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@po.state.ct.us
www.ct.gov/csc

December 19, 2005

Lucia Chiocchio, Esq.
Cuddy & Feder LLP
90 Maple Avenue
White Plains, NY 10601

RE: **EM-NEXTEL-015-051110** - General Dynamics Network Services, Inc. as agent for Nextel of New York, Inc. d/b/a Nextel Communications, Inc. notice of intent to modify an existing telecommunications facility located at 623 Pine Street, Bridgeport, Connecticut.

Dear Attorney Chiocchio:

At a public meeting held on December 14, 2005, 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 received in our office on November 10, 2005, and additional correspondence dated November 30, 2005, 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,

Pamela B. Katz, P.E.
Chairman

PBK/laf

c: The Honorable John Fabrizi, Mayor, City of Bridgeport
Melanie J. Howlett, Assistant City Attorney, City of Bridgeport
Robert Knapp, Radio Communications
Kenneth C. Baldwin, Esq., Robinson & Cole LLP
Christine Farrell, T-Mobile

ORIGINAL

CUDDY & FEDER LLP

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NORWALK, CONNECTICUT

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1971-2000

NEIL J. ALEXANDER (also CT)
THOMAS R. BEIRNE (also DC)
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LUCIA CHIOCCHIO (also CT)
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CHRISTOPHER B. FISHER (also CT)
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CONNECTICUT
SITING COUNCIL

EM-NEXTEL-015-051110

November 30, 2005

VIA OVERNIGHT MAIL
Hon. Pamela B. Katz, Chairman
and Members of the Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Re: Nextel of New York, Inc. d/b/a Nextel Communications
Notice of Intent to Modify an Existing Telecommunications Facility
623 Pine Street, Bridgeport, Connecticut

Dear Chairman Katz and Members of the Council:

On behalf of Nextel of New York, Inc. d/b/a Nextel Communications ("Nextel") and in furtherance of the above referenced matter, please find enclosed an updated structural report prepared by KM Consulting Engineers, revised on October 21, 2005. The enclosed structural report confirms that the existing Pine Street facility is structurally capable of supporting the addition of Nextel's antennas at a centerline height of 85' above grade level.

Thank you for your consideration of the enclosed.

Very truly yours,

Lucia Chiocchio

Lucia Chiocchio

cc: Mayor John Michael Fabrizi, City of Bridgeport (w/attachments)
Melanie Howlett, Esq., City Attorney (w/attachements)
Mark Nidle, General Dynamics (w/out attachments)
Shannon Auchmoody, General Dynamics (w/attachments)
Amy English, General Dynamics (w/attachments)

C&F: 558705.1

STRUCTURAL ANALYSIS AND REPORT

FOR

GENERAL DYNAMICS WIRELESS SERVICES
NEXTEL METRO NY - WESTCHESTER/FAIRFIELD

BRIDGEPORT WEST TOWER
CT-3612

BRIDGEPORT, CONNECTICUT

250 FT. SELF-SUPPORTED TRIANGULAR TOWER

Prepared By:

KM CONSULTING ENGINEERS, INC.

32 West Upper Ferry Road
Ewing, New Jersey 08628-0829
Phone: (609) 538-0400 Fax (609) 538-8858

October 10, 2005
REVISED OCTOBER 21, 2005

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

Structural wind & ice: 85 MPH and 74 MPH with ½ radial ice

GENERAL DYNAMICS WIRELESS SERVICES
PROJECT: BRIDGEPORT WEST

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY

Structure

- 250 ft. Self-Support Communications Tower
- Owner - RCI
- Location -Bridgeport, CT

Equipment

Proposed at 85' AGL elev - installation of proposed (12) Nextel panel antenna.

Synopsis

The tower as it exists and with the proposed Nextel equipment installation does meet the EIA/TIA standards. The maximum tower utilization with proposed and existing antenna is 88.3%.

Information on the existing foundations has been reviewed. Utilizing the proposed loading reactions of the tower, a foundations analysis indicates that the existing capacity of the foundation will meet the EIA/TIA and IBC standards.

- End of Executive Summary -

2.0 APPURTENANCE LISTING

TYPE	ELEVATION
Omni Antenna	276.5
Yagi in Radom	264
Beacon	264
Omni Antenna	264
Omni Antenna	264
Top of Platform	264
Omni Antenna	256-239
Omni Antenna	238
(2) APX16V-16VL	184
(2) APX16V-16VL	184
(2) APX16V-16VL	184
Mounting frame w/stable bar	184
Mounting frame w/stable bar	184
Mounting frame w/stable bar	184
Amplifier	184
Amplifier	184
Amplifier	184
Mounting frames w/stable bar (Verizon)	116
Mounting frames w/stable bar (Verizon)	116

TYPE	ELEVATION
(2) APL 196516 (Verizon)	116
(2) APL 196516 (Verizon)	116
(2) APL866513 w/Mount Pipe (Verizon)	116
(2) APL866513 w/Mount Pipe (Verizon)	116
(2) APL 196516 (Verizon)	116
Mounting frames w/stable bar (Verizon)	116
(2) APL866513 w/Mount Pipe (Verizon)	116
TV 65 antenna	108
TV 65 antenna	108
(4) sector antenna (Nextel)	85*
(4) sector antenna (Nextel)	85*
(4) sector antenna (Nextel)	85*
Mounting Frames (Nextel)	85*
Mounting Frames (Nextel)	85*
Mounting Frames (Nextel)	85*

* Proposed Nextel antenna with mounting frames

3.0 COMMENTARY

A tower climb was performed by KM Consulting Engineers Inc. (KMCE) in September 2005 in order to ascertain tower inventory, antenna configurations, tower member sizes and general condition of the tower. The structure is a Rohn self-supported tower located at 623 Pine Street, Bridgeport, CT.

The tower is a 250 ft. structure with a triangular platform located at the top of the tower. Our scope of work is to determine if the existing structure is capable of withstanding additional stresses/forces imposed by the addition of Nextel equipment.

The following report will provide analytical calculations and commentary regarding the capacity of the existing tower and subsequent recommendations.

4.0 ANALYSIS PROCEDURE

KM Consulting Engineers, Inc. carried out their structural analysis by correlating an inventory/field inspection and processing the retrieved data into EriTower analytical program.

This program runs in conjunction with the guidelines set down in the EIA/TIA-222-F June 1996 Standard entitled "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures."

The existing Tower is analyzed by placing wind forces on the structure in 30° positional increments around the tower (ie. forces directly onto the tower corners, faces and parallel to the faces). This enables the user to "create" a three-dimensional representation, yielding results for maximum worst case scenarios.

In effect, the production of these results allows the user to study the structural integrity of the tower when influenced by wind forces from any direction.

The proceeding report includes analysis for the tower with the addition of Nextel antenna in the scenario previously stated. For clarity, the analysis shall include worst case loadings and a typical elevation view with maximum foundation loads tabulated.

5.0 WIND AND ICE LOADING

The existing 250 ft. self-supported tower is located at 623 Pine Street, Bridgeport, CT.

Structural wind speed has been taken as 85 MPH (concurrent with listings applicable for Fairfield County, CT).

Additionally, the tower has been analyzed for ½" radial ice loading with a reduced wind speed of 74 MPH.

6.0 EQUIPMENT LOADING

The preceding analytical data has been formulated for the following:

Load Case #1: Existing 250 ft. self-supported tower with existing inventory. Capacity utilization is LC1 - 85.8%, LC2 - 88.3%.

Load Case #2: Existing 250 ft. self-supported tower with existing inventory and adding 12 each panel antenna, at rad center of 85 ft., along with 15 each, 1 5/8" coax.

7.0 TOWER ANALYSIS AND RESULTS

The tower was analyzed for the existing inventory plus the proposed loading condition

For Load Cases #1 & 2: The existing tower meets the standards of EIA/TIA 222 F.

The tower foundation has adequate capacity to meet the EIA/TIA-222-F and IBC standards. The IBC requires that the foundation resist two time the wind load.

8.0 RECOMMENDATIONS

Further to our calculations, we conclude that the tower structure and foundation meets the standards of EIA/TIA 222 F and the IBC.

We recommend the following:

1. The antenna be mounted as per this report at rad center 85' AGL.

Prepared By:

Michael L. Bohlinger, PE
Principal
CT License No. 20405

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
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November 14, 2005

The Honorable John Fabrizi
Mayor
City of Bridgeport
City Hall
999 Broad Street
Bridgeport, CT 06604

RE: **EM-NEXTEL-015-051110** – General Dynamics Network Services, Inc. as agent for Nextel of New York, Inc. d/b/a Nextel Communications, Inc. notice of intent to modify an existing telecommunications facility located at 623 Pine Street, Bridgeport, Connecticut.

Dear Mayor Fabrizi:

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 November 30, 2005 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 November 25, 2005.

Thank you for your cooperation and consideration.

Very truly yours,

S. Derek Phelps
Executive Director

SDP/ap

Enclosure: Notice of Intent

c: Melanie J. Howlett, Assistant City Attorney, City of Bridgeport

EM-NEXTEL-015-051110

NOTICE OF INTENT TO MODIFY AN EXISTING TELECOMMUNICATIONS FACILITY AT 623 PINE STREET, BRIDGEPORT, CONNECTICUT

Pursuant to the Public Utility Environmental Standards Act, Connecticut General Statutes § 16-50g et. seq. ("PUESA"), and Sections 16-50j-72(b) of the Regulations of Connecticut State Agencies adopted pursuant to the PUESA, General Dynamics Network Services, Inc. as agent for Nextel of New York, Inc. d/b/a Nextel Communications ("Nextel") hereby notifies the Connecticut Siting Council of its intent to modify an existing facility located at 623 Pine Street, Bridgeport, Connecticut (the "Pine Street Facility"), owned by Andrew Knapp, Lillian Knapp and Robert Knapp. Nextel has entered into an agreement with the owners of the Facility to permit the installation of a wireless communications facility at the Pine Street Facility. Verizon Wireless and Omnipoint (T-Mobile) currently shares the use of the Pine Street Facility, as detailed below.

