



# 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

February 26, 2009

Steven L. Levine  
Real Estate Consultant  
New Cingular Wireless PCS, LLC  
500 Enterprise Drive  
Rocky Hill, CT 06067-3900

RE: **EM-CING-086-081215B**- New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 557 Rte 82, Montville, Connecticut.

Dear Mr. Levine:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- The tower shall be reinforced per the attached drawings dated October 24, 2007 prior to the antenna swap;
- A post-construction tower rating of not more than 100 percent shall be achieved; and
- A signed letter from a Professional Engineer duly licensed in the State of Connecticut shall be submitted to the Council to certify that the reinforcements have been properly completed and a post-construction tower rating of not more than 100 percent has been achieved.

The proposed modifications are to be implemented as specified here and in your notice dated December 12, 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.

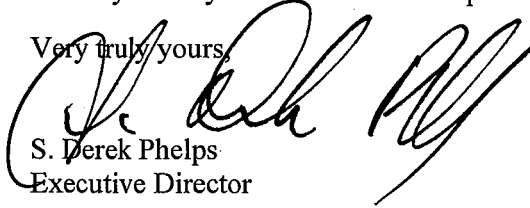
This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies 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.



CONNECTICUT SITING COUNCIL  
Affirmative Action / Equal Opportunity Employer

Thank you for your attention and cooperation.

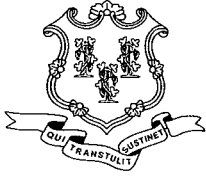
Very truly yours,

A handwritten signature in black ink, appearing to read 'S. Derek Phelps', written over the typed name and title.

S. Derek Phelps  
Executive Director

SDP/MP/laf

c: The Honorable Joseph W. Jaskiewicz, Mayor, Town of Montville  
Marcia Vlaun, Town Planner, Town of Montville  
Crown Castle



# 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)

[www.ct.gov/csc](http://www.ct.gov/csc)

December 16, 2008

The Honorable Joseph W. Jaskiewicz  
Mayor  
Town of Montville  
Town Hall  
310 Norwich New London Turnpike  
Uncasville, CT 06382

RE: **EM-CING-086-081215B**- New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 557 Rte 82, Montville, Connecticut.

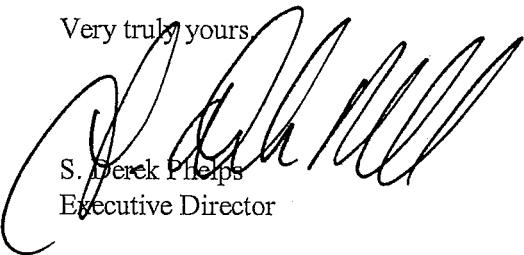
Dear Mayor Jaskiewicz:

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 December 30, 2008.

Thank you for your cooperation and consideration.

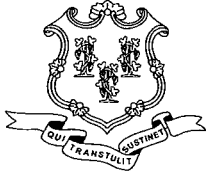
Very truly yours,

  
S. Derek Phelps  
Executive Director

SDP/jb

Enclosure: Notice of Intent

c: Marcia Vlaun, Town Planner, Town of Montville



# STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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

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December 16, 2008

The Honorable Joseph W. Jaskiewicz  
Mayor  
Town of Montville  
Town Hall  
310 Norwich New London Turnpike  
Uncasville, CT 06382

RE: **EM-CING-086-081215B**- New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 557 Rte 82, Montville, Connecticut.

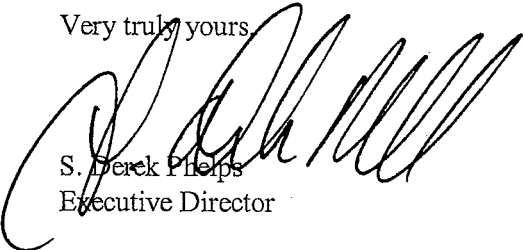
Dear Mayor Jaskiewicz:

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 December 30, 2008.

Thank you for your cooperation and consideration.

