

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

February 22, 2008

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

RE: **EM-VER-143-080117** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 1925-1931 East Main Street, Torrington, Connecticut.

Dear Attorney Baldwin:

At a public meeting held on February 14, 2008, 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 monopole shaft.

The proposed modifications are to be implemented as specified here and in your notice dated January 17, 2008, 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/cm

c: The Honorable Ryan J. Bingham, Mayor, City of Torrington
Martin Connor, City Planner, City of Torrington
SBA



Daniel F. Caruso
Chairman

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Ten Franklin Square, New Britain, CT 06051

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

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January 17, 2008

The Honorable Ryan J. Bingham
Mayor
City of Torrington
Municipal Building
140 Main Street
Torrington, CT 06790-5245

RE: **EM-VER-143-080117** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 1925-1931 East Main Street, Torrington, Connecticut.

Dear Mayor Bingham:

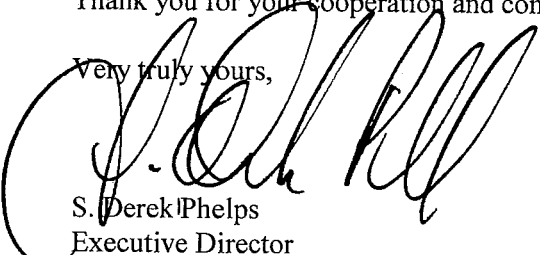
The Connecticut Siting Council (Council) received this request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72.

The Council will consider this item at the next meeting scheduled for February 14, 2008, at 1:30 p.m. in Hearing Room One, Ten Franklin Square, New Britain, Connecticut.

If you have any questions or comments regarding this proposal, please call me or inform the Council by February 13, 2008.

Thank you for your cooperation and consideration.

Very truly yours,



S. Derek Phelps
Executive Director

SDP/jb

Enclosure: Notice of Intent

c: Martin Connor, City Planner, City of Torrington

EM-VER-143-080117

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

January 17, 2008

Via Hand Delivery

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

ORIGINAL

RECEIVED
JAN 17 2008
CONNECTICUT
SITING COUNCIL

Re: **Notice of Exempt Modification – Antenna Swap
1925-1931 East Main Street, Torrington, Connecticut**

Dear Mr. Phelps:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains a wireless telecommunications facility at the above referenced location. The Council approved Cellco’s shared use of this facility on October 14, 2003. Cellco intends to modify its installation by replacing six (6) DB950F65E-M antennas with six (6) LPA-80063/6CF antennas at the same 123-foot level on the tower. Attached behind Tab 1 are the specifications for the existing and 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 Ryan J. Bingham, Mayor of the City of Torrington. Pursuant to a Council directive, a copy of this letter is also being sent to TEP Incorporated, the owner of the property on which the facility is located and SBA, the tower owner.

The planned modifications 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 structures. Cellco’s replacement antennas will be located at the same height and location as the existing antennas.
2. The proposed modifications will not involve any ground-mounted equipment and, therefore, will not require the extension of the site boundaries.



Law Offices

- BOSTON
- HARTFORD
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- NEW YORK CITY
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ROBINSON & COLE_{LLP}

S. Derek Phelps
January 17, 2008
Page 2

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 the facility is included behind Tab 2.

Also attached is a Detailed Structural Analysis confirming that the tower can support the 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:

Ryan J. Bingham, Mayor of Torrington
TEP Incorporated
Sandy M. Carter



Vertically Polarized Directed Dipole® Panel Antennas



65° HORIZONTAL BEAMWIDTH

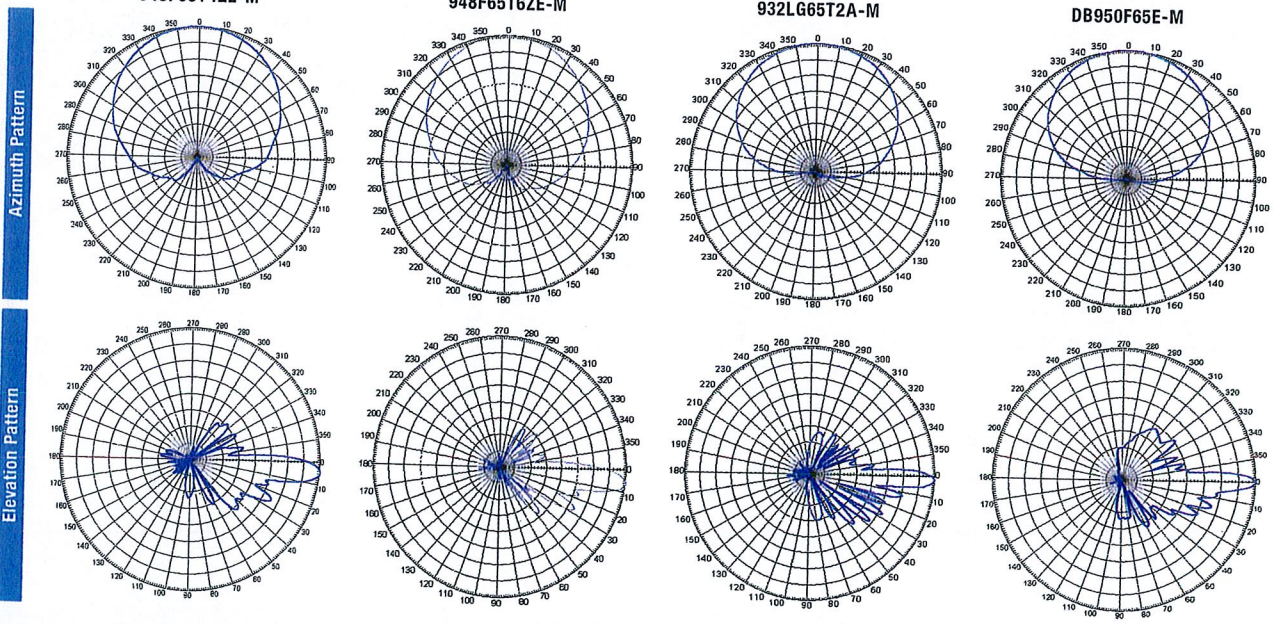
1710 - 2170 MHz

HORIZONTAL BEAMWIDTH	65°	65°	65°	65°
FREQUENCY RANGE	1850-1990 MHz	1850-1990 MHz	1850-1990 MHz	1850-1990 MHz
	17.1 dBi / 4° Tilt	17.1 dBi / 6° Tilt	18.5 dBi / 2° Tilt	18 dBi / 0° Tilt
MODEL	948F65T4ZE-M	948F65T6ZE-M	932LG65T2A-M	DB950F65E-M
TYPE	Directed Dipole®, No Screen	Directed Dipole®, No Screen	±45° Directed Dipole®	Directed Dipole®

ELECTRICAL SPECIFICATIONS				
Frequency Range (MHz)	1850-1990	1850-1990	1850-1990	1850-1990
Gain (dBd/dBi)	15 / 17.1	15 / 17.1	16.4 / 18.5	15.9 / 18
Horizontal Beamwidth (Deg.)	65	65	65	65
Elevation Beamwidth (Deg.)	8	6	6.5	6.5
USLS (dB)	>20	>20	>18	>18
Null Fill (dB) – Below Peak	15	15	20	12
Beam Tilt (Deg.)	4	6	2	0
VSWR	<1.33:1	<1.33:1	<1.33:1	<1.33:1
Front-To-Back Ratio (dB)	40	40	40	40
Isolation (dB)	N/A	N/A	>30	N/A
Max. Input Power (Watts)	250	250	250	250
Polarization	Vertical	Vertical	+45°/-45°	Vertical
Connector Location	Bottom	Bottom	Back	Bottom
Connector Type	7-16 DIN - Female	7-16 DIN - Female	7-16 DIN - Female	7-16 DIN - Female

