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
www.ct.gov/csc

July 9, 2013

Julie D. Kohler, Esq.
Cohen and Wolf, P.C.
1115 Broad Street
Bridgeport, CT 06604

RE: **EM-T-MOBILE-034-130531B** – T-Mobile Northeast LLC notice of intent to modify an existing telecommunications facility located at 303 Boxwood Lane, Danbury, Connecticut.

Dear Attorney Kohler:

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 the 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;
- Within 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 May 29, 2013. 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,

Melanie A. Bachman
Acting Executive Director

MAB/CDM/jb

c: The Honorable Mark D. Boughton, Mayor, City of Danbury
Dennis Elpern, City Planner, City of Danbury
Western Connecticut State University

COHEN and WOLF P.C.
ATTORNEYS AT LAW

RACHEL A. SCHWARTZMAN

Please Reply To: Bridgeport
Writer's Direct Dial: (203) 337-4110
E-Mail: rschwartzman@cohenandwolf.com

February 26, 2015

Attorney Melanie Bachman
Acting Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06501

Re: EM-T-MOBILE-034-130531B
T-Mobile Site ID CTFF703A
303 Boxwood Lane, Danbury, CT (WCSU)
Notice of Construction Completion

Dear Attorney Bachman:

The Connecticut Siting Council ("Council") acknowledged the above referenced T-Mobile Northeast LLC ("T-Mobile") notice of exempt modification on July 9, 2013. T-Mobile hereby notifies the Council that construction of the acknowledged modifications were complete as of November 18, 2013.

Please don't hesitate to contact me with any questions.

Sincerely,

Rachel A. Schwartzman

cc: Samuel Simons, T-Mobile
Mark Richard, T-Mobile
Robert Stanford, Vertical Development, LLC
Julie Kohler, Esq.

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

www.ct.gov/csc

December 24, 2014

Rachel A. Schwartzman, Esq.
Cohen and Wolf, P.C.
P.O. Box 1821
Bridgeport, CT 06601

RE:

EM-T-MOBILE-004-130531	81 Montevideo Road	Avon
EM-T-MOBILE-009-130611	38 Spring Hill Lane	Bethel
EM-T-MOBILE-014-130724	405 Brushy Plain Road	Branford
EM-T-MOBILE-017-130611	2 Willis Street	Bristol
EM-T-MOBILE-017-130729	985 Farmington Avenue	Bristol
EM-T-MOBILE-033-130719	179 Shunpike Road	Cromwell
EM-T-MOBILE-034-130531A	41 Padanaram Road	Danbury
EM-T-MOBILE-034-130531B	303 Boxwood Lane	Danbury
EM-T-MOBILE-034-130726	7 West View Drive	Danbury
EM-T-MOBILE-043-130222	1455 Forbes Street	East Hartford
EM-T-MOBILE-049-130718	1 Ecology Drive	Enfield
EM-T-MOBILE-057-130220	150 Butternut Hollow Road	Greenwich
EM-T-MOBILE-080-130903	11 West Peak Drive	Meriden
EM-T-MOBILE-091-130531A	302 Ball Pond Road	New Fairfield
EM-T-MOBILE-091-130531B	37 Titicus Mountain Road	New Fairfield
EM-T-MOBILE-101-130611	125 Washington Avenue	North Haven
EM-T-MOBILE-110-130621	335 S. Washington Street	Plainville
EM-T-MOBILE-135-130318	555 Main Street	Stamford
EM-T-MOBILE-148-130531	90 N. Plains Industrial Road	Wallingford
EM-T-MOBILE-166-130726	Andrews Road	Wolcott
EM-T-MOBILE-166-130816	Route 322/Meridian Road	Wolcott

Dear Attorney Schwartzman:

The Connecticut Siting Council (Council) is in receipt of your letter dated December 23, 2014, submitted on behalf of T-Mobile, requesting an extension of time to submit a notice of completion of construction and associated post modification inspection reports for the above-referenced exempt modifications.

The Council hereby grants a 60-day extension of time to submit a notice of completion of construction and associated post modification inspection reports for the above-referenced exempt modifications to March 2, 2015.

This extension is granted with the understanding that the Council will be notified should T-Mobile need additional time beyond 60 days to submit a notice of completion and associated post modification inspection reports or decide not to proceed with construction.

Thank you for your attention to this matter.

