

March 20, 2015

Members of the Siting Council  
Connecticut Siting Council  
Ten Franklin Square  
New Britain, CT 06051

RE: Notice of Exempt Modification  
31 Chestnut Hill Road, Colchester, CT 06415  
N 41° 34' 16.78"  
W 72° 18' 08.35"  
T-Mobile Site #: CT11255E\_L700

Members of the Siting Council:

On behalf of T-Mobile, SBA Communications is submitting an exempt modification application to the Connecticut Siting council for modification of existing equipment at a tower facility located at 31 Chestnut Hill Road, Colchester, CT 06415.

The 31 Chestnut Hill Road, Colchester, CT facility consists of a 180' Monopole Tower owned and operated by SBA Towers, LLC. In order to accommodate technological changes and enhance system performance in the State of Connecticut, T-Mobile plans to modify the equipment configurations at many of its existing cell sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the chief elected official of the municipality in which the affected cell site is located.

As part of T-Mobile's L700 project, T-Mobile desires to upgrade their equipment to meet the new standards of 4G technology. The new equipment will allow customers to download files and browse the internet at a high rate of speed while also allowing their phones to be compatible with the latest 4G technology.

Attached is a summary of the planned modifications, including power density calculations reflecting the change in T-Mobile's operations at the site along with the required fee of \$625.

The changes to the facility do not constitute modifications as defined in Connecticut General Statutes (“C.G.S.”) Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed or altered. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. The overall height of the structure will be unaffected.
2. The proposed changes will not extend the site boundaries. There will be no effect on the site compound other than the new equipment cabinets.
3. The proposed changes will not increase the noise level at the existing facility by six decibels or more.
4. The changes in radio frequency power density will not increase the calculated “worst case” power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site.

For the foregoing reasons, SBA Communications on behalf of T-Mobile, respectfully submits that he proposed changes at the referenced site constitute exempt modifications under R.C.S.A. Section 16-50j-72(b)(2).

Please feel free to call me at 508.251.0720 x 3804 with any questions you may have concerning this matter.

Thank you,



Kri Pelletier  
SBA Communications Corporation  
33 Boston Post Road West Suite 320  
Marlborough, MA 01752  
508-251-0720 x 3804 + T  
508-251-1755 + F  
203-446-7700 + C  
[kpelletier@sbsite.com](mailto:kpelletier@sbsite.com)



## T-Mobile Equipment Modification

31 Chestnut Hill Road, Colchester, CT 06415

Site number CT11255E\_L700

**Tower Owner:** SBA Towers, LLC

**Equipment Configuration:** Monopole

### Current and/or approved:

- (1) EMS RR901782DP
- (2) EMS RR651802DP
- (6) Allen Telecom FE15501P77/75
- (6) 1-5/8" feed lines

### Planned Modifications:

- (3) Commscope LNX-6515DS
- (3) EMS RR901782DP
- (6) Allen Telecom FE15501P77/75
- (3) Kathrein 782 11056 Bias T
- (12) 1-5/8" feed lines

### Structural Information:

The attached structural analysis demonstrates that the tower and foundation will have adequate structural capacity to accommodate the proposed modifications.

### Power Density:

The anticipated Maximum Composite contributions from the T-Mobile facility are 3.63% of the allowable FCC established general public limit. The anticipated composite MPE value for this site assuming all carriers present is 5.06% of the allowable FCC established general public limit sampled at the ground level.

Site Composite MPE%	
Carrier	MPE%
T-Mobile	3.63
Sprint	1.43 %
<b>Site Total MPE %:</b>	<b>5.06 %</b>





March 20, 2015

Mr. Stan Soby  
First Selectman  
Town of Colchester  
127 Norwich Avenue  
Colchester, CT 06415

RE: Telecommunications Facility @ 31 Chestnut Hill Road, Colchester, CT 06415

Dear Mr. Soby,

In order to accommodate technological changes and enhance system performance in the State of Connecticut, T-Mobile will be changing its equipment configuration at certain cell sites.

As required by Regulations of Connecticut State Agencies (R.C.S.A.) Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review T-Mobile's proposal. Please accept this letter as notification under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

The accompanying letter to the Siting Council fully describes T-Mobile's proposal for the referenced cell site. However, if you have any questions or require any further information on our plans or the Siting Council's procedures, please call me at 508.251.0720 x 3804.

Thank you,

A handwritten signature in black ink, appearing to read "Kri Pelletier", is written over the typed name.

Kri Pelletier  
SBA Communications Company  
33 Boston Post Road West Suite 320  
Marlborough, MA 01752  
508-251-0720 x 3804 + T  
508-251-1755 + F  
203-446-7700 + C  
[kpelletier@sbsite.com](mailto:kpelletier@sbsite.com)



March 20, 2015

John Jr & Mary Przyborowski  
P.O. Box C  
Fishers Island NY 06390

RE: Telecommunications Facility @ 31 Chestnut Hill Road, Colchester, CT 06415

Dear Mr. and Mrs. Przyborowski:

In order to accommodate technological changes and enhance system performance in the State of Connecticut, T-Mobile will be changing its equipment configuration at certain cell sites.

