

# STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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

E-Mail: [siting.council@ct.gov](mailto:siting.council@ct.gov)

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

Daniel F. Caruso

Chairman

February 6, 2008

Thomas J. Regan, Esq.  
Brown Rudnick Berlack Israels LLP  
CityPlace I  
185 Asylum Street  
Hartford, CT 06103

RE: **EM-SPRINT-NEXTEL-025-080114** – Sprint Nextel Corporation notice of intent to modify an existing telecommunications facility located at 500 Highland Avenue, Cheshire, Connecticut.

Dear Attorney Regan:

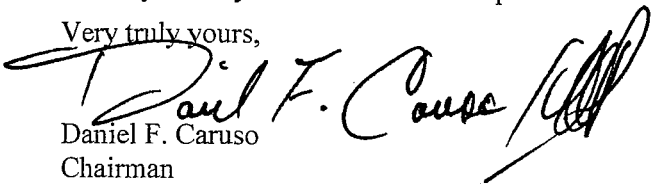
At a public meeting held on January 24, 2008, the Connecticut Siting Council (Council) acknowledged your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies.

The proposed modifications are to be implemented as specified here and in your notice dated January 11, 2008, including the placement of all necessary equipment and shelters within the tower compound. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Thank you for your attention and cooperation.

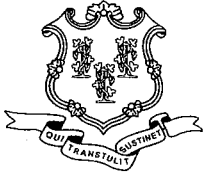
Very truly yours,

  
Daniel F. Caruso

Chairman

DFC/MP/cm

c: The Honorable Matt Hall, Council Chairman, Town of Cheshire  
William S. Voelker, AICP, Town Planner, Town of Cheshire  
Crown Castle



# STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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E-Mail: [siting.council@ct.gov](mailto:siting.council@ct.gov)

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

Daniel F. Caruso

Chairman

January 15, 2008

The Honorable Matt Hall  
Council Chairman  
Town of Cheshire  
Town Hall  
84 South Main Street  
Cheshire, CT 06410

RE: **EM-SPRINT-NEXTEL-025-080114** – Sprint Nextel Corporation notice of intent to modify an existing telecommunications facility located at 500 Highland Avenue, Cheshire, Connecticut.

Dear Mr. Hall:

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 January 24, 2008, at 1:30 p.m. in Hearing Room One, Ten Franklin Square, New Britain, Connecticut.

If you have any questions or comments regarding this proposal, please call me or inform the Council by January 23, 2008.

Thank you for your cooperation and consideration.

Very truly yours,

S. Derek Phelps  
Executive Director

SDP/jb

Enclosure: Notice of Intent

c: William S. Voelker, AICP, Town Planner, Town of Cheshire  
Michael A. Milone, Town Planner, Town of Cheshire

THOMAS J. REGAN  
Direct Dial: (860) 509-6522  
tregan@brownrudnick.com

CityPlace I  
185 Asylum  
Street  
Hartford  
Connecticut  
06103  
tel 860.509.6500  
fax 860.509.6501

*Via Federal Express*

January 11, 2008

S. Derek Phelps  
Executive Director  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051

ORIGINAL

RECEIVED  
JAN 14 2008

CONNECTICUT  
SITING COUNCIL

**RE: Sprint Nextel Corporation - Exempt Modification**

Dear Mr. Phelps:

Enclosed for filing is Sprint Nextel Corporation's Notice of Exempt Modification for the addition of WiMAX antennas to an existing tower located at 500 Highland Avenue in Cheshire. I have enclosed a check in the amount of \$500.00 in payment of the filing fee. If you have any questions, please feel free to contact me.