Sincerley,

Melanie A. Bachman
Acting Executive Director

MAB/cm

COHEN and WOLF P.C.
ATTORNEYS AT LAW

RACHEL A. SCHWARTZMAN

Please Reply To: Bridgeport
Writer's Direct Dial: (203) 337-4110
E-Mail: rschwartzman@cohenandwolf.com

December 23, 2014

Via Electronic and Overnight Mail

Attorney Melanie Bachman
Acting Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: T-Mobile Exempt Modification Compliance Filings
Connecticut Siting Council Audit Letter dated November 3, 2014
Request For Extension of Time

Dear Attorney Bachman:

T-Mobile Northeast, LLC ("T-Mobile") respectfully requests a 60-day extension of time to March 2, 2015 to respond to the Council's request, dated November 3, 2014, for exempt modification compliance data. The attached spreadsheet provides a list of the sites for which T-Mobile seeks a requested extension.

T-Mobile is actively compiling all of the requested information but needs additional time to provide the necessary documentation.

Please do not hesitate to let me know if you have any questions.

Sincerely,

Rachel Schwartzman

Rachel A. Schwartzman, Esq.

RAS/lcc
Enclosure

cc: Samuel Simons, T-Mobile Northeast, LLC (via electronic mail)
Mark Richard, T-Mobile Northeast, LLC (via electronic mail)
Robert Stanford, Vertical Development, LLC (via electronic mail)
Julie Kohler, Esq.

EM/TS #	Address	Town	Council Additional Conditions	Compliance with Council Additional Conditions Received	Notice of Completion Received	Decision Date
EM-T-MOBILE-043-130222	1455 Forbes Street	East Hartford	Yes	No	No	3/12/2013
EM-T-MOBILE-057-130220	150 Butternut Hollow Road	Greenwich	N/A	N/A	No	3/12/2013
EM-T-MOBILE-135-130318	555 Main Street	Stamford	Yes	No	No	4/9/2013
EM-T-MOBILE-006-130528	60 Rice Lane	Beacon Falls	Yes	No	No	6/26/2013
EM-T-MOBILE-002-130529	401 Wakelee Avenue	Ansonia	N/A	N/A	No	6/27/2013
EM-T-MOBILE-004-130531	81 Montevideo Road	Avon	N/A	N/A	No	7/9/2013
EM-T-MOBILE-034-130531A	41 Padanaram Road	Danbury	Yes	No	No	7/9/2013
EM-T-MOBILE-034-130531B	303 Boxwood Lane	Danbury	N/A	N/A	No	7/9/2013
EM-T-MOBILE-091-130531A	302 Ball Pond Road	New Fairfield	N/A	N/A	No	7/9/2013
EM-T-MOBILE-091-130531B	37 Titicus Mountain Road	New Fairfield	N/A	N/A	No	7/9/2013
EM-T-MOBILE-148-130531	90 N. Plains Industrial Road	Wallingford	N/A	N/A	No	7/9/2013
EM-T-MOBILE-101-130611	125 Washington Avenue	North Haven	N/A	N/A	No	7/10/2013
EM-T-MOBILE-009-130611	38 Spring Hill Lane	Bethel	Yes	No	No	7/11/2013
EM-T-MOBILE-017-130611	2 Willis Street	Bristol	Yes	No	No	7/12/2013
EM-T-MOBILE-110-130621	335 S. Washington Street	Plainville	N/A	N/A	No	7/12/2013
EM-T-MOBILE-033-130719	179 Shunpike Road	Cromwell	Yes	No	No	8/7/2013
EM-T-MOBILE-049-130718	1 Ecology Drive	Enfield	N/A	N/A	No	8/7/2013
EM-T-MOBILE-014-130724	405 Brushy Plain Road	Branford	Yes	No	No	8/13/2013
EM-T-MOBILE-017-130729	985 Farmington Avenue	Bristol	N/A	N/A	No	8/20/2013
EM-T-MOBILE-034-130726	7 West View Drive	Danbury	N/A	N/A	No	8/20/2013
EM-T-MOBILE-166-130726	Andrews Road	Wolcott	Yes	No	No	8/20/2013
EM-T-MOBILE-166-130816	Route 322/Meridian Road	Wolcott	N/A	N/A	No	9/3/2013
EM-T-MOBILE-080-130903	11 West Peak Drive	Meriden	Yes	No	No	9/18/2013

COHEN and WOLF P.C.
ATTORNEYS AT LAW

JULIE D. KOHLER

PLEASE REPLY TO: Bridgeport
WRITER'S DIRECT DIAL: (203) 337-4157
E-Mail Address: jkohler@cohenandwolf.com

May 29, 2013

Attorney Melanie Bachman
Acting Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: Notice of Exempt Modification
WCSU/T-Mobile co-location
Site ID CTFF703A
303 Boxwood Lane, Danbury, CT

Dear Attorney Bachman:

This office represents T-Mobile Northeast LLC ("T-Mobile") and has been retained to file exempt modification filings with the Connecticut Siting Council on its behalf.

