

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

www.ct.gov/csc

April 25, 2011

Jennifer Young Gaudet
HPC Development LLC
46 Mill Plain Road, 2nd Floor
Danbury, CT 06811

RE: **EM-SPRINT-009-110406** – Sprint Spectrum L.P. notice of intent to modify an existing telecommunications facility located at 38 Spring Hill Lane, Bethel, Connecticut.

Dear Ms. Gaudet:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- Any deviation from the proposed modification as specified in this notice and supporting materials with Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Not less than 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration;

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated March 31, 2011. 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. Thank you for your attention and cooperation.

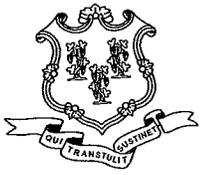
Very truly yours,


Linda Roberts
Executive Director

LR/CDM/laf

c: The Honorable Matthew S. Knickerbocker, First Selectman, Town of Bethel
Steve Palmer, Planning & Zoning Official, Town of Bethel
Cordless Data Transfer





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April 11, 2011

The Honorable Matthew S. Knickerbocker
First Selectman
Town of Bethel
1 School Street
Bethel Municipal Center
Bethel, CT 06801-2105

RE: **EM-SPRINT-009-110406** -- Sprint Spectrum L.P. notice of intent to modify an existing telecommunications facility located at 38 Spring Hill Lane, Bethel, Connecticut.

Dear First Selectman Knickerbocker:

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.

If you have any questions or comments regarding this proposal, please call me or inform the Council by April 25, 2011.

Thank you for your cooperation and consideration.

Very truly yours,

Linda Roberts MAR

Linda Roberts
Executive Director

LR/jbw

Enclosure: Notice of Intent

c: Steve Palmer, Planning & Zoning Official, Town of Bethel



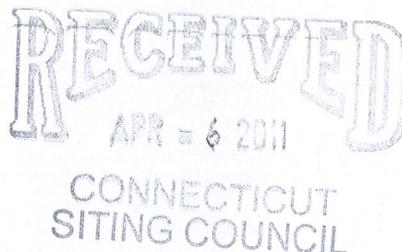
EM-SPRINT-009-110406

March 31, 2011

ORIGINAL

VIA UPS

Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051
Attn: Ms. Linda Roberts, Executive Director



Re: Sprint Spectrum LP – exempt modification
38 Spring Hill Lane Bethel, Connecticut

Dear Ms. Roberts:

This letter and attachments are submitted on behalf of Sprint Spectrum LP (“Sprint”). Sprint is making modifications to certain existing sites in its Connecticut system in order to enhance system performance. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the First Selectman of the Town of Bethel.

Sprint plans to modify the existing facility at 38 Spring Hill Lane, Bethel owned by Valley Communications, Inc. (coordinates 41-21-43.97 N, 73-23-47.55 W). Attached are a compound plan and tower elevation depicting the planned changes, and documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration. Also included is a power density calculation reflecting the modification to Sprint’s operations at the site.

The changes to the facility do not constitute a modification as defined in Connecticut General Statutes (“C.G.S.”) Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. The height of the overall structure will be unaffected. Both Sprint’s existing and proposed antenna configuration will be mounted at the 112’ height on the 125’ tower. Sprint will add three panel antennas to the three existing antennas, for a total of six, and will add one TMA. An additional six coaxial cables will also be installed. The proposed modifications will not extend the height of the tower.

2. The proposed changes will not extend the site boundaries. Sprint will install one additional cabinet on its existing concrete pad within the existing compound. Thus, there will be no effect on the site boundaries.
3. The proposed changes will not increase the noise level at the existing facility by six decibels or more. The incremental effect of the proposed changes will be negligible.
4. The changes to the facility will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site. As indicated on the attached power density calculation, Sprint's operations at the site will result in a power density of 25.26%; the combined site operations will result in a total power density of 78.92%.

Please feel free to call me at (860) 798-7454 with questions concerning this matter.
Thank you for your consideration.

Respectfully yours,


Jennifer Young Gaudet

cc: Honorable Matthew Knickerbocker, First Selectman, Town of Bethel
Spring Hill Lane Properties, LLC . (underlying property owner)
Attachments

ALL-POINTS TECHNOLOGY CORPORATION, P.C.

3 SADELBROOK DRIVE
KILLINGWORTH, CT. 06419
PHONE: (860)-663-1697
FAX: (860)-663-0935
www.allpointstech.com



APT FILING NUMBER: NY-241-450

LE-1

SCALE: AS NOTED

DRAWN BY: RCB

DATE: 10/22/10

CHECKED BY: SMC

Sprint
Together with NEXTEL
1 INTERNATIONAL BLVD.
SUITE 800
MAHWAH, N.J. 07495

SPRINT / NEXTEL
SITE NUMBER: CT54XC749

CINGULAR
38 SPRING HILL LANE
BETHEL, CT 06801

APPROVALS:

LANDLORD _____ DATE: _____
RF ENGINEER _____ DATE: _____
OPERATIONS _____ DATE: _____
PROJECT MGR _____ DATE: _____

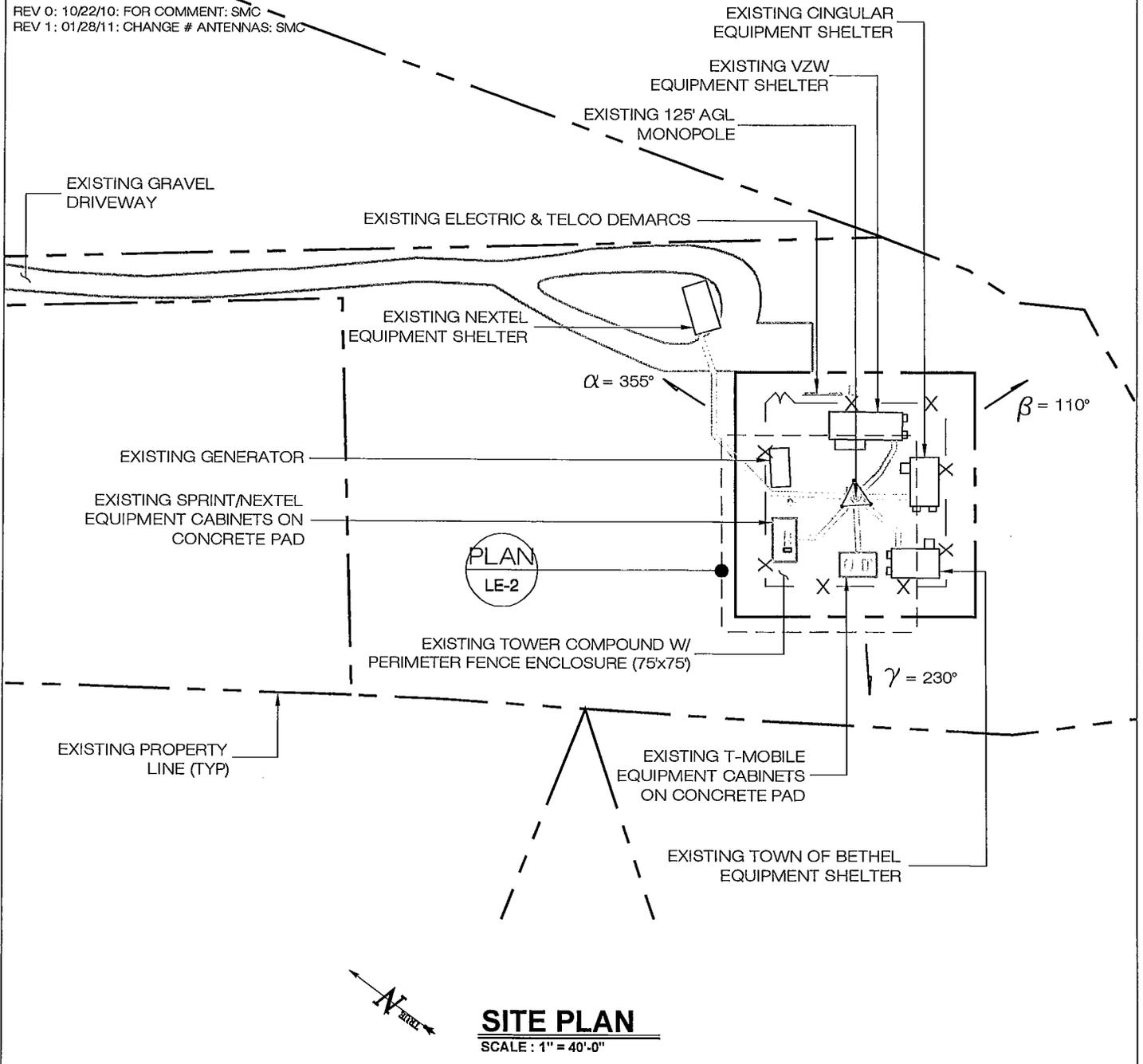
TOTALS:

