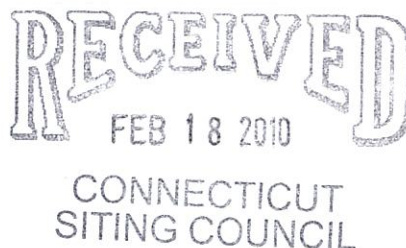


February 18, 2010

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

ORIGINAL



Re: Notice of Exempt Modification
Clearwire Corporation Notice to make an Exempt Modification to an Existing
Facility at 53 Slater Street, CT
Clearwire Site Number CT-HFD0029

Dear Mr. Phelps,

Pursuant to Conn. Agency Regulations Sections 16-50j-73 and 16-50j-72(b), Clearwire Corporation (Clearwire) hereby gives notice to the Connecticut Siting Council (Council) and the Town of Manchester, CT. of Clearwire's intent to make an exempt modification to an existing monopole tower (tower) located at 53 Slater Street, Manchester, CT. Specifically, Clearwire plans to add three (3) antennas to the tower, one (1) per sector and to add four (4) microwave dishes, one (1) per sector for backhaul at the 155' AGL. Pursuant to the Council's regulations, (Conn. Agency Regulations Section 16-50j-72(b)), Clearwire's plans do not constitute a modification subject to the Council's review because Clearwire will not change the height of the tower, will not extend the boundaries of the compound, will not increase the noise levels at the site and will not increase the total radio frequency electromagnetic radiation power density at the site to levels above applicable standards. A copy of this notice has been sent to Town Manager Scott Shanley of the Town of Manchester, CT.

Clearwire is currently developing a 4G wireless broadband network to provide high-speed wireless data and VoIP service within the State of Connecticut. Clearwire's 4G service leverages the WiMAX technology to enable enhanced wireless data communications. In order to accomplish the upgrade at this site, Clearwire plans to add three (3) WiMAX antennas, four (4) dishes and to install additional WiMAX related electronic equipment at the base of the tower.

The tower is a 155' monopole located at 53 Slater Street, Manchester, Connecticut (Latitude 41 48 43.9 N Longitude 72 32 3.2 W). The tower is owned by Crown Castle USA. Currently, Sprint, Verizon, T-Mobile and Pocket are located on the tower. Presently, Clearwire is not located at the site. Clearwire's base station equipment will be located on the ground next to the pole. A site plan with the tower elevations and site plan specifications is attached.

Clearwire will add three (3) antennas, one (1) to each sector, and mount three (3) microwave dishes, one (1) above each of those antennas. The center line for the microwave dishes will be XXX'. Nine coaxial cables will be added to the structure, 2 per antenna and one per microwave dish. These cables will be inside the tower and bundled. To confirm that the tower can support these changes, Clearwire commissioned Crown castle USA to perform a

structural analysis of the tower and the proposed changes. According to that structural dated February 2, 2010 and attached hereto, the structure is sufficient to support the proposed loading and will not need to be modified. The tower, with the additions and the modifications will be at 90% of its capacity.

Within the existing compound, Clearwire will install one (1) WiMAX radio and power cabinet on the existing pad at the site. The new equipment will be adjacent to the existing tower. Excluding brief, construction related noise during the addition of this equipment, the proposed changes to the tower will not increase noise levels at the site.

The addition of new WiMAX antennas and microwave dishes will not adversely impact the health and safety of the surrounding community or the people working on the tower. The total radio frequency exposure measured around the base of the tower will be well below the National Council on Radiation Protection and Measurements' (NCRP) standard adopted by the Federal Communications Commission (FCC). The worst case power density analysis for the WiMAX antennas and dishes, measured at the base of the tower, indicates that the WiMAX antennas and dishes will emit 00.3680% of the NCRP's standard for maximum permissible exposure. The cumulative power density analysis indicates that all the antennas on the structure will emit 26.4452% of the NCRP's standard for maximum permissible exposure. Therefore, the power density levels will be well below the FCC mandated radio frequency exposure limits in all locations around the base of the tower. The power density analysis is attached.

