



EM-CING-067-081202

New Cingular Wireless PCS, LLC  
500 Enterprise Drive  
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Steven L. Levine  
Real Estate Consultant

ORIGINAL

HAND DELIVERED

December 1, 2008

RECEIVED  
DEC 2 - 2008

CONNECTICUT  
SITING COUNCIL

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

Re: New Cingular Wireless PCS, LLC notice of intent to modify an existing tele-  
communications facility located at 768 Gilead Street, Hebron (owner, SBA)

Dear Chairman Caruso and Members of the Council:

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

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

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

The changes to the facility do not constitute modifications as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility

will not be significantly changed or altered. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

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

- Replacement of existing panel antennas with new antennas or, installation of additional antennas of a size required to accommodate UMTS.
- 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.
- Radome enlargement for flagpole and "stick" structures to accommodate larger antennas and additional associated equipment.

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 may be noted in the attachments.

3. The proposed changes will not increase the noise level at the existing facility by six decibels or more.

4. Radio frequency power density may increase due to use of one or more GSM channel for UMTS transmissions. However, the changes will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site.

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

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

Sincerely,



Steven L. Levine  
Real Estate Consultant

Attachments

**NEW CINGULAR WIRELESS  
Equipment Modification**

768 Gilead Street, Hebron  
Site Number 5866  
Former AT&T cell site  
Petition 565 approved 6/02

**Tower Owner/Manager:** SBA

**Equipment Configuration:** Flagpole

**Current and/or Approved:** Three Allgon 7250 panel antennas @ 145 ft AGL  
Six runs 1 5/8 inch coax cable  
Concrete pad with outdoor equipment cabinets

**Planned Modifications:** Remove all existing antennas  
Install three Powerwave 7770 antennas (or equivalent) @ 145 ft  
Install six TMA's @ 145 ft  
Install six additional lines 1 5/8 inch coax  
Remove one existing 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 12.4 % 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 11.9 % 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 *							5.55
AT&T GSM *	145	1900 Band	16	250	0.0684	1.0000	6.84
<b>Total</b>							<b>12.4%</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 *							5.55
AT&T UMIS	145	880 - 894	1	500	0.0086	0.5867	1.46
AT&T GSM	145	1900 Band	2	427	0.0146	1.0000	1.46
AT&T GSM	145	880 - 894	4	296	0.0202	0.5867	3.45
<b>Total</b>							<b>11.9%</b>

\* Per CSC records

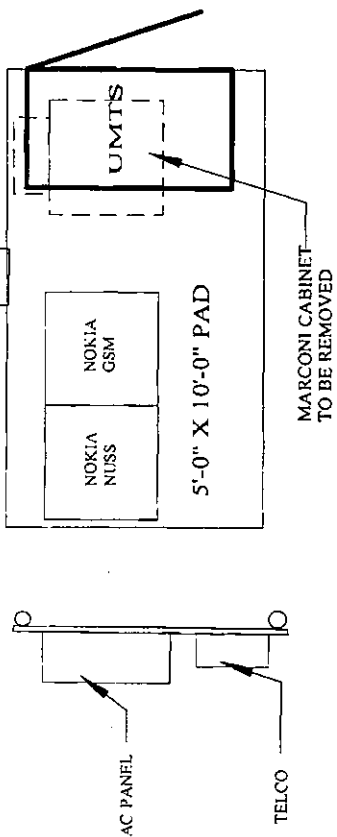
### Structural information:

The attached structural analysis demonstrates that the tower and foundation have adequate structural capacity to accommodate the proposed equipment modifications. (FDH Engineering, 11/18/08)



SITE NUMBER  
5866  
SITE NAME  
Hebron North Central

TITLE:	EQUIPMENT PLAN
MISC. INFO:	
DWG. BY:	SGB
DATE:	07/07/08
SCALE:	N.T.S.
SHEET:	1 OF 1





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Fax: (860) 513-7190

**Steven L. Levine**  
Real Estate Consultant

December 1, 2008

Jared S. A. Clark, Town Manager  
Town of Hebron  
Town Office Bldg., 15 Gilead Street  
Hebron, CT 06248

Re: Telecommunications Facility – 768 Gilead Street

Dear Mr. Clark:

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

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

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

Sincerely,

Steven L. Levine  
Real Estate Consultant

Enclosure





**Structural Analysis for  
SBA Network Services, Inc.**

**160' Flagpole**

**Site Name: Hebron  
Site ID: CT01001-S**

*# 5866  
GILHEAD STREET*

FDH Project Number 08-11047E S1

Prepared By:

