

CONNECTICUT SITING COUNCIL

EM-T-MOBILE-011-090409

In re:

T-Mobile USA, Inc. Notice to Make an Exempt : EXEMPT MODIFICATION NO. _____
Modification to an Existing Facility 100 Filley :
Street, Bloomfield, Connecticut. : April 9, 2009

ORIGINAL RECEIVED
NOTICE OF EXEMPT MODIFICATION APR - 9 2009
CONNECTICUT SITING COUNCIL

Pursuant to Conn. Agencies Regs. §§ 16-50j-73 and 16-50j-72(b), T-Mobile USA, Inc.

("T-Mobile") hereby gives notice to the Connecticut Siting Council ("Council") and the Town of Bloomfield of T-Mobile's intent to make an exempt modification to an existing monopole (the "Tower") located at 100 Filley Street in Bloomfield, Connecticut. Specifically, T-Mobile plans to upgrade its wireless system in Connecticut by implementing its Universal Mobile Telecommunications System ("UMTS"). UMTS is a third-generation ("3G") technology that utilizes a code division multiple access ("CDMA") base to allow for fast and large data transfers. To accomplish this upgrade, T-Mobile must modify its antenna and equipment configurations at many of its existing sites.

Once the UMTS upgrade is complete, T-Mobile will operate on a more unified communication system, allowing international wireless telephones to function world-wide. Furthermore, UMTS will enhance GPS navigation capabilities and provide emergency responders with more advanced tracking capabilities. The proposed UMTS technology is compatible with the existing second-generation ("2G") Global System for Mobile Communication ("GSM") currently on the Tower and the proposed upgrade is expected to

enhance the existing 2G system. In order to accomplish the upgrade at this site, T-Mobile plans to add UMTS technology and install associated equipment at the base of the tower.

Under the Council's regulations (Conn. Agencies Regs. § 16-50j-72(b)), T-Mobile's plans do not constitute a modification subject to the Council's review because T-Mobile 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.

The Tower is a 95-foot monopole located at 100 Filley Street in Bloomfield, Connecticut (41.8518, -72.7152). The Tower is owned by T-Mobile and it is the only provider on the Tower. Currently, T-Mobile has 4 antennas and 6 Tower Mounted Amplifiers ("TMA") located on the Tower with a centerline of 95 feet.¹ A site plan with Tower specifications is attached.

T-Mobile plans to remove and replace 1 of its existing antennas, add 2 antennas and add 3 TMA. T-Mobile proposes to remove and replace 1 of its existing antennas with 1 UMTS antenna and add 2 UMTS antennas to the Tower. T-Mobile also plans to add 3 UMTS Twin TMA to the Tower. The proposed antennas and TMA will have the same centerline as the existing antennas and TMA – 95 feet. To confirm the Tower can support these changes, T-Mobile commissioned Armor Tower to perform a structural analysis of the Tower (attached²). According to the structural analysis, dated March 23, 2009, the Tower is; "...adequate to support the proposed antenna loading" (Page1, Structural Analysis, emphasis in original).

¹ Please note that although the site plan states that there are 6 existing antennas on the Tower, there are currently 4 existing antennas on the Tower.

² The Structural Analysis incorrectly states that the site address is 100 Fillet Way in Bloomfield, Connecticut. The correct address for the site is 100 Filley Street in Bloomfield, Connecticut.

In addition, T-Mobile plans to locate 6, 1-1/4 inch coax cables under the proposed cable tray. The proposed cable tray will connect the proposed UMTS equipment cabinet and the proposed UMTS antennas. T-Mobile proposes to install the UMTS equipment cabinet on a 5.5-foot by 5.5-foot (approximately) concrete pad extension. The concrete pad extension is contained within the existing chain link fence that surrounds the tower site. Hence, the concrete pad extension will not extend beyond the boundaries of the tower site. T-Mobile also proposes to install electric wiring to run inside the existing conduit.


Therefore, excluding brief, minor, construction-related noise during the addition of the antennas and the installation of the equipment cabinet, T-Mobile's changes to the Tower will not increase noise levels at the site.

The proposed antennas and TMA 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 cumulative power density analysis measured at the base of the Tower indicates that T-Mobile's antennas will emit 12.62% 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, T-Mobile's proposed plan to remove and replace antennas and add TMA at this site does not constitute a modification subject to the Council's jurisdiction because T-Mobile 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.

