(in)
(E) Town 1-5/8" Coax PoleA:Port PoleA:Town175			10	Round	Inside	0.82	0	0
(E) AT&T 1-5/8" Coax PoleA:Port PoleA:AT&T			6	Round	Inside	0.82	0	0
(E) T-Mobile 1-5/8" Coax PoleA:Port PoleA:TMobile			24	Round	Inside	0.82	0	0
(E) Town 1-5/8" Coax to 159" PoleA:Port PoleA:TMobile			2	Round	Inside	0.82	0	0
(P) Sprint 1-1/4" Power/Fiber PoleA:Port PoleA:SprintA			3	Round	Inside	0.7	1.54	4.838
(E) Sprint Dish 1/2" PoleA:Port PoleA:Dish-Sp			4	Round	Inside	0.25	0	0
(E) Clearwire CAT 5 CABLES PoleA:Port PoleA:SprintA			6	Round	Inside	0.58	1.97	6.189
(E) Sprint 1-5/8" dia coax PoleA:Port PoleA:SprintA			12	Round	Inside	0.82	0	0
(E) Town 1-5/8" Coax (1) PoleA:Port PoleA:Town130			2	Round	Inside	0.82	0	0
(E) Pocket Wireless 1-5/8" Coax exterior PoleA:Port PoleA:Pocket			2	Round	Outside	0.82	1.97	6.189
(E) Verizon 1-5/8" Coax exterior shielded PoleA:Port PoleA:Verizon			4	Round	Inside	0.82	0	0
(E) Town 1-5/8" Coax (2) PoleA:Port PoleA:Town100			2	Round	Inside	0.82	0	0
(E) Sprint 1/2" Coax PoleA:Port PoleA:SprintB			1	Round	Inside	0.25	0	0

*** Loads Data

Loads from file: g:\newburgh\projects\6318-hpc-ny&ct (tn)\43-846\structural\pole loads rev f.eia

Structure Height Summary (used for calculating wind/ice adjust with height):
 Structure Height 175.00 (ft)
 Structure height above ground 175.00 (ft)

EIA Rev. F Load Cases:

Load Case Description	Factor	Dead Load	Wind Load	Ice Load	Strength Allowable	Basic Wind Speed	Ice Density	Temperature	Point Loads	Joint Displ.
DL + WL	1.0000	1.0000	1.0000	1.0000	1.3300	90.000	0.0000	60.0	9 Loads	
DLi + WLi	1.0000	1.0000	1.0000	1.0000	1.3300	78.300	0.5000	10.0	9 Loads	

Concentrated Loads for Load Case "DL + WL":

Joint Force Label	Force (lbs)	Moment (ft-lbs)	Y-Axis (ft-lbs)	Z-Axis (ft-lbs)	Comment
PoleA:Town175	0	1216	0	0	
PoleA:AT&T	0	216	0	0	
PoleA:TMobile	0	978	0	0	
PoleA:SprintA	0	5114	0	0	
PoleA:Town130	0	93	0	0	
PoleA:POCKET	0	152	0	0	
PoleA:Verizon	0	1734	0	0	
PoleA:Town100	0	106	0	0	
PoleA:SprintB	0	29	0	0	

Equipment Load Case Information for "DL + WL":

Equipment Label	Property Set	Elevation Above Ground (ft)	qzGh (psf)	Ice Thick. (in)	Total Wind Area (ft^2)	Wind Incidence Angle (deg)	222-G CA	222-G CS	222-G CM	Antenna Side Load FPM (lbs)	Antenna Moment MM (ft-lbs)	Antenna Long. Load (lbs)	Trans. Load (lbs)	Vert. Load (lbs)
TownGrid 175'A	Grid Dish	174.90	56.40	0.00	0.00	180.00	-0.59380			89.09		89.09	0.00	13.00
TownGrid 175'B	Grid Dish	174.90	56.40	0.00	0.00	180.00	-0.59380			89.09		89.09	0.00	13.00
Grid 159'A	Grid Dish	159.00	54.89	0.00	0.00	180.00	-0.59380			86.70		86.70	0.00	13.00
Grid 113'A	Grid Dish	99.00	47.94	0.00	0.00	180.00	-0.59380			75.72		75.72	0.00	13.00
3'Dish 149'A	3' Dish	153.00	54.29	0.00	0.00	0.00	0.86330			331.82		331.82	0.00	50.00
3'Dish 149'B	3' Dish	153.00	54.29	0.00	0.00	0.00	0.86330			331.82		331.82	0.00	50.00
3'Dish 149'C	3' Dish	153.00	54.29	0.00	0.00	0.00	0.86330			331.82		331.82	0.00	50.00
2.5'Dish 149'A Andrew	VHP2.5-180	153.00	54.29	0.00	0.00	0.00	1.26170			335.63		335.63	0.00	69.00
2.5'Dish 149'B Andrew	VHP2.5-180	153.00	54.29	0.00	0.00	0.00	1.26170			335.63		335.63	0.00	69.00