Very truly yours,



S. Derek Phelps  
Executive Director

SDP/jb

Enclosure: Notice of Intent

c: Marcia Vlaun, Town Planner, Town of Montville

EM-CING-086-081215B



ORIGINAL

New Cingular Wireless PCS, LLC  
500 Enterprise Drive  
Rocky Hill, Connecticut 06067-3900  
Phone: (860) 513-7636  
Fax: (860) 513-7190

Steven L. Levine  
Real Estate Consultant

HAND DELIVERED

December 12, 2008

Honorable Daniel F. Caruso, Chairman,  
and Members of the Connecticut Siting Council  
Connecticut Siting Council  
10 Franklin Square  
New Britain, Connecticut 06051



Re: New Cingular Wireless PCS, LLC notice of intent to modify an existing tele-communications facility located at 557 Rte 82 (owner, Crown Castle)

Dear Chairman Caruso and Members of the Council:

In order to accommodate technological changes, implement Uniform Mobile Telecommunications System ("UMTS") capability, and enhance system performance in the State of Connecticut, New Cingular Wireless PCS, LLC ("AT&T") plans to modify the equipment configurations at many of its existing cell sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the chief elected official of the municipality in which the affected cell site is located.

UMTS technology offers services to mobile computer and phone users anywhere in the world. Based on the Global System for Mobile (GSM) communication standard, UMTS is the planned worldwide standard for mobile users. UMTS, fully implemented, gives computer and phone users high-speed access to the Internet as they travel. They have the same capabilities even when they roam, through both terrestrial wireless and satellite transmissions.

Attached is a summary of the planned modifications, including power density calculations reflecting the change in AT&T's operations at the site. Also included is documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration.

The changes to the facility do not constitute modifications as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed or altered. Rather, the planned changes to the facility fall

squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. The height of the overall structure will be unaffected.
2. The proposed changes will not extend the site boundaries. There will be no effect on the site compound other than some enlarged equipment pads as may be noted in the attachments.
3. The proposed changes will not increase the noise level at the existing facility by six decibels or more.
4. Radio frequency power density may increase due to use of one or more GSM channel for UMTS transmissions. However, the changes will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site.

For the foregoing reasons, New Cingular Wireless respectfully submits that the proposed changes at the referenced site constitute exempt modifications under R.C.S.A. Section 16-50j-72(b)(2).

Please feel free to call me at (860) 513-7636 with questions concerning this matter. Thank you for your consideration.

Sincerely,



Steven L. Levine  
Real Estate Consultant

Attachments

**NEW CINGULAR WIRELESS  
Equipment Modification**

557 Rte 82, Montville  
Site Number 2194  
Exempt Modification approved 12/03

**Tower Owner/Manager:** Crown Castle

**Equipment Configuration:** Monopole

**Current and/or Approved:** Nine CSS DUO-1417-8686 panel antennas @ 150 ft AGL  
Six TMA's and three diplexers @ 150 ft  
Nine runs 1 5/8 inch coax cable  
Equipment Shelter

**Planned Modifications:** Remove all existing antennas, TMA's, and diplexers  
Install six Powerwave 7770 antennas (or equivalent) @ 147 ft  
Install six TMA's and six diplexers @ 147 ft  
Install three additional lines 1 5/8 inch coax

**Power Density:**

Worst-case calculations for existing wireless operations at the site indicate a radio frequency electromagnetic radiation power density, measured at ground level beside the tower, of approximately 9.2 % of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density following proposed modifications would be approximately 12.5 % of the standard.

