ROBINSON & COLE LLP

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

April 7, 2011

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

Re: **Notice of Construction Activity**
EM-VER-002-100107 – 401 Wakelee Avenue, Ansonia, CT
EM-VER-051-100125 – 281 Woodhouse Avenue, Fairfield, CT
EM-VER-101-100107 – 117 Washington Avenue, North Haven, CT
EM-VER-084-100107 – 111 School House Road, Milford, CT
EM-VER-115-100128 – 178 New Haven Road, Prospect, CT
EM-VER-103-100107 – Old Waterbury Road, Southbury, CT

Dear Ms. Roberts:

The purpose of this letter is to notify you that construction activity associated with all of the above-referenced facility modifications has been completed.

If you have any questions or need any additional information regarding any of these facilities, please do not hesitate to contact me.

Sincerely,

Kenneth C. Baldwin

KCB/kmd
Copy to:
Sandy M. Carter

10995311-v1

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

December 8, 2010

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

RE: **EM-VER-115-100128** - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 178 New Haven Road, Prospect, Connecticut. Modification of Previous Acknowledgment.

Dear Attorney Baldwin:

In addition to the Connecticut Siting Council (Council) acknowledgement dated March 12, 2010 (filing dated January 28, 2010), 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:

- 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 less 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 16, 2010. 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,

Linda Roberts
Executive Director

LR/CDM/laf

c: The Honorable Robert J. Chatfield, Mayor, Town of Prospect
William J. Donovan, Zoning Enforcement Officer, Town of Prospect
SBA

ROBINSON & COLE LLP

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ORIGINAL

November 16, 2010

Michael Perrone
Siting Analyst
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: **EM-VER-115-100128 – Cellco Partnership d/b/a Verizon Wireless**
178 New Haven Road, Prospect, Connecticut

Dear Mr. Perrone:

On March 12, 2010, the Siting Council acknowledged receipt of Cellco's notice of intent to modify the above-referenced telecommunications facility. This modification involved the replacement of Cellco's existing antennas with newer model cellular, PCS and LTE antennas.

In addition to the antenna modifications, Cellco now intends to install six (6) antenna cable diplexers on its antenna platform. Attached to this letter is a Structural Evaluation Letter verifying that the tower can support all of the previously approved antenna modifications and the addition of the antenna cable diplexers.

If you have any questions regarding any of these materials, please do not hesitate to contact me or Rachel Mayo.

Sincerely,

Kenneth C. Baldwin

Attachment
Copy to:
Sandy M. Carter
Brian Ragozzine
Mark Gauger

10728015-v1

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

November 12, 2010

Mr. Darcy Nelson
SBA Network Services, Inc.
74 Wesley Street
Forty Fort, PA 18704

RE: 157' Monopole
SBA Site Name: Prospect
SBA Site ID: CT00252-S
FDH Project Number: 10-01014E S2

Dear Darcy:

Per your request, FDH Engineering, Inc. has reviewed our previous structural analysis report and the revised loading for the 157' monopole located in Prospect, CT. The previous structural analysis report by FDH Engineering, Inc. (Project No. 10-01014E S1) dated January 8, 2010 stipulates the tower was analyzed with the appurtenance loading outlined in **Table 1** on the following page.

Given the current configuration (see **Table 1**), Verizon's revised loading of (6) Decibel DB844G65ZAXY antennas, (3) Powerwave P65-16-XL-2 antennas, (3) Rymsa MGD3-800T0 antennas, (6) RFS FD9R6004/2C-3L diplexers with corresponding (12) 1-5/8" coax at a centerline elevation of 132 ft (see **Table 2**), and the working percentage calculated in the previous analysis, the tower will meet the requirements of the *TIA/EIA-222-F* standards. Furthermore, provided the tower foundation was designed and constructed to support the tower's original design reactions (see Fred Nudd Project No. 6820), the foundation should have the necessary capacity to support the existing and revised loading. The existing coax should be re-used with the proposed loading. The proposed diplexers should be installed directly behind the existing antennas.

Our assessment has been made assuming all information provided to FDH Engineering, Inc. is accurate and that the tower has been properly erected and maintained.

In conclusion, the Verizon installation should meet or exceed all applicable standards and should therefore be considered safe. Should you require additional information, please do not hesitate to contact our office.