MECHANICAL SPECIFICATIONS				
Length (inch/mm)	48 / 1,219	48 / 1,219	51.5 / 1,308	60 / 1,524
Width (inch/mm)	6.5 / 165	6.5 / 165	8.5 / 216	10.5 / 267
Depth (inch/mm)	4 / 102	4 / 102	6.5 / 165	7 / 178
Net Weight (lbs/kg)	9.5 / 4.3	9.5 / 4.3	13 / 5.9	16 / 7.2
Max. Flat Plate Area (ft²/m²)	1.18 / 0.11	1.18 / 0.11	0.86 / 0.08	2.91 / 0.27
Max. Wind Load at 100 mph (lbf/N)	67 / 299	67 / 299	50 / 221	158 / 703
Max. Wind Speed (mph/kmh)	125 / 201	125 / 201	125 / 201	125 / 201
Radome Material	ABS, UV Resistant	ABS, UV Resistant	Polycarbonate, UV Resistant	ABS, UV Resistant
Reflector Material	Pass. Aluminum	Pass. Aluminum	Pass. Aluminum	Pass. Aluminum
Radiator Material	Low Loss Circuit Board	Low Loss Circuit Board	Aluminum	Low Loss Circuit Board
Hardware Material	Galvanized Steel	Galvanized Steel	Galvanized Steel	Galvanized Steel
Color	Light Gray	Light Gray	Light Gray	Light Gray
Std. Mounting Hardware	DB390	DB390	DB390	DB390
Optional Downtilt Kit	DB5098	DB5098	DB5098	DB5098
Optional Special Mounting	DB5094-AZ	DB5094-AZ	DB5094-AZ	DB5094-AZ

Specifications are subject to change. Please see our website for the latest information.
*TELETILT® compatible.



Scale: 10° radials, 5 dB per division

Azimuth Pattern

Elevation Pattern

X P o l

VERTICAL
Directed Dipole®

VERTICAL
Panel

O m n i

Vertically Polarized, Log Periodic 63° / 14.5 dBd

LPA-80063/6CF

When ordering replace "___" with connector type.

Mechanical specifications

Length	1800 mm	70.9 in
Width	380 mm	15.0 in
Depth	332 mm	13.1 in
Depth with z-bracket	372 mm	14.6 in
4) Weight	12.3 kg	27.0 lbs
Wind Area		
Fore/Aft	0.68 m ²	7.4 ft ²
Side	0.60 m ²	6.5 ft ²
Rated Wind Velocity (Safety factor 2.0)	>235 km/hr >146 mph	
Wind Load @ 100 mph (161 km/hr)		
Fore/Aft	993 N	223.3 lbs
Side	872 N	196.1 lbs

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

Mounting and Downtilting

Mounting brackets attach to a pipe diameter of Ø50-102 mm (2.0-4.0 in). If the lock-down brace is used, the maximum diameter is Ø88.9 mm (3.5 in)

Mounting Bracket & Downtilt Bracket Kit
#21699999

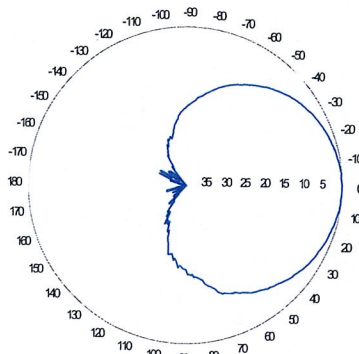
Electrical specifications

Frequency Range	806-960 MHz
Impedance	50Ω
3) Connector(s)	NE or E-DIN 1 port / center
1) VSWR	≤ 1.4:1
Polarization	Vertical
1) Gain	14.5 dBd
2) Power Rating	500 W
1) Half Power Angle	
H-Plane	63°
E-Plane	10°
1) Electrical Downtilt	0°
1) Null Fill	10%
Lightning Protection	Direct Ground

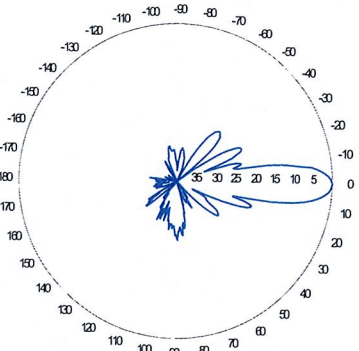
- 1) Typical values.
2) Power rating limited by connector only.
3) NE indicates an elongated N connector.
E-DIN indicates an elongated DIN connector.
4) The antenna weight listed above does not include the bracket weight.

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

Radiation pattern¹⁾



Horizontal

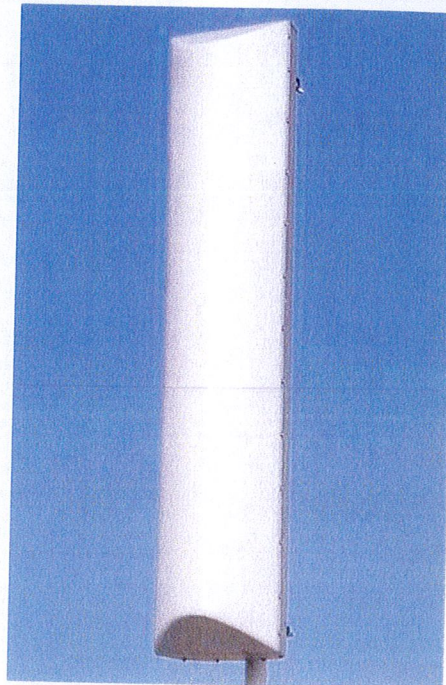


Vertical

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.



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.

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

Antenna available with center-fed connector only.

CF Denotes a Center-Fed Connector.

806-960 MHz

Amphenol Antel, Inc.
The Antenna Technology Company

Revision Date: 7/5/07

General		Power	Density					
Site Name: Torrington East								
Tower Height: Verizon @ 120Ft.								
CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	CALC. POWER DENS	FREQ.	MAX. PERMISS. EXP.	FRACTION MPE	Total
Sprint	11	349	153	0.0590	1962.5	1.0000	5.90%	
Nextel	9	100	143	0.0158	851	0.5673	2.79%	
Voicestream	4	294	133	0.0239	1930	1.0000	2.39%	
Cingular	2	296	95	0.0236	880	0.5867	4.02%	
Cingular	2	427	95	0.0340	1930	1.0000	3.40%	
Town (estimated)	0	0	0	0.0000	0	0.0000	5.00%	
Verizon PCS	9	485	120	0.1090	1970	1.0000	10.90%	
Verizon	9	200	120	0.0449	875	0.5830	7.71%	
* Source: Siting Council								42.11%



**Structural Analysis for
SBA Network Services**

153' Monopole

**Site Name: Torrington
Site ID: CT01499-S**

FDH Project Number 07-1290E

Prepared By:

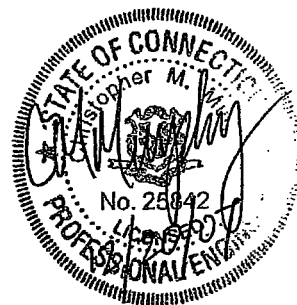
Krystyn Wagner, EI
Project Engineer

Reviewed By:

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

FDH Engineering, Inc.

PO Box 99556
Raleigh, NC 27615
(919)-755-1012
info@fdh-inc.com



December 20, 2007

Prepared pursuant to ANSI/TIA-222-G Structural Standards for Antenna Supporting Structures and Antennas

TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	3
Conclusions	
Recommendations	
APPURTENANCE LISTING.....	4
RESULTS.....	5
GENERAL COMMENTS.....	6
LIMITATIONS.....	6
POLE PROFILE.....	7

EXECUTIVE SUMMARY

At the request of SBA Network Services, FDH Engineering performed a structural analysis of the monopole located in Torrington, CT to determine whether the tower is structurally adequate to support both the existing and proposed loads, pursuant to the *Structural Standards for Antenna Supporting Structures and Antennas, ANSI/TIA-222-G*. Information pertaining to the existing/proposed antenna loading, current tower geometry, and member sizes was obtained from Fred A. Nudd Corporation (Project No. 7783) original design drawings dated August 18, 2000, Vertical Structures, Inc. (Job No. 2003-007-015) structural analysis and modification drawings dated September 9, 2003, and SBA Network Services.

