STATE OF CONNECTICUT
*CONNECTICUT SITING COUNCIL*
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
Internet: ct.gov/csc

*Daniel F. Caruso*
*Chairman*

August 7, 2007

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

RE: **EM-CING-049-077-102-115-128-070712** - New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at 1654 King Street, Enfield; 205 Spencer Street, Manchester; 273 Boombridge Road, North Stonington; 229 Cheshire Road, Prospect; and 225 Grist Mill Road, Simsbury, Connecticut.

Dear Mr. Levine:

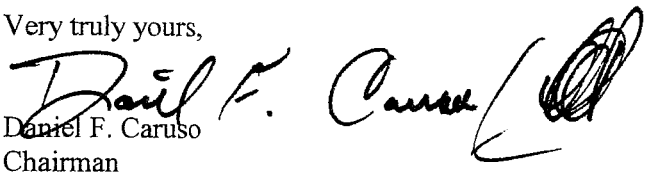
At a public meeting held on July 26, 2007, the Connecticut Siting Council (Council) acknowledged your notice to modify these existing telecommunications facilities, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the condition that the proposed coax lines are installed inside the monopole shaft at the Prospect tower site.

The proposed modifications are to be implemented as specified here and in your notice dated July 12, 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/laf

c: The Honorable Patrick L. Tallarita, Mayor, Town of Enfield
Scott a. Shanley, Town Manager, Town of Enfield
Jose Giner, Director of Planning and Community Development, Town of Enfield
The Honorable Josh M. Howroyd, Mayor, Town of Manchester
Steve Werbner, General Manager, Town of Manchester
Thomas R. O'Marra, Zoning Enforcement Officer, Town of Manchester
The Honorable Nicholas H. Mullane, II, First Selectman, Town of North Stonington
Craig Grimord, Senior Planning and Zoning Official, Town of North Stonington
The Honorable Robert J. Chatfield, Mayor, Town of Prospect
William J. Donovan, Zoning Enforcement Officer, Town of Prospect
The Honorable Thomas E. Vincent, First Selectman, Town of Simsbury
John Loomis, Chairman of the Planning Commission, Town of Simsbury
Christopher B. Fisher, Esq., Cuddy & Feder LLP
Thomas J. Regan, Esq., Brown Rudnick Berlack Israels, LLP
Kenneth C. Baldwin, Esq., Robinson & Cole LLP
Christine Farrell, T-Mobile Inc.
Jeffrey W. Barbadora, Crown Atlantic Company LLC
SBA Inc.
Ken Thomas, Wireless Solutions
Mariner Tower

# STATE OF CONNECTICUT

*CONNECTICUT SITING COUNCIL*

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
Internet: ct.gov/csc

*Daniel F. Caruso*
*Chairman*


July 16, 2007

The Honorable Patrick L. Tallarita
Mayor
Town of Enfield
820 Enfield Street
Enfield, CT 06082

RE: **EM-CING-049-077-102-115-128-070712** – New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at 1654 King Street, Enfield; 205 Spencer Street, Manchester; 273 Boombridge Road, North Stonington; 229 Cheshire Road, Prospect; and 225 Grist Mill Road, Simsbury, Connecticut.

Dear Mayor Tallarita:

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 July 26, 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 July 24, 2007.

Thank you for your cooperation and consideration.

Very truly yours,

S. Derek Phelps
Executive Director

SDP/lm

Enclosure: Notice of Intent

c: Jose Giner, Director of Planning and Community Development, Town of Enfield
Scott A. Shanley, Town Manager, Town of Enfield

EM-CING-049-077-102-115-128-070712

cingular raising the bar℠ The new at&t Your world. Delivered.

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

**Steven L. Levine**
Real Estate Consultant

HAND DELIVERED



July 12, 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 telecommunications facilities located in Enfield, Manchester, North Stonington, Prospect, and Simsbury

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**

1654 King Street, Enfield, CT
Former AT&T Wireless Cell Site
Local P&Z Approval; Town of Enfield B.P. 20426 dated 4/25/00

**Tower Owner/Manager:** Cingular

**Equipment configuration:** Monopole

**Current and/or approved:** Twelve Allgon 7184 antennas @ 148 ft c.l.
Twelve runs 1 5/8 inch coax

**Planned Modifications:** Remove all existing antennas
Install six Powerwave 7770 antennas at 148 ft c.l.
Install six TMA's and six diplexers @ 148 ft

**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 1.6 % 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 2.8 % of the standard.

| Company | Centerline Ht (feet) | Frequency (MHz) | Number of Channels | Power Per Channel (Watts) | Power Density ($mW/cm^2$) | Standard Limits ($mW/cm^2$) | Percent of Limit |
|---|---|---|---|---|---|---|---|
| Other Users | | | | | | | 0.00 |
| Cingular GSM | 148 | 1900 Band | 4 | 250 | 0.0164 | 1.0000 | 1.64 |
| Total | | | | | | | 1.6% |

**Proposed**

| Company | Centerline Ht (feet) | Frequency (MHz) | Number of Channels | Power Per Channel (Watts) | Power Density ($mW/cm^2$) | Standard Limits ($mW/cm^2$) | Percent of Limit |
|---|---|---|---|---|---|---|---|
| Other Users | | | | | | | 0.00 |
| Cingular UMTS | 148 | 880 - 894 | 1 | 500 | 0.0082 | 0.5867 | 1.40 |
| Cingular GSM | 148 | 1900 Band | 2 | 427 | 0.0140 | 1.0000 | 1.40 |
| Total | | | | | | | 2.8% |

**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 7/11/07)

TOWN OF ENFIELD, CONNECTICUT BUILDING DEPARTMENT
820 ENFIELD STREET, ENFIELD , CONNECTICUT 06082
TELEPHONE (860) 253-6370, FAX (860) 253-6310

# BUILDING PERMIT

AMOUNT TENDERED: $1,799.00

SIGNED BY: RICHARD GILMAN

| | | |
|---|---|---|
| OFFICE COPY | DATE: 04/25/2000 | BUILDING PERMIT NO.: 20426 |
| TYPE OF PERMIT: BUSINESS & INDUSTRY | | REMARKS: SHELTERS FOR TELECOM |
| LOCATION: 1654 KING ST. | | |
| APPLICANT: RAY GAGNON | | |
| ADDRESS: 63-3 N. BRANFORD RD. | TOWN: BRANFORD, CT. | ZIP: 06405 |
| BETWEEN CROSS STREET: DEPOT HILL RD. | AND: MULLEN RD. | |
| ESTIMATED COST: $178,900.00 | PERMIT FEE: $1,799.00 | |
| OWNER: AT&T PCS WIRELESS | | |
| ADDRESS: 15 E. MIDLAND AVE. | | |
| TOWN: PARAMUS, N.J. | ZIP: 07652 | |
| CONTRACTOR: CONSTRUCTION SERVICES | | |
| ADDRESS: 63-3 NORTH BRANFORD RD | | |
| TOWN: BRANFORD CT | ZIP: 06405 | |