T-Mobile USA, Inc.

By: 
Thomas J. Regan
Brown Rudnick LLP
185 Asylum Street, CityPlace I
Hartford, CT 06103-3402
Email - tregan@brownrudnick.com
Phone - 860.509.6522
Fax - 860.509.6622

Certificate of Service

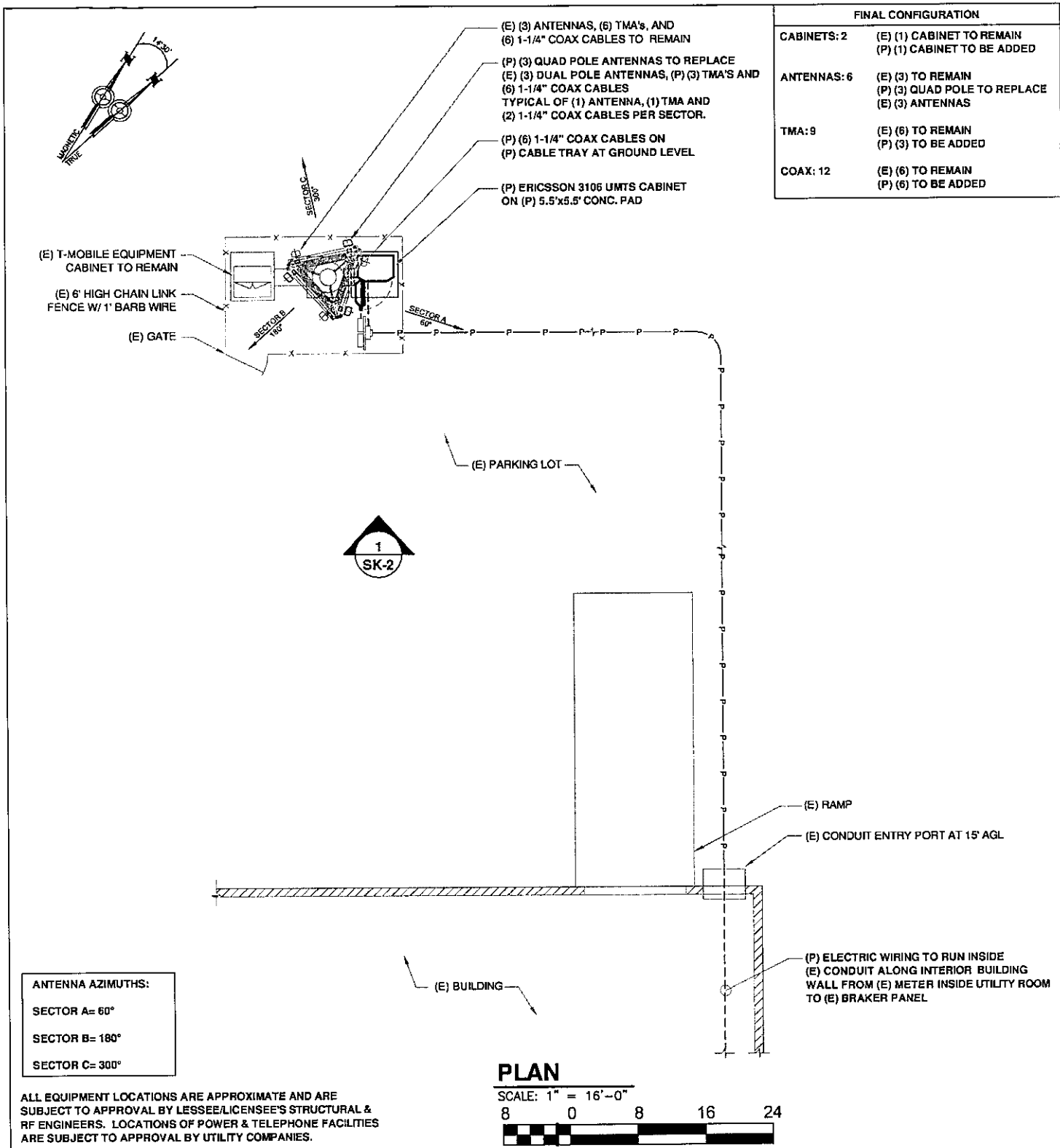
This is to certify that on this 24th day of April, 2009, the foregoing Notice of Exempt

