ROBINSON & COLE

EM-VER-023-120301

KENNETH C. BALDWIN

280 Trumbull Street
Hartford, CT 06103-3597
Main (860) 275-8200
Fax (860) 275-8299
kbaldwin@rc.com
Direct (860) 275-8345

February 29, 2012

RECEIVED
MAR - 1 2012
CONNECTICUT
SITING COUNCIL

Linda Roberts
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: **Notice of Exempt Modification – Antenna Swap**
540 Cherry Brook Road, Canton, Connecticut

Dear Ms. Roberts:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains twelve (12) wireless telecommunications antennas at the 150-foot level on the existing 150-foot tower at the above-referenced address. The tower is owned by SBA. The Council originally approved Cellco's shared use of the existing tower in 2001. Cellco now intends to modify its installation by replacing six (6) of its existing antennas with two (2) model BXA-171085-12BF PCS antennas; one (1) model BXA-171063-12BF PCS antenna; and three (3) BXA-70063/6CF LTE antennas, all at the same level on the tower. Cellco also intends to install six (6) additional coax cables attached to the outside of the tower. Attached behind Tab 1 are the specifications for the proposed replacement antennas.

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 Richard Barlow, First Selectman of the Town of Canton. A copy of this letter is also being sent to North Canton Fire Department, the owner of the property on which the tower is located.

The planned modifications to the facility fall 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 an increase in the overall height of the existing tower. Cellco's antennas will be located at the 150-foot level on the existing tower.

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2. The proposed modifications will not involve any modifications to ground-mounted equipment and, therefore, 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 operation of the replacement antennas will not increase radio frequency (RF) power density levels at the facility to a level at or above the Federal Communications Commission (FCC) adopted safety standard. A cumulative power density table for Cellco's modified facility is included behind Tab 2.

Also attached is a Structural Analysis confirming that the tower and foundation can support Cellco's proposed modifications. (See Tab 3).

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

Sincerely,

Kenneth C. Baldwin

Enclosures
Copy to:
Richard Barlow, Canton First Selectman
North Canton Fire Department
Sandy M. Carter

Amphenol ANTENNA SOLUTIONS

BXA-171085-12BF-EDIN-X

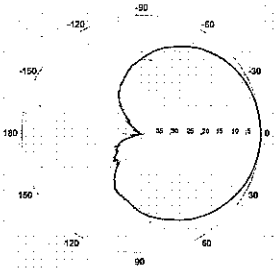
Replace "X" with desired electrical downtilt

X-Pol | FET Panel | 85° | 18.0 dBi

Electrical Characteristics	1710-2170 MHz		
Frequency bands	1710-1880 MHz	1850-1990 MHz	1920-2170 MHz
Polarization	±45°	±45°	±45°
Horizontal beamwidth	88°	85°	80°
Vertical beamwidth	4.5°	4.5°	4.5°
Gain	15.1 dBd / 17.2 dBi	15.5 dBd / 17.6 dBi	15.9 dBd / 18.0 dBi
Electrical downtilt (X)	0, 2, 4		
Impedance	50Ω		
VSWR	≤1.5:1		
First upper sidelobe	< -17 dB		
Front-to-back ratio	> 30 dB		
In-band isolation	> 28 dB		
IM3 (20W carrier)	< -150 dBc		
Input power	300 W		
Lightning protection	Direct Ground		
Connector(s)	2 Ports / EDIN / Female / Bottom		
Operating temperature	-40° to +60° C / -40° to +140° F		
Mechanical Characteristics			
Dimensions Length x Width x Depth	1820 x 154 x 105 mm	71.7 x 6.1 x 4.1 in	
Depth with z-brackets	133 mm	5.2 in	
Weight without mounting brackets	6.8 kg	15 lbs	
Survival wind speed	> 201 km/hr	> 125 mph	
Wind area	Front: 0.28 m² Side: 0.19 m²	Front: 3.1 ft² Side: 2.1 ft²	
Wind load @ 161 km/hr (100 mph)	Front: 460 N Side: 304 N	Front: 103 lbf Side: 68 lbf	

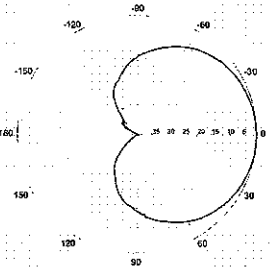
Mounting Options	Part Number	Fits Pipe Diameter	Weight
2-Point Mounting Bracket Kit	26799997	50-102 mm 2.0-4.0 in	2.3 kg 5 lbs
2-Point Mounting & Downtilt Bracket Kit	26799999	50-102 mm 2.0-4.0 in	3.6 kg 8 lbs
Concealment Configurations	For concealment configurations, order BXA-171085-12BF-EDIN-X-FP		

