

ORIGINAL

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

August 21, 2008

RECEIVED  
AUG 25 2008

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

CONNECTICUT  
SITING COUNCIL

Re: **Cellco Partnership d/b/a Verizon Wireless  
Exempt Modification Approvals**

Dear Mr. Perrone:

Enclosed you will find various structural and engineering reports confirming that certain Verizon Wireless antenna installations were completed in accordance with the requirements of the Structural Analysis submitted as a part of each of the referenced exempt modification filings.

1. Groton 5 – 75 Roberts Road, Groton, CT  
(EM-VER-059-071017)
2. Groton – Police Department, 68 Groton Long Point Road, Groton, CT  
(EM-VER-059-080508)
3. Cromwell North – 179 Shunpike Road, Cromwell, CT  
(EM-VER-033-071005)
4. Woodstock North – 1825 Route 198, Woodstock, CT  
(TS-VER-169-080128)
5. Mansfield NE – 203 Davis Road, Chaplin, CT  
(EM-VER-024-070917)
6. New Britain NW – North Mountain Road, New Britain, CT  
(EM-VER-089-080314)



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# ROBINSON & COLE<sub>LLP</sub>

Michael Perrone  
August 21, 2008  
Page 2

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

Sincerely,



Kenneth C. Baldwin

KCB/kmd  
Enclosures  
Copy to:

Sandy M. Carter  
Brian Ragozzine  
Mark Gauger



# Final Report of Special Inspections

Mansfield  
NE

Project: *SBA Site Number CT03113-S*  
Location: *203 Davis Road, Chaplin, Connecticut*  
Owner: *SBA Communications Corporation*  
Design Professional in Responsible Charge: *George R. Underhill, P.E.*

To the best of my information, knowledge and belief, the Special Inspections required for this project, and itemized in the *Statement of Special Inspections* submitted for permit, have been performed and all discovered discrepancies have been reported and resolved.

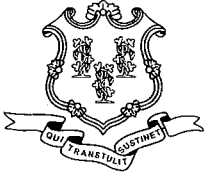
Respectfully submitted,  
Special Inspector

Ryan R. Roy, P.E.  
(Type or print name)

*Ryan R. Roy*  
Signature

12/18/2007  
Date





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](mailto:siting.council@ct.gov)  
Internet: [ct.gov/csc](http://ct.gov/csc)

Daniel F. Caruso  
Chairman

October 1, 2007

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

RE: **EM-VER-024-070917** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 203 Davis Road, Chaplin, Connecticut.

Dear Attorney Baldwin:

At a public meeting held on September 25, 2007, 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 modifications specified on page 5 of the structural analysis report sealed by John Irving Mathis, P.E. are performed prior to the antenna installation and that a signed letter from a Professional Engineer is submitted to the Council to certify that the modifications have been properly completed.

The proposed modifications are to be implemented as specified here and in your notice dated September 17, 2007, 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.

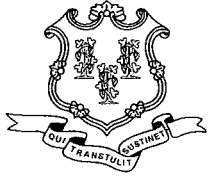
Very truly yours,

Daniel F. Caruso  
Chairman

DFC/MP/cm

c: The Honorable Rusty Lanzit, First Selectman, Town of Chaplin  
Raymond Murphy, Zoning Enforcement Officer, Town of Chaplin  
SBA Towers





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](mailto:siting.council@ct.gov)  
Internet: [ct.gov/csc](http://ct.gov/csc)

Daniel F. Caruso  
Chairman

September 17, 2007

The Honorable Rusty Lanzit  
First Selectman  
Town of Chaplin  
Town Hall  
Route 198  
P. O. Box 286  
Chaplin, CT 06235-0286

RE: **EM-VER-024-070917** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 203 Davis Road, Chaplin, Connecticut.

Dear Mr. Lanzit:

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 September 25, 2007, at 1:30 p.m. in Hearing Room Two, Ten Franklin Square, New Britain, Connecticut.

If you have any questions or comments regarding this proposal, please call me or inform the Council by noon on September 25, 2007.

Thank you for your cooperation and consideration.

Very truly yours,

S. Derek Phelps  
Executive Director

SDP/cm

Enclosure: Notice of Intent

c: Raymond Murphy, Zoning Enforcement Officer, Town of Chaplin

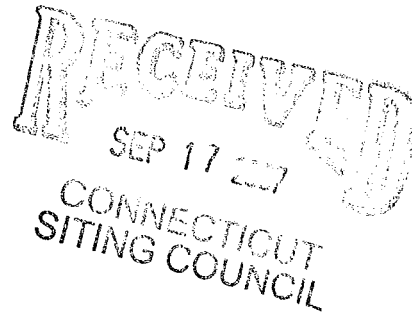
EM-VER-024-070917

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

September 17, 2007

*Via Hand Delivery*

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



Re: **Notice of Exempt Modification**  
**203 Davis Road**  
**Chaplin, Connecticut**

Dear Mr. Phelps:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") intends to install antennas on the existing 175-foot self-supporting monopole tower owned by SBA Towers ("SBA") at 203 Davis Road in Chaplin, Connecticut. 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 Rusty Lanzit, Chaplin First Selectman. Pursuant to Siting Council directive a copy of the letter is being sent to Truman J. & Lyn D. Pearl, owners of the property on which the tower is located.

The facility consists of a 175-foot self-supporting monopole tower capable of supporting multiple carriers within a fenced compound at 203 Davis Road in Chaplin. The tower is currently shared by Sprint/Nextel with antennas at the 173-foot level and the 165-foot level on the tower. Cellco intends to install twelve (12) panel-type antennas (six cellular and six PCS) at the 155-foot level on the tower and place a 12' x 30' equipment shelter on the ground at the base of the tower within the existing fenced compound. Attached behind Tab 1 are Project Plans for the proposed Cellco facility.

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



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S. Derek Phelps  
September 17, 2007  
Page 2

1. The proposed modification will not increase the overall height of the existing tower. Cellco's antennas will be mounted with their centerline at the 155-foot level on the 175-foot tower.
2. The proposed installation of a 12' x 30' equipment shelter will not require an extension of the fenced compound or lease area.
3. The proposed installation will not increase the noise levels at the facility by six decibels or more.
4. The operation of the 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. The worst-case RF power density calculations for the Cellco antennas would be 6.98% of the FCC standard. A copy of the power density calculations table is attached behind Tab 2.

Also attached, behind Tab 3, is a Structural Analysis confirming that the tower, with modifications, can support the existing and proposed antennas and associated equipment. A statement of special inspections is also attached behind the Structural Analysis.

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

Sincerely,



Kenneth C. Baldwin

Attachments

Copy to:

Rusty Lanzit, Chaplin First Selectman  
Truman J. & Lyn D. Pearl  
Sandy M. Carter



Cellco Partnership

d.b.a. **verizon** wireless

# MANSFIELD NE

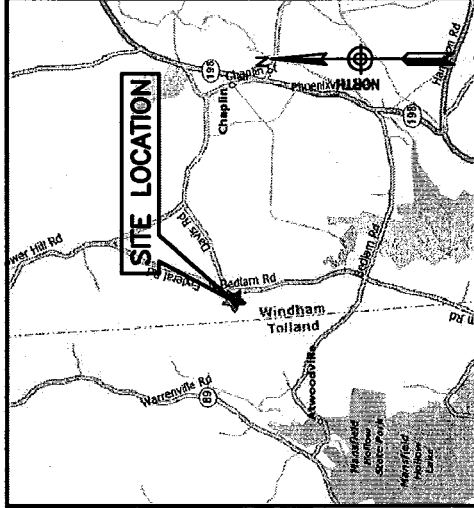
203 DAVIS ROAD  
CHAPLIN, CT 06235

**NOTE:**  
THIS DOCUMENT WAS DEVELOPED TO REFLECT A SPECIFIC SITE AND ITS SITE CONDITIONS AND IS NOT TO BE USED FOR ANOTHER SITE OR WHEN OTHER CONDITIONS PERTAIN. REUSE OF THIS DOCUMENT IS AT THE SOLE RISK OF THE USER.