In this case, Western Connecticut State University ("WCSU") owns the existing lattice telecommunications tower and related facility at 303 Boxwood Lane, Danbury Connecticut (coordinates 41 24' 2.1594" / 73 26' 45.2394"). T-Mobile intends to replace three antennas and related equipment at this existing telecommunications facility in Danbury ("Danbury Facility"). Please accept this letter as notification, pursuant to R.C.S.A. § 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Mayor Mark D. Boughton and the property owner, the State of Connecticut.

The existing Danbury Facility consists of a 100 foot tall lattice structure. T-Mobile plans to replace three antennas and remove three existing TMAs (tower mounted amplifiers) at a centerline of 83 feet. (See the plans revised to April 10, 2013 attached hereto as Exhibit A). T-Mobile will also replace one of its equipment cabinets within the existing compound area near the base of the structure, as well as install fiber cable and reuse existing coax cables. The existing Facility is structurally capable of supporting T-Mobile's proposed modifications, as indicated in the Structural Analysis Summary Report dated May 14, 2013 and attached hereto as Exhibit B.

The planned modifications to the Danbury Facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1 . The proposed modification will not increase the height of the tower. T-Mobile's replacement antennas will be installed at the 83 foot level. The enclosed tower drawing confirms that the proposed modification will not increase the height of the tower.

2 . The installation of the T-Mobile replacement equipment in the existing compound, as reflected on the attached site plan, will not require an extension of the site boundaries. T-Mobile's proposed equipment will be located entirely within the existing compound area.

3 . The proposed modification to the Facility will not increase the noise levels at the existing facility by six decibels or more.

4 . The operation of the replacement antennas will not increase the total radio frequency (RF) power density, measured at the base of the tower, to a level at or above the applicable standard. According to a Radio Frequency Emissions Analysis Report prepared by EBI dated May 23, 2013 T-Mobile's operations would add 1.556% of the FCC Standard. Therefore, the calculated "worst case" power density for the planned combined operation at the site including all of the proposed antennas would be 36.196% of the FCC Standard as calculated for a mixed frequency site as evidenced by the engineering exhibit attached hereto as Exhibit C.