BXA-171085-12BF-EDIN-X



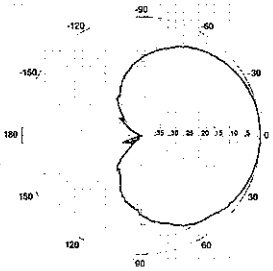
Horizontal | 1710-1880 MHz

BXA-171085-12BF-EDIN-X



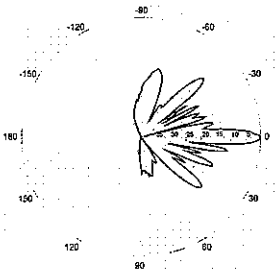
Horizontal | 1850-1990 MHz

BXA-171085-12BF-EDIN-X



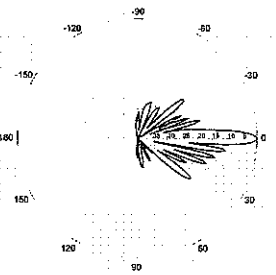
Horizontal | 1920-2170 MHz

BXA-171085-12BF-EDIN-0



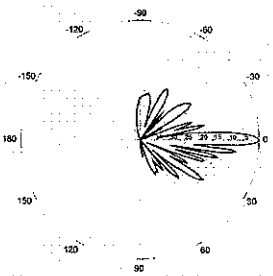
0° | Vertical | 1710-1880 MHz

BXA-171085-12BF-EDIN-0



0° | Vertical | 1850-1990 MHz

BXA-171085-12BF-EDIN-0



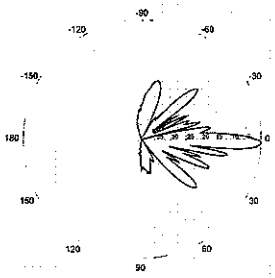
0° | Vertical | 1920-2170 MHz

Quoted performance parameters are provided to offer typical or range values only and may vary as a result of normal manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to product may be made without notice.