Very truly yours,

**BROWN RUDNICK BERLACK ISRAELS LLP**

By: Thomas J. Regan  
Thomas J. Regan

cc: Town of Cheshire via 1<sup>st</sup> Class Mail

# 40247599 v1 - MERCIECM - 025064/0015

CONNECTICUT SITING COUNCIL

EM-SPRINT-NEXTEL-025-080114

In re:

Sprint Nextel Corporation's Notice to Make an Exempt Modification to an Existing Facility at 500 Highland Avenue, Cheshire, Connecticut. : EXEMPT MODIFICATION NO. \_\_\_\_\_ : January 10, 2008

RECEIVED JAN 14 2008

NOTICE OF EXEMPT MODIFICATION

CONNECTICUT SITING COUNCIL

Pursuant to Conn. Agencies Regs. §§ 16-50j-73 and 16-50j-72(b), Sprint Nextel

Corporation ("Sprint") hereby gives notice to the Connecticut Siting Council ("Council") and the Town of Cheshire of Sprint's intent to make an exempt modification to an existing monopole (the "Tower") located at 500 Highland Avenue, Cheshire, Connecticut. Specifically, Sprint plans to remove its six existing antennas and install three new CDMA network antennas, three WiMAX antennas, a microwave dish, and associated WiMAX electronic equipment at the base of the Tower. Under the Council's regulations (Conn. Agencies Regs. § 16-50j-72(b)), Sprint's plans do not constitute a modification subject to the Council's review because Sprint will not change the height of the Tower, will not extend the boundaries of the compound, will not increase the noise levels at the site, and will not increase the total radio frequency electromagnetic radiation power density at the site to levels above applicable standards.

Sprint is currently undertaking an upgrade to its wireless communications system in Connecticut. As part of the upgrade, Sprint is implementing WiMAX technology to enable enhanced wireless data communications. In order to accomplish the upgrade at this site, Sprint plans to install three WiMAX antennas, a microwave dish, and additional WiMAX-related electronic equipment at the base of the Tower.

The Tower is a 160-foot monopole located at 500 Highland Avenue, Cheshire, Connecticut (41.5112 degrees north latitude, -72.8984 degrees west longitude). The Tower is owned by Crown Castle. Currently, there are several other carriers on the monopole. Sprint has six CDMA network antennas located on the Tower with the centerline at 157.5 feet. The equipment cabinets are located on a 20-foot by 20-foot concrete pad within the compound at the base of the Tower. A site plan with the Tower specifications is attached.

Sprint plans to remove its six existing antennas. Sprint will then install three KMW-AM-X-WM-17-65 (WiMAX) antennas, three Andrew 932LG65R2E antennas, and a 2.5 feet diameter VHLP800-11 microwave dish. All of the new antennas will have the same centerline as the existing antennas – 157.5 feet. To confirm the Tower can support these changes, Sprint commissioned Morrison Hershfield to perform a structural analysis of the Tower (attached). According to the structural analysis, dated January 2, 2008, “the existing tower and foundation **are in conformance** with the requirements of [TIA/EIA-222-F] under the effects of loading due to the proposed antenna installation and existing antennas.” (emphasis in original).

Two WiMAX exterior equipment cabinets will be mounted to the existing concrete slab. Hence, no increase in the size of the compound is necessary. Sprint will also mount a global positioning system (GPS) antenna to the existing ice bridge. Therefore, excluding brief, minor, construction-related noise during the addition of the antennas and the installation of the equipment cabinets, Sprint’s changes to the Tower will not increase noise levels at the site.

The new antennas and microwave dish will not adversely impact the health and safety of the surrounding community or the people working on the Tower. The total radio frequency exposure measured around the Tower will be well below the National Council on Radiation Protection and Measurements’ (“NCRP”) standard adopted by the Federal Communications

Commission ("FCC"). The worst-case power density analysis measured at the base of the Tower indicates that the existing and proposed antennas will emit in total 34.3257% of the NCRP's standard for maximum permissible exposure. Therefore, the power density levels will be well below the FCC mandated radio frequency exposure limits in all locations around the Tower, even with extremely conservative assumptions. The power density analysis is attached.

In conclusion, Sprint's proposed plan to replace the antennas and add a microwave dish at this site does not constitute a modification subject to the Council's jurisdiction because Sprint will not increase the height of the Tower, will not extend the boundaries of the site, will not increase the noise levels at the site, and the total radio frequency electromagnetic radiation power density will stay within all applicable standards. *See* Conn. Agencies Regs. § 16-50j-72.