BUILDING IS TO BE;WIDE: 0 FT: LONG: 0 FT: EIGHT: 0 FT:

INSPECTION RECORD

| DATE | NOTE PROGRESS CORRECTIONS AND REMARKS | INSPECTOR | |
|---|---|---|---|
| | | | ADDRESS |
| | | | |
| | | | |
| | | | |
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**TOWN OF ENFIELD CONNECTICUT**
**BUILDING DEPARTMENT**

CERTIFICATE OF OCCUPANCY NO. 5096

Fee Paid: Prepaid Date Granted: Dec. 7, 20 00

This is to certify that the structure located at

No. 1654 King Street

as Constructed under Building Permit No. 20426

conforms substantially to the requirements of the Connecticut State Building Code, current edition, and is hereby approved for occupancy as indicated below.

USE GROUP _____ CONSTRUCTION TYPE _____

Sprinkler System Provided: Yes ____ No X , Required: Yes ____ No X

Hazard Classification N/A Required Aisle Widths _____

Sprinkler and/or Standpipe Demand N/A

Remarks AT&T PCS Wireless

NOTICE: Any change of extension of the use herein approved requires a new Certificate of Occupancy.

Richard E. Gilman
BUILDING OFFICIAL
Richard E. Gilman

MAR 9 7 2000

MALOUF ENGINEERING INTL., INC.

STRUCTURAL CONSULTANTS

July 11, 2007

Mr. Derek Creaser
**HUDSON DESIGN GROUP, LLC**
representing **AT&T**
46 Beechwood Drive
North Andover, MA 01845

| SUBJECT | **FEASIBILITY STRUCTURAL EVALUATION** | | | |
|---|---|---|---|---|
| Structure: | 150 ft **Monopole** | | Engineered Endeavors – 18-sided | |
| Client/ Site Name /#: | **Hudson D.G./ AT&T** | **5153 E. Windsor** | | **# 5153** |
| Owner/Site Name /#: | AT&T | 5153 E. Windsor | | # 5153 |
| MEI Project ID: | **CT00804M-07V0** | | | |
| Location: | 1654 King Street<br>Enfield, CT 06082 | | Hartford County<br>FCC # 1257423 | |
| | LAT | 41-56-44.9 N | LON | 72-36-20.2 W |

Malouf Engineering Int'l (MEI), as requested, has performed a feasibility structural evaluation of the above mentioned structure to assess the impact of the changed condition as noted below.

The structural evaluation performed used the following criteria:

| CODE / STANDARD | ANSI/TIA-222-F-96 Standard / IBC 2003 Code – CT Building Code | |
|---|---|---|
| LOADING CASES | *Full Wind*: | 80 Mph (with No Radial Ice) |
| | *Iced Case*: | 69 Mph + 0.50" Radial Ice |
| | *Service*: | 50 Mph |

Table 1: Proposed Changed Condition Appurtenances

| Elev (ft) | Tenant | Ants Qty | Appurtenance Model / Description | Mount Description | Lines Qty | Line size & Location |
|---|---|---|---|---|---|---|
| 148± * | AT&T | 6 | LGP 7770 Panels | [exist 14ft LP Platform w/o rails] | [12] | [1-5/8"-(I)] [exist] |
| | | 6 | LGP21401 TMA's | | | |
| | | 6 | LGP 13519 Diplexers | | | |

* Note: Existing (12) panel antennas & TMA's are to be removed and replaced with above.

Table 2: Original Design Appurtenances

| Elev (ft) | Tenant | Ants Qty | Appurtenance Model / Description | Mount Description | Lines Qty | Line size & Location |
|---|---|---|---|---|---|---|
| 150 | | 12 | DB 980 Directional Antennas | Low Profile Platform | | |
| 140 | | 12 | DB 980 Directional Antennas | Low Profile Platform | | |
| 130 | | 12 | DB 980 Directional Antennas | Low Profile Platform | | |
| 120 | | 12 | DB 980 Directional Antennas | Low Profile Platform | | |

(I) = internal; (E) = External - as per TIA-222

The information used as source data to represent the existing structure and the related appurtenances is as follows:

| Structure & Current Appurtenances | Structure data and design appurtenances loading as per original design data by EEI, ref. # 5819, dated 11/06/99 – Tower designed for *Max. Stress at 77%.* |
|---|---|
| Changed Condition | As per AT&T /Cingular Wireless RF approval email, dated 04/30/07, Supplied by Hudson Design Group, LLC on 07/03/07. |

The subject structure is evaluated for the feasibility of the installation of the proposed changed condition previously noted. The data records furnished were reviewed and the appurtenances loading was evaluated (no computer analysis performed, only relative loading magnitude comparison), in accordance with the TIA-222 Standard provisions and with the agreed limited scope of work terms and the results of this feasibility evaluation are reported. This evaluation 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 of its accuracy. This existing structure is assumed, for the purpose of this evaluation, to have been properly maintained and to be in good condition with no structural defects and with no deterioration to its capacity ('as-new').

Based on the feasibility structural evaluation of the data provided, the subject structure, including foundation, would meet the minimum requirements of ANSI/TIA 222-F Standard for the proposed changed condition as stated above when considering the structure to have been properly designed for the stated appurtenances. The proposed loading would stress the structure less than the original design.

Therefore, **the installation of the noted proposed changed condition is structurally acceptable** on this existing structure in accordance with the ANSI/TIA **222-F** Standard for the loading considered under the criteria listed and referenced.

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

Respectfully submitted,

MALOUF ENGINEERING INT'L, INC.