**STRUCTURAL NOTE:**  
NEW CONSTRUCTION REPRESENTED ON THESE PLANS IS PROPOSED PRECATED ON THE REQUIREMENT THAT A STRUCTURAL ANALYSIS BE PERFORMED BY A LICENSED CONNECTICUT PROFESSIONAL STRUCTURAL ENGINEER AND CERTIFICATION IS GIVEN BY THE ENGINEER THAT THE EXISTING TOWER AND ALL EXISTING AND PROPOSED ANTENNAS AND APPURTENANCES SUPPORTED BY THE TOWER AND ANY REQUIRED IMPROVEMENTS AND REINFORCEMENTS HAVE SUFFICIENT STRUCTURAL CAPACITY AND COMPLY WITH THE CONNECTICUT BUILDING CODE AND ALL APPLICABLE EIA/TIA CRITERIA. NO WORK PROPOSED HEREON SHALL BE PROGRESSED WITHOUT CONFIRMATION OF THIS CERTIFICATION.

**DIRECTIONS (FROM HARTFORD, CT):**

TAKE 84 EAST TO I-384 EAST TO  
ROUTE 44 EAST (FOR APPROX. 16 MILES)  
RIGHT ON ROUTE 84 SOUTH  
LEFT ON TOWER HILL ROAD  
LEFT ON DAVIS RD.  
SITE IS ON THE RIGHT



LOCATION MAP  
CHAPLIN, CT

**PROJECT SUMMARY**

**SITE NAME:** MANSFIELD NE  
**SITE ADDRESS:** 203 DAVIS ROAD, CHAPLIN, CT 06235  
**PROPERTY OWNER:** N/F TRUMAN J. PEARL & LYN D. PEARL, 203 DAVIS RD, CHAPLIN, CT 06235  
**TOWER OWNER:** SBA TOWERS, 5900 BROKEN SOUND PARKWAY, NW BOCA RATON, FL 33487  
**TOWER OWNER CONTACT:** MARK LUTHER, 570-561-3200  
**APPLICANT:** CELCO PARTNERSHIP, d.b.a. VERIZON WIRELESS, 99 EAST RIVER DRIVE, EAST HARTFORD, CT 06108  
**CONTACT PERSON:** SANDY CARTER, CELCO PARTNERSHIP, (860) 803-8219  
**COORDINATES:** LATITUDE: 41-47-36.6" N (NAD 83), LONGITUDE: 72-09-37.0" W (NAD 83). COORDINATES PROVIDED BY HAND HELD GPS

SHEET INDEX	
SHEET NO.	DESCRIPTION
T-1	TITLE SHEET
S-1	PARTIAL SITE PLAN
S-2	MONOPOLE ELEVATION

**NOTE:**  
DRAWINGS FOR SITING COUNCIL ONLY. NOT TO BE USED FOR CONSTRUCTION.

NO.	DATE	BY	DESCRIPTION
A	06/16/07	IMQ	PRELIMINARY SITING COUNCIL

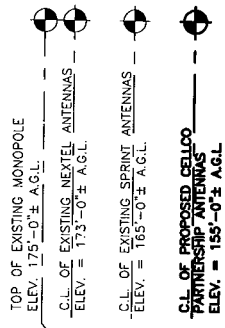
**Dewberry**  
Dewberry-Goodkind, Inc.  
59 ELM STREET  
SUITE 101  
HARTFORD, CT 06180  
203.776.9277 PHONE  
203.776.2288 FAX

SCALE: AS SHOWN	DESIGNED BY: CKD	DATE: 06/15/07	CGI PROJECT NO.: 50006040
-----------------	------------------	----------------	---------------------------

CELLCO PARTNERSHIP		d.b.a. <b>verizon</b> wireless	
TITLE SHEET		PROJECT: TBD	SHEET NO. T-1
MANSFIELD NE		LOCATION CODE: TBD	
203 DAVIS ROAD		CHAPLIN, CT 06235	

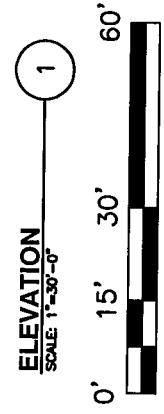
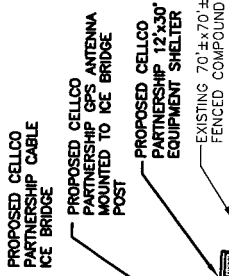






PROPOSED CELCO PARTNERSHIP ANTENNA (TYP-12) MOUNTED TO PROPOSED ANTENNA PLATFORM

EXISTING 175'-0" ± A.G.L. TALL MONOPOLE



NOTE:  
SOME EXISTING ITEMS NOT SHOWN FOR CLARITY

**NOTES:**

1. DRAWING IS SCHEMATIC. FINAL EQUIPMENT LOCATION, UTILITY ROUTING, ANTENNA TYPES AND ANTENNA HEIGHTS WILL BE FINALIZED UPON COMPLETION OF DESIGN.
2. THIS DOCUMENT WAS DEVELOPED TO REFLECT A SPECIFIC SITE AND ITS SITE CONDITIONS AND IS NOT TO BE USED FOR ANOTHER SITE OR WHEN OTHER CONDITIONS PERTAIN. REUSE OF THIS DOCUMENT IS AT THE SOLE RISK OF THE USER.
3. EXISTING ANTENNA ELEVATIONS PROVIDED BY TOWER OWNER.

<p>Dewberry-Goodkind, Inc. 99 ELM STREET NEW HAVEN, CT 06510 203.776.2277 PHONE 203.776.2288 FAX</p>		<p>SCALE: AS SHOWN DESIGNED BY: CKD DATE: 06/15/07 DGI PROJECT NO. 50006040</p>		<p>Cellco Partnership d.b.a. <b>verizon</b> Wireless</p>	
<p><b>TOWER ELEVATION</b></p>		<p>SITE NAME: MANSFIELD 203 DAVIS ROAD CHAPLIN, CT 06235</p>		<p>PROJECT: TBD LOCATION CODE: TBD</p>	
<p>NO. A</p>		<p>DATE 06/16/07</p>		<p>SHEET NO. S - 2</p>	
<p>BY IMQ</p>		<p>DESCRIPTION PRELIMINARY SITING COUNCIL</p>			

General Power Density

Site Name: Mansfield NE, CT  
 Cumulative Power Density

Operator	Operating Frequency (MHz)	Number of Trans.	ERP Per Trans. (watts)	Total ERP (watts)	Distance to Target (feet)	Calculated Power Density (mW/cm <sup>2</sup> )	Maximum Permissible Exposure* (mW/cm <sup>2</sup> )	Fraction of MPE (%)
VZW PCS	1970	3	485	1455	153	0.0224	1.0	2.24%
VZW	875	9	200	1800	153	0.0277	0.583	4.74%

**Total Percentage of Maximum Permissible Exposure**

6.98%

\*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

MHz = Megahertz

mW/cm<sup>2</sup> = milliwatts per square centimeter

ERP = Effective Radiated Power

Absolute worst case maximum values used.