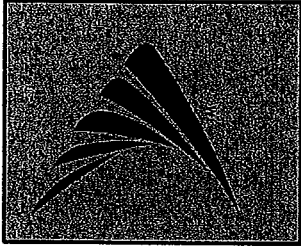
Sprint Nextel Corporation

By: 

Thomas J. Regan  
Brown Rudnick Berlack Israels LLP  
185 Asylum Street, CityPlace I  
Hartford, CT 06103-3402  
Email - [tregan@brownrudnick.com](mailto:tregan@brownrudnick.com)  
Phone - 860.509.6522  
Fax - 860.509.6622

# 40247080 v1 - MUSKASA - 025064/0015

# Sprint Nextel Corp.



# CHESHIRE POLICE DEPART.

## CT01YC312/CT43XC809

### 500 HIGHLAND AVENUE CHESHIRE, CT 06410



**Sprint Nextel Corp.**  
1 INTERNATIONAL BLVD.,  
SUITE 800  
MAHWAH, NJ 07485

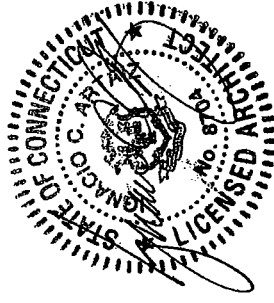
TRANSCEND WIRELESS, LLC  
479 ROUTE 17 NORTH,  
2ND FLOOR  
MAHWAH, NJ 07430

A&E FIRM

**URS CORPORATION AES**  
500 ENTERPRISE DRIVE, SUITE 3B  
ROCKY HILL, CONNECTICUT  
1-(860)-529-8882

NO.	DATE	REVISIONS	BY	CHK/APP'D
A	12/19/07	STRING COUNCIL	RRH	PJS/AM
A	12/18/07	REVIEW	RRH	PJS/AM
NOT TO SCALE   DESIGNED BY: PJS   DRAWN BY: RRH				

A&E SEAL



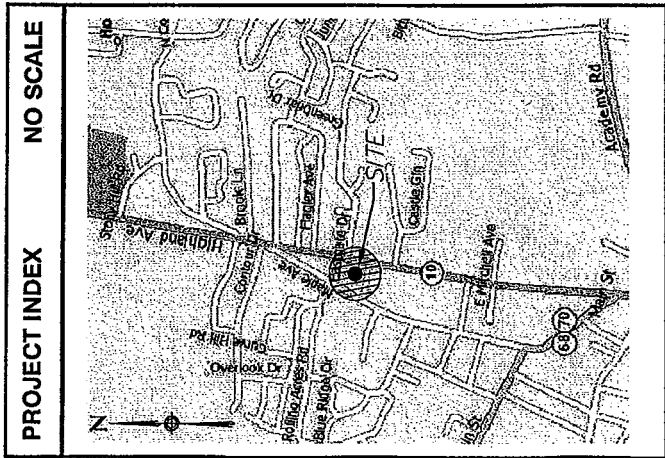
**CHESHIRE POLICE DEPARTMENT**

**CT01YC312/CT43XC809**  
500 HIGHLAND AVENUE  
CHESHIRE, CT 06410

PROJECT NO.	DRAWING NAME	DATE	SHEET NO./REV
TW1-038	T-1	12/18/07	1 OF 3   A
36917298			

PROJECT INDEX	
SITE NUMBER:	CT01YC312/CT43XC809
SITE NAME:	CHESHIRE POLICE DEPARTMENT
SITE ADDRESS:	500 HIGHLAND AVENUE CHESHIRE, CT 06410
APPLICANT:	SPRINT NEXTEL CORP. 1 INTERNATIONAL BLVD., SUITE 800 MAHWAH, NJ 07485
CONTACT:	JASON DEBERT (347) 284-6617
PROPERTY OWNER:	CROWN CASTLE
JURISDICTION:	CONNECTICUT STRING COUNCIL
LATITUDE:	41.5112°
LONGITUDE:	-72.8884°