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

**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 12, 2007

Matthew Coppler, Town Manager
Town of Enfield
Town Hall 820 Enfield St.
Enfield, CT 06082-2997

Re: Telecommunications Facility – 1654 King Street, Enfield

Dear Mr. Coppler:

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

**CINGULAR WIRELESS**
**Equipment Modification**

205 Spencer Street, Manchester, CT
Site Number 5245
Former AT&T cell site
CSC Exempt Modifications 5/10/01 and 10/23/02

**Tower Owner/Manager:** T-Mobile

**Equipment configuration:** Flagpole

**Current and/or approved:** Three Allgon 7183 antennas @ 98 ft c.l.
Six runs 1 ¼ inch coax
Five outdoor cabinets on existing pad

**Planned Modifications:** Remove all three existing antennas
Install three Powerwave 7770 antennas @ 98 ft c.l.
Install six TMA's @ 98 ft
Install two additional outdoor cabinets on existing pad

**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 13.2 % of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density following proposed modifications would be approximately 15.3 % of the standard.

**Existing**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Other Users * | | | | | | | 5.93 |
| Cingular GSM * | 99 | 1900 Band | 8 | 110 | 0.0323 | 1.0000 | 3.23 |
| Cingular GSM * | 99 | 1900 Band | 4 | 275 | 0.0404 | 1.0000 | 4.04 |
| **Total** | | | | | | | **13.2%** |

* Per CSC Records

**Proposed**

| Company | Centerline Ht (feet) | Frequency (MHz) | Number of Channels | Power Per Channel (Watts) | Power Density ($mW/cm^2$) | Standard Limits ($mW/cm^2$) | Percent of Limit |
|---|---|---|---|---|---|---|---|
| Other Users * | | | | | | | 5.93 |
| Cingular GSM | 98 | 1900 Band | 3 | 550 | 0.0618 | 1.0000 | 6.18 |
| Cingular UMTS | 98 | 880 - 894 | 1 | 500 | 0.0187 | 0.5867 | 3.19 |
| **Total** | | | | | | | **15.3%** |

* Per CSC Records

**Structural information:**

The attached structural analysis demonstrates that the tower and foundation have adequate structural capacity to accommodate the proposed modifications. (Semaan Engineering Solutions, dated 7/5/07)

**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 12, 2007

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

Re: Telecommunications Facility – 205 Spencer Street, Manchester, CT

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

Enclosure

1079 N. 204th Avenue
Elkhorn, NE 68022
Ph: 402-289-1888
Fax: 402-289-1861

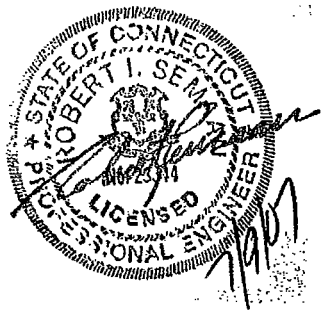
**SEMAAN ENGINEERING SOLUTIONS**

# 125 ft FWT Flag Pole
# Structural Analysis

APPROVED - 7/11/07
T-Mobile Tower Asset Mgt

**Prepared for:**
**T-Mobile USA**
**12920 SE 38th Street**
**Bellevue, WA 98006**

**Site: CT11138F / Manchester / Cingular #5245**
**Manchester, CT**




RECEIVED
JUL 10 2007

**July 5, 2007**

Ms. Lisa Hamedian
T-Mobile USA
12920 SE 38th Street
Bellevue, WA 98006

***Re: Site Number CT11138F – Manchester, CT.***

Dear Ms. Hamedian:

We have completed the structural analysis for the existing monopole, located at the above referenced site. The purpose of this analysis is to determine that the existing monopole design is in conformance with the TIA/EIA-222 Rev F standard and local building codes for the proposed antennae loads installation. Refer to the Review and Recommendations section at the end of this report for the analysis results.

**Description of Structure:**

The structure is a 125 ft FWT Flag pole.

Refer to FWT drawing job #17252 dated March 9, 1998 for a detailed description of the structure.

**Method of analysis:**

The tower was analyzed using Semaan Engineering Solutions' software suite for communication structures. The structural analysis is performed using the SAPS finite element engine. The method is 3D, non-linear, which accounts for the second order geometric effects due to the displacements. It also treats guys as exact cable elements and therefore is ideal for guyed towers. The analysis was performed in conformance with **TIA/EIA-222 Rev F and local building codes for a basic wind speed of 80 mph and 1/2" radial ice with reduced wind speed (fastest mile)**. This wind speed is equivalent to a 100 mph 3-second gust per the IBC 2003. This is in conformance with the IBC 2003: Section 1609.1.1, Exception (5) and Section 3108.4. Wind is applied to the structure, accessories and antennas.

**Structure loading:**

The following loads were used in the tower analysis:

| Elev (ft) | Qty | Antennas | Mounts | Coax | Carrier |
|---|---|---|---|---|---|
| 122.0 | 1 | 12' X 18' Flag | | | |
| 118.0 | 3 | S20045A1 LNA | Inside canister | (12) 1 5/8" | T-Mobile |
| | 3 | RR90-17-02NP | | | |
| 108.0 | 3 | S20045A1 LNA | Inside canister | (12) 1 5/8" | |
| | 3 | RR90-17-02NP | | | |
| 98.4 | 3 | Allgon 7770 | Inside canister | (6) 1 5/8" | Cingular |

Proposed Loads:

| Elev (ft) | Qty | Antennas | Mounts | Coax | Carrier |
|---|---|---|---|---|---|
| 98.4 | 6 | 21401 TMA | Inside canister | Existing (6) 1 5/8" | Cingular |

**All new access holes shall be reinforced with welded rims that are compatible with the pole and to be sized and supplied by pole manufacturer.**
**All transmission lines are assumed running inside of pole shaft.**

**Results of Analysis:**

Refer to the attached Computer Summary sheets for detailed analysis results.

**Structure:**

The existing monopole is structurally capable of supporting the existing and proposed antennas. The maximum structure usage is: 70.9%.