Sincerely,

Trent T. Snarr, EI
Project Engineer

Reviewed By:

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

Table 1 – Previous Analysis/Existing Appurtenance Loading

Antenna No.	Antenna Elevation (ft)	Description	Coax and Lines	Carrier	Mount Elevation (ft)	Mount Type	Total EPA (ft^2)*
1-9	158.5[2]	(3) Powerwave 7770 (6) CSS DUO1417-8686 (6) ADC Cleargain CG1900W/850 TMAs (3) Powerwave LGP 13519 Diplexers (3) CSS DBC-750 Combiners	(12) 1-1/4"	AT&T	158.5	(1) 16' Low Profile Platform	---
10-18	140[3]	(9) Decibel DB844H90E-XY	(9) 1-5/8"	Nextel	140	(3) 12.5' T-Frames	---
19-30	132[4]	(6) Decibel DB844G65ZAXY (3) Powerwave P65-16-XL-2 (3) Rymsa MGD3-800T0	(12) 1-5/8"	Verizon	132	(1) 14' Low Profile Platform	52.21
31-33	100	(3) Kathrein 742-213	(6) 1-5/8"	Pocket	100	Flush	---

* Total EPA listed without ice per TIA standard and does not include mount or dish area.

1. The existing coax are located inside the pole's shaft, unless otherwise noted.
2. Currently AT&T has (6) CSS DUO1417-8686-4 antennas, (3) Kathrein 800 10121 antennas, (12) TMAs and (12) 1-1/4" coax installed at 158.5'. According to information provided by SBA, AT&T may install up to (6) CSS DUO1417-8686 antennas, (3) Powerwave 7770 antennas, (6) TMAs, (3) diplexers, (3) combiners, and (12) 1-1/4" coax at 158.5'. Analysis performed with the larger loading in place.
3. Currently Nextel has (9) 1-1/4" coax installed at 140'. According to information provided by SBA, Nextel may install up to (9) 1-5/8" coax at 140'. Analysis performed with the total leased loading in place.
4. The loading for Verizon at 132' will be altered. See the proposed loading below.

Table 2 – Revised Appurtenance Loading

Antenna No.	Antenna Elevation (ft)	Description	Coax and Lines	Carrier	Mount Elevation (ft)	Mount Type	Total EPA (ft^2)*
1-12	132[1]	(6) Decibel DB844G65ZAXY (3) Powerwave P65-16-XL-2 (3) Rymsa MGD3-800T0 (6) RFS FD9R6004/2C-3L Diplexers	(12) 1-5/8"	Verizon	132	(1) 14' Low Profile Platform	53.56

* Total EPA listed without ice per TIA standard and does not include mount or dish area.

1. This represents the total loading for Verizon at 132 ft. According to information provided by SBA, Verizon will install (6) RFS FD9R6004/2C-3L diplexers in addition to their existing loading at 132'.

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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Internet: ct.gov/csc

Daniel F. Caruso
Chairman

March 12, 2010

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

RE: **EM-VER-115-100128** - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 178 New Haven Road, Prospect, Connecticut

Dear Attorney Baldwin:

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 condition:

- The existing coax shall be reused if reasonably feasible; and
- Not more than 45 days after completion of construction, the Council shall be notified in writing that the coax was configured as specified.

The proposed modifications are to be implemented as specified here and in your notice dated January 28, 2010, 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,

S. Derek Phelps
Executive Director

SDP/MP/laf

c: The Honorable Robert J. Chatfield, Mayor, Town of Prospect
William J. Donovan, Zoning Enforcement Officer, Town of Prospect
SBA

ROBINSON & COLE LLP

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Hartford, CT 06103-3597
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EM-VER-115-100128

January 28, 2010

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**
178 New Haven Road, Prospect, Connecticut

Dear Mr. Phelps:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains wireless telecommunications antennas at the 132-foot level on the existing 157-foot tower at the above-referenced address. The tower is owned by SBA. The Council approved Cellco's shared use of the existing tower in 1999 through its approval of EM-BAM-115-990701. Cellco now intends to modify its installation by replacing all twelve (12) of its existing antennas with six (6) model DB844G65ZAXY cellular antennas; three (3) model MGD3-800T0 PCS antennas; and three (3) P65-16-XL-2 LTE (700 MHz) antennas, all at the same 132-foot level on 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 Robert J. Chatfield, Mayor for the Town of Prospect. A copy of this letter is also being sent to Victor, Peter and Joseph Visockis, the owners 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 any increase in the overall height of the existing tower. Cellco's antennas will be located at the same 132-foot level on the existing 157-foot tower.

