STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
Internet: ct.gov/csc

Daniel F. Caruso
Chairman

March 15, 2011

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

RE: **EM-SPRINT-034-110218** – Sprint Spectrum LP notice of intent to modify an existing telecommunications facility located at 41 Padanaram Road, Danbury, 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 February 17, 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 Mark D. Boughton, Mayor, City of Danbury
Dennis Elpern, City Planner, City of Danbury
Hans Fiedler, T-Mobile
Julie D. Kohler, Esq., Cohen and Wolf P.C.

Em-SPRINTNEXTEL-135-110218

BROWNRUDNICK

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

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

Via Hand Delivery

February 18, 2011

RECEIVED
FEB 18 2011
CONNECTICUT
SITING COUNCIL

ORIGINAL

Daniel F. Caruso, Chairman
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: Notice of Exempt Modification / Stamford @ 366 Old Long Ridge Road

Dear Mr. Caruso:

On behalf of Sprint Nextel Corporation enclosed for filing are an original and five (5) copies of Sprint's Notice of Exempt Modification for the Facility located at the above-referenced site. I also enclose herewith a check in the amount of $625.00 representing the filing fee.

I would appreciate it if you would date-stamp the enclosed copy of this transmittal letter and return it to the courier delivering this package.

If you have any questions, please feel free to contact me.

Very truly yours,

BROWN RUDNICK LLP

By: Thomas J. Regan
Thomas J. Regan

Enclosures
cc w/ encl. via 1st Class Mail – Mayor Michael Pavia

40281566 v1 - MERCIECM - 025064/001

HPC DEVELOPMENT LLC

EM-SPRINT-034-110218

February 17, 2011

VIA UPS

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

Re: Sprint Spectrum L.P. – exempt modification
41 Padanaram Road, Danbury, Connecticut

Dear Ms. Roberts:

This letter and attachments are submitted on behalf of Sprint Spectrum L.P. ("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 Mayor of the City of Danbury.

Sprint plans to modify the existing facility at 41 Padanaram Road, Danbury owned by T-Mobile (coordinates 41-25-08.1 N, 73-27-43 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 70' height on the tower. Sprint will remove and replace three existing panel antennas of the six existing antennas, 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 the 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 11.46%; the combined site operations will result in a total power density of 21.68%.

Please note that Clearwire had previously notified the Council of its intent to install antennas and equipment at this site, utilizing an extension to the tower. However, T-Mobile has informed Sprint that Clearwire has no current intention to make the modification; T-Mobile, therefore, has removed Clearwire from its reserved loading and performed the structural analysis accordingly. The power density calculations provided herein nonetheless utilize the Council's current power density records, and Clearwire's operations are included in the total number.

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 Mark Boughton, Mayor, City of Danbury
Robert J. Kaufman (underlying property owner)

Attachments

ALL-POINTS TECHNOLOGY CORPORATION, P.C. 3 SADDELBROOK DRIVE KILLINGWORTH, CT. 06419 PHONE: (860)-663-1697 FAX: (860)-663-0935 www.allpointstech.com	**APT FILING NUMBER: NY-241-390** LE-1 SCALE: AS NOTED / DRAWN BY: RCB DATE: 10/01/10 / CHECKED BY: SMC	Sprint **Together with NEXTEL** 1 INTERNATIONAL BLVD. SUITE 800 MAHWAH, NJ 07495	**SPRINT / NEXTEL** **SITE NUMBER: CT33XC09** T-MOBILE DANBURY COLO 41 PADANARAM ROAD DANBURY, CT 06811

APPROVALS:

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

TOTALS:

