



March 26, 2014

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

RE: Notice of Exempt Modification
170 Mount Tobe Road
Plymouth, CT 06782
N 41° 37' 48"
W -73° 03' 23"

Dear Mr. Martin and 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 170 Mount Tobe Road, Plymouth, CT.

The 170 Mount Tobe Road facility consists of a 160' Monopole Tower owned and operated by SBA Properties, 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 modernization 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 the 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



T-Mobile Equipment Modification

170 Mount Tobe Road, Plymouth, CT 06782
Site number CT11363D

Tower Owner: SBA Properties, LLC

Equipment Configuration: Monopole

Current and/or approved:

- (6) EMS RR90-17-02DP
- (6) TMAs
- (12) 1-5/8" Feed lines

Planned Modifications:

- (3) Ericsson AIR 21 B2A B4P
- (3) Ericsson AIR 21 B4A B2P
- (3) Ericsson KRY 112 144/1 TMAs
- (12) 1 5/8" Feed lines
- (1) 1 5/8" Fiber

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 0.440% of the allowable FCC established general public limit. The anticipated composite MPE value for this site assuming all carriers present is 56.140% of the allowable FCC established general public limit sampled at the ground level.

Site Composite MPE %	
Carrier	MPE %
T-Mobile	0.440%
Sprint	3.820%
MetroPCS	4.970%
Nextel	3.540%
Verizon Wireless	15.810%
AT&T	27.560%
Total Site MPE %	56.140%



March 26, 2014

Mayor David V. Merchant
Town of Plymouth
Town Hall
80 Main Street
Terryville, CT 06786

RE: Telecommunications Facility @ 170 Mount Tobe Road, Plymouth, CT 06782

Dear Mayor Merchant,

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 positioned above the typed name.

Kri Pelletier
SBA Communications Company
33 Boston Post Road West Suite 320
Marlborough, MA 01752
508-251-0720 x 3804 + T
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RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL
TO NON-IONIZING EMISSIONS

T-Mobile Existing Facility

Site ID: CT11363D

SBA South Plymouth

170 Mount Tobe Road
Plymouth, CT 06782

March 22, 2014

EBI PROJECT NUMBER: 62141650

March 22, 2014

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

Re: Emissions Values for Site: **CT11363D - SBA South Plymouth**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at 170 Mount Tobe Road, Plymouth, 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 cellular band is $567 \mu\text{W}/\text{cm}^2$, 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 170 Mount Tobe Road, Plymouth, 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 (1935.000 MHz—to 1945.000 MHz / 1980.000 MHz—to 1985.000 MHz) were considered for each sector of the proposed installation.
- 2) 2 UMTS channels (2110.000 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 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 **160 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	CT113663D - SBA South Plymouth
Site Address	170 Mount Toke Road, Plymouth, CT 06782
Site Type	Monopole

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 (dBi)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	Ericsson	AIR21 B4A/B2P	Active	AWS - 2100 MHz	LTE	60	2	120	-3.95	160	154	None	0	0	48.326044	0.732564	0.07326%
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-	-	-	0	-3.95	160	154	None	0	0	0	0	0.00000%
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	160	154	1-5/8"	0	0	24.163022	0.366282	0.03663%
2B	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	160	154	1-5/8"	0	0	24.163022	0.366282	0.03663%
Sector total Power Density Value:														0.147%			
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 (dBi)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	Ericsson	AIR21 B4A/B2P	Active	AWS - 2100 MHz	LTE	60	2	120	-3.95	160	154	None	0	0	48.326044	0.732564	0.07326%
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-	-	-	0	-3.95	160	154	None	0	0	0	0	0.00000%
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	160	154	1-5/8"	0	0	24.163022	0.366282	0.03663%
2B	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	160	154	1-5/8"	0	0	24.163022	0.366282	0.03663%
Sector total Power Density Value:														0.147%			
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 (dBi)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	Ericsson	AIR21 B4A/B2P	Active	AWS - 2100 MHz	LTE	60	2	120	-3.95	160	154	None	0	0	48.326044	0.732564	0.07326%
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-	-	-	0	-3.95	160	154	None	0	0	0	0	0.00000%
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	160	154	1-5/8"	0	0	24.163022	0.366282	0.03663%
2B	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	160	154	1-5/8"	0	0	24.163022	0.366282	0.03663%
Sector total Power Density Value:														0.147%			