As required by Regulations of Connecticut State Agencies (R.C.S.A.) Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review T-Mobile's proposal. Please accept this letter as notification under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

The accompanying letter to the Siting Council fully describes T-Mobile's proposal for the referenced cell site. However, if you have any questions or require any further information on our plans or the Siting Council's procedures, please call me at 508.251.0720 x 3804.

Thank you,

Kri Pelletier  
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[kpelletier@sbsite.com](mailto:kpelletier@sbsite.com)



FDH Engineering, Inc., 6521 Meriden Drive Raleigh, NC 27616, Ph. 919.755.1012

**Structural Analysis for  
SBA Network Services, Inc.**

**180' Monopole Tower**

**SBA Site Name: Colchester 2 CT  
SBA Site ID: CT02220-S-02  
T-Mobile Site ID: CT11255E  
Site Address: 31 Chestnut Hill Road, Colchester, CT 06415**

FDH Project Number 15BFFW1400 (R1)

**Analysis Results**

Tower Components	90.0%	Sufficient
Foundation	93.1%	Sufficient

Prepared By:

Christopher Lee, EIT  
Project Engineer

Reviewed By:

Dennis D. Abel, PE  
Director of Structural Engineering  
CT PE License No. 23247

**FDH Engineering, Inc.**  
6521 Meriden Drive  
Raleigh, NC 27616  
(919) 755-1012  
info@fdh-inc.com



March 11, 2015

*Prepared pursuant to TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures and 2005 Connecticut State Building Code*

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## EXECUTIVE SUMMARY

At the request of SBA Network Services, Inc., FDH Engineering, Inc. performed a structural analysis of the monopole located in Colchester, CT to determine whether the tower is structurally adequate to support both the existing and proposed loads pursuant to the *Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, TIA/EIA-222-F* and *2005 Connecticut State Building Code (2005 CSBC)*. Information pertaining to the existing/proposed antenna loading, current tower geometry, foundation dimensions, geotechnical data, and member sizes was obtained from:

- Valmont (Order No.19487-99) Communication Pole Record Drawings November 3, 1999
- Valmont (Order No.19539-99) foundation design drawings dated November 29, 1999
- FDH Engineering, Inc. (Project No. 1207126EG1) Geotechnical Evaluation of Subsurface Conditions dated August 10, 2012
- ETS (Project No. 13023) TIA Inspection Report dated December 8, 2014
- SBA Network Services, Inc.

The basic design wind speed per the *TIA/EIA-222-F* standards and *2005 CSBC* is 100 mph without ice and 38 mph with 3/4" radial ice. Ice is considered to increase in thickness with height.

## Conclusions

With the existing and proposed antennas from T-Mobile in place at 164.5 ft, the tower meets the requirements of the *TIA/EIA-222-F* standards and *2005 CSBC* provided the **Recommendation** listed below is satisfied. Furthermore, provided the foundation was designed and constructed to support the original design reactions (see Valmont Order No. 19539-99), the foundation should have the necessary capacity to support the existing and proposed loading. For a more detailed description of the analysis of the tower, see the **Results** section of this report.

Our structural analysis has been performed assuming all information provided to FDH Engineering, Inc. is accurate (i.e., the steel data, tower layout, existing antenna loading, and proposed antenna loading) and that the tower has been properly erected and maintained per the original design drawings.

## Recommendation

To ensure the requirements of the *TIA/EIA-222-F* standards and *2005 CSBC* are met with the existing and proposed loading in place, we have the following recommendation:

1. The proposed feed lines should be installed inside the pole's shaft.



## APPURTENANCE LISTING

The proposed and existing antennas with their corresponding cables/coax lines are shown in **Table 1**. *If the actual layout determined in the field deviates from the layout, FDH Engineering, Inc. should be contacted to perform a revised analysis.*

**Table 1 - Appurtenance Loading**

### Existing Loading:

Antenna Elevation (ft)	Description	Feed Lines <sup>1</sup>	Carrier	Mount Elevation (ft)	Mount Type
177.7	(6) Decibel DB908H90E-M	(6) 1-5/8"	Sprint	177.7	(1) 14' Low Profile Platform
164.5	(1) EMS RR901782DP (2) EMS RR651802DP (6) Allen Telecom FE15501P77/75	(6) 1-5/8"	T-Mobile	164.5	(1) 10' Low Profile Platform
76.5	(1) GPS	(1) 1/2"	Sprint	76.5	(1) 3.5' Stand Off Arm
60	(2) Commscope HBX-6513DS-A1M (2) Alcatel Lucent RRH 2x60 AWS	(1) 1-5/8"	Verizon	60	(2) Stand Off Arms (Commscope P/N: MC-SA40-B)

<sup>1</sup>Feed lines installed inside the pole's shaft unless otherwise noted.

### Proposed Carrier Final Loading:

Antenna Elevation (ft)	Description	Feed Lines	Carrier	Mount Elevation (ft)	Mount Type
164.5	(3) Commscope LNX-6515DS (3) EMS RR901782DP (6) Allen Telecom FE15501P77/75 (3) Kathrein 782 11056 Bias T	(12) 1-5/8"	T-Mobile	164.5	(1) 10' Low Profile Platform

## RESULTS

The following yield strength of steel for individual members was used for analysis:

**Table 2 - Material Strength**

Member Type	Yield Strength
Tower Shaft Sections	65 ksi
Base Plate	60 ksi
Anchor Bolts	75 ksi

**Table 3** displays the summary of the ratio (as a percentage) of force in the member to their capacities. Values greater than 100% indicate locations where the maximum force in the member exceeds its capacity. **Table 4** displays the maximum foundation reactions.

