EM-CLEARWIRE-093-100407

April 7,, 2010

ORIGINAL

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

Re: Notice of Exempt Modification
Clearwire Corporation Notice to make an Exempt Modification to an Existing Facility at 69 Wheeler Street, New Haven, CT
Clearwire Site Number CT-NHN0092

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 City of New Haven, CT. of Clearwire's intent to make an exempt modification to an existing monopole tower (tower) located at 69 Wheeler Street, New Haven, 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 68' 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 Mayor John DeStefano of the City of New Haven, 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 98' monopole located at 69 Wheeler Street, New Haven CT, Connecticut (Latitude 41 17 45 N Longitude 72 53 52.5 W). The tower is owned by Laydon Construction Inc.. Currently, Nextel, AT&T, Cingular, T-Mobile and Verizon 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 two (2) microwave dishes, one (1) above each of those antennas. The center line for the microwave dishes will be 80'. 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 March 10, 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 98.2% 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.

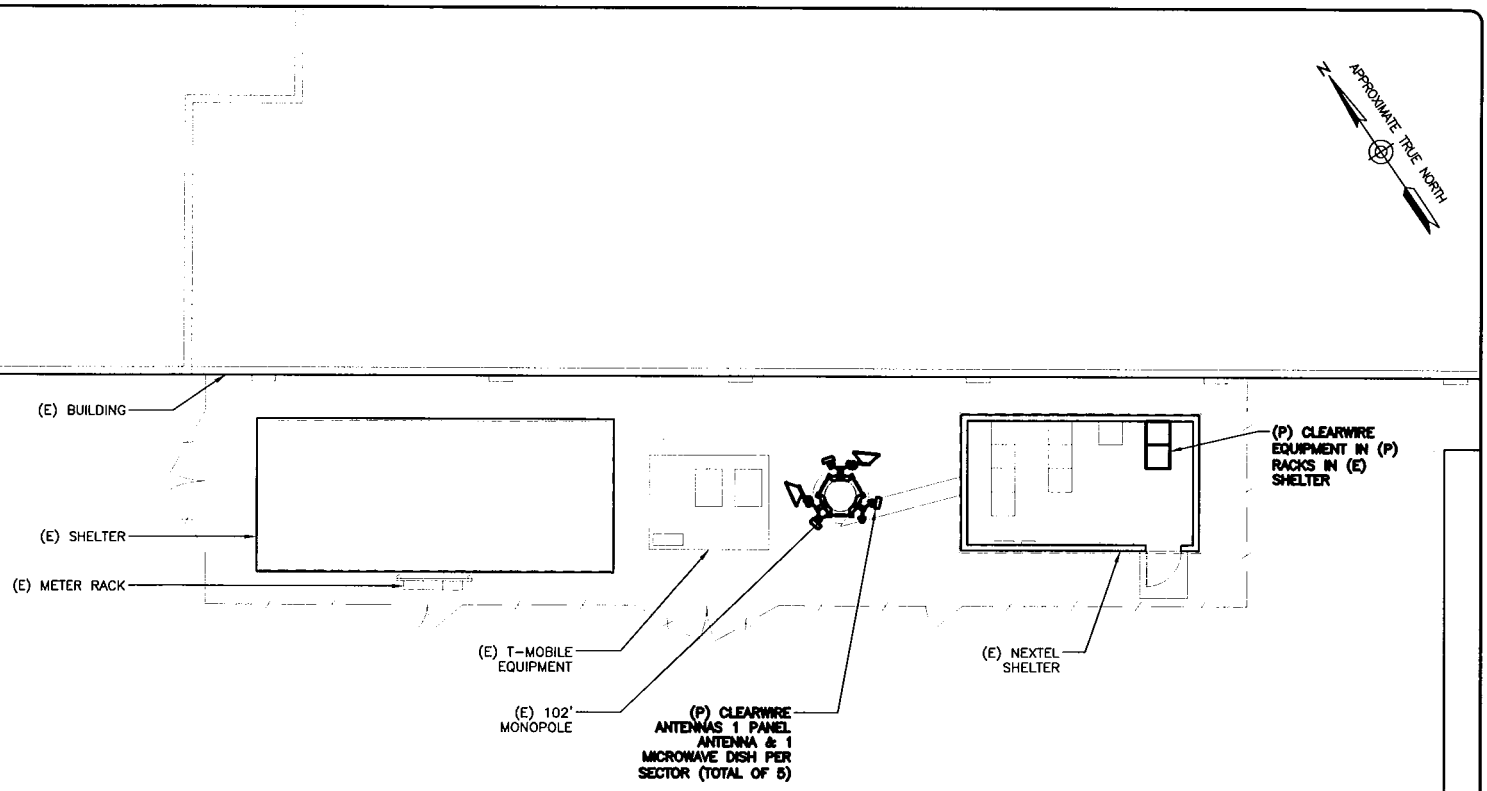
The addition of new WiMAX antennas and microwave dishes will not adversely impact the health and safety of the surrounding community or the people working on the tower. The total radio frequency exposure measured around the base of the tower will be well below the National Council on Radiation Protection 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 .01% of the NCRP's standard for maximum permissible exposure. The cumulative power density analysis indicates that all the antennas on the structure will emit 50.99% 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: Mayor John DeStefano
City of New Haven, CT



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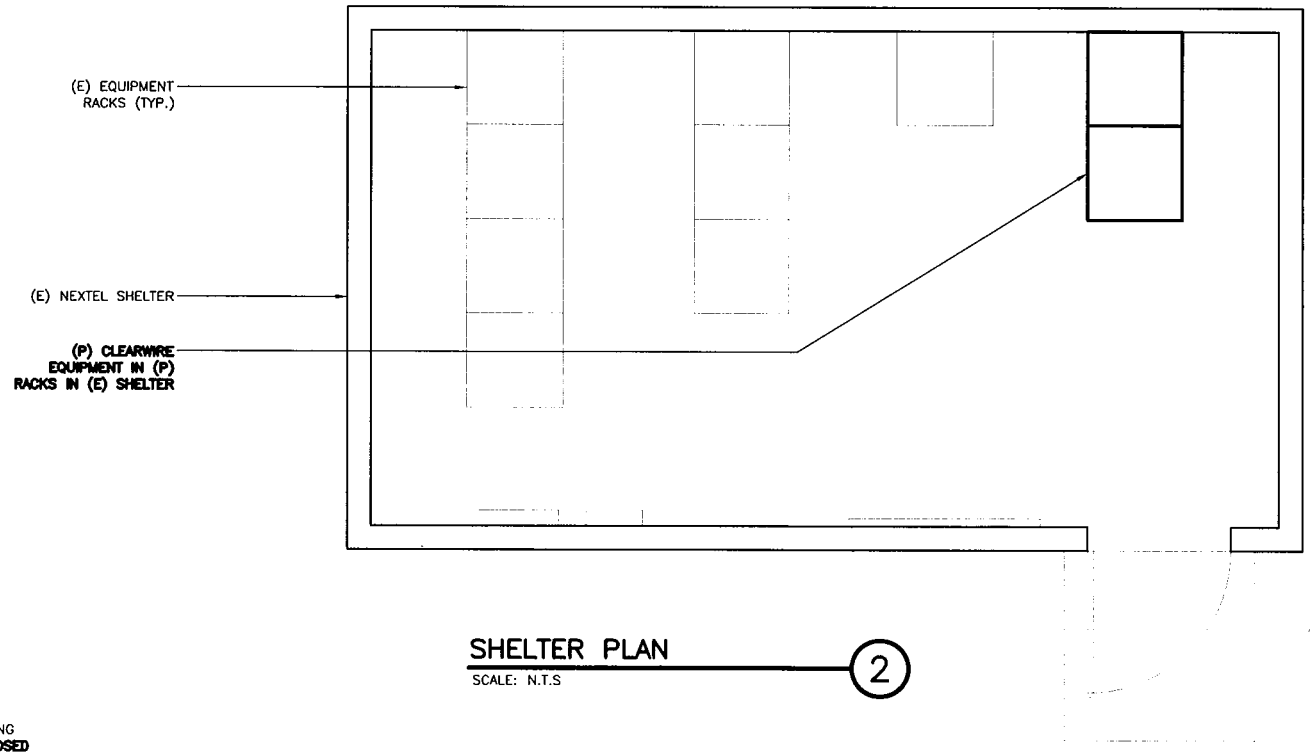
L2

COMPOUND PLAN 1

SCALE: N.T.S



SHELTER PLAN 2

SCALE: N.T.S

(E) EXISTING
(P) PROPOSED

MAXTON
BAY STATE DESIGN
241 Boston Post Road West
Marlborough, MA. 01752
Phone: 508-229-4100
Fax: 508-485-5321
Bay State Design, Inc.
Architects • Engineers
241 Boston Post Road West
Marlborough, MA. 01752
Phone: 508-229-4100
Fax: 508-485-5321

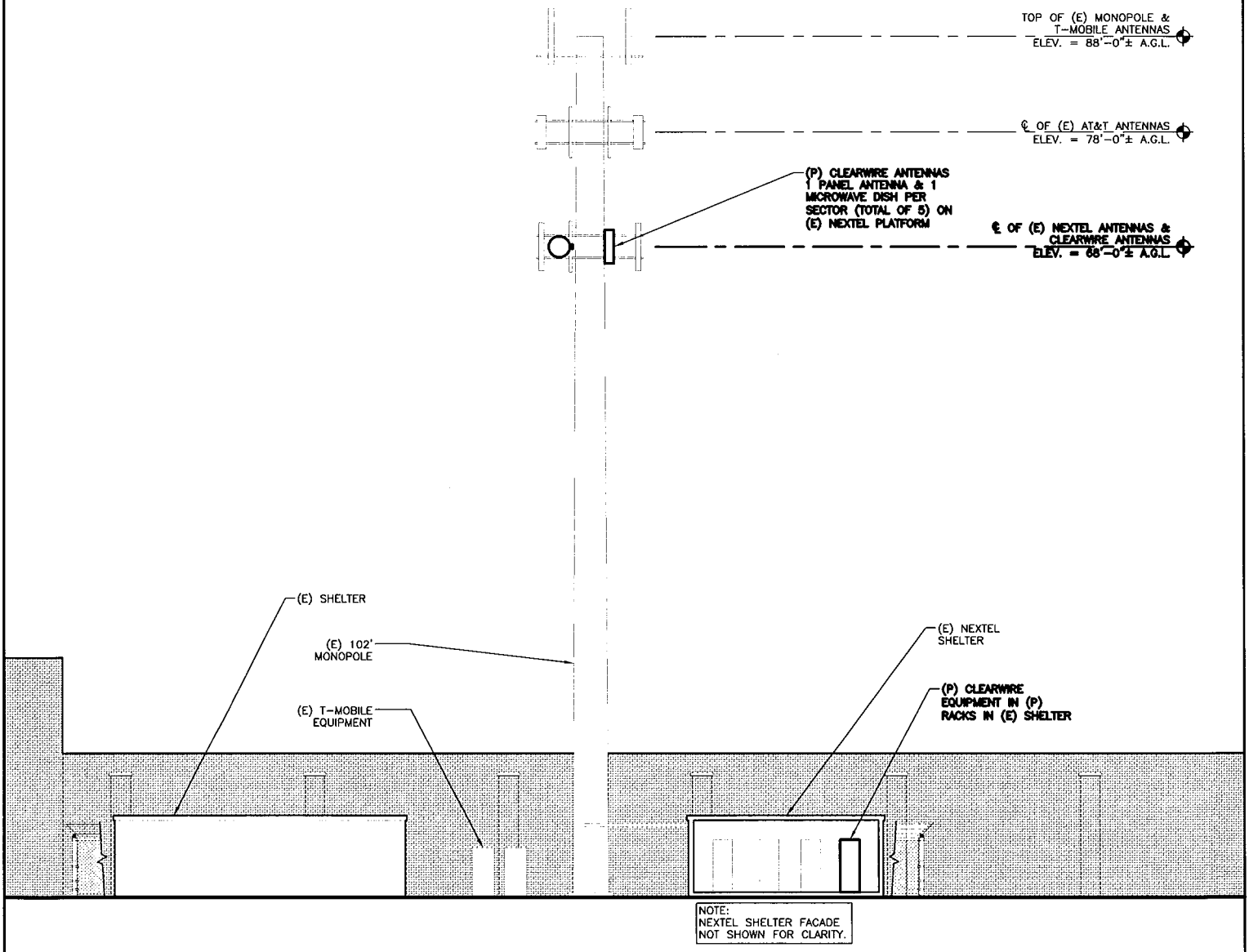
clearwire
5808 LAKE WASHINGTON BLVD.
NE SUITE 300
KIRKLAND, WA 98033

PROJECT LOCATION:
WHEELER STREET
CT-NHN0092B
69 WHEELER STREET
NEW HAVEN, CT

SITE TYPE:
COPLANE

PROJECT MANAGER: JP
DRAWN BY: NS
APPROVED BY:
DATE: 02/18/10
REVISION: 0

BSDA PROJ. #: 2908.173
SHEET: L1



NOTE:
NEXTEL SHELTER FACADE NOT SHOWN FOR CLARITY.

ELEVATION 1

SCALE: N.T.S

(E) EXISTING
(P) PROPOSED

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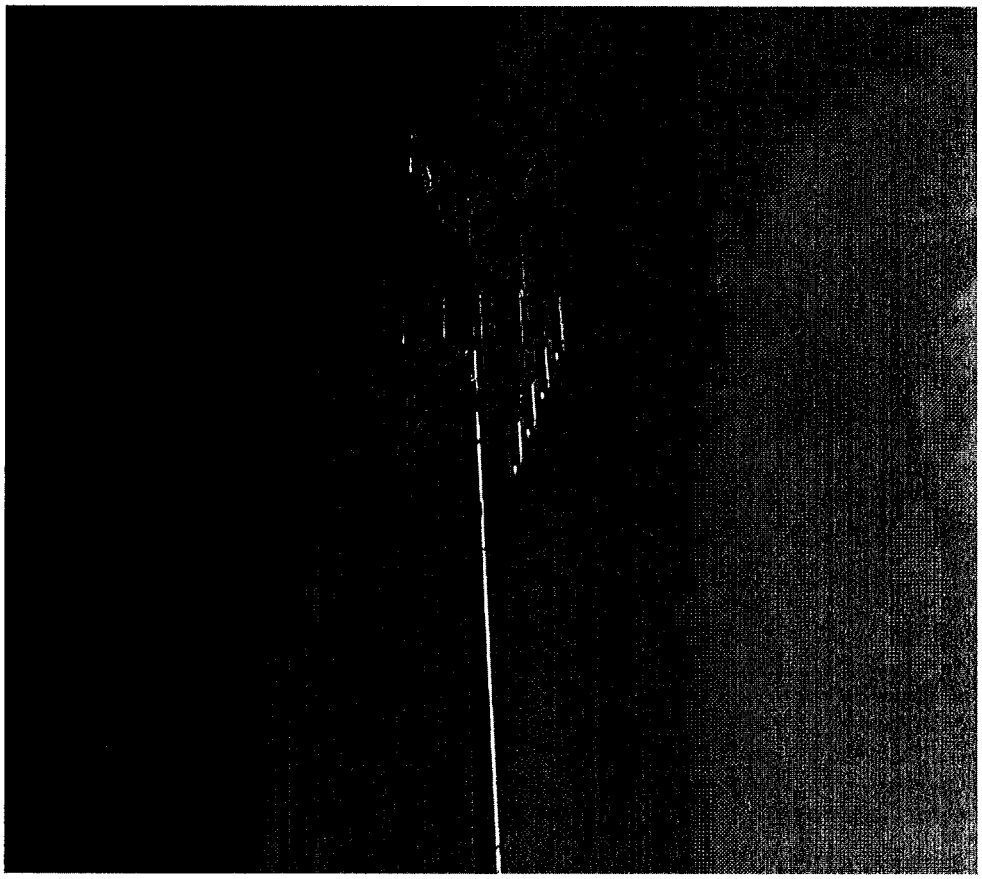
clearwire
5808 LAKE WASHINGTON BLVD.
NE SUITE 300
KIRKLAND, WA 98033

PROJECT LOCATION: WHEELER STREET CT-NHN0092B 69 WHEELER STREET NEW HAVEN, CT	SITE TYPE: COPLANE		BSDA PROJ. #: 2908.173
	PROJECT MANAGER: JP	DRAWN BY: NS	SHEET: L2
APPROVED BY:	DATE: 02/18/10	REVISION: 0	

BAY STATE
DESIGN

STRUCTURAL ANALYSIS REPORT



clearwire®
wireless broadband

Site ID CT-NHN0092B
69 Wheeler Street
New Haven, CT

March 10, 2010

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 98' Monopole at 69 Wheeler Street in New Haven, CT. Clearwire is proposing to add the following equipment to the existing Nextel mount at an elevation of 80':

3	Kathrein Model No. 840 10054 Panel Antenna
3	Samsung WiMAX U-RAS Flexible RRU
2	Dragonwave 2'-0" Microwave Dish

All proposed coax cables are to 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
- Previous structural analysis conducted for T Mobile prepared by Spartan Engineering dated 12/15/2008
- Previous structural analysis conducted for AT & T prepared by All Points Technology, Inc. dated 3/10/1996

MONOPOLE ANALYSIS RESULTS:

Based on the following calculations, Bay State Design, Inc. concludes the monopole meets the structural requirements as specified by TIA/EIA-222-F. The following stresses were observed:

Existing Conditions Plus Proposed Clearwire Loading:

MEMBER TYPE	MAXIMUM STRESS RATIO	CONTROLLING ELEVATION/COMPONENT	PASS / FAIL	COMMENTS
POLE SHAFT	7.00%	98 - 88	PASS	
POLE SHAFT	98.20%	88 - 45.67	PASS	
POLE SHAFT	96.50%	45.67 - 0	PASS	

BASEPLATE / FOUNDATION ANALYSIS:

The monopole base plate has been previously reinforced with (12) 1 ½ " stiffener plates per recommendations included in the All Points Technology, Inc. structural analysis dated 3/10/1996.

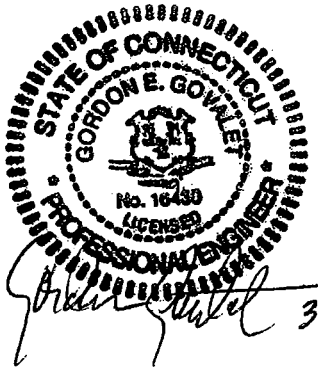
In addition, the Cingular installation at 70' has been removed from the monopole. As a result, the new calculated base shear and over turning moment reactions for the proposed Clearwire installation have decreased since the above referenced structural calculations were completed.

	SPARTAN ENGINEERING 12/15/2008	CURRENT WITH (P) CLEARWIRE LOADING
Moment	970.1 kips-ft	924.2 kips-ft
Shear	13.3 kips-ft	12.4 kips
Axial	11.1 kips	12 kips

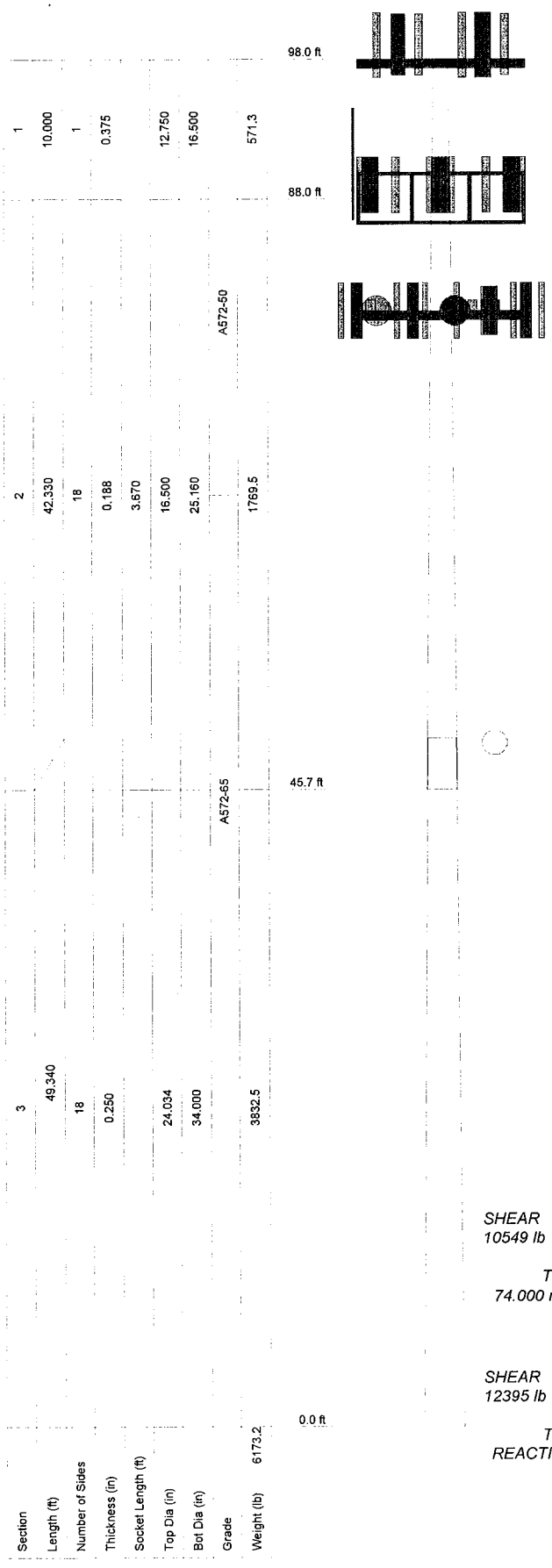
Due to the decreases observed, it is reasonable to conclude the base plate and foundation are adequate for the proposed Clearwire loading.

CONCLUSION:

We conclude the existing monopole, base plate and foundation are adequate to support the proposed Clearwire loading. The monopole is rated at 98.2% of its structural capacity.



Gordon E. Govalet, P.E.
Vice President
Bay State Design, Inc.



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
PiROD 10' Lightweight T-Frame (T-Mobile)	98	DB844G65ZAXY (Sprint)	80
		DB844G65ZAXY (Sprint)	80
APX16PV-16PVL (T-Mobile)	98	DB844G65ZAXY (Sprint)	80
APX16PV-16PVL (T-Mobile)	98	DB844G65ZAXY (Sprint)	80
APX16PV-16PVL (T-Mobile)	98	DB844G65ZAXY (Sprint)	80
APX16DWV-16DWVS-E-A20 (T-Mobile)	98	DB844G65ZAXY (Sprint)	80
		DB844G65ZAXY (Sprint)	80
APX16DWV-16DWVS-E-A20 (T-Mobile)	98	DB844G65ZAXY (Sprint)	80
APX16DWV-16DWVS-E-A20 (T-Mobile)	98	800-10054 with Mount Pipe (Clearwire)	80
PiROD 12' Platform w / handrails (ATT)	88	800-10054 with Mount Pipe (Clearwire)	80
		800-10054 with Mount Pipe (Clearwire)	80
(3) DUO1417-8670 (ATT)	88		
(3) DUO1417-8670 (ATT)	88	RRH Clearwire CT (Clearwire)	80
(3) DUO1417-8670 (ATT)	88	RRH Clearwire CT (Clearwire)	80
Omni 2" x 8'	88	RRH Clearwire CT (Clearwire)	80
PiROD 12' Universal T-Frame Sector Mount (Sprint)	80	2' foot dish (Clearwire)	80
		2' foot dish (Clearwire)	80
DB844G65ZAXY (Sprint)	80		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A572-65	65 ksi	80 ksi

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for a 85.000 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 74.000 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50.000 mph wind.
5. Weld together tower sections have flange connections.
6. Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA -222 and AISC Specifications.
7. Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
8. Welds are fabricated with ER-70S-6 electrodes.
9. TOWER RATING: 98.2%

AXIAL
15256 lb

SHEAR
10549 lb

MOMENT
811013 lb-ft

TORQUE 1656 lb-ft
74.000 mph WIND - 0.500 in ICE
AXIAL
12033 lb

SHEAR
12395 lb

MOMENT
924227 lb-ft

TORQUE 1829 lb-ft
REACTIONS - 85.000 mph WIND

BAY STATE DESIGN
Consulting Engineers
Bay State Design Inc.
241 Boston Post Road W
Marlborough, MA 01752
Phone: (508) 229-4100
FAX: (508) 485-5321

Job: **CT-NHN-0092A**
Project: ***98' Monopole, New Haven CT***
Client: Clearwire CT | Drawn by: MC | App'd:
Code: TIA/EIA-222-F | Date: 03/09/10 | Scale: NTS
Path: N:\PROJECTS\Clearwire-CT\CT-NHN0092-A\CT-NHN0092-A.en | Dwg No. E-1

CLEAR

To:
From: Mark Brauer – Radio Frequency Engineer
Cc: Cameron Syme
Subject: Power Density Report for CT-NHN0092
Date: March, 29, 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 tower at 69 Wheeler St, New Haven, CT. 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 80' feet.
6) The Clearwire Microwave dish centerline is 80' 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 Tower at 69 Wheeler St, New Haven, CT is 0.000015 mW/cm^2. This value represents 0.001453% 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 licensed 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 50.98%. The combined Power Density for this site is 50.99 % of the M.P.E. standard.