BXA-171085-12BF-EDIN-X

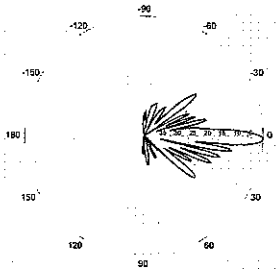
X-Pol | FET Panel | 85° | 18.0 dBi

BXA-171085-12BF-EDIN-2



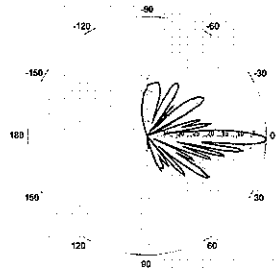
2° | Vertical | 1710-1880 MHz

BXA-171085-12BF-EDIN-2



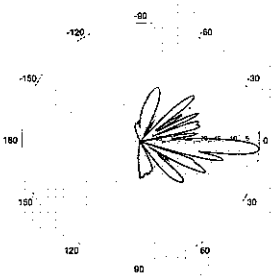
2° | Vertical | 1850-1990 MHz

BXA-171085-12BF-EDIN-2



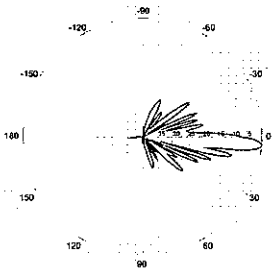
2° | Vertical | 1920-2170 MHz

BXA-171085-12BF-EDIN-4



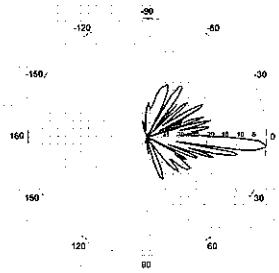
4° | Vertical | 1710-1880 MHz

BXA-171085-12BF-EDIN-4



4° | Vertical | 1850-1990 MHz

BXA-171085-12BF-EDIN-4



4° | Vertical | 1920-2170 MHz

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Amphenol ANTENNA SOLUTIONS

BXA-171063-12BF-EDIN-X

Replace "X" with desired electrical downtilt

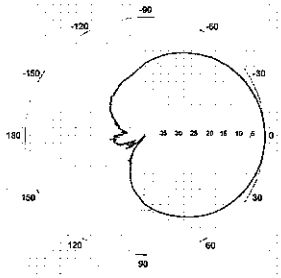
X-Pol | FET Panel | 63° | 19.0 dBi

Electrical Characteristics	1710-2170 MHz		
Frequency bands	1710-1880 MHz	1850-1990 MHz	1920-2170 MHz
Polarization	±45°	±45°	±45°
Horizontal beamwidth	68°	65°	60°
Vertical beamwidth	4.5°	4.5°	4.5°
Gain	16.1 dBd / 18.2 dBi	16.5 dBd / 18.6 dBi	16.9 dBd / 19.0 dBi
Electrical downtilt (X)	0, 2, 5		
Impedance	50Ω		
VSWR	≤1.5:1		
First upper sidelobe	< -17 dB		
Front-to-back ratio	> 30 dB		
In-band isolation	> 28 dB		
IM3 (20W carrier)	< -150 dBc		
Input power	300 W		
Lightning protection	Direct Ground		
Connector(s)	2 Ports / EDIN / Female / Bottom		
Operating temperature	-40° to +60° C / -40° to +140° F		

Mechanical Characteristics		
Dimensions Length x Width x Depth	1820 x 154 x 105 mm	71.7 x 6.1 x 4.1 in
Depth with z-brackets	133 mm	5.2 in
Weight without mounting brackets	6.8 kg	15 lbs
Survival wind speed	> 201 km/hr	> 125 mph
Wind area	Front: 0.28 m² Side: 0.19 m²	Front: 3.1 ft² Side: 2.1 ft²
Wind load @ 161 km/hr (100 mph)	Front: 460 N Side: 304 N	Front: 103 lbf Side: 68 lbf

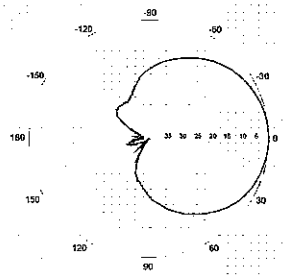
Mounting Options	Part Number	Fits Pipe Diameter	Weight
2-Point Mounting Bracket Kit	26799997	50-102 mm 2.0-4.0 in	2.3 kg 5 lbs
2-Point Mounting & Downtilt Bracket Kit	26799999	50-102 mm 2.0-4.0 in	3.6 kg 8 lbs
Concealment Configurations	For concealment configurations, order BXA-171063-12BF-EDIN-X-FP		

BXA-171063-12BF-EDIN-X



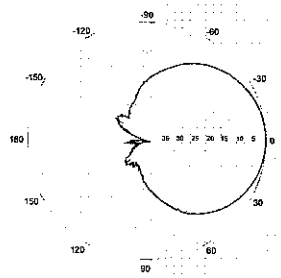
Horizontal | 1710-1880 MHz

BXA-171063-12BF-EDIN-X



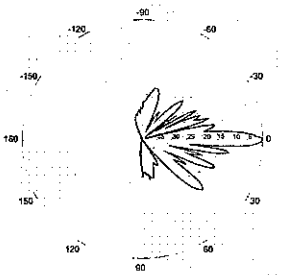
Horizontal | 1850-1990 MHz

BXA-171063-12BF-EDIN-X



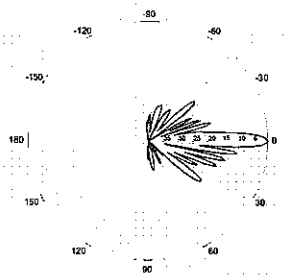
Horizontal | 1920-2170 MHz

BXA-171063-12BF-EDIN-0



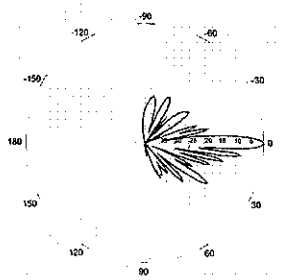
0° | Vertical | 1710-1880 MHz

BXA-171063-12BF-EDIN-0



0° | Vertical | 1850-1990 MHz

BXA-171063-12BF-EDIN-0



0° | Vertical | 1920-2170 MHz

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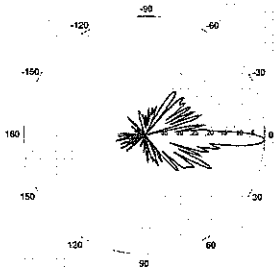
BXA-171063-12BF-EDIN-X

