

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

September 4, 2007

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

RE: EM-CING-011-076-146-070816 - New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at 8 Hoskins Road, Bloomfield; 136 New Road, Madison; and 777 Talcottville Road, Vernon, 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 Bloomfield tower be reinforced per the structural analysis report dated August 7, 2007 and sealed by Robert Adair, P.E. prior to the antenna swap and that a signed letter from a Professional Engineer is submitted to the Council to certify that the modifications have been properly completed.

The proposed modifications are to be implemented as specified here and in your notice dated August 16, 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.

F. Caura

Very truly yours,

Daniel F. Caruso Chairman

DFC/MP/cm

c: The Honorable Sydney Schulman, Mayor, Town of Bloomfield Thomas B. Hooper, Director of Planning, Town of Bloomfield The Honorable Thomas Scarpati, First Selectman, Town of Madison Marilyn M. Ozols, Planning and Zoning Administrator, Town of Madison The Honorable Ellen L. Marmer, Mayor, Town of Vernon Gene F. Bolles, Zoning Enforcement Officer, Town of Vernon Connecticut Light & Power American Tower

Design Services

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 17, 2007

The Honorable Thomas S. Scarpati First Selectman Town of Madison 8 Campus Drive Madison, CT 06443-2563

RE:

EM-CING-011-076-146-070816 - New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunication facilities located at 8 Hoskins Road, Bloomfield; 136 New Road, Madison; and 777 Talcottville Road, Vernon, Connecticut.

Dear Mr. Scarpati:

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.

Executive Director

SDP/cm

Enclosure: Notice of Intent

e: Marilyn M. Ozols, Planning & Zoning Administrator, Town of Madison



EM-CING-011-076-146-070816



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

August 16, 2007

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

Re: New Cingular Wireless PCS, LLC notice of intent to modify 3 existing telecommunications facilities located in Bloomfield, Madison, and Vernon

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**

8 Hoskins Road, Bloomfield, CT

Cell Site 1001

Docket 158; Exempt Modifications 5/6/93 and 10/23/02

Tower Owner/Manager:

Connecticut Light & Power

Equipment configuration:

Self-supporting Lattice Tower

Current and/or approved: Nine CSS DUO1417 antennas @ 155 ft c.l.

Nine runs 1 5/8 inch coax

Six TMA's

Planned Modifications:

Remove three existing antennas

Install three Powerwave 7770 antennas @ 155 ft c.l. Install three additional runs 1 5/8 inch coax (total of 12)

Install three diplexers @ 155 ft

We note a 6 ft discrepancy for Cingular centerline heights between Cingular and Council records (161 ft) and the attached 8/07 structural analysis (155 ft). The correct height is 155 ft, and this has been verified twice by our engineers climbing the tower and measuring the height. There was apparently an error during initial installation of the antennas, resulting in their being placed 6 feet lower than intended. Cingular's plan is to leave the antennas at 155 ft rather than move them to 161 ft.

Decommissioning of AT&T Installation

Notice of decommissioning of the former AT&T installation at this site will be forthcoming under separate cover.

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 30.7 % 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 27 % of the standard.

Existing

| Company | Centerline Ht (feet) | Frequency (MHz) | Number of Channels | Power Per Channel (Watts) | Power Density (mW/cm²) | Standard Limits (mW/cm²) | Percent of Limit |
|-----------------|-------------------------|----------------------|-----------------------|---------------------------------|---------------------------|--------------------------------|---------------------|
| Other Users * | | | | | | 15.7 | 24.30 |
| Cingular TDMA * | 161 | 880 - 894 | 16 | 100 | 0.0222 | 0.5867 | 3.78 |
| Cingular GSM * | 161 | 880 -8 94 | 2 | 296 | 0.0082 | 0.5867 | 1.40 |
| Cingular GSM * | 161 | <u> 193</u> 0 - 1970 | 2 | 427 | 0.0118 | 1.0000 | 1.18 |
| i ibidi | | | | | | | |

^{*} Per CSC Records

Proposed

| Company | Centerline Ht (feet) | Frequency (MHz) | Number of Channels | Power Per Channel (Watts) | Power Density (mW/cm²) | Standard Limits (mW/cm²) | Percent of Limit |
|----------------|-------------------------|--------------------|-----------------------|---------------------------------|---------------------------|--------------------------------|---------------------|
| Other Users * | | | | | | | 24.30 |
| Cingular GSM | 155 | 880 - 894 | 1 | 296 | 0.0044 | 0.5867 | 0.76 |
| Cingular GSM | 155 | 1900 Band | 1 | 427 | 0.0064 | 1.0000 | 0.64 |
| Cingular UMTS | 155 | 880 - 894 | 1 | 500 | 0.0075 | 0.5867 | 1.28 |
| eezeeumale (*) | | | | | | ar do no processor | |

^{*} Per CSC Records

Structural information:

The attached structural analysis demonstrates that the tower and foundation will be structurally adequate to accommodate the proposed modifications once minor structural improvements are completed. (All-Points Technology Corp., dated 8/7/07)

Design plans for recommended structural work have been ordered and will be implemented prior to proposed modifications to tower loading. Cingular respectfully requests a 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

August 16, 2007

Honorable Robert F. Burbank

1st Selectman, Town of Bloomfield
Town Office Bldg. 17 School Rd.
Bloomfield, CT 06232-1526

Re: Telecommunications Facility - 8 Hoskins Road, Bloomfield

Dear Mr. Burbank:

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.

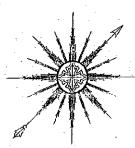
As required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review Cingular's proposal. Please accept this letter as notification under Section 16-50j-73 of construction which constitutes an exempt modification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



ALL-POINTS TECHNOLOGY CORPORATION, P.C.