The *basic design wind speed* per *ANSI/TIA-222-G* standards is 100 MPH without ice and 40 MPH with 1" radial ice.

Conclusions

With the existing and proposed antennas from Verizon at 123 ft, the tower meets the requirements of the *ANSI/TIA-222-G* standards. Furthermore, provided the foundation was constructed per the original design drawings (see Fred A. Nudd Corporation Project No. 7783), 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 is accurate (i.e., the steel data, tower layout, existing and proposed antenna loading) and that the tower was properly erected and maintained per the original design drawings.

Recommendations

To ensure the requirements of the *ANSI/TIA-222-G* 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 monopole shaft.

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	Mount Type	Description
1-6	153	(6) 1-5/8"	Sprint	Low Profile Platform	(6) EMS RR90-17-02DP
7-18	143	(12) 1-1/4"	Nextel	Low Profile Platform	(12) Decibel DB844H90E-XY
19-24	133	(12) 1-5/8"	T-Mobile	Low Profile Platform	(6) EMS RR90-17-02DP
25-36	123	(12) 1-5/8" ²	Verizon	Low Profile Platform	(12) Decibel DB950F65E-M
37	110	(1) 1/2"	Torrington PD	Standoff	(1) 10 ft whip
38-49	95	(12) 1-5/8" ^{3,4}	Cingular	Low Profile Platform	(12) CSS DUO-1417-8686-40

1 The existing coax is located inside the pole's shaft, unless otherwise noted.

2 The loading for Verizon at 123 ft will be altered. See proposed loading below.

3 Currently Cingular had (9) CSS DUO-1417-8686-40 antennas and (9) coax installed at 95 ft. According to information provided by SBA, Cingular may install up to (12) antennas and (12) coax. Analysis is performed with total leased loading in place.

4 Cingular's coax at 95 feet is installed outside the monopole shaft in a single row.

Proposed Loading:

No.	Centerline Elevation (ft)	Coax and Lines	Carrier	Mount Type	Description
1-6	123	(12) 1-5/8" ¹	Verizon	Low Profile Platform	(6) Antel LPA-80063/6CF (6) Decibel DB950F65E-M

1 This represents the final configuration for Verizon at 123 ft. According to information provided by SBA, Verizon will remove (6) Decibel DB950F65E-M antennas at 123 ft and replace with (6) Antel LPA-80063/6CF antennas. The complete loading at 123 ft will be (12) antennas and (12) coax.

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	125 ksi

Table 3 displays the ratio (as a percentage) of actual 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 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

Section No.	Elevation ft	Component Type	Size	% Capacity	Pass Fail
L1	153 - 150	Pole	TP26.5x24x0.25	5.3	Pass
L2	150 - 110	Pole	TP35.25x26.5x0.25	29.7	Pass
L3	110 - 65	Pole	TP45.36x33.6563x0.3125	53.4	Pass
L4	65 - 21	Pole	TP55.27x43.3306x0.3125	72.5	Pass
L5	21 - 0	Pole	TP60x52.9735x0.375	64.4	Pass
			Anchor Bolts	OK	Pass
			Base Plate	OK	Pass

Table 4 – Maximum Base Reactions

Load Type	Current Analysis (ANSI/TIA-222-G)	Original Design (TIA/EIA-222-F)
Axial	46.6 k	---
Shear	32.2 k	32.1 k
Moment	3,133 k-ft	3,692 k-ft

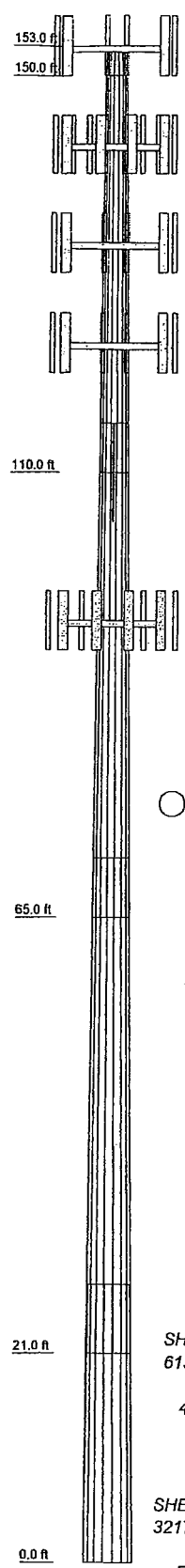
GENERAL COMMENTS

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 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.

