EM-CLEARWIRE-052-100401

March 30, 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 319-321 New Britain Avenue, Farmington, CT
Clearwire Site Number CT-HFD0073

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 Farmington, CT. of Clearwire's intent to make an exempt modification to an existing monopole tower (tower) located at 319-321 New Britain Avenue, Farmington, CT. Specifically, Clearwire plans to add three (3) antennas to the tower, one (1) per sector and to add two (2) microwave dishes, one (1) per sector for backhaul at the 170' 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 the Town Manager of the Town Farmington, 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, two (2) dishes and to install additional WiMAX related electronic equipment at the base of the tower.

The tower is a 190' monopole located at 319-321 New Britain Avenue, Farmington, Connecticut (Latitude 41 44 59.3 N Longitude 72 52 21.7 W). The tower is owned by the Town of Farmington. Currently, Sprint, AT7T, Cingular, T-Mobile and Pocket are located on the tower, as well as a number of other public service antennas. 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 two (2) microwave dishes, one (1) above each of those antennas. The center line for the microwave dishes will be 170'. 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 Bay State Design Inc. to perform a structural analysis of the tower and the proposed changes. According to that structural dated September 11, 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 less than 89.8% 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.

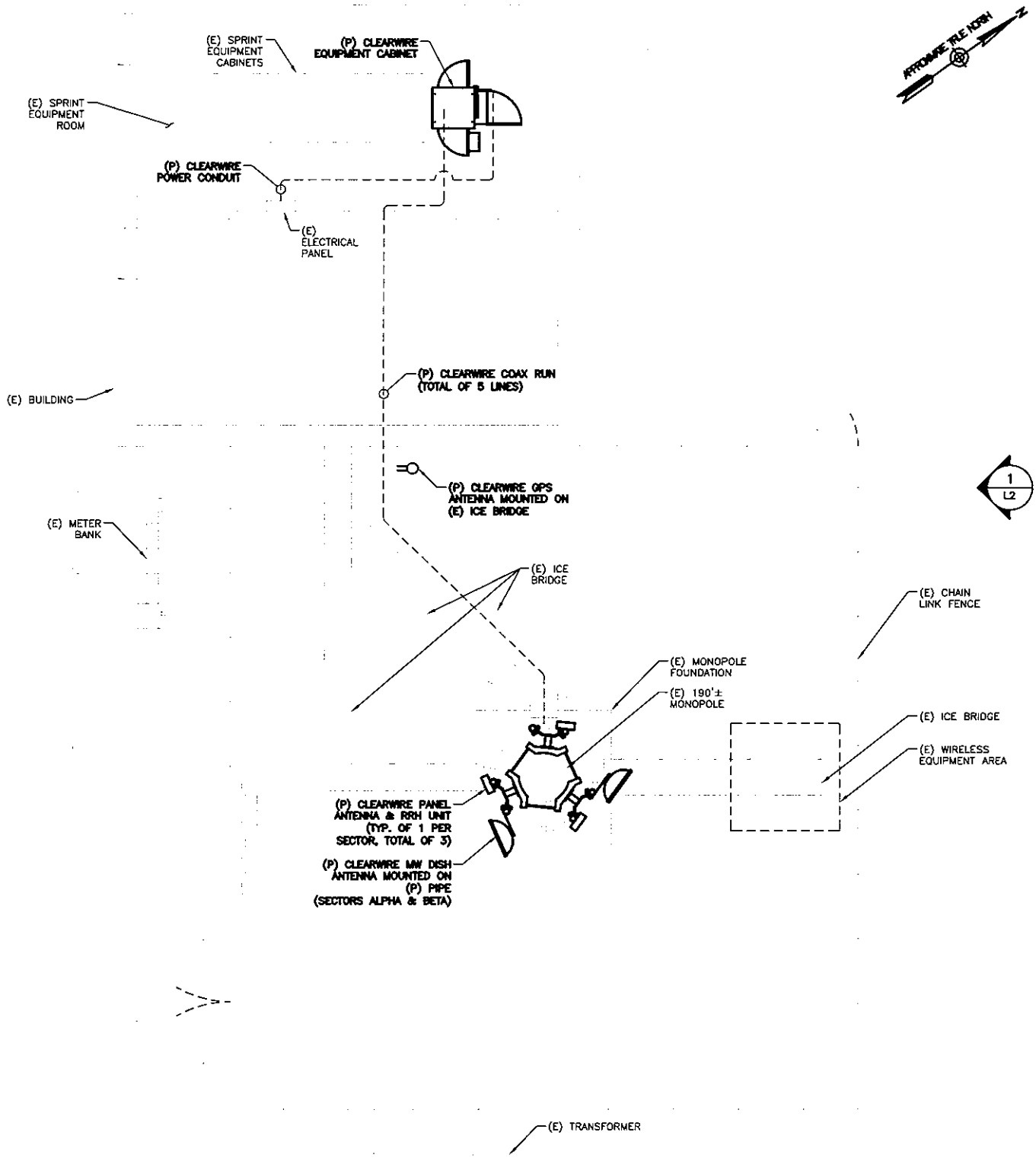
The addition of new WiMAX antennas and microwave dishes will not adversely impact the health and safety of the surrounding community or the people working on the tower. The total radio frequency exposure measured around the base of the tower will be well below the National Council on Radiation Protection 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 .36% of the NCRP's standard for maximum permissible exposure. The cumulative power density analysis indicates that all the antennas on the structure will emit 58.0823% of the NRCP'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, three (3) 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 Kathleen Eagan
Town of Farmington