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 Report confirming that the tower and foundation can support Cellco's proposed antennas modification. (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 J. Chatfield, Prospect Mayor
Victor, Peter and Joseph Visockis
Sandy M. Carter

Product Specifications

DB844G65ZAXY

ANDREW®
A CommScope Company

Mechanical Specifications

Color	Light gray
Connector Interface	7-16 DIN Female
Connector Location	Back
Connector Quantity	1
Wind Loading, maximum	235.8 N @ 100 mph 53.0 lbf @ 100 mph
Wind Speed, maximum	241.4 km/h | 150.0 mph

Dimensions

Depth	203.2 mm | 8.0 in
Length	1219.2 mm | 48.0 in
Width	254.0 mm | 10.0 in
Net Weight	5.4 kg | 12.0 lb

Regulatory Compliance/Certifications

Agency
RoHS 2002/95/EC
China RoHS SJ/T 11364-2006

Classification
Compliant by Exemption
Above Maximum Concentration Value (MCV)

INCLUDED PRODUCTS

DB5083
Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members

DB380
Pipe Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members

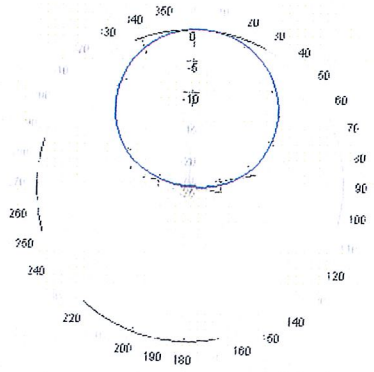
DB382NS
Side Offset Bracket for 4.5 in (114.3 mm) OD round members