SHEET INDEX	
SHT. NO.	DESCRIPTION
T-1	TITLE SHEET - GENERAL NOTES AND LEGENDS
SC-1	COMPOUND PLAN
SC-2	TOWER ELEVATION
DRIVING DIRECTIONS	
FROM 100 CORPORATE PLACE, ROCKY HILL, CT: START OUT GOING SOUTH ON CORPORATE PL TOWARD WEST ST. TURN LEFT ONTO WEST ST. MERGE ONTO I-91 S TOWARD NEW HAVEN. MERGE ONTO I-691 W VIA EXIT 18 TOWARD MERIDEN / WATERBURY. TAKE THE CT-10 EXIT- EXIT 3- TOWARD MILLDALE / CHESHIRE. TURN LEFT ONTO CT-10 / HIGHLAND AVE. END AT CHESHIRE POLICE DEPT. 500 HIGHLAND AVE, CHESHIRE, CT 06410, US	





**Sprint Nextel Corp.**  
 1 INTERNATIONAL BLVD.,  
 SUITE 800  
 MAHWAH, NJ 07495

TRANSCEND WIRELESS, LLC  
 479 ROUTE 17 NORTH,  
 2ND FLOOR  
 MAHWAH, NJ 07430

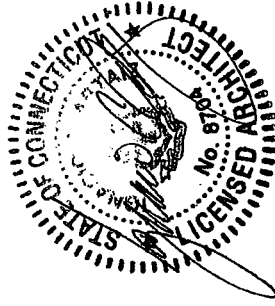
A&E FIRM

**URS CORPORATION A/E/S**

500 ENTERPRISE DRIVE, SUITE 3B  
 ROCKY HILL, CONNECTICUT  
 1-(860)-529-8882

NO.	DATE	REVISIONS	BY	CHKD/APPD
1	12/19/07	SITING COUNCIL	RRH/PJS/AA	
2	12/19/07	REVIEW	RRH/PJS/AA	
NOT TO SCALE DESIGNED BY: PJS DRAWN BY: RRH				

A&E SEAL



**CHESHIRE POLICE DEPARTMENT**

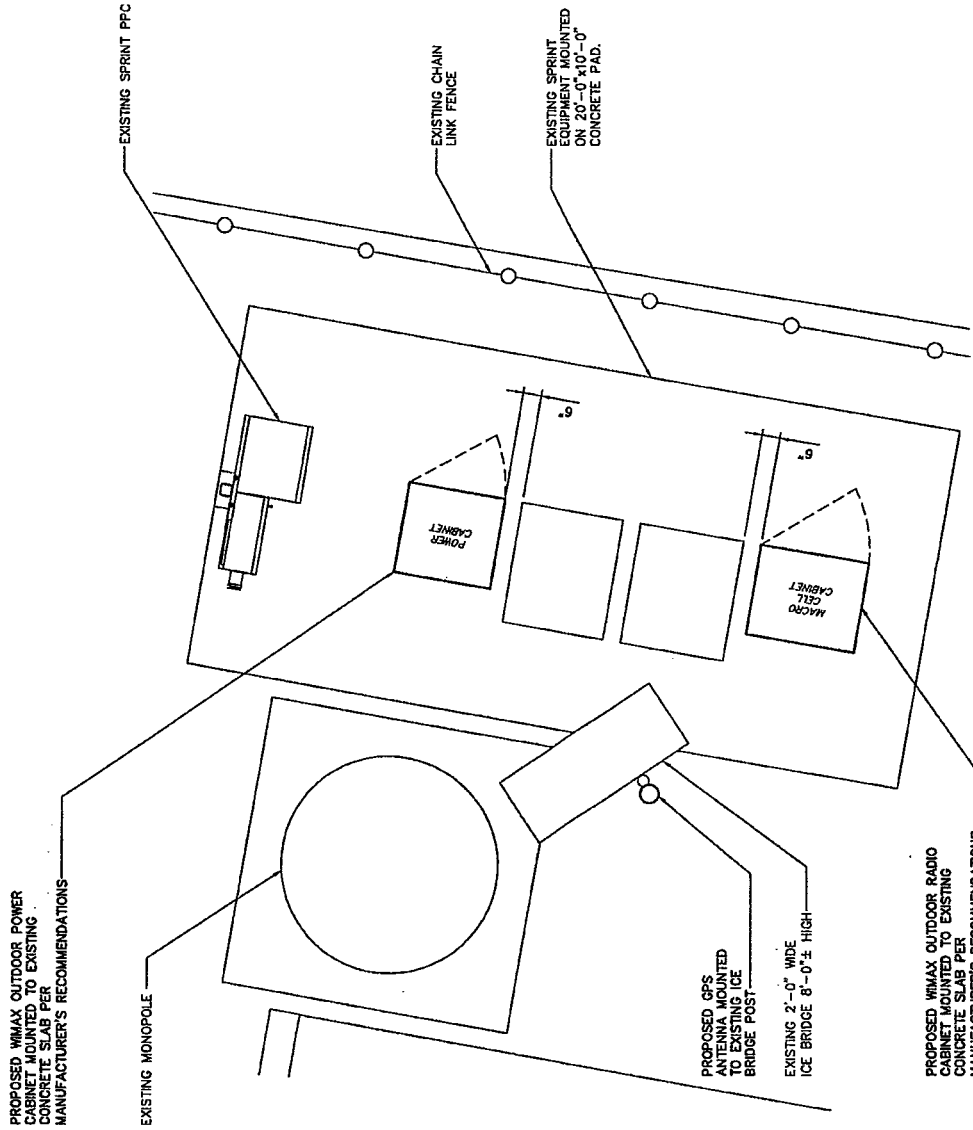
CT01YC312/CT43XC809  
 500 HIGHLAND AVENUE  
 CHESHIRE, CT 06410

PROJECT NO.  
 TW1-038  
 36917298

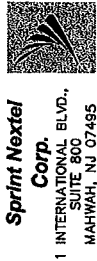
DRAWING NAME  
 SC-1

DATE  
 12/18/07

SHEET NO./REV  
 2 OF 3  
 A







TRANSCEND WIRELESS, LLC  
479 ROUTE 17 NORTH,  
2ND FLOOR  
MAHWAH, NJ 07430

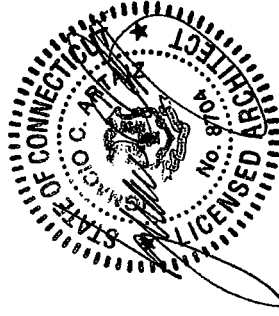
A&E FIRM

**URS CORPORATION AES**

500 ENTERPRISE DRIVE, SUITE 3B  
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NO.	DATE	REVISIONS	BY	CHK/APP'D
AA	12/19/07	STRING COUNCIL	RRH	PJS AA
AA	12/19/07	REVIEW	RRH	PJS AA

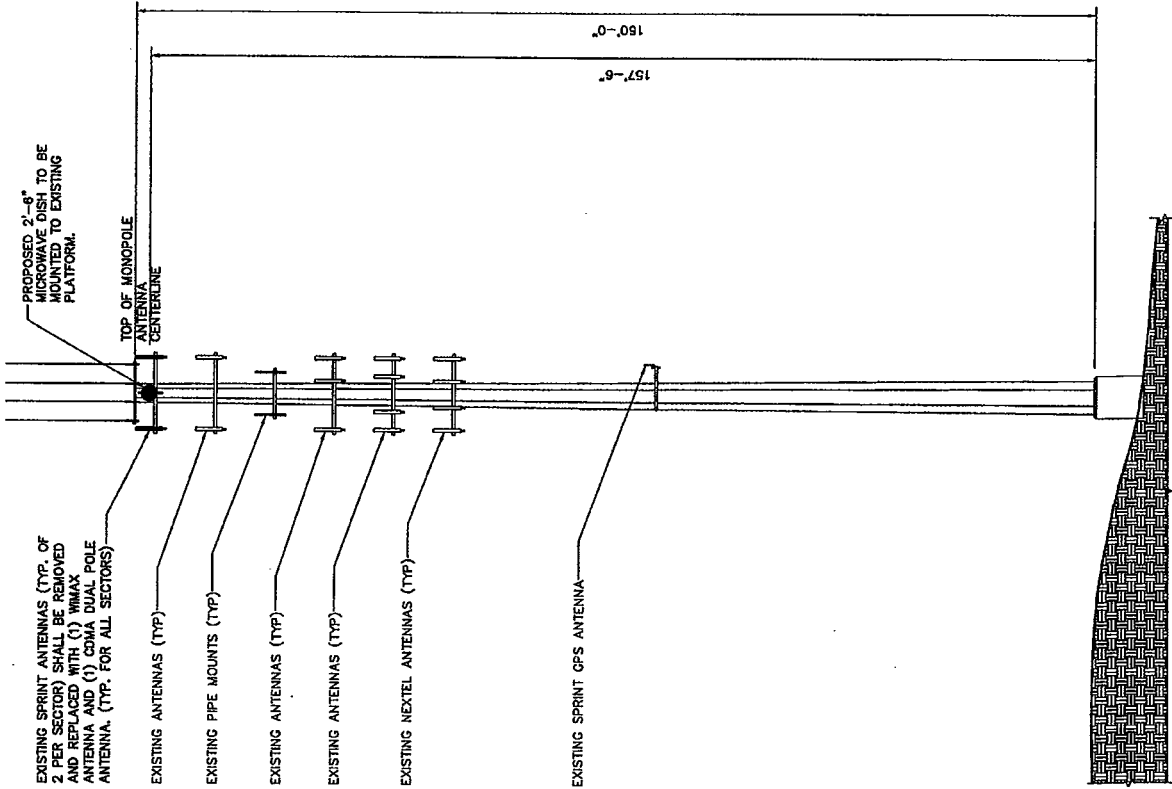
NOT TO SCALE | DESIGNED BY: PJS | DRAWN BY: RRH  
A&E SEAL



**CHESHIRE POLICE  
DEPARTMENT**

CT01YC312/CT43XC809  
500 HIGHLAND AVENUE  
CHESHIRE, CT 06410

PROJECT NO.	DRAWING NAME	DATE	SHEET NO.	REV
TW1-038	SC-2	12/18/07	3 OF 3	A
36817298				



1 TOWER ELEVATION  
SCALE: 1" = 30'-0"  
SC-2



January 2, 2008

Ms. Nicole McGowan  
Lighttower  
80 Central Street  
Boxborough, MA 01719  
978-264-6000

**Subject: Structural Analysis of 160 ft Monopole Tower**  
**Site: CT0302 / "Cheshire-Police" / New Haven County, CT**  
***Sprint Spectrum, LP Proposed Antenna Loading***  
**MH Project No. 6073124: NG0-045R1**

Dear Ms. McGowan:

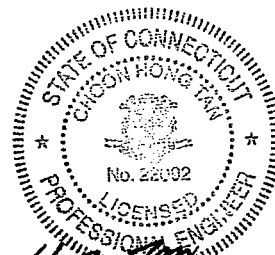
Morrison Hershfield has carried out an analysis of the 160 ft monopole tower in Cheshire, CT for the addition of *Sprint Spectrum, LP's* proposed antenna installation given in Table 2. The structural analysis was done in accordance with the requirements of TIA/EIA-222-F *Structural Standards for Steel Antenna Towers and Antenna Supporting Structures* using a fastest-mile wind speed of 85 mph and 1/2" radial ice, meeting the requirements of the 2003 International Building Code for a 3-second gust wind speed of 105 mph. The tower has been assumed to be in good condition and capable of supporting its full design capacity.

Our analysis demonstrates that the existing tower and foundation **are in conformance** with the requirements of the above noted standards under the effects of loading due to the proposed antenna installation and existing antennas.

We trust that this report is satisfactory. If you have any questions regarding the investigation, please contact our office.

Yours very truly,  
Morrison Hershfield

C. H. David Tan, P.E. (CT License No. 22092)  
Senior Engineer



*Chong Hong Tan*  
1-2-08

**Table 1: Tower Details**

Site ID / Site Name	CT0302 / Cheshire-Police
Location	500 Highland Avenue, Cheshire, CT / New Haven County (Lat 41.5112, Long -72.8984)
Tower Description	160 ft monopole tower, manufactured by Sabre
Current Standard and Loading	TIA/EIA-222-F, 85 mph fastest mile wind speed and 1/2" ice (meets requirements of 2003 IBC for 105 mph 3-sec gust wind speed).
Previous MH Analyses	NG0-045