(E) EXISTING
(P) PROPOSED

SITE PLAN

SCALE: N.T.S.

1

MAXTON
241 BOSTON POST RD WEST
MARLBOROUGH, MA. 01752
Phone: 508-229-4100
Fax: 508-485-5321

BAY STATE DESIGN
Bay State Design, Inc.
Architects Engineers
241 BOSTON POST RD WEST
MARLBOROUGH, MA. 01752
Phone: 508-229-4100
Fax: 508-485-5321

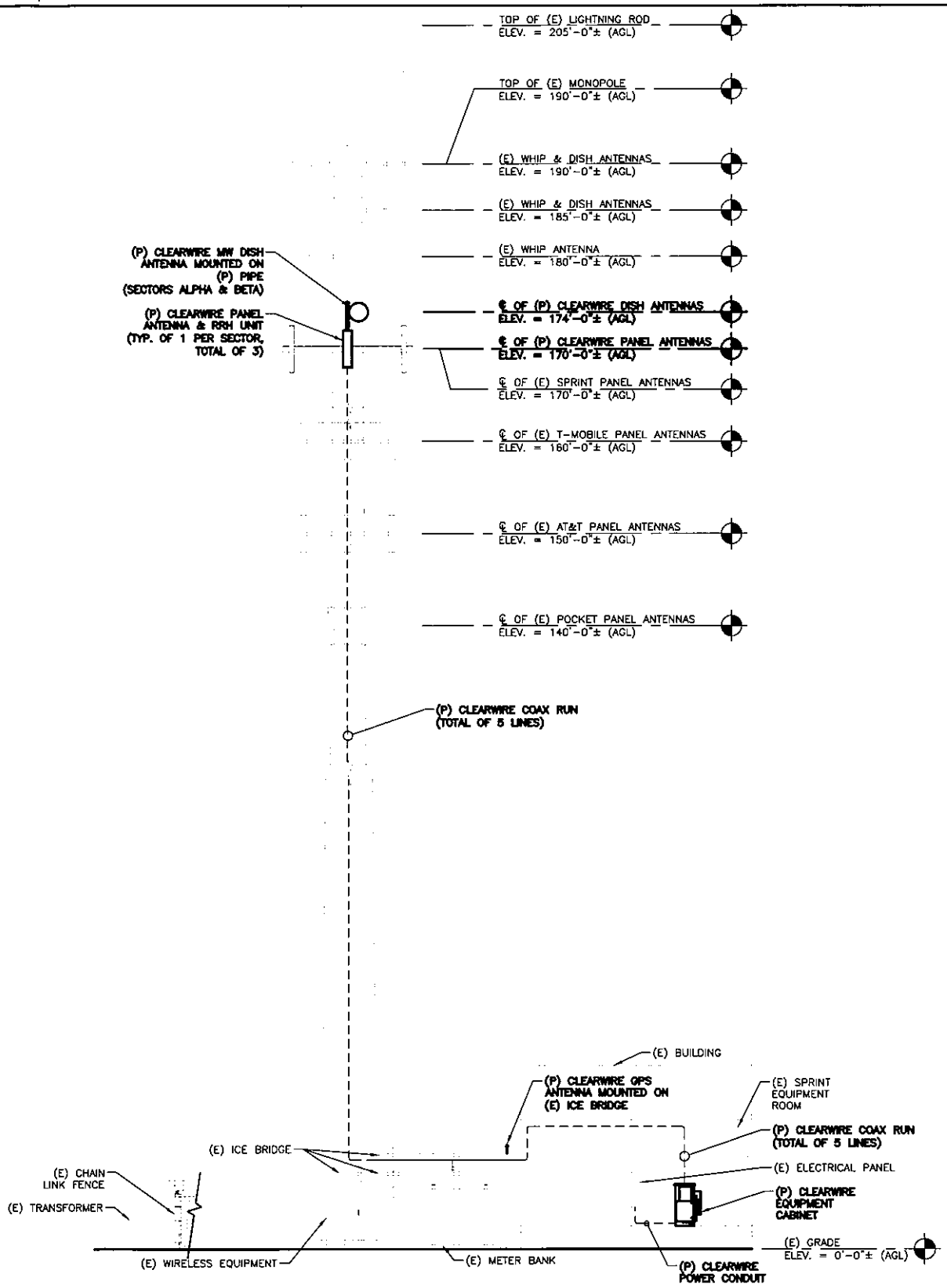
clearwire
5808 LAKE WASHINGTON BLVD.
NE SUITE 300
KIRKLAND, WA 98033

PROJECT LOCATION:
FARMINGTON PD
CT-HFD0073A
319-321 NEW BRITAIN AVENUE
FARMINGTON, CT 06032

SITE TYPE:
MONOPOLE
COLOCATION

PROJECT MANAGER: JP
DRAWN BY: DR
APPROVED BY:
DATE: 03/11/10
REVISION: 1

BSDA PROJ. #: 2908.068
SHEET: L1



NORTHEAST ELEVATION 1

