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

June 2, 2010

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

RE: **EM-VER-141-100519** - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at Rich Road, Thompson, 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.

The proposed modifications are to be implemented as specified here and in your notice dated May 19, 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/CDM/laf

c: The Honorable Larry Groh, First Selectman, Town of Thompson
John E. Mahon, Jr., Zoning Enforcement Officer, Town of Thompson
SBA

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STATE OF CONNECTICUT

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

E-Mail: siting.council@ct.gov

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Daniel F. Caruso
Chairman

May 25, 2010

The Honorable Larry Groh
First Selectman
Town of Thompson
Town Office Building
815 Riverside Drive
P. O. Box 899
North Grosvenordale, CT 06255

RE: **EM-VER-141-100519** - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at Rich Road, Thompson, Connecticut.

Dear First Selectman Groh:

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.

If you have any questions or comments regarding this proposal, please call me or inform the Council by June 8, 2010.

Thank you for your cooperation and consideration.

Very truly yours,

S. Derek Phelps
Executive Director

SDP/jbw

Enclosure: Notice of Intent

c: John E. Mahon, Jr., Zoning Enforcement Officer, Town of Thompson

ROBINSON & COLE

EM-VER-141-100519

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

ORIGINAL

May 19, 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**
Rich Road, Thompson, Connecticut

Dear Mr. Phelps:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains wireless telecommunications antennas at the 137-foot level on the existing 149-foot tower at the above-referenced address. The tower is owned by SBA. The Connecticut Siting Council ("Council") approved Cellco's use of the existing tower in Docket No. 344. Cellco now intends to modify its installation by replacing two (2) of its cellular antennas with two (2) model LPA-4019 cellular antennas at the same 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 Larry Groh, Jr., First Selectman for the Town of Thompson. The Town of Thompson is 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 any increase in the overall height of the existing tower. Cellco's replacement antennas will be located at the 137-foot level on the existing 149-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 Calculated Radio Frequency Emissions report, for the existing antennas and 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:
Larry Groh, Jr., Thompson First Selectman
Sandy M. Carter

Vertically Polarized, Log-Periodic 40° / 19 dBd
806-941 MHz

Mechanical specifications

Length	2400	mm	94.5	in
Width	545	mm	21.3	in
Depth	350	mm	13.7	in
Depth with z-bracket	390	mm	15.4	in
Weight [4]	18.6	kg	41.0	lbs
Wind Area Fore/Aft [6]	1.30	m^2	14.0	ft^2
Wind Area Side [6]	0.86	m^2	9.3	ft^2
Max Wind Survivability [6]	>201	km/hr	>125	mph
Wind Load @ 100 mph (161 km/hr) [6]				
Fore/Aft	1667	N	374	lbf
Side	1186	N	267	lbf

Antenna consisting of aluminum alloy with brass feedlines covered by a gray, UV safe fiberglass radome. Aluminum reflector. RoHS compliant.

Mounting & Downtilting

Mounting hardware attaches to pipe diameter Ø50-102 mm; Ø2.0-4.0 in. If the lock-down brace is used, the maximum diameter is Ø88.9 mm (3.5 in).

Mounting & Downtilt Bracket Kit 21700000

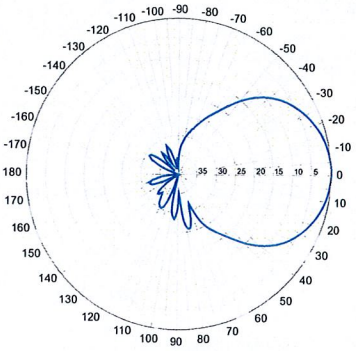
Electrical specifications

Frequency Range	806-941 MHz
Impedance	50Ω
Connector [3]	NE or E-DIN Female 1 port / Center
VSWR [1]	≤ 1.35:1
Polarization	Vertical
Gain [1]	19 dBd
Power Rating [2]	500 W
Half Power Angle [1]	
Horizontal Beamwidth	40°
Vertical Beamwidth	7°
Electrical downtilt [5]	1.25°
Null fill [1]	5%
Lightning protection	Direct ground

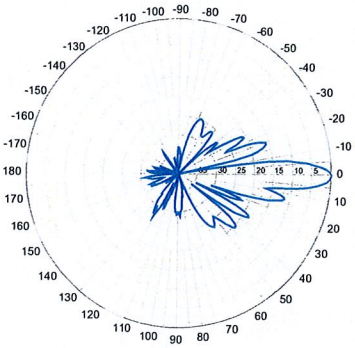
1) Typical values.
2) Power rating limited by connector only.
3) NE indicates an elongated N connector. E-DIN indicates an elongated DIN connector.
4) Antenna weight does not include brackets.
5) Add'l downtilts may be available. Check website for details.
6) Values reflect installation with all three brackets utilized.