EIA Load Case Information for "DL + WL":

Note: Totals include load on pole and appurtenances, but not user entered loads or loads from equipment.
 Adjusted Wind Pressure Includes: Velocity Pressure Coefficient (Kz), Gust Effect Factor (Gh) and Wind Load Factor (from Loads/EIA Loads)

Pole Label	Top Joint	Bottom Joint	Section Top Elev. (ft)	Section Bottom Elev. (ft)	Average Elev. (ft)	Kz Coef.	Velocity Coef.	Pole Drag (psf)	Adjusted Ice Thickness (in)	Adjusted Pole Ice (in)	Pole Vert. Load (lbs)	Appurt. Vert. Load (lbs)	Total Vert. Load (lbs)	Tran. Wind Load (lbs)	Long. Wind Load (lbs)
PoleA	PoleA:Town175	PoleA:Town175	175.00	174.90	174.95	1.61	199.99	0.913	56.41	0.00	5.62	0.00	5.62	9.02	0.00
PoleA	PoleA:Town175	PoleA:Town175	174.90	171.95	173.42	1.61	203.17	0.916	56.27	0.00	168.70	270.87	24.19	0.00	270.87
PoleA	PoleA:AT&T	PoleA:AT&T	171.95	169.00	170.47	1.60	209.29	0.921	55.99	0.00	174.27	279.91	24.19	0.00	279.91

Equipment Label	Equipment Property Set	Elevation Above Ground (ft)	gqGh (psf)	Ice Thick. (in)	Total Wind Area (ft ²)	Incidence Angle (deg)	222-G CA	222-G CS	222-G CM	Antenna Side		Antenna Moment		Long. Trans. Vert.			
										Load F&M (lbs)		Load F&M (lbs)		Load (lbs)		Load (lbs)	
										Load	MM	Load	MM	Load	Load	Load	Load
Pole Label	Top Joint	Bottom Joint	Section Elev. (ft)	Average Elev. (ft)	Kz Vel. Coef. (mph*ft)	Pole Drag Coef.	Adjusted Wind Pressure (psf)	Adjusted Ice Thickness (in)	Pole Vert. Load (lbs)	Pole Wind Load (lbs)	Appurt. Vert. Load (lbs)	Appurt. Wind Load (lbs)	Total Vert. Load (lbs)	Total Wind Load (lbs)	Tran. Wind Load (lbs)	Long. Wind Load (lbs)	
TownGrid 175'A	Grid Dish	174.90	42.69	0.50	0.27	180.00	-1.05470				131.81			0.00	26.42		
TownGrid 175'B	Grid Dish	174.90	42.69	0.50	0.27	180.00	-1.05470				131.81			0.00	26.42		
Grid 159 A	Grid Dish	159.00	41.54	0.50	0.27	180.00	-1.05470				128.26			0.00	26.42		
3'Dish 149'A	3' Dish	153.00	41.09	0.50	0.40	0.00	0.86330				265.28			0.00	88.50		
3'Dish 149'B	3' Dish	153.00	41.09	0.50	0.40	0.00	0.86330				265.28			0.00	88.50		
3'Dish 149'C	3' Dish	153.00	41.09	0.50	0.40	0.00	0.86330				265.28			0.00	88.50		
2.5'Dish 149'A Andrew	VHLF2.5-180	153.00	41.09	0.50	0.33	0.00	1.26170				271.28			0.00	95.89		
2.5'Dish 149'B Andrew	VHLF2.5-180	153.00	41.09	0.50	0.33	0.00	1.26170				271.28			0.00	95.89		

EIA Load Case Information for "Dli + Wli":