In conclusion, Clearwire's proposed plan to add three (3) WiMAX antennas, four (4) microwave dishes and the associated base station equipment does not constitute a modification subject to the Council's jurisdiction because Clearwire will not increase the height of the tower, will not extend the boundaries of the compound at the site, will not increase the noise levels at the site and the radio frequency electromagnetic radiation power density will stay within all applicable standards.

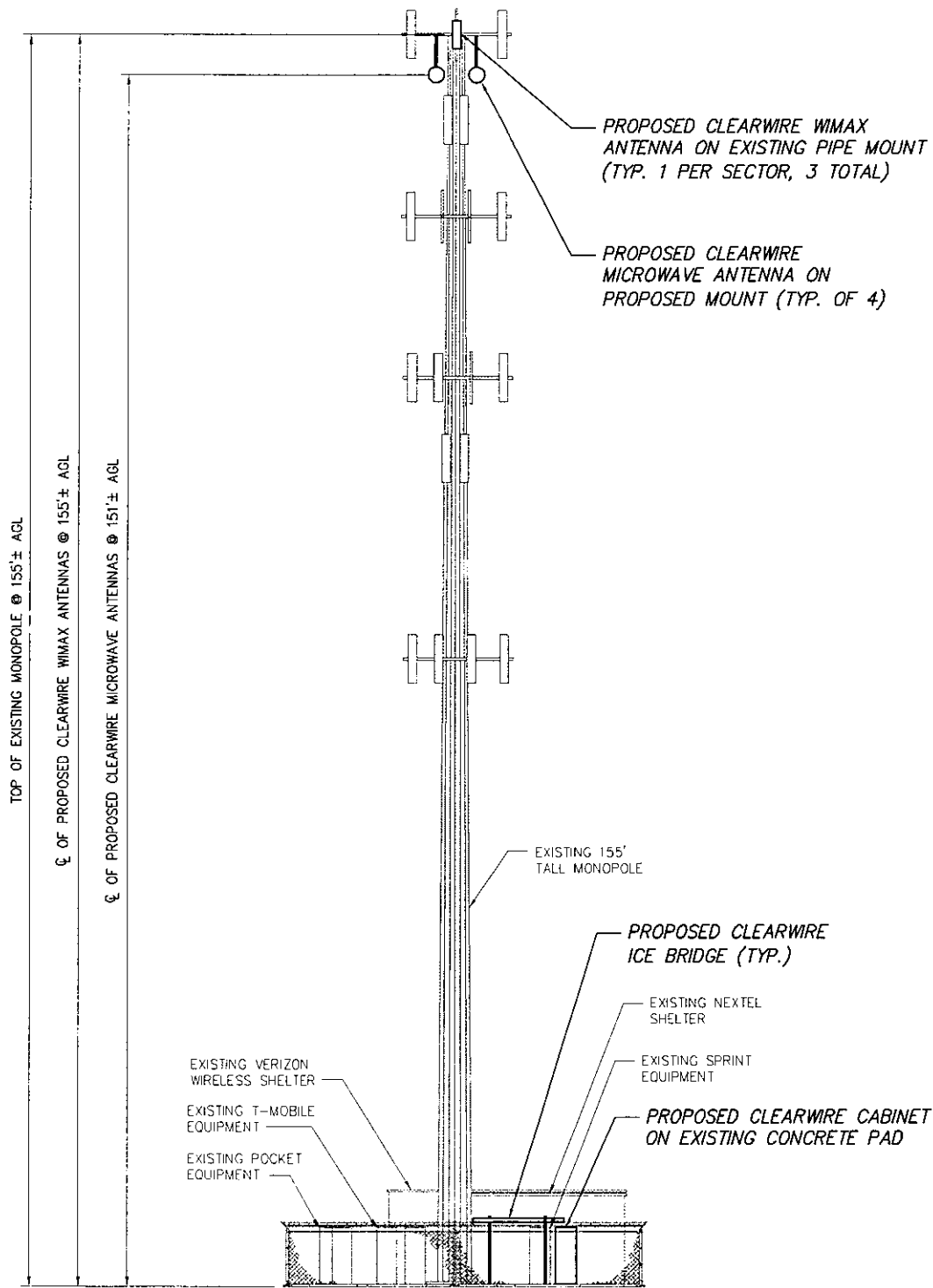
Respectfully Submitted



Thomas F. Flynn III
Site Development Project Manager
Maxton Technology Inc.
1296 Blue Hills Avenue
Bloomfield, CT 06002
508-821-6974
Tom.Flynn@maxtontech.com
Agent for Clearwire Corporation