STRUCTURAL ANALYSIS REPORT 180' SELF-SUPPORTING TOWER BLOOMFIELD, CONNECTICUT

Prepared for Hudson Design Group, LLC

Cingular Site #1001

August 7, 2007



APT Project #CT198360

STRUCTURAL ANALYSIS REPORT 180' SELF-SUPPORTING TOWER BLOOMFIELD, CONNECTICUT prepared for Hudson Design Group

EXECUTIVE SUMMARY:

All-Points Technology Corporation, P.C. (APT) performed a structural analysis of this 180-foot self-supporting tower. The analysis was performed for antenna changes proposed by Cingular Wireless consisting of removal of three of their nine existing CSS DUO1417-8686 panel antennas and replacement with three Powerwave 7770.00 panels and three small LGP13519 diplexers. Three additional 1-5/8" waveguide cables are to be installed, assumed to be installed stacked on existing lines.

Cingular's proposed changes actually result in a slight reduction in wind loads, however our analysis indicates the tower requires splice bolt and bracing upgrades under existing loads.

INTRODUCTION:

A structural analysis was performed on the above-mentioned tower by APT for Hudson Design Group. The tower is located off St. Andrew's Road in Bloomfield, Connecticut.

The structure is a Model 3ST 180-foot galvanized steel self-supporting tower manufactured by Andrew Corporation. Robert O. Parrott previously visited the tower site on February 20, 2007 to record information regarding physical and dimensional properties of the structure and its appurtenances. Mr. Parrott climbed the structure in its entirety to compile data necessary to perform the structural analysis.

The analysis also relied on Andrew foundation drawings, drawing no. SF-3719-01 dated September 6, 1993, previously provided by T-Mobile.

The analysis was performed in accordance with EIA/TIA-222-F using the following antenna inventory (proposed antennas in **bold** text, antennas assumed to be removed shown in *italic* text):

| Antenna | Elev. | Mount | Coax. |
|------------------------------------------------|-----------|-------------------------|--------------|
| Dual beacons | 180'-184' | Top plate | 1" conduit |
| 2' omnidirectional whip | 184' | 4' pipe extension | 1-1/4" |
| 8-bay dipole | 180' | 10' x 2-3/8" pipe mount | (2) 7/8" |
| 8' omni whip & 8' ground plane omni | 178' | 4' x 2-3/8" pipe mounts | 1/2", 1-1/4" |
| 4-bay dipole | 178' | 12' x 2-3/8"pipe mount | 7/8" |
| 5' omnidirectional whip | 178' | 10' x 4-1/2" pipe mount | 7/8" |
| 6' dish with radome | 177' | On above mount | EW-63 |
| 8' dish with radome | 176' | 10' x 4-1/2" pipe mount | EW-63 |
| 8' dish with radome | 174' | 10' x 4-1/2" pipe mount | EW-63 |
| 4' x 8" panel antenna | 166' | 12' x 2-3/8"pipe mount | 1-5/8" |
| 8' dish with radome | 161' | 8' x 4-1/2" pipe mount | EW-63 |
| Scala Paraflector grid : | 160' | On above pipe | 7/8" |
| 20' omnidirectional whip | 157' | 10' x 2-3/8" pipe mount | 7/8" |
| (6) CSS DUO1417-8686 panels; (6) TMAs; | 155' | (3) 12' sector mounts | (12) 1-5/8" |
| (3) 7770.00 panels; (3) Diplexers ¹ | | | (, |
| (6) DB844H90, (6) DB948F85 panels | 147' | (3) 12' sector mounts | (12) 1-5/8" |
| 4' dish with radome | 143' | 5' x 4-1/2" pipe mount | EW-90 |
| 10' dish with radome | 135' | 10' x 4-1/2" pipe mount | EW-63 |
| 4' dish with radome | 135' | 10' x 4-1/2" pipe mount | EW-90 |
| 8' & 12' omnidirectional whips | 124' | 10' pipe mounts | 1/2", 7/8" |
| 8' dish with radome | 120' | 20' x 4-1/2" pipe mount | EW-63 |
| 20' omnidirectional whip | 120' | 4' sidearm | 7/8" |
| 10' yagi | 118' | On above mount | 1/2" |
| (3) Allgon 7182.23 panels ² | 107' | (3) 6' sector mounts | (6) 7/8" |
| 20' omnidirectional whip | 97' | 10' pipe mounts | 7/8" |
| 8' dish with radome | 91' | 12' x 4-1/2" pipe mount | EW-63 |
| (2) obstruction lights | 88' | Legs | 1" conduit |
| PD1142-1 omnidirectional whip | 84' | 4' sidearm | 1/2" |
| Single dipole | 80' | 18' pipe mount | 1/2" |
| Empty mount | 77' | 4' x 2-3/8" pipe mount | N.A. |
| 2' dish, no radome | 67' | 10' pipe mounts | 1/4" |
| 4-bay dipole | 67' | 10' pipe mounts | 7/8" |
| PD1142-1 omnidirectional whip | 67' | 10' pipe mounts | 1/2" |
| PD1142-1 omnidirectional whip | 57' | 10' pipe mounts | 1/2" |
| PD1142-2C omnidirectional whip | 45' | 4' x 2-3/8" pipe mount | 1/2" |
| Weather station | 43' | 8' pipe mount | 1/8" |

¹ Currently nine CSS antennas, six TMAs and nine feed lines installed. ² These antennas, mounts and feed lines assumed to be removed.

STRUCTURAL ANALYSIS:

Methodology: The structural analysis was done in accordance with EIA/TIA-222-F (TIA), Structural Standards for Steel Antenna Towers and Antenna Supporting Structures; the American Institute of Steel Construction (AISC), Manual of Steel Construction, Allowable Stress Design, Ninth Edition; and Northeast Utilities Substation Standards 000.001.