- (9) PANEL (3 EXISTING, 3 NEW, 3 FUTURE) & 1 GPS ANTENNAS
- SCOPE: ADD (3) NEW PANEL ANTENNAS, (1) TMA, AND (1) MCPA OUTDOOR SYSTEM CABINET
- SQUARE FOOTAGE OF EXISTING LEASE AREA (15'x20') = 300 SF±

NOTICE:

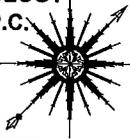
THIS IS A REPRESENTATION OF THE EXISTING STRUCTURE AND PROPOSED MODIFICATIONS. ALL SCALED DIMENSIONS SHOWN ARE NO BETTER THAN APPROXIMATE. FINAL LOCATIONS PENDING FURTHER ENGINEERING ANALYSIS AND DESIGN.

REV 0: 10/22/10: FOR COMMENT: SMC
REV 1: 01/28/11: CHANGE # ANTENNAS: SMC



ALL-POINTS TECHNOLOGY CORPORATION, P.C.

3 SADDLEBROOK DRIVE
KILLINGWORTH, CT. 08419
PHONE: (860)-663-1697
FAX: (860)-663-0935
www.allpointstech.com



APT FILING NUMBER: NY-241-450

LE-2

SCALE: AS NOTED

DRAWN BY: RCB

DATE: 10/22/10

CHECKED BY: SMC

Sprint

Together with NEXTEL
1 INTERNATIONAL BLVD.
SUITE 800
MAHWAH, NJ. 07485

**SPRINT / NEXTEL
SITE NUMBER: CT54XC749**

**CINGULAR
38 SPRING HILL LANE
BETHEL, CT 06801**

APPROVALS:

LANDLORD _____ DATE: _____
RF ENGINEER _____ DATE: _____
OPERATIONS _____ DATE: _____
PROJECT MGR _____ DATE: _____

TOTALS:

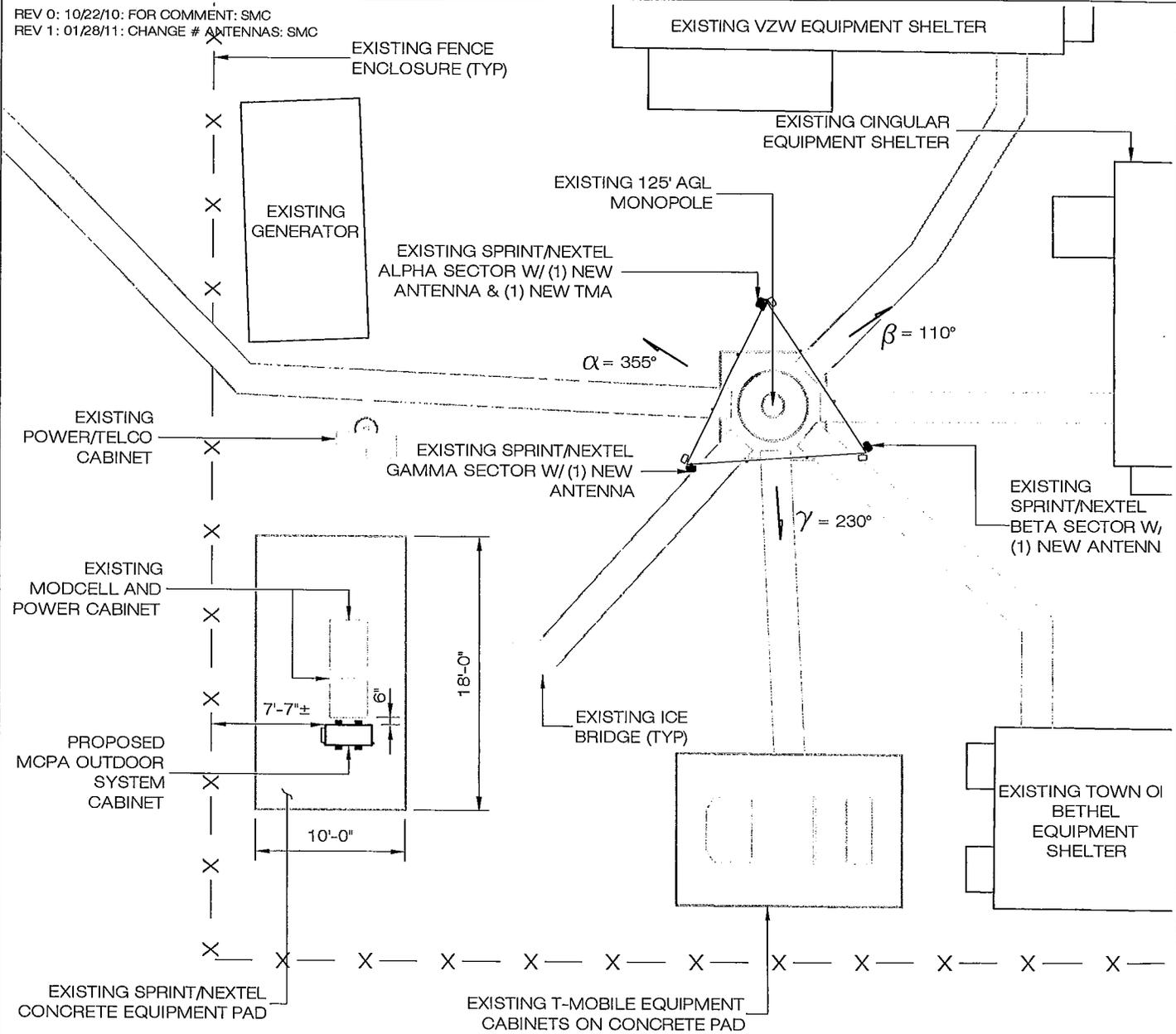
- (9) PANEL (3 EXISTING, 3 NEW, 3 FUTURE) & 1 GPS ANTENNAS
- SCOPE: ADD (3) NEW PANEL ANTENNAS, (1) TMA, AND (1) MCPA OUTDOOR SYSTEM CABINET
- SQUARE FOOTAGE OF EXISTING LEASE AREA (15'x20') = 300 SF±

NOTICE:

THIS IS A REPRESENTATION OF THE EXISTING STRUCTURE AND PROPOSED MODIFICATIONS. ALL SCALED DIMENSIONS SHOWN ARE NO BETTER THAN APPROXIMATE. FINAL LOCATIONS PENDING FURTHER ENGINEERING ANALYSIS AND DESIGN.

