



Daniel F. Caruso  
Chairman

# 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)

September 6, 2007

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

RE: **EM-CING-003-077-077-115-126-070726** -- New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at 36 Janowski Road, Ashford; 239 Middle Turnpike East, Manchester; 575 Hillstown Road, Manchester; 151 Waterbury Road, Prospect; and 14 Booth Hill Road, a/k/a Oxford Drive, Shelton, Connecticut.

Dear Mr. Levine:

At a public meeting held on August 29, 2007, the Connecticut Siting Council (Council) acknowledged your notice to modify these existing telecommunications facilities, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the condition that the Shelton tower be reinforced per page 2 of the structural analysis report dated June 8, 2007 and sealed by Jason Seaverson, P.E. prior to the antenna swap and that a signed letter from a Professional Engineer be 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 July 25, 2007, including the placement of all necessary equipment and shelters within the tower compounds. 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 existing facility sites that would not increase tower heights, extend the boundaries of the tower sites, increase noise levels at the tower site boundaries by six decibels, and increase the total radio frequencies electromagnetic radiation power densities measured at the tower site boundaries to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. These facilities have also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on these towers.

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 any of these facilities 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 Robert J. Chatfield, Mayor, Town of Prospect  
William J. Donovan, Zoning Enforcement Officer, Town of Prospect  
The Honorable Mark A. Lauretti, Mayor, City of Shelton  
Richard Schultz, Planning Administrator, City of Shelton  
The Honorable Ralph H. Fletcher, First Selectman, Town of Ashford  
Richard Dziadus, Zoning Enforcement Officer, Town of Ashford  
The Honorable Josh M. Howroyd, Mayor, Town of Manchester  
Thomas R. O'Marra, Zoning Enforcement Officer, Town of Manchester  
Crown Castle International  
Estate of Anthony M. Botticello  
Capstar Radio Operating Company  
American Tower



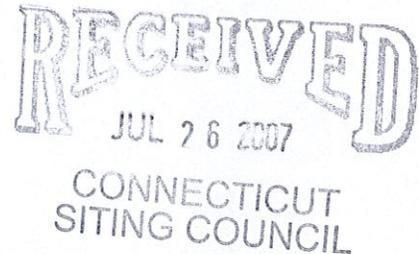
500 Enterprise Drive  
Rocky Hill, Connecticut 06067-3900  
Phone: (860) 513-7636  
Fax: (860) 513-7190

**Steven L. Levine**  
Real Estate Consultant

HAND DELIVERED

July 25, 2007

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 5 existing tele-communications facilities located in Ashford, Manchester (2), Prospect, Shelton

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 ("Cingular") 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 each of the municipalities in which an affected cell site is locate.

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 are summary sheets detailing the planned changes, including power density calculations reflecting the change in the effect of Cingular's operations at each affected site. Also included is documentation of the structural sufficiency of each tower to accommodate the revised antenna configuration.

The changes to the facilities do not constitute modifications as defined in Connecticut General

Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facilities will not be significantly changed or altered. Rather, the planned changes to the facilities fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. In each instance, the height of the overall structure will be unaffected. Modifications to the existing sites include all or some of the following as necessary to bring each site into conformance with the plan:

- Replacement of existing panel antennas with new antennas of similar size, shape, and weight, or, installation of additional antennas of similar size, shape, and weight.
- Installation of small tower mount amplifiers ("TMA's") and/or diplexers to the platform on which the panel antennas are mounted to enhance signal reception.
- Installation of additional or larger coaxial cables as required.
- Installation of an additional equipment cabinet in existing shelters, or on existing or enlarged concrete pads.

None of these modifications will extend the height of the tower.

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 noted in the following 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 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, Cingular Wireless respectfully submits that the proposed changes at the referenced sites 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

**CINGULAR WIRELESS  
Equipment Modification**

36 Janowski Road, Ashford, CT  
Site Number 1058  
Exempt Modifications 12/8/99 and 8/1/02

**Tower Owner/Manager:** Crown Castle

**Equipment configuration:** Self-supporting lattice tower

**Current and/or approved:** Nine CSS DUO1417 antennas @ 140 ft c.l.  
Nine runs 7/8 inch coax  
Six TMA's @ 140 ft

**Planned Modifications:** Remove three existing antennas  
Install three Powerwave 7770 antennas at 140 ft c.l.  
Install six additional TMA's and six diplexers @ 140 ft  
Install three additional runs 7/8 inch coax (total of 12)

**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 16.7 % 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 20.2 % 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 *							8.24
Cingular TDMA *	140	880 - 894	16	100	0.0294	0.5867	5.00
Cingular GSM *	140	880 - 894	2	296	0.0109	0.5867	1.85
Cingular GSM *	140	1900 Band	2	427	0.0157	1.0000	1.57
<b>Total</b>							<b>16.7%</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 *							15.23
Cingular GSM	140	880 - 894	2	296	0.0109	0.5867	1.85
Cingular GSM	140	1900 Band	2	427	0.0157	1.0000	1.57
Cingular UMTS	140	880 - 894	1	500	0.0092	0.5867	1.56
Total							20.2%

\* Per CSC Records

### Structural information:

The attached structural analysis demonstrates that the tower and foundation have sufficient structural capacity to accommodate the proposed modifications. (B&T Engineering, dated 7/11/07)



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

July 25, 2007

Honorable Ralph H. Fletcher  
1<sup>st</sup> Selectman, Town of Ashford  
Town Office Bldg. 5 Town Hall Rd.  
Ashford, CT 06278-1530

Re: Telecommunications Facility – 36 Janowski Road, Ashford

Dear Mr. Fletcher:

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 (“Cingular”) will be changing its equipment configuration at certain cell sites.

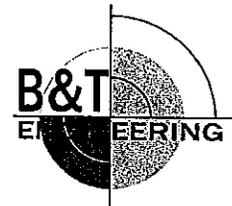
As required by Regulations of Connecticut State Agencies (“R.C.S.A.”) Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review Cingular’s proposal. Please accept this letter as notification under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

The accompanying letter to the Siting Council fully describes Cingular’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



July 11, 2007

Mr. Ben Goodhart  
Crown Castle International  
9105 Monroe Road, Suite 150  
Charlotte, NC 28270  
(704) 321-3845

B&T Engineering, Inc.  
1717 S. Boulder, Suite 300  
Tulsa, OK 74119  
(918) 587-4630  
ctuttle@btengineering.com

**Subject: Structural Analysis Report**

**Carrier Designation** Cingular Wireless Co-Locate  
Carrier Site Number: 1058  
Carrier Site Name: Ashford-Janoski Road

**Crown Castle Designation** Crown Castle BU Number: 876345  
Crown Castle Site Name: Sky Hill  
Crown Castle JDE Job Number: 88839

**Engineering Firm Designation** B&T Engineering Project Number: 77921

**Site Data** 36 Janoski Road, Ashford, CT, Windham County  
Latitude 41°-57'-7.7", Longitude -72°-11'-43.9"  
190 Foot – Self-Support Tower

Dear Mr. Goodhart,

B&T Engineering 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 242898, in accordance with Application 45870, Revision 1.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC1: Existing + Reserved + Proposed Equipment

**Sufficient Capacity**

Note: See Table 1 and Table 2 for the proposed and existing/reserved loading.

The analysis has been performed in accordance with the TIA/EIA-222-F standard based upon a wind speed of 85 mph fastest mile.

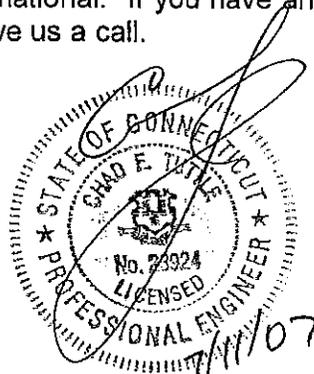
All equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

We at B&T Engineering appreciate the opportunity of providing our continuing professional services to you and Crown Castle International. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted,

Chad E. Tuttle, P.E.  
President

ENG-FRM-10034, Rev -- (3/22/06)



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## 1) INTRODUCTION

The subject structure is a 192 foot self-support lattice tower manufactured in 1996 by Rohn.

## 2) ANALYSIS CRITERIA

Specific code

- TIA/EIA-222-F – 85 mph fastest mile wind speed
- Connecticut State Building Code - 105 mph 3-second gust

The controlling wind loads for this analysis were derived from TIA/EIA-222-F therefore the tower was analyzed for a fastest mile wind speed of 85 mph with no ice and 74 mph with ½" of radial ice. The tower was originally designed for a 90 mph fastest mile wind speed with no ice and 78 mph with ½" of radial ice per the ANSI/EIA-222-E standard.

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

Center Line Elev. (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount	Number of Feed Lines	Feed Line Size (in)
140	6	CSS	DU01417-8686	Existing	3	7/8
	3	Powerwave	7770.00			
	6	Powerwave	LGP13519 Diplexer			

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

Center Line Elev. (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount	Number of Feed Lines	Feed Line Size (in)
190 <sup>#</sup>	6	Decibel	DB980H90	(3) Sected Frames	6	1 5/8
	9 (MLA)	--	6' x 1' Panel		9 (MLA)	
180	6 (r) 6 (r)	RFS	APL199016-42T2 APL869012-42T0	(3) Sected Frames	12	1 5/8
170	9	Decibel	DB980H90	(3) Sected Frames	9	1 5/8
160 <sup>#</sup>	2	EMS Wireless	RR90-17	(1) Standoff	4 (MLA)	1 5/8
	1 (MLA) 2	EMS Wireless --	RR90-1702 TMA			
150 <sup>#</sup>	4	EMS Wireless	RR90-17	(2) Standoffs	8 (MLA)	1 5/8
	2 (MLA) 2	EMS Wireless --	RR90-1702 TMA			
140 <sup>**</sup>	9 (remove) 6	CSS ADC	DU04-8670 800/1900 Full Band Masthead	(3) Sected Frames	9	7/8

(r) – Indicates Reserved

\* Refer to Base Level Drawing in Appendix B for Feedline Placement.

\*\* Designated antennas to be removed.

# Analysis performed with Existing+MLA loading for the 160 Ft and 150 Ft levels. For the 190 Ft level, only the MLA loading was used.