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

Radiation-pattern[1]



Horizontal



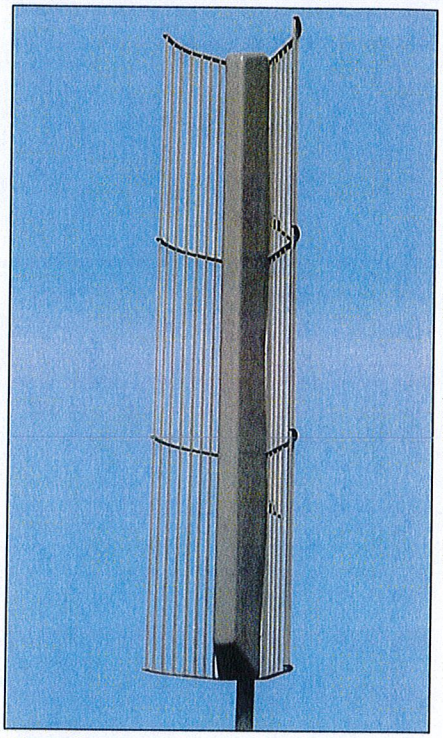
Vertical

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.

LPA-4019 ___

When ordering replace "__" with connector type.



Featuring our Exclusive 3T 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.

Warranty:
This antenna is under a five-year limited warranty for repair or replacement.

Revision Date 09/10/09

806-941 MHz

815.399.0001 • antel@antelinc.com • www.antelinc.com

Amphenol Antel, Inc. The Antenna Technology Company

	General	Power	Density					
Site Name: Thompson North								
Tower Height: Verizon @ 137Ft.								
CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	CALC. POWER DENS	FREQ.	MAX. PERMISS. EXP.	FRACTION MPE	Total
*T-Mobile	8	149	147	0.0198	1945	1.0000	1.98%	
*Cingular/AT&T GSM	2	296	127	0.0132	1900	1.0000	1.32%	
*Cingular/AT&T GSM	4	296	127	0.0264	880	0.5867	4.50%	
*Cingular/AT&T UMTS	1	500	127	0.0111	880	0.5867	1.90%	
Verizon	**3**	**397**	**137**	**0.0228**	**1970**	**1.0000**	**2.28%**	
Verizon	**9**	**490**	**137**	**0.0845**	**869**	**0.5793**	**14.58%**	
								26.57%
* Source: Siting Council								

FDH ENGINEERING

Structural Analysis for
SBA Network Services, Inc.

149' Monopole

Site Name: Thompson 1
Site ID: CT11559-A

FDH Project Number 10-05041E S1 (R1)

Prepared By:

Blake A. Bartok, 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

STATE OF CONNECTICUT
Christopher Michael Murphy
No. 25842
LICENSED
PROFESSIONAL ENGINEER
5/17/10

May 17, 2010

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

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 an analysis of the existing monopole located in N. Grosvenordale, CT to determine whether the tower is structurally adequate to support both the existing and proposed loads, prepared pursuant to the *Structural Standard for Antenna Supporting Structures and Antennas, ANSI/TIA-222-G*. Information pertaining to the existing/proposed antenna loading, current tower geometry, and the member sizes was obtained from FDH, Inc. (Project No. 08-08058T) TIA Inspection Report dated September 15, 2008, Fred A. Nudd Corporation (Project No. 308-13019) original design drawings dated April 25, 2008, and SBA Network Services, Inc.

The *basic design wind speed* per *ANSI/TIA-222-G* standards is 105 mph without ice and 50 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 137 ft, the tower meets the requirements of the *ANSI/TIA-222-G* standard provided the **Recommendation** below is satisfied. Furthermore, provided the foundation was designed and constructed to support the original design reactions (see Fred A. Nudd Corporation Project No. 308-13019), 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. tower geometry, tower layout, and proposed antenna loading) and that the tower has been properly erected and maintained per the original manufacturer's specifications.

Recommendation

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

1. The proposed antennas should reuse the existing coax.

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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.	Antenna Elevation (ft)	Description	Coax and Lines [1]	Carrier	Mount Elevation (ft)	Mount Type
1-3	148.7	(3) RFS APXV18-209014 (3) Com Communications DTMA-1819-0012 TMAs	(6) 1-5/8" (1) 1/4"	T-Mobile	146.5	(1) 12.5' Low-Profile Platform
4-15	137[2]	(6) Antel LPA-185080/12CF-2 (6) Antel LPA-80080/6CF-5	(12) 1-5/8"	Verizon	136	(1) 12.5' Low-Profile Platform
16-27	126	(12) Powerwave 7770 (12) Powerwave LGP21401 TMAs	(12) 1-5/8"	AT&T	126	(1) Low-Profile Platform (assumed)

1 Coax installed inside the pole's shaft unless noted otherwise.
2 The loading for Verizon at 137 ft will be altered. See the proposed loading below.