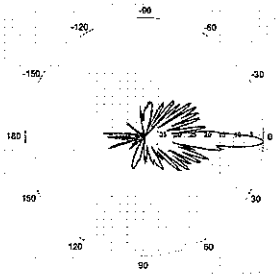
X-Pol | FET Panel | 63° | 19.0 dBi

BXA-171063-12BF-EDIN-2



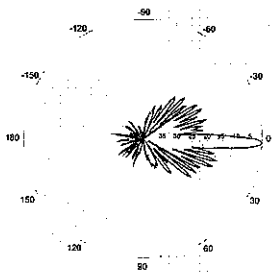
2° | Vertical | 1710-1880 MHz

BXA-171063-12BF-EDIN-2



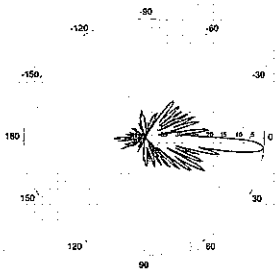
2° | Vertical | 1850-1990 MHz

BXA-171063-12BF-EDIN-2



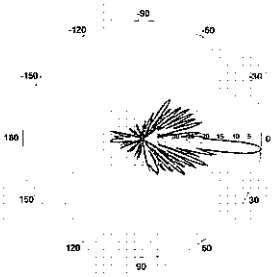
2° | Vertical | 1920-2170 MHz

BXA-171063-12BF-EDIN-5



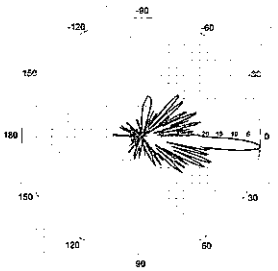
5° | Vertical | 1710-1880 MHz

BXA-171063-12BF-EDIN-5



5° | Vertical | 1850-1990 MHz

BXA-171063-12BF-EDIN-5



5° | Vertical | 1920-2170 MHz

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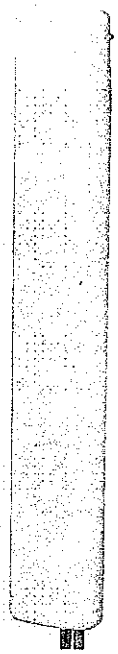
Amphenol ANTENNA SOLUTIONS

BXA-70063-6CF-EDIN-X

X-Pol | FET Panel | 63° | 14.5 dBd

Replace "X" with desired electrical downtilt.

Antenna is also available with NE connector(s). Replace "EDIN" with "NE" in the model number when ordering.

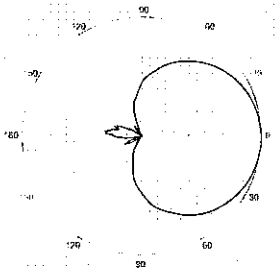


Electrical Characteristics	696-900 MHz	
Frequency bands	696-806 MHz	806-900 MHz
Polarization	±45°	
Horizontal beamwidth	65°	63°
Vertical beamwidth	13°	11°
Gain	14.0 dBd (16.1 dBi)	14.5 dBd (16.6 dBi)
Electrical downtilt (X)	0, 2, 3, 4, 5, 6, 8, 10	
Impedance	50Ω	
VSWR	≤1.35:1	
Upper sidelobe suppression (0°)	-18.3 dB	-18.2 dB
Front-to-back ratio (+/-30°)	-33.4 dB	-36.3 dB
Null fill	5% (-26.02 dB)	
Isolation between ports	< -25 dB	
Input power with EDIN connectors	500 W	
Input power with NE connectors	300 W	
Lightning protection	Direct Ground	
Connector(s)	2 Ports / EDIN or NE / Female / Center (Back)	

Mechanical Characteristics		
Dimensions Length x Width x Depth	1804 x 285 x 132 mm	71.0 x 11.2 x 5.2 in
Depth with z-brackets	172 mm	6.8 in
Weight without mounting brackets	7.9 kg	17 lbs
Survival wind speed	> 201 km/hr	> 125 mph
Wind area	Front: 0.51 m² Side: 0.24 m²	Front: 5.5 ft² Side: 2.6 ft²
Wind load @ 161 km/hr (100 mph)	Front: 759 N Side: 391 N	Front: 169 lbf Side: 89 lbf

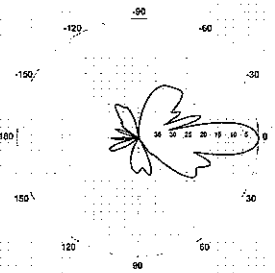
Mounting Options	Part Number	Fits Pipe Diameter	Weight
3-Point Mounting & Downtilt Bracket Kit	36210008	40-115 mm 1.57-4.5 in	6.9 kg 15.2 lbs
Concealment Configurations	For concealment configurations, order BXA-70063-6CF-EDIN-X-FP		