July 10, 2007

Mr. Mark Luther  
SBA Network Services  
800 South Washington Ave.  
Scranton, PA 18505  
(570) 558-3450

Subject: **Structural Analysis Report  
Verizon Wireless Co-Locate  
SBA Site Name: North Chaplin, CT  
SBA Site Number: CT03113-S  
175' Nudd MJ-180 Monopole Tower  
Vertical Structures Job Number: 2007-007-026**

Dear Mr. Luther,

Vertical Structures is pleased to provide you with the results of the structural analysis performed on the 175' tall monopole tower at the North Chaplin site in Connecticut. The purpose of the analysis was to determine the suitability of the tower upon adding six (6) proposed Antel LPA-80080/6CF panel antennas and six (6) proposed Antel LPA-185080/12CFx2 panel antennas with six (6) proposed Andrew PCS 1900 tower mounted amplifiers mounted on a proposed platform at 155' for Verizon Wireless when combined with the existing and reserved equipment on the structure. This analysis has been performed in accordance with the TIA/EIA-222-F standard and local code requirements based upon an 85 MPH basic "fastest mile" wind speed, equivalent to a 105 MPH basic "3-second gust" wind speed per IBC Table 1609.3.1.

Based on our analysis we have determined the tower superstructure and foundation are sufficient for the proposed loading, provided the modifications detailed in Appendix B have been completed.

Vertical Structures appreciates the opportunity to provide this report and our continuing professional services. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted,

A handwritten signature in black ink that reads "Ben Greenwell".

Ben Greenwell  
Project Engineer



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**INTRODUCTION**

The subject tower is located in Chaplin, Connecticut. The 175' Nudd MJ-180 monopole tower was designed and manufactured in 2000 for SBA. The tower consists of four (4) 18-sided tapered polygonal sections joined via slip joint connections. The tower is founded on a 31' square by 4' thick mat foundation bearing approximately 10' below grade. For the purpose of this analysis, the required modifications detailed in Appendix B are considered complete.

**ANALYSIS CRITERIA**

The North Chaplin monopole tower was analyzed in accordance with the current EIA-222-F publication, "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures." The proposed and existing antennas, lines and mounts considered in this analysis are listed in Table 1. The applied forces for this analysis were derived from an 85 MPH basic wind speed with no ice accumulation and a reduced 74 MPH basic wind speed with a 1/2" of radial ice accumulation. The tower was originally designed for an 85 MPH basic wind speed with no ice accumulation and a reduced 74 MPH basic wind speed with a 1/2" of radial ice accumulation. The original design loads are listed in Table 2. All cables are assumed to be routed up the interior of the pole unless noted otherwise.

**Table 1 – Proposed and Existing Loads**

Mount Elevation	Carrier Name	Status	Antennas	Mounts	Feedlines
173'	Nextel	Existing	(12) Decibel DB844H90E-XY Panels	(1) 14' L.P. Platform	(12) 1 1/4" Coax
165'	Sprint	Existing	(6) Decibel DB980H90 Panels	(1) 14' L.P. Platform	(6) 1 5/8" Coax
		Reserved	(6) Decibel DB980H90 Panels		(6) 1 5/8" Coax
155'	Verizon Wireless	Proposed	(6) Antel LPA-80080/6CF Panels	(1) PiRod 13' L.P. Platform	(12) 1 5/8" Coax
			(6) Antel LPA-185080/12CFx2 Panels		
			(6) Andrew PCS 1900 TMAs		

**Table 2 – Original Design Loads**

Mount Elevation	Carrier Name	Status	Antennas	Mounts	Feedlines
190'	Co-Lo	Design	(12) Decibel DB896 Panels	(1) 14' L.P. Platform	(12) 1 5/8" Coax
180'	Co-Lo	Design	(12) Decibel DB896 Panels	(1) 14' L.P. Platform	(12) 1 5/8" Coax
170'	Co-Lo	Design	(12) Decibel DB896 Panels	(1) 14' L.P. Platform	(12) 1 5/8" Coax
160'	Co-Lo	Design	(12) Decibel DB896 Panels	(1) 14' L.P. Platform	(12) 1 5/8" Coax
150'	Co-Lo	Design	(12) Decibel DB896 Panels	(1) 14' L.P. Platform	(12) 1 5/8" Coax
140'	Co-Lo	Design	(12) Decibel DB896 Panels	(1) 14' L.P. Platform	(12) 1 5/8" Coax

## ANALYSIS PROCEDURE

Table 3 – Resources Utilized

Resource	Remarks
Proposed Loads	SBA E-mail Dated June 4, 2007
Existing Loads	Vertical Structures Analysis No. 2004-007-021
Tower Drawing	Nudd Drawing No. 00-7678-1
Foundation Drawing	Nudd Drawing No. 00-7678-1
Geotechnical Information	Jaworski Geotech Project No. 00213G
Rework Drawings	Vertical Structures Job No. 2007-007-026

### **Analysis Methods**

RISA Tower (Version 5.0), a commercially available software program, was used to create a three-dimensional model of the tower and calculate member stresses for various dead, live, wind, and ice load cases. All loads were computed in accordance with the ANSI/EIA/TIA-222-F or the local building code requirements. Selected output from the analysis is included in Appendix A.

### **Assumptions**

1. Tower and structures were built in accordance with the manufacturer's specifications.
2. The tower and structures have been maintained in accordance with manufacturer's specifications.
3. The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Table 1 and any referenced drawings.
4. When applicable, transmission cables are considered to be structural components for calculating wind loads, as allowed by TIA/EIA-222-F.

If any of these assumptions are not valid or have been made in error, this analysis may be affected, and Vertical Structures should be allowed to review any new information to determine its effect on the structural integrity of the tower.

**ANALYSIS RESULTS**

The North Chaplin tower superstructure is found to be adequate for the intended loading at the wind and ice conditions considered, provided the required modifications in Appendix B have been completed. Calculated foundation reactions are within the allowable limits based on the provided soil information. Table 4 summarizes the modified condition of the tower. Capacities up to 105% are considered acceptable based on the analysis procedures used.

**Table 4 – Modified Tower Component Capacities**

Section Number	Elevation	Percent Capacity Used		
		Pole	Flange Plate	Splice Bolts
1	175' – 130'	52.7	-	-
2 – 3	130' – 85'	57.7	-	-
4	85' – 41'	63.1	-	-
5	41' – 0'	63.0	-	-
Anchor Bolts – Tension		61.6		
Base Plate and Gussets		79.6		
Foundation – Moment		< 100		

**Required Modifications**

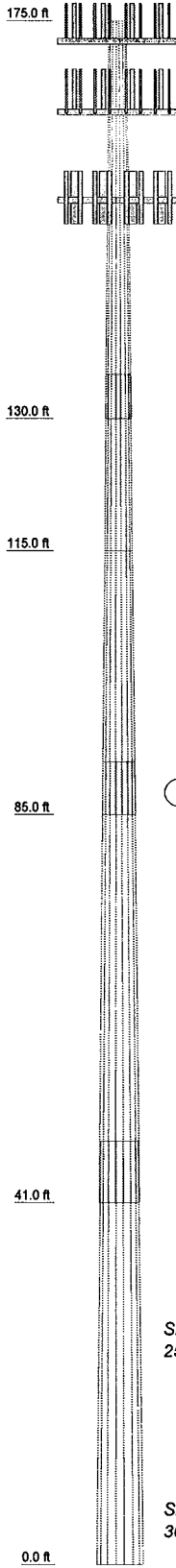
Modification (A) is required to remedy the deficiencies identified in Vertical Structures Job No. 2007-007-017. Required modification drawings are provided in Appendix B. If requested, Vertical Structures will supply the material necessary to make the required modifications.