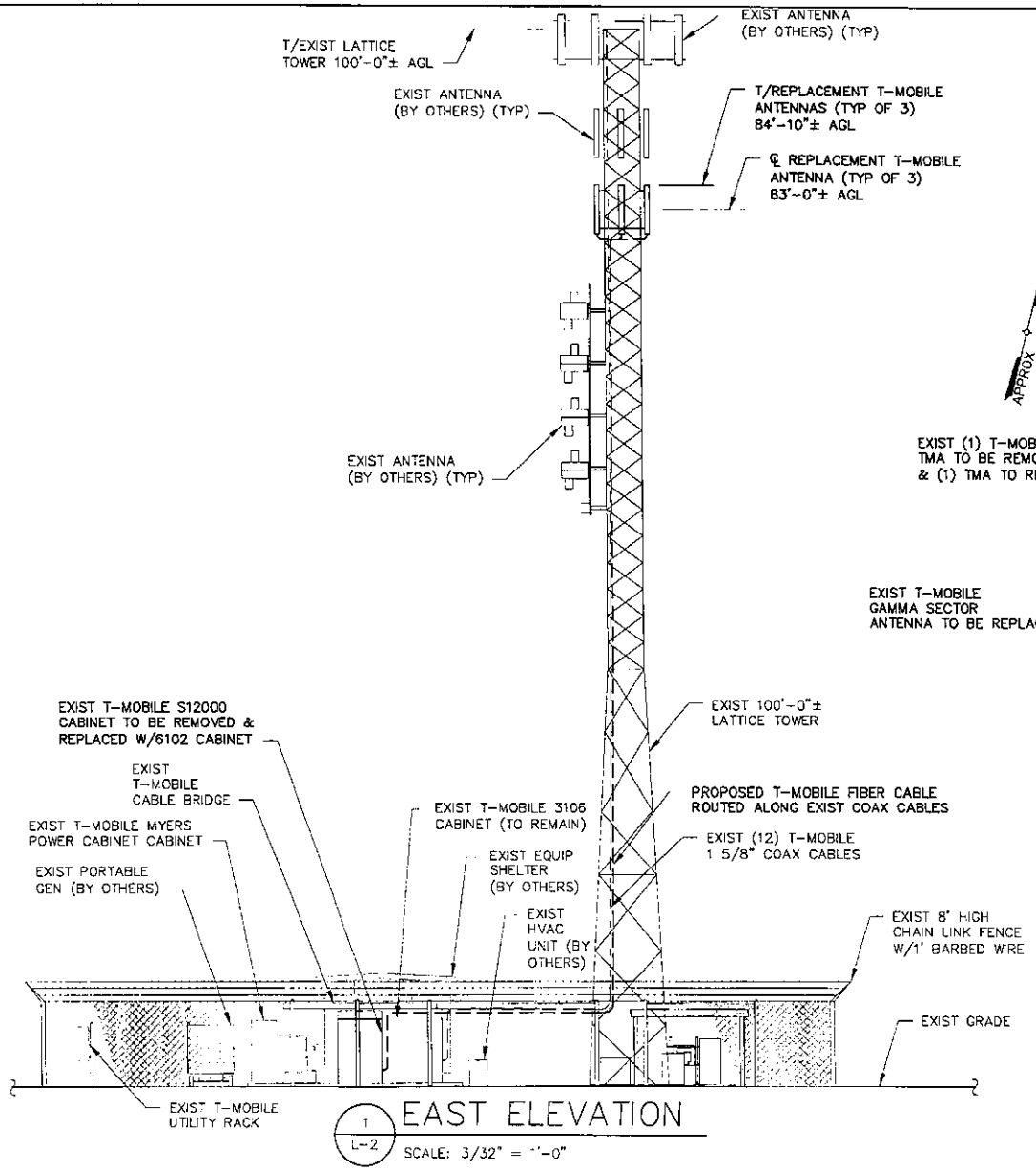
For the foregoing reasons, T-Mobile respectfully submits that the proposed replacement antennas and equipment at the Danbury Facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Julie D. Kohler, Esq.

cc: City of Danbury, Mayor Mark D. Boughton
WCSU
State of Connecticut
Jamie Ford, HPC Wireless

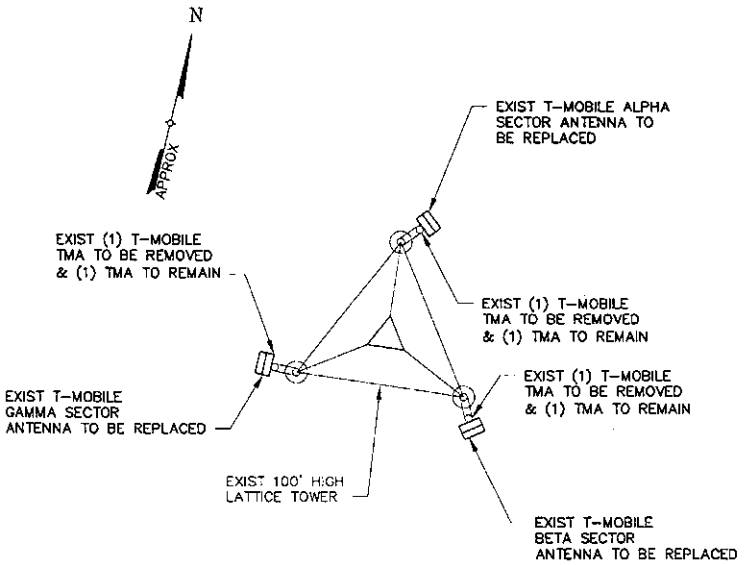
EXHIBIT A



1 / L-2 EAST ELEVATION

SCALE: 3/32" = 1'-0"

STRUCTUAL NOTE:
EXIST MOUNTS AND TOWER STRUCTURE TO BE VERIFIED FOR STRUCTURAL SUITABILITY OF PROPOSED INSTALLATION BY A STATE LICENSED P.E.