REV 0: 10/22/10; FOR COMMENT: SMC

REV 1: 01/28/11; CHANGE # ANTENNAS: SMC

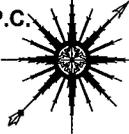


COMPOUND PLAN



ALL-POINTS TECHNOLOGY CORPORATION, P.C.

3 SADDLEBROOK DRIVE
KILLINGWORTH, CT. 06419
PHONE: (860)-663-1697
FAX: (860)-663-0935
www.allpointstech.com



APT FILING NUMBER: NY-241-450

LE-3

SCALE: AS NOTED

DRAWN BY: RCB

DATE: 10/22/10

CHECKED BY: SMC

Sprint
Together with **NEXTEL**
1 INTERNATIONAL BLVD.
SUITE 800
MAHWAH, NJ. 07495

SPRINT / NEXTEL
SITE NUMBER: CT54XC749

CINGULAR
38 SPRING HILL LANE
BETHEL, CT 06801

APPROVALS:

LANDLORD _____ DATE: _____
RF ENGINEER _____ DATE: _____
OPERATIONS _____ DATE: _____
PROJECT MGR _____ DATE: _____

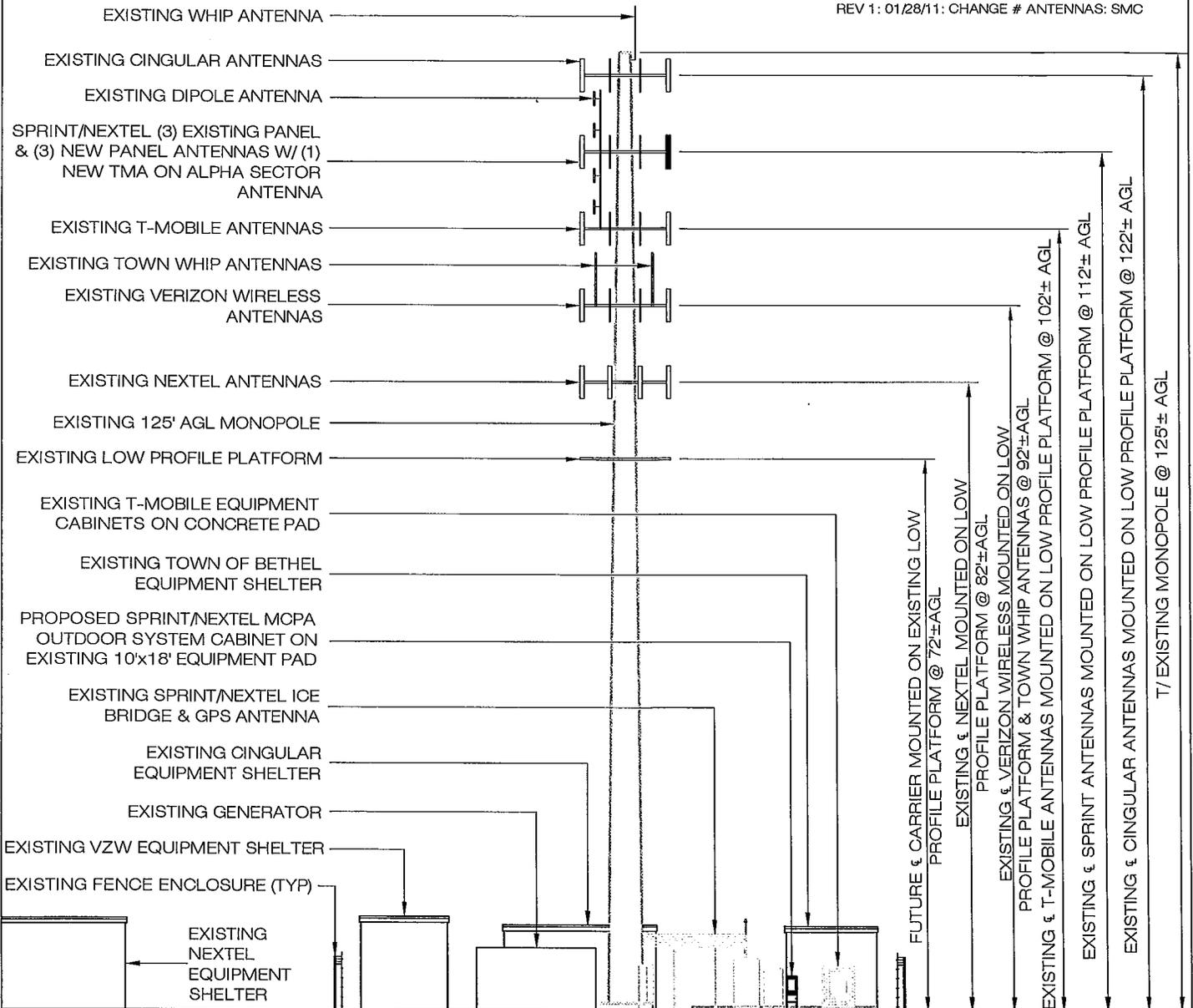
TOTALS:

- (9) PANEL (3 EXISTING, 3 NEW, 3 FUTURE) & 1 GPS ANTENNAS
- SCOPE: ADD (3) NEW PANEL ANTENNAS, (1) TMA, AND (1) MCPA OUTDOOR SYSTEM CABINET
- SQUARE FOOTAGE OF EXISTING LEASE AREA (15'x20') = 300 SF±

NOTICE:

THIS IS A REPRESENTATION OF THE EXISTING STRUCTURE AND PROPOSED MODIFICATIONS. ALL SCALED DIMENSIONS SHOWN ARE NO BETTER THAN APPROXIMATE. FINAL LOCATIONS PENDING FURTHER ENGINEERING ANALYSIS AND DESIGN.

REV 0: 10/22/10: FOR COMMENT: SMC
REV 1: 01/28/11: CHANGE # ANTENNAS: SMC



NORTHWESTERN ELEVATION



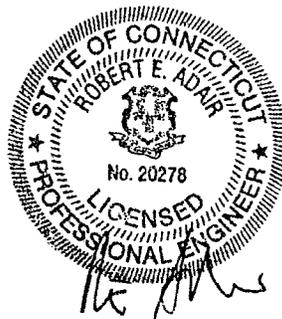
ALL-POINTS TECHNOLOGY CORPORATION, P.C.

**STRUCTURAL ANALYSIS REPORT
125' MONOPOLE TOWER
BETHEL, CONNECTICUT**

Prepared for
Sprint-Nextel

Sprint Site #CT54XC749

December 15, 2010



APT Project #CT241451

**STRUCTURAL ANALYSIS REPORT
125' MONOPOLE TOWER
BETHEL, CONNECTICUT
prepared for
Sprint-Nextel**

EXECUTIVE SUMMARY:

All-Points Technology Corporation, P.C. (APT) performed a structural analysis of this 125-foot monopole tower located at 38 Spring Hill Lane in Bethel, Connecticut. The analysis was performed for Sprint-Nextel's replacement of three of their existing six panel antennas currently installed at 114'.

Our analysis indicates the tower meets the requirements of the Connecticut State Building Code and TIA-222 with the proposed changes. The base foundation was found to be adequately sized for the proposed changes.

INTRODUCTION:

A structural analysis of this communications tower was performed by APT for Sprint-Nextel. The tower is located at 38 Spring Hill Lane in Bethel, Connecticut. APT did not visit the tower site. This analysis relied solely on information provided by others, which included Engineered Endeavors Incorporated (EEI) design calculations, EEI Job #14009-E01 dated March 9, 2006, recent photographs and proposed equipment changes.