The Pine Street Facility

The Pine Street Facility consists of an approximately two hundred and fifty (250) foot lattice tower and associated equipment shelter currently being used for wireless communications by Verizon Wireless and T-Mobile. Verizon Wireless' antennas are located at a centerline height of 110' above grade level and T-Mobile's antennas are located at a centerline height of 180' above grade level. Verizon Wireless and T-Mobile's equipment are located in equipment rooms with the equipment shelter located at the base of the lattice tower.

Nextel's Wireless Facility

As shown on the Lease Exhibits annexed hereto as Exhibit C, dated August 1, 2005, prepared by Tectonic Engineering & Surveying Consultants P.C., including an equipment shelter floor plan, roof plan and elevation plan of the Pine Street Facility, Nextel proposes shared use of the Facility by placing panel antennas at a centerline height of 85' above grade level and equipment within a 10' x 20' equipment room within the existing equipment shelter. Nextel will install twelve (12) panel antennas at a centerline height of approximately 85' as shown on the enclosed antenna mounting plan. As evidenced in the structural letter and structural report prepared by KM Consulting Engineers, annexed hereto as Exhibit A, Nextel has confirmed that the Pine Street Facility is structurally capable of supporting the addition of Nextel's antennas.

Nextel's Facility Constitutes An Exempt Modification

The proposed addition of Nextel's antennas and equipment to the Pine Street Facility constitutes an exempt "modification" of an existing facility as defined in Connecticut General Statutes Section 16-50i(d) and Council regulations promulgated pursuant thereto. The addition of Nextel's antennas and equipment to the Pine Street Facility will not result in an increase of the lattice tower's height nor extend the

equipment shelter or site boundaries. Further, there will be no increase in noise levels by six (6) decibels or more at the site's boundary. No changes to the appearance of the lattice tower are proposed as Nextel's antennas will be mounted in the same manner as the existing antennas. Nextel's equipment will be located within the existing equipment shelter that houses the existing carriers' equipment. As such, Nextel's facility will have a *de minimus*, if any, visual impact.

As set forth in a Cumulative Emissions Report prepared by Daniel J. Collins, RF Engineer, annexed hereto as Exhibit B, the total radio frequency electromagnetic radiation power density at the site's boundary will not be increased to or above the standard adopted by the Connecticut Department of Environmental Protection as set forth in Section 22a-162 of the Connecticut General Statutes and MPE limits established by the Federal Communications Commission.

For all the foregoing reasons, addition of Nextel's facility to the Pine Street Facility constitutes an exempt modification which will not have a substantially adverse environmental effect.

Conclusion

Accordingly, Nextel respectfully requests that the Connecticut Siting Council acknowledge that its proposed modification to the Pine Street Facility meets the Council's exemption criteria.

Respectfully Submitted,

Lucia Chiocchio

Lucia Chiocchio, Esq.
On behalf of Nextel of New York
Cuddy & Feder LLP
90 Maple Avenue
White Plains, New York 10601

cc: Mayor John Michael Fabrizi, City of Bridgeport
Melanie Howlett, Esq., City Attorney
Mark Nidle, General Dynamics (w/o attachments)
Tara Basley, General Dynamics

KM Consulting Engineers, Inc.
Multi-Disciplined Engineering and Project Management

November 9, 2005

Connecticut Siting Counsel
10 Franklin Square
New Britain, CT

Re: Bridgeport West
623 Pine Street
Bridgeport, CT 06605
CT-3612
KMCE Project No. 050801.001

Dear Counsel:

Further to our Structural Analysis report dated October 10, 2005, the Bridgeport West Tower located at 623 Pine Street, Bridgeport, CT will have the capacity to lower the proposed Nextel installation from a Rad center of 93' to 85'. As outlined in section 2.3.3 of the Structural Standards for Steel Antenna Towers and Antenna Supporting Structure TIA/EIA-222-F, the velocity pressure is a function of height. Therefore, a decrease in installation Rad center will result in a decrease of velocity pressure. Thus, the resulting load on the tower will decrease.

If you have any questions or need further information, please don't hesitate to contact our office.

Sincerely,
KM CONSULTING ENGINEERS, INC.

Richard L. Peterman, EIT
Project Manager

Reviewed and Approved by:

Michael L. Bohlinger, PE
Principal
CT License No. 20405

Z:\kmce\General Dynamics\Bridgeport West\Admin\S&S ltr.wpd

STRUCTURAL ANALYSIS AND REPORT

FOR

GENERAL DYNAMICS WIRELESS SERVICES
NEXTEL METRO NY - WESTCHESTER/FAIRFIELD

BRIDGEPORT WEST TOWER
CT-3612

BRIDGEPORT, CONNECTICUT

250 FT. SELF-SUPPORTED TRIANGULAR TOWER

Prepared By:

KM **CONSULTING ENGINEERS, INC.**
32 West Upper Ferry Road
Ewing, New Jersey 08628-0829
Phone: (609) 538-0400 Fax (609) 538-8858

October 10, 2005

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

Structural wind & ice: 85 MPH and 74 MPH with ½ radial ice

1.0 EXECUTIVE SUMMARY

Structure

- 250 ft. Self-Support Communications Tower
- Owner - RCI
- Location -Bridgeport, CT

Equipment

Proposed at 93' elev - installation of proposed (12) Nextel panel antenna.

Synopsis

The tower as it exists and with the proposed Nextel equipment installation does meet the EIA/TIA standards. The maximum tower utilization with proposed and existing antenna is 88.3%.

Information on the existing foundations has been reviewed. Utilizing the proposed loading reactions of the tower, a foundations analysis indicates that the existing capacity of the foundation will meet the EIA/TIA and IBC standards.

- End of Executive Summary -

2.0 APPURTENANCE LISTING

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Mounting Frames (Nextel)	93*

* Proposed Nextel antenna with mounting frames

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The tower is a 250 ft. structure with a triangular platform located at the top of the tower.

Our scope of work is to determine if the existing structure is capable of withstanding additional stresses/forces imposed by the addition of Nextel equipment.

The following report will provide analytical calculations and commentary regarding the capacity of the existing tower and subsequent recommendations.

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In effect, the production of these results allows the user to study the structural integrity of the tower when influenced by wind forces from any direction.

The proceeding report includes analysis for the tower with the addition of Nextel antenna in the scenario previously stated. For clarity, the analysis shall include worst case loadings and a typical elevation view with maximum foundation loads tabulated.

5.0 WIND AND ICE LOADING

The existing 250 ft. self-supported tower is located at 623 Pine Street, Bridgeport, CT.

Structural wind speed has been taken as 85 MPH (concurrent with listings applicable for Fairfield County, CT).

Additionally, the tower has been analyzed for ½" radial ice loading with a reduced wind speed of 74 MPH.

6.0 EQUIPMENT LOADING

The preceding analytical data has been formulated for the following:

Load Case #1: Existing 250 ft. self-supported tower with existing inventory. Capacity utilization is LC1 - 85.8%, LC2 0 88.3%.

Load Case #2: Existing 250 ft. self-supported tower with existing inventory and adding 12 each panel antenna, at rad center of 93 ft., along with 15 each, 1 5/8" coax.

8.0 RECOMMENDATIONS

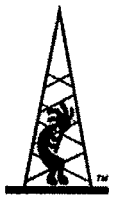
Further to our calculations, we conclude that the tower structure and foundation meets the standards of EIA/TIA 222 F and the IBC.

We recommend the following:

1. The antenna be mounted as per this report at rad center 93'.

Prepared By:

Michael L. Bohlinger, PE
Principal
CT License No. 20405



PINNACLE TELECOM GROUP

Consulting and Engineering Services

ANTENNA SITE FCC RF COMPLIANCE ASSESSMENT AND REPORT

NEXTEL COMMUNICATIONS

SITE CT-3612
623 PINE STREET
BRIDGEPORT, CT

NOVEMBER 8, 2005

14 RIDGEDALE AVENUE, SUITE 262 • CEDAR KNOLLS, NJ 07927 • 973-451-1630

Contents

Introduction and Summary

At the request of Nextel Communications, Pinnacle Telecom Group has prepared this independent expert assessment of potential radiofrequency (RF) exposure and FCC regulatory compliance related to a proposed wireless base station operation on an existing tower at 623 Pine Street in Bridgeport, CT. Nextel refers to the site by the code "CT-3612".

The FCC requires all wireless system operators to perform an assessment of potential human exposure to radiofrequency (RF) fields emanating from all the transmitting antennas at a site whenever antenna operations are added or modified, and to ensure compliance with specified FCC Maximum Permissible Exposure (MPE) limits in areas of general public access. In this case, according to information provided by Nextel, there are a number of other antenna operations on the tower, and the RF effects of those existing antennas will be incorporated in this assessment of compliance with the FCC MPE limits and associated regulations. Note that those same FCC regulations require any future collocators to specifically assess and assure continuing compliance based on the effects of all proposed and then-existing antennas.

The compliance assessment employs a mathematical analysis of potential RF exposure levels that the combination of proposed and existing antenna operations will cause at ground level around the site. The analysis employs standard FCC formulas for predicting the effects of the antennas in a very conservative manner – indeed, intentionally and significantly overstating the results – so that there can be great confidence in the conclusions about compliance with the safety limit.