Modification was sent, via first class mail, to the following:

Town of Bloomfield
Town Hall
Mayor Sydney T. Schulman
800 Bloomfield Avenue
Bloomfield, CT 06002

By: 
Thomas J. Regan

40258637 v1 - 025064/0016



ALL EQUIPMENT LOCATIONS ARE APPROXIMATE AND ARE
SUBJECT TO APPROVAL BY LESSEE/LICENSEE'S STRUCTURAL &
RF ENGINEERS. LOCATIONS OF POWER & TELEPHONE FACILITIES
ARE SUBJECT TO APPROVAL BY UTILITY COMPANIES.

TRANSCEND WIRELESS

10 INDUSTRIAL AVE
MAHWAH, NJ 0740
OFFICE: (210) 316-2085
FAX: (210) 684-0066

FOR

OMNIPONT COMMUNICATIONS, INC. DBA T-MOBILE USA, INC

35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860) 692-7100
FAX: (860) 692-7159



15 Cypress St., Suite 300
Newton Centre, MA 02459
Office: 617-965-0789
Fax: 617-663-6032

SITE NUMBER:

CT11000A

SITE NAME:

BLOOMFIELD/W DUDLEY-1

ADDRESS:

100 FILLEY STREET
BLOOMFIELD, CT 06002

DRAWN BY

G.C.