**Existing**

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Other Users *							6.27
AT&T GSM *	150	1900 Band	2	427	0.0136	1.0000	1.36
AT&T GSM *	150	880 - 894	2	296	0.0095	0.5867	1.61
<b>Total</b>							<b>9.2%</b>

\* Per CSC records

## Proposed

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Other Users *							6.27
AT&T UMTS	147	880 - 894	1	500	0.0083	0.5867	1.42
AT&T GSM	147	1900 Band	2	427	0.0142	1.0000	1.42
AT&T GSM	147	880 - 894	4	296	0.0197	0.5867	3.36
Total							12.5%

\* Per CSC records

### Structural information:

The attached structural analysis demonstrates that the tower and foundation will have adequate structural capacity to accommodate the proposed equipment modifications following completion of recommended tower modifications. (Vertical Structures, Inc., 11/25/08) Per the attached email, Crown Castle has committed to performing the tower upgrade. We therefore respectfully request conditional approval for the proposed equipment modifications.





**New Cingular Wireless PCS, LLC**  
500 Enterprise Drive  
Rocky Hill, Connecticut 06067-3900  
Phone: (860) 513-7636  
Fax: (860) 513-7190

**Steven L. Levine**  
Real Estate Consultant

December 12, 2008

Mayor Joseph W. Jaskiewicz  
Town of Montville  
Town Hall 310 Norwich-New London Tpke.  
Uncasville, CT 06382

Re: Telecommunications Facility – 557 Route 82

Dear Mayor Jaskiewicz:

In order to accommodate technological changes, implement Uniform Mobile Telecommunications System (“UMTS”) capability, and enhance system performance in the State of Connecticut, New Cingular Wireless PCS, LLC (“AT&T”) will be changing its equipment configuration at certain cell sites.

As required by Regulations of Connecticut State Agencies (“R.C.S.A.”) Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review AT&T’s proposal. Please accept this letter as notification under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

The accompanying letter to the Siting Council fully describes AT&T’s proposal for the referenced cell site. However, if you have any questions or require any further information on our plans or the Siting Council’s procedures, please call me at (860) 513-7636 or Mr. Derek Phelps, Executive Director, Connecticut Siting Council at (860) 827-2935.

Sincerely,

Steven L. Levine  
Real Estate Consultant

Enclosure

**Levine, Steven**

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**From:** Leech, Marianne (Contractor) [Marianne.Leech.contractor@crowncastle.com]  
**Sent:** Friday, December 12, 2008 8:28 AM  
**To:** Levine, Steven  
**Subject:** FW: 876371 Walden Base Plate Upgrade AT&T  
**Attachments:** BU876371 Mod designs.pdf

Good Morning Steve,

Attached are the Base Plate mod designs for BU876371. The mods were never installed because the previous applications were cancelled. The AT&T structural analysis passed considering the mod designs. Our Project Manager, Josh Mostow, will be contacting David Osuch to discuss and explain **we are now working to complete the mods.**

I apologize for this confusion. Please let me know if you need addition information.

Thank you!

*Mitzi*

Mitzi Leech

**Crown Castle International**

Tower Structural Analyst (Contract)

3530 Toringdon Way, Suite 300

Charlotte, NC 28277

(704) 405-6580

[marianne.leech@crowncastle.com](mailto:marianne.leech@crowncastle.com)

This email may contain confidential or privileged material. Use or disclosure of it by anyone other than the recipient is unauthorized. If you are not an intended recipient, please delete this email.

12/12/2008

TABLE OF CONTENTS	
SHEET NO.	DESCRIPTION
SHEET 1	MASTER DRAWING INCLUDING NOTES
SHEET 2	BASE PLATE REINFORCEMENT (0)

**STRUCTURAL MODIFICATIONS:**

THIS DRAWING DEPICTS THE REWORK REQUIRED TO REMEDY THE DEFICIENCIES FOUND IN THE WALDEN/CAROLYN BESADE, CT TOWER PER THE REPORT PUBLISHED BY VERTICAL STRUCTURES ON 9-20-07, JOB# 2007-004-130.

- A. REINFORCE THE BASE PLATE.

**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.

**WELDING SPECIFICATION NOTES:**

1. SURFACES TO BE CLEARED OF GALVANIZATION BEFORE FIELD WELDING ANY MATERIAL.
  2. ALL CUTTING AND WELDING ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH CCUSA POLICY "CUTTING AND WELDING SAFETY PLAN" (DOC# ENG-PLN-10015) ON AN ONGOING BASIS THROUGHOUT THE ENTIRE LIFE OF THE PROJECT. PRIOR TO BIDDING REWORK, CONTRACTOR MUST HAVE IN THEIR POSSESSION AND HAVE READ THIS DOCUMENT. CONSULT CROWN CASTLE FOR COPIES OF THIS DOCUMENT.
- ADDITIONAL WELDING NOTE:
- A. WELDER TO USE E70XX RODS.

**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. AFTER FIELD MODIFICATIONS OF ANY STEEL MEMBERS, COAT EXPOSED STEEL SURFACES WITH TWO COATS OF SHERWIN WILLIAMS PART #143-0285 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.
6. 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.
7. ELEVATIONS SHOWN ARE NOMINAL AND NOT EXACT.

**CONTRACT ADMINISTRATION NOTES:**

1. PER CROWN POLICY, ALL MODIFICATIONS DEPICTED ON THESE DRAWINGS MUST BE INSPECTED BY VERTICAL STRUCTURES, INC. TO EXECUTE THIS SERVICE. VERTICAL STRUCTURES WILL REQUIRE A WRITTEN PURCHASE ORDER AND ONE CALENDAR WEEK PRIOR NOTICE OF AN INSPECTION. THE CONTRACTOR SHALL ALSO GIVE VERIFICATION 24 HOURS IN ADVANCE OF A SCHEDULED REQUEST FOR INSPECTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASSURE THAT THESE REQUIREMENTS ARE MET.
2. INSPECTIONS OF ABOVE GRADE MODIFICATIONS SHALL BE PERFORMED AT THE CONCLUSION OF THE WORK. BELOW GRADE OR HIDDEN INSTALLATIONS SUCH AS REBAR OR ANCHORS SHALL BE INSPECTED PRIOR TO THE PLACEMENT OF CONCRETE.
3. VERTICAL STRUCTURES WILL PROVIDE AN ENGINEERING REVIEW OF PART FABRICATION DETAIL DRAWINGS PRIOR TO MATERIAL FABRICATION AT THE DISCRETION OF CROWN CASTLE PROJECT MANAGEMENT. VERTICAL STRUCTURES WILL REQUIRE A PURCHASE ORDER AND A COMPLETE DRAWING PACKAGE TO PERFORM THIS WORK. VERTICAL STRUCTURES WILL SUBMIT A REPORT TO THE CONTRACTOR WITHIN TWO BUSINESS DAYS AFTER RECEIPT OF THE DRAWINGS AND PURCHASE ORDER.

180'

133'

87'

43'

0' INSTALL BASE PLATE GUSSETS PER SHEET 2.

REV.	DESCRIPTION	DATE	BY
A	ORIGINAL RELEASE	10-24-07	SWH

  
 P.O. Box 1486  
 Richmond, KY 40478  
 Phone: (859) 624-8360  
 Fax: (859) 624-8369  
 Email: [engineering@verticalstructures.com](mailto:engineering@verticalstructures.com)

FOR

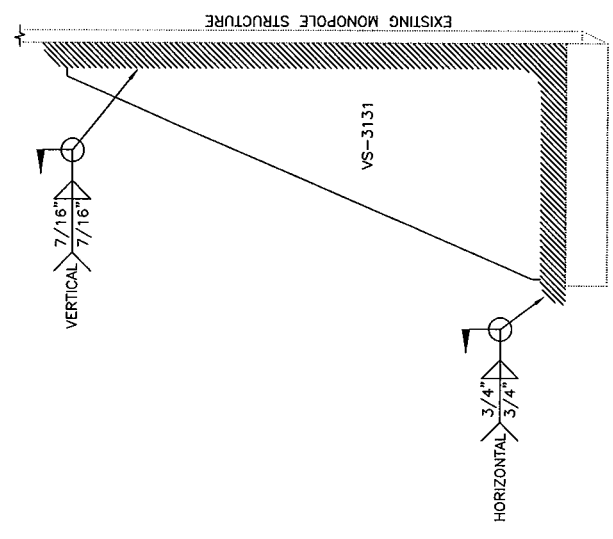
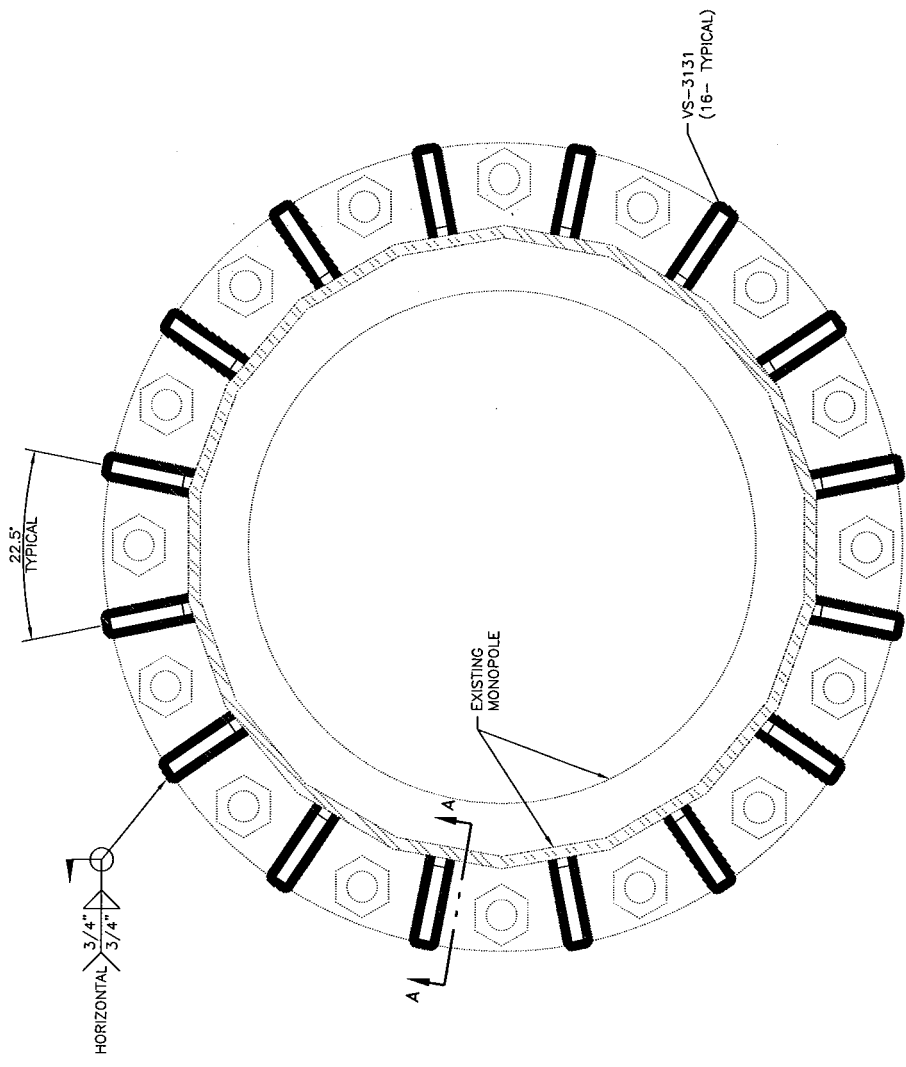
# CROWN CASTLE

**2007 MODIFICATIONS**  
**TOWER REWORK FOR A**  
**180' EEI MONOPOLE**  
**SITE: WALDEN/CAROLYN BESADE, CT**

SHEET 1 OF 2	B	TA2007004171-11	SCALE: NONE
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CROWN CASTLE	
Bu# 876371	
DRAFTER/PERSON:	DATE:
S. HARRIS	10-24-07
CHECKED BY:	DATE:
ENGR:	DATE:

BILL OF MATERIALS			
MARK NO.	QTY.	DESCRIPTION	MATERIAL GRADE
VS-3131	16	GUSSET, PL 7" X 1" X 1'-8"	ASTM A572, GRADE 50



SECTION "A-A"

PLAN VIEW

REV.	DESCRIPTION	DATE	BY
A	ORIGINAL RELEASE	10-24-07	SWH

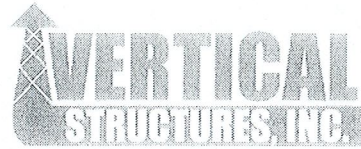
FOR

**VERTICAL STRUCTURES, INC.**  
 P.O. Box 1486  
 Richmond, KY 40476  
 Phone: (859) 624-8360  
 Fax: (859) 624-8361  
 Email: engineering@verticalstructures.com

FOR	
<b>CROWN CASTLE</b>	
2007 MODIFICATIONS TOWER REWORK FOR A 180' EEI MONOPOLE SITE: WALDEN/CAROLYN BESEAD, CT	
SHEET 2 OF 2	SCALE: NONE

CROWN CASTLE BU# 876371	
DRAFTSPERSON: S. HARRIS	DATE 10-24-07
CHKD BY:	DATE
ENGR:	DATE





November 25, 2008

Marianne Leech  
Crown Castle USA  
3530 Toringdon Way, Suite 300  
Charlotte, NC 28277  
(704) 405-6580

Vertical Structures, Inc.  
309 Spangler Drive, Suite E  
Richmond, KY 40475  
(859) 624-8360  
kmeehan@verticalstructures.com

**Subject: Structural Analysis Report**

**Carrier Designation** AT&T Mobility Change-Out  
Carrier Site Number: 2194  
Carrier Site Name: Montville-Route 82

**Crown Castle Designation** Crown Castle BU Number: 876371  
Crown Castle Site Name: Walden/Carolyn Besade  
Crown Castle JDE Job Number: 112062

**Engineering Firm Designation** Vertical Structures Project Number: 2008-004-154

**Site Data** 557 Route 82, Oakdale, CT, New London County  
Latitude 41°-30'-20.3", Longitude -72°-11'-51.1"  
180' EEI Monopole Tower

Dear Ms. Leech,


Vertical Structures is pleased to submit this structural analysis report to determine the structural integrity of the aforementioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 311710, and Application Number 70854, Revision 1. The purpose of the analysis is to determine the suitability of the tower for the following load case:

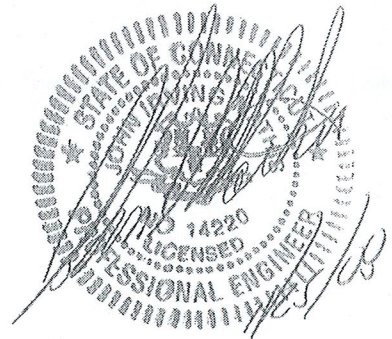
Load Case 1 (LC1): Proposed Equipment (Table 1) + Existing/Reserved Equipment (Table 2)

Based on our analysis we have determined the tower superstructure and foundation are sufficient for LC1, provided the required modifications detailed in Vertical Structures Job No. 2007-004-171 have been completed. 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 100 MPH basic "3-second gust" wind speed per 2006 IBC Equation 16-34.

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

Respectfully submitted,

  
Kyle Meehan  
Project Engineer



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Additional Calculations

## 1.) INTRODUCTION

The 180' tall monopole tower was designed and manufactured by EEI for Sprint PCS in 1999. The tower is constructed of four (4) 18-sided tapered polygonal tubes joined via slip joint connections and is founded on a 25' square by 5' thick mat bearing 4'-3" below grade. For the purpose of this analysis, the required modifications detailed in Vertical Structures Job No. 2007-004-171 are considered complete.