The analysis was conducted using a wind speed of 85 miles per hour with concurrent ½" of radial ice over the entire structure and all appurtenances, exceeding TIA requirements for Hartford County, Connecticut. The tower was analyzed by calculating the resultant wind loading and associated maximum bending moments, shear forces, and axial loads. The moments and forces were used to calculate stresses in leg and bracing members, which were compared to allowable stresses according to AISC.

The TIA standard permits a one-third increase in allowable stresses for towers less than 700-feet tall. Allowable stresses of tower members were increased by one-third when computing the load capacity values shown below.

Analysis: Analysis of the tower was conducted in accordance with the criteria outlined herein with antennas and lines as previously described. The following table summarizes results of the analyses based on leg and bracing members:

| <u> </u> | Existing | Existing | Proposed | Proposed |
|-----------|-----------------|------------------|-----------------|---------------------|
| Elevation | Leg Capacity | Bracing Capacity | Leg Capacity | Bracing Capacity |
| 160'-180' | 20% | 16% | 20% | 16% |
| 140'-160' | 25% | 106% | 24% | 102% |
| 120'-140' | 53% | 78% | 52% | 77% |
| 100'-120' | 48% | 92% | 48% | 90% |
| 80'-100' | 65% | 66% | 64% | 65% |
| 60'-80' | 86% | 76% | 85% | 75% |
| 40'-60' | 76% | 87% | 76% | 86% |
| 20'-40' | 82% | 70% | 82% | 70% |
| 0'-20' | 89% | 74% | 88% | 74% |

Bracing and Splice Bolts:

Bracing and splice bolts were evaluated under the existing and proposed loadings. All bracing bolts were found to be adequately sized for both proposed loading scenarios. Splice bolts in the bottom five tower sections require upgrade for both existing and proposed loads.

Deflection:

Northeast Utilities specifies a maximum allowable deflection of ½ degree due to twist and sway. This value is slightly exceeded under existing and proposed loads.

The following values were calculated at the top of the tower under the loading conditions evaluated:

| Load Case | Max. Tilt | Max. Twist |
|-----------|-----------|------------|
| Existing | 0.53° | 0.06° |
| Proposed | 0.52° | 0.06° |

Base Foundations:

Evaluation of the existing foundations was performed from Andrew drawings provided to APT. The existing foundations were found to be adequate.

Base reactions imposed with the proposed changes were calculated as follows:

Uplift:

287.4 kips

Compression:

383.1 kips

Total Shear:

77.4 kips

Overturning Moment:

7575 ft-kips

CONCLUSIONS AND RECOMMENDATIONS:

Our structural analysis indicates the 180-foot tower located off St. Andrew's Road in Bloomfield, Connecticut requires splice bolt and bracing upgrades under existing loads. Antenna changes proposed by Cingular Wireless result in a slight decrease in tower stresses and deflections.

Design of tower reinforcement is beyond the scope of this analysis, however we would be pleased to provide this service to you.

LIMITATIONS:

This report is based on the following:

1. Tower is properly installed and maintained.

- 2. All members are in new condition.
- 3. All required members are in place.
- 4. All bolts are in place and are properly tightened.
- 5. Tower is in plumb condition.
- 6. All tower members were properly designed, detailed, fabricated, and installed and have been properly maintained since erection.

All-Points Technology Corporation, P.C. (APT) is not responsible for any modifications completed prior to or hereafter which APT is not or was not directly involved. Modifications include but are not limited to:

- 1. Replacing or reinforcing bracing members.
- 2. Reinforcing leg members in any manner.
- 3. Installing antenna mounts or side arms.
- 4. Extending tower.

APT hereby states that this document represents the entire report and that it assumes no liability for any factual changes that may occur after the date of this report. All representations, recommendations, and conclusions are based upon the information contained and set forth herein. If you are aware of any information which is contrary to that which is contained herein, or you are aware of any defects arising from the original design, material, fabrication and erection deficiencies, you should disregard this report and immediately contact APT. APT disclaims all liability for any representation, recommendation, or conclusion not expressly stated herein.

| | F | 1 2/2 | 02-20 (10x,073) 02-2055 (8x,3125) | | 2L2x2x3/16x3/8 | | 4857956 | | N.A. | 8 NA. | L1 3/4x1 3/4x1/8 N.A. | 4 Z | 40.722 | | 3 @ 6.65667 | 7 1 mar 9 datos | | <u>1</u> 60. | 0 ft | |
|---------|-----------------|-------------------|-----------------------------------|----------------|-----------------------|-------------------------------------------|------------------------|-----------------------------------------|-----------------------------------------|-----------------------|-----------------------|----------------------|---------|-----------------|---------------------|-----------------|---|--------------|-----------|--|
| | ß | 05-56 (11x 375) | | 110 | 2.4 1/2×2/15×3/16×3/8 | | 2L2x2x3/16x3/8 | 20.000000000000000000000000000000000000 | - 1 | 1,2x2x1/8 | 2x2x1/8 | | 12.4444 | | | 2479.4 | | 140.0 | | |
| | F | 10-37SS (13x,5) | | 2 2 2 2 | 212.172.2 | | | | 2.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4 | - 1 | 4 | | 14.1567 | | | 3061.0 | | 100.0 | <u>ft</u> | |
| | 1 | 15x,5 | A572-50 | | 24.4 | A36 | | | 11 3/Av1 3/Av2ME | 0.00 | | 1/4 | 15.8889 | 14 @ 10 | | 3882.9 | | 1 0.08 | ft_ | |
| | | | | 2L3x3x3/16x3/8 | | 10 0 4 00 00 00 00 00 00 00 00 00 00 00 0 | 244 1/2X2 1/2X3/16X3/8 | 2L2 1/2x2 1/2x3/16x3/8 | L2x2x3/16 | 12 10x2 10x3/16 | | | 17.6111 | | | 0,180 | | 60.0 f | t | |
| 1 | | 15x625 | | | | | | į | מצו | 12 10x2 | | | 19,333 | | 0.000 | 7010 | | 40.0 ft | | |
| £ | 477 0000 | 13-885S (18x.625) | | /4x3/8 | | 21 3x3x1/4x3/8 | 2004 | 2L3x3x1/4x3/8 | L2 1/2x2 1/2x3/16 | | | 20000 | eccu,rz | j | 6105.1 | | | | | |
| ē | 44 0000 /00.000 | 14-08SS (20x.625) | | 2L3x3x1/4x3/8 | | 2L2 1/2x2 1/2x3/16x3/8 | 0.14 | | 2L1 3/4x1 3/4x1/8x3/8 | 2L1 3/4x1 3/4x1/8x3/8 | | STEE CO | | 160 20 | 5354.4 | | 3 | 20.0 ft | | |
| Section | 0000 | Span | Leg Grade | Diagonals | Diagonal Grade | Top Girts | Horizootok | (30 IZOLUED) | Red. Horizontals | Red, Diagonals | Inner Bracing | Face Wirth (11) 24.5 | | # Paners @ (II) | Weight (lb) 33325.4 | | | <u>n 0.0</u> | ·V | |