2 / L-2 ANTENNA PLAN

SCALE: 3/16" = 1'-0"

CONFIGURATION
1B

0 1 2 3
ORIGINAL SIZE IN INCHES

TECTONIC
• PLANNING • ENGINEERING • SURVEYING • CONSTRUCTION MANAGEMENT
TECTONIC Engineering & Surveying Consultants P.C.
1279 Route 300
Newburgh, NY 12550
Phone: (845) 567-6656
Fax: (845) 567-6703

T-Mobile
NORTHEAST LLC.
T-MOBILE NORTHEAST, LLC.
35 SYLVAN DRIVE
PARSIPPANY, NJ 07054
PHONE: (973) 630-8500

APPROVALS
T-MOBILE
LANDLORD
RF
CONSTRUCTION

PROJECT NUMBER	DESIGNED BY
6644.CTFF703A	TN

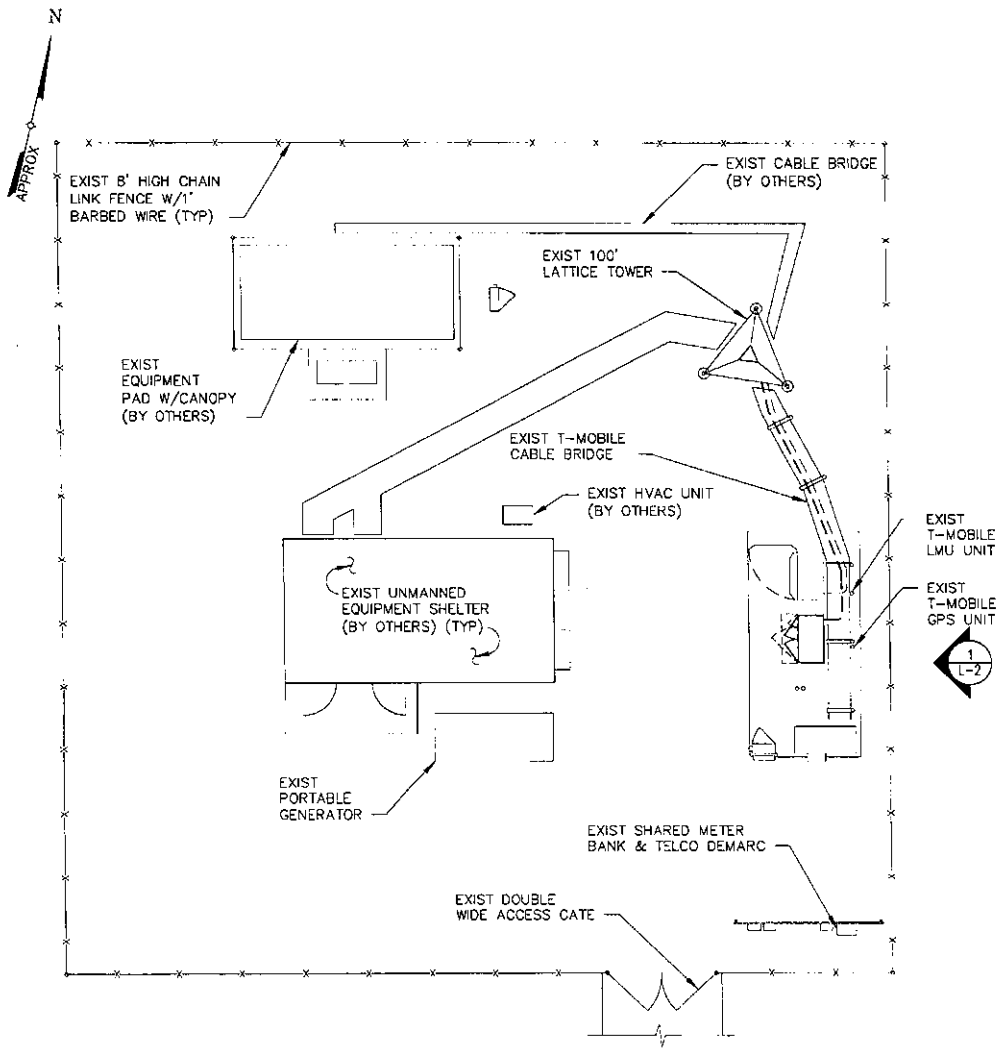
REV	DATE	REVISION	DRAWN BY
0	4/10/13	FOR COMMENT	SW