**Table 2: Antenna Loads**

Elev. (ft)	Antenna Description	Carrier	Location	TX-Lines
	***PROPOSED***		-	
157.5	(3) Andrew 932LG65R2E Panels	Sprint	-	(3) 1 5/8"
	(3) KMW AM-X-WM-17-65 Panels			(3) 1 5/8"
	VHLP800-11 Dish			(1) 1 5/8"
	***EXISTING***		-	
157.5	(2) DB224 Dipoles	Town	-	(2) 1 5/8"
	20 ft Omni			(1) 1 5/8"
157.5	+ (3) T-Arm Mounts	Sprint	-	(6) 1 5/8"
147.5	(6) EMS RR90-18-XXDP Panels	T-Mobile	-	(12) 1 5/8"
	(3)* EMS RR90-18-XXDP Panels			(6) 1 5/8"
	(3) T-Arm Mounts **			-
127.0	(6) CSS DU04-8686 Panels	Cingular	-	(6) 1 5/8"
	(3)* CSS DU04-8686 Panels			(3) 1 5/8"
	(3) Allgon 7770 Panels			-
	(3) Powerwave 7060			-
	(3) Powerwave 7020			-
	(6) CG-1900W850			-
	(3) T-Arm Mounts **			-
117.5	(12) 48"x12"x4" Panels	Verizon	-	(12) 1 5/8"
	(3) T-Arm Mounts **			-
107.0	(12) 844G65VTZASX Panels	Nextel	-	(12) 1-5/8"
	(3) T-Arm Mounts **			-
80.0	(3) UHF/VHF Antennas	Town	-	(3) 7/8"
	GPS Unit			(1) 2"
	(3) T-Arm Mounts **			-

Note: Any discrepancies in loading from this listing should be brought to Morrison Hershfield's attention; results of this analysis cannot be used if the loading is different. All lines assumed on inside of pole.

\* Reserved Antenna Loading

\*\* No photos were available so mount types were assumed.



**Table 3: Maximum Tower Response**

Section No.	Elevation	Combined Stress Ratio	Allowable Stress Ratio	Percent Capacity Used
1	147 - 160 ft	0.272	1.333	20.4
2	96 - 147 ft	0.868	1.333	65.1
3	47 - 96 ft	0.955	1.333	71.6
4	0 - 47 ft	0.882	1.333	66.1

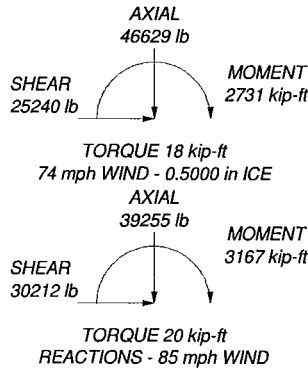
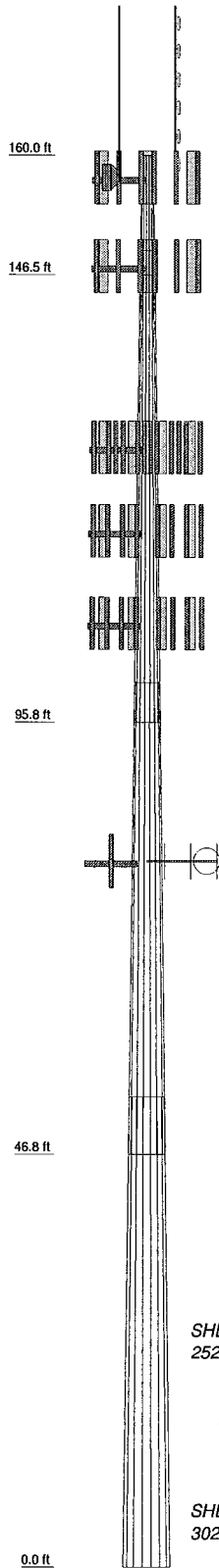
**Table 4: Foundation Loads Comparison**

Load	Original Design	Current Analysis	Pass/Fail
Compression (kip)	45.3	39.3	Pass
Moment (kip-ft)	4115	3167	
Shear (kip)	35.2	30.2	