The structure is a 125-foot, galvanized steel, 3-section monopole manufactured by EEI. The analysis was conducted using the following antenna inventory (proposed changes shown in **bold text**):

Antenna	Elev.	Mount	Coax.
(6) 7770 panels, (6) TMAs	124'	13' low-profile platform	(12) 1-5/8"
20' 4-bay dipole (inverted)	124'	On above platform	1-5/8"
18' omnidirectional whip	124'	On above platform	1-5/8"
(3) DB950F85, (3) HBX-9014DS panels , (1) TMA ¹	114'	13' low-profile platform	(12) 1-5/8"
(3) APX16DWV-16DWVS, (3) APXV16-16PVL, (6) TMAs	104'	13' low-profile platform	(12) 1-5/8"
(6) LPA-185080/12, (4) LPA-80080/8, (2) LPA-80063/8	94'	13' low-profile platform	(12) 1-5/8"
(2) 18' omnidirectional whips	94'	On above platform	(2) 1-5/8"
(12) DB844H90 panels	84'	13' low-profile platform	(12) 1-5/8"
20' 4-bay dipole	74'	13' low-profile platform	7/8"

¹ Six DB950F85 antennas installed at the present time.

All-Points Technology Corporation

P.O. Box 504
Conway, NH 03818
(603) 496-5853

3 Saddlebrook Drive
Killingworth, CT 06419
(860) 663-1697

STRUCTURAL ANALYSIS:

Methodology:

The structural analysis was done in accordance with TIA/EIA-222, Revisions F and G (TIA), Structural Standards for Steel Antenna Towers and Antenna Supporting Structures; and the American Institute of Steel Construction (AISC), Manual of Steel Construction, Allowable Stress Design, Ninth Edition. The more stringent of the two TIA revisions, in this case Revision F, was used to compute the tower capacity values shown below.

The analysis was conducted using a 85 mph fastest mile wind speed (equivalent to 100 mph 3-second gust) and 3/4" of radial ice over the structure and associated appurtenances. The TIA Standard requires a basic wind speed of 85 miles per hour for Fairfield County, Connecticut.

Two loading conditions were evaluated in accordance with TIA/EIA-222-F to determine tower capacity. The more demanding of the two cases is used to calculate tower capacity:

- Case 1 = Wind Load (without ice) + Tower Dead Load
- Case 2 = 0.75 Wind Load (with ice) + Ice Load + Tower Dead Load

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

Analysis Results:

Our analysis determined the tower will support the proposed antenna changes. The following table summarizes the capacity of the monopole based on combined axial and bending stresses:

Elevation	Capacity
96'-125'	47%
48'-96'	86%
0'-48'	81%
Base plate	84%

The base foundation was evaluated from EEI design calculations. The foundation was found to be adequately sized for the proposed changes.

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

Compression: 29.9 kips
Total Shear: 26.6 kips
Overturning Moment: 2337 ft-kips

All-Points Technology Corporation

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Killingworth, CT 06419
(860) 663-1697

CONCLUSIONS AND SUGGESTIONS:

As detailed above, our analysis indicates that the existing 125' monopole tower located at 38 Spring Hill Lane in Bethel, Connecticut meets the requirements of the Connecticut State Building Code and TIA-222 with Sprint-Nextel's proposed equipment changes.

LIMITATIONS:

This report is based on the following:

1. Tower is properly installed and maintained.
2. All members are in new condition.
3. All bolts are in place and are properly tightened.
4. Tower is in plumb condition.

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

1. Adding or relocating antennas.
2. Installing antenna mounts or waveguide cables.
3. Extending tower.

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

All-Points Technology Corporation

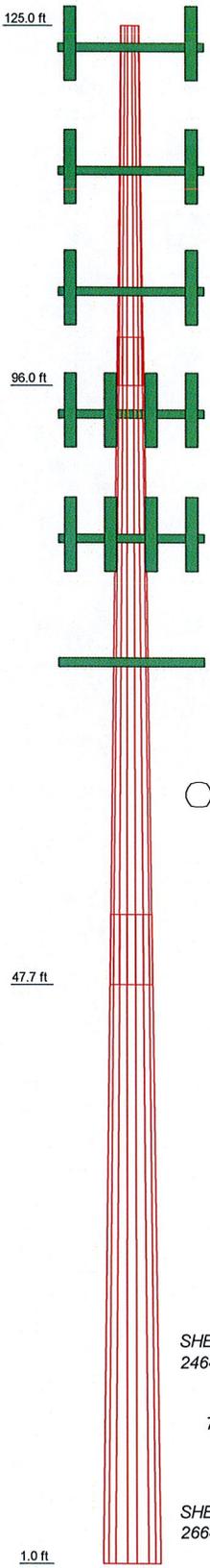
P.O. Box 504
Conway, NH 03818
(603) 496-5853

3 Saddlebrook Drive
Killingworth, CT 06419
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Appendix A

Tower Schematic

Section	1	2	3	
Length (ft)	28.96	52.29	52.33	14223.0
Number of Sides	18	18	18	
Thickness (in)	0.1875	0.2500	0.3125	
Socket Length (ft)	3.92	5.67	39.0506	
Top Dia (in)	18.0000	25.3213	55.0000	
Bot Dia (in)	26.9000	41.2800	8251.0	
Grade		A572-65		
Weight (lb)	1305.6	4666.4		

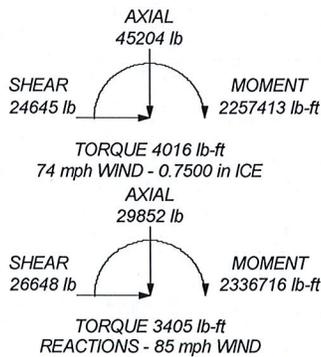


DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
20' 4-Bay Dipole	123.9 - 103.9	(2) KRY 112 144/1	103.9
(2) 7770.00	123.6	APX16PV-16PVL-E	103.9
(2) 7770.00	123.6	(4) 8'x2 3/8" Pipe Mount	103.9
(2) LGP2140X TMA	123.6	(4) 8'x2 3/8" Pipe Mount	103.9
(2) LGP2140X TMA	123.6	(4) 8'x2 3/8" Pipe Mount	103.9
(2) LGP2140X TMA	123.6	Pirol 13' Low-Profile Platform	103.9
(4) 8'x2 3/8" Pipe Mount	123.6	APX16PV-16PVL-E	103.9
(4) 8'x2 3/8" Pipe Mount	123.6	APX16PV-16PVL-E	103.9
(4) 8'x2 3/8" Pipe Mount	123.6	(2) LPA-185080/12	94
Pirol 13' Low-Profile Platform	123.6	(2) LPA-80080/8CF	94
18' x 4" omni whip	123.6	(2) LPA-80080/8CF	94
(2) 7770.00	123.6	(2) LPA-80063/8CF	94
HBX-9014DS-R2M	113.7	(2) 6'x2 3/8" Pipe Mount	94
HBX-9014DS-R2M	113.7	(2) 6'x2 3/8" Pipe Mount	94
HBX-9014DS-R2M	113.7	(2) 6'x2 3/8" Pipe Mount	94
DB950F85T2E-M	113.7	(2) 8'x2 3/8" Pipe Mount	94
DB950F85T2E-M	113.7	(2) 8'x2 3/8" Pipe Mount	94
DB950F85T2E-M	113.7	(2) 8'x2 3/8" Pipe Mount	94
(4) 8'x2 3/8" Pipe Mount	113.7	(2) LPA-185080/12	94
(4) 8'x2 3/8" Pipe Mount	113.7	(2) LPA-185080/12	94
(4) 8'x2 3/8" Pipe Mount	113.7	Pirol 13' Low-Profile Platform	94
Pirol 13' Low-Profile Platform	113.7	(4) DB844H90E-XY	84
LGP18601 TMA	113.7	(4) DB844H90E-XY	84
18' x 4" omni whip	112 - 94	(4) DB844H90E-XY	84
18' x 4" omni whip	112 - 94	(4) 8'x2 3/8" Pipe Mount	84
APX16DWV-16DWVS	103.9	(4) 8'x2 3/8" Pipe Mount	84
APX16DWV-16DWVS	103.9	(4) 8'x2 3/8" Pipe Mount	84
APX16DWV-16DWVS	103.9	Pirol 13' Low-Profile Platform	84
(2) KRY 112 144/1	103.9	20' 4-Bay Dipole	74 - 54
(2) KRY 112 144/1	103.9	Pirol 13' Low-Profile Platform	74