SCALE: N.T.S.

(E) EXISTING
(P) PROPOSED

MAXTON
BAY STATE DESIGN
241 BOSTON POST RD WEST
MARLBOROUGH, MA. 01752
Phone: 508-229-4100
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Bay State, Design, Inc.
Architects Engineers
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FARMINGTON, CT 06032

APPROVED BY:

SITE TYPE:
MONOPOLE
COLOCATION

PROJECT MANAGER: JP
DRAWN BY: DR
DATE: 03/11/10
REVISION: 1

BSDA PROJ. #: 2908.068
SHEET: L2

BAY STATE
DESIGN

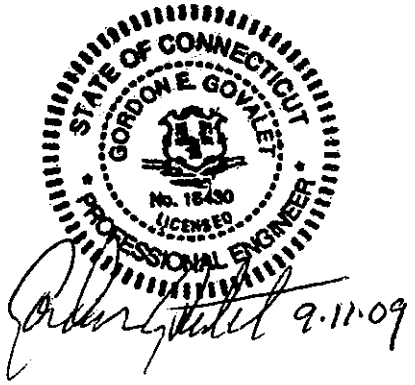
STRUCTURAL ANALYSIS REPORT

CT-HFD0073A

319 NEW BRITAIN AVENUE
FARMINGTON, CT 06032

clearwire®
wireless broadband

September 11, 2009



Gordon Govalet, P.E.