- (A) Reinforce the base plate.



## APPENDIX A

Section	1	2	3	4	5
Length (ft)	45'	20'	30'	50'	48'
Number of Sides	18	18	18	18	18
Thickness (in)	0.2500	0.3125	0.3750	0.3750	0.4375
Lap Splice (ft)	5'		6'	7'	
Top Dia (in)	24.0000	33.5588	38.6200	43.2634	52.8558
Bot Dia (in)	35.3162	38.6200	45.3617	55.2895	64.5000
Grade			A572-65	A582-70	A572-65
Weight (lb)	3573.2	2415.0	5056.5	9902.9	13209.4



### DESIGNED APPURTENANCE LOADING

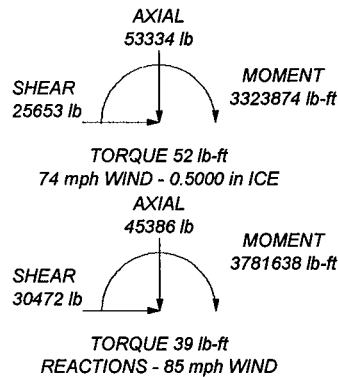
TYPE	ELEVATION	TYPE	ELEVATION
Nudd 14' Boom (3) (Nextel)	173	(2) LPA-80080/6CF w/Mount Pipe (Verizon Wireless)	155
(4) DB844H90E-XY w/ Mount Pipe (Nextel)	173	(2) LPA-80080/6CF w/Mount Pipe (Verizon Wireless)	155
(4) DB844H90E-XY w/ Mount Pipe (Nextel)	173	(2) LPA-185080/12CFx2 w/ Mount Pipe (Verizon Wireless)	155
(4) DB844H90E-XY w/ Mount Pipe (Nextel)	173	(2) LPA-185080/12CFx2 w/ Mount Pipe (Verizon Wireless)	155
Nudd 14' Boom (3) (Sprint)	165	(2) LPA-185080/12CFx2 w/ Mount Pipe (Verizon Wireless)	155
(4) DB980H90 w/Pipe Mount (Sprint)	165	(2) PCS 1900 TMA (Verizon Wireless)	155
(4) DB980H90 w/Pipe Mount (Sprint)	165	(2) PCS 1900 TMA (Verizon Wireless)	155
(4) DB980H90 w/Pipe Mount (Sprint)	165	(2) PCS 1900 TMA (Verizon Wireless)	155
Piord 13' Low Profile Platform (VSI) (Verizon Wireless)	155	(2) PCS 1900 TMA (Verizon Wireless)	155
(2) LPA-80080/6CF w/Mount Pipe (Verizon Wireless)	155	58532A (Verizon Wireless)	155

### MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi	A582-70	70 ksi	90 ksi

### TOWER DESIGN NOTES

1. Tower is located in Windham 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 RATING: 63.1%



<b>Vertical Structures, Inc.</b> 309 Spangler Drive, Suite E Richmond, KY 40475 Phone: (859) 624-8360 FAX: (859) 624-8369	Job: <b>North Chaplin, CT (CT03113-S)</b>		
	Project: <b>Vertical Structures Job No. 2007-007-026</b>		
	Client: SBA	Drawn by: Ben Greenwell	App'd:
	Code: TIA/EIA-222-F	Date: 07/10/07	Scale: NTS
	Path:		Dwg No. E-1

<b>RISA Tower</b>  <i>Vertical Structures, Inc.</i> 309 Spangler Drive, Suite E Richmond, KY 40475 Phone: (859) 624-8360 FAX: (859) 624-8369	<b>Job</b> North Chaplin, CT (CT03113-S)	<b>Page</b> 1 of 6
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	<b>Client</b> SBA	<b>Designed by</b> Ben Greenwell

## Tower Input Data

There is a pole section.

This tower is designed using the TIA/EIA-222-F standard.

The following design criteria apply:

Tower is located in Windham County, Connecticut.

Basic wind speed of 85 mph.

Nominal ice thickness of 0.5000 in.

Ice density of 56 pcf.

A wind speed of 74 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 50 mph.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

Stress ratio used in pole design is 1.333.

Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

## Options

- |  |  |   |
|--|--|---|
| <ul style="list-style-type: none"> <li>Consider Moments - Legs</li> <li>Consider Moments - Horizontals</li> <li>Consider Moments - Diagonals</li> <li>Use Moment Magnification</li> <li>√ Use Code Stress Ratios</li> <li>√ Use Code Safety Factors - Guys</li> <li>Escalate Ice</li> <li>Always Use Max Kz</li> <li>Use Special Wind Profile</li> <li>√ Include Bolts In Member Capacity</li> <li>√ Leg Bolts Are At Top Of Section</li> <li>√ Secondary Horizontal Braces Leg</li> <li>√ Use Diamond Inner Bracing (4 Sided)</li> <li>Add IBC .6D+W Combination</li> </ul> | <ul style="list-style-type: none"> <li>Distribute Leg Loads As Uniform</li> <li>Assume Legs Pinned</li> <li>√ Assume Rigid Index Plate</li> <li>√ Use Clear Spans For Wind Area</li> <li>√ Use Clear Spans For KL/r</li> <li>√ Retension Guys To Initial Tension</li> <li>√ Bypass Mast Stability Checks</li> <li>Use Azimuth Dish Coefficients</li> <li>√ Project Wind Area of Appurt.</li> <li>√ Autocalc Torque Arm Areas</li> <li>√ SR Members Have Cut Ends</li> <li>Sort Capacity Reports By Component</li> <li>√ Triangulate Diamond Inner Bracing</li> </ul> | <ul style="list-style-type: none"> <li>√ Treat Feedline Bundles As Cylinder</li> <li>Use ASCE 10 X-Brace Ly Rules</li> <li>√ Calculate Redundant Bracing Forces</li> <li>Ignore Redundant Members in FEA</li> <li>√ SR Leg Bolts Resist Compression</li> <li>√ All Leg Panels Have Same Allowable</li> <li>Offset Girt At Foundation</li> <li>√ Consider Feedline Torque</li> <li>Include Angle Block Shear Check</li> <li style="text-align: center;">Poles</li> <li>Include Shear-Torsion Interaction</li> <li>Always Use Sub-Critical Flow</li> <li>Use Top Mounted Sockets</li> </ul> |
|--|--|---|

## Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	175'-130'	45'	5'	18	24.0000	35.3162	0.2500	1.0000	A572-65 (65 ksi)
L2	130'-115'	20'	0'	18	33.5588	38.6200	0.3125	1.2500	A572-65 (65 ksi)
L3	115'-85'	30'	6'	18	38.6200	45.3617	0.3750	1.5000	A572-65 (65 ksi)
L4	85'-41'	50'	7'	18	43.2634	55.2895	0.3750	1.5000	A582-70 (70 ksi)
L5	41'-0'	48'		18	52.8558	64.5000	0.4375	1.7500	A572-65 (65 ksi)

<b>RISA Tower</b>  <b>Vertical Structures, Inc.</b> 309 Spangler Drive, Suite E Richmond, KY 40475 Phone: (859) 624-8360 FAX: (859) 624-8369	<b>Job</b> North Chaplin, CT (CT03113-S)	<b>Page</b> 2 of 6
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	<b>Client</b> SBA	<b>Designed by</b> Ben Greenwell