DESIGNED APPURTENANCE LOADING

| TYPE | ELEVATION | TYPE | ELEVATION |
|-------------------------------|-----------|--------------------------------|-----------|
| Flash Beacon Lighting | 180 | (2) DB844H90 w/Mount Pipe | 147 |
| 2' x 1-3/4" omni whip | 180 | (2) DB844H90 w/Mount Pine | 147 |
| 4'x2 3/8" Pipe Mount | 180 | (2) DB844H90 w/Mount Pipe | 147 |
| Flash Beacon Lighting | į 180 | (2) DB948F85T2E-M w/Mount Pipe | 147 |
| 10' 8-bay dipole | 180 | 4' dish with radome | 143 |
| 10'x2 3/8" Pipe Mount | 180 | 10'x4 1/2" Pipe Mount | 140 - 130 |
| 12x2 3/8* Pice Mount | 180 - 168 | 10x4 1/2" Pige Mount | 140 - 130 |
| 10'x2 3/8" Pipe Mount | 180 - 170 | 10' dish with radome | 135 |
| 10'x4 1/2" Pipe Mount | 180 - 170 | 4' dish with radome | 135 |
| 10'x4 1/2" Pipe Mount | 180 - 170 | (2) 10' pipe mounts | 125 - 115 |
| 10'x4 1/2" Pipe Mount | 180 - 170 | 8' x 2" omni whip | 124 |
| 8' ground plane omni | 178 | 12' x 1.5" omni whip | 124 |
| (2) 4'x2 3/8" Pipe Mount | 178 | 8' dish with radome | 120 |
| 10' 4-bay dipole | 178 | 20' x 2.5" ornoi whip | 120 |
| 8" x 2" omni whip | 178 | 4' sidearm | 120 |
| 5' x 2" amai whip | 178 | 10' yagi | 118 |
| 6' dish with radome | 1177 | 10 pipe mount on horizontals | 97 - 87 |
| 8' dish with radome | 176 | 20' x 2.5" omni whip | 97 |
| 9' dish with radome | 174 | 20' x 2,5" armi whip | 97 |
| 4' x 8" panel | 166 | 20' x 2.5" omni whip | 97 |
| 3x4 1/2" Pipe Mount | 164 - 156 | 10' pipe mount on horizontals | 97 - 87 |
| 3' dish with radome | 161 | 8' dish with radome | 91 |
| PR-460 | 160 | Obstruction light | 88 |
| 0'x2 3/8" Pipe Mount | 159 - 149 | Obstruction light | 88 |
| 20' x 2.5" omni whip | 157 | 4' sidearm | 84 |
| 2) 1900 TMA | 155 | PD1142-1 | 84 |
| 2) 1900 TMA | 155 | Single dipole | 80 |
| 2' sector mount | 155 | 18' pipe mount on horizontals | 80 |
| 2' sector mount | 155 | 4'x2 3/8" Pipe Mount | 77 |
| 2' sector mount | 155 | PD1142-1 | 67 |
| 3) DUO1417-8686 w/Mount Pipe | 155 | (2) 10' pipe mounts | 67 - 57 |
| 2) 1900 TMA | 155 | 2' dish, no radome | 67 |
| 3) DUO1417-8686 w/Mount Pipe | 155 | 20' 4-Bay Dipole | 67 |
| 3) DUO1417-8886 w/Mount Pipe | 155 | 4x2 3/8" Pipe Mount | 57 |
| 2) DB948F85T2E-M w/Mount Pipe | 147 | PD1142-1 | 57 |
| 2) DB948F85T2E-M w/Mount Pipe | 147 | 1142-2C | 45 |
| 2' sector mount | 147 | 4'x2 3/8" Pipe Mount | 45 |
| 2' sector mount | 147 | weather station | 43 |
| 2' sector mount | 147 | | L |

MATERIAL STRENGTH

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

MAX. CORNER REACTIONS AT BASE:

DOWN: 383123 lb UPLIFT: -287368 lb SHEAR: 44143 lb

Δ

AXIAL 78284 lb SHEAR 77428 lb MOMENT 7575323 lb-ft

TORQUE 15779 lb-ft 85 mph WIND - 0.5000 in ICE AXIAL

49092 lb MOMENT 6257352 lb-ft 62981 lb

TORQUE 17219 lb-ft REACTIONS - 85 mph WIND

All-Points Technology Corp. 150 Old Westside Road North Conway, NH 03860 Phone: 603-496-5853 FAX: 603-356-5214

| 180' Self-Supporting | Tower | | |
|----------------------------------|--------------------------------|--------|---|
| Froject: CT1071050 Bloomfield | | | _ |
| Client: T-Mobile; Site #CTHA142A | Drawn by: Robert E. Adair, P.E | App'd: | |
| Code: TIA/EIA-222-F | Date: 08/07/07 | Scale: | |

CINGULAR WIRELESS Equipment Modification

136 New Road, Madison, CT Site Number 5206 Former AT&T Wireless Cell Site Exempt Modifications 10/7/02

Tower Owner/Manager: CT Light & Power

Equipment configuration: Guyed lattice tower

Current and/or approved: Three Allgon 7250 antennas @ 77 ft c.l.