MATERIAL STRENGTH

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



All-Points Technology Corporation P. O. Box 504 Conway, NH 03818 Phone: (603) 496-5853 FAX: (603) 447-2124	Job: 125' Monopole		
	Project: CT241451 Bethel		
	Client: Sprint, Site #CT54XC749	Drawn by: Rob Adair	App'd:
	Code: TIA/EIA-222-F	Date: 12/15/10	Scale: NTS
	Path: <small>C:\Documents and Settings\Rob Adair\My Documents\Jobs\CT241451 Bethel\CT241451 Bethel.dwg</small>		Dwg No. E-1

Appendix B

Calculations

RISATower All-Points Technology Corporation P.O. Box 504 Conway, NH 03818 Phone: (603) 496-5853 FAX: (603) 447-2124	Job 125' Monopole	Page 1 of 6
	Project CT241451 Bethel	Date 11:59:50 12/15/10
	Client Sprint; Site #CT54XC749	Designed by Rob Adair

Tower Input Data

This tower is designed using the TIA/EIA-222-F standard.

The following design criteria apply:

Tower is located in Fairfield County, Connecticut.

Basic wind speed of 85 mph.

Nominal ice thickness of 0.7500 in.

Ice density of 56 pcf.

A wind speed of 74 mph is used in combination with ice.

Deflections calculated using a wind speed of 60 mph.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

Stress ratio used in pole design is 1.333.

Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	125.00-96.04	28.96	3.92	18	18.0000	26.9000	0.1875	0.7500	A572-65 (65 ksi)
L2	96.04-47.67	52.29	5.67	18	25.3213	41.2800	0.2500	1.0000	A572-65 (65 ksi)
L3	47.67-1.00	52.33		18	39.0506	55.0000	0.3125	1.2500	A572-65 (65 ksi)

Monopole Base Plate Data

Base Plate Data	
Anchor bolt grade	A615-75
Anchor bolt size	2.2500 in
Number of bolts	12
Embedment length	60.0000 in
f_c	4 ksi
Grout space	2.0000 in
Base plate grade	A572-60
Base plate thickness	1.7500 in
Bolt circle diameter	63.0000 in
Outer diameter	69.0000 in
Inner diameter	55.0000 in
Base plate type	Stiffened Plate
Bolts per stiffener	1
Stiffener thickness	0.7500 in
Stiffener height	8.0000 in

Feed Line/Linear Appurtenances

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	C_{AA} ft ² /ft	Weight plf	
1 5/8	C	No	Inside Pole	123.60 - 9.00	14	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	1.04 1.04 1.04

RISATower All-Points Technology Corporation P.O. Box 504 Conway, NH 03818 Phone: (603) 496-5853 FAX: (603) 447-2124	Job 125' Monopole	Page 2 of 6
	Project CT241451 Bethel	Date 11:59:50 12/15/10
	Client Sprint; Site #CT54XC749	Designed by Rob Adair

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C _A A _A		Weight plf
							ft ² /ft		
1 5/8	C	No	Inside Pole	113.70 - 9.00	6	No Ice	0.00	1.04	
						1/2" Ice	0.00	1.04	
						1" Ice	0.00	1.04	
1 5/8	C	No	Inside Pole	103.90 - 9.00	14	No Ice	0.00	1.04	
						1/2" Ice	0.00	1.04	
						1" Ice	0.00	1.04	
1 5/8	C	No	Inside Pole	94.00 - 9.00	14	No Ice	0.00	1.04	
						1/2" Ice	0.00	1.04	
						1" Ice	0.00	1.04	
1 5/8	C	No	Inside Pole	84.00 - 9.00	12	No Ice	0.00	1.04	
						1/2" Ice	0.00	1.04	
						1" Ice	0.00	1.04	
7/8	C	No	Inside Pole	74.00 - 9.00	1	No Ice	0.00	0.54	
						1/2" Ice	0.00	0.54	
						1" Ice	0.00	0.54	
Safety Line 3/8	A	No	CaAa (Out Of Face)	125.00 - 13.00	1	No Ice	0.04	0.22	
						1/2" Ice	0.14	0.75	
						1" Ice	0.24	1.28	

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment °	Placement ft	C _A A _A		Weight lb
			Horz Lateral ft	Vert ft			C _A A _A Front ft ²	C _A A _A Side ft ²	
(2) 7770.00	A	From Face	4.00	0.0000	123.60	No Ice	5.88	2.93	35.00
						1/2" Ice	6.31	3.27	67.63
						1" Ice	6.75	3.63	105.06
(2) 7770.00	B	From Face	4.00	0.0000	123.60	No Ice	5.88	2.93	35.00
						1/2" Ice	6.31	3.27	67.63
						1" Ice	6.75	3.63	105.06
(2) 7770.00	C	From Face	4.00	0.0000	123.60	No Ice	5.88	2.93	35.00
						1/2" Ice	6.31	3.27	67.63
						1" Ice	6.75	3.63	105.06
(2) LGP2140X TMA	A	From Face	4.00	0.0000	123.60	No Ice	1.26	0.38	20.00
						1/2" Ice	1.42	0.49	27.13
						1" Ice	1.58	0.62	36.14
(2) LGP2140X TMA	B	From Face	4.00	0.0000	123.60	No Ice	1.26	0.38	20.00
						1/2" Ice	1.42	0.49	27.13
						1" Ice	1.58	0.62	36.14
(2) LGP2140X TMA	C	From Face	4.00	0.0000	123.60	No Ice	1.26	0.38	20.00
						1/2" Ice	1.42	0.49	27.13
						1" Ice	1.58	0.62	36.14
(4) 8'x2 3/8" Pipe Mount	A	From Face	4.00	0.0000	123.60	No Ice	1.90	1.90	29.20
						1/2" Ice	2.73	2.73	43.54
						1" Ice	3.40	3.40	63.16
(4) 8'x2 3/8" Pipe Mount	B	From Face	4.00	0.0000	123.60	No Ice	1.90	1.90	29.20
						1/2" Ice	2.73	2.73	43.54
						1" Ice	3.40	3.40	63.16
(4) 8'x2 3/8" Pipe Mount	C	From Face	4.00	0.0000	123.60	No Ice	1.90	1.90	29.20
						1/2" Ice	2.73	2.73	43.54
						1" Ice	3.40	3.40	63.16
Pirod 13' Low-Profile Platform	C	None		0.0000	123.60	No Ice	9.10	7.88	1100.00
						1/2" Ice	10.15	8.79	1848.74
						1" Ice	11.22	9.72	2616.93
18' x 4" omni whip	C	From Leg	4.00	0.0000	123.60	No Ice	7.20	7.20	60.00
						1/2" Ice	9.04	9.04	110.12
						1" Ice	10.90	10.90	171.79