The result of the compliance assessment in this case is as follows:

- At ground level around the site, the conservatively calculated maximum RF exposure level from the combination of proposed and existing antenna operations is 4.1444 percent of the FCC limit for acceptable continuous exposure of the general population; in other words, even with an extremely conservative methodology and assumptions in the

calculations, the maximum potential exposure is still more than 24 times below the FCC compliance limit.

- Therefore, the calculation results demonstrate that the RF emissions from the combination of proposed and existing antenna operations will comfortably satisfy the compliance obligations in the FCC regulations regarding human exposure to RF fields. Moreover, because of the conservative methodology and assumptions applied in the calculations, actual RF levels caused by the antennas will be even lower than the calculations here indicate.

The remainder of this report provides the following:

- technical data on the proposed and existing antenna operations;
- a description of the applicable FCC mathematical model for determining RF compliance, and application of the relevant data to that model; and
- analysis of the results, and a compliance conclusion for the antenna site.

In addition, four Appendices are included. Appendix A provides background on the FCC limits for RF exposure. Appendix B provides a list of key FCC references on RF exposure and site compliance. Appendix C provides a copy of the FCC's official position on the potential exposure from cellular and PCS transmitters, to wit, that it is insignificantly low and has no effect on the human health environment. Appendix D summarizes the qualifications of the expert certifying RF compliance for this site.

Antenna and Transmission Data

Compliance-related data for the proposed Nextel antenna operation at the site is summarized in the table on the next page.

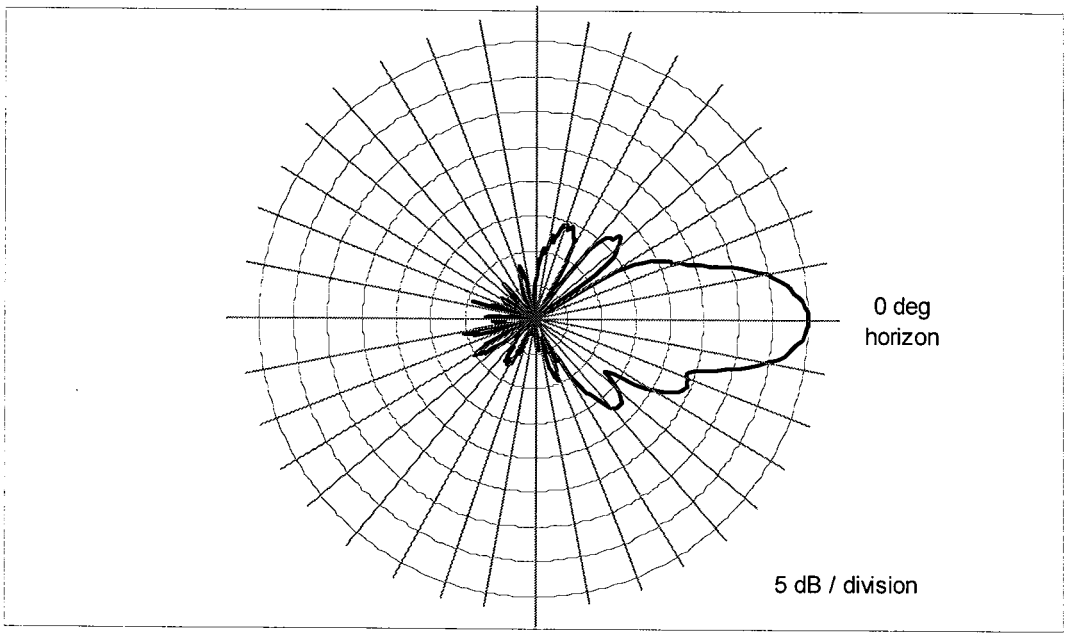
Nextel Data	
Trans. Frequency Band	851-866 MHz and 935-940 MHz
Service Coverage Type	Sectorized (3 sectors – with identical parameters)
Antenna Height (AGL)	85 feet (to centerline)
Antenna Type	Directional Panel
Antenna Manufacturer	EMS Wireless
Antenna Model / Max. Gain	FV65-13-XXXBL2 / 13.5 dBd (15.65 dBi)
RF Channels per Sector	20 (max. in each band; see note below)
Max. ERP / RF Chan.	100 watts (max.; see note below)

Note that Nextel's service coverage is optimized when the maximum effective radiated power (ERP, the product of transmitter power and maximum antenna gain, offset by antenna line loss) is set at 100 watts per channel. Note, too, that Nextel's technology allows a maximum of 36 RF channels for each base station (divided among the antenna sectors). While the typical "maximum RF channels per sector" figure is 12 (36 divided by three), the equipment is technically capable of as many as 20 RF channels in a single sector (subject to the overall limit of 36). In order to be as conservative as possible, our compliance calculations will apply the technical maximum of 20 channels.

The area below the antennas, at ground level, is of interest in terms of potential exposure of the general public, so the antenna's vertical-plane emission characteristic is used in the calculations.

A diagram on the next page shows the vertical-plane radiation pattern of the antenna model proposed here by Omnipoint. In these antenna radiation pattern diagrams, the antenna is effectively pointed at the three o'clock position (the horizon) and the relative strength of the pattern at different angles is described using decibel units. Note that the use of a decibel scale to describe the relative pattern at different angles actually serves to significantly understate the actual focusing effects of the antenna. Where the pattern reads 20 dB the relative RF energy emitted at the corresponding downward angle is $1/100^{th}$ of the maximum that occurs in the main beam (at 0 degrees); at 30 dB, the energy is only $1/1000^{th}$ of the maximum.

EMS FV65-13-XXXBL2 Panel Antenna – Vertical-Plane Radiation Pattern



As mentioned, there are a number of existing antenna operations to include in the compliance assessment. The tables that follow summarize the relevant data for each type of antenna and service.

Omnidirectional Antennas			
Height AGL (ft)	***Antenna Model***	***Freq. Band (MHz)***	***ERP (W)***
272	DB640 (4)	450-470	6 x 500
272	DB268	162	500
267	DB806 (3)	929	3 x 3500
242	DB640	450-480	500
225	DB806 (2)	806-940	(see note)

Note: The last antenna model listed has a maximum antenna input power specification of 500 watts and a maximum antenna gain of 6 dBd; therefore, we will conservatively apply a maximum ERP of 2000 watts each of these antennas.

The next table summarizes the information for two existing commercial wireless operators – Verizon Wireless and Omnipoint Communications (a.k.a., T-Mobile) – both using directional panel antennas. The column labeled "Channels" refers

to channel per antenna sector, and the column labeled "Tx Power" refers to transmitter power per channel, in watts. Note that we will conservatively apply "dual-band" parameters to the Verizon operation, as it can be assumed Verizon will maximize the capability of its FCC licenses.

Operator	*Ant Ht (ft)*	*Freq Band (MHz)*	*Channels*	*Tx Power*
Verizon	110	880 1900	7 3	20 16
Omnipoint	180	1900	8	20

In addition, there is a six-foot point-to-point 13 GHz microwave dish at 245 feet, a 450 MHz Yagi (DB436) at 208 feet, two 454 MHz log periodic antennas (Kathrein-Scala CL-400, with 210 watts ERP) at 260 feet, and TV Channel 65 (using a Kathrein-Scala 4DR-4-2HW antenna and 1260 watts ERP) at 260 feet.

Mathematical Compliance Analysis

FCC Office of Engineering and Technology Bulletin 65 ("OET Bulletin 65"; see list of references in Appendix B) provides guidelines for computational models and their application to calculating potential exposure levels at various points around wireless transmitting antennas. The computational models are intentionally very conservative, and significantly overestimate the potential exposure levels, and additional assumptions can be incorporated to make the calculations even more conservative. Thus, if the calculations demonstrate the MPE limits are still not exceeded even under extreme worst-case assumptions, there can be great confidence that no RF health hazard exists.

Potential exposure levels at ground level around an antenna site have a direct relationship to input power to the antenna (which we will assume is constant and at its maximum), effective antenna gain in the direction of interest, and an assumed ground reflection factor (assumed to be a conservative 100 percent). The levels are inversely proportional to the square of the distance from the antenna. Thus, in order to be conservative, calculations will be performed from

the bottom of the antennas and at street level will assume a human height of 6 feet, 6 inches – conservatively minimizing the distance to the RF source.

Note that the FCC recognizes that with sectorized antenna coverage, the radiated power of interest is the maximum per individual antenna sector. The exposure contributions of same-system sectors pointing in other directions are insignificantly low, due to the directionality of the antennas.