Six runs 7/8 inch coax

Three outdoor cabinets on concrete pad

Planned Modifications: Remove all three existing antennas

Install three Powerwave 7770 antennas at 77 ft c.l.

Install six TMA's @ 77 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 88.8 % 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 97.3 % of the standard.

| Company | Centerline Ht (feet) | Frequency (MHz) | Number of Channels | Power Per Channel (Watts) | Power Density (mW/cm²) | Standard Limits (mW/cm²) | Percent of Limit |
|----------------|-------------------------|--------------------|-----------------------|---------------------------------|---------------------------|--------------------------------|---------------------|
| Other Users * | | | | | | | 82.79 |
| Cingular GSM * | 77.5 | 1900 Band | 4 | 250 | 0.0599 | 1.0000 | 5.99 |
| ar a Thirid | | E-W Track | 4 | 14/4/ | | | 68.8% |

^{*} Per Council Records

Proposed

| Company | Centerline Ht (feet) | Frequency (MHz) | Number of Channels | Power Per Channel (Watts) | Power Density (mW/cm²) | Standard Limits (mW/cm²) | Percent of Limit | |
|---------------|-------------------------|--------------------|-----------------------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|---------------------|--|
| Other Users * | | | | 100000 | a de la companya de l | | 82.79 | |
| Cingular UMTS | 77 | 880 - 894 | 1 | 500 | 0.0303 | 0.5867 | 5.17 | |
| Cingular GSM | 77 | 1900 Band | 2 | 769 | 0.0933 | 1.0000 | 9.33 | |
| ga /Jkojali | | | | | | | 97/87/8 | |

^{*} Per Council Records

Structural information:

The attached structural analysis demonstrates that the tower and foundation have adequate structural capacity to accommodate the proposed modifications. (All-Points Technology Corp., dated 8/15/07)





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

August 16, 2007

Honorable Thomas S. Scarpati 1st Selectman, Town of Madison Madison Town Campus 8 Campus Dr. Madison, CT 06443-2563

Re: Telecommunications Facility - 136 New Road, Madison

Dear Mr. Scarpati:

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).

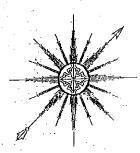
The accompanying letter to the Siting Council fully describes Cingular's proposal for the referenced cell site. However, if you have any questions or require any further information on our plans or the Siting Council's procedures, please call me at (860) 513-7636 or Mr. Derek Phelps, Executive Director, Connecticut Siting Council at (860) 827-2935.

Sincerely,

Steven L. Levine

Real Estate Consultant

Enclosure



ALL-POINTS TECHNOLOGY CORPORATION, P.C.

STRUCTURAL ANALYSIS REPORT 180' GUYED TOWER MADISON, CONNECTICUT

Prepared for Hudson Design Group, LLC

Cingular Site #5206

August 15, 2007



APT Project #CT198340

STRUCTURAL ANALYSIS REPORT 180' GUYED TOWER MADISON, CONNECTICUT prepared for Hudson Design Group, LLC

EXECUTIVE SUMMARY:

All-Points Technology Corporation, P.C. (APT) performed a mapping and structural analysis of this 180-foot ROHN Model 80 guyed tower. The analysis was performed for Cingular Wireless's proposed replacement of their existing three leg-mounted panel antennas at 77' with three Powerwave 7770 panel antennas and six LGP 21401 tower-mounted amplifiers (TMAs). Waveguide cables, consisting of six 7/8" lines, will remain in place.

Our analysis indicates the tower meets the requirements of the Connecticut State Building Code and Northeast Utilities Substation Standards with the proposed changes.

INTRODUCTION:

A structural analysis was performed on the above-mentioned communications tower by APT for Hudson Design Group, LLC. The tower is located at 135 New Road in Madison, Connecticut. APT visited the tower site on July 13, 2007. Robert O. Parrott climbed the structure in its entirety to compile data necessary to perform the structural analysis. The analysis also relied on information provided by Hudson Design Group, LLC, which included guy anchor drawings by H.E. Bergeron Engineers, project No. 97058-007 dated October 14, 2003, and information on proposed antenna changes.

The structure is a 180-foot ROHN Model 80 galvanized steel guyed tower. The tower is guyed at three elevations, with torque arm attachments at 167' and 127'. Significant upgrades have been performed on the tower, including installation of additional outer guy anchors, replacement of existing bracing, and addition of redundant horizontal bracing on some tower sections.

The analysis was performed using the following antenna inventory (proposed changes shown in **bold** text):

All-Points Technology Corporation

150 Old Westside Road North Conway, NH 03860 (603) 356-5214 3 Saddlebrook Drive Killingworth, CT 06419 (860) 663-1697

| Antenna | Elev. | Mount | Coax. |
|---------------------------------------|-----------|---------------------------|------------|
| PD-1142 omnidirectional whip | 180' | 4' x 2" pipe on leg | 1/2" |
| Ground plane omnidirectional | 180' | 4' sidearm | 1/2" |
| 20' omnidirectional whip | 178' | Leg | 1-5/8" |
| 8' dish with radome | 174' | 6' x 4-1/2" pipe on leg | EW-63 |
| (3) RR90-17-02DP panels, (6) TMAs | 157' | Legs, 4' sidearm | (6) 1-1/4" |
| 10' single dipole | 144' | Leg | 7/8" |
| 2' omnidirectional whip | 142' | 18" sidearm | 7/8" |
| 20' omnidirectional whip | 140' | 4' sidearm | 7/8" |
| 10' single dipole | 130' | Leg | 1/2" |
| (6) DB980H90E-M panels | 126' | (3) 12' sector mounts | (6) 1-5/8" |
| 2' omnidirectional whip | 108' | 18" sidearm | 7/8" |
| 12' omnidirectional with reflector | 106'-118' | (2) 18" sidearms | 7/8" |
| 20' 4-bay dipole | 96'-116' | (2) 18" sidearms | 1/2" |
| GPS | 88' | 2' sidearm | 1/2" |
| 8' yagi | 81' | Leg | 1/2" |
| (3) 7770.00 panels, (6) LGP21401 TMAs | 77' | 6' x 2-3/8" pipes on legs | (6) 7/8" |
| Anemometer | 56' | Leg | 1/8" |