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

Center Line Elev. (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount	Number of Feed Lines	Feed Line Size (In)
189	12	Decibel	DB980H90E-M	Mounting Frames	12	2 1/4
170	12	Swedcom	ALP9212	Mounting Frames	12	1 5/8
150	12	Swedcom	ALP9212	Mounting Frames	12	1 5/8
80	1	--	GPS Antenna	12' Gate Boom	1	7/8

### 3) ANALYSIS PROCEDURE

**Table 4 – Documents Provided**

Document	Remarks	Reference	Source
Tower Manufacturer Drawings	Rohn	CCI Doc ID# 1631630	CCIsites
Foundation	Rohn (Foundation & Soils Info)	CCI Doc ID# 1631622	CCIsites
Geotech Report	<i>Information Not Provided</i>		
Antenna Configuration	Configuration Change CheckList	Date: 06/27/07	CCI

#### 3.1) Analysis Method

RISA Tower (version 5.0.2.0), 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 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 the manufacturer's specifications.
3. The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the 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 B&T Engineering, Inc. 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. Capacity – LC1**

Notes	Component	Elevation (ft)	% Capacity	Pass/Fail
<b>RISA Tower Analysis Summary:</b>				
			<b>Summary</b>	
<b>Notes:</b>	<b>Component</b>	<b>Section Elevation (ft)</b>	<b>% Capacity</b>	<b>Pass/Fail</b>
	Leg (T10)	20 - 0	97.3	Pass
	Diagonal (T4)	140 - 120	94.9	Pass
	Top Girt (T1)	190 - 180	19.3	Pass
	Bolt Checks	--	88.9	Pass
<b>Individual Components:</b>				
<b>Notes:</b>	<b>Component</b>	<b>Elevation</b>	<b>% Capacity</b>	<b>Pass/Fail</b>
	Anchor Rods	Base	57.0	Pass
1	Base Foundation (Analysis)	Base	76.1	Pass
<b>Structure Rating (max from all components) =</b>				<b>97.3%</b>

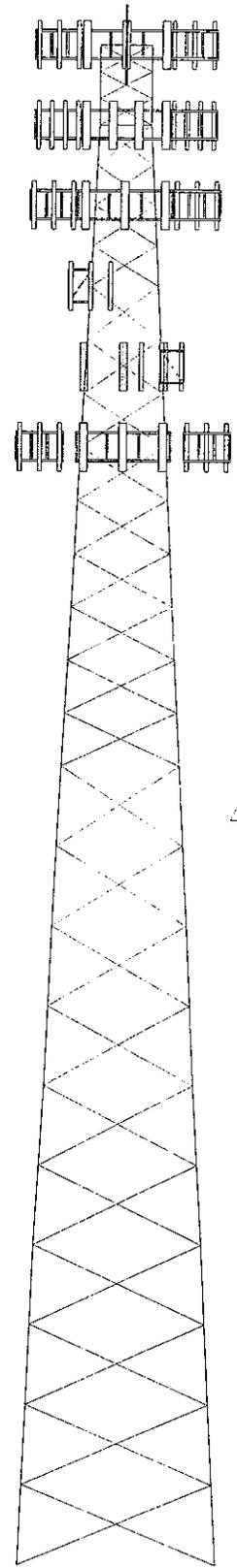
\*Notes:

- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity listed.
- 2) Capacities up to 105% are considered acceptable based on analysis procedures used.

#### 4.1) Recommendations

N/A

Section	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	ROHN 8 EHS	ROHN 8 EHS	ROHN 6 EH	ROHN 5 EH	ROHN 4 EH	ROHN 3 EH	ROHN 2.5 STD			
Leg Grade	L4x4x1/8	L4x4x5/16	L4x4x1/4	L3x3x1/4	L3 1/2x3 1/2x1/4	A572-50	L2 1/2x3 1/2	L2x2x3/16		
Diagonals										
Diagonal Grade										
Top Girts										
Face Width (ft)	25.05	21.13	18.88	16.92	14.83	12.74	10.61	8.54		6.58
# Panels @ (ft)	5.0	10 @ 10	4.2	3.3	2.7	2.8	1.8	1.5	0.9	3 @ 3.33333
Weight (K)	27.0	6.4	4.2	3.3	2.7	2.8	1.8	1.5	0.9	0.5



**DESIGNED APPURTENANCE LOADING**

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod	190	(2) TMA (Existing)	150
(3) 6'x1' Panel (MLA)	190	(2) TMA (Existing)	150
(3) 6'x1' Panel (MLA)	190	6' Standoff (Existing)	150
(3) 6'x1' Panel (MLA)	190	6' Standoff (Existing)	150
(3) Secored Frames (Existing)	190	(2) DUO1417-8686 (Proposed)	140
(2) APL199016-42T2 (Reserved)	180	(2) DUO1417-8686 (Proposed)	140
(2) APL199016-42T2 (Reserved)	180	(2) DUO1417-8686 (Proposed)	140
(2) APL199016-42T2 (Reserved)	180	7770.00 (Proposed)	140
(2) APL869012-42T0 (Reserved)	180	7770.00 (Proposed)	140
(2) APL869012-42T0 (Reserved)	180	7770.00 (Proposed)	140
(2) APL869012-42T0 (Reserved)	180	(2) DB 800/1900 FB Masthead (Existing)	140
(3) Secored Frames (Existing)	180	(2) DB 800/1900 FB Masthead (Existing)	140
(3) DB980H90 (Existing)	170	(2) DB 800/1900 FB Masthead (Existing)	140
(3) DB980H90 (Existing)	170	(2) DB 800/1900 FB Masthead (Existing)	140
(3) DB980H90 (Existing)	170	(2) LGP 13519 Diplexor (Proposed)	140
(3) Secored Frames (Existing)	170	(2) LGP 13519 Diplexor (Proposed)	140
(3) RR90-17-02DP (Existing+MLA)	160	(2) LGP 13519 Diplexor (Proposed)	140
(2) TMA (Existing)	160	(2) LGP 13519 Diplexor (Proposed)	140
6' Standoff (Existing)	160	(3) Secored Frames (Existing)	140
(3) RR90-17-02DP (Existing+MLA)	150		
(3) RR90-17-02DP (Existing+MLA)	150		

**SYMBOL LIST**

MARK	SIZE	MARK	SIZE
A	L1 3/4x1 3/4x3/16		

**MATERIAL STRENGTH**

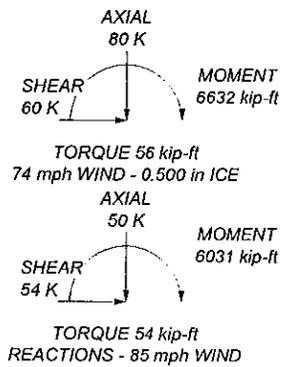
GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

**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: 97.3%

**MAX. CORNER REACTIONS AT BASE:**

DOWN: 332 K  
 UPLIFT: -252 K  
 SHEAR: 38 K



<p><b>B&amp;T Engineering, Inc.</b>          1717 S. Boulder, Suite 300          Tulsa, OK 74119          Phone: (918) 587-4630          FAX: (918) 295-0265</p>	<b>Job: 77921 - Sky Hill, CT (BU# 876345)</b>
	<b>Project: 190' ROHN Self-Supporter / App ID 45870, Rev 1</b>
	<b>Client: Crown Castle International</b> Drawn by: CT App'd:
	<b>Code: TIA/EIA-222-F</b> Date: 07/12/07 Scale: NTS
	<b>Path:</b>

**CINGULAR WIRELESS  
Equipment Modification**

239 Middle Turnpike East, Manchester, CT  
Site Number 5448  
Former AT&T site  
Exempt Modification 3/25/03

**Tower Owner/Manager:** Town of Manchester

**Equipment configuration:** Monopole

**Current and/or approved:** Three Allgon 7250 antennas @ 144 ft c.l. (approved for 6)  
Six runs 1 5/8 inch coax  
Three outdoor cabinets on existing pad

**Planned Modifications:** Remove existing antennas  
Install Three Powerwave 7770 antennas at 144 ft c.l.  
Install six TMA's @ 144 ft  
Remove one outdoor cabinet  
Install one new outdoor cabinet for UMTS

**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 28.8 % 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 28 % 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 *							23.56
Cingular GSM *	144	1900 Band	12	250	0.0520	1.0000	5.20
<b>Total</b>							<b>28.8%</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 *							23.56
Cingular GSM	144	1900 Band	4	427	0.0296	1.0000	2.96
Cingular UMTS	144	880 - 894	1	500	0.0087	0.5867	1.48
<b>Total</b>							<b>28.0%</b>

\* Per CSC Records

### Structural information:

The attached structural analysis demonstrates that the tower and foundation have adequate structural capacity to accommodate the proposed modifications. (Malouf Engineering Intl, dated 7/18/07)



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

July 25, 2007

Mr. Scott Shanley, General Manager  
Town of Manchester  
Town Hall 41 Center St.  
Manchester, CT 06045-0191

Re: Telecommunications Facility – 239 Middle Turnpike East, Manchester

Dear Mr. Shanley:

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 (“Cingular”) will be changing its equipment configuration at certain cell sites.

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The accompanying letter to the Siting Council fully describes Cingular’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



July 18, 2007

### RIGOROUS STRUCTURAL ANALYSIS

Structure:	184 ft <b>Monopole</b>	Unknown	
Client / Site ID:	<b>Hudson D.G. / AT&amp;T</b>	<b>Manchester Central Site #5448</b>	
Owner / Site ID:	AT&T	54448 Manchester Central #5448	
MEI Project ID:	<b>CT00813M-07V0</b>		
Location:	239 Middle Turnpike East Manchester, CT 06040	Hartford County FCC # N/A	
	LAT	41-47-3.8 N	LON 72-30-42.1 W

**EXECUTIVE SUMMARY:**

Malouf Engineering Int'l (MEI), as requested, has performed a rigorous structural analysis of the above mentioned structure to assess the impact of the changed condition as noted in Table 1.

Based on the stress analysis performed, the existing structure is **in conformance** with the ANSI/TIA **222-F** Standard for the loading considered under the criteria listed and referenced in the report sections.

***The installation of the proposed changed condition consisting of replacement of the existing antennas with the new AT&T (3) Allgon LGP 7770 Panels + (6) LGP 21401 TMA's + (2) Ret Units onto existing (3) 4ft Standoff Mounts at Elev. 144 ft ± c.l. is structurally acceptable.***

MEI appreciates the opportunity of providing our continuing professional services to you. If you have any questions or need further assistance on this or any other projects please contact us.

Respectfully submitted,

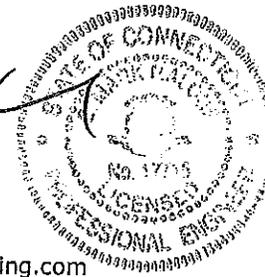
**MALOUF ENGINEERING INT'L, INC.**

Analysis performed by:

Luan Nguyen, PE  
Project Engineer

Reviewed & Approved by:

E. Mark Malouf, PE  
Connecticut #17715  
972-783-2578 ext. 106  
mmalouf@maloufengineering.com



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## 1. INTRODUCTION & SCOPE

A rigorous structural analysis was performed by Malouf Engineering Int'l (MEI), as requested and authorized by Derek Creaser, Hudson Design Group on behalf of AT&T, to determine the acceptance of the proposed changed conditions in conformance with the ANSI/TIA-222-F Standard, "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures".