**Foundation:**

| Pole Reactions | Original Design Reactions | Current Analysis Reactions | % Of Design |
|---|---|---|---|
| Moment (ft-kips) | 706.00 | 573.09 | 81.2 |
| Shear (kips) | 9.10 | 7.85 | 86.3 |

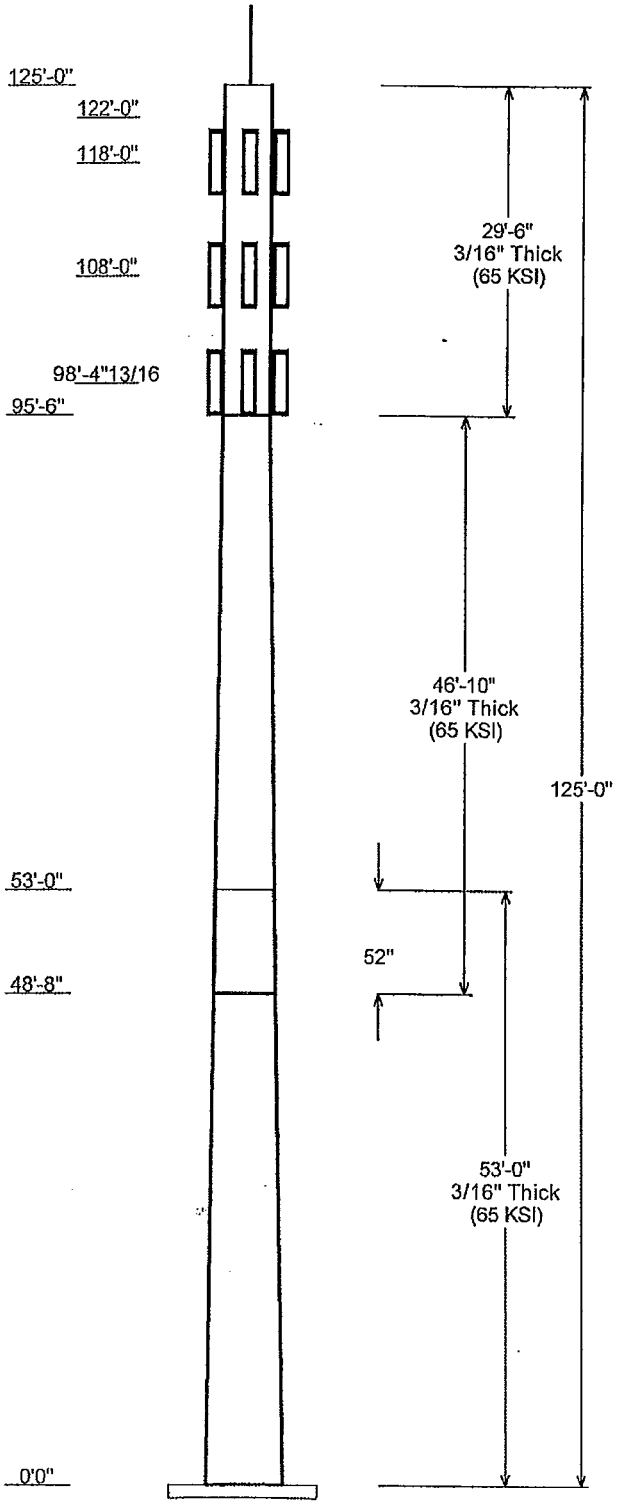
The analysis reactions are less than the design reactions therefore no foundation modifications are required.

**Review and Recommendations:**

Based on the analysis results, the existing structure meets the requirements per the TIA/EIA-222 Rev F standards for a basic wind speed of 80 mph and 1/2" radial ice with reduced wind speed. This wind speed is equivalent to a 100 mph 3-second gust.

**SEMAAN ENGINEERING SOLUTIONS**
1079 N.204th Avenue
Elkhorn, NE 68022
Phone: 402-289-1888
Fax: 402-289-1861






## Job Information

| | |
|---|---|
| Pole: | CT11138F |
| Code: | TIA/EIA-222 Rev F |
| Description: | |
| Client: | T-Mobile USA-WA |
| Location: | Manchester, CT |
| Shape: | 18 Sides |
| Base Elev (ft): | 0.00 |
| Height: | 125.00 (ft) |
| Taper: | 0.150000(in/ft) |

## Sections Properties

| Shaft Section | Length (ft) | Diameter (in) Accross Flats Top | Bottom | Thick (in) | Joint Type | Overlap Length (in) | Taper (in/ft) | Steel Grade (ksi) |
|---|---|---|---|---|---|---|---|---|
| 1 | 53.000 | 32.00 | 39.95 | 0.188 | | 0.000 | 0.150000 | 65 |
| 2 | 46.833 | 26.00 | 33.02 | 0.188 | Slip Joint | 52.000 | 0.150000 | 65 |
| 3 | 29.500 | 24.00 | 24.00 | 0.188 | Butt Joint | 0.000 | 0.000000 | 65 |

## Discrete Appurtenance

| Attach Elev (ft) | Force Elev (ft) | Qty | Description |
|---|---|---|---|
| 125.000 | 128.000 | 1 | 3/4" Lightning Rod |
| 125.000 | 125.000 | 1 | Flag Ball &Pulley & Cord |
| 122.000 | 122.000 | 1 | 12' x 18' Flag |
| 118.000 | 118.000 | 3 | S20045A1 LNA |
| 118.000 | 118.000 | 3 | RR90-17-02NP |
| 108.000 | 108.000 | 3 | S20045A1 LNA |
| 108.000 | 108.000 | 3 | RR90-17-02NP |
| 98.400 | 98.400 | 6 | 21401 TMA |
| 98.400 | 98.400 | 3 | Allgon 7770 |

## Linear Appurtenance

| Elev (ft) From | To | Description | Exposed To Wind |
|---|---|---|---|
| 0.000 | 98.400 | 1 5/8" Coax | No |
| 0.000 | 108.0 | 1 5/8" Coax | No |
| 0.000 | 118.0 | 1 5/8" Coax | No |

## Load Cases

| | |
|---|---|
| No Ice | 80.00 mph Wind with No Ice |
| Ice | 69.28 mph Wind with Ice |

## Reactions

| Load Case | Moment (Kip-ft) | Shear (Kips) | Axial (Kips) |
|---|---|---|---|
| No Ice | 573.09 | 7.85 | 11.84 |
| Ice | 535.60 | 6.75 | 15.00 |

**CINGULAR WIRELESS**
**Equipment Modification**

273 Boombridge Road, North Stonington, CT
Site Number 2167
Exempt Modifications 1/23/96 and 9/25/02

**Tower Owner/Manager:** Wireless Solutions

**Equipment configuration:** Guyed Lattice Tower

**Current and/or approved:**

**Sectors 2 & 3** – facing Connecticut
Six CSS DUO1417 antennas @ 180 ft c.l.
Six runs 1¼ inch coax
Four TMA's @ 180 ft

**Sector 1** – facing Rhode Island
Four ALP 3-9011 antennas @ 180 ft c.l.
Four runs 1¼ inch coax

**Planned Modifications:**

**Sectors 2 & 3** – facing Connecticut
Remove two CSS antennas
Install two Powerwave 7770 antennas @ 180 ft c.l.
Install four diplexers @ 180 ft
Install two additional runs 1¼ inch coax (total of 8)

**Sector 1** – facing Rhode Island
Remove three ALP antennas
Install two Powerwave 7770 antennas @ 180 ft c.l.
Install two TMA's & two diplexers @ 180 ft
Remove all four runs 1¼ inch coax
Install four runs 1 5/8 inch coax

**Power Density:**

Worst-case calculations for existing wireless operations at the site indicate a radio frequency electromagnetic radiation power density, measured at ground level beside the tower, of approximately 18.6 % 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 16.5 % of the standard.