**Attachments:** Tower Profile



Section	1	2	3	4	
Length (ft)	13.50	53.50	53.50	53.25	
Number of Sides	18	18	18	18	
Thickness (in)	0.1875	0.2500	0.3125	0.3750	
Lap Splice (ft)	2.75	4.50	6.50		
Top Dia (in)	16.7500	19.6876	34.2745	48.1321	
Bot Dia (in)	20.9100	36.1600	50.7600	64.5300	
Grade		A572-65			
Weight (lb)	509.7	3997.6	7620.9	12068.1	24196.3



### DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
DB224 (E)	167	(2) CG-1900W850 TMA (E)	127
DB224 (E)	167	(2) CG-1900W850 TMA (E)	127
20' omni (E)	167	(2) CG-1900W850 TMA (E)	127
AM-X-WM-17-65 (P)	157.5	7770 (E)	127
AM-X-WM-17-65 (P)	157.5	(3) DUO4-8686 (E/R)	127
AM-X-WM-17-65 (P)	157.5	(3) T-Arms (E)	127
(3) T-Arms (E)	157.5	(3) DUO4-8686 (E/R)	127
932LG65R2E (P)	157.5	(3) DUO4-8686 (E/R)	127
932LG65R2E (P)	157.5	7770 (E)	127
932LG65R2E (P)	157.5	7770 (E)	127
VHLP800-11 (P)	157.5	(4) 48x12x4 (E)	117.5
(3) RR90-18-XXDP (E/R)	147.5	(4) 48x12x4 (E)	117.5
(3) T-Arms (E)	147.5	(4) 48x12x4 (E)	117.5
(3) RR90-18-XXDP (E/R)	147.5	(3) T-Arms (E)	117.5
(3) RR90-18-XXDP (E/R)	147.5	(3) T-Arms (E)	107
Powerwave 7020 TMA (E)	127	(4) 844G65VTZASX (E)	107
Powerwave 7020 TMA (E)	127	(4) 844G65VTZASX (E)	107
Powerwave 7020 TMA (E)	127	(4) 844G65VTZASX (E)	107
Powerwave 7060 TMA (E)	127	(3) T-Arms (E)	80
Powerwave 7060 TMA (E)	127	GPS (E)	80
Powerwave 7060 TMA (E)	127	(3) UHF/VHF Antennas (E)	80

### MATERIAL STRENGTH

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

### TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 74 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 60 mph wind.
5. TOWER RATING: 71.6%

<b>Morrison Hershfield Corporation</b> 66 Perimeter Center East Suite 600 Atlanta, GA 30346 Phone: (770) 379-8500 FAX: (770) 379-8501	Job: <b>NGO-045R1 / 6073124</b>
	Project: <b>CT0302 / Cheshire-Police</b>
	Client: <b>National Grid Wireless</b> Drawn by: <b>TNatanegara</b> App'd:
	Code: <b>TIA/EIA-222-F</b> Date: <b>12/24/07</b> Scale: <b>NTS</b>
Path: <b>K:\Proj\MHC\NGO\NGO-045R1\Analysis\NGO-045R1.erl</b>	Dwg No. <b>E-1</b>

CT01YC312 (500 Highland Avenue, Cheshire, CT) - Siting Council Power Density Calculations										
Sprint Nextel Directional Antennas ESMR - 2657 MHz 157.5'										
Note: Power densities are in mW/ cm <sup>2</sup>										
Transmitters:	Frequency in MHz	CT Standard mW/ cm <sup>2</sup>	Number of Channels	ERP (W) per channel	Centerline of Tx antennas AGL (ft.)**	Power density calculated at base of tower				% of CT Standard
WiMAX	2657	1.0000	3	562	157.5	0.0244272				2.4427%
CDMA	1962.5	1.0000	11	411	157.5	0.0655015				6.5502%
Microwave	22500	1.0000	2	4.42	157.5	0.0001281				0.01%
From previous filings: per CSC power density data base										
Town Emergency Services										5.1300%
T-Mobile										3.1700%
Verizon										8.0900%
Verizon										1.5600%
Cellular										1.4200%
Cingular GSM										1.9300%
Cingular GSM										1.6400%
Cingular UMTS										1.6300%
Nextel										0.7500%
<b>Total % of CT Standard</b>										<b>34.3257%</b>