Site Composite MPE %	
Carrier	MPE %
T-Mobile	0.440%
Sprint	3.820%
MetroPCS	4.970%
Nextel	3.540%
Verizon Wireless	15.810%
AT&T	27.560%
Total Site MPE %	56.140%

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 **0.440% (0.147% from each sector)** of the allowable FCC established general public limit considering all three sectors simultaneously sampled at the ground level.

The anticipated composite MPE value for this site assuming all carriers present is **56.140%** 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 within the allowable 100% threshold standard per the federal government.



Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803



FDH Engineering, Inc., 6521 Meridien Drive, Raleigh, NC 27616, Ph. 919.755.1012, Fax 919.755.1031

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

160' Monopole Tower

**SBA Site Name: South Plymouth
SBA Site ID: CT03538-S-06
T-Mobile Site ID: CT11363D**

FDH Project Number 1424IX1400

Analysis Results

Tower Components	80.6%	Sufficient
Foundation	81.0%	Sufficient

Prepared By:

Mark S. Girgis, EI
Project Engineer

Reviewed By:

Bradley Newman, PE
Senior Project Engineer
CT License No. 29630

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



March 14, 2014

Prepared pursuant to TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures and the 2005 Connecticut 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 Plymouth, 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 the *2005 Connecticut Building Code (CBC)*. Information pertaining to the existing/proposed antenna loading, current tower geometry, geotechnical data, foundation dimensions, and member sizes was obtained from:

- Paul J. Ford and Company (Job No. 29201-1019) original design drawings dated August 21, 2001
- Jaworski Geotech, Inc. (Project No. 00244G) Geotechnical Evaluation dated July 31, 2001
- SBA Network Services, Inc.

The *basic design wind speed* per the *TIA/EIA-222-F* standards and the *2005 CBC* is 80 mph without ice and 28 mph with 1" radial ice. Ice is considered to increase in thickness with height.

Conclusions

With the existing and proposed antennas from T-Mobile in place at 160 ft, the tower meets the requirements of the *TIA/EIA-222-F* standards and the *2005 CBC* provided the **Recommendations** listed below are satisfied. Furthermore, provided the foundation was designed and constructed to support the original design reactions (see Paul J. Ford and Company Job No. 29201-1019), 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.

Recommendations

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

1. The feed lines should be installed inside the pole's shaft.
2. The proposed TMAs should be installed directly behind the proposed panel antennas.