## Existing

| Company | Centerline Ht (feet) | Frequency (MHz) | Number of Channels | Power Per Channel (Watts) | Power Density ($mW/cm^2$) | Standard Limits ($mW/cm^2$) | Percent of Limit |
|---|---|---|---|---|---|---|---|
| Other Users * | | | | | | | 13.53 |
| Cingular TDMA * | 180 | 880 - 894 | 16 | 100 | 0.0178 | 0.5867 | 3.03 |
| Cingular GSM * | 180 | 880 - 894 | 2 | 296 | 0.0066 | 0.5867 | 1.12 |
| Cingular GSM * | 180 | 1900 Band | 2 | 427 | 0.0095 | 1.0000 | 0.95 |
| Total: | | | | | | | 18.6% |

* Per CSC Records

## Proposed

| Company | Centerline Ht (feet) | Frequency (MHz) | Number of Channels | Power Per Channel (Watts) | Power Density ($mW/cm^2$) | Standard Limits ($mW/cm^2$) | Percent of Limit |
|---|---|---|---|---|---|---|---|
| Other Users * | | | | | | | 13.53 |
| Cingular UMTS | 180 | 880 - 894 | 1 | 500 | 0.0055 | 0.5867 | 0.95 |
| Cingular GSM | 180 | 1900 Band | 2 | 427 | 0.0095 | 1.0000 | 0.95 |
| Cingular GSM | 180 | 880 - 894 | 2 | 296 | 0.0066 | 0.5867 | 1.12 |
| Total | | | | | | | 16.5% |

* Per CSC Records

**Structural information:**

The attached structural analysis demonstrates that the tower has sufficient structural capacity to accommodate the proposed modifications. (All-Points Technology Corp., dated 7/9/07)

# ALL-POINTS TECHNOLOGY CORPORATION, P.C.

July 9, 2007

Hudson Design Group, LLC
46 Beechwood Drive
North Andover, MA 01845

Attn: Derek Creaser
Re: 180' Guyed Tower, Stonington, CT
Cingular Site #4049; North Stonington

Dear Derek,

All-Points Technology Corporation, P.C. (APT) evaluated the 180' guyed tower located at 273 Boombridge Road in Stonington, Connecticut for antenna changes proposed by Cingular Wireless. APT previously visited the tower site and performed a structural analysis for Verizon Wireless dated December 12, 2002; this evaluation also relied on information provided by others, which included recent tower photographs and antenna changes proposed by Cingular Wireless.

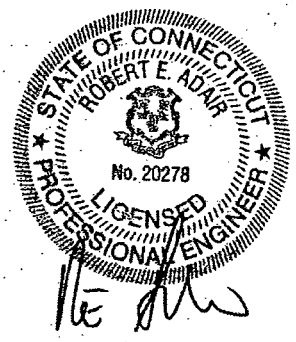
Cingular Wireless proposes to remove five existing panel antennas (two CSS DUO1417-8686 and three Swedcom ALP-E 9011) and replace them with four Powerwave 7770 panel antennas, two LGP 21401 tower-mounted amplifiers (TMAs), six LGP 13519 diplexers, and two additional 1-1/4" lines. Three 1-1/4" feed lines will be replaced with four 1-5/8" lines. Six existing 1-1/4" feed lines and four existing TMAs will remain in place. APT recommends all new feed lines be installed in a stacked or bundled arrangement.

My evaluation indicates that the tower is capable of supporting Cingular's proposed antenna changes and associated appurtenances. The proposed changes represent an insignificant change in wind and dead loads on the structure compared to current loads. The structural capacity of the tower will not be diminished due to Cingular's proposed changes.

Please call if you have any questions.

Sincerely,
**All-Points Technology Corporation, P.C.**

Robert E. Adair, P.E.
Principal




CT198320 North Stonington ltr 7-9-07.doc

☐ 3 SADDLEBROOK DRIVE • KILLINGWORTH, CONNECTICUT 06419 • PHONE: 860-663-1697 • FAX: 860-663-0935
☑ 150 OLD WESTSIDE ROAD • NORTH CONWAY, NEW HAMPSHIRE 03860 • PHONE/FAX: 603-356-5214


The new  at&t
Your world. Delivered.

**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 12, 2007

Honorable Nicholas H. Mullane II
1st Selectman, Town of North Stonington
Town Hall 40 Main St.
North Stonington, CT 06359

Re: Telecommunications Facility – 273 Boombridge Road, North Stonington

Dear Mr. Mullane:

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

**CINGULAR WIRELESS**
**Equipment Modification**

229 Cheshire Road, Prospect, CT
Site Number 2219
Exempt Modifications 9/28/98 and 8/1/02

**Tower Owner/Manager:** SBA

**Equipment configuration:** Monopole

**Current and/or approved:** Nine CSS DUO1417 antennas @ 117 ft c.l.
Nine runs 1 5/8 inch coax
Six TMA's @ 117 ft

**Planned Modifications:** Remove three existing antennas
Install three Powerwave 7770 antennas @ 117 ft c.l.
Install three runs 1 5/8 inch coax (total of 12)
Install three diplexers @ 117 ft

**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 19.7 % 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 21.2 % of the standard.

**Existing / Approved**

| Company | Centerline Ht (feet) | Frequency (MHz) | Number of Channels | Power Per Channel (Watts) | Power Density ($mW/cm^2$) | Standard Limits ($mW/cm^2$) | Percent of Limit |
|---|---|---|---|---|---|---|---|
| Other Users * | | | | | | | 14.84 |
| Cingular GSM * | 117 | 880 - 894 | 2 | 296 | 0.0155 | 0.5867 | 2.65 |
| Cingular GSM * | 117 | 1900 Band | 2 | 427 | 0.0224 | 1.0000 | 2.24 |
| Total | | | | | | | 19.7% |

* Per CSC records.

**Proposed**

| Company | Centerline Ht (feet) | Frequency (MHz) | Number of Channels | Power Per Channel (Watts) | Power Density ($mW/cm^2$) | Standard Limits ($mW/cm^2$) | Percent of Limit |
|---|---|---|---|---|---|---|---|
| Other Users * | | | | | | | 14.84 |
| Cingular GSM | 117 | 880 - 894 | 2 | 296 | 0.0155 | 0.5867 | 2.65 |
| Cingular GSM | 117 | 1900 Band | 1 | 550 | 0.0144 | 1.0000 | 1.44 |
| Cingular UMTS | 117 | 880 - 894 | 1 | 500 | 0.0131 | 0.5867 | 2.24 |
| Total | | | | | | | 21.2% |

* Per CSC records.

## Structural information:

The attached structural analysis demonstrates that the tower and foundation have adequate structural capacity to accommodate the proposed modifications. (FDH Engineering, dated 7/6/07)

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 12, 2007

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

Re: Telecommunications Facility – 229 Cheshire 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

# Structural Analysis for SBA Network Services

## 162' Monopole

**Site Name: East Prospect, CT**
**Site ID: CT02694-B**

#2219

FDH Project Number 07-0704E

Prepared By:

Brent McLain
Project Engineer

Reviewed By:

J. Darrin Holt, PhD, PE
Vice President
CT PE License No. 22988

**FDH Engineering, Inc.**
PO Box 99556
Raleigh, NC 27615
(919)-755-1012
info@fdh-inc.com

July 6, 2007

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

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Conclusions
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2730 Rowland Rd., Suite 100 Raleigh, NC 27615 Ph: (919)-755-1012 Fax: (919)-755-1031 info@fdh-inc.com

## EXECUTIVE SUMMARY

At the request of SBA Network Services, FDH Engineering performed a structural analysis of the monopole located in Prospect, CT to determine whether the tower is structurally adequate to support both 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

- Engineered Endeavors, Inc. (Job No. 13588) original design drawings dated September 20, 2005,
- FDH, Inc. (Project No.05-09107E) modification drawings dated September 30, 2005,
- FDH, Inc. (Project No. 06-08154E) structural analysis dated September 6, 2006,
- 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. However, local building code stipulates that structures shall be designed to withstand a minimum design *3-second gust* wind speed of 110 MPH, which is equivalent to a 90 MPH *fastest mile* wind speed. As such, a wind speed of 90 MPH without ice and 78 MPH with ½" radial ice was used in this analysis.

Note: Analysis performed without additional capacity from shaft reinforcement.

### Conclusions

With the existing and proposed antennas from New AT&T in place at 117 ft., the tower meets the requirements of the *TIA/EIA-222-F* standards. Furthermore, provided the foundation was constructed per the original foundation drawings (see EEI Drawing No. S5816-150), 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, existing and proposed antenna loading) and that the tower will be properly erected and maintained per the original design drawings.

### 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 lines should be installed inside the monopole shaft.



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## APPURTENANCE LISTING

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

### Table 1 – Appurtenance Loading

### Existing Loading:

| No. | Centerline Elevation (ft) | Coax and Lines[1] | Carrier | Mount Type | Description |
|---|---|---|---|---|---|
| 1-3 | 160 | (12) 1-5/8 | T-Mobile | 5' Standoff | (3) 54" x 12" x 7" Panels<br>(6) TMAs |
| 4-9 | 147 | (6) 1-5/8" | Sprint | 13' Low Profile Platforms | (6) Decibel DB980H90 |
| 10-21 | 137 | (12) 1-5/8" | Verizon | 13' Low Profile Platform | (6) Antel LPA-80063/4CF<br>(6) Antel LPA-80063/8CF |
| 22-33 | 117 | (12) 1-5/8"[2] | New AT&T | 13' Low Profile Platform | (12) CSS DUO1417-8686-4D |

1 The existing coax is located inside the pole's shaft, unless otherwise noted.
2 New AT&T's existing loading will be altered. See proposed loading below for details

### Proposed Loading:

| No. | Centerline Elevation (ft) | Coax and Lines | Carrier | Mount Type | Description |
|---|---|---|---|---|---|
| 1-12 | 117 | (12) 1-5/8" | New AT&T | 13' Low Profile Platform | (9) CSS DUO1417-8686-4D<br>(3) Powerwave 7770<br>(6) TMAs<br>(3) Combiners<br>(3) Diplexers |

1 This represents the full loading at 117'. According to information provided at SBA, New AT&T will remove (3) CSS DUO1417-8686-4D and replace them with (3) Powerwave 7770 antennas, (6) TMAs, (3) Combiners, and (3) Diplexors at 117 ft. The full loading is (12) antennas, (6) TMAs, (3) Combiners, (3) Diplexors, and (12) coax at 117 ft.



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## 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 | 50 & 65 ksi |
| Base Plate | 60 ksi |
| Anchor Bolts | 75 ksi |

**Table 3** displays the ratio (as a percentage) of actual force in the member to their capacities. Values greater than 100% indicate locations where the maximum force in the member exceeds its 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 | 162 - 150 | TP12.75x12.75x0.375 | 19.3 | Pass |
| L2 | 150 - 111.04 | TP27.13x12.75x0.1875 | 75.5 | Pass |
| L3 | 111.04 - 75.8975 | TP33.37x25.5785x0.25 | 97.4 | Pass |
| L4 | 75.8975 - 39.8612 | TP39.47x32.2411x0.3125 | 96.1 | Pass |
| L5 | 39.8612 - 0 | TP47x38.2374x0.375 | 90.7 | Pass |
| | | Anchor Bolts | OK | Pass |
| | | Base Plate | OK | Pass |

### Table 4 – Maximum Base Reactions

| Base Reactions | Design Analysis Reactions | Current Analysis Reactions |
|---|---|---|
| Axial | 24 k | 29 k |
| Shear | 22 k | 23 k |
| Moment | 2,334 k-ft | 2,406 k-ft |



2730 Rowland Rd., Suite 100 Raleigh, NC 27615 Ph: (919)-755-1012 Fax: (919)-755-1031 info@fdh-inc.com

## GENERAL COMMENTS

This engineering analysis is based upon the theoretical capacity of the structure. It is not a condition assessment of the tower and its foundation. It is the responsibility of SBA Network Services 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.