STRUCTURAL ANALYSIS:

Methodology:

The structural analysis was done in accordance with TIA/EIA-222, Revision F (TIA), Structural Standards for Steel Antenna Towers and Antenna Supporting Structures; and the American Institute of Steel Construction (AISC), Manual of Steel Construction, Allowable Stress Design, Ninth Edition and Northeast Utilities Substation Standards 000.001.

The analysis was conducted using a wind speed of 85 miles per hour with concurrent ½" of radial ice over the entire structure and all appurtenances, exceeding TIA requirements for New Haven County, Connecticut. The tower was analyzed by calculating the resultant wind loading and associated maximum bending moments, shear forces, and axial loads. The moments and forces were used to calculate stresses in leg and bracing members, which were compared to allowable stresses according to AISC.

The TIA/EIA standard permits a one-third increase in allowable stresses for towers less than 700-feet tall. Allowable stresses of tower members were increased by one-third when computing the tower capacity values shown below.

Analysis Results:

The following table summarizes the results of the analysis based on stresses of individual leg and bracing members:

| Elevation | Legs | Bracing |
|-----------|------|---------|
| 160'-180' | 27% | 39% |
| 140'-160' | 35% | 27% |
| 120'-140' | 61% | 14% |
| 100'-120' | 93% | 12% |
| 80'-100' | 93% | 43% |
| 60'-80' | 88% | 15% |
| 40'-60' | 88% | 34% |
| 20'-40' | 86% | 24% |
| 0'-20' | 86% | 38% |

Deflection:

Northeast Utilities specifies a maximum allowable deflection of ½ degree due to twist and sway. The following values were calculated:

| Max. Tilt | Max, Twist | | |
|-----------|------------|--|--|
| 0.48° | 0.10° | | |

Bracing and Splice Bolts:

Bracing and splice bolts were evaluated under the proposed loading. All bolts were found to be adequately sized.

Guy Cables:

Our calculations indicate all guys are adequately sized for existing and proposed loads.

Base Foundation and Guy Anchors:

Evaluation of the base foundation and guy anchors was performed from ROHN design drawings and H.E. Bergeron outer anchor design drawings. Reactions imposed by the proposed changes are within the capacity of the base foundation and guy anchors.

Base reactions imposed with the antenna changes were calculated as follows:

| Location | <u>Vertical</u> | <u>Horizontal</u> |
|-----------------|-----------------|-------------------|
| Base: | 94.0 kips | 2.7 kips |
| Inner Anchor: | -7.7 kips | 19.5 kips |
| Outer Anchor: | -28.3 kips | 34.8 kips |

CONCLUSIONS AND RECOMMENDATIONS:

Our structural analysis indicates that the 180-foot ROHN Model 80 guyed tower located in Madison, Connecticut meets the requirements of the Connecticut State Building Code and Northeast Utilities Substation Standards with the antenna changes proposed by Cingular Wireless.

LIMITATIONS:

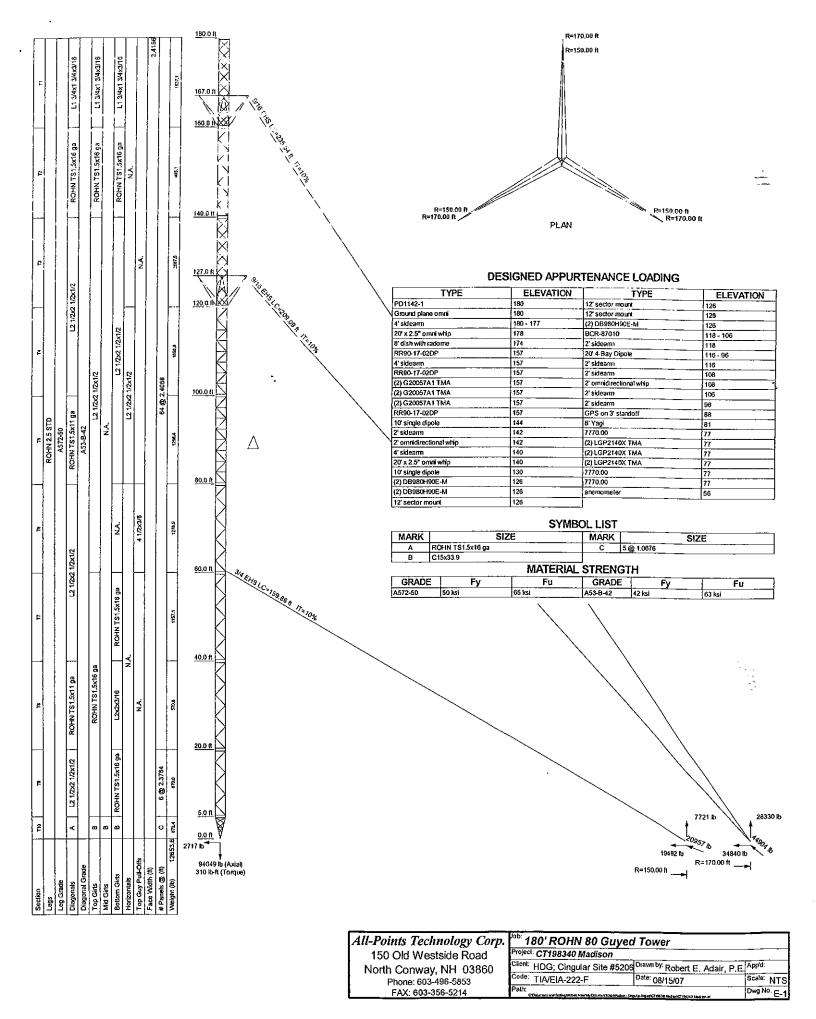
This report is based on the following:

- 1. Tower is properly installed and maintained.
- 2. All members are in new condition.
- 3. All required members are in place.
- 4. All bolts are in place and are properly tightened.
- 5. Tower is in plumb condition.
- 6. All tower members were properly designed, detailed, fabricated, and installed and have been properly maintained since erection.

All-Points Technology Corporation, P.C. (APT) is not responsible for modifications completed prior to or hereafter which APT is not or was not directly involved. Modifications include but are not limited to:

- 1. Replacing or strengthening bracing members.
- 2. Reinforcing vertical members in any manner.
- 3. Adding or relocating torque arms or guys.
- 4. Installing antenna mounting gates or side arms.

APT hereby states that this document represents the entire report and that it assumes no liability for any factual changes that may occur after the date of this report. All representations, recommendations, and conclusions are based upon the information contained and set forth herein. If you are aware of any information which is contrary to that which is contained herein, or you are aware of any defects arising from the original design, material, fabrication and erection deficiencies, you should disregard this report and immediately contact APT. APT disclaims all liability for any representation, recommendation, or conclusion not expressly stated herein.



CINGULAR WIRELESS Equipment Modification

777 Talcottville Road, Vernon, CT Site Number 5328 Former AT&T Wireless Cell Site Exempt Modification 4/3/02

Tower Owner/Manager: American Tower

Equipment configuration: Monopole

Current and/or approved: Three Allgon 7250 antennas @ 140 ft c.l.

Six runs 1 ¼ inch coax

Existing concrete pad with two outdoor cabinets

Planned Modifications: Remove three existing antennas

Install three Powerwave 7770 antennas at 140 ft c.l.

Install six TMA's @ 140 ft Install additional 5 x 6 ft pad

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 16.9 % 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 19.3 % of the standard.

Existing

| Company | Centerline Ht (feet) | Frequency (MHz) | Number of Channels | Power Per Channel (Watts) | Power Density (mW/cm²) | Standard Limits (mW/cm²) | Percent of Limit |
|----------------|-------------------------|--------------------|-----------------------|---------------------------------|------------------------|--------------------------------|---------------------|
| Other Users * | | | | | | | 15.07 |
| Cingular GSM * | 140 | 1900 Band | 4 | 250 | 0.0183 | 1.0000 | 1.83 |
| Total | | | | | | | 16.9% |

^{*} Per CSC Records

Proposed

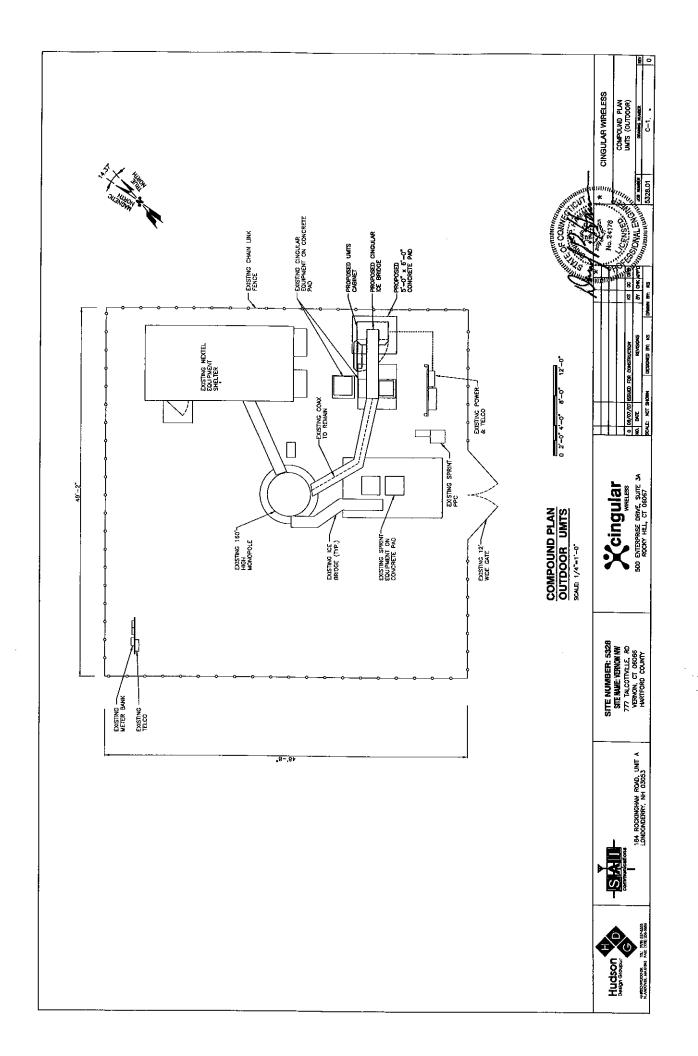
| Company | Centerline Ht (feet) | Frequency (MHz) | Number of Channels | Power Per Channel (Watts) | Power Density (mW/cm²) | Standard Limits (mW/cm²) | Percent of Limit |
|---------------|-----------------------------------------|--------------------|-----------------------|---------------------------------|---------------------------|--------------------------|---------------------|
| Other Users * | | | \$100 70 25 (\$10) | | April 1985 | | 15.07 |
| Cingular UMTS | 165 | 880 - 894 | 1 | 500 | 0.0066 | 0.5867 | 1.13 |
| Cingular GSM | 165 | 1900 Band | 4 | 597 | 0.0315 | 1.0000 | 3.15 |
| | 100000000000000000000000000000000000000 | | | [789] ¥3 | | | |