### Tapered Pole Properties

Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	I/C in <sup>3</sup>	J in <sup>4</sup>	I/Q in <sup>2</sup>	w in	w/t
L1	24.3702	18.8456	1342.9976	8.4313	12.1920	110.1540	2687.7623	9.4246	3.7840	15.136
	35.8610	27.8250	4322.6542	12.4485	17.9406	240.9422	8650.9963	13.9152	5.7757	23.103
L2	35.3614	32.9762	4604.9623	11.8025	17.0479	270.1191	9215.9839	16.4912	5.3564	17.14
	39.2158	37.9963	7044.4295	13.5992	19.6190	359.0623	14098.1282	19.0017	6.2471	19.991
L3	39.2158	45.5211	8412.0072	13.5770	19.6190	428.7693	16835.0832	22.7649	6.1371	16.366
	46.0615	53.5454	13690.7755	15.9703	23.0437	594.1212	27399.5658	26.7778	7.3237	19.53
L4	45.3962	51.0479	11862.9844	15.2254	21.9778	539.7716	23741.5784	25.5288	6.9544	18.545
	56.1424	65.3620	24902.1441	19.4946	28.0871	886.6054	49837.0550	32.6872	9.0710	24.189
L5	55.3955	72.7894	25268.0787	18.6085	26.8508	941.0561	50569.4057	36.4016	8.5326	19.503
	65.4950	88.9588	46124.7556	22.7422	32.7660	1407.7018	92310.2034	44.4878	10.5820	24.187

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A <sub>f</sub>	Adjust. Factor A <sub>r</sub>	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals
ft	ft <sup>2</sup>	in					in	in
L1 175'-130'				1	1	1		
L2 130'-115'				1	1	1		
L3 115'-85'				1	1	1		
L4 85'-41'				1	1	1		
L5 41'-0'				1	1	1		

### Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement	Total Number	C <sub>A</sub> A <sub>A</sub>	Weight
				ft		ft <sup>2</sup> /ft	plf
LDF7-50A (1-5/8 FOAM) (Verizon Wireless)	C	No	Inside Pole	155' - 5'	12	No Ice 1/2" Ice	0.00 0.82
LDF4-50A (1/2 FOAM) (Verizon Wireless)	C	No	Inside Pole	155' - 5'	1	No Ice 1/2" Ice	0.00 0.15
LDF6-50A (1-1/4 FOAM) (Nextel)	C	No	Inside Pole	173' - 5'	12	No Ice 1/2" Ice	0.00 0.66
LDF7-50A (1-5/8 FOAM) (Sprint)	C	No	Inside Pole	165' - 5'	12	No Ice 1/2" Ice	0.00 0.82

### Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation	Face	A <sub>R</sub>	A <sub>F</sub>	C <sub>A</sub> A <sub>A</sub> In Face	C <sub>A</sub> A <sub>A</sub> Out Face	Weight
	ft		ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>	lb
L1	175'-130'	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	934.71

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Tower Section	Tower Elevation ft	Face	$A_R$ ft <sup>2</sup>	$A_F$ ft <sup>2</sup>	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>	Weight lb
L2	130'-115'	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	416.25
L3	115'-85'	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	832.50
L4	85'-41'	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	1221.00
L5	41'-0'	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	999.00

### Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	$A_R$ ft <sup>2</sup>	$A_F$ ft <sup>2</sup>	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>	Weight lb
L1	175'-130'	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	934.71
L2	130'-115'	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	416.25
L3	115'-85'	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	832.50
L4	85'-41'	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	1221.00
L5	41'-0'	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	999.00

### Feed Line Center of Pressure

Section	Elevation ft	$CP_x$ in	$CP_z$ in	$CP_x$ Ice in	$CP_z$ Ice in
L1	175'-130'	0.0000	0.0000	0.0000	0.0000
L2	130'-115'	0.0000	0.0000	0.0000	0.0000
L3	115'-85'	0.0000	0.0000	0.0000	0.0000
L4	85'-41'	0.0000	0.0000	0.0000	0.0000
L5	41'-0'	0.0000	0.0000	0.0000	0.0000

### Discrete Tower Loads

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	<b>Client</b>		SBA		<b>Designed by</b>		Ben Greenwell	

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C <sub>A,A</sub> Front ft <sup>2</sup>	C <sub>A,A</sub> Side ft <sup>2</sup>	Weight lb
Nudd 14' Boom (3) (Nextel)	C	None		0.0000	173'	No Ice 1/2" Ice	47.00 47.00	1600.00 2050.00
(4) DB844H90E-XY w/ Mount Pipe (Nextel)	A	From Centroid- Leg	4.00 0' 2'	0.0000	173'	No Ice 1/2" Ice	3.54 4.03	35.90 75.66
(4) DB844H90E-XY w/ Mount Pipe (Nextel)	B	From Centroid- Leg	4.00 0' 2'	0.0000	173'	No Ice 1/2" Ice	3.54 4.03	35.90 75.66
(4) DB844H90E-XY w/ Mount Pipe (Nextel)	C	From Centroid- Leg	4.00 0' 2'	0.0000	173'	No Ice 1/2" Ice	3.54 4.03	35.90 75.66
**								
Nudd 14' Boom (3) (Sprint)	C	None		0.0000	165'	No Ice 1/2" Ice	47.00 47.00	1600.00 2050.00
(4) DB980H90 w/Pipe Mount (Sprint)	A	From Centroid- Leg	4.00 0' 2'	0.0000	165'	No Ice 1/2" Ice	4.04 4.50	106.90 140.48
(4) DB980H90 w/Pipe Mount (Sprint)	B	From Centroid- Leg	4.00 0' 2'	0.0000	165'	No Ice 1/2" Ice	4.04 4.50	106.90 140.48
(4) DB980H90 w/Pipe Mount (Sprint)	C	From Centroid- Leg	4.00 0' 2'	0.0000	165'	No Ice 1/2" Ice	4.04 4.50	106.90 140.48
**								
Pirod 13' Low Profile Platform (VSI) (Verizon Wireless)	A	None		0.0000	155'	No Ice 1/2" Ice	15.30 17.00	1340.00 2000.00
(2) LPA-80080/6CF w/Mount Pipe (Verizon Wireless)	A	From Centroid- Leg	4.00 0' 0'	0.0000	155'	No Ice 1/2" Ice	4.35 4.79	42.90 104.60
(2) LPA-80080/6CF w/Mount Pipe (Verizon Wireless)	B	From Centroid- Leg	4.00 0' 0'	0.0000	155'	No Ice 1/2" Ice	4.35 4.79	42.90 104.60
(2) LPA-80080/6CF w/Mount Pipe (Verizon Wireless)	C	From Centroid- Leg	4.00 0' 0'	0.0000	155'	No Ice 1/2" Ice	4.35 4.79	42.90 104.60
(2) LPA-185080/12CFx2 w/ Mount Pipe (Verizon Wireless)	A	From Centroid- Leg	4.00 0' 0'	0.0000	155'	No Ice 1/2" Ice	3.55 3.99	32.40 72.35
(2) LPA-185080/12CFx2 w/ Mount Pipe (Verizon Wireless)	B	From Centroid- Leg	4.00 0' 0'	0.0000	155'	No Ice 1/2" Ice	3.55 3.99	32.40 72.35
(2) LPA-185080/12CFx2 w/ Mount Pipe (Verizon Wireless)	C	From Centroid- Leg	4.00 0' 0'	0.0000	155'	No Ice 1/2" Ice	3.55 3.99	32.40 72.35
(2) PCS 1900 TMA (Verizon Wireless)	A	From Centroid- Leg	4.00 0' 0'	0.0000	155'	No Ice 1/2" Ice	1.02 1.17	20.00 26.38
(2) PCS 1900 TMA (Verizon Wireless)	B	From Centroid- Leg	4.00 0' 0'	0.0000	155'	No Ice 1/2" Ice	1.02 1.17	20.00 26.38
(2) PCS 1900 TMA (Verizon Wireless)	C	From Centroid- Leg	4.00 0' 0'	0.0000	155'	No Ice 1/2" Ice	1.02 1.17	20.00 26.38
58532A (Verizon Wireless)	A	From Centroid- Leg	4.00 0' 0'	0.0000	155'	No Ice 1/2" Ice	0.20 0.36	0.41 0.54