Trent T. Snarr, EI  
Project Engineer

Reviewed By:

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

**FDH Engineering, Inc.**  
2730 Rowland Road, Suite 100  
Raleigh, NC 27615  
(919)-755-1012  
info@fdh-inc.com



November 18, 2008

*Prepared pursuant to EIA TIA-222-F June 1996 Structural Standards for Steel Antenna Towers and Antenna Supporting Structures*

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## EXECUTIVE SUMMARY

At the request of SBA Network Services, Inc., FDH Engineering performed a structural analysis of the monopole located in Hebron, CT to determine whether the tower is structurally adequate to support the existing and proposed loads, pursuant to the *Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, TIA/EIA-222-F*. Information pertaining to the existing/proposed antenna loading, current tower geometry, and member sizes was obtained from Armour Tower (Project No. 4283B) structural design report dated October 24, 2001 and SBA Network Services, Inc.

The basic design wind speed per *TIA/EIA-222-F* standards is 85 MPH without ice and 74 MPH with 1/2" radial ice.

## Conclusions

With the existing and proposed antennas from AT&T in place at 145 ft, the tower meets the requirements of the *TIA/EIA-222-F* standards. Furthermore, provided the foundation was constructed per the original foundation design drawing (see Armour Tower Project No. 4283B), the foundation should have the necessary capacity to support both the proposed and existing loading. For a more detailed description of the analysis of the tower, see the **Results** section of this report.

Our structural analysis has been performed assuming all information provided to FDH is accurate (i.e., the steel data, tower layout, current antenna loading, and proposed antenna loading) and that the tower was properly erected and maintained per the original design report.

## Recommendations

To ensure the requirements of the *TIA/EIA-222-F* standards are met with the existing and proposed loading in place, we have the following recommendations:

1. The proposed coax should be installed inside the pole's shaft.

## APPURTENANCE LISTING

The proposed and existing antennas with their corresponding cables/coax lines are shown in **Table 1**. *If the actual layout determined in the field deviates from this layout, FDH should be contacted to perform a revised analysis.*

**Table 1 – Appurtenance Loading**

### Existing Loading:

No.	Centerline Elevation (ft)	Coax and Lines <sup>1</sup>	Carrier	Mount Type	Description
1-3	155	(6) 1-5/8"	Verizon	Inside Canister	(3) TGA D3-400TV (54.3" x 13.4" x 5.5") (6) Diplexers
4-6	145 <sup>2</sup>	(6) 1-5/8"	AT&T	Inside Canister	(3) Allgon XM-1900-65-18.51-2-D

<sup>1</sup> All coax are assumed to be located inside the pole's shaft, unless otherwise noted.

<sup>2</sup> The loading for AT&T at 145' will be altered. See the proposed loading below.

### Proposed Loading:

No.	Centerline Elevation (ft)	Coax and Lines	Carrier	Mount Type	Description
1-6	145 <sup>1</sup>	(6) 1-5/8"	AT&T	Inside Canister	(6) Powerwave 7770 (6) Powerwave LGP21401 TMAs (6) Diplexers

<sup>1</sup> This represents the total loading for AT&T at 145'. According to information provided by SBA, AT&T will remove (3) Allgon XM-1900-65-18.51-2-D antennas and install (6) Powerwave 7770 antennas, (6) Powerwave LGP21401 TMAs, and (6) Diplexers at 145'. The total loading for AT&T at 145' will be (6) antennas, (6) TMAs, (6) diplexers, and (6) coax at 145'.

## RESULTS

Based on information obtained from the original design drawings, the yield strength of steel for individual members was as follows:

**Table 2 - Material Strength**

Member Type	Yield Strength
Tower Shaft Sections	36 ksi and 65 ksi
Flange Plate	36 ksi (assumed)
Flange Bolts	Ultimate Strength = 120 ksi
Base Plate	36 ksi
Anchor Bolts	Ultimate Strength = 125 ksi

**Table 3** displays the ratio (as a percentage) of actual force in the member to their allowable capacities. Values greater than 100% indicate locations where the maximum force in the member exceeds its allowable capacity. *Note: Capacities up to 105% are considered acceptable.* **Table 4** displays the maximum foundation reactions.

If the assumptions outlined in this report differ from actual field conditions, FDH should be contacted to perform a revised analysis. Furthermore, as no information pertaining to the allowable twist and sway requirements for the existing or proposed appurtenances was provided, deflection and rotation were not taken into consideration when performing this analysis.

See the **Appendix** for detailed modeling information.