Cc: Town Manager Scott Shanley
Town of Manchester

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TOWER ELEVATION
NO SCALE

LEASE EXHIBIT

NO SCALE
FEBRUARY 5, 2010

2 OF 3

REVISION
NUMBER 2



81 Winners Circle, PO Box 5269 - Albany, NY 12205-0269
Main: (518) 453-4500 - www.chacompanies.com

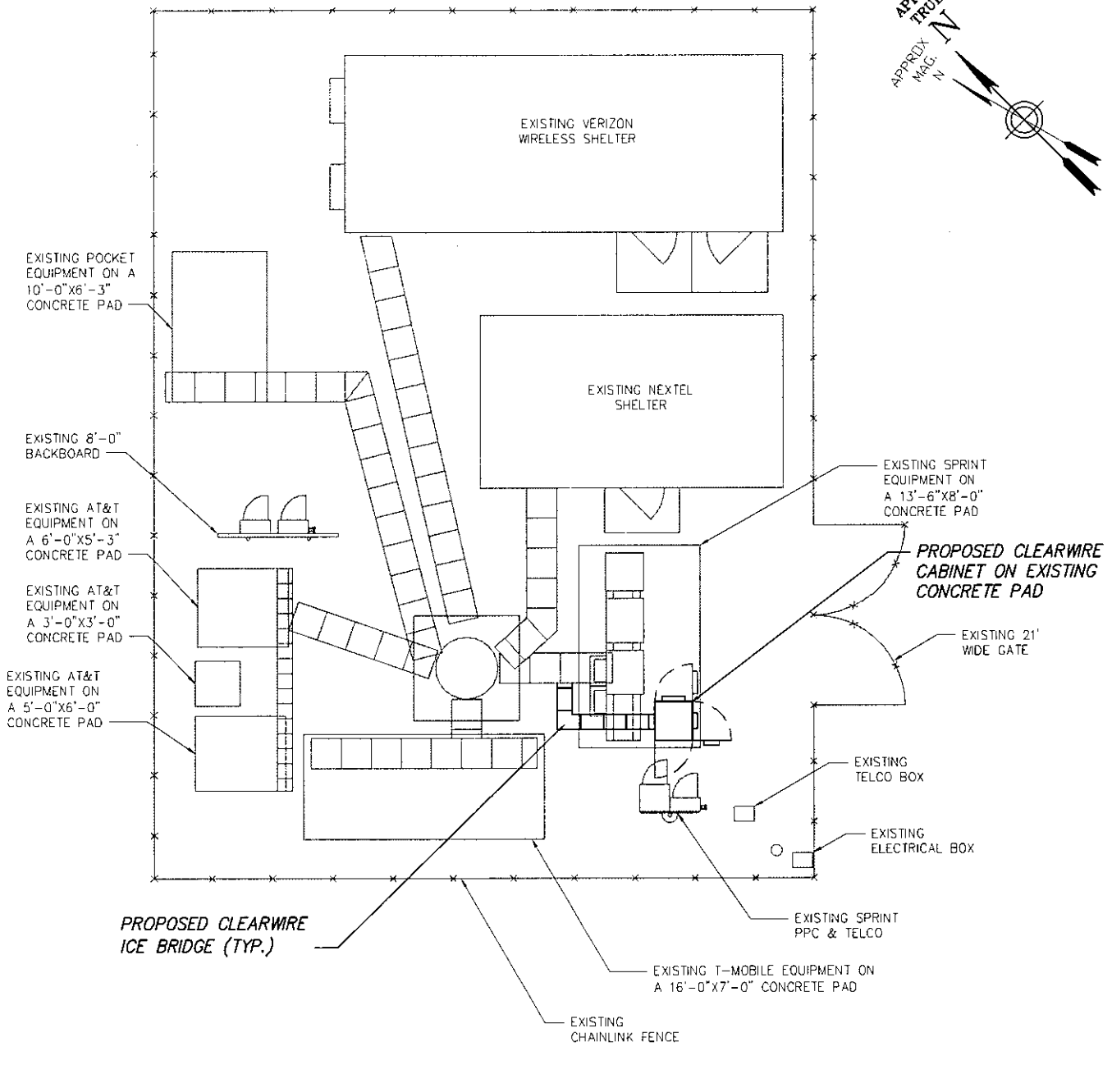
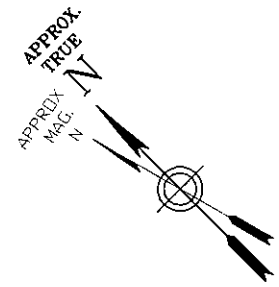
clearw're
TECHNOLOGIES, INC.