The FCC's formula for ground-level RF exposure calculations is as follows:

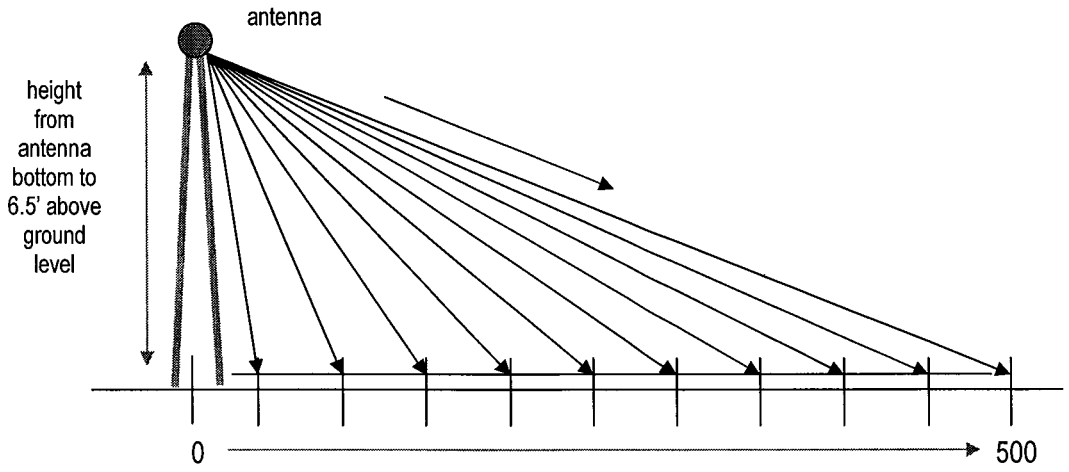
$$MPE\% = (100 * ERP_{ch} * 1.64 * N * 10^{(Vdisc/10)} * 4) / (MPE * 4\pi * R^2)$$

where

MPE%	=	RF level, expressed as a percentage of the FCC limit for acceptable continuous exposure of the general public
100	=	factor to convert raw result to percentage form
ERP_{ch}	=	maximum effective radiated power per RF channel, expressed in milliwatts, and a function of transmitter power, line loss, and maximum antenna gain (referenced to a unity-gain dipole)
1.64	=	factor to convert dipole reference in ERP to an isotropic (absolute) reference
N	=	maximum number of RF channels per sector
$10^{(Vdisc/10)}$	=	numeric equivalent of the relative antenna discrimination in the downward direction of interest, referenced to any applicable antenna mechanical downtilt angle
4	=	the factor to account for a 100-percent-efficient energy reflection from the ground, and the squared relationship between RF field strength and power density ($2^2 = 4$)
MPE	=	FCC general population MPE limit
R	=	straight-line distance from the RF source to the point of interest, centimeters (1 foot = 30.48 centimeters)

The MPE% calculations are performed out to a distance of 500 feet from the facility to points 6.5 feet (approximately two meters) off the ground, representing

the FCC-recommended figure for human standing height, as illustrated in the diagram below.



It is generally understood that the farther away one is from an antenna, the lower the RF level, but that is true when distance is the primary factor controlling RF level. At distances fairly close to the site, the MPE% calculations reflect the variations in the vertical-plane antenna pattern as well as the variation in straight-line distance to the antennas. Therefore, RF levels may actually increase slightly with increasing distance within the range of zero to 500 feet from the site. As the distance approaches 500 feet and beyond, though, the antenna pattern factor becomes less significant, the RF levels become primarily distance-controlled, and as a result the RF levels generally decrease with increasing distance.

In order to assess FCC compliance for a multi-operator site, at each distance point along the ground an MPE% calculation is made for each antenna operation, and compliance is then determined by comparing the sum of the individual results (which we call "total MPE%") at each distance with 100 percent, with the latter figure serving as the normalized reference for the FCC limit. Any calculated total MPE% result exceeding 100 percent is, by definition, higher than the FCC limit and represent non-compliance. Results below 100 percent indicate compliance with the federal regulations on controlling exposure.

Note that the following conservative methodology and assumptions are incorporated on a general basis into the calculations:

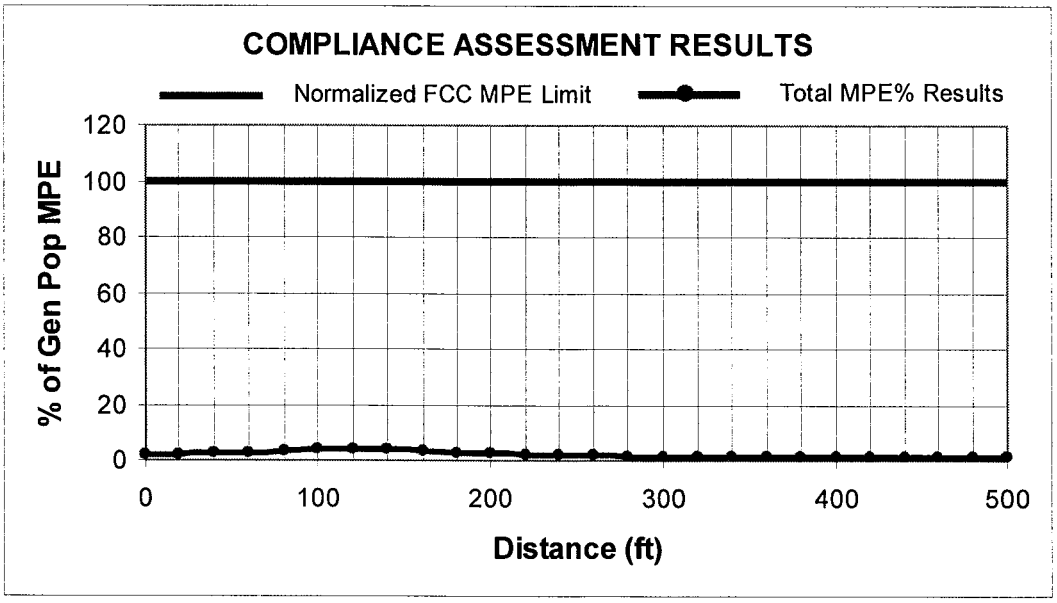
1. The antennas are assumed to be operating continuously at maximum power.
2. The directional panel antennas are all hypothetically assumed to be pointed directly overhead all points of interest at street, ignoring the effects of antenna discrimination in the horizontal plane.
3. The calculations also intentionally minimize the distance factor by assuming a 6'6" human and performing the calculations from the bottom (rather than the centerline) of the antenna.
4. The potential RF exposure at ground level is assumed to be 100-percent enhanced (increased) via a "perfect" field reflection from the ground itself.

The table on the following page provides the results of the MPE% calculations for each operator as well as the "total MPE%" effect, highlighting the overall worst-case (maximum) calculated result in bold.

As indicated, the highest overall result is only 4.1444 percent of the FCC limit – a result that, particularly with the conservatism applied in the analysis, demonstrates clear compliance with the FCC limit.

A graph of the calculation results, presented on the page after the table, provides a clearer visual illustration of the relative insignificance of the RF levels. The line representing calculation results barely rises above the graph's zero baseline, and shows a clear and consistent margin to the FCC compliance limit.

Gnd Dist(ft)	Nextel 851 MHz	Nextel 935 MHz	DB640 (272')	DB268 (272')	DB806 (267')	DB640 (242')	DB806 (225')	VzW 880 MHz	VzW 1900 MHz	Omni 1900 MHz	Dish (245')	DB436 (208')	CL-400 (260')	TV-65 (260')	Total MPE%
0	0.0034	0.0031	0.0002	0.0005	0.0165	0.0004	0.0089	0.0020	0.0063	0.0074	0.0003	0.0018	0.0010	2.1297	2.1815
20	0.0069	0.0062	0.0001	0.0003	0.0393	0.0003	0.0293	0.0019	0.0126	0.0143	0.0005	0.0014	0.0008	2.1165	2.2304
40	0.0051	0.0047	0.0003	0.0008	0.1251	0.0011	0.1221	0.0017	0.0180	0.0158	0.0014	0.0004	0.0005	2.0779	2.3749
60	0.0668	0.0608	0.0010	0.0024	0.3125	0.0026	0.3231	0.0056	0.0013	0.0241	0.0029	0.0004	0.0001	2.0167	2.8203
80	0.0915	0.0833	0.0013	0.0033	0.8094	0.0023	0.6256	0.0188	0.0059	0.0111	0.0039	0.0029	0.0003	1.9368	3.5964
100	0.0275	0.0250	0.0006	0.0015	1.2812	0.0009	0.8097	0.0063	0.0245	0.0008	0.0037	0.0093	0.0015	1.8429	4.0354
120	0.0527	0.0480	0.0008	0.0020	1.4919	0.0083	0.7352	0.0208	0.0111	0.0105	0.0011	0.0182	0.0040	1.7398	**4.1444**
140	0.1266	0.1152	0.0038	0.0096	1.3713	0.0116	0.5029	0.1013	0.0048	0.0038	0.0005	0.0303	0.0069	1.6319	3.9205
160	0.1550	0.1411	0.0055	0.0136	1.0193	0.0054	0.3668	0.1539	0.0081	0.0071	0.0027	0.0478	0.0128	1.5230	3.4621
180	0.1334	0.1214	0.0026	0.0064	0.7547	0.0019	0.2857	0.0939	0.0025	0.0297	0.0035	0.0627	0.0184	1.4158	2.9326
200	0.1038	0.0945	0.0011	0.0027	0.6253	0.0042	0.1848	0.0382	0.0103	0.0133	0.0015	0.0766	0.0253	1.3126	2.4942
220	0.0819	0.0745	0.0013	0.0032	0.4715	0.0061	0.0970	0.0036	0.0108	0.0012	0.0001	0.0914	0.0301	1.2147	2.0874
240	0.0944	0.0859	0.0027	0.0068	0.3392	0.0063	0.0599	0.0124	0.0022	0.0111	0.0032	0.0996	0.0385	1.1230	1.8852
260	0.1050	0.0956	0.0029	0.0074	0.2224	0.0059	0.0378	0.0541	0.0049	0.0131	0.0045	0.1138	0.0427	1.0379	1.748
280	0.1386	0.1261	0.0029	0.0073	0.1132	0.0050	0.0330	0.0720	0.0116	0.0047	0.0030	0.1216	0.0475	0.9593	1.6458
300	0.1720	0.1566	0.0026	0.0065	0.0726	0.0041	0.0303	0.0840	0.0183	0.0021	0.0005	0.1243	0.0528	0.8872	1.6139
320	0.2202	0.2004	0.0022	0.0055	0.0642	0.0030	0.0284	0.0899	0.0192	0.0074	0.0001	0.1217	0.0574	0.8212	1.6408
340	0.2708	0.2465	0.0017	0.0043	0.0596	0.0019	0.0286	0.0752	0.0113	0.0119	0.0006	0.1250	0.0611	0.7609	1.6594
360	0.3201	0.2914	0.0014	0.0036	0.0541	0.0012	0.0381	0.0677	0.0102	0.0133	0.0011	0.1229	0.0621	0.7059	1.6931
380	0.2886	0.2626	0.0009	0.0023	0.0527	0.0010	0.0443	0.0475	0.0036	0.0077	0.0008	0.1269	0.0648	0.6559	1.5596
400	0.3609	0.3284	0.0006	0.0015	0.0551	0.0016	0.0481	0.0279	0.0003	0.0027	0.0001	0.1225	0.0646	0.6103	1.6246
420	0.3284	0.2989	0.0004	0.0011	0.0726	0.0031	0.0512	0.0116	0.0028	0.0014	0.0002	0.1159	0.0645	0.5687	1.5208
440	0.3955	0.3600	0.0005	0.0011	0.0761	0.0052	0.0498	0.0106	0.0026	0.0057	0.0007	0.1124	0.0675	0.5307	1.6184
460	0.3628	0.3302	0.0015	0.0038	0.0799	0.0094	0.0532	0.0045	0.0087	0.0143	0.0015	0.1093	0.0661	0.4961	1.5413
480	0.4014	0.3654	0.0026	0.0064	0.0880	0.0114	0.0544	0.0041	0.0080	0.0236	0.0020	0.1065	0.0663	0.4645	1.6046
500	0.3707	0.3374	0.0047	0.0118	0.0948	0.0119	0.0532	0.0096	0.0132	0.0220	0.0019	0.1040	0.0651	0.4355	1.5358