## 2.) ANALYSIS CRITERIA

The Walden/Carolyn Besade tower was analyzed in accordance with the current EIA-222-F publication, "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures." The proposed, existing, and reserved antennas, cables, and mounts considered in this analysis are listed in Tables 1 and 2. Applied forces in this study were derived from an 85 MPH basic "fastest mile" wind speed with no ice and a reduced 74 MPH basic "fastest mile" wind speed with a 1/2" of radial ice accumulation. The tower was originally designed for a 90 MPH basic "fastest mile" wind speed with no ice and a reduced 78 MPH basic "fastest mile" wind speed with a 1/2" of radial ice accumulation. The original design loads are listed in Table 3. All cables are assumed to be routed in accordance with the drawing in Appendix B.

**Table 1 – Proposed Antenna and Cable Information**

Mount Center Line Elevation (feet)	Number Of Antenna	Antenna Manufacturer	Antenna Model	Mount Manufacturer	Mount Model	Number Of Feed Lines	Feed Line Size (inches)
147	6	Powerwave Technologies	7770.00			3	1 5/8
	6		LGP21401 TMA				
	6		LGP21901 Diplexer				

**Table 2 – Existing and Reserved Antenna and Cable Information**

Mount Center Line Elevation (feet)	Number Of Antenna	Antenna Manufacturer	Antenna Model	Mount Manufacturer	Mount Model	Number Of Feed Lines	Feed Line Size (inches)
180	6	Decibel	DB980H90E-M	EEI	10'-8" L.P. Platform	6	1 5/8
	9*	EMS Wireless	FV65-14-00NA2			9*	1 5/8
167	12	Decibel	DB844H90-XY		14' L.P. Platform	12	1 5/8
147	9**	CSS	DUO1417-8686		14' L.P. Platform	9	1 5/8
	6**	ADC	DD1900 Full Band Masthead TMA				
	3**	CSS	DBC-750 Combiner				

\*Indicates MLA loading. MLA loading controls and is used in this analysis.

\*\*Indicates equipment to be removed.

**Table 3 – Design Antenna and Cable Information**

Mount Center Line Elevation (feet)	Number Of Antenna	Antenna Manufacturer	Antenna Model	Mount Manufacturer	Mount Model	Number Of Feed Lines	Feed Line Size (Inches)
180	12	Decibel	DB980	EEI	L.P. Platform		
170	12	Decibel	DB980	EEI	L.P. Platform		
160	12	Decibel	DB980	EEI	L.P. Platform		

### 3.) ANALYSIS PROCEDURE

**Table 4 – Documents Provided**

Document	Remarks	Reference	Source
Online Application	AT&T Mobility Change-Out Revision #1	70854	CCI iSite
Tower Drawing	EEI Drawing No. GS51874	1615393	CCI iSite
Foundation Design	EEI Job No. 6063	1615419	CCI iSite
Rework Drawings	Vertical Structures Job No. 2007-004-171	2254969	CCI iSite

#### 3.1) Analysis Methods

RISA Tower (Version 5.2), a commercially available analysis software package, 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/TIA/EIA-222-F or the local building code requirements. Selected output from the analysis is included in Appendix A.

#### 3.2) 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 Tables 1 and 2 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.



**4.) ANALYSIS RESULTS**

**Table 5 – Tower Component Stresses vs. Modified Capacity (LC1)**

<b>Section Capacity Table</b>									
Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P <sub>allow</sub> lb	% Capacity	Pass Fail	
L1	179.708 - 132.836	Pole	TP27.9768x18x0.25	1	-8033.91	1108678.71	73.0	Pass	
L2	132.836 - 87.2682	Pole	TP37.0505x26.626x0.3125	2	-14642.20	1838740.12	90.3	Pass	
L3	87.2682 - 42.7214	Pole	TP45.7818x35.3465x0.375	3	-24007.90	2728757.53	85.9	Pass	
L4	42.7214 - 0	Pole	TP54x43.7244x0.4375	4	-38155.50	3866699.59	77.9	Pass	
							Summary		
							Pole (L2)	90.3	Pass
							<b>RATING =</b>	<b>90.3</b>	<b>Pass</b>

Notes	Component	% Capacity	Pass/Fail
<b>Additional Component Analysis Summary:</b>			
1	Anchor Bolts (Tension)	87.8	Pass
1	Base Plate and Gussets (Bending)	79.6	Pass
1	Foundation (Compared to Allowable Loads)	83.2	Pass
<b>Structure Rating =</b>		<b>90.3</b>	<b>Pass</b>

1) Indicates calculations supporting % capacity are included in Appendix C.