5808 LAKE WASHINGTON
BLVD. NE STE. 300
KIRKLAND, WA 98033
OFFICE: (425) 216-7600
FAX: (425) 216-7900

CT-HFD0029B
53 SLATER STREET
MANCHESTER, CT 06040

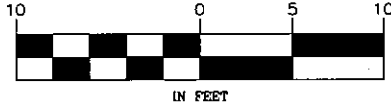
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SITE PLAN

GRAPHIC SCALE



LEASE EXHIBIT

SCALE: 1" = 10'
FEBRUARY 5, 2010

1 OF 3

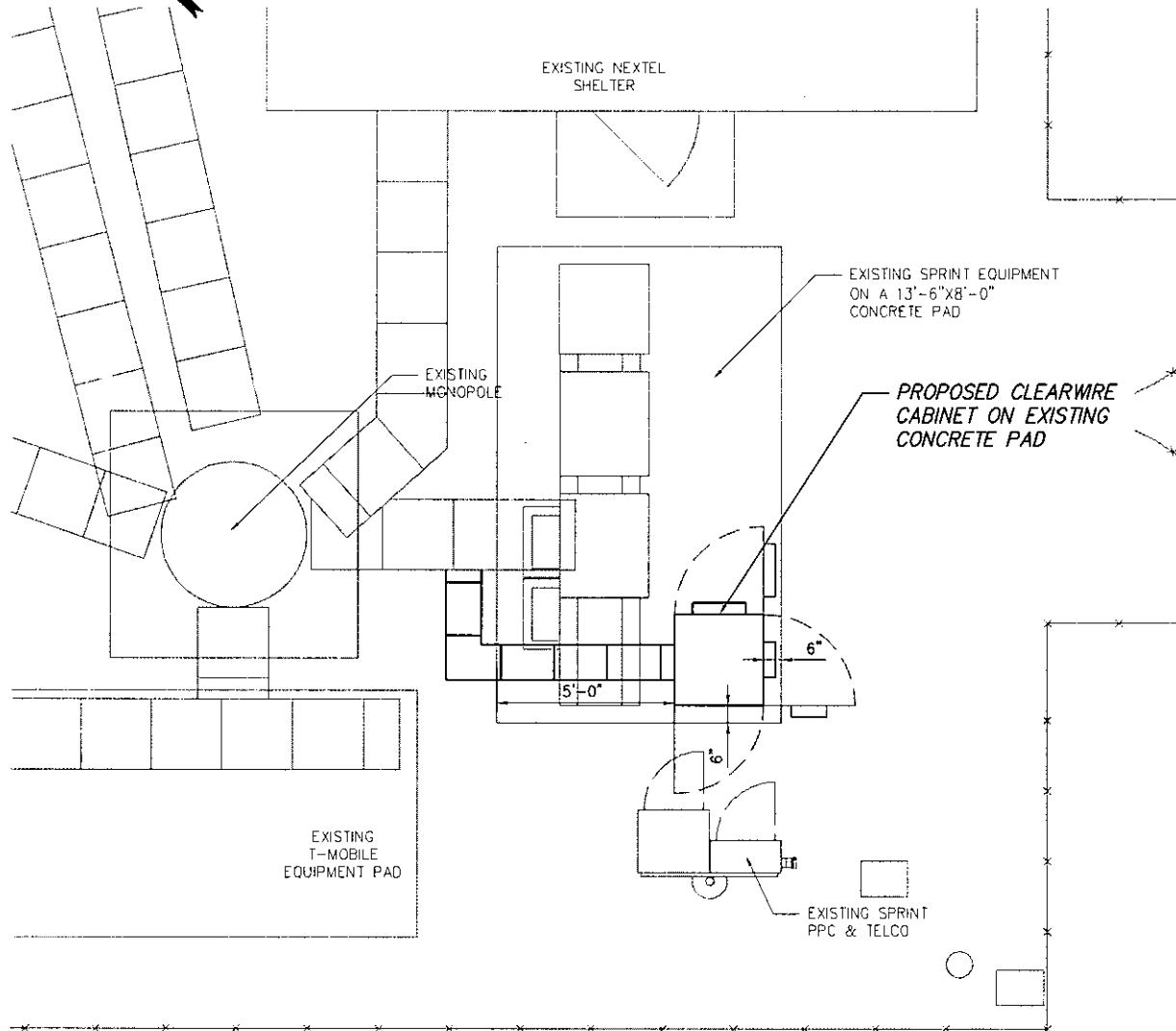
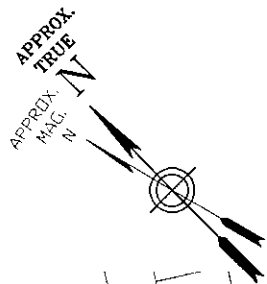
REVISION NUMBER 2