ISSUED BY | DATE

SITE INFORMATION
CTFF703A
CT703/WCSU ET
303 BOXWOOD LANE
DANBURY, CT 06811

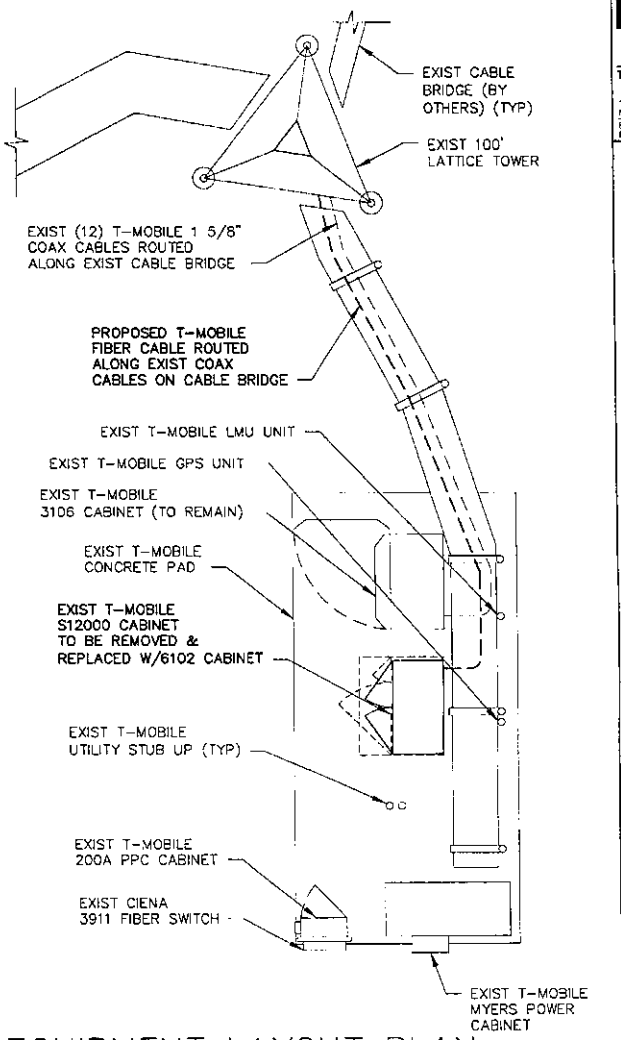
SHEET TITLE
ELEVATION & ANTENNA PLAN

SHEET NUMBER
L-2



1 L-1 SITE PLAN

SCALE: 3/32" = 1'-0"



2 L-1 EQUIPMENT LAYOUT PLAN

SCALE: 3/16" = 1'-0"

CONFIGURATION

1B

STRUCTUAL NOTE:

EXIST MOUNTS AND TOWER STRUCTURE TO BE VERIFIED FOR STRUCTURAL SUITABILITY OF PROPOSED INSTALLATION BY A STATE LICENSED P.E.

0 1 2 3

ORIGINAL SIZE IN INCHES

TECTONIC

• PLANNING • ENGINEERING • SURVEYING • CONSTRUCTION MANAGEMENT

TECTONIC Engineering & Surveying Consultants P.C.

1279 Route 300
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T-Mobile

NORTHEAST LLC.

T-MOBILE NORTHEAST, LLC.
4 SYLVAN DRIVE
PARSIPPANY, NJ 07054
PHONE: (973) 668-8500

APPROVALS

T-MOBILE

LANDLORD

RF

CONSTRUCTION

PROJECT NUMBER	DESIGNED BY
6644.CTFF703A	TN

REV	DATE	REVISION	DRAWN BY
0	4/10/13	FOR COMMENT	SW

ISSUED BY DATE

SITE INFORMATION

CTFF703A
CT703/WCSU ET
303 BOXWOOD LANE
DANBURY, CT 06811

SHEET TITLE

SITE PLAN & EQUIPMENT LAYOUT PLAN

SHEET NUMBER

L-1

EXHIBIT B

STRUCTURAL ANALYSIS

SUMMARY REPORT

T-MOBILE UPGRADE

EXISTING 100 FEET SELF-SUPPORTING TOWER

T-MOBILE SITE: CTFF703A; CT703/WCSU ET

303 BOXWOOD LANE,

DANBURY, CT

MAY 14, 2013

TEC W.O. 6644.CTFF703

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STRUCTURAL ANALYSIS REPORT

Project Information

W.O. Number:	6644.CTFF703/		Report Date: 5/14/2013
Client:	T-Mobile		Revision: 0
Site Name:	CT703/WCSU ET		
Owner:	Western Connecticut State University		
Site Address:	303 Boxwood Lane	FCC Regulation Number:	--
City, State:	Danbury, CT 06810	County:	Fairfield

Structure Information

Structure Type: Self-Supporting Tower
Manufacturer: Fred A. Nudd
Structure Height: 100 ft
Year Built: 1997

Original Drawings: Structure: Yes Foundation: Yes

Previous Analysis: Yes

Documents provided:

Item	By	No.	Date
Original Tower Drawings (1 page)	Fred A. Nudd	96-4992-1	1/21/97
Original Foundation Drawings (1 page)	Fred A. Nudd	96-4992-2	1/21/97
Structural Analysis Report (50 pages)	Natcomm	8140	11/7/08
Structural Reinforcement Drawings (1 page)	Centek	10106 S-1	7/23/10
As-Built Drawings (10 sheets)	Centek	10106	12/14/10
RFDS	T-Mobile	CTFF703A	3/28/13

Inspection

Type: Visual Inspection
Date: 5/1/2013

General Condition:
Tower: Good
Foundation: Good

Observations: None

Finish: Painted
Condition: Intact

Proposed Installation

T-Mobile is proposing to upgrade its existing installation by replacing three (3) of the existing antennas with newer model antennas, as well as removing three (3) existing TMA's. The final configuration upon the upgrade will be as follows:

Antennas:

Height (ft)	Carrier	Qty	Manuf.	Model	Mount	Leg (s)
83	T-Mobile	3	Ericsson	AIR21 B2A/B4P	Pipe-Mounted to Tower Leg	A,B,C
		3	Unknown	TMA's		

Cables:

Height (ft.)	Qty	Nom. Size	Location		Comments
128	12	1-5/8"	Face	BC	Existing to remain
128	1	Fiber Trunk line	Face	BC	To be stacked on existing

Analysis Criteria

Design Standard: ANSI/TIA-222-F-1996

	Capacity (no ice)	Capacity w/ ice	Service
Wind Speed:	85 mph	74 mph	50 mph
Basic Ice Thickness:	0 inch	0.5 inch	0 inch

Assumptions:

1. The tower was designed, manufactured, and constructed in accordance with the approved tower drawings.
2. The tower reinforcement has been verified and completed in accordance with the reinforcement drawings referenced above.
3. The foundation was designed and constructed based on site-specific geotechnical information.
4. Tower appurtenances are solely based on the previous analysis report referenced above.

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STRUCTURAL ANALYSIS REPORT (CONT.)

W.O. Number:	6644.CTFF703A	Report Date:	5/14/2013
Client:	T-Mobile	Revision:	0
Site Name:	CT703/WCSU ET		

Analysis Results

Element	% Usage
Legs	93%
Diagonals	95%
Horizontals	57%
Anchor Bolts	72%

Foundation Reactions:

Tower Base	Current Analysis
Vertical	167 kips
Uplift	140 kips
Shear (total)	17 kips

Conclusions

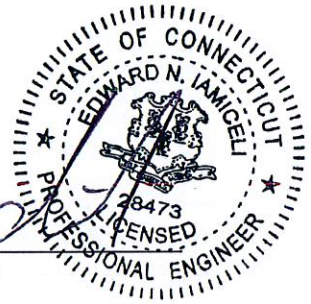
Based on our analysis, The existing tower has adequate capacity to support the proposed T-Mobile upgrade as described herein in accordance with current code requirements.

Based on the review and analysis of the existing foundation provided in the previous analysis report referenced above, the existing foundation is also adequate for the proposed T-Mobile upgrade.

This report and the structural analysis performed are based on the information referenced above. If the existing conditions are not as represented in this report, the design engineer should be immediately notified prior to construction. Any further changes to the antenna configuration or other appurtenances should be reviewed with respect to their effect on structural loads prior to implementation.

Prepared by: Kenneth Widman
Structural Engineer

Reviewed by: Vinod Ramesh
Structural Engineer



Approved by: Edward N. Iamiceli, P.E.
Project Manager

Date: 5/14/13

TECTONIC
Practical Solutions, Exceptional Service

Tectonic Engineering & Surveying Consultants, P.C.
1279 Route 300
Newburgh, NY 12550

Phone: (845) 567-6656
Fax: (845) 567-8703
Web: www.tectonicengineering.com

EXHIBIT C

EBI Consulting
environmental | engineering | due diligence

RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

T-Mobile Existing Facility

Site ID: CTFF703A

WCSU
303 Boxwood Lane
Danbury, CT 06811

May 23, 2013

EBI Project Number: 62136464

21 B Street · Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

EBI Consulting
environmental | engineering | due diligence

May 23, 2013

T-Mobile USA
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, CT 06002

Re: Emissions Values for Site: **CTFF703A - WCSU**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at 303 Boxwood Lane, Danbury, CT, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of μW/cm2 calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter (μW/cm2). The general population exposure limit for the cellular band is 567 μW/cm2, and the general population exposure limit for the PCS band is 1000 μW/cm2. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 303 Boxwood Lane, Danbury, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, the actual antenna pattern gain value in the direction of the sample area was used. For this report the sample point is a 6 foot person standing at the base of the tower

For all calculations, all equipment was calculated using the following assumptions:

1) 2 GSM channels (1940.000 MHz—to 1950.000 MHz) were considered for each sector of the proposed installation.
2) 2 UMTS channels (2110.000 MHz to 2120.000 MHz / 2140.000 MHz to 2145.000 MHz) were considered for each sector of the proposed installation
3) 2 LTE channels (2110.000 MHz to 2120.000 MHz / 2140.000 MHz to 2145.000 MHz) were considered for each sector of the proposed installation
4) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
5) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The actual gain in this direction was used per the manufactures supplied specifications.
6) The antenna used in this modeling is the Ericsson AIR21 for LTE, UMTS and GSM. This is based on feedback from the carrier with regards to anticipated antenna selection. This antenna has a 15.6 dBd gain value at its main lobe. Actual antenna gain values were used for all calculations as per the manufacturers specifications

7) The antenna mounting height centerline of the proposed antennas is **83 feet** above ground level (AGL)
8) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

All calculation were done with respect to uncontrolled / general public threshold limits

Site ID	CTFF703A - WCSU
Site Addresss	303 Boxwood Lane, Danbury, CT 06811
Site Type	Self Support Tower

Sector 1

Antenna Number	Antenna Make	Antenna Model	Status	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	RFS	APX16DWV-16DWVS	Passive	PCS - 1950 MHz	GSM / UMTS	30	4	120	-3.95	83	77	7/8"	1.2	0	36.659053	2.222828	0.22228%
1B	RFS	APX16DWV-16DWVS	Passive	AWS - 2100 MHz	UMTS/LTE	40	4	160	-3.95	83	77	7/8"	1.2	0	48.878738	2.96377	0.29638%
														Sector total Power Density Value:		0.519%	

Sector 2

Antenna Number	Antenna Make	Antenna Model	Status	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	RFS	APX16DWV-16DWVS	Passive	PCS - 1950 MHz	GSM / UMTS	30	4	120	-3.95	83	77	7/8"	1.2	0	36.659053	2.222828	0.22228%
1B	RFS	APX16DWV-16DWVS	Passive	AWS - 2100 MHz	UMTS/LTE	40	4	160	-3.95	83	77	1-5/8"	1.2	0	48.878738	2.96377	0.29638%
														Sector total Power Density Value:		0.519%	

Sector 3

Antenna Number	Antenna Make	Antenna Model	Status	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	RFS	APX16DWV-16DWVS	Passive	PCS - 1950 MHz	GSM / UMTS	30	4	120	-3.95	83	77	7/8"	1.2	0	36.659053	2.222828	0.22228%
1B	RFS	APX16DWV-16DWVS	Passive	AWS - 2100 MHz	UMTS/LTE	40	4	160	-3.95	83	77	1-5/8"	1.2	0	48.878738	2.96377	0.29638%
														Sector total Power Density Value:		0.519%	

Site Composite MPE %

Carrier	MPE %
T-Mobile	1.556%
Nextel iDEN	12.290%
Sprint	21.070%
WCXI (WCSU)	1.280%
Total Site MPE %	**36.196%**

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Summary

All calculations performed for this analysis yielded results that were well within the allowable limits for general public exposure to RF Emissions.

The anticipated Maximum Composite contributions from the T-Mobile facility are **1.556 % (0.519% from each sector)** of the allowable FCC established general public limit considering all three sectors simultaneously.

The anticipated composite MPE value for this site assuming all carriers present is **36.196%** of the allowable FCC established general public limit. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were within the allowable 100% threshold standard per the federal government.

Scott Heffernan
RF Engineering Director

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