## APPENDIX A

Section	1	2	3	4
Length (ft)	46.87	49.57	49.88	48.95
Number of Sides	18	18	18	18
Thickness (in)	0.2500	0.3125	0.3750	0.4375
Lap Splice (ft)	4.00	5.13	6.22	
Top Dia (in)	18.0000	26.6260	35.3465	43.7244
Bot Dia (in)	27.9768	37.0505	45.7818	54.0000
Grade		A572-55		
Weight (lb)	2877.3	5273.9	8086.1	11199.5



### DESIGNED APPURTENANCE LOADING

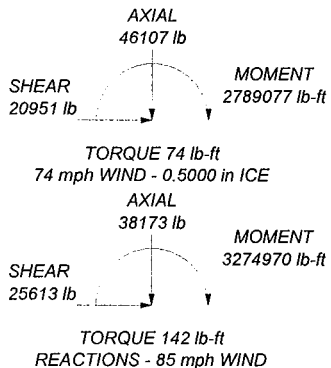
TYPE	ELEVATION	TYPE	ELEVATION
EEI 10'-8" Low-Profile Platform	180	(2) LGP21401 TMA (VSI) (ATT Mobility)	147
(3) FV65-14-00NA2 w/Mount Pipe	180	(2) LGP21401 TMA (VSI) (ATT Mobility)	147
(3) FV65-14-00NA2 w/Mount Pipe	180	(2) LGP 21901 Diplexer (VSI) (ATT Mobility)	147
(3) FV65-14-00NA2 w/Mount Pipe	180	(2) LGP 21901 Diplexer (VSI) (ATT Mobility)	147
14' L.P. Platform	167	(2) LGP 21901 Diplexer (VSI) (ATT Mobility)	147
(4) DB844H90-XY w/Mount Pipe	167	(2) LGP 21901 Diplexer (VSI) (ATT Mobility)	147
(4) DB844H90-XY w/Mount Pipe	167	(2) LGP 21901 Diplexer (VSI) (ATT Mobility)	147
(4) DB844H90-XY w/Mount Pipe	167	(2) LGP 21901 Diplexer (VSI) (ATT Mobility)	147
14' L.P. Platform (ATT Mobility)	147	6' x 2" Antenna Mount Pipe (VSI) (ATT Mobility)	147
(2) 7770.00 w/ mount pipe (ATT Mobility)	147	6' x 2" Antenna Mount Pipe (VSI) (ATT Mobility)	147
(2) 7770.00 w/ mount pipe (ATT Mobility)	147	6' x 2" Antenna Mount Pipe (VSI) (ATT Mobility)	147
(2) 7770.00 w/ mount pipe (ATT Mobility)	147	6' x 2" Antenna Mount Pipe (VSI) (ATT Mobility)	147
(2) LGP21401 TMA (VSI) (ATT Mobility)	147		

### MATERIAL STRENGTH

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

### TOWER DESIGN NOTES

1. Tower is located in New London 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: 90.3%



	<b>Vertical Structures, Inc.</b> 309 Spangler Drive, Suite E Richmond, KY 40475 Phone: (859) 624-8360 FAX: (859) 624-8369		Job: <b>Walden/Carolyn Besade, CT BU#87637</b>
	Project: <b>Vertical Structures Job No. 2008-004-154</b>		
	Client: <b>Crown Castle</b>	Drawn by: <b>Kyle Meehan</b>	App'd:
	Code: <b>TIA/EIA-222-F</b>	Date: <b>11/25/08</b>	Scale: <b>NTS</b>
	Path: <b>\\nas1\kmeehan\2008-004-154\RISA\876371.eri</b>	Dwg No. <b>E-1</b>	