**Table 3 – Summary of Working Percentage of Structural Components**

Section No.	Elevation ft	Size	% Capacity	Pass Fail
L1	160 - 150	TP38x38x0.25	OK	Pass
L2	150 - 140	TP38x38x0.25	OK	Pass
L3	140 - 130	TP38x38x0.25	OK	Pass
L4	130 - 120	TP38x38x0.25	OK	Pass
L5	120 - 110	TP38x38x0.25	OK	Pass
L6	---	---	---	---
L7	110 - 80	TP39.14x34x0.25	36.3	Pass
L8	80 - 37	TP45.95x37.78x0.31	42.9	Pass
L9	37 - 0	TP51.6x44.3x0.38	45.8	Pass
Flange Bolts	130		OK	Pass
Flange Plates	130		OK	Pass
Flange Plate	110		OK	Pass
Anchor Bolts			OK	Pass
Base Plate			OK	Pass

**Table 4 – Maximum Base Reactions**

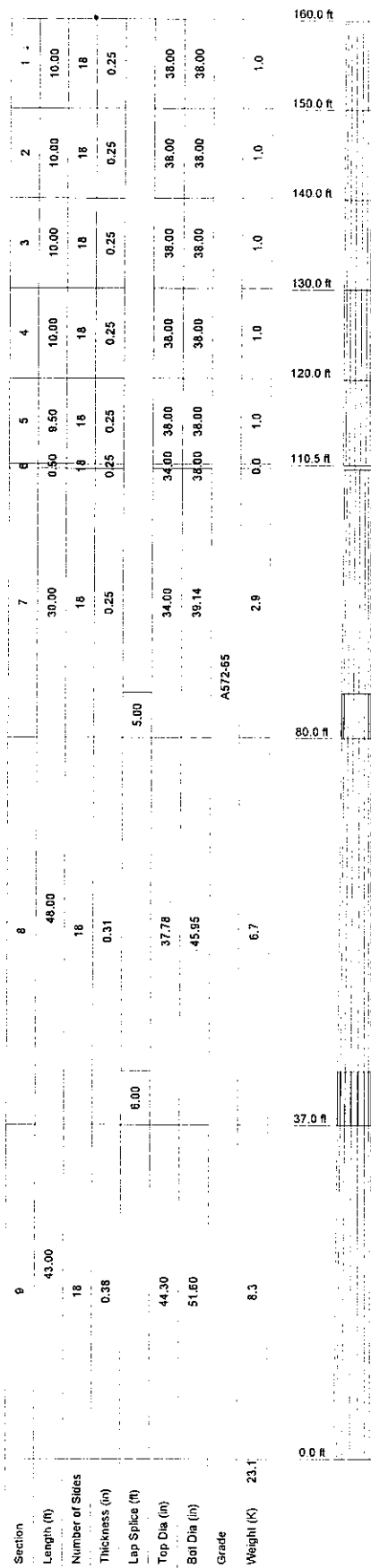
Base Reactions	Current Analysis (TIA/EIA-222-F)	Original Design (TIA/EIA-222-F)
Axial	26 k	33 k
Shear	16 k	16 k
Moment	1,451 k-ft	1,456 k-ft

## GENERAL COMMENTS

This engineering analysis is based upon the theoretical capacity of the structure. It is not a condition assessment of the tower and its foundation. It is the responsibility of SBA Network Services to verify that the tower modeled and analyzed is the correct structure (with accurate antenna loading information) modeled. If there are substantial modifications to be made or the assumptions made in this analysis are not accurate, FDH Engineering should be notified immediately to perform a revised analysis.

## LIMITATIONS

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of this report. All opinions and conclusions are subject to revision based upon receipt of new or additional/updated information. All services are provided exercising a level of care and diligence equivalent to the standard and care of our profession. No other warranty or guarantee, expressed or implied, is offered. Our services are confidential in nature and we will not release this report to any other party without the client's consent. The use of this engineering work is limited to the express purpose for which it was commissioned and it may not be reused, copied, or distributed for any other purpose without the written consent of FDH Engineering, Inc.



