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
Internet: ct.gov/csc

Daniel F. Caruso
Chairman

November 8, 2006

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

RE: **EM-VER-115-061005** - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 229 Cheshire Road, Prospect, Connecticut.

Dear Attorney Baldwin:

At a public meeting held on October 31, 2006, the Connecticut Siting Council (Council) acknowledged your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the condition that the proposed coax lines are installed inside the pole's shaft, as recommended by J. Darrin Holt, Ph.D, P.E.

The proposed modifications are to be implemented as specified here and in your notice dated October 5, 2006, including the placement of all necessary equipment and shelters within the tower compound. 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. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Thank you for your attention and cooperation.

Very truly yours,

Daniel F. Caruso
Chairman

DFC/MP/laf

c: The Honorable Robert J. Chatfield, Mayor, Town of Prospect
William J. Donovan, Zoning Enforcement Officer, Town of Prospect
Christopher B. Fisher, Esq., Cuddy & Feder LLP
Michele G. Briggs, New Cingular Wireless PCS, LLC
Thomas J. Regan, Esq., Brown Rudnick Berlack Israels LLP
Christine Farrell, T-Mobile

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ROBINSON & COLE LLP

KENNETH C. BALDWIN

280 Trumbull Street
Hartford, CT 06103-3597
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kbaldwin@rc.com
Direct (860) 275-8345

ORIGINAL

EM-VER-115-061005

October 5, 2006

Via Hand Delivery

S. Derek Phelps
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: **Notice of Exempt Modification – Antenna Swap**
229 Cheshire Road, Prospect, CT

Dear Mr. Phelps:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains a wireless telecommunications facility at 229 Cheshire Road in Prospect. In its continuing effort to improve the quality and reliability of its wireless service, Cellco intends to replace and upgrade its antennas at this facility.

The Council originally approved Cellco's Cheshire Road facility on January 1, 2002. Cellco now intends to modify this facility by replacing the twelve cellular antennas with six newer model cellular antennas and six PCS antennas at the same location on the tower. Attached behind Tab 1 are specifications for the existing and proposed replacement antennas as well as a structural report verifying that the Cheshire Road tower can support the proposed modifications.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Robert J. Chatfield, the Mayor of Prospect.

The planned modification to the facility falls squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in any increase in the overall height of the existing structure. Cellco's replacement antennas will be located at the same height and location as the existing antennas.

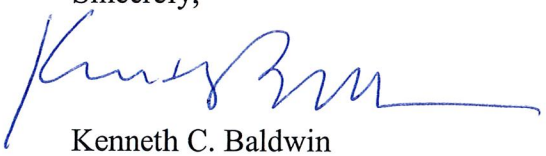
2. The proposed modifications will not affect associated equipment areas and will not require the extension of the site boundaries.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more.

4. The proposed modifications will not result in changes to radio frequency (RF) power density levels at the facility. Therefore, no new Power Density Calculation Table is provided.

For the foregoing reasons, Cellco respectfully submits that the proposed modifications at the above-referenced telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,



Kenneth C. Baldwin

Enclosures
cc: Robert J. Chatfield, Prospect Mayor
Sandy M. Carter
Michelle Kababik

EXISTING

Vertically Polarized, Log Periodic 90° / 11.5 dBd

LPA-80090/4CF ___

When ordering, replace "___" with connector type.

Mechanical specifications

Length	1200 mm	47.2 in
Width	140 mm	5.5 in
Depth	240 mm	9.4 in
[4] Weight	4.99 kg	11.0 lbs
Wind Area		
Front	0.168 m^2	1.8 ft^2
Side	0.288 m^2	3.1 ft^2
Rated Wind Velocity (Safety factor 2.0)		
	>444 km/hr	>276 mph
Wind load @ 100 mph (161 km/hr)		
Front	254 N	57.1 lbs
Side	415 N	93.3 lbs

Antenna consisting of aluminum alloy with brass feedlines covered by a UV safe fiberglass radome.

Mounting & Downtilting:

Mounting brackets attach to a pipe diameter of Ø50-102 mm (2.0-4.0 in).

Mounting bracket kit #21699999

Downtilt bracket kit #21699999
The downtilt bracket kit includes the mounting bracket kit.

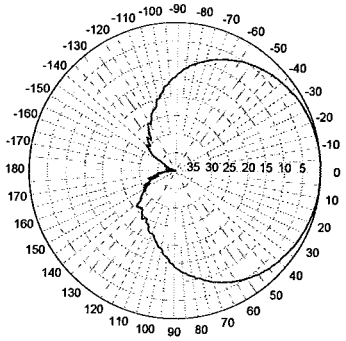
Electrical specifications

Frequency Range	806-960 MHz
Impedance	50Ω
[3] Connector	NE, E-DIN
[1] VSWR	≤1.4:1
Polarization	Vertical
[1] Gain	11.5 dBd
[2] Power Rating	500 W
[1] Half Power Angle	
H-Plane	90°
E-Plane	15°
[1] Electrical Downtilt	0°
[1] Null Fill	10-15%
Lightning Protection	Direct Ground

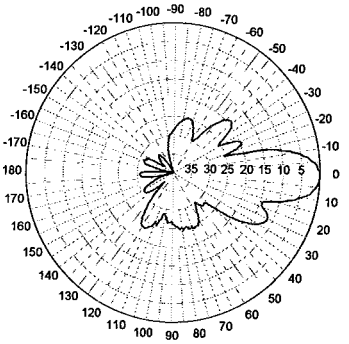
[1] Typical Values
[2] Power Rating limited by connector only.
[3] NE indicates an elongated N Connector.
E-DIN indicates an elongated DIN Connector.
[4] The antenna weight listed above does not include the bracket weight.

Improvements to mechanical and/or electrical performance of the antenna may be made without notice.

Radiation-pattern[1]



Horizontal



Vertical

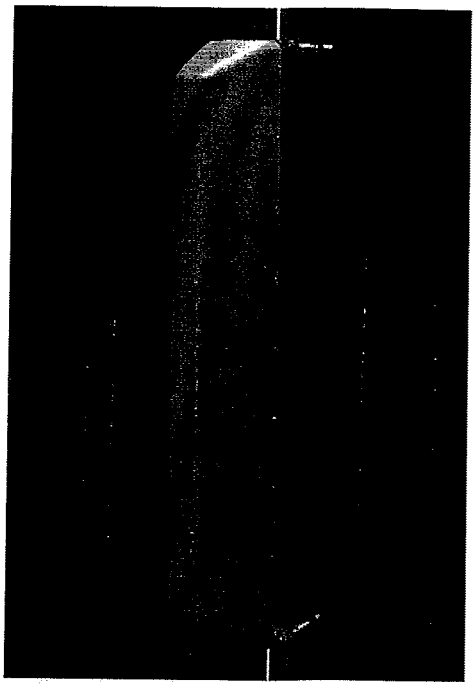
Featuring upper side lobe suppression.

Radiation patterns for all antennas are measured with the antenna mounted on a fiberglass pole.

Mounting on a metal pole will typically improve the Front-to-Back Ratio.

CF Denotes a Center-Fed Connector.

806-960 MHz



Amphenol Antel's Exclusive 3T (True Transmission Line Technology) Antenna Design:

- True log-periodic design allows for superior front-to-side characteristics to minimize sector overlap.
- Unique feedline design eliminates the need for conventional solder joints in the signal path.
- A non-collinear system with access to every radiating element for broad bandwidth and superior performance.
- Air as insulation for virtually no internal signal loss.

Every Amphenol Antel antenna is under a five-year limited warranty for repair or replacement.

Antenna available with center-fed connector only.

Amphenol Antel, Inc.
The Antenna Technology Company

1300 Capital Drive Rockford, IL 61109 Toll-Free (888) 417-9562 Tel. (815) 399-0001
Fax. (815) 399-0156 Email: antel@antelinc.com www.antelinc.com

Revision Date: 12/1/05

PROPOSED

Vertically Polarized, Log Periodic 63° / 13 dBd

LPA-80063/4CF ___

When ordering, replace "___" with connector type.