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### Compression Checks

### Pole Design Data

Section No.	Elevation ft	Size	L ft	L <sub>n</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P lb	Allow. P <sub>a</sub> lb	Ratio P/P <sub>a</sub>
L1	175 - 130 (1)	TP35.3162x24x0.25	45'	0'	0.0	39.000	26.8273	-9610.34	1046270.00	0.009
L2	130 - 115 (2)	TP38.62x33.5588x0.3125	20'	0'	0.0	39.000	37.9963	-13100.40	1481850.00	0.009
L3	115 - 85 (3)	TP45.3617x38.62x0.375	30'	0'	0.0	39.000	51.9406	-17898.00	2025680.00	0.009
L4	85 - 41 (4)	TP55.2895x43.2634x0.375	50'	0'	0.0	42.000	63.3580	-28928.50	2661040.00	0.011
L5	41 - 0 (5)	TP64.5x52.8558x0.4375	48'	0'	0.0	39.000	88.9588	-45372.90	3469390.00	0.013

### Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M <sub>x</sub> lb-ft	Actual f <sub>bx</sub> ksi	Allow. F <sub>bx</sub> ksi	Ratio f <sub>bx</sub> /F <sub>bx</sub>	Actual M <sub>y</sub> lb-ft	Actual f <sub>by</sub> ksi	Allow. F <sub>by</sub> ksi	Ratio f <sub>by</sub> /F <sub>by</sub>
L1	175 - 130 (1)	TP35.3162x24x0.25	504897.50	-27.058	39.000	0.694	0.00	0.000	39.000	0.000
L2	130 - 115 (2)	TP38.62x33.5588x0.3125	880491.67	-29.427	39.000	0.755	0.00	0.000	39.000	0.000
L3	115 - 85 (3)	TP45.3617x38.62x0.375	1381058.33	-29.652	39.000	0.760	0.00	0.000	39.000	0.000
L4	85 - 41 (4)	TP55.2895x43.2634x0.375	2420291.67	-34.871	42.000	0.830	0.00	0.000	42.000	0.000
L5	41 - 0 (5)	TP64.5x52.8558x0.4375	3781641.67	-32.237	39.000	0.827	0.00	0.000	39.000	0.000

### Pole Interaction Design Data

Section No.	Elevation ft	Size	Ratio P/P <sub>a</sub>	Ratio f <sub>bx</sub> /F <sub>bx</sub>	Ratio f <sub>by</sub> /F <sub>by</sub>	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	175 - 130 (1)	TP35.3162x24x0.25	0.009	0.694	0.000	0.703 ✓	1.333	H1-3 ✓
L2	130 - 115 (2)	TP38.62x33.5588x0.3125	0.009	0.755	0.000	0.763 ✓	1.333	H1-3 ✓
L3	115 - 85 (3)	TP45.3617x38.62x0.375	0.009	0.760	0.000	0.769 ✓	1.333	H1-3 ✓
L4	85 - 41 (4)	TP55.2895x43.2634x0.375	0.011	0.830	0.000	0.841 ✓	1.333	H1-3 ✓
L5	41 - 0 (5)	TP64.5x52.8558x0.4375	0.013	0.827	0.000	0.840 ✓	1.333	H1-3 ✓

### Section Capacity Table

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	<b>Client</b> SBA	<b>Designed by</b> Ben Greenwell

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P <sub>allow</sub> lb	% Capacity	Pass Fail	
L1	175 - 130	Pole	TP35.3162x24x0.25	1	-9610.34	1394677.85	52.7	Pass	
L2	130 - 115	Pole	TP38.62x33.5588x0.3125	2	-13100.40	1975305.97	57.3	Pass	
L3	115 - 85	Pole	TP45.3617x38.62x0.375	3	-17898.00	2700231.33	57.7	Pass	
L4	85 - 41	Pole	TP55.2895x43.2634x0.375	4	-28928.50	3547166.17	63.1	Pass	
L5	41 - 0	Pole	TP64.5x52.8558x0.4375	5	-45372.90	4624696.68	63.0	Pass	
							Summary		
							Pole (L4)	63.1	Pass
							<b>RATING =</b>	<b>63.1</b>	<b>Pass</b>

Program Version 5.0.2.0 - 6/13/2007 File://Nas1/bggreenwell/JOBS/JOBS Opened/2007-007-026 North Chaplin, CT\_base plate reinforcement/RISA/North Chaplin, CT.eri



## APPENDIX B

**TABLE OF CONTENTS**

SHEET NO.	DESCRIPTION
SHEET 1	MASTER DRAWING INCLUDING NOTES
SHEET 2	BASEPLATE REINFORCEMENT (0')

**STRUCTURAL MODIFICATIONS:**

THIS DRAWING DEPICTS THE REWORK REQUIRED TO REMEDY THE DEFICIENCIES FOUND IN THE NORTH CHAPLIN, CT TOWER PER THE REPORT PUBLISHED BY VERTICAL STRUCTURES ON 6-19-07, JOB# 2007-007-017.

A. REINFORCE THE BASE PLATE.

**WELDING SPECIFICATION NOTES:**

1. SURFACES TO BE CLEARED OF GALVANIZATION BEFORE FIELD WELDING ANY MATERIAL.
2. CARE MUST BE TAKEN TO ENSURE THAT THE COAX AND GALVANIZATION INSIDE THE POLE ARE NOT DAMAGED BY HEAT DURING WELDING.
3. WELDER TO BE AWS CERTIFIED AND USE E70XX RODS.
4. A LOW-HEAT WELDING PROCEDURE SHOULD BE EMPLOYED. PROCEDURE MUST BE SUBMITTED TO VERTICAL STRUCTURES FOR REVIEW PRIOR TO CONSTRUCTION.
5. AFTER INSTALLING REINFORCEMENT, COAT EXPOSED STEEL SURFACES WITH TWO COATS OF SHERWIN WILLIAMS PART #143-0255 ZINC CLAD COATING, CONTAINING 97% ZINC DUST TO RESTORE THE GALVANIZED PROTECTION ON THE MEMBERS. IF REQUIRED, PAINT ALL AREAS AFFECTED OR NEW STEEL WITH MATCHING TOWER PAINT.