## DESIGNED APPURTENANCE LOADING

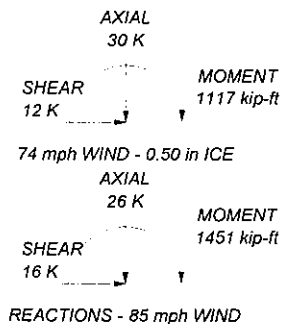
TYPE	ELEVATION	TYPE	ELEVATION
15' x 25' American Flag	160	(2) Diplexer (ATT)	145
TGA D3-400TV (Verizon)	155	(2) Diplexer (ATT)	145
TGA D3-400TV (Verizon)	155	(2) 7770 (ATT)	145
TGA D3-400TV (Verizon)	155	(2) 7770 (ATT)	145
(2) Diplexer (Verizon)	155	(2) 7770 (ATT)	145
(2) Diplexer (Verizon)	155	(2) LGP21401 TMA (ATT)	145
(2) Diplexer (Verizon)	155	(2) LGP21401 TMA (ATT)	145
(2) Diplexer (ATT)	145	(2) LGP21401 TMA (ATT)	145

## MATERIAL STRENGTH

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

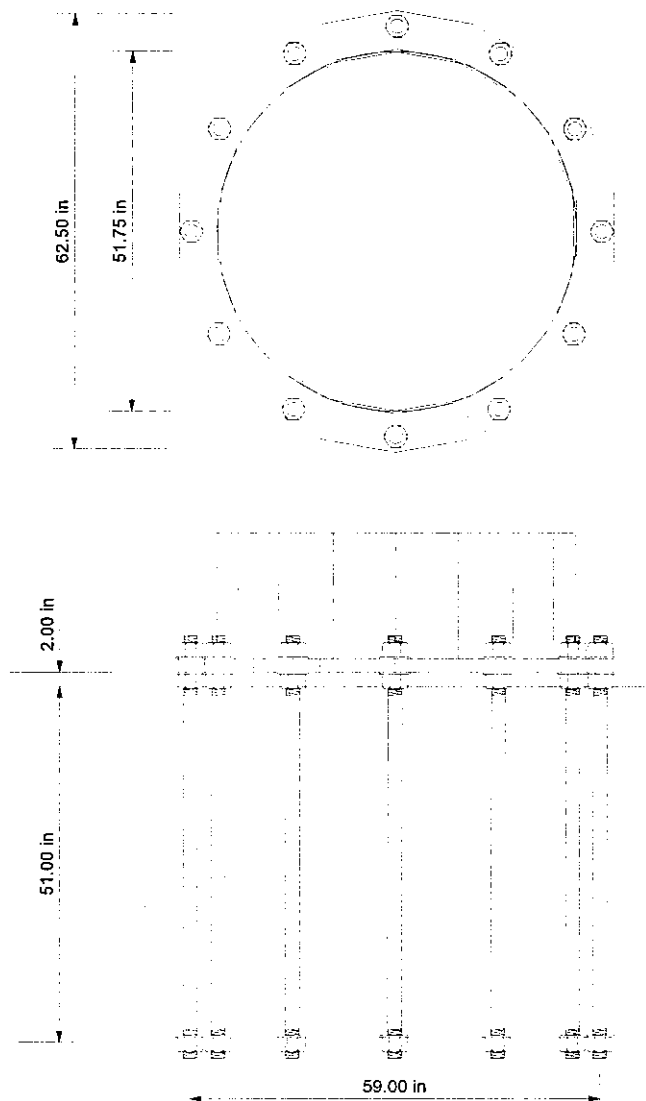
## TOWER DESIGN NOTES

1. Tower is located in Tolland 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. Note: This analysis is for wind loading purposed only. For actual tower geometry see Armour Tower Project No. 4283B.



**FDH Engineering, Inc.**  
 2730 Rowland Road, Suite 100  
 Raleigh, NC 27615  
 Phone: 919-755-1012  
 FAX: 919-755-1031

Job: **Hebron, CT01001-S**  
 Project: **FDH No. 08-11047E S1**  
 Client: **SBA** Drawn by: **TTS** App'd:  
 Code: **TIA/EIA-222-F** Date: **11/20/08** Scale: **NTS**  
 Path: **W:\ch\series\projects\2008\Projects\11-November\08-11047E\Hebron\_CT\Analysis\Hebron\_CT.dwg** Dwg No. **E-1**



#### FOUNDATION NOTES

1. Plate thickness is 2.00 in.
2. Plate grade is A36.
3. Anchor bolt grade is A687.
4.  $f_c$  is 3 ksi.



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 FAX: 919-755-1031

Tower Analysis

Job: <b>Hebron, CT01001-S</b>		
Project: <b>FDH No. 08-11047E S1</b>		
Client: <b>SBA</b>	Drawn by: <b>TTS</b>	App'd:
Code: <b>TIA/EIA-222-F</b>	Date: <b>11/20/08</b>	Scale: <b>NTS</b>
Path: <b>\\fdh-server\projects\2008 Projects\11-November\08-11047E\Hebron, CT\AnaVanHebron, CT.dwg</b>	Dwg No. <b>F-1</b>	