CHA
III Winners Circle, PO Box 6269 - Albany, NY 12205-0269
Main: (518) 453-4500 - www.chacompanies.com

clearw're
TECHNOLOGIES, INC.
5808 LAKE WASHINGTON
BLVD. NE STE. 300
KIRKLAND, WA 98033
OFFICE: (425) 216-7600
FAX: (425) 216-7900

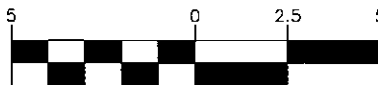
CT-HFD0029B
53 SLATER STREET
MANCHESTER, CT 06040

CHA PROJ. NO. - 20592.1010.1101



EQUIPMENT LAYOUT

GRAPHIC SCALE



IN FEET

LEASE EXHIBIT

SCALE: 1" = 5'
FEBRUARY 5, 2010

3 OF 3

REVISION
NUMBER 2

Drawing Copyright © 2009



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CT-HFD0029B
53 SLATER STREET
MANCHESTER, CT 06040

CHA PROJ. NO. - 20592.1010.1101

Date: February 02, 2010

Eva Morales
Crown Castle
46 Broadway
Albany, NY 12204

 **CROWN
CASTLE**
Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
724-416-2000

Subject: Structural Analysis Report

Carrier Designation:	Clearwire Corp Co-Locate	
	Carrier Site Number:	CT03XC211
	Carrier Site Name:	N/A
Crown Castle Designation:	Crown Castle BU Number:	876347
	Crown Castle Site Name:	BUCKLAND MALL
	Crown Castle JDE Job Number:	129816
	Crown Castle Work Order Number:	314682
Engineering Firm Designation:	Crown Castle Project Number:	314682
Site Data:	53 Slater Street, MANCHESTER, Hartford County, CT	
	Latitude 41° 48' 43.9", Longitude -72° 32' 3.2"	
	155 Foot - Monopole Tower	

Dear Eva Morales,

Crown Castle is pleased to submit this "Structural Analysis Report" to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 314682, in accordance with application 87476, revision 1.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC1: Existing + Reserved + Proposed Equipment

Sufficient Capacity

Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

The analysis has been performed in accordance with the TIA/EIA-222-F standard and local code requirements based upon a wind speed of 80 mph fastest mile.

All equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

We at Crown Castle appreciate the opportunity of providing our continuing professional services to you and Crown Castle USA Inc. If you have any questions or need further assistance on this or any other projects please give us a call.

Structural analysis prepared by: Jeffrey Fesko, E.I.T.