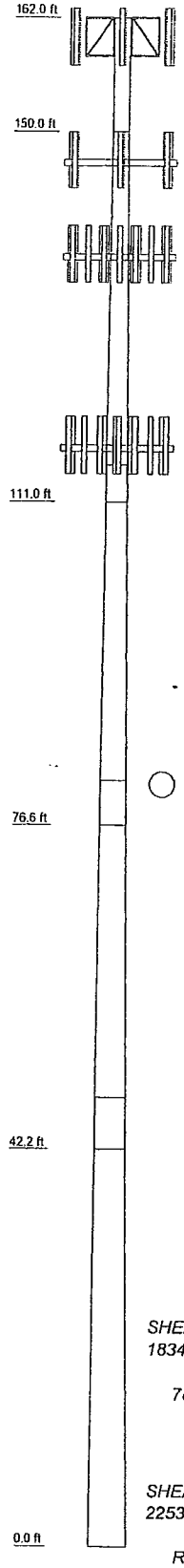
## LIMITATIONS

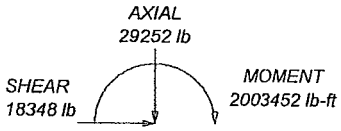
All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of this report. All opinions and conclusions are subject to revision based upon receipt of new or additional/updated information. All services are provided 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.



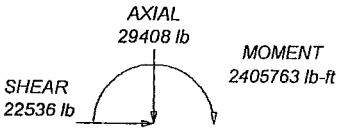
2730 Rowland Rd., Suite 100 Raleigh, NC 27615 Ph: (919)-755-1012 Fax: (919)-755-1031 info@fdh-inc.com

| Section | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Length (ft) | 12.00 | 38.96 | 38.33 | 39.13 | 47.75 |
| Number of Sides | 1 | 18 | 18 | 18 | 18 |
| Thickness (in) | 0.3750 | 0.1875 | 0.2500 | 0.3125 | 0.3750 |
| Lap Splice (ft) | | 3.92 | 4.75 | 5.50 | |
| Top Dia (in) | 19.4900 | 19.4900 | 25.9869 | 31.9551 | 37.7887 |
| Bot Dia (in) | 19.4900 | 27.1300 | 33.3700 | 39.4700 | 47.0000 |
| Grade | A572-65 | | | | |
| Weight (lb) 18590.1 | 919.1 | 1824.3 | 3045.7 | 4675.2 | 8125.8 |




78 mph WIND - 0.5000 in ICE




REACTIONS - 90 mph WIND

## DESIGNED APPURTENANCE LOADING

| TYPE | ELEVATION | TYPE | ELEVATION |
|---|---|---|---|
| 54" x 12" x 7" | 160 | (2) LPA-80063/4CF | 137 |
| 54" x 12" x 7" | 160 | (2) LPA-185063/8CF | 137 |
| 54" x 12" x 7" | 160 | (2) LPA-185063/8CF | 137 |
| 5' Standoff | 160 | (2) LPA-185063/8CF | 137 |
| 5' Standoff | 160 | (2) LPA-80063/4CF | 137 |
| 5' Standoff | 160 | (3) DUO1417-8686-4D | 117 |
| (6) TMA | 160 | 7770 | 117 |
| (2) DB980H90 | 147 | 7770 | 117 |
| (2) DB980H90 | 147 | PiROD 13' Low Profile Platform | 117 |
| (2) DB980H90 | 147 | 7770 | 117 |
| PiROD 13' Low Profile Platform | 147 | (3) DUO1417-8686-4D | 117 |
| PiROD 13' Low Profile Platform | 137 | (3) DUO1417-8686-4D | 117 |
| (2) LPA-80063/4CF | 137 | (6) TMA | 117 |

## MATERIAL STRENGTH

| GRADE | YIELD | GRADE | YIELD |
|---|---|---|---|
| A572-65 | 65 ksi | | |

## TOWER DESIGN NOTES

1. Tower designed for a 90 mph basic wind in accordance with the TIA/EIA-222-F Standard.
2. Tower is also designed for a 78 mph basic wind with 0.50 in ice.
3. Deflections are based upon a 60 mph wind.
4. Modification were not considered in the analysis, but wind area was calculated.
5. Tower extension shown for wind loads only. Actual extension is 12.75" OD x 0.375" thick
6. Anchor Bolt: (12) 2.25" Dia. A615 GR. 75 w/ BC = 56"
7. Base Plate: 1.75" x 62" A572 GR. 60
8. TOWER RATING: 97.4%


FDH Engineering, Inc.
2730 Rowland Road
Raleigh, North Carolina
Phone: (919)755-1012
FAX: (919)755-3031
Tower Analysis


| | | |
|---|---|---|
| Job: (Site ID: CT02694-B) East Prospect, CT | | |
| Project: 07-0704 | | |
| Client: SBA | Drawn by: Brent McLain | App'd: |
| Code: TIA/EIA-222-F | Date: 07/10/07 | Scale: NTS |
| Path: | | Dwg No. E-1 |

**CINGULAR WIRELESS**
**Equipment Modification**

225 Grist Mill Road, Simsbury, CT
Site Number 1151
Docket 203 approved 11/7/01

**Tower Owner/Manager:** Mariner Tower

**Equipment configuration:** Monopole

**Current and/or approved:** Nine CSS DUO1417 antennas @ 150 ft c.l.
Nine runs 1 5/8 inch coax
Six TMA's

**Planned Modifications:** Remove three existing antennas
Install three Powerwave 7770 antennas @ 150 ft c.l.
Install three additional runs 1 5/8 inch coax (total of 12)
Install three diplexers @ 150 ft

**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 14.5 % 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 13 % of the standard.