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 ¹	Carrier	Mount Elevation (ft)	Mount Type
162	(6) EMS RR90-17-02DP (6) TMAs	(12) 1-5/8"	T-Mobile	160	(1) Low Profile Platform
156.5	(1) Lone Star Electronics Co. LS-230C Omni	(1) 7/8"	Thomaston PD	153	(1) 4' Side-Arm
153	(1) Andrew VHLP-2.6-11 Dish (1) Hutton HPD3.4-4.7 Dish (3) Motorola ODU-A-RF Bands	(2) EW90			(2) Pipe Mounts
134.5	(1) Bird Technologies CSA10-67-DIM Dipole	(1) 7/8"			(1) 4' Side-Arm
148	(3) RFS APXVSP18-C-A20 (3) Alcatel Lucent 1900 MHz RRHs (3) Alcatel Lucent 800 MHz RRHs (3) Alcatel Lucent 800 MHz Filters (4) RFS ACU-A20-N RETs	(3) 1-1/4"	Sprint	148	(1) Low Profile Platform
137	(6) Antel LPA-80080/6CF (3) Antel BXA-70063/6CF-2 (3) Antel BXA-171085/8BF-2 (6) RFS FDR6004/2C-3L Diplexers	(12) 1-5/8"	Verizon	137	(1) Low Profile Platform
127	(12) Decibel DB844H90E-XY	(12) 1-5/8"	Nextel	127	(1) Low Profile Platform
117	(3) RFS APXV18-206515S-C	(6) 1-5/8"	Pocket	117	(3) Pipe Mount
108	(6) Powerwave 7770 (3) CSS DUO1417-8686-40 (3) KMW AM-X-CD-16-65-00T-RET (6) Powerwave LGP21401 TMAs (6) Powerwave LGP21903 Diplexers (6) Ericsson RRUS-11 RRUs (1) Andrew ABT-DFDM-ADBH Surge Arrestor (1) Raycap DC6-48-60-18-8F Surge Arrestor	(12) 1-5/8" (1) 3" Conduit (1) 7/16" Fiber (2) 3/4" DC Power	AT&T	108	(1) Low Profile Platform
75	(1) GPS	(1) 1/2"	T-Mobile	75	(1) Pipe Mount

1. Feed lines installed inside pole's shaft unless otherwise noted

Proposed Loading:

Antenna Elevation (ft)	Description	Feed Lines	Carrier	Mount Elevation (ft)	Mount Type
160	(3) Ericsson AIR 21 B2A/B4P (3) Ericsson AIR 21 B4A/B2P (3) Ericsson KRY 112 144/1 TMAs	(12) 1-5/8" (1) 1-5/8" Fiber	T-Mobile	160	(1) 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	55 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. *Note: Capacities up to 100% are considered acceptable.* **Table 4** displays the maximum foundation reactions. **Table 5** displays maximum antenna rotations at service wind speeds (dishes only).

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	160 - 119.25	Pole	TP32.763x24x0.25	40.3	Pass
L2	119.25 - 78.5	Pole	TP41.025x31.3491x0.3125	73.7	Pass
L3	78.5 - 38.75	Pole	TP48.947x39.2711x0.375	80.6	Pass
L4	38.75 - 0	Pole	TP56.53x46.8531x0.4375	78.4	Pass
		Anchor Bolts	(20) 2.25" Ø w/ BC = 64"	68.1	Pass
		Base Plate	PL 64" Square x 3" Thick	62.7	Pass

*Capacities include a 1/3 allowable 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	48 k*	37 k
Shear	31 k	38 k
Moment	3,605 k-ft	4,450 k-ft

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

Table 5 - Maximum Dish Rotations at Service Wind Speed (Dishes Only)

Centerline Elevation (ft)	Dish	Tilt* (deg)	Twist* (deg)
153	(1) Andrew VHLP-2.6-11 Dish (1) Hutton HPD3.4-4.7 Dish	1.8644	0.0080

*Allowable tilt and twist values to be determined by the carrier.

GENERAL COMMENTS

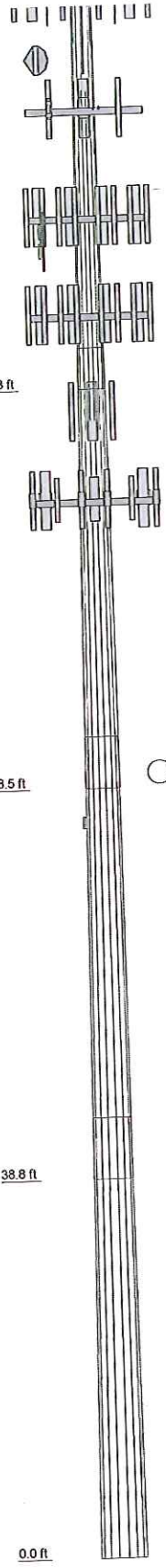
This engineering analysis is based upon the theoretical capacity of the structure. It is not a condition assessment of the tower and its foundation. It is the responsibility of SBA Network Services, Inc. to verify that the tower modeled and analyzed is the correct structure (with accurate antenna loading 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)	40.75	45.00	45.00	45.00
Number of Sides	18	18	18	18
Thickness (in)	0.2500	0.3125	0.3750	0.4375
Socket Length (ft)	4.25	5.25	6.25	6.25
Top Dia (in)	24.0000	31.3481	39.2711	46.8531
Bot Dia (in)	32.7630	41.0250	48.9470	56.5300
Grade	3.1	5.4	8.0	10.9
Weight (K)				27.4