Proposed Loading:

Antenna No.	Antenna Elevation (ft)	Description	Coax and Lines [1]	Carrier	Mount Elevation (ft)	Mount Type
1-12	137[1]	(6) Antel LPA-185080/12CF-2 (4) Antel LPA-80080/6CF-5 (2) Antel LPA-4019	(12) 1-5/8"	Verizon	136	(1) 12.5' Low-Profile Platform

1 This represents the final configuration for Verizon at 137 ft. According to information provided by SBA, Verizon will remove (2) Antel LPA-80080/12CF-2 antennas and install (2) Antel LPA-4019 antennas.

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RESULTS

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

Table 2 - Material Strength

Member Type	Yield Strength
Pole Shaft	65 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. **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 & Base Level Sketch** for detailed modeling information

Table 3 – Summary of Working Percentage of Structural Components

Section No.	Elevation ft	Component Type	Size	% Capacity	Pass/ Fail
L1	149 - 107	Pole	TP35.8125x25.875x0.25	27.2	Pass
L2	107 - 62	Pole	TP45.875x34.1295x0.3125	45.1	Pass
L3	62 - 18	Pole	TP55.625x43.8405x0.375	48.6	Pass
L4	18 - 0	Pole	TP59.0625x53.2252x0.4375	45.1	Pass
		Anchor Bolts	(18) 2"ø w/ BC = 66"	50.0	Pass
		Base Plate	PL 72" x 2.75" Thk	30.4	Pass

Table 4 – Maximum Base Reactions

Base Reactions	Current Analysis * *(ANSI/TIA-222-G)*	Original Design *(TIA/EIA-222-F)*
Axial	43 k	38 k
Shear	30 k	36 k
Moment	2,953 k-ft	4,056 k-ft

* Current analysis reactions are within an allowable factor of 1.35 when the original design reactions are based on an allowable stress design per *ANSI/TIA-222-G*.

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

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. If there are substantial modifications made to the appurtenance loading provided by SBA Network Services, Inc., FDH Engineering, Inc. should be notified immediately to perform a revised analysis.

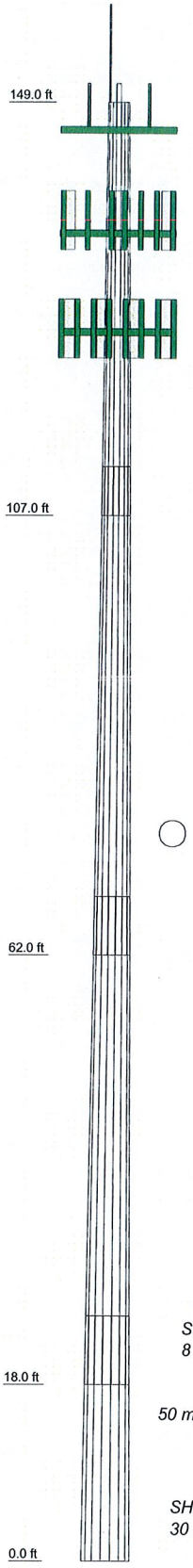
LIMITATIONS

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.

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

Section	1	2	3	4
Length (ft)	42.00	50.00	50.00	25.00
Number of Sides	18	18	18	18
Thickness (in)	0.2500	0.3125	0.3750	0.4375
Socket Length (ft)	5.00	6.00	7.00	
Top Dia (in)	25.8750	34.1295	43.8405	53.2252
Bot Dia (in)	35.8125	45.8750	55.6250	59.0625
Grade	A572-65			
Weight (K)	3.5	6.7	10.0	6.6

