EM-CLEARWIRE-049-100119

January 19, 2010

ORIGINAL

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

Re: Notice of Exempt Modification
Clearwire Communications LLC Notice to make an Exempt Modification to an Existing Facility at 1654 King Street, Enfield, CT
Clearwire Site Number CT-HFD0147

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 Enfield, CT. of Clearwire's intent to make an exempt modification to an existing monopole tower (tower) located at 1654 King Street, Enfield, CT. Specifically, Clearwire plans to add three (3) antennas to the tower, one (1) per sector and to add three (3) microwave dishes, one (1) per sector for backhaul at the XXX' 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 Matthew Copplen of the Town of Enfield, 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, three (3) dishes and to install additional WiMAX related electronic equipment at the base of the tower.

The tower is a 150' monopole located at 1654 King Street, Enfield, Connecticut (Latitude 41 56 20 N Longitude 72 36 20 W). The tower is owned by AT&T\Cingular. Currently, ATT is 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 140''. 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 January 6, 2010 and attached hereto, the structure, as is, is insufficient to support the proposed loading (108.7%) and will need to be modified. If the proposed modification are installed per the recommendations of the BSD structural, the tower will pass at 81.3%. 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.

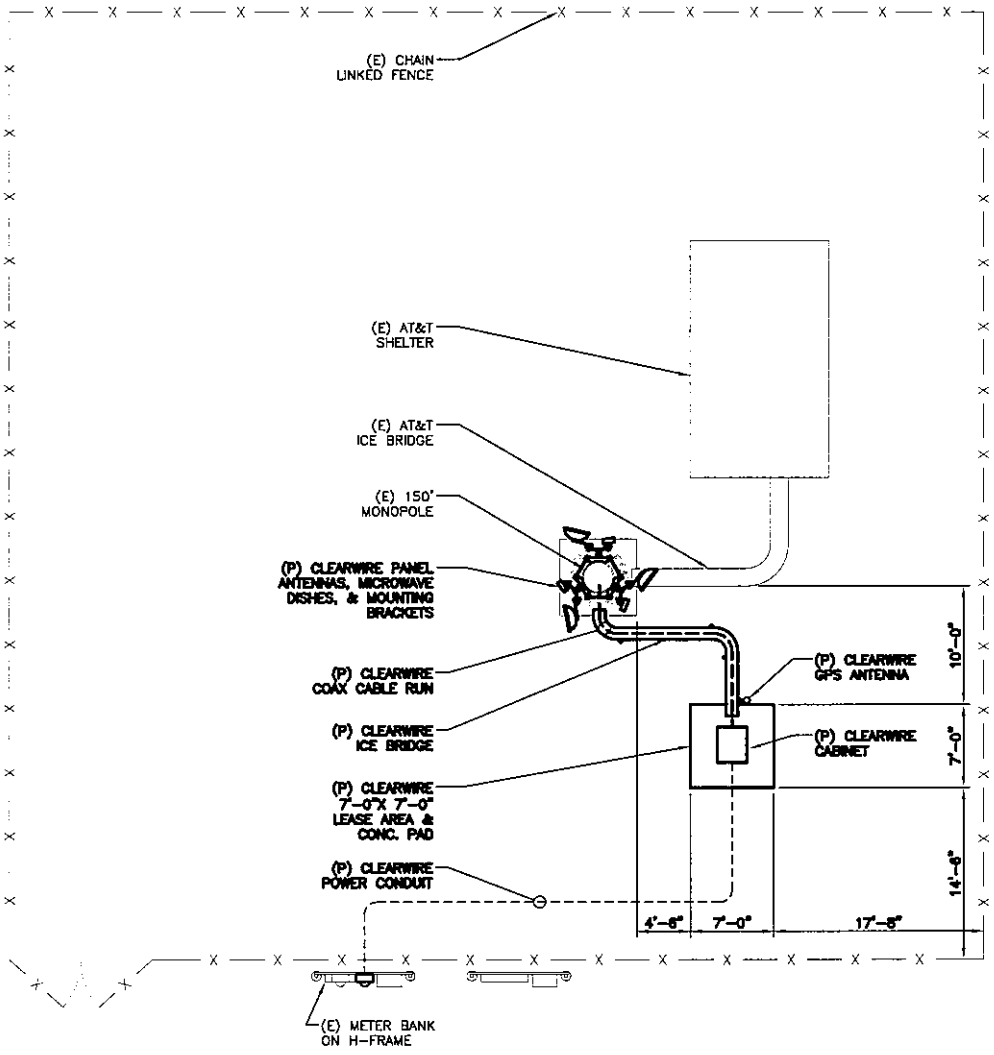
The addition of new WiMAX antennas and microwave dishes will not adversely impact the health and safety of the surrounding community or the people working on the tower. The total radio frequency exposure measured around the base of the tower will be well below the National Council on Radiation Protection 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 0.003604% of the NCRP's standard for maximum permissible exposure. The cumulative power density analysis indicates that all the antennas on the structure will emit 0.36% 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 Matthew Copplen
Town of Enfield