BXA-70063-6CF-EDIN-X



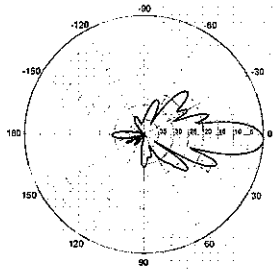
Horizontal | 750 MHz

BXA-70063-6CF-EDIN-0

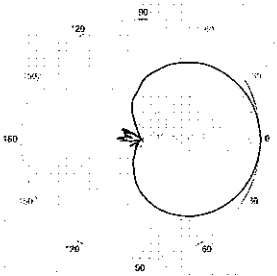


0° | Vertical | 750 MHz

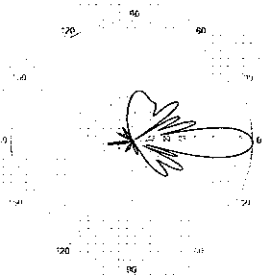
BXA-70063-6CF-EDIN-2



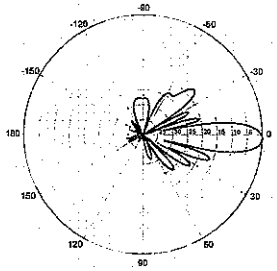
2° | Vertical | 750 MHz



Horizontal | 850 MHz



0° | Vertical | 850 MHz



2° | Vertical | 850 MHz

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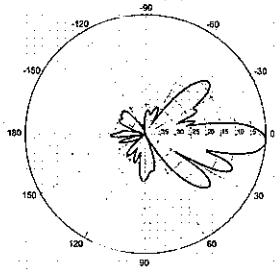
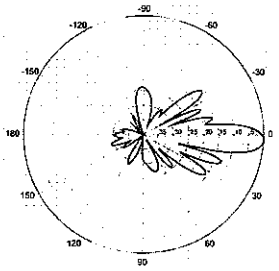
BXA-70063-6CF-EDIN-X

X-Pol | FET Panel | 63° | 14.5 dBd

BXA-70063-6CF-EDIN-3

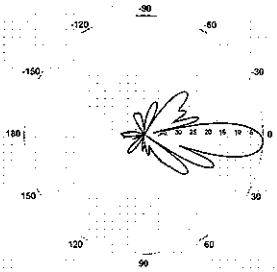


3° | Vertical | 750 MHz

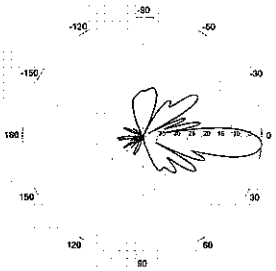


3° | Vertical | 850 MHz

BXA-70063-6CF-EDIN-4



4° | Vertical | 750 MHz



4° | Vertical | 850 MHz

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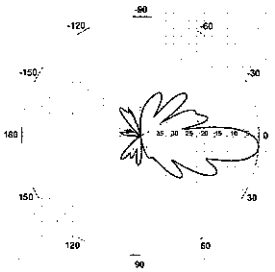
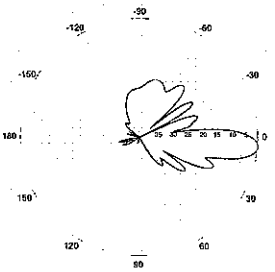
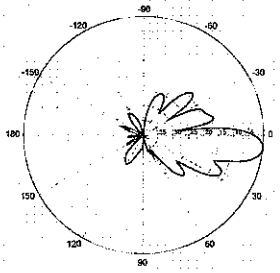


5° | Vertical | 750 MHz

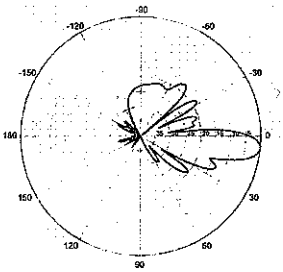


5° | Vertical | 850 MHz

BXA-70063-6CF-EDIN-6

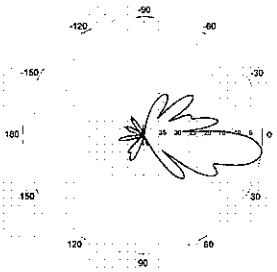


6° | Vertical | 750 MHz

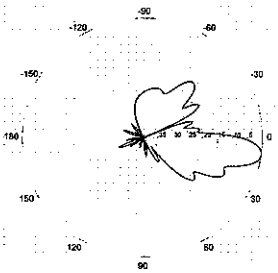


6° | Vertical | 850 MHz

BXA-70063-6CF-EDIN-8

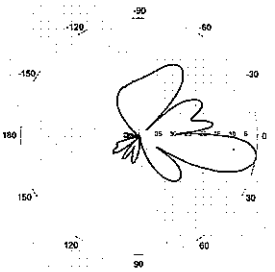


8° | Vertical | 750 MHz

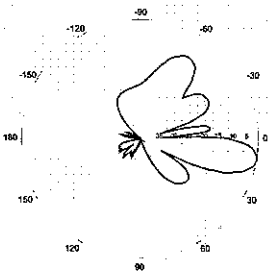


8° | Vertical | 850 MHz

BXA-70063-6CF-EDIN-10



10° | Vertical | 750 MHz



10° | Vertical | 850 MHz

Quoted performance parameters are provided to offer typical or range values only and may vary as a result of normal manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to product may be made without notice.