26.7



ALL REACTIONS ARE FACTORED

AXIAL 79 K

SHEAR 8 K — *MOMENT 808 kip-ft*

TORQUE 0 kip-ft
50 mph WIND - 1.0000 in ICE

AXIAL 43 K

SHEAR 30 K — *MOMENT 2953 kip-ft*

TORQUE 1 kip-ft
REACTIONS - 105 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod	149	LPA-80080/6CF-5 W/Mount Pipe (Verizon)	137
APXV18-209014 W/Mount Pipe (T-Mobile)	148.7	(2) LPA-80080/6CF-5 W/Mount Pipe (Verizon)	137
APXV18-209014 W/Mount Pipe (T-Mobile)	148.7	LPA-80080/6CF-5 W/Mount Pipe (Verizon)	137
APXV18-209014 W/Mount Pipe (T-Mobile)	148.7	LPA-4019 W/ Mount Pipe (Verizon)	137
DTMA-1819-0012 TMA (T-Mobile)	148.7	LPA-4019 W/ Mount Pipe (Verizon)	137
DTMA-1819-0012 TMA (T-Mobile)	148.7	12.5' Low Profile Platform (Verizon)	136
DTMA-1819-0012 TMA (T-Mobile)	148.7	(4) 7770 W/Mount Pipe (ATI)	126
12.5' Low Profile Platform (T-Mobile)	146.5	(4) 7770 W/Mount Pipe (ATI)	126
(2) LPA-185080/12CF-2 W/Mount Pipe (Verizon)	137	(4) 7770 W/Mount Pipe (ATI)	126
(2) LPA-185080/12CF-2 W/Mount Pipe (Verizon)	137	(4) LGP21401 TMA (ATI)	126
(2) LPA-185080/12CF-2 W/Mount Pipe (Verizon)	137	(4) LGP21401 TMA (ATI)	126
		(4) LGP21401 TMA (ATI)	126
		Low Profile Platform (ATI)	126

MATERIAL STRENGTH

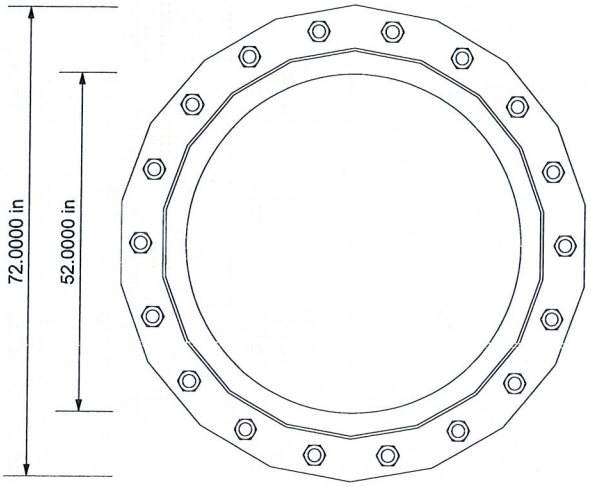
GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

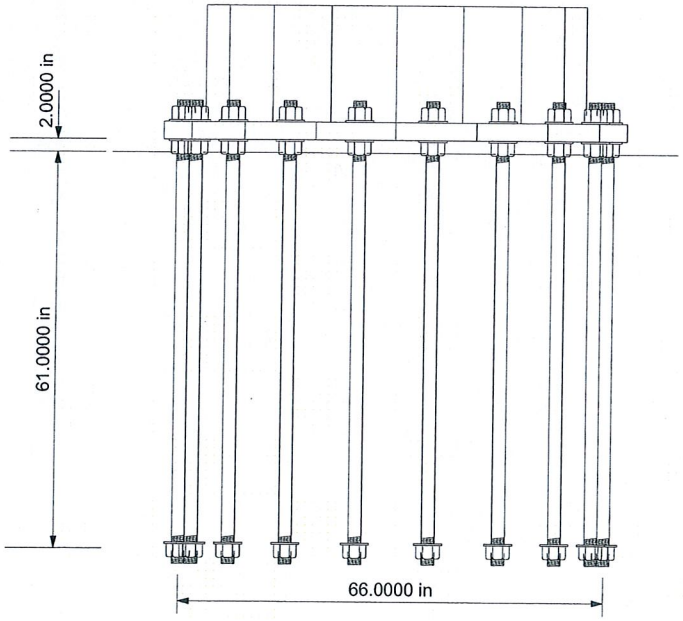
TOWER DESIGN NOTES

1. Tower is located in Windham County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 105 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 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. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. Analysis performed using TIA-222-G Addendum 2 Table 4-8.
9. TOWER RATING: 52.1%

FDH Engineering, Inc.
2730 Rowland Road
Raleigh, North Carolina
Phone: (919) 755-1012
FAX: (919) 755-1031
Tower Analysis

Job: *Thompson 1 (CT11559-A)*			
Project: *10-05041E S1 (R1)*			
Client: SBA Network Services, Inc.	Drawn by: BAB	App'd:	
Code: TIA-222-G	Date: 05/17/10	Scale: NTS	
Path:		Dwg No. E-1	





FOUNDATION NOTES

1. Plate thickness is 2.7500 in.
2. Plate grade is A572-50.
3. Anchor bolt grade is F1554-105.
4. f'c is 4 ksi.

FDH Engineering, Inc.
2730 Rowland Road
Raleigh, North Carolina
Phone: (919) 755-1012
FAX: (919) 755-1031
Tower Analysis

Job: *Thompson 1 (CT11559-A)*			
Project: *10-05041E S1 (R1)*			
Client: SBA Network Services, Inc.	Drawn by: BAB	App'd:	
Code: TIA-222-G	Date: 05/17/10	Scale: NTS	
Path:		Dwg No. F-1	