Bay State Design, Inc. 241 Boston Post Road Marlborough, MA 01752 TEL: (508) 229-4100 FAX: (508) 485-5321
Architects • Engineers

INTRODUCTION:

The purpose of this analysis is to determine the structural capability of the 190' Monopole at 319 New Britain Avenue in Farmington, CT, for the proposed loading of the following on the existing Sprint platform at an elevation of 170'-0":

3	Argus 2300-2700MHz Remote Tilt Panel Antenna
3	Samsung WiMAX U-RAS Flexible RRU
3	Dragonwave 2'-0" Microwave Dish

Coax run inside monopole.

ASSUMPTIONS:

All engineering services have been performed on the basis that the information used is current and accurate. This information may consist of, but is not necessarily limited to:

- Information supplied by the client regarding the structure itself, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of Bay State Design, Inc., or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to Bay State Design, Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, BSD assumes that all structures were constructed in accordance with the drawings / specifications and are in good condition and have not significantly changed from the "as new" condition.

All services were performed to codes specified by the client. BSD does not imply to have met any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are different from the minimum values recommended by code, the client shall specify the exact requirement.

All services are performed in accordance with generally accepted engineering principles and practices. Bay State Design, Inc., is not responsible for the conclusions, opinions and recommendations made by others based on the information provided.

REFERENCES:

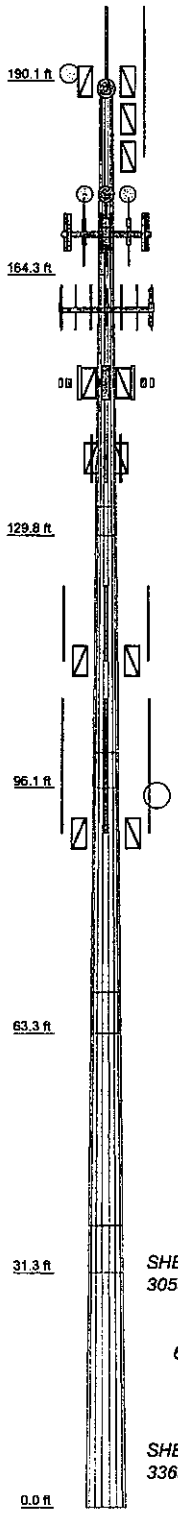
This structural analysis was evaluated using RISA Tower, a general-purpose modeling, analysis, and design program created specifically for communications towers in accordance with the following:

- TIA/EIA 222-F Structural Standards for Steel Antenna Tower and Antenna Supporting Structures
- International Building Code 2003 Edition with the CT Supplement
- CT State Building Code 2005

CONCLUSION:

Based on our analysis, Bay State Design, Inc., has concluded the above referenced monopole and foundation are sufficient to support the proposed loading. No structural modifications are required. The monopole is rated at 89.8 % of its structural capacity.

Section	6	5	4	3	2	1
Length (ft)	37.50	37.50	37.50	37.50	37.50	25.75
Number of Sides	18	18	18	18	18	18
Thickness (in)	0.3750	0.3750	0.3750	0.3750	0.3125	0.2500
Lap Splice (ft)		8.25	5.50	4.67	3.83	2.92
Top Dia (in)	53.5352	46.4169	39.1419	31.7884	24.2796	19.5625
Bot Dia (in)	63.0000	55.8588	48.5462	41.0432	33.3498	25.4469
Grade	A572-65					
Weight (lb)	35421.1	9232.5	8085.4	6932.3	5748.4	3787.8	1624.7



AXIAL
54541 lb
SHEAR
30567 lb
MOMENT
3589128 lb-ft
TORQUE 2891 lb-ft
69 mph WIND - 0.5000 in ICE

AXIAL
44983 lb
SHEAR
33631 lb
MOMENT
3840777 lb-ft
TORQUE 2754 lb-ft
REACTIONS - 80 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod on Pole	205	PiROD 13' Low Profile Platform	160
Pirod 5' Standoff	190	2" dia. pipe (6' long)	160
Omni 10'x3"	190	2" dia. pipe (6' long)	160
Pirod 5' Standoff	190	2" dia. pipe (6' long)	160
Omni 10'x3"	190	5' Panel Antenna w/mount pipe	160
Pirod 5' Standoff	190	LGP 21401 TMA	160
MF-900B	190	2" dia. pipe (6' long)	160
MF-900B	190	2" dia. pipe (6' long)	160
Omni 12'x3"	185	2" dia. pipe (6' long)	160
Pirod 5' Standoff	185	5' Panel Antenna w/mount pipe	160
Pirod 5' Standoff	185	LGP 21401 TMA	160
Pirod 5' Standoff	180	Pirod 3' Side Mount Standoff (1)	150
Pirod 5' Standoff	180	Pirod 3' Side Mount Standoff (1)	150
Omni 8'x2"	180	Pirod 3' Side Mount Standoff (1)	150
DragonWave	175	7770.00 w/2"x6' pipe	150
DragonWave	175	7770.00 w/2"x6' pipe	150
DragonWave	175	7770.00 w/2"x6' pipe	150
2"dia. pipe (9' Long)	170	(2) LGP 21401 TMA	150
5' Panel Antenna w/mount pipe	170	(2) LGP 21401 TMA	150
5' Panel Antenna w/mount pipe	170	(2) LGP 21401 TMA	150
2"dia. pipe (9' Long)	170	1' Side Mount Standoff	140
5' Panel Antenna w/mount pipe	170	742.213 w/mount pipe	140
LLPX310R	170	742.213 w/mount pipe	140
LLPX310R	170	742.213 w/mount pipe	140
LLPX310R	170	1' Side Mount Standoff	140
U-RAS	170	1' Side Mount Standoff	140
U-RAS	170	Omni 10'x3"	113
U-RAS	170	Pirod 5' Standoff	113
PiROD 15' Low Profile Platform	170	Pirod 5' Standoff	113
5' Panel Antenna w/mount pipe	170	Pirod 5' Standoff	113
2"dia. pipe (9' Long)	170	Omni 10'x3"	113
5' Panel Antenna w/mount pipe	170	Omni 10'x3"	113
5' Panel Antenna w/mount pipe	170	Pirod 5' Standoff	90
2" dia. pipe (6' long)	160	Pirod 5' Standoff	90
2" dia. pipe (6' long)	160	Pirod 5' Standoff	90
2" dia. pipe (6' long)	160	Omni 18'x3"	90
5' Panel Antenna w/mount pipe	160	Omni 18'x3"	90
LGP 21401 TMA	160	Omni 18'x3"	90

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for a 80 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 69 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 60 mph wind.
5. TOWER RATING: 89.8%

Bay State Design
241 Boston Post Road West
Marlborough, MA 01752
Phone: (508) 229-4100
FAX: (508) 485-5321

Job: CT-HFD-0073A			
Project: *190' Monopole*			
Client: Clearwire CT	Drawn by: AAP	App'd:	
Code: TIA/EIA-222-F	Date: 09/09/09	Scale: NTS	
Path: N:\ap\CT-HFD-0073A\Latest Analysis CTHFD0073A.eri		Dwg No. E-1	

CLEAR

4400 Carillon Point
Kirkland, WA 98033

To: Maxton
From: Frantz Pierre – Radio Frequency Engineer
Cc: Micah Hawthorne
Subject: Power Density Report for CT-HFD0073
Date: March 28, 2010

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1. Introduction:

This report is the result of Electromagnetic Field Intensities (EMF – Power Densities) study for the Clearwire broadband antenna installation on a Steel Monopole at 319-321 New Britain Avenue, Farmington, CT, 06032. 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 with 30" Diameter.
5) The Clearwire Panel antenna centerline is 170 feet.
6) The Clearwire Microwave dish centerline is 170 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 a Steel Monopole at 319-321 New Britain Avenue, Farmington, CT, 06032 is 0.003562 mW/cm^2. This value represents 0.36% of the Maximum Permissible Exposure (MPE) standard of 1 milliwatt per square centimeter (mW/cm^2) 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 57.7223 %. The combined Power Density for this site is 58.0823% of the M.P.E. standard.