Section	1	2	3	4	5
Length (ft)	3.00	40.00	50.00	50.00	28.00
Number of Sides	18	18	18	18	18
Thickness (in)	0.2500	0.2500	0.3125	0.3125	0.3750
Lap Splice (ft)		5.00	6.00	7.00	
Top Dia (in)	21.0000	26.5000	33.6563	43.3306	52.9907
Bot Dia (in)	25.5000	36.2500	45.3600	56.2900	60.0000
Grade			A572-65		
Weight (lb)	202.8	3307.6	6614.5	8268.7	6354.3



DESIGNED APPURTENANCE LOADING

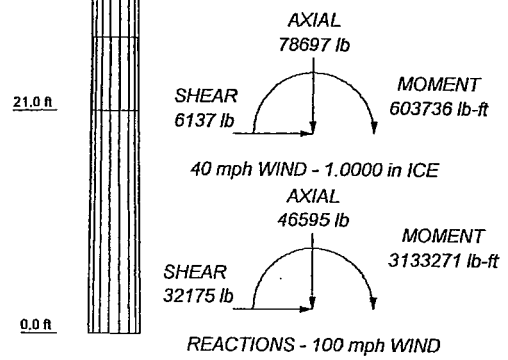
TYPE	ELEVATION	TYPE	ELEVATION
(2) RR90-17-02DP (Sprint)	153	Low Profile Platform (Verizon)	123
(2) RR90-17-02DP (Sprint)	153	(2) Antel LPA-80063/6CF	123
(2) RR90-17-02DP (Sprint)	153	(2) Antel LPA-80063/6CF	123
Low Profile Platform (Sprint)	153	(2) Antel LPA-80063/6CF	123
(4) DB844H90E-XY (Nextel)	143	10' whip (Torrington PD)	115 - 105
(4) DB844H90E-XY (Nextel)	143	Side Mount Standoff (1) (Torrington PD)	105
(4) DB844H90E-XY (Nextel)	143		
Low Profile Platform (Nextel)	143	(2) TMA (Cingular)	95
(2) RR90-17-02DP (T-Mobile)	133	Low Profile Platform (Cingular)	95
(2) RR90-17-02DP (T-Mobile)	133	(4) DUO1417-8686 (Cingular)	95
(2) RR90-17-02DP (T-Mobile)	133	(4) DUO1417-8686 (Cingular)	95
Low Profile Platform (T-Mobile)	133	(2) TMA (Cingular)	95
(2) DB950F65E-M (Verizon)	123	(2) TMA (Cingular)	95
(2) DB950F65E-M (Verizon)	123	(4) DUO1417-8686 (Cingular)	95
(2) DB950F65E-M (Verizon)	123		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Litchfield County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 100 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 40 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. (18) 2" Anchor Bolts on a 67" Bolt Circle; Base Plate thickness = 1.5 in; Stiffeners 1' x 3/4"



<p>FDH Engineering 2730 Rowland Road, Suite 100 Raleigh, NC 27615 Phone: (919) 755-1012 FAX: (919) 755-1031</p>		<p>Job: Torrington CT01499-S</p>	
		<p>Project: 07-1290E</p>	
<p>Tower Analysis</p>	<p>Client: SBA</p>	<p>Drawn by: Krystyn Wagner</p>	<p>App'd:</p>
	<p>Code: TIA-222-G</p>	<p>Date: 01/04/08</p>	<p>Scale: NTS</p>
		<p>Path:</p>	<p>Dwg No. E-1</p>