Compliance Conclusion

In this case, the calculated maximum potential exposure level from the combination of proposed and existing antenna operations is 4.1444 percent of the FCC limit.

In other words, even with all the conservatism in the analytical approach, this result is equivalent to more than 24 times below the FCC limit.

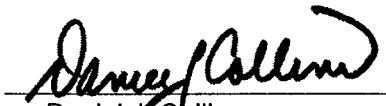
The results of these calculations, therefore, provide a clear demonstration that the RF emissions and exposure levels from the combination of proposed and existing antennas at this site will be in full compliance with the Federal regulations regarding the control of human exposure to RF fields.

Moreover, because of the conservatism in the FCC mathematical model and our calculations, the RF levels that will actually be caused by the antennas will be lower than the results of the calculations here indicate.

Certification

It is the policy and practice of Pinnacle Telecom Group that all FCC RF compliance assessments are reviewed, approved, and signed by the firm's Chief Technical Officer, who certifies as follows:

1. I have read and fully understand the FCC regulations concerning RF safety and the control of human exposure to RF fields (47 CFR 1.1301 *et seq*).
2. To the best of my knowledge, the statements and information disclosed in this report are true, complete and accurate.
3. The analysis of site RF exposure levels and assessment of regulatory compliance provided herein is consistent with the applicable FCC regulations, additional guidelines issued by the FCC, and industry practice.
4. The results of the analysis indicate that the potential RF exposure levels at the subject site are in full compliance with the FCC regulations concerning RF exposure.



Daniel J. Collins
Chief Technical Officer

11/8/05
Date

Appendix A: The FCC RF Exposure Limits

As directed by the Telecommunications Act of 1996, the FCC has established limits for maximum continuous human exposure to RF fields.

The FCC maximum permissible exposure (MPE) limits represent the consensus of federal agencies and independent experts responsible for RF safety matters. Those agencies include the National Council on Radiation Protection and Measurements (NCRP), the Occupational Safety and Health Administration (OSHA), the National Institute for Occupational Safety and Health (NIOSH), the American National Standards Institute (ANSI), the Environmental Protection Agency (EPA), and the Food and Drug Administration (FDA). In formulating its guidelines, the FCC also considered input from the public and technical community – notably the Institute of Electrical and Electronics Engineers (IEEE).

The FCC's RF exposure guidelines are incorporated in Section 1.301 *et seq* of its Rules and Regulations (47 CFR 1.1301-1.1310). Those guidelines specify MPE limits for both occupational and general population exposure.

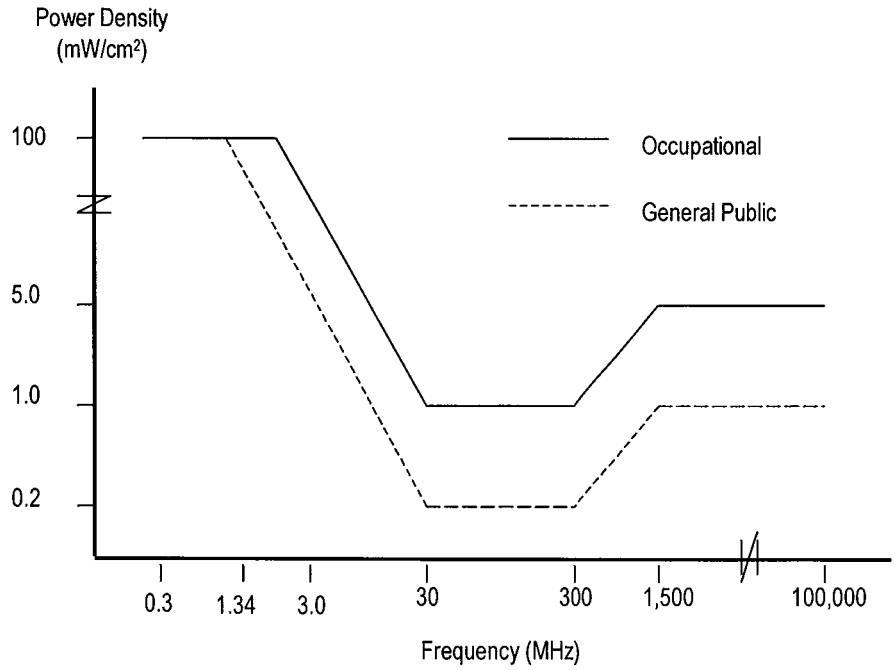
The specified continuous exposure MPE limits are based on known variation of human body susceptibility in different frequency ranges, and a Specific Absorption Rate (SAR) of 4 watts per kilogram, which is universally considered to accurately represent human capacity to dissipate incident RF energy (in the form of heat). The occupational MPE guidelines incorporate a safety factor of 10 or greater with respect to RF levels known to represent a health hazard, and an additional safety factor of five is applied to the MPE limits for general population exposure. Thus, the general population MPE limit has a built-in safety factor of more than 50. The limits were constructed to appropriately protect humans of both sexes and all ages and sizes and under all conditions – and continuous exposure at levels equal to or below the applicable MPE limits is considered to result in no adverse health effects or even health risk.

The reason for *two* tiers of MPE limits is based on an understanding and assumption that members of the general public are unlikely to have had appropriate RF safety training and may not be aware of the exposures they receive; occupational exposure in controlled environments, on the other hand, is assumed to involve individuals who have had such training, are aware of the exposures, and know how to maintain a safe personal work environment.

The FCC's RF exposure limits are expressed in two equivalent forms, using alternative units of field strength (expressed in volts per meter, or V/m), and power density (expressed in milliwatts per square centimeter, or mW/cm^2). The table on the next page lists the FCC limits for both occupational and general population exposures, using the mW/cm^2 reference, for the different radio frequency ranges.

Frequency Range (F) (MHz)	Occupational Exposure (mW/cm^2)	General Public Exposure (mW/cm^2)
0.3 - 1.34	100	100
1.34 - 3.0	100	$180 / F^2$
3.0 - 30	$900 / F^2$	$180 / F^2$
30 - 300	1.0	0.2
300 - 1,500	F / 300	F / 1500
1,500 - 100,000	5.0	1.0

The diagram below provides a graphical illustration of both the FCC's occupational and general population MPE limits.



Because the FCC's RF exposure limits are frequency-shaped, the exact MPE limits applicable to the instant situation depend on the frequency range used by the systems of interest.

The method of determining RF compliance is to calculate the RF power density attributable to a particular system and compare that to the MPE limit applicable to the operating frequency in question. The result is usually expressed as a percentage of the MPE limit.

For potential exposure from multiple systems, the respective percentages of the MPE limits are added, and the total percentage compared to 100 (percent of the limit). If the result is less than 100, the total exposure is in compliance; if it is more than 100, exposure mitigation measures are necessary to achieve compliance.

Appendix B: FCC References

47 CFR, FCC Rules and Regulations, Part 1 (Practice and Procedure), Section 1.1310 (Radiofrequency radiation exposure limits).

47 CFR, FCC Rules and Regulations, Part 22 (Public Mobile Services).

47 CFR, FCC Rules and Regulations, Part 24 (Personal Communications Services).

FCC Second Memorandum Opinion and Order and Notice of Proposed Rulemaking (FCC 97-303), *In the Matter of Procedures for Reviewing Requests for Relief From State and Local Regulations Pursuant to Section 332(c)(7)(B)(v) of the Communications Act of 1934 (WT Docket 97-192), Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation (ET Docket 93-62), and Petition for Rulemaking of the Cellular Telecommunications Industry Association Concerning Amendment of the Commission's Rules to Preempt State and Local Regulation of Commercial Mobile Radio Service Transmitting Facilities*, released August 25, 1997.

FCC First Memorandum Opinion and Order, ET Docket 93-62, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, released December 24, 1996.

FCC Report and Order, ET Docket 93-62, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, released August 1, 1996.

FCC Office of Engineering and Technology (OET) Bulletin 65, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", Edition 97-01, August 1997.

FCC Office of Engineering and Technology (OET) Bulletin 56, "Questions and Answers About Biological Effects and Potential Hazards of RF Radiation", edition 4, August 1999.