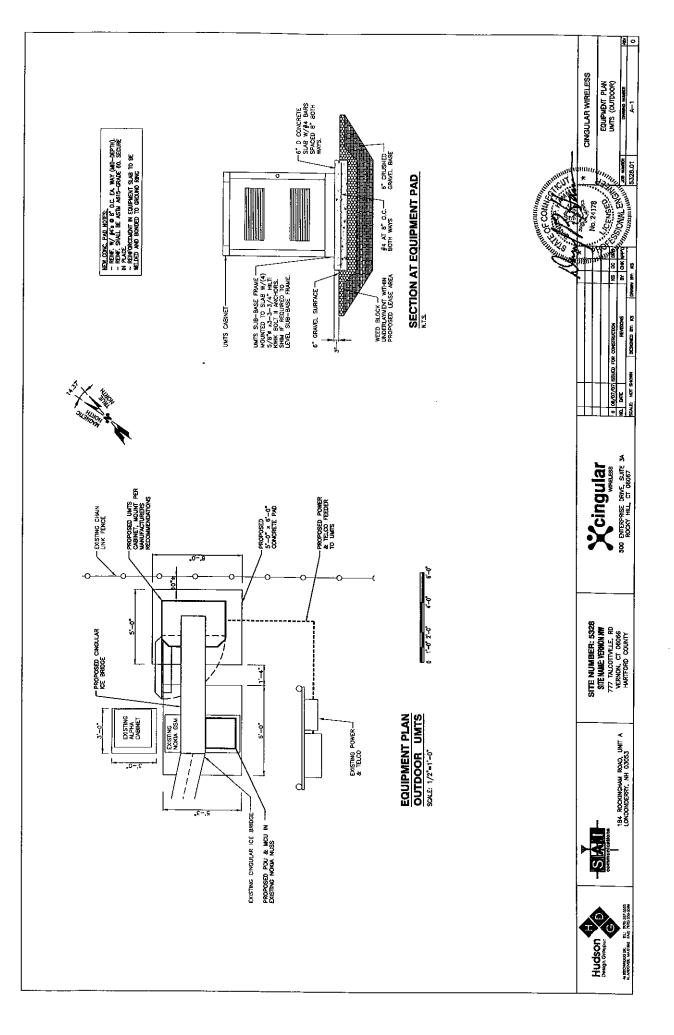
^{*} Per CSC Records

Structural information:

The attached structural analysis demonstrates that the existing tower and foundation have sufficient structural capacity to accommodate the proposed modifications. (American Tower, dated 5/15/07)

There is one ambiguity in the loading that must be addressed, however. The analysis lists the existing Cingular (AT&T) antennas as if they were being left on the tower after installation of the new Powerwave antennas. In fact, they will be removed. The existing antennas remain in the analysis because Cingular leases capacity for 6 antennas on this tower, and American Tower considers reserved capacity in their structural analyses as well as actual usage.







| | Level 1 Structural Evalua | tion ¹ | | | |
|----------------------------|------------------------------------------------------------------|----------------------------------|--|--|--|
| ATC Site Number & Name | Site Number & Name 302529, Vernon CT 6 Engineering ID: 40469 | | | | |
| Carrier Site Number & Name | 5328, Vernon NW | | | | |
| Site Address | 777 Talcotville Road | | | | |
| | Vernon Rockville, Connecticut 06066 | | | | |
| | Tolland County | | | | |
| Tower Description | 160 ft Summit Monopole | | | | |
| Standards & Codes 2 | ANSI/TIA/EIA-222-F (1996) | 2003 International Building Code | | | |
| | 85 mph w/0" radial ice | 115 mph w/0" radial ice | | | |
| | 74 mph w/½" radial ice | | | | |

| Table 1: Existing and Proposed Antenna Configuration | | | | | | |
|------------------------------------------------------|-------------------------------------------------------------------------|----------|-------------|----------------------|----------|--|
| HEIGHT (F1) | ANTENNA | CARRIER | COAX | [I]/[O] ^a | STATUS | |
| 160 | (9) 48" x 12" Panels (3) 72" x 12" Panles on Low Profile Platform | Nextel | (12) 1-5/8" | I | Existing | |
| 150 | (12) Swedcom ALP 9011 on Low Profile Platform | Verizon | (12) 1-5/8" | I | Existing | |
| 140 | (3) Allgon 7250.03 on Low Profile Platform | Cingular | (6) 1-5/8" | I | Existing | |
| 140 | (3) Allgon 7770 (6) Powerwave LGP21401 on Low Profile Platform | Cingular | (6) 1-5/8" | I | Proposed | |
| 130 | (6)Decibel 950F85 on Low Profile Platform | Sprint | (12) 1-5/8" | I | Existing | |
| 50 | (1) GPS on Side Arm Mount | Sprint | (1) 1/2" | 0 | Existing | |

^a[I]/[O] denotes coax installed inside or outside of monopole respectively.

The subject tower and foundation are adequate to support the above stated loads in conformance with specified requirements. 3



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Connecticut.

¹ The existing and proposed loads of *Table 1* are compared to the tower's current design capacity or previous analysis.

² The design wind criteria are compared to the current code requirements.

³ The tower should be re-evaluated as future loads are added or if actual loads are found different from those mentioned in *Table 1*.





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

August 16, 2007

Honorable Ellen L. Marmer, Mayor Town of Vernon Memorial Bldg. 14 Park Pl. Vernon, CT 06066

Re: Telecommunications Facility - 777 Talcottville Road, Vernon

Dear Mayor Marmer:

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