If the assumptions outlined in this report differ from actual field conditions, FDH Engineering, Inc. should be contacted to perform a revised analysis. Furthermore, as no information pertaining to the allowable twist and sway requirements for the existing or proposed appurtenances was provided, deflection and rotation were not taken into consideration when performing this analysis.

See the **Appendix** for detailed modeling information

**Table 3 - Summary of Working Percentage of Structural Components**

Section No.	Elevation ft	Component Type	Size	% Capacity*	Pass Fail
L1	180 - 127	Pole	TP35.77x24.91x0.25	54.8	Pass
L2	127 - 92.8333	Pole	TP42.34x34.1942x0.3125	71.5	Pass
L3	92.8333-45.8333	Pole	TP51.35x40.4751x0.375	84.0	Pass
L4	45.8333-0	Pole	TP60x49.1466x0.4375	90.0	Pass
		Anchor Bolts	(20) 2.25"Ø w/ BC=68.62"	83.3	Pass
		Base Plate	PL 74.62"Ø x 2.75" Thick	61.5	Pass

\*Capacities include a 1/3 allowable stress increase for wind per TIA/EIA-222-F standards.

**Table 4 - Maximum Base Reactions**

Base Reactions	Current Analysis (TIA/EIA-222-F)*	Original Design (TIA/EIA-222-F)
Axial	39 k	56 k
Shear	45 k	40 k
Moment	4,698 k-ft	5,045 k-ft

\*Per our experience with foundations of similar type, the shear loading should not control the foundation analysis.

## **GENERAL COMMENTS**

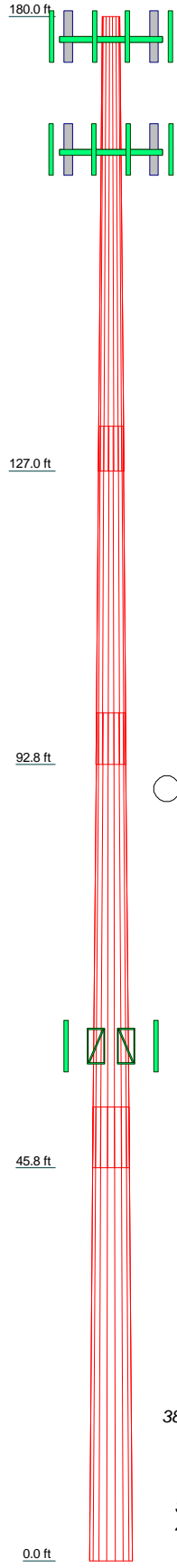
This engineering analysis is based upon the theoretical capacity of the structure. It is not a condition assessment of the tower and its foundation. It is the responsibility of SBA Network Services, Inc. to verify that the tower modeled and analyzed is the correct structure (with accurate antenna loading information) modeled. If there are substantial modifications to be made or the assumptions made in this analysis are not accurate, FDH Engineering, Inc. should be notified immediately to perform a revised analysis.

## **LIMITATIONS**

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of this report. All opinions and conclusions are subject to revision based upon receipt of new or additional/updated information. All services are provided exercising a level of care and diligence equivalent to the standard and care of our profession. No other warranty or guarantee, expressed or implied, is offered. Our services are confidential in nature and we will not release this report to any other party without the client's consent. The use of this engineering work is limited to the express purpose for which it was commissioned and it may not be reused, copied, or distributed for any other purpose without the written consent of FDH Engineering, Inc.

## **APPENDIX**

Section	1	2	3	4
Length (ft)	53.00	39.42	53.00	52.92
Number of Sides	16	16	16	16
Thickness (in)	0.2500	0.3125	0.3750	0.4375
Socket Length (ft)	5.25	6.00	7.08	49.1466
Top Dia (in)	24.9100	34.1942	40.4751	60.0000
Bot Dia (in)	35.7700	42.3400	51.3500	60.0000
Grade	4.3	5.1	9.8	13.6
Weight (K)				32.8



**DESIGNED APPURTENANCE LOADING**

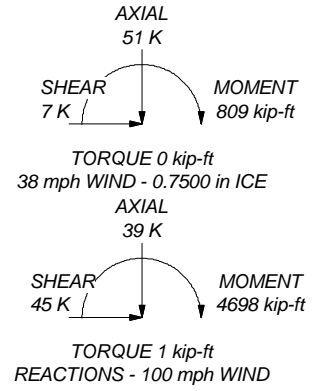
TYPE	ELEVATION	TYPE	ELEVATION
Low Profile Platform	177.67	LNX-6515DS w/ Mount Pipe	164.5
Empty Mount Pipe	177.67	RR901782DP w/ Mount Pipe	164.5
Empty Mount Pipe	177.67	RR901782DP w/ Mount Pipe	164.5
Empty Mount Pipe	177.67	782 11056	164.5
(2) DB908H90E-M w/Mount Pipe	177.67	782 11056	164.5
(2) DB908H90E-M w/Mount Pipe	177.67	782 11056	164.5
(2) DB908H90E-M w/Mount Pipe	177.67	RR901782DP w/ Mount Pipe	164.5
(2) FE15501P77/75	164.5	GPS	76.5
(2) FE15501P77/75	164.5	(1) Stand Off Arm	76.5
(2) FE15501P77/75	164.5	RRH2x60-AWS	60
Low Profile Platform	164.5	(1) Stand Off Arm	60
(2) Empty Mount Pipe	164.5	(1) Stand Off Arm	60
(2) Empty Mount Pipe	164.5	HBX-6513DS-A1M w/ Mount Pipe	60
(2) Empty Mount Pipe	164.5	HBX-6513DS-A1M w/ Mount Pipe	60
LNX-6515DS w/ Mount Pipe	164.5	RRH2x60-AWS	60
LNX-6515DS w/ Mount Pipe	164.5		

**MATERIAL STRENGTH**

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

**TOWER DESIGN NOTES**

1. Tower is located in New London County, Connecticut.
2. Tower designed for a 100 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 90%



<p>Tower Analysis</p>	<p><b>FDH Engineering, Inc.</b>          6521 Meridian Drive, Suite 107          Raleigh, North Carolina 27616          Phone: 9197551012          FAX: 9197551031</p>		<p>Job: <b>Colchester 2, CT02220-S-02</b></p>	
	<p>Project: <b>15BFFW1400 (R1)</b></p>			
	<p>Client: SBA</p>	<p>Drawn by: CLee</p>	<p>App'd:</p>	<p>Scale: NTS</p>
	<p>Code: TIA/EIA-222-F</p>	<p>Date: 03/11/15</p>	<p>Path:</p>	<p>Dwg No. E-1</p>



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

T-Mobile Existing Facility

Site ID: CT11255E

Colchester/ Rt2  
31 Chestnut Hill Road  
Colchester, CT 06415

**March 19, 2015**

**EBI Project Number: 6215001666**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general public allowable limit:	<b>5.06 %</b>

March 19, 2015

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

Emissions Analysis for Site: **CT11255E – Colchester/ Rt2**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **31 Chestnut Hill Road, Colchester, 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  $467 \mu\text{W}/\text{cm}^2$ , and the general population exposure limit for the PCS band 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 **31 Chestnut Hill Road, Colchester, 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 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 (PCS Band - 1900 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 (PCS Band - 1900 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 **EMS RR90\_17\_02DP** for 1900 MHz (PCS) 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 **EMS RR90\_17\_02DP** has a maximum gain of **14.4 dBd** at its 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 **164.5 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.

**T-Mobile Site Inventory and Power Data**

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	EMS RR90_17_02DP	Make / Model:	EMS RR90_17_02DP	Make / Model:	EMS RR90_17_02DP
Gain:	14.4 dBd	Gain:	14.4 dBd	Gain:	14.4 dBd
Height (AGL):	164.5	Height (AGL):	164.5	Height (AGL):	164.5
Frequency Bands	1900 MHz(PCS)	Frequency Bands	1900 MHz(PCS)	Frequency Bands	1900 MHz(PCS)
Channel Count	6	Channel Count	6	# PCS Channels:	6
Total TX Power:	240	Total TX Power:	240	# AWS Channels:	240
ERP (W):	6,610.15	ERP (W):	6,610.15	ERP (W):	6,610.15
Antenna A1 MPE%	0.95	Antenna B1 MPE%	0.95	Antenna C1 MPE%	0.95
Antenna #:	2	Antenna #:	2	Antenna #:	2
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):	164.5	Height (AGL):	164.5	Height (AGL):	164.5
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 A2 MPE%	0.27	Antenna B2 MPE%	0.27	Antenna C2 MPE%	0.27

Site Composite MPE%	
Carrier	MPE%
T-Mobile	3.63
Sprint	1.43 %
<b>Site Total MPE %:</b>	<b>5.06 %</b>

T-Mobile Sector 1 Total:	1.21 %
T-Mobile Sector 2 Total:	1.21 %
T-Mobile Sector 3 Total:	1.21 %
<b>Site Total:</b>	<b>5.06 %</b>



## 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:	1.21 %
Sector 2:	1.21 %
Sector 3 :	1.21 %
T-Mobile Total:	3.63 %
Site Total:	5.06 %
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **5.06%** 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

**T-MOBILE  
NORTHEAST LLC**

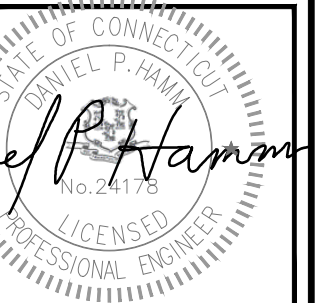
35 GRIFFIN ROAD SOUTH  
BLOOMFIELD, CT 06002  
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1600 OSGOOD STREET  
BUILDING 20 NORTH, SUITE 3090 TEL: (978) 557-5553  
N. ANDOVER, MA 01845 FAX: (978) 336-5586



*Daniel P. Hamm*

CHECKED BY: KB

APPROVED BY: DPH

**SUBMITTALS**

REV.	DATE	DESCRIPTION	BY
0	03/10/15	ISSUED FOR CONSTRUCTION	SF

SITE NUMBER:

CT11255E

SITE NAME:

COLCHESTER/ RT 2

SITE ADDRESS:

31 CHESTNUT HILL ROAD  
COLCHESTER, CT 06415  
NEW LONDON COUNTY

SHEET TITLE

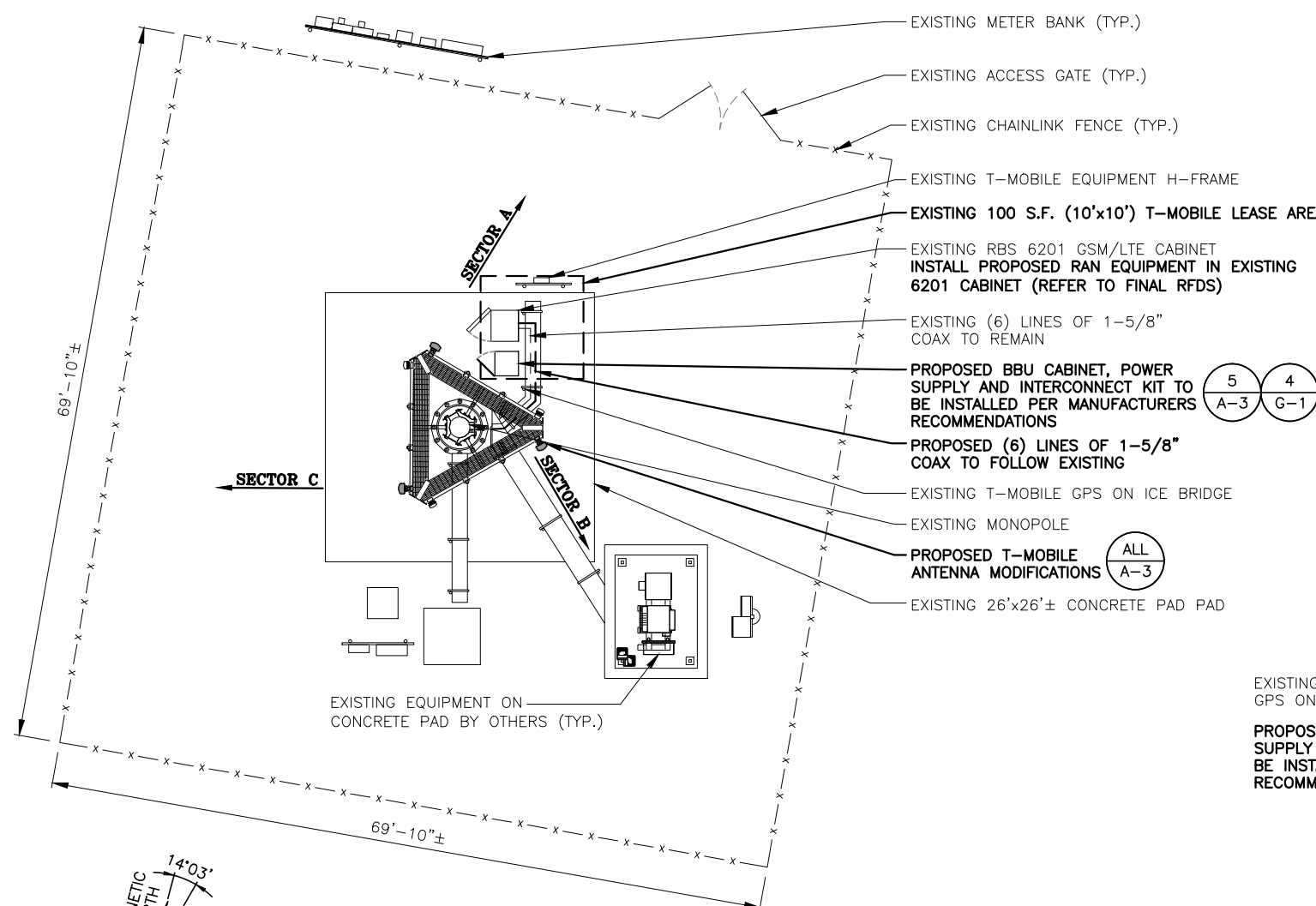
COMPOUND &  
ELEVATION PLAN

SHEET NUMBER

**A-1**

**STRUCTURAL NOTES:**  
1. ADDITIONAL TOWER MAPPING AND STRUCTURAL ANALYSIS ARE REQUIRED PRIOR TO CONSTRUCTION. DRAWINGS ARE SUBJECT TO CHANGE PENDING OUTCOME OF STRUCTURAL ANALYSIS.  
2. MOUNT ALL ANTENNAS, COAX, ETC. IN ACCORDANCE WITH STRUCTURAL ANALYSIS.

**ANTENNA MOUNT STRUCTURAL ASSESSMENT REQUIREMENT:**  
ENGINEER OF RECORD HAS MADE A VISUAL ASSESSMENT ONLY AND DETERMINED THAT THE EXISTING ANTENNA MOUNT IS ADEQUATE TO ACCOMMODATE ADDITIONAL EQUIPMENT LOADS. STRUCTURAL DESIGNS AND DETAILS AS SHOWN HEREIN FOR STRUCTURAL MODIFICATIONS OF THE EXISTING ANTENNA MOUNT ARE PRELIMINARY ONLY AND FINAL CONSTRUCTION DETAILS ARE SUBJECT TO CHANGE PENDING THE COMPLETION OF AN ANTENNA MOUNT STRUCTURAL ASSESSMENT.



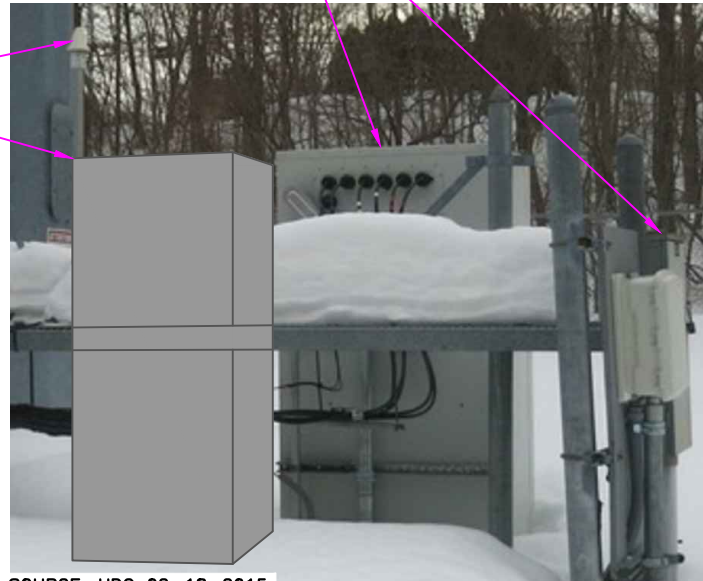
**COMPOUND PLAN**  
22x34 SCALE: 1/8"=1'-0"  
11x17 SCALE: 1/16"=1'-0"



SOURCE: HDG 02-18-2015

**PARTIAL ELEVATION PHOTO DETAIL**  
SCALE: N.T.S.

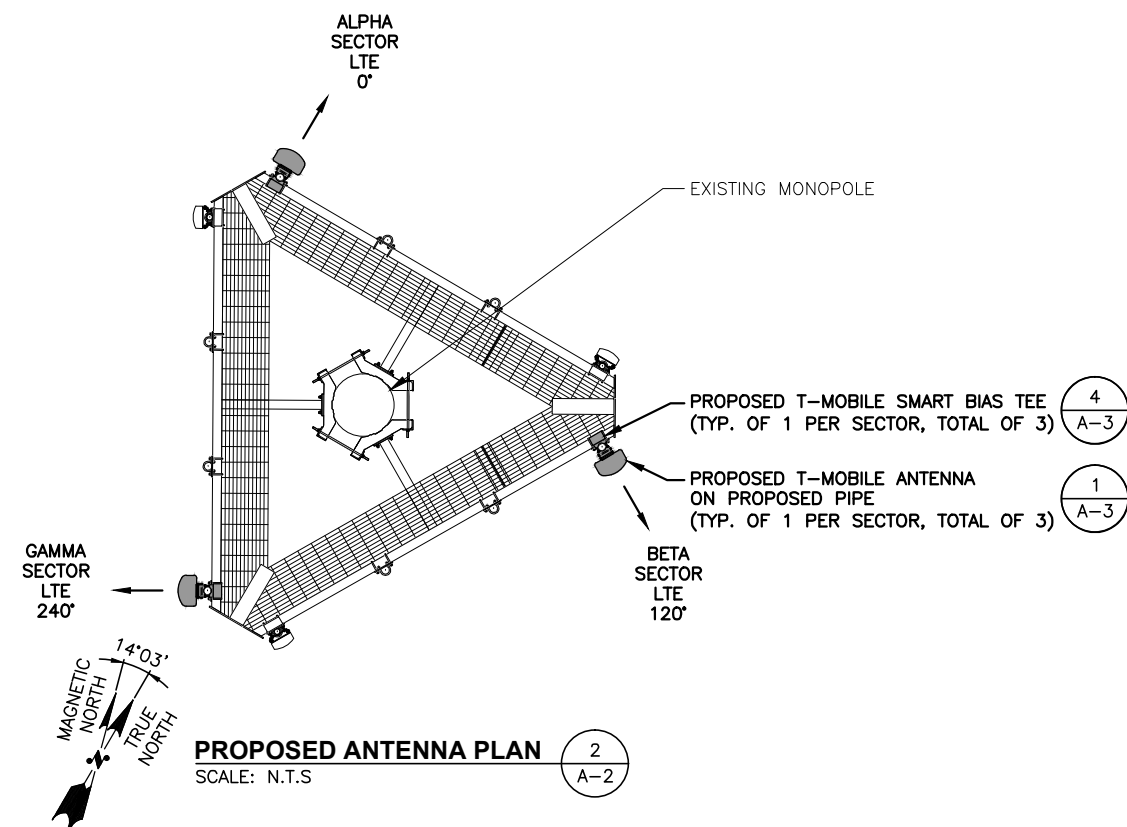
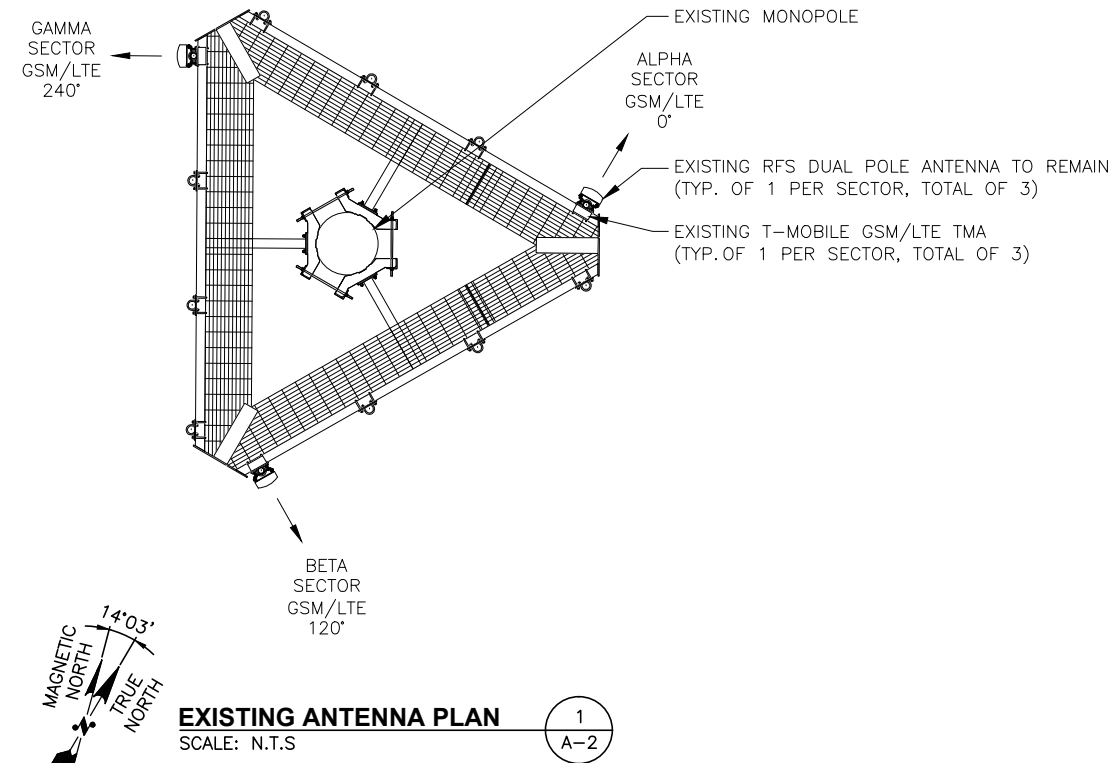
EXISTING PURCELL CABINET  
EXISTING RBS 6201 GSM/LTE CABINET  
INSTALL PROPOSED RAN EQUIPMENT IN EXISTING 6201 CABINET (REFER TO FINAL RFDS)



SOURCE: HDG 02-18-2015

**EQUIPMENT PHOTO DETAIL**  
SCALE: N.T.S.

EXISTING T-MOBILE GPS ON ICE BRIDGE  
PROPOSED BBU CABINET, POWER SUPPLY AND INTERCONNECT KIT TO BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS



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**SPECIAL WORK NOTE:**  
 VERTICALLY CENTER ON EXISTING MOUNTING RAIL, THE PIPE MAST AND ANTENNA

- 1/A-3 PROPOSED T-MOBILE ANTENNA ON PROPOSED PIPE (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- 4/A-3 PROPOSED T-MOBILE SMART BIAS TEE (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- EXISTING RFS DUAL POLE ANTENNA TO REMAIN (TYP. OF 1 PER SECTOR, TOTAL OF 3)



**PROPOSED ANTENNA PHOTO DETAIL** 3  
SCALE: N.T.S. A-2

**T-MOBILE NORTHEAST LLC**  
 35 GRIFFIN ROAD SOUTH  
 BLOOMFIELD, CT 06002  
 OFFICE: (860) 648-1116

**SBA**  
 SBA COMMUNICATIONS CORP.  
 33 BOSTON POST ROAD WEST, SUITE 320 TEL: (508) 251-0720  
 MARLBOROUGH, MA 01752 FAX: (508) 251-1755

**Hudson Design Group**  
 1600 OSGOOD STREET  
 BUILDING 20 NORTH, SUITE 3090 TEL: (978) 557-5553  
 N. ANDOVER, MA 01845 FAX: (978) 336-5586