1
L2

ROOF PLAN

SCALE: N.T.S

1

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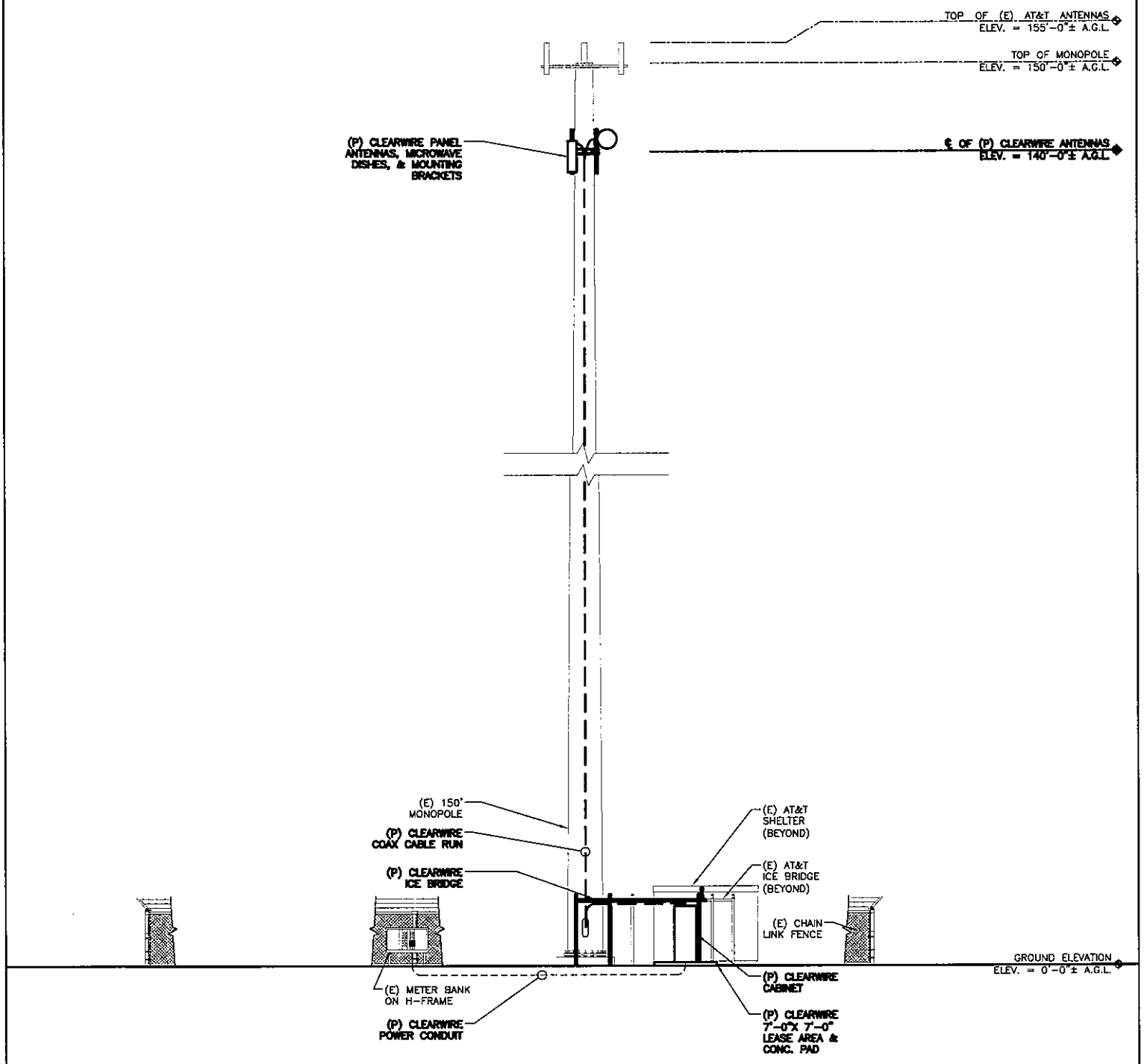
clearwire
5808 LAKE WASHINGTON BLVD.
NE, SUITE 300
KIRKLAND, WA 98033

PROJECT LOCATION: ENFIELD, CT CT-HFD0147 1654 KING STREET ENFIELD, CT 06082	SITE TYPE: MONOPOLE COLOCATION		BSDA PROJ. #: 2908.XXX
	PROJECT MANAGER: JP	DRAWN BY: NS	SHEET: L1
APPROVED BY:	DATE: 11/12/09	REVISION: 0	



EAST ELEVATION

SCALE: N.T.S

1

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

PROJECT LOCATION:	ENFIELD, CT CT-HFD0147 1654 KING STREET ENFIELD, CT 06082
APPROVED BY:	
SITE TYPE:	MONOPOLE COLOCATION
PROJECT MANAGER:	JP
DRAWN BY:	NS
DATE:	11/12/09
REVISION:	0
BSDA PROJ. #:	2908.XXX
SHEET:	L2

BAY STATE
DESIGN

STRUCTURAL ANALYSIS REPORT

CT-HFD0147A

1654 King Street
Enfield, CT

clearwire®
wireless broadband

January 6, 2010

Gordon E. Govalet, P.E.

STATE OF CONNECTICUT
GORDON E. GOVALET
No. 16430
LICENSED
PROFESSIONAL ENGINEER

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 existing 150'-0" Monopole located at 1654 King Street in Enfield, CT. Clearwire is proposing loading of the following wireless equipment at an elevation of 140'-0":

3	Argus 2300-2700MHz Remote Tilt Panel Antenna LLPX310R
3	Samsung WiMAX U-RAS Flexible RRU
3	Dragonwave 2'-0" Microwave Dish

In addition, a total of (3) lines of ½" coax and (1) 2" flexible conduit containing (6) 5/16" Ethernet cables will be run inside the 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
- Tower Mapping/Inventory conducted by Bay State Design on 12/15/09
- Original tower and foundation design drawings obtained from EEI dated 11/6/99

CONCLUSION:

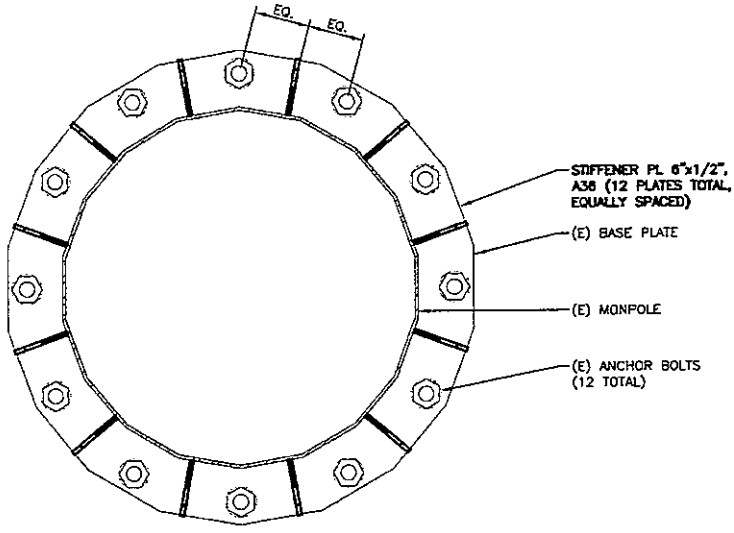
Based on our analysis, Bay State Design, Inc. concludes the monopole is *not adequate* to support the proposed Clearwire loading. The monopole base plate is overstressed at 108.7% of it structural capacity.

The following structural modifications must be made to the monopole to reduce the overstress to acceptable levels:

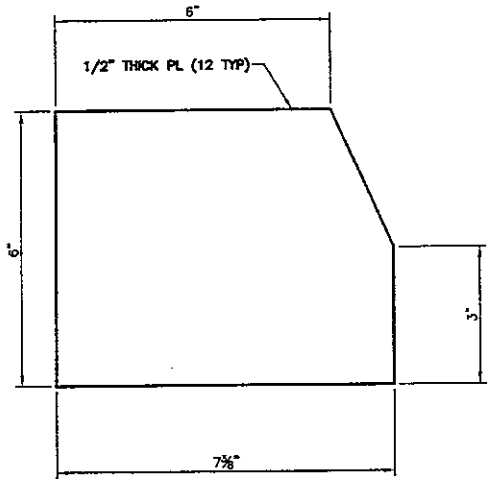
- A total of (12) ½" x 6" stiffener plates must be welded to the base plate. See attached Structural Modification Plan for construction details.

Provided these modifications have been made, the overstress on the monopole base plate will be reduced to 81.3%.

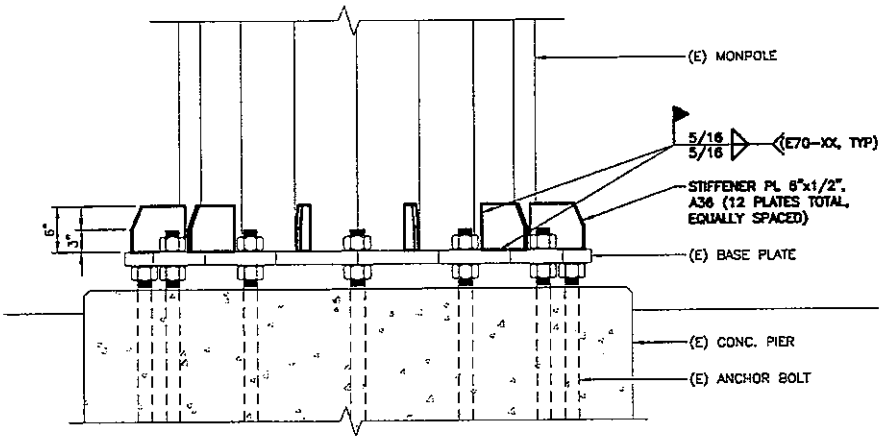
The monopole foundation is adequate to support the proposed loading including the addition of the stiffener plates.



MONOPOLE BASE PLAN (1)
SCALE: N.T.S



STIFFENER PLATE DETAIL (3)
SCALE: N.T.S



MONOPOLE BASE ELEVATION (2)
SCALE: N.T.S

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

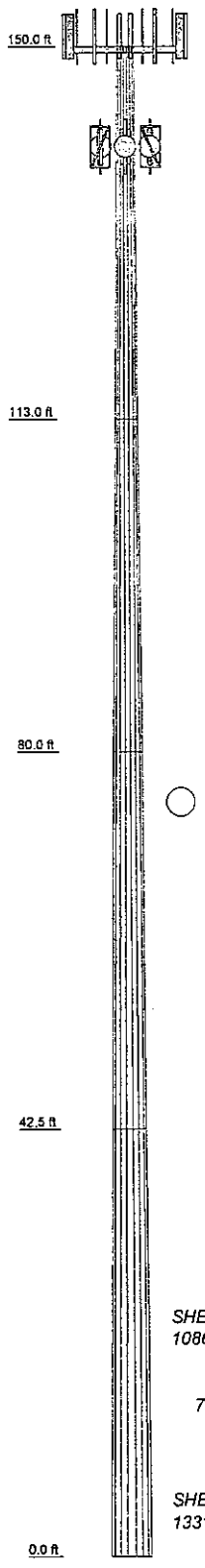
PROJECT LOCATION:
CT-HFD0147
1654 KING STREET
ENFIELD, CT 06082

APPROVED BY:

DRAWING NAME:
MONOPOLE BASE PLATE REINFORCING DETAILS

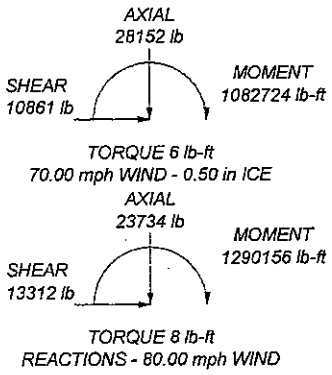
PROJECT MANAGER: AAP/GG
DRAWN BY: NS
DATE: 1/06/10
REVISION: 0

BSDA PROJ. #: 2908.191
SHEET: SK1



Section	1	2	3	4
Length (ft)	37.00	33.00	37.50	42.50
Number of Sides	18	18	18	18
Thickness (in)	0.19	0.25	0.38	0.44
Top Dia (in)	19.00	26.86	33.09	40.02
Bot Dia (in)	26.86	33.09	40.02	47.25
Grade	A572-65			
Weight (lb)	1755.2	2728.1	5659.9	8935.2

Total Weight: 19078.4



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
PIROD 13' Low Profile Platform (ATI)	150	3"x 5.5' pipe (Clearwire)	140
3"x 5.5' pipe (ATI)	150	3"x 5.5' pipe (Clearwire)	140
3"x 5.5' pipe (ATI)	150	LLPX310R w/3"x5.5' pipe (Clearwire)	140
3"x 5.5' pipe (ATI)	150	LLPX310R w/3"x5.5' pipe (Clearwire)	140
3"x 5.5' pipe (ATI)	150	LLPX310R w/3"x5.5' pipe (Clearwire)	140
3"x 5.5' pipe (ATI)	150	RRU (Clearwire) (Clearwire)	140
3"x 5.5' pipe (ATI)	150	2.0 ft. Standoff (Clearwire) (Clearwire)	140
Kathrein 806-960/1710-2180 (ATI)	150		
Kathrein 806-960/1710-2180 (ATI)	150	2.0 ft. Standoff (Clearwire) (Clearwire)	140
Kathrein 806-960/1710-2180 (ATI)	150		
Kathrein 806-960/1710-2180 (ATI)	150	2.0 ft. Standoff (Clearwire) (Clearwire)	140
Kathrein 806-960/1710-2180 (ATI)	150		
Kathrein 806-960/1710-2180 (ATI)	150	DragonWave (Clearwire)	140
RRU (Clearwire) (Clearwire)	140	DragonWave (Clearwire)	140
RRU (Clearwire) (Clearwire)	140	DragonWave (Clearwire)	140
3"x 5.5' pipe (Clearwire)	140		

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 80.00 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 70.00 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 60.00 mph wind.
5. TOWER RATING: 81.3%

Bay State Design
241 Boston Post Road West
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FAX: (508) 485-5321

Job: CT-HFD0147			
Project: 150' Monopole			
Client: Clearwire	Drawn by: AAP	App'd:	
Code: TIA/EIA-222-F	Date: 01/05/10	Scale: NTS	
Path: N:\AP\CT-HFD0147 CT01-05-10 Latest Analysis CT-HFD0147.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-HFD0147
Date: January 18, 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 Self Support Tower at 1654 King Street, Enfield, CT, 06082. 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 VHLP2-23 with 24" Diameter.
5) The Clearwire Panel antenna centerline is 140 feet.
6) The Clearwire Microwave dish centerline is 140 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 Self Support Tower at 1654 King Street, Enfield, CT is 0.003604 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 0.36 %. The combined Power Density for this site is 0.36% of the M.P.E. standard.