Appendix C: FCC Position on Cellular and PCS Transmitters

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF ENGINEERING & TECHNOLOGY
WASHINGTON, D.C. 20554

January 1998

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INFORMATION ON HUMAN EXPOSURE TO RADIOFREQUENCY FIELDS FROM CELLULAR AND PCS RADIO TRANSMITTERS

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(1) Cellular and PCS base stations

Radio frequencies constitute part of the overall electromagnetic spectrum. Cellular communications systems use frequencies in the 800-900 megahertz (MHz) portion of the radiofrequency (RF) spectrum (frequencies formerly used for UHF-TV broadcasting), and transmitters in the Personal Communications Service (PCS) use frequencies in the range of 1850-1990 MHz. Primary antennas for cellular and PCS transmissions are usually located on towers, water tanks and other elevated structures including rooftops and the sides of buildings. The combination of antennas and associated electronic equipment is referred to as a cellular or PCS base station" or "cell site." Typical heights for base station towers or structures are 50-200 feet. A typical cellular base station may utilize several "omni-directional" antennas that look like poles or whips, 10 to 15 feet in length. PCS (and also many cellular) base stations use a number of "sector" antennas that look like rectangular panels. The dimensions of a sector antenna are typically 1 foot by 4 feet. Antennas are usually arranged in three groups of three with one antenna in each group used to transmit signals to mobile units (car phones or hand-held phones). The other two antennas in each group are used to receive signals from mobile units.

The Federal Communications Commission (FCC) authorizes cellular and PCS carriers in various service areas around the country. At a cell site, the total RF power that could be transmitted from each transmitting antenna at a cell site depends on the number of radio channels (transmitters) that have been authorized and the power of each transmitter. Typically, for a cellular base station, a maximum of 21 channels per sector (depending on the system) could be used. Thus, for a typical cell site utilizing sector antennas, each of the three transmitting antennas could be connected to up to 21 transmitters for a total of 63 transmitters per site. When omni-directional antennas are used, up to 96 transmitters could be implemented at a cell site, but this would be very unusual. While a typical base station could have as many as 63 transmitters, not all of the transmitters would be expected to operate simultaneously thus reducing overall emission levels. For the case of PCS base stations, fewer transmitters are normally required due to the relatively greater number of base stations.

Although the FCC permits an **effective radiated power** (ERP) of up to 500 watts per channel (depending on the tower height), the majority of cellular base stations in urban and suburban areas operate at an ERP of 100 watts per channel or less. An ERP of 100 watts corresponds to an **actual** radiated power of 5-10 watts, depending on the type of antenna used (ERP is not equivalent to the power that is radiated but is a measure of the directional

characteristics of the antenna). As the capacity of a system is expanded by dividing cells, i.e., adding additional base stations, lower ERPs are normally used. In urban areas, an ERP of 10 watts per channel (corresponding to a radiated power of 0.5 - 1 watt) or less is commonly used. For PCS base stations, even lower radiated power levels are normally used. The signal from a cellular or PCS base station antenna is essentially directed toward the horizon in a relatively narrow beam in the vertical plane. For example, the radiation pattern for an omni-directional antenna might be compared to a thin doughnut or pancake centered around the antenna while the pattern for a sector antenna is fan-shaped, like a wedge cut from a pie. As with all forms of electromagnetic energy, the power density from a cellular or PCS transmitter decreases rapidly (according to an inverse square law) as one moves away from the antenna. Consequently, normal ground-level exposure is much less than exposures that might be encountered if one were very close to the antenna and in its main transmitted beam. Measurements made near typical cellular and PCS installations have shown that ground-level power densities are well below limits recommended by RF/microwave safety standards.

In 1996, the FCC adopted updated guidelines for evaluating human exposure to radiofrequency (RF) fields from fixed transmitting antennas such as those used for cellular radio and PCS base stations.1 The new guidelines for cellular and PCS base stations are identical to those recommended by the National Council on Radiation Protection and Measurements (NCRP).2 These guidelines are also similar to the 1992 guidelines recommended by the American National Standards Institute and the Institute of Electrical and Electronics Engineers (ANSI/IEEE C95.1-1992).3 The FCC adopted guidelines for hand-held RF devices, such as cellular and PCS phones, that are the same as those recommended by the ANSI/IEEE and NCRP guidelines (see later discussion).

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1 FCC *Report and Order* in ET Docket 93-62, 61 Federal Register 41006 (August 7, 1996); 11 FCC Record 15123 (1997). See also, FCC *Second Memorandum Opinion and Orde*r, ET Docket 93-62, 62 Federal Register 47960 (September 12, 1997), 12 FCC Record 13494 (1997). For more information on these documents contact the FCC's toll-free number: 1-888-CALL FCC (1-888-225-5322). They may also be viewed and downloaded at the FCC's Office of Engineering and Technology World Wide Web Site under the "RF Safety" heading at the following address: www.fcc.gov/oet/rfsafety. The FCC's RF exposure guidelines are based on recommendations made to the FCC by U.S. federal safety and health agencies such as the Environmental Protection Agency (EPA), the Food and Drug Administration (FDA), the National Institute for Occupational Safety and Health (NIOSH) and the Occupational Safety and Health Administration (OSHA).

2 The NCRP is a non-profit corporation chartered by congress to develop information and recommendations concerning radiation protection.

3 The American National Standards Institute is a non-profit, privately-funded, membership organization that coordinates development of voluntary national standards in the United States. The IEEE is a non-profit technical and professional engineering society.

In the case of cellular base station transmitters, at a frequency of 869 MHz (the lowest frequency used), the FCC's RF exposure guidelines recommend a maximum permissible exposure level of the general public (or exposure in "uncontrolled" environments) of about 580 microwatts per square centimeter ($\mu W/cm^2$), as averaged over any thirty-minute period. This limit is many times greater than RF levels typical found near the base of typical cellular towers or in the vicinity of other, lower-powered cellular base station transmitters. For example, measurement data obtained from various sources have consistently indicated that "worst-case" ground-level power densities near typical cellular towers are on the order of 1 $\mu W/cm^2$ or less (usually significantly less). Calculations corresponding to a "worst-case" situation (all transmitters operating simultaneously and continuously at the maximum licensed power) show that in order to be exposed to levels near the FCC's limits for cellular frequencies, an individual would essentially have to remain in the main transmitting beam (at the height of the antenna) and within a few feet from the antenna. This makes it extremely unlikely that a member of the general public could be exposed to RF levels in excess of these guidelines from cellular base station transmitters.

For PCS base station transmitters, the same type of analysis holds, except that at the PCS transmitting frequencies (1850-1990 MHz) the FCC's exposure limits for the public are 1000 $\mu W/cm^2$. Therefore, there would typically be an even greater margin of safety between actual public exposure levels and the recognized safety limit.

When cellular and PCS antennas are mounted at rooftop locations it is possible that RF levels greater than 1 $\mu W/cm^2$ could be present on the rooftop itself. This might become an issue if the rooftop were accessible to maintenance personnel or others. However, exposures approaching or exceeding the safety guidelines are only likely to be encountered very close to and directly in front of the antennas. Even if RF levels were to be higher than desirable on a rooftop, appropriate restrictions could be placed on access. Factoring in the time-averaging aspects of safety standards could also be used to reduce potential exposure. The fact that rooftop cellular and PCS antennas usually operate at lower power levels than antennas on freestanding towers makes excessive exposure conditions on rooftops even less likely. This reason and the significant signal attenuation of a building's roof also minimizes any chance for harmful exposure of persons living or working within the building itself.

(2) <u>Mobile (vehicle-mounted) antennas</u>

Vehicle-mounted antennas used for cellular communications normally operate at a power level of 3 watts or less. These cellular antennas are typically mounted on the roof, on the trunk, or on the rear window of a car or truck. Studies have shown that in order to be exposed to RF levels that approach the safety guidelines it would be necessary to remain very close to a vehicle-mounted cellular antenna. For example, a study done for AT&T Bell Laboratories by the University of Washington documented typical and "worst-case" exposure levels and specific absorption rates (SAR) for vehicle occupants and persons standing close to vehicle-mounted cellular antennas. Worst-case exposure conditions were considered when an individual was at the closest possible distance from the antenna. Several configurations were tested using adult and child "phantom" models.

The results of this study showed that the highest exposure (1900 $\mu W/cm^2$) occurred with a female model at a distance of 9.7 cm (3.8 inches) from one of the antennas operating at a power level of 3 watts. Although this level is nominally in excess of the FCC's exposure limits for power density at this frequency, analysis of the data indicated that the antenna

would have to be driven to 7 W of power before the limit for *specific absorption rate* (SAR) allowed by the FCC guidelines would be exceeded. The intermittent nature of transmission and the improbability that a person would remain so close to the antenna for any length of time further reduces the potential for excessive exposure.

The University of Washington study also indicated that vehicle occupants are effectively shielded by the metal body. Motorola, Inc., in comments filed with the FCC, has expressed the opinion that proper installation of a vehicle-mounted antenna to maximize the shielding effect is an effective way of limiting exposure. Motorola and other companies have recommended antenna installation either in the center of the roof or the center of the trunk. In response to concerns expressed over the commonly-used rear-window mounted cellular antennas, Motorola has recommended a minimum separation distance of 30-60 cm (1 -2 feet) to minimize exposure to vehicle occupants resulting from antenna mismatch for this type of antenna installation.

In summary, from data gathered to date, it appears that properly installed, vehicle-mounted, personal wireless transceivers using up to 3 watts of power would result in maximum exposure levels in or near the vehicle that are well below the FCC's safety limits. This assumes that the transmitting antenna is at least 15 cm (about 6 inches) or more from vehicle occupants. Time-averaging of exposure (either a 6 or 30minute period is specified) will usually result in still lower values when compared with safety guidelines.