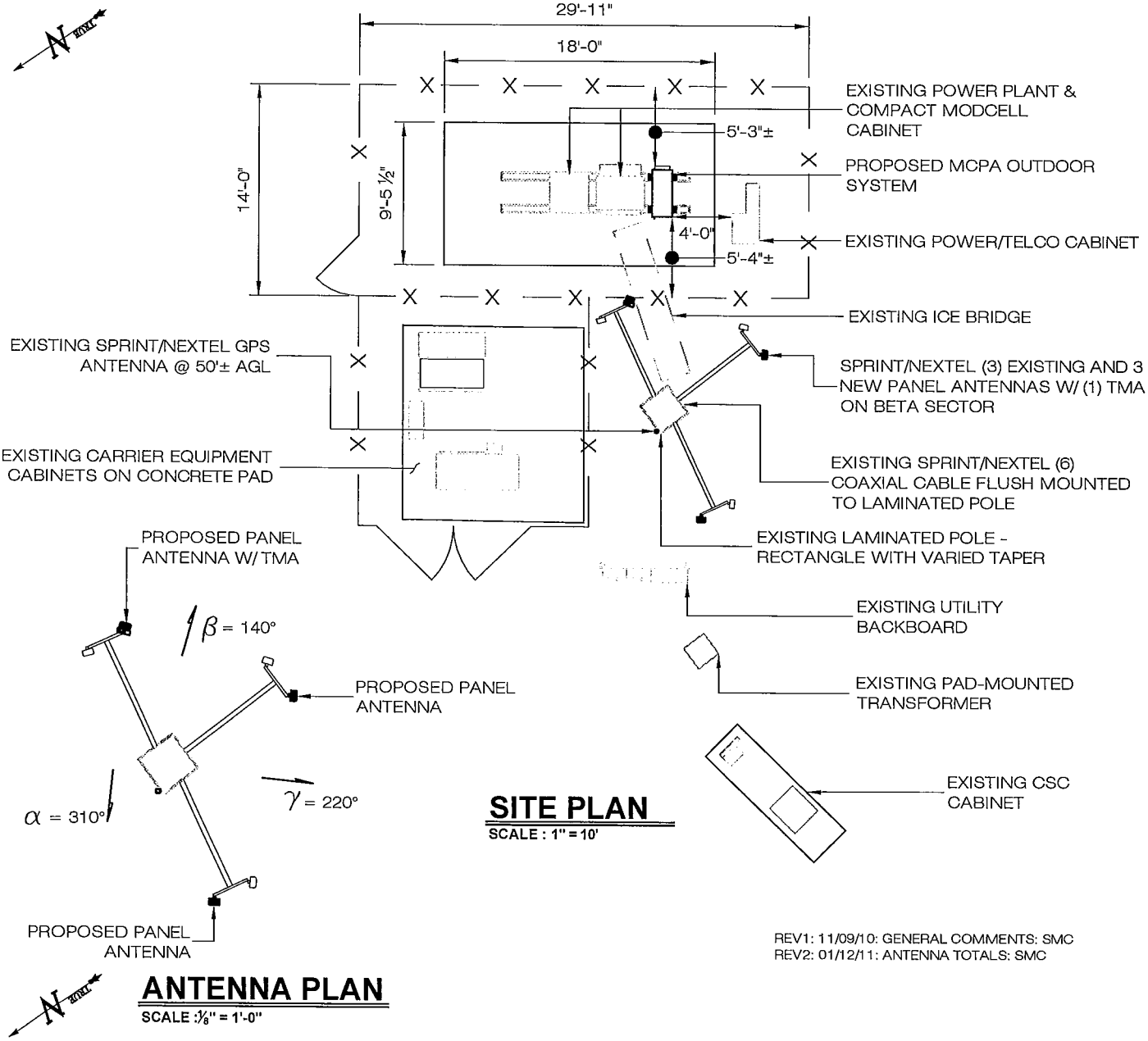
- (6) PANELS & (1) GPS ANTENNA

- SCOPE: REMOVE AND REPLACE 3 PANEL ANTENNAS, ADD (1) TMA AND (1) MCPA OUTDOOR CABINET

- SQUARE FOOTAGE OF EXISTING LEASE AREA = 240 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.



SITE PLAN

SCALE : 1" = 10'

REV1: 11/09/10: GENERAL COMMENTS: SMC
REV2: 01/12/11: ANTENNA TOTALS: SMC

ANTENNA PLAN

SCALE :⅛" = 1'-0"

ALL-POINTS TECHNOLOGY CORPORATION, P.C.
3 SADDELBROOK DRIVE
KILLINGWORTH, CT. 06419
PHONE: (860)-663-1697
FAX: (860)-663-0935
www.allpointstech.com

APT FILING NUMBER: NY-241-390	
LE-2	
SCALE: AS NOTED	DRAWN BY: RCB
DATE: 10/01/10	CHECKED BY: SMC

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

SPRINT / NEXTEL
SITE NUMBER: CT33XC09
T-MOBILE DANBURY COLO
41 PADANARAM ROAD
DANBURY, CT 06811

APPROVALS:

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

TOTALS:

- (6) PANELS & (1) GPS ANTENNA

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NOTICE:

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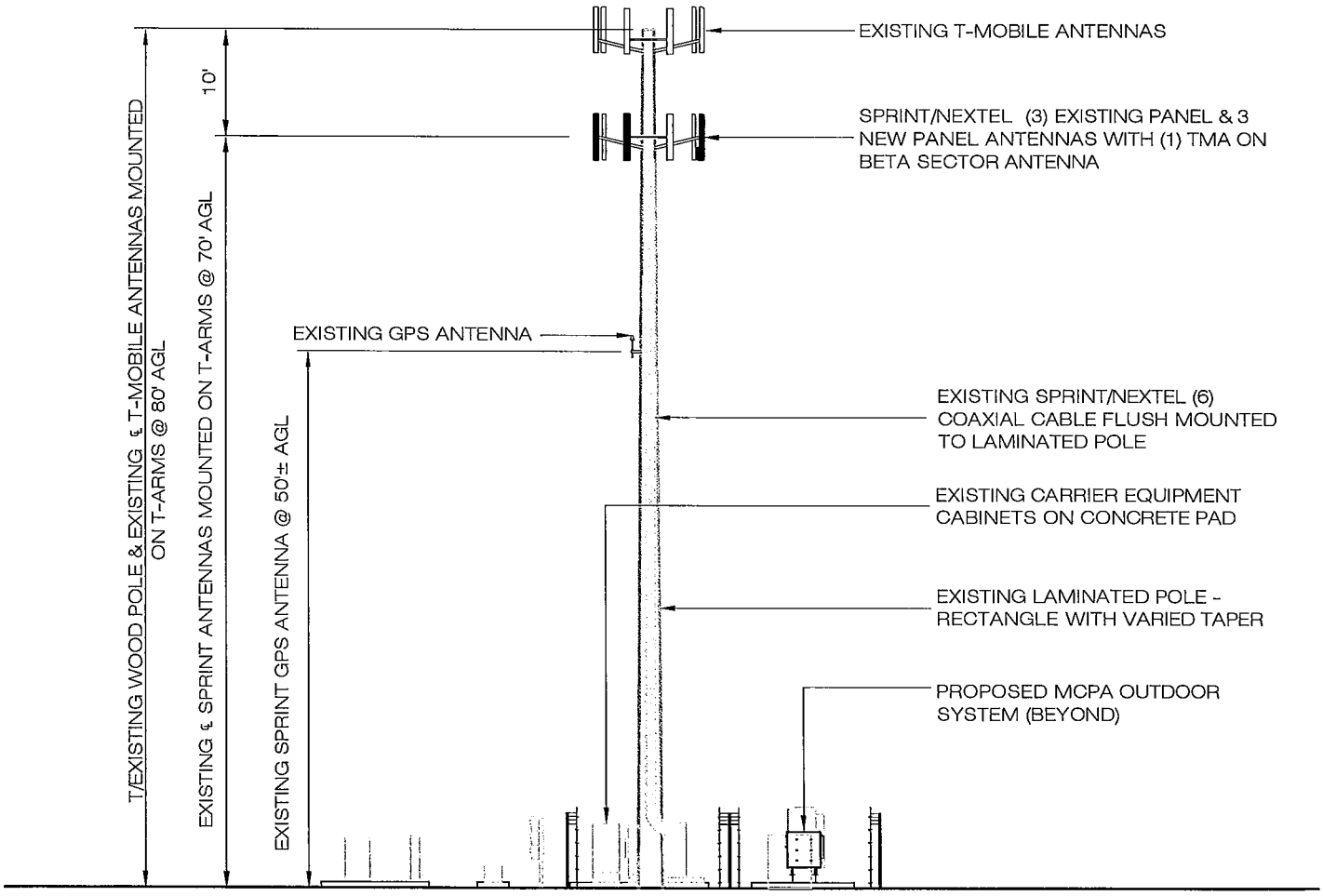