**TECHNICAL SPECIFICATION NOTES:**

1. CONTRACTOR: CALL VERTICAL STRUCTURES AT (859) 624-8360 TO MAKE SURE YOU HAVE THE LATEST REVISION OF THIS DRAWING. CONTACT THE ENGINEER CONCERNING ANY CHANGES OR MODIFICATIONS THAT MAY BE REQUIRED DUE TO THE EXISTING CONDITIONS.
2. ALL BOLTS 1/2" OR LESS TO BE INSTALLED WITH H OR 2H NUTS. ALL BOLTS GREATER THAN 1/2" TO BE INSTALLED WITH 2H NUTS. LOCKING MECHANISM FOR BOLTS TO BE PALNUTS OR LOCKWASHERS.
3. ALL U-BOLTS TO BE INSTALLED WITH 2H NUTS AND LOCKWASHERS.
4. ANY HARDWARE REMOVED FROM THE EXISTING TOWER MUST BE REPLACED WITH NEW HARDWARE OF EQUAL SIZE AND QUALITY UNLESS NOTED OTHERWISE.
5. FINISHING SPECIFICATIONS - ALL MATERIAL TO BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:
  - A. FABRICATED MATERIAL - ASTM A153.
  - B. HARDWARE - ASTM A475.
  - C. GUY WIRE - ASTM A475.
6. AFTER FIELD MODIFICATIONS OF ANY STEEL MEMBERS, COAT EXPOSED STEEL SURFACES WITH TWO COATS OF SHERWIN WILLIAMS PART #143-0255 ZINC CLAD COATING, CONTAINING 97% ZINC DUST TO RESTORE THE GALVANIZED PROTECTION ON THE MEMBERS. IF REQUIRED, PAINT ALL AREAS AFFECTED OR NEW STEEL WITH MATCHING TOWER PAINT.
7. ELEVATIONS SHOWN ARE NOMINAL AND NOT EXACT.

**MATERIAL SPECIFICATION NOTES:**

1. ALL MATERIAL AND HARDWARE CAN BE PURCHASED FROM VERTICAL STRUCTURES, INC.
2. FABRICATION DETAILS FOR ANY PARTS NOT PURCHASED FROM VERTICAL STRUCTURES, INC. MUST BE APPROVED BY VERTICAL STRUCTURES, INC. BEFORE USE. REVIEW MAY INCLUDE RECEIPT OF MILL CERTIFICATIONS WHEN NECESSARY.
3. NO FIELD FABRICATION OF TOWER REWORK MATERIAL IS ALLOWED. ALL STEEL TO BE SHOP FABRICATED.
4. IT IS THE RESPONSIBILITY OF THE MATERIAL SUPPLIER TO GUARANTEE PROPER FITUP. ALL DIMENSIONS USED IN FABRICATION DETAILS MUST BE FIELD VERIFIED.

175'-0"

130'-0"

85'-0"

41'-0"

0'

REV.	DESCRIPTION	DATE	BY
A	ORIGINAL RELEASE	7-5-07	SWH

P.O. Box 1486  
Richmond, NY 142416  
Phone: (859) 624-8360  
Fax: (859) 624-8361  
Email: engineering@verticalstructures.com

**VERTICAL  
STRUCTURES, INC.**

FOR

**SBA**

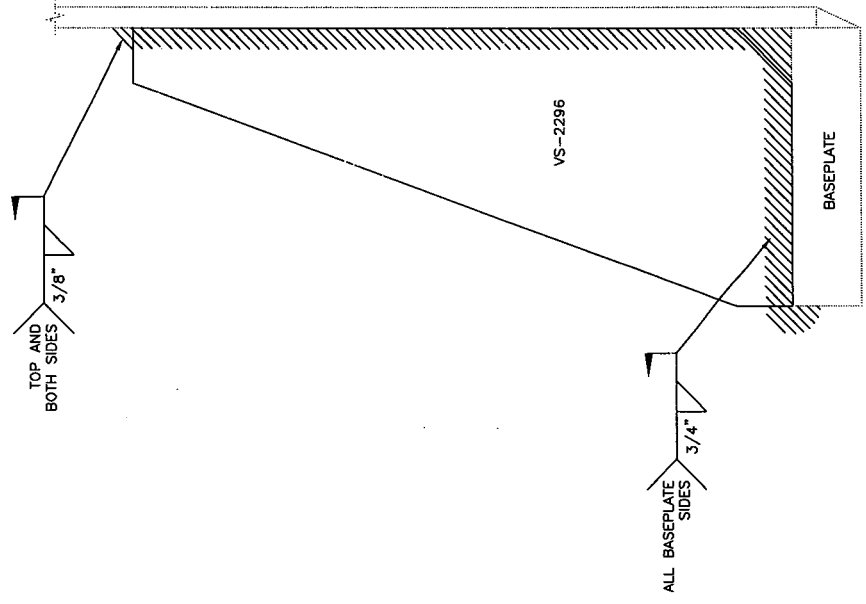
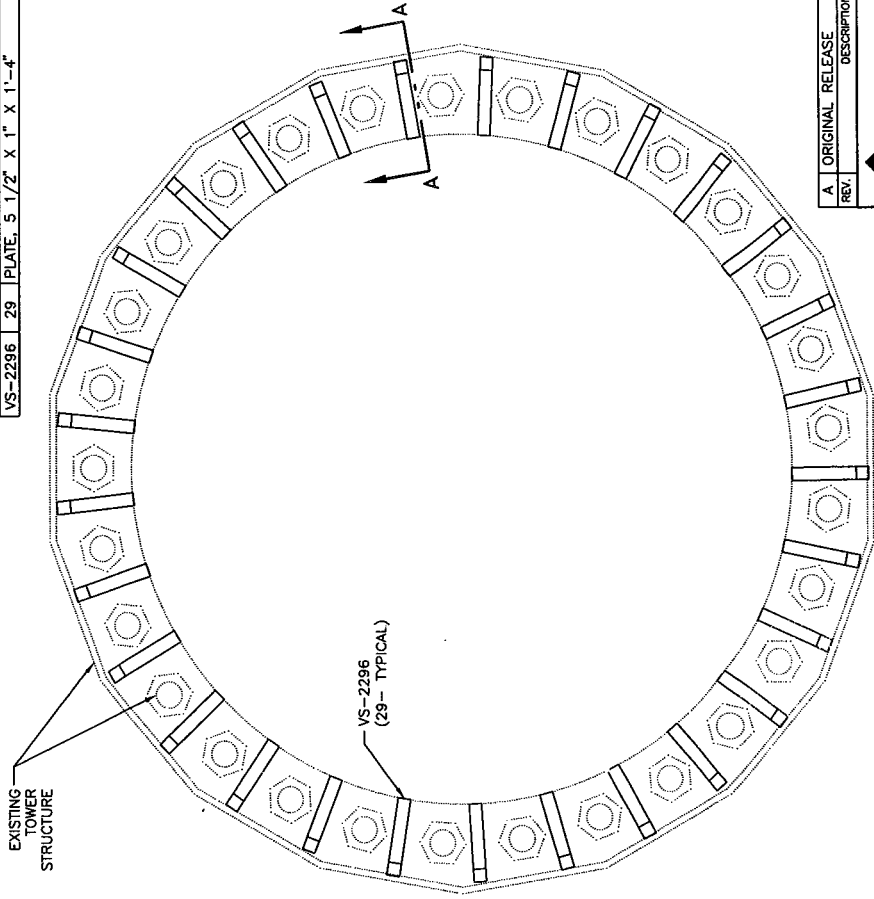
SBA SITE #CT03113-S	
DRAWN BY:	DATE
S. HARRIS	7-5-07
CHECK'D BY:	DATE
ENGR:	DATE

2007 MODIFICATIONS  
TOWER REWORK FOR A  
175' NUDD MJ-180 MONOPOLE  
SITE: NORTH CHAPLIN, CT

SHEET 1 OF 2      B TA2007007026-T1      SCALE: NONE

0'-0" INSTALL NEW INTERIOR BASEPLATE REINFORCEMENT PER SHEET 2.