Respectfully submitted by:



Douglas K. Pineo, P.E.
Manager Structural Design



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1) INTRODUCTION

This tower is a 155 ft Monopole tower designed by Sea Consultants Inc. in February of 2002. The tower was originally designed for a wind speed of 90 mph per TIA/EIA-222-F.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 80 mph with no ice, 37.6 mph with 1 inch ice thickness and 50 mph under service loads.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
155	155	3	kathrein	840 10054 w/ Mount Pipe	3	5/16	-
		1	motorola	TIMING 2000			
		1	samsung telecommunications	WIMAX DAP HEAD			
	151	4	dragonwave	A-ANT-18G-2-C	5	1/2	
		4	dragonwave	Horizon Compact			

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
155	155	6	decibel	DB980H90E-M w/Mount Pipe	6	1-5/8	1
		1	tower mounts	Platform Mount [LP 601-1]			1
		9	mila	MLA_ANTENNA w/Mount Pipe	9	1-5/8	2
145	145	3	kathrein	800 10121 w/Mount Pipe	6	1-1/4	1
		6	powerwave technologies	LGP21401			
		1	tower mounts	Pipe Mount [PM 601-3]			
133	133	3	andrew	ETW190VS12UB	18	1-5/8	1
		6	rfs celwave	APX16DWV-16DWV-S-E-A20 w/Mount Pipe			
		3	rfs celwave	ATMAA1412D-1A20			
		1	tower mounts	Platform Mount [LP 304-1]			
113	113	3	antel	BXA-70063/6CFx2	12	1-5/8	3
		3	rymsa wireless	MG D3-800Tx w/Mount Pipe			
		6	decibel	DB844G65ZAXY w/Mount Pipe	-	-	1
		1	tower mounts	Platform Mount [LP 712-1]			
103	103	3	rfs celwave	APXV18-206517S-C w/ Mount Pipe	3	1-5/8	1

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
		1	tower mounts	Pipe Mount [PM 601-3]			
78	78	12	decibel	844G65VTZASX w/Mount Pipe	12	1-5/8	1
		1	tower mounts	Platform Mount [LP 303-1]			
60	60	1	tower mounts	Side Arm Mount [SO 701-1]	1	1/2	1
		1	trimble	ACUTIME 2000			

Notes:

- 1) Existing Equipment
- 2) MLA Equipment Controlling, was considered in analysis
- 3) Reserved Equipment

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
155	155	9	Decibel	DB980H90	-	-
145	145	6	Allgon	7250.03	-	-
133	133	6	EMS Wireless	RR90-17-00DP	-	-
50	50	1	Generic	GPS Antenna	-	-

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Clough, Harbour, & Associates LLP.	1533476	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Summit Manufacturing Inc.	1615406	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Summit Manufacturing Inc.	2068033	CCISITES

3.1) Analysis Method

RISATower (version 5.3.1.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

- 1) Tower and structures were built in accordance with the manufacturer's specifications.
- 2) The tower and structures have been maintained in accordance with the manufacturer's specification.
- 3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
- 4) When applicable, transmission cables are considered as structural components for calculating wind loads as allowed by TIA/EIA-222-F.

This analysis may be affected if any assumptions are not valid or have been made in error. Crown Castle should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	155 - 115.5	Pole	TP29.308x22x0.25	1	-6.11	1080.07	50.1	Pass
L2	115.5 - 79.25	Pole	TP35.514x28.1142x0.3125	2	-12.88	1772.22	73.6	Pass
L3	79.25 - 43.75	Pole	TP41.456x34.0565x0.375	3	-21.86	2481.90	85.8	Pass
L4	43.75 - 0	Pole	TP48.8x39.7348x0.4375	4	-35.56	3491.31	90.0	Pass
							Summary:	
						Pole (L4)	90.0	Pass
						Rating =	90.0	Pass

Table 6 - Tower Component Stresses vs. Capacity - LC1

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	83.6	Pass
1	Base Plate	0	71.9	Pass
1	Base Foundation	0	84.5	Pass

Structure Rating (max from all components) =	90%
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Notes:

- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

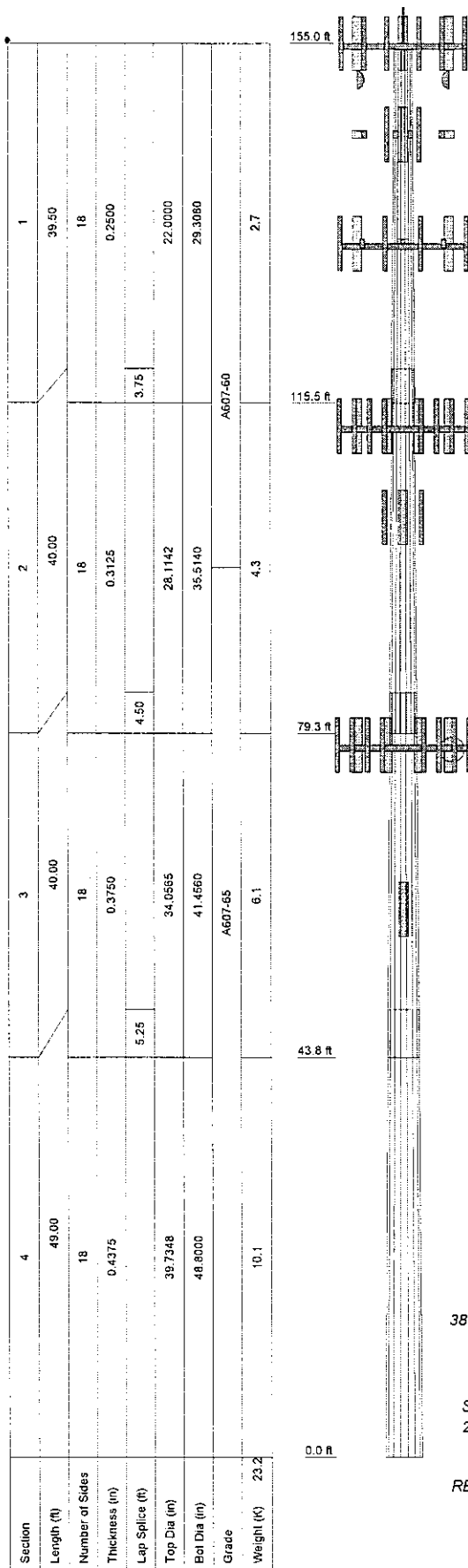
4.1) Recommendations

The tower and foundation have sufficient capacity to carry the existing, reserved, and proposed loading. No modifications are required at this time.

Post-Twist and Sway

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
151.00	A-ANT-18G-2-C	37	40.89	2.303	0.004	27735

APPENDIX A
RISA TOWER OUTPUT



DESIGNED APPURTENANCE LOADING

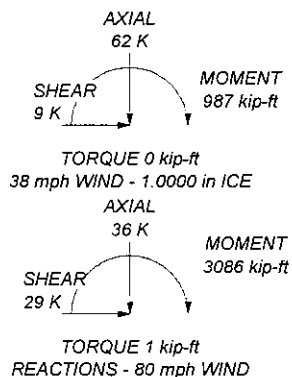
TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod 5/8x4'	157	ATMAA1412D-1A20	133
840 10054 w/ Mount Pipe	155	Platform Mount (LP 304-1)	133
TIMING 2000	155	(2) APX16DWV-16DWV-S-E-A20 w/Mount Pipe	133
WIMAX DAP HEAD	155	ETW190VS12UB	133
840 10054 w/ Mount Pipe	155	ATMAA1412D-1A20	133
(2) Horizon Compact	155	(2) APX16DWV-16DWV-S-E-A20 w/Mount Pipe	133
840 10054 w/ Mount Pipe	155	BXA-70063/6CFx2 w/ Mount Pipe	113
(2) Horizon Compact	155	MG D3-800Tx w/ Mount Pipe	113
(3) MLA_ANTENNA w/Mount Pipe	155	(2) DB844G65ZAXY w/Mount Pipe	113
(3) MLA_ANTENNA w/Mount Pipe	155	BXA-70063/6CFx4 w/ Mount Pipe	113
(3) MLA_ANTENNA w/Mount Pipe	155	MG D3-800Tx w/ Mount Pipe	113
Platform Mount (LP 601-1)	155	Platform Mount (LP 712-1)	113
A-ANT-18G-2-C	155	(2) DB844G65ZAXY w/Mount Pipe	113
A-ANT-18G-2-C	155	BXA-70063/6CFx2 w/ Mount Pipe	113
A-ANT-18G-2-C	155	MG D3-800Tx w/ Mount Pipe	113
A-ANT-18G-2-C	155	(2) DB844G65ZAXY w/Mount Pipe	113
800 10121 w/Mount Pipe	145	APXV18-206517S-C w/ Mount Pipe	103
(2) LGP21401	145	APXV18-206517S-C w/ Mount Pipe	103
Pipe Mount (PM 601-3)	145	APXV18-206517S-C w/ Mount Pipe	103
800 10121 w/Mount Pipe	145	Pipe Mount (PM 601-3)	103
(2) LGP21401	145	(4) 844G65VTZASX w/Mount Pipe	78
ETW190VS12UB	133	(4) 844G65VTZASX w/Mount Pipe	78
ATMAA1412D-1A20	133	(4) 844G65VTZASX w/Mount Pipe	78
(2) APX16DWV-16DWV-S-E-A20 w/Mount Pipe	133	Platform Mount (LP 303-1)	78
ETW190VS12UB	133	ACUTIME 2000	60
		Side Arm Mount (SO 701-1)	60