REV1: 11/09/10: GENERAL COMMENTS: SMC
REV2: 01/12/11: ANTENNA TOTALS: SMC

WESTERN ELEVATION

SCALE : 1/16" = 1'-0"

GPD ASSOCIATES

STRUCTURAL ANALYSIS REPORT

T-Mobile

SITE NUMBER: CT11896A
SITE NAME: CT896/M&M CONCRETE POLE

NEW ANTENNA INSTALLATION BY:

Sprint

ON AN EXISTING
80' WOOD MONOPOLE

December 20, 2010

2010299.33

WOOD MONOPOLE

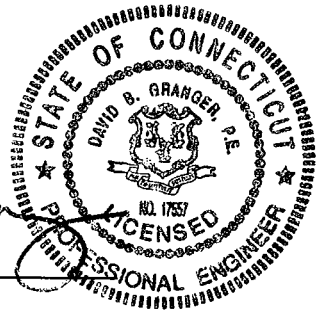
STRUCTURAL ANALYSIS REPORT

CT11896A CT896/M&M CONCRETE POLE
Danbury, Connecticut
GPD Project #: 2010299.33

New Antenna Installation
Existing 80 ft Wood Monopole

For:
T-Mobile
Bellevue, Washington

Prepared By:



David B. Granger, P.E.
Registered Professional Engineer
Connecticut #: 17557

December 20, 2010

Glaus, Pyle, Schomer, Burns, and DeHaven, Inc. ENGINEERS • ARCHITECTS • PLANNERS
520 South Main Street • Suite 2531 • Akron • Ohio • 44311-1010 • Tel: 330-572-2100 • Fax: 330-572-2101

TABLE OF CONTENTS

APPENDICES

EXECUTIVE SUMMARY

The purpose of this analysis was to verify whether the design for the existing tower is structurally adequate to carry the new antenna and coax loads as specified by Sprint to T-Mobile. This report was commissioned by Ms. Maurine Irvine-Trujillo of T-Mobile.

The design for the existing structure meets the requirements of ASCE 7-05 for a 3-second gust wind speed of 100 mph with no radial ice and 40 mph with 3/4" of radial ice in accordance with the 2003 IBC, for the proposed antenna configuration.

The foundation reactions, with the proposed loading, were found to be less than the capacity of the foundation design. Therefore the existing foundation is adequate, assuming it was properly constructed according to original design.

Section Results

Monopole	**% Capacity**	**Result**
Wood Pole	84.9%	Pass
Foundation	**% Capacity**	**Result**
Soil Interaction	93.5%	Pass
Tower Rating:	**93.5%**	

TOWER DESCRIPTION

The existing monopole is located in Danbury, Connecticut. It was originally designed for T-Mobile by Laminated Wood Systems, Inc. of Seward, Nebraska. The original design load for the tower was for a 90 mph basic wind speed in accordance with ASCE 7-02. The tower was originally designed to hold the following:

Original Configuration

Antennas:	
Elev. 78′	(6) Panel Antennas on (3) 3′ Side Arms mounts
Elev. 68′	(6) Panel Antennas on (3) 3′ Side Arms mounts

The existing 80′ wood monopole has one major section. It has four sides and is made of glued laminated layers of Coastal Douglas Fir. It has a constant width of 26.25″ about one axis and a tapers from 25.26″ at ground level to 12″ at the top about the other. The total structure is 93.5′ tall with 13.5′ embedded directly into a 4.5′ diameter concrete foundation.

All structural information was provided by T-Mobile in the form of the original tower and foundation drawings and calculations by Laminated Wood Systems, Inc. (Drawing #: TMOB-0018.06A1, dated August 20, 2005). Soils information was obtained from a geotechnical report by EnviroBusiness, Inc. (Project #: 61051632, dated July 27, 2005). The existing, reserved, and proposed antenna information was provided by T-Mobile. This analysis and report are based solely on this information.

TOWER MATERIALS

Data on wood strength was available from the information provided. The following table details the wood strength used in the analysis.

Glue Laminated Beam	F_{bx} = 2400 psi (transverse)
	F_{by} = 1750 psi (longitudinal)

TOWER LOADING

The following data shows the major loading that the tower supports. The existing, reserved, and proposed antenna information was provided by T-Mobile.