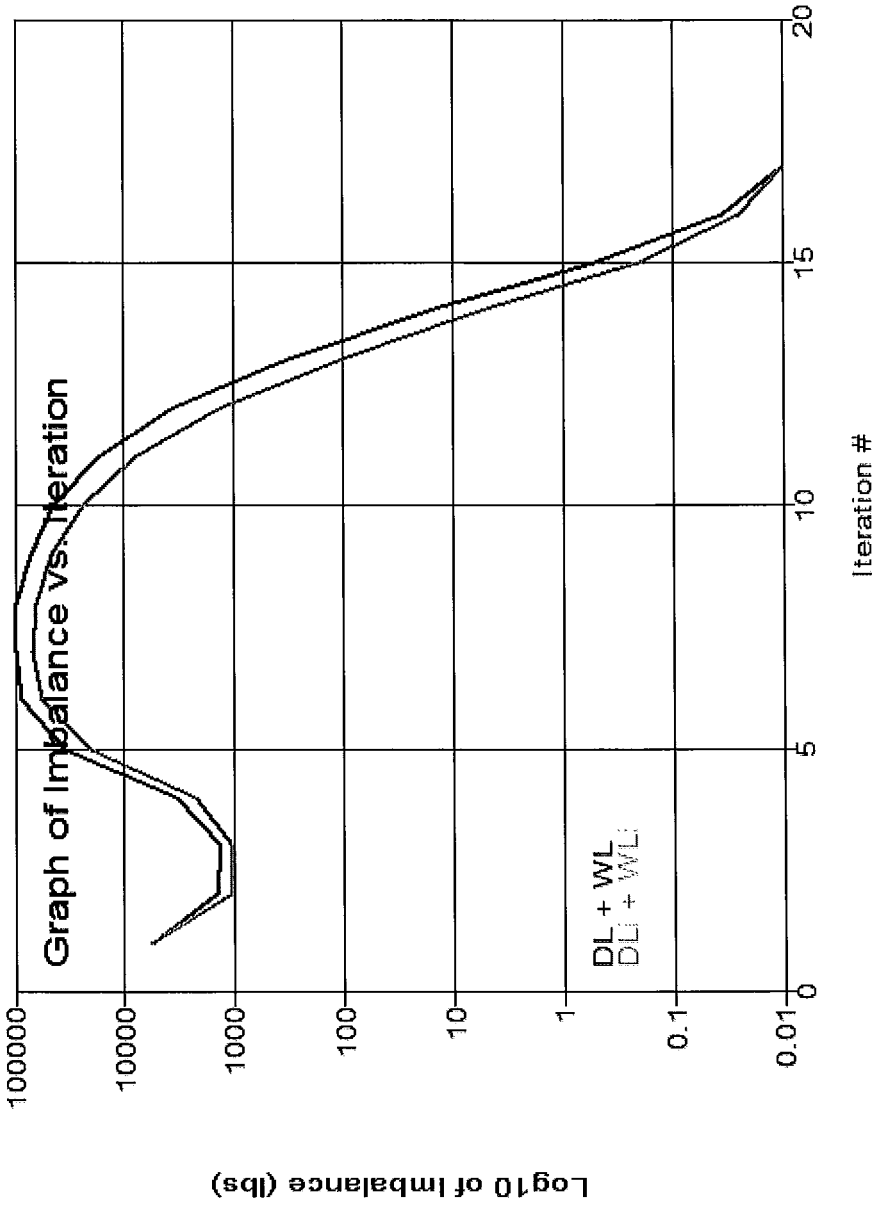
Note: Totals include load on pole and appurtenances, but not user entered loads or loads from equipment.
Adjusted Wind Pressure includes: Velocity Pressure Coefficient (Kz), Gust Effect Factor (Gf) and Wind Load Factor (from Loads/EIA Loads)

Tectonic Engineering - 6318.43-846 analysis

PoleA	42.00	38.00	40.00	1.06	342.33	0.960	28.01	0.50	1085.52	468.67	286.23	66.55	1371.75	535.22	0.00	535.22
PoleA	38.00	34.00	36.00	1.03	343.47	0.962	27.18	0.50	1105.67	464.03	286.23	64.57	1391.90	528.60	0.00	528.60
PoleA	34.00	30.00	32.00	1.00	345.40	0.964	26.51	0.50	1125.93	461.66	286.23	62.99	1412.16	524.65	0.00	524.65
PoleA	30.00	26.00	28.00	1.00	351.57	0.966	26.51	0.50	1146.20	470.69	286.23	62.99	1432.42	533.67	0.00	533.67
PoleA	26.00	22.00	24.00	1.00	357.74	0.968	26.51	0.50	1166.46	479.71	286.23	62.99	1452.69	542.70	0.00	542.70
PoleA	22.00	18.00	20.00	1.00	363.91	0.970	26.51	0.50	1186.72	488.74	286.23	62.99	1472.95	551.72	0.00	551.72
PoleA	18.00	14.00	16.00	1.00	370.08	0.972	26.51	0.50	1206.99	497.76	286.23	62.99	1493.21	560.75	0.00	560.75
PoleA	14.00	10.00	12.00	1.00	376.25	0.974	26.51	0.50	1227.25	506.79	286.23	62.99	1513.48	569.77	0.00	569.77
PoleA	10.00	7.50	8.75	1.00	381.26	0.975	26.51	0.50	1247.51	515.82	286.23	62.99	1533.75	578.80	0.00	578.80
PoleA	7.50	5.00	6.25	1.00	385.12	0.976	26.51	0.50	1267.77	524.85	286.23	62.99	1554.02	587.83	0.00	587.83
PoleA	5.00	2.50	3.75	1.00	388.98	0.977	26.51	0.50	1288.03	533.88	286.23	62.99	1574.29	596.86	0.00	596.86
PoleA	2.50	0.00	1.25	1.00	392.83	0.978	26.51	0.50	1308.29	542.91	286.23	62.99	1594.56	605.89	0.00	605.89
PoleA:Climb																
PoleA:Port																
PoleA:Climb																
PoleA:Port																
PoleA:G																

*** Analysis Results:

Maximum element usage is 98.00% for Steel Pole "PoleA" in load case "DL + WL"



*** Analysis Results for Load Case No. 1 "DL + WL" - Number of iterations in SAPS 17

Equilibrium Joint Positions and Rotations for Load Case "DL + WL":

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)
PoleA:G	0	0	0	0.0000	0.0000	0.0000	0	0	0
PoleA:E	11.69	1.107e-018	-0.526	-0.0000	6.9080	-0.0000	11.69	1.107e-018	174.5
PoleA:Fown175	11.67	1.105e-018	-0.5253	-0.0000	6.9080	-0.0000	11.67	1.105e-018	174.4
PoleA:ATET	10.96	9.968e-019	-0.4825	-0.0000	6.8940	-0.0000	10.96	9.968e-019	168.5
PoleA:Tmobile	9.77	8.166e-019	-0.4109	-0.0000	6.8059	-0.0000	9.77	8.166e-019	158.6
PoleA:Dish-Sp	9.063	7.128e-019	-0.3691	-0.0000	6.7091	-0.0000	9.063	7.128e-019	152.6
PoleA:SprintA	8.598	6.464e-019	-0.342	-0.0000	6.6217	-0.0000	8.598	6.464e-019	148.7
PoleA:Fown130	6.407	3.666e-019	-0.2213	-0.0000	5.8978	-0.0000	6.407	3.666e-019	128.8

PoleA:Pocket 5.803 3.016e-019 -0.1907 -0.0000 5.6472 -0.0000 5.803 3.016e-019 122.8
 PoleA:Verizon 4.857 2.113e-019 -0.1457 -0.0000 5.1947 -0.0000 4.857 2.113e-019 112.9
 PoleA:Town100 3.672 1.201e-019 -0.09521 -0.0000 4.4939 -0.0000 3.672 1.201e-019 98.9
 PoleA:SprintB 1.991 3.571e-020 -0.03781 -0.0000 3.2327 -0.0000 1.991 3.571e-020 73.96
 PoleA:Climb 0.03444 7.342e-023 -0.0002717 -0.0000 0.3902 -0.0000 0.03444 7.342e-023 10
 PoleA:Port 0.008707 1.659e-023 -0.0001073 -0.0000 0.1938 -0.0000 0.008707 1.659e-023 5

Joint Support Reactions for Load Case "DL + WL":

Joint Label	X (kips)	Y (kips)	Z Comp. Usage %	Horz. Shear Usage %	Uplift Usage %	Result. Force (kips)	X-M. Moment (ft-k)	Y-M. Moment (ft-k)	Z-M. Moment (ft-k)	Max. Usage %
PoleA:G	-46.71	0.0	0.0	0.0	0.0	66.87	0.0	-5169.0	0.0	0.0

Detailed Steel Pole Usages for Load Case "DL + WL":

Element Label	Joint Label Position	Rel. Dist. (ft)	Trans. Defl. (in)	Long. Defl. (in)	Vert. Defl. (in)	Trans. Mom. (Local Mx) (ft-k)	Tors. Mom. (Local My) (ft-k)	Axial Force (kips)	Tran. Shear (kips)	Long. Shear (kips)	P/A (ksi)	M/S (ksi)	V/Q (ksi)	T/R (ksi)	Res. (ksi)	Max. Usage %
PoleA	PoleA:t	Origin	0.00	140.22	-6.31	0.00	0.00	0.00	0.00	-0.00	-0.00	0.00	0.00	0.00	0.00	0.0
PoleA	PoleA:Town175	End	0.00	140.08	-6.30	0.00	-0.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	0.00	0.0
PoleA	PoleA:Town175	Origin	0.10	0.00	140.08	-6.30	0.00	0.00	0.00	0.00	-2.82	-0.06	0.00	0.34	0.00	1.2
PoleA	Tube 1	End	3.05	0.00	135.82	-6.05	0.00	-8.31	0.0	-1.01	0.00	-2.82	-0.06	0.00	0.00	1.2
PoleA	Tube 1	Origin	3.05	0.00	135.82	-6.05	0.00	-8.31	0.0	-1.17	0.00	-3.11	-0.07	1.09	0.07	2.2
PoleA	PoleA:ATRT	End	6.00	0.00	131.57	-5.79	0.00	-17.50	0.0	-1.17	0.00	-3.11	-0.07	2.14	0.07	4.3
PoleA	PoleA:ATRT	Origin	6.00	0.00	131.57	-5.79	0.00	-17.50	0.0	-1.48	0.00	-4.46	-0.08	2.14	0.10	2.3
PoleA	Tube 1	End	10.00	0.00	125.81	-5.44	0.00	-35.35	0.0	-1.48	0.00	-4.46	-0.08	3.98	0.10	4.07
PoleA	Tube 1	Origin	10.00	0.00	125.81	-5.44	0.00	-35.35	0.0	-1.70	0.00	-4.84	-0.09	3.98	0.10	7.8
PoleA	Tube 1	End	13.00	0.00	121.52	-5.19	0.00	-49.87	0.0	-1.70	0.00	-4.84	-0.09	5.29	0.10	10.4
PoleA	Tube 1	Origin	13.00	0.00	121.52	-5.19	0.00	-49.87	0.0	-1.90	0.00	-5.17	-0.10	5.29	0.11	10.4
PoleA	PoleA:TWobile	End	16.00	0.00	117.24	-4.93	0.00	-65.39	0.0	-1.90	0.00	-5.17	-0.10	6.53	0.11	12.8
PoleA	PoleA:TWobile	Origin	16.00	0.00	117.24	-4.93	0.00	-65.39	0.0	-2.72	0.00	-8.94	-0.14	6.53	0.18	12.9
PoleA	Tube 1	End	19.00	0.00	112.98	-4.68	0.00	-92.21	0.0	-2.72	0.00	-8.94	-0.14	8.70	0.18	17.0
PoleA	Tube 1	Origin	19.00	0.00	112.98	-4.68	0.00	-92.21	0.0	-3.00	0.00	-9.30	-0.15	8.70	0.18	17.1
PoleA	PoleA:Dish-Sp	End	22.00	0.00	108.76	-4.43	0.00	-120.11	0.0	-3.00	0.00	-9.30	-0.15	10.72	0.18	21.0
PoleA	PoleA:Dish-Sp	Origin	22.00	0.00	108.76	-4.43	0.00	-120.11	0.0	-3.42	0.00	-11.42	-0.17	10.72	0.22	21.0
PoleA	PoleA:SprintA	End	26.00	0.00	103.18	-4.10	0.00	-165.78	0.0	-3.42	0.00	-11.42	-0.16	13.77	0.21	26.9
PoleA	PoleA:SprintA	Origin	26.00	0.00	103.18	-4.10	0.00	-165.78	0.0	-5.67	0.00	-17.28	-0.27	13.77	0.32	27.1
PoleA	Tube 1	End	30.00	0.00	97.69	-3.79	0.00	-234.92	0.0	-5.67	0.00	-17.28	-0.26	18.20	0.31	35.6
PoleA	Tube 1	Origin	30.00	0.00	97.69	-3.79	0.00	-234.92	0.0	-6.16	0.00	-17.80	-0.28	18.20	0.32	35.6
PoleA	Tube 1	End	34.00	0.00	92.29	-3.48	0.00	-306.14	0.0	-6.16	0.00	-17.80	-0.27	22.18	0.31	43.3
PoleA	Tube 1	Origin	34.00	0.00	92.29	-3.48	0.00	-306.14	0.0	-6.62	0.00	-18.29	-0.29	22.18	0.32	43.3
PoleA	Tube 1	End	37.38	0.00	87.84	-3.24	0.00	-367.87	0.0	-6.62	0.00	-18.29	-0.28	25.23	0.31	49.2
PoleA	Tube 1	Origin	37.38	0.00	87.84	-3.24	0.00	-367.87	0.0	-7.06	0.00	-18.75	-0.30	25.23	0.32	49.2
PoleA	SpliceT	End	40.75	0.00	83.47	-3.00	0.00	-431.14	0.0	-7.06	0.00	-18.75	-0.29	28.03	0.31	54.6
PoleA	SpliceT	Origin	40.75	0.00	83.47	-3.00	0.00	-431.14	0.0	-7.54	0.00	-19.14	-0.31	28.03	0.31	54.7
PoleA	Tube 1	End	43.00	0.00	80.62	-2.85	0.00	-474.21	0.0	-7.54	0.00	-19.14	-0.25	24.77	0.25	54.7
PoleA	Tube 1	Origin	43.00	0.00	80.62	-2.85	0.00	-474.21	0.0	-8.07	0.00	-19.46	-0.27	24.77	0.26	48.2
PoleA	SpliceB	End	45.25	0.00	77.81	-2.70	0.00	-517.99	0.0	-8.07	0.00	-19.46	-0.26	26.13	0.25	50.9
PoleA	SpliceB	Origin	45.25	0.00	77.81	-2.70	0.00	-517.99	0.0	-8.40	0.00	-19.68	-0.27	26.13	0.25	50.9
PoleA	Tube 2	End	49.00	0.00	73.22	-2.47	0.00	-593.47	0.0	-8.40	0.00	-19.68	-0.27	26.56	0.25	51.8
PoleA	Tube 2	Origin	49.00	0.00	73.22	-2.47	0.00	-593.47	0.0	-8.76	0.00	-20.24	-0.28	26.56	0.25	51.8
PoleA	PoleA:Pocket	End	52.00	0.00	69.63	-2.29	0.00	-655.44	0.0	-8.76	0.00	-20.24	-0.28	28.28	0.26	55.1
PoleA	PoleA:Pocket	Origin	52.00	0.00	69.63	-2.29	0.00	-655.44	0.0	-9.90	0.00	-21.97	-0.31	29.88	0.25	58.2
PoleA	Tube 2	End	56.00	0.00	64.98	-2.06	0.00	-743.33	0.0	-9.90	0.00	-21.97	-0.31	31.98	0.26	62.2
PoleA	Tube 2	Origin	56.00	0.00	64.98	-2.06	0.00	-743.33	0.0	-10.50	0.00	-22.54	-0.32	31.98	0.27	62.2
PoleA	Tube 2	End	59.00	0.00	61.59	-1.90	0.00	-810.94	0.0	-10.50	0.00	-22.54	-0.31	33.45	0.26	65.1
PoleA	Tube 2	Origin	59.00	0.00	61.59	-1.90	0.00	-810.94	0.0	-11.03	0.00	-23.03	-0.32	33.45	0.27	65.1
PoleA	PoleA:Verizon	End	62.00	0.00	58.28	-1.75	0.00	-880.03	0.0	-11.03	0.00	-23.03	-0.32	34.83	0.26	67.8
PoleA	PoleA:Verizon	Origin	62.00	0.00	58.28	-1.75	0.00	-880.03	0.0	-12.98	0.00	-26.49	-0.37	34.83	0.33	67.8
PoleA	Tube 2	End	66.00	0.00	54.01	-1.56	0.00	-994.01	0.0	-12.98	0.00	-26.49	-0.36	37.28	0.32	72.6
PoleA	Tube 2	Origin	66.00	0.00	54.01	-1.56	0.00	-994.01	0.0	-13.78	0.00	-29.16	-0.39	37.28	0.32	72.6
PoleA	Tube 2	End	70.00	0.00	49.90	-1.38	0.00	-1110.64	0.0	-13.78	0.00	-29.16	-0.38	39.53	0.32	76.9
PoleA	Tube 2	Origin	70.00	0.00	49.90	-1.38	0.00	-1110.64	0.0	-14.49	0.00	-29.74	-0.40	39.53	0.32	77.0

Equilibrium Joint Positions and Rotations for Load Case "DLi + WLi":

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)
PoleA:G	0	0	0	0.0000	0.0000	0.0000	0	0	0
PoleA:E	8.989	5.251e-019	-0.3147	-0.0000	5.3783	-0.0000	8.989	5.251e-019	174.7
PoleA:AT&T	8.98	5.242e-019	-0.3143	-0.0000	5.3783	-0.0000	8.98	5.242e-019	174.6
PoleA:TMobile	7.498	3.851e-019	-0.2883	-0.0000	5.3648	-0.0000	7.498	3.851e-019	158.7
PoleA:Dish-Sp	6.949	3.355e-019	-0.245	-0.0000	5.2837	-0.0000	6.949	3.355e-019	152.8
PoleA:Sprinta	6.589	3.039e-019	-0.2035	-0.0000	5.1979	-0.0000	6.589	3.039e-019	148.8
PoleA:Town130	4.898	1.722e-019	-0.1314	-0.0000	4.5335	-0.0000	4.898	1.722e-019	128.9
PoleA:Pocket	4.434	1.418e-019	-0.1133	-0.0000	4.3355	-0.0000	4.434	1.418e-019	122.9
PoleA:Verizon	3.708	9.966e-020	-0.08667	-0.0000	3.9798	-0.0000	3.708	9.966e-020	112.9
PoleA:Town100	2.801	5.72e-020	-0.05686	-0.0000	3.4349	-0.0000	2.801	5.72e-020	98.94
PoleA:SprintB	1.517	1.763e-020	-0.02301	-0.0000	2.4657	-0.0000	1.517	1.763e-020	73.98
PoleA:Climb	0.02621	5.6e-023	-0.0002985	-0.0000	0.2970	-0.0000	0.02621	5.6e-023	10
PoleA:Port	0.006626	1.309e-023	-0.0001329	-0.0000	0.1475	-0.0000	0.006626	1.309e-023	5

Joint Support Reactions for Load Case "DLi + WLi":

Joint Label	X Force (kips)	X Usage %	Y Force (kips)	Y Usage %	Z Force (kips)	Z Usage %	X-M. Moment (ft-k)	X-M. Usage %	Y-M. Moment (ft-k)	Y-M. Usage %	Z-M. Moment (ft-k)	Z-M. Usage %
PoleA:G	-35.42	0.0	0.00	0.0	0.0	0.0	0.0	0.0	-3934.2	0.0	0.00	0.0

Detailed Steel Pole Usages for Load Case "DLi + WLi":

Element Label	Joint Label	Joint Position	Rel. Dist. (ft)	Trans. Defl. (in)	Long. Defl. (in)	Vert. Defl. (in)	Trans. Mom. (Local Mx) (ft-k)	Axial Force (kips)	Tors. Mom. (Local My) (ft-k)	Long. Shear (kips)	Trans. Shear (kips)	Y-M. Moment (ft-k)	Z-M. Moment (ft-k)	P/A (ksi)	M/S (ksi)	V/Q (ksi)	T/R (ksi)	Res. Usage %	Max. At Usage Pt. %
PoleA	PoleA:Tube 1	Origin	0.00	0.00	107.87	-3.78	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
PoleA	PoleA:Tube 1	End	0.10	0.00	107.76	-3.77	0.00	-0.00	0.00	-0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
PoleA	PoleA:Tube 1	Origin	0.10	0.00	107.76	-3.77	0.00	-0.00	0.00	-0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
PoleA	PoleA:Tube 1	End	3.05	0.00	104.44	-3.62	0.00	-8.05	-0.00	-2.73	-0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.1
PoleA	PoleA:Tube 1	Origin	3.05	0.00	104.44	-3.62	0.00	-8.05	-0.00	-2.73	-0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.2
PoleA	PoleA:Tube 1	End	6.00	0.00	101.12	-3.46	0.00	-16.82	-0.00	-2.97	-0.10	1.05	0.07	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	Origin	6.00	0.00	101.12	-3.46	0.00	-16.82	-0.00	-2.97	-0.10	2.06	0.00	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	End	10.00	0.00	96.64	-3.25	0.00	-32.72	-0.00	-3.97	-0.17	3.69	0.09	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	Origin	10.00	0.00	96.64	-3.25	0.00	-32.72	-0.00	-3.97	-0.17	3.69	0.09	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	End	13.00	0.00	93.30	-3.09	0.00	-45.56	-0.00	-4.28	-0.19	4.83	0.09	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	Origin	13.00	0.00	93.30	-3.09	0.00	-45.56	-0.00	-4.28	-0.19	4.83	0.09	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	End	16.00	0.00	89.97	-2.94	0.00	-59.21	-0.00	-4.55	-0.19	5.92	0.10	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	Origin	16.00	0.00	89.97	-2.94	0.00	-59.21	-0.00	-4.55	-0.19	5.92	0.10	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	End	19.00	0.00	86.67	-2.79	0.00	-81.72	-0.00	-7.50	-0.44	7.71	0.15	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	Origin	19.00	0.00	86.67	-2.79	0.00	-81.72	-0.00	-7.50	-0.44	7.71	0.15	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	End	22.00	0.00	83.39	-2.64	0.00	-105.09	-0.00	-9.25	-0.45	9.38	0.15	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	Origin	22.00	0.00	83.39	-2.64	0.00	-105.09	-0.00	-9.25	-0.45	9.38	0.15	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	End	25.00	0.00	79.07	-2.44	0.00	-143.10	-0.00	-13.15	-0.47	11.89	0.18	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	Origin	25.00	0.00	79.07	-2.44	0.00	-143.10	-0.00	-13.15	-0.47	11.89	0.18	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	End	26.00	0.00	74.82	-2.25	0.00	-195.69	-0.00	-12.11	-0.55	15.16	0.24	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	Origin	26.00	0.00	74.82	-2.25	0.00	-195.69	-0.00	-12.11	-0.55	15.16	0.24	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	End	30.00	0.00	70.65	-2.07	0.00	-249.89	-0.00	-12.67	-0.55	18.11	0.23	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	Origin	30.00	0.00	70.65	-2.07	0.00	-249.89	-0.00	-12.67	-0.55	18.11	0.23	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	End	34.00	0.00	67.22	-1.92	0.00	-296.90	-0.00	-13.21	-0.58	20.37	0.23	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	Origin	34.00	0.00	67.22	-1.92	0.00	-296.90	-0.00	-13.21	-0.58	20.37	0.23	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	End	37.38	0.00	63.85	-1.78	0.00	-345.09	-0.00	-13.71	-0.58	22.44	0.23	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	Origin	37.38	0.00	63.85	-1.78	0.00	-345.09	-0.00	-13.71	-0.58	22.44	0.23	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	End	40.75	0.00	61.66	-1.69	0.00	-377.90	-0.00	-14.25	-0.59	23.44	0.24	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	Origin	40.75	0.00	61.66	-1.69	0.00	-377.90	-0.00	-14.25	-0.59	23.44	0.24	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	End	43.00	0.00	59.49	-1.61	0.00	-411.27	-0.00	-14.82	-0.49	25.74	0.19	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	Origin	43.00	0.00	59.49	-1.61	0.00	-411.27	-0.00	-14.82	-0.49	25.74	0.19	0.00	0.00	0.00	0.00	0.00	5
PoleA	PoleA:Tube 1	End	45.25	0.00	59.49	-1.61	0.00	-411.27	-0.00	-14.82	-0.49	25.74	0.19	0.00	0.00	0.00	0.00	0.00	5

PoleA	PoleA:Climb	End 165.00	0.00	0.31	-0.00	0.00	-3585.23	-0.0	-57.59	0.00	-34.11	-0.72	36.92	0.17	0.00	37.64	72.6	5
PoleA	PoleA:Climb	Origin 165.00	0.00	0.31	-0.00	0.00	-3585.23	-0.0	-58.88	0.00	-34.48	-0.73	36.92	0.17	0.00	37.65	72.6	5
PoleA	Tube 4	End 167.50	0.00	0.18	-0.00	0.00	-3671.43	-0.0	-58.88	0.00	-34.48	-0.73	37.04	0.17	0.00	37.77	72.8	5
PoleA	Tube 4	Origin 167.50	0.00	0.18	-0.00	0.00	-3671.43	-0.0	-59.88	0.00	-34.77	-0.74	37.04	0.17	0.00	37.78	72.8	5
PoleA	PoleA:Port	End 170.00	0.00	0.08	-0.00	0.00	-3758.35	-0.0	-59.88	0.00	-34.77	-0.73	37.16	0.17	0.00	37.89	73.0	5
PoleA	PoleA:Port	Origin 170.00	0.00	0.08	-0.00	0.00	-3758.35	-0.0	-60.81	0.00	-35.04	-0.74	37.16	0.17	0.00	37.90	73.1	5
PoleA	Tube 4	End 172.50	0.00	0.02	-0.00	0.00	-3845.95	-0.0	-60.81	0.00	-35.04	-0.73	37.27	0.17	0.00	38.01	73.3	5
PoleA	Tube 4	Origin 172.50	0.00	0.02	-0.00	0.00	-3845.95	-0.0	-61.65	0.00	-35.29	-0.74	37.27	0.17	0.00	38.02	73.3	5
PoleA	PoleA:g	End 175.00	0.00	0.00	0.00	0.00	-3934.18	-0.0	-61.65	0.00	-35.29	-0.74	37.38	0.17	0.00	38.11	73.5	5

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

Summary of Steel Pole Usages:

Steel Pole Label	Maximum Load Case	Segment Number	Weight (lbs)
PoleA	DL + WL	41	30685.1

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Element Usage %	Element Label	Type
DL + WL	98.00	PoleA	Steel Pole
DLI + WLI	75.43	PoleA	Steel Pole

Summary of Steel Pole Usages by Load Case:

Load Case	Maximum Steel Pole Usage %	Steel Pole Label	Segment Number
DL + WL	98.00	PoleA	41
DLI + WLI	75.43	PoleA	41

*** Weight of structure (lbs): 30685.1
Weight of Steel Poles: 340.0
Weight of Equipment: 31025.1
Total:

*** End of Report

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

Sprint Existing Facility

Site ID: CT43XC846

Berlin FD - Route 15
1657 Wilbur Cross
Berlin, CT 06037

November 4, 2012

November 4, 2012

Sprint
Attn: RF Engineering Manager
1 International Boulevard, Suite 800
Mahwah, NJ 07495

Re: Emissions Values for Site: **CT43XC846 – Berlin FD - Route 15**

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 1657 Wilbur Cross, Berlin, 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 1657 Wilbur Cross, Berlin, 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) 3 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 **150 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	CT143XC946 - Berlin FD - Route 15
Site Address	1657 Wilbur Cross, Berlin, CT, 06037
Site Type	Monopole

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 (dBS)	Antenna Height (ft)	Antenna analysis height (ft)	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	RFS	APXVSP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	15.9	144	144	1/2"	0.5	0	2080.4211	36.05885	3.60688%
1a	RFS	APXVSP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	150	144	1/2"	0.5	0	389.96892	6.761001	1.19242%
Sector total Power Density Value: 4.799%																	
2a	RFS	APXVSP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	15.9	144	144	1/2"	0.5	0	2080.4211	36.05885	3.60688%
2a	RFS	APXVSP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	150	144	1/2"	0.5	0	389.96892	6.761001	1.19242%
Sector total Power Density Value: 4.799%																	
3a	RFS	APXVSP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	15.9	144	144	1/2"	0.5	0	2080.4211	36.05885	3.60688%
3a	RFS	APXVSP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	150	144	1/2"	0.5	0	389.96892	6.761001	1.19242%
Sector total Power Density Value: 4.799%																	

Carrier	Site Composite MPE %	MPE %
Sprint	14.338%	14.338%
Cleanwire	0.830%	0.830%
Podet	4.450%	4.450%
AT&T	12.280%	12.280%
T-Mobile	2.760%	2.760%
Verizon Wireless	27.380%	27.380%
960 Link	0.120%	0.120%
Police	0.410%	0.410%
Fire Main	0.500%	0.500%
Fire Inactivity	0.540%	0.540%
Fire Inactivity	0.350%	0.350%
Fire Ground	0.050%	0.050%
SP Hotline	0.450%	0.450%
FACS	0.110%	0.110%
Total Site MPE %	64.606%	64.606%

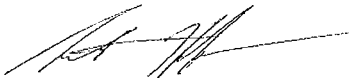
Summary

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 **14.398% (4.799% 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 **64.908%** 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



Scott Heffernan
RF Engineering Director

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