	General	Power	Density					
Site Name: North Canton								
Tower Height: Verizon @ 150ft								
CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	CALC. POWER DENS	FREQ.	MAX. PERMISS. EXP.	FRACTION MPE	Total
*Pocket	3	631	129	0.0409	2130	1.0000	4.09%	
*Cingular UMTS	1	500	140	0.0092	880	0.5867	1.56%	
*Cingular UMTS	1	500	140	0.0092	1900	1.0000	0.92%	
*Cingular GSM	2	427	140	0.0157	1900	1.0000	1.57%	
*Cingular GSM	4	296	140	0.0217	880	0.5867	3.70%	
*Town of Canton 1	1	400	150	0.0064	160	0.2000	3.20%	
*Town of Canton 2	1	200	150	0.0032	37.74	0.2000	1.60%	
*Town of Canton 3	1	20	150	0.0003	454	0.3027	0.11%	
Verizon PCS	**7**	**337**	**150**	**0.0377**	**1970**	**1.0000**	**3.77%**	
Verizon Cellular	**9**	**373**	**150**	**0.0536**	**869**	**0.5793**	**9.26%**	
Verizon AWS	**1**	**843**	**150**	**0.0135**	**2145**	**1.0000**	**1.35%**	
Verizon 700	**1**	**780**	**150**	**0.0125**	**698**	**0.4653**	**2.68%**	
								33.80%
* Source: Siting Council								

FDH ENGINEERING

FDH Engineering, Inc., 2730 Rowland Rd. Raleigh, NC 27615, Ph. 919.755.1012, Fax 919.755.1031

Structural Analysis for SBA Network Services, Inc.

150' Monopole Tower

SBA Site Name: Canton 2
SBA Site ID: CT01500-S
Verizon Site Name: North Canton, CT

FDH Project Number 11-12292E S1

Analysis Results

Tower Components	72.8%	Sufficient
Foundation	59.4%	Sufficient

Prepared By:

J. Scott Hilgoe

J. Scott Hilgoe, EI
Project Engineer

Reviewed By:

Christopher M. Murphy

Christopher M Murphy, PE
President
CT PE License No. 25842

FDH Engineering, Inc.
2730 Rowland Rd.
Raleigh, NC 27615
(919) 755-1012
info@fdh-inc.com

December 28, 2011

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

TABLE OF CONTENTS

EXECUTIVE SUMMARY

At the request of SBA Network Services, Inc., FDH Engineering, Inc. performed a structural analysis of the monopole located in Canton, CT to determine whether the tower is structurally adequate to support both the existing and proposed loads pursuant to the *Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, TIA/EIA-222-F.* Information pertaining to the existing/proposed antenna loading, current tower geometry, geotechnical data, foundation dimensions, and member sizes was obtained from:

- Fred A. Nudd Corporation (Proj. No. 7221) Design of 150' Monopole Tower dated November 2, 2000
- Vertical Structures, Inc. (Job No. 2009-007-014) Structural Analysis Report dated June 24, 2009
- Vertical Structures, Inc. (Job No. 2008-007-029) Modification Design Drawings dated October 6, 2008
- Vertical Structures, Inc. (Job No. 2009-012-001) Post Rework Report dated January 13, 2009
- Jaworski Geotech, Inc. (Proj. No. 99503G) Geotechnical Evaluation dated November 29, 1999
- SBA Network Services, Inc.

The *basic design wind speed* per the *TIA/EIA-222-F* standard is 80 mph without ice and 38 mph with 1" radial ice. Ice is considered to increase in thickness with height.

Conclusions

With the existing and proposed antennas from Verizon in place at 150 ft, the tower meets the requirements of the *TIA/EIA-222-F* standards provided the **Recommendations** listed below are satisfied. Furthermore, provided the foundation was designed and constructed to support the original design reactions (see Nudd Proj. No. 7221), the foundation should have the necessary capacity 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 Engineering, Inc. is accurate (i.e., the steel data, tower layout, existing antenna loading, and proposed antenna loading) and that the tower has been properly erected and maintained per the original design drawings.