RISATower All-Points Technology Corporation P.O. Box 504 Conway, NH 03818 Phone: (603) 496-5853 FAX: (603) 447-2124	Job	125' Monopole	Page	3 of 6
	Project	CT241451 Bethel	Date	11:59:50 12/15/10
	Client	Sprint; Site #CT54XC749	Designed by	Rob Adair

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral Vert					
			ft	ft	°	ft	ft ²	ft ²	lb
LGP18601 TMA	A	From Face	4.00	0.0000	113.70	No Ice	0.70	0.28	10.00
			0.00			1/2" Ice	0.81	0.37	14.53
			0.00			1" Ice	0.94	0.47	20.56
HBX-9014DS-R2M	A	From Face	4.00	0.0000	113.70	No Ice	3.42	2.18	15.00
			0.00			1/2" Ice	3.76	2.49	35.42
			0.00			1" Ice	4.15	2.82	60.04
HBX-9014DS-R2M	B	From Face	4.00	0.0000	113.70	No Ice	3.42	2.18	15.00
			0.00			1/2" Ice	3.76	2.49	35.42
			0.00			1" Ice	4.15	2.82	60.04
HBX-9014DS-R2M	C	From Face	4.00	0.0000	113.70	No Ice	3.42	2.18	15.00
			0.00			1/2" Ice	3.76	2.49	35.42
			0.00			1" Ice	4.15	2.82	60.04
DB950F85T2E-M	A	From Face	4.00	0.0000	113.70	No Ice	2.53	4.19	10.50
			0.00			1/2" Ice	2.90	4.57	33.82
			0.00			1" Ice	3.27	4.96	61.89
DB950F85T2E-M	B	From Face	4.00	0.0000	113.70	No Ice	2.53	4.19	10.50
			0.00			1/2" Ice	2.90	4.57	33.82
			0.00			1" Ice	3.27	4.96	61.89
DB950F85T2E-M	C	From Face	4.00	0.0000	113.70	No Ice	2.53	4.19	10.50
			0.00			1/2" Ice	2.90	4.57	33.82
			0.00			1" Ice	3.27	4.96	61.89
(4) 8'x2 3/8" Pipe Mount	A	From Face	4.00	0.0000	113.70	No Ice	1.90	1.90	29.20
			0.00			1/2" Ice	2.73	2.73	43.54
			0.00			1" Ice	3.40	3.40	63.16
(4) 8'x2 3/8" Pipe Mount	B	From Face	4.00	0.0000	113.70	No Ice	1.90	1.90	29.20
			0.00			1/2" Ice	2.73	2.73	43.54
			0.00			1" Ice	3.40	3.40	63.16
(4) 8'x2 3/8" Pipe Mount	C	From Face	4.00	0.0000	113.70	No Ice	1.90	1.90	29.20
			0.00			1/2" Ice	2.73	2.73	43.54
			0.00			1" Ice	3.40	3.40	63.16
Pirod 13' Low-Profile Platform	C	None		0.0000	113.70	No Ice	9.10	7.88	1100.00
						1/2" Ice	10.15	8.79	1848.74
						1" Ice	11.22	9.72	2616.93
APX16PV-16PVL-E	A	From Face	4.00	0.0000	103.90	No Ice	6.65	1.98	20.00
			0.00			1/2" Ice	7.08	2.30	51.05
			0.00			1" Ice	7.52	2.63	86.76
APX16PV-16PVL-E	B	From Face	4.00	0.0000	103.90	No Ice	6.65	1.98	20.00
			0.00			1/2" Ice	7.08	2.30	51.05
			0.00			1" Ice	7.52	2.63	86.76
APX16PV-16PVL-E	C	From Face	4.00	0.0000	103.90	No Ice	6.65	1.98	20.00
			0.00			1/2" Ice	7.08	2.30	51.05
			0.00			1" Ice	7.52	2.63	86.76
APX16DWV-16DWVS	A	From Face	4.00	0.0000	103.90	No Ice	6.70	2.00	25.00
			0.00			1/2" Ice	7.13	2.33	56.34
			0.00			1" Ice	7.57	2.66	92.36
APX16DWV-16DWVS	B	From Face	4.00	0.0000	103.90	No Ice	6.70	2.00	25.00
			0.00			1/2" Ice	7.13	2.33	56.34
			0.00			1" Ice	7.57	2.66	92.36
APX16DWV-16DWVS	C	From Face	4.00	0.0000	103.90	No Ice	6.70	2.00	25.00
			0.00			1/2" Ice	7.13	2.33	56.34
			0.00			1" Ice	7.57	2.66	92.36
(2) KRY 112 144/1	A	From Face	4.00	0.0000	103.90	No Ice	0.56	0.25	15.00
			0.00			1/2" Ice	0.66	0.33	19.18
			0.00			1" Ice	0.78	0.42	24.76
(2) KRY 112 144/1	B	From Face	4.00	0.0000	103.90	No Ice	0.56	0.25	15.00
			0.00			1/2" Ice	0.66	0.33	19.18
			0.00			1" Ice	0.78	0.42	24.76
(2) KRY 112 144/1	C	From Face	4.00	0.0000	103.90	No Ice	0.56	0.25	15.00
			0.00			1/2" Ice	0.66	0.33	19.18
			0.00			1" Ice	0.78	0.42	24.76

RISATower All-Points Technology Corporation P.O. Box 504 Conway, NH 03818 Phone: (603) 496-5853 FAX: (603) 447-2124	Job	125' Monopole	Page	4 of 6
	Project	CT241451 Bethel	Date	11:59:50 12/15/10
	Client	Sprint; Site #CT54XC749	Designed by	Rob Adair