Product Specifications

DB844G65ZAXY

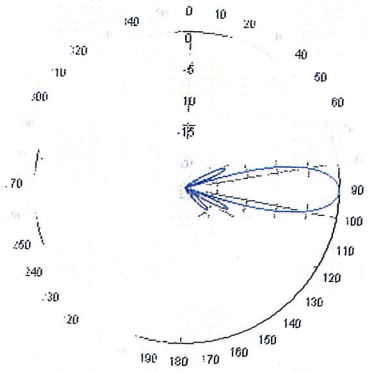
ANDREW®
A CommScope Company

Horizontal Pattern

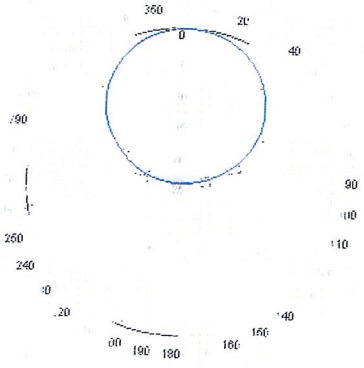


Freq: 860 MHz, Tilt: 0°

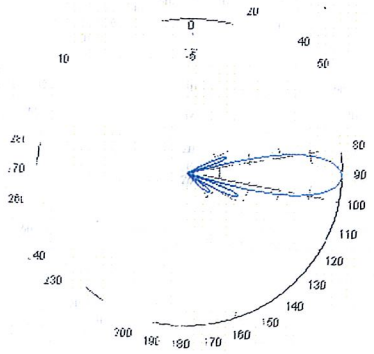
Vertical Pattern



Freq: 860 MHz, Tilt: 0°



Freq: 935 MHz, Tilt: 0°



Freq: 935 MHz, Tilt: 0°

RYMSA WIRELESS

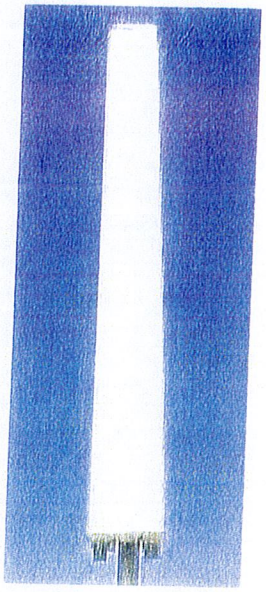
1710-2170 MHz

Model # MG D3-800TX

XPol GSM1800+PCS & UMTS Panel Antenna

Beamwidth: H 65º/V 6.5º
Gain: 16.15 dBd/18.25 dBi
Length: 52.7 in

Electrical Specifications			
Antenna model	MG D3-800TX		
Frequency range (MHz)	1710-1880	1850-1990	1920-2170
Impedance	50 ohms		
VSWR	1.4		
Polarization	±45º		
Isolation between ports (dB)	30		
Average gain (dBd/dBi)	15.7/17.8	15.9/18	16.15/18.25
Horizontal beamwidth (deg)	65º±5º		
Vertical beamwidth (deg)	6.5º±0.5º	6.3º±0.5º	6.3º±0.5º
Electrical tilt (deg)	Fixed 0º-14º		
Upper sidelobe suppression (dB)	18		
Front-to-back ratio (db) @180º±30º	30		
Polarization isolation (dB) @3 dB beamwidth	20		
Maximum power per input (w)	250		
Intermodulation products (dBc)	-150		
Connectors	2 X 7/16 female		
Connector position	Antenna bottom		



Mechanical & Environmental Specifications	
Dimensions in (mm)	52.7 x 6.3 x 3.5 (1380 x 160 x 90)
Survival wind speed mph (kph)	124 (200)
Front windload lbs (N) @100 mph/160 kph	74 (335)
Lateral windload lbs (N) @100 mph/160 kph	42 (188)
Antenna weight lbs (kg)	15 (7)
Clamps weight lbs (kg)	7.7 (3.5)
Mast mounting in (cm)	2.0 to 5.3 (50 to 135)
Radome color	Gray
Grounding	All metallic parts DC grounded
Temperature range F (ºC)	-67º to 140º (-55 to +60º)
Humidity	100%

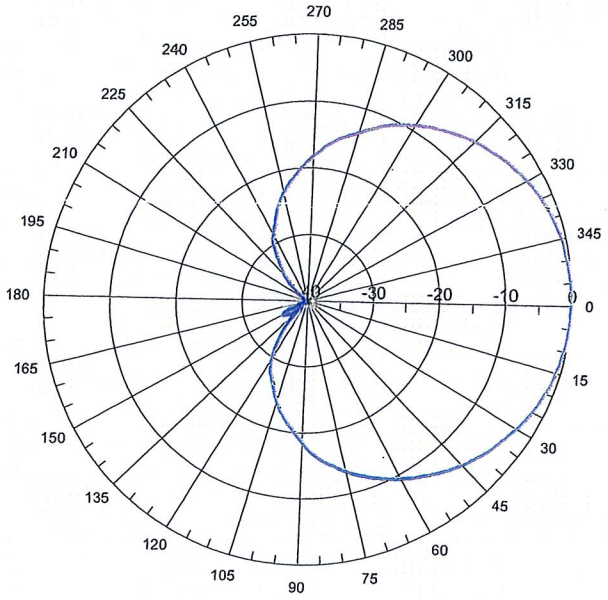
Shipping Specifications	
Dimensions in (mm)	64 x 8.8 x 6.9 (1630 x 225 x 175)
Weight lbs (kg)	27 (12.5)
Material	Cardboard and foam

1710-2170 MHz

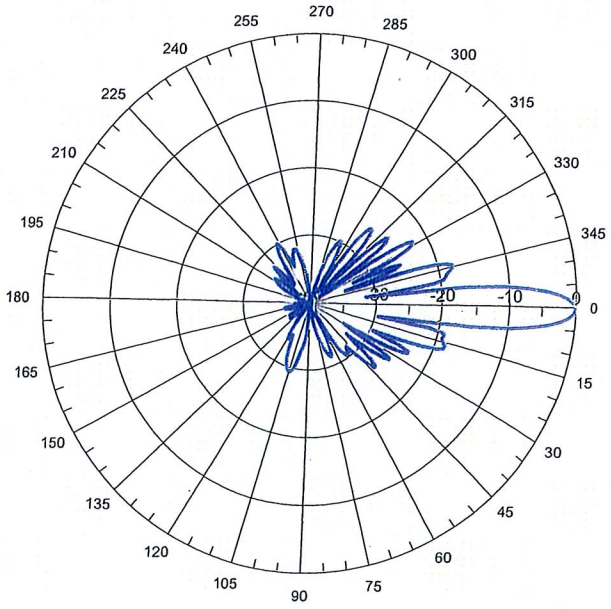
Model # MG D3-800TX

XPol GSM1800+PCS & UMTS Panel Antenna

H plane



E plane



P65-16-XL-2 Very Low Broadband Antennas

POLARIZATION: Dual linear ±45°
FREQUENCY (MHz): 698-894
HORIZONTAL BEAM WIDTH (°): 65
GAIN (dBi/dBd): 16.0/13.9
TILT: 2
LENGTH: 72"

ELECTRICAL SPECIFICATIONS*

Frequency range (MHz)	698-894	
Frequency band (MHz)	698-806	806-894
Gain (dBi/dBd)	15.5/13.4	16.0/13.9
Polarization		
Nominal Impedance (Ω)		
VSWR		
Horizontal beam width, -3 dB (°)	68	65
Vertical beam width, -3 dB (°)	10.5	9.5
Electrical down tilt (°)		
Side lobe suppression, vertical 1st upper (dB)	> 15	> 15
Isolation between inputs (dB)	> 30	> 30
Tracking, horizontal plane ±60° (dB)	< 2	< 2
First null fill (dB)	-	-
Vertical beam squint (°)	< 0.5	< 0.5
Front to back ratio (dB)	> 30	> 30
Front to back ratio, total power (dB)	> 25	> 25
Cross polar discrimination (XPD) 0° (dB)	> 15	> 15
Cross polar discrimination (XPD) ±60° (dB)	> 10	> 10
Far field coupling		
IM3, 2xTx@43dBm (dBc)	-153	
IM7, 2xTx@43dBm (dBc)		
Power handling, average per input (W)		
Power handling, average total (W)		

MECHANICAL SPECIFICATIONS*

Connector	2 X 7/16 DIN Female
Connector position	Bottom
Dimensions, HxWxD, mm (ft)	72" x 12" x 5" (1829 x 305 x 125)
Mounting	Pre-mounted Tilt Brackets
Weight, with brackets, kg (lbs)	44 (20)
Weight, without brackets, kg (lbs)	33 (15)
Wind load, frontal/lateral/rear side 42 m/s Cd=1.6 (N)	1380
Maximum operational wind speed, m/s (mph)	100 (45)
Survival wind speed, m/s (mph)	125 (55)
Lightning protection	DC Ground
Radome material	PVC
Radome colour	Light Grey
Package size, HxWxD, mm (ft)	82" x 16" x 10" (2082 x 400 x 255)
Shipping weight, kg (lbs)	55 (25)
RET	N/A
Brackets	7256.00, 7454.00, 2210.00

*All specifications subject to change without notice. Please contact your Powerwave representative for complete performance data.

ANTENNA PATTERNS*

For detailed patterns visit http://www.powerwave.com/rpa/.

	General	Power	Density					
Site Name: Propspect								
Tower Height: Verizon @ 132'								
CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	CALC. POWER DENS	FREQ.	MAX. PERMISS. EXP.	FRACTION MPE	Total
*Cingular/UMTS	1	500	158	0.0072	880	0.5867	1.23%	
*Cingular GSM	2	296	158	0.0085	880	0.5867	1.45%	
*Cingular GSM	1	427	158	0.0062	1900	1.0000	0.62%	
*Pocket	3	631	100	0.0681	2130	1.0000	6.81%	
*Nextel	9	100	142	0.0160	851	0.5673	2.83%	
Verizon	**3**	**416**	**132**	**0.0258**	**1970**	**1.0000**	**2.58%**	
Verizon	**9**	**310**	**132**	**0.0576**	**869**	**0.5793**	**9.94%**	
Verizon	**1**	**674**	**132**	**0.0139**	**757**	**0.4973**	**2.80%**	
								28.2%
* Source: Siting Council								

FDH

Structural Analysis for SBA Network Services, Inc.

157' Monopole

Site Name: Prospect
Site ID: CT00252-S

FDH Project Number 10-01014E S1

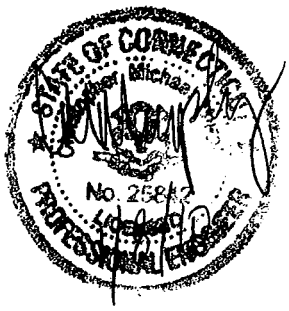
Prepared By:

Trent T. Snarr, EI
Project Engineer

Reviewed By:

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

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



January 8, 2010

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

TABLE OF CONTENTS

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

EXECUTIVE SUMMARY

At the request of SBA Network Services, Inc., FDH Engineering, Inc. performed a 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 *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, and member sizes was obtained from:

- Fred A. Nudd, Corp. (Project No. 6820) original design drawings dated May 20, 1999
- Semaan Engineering Solutions (Project No. CT-00252S) Structural Analysis and Modification Package dated April 18, 2002
- FDH, Inc. (Job No. 08-09035T) TIA Inspection Report dated January 9, 2009
- SBA Network Services, Inc.

The *basic design wind speed* per *TIA/EIA-222-F* standards is 85 MPH without ice and 74 MPH with 1/2" radial ice.

Conclusions

With the existing and proposed antennas for Verizon in place at 132 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 Fred A. Nudd, Corp. Project No. 6820), the foundation should have the necessary capacity to support the existing and proposed 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 and proposed antenna loading) and that the tower has been 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 existing coax should be reused with the proposed loading.

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

Table 1 – Appurtenance Loading

Existing Loading:

Antenna No.	Centerline Elevation (ft)	Coax and Lines[1]	Carrier	Mount Type	Description
1-9	158.5[2]	(12) 1-1/4"	AT&T	(1) 16' Low Profile Platform	(3) Powerwave 7770 (6) CSS DUO1417-8686 (6) ADC Cleargain CG1900W/850 TMAs (3) Powerwave LGP 13519 Diplexers (3) CSS DBC-750 Combiners
10-18	140[3]	(9) 1-5/8"	Nextel	(3) 12.5' T-Frames	(9) Decibel DB844H90E-XY
19-30	132[4]	(12) 1-5/8"	Verizon	(1) 14' Low Profile Platform	(6) Decibel 948F85T2E-M (6) Allgon 7129.16.33.00
31-33	100	(6) 1-5/8"	Pocket	Flush	(3) Kathrein 742-213

1 The existing coax are located inside the pole's shaft, unless otherwise noted.
2 Currently AT&T has (6) CSS DUO1417-8686-4 antennas, (3) Kathrein 800 10121 antennas, (12) TMAs and (12) 1-1/4" coax installed at 158.5'. According to information provided by SBA, AT&T may install up to (6) CSS DUO1417-8686 antennas, (3) Powerwave 7770 antennas, (6) TMAs, (3) diplexers, (3) combiners, and (12) 1-1/4" coax at 158.5'. Analysis performed with the larger loading in place.
3 Currently Nextel has (9) 1-1/4" coax installed at 140'. According to information provided by SBA, Nextel may install up to (9) 1-5/8" coax at 140'. Analysis performed with the total leased loading in place.
4 The loading for Verizon at 132' will be altered. See the proposed loading below.

Proposed Loading:

Antenna No.	Centerline Elevation (ft)	Coax and Lines[1]	Carrier	Mount Type	Description
1-12	132[1]	(12) 1-5/8"	Verizon	(1) 14' Low Profile Platform	(6) Decibel DB844G65ZAXY (3) Powerwave P65-16-XL-2 (3) Rymsa MGD3-800T0

1 This represents the final loading configuration for Verizon at 132'. According to information provided by SBA, Verizon will remove their existing antennas and install (6) Decibel DB844G65ZAXY antennas, (3) Powerwave P65-16-XL-2 antennas, and (3) Rymsa MGD3-800T0 antennas. Verizon will reuse their existing (12) 1-5/8" coax with the proposed loading.

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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	42 ksi
Channel Reinforcement	65 ksi
Base Plate	36 ksi
Anchor Bolts	Fu = 90 ksi and 150 ksi

Table 3 displays 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. **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 **Pole Profile** for detailed modeling information.

Table 3 – Summary of Working Percentage of Structural Components

Section No.	Elevation ft	Component Type	Size	% Capacity*	Pass Fail
L1	157 - 110	Pole	TP34.3125x18x0.25	74.6	Pass
L2	110 - 95	Pole	TP38.656x32.0771x0.25	74.2	Pass
L3	95 - 75	Pole	TP45.1875x38.656x0.3125	67.0	Pass
L4	75 - 71	Pole	TP45.725x42.6031x0.3125	75.7	Pass
L5	71 - 31	Pole	TP58.375x45.725x0.375	83.2	Pass
L6	31 - 20	Pole	TP61.649x55.095x0.375	82.6	Pass
L7	20 - 0	Pole	TP68.1875x61.649x0.4375	79.5	Pass
		Anchor Bolts**	(6) 1.375" ø on 92" BC	76.4	Pass
		Anchor Bolts	(18) 2" ø on 62" BC	85.3	Pass
		Base Plate	PL 1.75" thk. x 68.1875" ø	99.0	Pass

*% Capacities listed include the additional capacity from channel reinforcement.
**Semaan Engineering Solutions specifies that the modified anchor bolts were to be pre-tensioned to 120 kips. This analysis assumes this work was performed and the anchor bolts have 120 kip capacity.

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Table 4 – Maximum Base Reactions

Base Reactions	Current Analysis *(TIA/EIA-222-F)*	Original Design *(TIA/EIA-222-F)*
Axial	40 k	45 k
Shear	35 k	34 k
Moment	3,384 k-ft	3,435 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 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.

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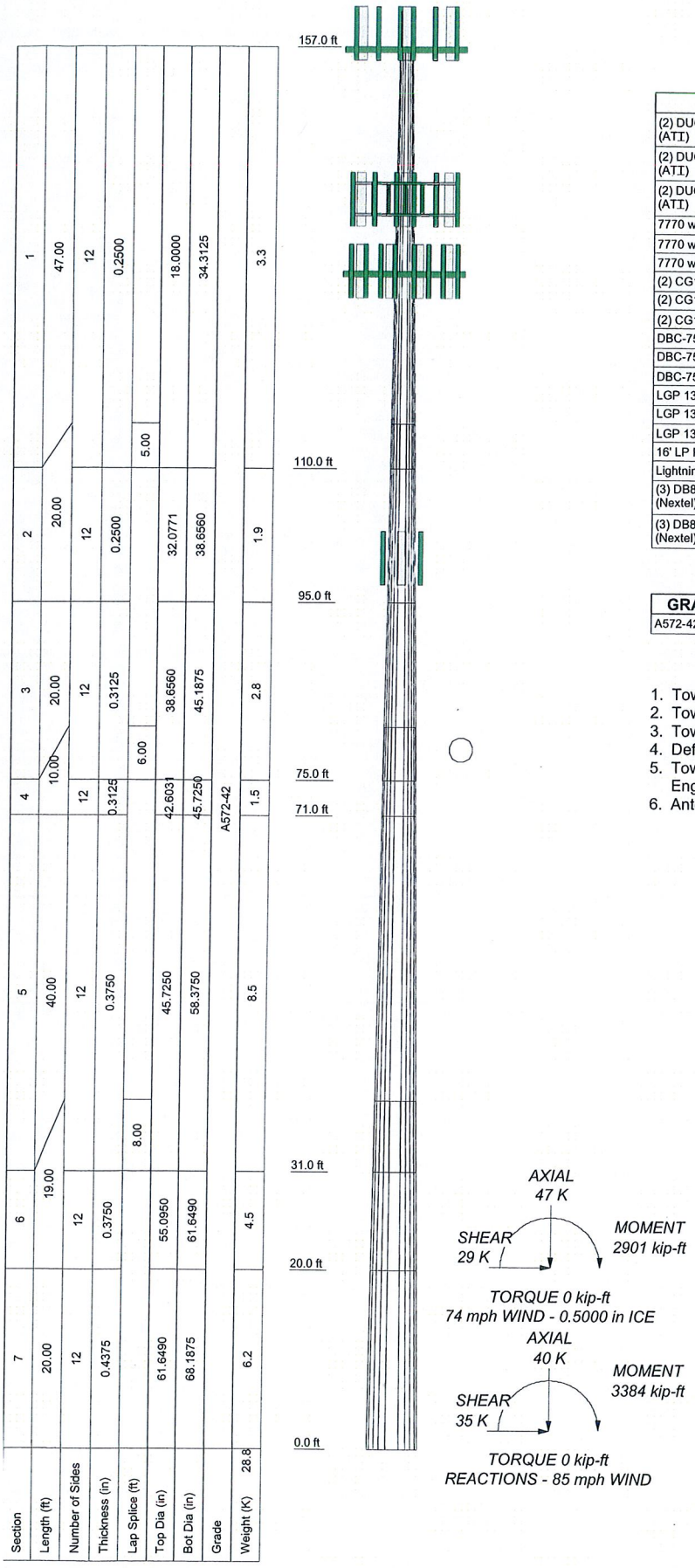