Recommendation

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

1. The proposed coax should be installed inside the pole's shaft but may be installed outside the pole's shaft in a single row if necessary.

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 the layout, FDH Engineering, Inc. should be contacted to perform a revised analysis.*

Table 1 - Appurtenance Loading

Existing Loading:

Antenna Elevation (ft)	Description	Coax and Lines	Carrier	Mount Elevation (ft)	Mount Type
161	(1) Celwave PD220 Omni	(2) 1-5/8"	NCVFD	150	(1) Low Profile Platform
159.4	(1) Celwave TD1142 Omni				
150	(6) Antel LPA-80080/6CF W/Mount Pipe (6) Antel LPA-185080/12CF W/Mount Pipe	(12) 1-5/8"	Verizon		
138	(6) Powerwave 7770.00 w/Mount Pipe (6) Powerwave LGP2140X TMA (6) Powerwave LGP21903 Diplexers (3) Decibel 978QNB120E-M w/Mount Pipe	(12) 1-5/8" (3) 1/2"	AT&T	138	(1) Low Profile Platform
129	(3) Kathrein 742 213 w/ Mount Pipe	(6) 1-5/8"	Pocket Comm.	129	Direct Mount
92	(1) 4' Yagi	(1) 1/2"	--	92	Direct Mount

Proposed Loading:

Antenna Elevation (ft)	Description	Coax and Lines	Carrier	Mount Elevation (ft)	Mount Type
150	(3) Antel BXA-70063/6CF W/Mount Pipe (2) Antel BXA-171085-12BF w/Mount Pipe (2) Antel LPA-80063/6CF w/ Mount Pipe (1) Antel BXA-171063/12BF-2 w/ Mount Pipe (4) Antel LPA-80080/6CF W/Mount Pipe	(18) 1-5/8"	Verizon	150	(1) Low Profile Platform

RESULTS

The following yield strength of steel for individual members was used for analysis:

Table 2 - Material Strength

Member Type	Yield Strength
Tower Shaft Sections	36 & 65 ksi
Flange Plate	50 ksi
Flange Bolts	92 ksi
Base Plate	50 ksi
Anchor Bolts	105 ksi

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

If the assumptions outlined in this report differ from actual field conditions, FDH Engineering, Inc. 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

Section No.	Elevation ft	Component Type	Size	% Capacity	Pass Fail
L1	150 - 139	Pole	TP24x24x0.2813	18.7	Pass
	139	Flange Bolts	(18) 1/2"ø w/ BC=27"ø	49.7	Pass
	139	Flange Plate	PL30"ø x 0.625" Thk.	49.7	Pass
L2	139 - 89	Pole	TP35.25x24x0.25	53.9	Pass
L3	89 - 44	Pole	TP45.25x33.625x0.3125	56.7	Pass
L4	44 - 0	Pole	TP55.5x43.23x0.375	52.4	Pass
	0	Anchor Bolts	(18) 2"ø w/ BC=62"ø	48.6	Pass
	0	Base Plate	PL68"ø x 1.5" Thk. w/ 6" x 1" x 1'-3" Stiffeners	72.8	Pass

Table 4 - Maximum Base Reactions

Base Reactions	Current Analysis *(TIA/EIA-222-F)*	Original Design *(TIA/EIA-222-F)*
Axial	31 k	---
Shear	19 k	32 k
Moment	1,991 k	3,544 k