The scope of this independent analysis is to determine the overall stability and the adequacy of structural members, foundations, and member connections, as available and stated. This analysis considers the structure to have been properly installed and maintained with no structural defects. Installation procedures and related loading are not within the scope of this analysis and should be performed and evaluated by a competent person of the erection contractor.

The different report sections detail the applicable information used in this evaluation, relating to the tower data, the appurtenances configuration and the wind and ice loading considered.

## 2. SOURCE OF DATA

The following information has been used in this evaluation as source data that accurately represent the existing structure and the related appurtenances:

	Source	Information	Reference
<b>STRUCTURE</b>			
<b>Tower</b>	Hudson D. G.	Previous Tower Analysis Report	Bay State Design Job No. 2740.003, dated 01/04/07
<b>Foundation</b>		Not Available	-
<b>Material Grade</b>	Not Available from supplied documents – Assumed based on similar structures – refer to Appendix.		
<b>CURRENT APPURTENANCES</b>			
	Hudson D. G.	Previous Tower Analysis Report & recent site photos	Bay State Design Job No. 2740.003, dated 01/04/07
<b>CHANGED CONDITION</b>			
	Hudson D. G.	Cingular RF Data sheet	Issue dated 4/27/07

### **Background Information:**

Based on available information, the following is known regarding this structure:

<b>DESIGNER / FABRICATOR</b>	Unknown
<b>DESIGN CRITERIA</b>	TIA/EIA 222-F – 80 / 69 Mph + 0" / 1/2" Ice
<b>PRIOR STRUCTURAL MODIFICATIONS</b>	Modified Base plate by adding stiffeners as per Bay State Design Job No. 2740.003, dated 01/04/07. (Only limited info available)

### 3. ANALYSIS CRITERIA

The structural analysis performed used the following criteria:

<b>CODE / STANDARD</b>	IBC 2003 / ANSI/TIA-222-F-96 Standard	
<b>LOADING CASES</b>	<i>Full Wind:</i>	80 Mph - with No Radial Ice
	<i>Iced Case:</i>	69 Mph (fastest-mile) + 1/2" Radial Ice
	<i>Service:</i>	60 Mph
<b>STRUCTURE CRITERIA</b>	<i>Structure Classification:</i> Class II	
	<i>Exposure Category:</i> 'C' - <i>Topographic Category:</i> 1	

#### Appurtenances Configuration

The following appurtenances configuration has been considered:

**Table 1: Proposed Changed Condition Appurtenances**

Elev (ft)	Tenant	Ants Qty	Appurtenance Model / Description	Mount Description	Lines Qty	Line size & Location
144	AT&T	3	Allgon LGP 7770 Panels	(3) 4ft Standoff Mounts	6	1-5/8" - (I) [Re-use existing]
		6	LGP 21401 TMA's			
		2	Ret Unit			

**Table 2: Current and Reserved/Future Appurtenances**

Elev (ft)	Tenant	Ants Qty	Appurtenance Model / Description	Mount Description	Lines Qty	Line size & Location
184		1	Omni Whip Ant.	Low Profile Platform	4	7/8" - (I)
		2	4-Elem Dipole Ant.			
		2	8-Element Dipole Ant.			
161	T-Mobile	6	RR90-17-02DP Panels	Low Profile Platform	12	1-5/8" - (I)
154	Sprint-Nextel	6	DB980-F65T4E-M Panels	Low Profile Platform	6	1-5/8" - (I)
		6	APVX86-906513-C Panels (New)		9	1-5/8"-(I/E)
124		2	YAGI Antenna	Low Profile Platform	3	1/2" - (I)
		1	Omni Whip Ant.			
53		1	GPS Antenna	Mount	1	1/2" - (I)

#### Notes:

1. Please note appurtenances not listed above are to be removed/not present as per data supplied.
2. (I) = internal; (E) = External; (FZ) = Within Face Zone & (OFZ) = Outside Face Zone - as per TIA-222-G.
3. The above antennas, mounts, and lines represent MEI's understanding of the appurtenances configuration. If different than above, the analysis is invalid. Please refer to Appendix 2 for EPA wind areas used in the calculations. Please contact MEI if any discrepancies are found.

#### 4. ANALYSIS PROCEDURE

The subject structure is analyzed for feasibility of the installation of the proposed changed condition previously noted. The data records furnished were reviewed and a computer stress analysis was performed in accordance with the TIA-222 Standard provisions and with the agreed scope of work terms and the results of this analysis are reported.

##### Analysis Program

The computer program used to model the structure is a rigorous Finite Element Analysis program, RISATower (ver. 5.0.2.2), a commercially available program developed by C-Concepts, WI and now maintained by RISA Technologies. The latticed structures members are modeled using beam/truss and cable members and the pole members using tubular beam elements. The structural parameters and geometry of the members are included in the model. The dead and temperature loads and the wind loads are internally calculated by the program for the different wind directions and then applied as external loads on the structure. This existing tower is assumed, for the purpose of this analysis, to have been properly maintained and to be in good condition with no structural defects and with no deterioration to its member capacities. Refer to the related section in this report for a listing of the assumptions made.

##### Assumptions

This engineering study is based on the theoretical capacity of the members and is not a condition assessment of the structure. This analysis is based on information supplied, and therefore, its results are based on and as accurate as that supplied data. MEI has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural stress analysis:

- This existing tower is assumed, for the purpose of this analysis, to have been properly maintained and to be in good condition with no structural defects and with no deterioration to its member capacities ('as-new' condition).
- The tower member sizes and configuration are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated.
- The appurtenances configuration is as supplied and/or as stated in the report. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements.
- Some assumptions are made regarding antennas and mounts sizes and their projected areas based on best interpretation of data supplied and of best knowledge of antenna type & industry practice.
- The top platform, if applicable, is considered adequate to support the loading. No actual analysis of the platform itself is performed, with the analysis being limited to analyzing the pole and its foundation.
- The soil parameters are as per data supplied or as assumed and stated in the calculations. Refer to the Appendix. If no data is available, the foundation system is assumed to support the structure with its new reactions.
- All welds and connections are assumed to develop at least the member capacity, unless determined otherwise and explicitly stated in this report. All guy cable assemblies, as applicable, are assumed to develop the rated breaking strength of the wire.
- All prior structural modifications, if any, are assumed to be as per data supplied/available, and to have been properly installed and to be fully effective.

If any of the above assumptions are not valid or have been made in error, this analysis results may be invalidated, MEI should be contacted to review any contradictory information to determine its effect.

## 5. ANALYSIS RESULTS

The results of the structural stress analysis based on data available and with the previous listed criteria, indicated the following:

**Table 3: Stress Analysis Results**

Member Type	Maximum Stress Ratio	Controlling Location / Component	Pass/Fail	Comment
POLE SHAFT	66.70%	Elev. 166 - 133 ft	Pass	
BASE PLATE	89.1%	Base Plate Stiffeners	Pass	
ANCHOR RODS	60.9%	Bolt Tensions	Pass	
FOUNDATION	Cannot Determine		Cannot Determine	No Data available - Considered Acceptable based on max. stress

**Notes:**

1. The Maximum Stress Ratio is the percentage that the maximum load in the member is relative to the allowable load as determined by Code requirements.
2. Refer to the Appendix 2 for more details on the member loads.
3. A maximum stress ratio between 100% to 105% may be considered as *Acceptable* according to industry standard practice.

## 6. FINDINGS & RECOMMENDATIONS

- Based on the rigorous stress analysis results, the subject structure is **rated at 89.1%** of its support capacity (controlling component: Base Plate) with the proposed changed condition considered. Please refer to Table 3 and to Appendix 2 for more details of the analysis results.
- Based on the stress analysis performed, the existing structure is **in conformance** with the ANSI/TIA **222-F** Standard for the loading considered under the criteria listed and referenced in the report sections.
- No data is available on the existing foundation, therefore its actual condition could not be determined. However, based on the maximum stress ratios of the pole, it can be considered as *Acceptable* for the new loading considered.
- ***The installation of the proposed changed condition consisting of replacement of the existing antennas with the new AT&T (3) Allgon LGP 7770 Panels + (6) LGP 21401 TMA's + (2) Ret Units onto existing (3) 4ft Standoff Mounts at Elev. 144 ft ± c.l. is structurally acceptable.***
- This pole has limited additional support capacity for the appurtenances and loading criteria considered. Therefore, no changes to the configuration considered should be made without performing a new proper evaluation.

*Rigging and temporary supports required for the erection/modification shall be determined, documented, furnished and installed by the erector/contractor accounting for the loads imposed on the structure due to the proposed construction method.*

## 7. REPORT DISCLAIMER

*The engineering services rendered by Malouf Engineering International, Inc. ('MEI') in connection with this Structural Analysis are limited to a computer analysis of the tower structure, size and capacity of its members. MEI does not analyze the fabrication, including welding and connection capacities, except as included in this Report.*

The analysis performed and the conclusions contained herein are based on the assumption that the tower has been properly installed and maintained, including, but not limited to the following:

1. Proper alignment and plumbness.
2. Correct guy tensions, as applicable.
3. Correct bolt tightness or slip jacking of sleeved connections.
4. No significant deterioration or damage to any structural component.

Furthermore, the information and conclusions contained in this Report were determined by application of the current "state-of-the-art" engineering and analysis procedures and formulae. MALOUF ENGINEERING INTERNATIONAL, INC. Assumes no obligation to revise any of the information or conclusions contained in this Report in the event that such engineering and analysis procedures and formulae are hereafter modified or revised. In addition, under no circumstances will MALOUF ENGINEERING INTERNATIONAL, INC. Have any obligation or responsibility whatsoever for or on account of consequential or incidental damages sustained by any person, firm or organization as a result of any information or conclusions contained in the Report, and the maximum liability of MALOUF ENGINEERING INTERNATIONAL, INC., if any, pursuant to this Report shall be limited to the total funds actually received by MALOUF ENGINEERING INTERNATIONAL, INC. For preparation of this Report.

Customer has requested MALOUF ENGINEERING INTERNATIONAL, INC. To prepare and submit to Customer an engineering analysis with respect to the Subject Tower and has further requested MALOUF ENGINEERING INTERNATIONAL, INC. to make appropriate recommendations regarding suggested structural modifications and changes to the Subject Tower. In making such request of MALOUF ENGINEERING INTERNATIONAL, INC., Customer has informed MALOUF ENGINEERING INTERNATIONAL, INC. that Customer will make a determination as to whether or not to implement any of the changes or modifications which may be suggested by MALOUF ENGINEERING INTERNATIONAL, INC. and that Customer will have any such changes or modifications made by riggers, erectors and other subcontractors of Customer's choice. MALOUF ENGINEERING INTERNATIONAL, INC. shall have the right to rely upon the accuracy of the information supplied by the customer and shall not be held responsible for the Customer's misrepresentation or omission of relevant fact whether intentional or otherwise.

Customer hereby agrees and acknowledges that MALOUF ENGINEERING INTERNATIONAL, INC. shall have no liability whatsoever to Customer or to others for any work or services performed by any persons other than MALOUF ENGINEERING INTERNATIONAL, INC. in connection with the implementation of services including but not limited to any services rendered for Customer or for others by riggers, erectors or other subcontractors. Customer acknowledges and agrees that any riggers, erectors or subcontractors retained or employed by Customer shall be solely responsible to Customer and to others for the quality of work performed by them and that MALOUF ENGINEERING INTERNATIONAL, INC. shall have no liability or responsibility whatsoever as a result of any negligence or breach of contract by any such rigger, erector or subcontractor and that Customer and rigger, erector, or subcontractor will provide MALOUF ENGINEERING INTERNATIONAL, INC. with a Certificate of Insurance naming MALOUF ENGINEERING INTERNATIONAL, INC. as additional insured.

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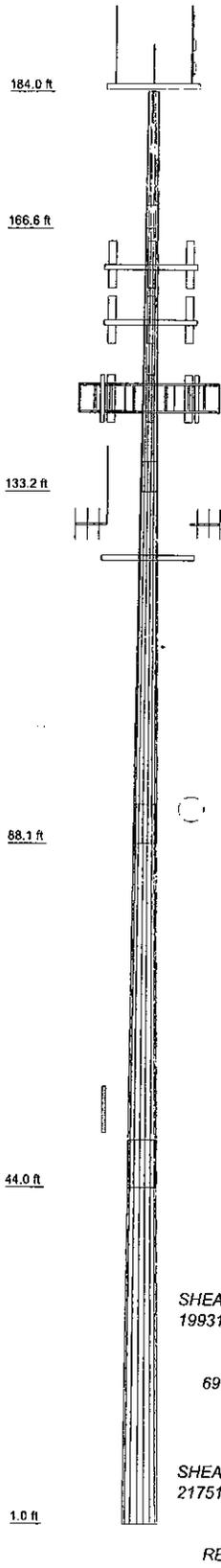
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**APPENDIX 1 - TOWER DRAWING**

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Section	1	2	3	4	5
Length (ft)	17.38	36.36	48.89	49.05	49.14
Number of Sides	18	18	18	18	18
Thickness (in)	0.1875	0.2500	0.3750	0.4375	0.4375
Lap Splice (ft)	2.92	3.80	4.99	6.11	
Top Dia (in)	15.5000	18.3689	25.0613	34.0389	42.6744
Bot Dia (in)	19.3990	26.4007	35.8924	44.9030	53.5000
Grade				A572-65	
Weight (lb)	607.6	2173.1	5960.5	9046.6	11064.0



### DESIGNED APPURTENANCE LOADING

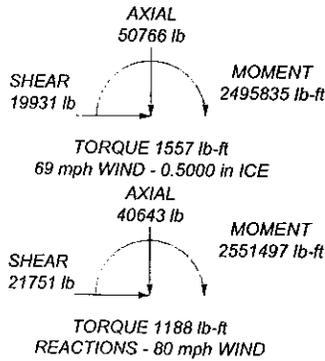
TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod (E)	185	ALLGON LGP 7770 PANELS (P)(3)<5> (ATI)	145
OMNI WHIP ANT (E)(1)<1> (E)	185	LGP 21401 TMA's (P)(6)<5> (ATI)	145
4-Elem Dipole Ant (E)(1)<1> (E)	185	RET Unit (P)(2)<5> (ATI)	145
8-Elem Dipole Ant (E)(1)<1> (E)	185	4FT STANDOFF MOUNTS (P)(3)<5> (ATI)	145
LP PLATFORM (E)(1)<1> (E)	185	YAGI ANTENNA (E)(1)<6> (E)	125
RR90-17-02DP PANELS (E)(6)<2> (T-MOBILE)	162	YAGI ANTENNA (E)(1)<6> (E)	125
LP PLATFORM (E)(1)<2> (T-MOBILE)	162	OMNI WHIP ANT (E)(1)<6> (E)	125
DB980-F65T4E-M PANELS (E)(6)<3> (SPRINT-NEXTEL)	155	LP PLATFORM (E)(1)<6> (E)	125
APVX86-906513-C PANELS (E)(6)<4> (SPRINT-NEXTEL)	155	GPS ANTENNA MOUNT (E)(1)<7> (E)	54
LP PLATFORM (E)(1)<3> (SPRINT-NEXTEL)	155		

### MATERIAL STRENGTH

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

### TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for a 80 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 69 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 60 mph wind.
5. TOWER RATING: 89.1%



**Malouf Engineering Int'l, Inc.**  
 17950 Preston Road; Suite #720  
 Dallas, TX 75252  
 Phone: (972) 783-2578  
 FAX: (972) 783-2583

Job:	184 FT MNP, MANCHESTER CENTRAL SITE #5448		
Project:	CT00813M-07V0		
Client:	HUDSON DESIGN GROUP / AT&T	Drawn by:	L.Nguyen
Code:	TIA/EIA-222-F	Date:	07/18/07
Path:	C:\MEI\Projects\07 DATA\MNP\CT00813M-07V0\CT00813M-07V0.dwg	Scale:	NTS
		Dwg No:	E-1

Consulting Engineers

**CINGULAR WIRELESS  
Equipment Modification**

575 Hillstown Road, Manchester, CT  
 Site Number 5321  
 Former AT&T site  
 Petition 633 approved 7/8/03

**Tower Owner/Manager:** Estate of Anthony M. Botticello

**Equipment configuration:** Wood Laminate Pole w/ T-Mobile Extension

**Current and/or approved:** Three Allgon 7250 antennas @ 70 ft c.l.  
 Six runs 7/8 inch coax  
 Three outdoor cabinets on existing slab

**Planned Modifications:** Remove existing antennas  
 Install three Powerwave 7770 antennas at 70 ft c.l.  
 Install six TMA's @ 70 ft  
 Remove one existing outdoor cabinet  
 Install one new outdoor cabinet for UMTS

**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 17.0 % 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 26.3 % 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 *							9.70
Cingular GSM *	70	1900 Band	4	250	0.0734	1.0000	7.34
<b>Total</b>							<b>17.0%</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 *							9.70
Cingular GSM	70	1900 Band	2	702	0.1030	1.0000	10.30
Cingular UMTS	70	880 - 894	1	500	0.0367	0.5867	6.25
<b>Total</b>							<b>26.3%</b>

\* Per CSC Records

### Structural information:

The attached structural analysis demonstrates that the tower and foundation have adequate structural capacity to accommodate the proposed modifications. (Malouf Engineering Intl, dated 7/19/07)



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

July 25, 2007

Mr. Scott Shanley, General Manager  
Town of Manchester  
Town Hall 41 Center St.  
Manchester, CT 06045-0191

Re: Telecommunications Facility – 575 Hillstown Road, Manchester

Dear Mr. Shanley:

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 (“Cingular”) 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 Cingular’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 Cingular’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



July 19, 2007

## STRUCTURAL ANALYSIS

Structure:	70 ft Wood Pole + Future 10' Extension ( 80 ft total height)	E-Lam / Glulam
Client / Site ID:	Hudson D.G. / AT&T	Manchester SW Site #5321
Owner / Site ID:	AT&T	5321 Manchester SW #5321
MEI Project ID:	CT00817M-07V0	
Location:	575 Hillstown Road Manchester, CT 06040	Hartford County FCC # N/A
	LAT 41-44-48.8 N	LON 72-33-50.8 W

### EXECUTIVE SUMMARY:

Malouf Engineering Int'l (MEI), as requested, has performed a structural analysis of the above mentioned structure to assess the impact of the changed condition as noted in Table 1.

Based on the stress analysis performed, the existing structure is **in conformance** with the IBC 2003 / ASCE 7-02 for the loading considered under the criteria listed and referenced in the report sections.

*The installation of the proposed changed condition consisting of replacement of the existing antennas with the new AT&T (3) Allgon LGP 7770 Panels + (6) LGP 21401 TMA's onto existing Standoff Mounts at Elev. 68.5 ft ± c.l. is structurally acceptable.*

MEI appreciates the opportunity of providing our continuing professional services to you. If you have any questions or need further assistance on this or any other projects please contact us.

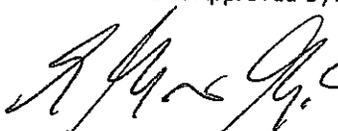
Respectfully submitted,

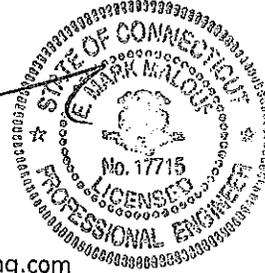
**MALOUF ENGINEERING INT'L, INC.**

Analysis performed by:

Helder Lopez, EIT  
Project Engineer

Reviewed & Approved by:

  
E. Mark Malouf, PE  
Connecticut #17715  
972-783-2578 ext. 106  
mmalouf@maloufengineering.com



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## 1. INTRODUCTION & SCOPE

A structural analysis was performed by Malouf Engineering Int'l (MEI), as requested and authorized by Derek Creaser, Hudson Design Group on behalf of AT&T, to determine the acceptance of the proposed changed conditions in conformance with the IBC-2003 / ASCE 7-02 and local Building Codes.

The scope of this independent analysis is to determine the overall stability and the adequacy of structural members, foundations, and member connections, as available and stated. This analysis considers the structure to have been properly installed and maintained with no structural defects. Installation procedures and related loading are not within the scope of this analysis and should be performed and evaluated by a competent person of the erection contractor.

The different report sections detail the applicable information used in this evaluation, relating to the tower data, the appurtenances configuration and the wind and ice loading considered.

## 2. SOURCE OF DATA

The following information has been used in this evaluation as source data that accurately represent the existing structure and the related appurtenances:

	Source	Information	Reference
<b>STRUCTURE</b>			
Tower	Hudson D. G.	Previous Analysis Report	Matthew J. Young Analysis, dated 06/13/06
Foundation		Limited Information per previous analysis	Matthew J. Young Analysis
Material Grade	Matthew J. Young Analysis, dated 06/13/06 – refer to Appendix.		
<b>CURRENT APPURTENANCES</b>			
	Hudson D. G.	Previous Analysis Report & recent site photos	Matthew J. Young Analysis, dated 06/13/06
<b>CHANGED CONDITION</b>			
	Hudson D. G.	Cingular RF Data sheet	Issue dated 4/27/07

### Background Information:

Based on available information, the following is known regarding this structure:

DESIGNER / FABRICATOR	E-Lam
DESIGN CRITERIA	Unknown
PRIOR STRUCTURAL MODIFICATIONS	Added 10ft Extension Pipe to accommodate T-Mobile future loading increasing pole to a total height of 80ft.

### 3. ANALYSIS CRITERIA

The structural analysis performed used the following criteria:

<b>CODE / STANDARD</b>	IBC 2003 / ASCE 7-02	
<b>LOADING CASES</b>	<i>Full Wind:</i>	100 Mph (3-Sec) - with No Radial Ice
	<i>Iced Case:</i>	N/A
	<i>Service:</i>	N/A
<b>STRUCTURE CRITERIA</b>	<i>Structure Classification:</i> Class II	
	<i>Exposure Category:</i> 'B' - <i>Topographic Category:</i> 1	

#### Appurtenances Configuration

The following appurtenances configuration has been considered:

**Table 1: Proposed Changed Condition Appurtenances**

Elev (ft)	Tenant	Ants Qty	Appurtenance Model / Description	Mount Description	Lines Qty	Line size & Location
68.5	AT&T	3	Allgon LGP 7770 Panels	(3) Standoff Mounts	6	7/8" - (E) * [Re-use existing]
		6	LGP 21401 TMA's			

**Table 2: Current and Reserved/Future Appurtenances**

Elev (ft)	Tenant	Ants Qty	Appurtenance Model / Description	Mount Description	Lines Qty	Line size & Location
77.5	T-Mobile	3	APX16PV-16PVL-E Panels Antennas (Future)	(3) 2ft Standoff Pipes on a 10ft Extension Pipe on top of existing 70ft pole (Future)	6	7/8" - (F) *
		6	TMA's			

#### Notes:

- \* No more than 2
- Please note appurtenances not listed above are to be removed/not present as per data supplied.
- (I) = internal; (E) = External; (FZ) = Within Face Zone & (OFZ) = Outside Face Zone - as per TIA-222-G.
- The above antennas, mounts, and lines represent MEI's understanding of the appurtenances configuration. If different than above, the analysis is invalid. Please refer to Appendix 2 for EPA wind areas used in the calculations. Please contact MEI if any discrepancies are found.

#### 4. ANALYSIS PROCEDURE

The subject structure is analyzed for feasibility of the installation of the proposed changed condition previously noted. The data records furnished were reviewed and a computer stress analysis was performed in accordance with the IBC 2003 / ASCE 7-02 and with the agreed scope of work terms and the results of this analysis are reported.

##### Assumptions

This engineering study is based on the theoretical capacity of the members and is not a condition assessment of the structure. This analysis is based on information supplied, and therefore, its results are based on and as accurate as that supplied data. MEI has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural stress analysis:

- This existing tower is assumed, for the purpose of this analysis, to have been properly maintained and to be in good condition with no structural defects and with no deterioration to its member capacities ('as-new' condition).
- The tower member sizes and configuration are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated.
- The appurtenances configuration is as supplied and/or as stated in the report. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements.
- Some assumptions are made regarding antennas and mounts sizes and their projected areas based on best interpretation of data supplied and of best knowledge of antenna type & industry practice.
- The platform(s), if applicable, is considered adequate to support the loading. No actual analysis of the platform itself is performed, with the analysis being limited to analyzing the pole and its foundation.
- The soil parameters are as per data supplied or as assumed and stated in the calculations. Refer to the Appendix. If no data is available, the foundation system is assumed to support the structure with its new reactions.
- All prior structural modifications, if any, are assumed to be as per data supplied/available, and to have been properly installed and to be fully effective.

If any of the above assumptions are not valid or have been made in error, this analysis results may be invalidated, MEI should be contacted to review any contradictory information to determine its effect.

## 5. ANALYSIS RESULTS

The results of the structural stress analysis based on data available and with the previous listed criteria, indicated the following:

**Table 3: Stress Analysis Results**

Member Type	Maximum Stress Ratio	Controlling Location / Component	Pass/Fail	Comment
POLE MAST	45.7%	Elev. 0 ft	Pass	
FOUNDATION	62.5%	Embedment length	Pass	

**Notes:**

1. The Maximum Stress Ratio is the percentage that the maximum load in the member is relative to the allowable load as determined by Code requirements.
2. Refer to the Appendix 2 for more details on the member loads.
3. A maximum stress ratio between 100% to 105% may be considered as *Acceptable* according to industry standard practice.

## 6. FINDINGS & RECOMMENDATIONS

- Based on the rigorous stress analysis results, the subject structure is **rated at 62.5%** of its support capacity (controlling component: Foundation) with the proposed changed condition considered. Please refer to Table 3 and to Appendix 2 for more details of the analysis results.
- Based on the stress analysis performed, the existing structure is **in conformance** with the IBC 2003 / ASCE 7-02 for the loading considered under the criteria listed and referenced in the report sections.
- ***The installation of the proposed changed condition consisting of replacement of the existing antennas with the new AT&T (3) Allgon LGP 7770 Panels + (6) LGP 21401 TMA's onto existing Standoff Mounts at Elev. 68.5 ft ± c.l. is structurally acceptable.***
- This pole has limited additional support capacity for the appurtenances and loading criteria considered. Therefore, no changes to the configuration considered should be made without performing a new proper evaluation.

*Rigging and temporary supports required for the erection/modification shall be determined, documented, furnished and installed by the erector/contractor accounting for the loads imposed on the structure due to the proposed construction method.*

## 7. REPORT DISCLAIMER

*The engineering services rendered by Malouf Engineering International, Inc. ('MEI') in connection with this Structural Analysis are limited to a computer analysis of the tower structure, size and capacity of its members. MEI does not analyze the fabrication, including welding and connection capacities, except as included in this Report.*

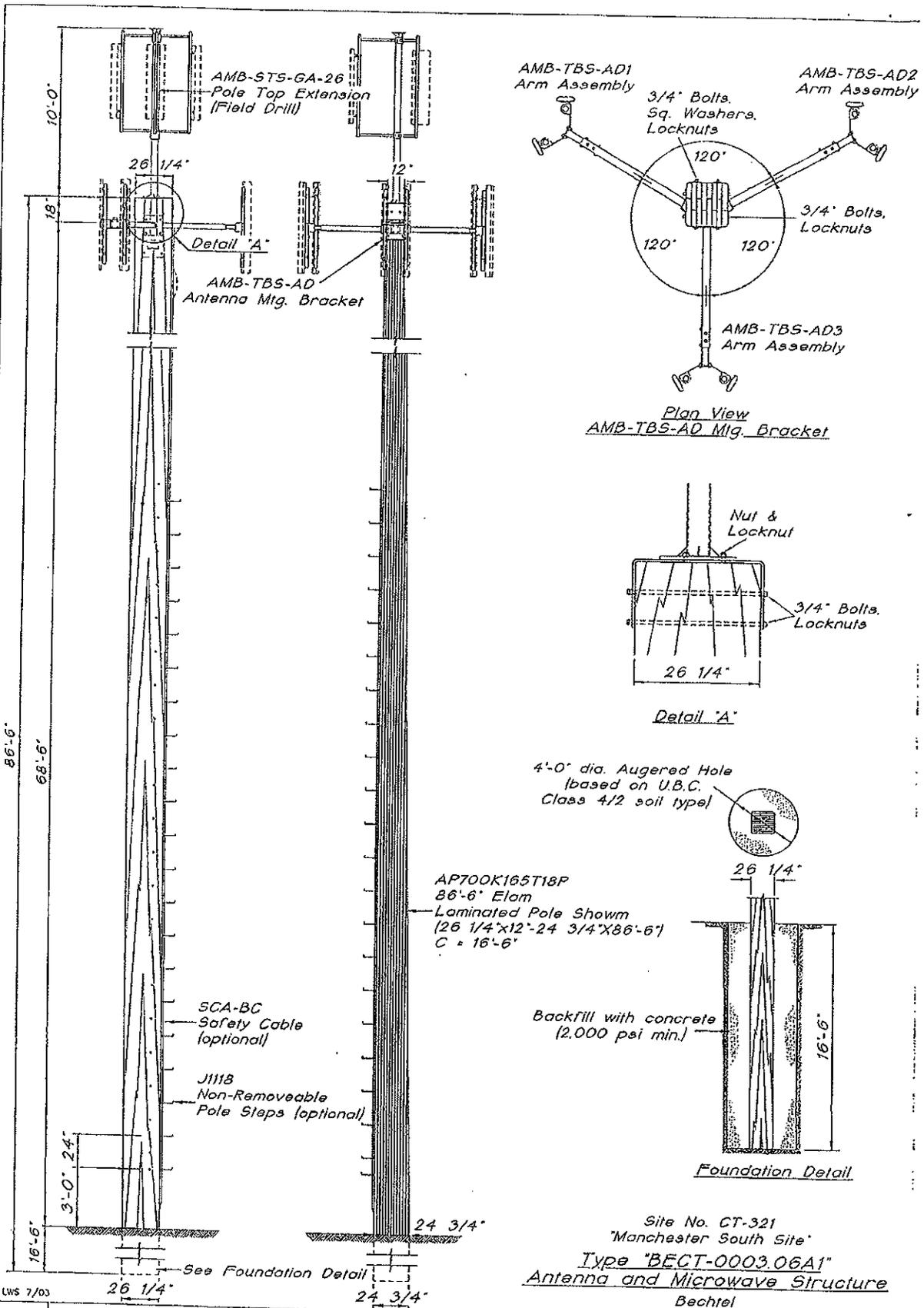
The analysis performed and the conclusions contained herein are based on the assumption that the tower has been properly installed and maintained, including, but not limited to the following:

1. Proper alignment and plumbness.
2. Correct guy tensions, as applicable.
3. Correct bolt tightness or slip jacking of sleeved connections.
4. No significant deterioration or damage to any structural component.

Furthermore, the information and conclusions contained in this Report were determined by application of the current "state-of-the-art" engineering and analysis procedures and formulae. MALOUF ENGINEERING INTERNATIONAL, INC. Assumes no obligation to revise any of the information or conclusions contained in this Report in the event that such engineering and analysis procedures and formulae are hereafter modified or revised. In addition, under no circumstances will MALOUF ENGINEERING INTERNATIONAL, INC. Have any obligation or responsibility whatsoever for or on account of consequential or incidental damages sustained by any person, firm or organization as a result of any information or conclusions contained in the Report, and the maximum liability of MALOUF ENGINEERING INTERNATIONAL, INC., if any, pursuant to this Report shall be limited to the total funds actually received by MALOUF ENGINEERING INTERNATIONAL, INC. For preparation of this Report.

Customer has requested MALOUF ENGINEERING INTERNATIONAL, INC. To prepare and submit to Customer an engineering analysis with respect to the Subject Tower and has further requested MALOUF ENGINEERING INTERNATIONAL, INC. to make appropriate recommendations regarding suggested structural modifications and changes to the Subject Tower. In making such request of MALOUF ENGINEERING INTERNATIONAL, INC., Customer has informed MALOUF ENGINEERING INTERNATIONAL, INC. that Customer will make a determination as to whether or not to implement any of the changes or modifications which may be suggested by MALOUF ENGINEERING INTERNATIONAL, INC. and that Customer will have any such changes or modifications made by riggers, erectors and other subcontractors of Customer's choice. MALOUF ENGINEERING INTERNATIONAL, INC. shall have the right to rely upon the accuracy of the information supplied by the customer and shall not be held responsible for the Customer's misrepresentation or omission of relevant fact whether intentional or otherwise.

Customer hereby agrees and acknowledges that MALOUF ENGINEERING INTERNATIONAL, INC. shall have no liability whatsoever to Customer or to others for any work or services performed by any persons other than MALOUF ENGINEERING INTERNATIONAL, INC. in connection with the implementation of services including but not limited to any services rendered for Customer or for others by riggers, erectors or other subcontractors. Customer acknowledges and agrees that any riggers, erectors or subcontractors retained or employed by Customer shall be solely responsible to Customer and to others for the quality of work performed by them and that MALOUF ENGINEERING INTERNATIONAL, INC. shall have no liability or responsibility whatsoever as a result of any negligence or breach of contract by any such rigger, erector or subcontractor and that Customer and rigger, erector, or subcontractor will provide MALOUF ENGINEERING INTERNATIONAL, INC. with a Certificate of Insurance naming MALOUF ENGINEERING INTERNATIONAL, INC. as additional insured.



© LWS 7/03

NO.	REVISION	DATE	CK.
3.		6-13-06	
2.	Removed Future Carriers, Added Pole Top Extension	6-9-06	
1.	Changed the AMB-TBS-AS to an AMB-TBS-AD	6-15-03	

ACAD DWG. FILE: BECT0306A1

Laminated Wood Systems, Inc.

**E-LAM**

P.O. BOX 386, SEWARD, NE 68434

1-800-949-ELAM

DRAWN  
D. Policky

DATE  
7-31-03

DWG. NO.

BECT-0003.06A1

**CINGULAR WIRELESS  
Equipment Modification**

151 Waterbury Rd, Prospect, CT  
Site Number 5626  
Former AT&T site  
Exempt Modification 10/7/02

**Tower Owner/Manager:** Capstar Radio Operating Company

**Equipment configuration:** Guyed Lattice Tower

**Current and/or approved:** Three Allgon 7250 antennas @ 140 ft c.l. (approved for 6)  
Six runs 1 ¼ inch coax

**Planned Modifications:** Remove all existing antennas  
Install three Powerwave 7770 antennas @ 140 ft c.l.  
Install six TMA's @ 140 ft c.l.  
Install two additional outdoor cabinets

**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 4.7 % 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 7.4 %.

**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 *							2.98
Cingular GSM **	148	1900 Band	2	250	0.0082	1.0000	0.82
Cingular GSM *	140	1900 Band	2	250	0.0092	1.0000	0.92
<b>Total</b>							<b>4.7%</b>

\* Per CSC records. \*\* Space under lease, but equipment not installed.

## 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 *							2.98
Cingular GSM	140	1900 Band	3	520	0.0286	1.0000	2.86
Cingular UMTS	140	880 - 894	1	500	0.0092	0.5867	1.56
<b>Total</b>							<b>7.4%</b>

\* Per CSC records.

### Structural information:

The attached structural analysis demonstrates that the tower and foundation have adequate structural capacity to accommodate the proposed modifications. (Malouf Engineering Intl, dated 7/19/07)



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

July 25, 2007

Honorable Robert J. Chatfield  
Mayor, Town of Prospect  
Town Office Building 36 Center Street  
Prospect, Connecticut 06712

Re: Telecommunications Facility – 151 Waterbury Road, Prospect

Dear Mayor Chatfield:

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 (“Cingular”) 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 Cingular’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 Cingular’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



July 19, 2007

## RIGOROUS STRUCTURAL ANALYSIS

Structure:	195 ft <b>Guyed</b>	Stainless	
Client / Site ID:	<b>Hudson D.G. / AT&amp;T</b>	<b>Prospect North Site #5626</b>	
Owner / Site ID:	AT&T	5626 Prospect North #5626	
MEI Project ID:	<b>CT00814G-07V0</b>		
Location:	151 Waterbury Road Prospect, CT 06712	New Haven County FCC # N/A	
	LAT	41-31-22.1 N	LON 72-59-52.1 W

### EXECUTIVE SUMMARY:

Malouf Engineering Int'l (MEI), as requested, has performed a rigorous structural analysis of the above mentioned structure to assess the impact of the changed condition as noted in Table 1.

Based on the stress analysis performed, the existing structure is **in conformance** with the ANSI/TIA **222-F** Standard for the loading considered under the criteria listed and referenced in the report sections.

***The installation of the proposed changed condition consisting of replacement of the existing antennas with the new AT&T (3) Allgon LGP 7770 Panels + (6) LGP 21401 TMA's + (2) RCU/RET Units onto existing (3) Flush Mounts at Elev. 140 ft ± c.l. is structurally acceptable.***

MEI appreciates the opportunity of providing our continuing professional services to you. If you have any questions or need further assistance on this or any other projects please contact us.

Respectfully submitted,

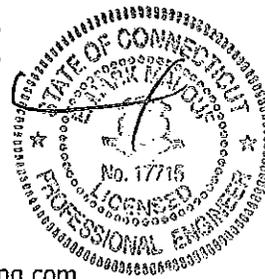
**MALOUF ENGINEERING INT'L, INC.**

Analysis performed by:

Luan Nguyen, PE  
Project Engineer

Reviewed & Approved by:

E. Mark Malouf, PE  
Connecticut #17715  
972-783-2578 ext. 106  
mmalouf@maloufengineering.com



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## 1. INTRODUCTION & SCOPE

A rigorous structural analysis was performed by Malouf Engineering Int'l (MEI), as requested and authorized by Derek Creaser, Hudson Design Group on behalf of AT&T, to determine the acceptance of the proposed changed conditions in conformance with the ANSI/TIA-222-F Standard, "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures".

The scope of this independent analysis is to determine the overall stability and the adequacy of structural members, foundations, and member connections, as available and stated. This analysis considers the structure to have been properly installed and maintained with no structural defects. Installation procedures and related loading are not within the scope of this analysis and should be performed and evaluated by a competent person of the erection contractor.

The different report sections detail the applicable information used in this evaluation, relating to the tower data, the appurtenances configuration and the wind and ice loading considered.

## 2. SOURCE OF DATA

The following information has been used in this evaluation as source data that accurately represent the existing structure and the related appurtenances:

	Source	Information	Reference
<b>STRUCTURE</b>			
<b>Tower</b>	Hudson D. G.	Previous Tower Analysis Report	Walker Eng. Job No. DTC-001R2; 0509-0503R2, dated 09/22/05
<b>Foundation</b>	Hudson D. G.	Previous Analysis Report, which only referenced the original reactions.	Walker Eng. Job No. DTC-001R2; 0509-0503R2, dated 09/22/05
<b>Material Grade</b>	Not Available from supplied documents – Assumed based on similar structures – refer to Appendix.		
<b>CURRENT APPURTENANCES</b>			
	Hudson D. G.	Previous Tower Analysis Report & recent site photos	Walker Eng. Job No. DTC-001R2; 0509-0503R2,
<b>CHANGED CONDITION</b>			
	Hudson D. G.	Cingular RF Data sheet	Issue dated 4/24/07

### Background Information:

Based on available information, the following is known regarding this structure:

<b>DESIGNER / FABRICATOR</b>	Stainless
<b>DESIGN CRITERIA</b>	TIA/EIA 222-F – 85 / 39 Mph + 0" / 3/4" Ice
<b>PRIOR STRUCTURAL MODIFICATIONS</b>	None Known

### 3. ANALYSIS CRITERIA

The structural analysis performed used the following criteria:

<b>CODE / STANDARD</b>	IBC 2003 / ANSI/TIA-222-F-96 Standard	
<b>LOADING CASES</b>	<i>Full Wind:</i>	85 Mph (fastest-mile) - with No Radial Ice
	<i>Iced Case:</i>	50 Mph (fastest-mile) + 3/4" Radial Ice
	<i>Service:</i>	60 Mph
<b>STRUCTURE CRITERIA</b>	<i>Structure Classification:</i> Class II	
	<i>Exposure Category:</i> 'C' - <i>Topographic Category:</i> 1	

#### Appurtenances Configuration

The following appurtenances configuration has been considered:

**Table 1: Proposed Changed Condition Appurtenances**

Elev (ft)	Tenant	Ants Qty	Appurtenance Model / Description	Mount Description	Lines Qty	Line size & Location
140	AT&T	3	Allgon LGP 7770 Panels	(3) Flush Mounts	6	1 1/4" - FZ [Re-use existing]
		6	LGP 21401 TMA's			
		3	RET/RCU Unit (1 exist)			

**Table 2: Current and Reserved/Future Appurtenances**

Elev (ft)	Tenant	Ants Qty	Appurtenance Model / Description	Mount Description	Lines Qty	Line size & Location
159					1	1 5/8" - FZ
148	AT&T	3	Allgon 7250 Panels (Fut)	(3) Flush Mounts	6	1 1/4" - FZ
		6	LGP 21401 TMA's (Future)			
		3	RET/RCU Unit (Future)			
130	T-MOBILE	18	DR65-19-XXDPQ Panels	(3) T-Frame Mounts	18	1 5/8" - FZ
92					2	7/8" - FZ
83		1	Broken Dipole	Mount	1	1/2" - FZ

#### Notes:

1. Please note appurtenances not listed above are to be removed/not present as per data supplied.
2. (I) = internal; (E) = External; (FZ) = Within Face Zone & (OFZ) = Outside Face Zone - as per TIA-222-G.
3. The above antennas, mounts, and lines represent MEI's understanding of the appurtenances configuration. If different than above, the analysis is invalid. Please refer to Appendix 2 for EPA wind areas used in the calculations. Please contact MEI if any discrepancies are found.

#### 4. ANALYSIS PROCEDURE

The subject structure is analyzed for feasibility of the installation of the proposed changed condition previously noted. The data records furnished were reviewed and a computer stress analysis was performed in accordance with the TIA-222 Standard provisions and with the agreed scope of work terms and the results of this analysis are reported.

##### Analysis Program

The computer program used to model the structure is a rigorous Finite Element Analysis program, RISATower (ver. 5.0.2.2), a commercially available program developed by C-Concepts, WI and now maintained by RISA Technologies. The latticed structures members are modeled using beam/truss and cable members and the pole members using tubular beam elements. The structural parameters and geometry of the members are included in the model. The dead and temperature loads and the wind loads are internally calculated by the program for the different wind directions and then applied as external loads on the structure. This existing tower is assumed, for the purpose of this analysis, to have been properly maintained and to be in good condition with no structural defects and with no deterioration to its member capacities. Refer to the related section in this report for a listing of the assumptions made.

##### Assumptions

This engineering study is based on the theoretical capacity of the members and is not a condition assessment of the structure. This analysis is based on information supplied, and therefore, its results are based on and as accurate as that supplied data. MEI has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural stress analysis:

- This existing tower is assumed, for the purpose of this analysis, to have been properly maintained and to be in good condition with no structural defects and with no deterioration to its member capacities ('as-new' condition).
- The tower member sizes and configuration are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated.
- The appurtenances configuration is as supplied and/or as stated in the report. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements.
- Some assumptions are made regarding antennas and mounts sizes and their projected areas based on best interpretation of data supplied and of best knowledge of antenna type & industry practice.
- The top platform, if applicable, is considered adequate to support the loading. No actual analysis of the platform itself is performed, with the analysis being limited to analyzing the pole and its foundation.
- The soil parameters are as per data supplied or as assumed and stated in the calculations. Refer to the Appendix. If no data is available, the foundation system is assumed to support the structure with its new reactions.
- All welds and connections are assumed to develop at least the member capacity, unless determined otherwise and explicitly stated in this report. All guy cable assemblies, as applicable, are assumed to develop the rated breaking strength of the wire.
- All prior structural modifications, if any, are assumed to be as per data supplied/available, and to have been properly installed and to be fully effective.

If any of the above assumptions are not valid or have been made in error, this analysis results may be invalidated, MEI should be contacted to review any contradictory information to determine its effect.

## 5. ANALYSIS RESULTS

The results of the structural stress analysis based on data available and with the previous listed criteria, indicated the following:

**Table 3: Stress Analysis Results**

Member Type	Maximum Stress Ratio	Controlling Location / Component	Pass/Fail	Comment
<b>GUY</b>	93.00%	Elev. 87.4583 ft	<b>Pass</b>	
<b>LEG</b>	71.80%	Elev. 25 - 0 ft	<b>Pass</b>	
<b>DIAGONALS</b>	42.70%	Elev. 150 - 125 ft	<b>Pass</b>	
<b>GIRTS</b>	43.60%	Elev. 25 - 0 ft	<b>Pass</b>	
<b>BASE FOUNDATION</b>	100.0%	Compression Force	<b>Pass</b>	Reactions Comparison Only.
<b>GUY ANCHORS</b>	85.4%	Shear Force	<b>Pass</b>	Reactions Comparison Only.

**Notes:**

1. The Maximum Stress Ratio is the percentage that the maximum load in the member is relative to the allowable load as determined by Code requirements.
2. Refer to the Appendix 2 for more details on the member loads.
3. A maximum stress ratio between 100% to 105% may be considered as *Acceptable* according to industry standard practice.

## 6. FINDINGS & RECOMMENDATIONS

- Based on the rigorous stress analysis results, the subject structure is **rated at 93.0%** of its support capacity (controlling component: Guy Wire) with the proposed changed condition considered. Please refer to Table 3 and to Appendix 2 for more details of the analysis results.
- Based on the stress analysis performed, the existing structure is **in conformance** with the ANSI/TIA **222-F** Standard for the loading considered under the criteria listed and referenced in the report sections.
- ***The installation of the proposed changed condition consisting of replacement of the existing antennas with the new AT&T (3) Allgon LGP 7770 Panels + (6) LGP 21401 TMA's + (2) RCU/RÉT Units onto existing (3) Flush Mounts at Elev. 140 ft ± c.l. is structurally acceptable.***
- This tower is near its maximum support capacity for the appurtenances and loading criteria considered. Therefore, no changes to the configuration considered should be made without performing a new proper evaluation.

*Rigging and temporary supports required for the erection/modification shall be determined, documented, furnished and installed by the erector/contractor accounting for the loads imposed on the structure due to the proposed construction method.*

## 7. REPORT DISCLAIMER

*The engineering services rendered by Malouf Engineering International, Inc. ('MEI') in connection with this Structural Analysis are limited to a computer analysis of the tower structure, size and capacity of its members. MEI does not analyze the fabrication, including welding and connection capacities, except as included in this Report.*

The analysis performed and the conclusions contained herein are based on the assumption that the tower has been properly installed and maintained, including, but not limited to the following:

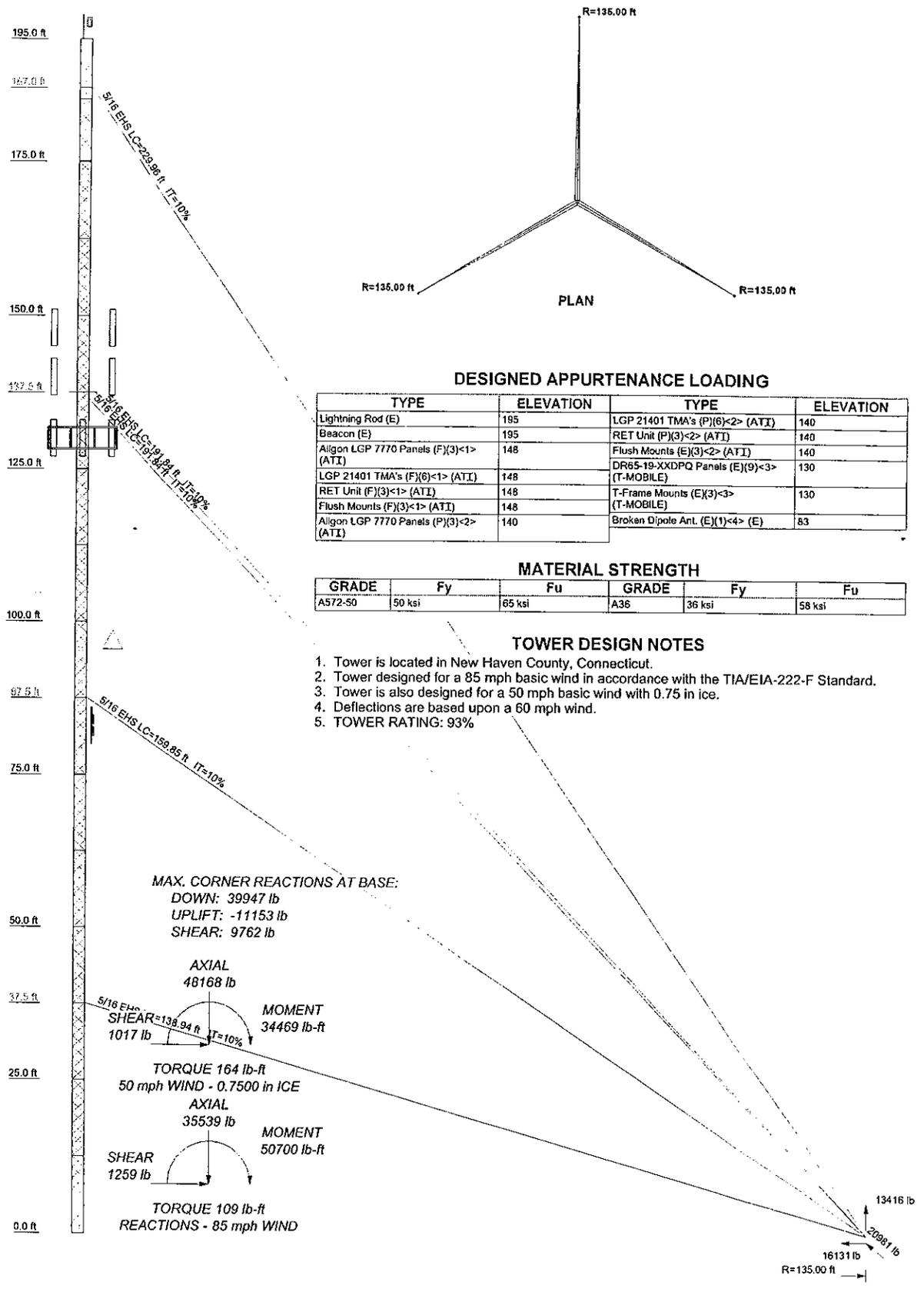
1. Proper alignment and plumbness.
2. Correct guy tensions, as applicable.
3. Correct bolt tightness or slip jacking of sleeved connections.
4. No significant deterioration or damage to any structural component.

Furthermore, the information and conclusions contained in this Report were determined by application of the current "state-of-the-art" engineering and analysis procedures and formulae. MALOUF ENGINEERING INTERNATIONAL, INC. Assumes no obligation to revise any of the information or conclusions contained in this Report in the event that such engineering and analysis procedures and formulae are hereafter modified or revised. In addition, under no circumstances will MALOUF ENGINEERING INTERNATIONAL, INC. Have any obligation or responsibility whatsoever for or on account of consequential or incidental damages sustained by any person, firm or organization as a result of any information or conclusions contained in the Report, and the maximum liability of MALOUF ENGINEERING INTERNATIONAL, INC., if any, pursuant to this Report shall be limited to the total funds actually received by MALOUF ENGINEERING INTERNATIONAL, INC. For preparation of this Report.

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Customer hereby agrees and acknowledges that MALOUF ENGINEERING INTERNATIONAL, INC. shall have no liability whatsoever to Customer or to others for any work or services performed by any persons other than MALOUF ENGINEERING INTERNATIONAL, INC. in connection with the implementation of services including but not limited to any services rendered for Customer or for others by riggers, erectors or other subcontractors. Customer acknowledges and agrees that any riggers, erectors or subcontractors retained or employed by Customer shall be solely responsible to Customer and to others for the quality of work performed by them and that MALOUF ENGINEERING INTERNATIONAL, INC. shall have no liability or responsibility whatsoever as a result of any negligence or breach of contract by any such rigger, erector or subcontractor and that Customer and rigger, erector, or subcontractor will provide MALOUF ENGINEERING INTERNATIONAL, INC. with a Certificate of Insurance naming MALOUF ENGINEERING INTERNATIONAL, INC. as additional insured.

Section	T1	T2	T3	T4	T5	T6	T7	T8
Legs								
Leg Grade	SR 1 1/2	SR 1 1/2	SR 1 1/2	SR 1/2	A36	SQ 3/4x3/4		
Diagonals								
Diagonal Grade								
Top Girts								
Mid Girts								
Bottom Girts								
Top Guy Pull-Offs								
Face Width (ft)								
# Panels @ (ft)								
Weight (lb)								5225.1



### DESIGNED APPURTENANCE LOADING

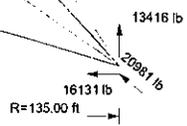
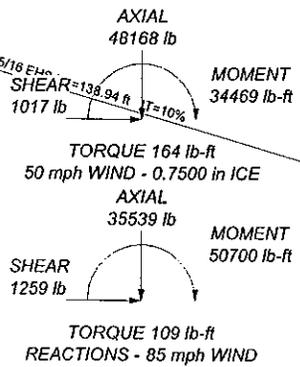
TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod (E)	195	LGP 21401 TMA's (F)(6)<2> (ATI)	140
Beacon (E)	195	RET Unit (F)(3)<2> (ATI)	140
Allion LGP 7770 Panels (F)(3)<1> (ATI)	148	Flush Mounts (E)(3)<2> (ATI)	140
LGP 21401 TMA's (F)(6)<1> (ATI)	148	DR65-19-XXDPQ Panels (E)(9)<3> (T-MOBILE)	130
RET Unit (F)(3)<1> (ATI)	148	T-Frame Mounts (E)(3)<3> (T-MOBILE)	130
Flush Mounts (F)(3)<1> (ATI)	148	Broken Dipole Ant. (E)(1)<4> (E)	83
Allion LGP 7770 Panels (P)(3)<2> (ATI)	140		

### MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

- ### TOWER DESIGN NOTES
1. Tower is located in New Haven County, Connecticut.
  2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
  3. Tower is also designed for a 50 mph basic wind with 0.75 in ice.
  4. Deflections are based upon a 60 mph wind.
  5. TOWER RATING: 93%

MAX. CORNER REACTIONS AT BASE:  
 DOWN: 39947 lb  
 UPLIFT: -11153 lb  
 SHEAR: 9762 lb



<p>Malouf Engineering Int'l, Inc.          17950 Preston Road, Suite #720          Dallas, TX 75252          Phone: (972) 783-2578          FAX: (972) 783-2583</p>	<b>Job: 195 FT GT, PROSPECT NORTH SITE #5626</b> Project: CT00814G-07V0 Client: HUDSON DESIGN GROUP / AT&T Code: TIA/EIA-222-F Path: C:\MEI\Project\07 DATA\GCT00814G-07V0\CT00814G-07V0-Final.rvt	Drawn by: LNguyen Date: 07/19/07 Scale: NTS Dwg No. E-1
	Consulting Engineers	
	App'd:	
	Date:	
	Scale:	

**CINGULAR WIRELESS  
Equipment Modification**

14 Booth Hill Rd (a/k/a Oxford Dr), Shelton  
Site Number 5542  
Former AT&T Cell Site  
Exempt Mod. approved 8/15/02

**Tower Owner/Manager:** American Tower

**Equipment configuration:** Lattice Tower

**Current and/or approved:** Three Allgon 7250 Panel Antennas @ 144 ft c.l. (6 approved)  
Six runs 1 5/8 inch coax (six runs 1 ¼ inch coax approved)

**Planned Modifications:** Remove all three existing antennas  
Install three Powerwave 7770 antennas @ 144 ft c.l.  
Install six TMA's @ 144 ft  
Remove one existing outdoor cabinet from existing pad  
Install one new outdoor equipment cabinet for UMTS

**Power Density:**

Calculations for Cingular's current operations at the site indicate a radio frequency electromagnetic radiation power density, measured at the tower base, of approximately 14.0 % of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density for Cingular's planned operations would be approximately 15.2 % 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 *							12.23
Cingular GSM *	144	1900 Band	4	250	0.0173	1.0000	1.73
<b>Total</b>							<b>14.0%</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 *							12.23
Cingular GSM	144	1900 Band	2	427	0.0148	1.0000	1.48
Cingular UMTS	144	880 - 894	1	500	0.0087	0.5867	1.48
<b>Total</b>							<b>15.2%</b>

\* Per CSC records.

### Structural information:

The attached structural analysis demonstrates that the foundation has adequate structural capacity to accommodate the proposed modifications, but that the tower itself would be overstressed. The analysis, however, presents a list of structural improvements that would eliminate the overstress condition. Cingular will have the tower strengthened per these recommendations prior to performing the proposed UMTS modifications. We respectfully request, therefore, that the Council give conditional approval for the proposed 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

July 25, 2007

Honorable Mark A. Lauretti, Mayor  
Town of Shelton  
Town Hall, 54 Hill Street  
Shelton, CT 06484-0364

Re: Telecommunications Facility – 14 Booth Hill Road, Shelton

Dear Mayor Lauretti:

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 (“Cingular”) 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 Cingular’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 Cingular’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



**AMERICAN TOWER**

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## Structural Analysis Report

**Structure** : 200 ft AT&T TAG Tower  
**ATC Site Name** : Shelton/Trumbull, CT  
**ATC Site Number** : 88017  
**Proposed Carrier** : Cingular  
**Carrier Site Name** : Shelton / Booth Hill  
**Carrier Site Number** : 5542  
**County** : Fairfield  
**Eng. Number** : 40480221  
**Date** : June 8, 2007  
**Usage** : 117 %

Submitted by:  
Michael Deese, E.I.  
Design Engineer

**American Tower Engineering Services**  
400 Regency Forest Drive  
Cary, NC 27518  
Phone: 919-468-0112



**Introduction**

The purpose of this report is to summarize results of the structural analysis performed on the 200 ft. AT&T TAG Tower located at 14 Oxford Dr, Shelton, CT 06484, Fairfield County (ATC site #88017). Tower geometry, member sizes, and foundation information was based on a mapping by Tower Engineering Professionals (TEP #070851, dated May 30, 2007).

**Analysis**

The tower was analyzed using Power Line Systems, Inc., Software. The analysis assumes that the tower is in good, undamaged, and non-corroded condition.

Basic Wind Speed: 90 mph (Fastest Mile) / 110 mph (3-Second Gust)  
 Radial Ice: 77.9 mph (Fastest Mile) w/ 1/2" ice  
 Code: TIA/EIA-222-F / 2003 International Building Code

**Antenna Loads**

The following antenna loads were used in the tower analysis.

**Existing Antennas**

Elev. (ft)	Qty	Antennas	Mount	Coax	Carrier
214.5	1	8' Dipole	Platform w/ Handrails	(1) 1 5/8"	State of CT
209.5	1	14' Whip		(1) 1 5/8"	
206.5	2	8' Dish w/ Radome		(2) EW65	
200.0	-	-	Platform w/ Handrails	-	-
183.5	2	Scala AP14-850/150N	Standoff	(2) 1 5/8"	State of CT
	3	8' Omni	Side Arm	(3) 1 5/8"	
168.0	12	Decibel DB844H90E-XY	Sector Frame	(15) 1 5/8"	Nextel
155.0	9	Dapa 58000	Pipe	(9) 1 5/8"	Sprint
125.5	1	8' Dish w/ Radome	Dish	(1) EW65	State of CT
112.5	-	-	Platform w/ Handrails	-	-
75.0	-	-	Platform w/ Handrails	-	-
55.0	1	GPS Unit	Pipe	(1) 1/2"	Sprint

**Proposed Antennas**

Elev. (ft)	Qty	Antennas	Mount	Coax	Carrier
144.0	6	Powerwave 7770	Pipe	(12) 1 5/8"	Cingular
	6	Powerwave LGP-21401		N/A	

Double stack proposed coax in a 6-on-6 configuration in same location as existing.

**Results**

The maximum structure usage is: 117 %

Leg Forces	Original Design Reactions	Current Analysis Reactions	% Of Design
Uplift (Kips)	N/A	146.7	N/A
Axial (Kips)	N/A	194.1	N/A
Shear (Kips)	N/A	32.4	N/A

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

**Conclusion**

Based on the analysis results, the structure does not meet the requirements per TIA/EIA-222-F and 2003 International Building Code standards.

The tower and foundation can support the existing and proposed equipment after the modifications listed below are completed:

- Replace or reinforce 2L 3" x 2.5" x 1/4" diagonals in section 3
- Replace or reinforce 2L 3" x 2.5" x 1/4" diagonals in section 4
- Replace or reinforce 2L 3" x 3" x 5/16" horizontals in section 1

If you have any questions or require additional information, please call 919-466-5146.

### Standard Conditions

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

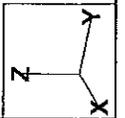
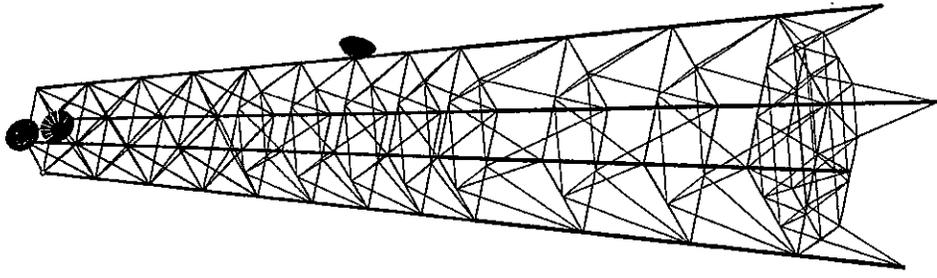
- Information supplied by the client regarding the structure itself, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

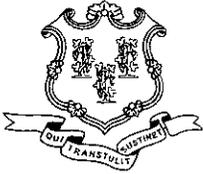
It is the responsibility of the client to ensure that the information provided to ATC Engineering Services and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated; and we, therefore, assume that their capacity has not significantly changed from the "as new" condition.

All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/EIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. ATC Engineering Services is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

American Tower Corp., Project: '88017 - shelton\_trumbull.ct'  
Tower Version 8.10, 11:15:21 AM Thursday, June 14, 2007  
Undeformed geometry displayed





# 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

August 1, 2007

The Honorable Ralph H. Fletcher  
First Selectman  
Town of Ashford  
Knowlton Memorial Town Hall  
5 Town Hall Road  
Ashford, CT 06278

RE: **EM-CING-003-077-077-115-126-070726** – New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at 36 Janowski Road, Ashford; 239 Middle Turnpike East, Manchester; 575 Hillstown Road, Manchester; 151 Waterbury Road, Prospect; and 14 Booth Hill Road, a/k/a Oxford Drive, Shelton, Connecticut.

Dear Mr. Fletcher:

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 August 29, 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 August 28, 2007.

Thank you for your cooperation and consideration.

Very truly yours,

S. Derek Phelps  
Executive Director

SDP/cm

Enclosure: Notice of Intent

c: Richard Dziadus, Zoning Enforcement Officer, Town of Ashford