**Existing**

| Company | Centerline Ht (feet) | Frequency (MHz) | Number of Channels | Power Per Channel (Watts) | Power Density ($mW/cm^2$) | Standard Limits ($mW/cm^2$) | Percent of Limit |
|---|---|---|---|---|---|---|---|
| Other Users * | | | | | | | 9.37 |
| Cingular TDMA * | 150 | 880 - 894 | 19 | 100 | 0.0304 | 0.5867 | 5.18 |
| Total | | | | | | | 14.5% |

* Per CSC Records

**Proposed**

| Company | Centerline Ht (feet) | Frequency (MHz) | Number of Channels | Power Per Channel (Watts) | Power Density ($mW/cm^2$) | Standard Limits ($mW/cm^2$) | Percent of Limit |
|---|---|---|---|---|---|---|---|
| Other Users * | | | | | | | 9.37 |
| Cingular GSM | 150 | 880 - 894 | 2 | 296 | 0.0095 | 0.5867 | 1.61 |
| Cingular GSM | 150 | 1900 Band | 1 | 427 | 0.0068 | 1.0000 | 0.68 |
| Cingular UMTS | 150 | 880 - 894 | 1 | 500 | 0.0080 | 0.5867 | 1.36 |
| Total | | | | | | | 13.0% |

* Per CSC Records

## Structural information:

The attached structural analysis demonstrates that the tower and foundation have sufficient structural capacity to accommodate the proposed modifications. (FDH Engineering, dated 7/8/07)

FDH Engineering, Inc., 2730 Rowland Rd., Suite 100, Raleigh, NC 27615, Ph. 919.755.1012, Fax 919.755.1031

July 8, 2007

Mr. Mark Luther
SBA Network Services, Inc.
800 S. Washington Ave.
Scranton, PA 18505

RE: 150' Monopole (Extendable to 190')
Site Name: Simsbury 2
SBA Site ID: CT10022-A
FDH Project Number: 07-0713E

Dear Mark:

Per your request, FDH Engineering, Inc. has reviewed the original manufacturer's drawings and the proposed loading for the 150' monopole located in Simsbury, CT. The original design configuration by Rohn Industries (File No. 50754AE dated February 13, 2002) stipulates the tower was designed to accommodate the appurtenance loading outlined in **Table 1** on the following page.

The load resulting from the current configuration (see **Table 2**) combined with Cingular's proposed (3) Powerwave 7770 antennas, (6) Combiners, and (3) Diplexers with a centerline elevation at 151 ft. and corresponding (3) 1-5/8" coax lines (see **Table 3**) will be below that of the original design loading. Furthermore, provided the tower foundation was constructed to support the tower's original design loading, the foundation should meet *TIA-EIA-222-F* standards with both the proposed and existing appurtenances in place. The proposed coax should be installed inside the pole's shaft.

Our assessment has been made assuming all information provided to FDH Engineering is accurate and that the tower as been properly erected and maintained.

In conclusion, the Cingular installation should meet or exceed all applicable standards and should therefore be considered safe. Should you require additional information, please do not hesitate to contact our office.

Sincerely,

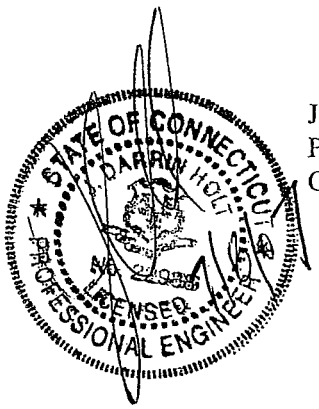
Jeremy D. Piner

Jeremy D. Piner, EI
Senior Project Engineer

Reviewed By:

J. Darrin Holt

J. Darrin Holt, Ph.D., P.E.
President
CT PE License No. 22988



## Table 1 – Design Appurtenance Loading

| No. | Centerline Elevation (ft) | Coax and Lines | Description |
|---|---|---|---|
| 1-12 | 190 | (12) 1-5/8" | (12) MD-16-90 Panels on 12' Platform |
| 13-24 | 180 | (12) 1-5/8" | (12) MD-16-90 Panels on 12' Platform |
| 25-36 | 170 | (12) 1-5/8" | (12) MD-16-90 Panels on 12' Platform |
| 37-48 | 160 | (12) 1-5/8" | (12) MD-16-90 Panels on 12' Platform |
| 49-60 | 150 | (12) 1-5/8" | (12) MD-16-90 Panels on 12' Platform |
| 61-72 | 140 | (12) 1-5/8" | (12) MD-16-90 Panels on 12' Platform |
| 73-84 | 130 | (12) 1-5/8" | (12) MD-16-90 Panels on 12' Platform |
| 85-96 | 120 | (12) 1-5/8" | (12) MD-16-90 Panels on 12' Platform |

## Table 2 – Existing Appurtenance Loading

| No. | Centerline Elevation (ft) | Coax and Lines | Carrier | Description |
|---|---|---|---|---|
| --- | 153 | (1) 1/2" | Cingular | (1) GPS |
| 1-12 | 151 | (16) 1-5/8"[1,2] | Cingular | (12) CSS DUO4-8670<br>(8) TMAs<br>(3) Combiners |
| --- | 143 | (1) 7/8" | Verizon | (1) GPS |
| 13-24 | 141 | (12) 1-5/8" | Verizon | (6) Antel WPA 80090/4<br>(6) Decibel DB948F85T2E-M |
| 25-30 | 123 | (6) 1-5/8" | Sprint | (6) Decibel DB950F85T2E-M |
| 31-42 | 111 | (12) 1-1/4" | Nextel | (12) Decibel DB844H90E-XY |

1 Currently, Cingular has (9) antennas, (6) TMAs, (3) Combiners, and (9) coax installed at 151 ft. According to information provided by SBA, Cingular may install up to (12) antennas, (8) TMAs, (3) Combiners, and (16) coax. Evaluation performed with total loading in place.

2 The loading for Cingular at 151 ft will be altered. See the proposed loading below

## Table 3 – Proposed Appurtenance Loading

| No. | Centerline Elevation (ft) | Coax and Lines | Carrier | Description |
|---|---|---|---|---|
| 1-12 | 151 | (16) 1-5/8"[1] | Cingular | (9) CSS DUO4-8670<br>(3) Powerwave 7770<br>(8) TMAs<br>(6) Combiners<br>(6) Diplexers |

1 This represents the total loading for Cingular at 151 ft. According to information provided by SBA, Cingular will remove (3) DUO4-8670 antennas and add (3) 7770 antennas, (3) Combiners, and (6) Diplexers to the existing loading at 151 ft.


The new  at&t
Your world. Delivered.

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500 Enterprise Drive
Rocky Hill, Connecticut 06067-3900
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**Steven L. Levine**
Real Estate Consultant

July 12, 2007

Honorable Thomas E. Vincent
1st Selectman, Town of Simsbury
Town Hall 933 Hopmeadow St.
Simsbury, CT 06070-1822

Re: Telecommunications Facility – 225 Gristmill Road, Simsbury

Dear Mr. Vincent:

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