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _A A		Weight	
			Horz	Lateral			Front	Side		
			ft	ft	°	ft	ft ²	ft ²	lb	
20' 4-Bay Dipole	C	From Face	0.00		0.0000	123.90 - 103.90	1" Ice	0.78	0.42	24.76
			4.00				No Ice	4.00	4.00	55.00
			0.00				1/2" Ice	6.00	6.00	100.00
(4) 8'x2 3/8" Pipe Mount	A	From Face	0.00		0.0000	103.90	1" Ice	8.00	8.00	145.00
			4.00				No Ice	1.90	1.90	29.20
			0.00				1/2" Ice	2.73	2.73	43.54
(4) 8'x2 3/8" Pipe Mount	B	From Face	0.00		0.0000	103.90	1" Ice	3.40	3.40	63.16
			4.00				No Ice	1.90	1.90	29.20
			0.00				1/2" Ice	2.73	2.73	43.54
(4) 8'x2 3/8" Pipe Mount	C	From Face	0.00		0.0000	103.90	1" Ice	3.40	3.40	63.16
			4.00				No Ice	1.90	1.90	29.20
			0.00				1/2" Ice	2.73	2.73	43.54
Pirod 13' Low-Profile Platform	C	None	0.00		0.0000	103.90	1" Ice	3.40	3.40	63.16
			4.00				No Ice	9.10	7.88	1100.00
			0.00				1/2" Ice	10.15	8.79	1848.74
(2) LPA-185080/12	A	From Face	4.00		0.0000	94.00	1" Ice	11.22	9.72	2616.93
			0.00				No Ice	3.47	4.62	20.00
			0.00				1/2" Ice	3.90	5.06	46.44
(2) LPA-185080/12	B	From Face	4.00		0.0000	94.00	1" Ice	4.34	5.51	78.33
			0.00				No Ice	3.47	4.62	20.00
			0.00				1/2" Ice	3.90	5.06	46.44
(2) LPA-185080/12	C	From Face	4.00		0.0000	94.00	1" Ice	4.34	5.51	78.33
			0.00				No Ice	3.47	4.62	20.00
			0.00				1/2" Ice	3.90	5.06	46.44
(2) LPA-80080/8CF	A	From Face	4.00		0.0000	94.00	1" Ice	4.34	5.51	78.33
			0.00				No Ice	6.28	12.17	24.00
			0.00				1/2" Ice	6.85	12.83	87.32
(2) LPA-80080/8CF	B	From Face	4.00		0.0000	94.00	1" Ice	7.43	13.54	158.18
			0.00				No Ice	6.28	12.17	24.00
			0.00				1/2" Ice	6.85	12.83	87.32
(2) LPA-80063/8CF	C	From Face	4.00		0.0000	94.00	1" Ice	7.43	13.54	158.18
			0.00				No Ice	13.97	12.17	45.00
			0.00				1/2" Ice	14.68	12.83	142.49
(2) 6'x2 3/8" Pipe Mount	A	From Face	4.00		0.0000	94.00	1" Ice	15.40	13.54	248.15
			0.00				No Ice	1.43	1.43	21.90
			0.00				1/2" Ice	1.92	1.92	32.73
(2) 6'x2 3/8" Pipe Mount	B	From Face	4.00		0.0000	94.00	1" Ice	2.29	2.29	47.61
			0.00				No Ice	1.43	1.43	21.90
			0.00				1/2" Ice	1.92	1.92	32.73
(2) 6'x2 3/8" Pipe Mount	C	From Face	4.00		0.0000	94.00	1" Ice	2.29	2.29	47.61
			0.00				No Ice	1.43	1.43	21.90
			0.00				1/2" Ice	1.92	1.92	32.73
(2) 8'x2 3/8" Pipe Mount	A	From Face	4.00		0.0000	94.00	1" Ice	2.29	2.29	47.61
			0.00				No Ice	1.90	1.90	29.20
			0.00				1/2" Ice	2.73	2.73	43.54
(2) 8'x2 3/8" Pipe Mount	B	From Face	4.00		0.0000	94.00	1" Ice	3.40	3.40	63.16
			0.00				No Ice	1.90	1.90	29.20
			0.00				1/2" Ice	2.73	2.73	43.54
(2) 8'x2 3/8" Pipe Mount	C	From Face	4.00		0.0000	94.00	1" Ice	3.40	3.40	63.16
			0.00				No Ice	1.90	1.90	29.20
			0.00				1/2" Ice	2.73	2.73	43.54
18' x 4" omni whip	A	From Face	4.00		0.0000	112.00 - 94.00	1" Ice	3.40	3.40	63.16
			0.00				No Ice	7.20	7.20	60.00
			0.00				1/2" Ice	9.04	9.04	110.12
18' x 4" omni whip	C	From Face	4.00		0.0000	112.00 - 94.00	1" Ice	10.90	10.90	171.79
			0.00				No Ice	7.20	7.20	60.00
			0.00				1/2" Ice	9.04	9.04	110.12
Pirod 13' Low-Profile	A	None	4.00		0.0000	94.00	1" Ice	10.90	10.90	171.79
			0.00				No Ice	9.10	7.88	1100.00
			0.00				1/2" Ice	9.10	7.88	1100.00

RISATower All-Points Technology Corporation P.O. Box 504 Conway, NH 03818 Phone: (603) 496-5853 FAX: (603) 447-2124	Job	125' Monopole	Page	5 of 6
	Project	CT241451 Bethel	Date	11:59:50 12/15/10
	Client	Sprint; Site #CT54XC749	Designed by	Rob Adair

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _A A		Weight
			Horz	Lateral			Front	Side	
			ft	ft	°	ft	ft ²	ft ²	lb
Platform						1/2" Ice	10.15	8.79	1848.74
						1" Ice	11.22	9.72	2616.93
(4) DB844H90E-XY	A	From Face	4.00		0.0000	84.00	No Ice	2.87	10.00
			0.00				1/2" Ice	3.18	35.38
			0.00				1" Ice	3.52	64.96
(4) DB844H90E-XY	B	From Face	4.00		0.0000	84.00	No Ice	2.87	10.00
			0.00				1/2" Ice	3.18	35.38
			0.00				1" Ice	3.52	64.96
(4) DB844H90E-XY	C	From Face	4.00		0.0000	84.00	No Ice	2.87	10.00
			0.00				1/2" Ice	3.18	35.38
			0.00				1" Ice	3.52	64.96
(4) 8'x2 3/8" Pipe Mount	A	From Face	4.00		0.0000	84.00	No Ice	1.90	29.20
			0.00				1/2" Ice	2.73	43.54
			0.00				1" Ice	3.40	63.16
(4) 8'x2 3/8" Pipe Mount	B	From Face	4.00		0.0000	84.00	No Ice	1.90	29.20
			0.00				1/2" Ice	2.73	43.54
			0.00				1" Ice	3.40	63.16
(4) 8'x2 3/8" Pipe Mount	C	From Face	4.00		0.0000	84.00	No Ice	1.90	29.20
			0.00				1/2" Ice	2.73	43.54
			0.00				1" Ice	3.40	63.16
Pirot 13' Low-Profile Platform	C	None			0.0000	84.00	No Ice	9.10	1100.00
							1/2" Ice	10.15	1848.74
							1" Ice	11.22	2616.93
20' 4-Bay Dipole	C	From Face	4.00		0.0000	54.00 - 74.00	No Ice	4.00	55.00
			0.00				1/2" Ice	6.00	100.00
			0.00				1" Ice	8.00	145.00
Pirot 13' Low-Profile Platform	C	None			0.0000	74.00	No Ice	9.10	1100.00
							1/2" Ice	10.15	1848.74
							1" Ice	11.22	2616.93

RISATower All-Points Technology Corporation P.O. Box 504 Conway, NH 03818 Phone: (603) 496-5853 FAX: (603) 447-2124	Job 125' Monopole	Page 6 of 6
	Project CT241451 Bethel	Date 11:59:50 12/15/10
	Client Sprint; Site #CT54XC749	Designed by Rob Adair

Solution Summary

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	125 - 96.04	29.700	11	2.0767	0.0192
L2	99.9567 - 47.6667	19.171	11	1.8680	0.0102
L3	53.3333 - 1	5.049	11	0.9121	0.0025

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
123.90	20' 4-Bay Dipole	11	29.223	2.0702	0.0187	19284
123.60	(2) 7770.00	11	29.093	2.0684	0.0186	19284
118.90	20' 4-Bay Dipole	11	27.060	2.0399	0.0168	15807
113.90	20' 4-Bay Dipole	11	24.917	2.0060	0.0149	8686
113.70	LGP18601 TMA	11	24.832	2.0045	0.0148	8532
112.00	18' x 4" omni whip	11	24.111	1.9915	0.0142	7416
108.90	20' 4-Bay Dipole	11	22.808	1.9656	0.0131	5988
106.00	18' x 4" omni whip	11	21.607	1.9380	0.0121	5074
103.90	APX16PV-16PVL-E	11	20.749	1.9158	0.0114	4570
100.00	18' x 4" omni whip	11	19.188	1.8686	0.0102	3931
94.00	(2) LPA-185080/12	11	16.880	1.7795	0.0085	3504
84.00	(4) DB844H90E-XY	11	13.311	1.5946	0.0063	3046
74.00	20' 4-Bay Dipole	11	10.138	1.3791	0.0046	2694
69.00	20' 4-Bay Dipole	11	8.715	1.2654	0.0040	2547
64.00	20' 4-Bay Dipole	11	7.410	1.1506	0.0035	2415
59.00	20' 4-Bay Dipole	11	6.229	1.0369	0.0030	2295
54.00	20' 4-Bay Dipole	11	5.179	0.9264	0.0026	2222