BILL OF MATERIALS		MATERIAL GRADE	
MARK NO.	QTY.	DESCRIPTION	
VS-2296	29	PLATE, 5 1/2" X 1" X 1"-4"	ASTM A572, GRADE 50



PLAN VIEW @ BASE PLATE  
STEPBOLTS, SAFETY CLIMB, AND PORTS NOT  
DRAWN FOR CLARITY.

REV.	DESCRIPTION	DATE	BY
A	ORIGINAL RELEASE	7-5-07	SWH

P.O. Box 1498  
Richmond, KY 40476  
Phone: (609) 624-9389  
Fax: (609) 624-9389  
Email: engineering@verticalstructures.com



FOR	
<b>SBA</b>	
2007 MODIFICATIONS TOWER REWORK FOR A 175' NUDD MJ-180 MONOPOLE SITE: NORTH CHAPLIN, CT	
SHEET 2 of 2	B TA2007007026-T2
SCALE:	NONE

SBA SITE #CT03113-S	
DRAWN BY:	DATE
S. HARRIS	7-5-07
CHK'D BY:	DATE
ENGR:	DATE

# Statement of Special Inspections

Project: *SBA Site Number CT03113-S*  
Location: *203 Davis Road, Chaplin, Connecticut*  
Owner: *SBA Communications Corporation*

Design Professional in Responsible Charge: *George R. Underhill, P.E.*

This *Statement of Special Inspections* is submitted as a condition for permit issuance in accordance with the Special Inspection and Structural Testing requirements of the Building Code. It includes a schedule of Special Inspection services applicable to this project as well as the name of the Special Inspection Coordinator and the identity of other approved agencies to be retained for conducting these inspections and tests. This *Statement of Special Inspections* encompass the following disciplines:

- Structural       Mechanical/Electrical/Plumbing  
 Architectural       Other: \_\_\_\_\_

The Special Inspection Coordinator shall keep records of all inspections and shall furnish inspection reports to the Building Official and the Registered Design Professional in Responsible Charge. Discovered discrepancies shall be brought to the immediate attention of the Contractor for correction. If such discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official and the Registered Design Professional in Responsible Charge. The Special Inspection program does not relieve the Contractor of his or her responsibilities.

Interim reports shall be submitted to the Building Official and the Registered Design Professional in Responsible Charge.

A *Final Report of Special Inspections* documenting completion of all required Special Inspections, testing and correction of any discrepancies noted in the inspections shall be submitted prior to issuance of a Certificate of Use and Occupancy.

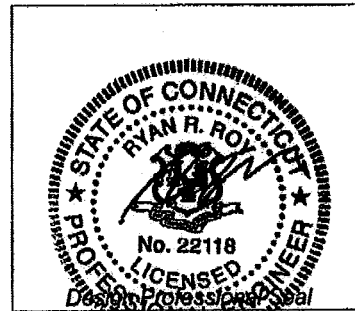
Job site safety and means and methods of construction are solely the responsibility of the Contractor.

Interim Report Frequency: *Monthly* or  per attached schedule.

Prepared by:

*Ryan R. Roy, P.E.*  
(type or print name)

*[Signature]*      *8/5/2007*  
Signature      Date



Owner's Authorization:

Building Official's Acceptance:

*Mark Lettler SBA/RSM 9/14/07*  
Signature      Date

\_\_\_\_\_  
Signature      Date

## Schedule of Inspection and Testing Agencies

This Statement of Special Inspections / Quality Assurance Plan includes the following building systems:

- |  |  |
|--|--|
| <input type="checkbox"/> Soils and Foundations       | <input type="checkbox"/> Spray Fire Resistant Material         |
| <input type="checkbox"/> Cast-in-Place Concrete      | <input type="checkbox"/> Wood Construction                     |
| <input type="checkbox"/> Precast Concrete            | <input type="checkbox"/> Exterior Insulation and Finish System |
| <input type="checkbox"/> Masonry                     | <input type="checkbox"/> Mechanical & Electrical Systems       |
| <input checked="" type="checkbox"/> Structural Steel | <input type="checkbox"/> Architectural Systems                 |
| <input type="checkbox"/> Cold-Formed Steel Framing   | <input type="checkbox"/> Special Cases                         |

Special Inspection Agencies	Firm	Address, Telephone, e-mail
1. Special Inspection Coordinator	JGI EASTERN, Inc. Ryan R. Roy, P.E.	201 Hammer Mill Road Rocky Hill, CT 06067 (860) 721-1900 <a href="mailto:rroy@jgieastern.com">rroy@jgieastern.com</a>
2. Inspector		
3. Inspector		
4. Testing Agency	JGI EASTERN, Inc.	201 Hammer Mill Road Rocky Hill, CT 06067 (860) 721-1900 <a href="mailto:pcameron@jgieastern.com">pcameron@jgieastern.com</a>
5. Testing Agency		
6. Other		

Note: The inspectors and testing agencies shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official, prior to commencing work.

## Qualifications of Inspectors and Testing Technicians

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The qualifications of all personnel performing Special Inspection and testing activities are subject to the approval of the Building Official. The credentials of all Inspectors and testing technicians shall be provided if requested.

### Key for Minimum Qualifications of Inspection Agents:

When the Registered Design Professional in Responsible Charge deems it appropriate that the individual performing a stipulated test or inspection have a specific certification or license as indicated below, such designation shall appear below the *Agency Number* on the Schedule.

PE/SE	Structural Engineer – a licensed SE or PE specializing in the design of building structures
PE/GE	Geotechnical Engineer – a licensed PE specializing in soil mechanics and foundations
EIT	Engineer-In-Training – a graduate engineer who has passed the Fundamentals of Engineering examination

### American Concrete Institute (ACI) Certification

ACI-CFTT	Concrete Field Testing Technician – Grade 1
ACI-CCI	Concrete Construction Inspector
ACI-LTT	Laboratory Testing Technician – Grade 1&2
ACI-STT	Strength Testing Technician

### American Welding Society (AWS) Certification

AWS-CWI	Certified Welding Inspector
AWS/AISC-SSI	Certified Structural Steel Inspector

### American Society of Non-Destructive Testing (ASNT) Certification

ASNT	Non-Destructive Testing Technician – Level II or III.
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### International Code Council (ICC) Certification

ICC-SMSI	Structural Masonry Special Inspector
ICC-SWSI	Structural Steel and Welding Special Inspector
ICC-SFSI	Spray-Applied Fireproofing Special Inspector
ICC-PCSI	Prestressed Concrete Special Inspector
ICC-RCSI	Reinforced Concrete Special Inspector

### National Institute for Certification in Engineering Technologies (NICET)

NICET-CT	Concrete Technician – Levels I, II, III & IV
NICET-ST	Soils Technician - Levels I, II, III & IV
NICET-GET	Geotechnical Engineering Technician - Levels I, II, III & IV

### Exterior Design Institute (EDI) Certification

EDI-EIFS	EIFS Third Party Inspector
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**Other**

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Item	Agency # (Qualif.)	Scope
1. Fabricator Certification/ Quality Control Procedures <input type="checkbox"/> Fabricator Exempt	1,4	<i>Verify that delivered materials conform with the manufacturer's and project specifications</i>
2. Material Certification		
3. Open Web Steel Joists		
4. Bolting		
5. Welding	4	<i>Visual review of surface preparation prior to welding. Visual observation of completed welds.</i>
6. Shear Connectors		
7. Structural Details		
8. Metal Deck		
9. Other:	4	<i>Confirm that galvanizing has been applied in accordance with the manufacturer's recommendations.</i>