0: FINAL

03-11-09

A: REVIEW

02-05-09

REVISION

DATE

APPROVALS

Site Owner

Date

Construction Manager

Date

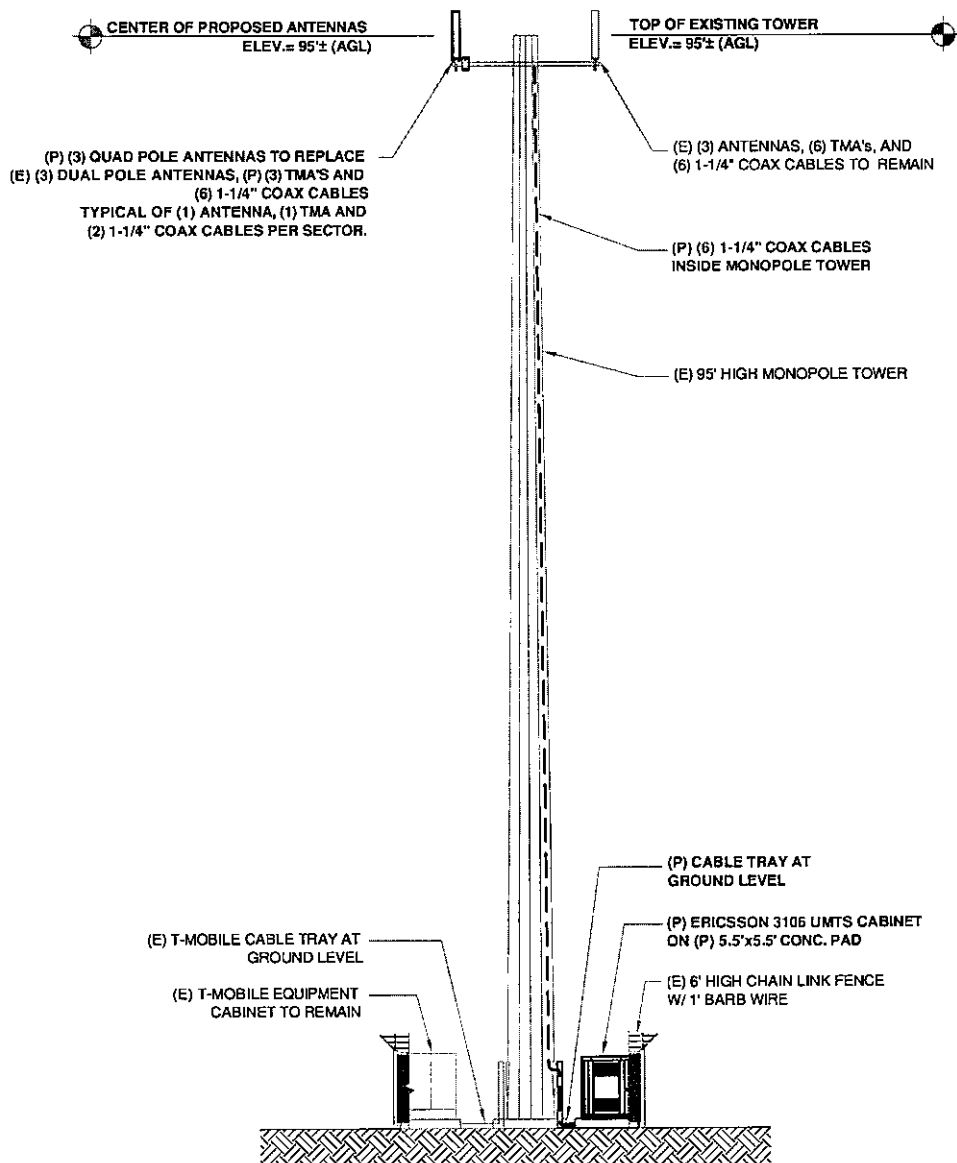
RF Engineer

Date

Site Acquisition

Date

The above parties hereby approve and accept these documents
and authorize the contractor to proceed with the construction
described herein, all construction documents are subject to
review by the local building department and any changes or
modifications they may impose.



ELEVATION

SCALE: 1" = 16'-0"



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Date

Construction Manager

Date

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Date

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Date

The above parties hereby approve and accept these documents and authorize the contractor to proceed with the construction described herein, all construction documents are subject to review by the local building department and any changes or modifications they may impose.



March 23rd, 2008

Mr. Hans Fiedler
T-Mobile USA
35 Griffin Road South
Bloomfield, CT 06002

Re: CT11000A Monopole

Dear Mr. Fiedler,

Per your request, we have completed the review of the above referenced tower located at 100 Fillet Way in Bloomfield, Hartford County, CT and have **concluded it to be adequate to support the proposed antenna loading** within the scope of this review.

95' Monopole was manufactured by Summit in July of 1997 (PJF Job No. 29297-439, Summit Job No. 2615) to support (2) levels of antennas at 93', and 75'. The pole consists of two (2) 18-sided polygon slip jointed sections ranging in thickness from 3/16" at the top to 1/4" at the bottom. The pole was designed to resist 85 mph design wind with no ice, and 74 mph wind with 1/2" radial ice per TIA/EIA-222-F Standard. Please note that Section 3108.4 of the International Building Code states that "Towers shall be designed to resist wind loads according to TIA/EIA-222".

T-Mobile is proposing to replace one existing RR90-17-02DP (Dual Pole) antenna per sector with one APX16DWV-16DWVS-A20 (Quad Pole) antenna with Twin TMA. All feed lines (existing and proposed) must be located inside the pole to maintain the design wind profile. The design load at 93' consisted of (6) AP1990152T2 Antennas with approx. $CaAa = 5.95 \text{ ft.sq.}$ totaling $CaAa = 35.7 \text{ ft.sq.}$ The proposed $CaAa$ at 93' = $7.06 \text{ ft.sq.} \times 3$ (APX16DWV-16DWVS-A20) + $4.36 \text{ ft.sq.} \times 3$ (RR90-17-02DP) = 34.3 ft.sq.

Additionally the tower was designed to accommodate one more antenna level at 75' which is presently not installed. All antennas (design, existing and proposed) assumed to be installed on 14' Low-Profile Platform.

Based on the above observations we conclude that it is structurally acceptable for the proposed T-Mobile antennas to be co-located on this tower.

No conclusions, expressed or implied, shall indicate that Armor Tower has made an evaluation of the original design, materials, fabrication, or potential erection deficiencies. Any information contrary to that assumed for the purpose of preparing this analysis could alter the findings and conclusions as stated.

We appreciate the opportunity to provide our professional services to T-Mobile and Atlantis Group and if we can be of further assistance, please contact us.

Respectfully submitted,
ARMOR TOWER, INC.

Ed Rosenbloom
Structural Engineer

Technical Memo

To: Transcend
From: Farid Marbough - Radio Frequency Engineer
cc: Jason Overbey
Subject: Power Density Report for CT11000A
Date: April 3, 2009

1. Introduction:

This report is the result of an Electromagnetic Field Intensities (EMF - Power Densities) study for the T-Mobile antenna installation on a Monopole at 100 Filley St., Bloomfield, CT. This study incorporates the most conservative consideration for determining the practical combined worst case power density levels that would be theoretically encountered from locations surrounding the transmitting location.