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P _{allow} lb	% Capacity	Pass Fail
L1	125 - 96.04	Pole	TP26.9x18x0.1875	1	-12154.60	111921.07	47.2	Pass
L2	96.04 - 47.6667	Pole	TP41.28x25.3213x0.25	2	-30514.70	545726.18	86.0	Pass
L3	47.6667 - 1	Pole	TP55x39.0506x0.3125	3	-29833.00	1644428.72	81.0	Pass
Summary								
Pole (L2)							86.0	Pass
Base Plate							83.9	Pass
RATING =							86.0	Pass



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Calculated Radio Frequency Emissions



CT54XC749

38 Spring Hill Road, Bethel, CT 06801

January 7, 2011

Table of Contents

1. Introduction.....	1
2. FCC Guidelines for Evaluating RF Radiation Exposure Limits.....	1
3. RF Exposure Prediction Methods.....	2
4. Calculation Results.....	2
5. Conclusion.....	3
6. Statement of Certification.....	3
Attachment A: References.....	4
Attachment B: FCC Limits for Maximum Permissible Exposure (MPE).....	5

List of Tables

Table 1: Carrier Information.....	2
Table 2: FCC Limits for Maximum Permissible Exposure (MPE).....	5

List of Figures

Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE).....	6
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1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed modifications to the existing Sprint PCS antenna arrays mounted on the existing monopole tower located at 38 Spring Hill Lane in Bethel, CT. Sprint-Nextel, T-Mobile, AT&T, Verizon Wireless & other government/utility organizations have antennas mounted on the tower. The coordinates of the tower are 41-21-44.07 N, 73-23-47.67 W.

Sprint PCS is proposing the following modifications:

- 1) Install three additional 1900MHz antennas per sector;
- 2) Install one tower-mounted amplifier on the alpha sector;
- 3) Install a multi-carrier power amplifier (MCPA) system on the existing Sprint equipment pad.

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment B of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment B contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

3. RF Exposure Prediction Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left(\frac{1.6^2 \times \text{EIRP}}{4\pi \times R^2} \right)$$

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial Distance = $\sqrt{(H^2 + V^2)}$

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Ground reflection factor of 1.6

These calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings, etc...) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not take into account actual terrain elevations which could attenuate the signal. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the finished modifications.

4. Calculation Results

Table 1 below outlines the power density information for the site. All information for carriers other than Sprint PCS comes directly from the current CSC database.

Carrier	Antenna Height (Feet)	Operating Frequency (MHz)	Number of Trans.	ERP Per Transmitter (Watts)	Power Density (mw/cm ²)	Limit	%MPE
T-Mobile	105	1930	8	224	0.0584	1.0000	5.84%
Bethel PD	No RF information available for Town and small company antennas.						
Thomas Refuse							
Utility Communications							
Valley Communications							
Yankee Gas							
AT&T	122	1945	3	427	0.0309	1.0000	3.09%
Nextel	85	851	24	100	0.1194	0.5673	21.05%
Verizon	92	880	9	285	0.1090	0.5867	18.57%
Verizon	92	1900	3	400	0.0510	1.0000	5.10%
Sprint PCS	112	1900	11	801	0.2526	1.0000	25.26%
Total							78.92%

Table 1: Carrier Information

5. Conclusion

The above analysis verifies that emissions from the existing site will be below the maximum power density levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Even when using conservative methods, the cumulative power density from the proposed and existing transmit antennas at the existing facility is below the limits for the general public. The highest expected percent of Maximum Permissible Exposure at the base of the tower is 78.92% of the FCC limit.

As previously noted, obstructions (trees, buildings etc.) that would normally attenuate the signal are not taken into account. As a result, the predicted signal levels are more conservative (higher) than the actual signal levels will be from the finished modifications.

6. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in ANSI/IEEE Std. C95.3, ANSI/IEEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.



Daniel L. Goulet
C Squared Systems, LLC

January 7, 2010

Date

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

ANSI C95.1-1982, American National Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz IEEE-SA Standards Board

IEEE Std C95.3-1991 (Reaff 1997), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave IEEE-SA Standards Board

Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure¹

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5	6

(B) Limits for General Population/Uncontrolled Exposure²

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

f = frequency in MHz * Plane-wave equivalent power density

Table 2: FCC Limits for Maximum Permissible Exposure (MPE)

¹ Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure

² General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure

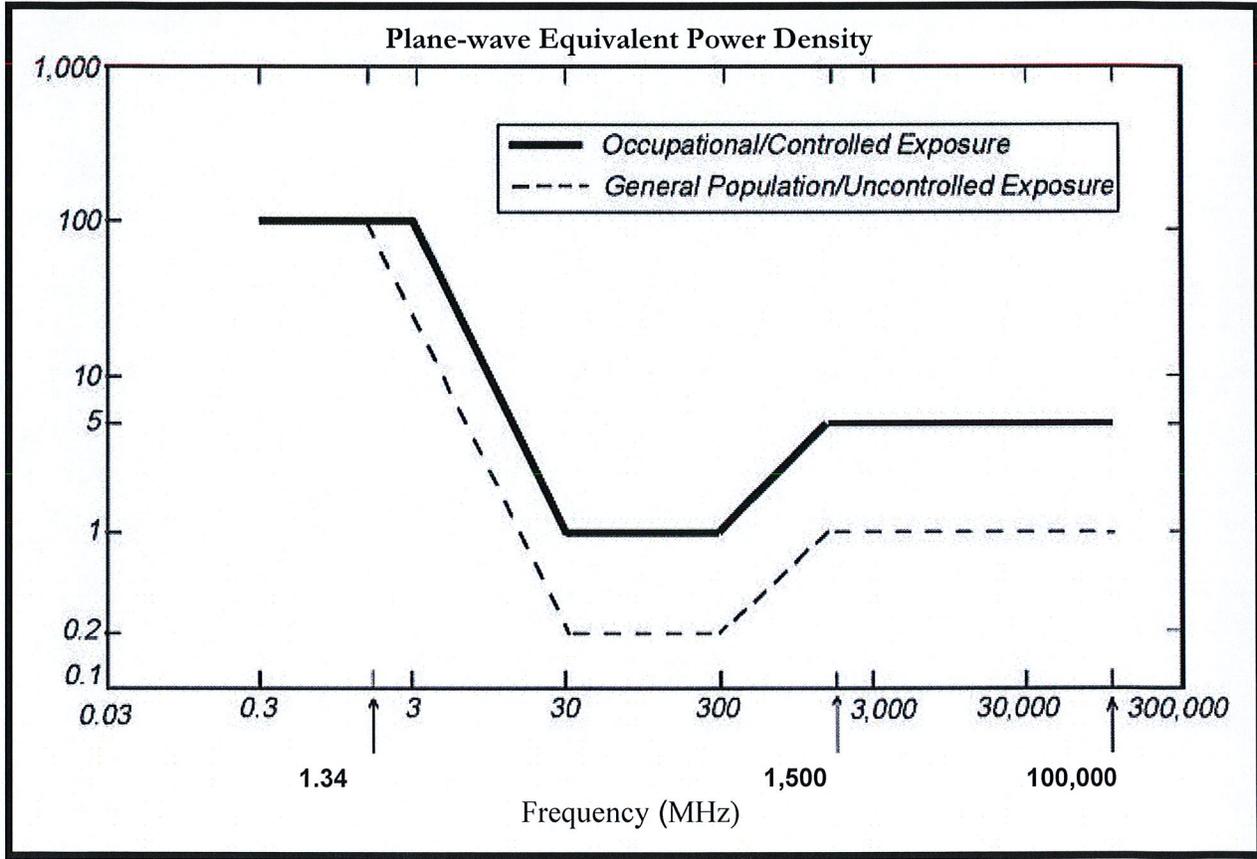


Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE)