



CRAIG CODY

16 Chestnut Street, Suite 420
Foxboro, MA 02035
Tel (781) 831-1281
Fax (774) 215-5423

Melanie Bachman
Executive Director
Connecticut Siting Counsel
10 Franklin Square
New Britain, CT 06051

Re: **Notice of Exempt Modification – 202 R North Wawecus Hill Rd, Norwich, CT**

Dear Ms. Bachman:

Please accept this letter as notification pursuant to R.C.S.A Section 16-50j-73, for construction that constitutes modification pursuant to R.C.S.A Section 16-50j-72(b) and 16-50j-73. In accordance with R.C.S.A Section 16-50j-73, a copy of this submission is being sent to the City of Norwich. A copy of this submission is also being sent to John Polaski Jr., the property owner on which the tower is located.

T-Mobile Northeast LLC's Proposed Wireless Modifications

T-Mobile as successor in interest to Omnipoint Communications achieved an initial approval from the Siting Council to install antennas as well as related ground equipment and currently maintains this equipment. The facility consists of a One Hundred and Forty-One foot (141') high communications tower within a fenced in compound. T-Mobile now intends to modify the facility as shown on the enclosed plans prepared by Infinigy Engineering and annexed hereto in Exhibit 1. The modifications will consist of adding three (3) new antennas at the existing AGL of One Hundred and Thirty-Seven feet (137'). A structural analysis has been completed for the site and attached as Exhibit 3.

T-Mobile's Proposed Wireless Modifications Constitutes An "Exempt Modification"

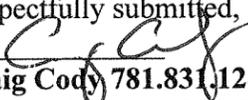
The proposed modification to the above mentioned Facility constitutes an exempt modification of an existing facility provided for in R.C.S.A Section 16-50j-72(b)(2) and Council regulations promulgated pursuant thereto.

- 1) The proposed modification will not result in an increase in the height of the existing tower.
- 2) The modifications will remain entirely within the limits of the leased area. The modifications therefor, will not require the extension of the boundary.

- 3) The proposed modification does not increase the noise levels at the boundary by six(6) decibels or more under normal conditions.
- 4) T-Mobile's proposed facility will not increase the cumulative radio frequency electromagnetic radiation power density at the Tower sites' boundary to or above the standard adopted by the Connecticut Department of Environmental Protection as set forth in Section 22a-162 of the Connecticut General Statutes and MPE limits established by the Federal Communications Commission. A cumulative General Power Density table for T-Mobile's proposed modified facility is included as Exhibit 2.
- 5) The facility has received all municipal zoning approvals and building permits. (Regs., Conn. State Agencies Section 16-50j-72))

For all the foregoing reasons, T-Mobile Northeast LLC respectfully submits that the proposed modifications to the above-referenced telecommunications facility constitutes an exempt modification under R.C.S.A Section 16-50j-72(b)(2)

Respectfully submitted,


Craig Cody 781.831.1281

On behalf of American Tower Corporation
c/o Tower Resource Management, Inc.
16 Chestnut Street, Suite 420
Foxboro, MA 02035

cc: **City of Norwich**
John Polaski Jr.

Exhibit 1

Site Plan



Exhibit 2

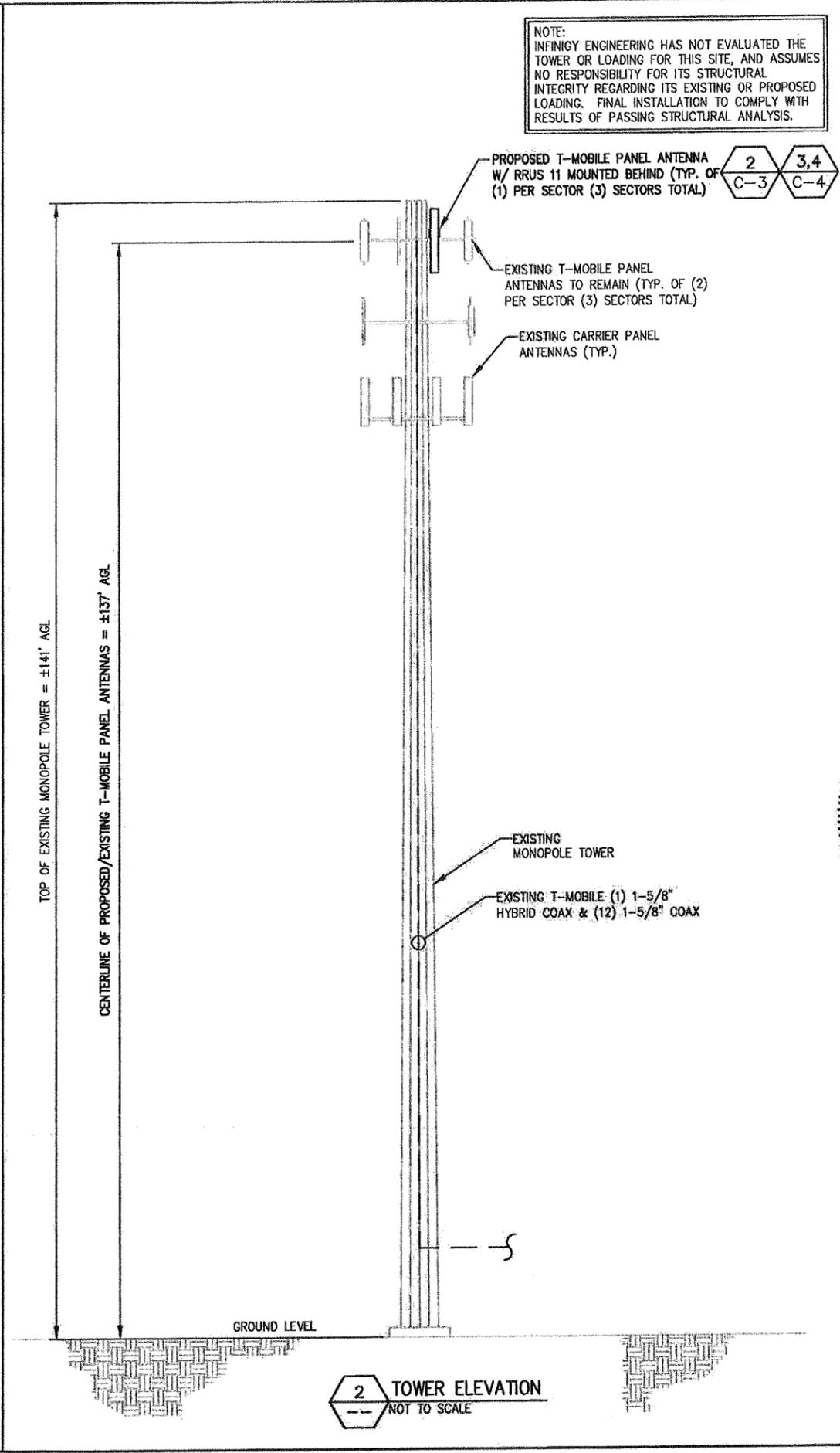
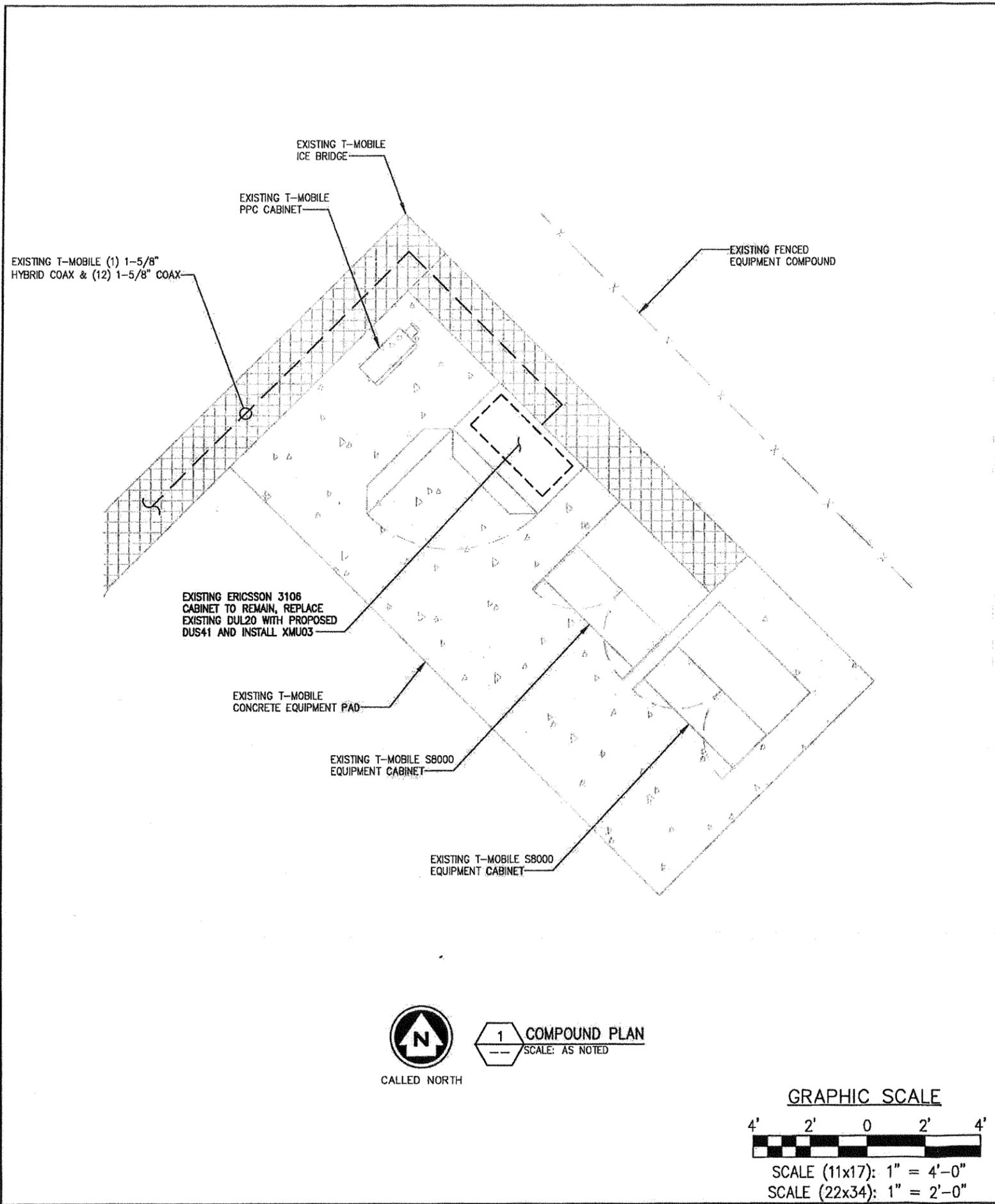
Power Density Report

Frequency (MHz)	Power (dBm)	Power Density (dBm/MHz)
100	-100	-100
101	-100	-100
102	-100	-100
103	-100	-100
104	-100	-100
105	-100	-100
106	-100	-100
107	-100	-100
108	-100	-100
109	-100	-100
110	-100	-100
111	-100	-100
112	-100	-100
113	-100	-100
114	-100	-100
115	-100	-100
116	-100	-100
117	-100	-100
118	-100	-100
119	-100	-100
120	-100	-100
121	-100	-100
122	-100	-100
123	-100	-100
124	-100	-100
125	-100	-100
126	-100	-100
127	-100	-100
128	-100	-100
129	-100	-100
130	-100	-100
131	-100	-100
132	-100	-100
133	-100	-100
134	-100	-100
135	-100	-100
136	-100	-100
137	-100	-100
138	-100	-100
139	-100	-100
140	-100	-100
141	-100	-100
142	-100	-100
143	-100	-100
144	-100	-100
145	-100	-100
146	-100	-100
147	-100	-100
148	-100	-100
149	-100	-100
150	-100	-100
151	-100	-100
152	-100	-100
153	-100	-100
154	-100	-100
155	-100	-100
156	-100	-100
157	-100	-100
158	-100	-100
159	-100	-100
160	-100	-100
161	-100	-100
162	-100	-100
163	-100	-100
164	-100	-100
165	-100	-100
166	-100	-100
167	-100	-100
168	-100	-100
169	-100	-100
170	-100	-100
171	-100	-100
172	-100	-100
173	-100	-100
174	-100	-100
175	-100	-100
176	-100	-100
177	-100	-100
178	-100	-100
179	-100	-100
180	-100	-100
181	-100	-100
182	-100	-100
183	-100	-100
184	-100	-100
185	-100	-100
186	-100	-100
187	-100	-100
188	-100	-100
189	-100	-100
190	-100	-100
191	-100	-100
192	-100	-100
193	-100	-100
194	-100	-100
195	-100	-100
196	-100	-100
197	-100	-100
198	-100	-100
199	-100	-100
200	-100	-100

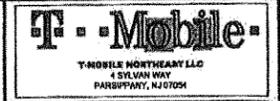
Exhibit 3

Structural Analysis

Item	Value
1	100
2	200
3	300
4	400
5	500
6	600
7	700
8	800
9	900
10	1000
11	1100
12	1200
13	1300
14	1400
15	1500
16	1600
17	1700
18	1800
19	1900
20	2000
21	2100
22	2200
23	2300
24	2400
25	2500
26	2600
27	2700
28	2800
29	2900
30	3000
31	3100
32	3200
33	3300
34	3400
35	3500
36	3600
37	3700
38	3800
39	3900
40	4000
41	4100
42	4200
43	4300
44	4400
45	4500
46	4600
47	4700
48	4800
49	4900
50	5000



NOTE:
 INFINIGY ENGINEERING HAS NOT EVALUATED THE TOWER OR LOADING FOR THIS SITE, AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY REGARDING ITS EXISTING OR PROPOSED LOADING. FINAL INSTALLATION TO COMPLY WITH RESULTS OF PASSING STRUCTURAL ANALYSIS.

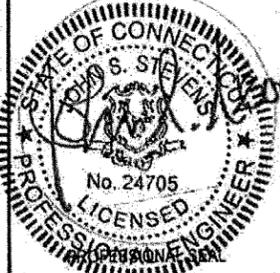


INFINIGY
 1033 Waterlily Shaker Rd
 Albany, NY 12205
 Office # (518) 886-0730
 Fax # (518) 886-0735

SUBMITTALS		
DATE	DESCRIPTION	REVISION
9/22/16	FOR PERMIT	0

DEPT.	DATE	APP'D	REVISIONS
R/E			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO: 317-000
 DRAWN BY: JLM
 CHECKED BY: ASW



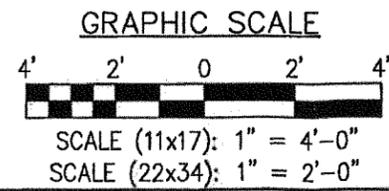
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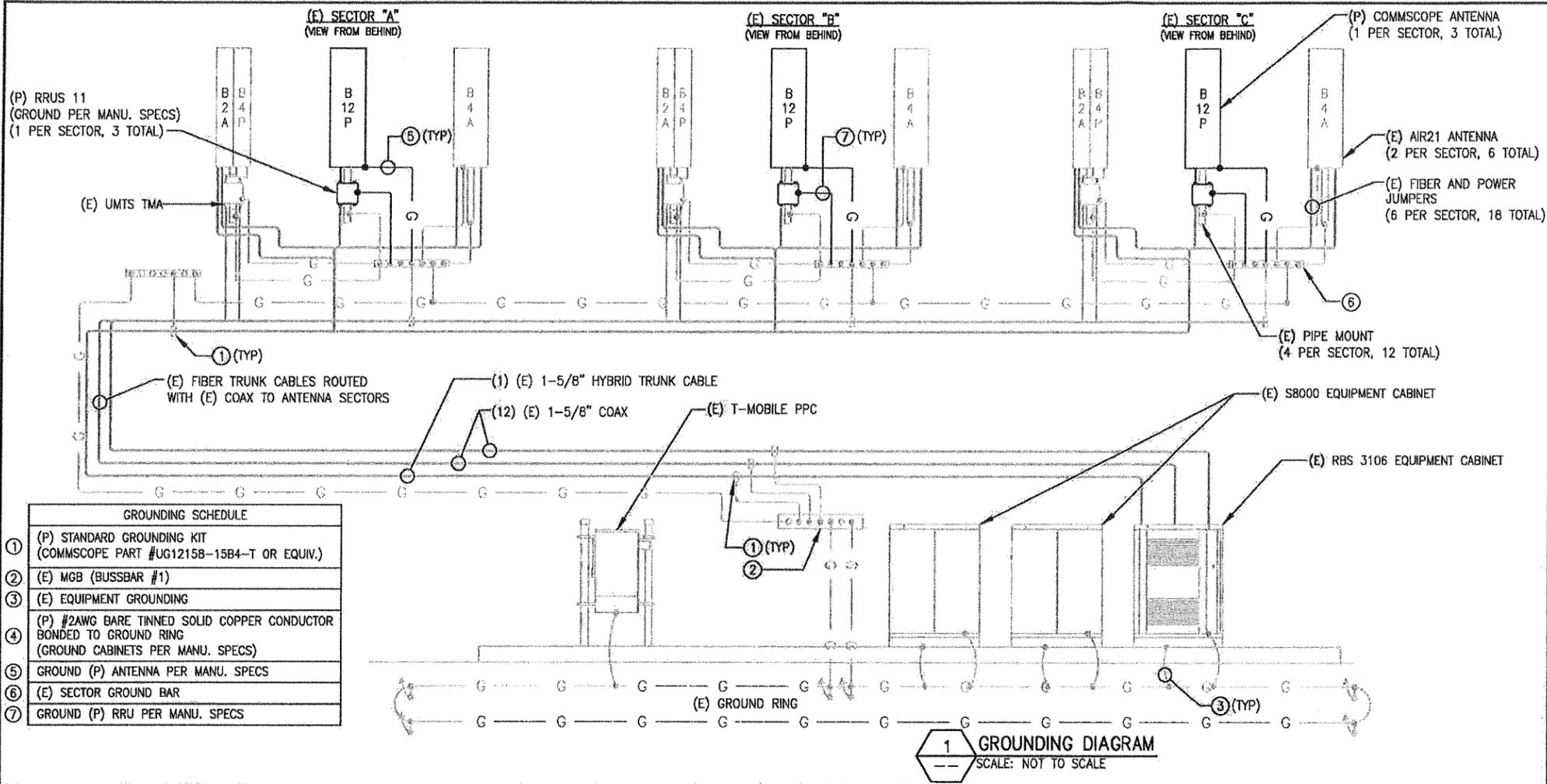
SITE NUMBER:
 CT11463C
 SITE NAME:
 CT463WAWECUS WP#2_FT
 202 NORTH WAWECUS HILL ROAD
 NORWICH, CT 06360

SHEET TITLE
COMPOUND PLAN & ELEVATION

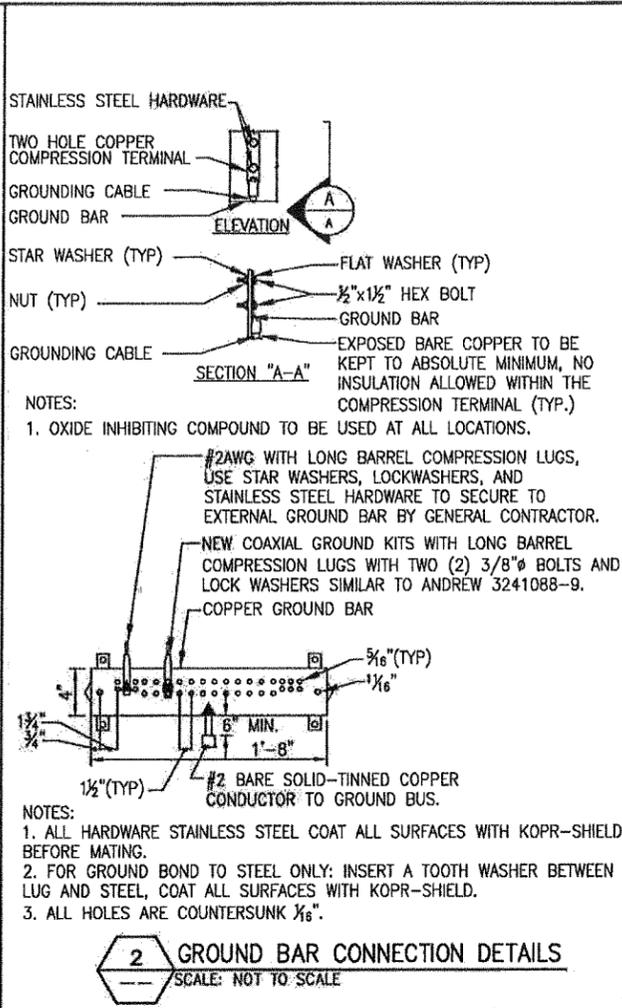
SHEET NUMBER
C-2
 SHEET 3 OF 8 SHEETS



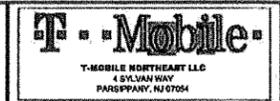
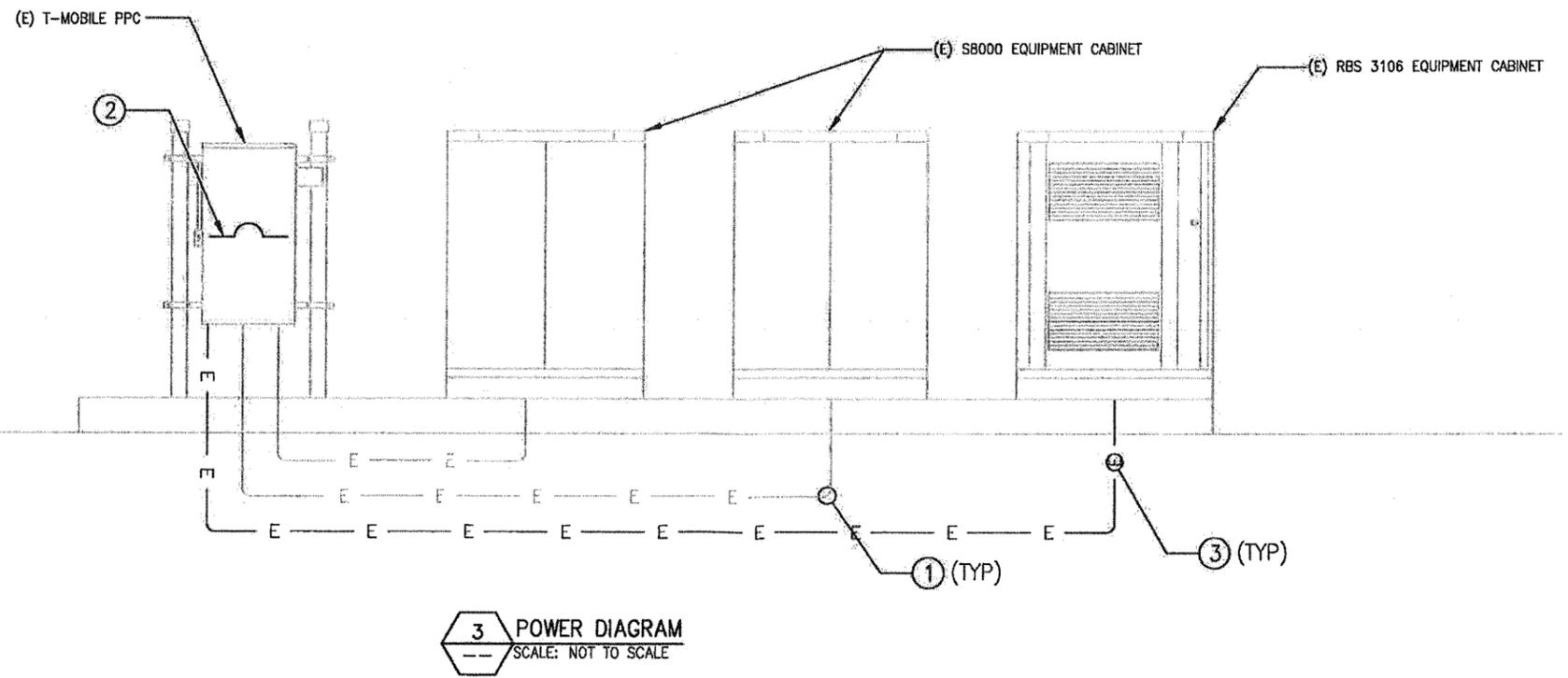
2 TOWER ELEVATION
 NOT TO SCALE



GROUNDING SCHEDULE	
1	(P) STANDARD GROUNDING KIT (COMMSCOPE PART #UG12158-15B4-T OR EQUIV.)
2	(E) MGB (BUSSBAR #1)
3	(E) EQUIPMENT GROUNDING
4	(P) #2AWG BARE TINNED SOLID COPPER CONDUCTOR BONDED TO GROUND RING (GROUND CABINETS PER MANU. SPECS)
5	GROUND (P) ANTENNA PER MANU. SPECS
6	(E) SECTOR GROUND BAR
7	GROUND (P) RRU PER MANU. SPECS



CONDUIT SCHEDULE	
1	(P) WIRE AND CONDUIT UPGRADE FOR POWER
2	(P) 100A BREAKER UPGRADE
3	(P) POWER CONDUIT UPGRADE



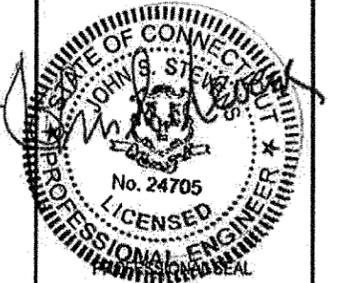
T-MOBILE NORTHEAST LLC
4 SYLVAN WAY
PARISSEPPANY, NJ 07654

INFINIGY
1033 Waterlily Shaker Rd
Albany, NY 12205
Office # (518) 880-0790
Fax # (518) 880-0785

SUBMITTALS		
DATE	DESCRIPTION	REVISION
8/23/15	FOR PERMIT	0

DEPT.	DATE	APP'D	REVISORS
RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO: 317-000
DRAWN BY: JLM
CHECKED BY: ASW



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SITE NUMBER:
CT11463C

SITE NAME:
CT463/WAWECUS WP#2_FT
202 NORTH WAWECUS HILL ROAD
NORWICH, CT 06360

SHEET TITLE
GROUNDING & POWER DIAGRAMS

SHEET NUMBER
E-1

SHEET 6 OF 8 SHEETS

- NOTES:**
1. TAG ALL EXISTING AND PROPOSED CABLES/JUMPERS PER T-MOBILE SPECIFICATIONS (SEE RF SCHEDULE/C-3)
 2. SEE RF SCHEDULE/C-3 FOR CABLE AND JUMPER LENGTHS.
 3. IF NEW GPS ADDED TO SITE, CAP AND WEATHERPROOF ANY UNUSED COAX FOR FUTURE USE.
 4. TRIM POWER JUMPERS PER MANU. SPECS TO CORRECT LENGTH FOR CONNECTION.
 5. COIL EXCESS FIBER IN CABINET BASE.

SUBMITTALS		
DATE	DESCRIPTION	REVISION
8/22/15	FOR PERMIT	0

DEPT.	DATE	APP'D	REVISIONS
RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

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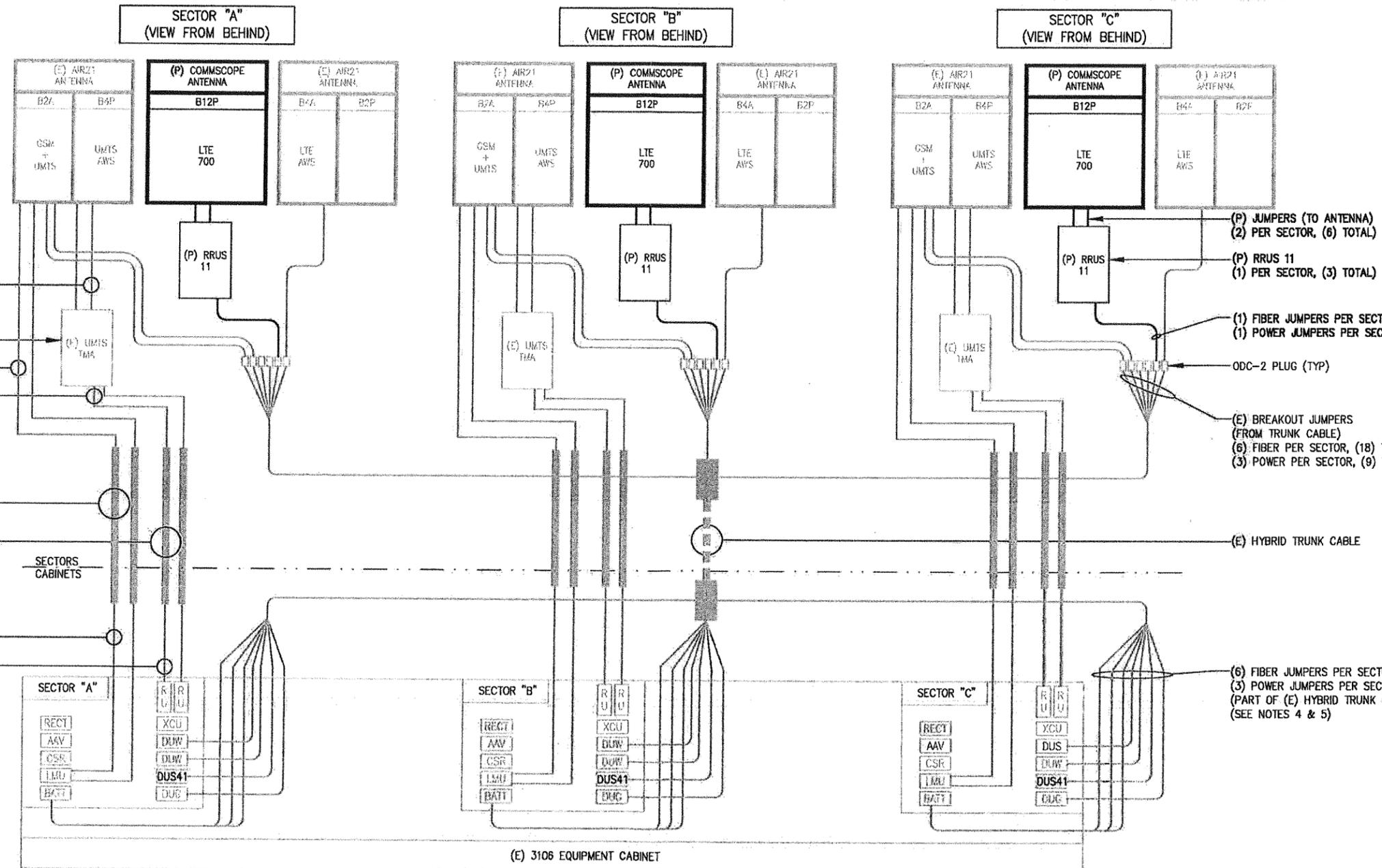
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NOTE: IF DRAWINGS ARE 22"x34", USE GRAPHICAL SCALE AND/OR 1/2 TIMES OF THE NOTED SCALE.

SITE NUMBER:
CT11463C
 SITE NAME:
 CT463/WAVECUS WP#2_FT
 202 NORTH WAVECUS HILL ROAD
 NORWICH, CT 06360

SHEET TITLE
COAX/FIBER PLUMBING DIAGRAM

SHEET NUMBER
E-2
 SHEET 7 OF 8 SHEETS



1 702Cu CONFIGURATION COAX/FIBER PLUMBING DIAGRAM
 NOT TO SCALE

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

T-Mobile Existing Facility

Site ID: CT11463C

CT463/ Wawecus WP#2_FT
202 North Wawecus Hill Road
Norwich, CT 06360

November 2, 2015

EBI Project Number: 6215005511

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	6.74 %

November 2, 2015

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

Emissions Analysis for Site: **CT11463C – CT463/ Wawecus WP#2_FT**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **202 North Wawecus Hill Road, Norwich, 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ 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 ($\mu\text{W}/\text{cm}^2$). The general population exposure limit for the 700 MHz Band is approximately 467 $\mu\text{W}/\text{cm}^2$, and the general population exposure limit for the PCS and AWS bands is 1000 $\mu\text{W}/\text{cm}^2$. 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 **202 North Wawecus Hill Road, Norwich, 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, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of 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 / UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel
- 2) 2 UMTS channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 3) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 4) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.
- 5) 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.

- 6) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 7) The antennas used in this modeling are the **Ericsson AIR21 (B4A/B2P & B2A/B4P)** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Commscope LNX-6515DS-VTM** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Ericsson AIR21 (B4A/B2P & B2A/B4P)** have a maximum gain of **15.9 dBd** at their main lobe. The **Commscope LNX-6515DS-VTM** has a maximum gain of **14.6 dBd** at its main lobe. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 8) The antenna mounting height centerline of the proposed antennas is **136 feet** above ground level (AGL).
- 9) 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 calculations were done with respect to uncontrolled / general public threshold limits.



EBI Consulting

environmental | engineering | due diligence

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	136	Height (AGL):	136	Height (AGL):	136
Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)
Channel Count	2	Channel Count	2	# PCS Channels:	2
Total TX Power:	120	Total TX Power:	120	# AWS Channels:	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A1 MPE%	0.99	Antenna B1 MPE%	0.99	Antenna C1 MPE%	0.99
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	136	Height (AGL):	136	Height (AGL):	136
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power:	120	Total TX Power:	120	Total TX Power:	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A2 MPE%	0.99	Antenna B2 MPE%	0.99	Antenna C2 MPE%	0.99
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	136	Height (AGL):	136	Height (AGL):	136
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power:	30	Total TX Power:	30	Total TX Power:	30
ERP (W):	865.21	ERP (W):	865.21	ERP (W):	865.21
Antenna A3 MPE%	0.39	Antenna B3 MPE%	0.39	Antenna C3 MPE%	0.39

Site Composite MPE%	
Carrier	MPE%
T-Mobile (Per Sector Max)	2.38 %
MetroPCS	0.30 %
Verizon Wireless	4.06 %
Site Total MPE %:	6.74 %

T-Mobile Sector 1 Total:	2.38 %
T-Mobile Sector 2 Total:	2.38 %
T-Mobile Sector 3 Total:	2.38 %
Site Total:	6.74 %

T-Mobile_per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile 2100 MHz (AWS) LTE	2	2334.27	136	9.93	2100	1000	0.99 %
T-Mobile 1900 MHz (PCS) GSM/UMTS	2	1167.14	136	4.97	1900	1000	0.50 %
T-Mobile 2100 MHz (AWS) UMTS	2	1167.14	136	4.97	2100	1000	0.50 %
T-Mobile 700 MHz LTE	1	865.21	136	1.84	700	467	0.39 %
						Total:	2.38%

Summary

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

The anticipated maximum composite contributions from the T-Mobile facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general public exposure to RF Emissions are shown here:

T-Mobile Sector	Power Density Value (%)
Sector 1:	2.38 %
Sector 2:	2.38 %
Sector 3 :	2.38 %
T-Mobile Per Sector Maximum:	2.38 %
Site Total:	6.74 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **6.74%** of the allowable FCC established general public limit sampled at the ground level. 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 well within the allowable 100% threshold standard per the federal government.



Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803



AMERICAN TOWER®
CORPORATION

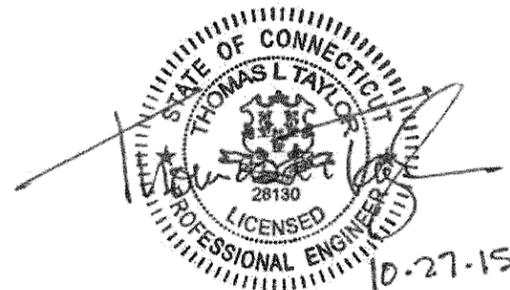
This report was prepared for American Tower Corporation by



Structural Analysis Report

Structure : 140 ft Monopole
ATC Site Name : Norwich CT, CT
ATC Site Number : 311014
Engineering Number : 63922921
Proposed Carrier : T-Mobile
Carrier Site Name : N/A
Carrier Site Number : CT11463C
Site Location : 202 N Wawecus Hill Rd
Norwich, CT 06360-4071
41.52707, -72.12259
County : New London
Date : October 27, 2015
Max Usage : 38%
Result : Pass

Courtney Fuhrer
SES Structural Engineer I





AMERICAN TOWER®
CORPORATION

This report was prepared for American Tower Corporation by



Structural Analysis Report

Structure : 140 ft Monopole
ATC Site Name : Norwich CT, CT
ATC Site Number : 311014
Engineering Number : 63922921
Proposed Carrier : T-Mobile
Carrier Site Name : N/A
Carrier Site Number : CT11463C
Site Location : 202 N Wawecus Hill Rd
Norwich, CT 06360-4071
41.52707, -72.12259
County : New London
Date : October 27, 2015
Max Usage : 38%
Result : Pass

Courtney Fuhrer
SES Structural Engineer I



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Calculations	Attached



Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 140 ft monopole to reflect the change in loading by T-Mobile.

Supporting Documents

Tower Drawings	PennSummit, PJF Job #29205-0119, dated June 1, 2005
Foundation Drawing	PennSummit, PJF Job #29205-0119, dated June 1, 2005
Geotechnical Report	Clarence Welti Assoc. Geotechnical Study Report for Cell Tower 202 North Wawecus Hill Rd., dated October 3, 2005

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	110 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2003 IBC w/ 2005 CT Supplement & 2009 CT Amendment
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
137.0	136.0	3	Ericsson KRY 112 144/1	Low Profile Platform	(12) 1 5/8" Coax (1) 1 5/8" Hybriflex	T-Mobile
		3	Ericsson AIR 21, 1.3 M, B2A B4P			
		3	Ericsson AIR 21, 1.3M, B4A B2P			
127.0	126.0	6	Kathrein Scala 800 10504	Low Profile Platform	(6) 1 5/8" Coax (1) 3/8" Coax	Metro PCS, Inc.
126.0		3	RCU			
116.0	116.0	3	Alcatel-Lucent RRH2x60 - AWS Band 4 (20" Height)	Low Profile Platform	(12) 1 5/8" Coax (2) 1 5/8" Hybriflex	Verizon Wireless
		3	Alcatel-Lucent RRH2X60-1900A-4R			
		3	Alcatel-Lucent RRH2x60 700			
		2	RFS DB-T1-6Z-8AB-0Z			
		3	Amphenol Antel BXA-70063-6CF-EDIN-X			
		3	Commscope LNX-6514DS-A1M			
6	Commscope HBXX-6517DS-A2M					

Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
No loading considered as to be removed						

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
137.0	137.0	3	Ericsson RRUS 11 B12	Existing Low Profile Platform	-	T-Mobile
	136.0	3	Andrew LNX-6515DS-VTM			

¹Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	31%	Pass
Shaft	38%	Pass
Base Plate	20%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	5,050.0	6,817.5	2,568.4	38%
Shear (Kips)	43.0	58.1	26.7	46%

* The design reactions are factored by 1.35 per ANSI/TIA-222-G, Sec. 15.5.1

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
137.0	Ericsson RRUS 11 B12	T-Mobile	0.563	0.407
	Andrew LNX-6515DS-VTM			

*Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-G



Standard Conditions

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

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

It is the responsibility of the client to ensure that the information provided to Semaan Engineering Solutions Holdings and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and Semaan Engineering Solutions, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Semaan Engineering Solutions Holdings is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.