*Daniel P. Hamm*  
 STATE OF CONNECTICUT  
 DANIEL P. HAMM  
 No. 24178  
 LICENSED PROFESSIONAL ENGINEER

CHECKED BY: KB

APPROVED BY: DPH

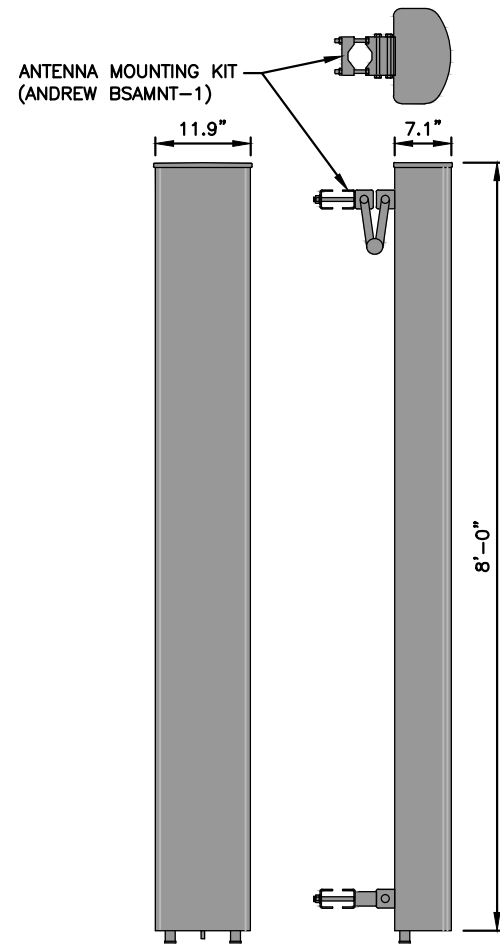
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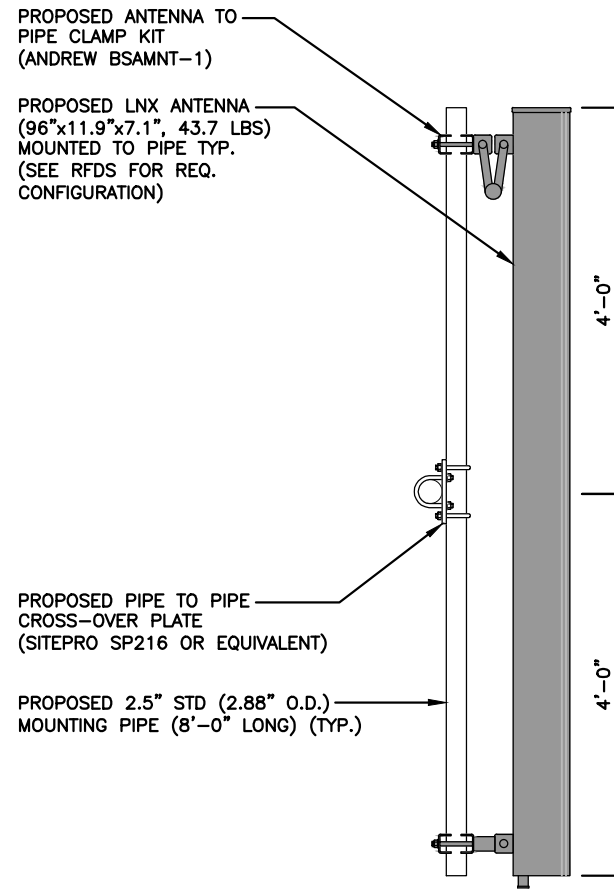
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 NEW LONDON COUNTY

SHEET TITLE  
 EXISTING &  
 PROPOSED ANTENNA  
 PLANS

SHEET NUMBER  
**A-2**



**LNx ANTENNA DETAIL** 1  
SCALE: N.T.S. A-3

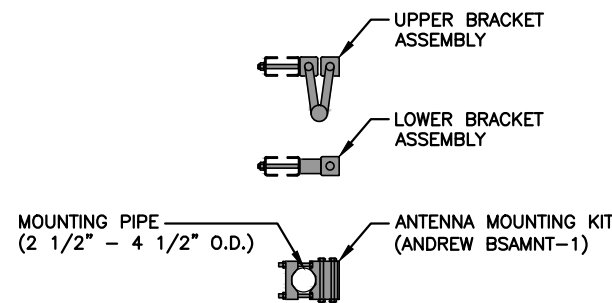


**PROPOSED ANTENNA MOUNTING DETAIL** 2  
SCALE: N.T.S. A-3

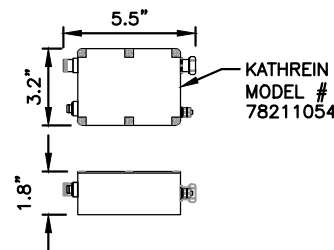
**SPECIAL WORK NOTE:**  
VERTICALLY CENTER ON EXISTING MOUNTING RAIL, THE PIPE MAST AND ANTENNA

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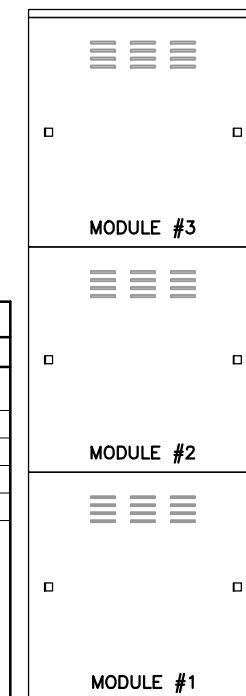


**ANTENNA MOUNTING BRACKET** 3  
SCALE: N.T.S. A-3



**SMART BIAS TEE (SBT)** 4  
SCALE: N.T.S. A-3

BBU DIMENSIONS	
MODEL #	DVBBM-2ALM
MANUF.	MSF DATA SERVICES
WIDTH	28.45"
DEPTH	28.45"
HEIGHT	29.67"
WEIGHT	1,264 LBS
MOUNT BASE WITH (4) 1/2" DROP IN ANCHOR'S WITH 2" MINIMUM EMBEDMENT (INSTALL PER MANUFACTURER'S INSTALLATION GUIDELINES)	



**BATTERY CABINET (BBU)** 5  
SCALE: N.T.S. A-3

**T-MOBILE  
NORTHEAST LLC**

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SHEET TITLE  
DETAILS

SHEET NUMBER  
**A-3**