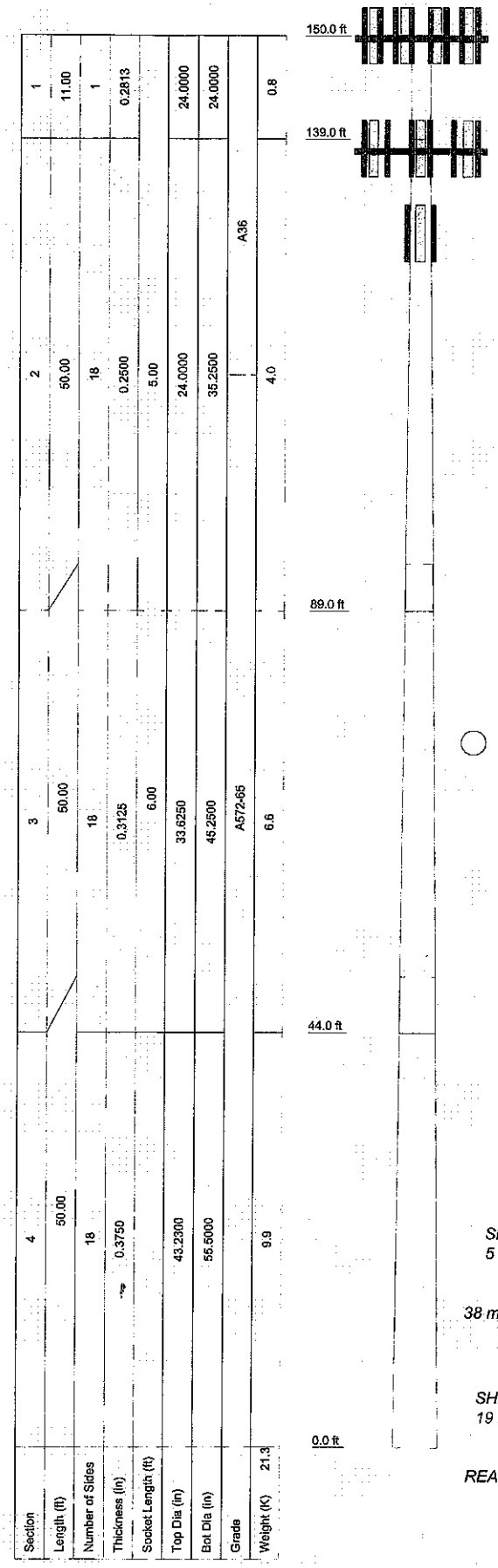
GENERAL COMMENTS

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 Network Services, Inc. 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, Inc. should be notified immediately to perform a revised analysis.

LIMITATIONS

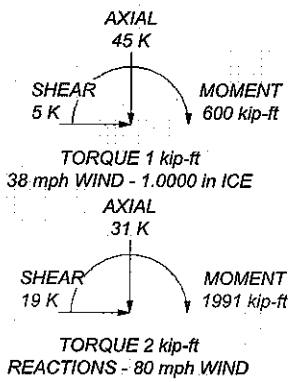
All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of this report. All opinions and conclusions are subject to revision based upon receipt of new or additional/updated information. All services are provided 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.

APPENDIX



Section	1	2	3	4
Length (ft)	11.00	50.00	50.00	50.00
Number of Sides	1	18	18	18
Thickness (in)	0.2813	0.2500	0.3125	0.3750
Socket Length (ft)		5.00	6.00	
Top Dia (in)	24.0000	24.0000	33.6250	43.2300
Bot Dia (in)	24.0000	35.2500	45.2500	55.5000
Grade	A36		A572-65	
Weight (K)	0.8	4.0	6.6	9.9

Total Weight (K) 21.3



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod 5/8x4'	150	(2) 7770.00 w/Mount Pipe	138
BXA-70063/6CF W/Mount Pipe	150	(2) 7770.00 w/Mount Pipe	138
BXA-70063/6CF W/Mount Pipe	150	(2) LGP2140X TMA	138
BXA-70063/6CF W/Mount Pipe	150	(2) LGP2140X TMA	138
BXA-171085-12BF w/Mount Pipe	150	(2) LGP2140X TMA	138
BXA-171085-12BF w/Mount Pipe	150	(2) LGP21903 Diplexer	138
LPA-80063/6CF w/ Mount Pipe	150	(2) LGP21903 Diplexer	138
LPA-80063/6CF w/ Mount Pipe	150	(2) LGP21903 Diplexer	138
BXA-171063/12BF-2 w/ Mount Pipe	150	978QNB120E-M w/Mount Pipe	138
LPA-80080/6CF W/Mount Pipe	150	978QNB120E-M w/Mount Pipe	138
LPA-80080/6CF W/Mount Pipe	150	978QNB120E-M w/Mount Pipe	138
(2) LPA-80080/6CF W/Mount Pipe	150	(1) Low Profile Platform mnt	138
(1) Low Profile Platform mnt	150	742 213 w/ Mount Pipe	129
PD220	150	742 213 w/ Mount Pipe	129
TD1142	150	742 213 w/ Mount Pipe	129
(2) 7770.00 w/Mount Pipe	138	4' Yagi	92

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36	36 ksi	58 ksi	A572-65	65 ksi	80 ksi

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for a 80 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 56.7%

FDH ENGINEERING
Structural Analysis

FDH Engineering, Inc.
2730 Rowland Road
Raleigh, NC 27615
Phone: (919)755-1012
FAX: (919)755-1031

Job: *Canton 2, CT01500-S*			
Project: *11-12292E S1*			
Client: SBA	Drawn by: JSH	App'd:	
Code: TIA/EIA-222-F	Date: 12/28/11	Scale: NTS	
Path:		Dwg No. E-1	