Section	1	2	3	4	5	6	7
Length (ft)	47.00	20.00	20.00	10.00	40.00	19.00	20.00
Number of Sides	12	12	12	12	12	12	12
Thickness (in)	0.2500	0.2500	0.3125	0.3125	0.3750	0.3750	0.4375
Lap Splice (ft)	5.00		6.00		8.00		
Top Dia (in)	18.0000	32.0771	38.6560	42.6031	45.7250	55.0950	61.6490
Bot Dia (in)	34.3125	38.6560	45.1875	45.7250	58.3750	61.6490	68.1875
Grade	A572-42						
Weight (K)	3.3	1.9	2.8	1.5	8.5	4.5	6.2

Section Weight (K) 28.8

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(2) DUO1417-8686 w/Mount Pipe (ATI)	158.5	(3) DB844H90E-XY w/Mount Pipe (Nextel)	140
(2) DUO1417-8686 w/Mount Pipe (ATI)	158.5	12.5' T-Frame (Nextel)	140
		12.5' T-Frame (Nextel)	140
(2) DUO1417-8686 w/Mount Pipe (ATI)	158.5	12.5' T-Frame (Nextel)	140
7770 w/ mount pipe (ATI)	158.5	(2) DB844G65ZAXY w/Mount Pipe (Verizon)	132
7770 w/ mount pipe (ATI)	158.5	(2) DB844G65ZAXY w/Mount Pipe (Verizon)	132
7770 w/ mount pipe (ATI)	158.5		
(2) CG1900W/850 TMA (ATI)	158.5	(2) DB844G65ZAXY w/Mount Pipe (Verizon)	132
(2) CG1900W/850 TMA (ATI)	158.5		
(2) CG1900W/850 TMA (ATI)	158.5	P65-16-XL-2 w/ mount pipe (Verizon)	132
DBC-750 Combiners (ATI)	158.5	P65-16-XL-2 w/ mount pipe (Verizon)	132
DBC-750 Combiners (ATI)	158.5	P65-16-XL-2 w/ mount pipe (Verizon)	132
DBC-750 Combiners (ATI)	158.5	MGD3-800T0 w/ mount pipe (Verizon)	132
LGP 13519 Diplexer (ATI)	158.5	MGD3-800T0 w/ mount pipe (Verizon)	132
LGP 13519 Diplexer (ATI)	158.5	MGD3-800T0 w/ mount pipe (Verizon)	132
LGP 13519 Diplexer (ATI)	158.5	14' LP Platform (Verizon)	132
16' LP Platform (ATI)	158.5	742 213 w/ mount pipe (Pocket)	100
Lightning Rod	157	742 213 w/ mount pipe (Pocket)	100
(3) DB844H90E-XY w/Mount Pipe (Nextel)	140	742 213 w/ mount pipe (Pocket)	100
(3) DB844H90E-XY w/Mount Pipe (Nextel)	140		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-42	42 ksi	60 ksi			

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 74 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50 mph wind.
5. Tower model shown for analysis purposes only. See the modification drawings (Semaan Engineering Solutions, Inc. Project No. CT-00252S) for actual tower layout.
6. Antennas listed to their centerline elevation.

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Tower Analysis

Job: (Site ID: CT00252-S) Prospect, CT			
Project: FDH No. 10-01014E S1			
Client: SBA	Drawn by: TTS	App'd:	
Code: TIA/EIA-222-F	Date: 01/08/10	Scale: NTS	
Path: \\fdh-server\projects\2010 Projects\01- Active\10-01014E\Prospect, CT\S1 - SA Vertex\Analysis\Prospect CT.eri		Dwg No. E-1	