2. Discussion:

The following assumptions were used in the calculations:

- 1) The emissions from T-Mobile transmitters are in the (1935-1944.8), (2140-2145), (2110-2120)MHz frequency Band.
- 2) The antenna array consists of three sectors, with 2 antennas per sector.
- 3) The model number for GSM antenna is RR90-17-02DP.
- 3) The model number for UMTS antenna is APX16DWV-16DWV.
- 4) GSM antenna center line height is 93 ft.
- 4) UMTS antenna center line height is 93 ft.
- 5) The maximum transmit power from any GSM sector is 1704.67 Watts Effective Radiated Power (EIRP) assuming 8 channels per sector.
- 5) The maximum transmit power from any UMTS sector is 2649.54 Watts Effective Radiated Power (EIRP) assuming 2 channels per sector.
- 6) All the antennas are simultaneously transmitting and receiving, 24 hours a day.
- 7) Power levels emitting from the antennas are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 8) The average ground level of the studied area does not change significantly with respect to the transmitting location

Equations given in "FCC OET Bulletin 65, Edition 97-01" were then used with the above information to perform the calculations.

3. Conclusion:

Based on the above worst case assumptions, the power density calculation from the T-Mobile antenna installation on a Monopole at 100 Filley St., Bloomfield, CT, is 0.12621 mW/cm². This value represents 12.621% of the Maximum Permissible Exposure (MPE) standard of 1 milliwatt per square centimeter (mW/cm²) set forth in the FCC/ANSI/IEEE C95.1-1991. Furthermore, the proposed antenna location for T-Mobile will not interfere with existing public safety communications, AM or FM radio broadcasts, TV, Police Communications, HAM Radio communications or any other signals in the area.

Connecticut Market**T-Mobile****Worst Case Power Density**

Site: CT11000A
 Site Address: 100 Filley St.
 Town: Bloomfield
 Tower Height: 95 ft.
 Tower Style: Monopole

GSM Data		UMTS Data	
Base Station TX output	20 W	Base Station TX output	40 W
Number of channels	8	Number of channels	2
Antenna Model	RR90-17-02DP	Antenna Model	APX16DWV-16DWV
Cable Size	1 1/4 in.	Cable Size	1 1/4 in.
Cable Length	112 ft.	Cable Length	112 ft.
Antenna Height	93.0 ft.	Antenna Height	93.0 ft.
Ground Reflection	1.6	Ground Reflection	1.6
Frequency	1945.0 MHz	Frequency	2.1 GHz
Jumper & Connector loss	4.50 dB	Jumper & Connector loss	1.50 dB
Antenna Gain	16.5 dBi	Antenna Gain	18.0 dBi
Cable Loss per foot	0.0154 dB	Cable Loss per foot	0.0116 dB
Total Cable Loss	1.7248 dB	Total Cable Loss	1.2992 dB
Total Attenuation	6.2248 dB	Total Attenuation	2.7992 dB
Total EIRP per Channel	53.29 dBm	Total EIRP per Channel	61.22 dBm
(In Watts)	213.08 W	(In Watts)	1324.77 W
Total EIRP per Sector	62.32 dBm	Total EIRP per Sector	64.23 dBm
(In Watts)	1704.67 W	(In Watts)	2649.54 W
nsg	10.2752	nsg	15.2008
Power Density (S) = 0.049411 mW/cm ²		Power Density (S) = 0.076798 mW/cm ²	
T-Mobile Worst Case % MPE =		12.6209%	

Equation Used :

$$S = \frac{(1000 (grf)^2 (Power)^{10^{(nsg/10)}})}{4\pi (R)^2}$$

Office of Engineering and Technology (OET) Bulletin 65, Edition 97-01, August 1997

Co-Location Total

Carrier	% of Standard
Verizon	
Cingular	
Sprint	
AT&T Wireless	
Nextel	
MetroPCS	
Other Antenna Systems	
Total Excluding T-Mobile	0.0000 %
T-Mobile	12.6209
Total % MPE for Site	12.6209%