Existing & Reserved Configuration

Elevation	Carrier	Antennas
80′	T-Mobile	(12) RFS APX16DWV-16DWVS-C Antennas, (12) TMAs & (1) 4′ MW Dish on (3) 6′ T-Arms w/ (25) 1-5/8″ external coax
70′	Sprint	(2) Decibel DB950F40T2E-M Antennas, (2) Decibel DB950F65T2E-M Antennas & (2) Decibel DB950F65E-M Antennas on (3) 3′ Side Arms w/ (12) 1-1/4″ external coax

Proposed Configuration

Elevation	Carrier	Antennas
80′	T-Mobile	(12) RFS APX16DWV-16DWVS-C Antennas, (12) TMAs & (1) 4′ MW Dish on (3) 6′ T-Arms w/ (25) 1-5/8″ external coax
70′	**Sprint**	**(3) Decibel DB978F65TxE-M Antennas, (2) Andrew HBX-6517C Antennas, (1) Andrew HBX-4517C Antennas & (1) Powerwave LGP186nn TMA on (3) 3′ Side Arms w/ (12) 1-5/8″ external coax**

Note: - **BOLD** type indicates a new appurtenance.
- All external coax are assumed to be banded flush to the tower in no more than five rows total on the 26.25″ wide tower faces.

The purpose of this independent structural analysis review is to determine if the design for the existing tower, with the proposed antenna and coax configuration, is in conformance to the latest ASCE 7-05 standard requirements.

ANALYSIS

The purpose of this structural analysis review is to determine if the design for the existing tower is in conformance to the latest code requirements. Wind loading was taken from ASCE 7-05. Wind load stresses were determined from hand calculations using Excel. Refer to Appendix 1 for wind loading and stress calculations.

The current wind loading requirements of ASCE 7-05 are for a 100 mph 3-second gust wind speed with no radial ice and 40 mph with 3/4" of radial ice. ASCE 7-05 requires towers within Fairfield County, Connecticut to be analyzed with a 100 mph 3-second gust wind speed.

ANALYSIS 3-SECOND GUST WIND SPEED:	100 MPH
ANALYSIS 3-SECOND GUST W/ RADIAL ICE:	40 MPH
RADIAL ICE:	3/4"
STRUCTURE CLASS:	II
TOPOGRAPHIC CATEGORY:	1
EXPOSURE CATEGORY:	B

The tower is assumed, for the purpose of this analysis, to have been properly fabricated, constructed, maintained, and to be in good condition with no structural defects. This is not a condition assessment of the tower and has been provided without the benefit of detailed site photos, a detailed tower mapping, or a GPD Associates site visit. This analysis assumes the antennas and coax have been installed in a neat and orderly fashion. Antennas are assumed to be installed on standard mounts at 120° azimuths.

CONCLUSIONS AND RECOMMENDATIONS

Based on the structural analysis results, the design for the 80' wood monopole structure meets the requirements of ASCE 7-05 for a 3-second gust wind speed of 100 mph with no radial ice and 40 mph with 3/4" of radial ice in accordance with the 2003 IBC, for the proposed antenna configuration.

The foundation reactions, with the proposed loading, were found to be less than the capacity of the foundation design. Therefore the existing foundation is adequate, assuming it was properly constructed according to original design.

Summary of Findings

Monopole	Satisfactory
Foundation	Satisfactory

Therefore, based on our analysis results, the design for the existing structure is structurally satisfactory for the proposed loading configuration.

DISCLAIMER OF WARRANTIES

GPD ASSOCIATES has not performed a site visit to the tower to verify the member sizes or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD ASSOCIATES in connection with this Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. All tower components have been assumed to only resist dead loads when no other loads are applied. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

GPD ASSOCIATES does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD ASSOCIATES provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the feasibility of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation in excess of the specified code recommended amount, if any, that should be considered in the structural analysis.

The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD ASSOCIATES, but are beyond the scope of this report.

Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

GPD ASSOCIATES makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD ASSOCIATES will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD ASSOCIATES pursuant to this report will be limited to the total fee received for preparation of this report.

APPENDICES

1. Wind Loading and Stress Calculations

2. Tower Elevation Drawing

WIND LOADING AND STRESS CALCULATIONS

CT11896A CT896/M&M CONCRETE POLE

WOOD POLE ANALYSIS

Wind Calculations

Wind Loading	ASCE 7-05	
Strength Design	2005 NDS	
Wind Speed	100	mph
Pole Shape	Rectangular	
Pole Density	0.037	kcf
Exposure Category	B	
Pole Height	80	ft
Zg	1200	ft
α	7.0	
Kzmin	0.7	

TOWER (Longitudinal)

Z (ft)	Section Height (ft)	Section Width (in)	Cross Sectional Area (in^2)	AG * 1.05 (ft^2)	I	Kd	Kzt	Kz	qz	G	Cf	Force (kips)	Moment (kip-ft)	Weight (kips)
75.00	10.00	12.97	340.46	11.35	1.00	0.90	1.00	0.91	20.97	0.85	2.00	0.405	30.35	0.875
65.00	10.00	14.91	391.39	13.05	1.00	0.90	1.00	0.87	20.13	0.85	2.00	0.447	29.02	1.006
55.00	10.00	16.84	442.05	14.74	1.00	0.90	1.00	0.83	19.19	0.85	2.00	0.481	26.44	1.136
45.00	10.00	18.78	492.98	16.43	1.00	0.90	1.00	0.79	18.12	0.85	2.00	0.506	22.78	1.267
35.00	10.00	20.72	543.90	18.13	1.00	0.90	1.00	0.73	16.87	0.85	2.00	0.520	18.20	1.398
25.00	10.00	22.66	594.83	19.83	1.00	0.90	1.00	0.70	16.13	0.85	2.00	0.544	13.59	1.528
15.00	10.00	24.59	645.49	21.52	1.00	0.90	1.00	0.70	16.13	0.85	2.00	0.590	8.85	1.659
5.00	10.00	26.53	696.41	23.21	1.00	0.90	1.00	0.70	16.13	0.85	2.00	0.636	3.18	1.789
											Sub Total	4.13	152.41	10.66

TOWER (Transverse)

Z (ft)	Section Height (ft)	Section Width (in)	Cross Sectional Area (in^2)	AG * 1.05 (ft^2)	I	Kd	Kzt	Kz	qz	G	Cf	Force (kips)	Moment (kip-ft)	Weight (kips)
75.00	10.00	26.25	340.46	22.97	1.00	0.90	1.00	0.91	20.97	0.85	2.00	0.819	61.42	0.875
65.00	10.00	26.25	391.39	22.97	1.00	0.90	1.00	0.87	20.13	0.85	2.00	0.786	51.10	1.006
55.00	10.00	26.25	442.05	22.97	1.00	0.90	1.00	0.83	19.19	0.85	2.00	0.749	41.22	1.136
45.00	10.00	26.25	492.98	22.97	1.00	0.90	1.00	0.79	18.12	0.85	2.00	0.708	31.85	1.267
35.00	10.00	26.25	543.90	22.97	1.00	0.90	1.00	0.73	16.87	0.85	2.00	0.659	23.05	1.398
25.00	10.00	26.25	594.83	22.97	1.00	0.90	1.00	0.70	16.13	0.85	2.00	0.630	15.74	1.528
15.00	10.00	26.25	645.49	22.97	1.00	0.90	1.00	0.70	16.13	0.85	2.00	0.630	9.45	1.659
5.00	10.00	26.25	696.41	22.97	1.00	0.90	1.00	0.70	16.13	0.85	2.00	0.630	3.15	1.789
											Sub Total	5.61	236.97	10.66

APPURTENANCES (Longitudinal)

	Z (ft)	AC (ft^2)	I	Kd	Kzt	Kz	qz	G	Cf	Force (kips)	Moment (kip-ft)	Weight (kips)
(12) RFS APX16DWV-16DWVS-C	80.00	52.49	1.00	0.90	1.00	0.93	21.36	0.85	1.42	1.356	108.45	0.6480
(12) Mount Pipes	80.00	7.92	1.00	0.95	1.00	0.93	22.55	0.85	1.20	0.182	14.57	0.2198
(1) 4' Microwave Dish	80.00	16.00	1.00	0.90	1.00	0.93	21.36	0.85	1.43	0.416	33.31	0.0500
(12) TMAs	79.00	1.78	1.00	0.90	1.00	0.92	21.29	0.85	1.32	0.042	3.35	0.1800
(3) 6' T-Arms	79.00	3.60	1.00	0.90	1.00	0.92	21.29	0.85	2.00	0.130	10.29	0.4500
(3) Decibel DB978F65TxE-M	70.00	4.65	1.00	0.90	1.00	0.89	20.56	0.85	1.70	0.138	9.67	0.0300
(2) Andrew HBX-6517C	70.00	5.51	1.00	0.90	1.00	0.89	20.56	0.85	1.92	0.185	12.97	0.0374
(1) Andrew HBX-4517C	70.00	5.61	1.00	0.90	1.00	0.89	20.56	0.85	1.66	0.162	11.36	0.0360
(6) Mount Pipes	70.00	4.16	1.00	0.95	1.00	0.89	21.71	0.85	1.20	0.092	6.44	0.1560
(1) Powerwave LGP186nn TMA	70.00	0.00	1.00	0.90	1.00	0.89	20.56	0.85	1.35	0.000	0.00	0.0100
(3) 3' Arms	70.00	1.67	1.00	0.90	1.00	0.89	20.56	0.85	1.47	0.043	2.99	0.3870

APPURTENANCES (Transverse)

	Z (ft)	AC (ft^2)	I	Kd	Kzt	Kz	qz	G	Cf	Force (kips)	Moment (kip-ft)	Weight (kips)
(12) RFS APX16DWV-16DWVS-C	80.00	52.49	1.00	0.90	1.00	0.93	21.36	0.85	1.42	1.356	108.45	0.6480
(12) Mount Pipes	80.00	7.92	1.00	0.95	1.00	0.93	22.55	0.85	1.20	0.182	14.57	0.2198
(1) 4' Microwave Dish	80.00	16.00	1.00	0.90	1.00	0.93	21.36	0.85	1.43	0.416	33.31	0.0500
(12) TMAs	79.00	1.78	1.00	0.90	1.00	0.92	21.29	0.85	1.32	0.042	3.35	0.1800
(3) 6' T-Arms	79.00	3.60	1.00	0.90	1.00	0.92	21.29	0.85	2.00	0.130	10.29	0.4500
(3) Decibel DB978F65TxE-M	70.00	4.65	1.00	0.90	1.00	0.89	20.56	0.85	1.70	0.138	9.67	0.0300
(2) Andrew HBX-6517C	70.00	5.51	1.00	0.90	1.00	0.89	20.56	0.85	1.92	0.185	12.97	0.0374
(1) Andrew HBX-4517C	70.00	5.61	1.00	0.90	1.00	0.89	20.56	0.85	1.66	0.162	11.36	0.0360
(6) Mount Pipes	70.00	4.16	1.00	0.95	1.00	0.89	21.71	0.85	1.20	0.092	6.44	0.1560
(1) Powerwave LGP186nn TMA	70.00	0.00	1.00	0.90	1.00	0.89	20.56	0.85	1.35	0.000	0.00	0.0100
(3) 3' Arms	70.00	1.67	1.00	0.90	1.00	0.89	20.56	0.85	1.47	0.043	2.99	0.3870

COAX (Longitudinal)

Coax 70' - 80'	75.00	6.60	1.00	0.95	1.00	0.91	22.14	0.85	1.20	0.149	11.18	0.3034
Coax 60' - 70'	65.00	8.25	1.00	0.95	1.00	0.87	21.25	0.85	1.20	0.179	11.62	0.3034
Coax 50' - 60'	55.00	8.25	1.00	0.95	1.00	0.83	20.26	0.85	1.20	0.170	9.38	0.3034
Coax 40' - 50'	45.00	8.25	1.00	0.95	1.00	0.79	19.13	0.85	1.20	0.161	7.24	0.3034
Coax 30' - 40'	35.00	8.25	1.00	0.95	1.00	0.73	17.81	0.85	1.20	0.150	5.24	0.3034
Coax 20' - 30'	25.00	8.25	1.00	0.95	1.00	0.70	17.02	0.85	1.20	0.143	3.58	0.3034
Coax 10' - 20'	15.00	8.25	1.00	0.95	1.00	0.70	17.02	0.85	1.20	0.143	2.15	0.3034
Coax 8' - 10'	9.00	1.65	1.00	0.95	1.00	0.70	17.02	0.85	1.20	0.029	0.26	0.0607
									Sub Total	3.87	264.05	4.39

COAX (Transverse)

Coax 70' - 80'	75.00	0.00	1.00	0.95	1.00	0.91	22.14	0.85	1.20	0.000	0.00	0.3034
Coax 60' - 70'	65.00	0.00	1.00	0.95	1.00	0.87	21.25	0.85	1.20	0.000	0.00	0.3034
Coax 50' - 60'	55.00	0.00	1.00	0.95	1.00	0.83	20.26	0.85	1.20	0.000	0.00	0.3034
Coax 40' - 50'	45.00	0.00	1.00	0.95	1.00	0.79	19.13	0.85	1.20	0.000	0.00	0.3034
Coax 30' - 40'	35.00	0.00	1.00	0.95	1.00	0.73	17.81	0.85	1.20	0.000	0.00	0.3034
Coax 20' - 30'	25.00	0.00	1.00	0.95	1.00	0.70	17.02	0.85	1.20	0.000	0.00	0.3034
Coax 10' - 20'	15.00	0.00	1.00	0.95	1.00	0.70	17.02	0.85	1.20	0.000	0.00	0.3034
Coax 8' - 10'	9.00	0.00	1.00	0.95	1.00	0.70	17.02	0.85	1.20	0.000	0.00	0.0607
									Sub Total	2.75	213.40	4.39

Longitudinal

Moment (kip-ft)	Axial (kips)	Shear (kips)
416.47	15.05	8.00

Transverse

Moment (kip-ft)	Axial (kips)	Shear (kips)
450.37	15.05	8.36

LONGITUDINAL (2005 N.D.S.)

BOTTOM SECTION PROPERTIES AND STRESSES (SPREAD SHEET RESULTS) Y-Dir.

ELEVATION (ft)	WIDTH (in)	DEPTH (in)	F_B** (ksi)	S (in^3)	AREA (in^2)	I (in^4)	f_b (ksi)	F_B' (ksi)	f_b/F_b	fc (ksi)	Fc (ksi)	F'c (ksi)	f_c/F'_c	Interaction
0.00	27.50	26.25	1.75	3158.20	721.88	41451.42	1.58	2.216	71.42%	0.021	1.2	0.06	0.37	**84.9%**

TRANSVERSE (2005 N.D.S.)

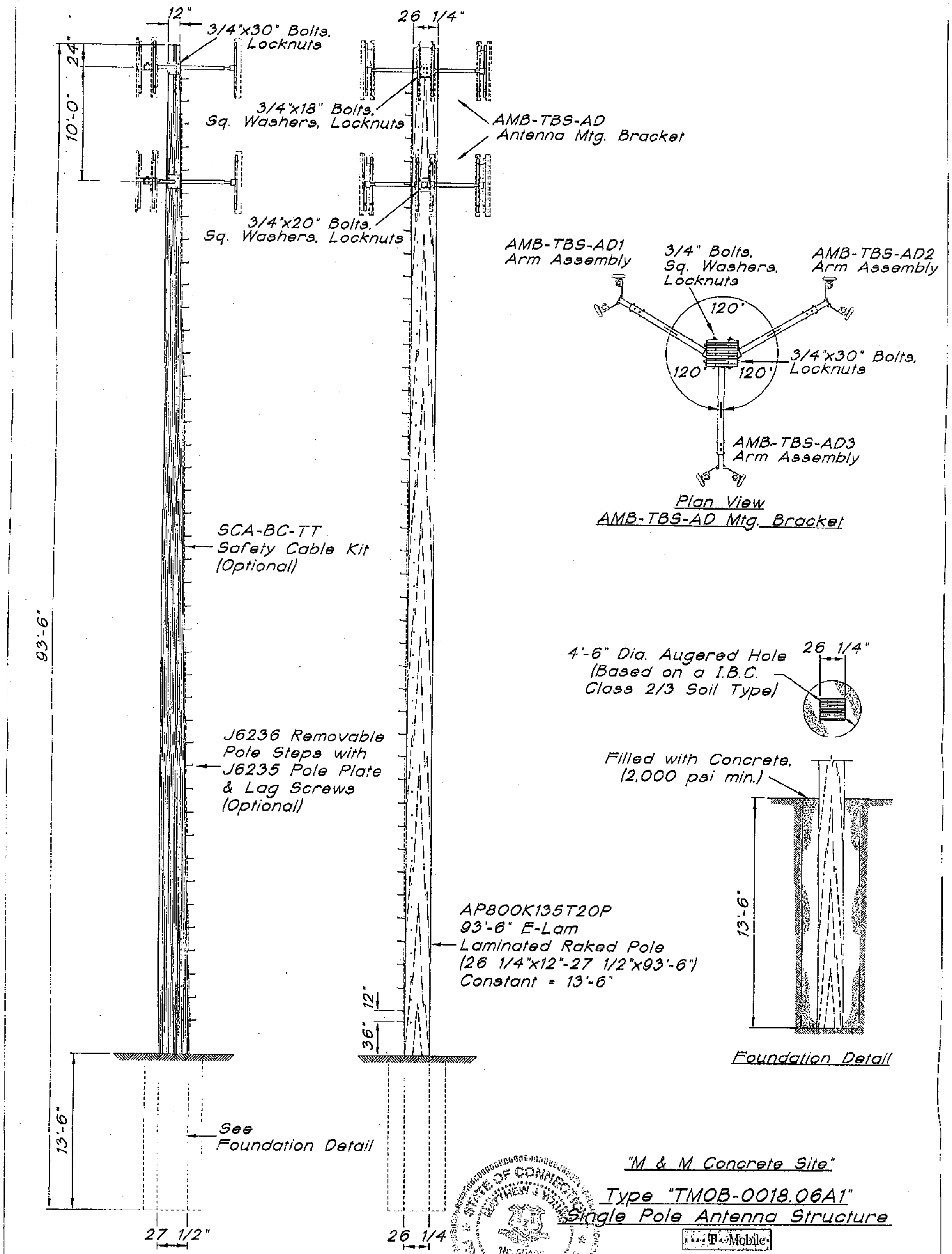
BOTTOM SECTION PROPERTIES AND STRESSES (SPREAD SHEET RESULTS) X-Dir.

ELEVATION (ft)	WIDTH (in)	DEPTH (in)	F_B** (ksi)	S (in^3)	AREA (in^2)	I (in^4)	f_b (ksi)	F_B' (ksi)	f_b/F_b	fc (ksi)	Fc (ksi)	F'c (ksi)	f_c/F'_c	Interaction
0.00	26.25	27.50	2.40	3308.59	721.88	45493.16	1.63	2.488	65.66%	0.021	1.2	0.05	0.38	**80.3%**

	C_D	C_M	C_t	C_V	C_{fu}	C_L	Cc	Cp
Longitudinal Correction Values	1.60	0.80	1.00	1.00	1.01	0.98	1.00	0.02958
Transverse Correction Values	1.60	0.80	1.00	0.80	1.01	0.97	1.00	0.02842

** As Specified by Tower Manufacturer

TOWER ELEVATION DRAWING



"M & M Concrete Site"

Type "TMOB-0018.06A1"
Single Pole Antenna Structure

T-Mobile

SEP 29 2005

© LWS 9/05

NO.	REVISION	DATE	CK.
1.		9-26-05	

ACAD DWG. FILE: TMOB1806A1

Laminated Wood Systems, Inc.

E-LAM

P.O. BOX 386, SEWARD, NE 68434 1-800-949-ELAM

DRAWN	DATE	DWG. NO.
D. Policky	9-20-05	TMOB-0018.06A1

C Squared Systems, LLC
920 Candia Road
Manchester, NH 03109
Phone: (603) 657 9702
support@csquaredsystems.com

Calculated Radio Frequency Emissions

CT33XC093

41 Padanaram Rd, Danbury, CT 06811

January 7, 2011

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List of Figures

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 41 Padanaram Road in Danbury, CT. Sprint PCS & T-Mobile both have antennas mounted on the tower. The coordinates of the tower are 41-25-08.12 N, 73-27-42.91 W.

Sprint PCS is proposing the following modifications:

1) Replace one 1900MHz panel antenna per sector;
2) Install one tower-mounted amplifier on the beta sector;
3) Install a multi-carrier power amplifier (MCPA) 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:

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

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

Off Beam Loss is determined by the selected antenna pattern

These calculations assume that the antennas are operating at 100 percent capacity and power, and that all channels are transmitting simultaneously. 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 T-Mobile & Clearwire comes directly from the current CSC database. Because the proposed Sprint antennas are directional in nature, the majority of the RF power is focused out towards the horizon. As a result, there will be less RF power directed below the antennas relative to the horizon, and consequently lower power density levels around the base of the tower. Please refer to Attachment C for the vertical pattern of the proposed Sprint antennas. The calculated results for Sprint in Table 1 include a nominal 10 dB off-beam pattern loss to account for the lower relative gain below the antennas.

Carrier	Antenna Height (Feet)	Operating Frequency (MHz)	Number of Trans.	ERP Per Transmitter (Watts)	Power Density (mw/cm^2)	Limit	%MPE
T-Mobile	80	1935	8	170	0.0764	1.0000	7.64%
Clearwire	85	2496	2	153	0.0152	1.0000	1.52%
Clearwire	85	5800	1	211	0.0105	1.0000	1.05%
Sprint PCS	70	1900	11	142	0.1146	1.0000	11.46%
						Total	**21.68%**

Table 1: Carrier Information[1]

[1] Calculated values for Sprint PCS include a -10 dB off-beam loss factor. Antenna specifics for T-Mobile and Clearwire were unavailable and therefore do not include any off-beam loss factor.

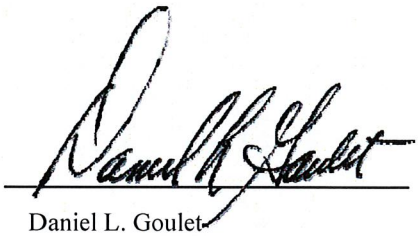
5. Conclusion

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 21.68% of the FCC limit.

As noted previously, 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, 2011
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 Exposure[2]

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 Exposure[3]

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)

[2] 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

[3] 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

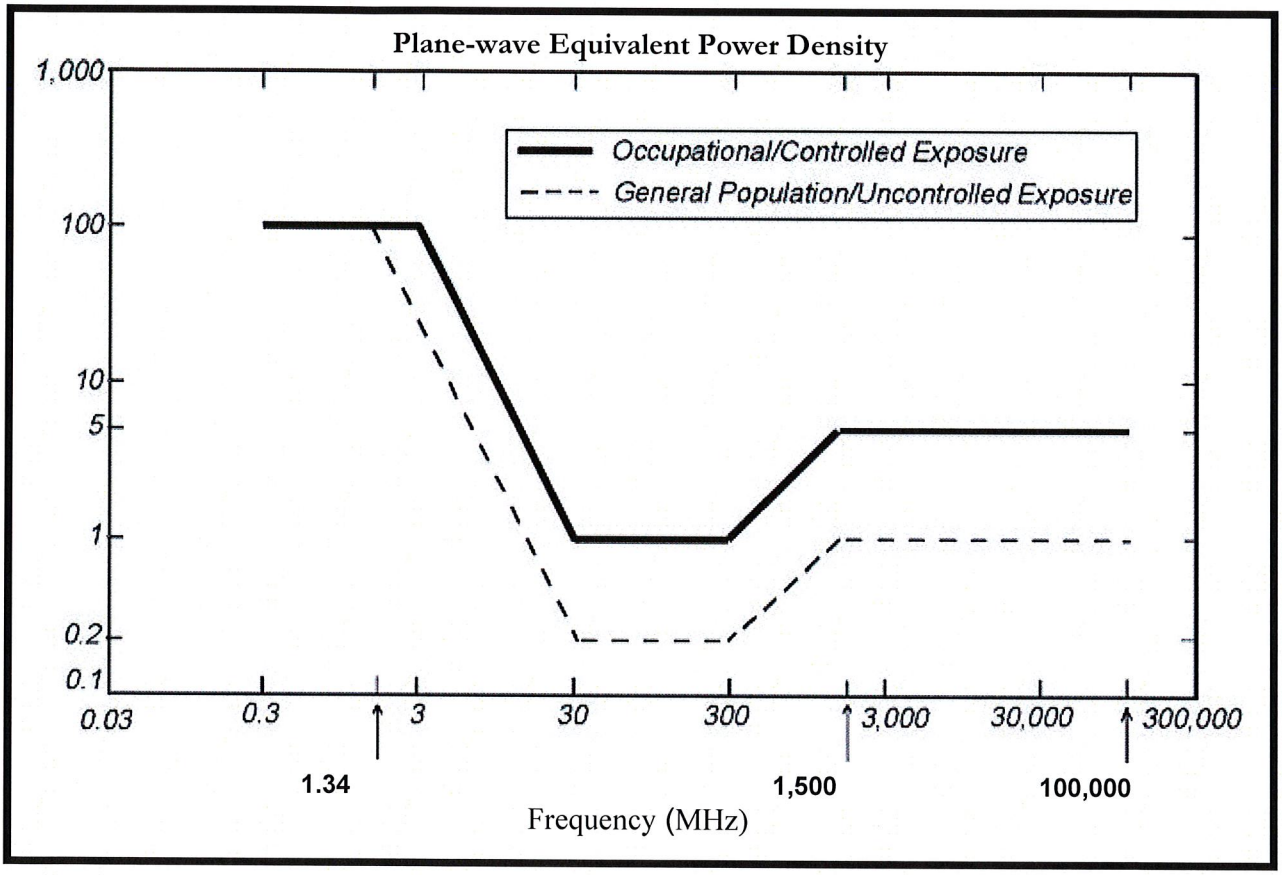
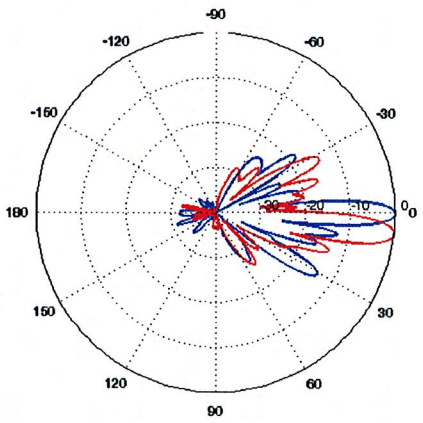


Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

Attachment C: Sprint's Antenna Model Data Sheets and Electrical Patterns

1900 MHz Manufacturer: Andrew Model #: HBX-4517DS-VTM Frequency Band: 1710-2170 MHz Gain: 16.7 dBd Vertical Beamwidth: 6.5 deg Horizontal Beamwidth: 45 deg Polarization: +- 45 deg Size L x W x D: 57.5" x 10.6" x 5.2"	
1900 MHz Manufacturer: Andrew Model #: HBX-6516DS-VTM Frequency Band: 1710-2170 MHz Gain: 15.9 dBd Vertical Beamwidth: 7 deg Horizontal Beamwidth: 65 deg Polarization: ± 45 deg Size L x W x D: 51.4" x 6.5" x 3.3"