Mechanical specifications

Length	1205 mm	47.44 in
Width	386 mm	15.2 in
Depth	335 mm	13.19 in
[4] Weight	9.07 kg	20 lbs
Wind Area		
Front	0.465 m^2	5.01 ft^2
Side	0.404 m^2	4.35 ft^2
Rated Wind Velocity (Safety factor 2.0)		
	>351 km/hr	>218 mph
Wind load @ 100 mph (161 km/hr)		
Front	665 N	149.5 lbs
Side	577 N	129.6 lbs

Antenna consisting of aluminum alloy with brass feedlines covered by a UV safe fiberglass radome.

Mounting & Downtilting:

Mounting brackets attach to a pipe diameter of Ø50-102 mm (2.0-4.0 in).

Mounting bracket kit #21699999

Downtilt bracket kit #21699999
The downtilt bracket kit includes the mounting bracket kit.

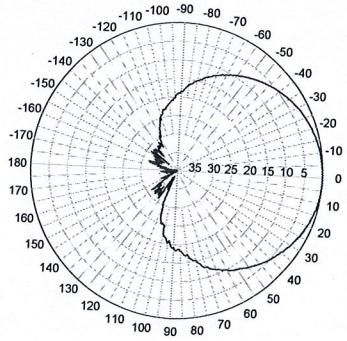
Electrical specifications

Frequency Range	806-960 MHz
Impedance	50Ω
[3] Connector	NE, E-DIN
[1] VSWR	≤1.4:1
Polarization	Vertical
[1] Gain	13 dBd
[2] Power Rating	500 W
[1] Half Power Angle	
H-Plane	63°
E-Plane	15°
[1] Electrical Downtilt	0°
[1] Null Fill	10%
Lightning Protection	Direct Ground

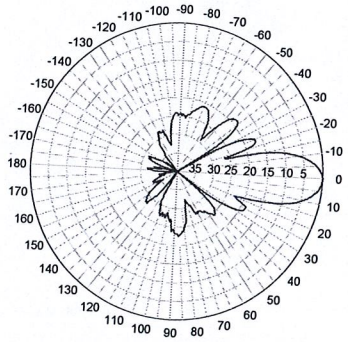
[1] Typical Values
[2] Power Rating limited by connector only.
[3] NE indicates an elongated N Connector.
E-DIN indicates an elongated DIN Connector.
[4] The antenna weight listed above does not include the bracket weight.

Improvements to mechanical and/or electrical performance of the antenna may be made without notice.

Radiation-pattern[1]



Horizontal



Vertical

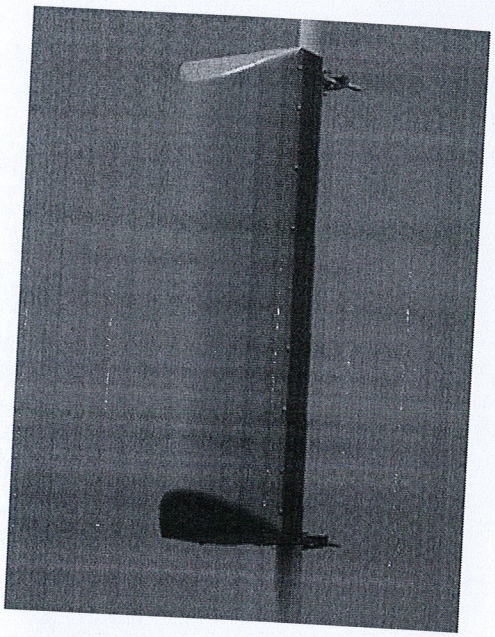
Featuring upper side lobe suppression.

Radiation patterns for all antennas are measured with the antenna mounted on a fiberglass pole.

Mounting on a metal pole will typically improve the Front-to-Back Ratio.

CF Denotes a Center-Fed Connector.

806-960 MHz



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Fax. (815) 399-0156 Email: antel@antelinc.com www.antelinc.com

Amphenol Antel, Inc.
The Antenna Technology Company

Revision Date: 12/1/05

PROPOSED

Vertically Polarized, Log Periodic 63° / 18 dBi

LPA-185063/8CF ___

When ordering, replace "___" with connector type.

Mechanical specifications

Length	1200 mm	47.2 in
Width	167 mm	6.6 in
Depth	148 mm	5.8 in
[4] Weight	4.1 kg	9.0 lbs
Wind Area		
Front	0.200 m^2	2.15 ft^2
Side	0.178 m^2	1.91 ft^2
Rated Wind Velocity (Safety factor 2.0)		
	>548 km/hr	>341 mph
Wind load @ 100 mph (161 km/hr)		
Front	299 N	67.2 lbs
Side	267 N	60.0 lbs

Antenna consisting of aluminum alloy with brass feedlines covered by a UV safe fiberglass radome.

Mounting & Downtilting:

Wall mounted or pole tower mount with mounting brackets.

Mounting bracket kit #26799997

Downtilt bracket kit #26799999
The downtilt bracket kit includes the mounting bracket kit.

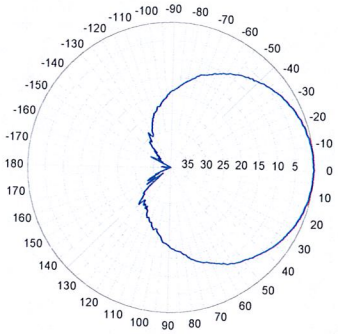
Electrical specifications

Frequency Range	1850-1990 MHz
Impedance	50Ω
[3] Connector	NE, E-DIN
[1] VSWR	≤1.4:1
Polarization	Vertical
[1] Gain	18 dBi
[2] Power Rating	250 W
[1] Half Power Angle	
H-Plane	63°
E-Plane	8°
[1] Electrical Downtilt	0°
[1] Null Fill	10-20%
Lightning Protection	Direct Ground

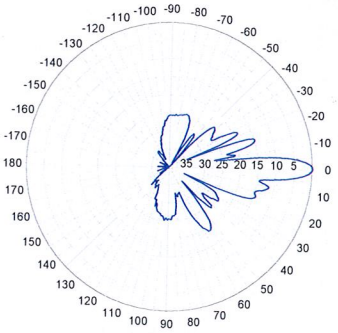
[1] Typical Values
[2] Power Rating limited by connector only.
[3] NE indicates an elongated N Connector.
E-DIN indicates an elongated DIN Connector.
[4] The antenna weight listed above does not include the bracket weight.

Improvements to mechanical and/or electrical performance of the antenna may be made without notice.

Radiation-pattern[1]



Horizontal



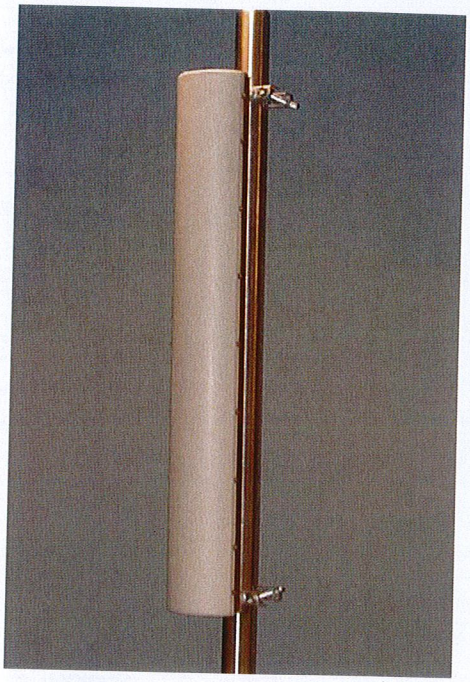
Vertical

Radiation patterns for all antennas are measured with the antenna mounted on a fiberglass pole.

Mounting on a metal pole will typically improve the Front-to-Back Ratio.

CF Denotes a Center-Fed Connector.

1850-1990 MHz



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Amphenol Antel, Inc.
The Antenna Technology Company

Revision Date: 8/23/04

Structural Analysis for SBA Network Services, Inc.

150' Monopole with 12' Extension

Site Name: East Prospect
Site ID: CT02694-S

FDH Project Number 06-08154E

Prepared By:

Holly M. Rose, EI
Senior Project Engineer

Reviewed By:

J. Darrin Holt, Ph.D., P.E.
President
CT PE License No. 22988

FDH Engineering, Inc.
PO Box 33037
Raleigh, NC 27636-3037
(919)-755-1012
info@fdh-inc.com

September 6, 2006

Prepared pursuant to EIA/TIA-222-F June 1996 Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

TABLE OF CONTENTS

2730 Rowland Road, Suite 100, Raleigh, NC 27615 Ph: (919) 755-1012 Fax: (919) 755-1031 info@fdh-inc.com

EXECUTIVE SUMMARY

At the request of SBA Network Services, FDH Engineering performed a revised structural analysis of the monopole located in Prospect, CT to determine whether the tower is structurally adequate to support both the existing and proposed loads, pursuant to the *TIA/EIA-222-F* standards. Information pertaining to the existing/proposed antenna loading, current tower geometry, and member sizes was obtained from Engineered Endeavors Inc. (Job No. 13588) structural analysis report dated September 20, 2005, FDH Engineering, Inc. (Project No. 05-09107E) modification drawings dated September 30, 2005, and SBA Network Services.

The *basic design wind speed* per *ANSI TIA/EIA-222-F* standards is 85 MPH without ice and 74 MPH with ½" radial ice.

Conclusions

With the existing and proposed antennas from Verizon place at 137 ft., the tower meets the requirements of the TIA/EIA-222-F standards. Furthermore, provided the foundation was constructed per the original foundation drawings (see EEI Drawing No. S5816-150), the foundation should be adequate to support both the proposed and existing loading. For a more detailed description of the analysis of the tower, see the **Results** section of this report.

Our structural analysis has been performed assuming all information provided to FDH is accurate (i.e., the steel data, tower layout, current antenna loading, and proposed antenna loading) and that the tower will be properly erected and maintained per the original design drawings.

Recommendations

To ensure the requirements of the *TIA/EIA-222-F* standards are met with the existing and proposed loading in place, we have the following recommendations:

1. The proposed coax lines should be installed inside the pole's shaft.

2730 Rowland Road, Suite 100, Raleigh, NC 27615 Ph: (919) 755-1012 Fax: (919) 755-1031 info@fdh-inc.com

APPURTENANCE LISTING

The proposed and existing antennas with their corresponding cables/coax lines are shown in **Table 1**. *If the actual layout determined in the field deviates from this layout, FDH should be contacted to perform a revised analysis.*

Table 1 – Appurtenance Loading

Existing Loading:

No.	Centerline Elevation (ft)	Coax and Lines[1]	Carrier	Description
1-3	160	(12) 1-5/8"	T-Mobile	(3) 54" x 12" x 7" Quadpole Panels + (6) TMAs Mounted on 5' Low Visibility Mount
4-9	147	(6) 1-5/8"	Sprint	(6) Decibel DB980H90 Mounted on Low Profile Platform
10-21	137	(12) 1-5/8" [2]	Verizon	(12) Antel LPA-80090/4CF Mounted on Low Profile Platform
22-27	127	(6) 1-5/8" [3]	AT&T	(6) Allgon 7250.00 Mounted on 2' Side Arms
28-39	117	(12) 1-5/8" [4]	Cingular	(12) CSS DUO1417-8686-4D Mounted on Low Profile Platform

1 Coax lines installed inside pole's shaft, unless otherwise stated.
2 The existing loading for Verizon will be replaced. See the proposed loading below.
3 Currently, AT&T has (3) antennas and (3) coax installed at 127 ft. According to information provided by SBA, AT&T may install up to (6) antennas and (6) coax. Analysis performed with full loading in place.
4 Currently, Cingular has (9) antennas and (9) coax installed at 117 ft. According to information provided by SBA, Cingular may install up to (12) antennas and (12) coax. Analysis performed with full loading in place.

Proposed Loading:

No.	Centerline Elevation (ft)	Coax and Lines	Carrier	Description
1-12	137	(12) 1-5/8" [1]	Verizon	(6) Antel LPA-80063/4CF (6) Antel LPA-185063/8CF

1 Verizon will replace the (12) existing antennas with (6) LPA-80063/4CF and (6) LPA-185063/8CF antennas at 137 ft.

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RESULTS

Based on information obtained from the original design drawings, the yield strength of steel for individual members was as follows:

Table 2 - Material Strength

Member Type	Yield Strength
Tower Shaft Sections	65 ksi
Base Plate	50 ksi
Anchor Bolts	75 ksi

Table 3 displays the ratio (as a percentage) of actual force in the member to their allowable capacities. Values greater than 100% indicate locations where the maximum force in the member exceeds its allowable capacity. *Note: Capacities up to 105% are considered acceptable.* **Table 4** displays the maximum foundation reactions.

If the assumptions outlined in this report differ from actual field conditions, FDH should be contacted to perform a revised analysis. Furthermore, as no information pertaining to the allowable twist and sway requirements for the existing or proposed appurtenances was provided, deflection and rotation were not taken into consideration when performing this analysis.

See the **Appendix** for detailed modeling information.

Table 3 – Summary of Working Percentage of Structural Components (85 MPH without ice)

Member Type	Elevation (ft.)	Existing and Proposed Loading Max. % Allowable Stress
Section 1	150 to 162	10%
Section 2	114 to 150	78%
Section 3	80 to 114	95%
Section 4	45 to 80	102%
Section 5	0 to 45	103%
Base Plate		OK
Anchor Bolts		OK

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Table 4 – Maximum Base Reactions

Base Reactions	Linear (w/o ice)	Non-Linear (w/o ice)
Axial	29 k	29 k
Shear	24 k	24 k
Moment	2,541 k-ft	2,639 k-ft

GENERAL COMMENTS

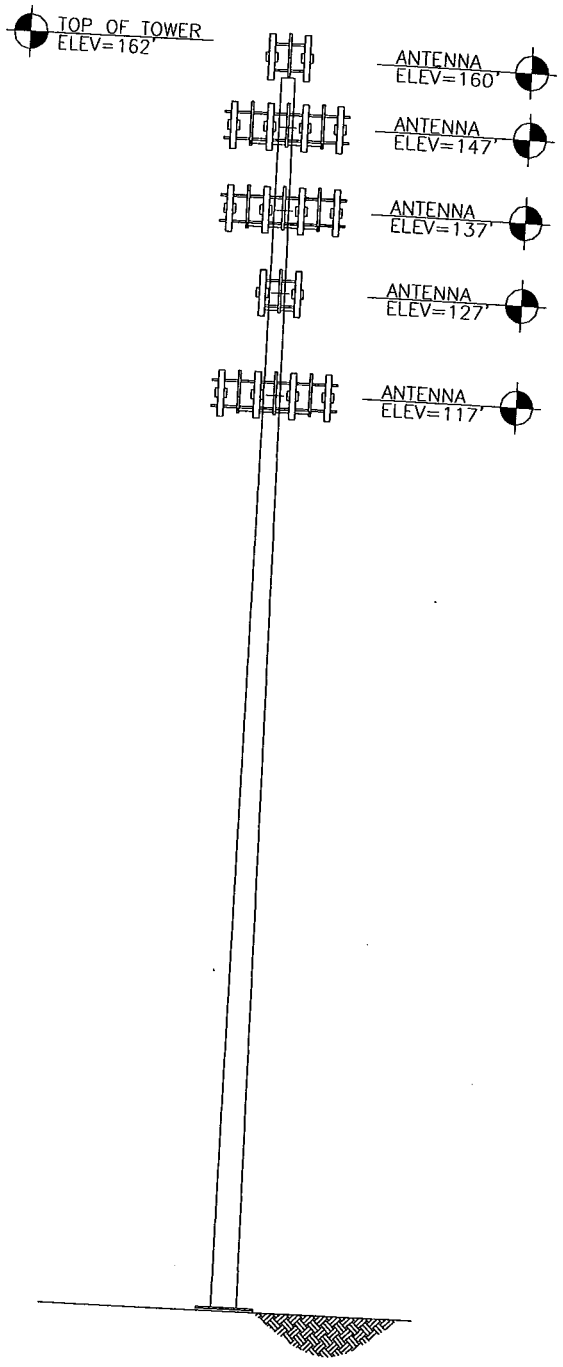
This engineering analysis is based upon the theoretical capacity of the structure. It is not a condition assessment of the tower and its foundation. It is the responsibility of SBA to verify that the tower modeled and analyzed is the correct structure (with accurate antenna loading information) modeled. If there are substantial modifications to be made or the assumptions made in this analysis are not accurate, FDH Engineering should be notified immediately to perform a revised analysis.

LIMITATIONS

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of this report. All opinions and conclusions are subject to revision based upon receipt of new or additional/updated information. All services are provided exercising a level of care and diligence equivalent to the standard and care of our profession. No other warranty or guarantee, expressed or implied, is offered. Our services are confidential in nature and we will not release this report to any other party without the client's consent. The use of this engineering work is limited to the express purpose for which it was commissioned and it may not be reused, copied, or distributed for any other purpose without the written consent of FDH Engineering, Inc.

2730 Rowland Road, Suite 100, Raleigh, NC 27615 Ph: (919) 755-1012 Fax: (919) 755-1031 info@fdh-inc.com

Page	1 of		
By	HMR	Date	1
Job No.	06-08154E	Date	9/6/2006
Revision No.		Date	
Pole	162 FT		
Location	East Prospect, CT		
Site	CT02694-S		
Owner	SBA Properties, Inc.		
Design	85 MPH No Ice		
	74 MPH with ice		



Load Cases		
Case 1	85 MPH NO ICE	DESIGN WIND
Case 2	74 MPH w/ 1/2" radial ice	
Case 3	50 MPH	OPERATIONAL

Pole Specifications	
Pole Shape Type:	18- sided
Taper:	0.1567 in/ft
Shaft Steel:	Fy=65 ksi
Base Plate Steel:	Fy=50 ksi
Anchor Bolts:	(12) 2.25" Fy=75 ksi

Appurtenance List		
No.	Elevation	Description
1-3	160	(3) 54" x 12" x 7" (6) TMAs with (12) 1-5/8" coax
7-9	147	(6) DB980H90 with (6) 1-5/8" coax
10-21	137	(6) LPA-80063/4CF with (12) 1-5/8" coax
	137	(6) LPA-185063/8CF
22-28	127	(6) 7250.00 with (6) 1-5/8" coax
29-40	117	(12) DUO1417-8686-40 with (12) 1-5/8" coax

Elevation	85 MPH WIND		50 MPH WIND	
	Lateral Deflection (In)	Rotation (Sway) (Degrees)	Lateral Deflection (In)	Rotation (Sway) (Degrees)
Top of Monopole (162 ft.)	163.7	8.7	56.6	3.0

Shaft Section Data					
Shaft Section	Sect. Length (ft)	Plate Thickness (in.)	Lap Splice (in.)	Diam. Across Flats (in)	
				Top	Bottom
1	12.00	0.3750	0.00	12.75	12.75
2	38.96	0.1875	47.00	19.49	27.13
3	38.33	0.2500	57.00	25.86	33.37
4	39.13	0.3125	66.00	31.81	39.47
5	47.75	0.3750	0.00	37.65	47.00

APPENDIX

2730 Rowland Road, Suite 100, Raleigh, NC 27615 Ph: (919) 755-1012 Fax: (919) 755-1031 info@fdh-inc.com

FDH Engineering Inc. Monopole Design Program
Version 1.0 (8-2000) 06-Sep-2006
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Data File...:100'Pole\Ante.txt Job No.:06-08154E Engineer:HMR
Description :162-FT --East Prospect, CT
Design.....:85 MPH Without Radial Ice
Owner.....:SBA Network Services
Analyzing Method: Finite Element Method

Segment Properties: (Max Segment Length = 5 ft)

LOAD CASE 1: BASIC WIND VELOCITY = 85 MPH.
Design Loads per TIA/EIA-22-F Standard: Gust Factor.....Gh= 1.69
Pole DL overload Factor= 1
Per TIA/EIA Table 1: Note3: For all cross sectional shapes,
Force coefficient [Cf] need not exceed 1.2
for any value of C. (Where C=sqrt(Kz)*V*D.)

Segment Feature Location	Segment Elev. (ft)	Diam. Across Flates (in)	Cross Section Area (in^2)	Inertia (in^4)	Expos Coeff. [Kz]	Veloc. Press. [qz] (psf)	Force Coeff. [Cf]	Projected Aera Shaft [Ae] (ft^2)	Segment [Cf*Ae] (ft^2)
top	162.000	12.750	14.729	285.1	1.576	29.141	0.650	2.158	1.403
	160.000	12.750	14.729	285.1	1.570	29.038	0.650	8.394	5.456
bot sec(1)	155.000	12.750	14.729	285.1	1.556	28.776	0.650	8.394	5.456
	150.000	12.750	14.729	285.1	1.541	28.507	0.650	5.967	3.878
	147.000	20.078	11.837	591.5	1.532	28.343	0.650	4.632	3.011
	145.000	20.478	12.075	627.9	1.526	28.233	0.650	11.872	7.717
	140.000	21.459	12.659	723.4	1.511	27.951	0.650	7.321	4.759
	137.000	22.039	13.004	784.3	1.502	27.778	0.650	4.964	3.226
	135.000	22.439	13.242	828.1	1.496	27.662	0.650	12.701	8.256
	130.000	23.420	13.826	942.5	1.480	27.365	0.650	7.819	5.082
	127.000	24.000	14.171	1014.9	1.470	27.183	0.650	5.296	3.442
	125.000	24.400	14.409	1066.9	1.463	27.060	0.650	13.531	8.795
	120.000	25.381	14.993	1201.9	1.446	26.747	0.650	8.317	5.406
top sec(3)	117.000	25.961	15.338	1286.9	1.436	26.554	0.650	5.627	3.658
bot sec(2)	115.000	26.361	15.576	1347.7	1.429	26.423	0.650	11.140	7.241
	111.080	26.628	20.930	1839.4	1.415	26.163	0.650	3.091	2.009
	110.000	26.836	21.095	1883.2	1.411	26.090	0.650	14.561	9.465
	105.000	27.815	21.872	2099.2	1.392	25.745	0.650	14.976	9.734
	100.000	28.795	22.650	2331.0	1.373	25.389	0.650	15.390	10.004
	95.000	29.775	23.427	2579.3	1.353	25.020	0.650	15.805	10.273
	90.000	30.754	24.204	2844.7	1.332	24.636	0.650	16.219	10.542
top sec(4)	85.000	31.734	24.982	3127.6	1.310	24.237	0.650	11.934	7.757
	81.400	32.439	25.541	3342.6	1.294	23.939	0.650	4.662	3.030
bot sec(3)	80.000	32.090	31.518	4020.0	1.288	23.821	0.650	11.199	7.279
	76.650	32.740	32.163	4271.7	1.272	23.531	0.650	5.584	3.630
	75.000	33.069	32.489	4403.0	1.264	23.386	0.650	17.198	11.179
	70.000	34.048	33.460	4809.6	1.240	22.929	0.650	17.612	11.448
	65.000	35.026	34.431	5240.5	1.214	22.449	0.650	18.026	11.717
	60.000	36.005	35.401	5696.3	1.186	21.941	0.650	18.441	11.986
	55.000	36.984	36.372	6177.9	1.157	21.402	0.650	18.855	12.256
top sec(5)	50.000	37.963	37.343	6685.9	1.126	20.827	0.650	8.427	5.478
	47.800	38.393	37.770	6918.0	1.112	20.561	0.650	10.752	6.989
bot sec(4)	45.000	38.188	45.006	8128.2	1.093	20.210	0.650	10.406	6.764
	42.300	38.727	45.647	8480.4	1.074	19.856	0.650	8.960	5.824
	40.000	39.168	46.171	8776.0	1.057	19.541	0.650	19.779	12.856
	35.000	40.147	47.336	9457.3	1.017	18.810	0.650	20.193	13.125
	30.000	41.126	48.502	10173.0	1.000	18.496	0.650	20.607	13.395
	25.000	42.105	49.667	10924.0	1.000	18.496	0.650	21.021	13.664
	20.000	43.084	50.832	11711.0	1.000	18.496	0.650	21.436	13.933
	15.000	44.063	51.998	12535.0	1.000	18.496	0.650	21.850	14.202
	10.000	45.042	53.163	13396.7	1.000	18.496	0.650	22.264	14.472
	5.000	46.021	54.328	14297.0	1.000	18.496	0.650	22.678	14.741
base	0.000	47.000	55.493	15236.8					

FDH Engineering Inc. Monopole Design Program
Version 1.0 (8-2000) 06-Sep-2006

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Data File...:100'Pole\Ante.txt Job No.:06-08154E Engineer:HMR
Description :162-FT --East Prospect, CT
Design.....:85 MPH Without Radial Ice.
Owner.....:SBA Network Services
Analyzing Method: Finite Element Method

Analysis Results:

Pole Elemt No.	Segment Feature Location	Segment Elev. (ft)	Linear Deflec. (in)	Non-Lin Deflec. (in)	Lin. Rotat. (deg.)	Non-Lin. Rotat. (deg.)
42.	top	162.000	155.317	163.658	8.23	8.70
41.		160.000	151.870	160.015	8.23	8.70
40.		155.000	143.258	150.914	8.21	8.68
39.	bot sec(1)	150.000	134.688	141.856	8.15	8.62
38.		147.000	129.584	136.460	8.09	8.55
37.		145.000	126.199	132.882	8.07	8.53
36.		140.000	117.796	123.999	7.97	8.43
35.		137.000	112.808	118.726	7.90	8.35
34.		135.000	109.510	115.240	7.85	8.29
33.		130.000	101.381	106.648	7.67	8.10
32.		127.000	96.602	101.598	7.54	7.97
31.		125.000	93.462	98.281	7.45	7.87
30.		120.000	85.791	90.179	7.19	7.59
29.		117.000	81.328	85.467	7.02	7.41
28.	top sec(3)	115.000	78.413	82.390	6.90	7.28
27.	bot sec(2)	111.080	72.853	76.524	6.64	7.00
26.		110.000	71.358	74.946	6.58	6.94
25.		105.000	64.620	67.840	6.28	6.62
24.		100.000	58.207	61.080	5.96	6.28
23.		95.000	52.140	54.688	5.62	5.92
22.		90.000	46.434	48.680	5.27	5.55
21.		85.000	41.100	43.067	4.91	5.17
20.	top sec(4)	81.400	37.495	39.275	4.65	4.89
19.		80.000	36.146	37.857	4.55	4.78
18.	bot sec(3)	76.650	33.025	34.578	4.34	4.56
17.		75.000	31.542	33.019	4.24	4.45
16.		70.000	27.265	28.528	3.92	4.12
15.		65.000	23.322	24.390	3.60	3.78
14.		60.000	19.712	20.604	3.29	3.45
13.		55.000	16.434	17.169	2.97	3.11
12.		50.000	13.488	14.083	2.65	2.78
11.	top sec(5)	47.800	12.296	12.836	2.52	2.64
10.		45.000	10.869	11.343	2.35	2.46
9.	bot sec(4)	42.300	9.582	9.998	2.20	2.30
8.		40.000	8.552	8.920	2.08	2.17
7.		35.000	6.517	6.795	1.81	1.89
6.		30.000	4.766	4.966	1.54	1.60
5.		25.000	3.295	3.431	1.27	1.33
4.		20.000	2.099	2.185	1.01	1.05
3.		15.000	1.176	1.223	0.75	0.78
2.		10.000	0.521	0.542	0.50	0.52
1.		5.000	0.130	0.135	0.25	0.26
0.	Base	0.000	0.000	0.000	0.00	0.00

Base Reactions :	Linear	Non-Linear
Shear(Kips) :	-24.4572	-24.4572
Axial(Kips) :	29.3700	29.3700
Moment(Ft-Kips) :	-2541.5045	-2639.4340

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Data File...:100'Pole\Ante.txt Job No.:06-08154E Engineer:HMR
Description :162-FT --East Prospect, CT
Design.....:85 MPH Without Radial Ice
Owner.....:SBA Network Services
Analyzing Method: Finite Element Method

Shaft Segments --- FORCES AND MOMENTS:

Load Case 1: Basic Wind Velocity = 85 MPH.

Wind Force (F=qz*Gh*[Cf*Ae+sum(Ca*Aa)]) <= 2*qz*Gh*Ag, where Ag is total area of pole.

Segment Elev. (ft)	[-----Cumulative Forces-----] Wind Forces (Kips)	Axial Forces (Kips)	[-----Moments (Ft-Kips)-----] From Ant/ Arm	From Shaft Wind	From P-Delta Effects	Total Moment
162.00	0.0988	0.1502	0.09	0.00	0.01	0.10
160.00	1.4707	1.5078	0.15	0.14	0.10	0.39
155.00	1.7361	1.7584	5.82	1.82	0.49	8.13
150.00	1.9229	1.8570	11.49	4.83	1.06	17.38
147.00	4.1987	4.4104	14.89	7.20	2.12	24.21
145.00	4.5669	4.6208	21.42	9.07	2.85	33.33
140.00	4.7917	4.7518	37.75	15.57	4.79	58.11
137.00	8.0059	8.1591	47.54	20.15	6.70	74.39
135.00	8.3918	8.3893	60.20	23.51	7.98	91.69
130.00	8.6269	8.5322	91.84	33.83	11.30	136.97
127.00	10.0051	9.5215	110.82	40.72	13.36	164.91
125.00	10.4074	9.7716	125.92	45.64	14.74	186.30
120.00	10.6517	9.9264	163.66	59.93	18.27	241.87
117.00	14.4638	13.3056	186.31	69.24	21.08	276.63
115.00	14.7872	13.7977	208.70	75.78	22.94	307.42
111.08	14.8760	13.8749	252.59	89.85	26.72	369.16
110.00	15.2934	14.2404	264.68	93.83	27.74	386.25
105.00	15.7169	14.6192	320.66	114.31	32.56	467.54
100.00	16.1461	15.0111	376.64	136.92	37.35	550.91
95.00	16.5805	15.4163	432.63	161.66	42.09	636.38
90.00	17.0194	15.8347	488.61	188.59	46.73	723.92
85.00	17.3372	16.1442	544.59	217.70	51.26	813.55
81.40	17.4598	16.4194	584.90	239.81	54.41	879.11
80.00	17.7528	17.0849	600.57	248.58	55.62	904.77
76.65	17.8972	17.2664	638.08	270.54	58.59	967.21
75.00	18.3390	17.8274	656.55	281.60	60.03	998.18
70.00	18.7826	18.4049	712.53	317.31	64.37	1094.21
65.00	19.2271	18.9990	768.51	355.24	68.56	1192.32
60.00	19.6716	19.6096	824.50	395.40	72.57	1292.47
55.00	20.1149	20.2366	880.48	437.77	76.38	1394.64
50.00	20.3077	20.5178	936.46	482.37	79.97	1498.79
47.80	20.5506	21.3161	961.09	502.41	81.44	1544.95
45.00	20.7816	22.0918	992.44	528.60	83.31	1604.35
42.30	20.9770	22.4511	1022.67	554.48	85.07	1662.22
40.00	21.4016	23.2466	1048.42	576.98	86.51	1711.91
35.00	21.8188	24.0619	1104.40	628.01	89.49	1821.90
30.00	22.2375	24.8970	1160.39	681.12	92.18	1933.68
25.00	22.6646	25.7520	1216.37	736.33	94.54	2047.23
20.00	23.1001	26.6267	1272.35	793.67	96.54	2162.56
15.00	23.5441	27.5213	1328.33	853.19	98.16	2279.67
10.00	23.9964	28.4357	1384.31	914.93	99.35	2398.59
5.00	24.4572	29.3700	1440.29	978.93	100.09	2519.31
0.00	24.4572	29.3700	1496.27	1045.23	100.35	2641.85

Antenna / Arm Loads:

Ant. Arm No.	Arm Mount Elev. (ft)	Load Applic. Elev. (ft)	Veloc. Press. [qz] (psf)	Antenna Force (lbs)	Antenna Weight (lbs)	Antenna Moment (lbs-ft)
[1]	162.000	165.000	29.29	29.70	50.00	89.11
[2]	160.000	160.000	29.04	927.50	75.00	0.00
[3]	160.000	160.000	29.04	176.67	72.00	0.00
[4]	147.000	147.000	28.34	1077.75	90.00	0.00
[5]	147.000	147.000	28.34	1053.80	1500.00	0.00
[6]	137.000	137.000	27.78	2029.93	174.00	0.00
[7]	137.000	137.000	27.78	1032.80	1500.00	0.00

[8]	127.000	127.000	27.18	1054.78	90.00	0.00
[9]	127.000	127.000	27.18	165.38	40.00	0.00
[10]	117.000	117.000	26.55	2660.69	370.00	0.00
[11]	117.000	117.000	26.55	987.27	1500.00	0.00

Total Number of Antennas / Arms = 11

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Description :162-FT --East Prospect, CT
Design.....:85 MPH Without Radial Ice
Owner.....:SBA Network Services
Analyzing Method: Finite Element Method

Pole Shaft Segments--- ACTUAL AND ALLOWABLE STRESSES:

Load Case 1: Basic Wind Velocity = 85 MPH.

Segment Elev. (ft)	[----------ACTUAL STRESSES----------] Bending [fb] (ksi)	Axial [fb] (ksi)	Torsion [ft] (ksi)	Shear [fv] (ksi)	Combined [Ftot] (ksi)	Allow. Stess [Fb] (ksi)	Percent Used [Ftot/Fb] %
162.00	0.028	0.010	0.000	0.014	0.038	48.00	0.08
160.00	0.105	0.102	0.498	0.213	0.711	48.00	1.48
155.00	2.216	0.119	0.498	0.251	2.437	48.00	5.08
150.00	4.736	0.126	0.498	0.278	4.912	48.00	10.23
147.00	5.007	0.373	0.882	0.726	5.520	48.00	11.50
145.00	6.623	0.383	0.847	0.774	7.106	48.00	14.81
140.00	10.502	0.375	0.771	0.774	10.932	48.00	22.77
137.00	12.737	0.627	1.456	1.259	13.521	48.00	28.17
135.00	15.136	0.634	1.404	1.295	15.894	48.00	33.11
130.00	20.736	0.617	1.287	1.275	21.430	48.00	44.65
127.00	23.759	0.672	1.523	1.442	24.525	48.00	51.09
125.00	25.958	0.678	1.472	1.474	26.717	48.00	55.66
120.00	31.119	0.662	1.360	1.449	31.839	48.00	66.33
117.00	34.001	0.867	1.965	1.923	34.979	48.00	72.87
115.00	36.635	0.886	1.905	1.936	37.617	48.00	78.37
111.08	32.559	0.663	1.410	1.456	33.281	48.00	69.34
110.00	33.533	0.675	1.388	1.485	34.265	48.00	71.38
105.00	37.745	0.668	1.291	1.471	38.456	48.00	80.12
100.00	41.463	0.663	1.203	1.458	42.160	48.00	87.83
95.00	44.756	0.658	1.124	1.447	45.442	48.00	94.67
90.00	47.683	0.654	1.053	1.437	48.360	48.00	100.75
85.00	50.291	0.646	0.988	1.417	50.957	48.00	106.16
81.40	51.980	0.643	0.945	1.396	52.640	48.00	109.67
80.00	44.003	0.542	0.778	1.155	44.558	48.00	92.83
76.65	45.164	0.537	0.747	1.140	45.713	48.00	95.24
75.00	45.675	0.549	0.732	1.156	46.235	48.00	96.32
70.00	47.193	0.550	0.690	1.149	47.753	48.00	99.49
65.00	48.553	0.552	0.651	1.143	49.113	48.00	102.32
60.00	49.772	0.554	0.616	1.137	50.334	48.00	104.86
55.00	50.866	0.556	0.583	1.131	51.429	48.00	107.14
50.00	51.849	0.549	0.553	1.111	52.404	48.00	109.18
47.80	52.239	0.564	0.541	1.112	52.808	48.00	110.02
45.00	45.924	0.491	0.458	0.947	46.419	48.00	96.71
42.30	46.247	0.492	0.445	0.942	46.744	48.00	97.38
40.00	46.549	0.503	0.435	0.950	47.057	48.00	98.03
35.00	47.120	0.508	0.413	0.944	47.632	48.00	99.23
30.00	47.626	0.513	0.394	0.939	48.143	48.00	100.30
25.00	48.075	0.518	0.375	0.934	48.596	48.00	101.24
20.00	48.471	0.524	0.358	0.930	48.998	48.00	102.08
15.00	48.823	0.529	0.342	0.926	49.354	48.00	102.82
10.00	49.133	0.535	0.327	0.923	49.670	48.00	103.48
5.00	49.407	0.541	0.314	0.920	49.950	48.00	104.06
0.00	49.649	0.529	0.300	0.900	50.180	48.00	104.54

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Data File...:100'Pole\Ante.txt Job No.:06-08154E Engineer:HMR
Description :162-FT --East Prospect, CT
Design.....:74 MPH + 0.5 Inchs Radial Ice
Owner.....:SBA Network Services
Analyzing Method: Finite Element Method

Segment Properties: (Max Segment Length = 5 ft)

LOAD CASE 2: WIND VELOCITY = 74 MPH With 0.5 Inchs Radial Ice.
Design Loads per TIA/EIA-22-F Standard: Gust Factor.....Gh= 1.69
Pole DL overload Factor= 1
Per TIA/EIA Table 1: Note3: For all cross sectional shapes,
Force coefficient [Cf] need not exceed 1.2
for any value of C. (Where C=sqrt(Kz)*V*D.)

Segment Feature Location	Segment Elev. (ft)	Diam. Across Flates (in)	Cross Section Area (in^2)	Inertia (in^4)	Expos Coeff. [Kz]	Veloc. Press. [qz] (psf)	Force Coeff. [Cf]	Projected Aera Shaft Segment [Ae] (ft^2)	[Cf*Ae] (ft^2)
top	162.000	12.750	14.729	285.1	1.576	22.087	0.650	2.327	1.513
	160.000	12.750	14.729	285.1	1.570	22.009	0.650	9.068	5.894
	155.000	12.750	14.729	285.1	1.556	21.810	0.650	9.068	5.894
bot sec(1)	150.000	12.750	14.729	285.1	1.541	21.606	0.650	6.371	4.141
	147.000	20.078	11.837	591.5	1.532	21.482	0.650	4.901	3.186
	145.000	20.478	12.075	627.9	1.526	21.398	0.650	12.545	8.154
	140.000	21.459	12.659	723.4	1.511	21.185	0.650	7.725	5.021
	137.000	22.039	13.004	784.3	1.502	21.054	0.650	5.233	3.401
	135.000	22.439	13.242	828.1	1.496	20.966	0.650	13.374	8.693
	130.000	23.420	13.826	942.5	1.480	20.741	0.650	8.223	5.345
	127.000	24.000	14.171	1014.9	1.470	20.603	0.650	5.565	3.617
	125.000	24.400	14.409	1066.9	1.463	20.510	0.650	14.204	9.233
	120.000	25.381	14.993	1201.9	1.446	20.272	0.650	8.721	5.668
	117.000	25.961	15.338	1286.9	1.436	20.126	0.650	5.897	3.833
top sec(3)	115.000	26.361	15.576	1347.7	1.429	20.027	0.650	11.668	7.584
bot sec(2)	111.080	26.628	20.930	1839.4	1.415	19.829	0.650	3.236	2.104
	110.000	26.836	21.095	1883.2	1.411	19.774	0.650	15.234	9.902
	105.000	27.815	21.872	2099.2	1.392	19.513	0.650	15.649	10.172
	100.000	28.795	22.650	2331.0	1.373	19.243	0.650	16.063	10.441
	95.000	29.775	23.427	2579.3	1.353	18.963	0.650	16.478	10.711
	90.000	30.754	24.204	2844.7	1.332	18.672	0.650	16.892	10.980
	85.000	31.734	24.982	3127.6	1.310	18.370	0.650	12.419	8.072
top sec(4)	81.400	32.439	25.541	3342.6	1.294	18.144	0.650	4.851	3.153
	80.000	32.090	31.518	4020.0	1.288	18.054	0.650	11.650	7.572
bot sec(3)	76.650	32.740	32.163	4271.7	1.272	17.835	0.650	5.806	3.774
	75.000	33.069	32.489	4403.0	1.264	17.725	0.650	17.871	11.616
	70.000	34.048	33.460	4809.6	1.240	17.379	0.650	18.285	11.886
	65.000	35.026	34.431	5240.5	1.214	17.014	0.650	18.700	12.155
	60.000	36.005	35.401	5696.3	1.186	16.630	0.650	19.114	12.424
	55.000	36.984	36.372	6177.9	1.157	16.221	0.650	19.528	12.693
	50.000	37.963	37.343	6685.9	1.126	15.786	0.650	8.723	5.670
top sec(5)	47.800	38.393	37.770	6918.0	1.112	15.584	0.650	11.129	7.234
	45.000	38.188	45.006	8128.2	1.093	15.318	0.650	10.770	7.000
bot sec(4)	42.300	38.727	45.647	8480.4	1.074	15.049	0.650	9.270	6.025
	40.000	39.168	46.171	8776.0	1.057	14.811	0.650	20.452	13.294
	35.000	40.147	47.336	9457.3	1.017	14.256	0.650	20.866	13.563
	30.000	41.126	48.502	10173.0	1.000	14.019	0.650	21.280	13.832
	25.000	42.105	49.667	10924.0	1.000	14.019	0.650	21.694	14.101
	20.000	43.084	50.832	11711.0	1.000	14.019	0.650	22.109	14.371
	15.000	44.063	51.998	12535.0	1.000	14.019	0.650	22.523	14.640
	10.000	45.042	53.163	13396.7	1.000	14.019	0.650	22.937	14.909
	5.000	46.021	54.328	14297.0	1.000	14.019	0.650	23.351	15.178
base	0.000	47.000	55.493	15236.8					

FDH Engineering Inc. Monopole Design Program
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Data File...:100'Pole\Ante.txt Job No.:06-08154E Engineer:HMR
Description :162-FT --East Prospect, CT
Design.....:74 MPH + 0.5 Inchs Radial Ice.
Owner.....:SBA Network Services
Analyzing Method: Finite Element Method

Analysis Results:

Pole Elemt No.	Segment Feature Location	Segment Elev. (ft)	Linear Deflec. (in)	Non-Lin Deflec. (in)	Lin. Rotat. (deg.)	Non-Lin. Rotat. (deg.)
42.	top	162.000	126.673	135.678	6.74	7.24
41.		160.000	123.851	132.644	6.74	7.24
40.		155.000	116.802	125.066	6.72	7.23
39.	bot sec(1)	150.000	109.789	117.524	6.67	7.17
38.		147.000	105.614	113.034	6.62	7.12
37.		145.000	102.846	110.057	6.60	7.10
36.		140.000	95.976	102.668	6.52	7.01
35.		137.000	91.899	98.283	6.46	6.95
34.		135.000	89.204	95.384	6.41	6.90
33.		130.000	82.563	88.243	6.26	6.73
32.		127.000	78.660	84.046	6.16	6.62
31.		125.000	76.096	81.290	6.08	6.54
30.		120.000	69.834	74.561	5.87	6.30
29.		117.000	66.191	70.649	5.73	6.15
28.	top sec(3)	115.000	63.813	68.096	5.63	6.04
27.	bot sec(2)	111.080	59.278	63.229	5.41	5.81
26.		110.000	58.059	61.920	5.37	5.76
25.		105.000	52.565	56.029	5.12	5.49
24.		100.000	47.338	50.427	4.86	5.20
23.		95.000	42.395	45.132	4.58	4.90
22.		90.000	37.748	40.159	4.29	4.59
21.		85.000	33.405	35.515	4.00	4.27
20.	top sec(4)	81.400	30.470	32.380	3.78	4.04
19.		80.000	29.373	31.207	3.70	3.95
18.	bot sec(3)	76.650	26.834	28.497	3.53	3.77
17.		75.000	25.627	27.210	3.45	3.68
16.		70.000	22.148	23.500	3.19	3.40
15.		65.000	18.941	20.084	2.93	3.12
14.		60.000	16.007	16.960	2.67	2.84
13.		55.000	13.343	14.128	2.41	2.56
12.		50.000	10.949	11.585	2.16	2.29
11.	top sec(5)	47.800	9.981	10.557	2.05	2.17
10.		45.000	8.821	9.327	1.91	2.02
9.	bot sec(4)	42.300	7.777	8.220	1.79	1.89
8.		40.000	6.940	7.333	1.69	1.79
7.		35.000	5.288	5.584	1.47	1.55
6.		30.000	3.867	4.080	1.25	1.32
5.		25.000	2.673	2.818	1.03	1.09
4.		20.000	1.703	1.794	0.82	0.86
3.		15.000	0.954	1.004	0.61	0.64
2.		10.000	0.422	0.444	0.40	0.42
1.		5.000	0.106	0.111	0.20	0.21
0.	Base	0.000	0.000	0.000	0.00	0.00

Base Reactions :	Linear	Non-Linear
Shear(Kips) :	-19.6612	-19.6612
Axial(Kips) :	34.7732	34.7732
Moment(Ft-Kips) :	-2060.0620	-2164.3410

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Data File...:100'Pole\Ante.txt Job No.:06-08154E Engineer:HMR
Description :162-FT --East Prospect, CT
Design.....:74 MPH + 0.5 Inchs Radial Ice
Owner.....:SBA Network Services
Analyzing Method: Finite Element Method

Shaft Segments --- FORCES AND MOMENTS:

Load Case 2: Wind Velocity = 74 MPH With 0.5 Inchs Radial Ice.

Wind Force (F=qz*Gh*[Cf*Ae+sum(Ca*Aa)]) <= 2*qz*Gh*Ag, where Ag is total area of pole.

Segment Elev. (ft)	[-----Cumulative Forces-----] Wind Forces (Kips)	Axial Forces (Kips)	[-----Moments (Ft-Kips)-----] From Ant/ Arm	From Shaft Wind	From P-Delta Effects	Total Moment
162.00	0.1015	0.1866	0.14	0.00	0.02	0.15
160.00	1.2602	1.7301	0.23	0.11	0.13	0.47
155.00	1.4775	2.0216	5.15	1.49	0.59	7.23
150.00	1.6287	2.1514	10.07	3.96	1.22	15.24
147.00	3.4851	5.1065	13.02	5.89	2.32	21.23
145.00	3.7800	5.3831	18.48	7.41	3.07	28.96
140.00	3.9598	5.5553	32.10	12.68	5.11	49.89
137.00	6.5434	9.7057	40.28	16.38	7.18	63.85
135.00	6.8514	10.0082	50.65	19.10	8.58	78.33
130.00	7.0388	10.1960	76.59	27.41	12.20	116.20
127.00	8.2605	11.3707	92.16	32.97	14.48	139.60
125.00	8.5805	11.6992	104.72	36.92	16.00	157.64
120.00	8.7747	11.9024	136.14	48.40	19.89	204.44
117.00	11.8050	16.0925	154.99	55.88	23.02	233.89
115.00	12.0617	16.6493	173.36	61.12	25.09	259.57
111.08	12.1321	16.7446	209.36	72.40	29.25	311.02
110.00	12.4631	17.1960	219.28	75.58	30.38	325.25
105.00	12.7985	17.6637	265.20	91.98	35.67	392.85
100.00	13.1381	18.1475	311.12	110.06	40.91	462.08
95.00	13.4813	18.6477	357.03	129.83	46.06	532.92
90.00	13.8278	19.1640	402.95	151.32	51.10	605.37
85.00	14.0784	19.5459	448.87	174.54	55.99	679.40
81.40	14.1751	19.8491	481.93	192.16	59.39	733.48
80.00	14.4061	20.5827	494.79	199.15	60.69	754.63
76.65	14.5199	20.7982	525.55	216.64	63.85	806.05
75.00	14.8678	21.4643	540.71	225.45	65.37	831.53
70.00	15.2169	22.1499	586.62	253.87	69.96	910.45
65.00	15.5664	22.8551	632.54	284.04	74.37	990.95
60.00	15.9156	23.5798	678.46	315.95	78.58	1072.99
55.00	16.2636	24.3241	724.38	349.61	82.56	1156.55
50.00	16.4148	24.6578	770.30	385.01	86.29	1241.60
47.80	16.6053	25.5225	790.50	400.92	87.83	1279.24
45.00	16.7866	26.3631	816.21	421.70	89.75	1327.66
42.30	16.9398	26.7784	841.01	442.23	91.55	1374.79
40.00	17.2725	27.6978	862.13	460.07	93.02	1415.22
35.00	17.5993	28.6400	908.05	500.51	96.06	1504.62
30.00	17.9270	29.6051	953.97	542.59	98.78	1595.34
25.00	18.2611	30.5930	999.89	586.31	101.17	1687.36
20.00	18.6016	31.6038	1045.80	631.69	103.19	1780.68
15.00	18.9484	32.6374	1091.72	678.78	104.81	1875.31
10.00	19.3016	33.6939	1137.64	727.61	106.00	1971.25
5.00	19.6612	34.7732	1183.56	778.20	106.74	2068.50
0.00	19.6612	34.7732	1229.48	830.59	107.00	2167.06

Antenna / Arm Loads:

Ant. Arm No.	Arm Mount Elev. (ft)	Load Applic. Elev. (ft)	Veloc. Press. [qz] (psf)	Antenna Force (lbs)	Antenna Weight (lbs)	Antenna Moment (lbs-ft)
[1]	162.000	165.000	22.20	45.03	70.00	135.08
[2]	160.000	160.000	22.01	749.84	194.00	0.00
[3]	160.000	160.000	22.01	189.69	108.00	0.00
[4]	147.000	147.000	21.48	927.58	216.00	0.00
[5]	147.000	147.000	21.48	813.22	1750.00	0.00
[6]	137.000	137.000	21.05	1665.56	639.00	0.00
[7]	137.000	137.000	21.05	797.02	1750.00	0.00

[8]	127.000	127.000	20.60	907.73	205.00	0.00
[9]	127.000	127.000	20.60	188.02	80.00	0.00
[10]	117.000	117.000	20.13	2138.03	898.00	0.00
[11]	117.000	117.000	20.13	761.88	1750.00	0.00

Total Number of Antennas / Arms = 11

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Data File...:100'Pole\Ante.txt Job No.:06-08154E Engineer:HMR
Description :162-FT --East Prospect, CT
Design.....:74 MPH + 0.5 Inchs Radial Ice
Owner.....:SBA Network Services
Analyzing Method: Finite Element Method

Pole Shaft Segments--- ACTUAL AND ALLOWABLE STRESSES:

Load Case 2: Wind Velocity = 74 MPH With 0.5 Inchs Radial Ice.

Segment Elev. (ft)	[----------ACTUAL STRESSES----------] Bending [fb] (ksi)	Axial [fb] (ksi)	Torsion [ft] (ksi)	Shear [fv] (ksi)	Combined [Ftot] (ksi)	Allow. Stess [Fb] (ksi)	Percent Used [Ftot/Fb] %
162.00	0.041	0.013	0.000	0.015	0.054	48.00	0.11
160.00	0.128	0.117	0.408	0.182	0.590	48.00	1.23
155.00	1.969	0.137	0.408	0.214	2.183	48.00	4.55
150.00	4.153	0.146	0.408	0.236	4.337	48.00	9.04
147.00	4.390	0.431	0.737	0.603	4.932	48.00	10.27
145.00	5.753	0.446	0.708	0.641	6.279	48.00	13.08
140.00	9.016	0.439	0.644	0.640	9.499	48.00	19.79
137.00	10.931	0.746	1.203	1.029	11.800	48.00	24.58
135.00	12.931	0.756	1.160	1.058	13.785	48.00	28.72
130.00	17.592	0.737	1.064	1.040	18.391	48.00	38.31
127.00	20.112	0.802	1.271	1.190	20.992	48.00	43.73
125.00	21.965	0.812	1.230	1.216	22.843	48.00	47.59
120.00	26.303	0.794	1.135	1.194	27.145	48.00	56.55
117.00	28.748	1.049	1.619	1.570	29.885	48.00	62.26
115.00	30.933	1.069	1.570	1.579	32.079	48.00	66.83
111.08	27.431	0.800	1.162	1.187	28.278	48.00	58.91
110.00	28.237	0.815	1.144	1.210	29.097	48.00	60.62
105.00	31.715	0.808	1.064	1.198	32.557	48.00	67.83
100.00	34.777	0.801	0.992	1.186	35.606	48.00	74.18
95.00	37.480	0.796	0.927	1.176	38.299	48.00	79.79
90.00	39.874	0.792	0.868	1.167	40.684	48.00	84.76
85.00	41.998	0.782	0.814	1.151	42.796	48.00	89.16
81.40	43.369	0.777	0.779	1.133	44.160	48.00	92.00
80.00	36.701	0.653	0.641	0.937	37.365	48.00	77.84
76.65	37.639	0.647	0.615	0.925	38.295	48.00	79.78
75.00	38.049	0.661	0.603	0.938	38.719	48.00	80.66
70.00	39.268	0.662	0.568	0.931	39.938	48.00	83.20
65.00	40.353	0.664	0.537	0.925	41.024	48.00	85.47
60.00	41.320	0.666	0.507	0.920	41.993	48.00	87.48
55.00	42.183	0.669	0.481	0.914	42.857	48.00	89.29
50.00	42.951	0.660	0.456	0.898	43.616	48.00	90.87
47.80	43.255	0.676	0.446	0.898	43.935	48.00	91.53
45.00	38.004	0.586	0.377	0.765	38.593	48.00	80.40
42.30	38.250	0.587	0.367	0.761	38.840	48.00	80.92
40.00	38.482	0.600	0.358	0.767	39.085	48.00	81.43
35.00	38.914	0.605	0.341	0.761	39.522	48.00	82.34
30.00	39.293	0.610	0.325	0.757	39.906	48.00	83.14
25.00	39.624	0.616	0.309	0.752	40.242	48.00	83.84
20.00	39.912	0.622	0.295	0.749	40.536	48.00	84.45
15.00	40.163	0.628	0.282	0.745	40.792	48.00	84.98
10.00	40.379	0.634	0.270	0.742	41.015	48.00	85.45
5.00	40.566	0.640	0.258	0.739	41.208	48.00	85.85
0.00	40.726	0.627	0.248	0.724	41.354	48.00	86.15