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A607-60	60 ksi	75 ksi	A607-65	65 ksi	80 ksi

TOWER DESIGN NOTES

1. Tower designed for a 80 mph basic wind in accordance with the TIA/EIA-222-F Standard.
2. Tower is also designed for a 38 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
3. Deflections are based upon a 50 mph wind.
4. TOWER RATING: 90%



Crown Castle USA Inc
 2000 Corporate Drive
 Canonsburg, PA 15317
 Phone: (724) 416-2000
 FAX: (724) 4162254

Job: BU# 876347	Project:	Client: Crown Castle USA, Inc.	Drawn by: Madhukar Ozarker	App'd:
Code: TIA/EIA-222-F	Date: 02/02/10	Scale: NTS	Dwg No. E-1	
Path:	R:\15A Models - Left\15A_Vent_Appl\Drawn\876347\WCD\114652-876347.dwg			



To: Maxton
From: Frantz Pierre – Radio Frequency Engineer
Cc: Micah Hawthorne
Subject: Power Density Report for CT-HFD0029
Date: February 16, 2010

1. Introduction:

This report is the result of Electromagnetic Field Intensities (EMF – Power Densities) study for the Clearwire broadband antenna installation on an existing Tower at 53 Slater St, Manchester, CT, 06040. This study incorporates the most conservative consideration for determining the practical combined worst case power density levels that would be theoretically encountered from locations surrounding the transmitting location:

2: Discussion:

The following assumptions were used in the calculations:

- 1) The emissions from Clearwire transmitters are in the (2496 – 2960) Frequency Band
- 2) The emissions from the Clearwire Microwave dishes are in the 11 GHz Frequency Band
- 3) The model number for Clearwire Antenna is Argus LLPX310R
- 4) The model number for the Microwave dish is Andrew VHLP2.5-11 with 30" Diameter.
- 5) The Clearwire Panel antenna centerline is 155 feet.
- 6) The Clearwire Microwave dish centerline is 151 feet.
- 7) The Maximum Transmit power from any Clearwire panel antenna is 251 Watts Effective Isotropic Radiated Power (EiRP) assuming 2 channels per sector.
- 8) The Maximum Transmit power from any Clearwire Microwave Dish is 346 Watts Effective Isotropic Radiated Power (EiRP) assuming 1 channel per dish.
- 9) All antennas are simultaneously transmitting and receiving 24 hours per day.
- 10) The average ground level of the studied area does not change significantly with respect to the transmitting location.

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

3: Conclusion:

Based on the above worst case assumptions, the power density calculation from the Clearwire antenna installation on an existing steel monopole at 53 Slater St, Manchester, CT, 06040 is 0.003580 mW/cm². This value represents 0.3680% of the Maximum Permissible Exposure (MPE) standard of 1 milliwatt per square centimeter (mW/cm²) set forth in the FCC/ANSI/IEEE C95-1-1991. Furthermore, the proposed antenna location for Clearwire will not interfere with existing public safety communications, AM or FM radio broadcasts, TV, Police Communications, HAM Radio communications or any other signals in the area.

The combined Power Density from all other carriers is 26.0772% The combined Power Density for this site is 26.4452% of the M.P.E. standard.