(3) <u>Hand-held cellular telephones and PCS devices</u>

A question that often arises is whether there may be potential health risks due to the RF emissions from hand-held cellular telephones and PCS devices. The FCC's exposure guidelines, and the ANSI/IEEE and NCRP guidelines upon which they are based, specify limits for human exposure to RF emissions from hand-held RF devices in terms of *specific absorption rate (SAR).* For exposure of the general public, e.g., exposure of the user of a cellular or PCS phone, the SAR limit is an absorption threshold of 1.6 watts/kg (W/kg), as measured over any one gram of tissue.

Measurements and computational analysis of SAR in models of the human head and other studies of SAR distribution using hand-held cellular and PCS phones have shown that, in general, the 1.6 W/kg limit is unlikely to be exceeded under normal conditions of use. Before FCC approval can be granted for marketing of a cellular or PCS phone, compliance with the 1.6 W/kg limit must be demonstrated. Also, testing of hand-held phones is normally done under conditions of maximum power usage. In reality, normal power usage is less and is dependent on distance of the user from the base station transmitter.

In recent years publicity, speculation and concern over claims of possible health effects due to RF fields from hand-held wireless telephones prompted industry-sponsored groups, such as Wireless Technology Research, L.L.C. (WTR) and Motorola, Inc., to initiate research programs aimed at investigating whether there is any risk to users of these devices. Past studies carried out at frequencies both higher and lower than those used for cellular and PCS phones have led expert organizations to conclude that typical RF exposures from these devices are safe. However, the Federal Government is monitoring the results of the ongoing industry-sponsored research through an inter-agency working group led by the EPA and the FDA's Center for Devices and Radiological Health.

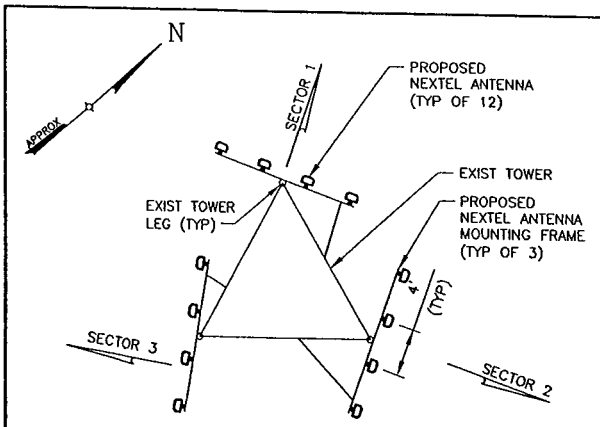
In a 1993 "Talk Paper," the FDA stated that it did not have enough information at that time to rule out the possibility of risk, but if such a risk exists "it is probably small." The FDA concluded that there is no proof that cellular telephones can be harmful, but if individuals remain concerned several precautionary actions could be taken. These included limiting conversations on hand-held cellular telephones to those that are essential and making greater use of telephones with vehicle-mounted antennas where there is a greater separation distance between the user and the radiating structure.

***NOTE*:** For more information on these and other RF-related topics, you may call the FCC's toll-free number: 1-888-CALL FCC (1-888-225-5322) or contact the FCC's RF Safety Program, in the Office of Engineering and Technology, at (202) 418-2464. Information is also available at the FCC's Office of Engineering and Technology World Wide Web Site under the "RF Safety" heading at the following address: www.fcc.gov/oet/rfsafety.

Appendix D: Expert Qualifications

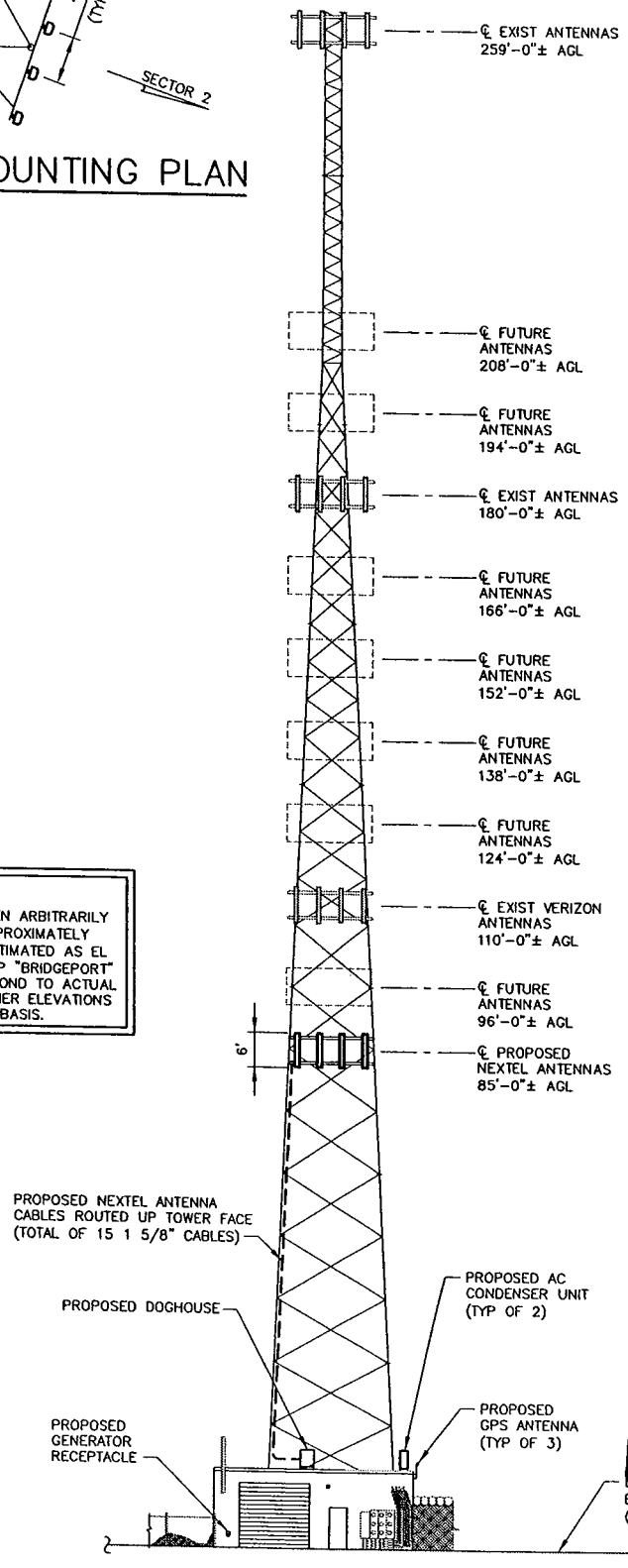
Daniel J. Collins, Chief Technical Officer, Pinnacle Telecom Group, LLC

Synopsis:	• More than 33 years of experience in all aspects of wireless system engineering, related regulation, and RF exposure • Has performed or led RF exposure compliance assessments on more than 8,500 antenna sites since 1997, when the latest FCC regulations went into effect • Has provided testimony as an RF compliance expert more than 850 times since 1997 • Accepted as an expert in New Jersey, New York, Connecticut and 40 other states, as well as by the FCC
Education:	• B.E.E., City College of New York (Sch. Of Eng.), 1971 • M.B.A., 1982, Fairleigh Dickinson University, 1982 • Bronx High School of Science, 1966
Current Responsibilities:	• leads all PTG staff work involving RF safety and FCC compliance, microwave and satellite system engineering, and consulting on wireless technology and regulation
Prior Experience:	• Edwards & Kelcey, VP – RF Engineering and Chief Information Technology Officer, 1996-99 • Bellcore, Executive Director – Regulation and Public Policy, 1983-96 • AT&T (Corp. HQ), Director – Spectrum Management Policy and Practice, 1977-83 • AT&T Long Lines, Group Supervisor – Microwave Radio System Design, 1972-77
Specific RF Safety / Compliance Experience:	• Involved in RF exposure matters since 1972 • Have had lead corporate responsibility for RF safety and compliance at AT&T, Bellcore, Edwards & Kelcey, and PTG • While at AT&T, helped develop the mathematical models later adopted by the FCC for predicting RF exposure • Have been relied on for compliance by all major wireless carriers, as well as by the federal government, several state and local governments, equipment manufacturers, system integrators, and other consulting / engineering firms
Other Background:	• Author, *Microwave System Engineering* (AT&T, 1974) • Co-author and executive editor, *A Guide to New Technologies and Services* (Bellcore, 1993) • National Spectrum Managers Association (NSMA) – three-term President and chair of the Board of Directors; earlier was founding member, twice-elected Vice President and long-time member of the Board, and was named an NSMA Fellow in 1991 • Listed in *Who's Who in the Media and Communication* and *International Who's Who in Information Technology* • Published more than 35 articles in industry magazines



2 / LE-3 ANTENNA MOUNTING PLAN

SCALE: 1" = 10'



ELEVATION NOTE:

ELEVATION OF EXISTING ROOF HAS BEEN ARBITRARILY ASSIGNED AS EL 53'-8"±. THIS IS APPROXIMATELY 13'-8"± ABOVE GRADE WHICH WAS ESTIMATED AS EL 40'-0"± FROM USGS QUADRANGLE MAP "BRIDGEPORT" AND DOES NOT NECESSARILY CORRESPOND TO ACTUAL ELEVATION ABOVE SEA LEVEL. ALL OTHER ELEVATIONS INDICATED WERE DETERMINED ON THIS BASIS.

1 / LE-3 ELEVATION (PINE STREET)

SCALE: 1" = 20'

SIGNOFFS

PM: CM: RF: OPS: CFS: LL:

DATE:

OWNER APPROVAL:

NEXTEL

BRIDGEPORT WEST (CT-3612)
623 PINE STREET
BRIDGEPORT, CT 06605

LEASE EXHIBIT LE-3

8/1/05	
7/28/05	
7/18/05	

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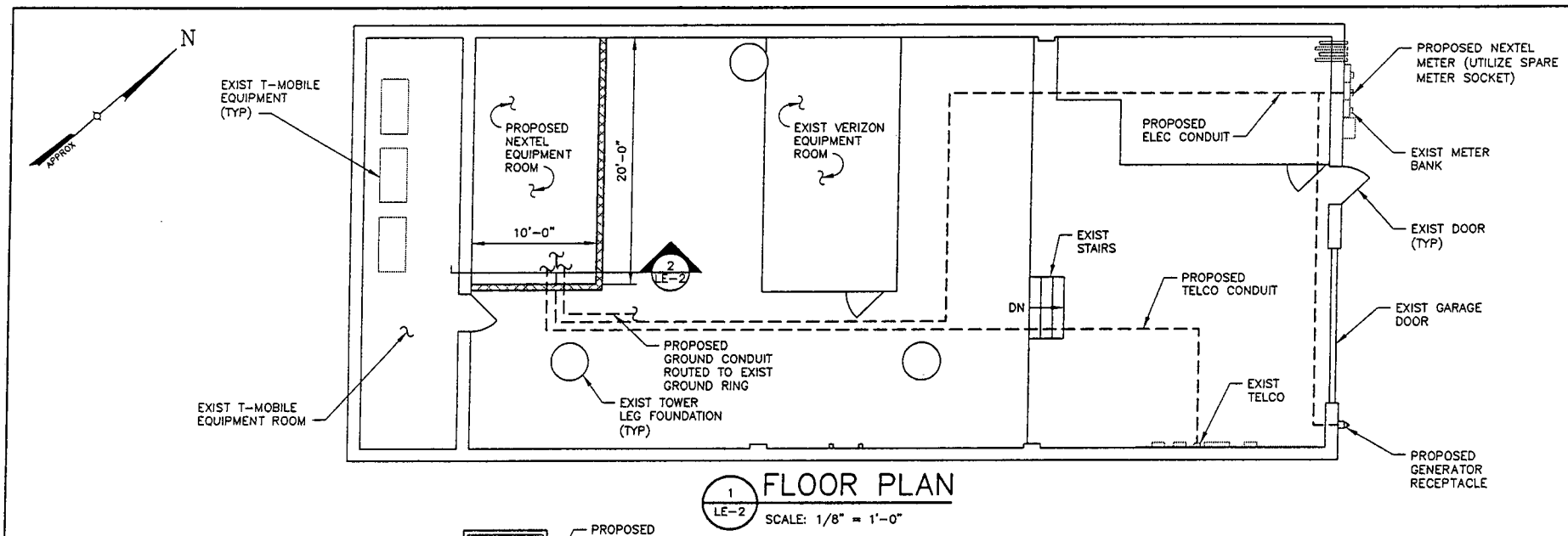
Fax: (845) 567-8703

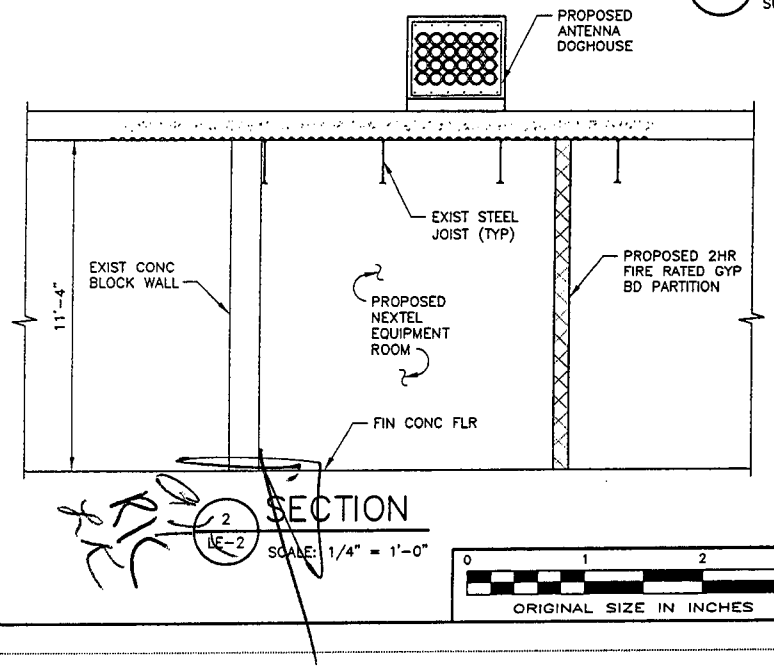
ISSUED BY: W.O. 3722.CT3612

ORIGINAL SIZE IN INCHES 0 1 2 3



1 LE-2 FLOOR PLAN

SCALE: 1/8" = 1'-0"



2 LE-2 SECTION

SCALE: 1/4" = 1'-0"

0 1 2 3

ORIGINAL SIZE IN INCHES

SIGNOFFS
PM:
CM:
RF:
OPS:
CFS:
LL:

OWNER APPROVAL: _____ DATE: _____

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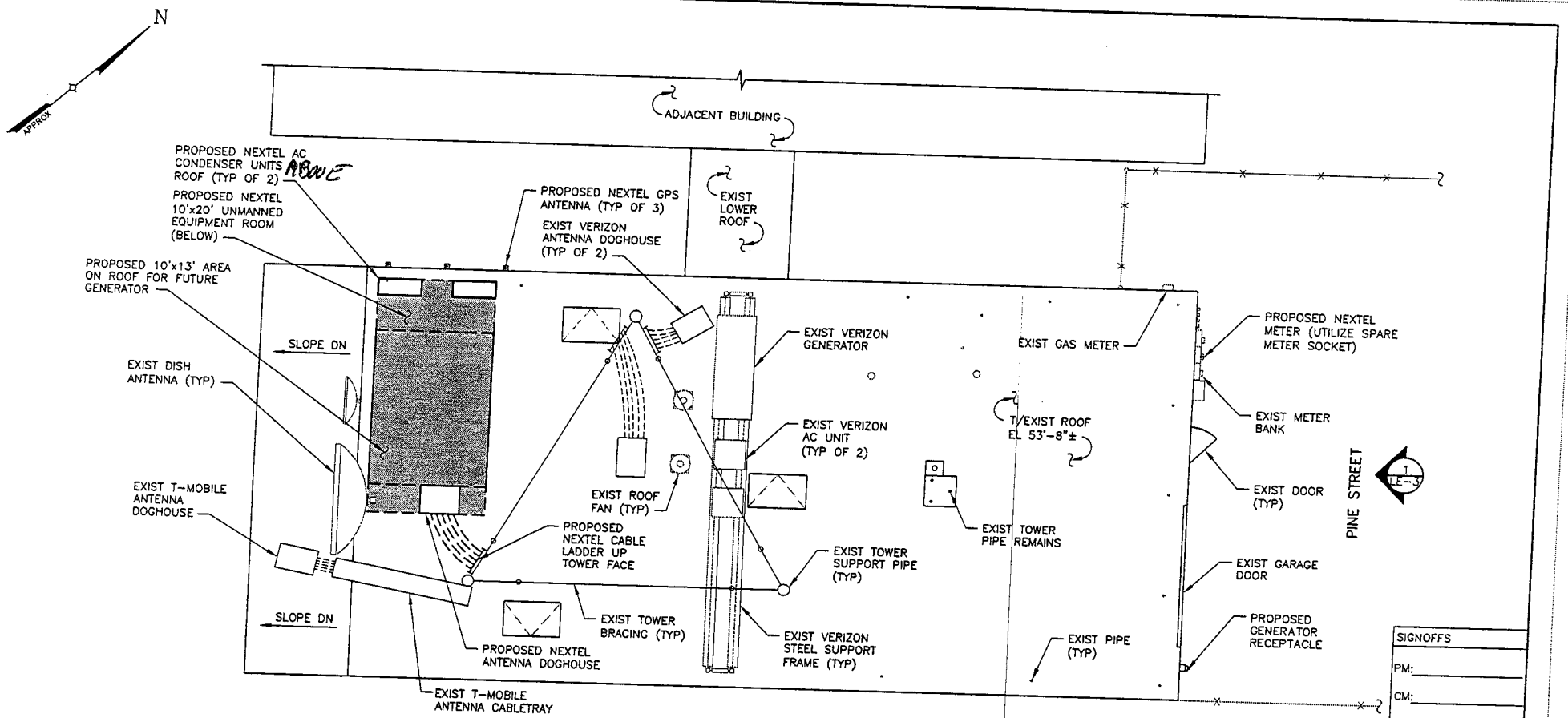
		7/28/05	
		8/1/05	

NEXTEL

BRIDGEPORT WEST (CT-3612)
623 PINE STREET
BRIDGEPORT, CT 06605



1 LE-1 ROOF PLAN

SCALE: 1/8" = 1'-0"

TOTAL NUMBER OF SECTORS	3
TOTAL NUMBER OF ANTENNAS PER SECTOR	4
TOTAL NUMBER OF ANTENNAS	12
TOTAL NUMBER OF GPS DEVICES	3
TOTAL NUMBER OF CABLES PER SECTOR	5
TOTAL SF OF LEASE EQUIPMENT SPACE	200±

SIGNOFFS

PM: _____

CM: _____

RF: _____

OPS: _____

CFS: _____

LL: _____

OWNER APPROVAL: _____ DATE: _____

LAT. = 41° 09' 49.2" (NAD 83)
LONG. = 73° 12' 56.4" (NAD 83)

0 1 2 3

ORIGINAL SIZE IN INCHES

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