DESIGNED APPURTENANCE LOADING

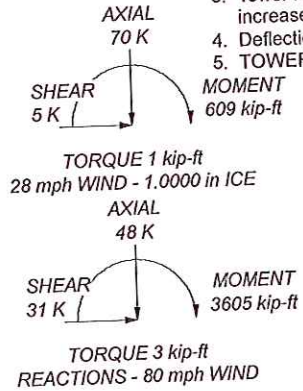
TYPE	ELEVATION	TYPE	ELEVATION
AIR 21 B2A/B4P w/ Mount Pipe	160	BXA-171085-8BF-2 w/ Mount Pipe	137
AIR 21 B2A/B4P w/ Mount Pipe	160	BXA-171085-8BF-2 w/ Mount Pipe	137
AIR 21 B2A/B4P w/ Mount Pipe	160	BXA-171085-8BF-2 w/ Mount Pipe	137
AIR 21 B4A/B2P w/ Mount Pipe	160	(2) FDR6004/2C-3L	137
AIR 21 B4A/B2P w/ Mount Pipe	160	(2) FDR6004/2C-3L	137
AIR 21 B4A/B2P w/ Mount Pipe	160	(2) FDR6004/2C-3L	137
KRY 112 144/1 TMA	160	Low Profile Platform	137
KRY 112 144/1 TMA	160	(2) LPA-60080/6CF w/ Mount Pipe	137
KRY 112 144/1 TMA	160	(2) LPA-60080/6CF w/ Mount Pipe	137
Empty Mount Pipe	160	Bird Technologies CSA10-67-DIM TX Dipole	133
Empty Mount Pipe	160	4' Standoff	133
Empty Mount Pipe	160	(4) DB844H90E-XY w/ Mount Pipe	127
Low Profile Platform	160	Low Profile Platform	127
Lone Star LS-230C RX Omni	153	(4) DB844H90E-XY w/ Mount Pipe	127
Motorola ODU-A-RF Bands	153	(4) DB844H90E-XY w/ Mount Pipe	127
Motorola ODU-A-RF Bands	153	APXV18-206515S-C w/ Mount Pipe	117
Motorola ODU-A-RF Bands	153	APXV18-206515S-C w/ Mount Pipe	117
4' Side-Arm	153	APXV18-206515S-C w/ Mount Pipe	117
Pipe Mount	153	(2) 7770 w/ Mount Pipe	108
Pipe Mount	153	DUO1417-6686-40 w/ Mount Pipe	108
VHLP2.6-11	153	DUO1417-6686-40 w/ Mount Pipe	108
Hutton HPD33.4-4.7	153	DUO1417-6686-40 w/ Mount Pipe	108
APXVSPP18-C-A20 w/ Mount Pipe	148	AM-X-CD-16-65-00T-RET w/ Mount Pipe	108
1900 MHz RRH	148	AM-X-CD-16-65-00T-RET w/ Mount Pipe	108
1900 MHz RRH	148	AM-X-CD-16-65-00T-RET w/ Mount Pipe	108
1900 MHz RRH	148	AM-X-CD-16-65-00T-RET w/ Mount Pipe	108
800 MHz RRH	148	AM-X-CD-16-65-00T-RET w/ Mount Pipe	108
800 MHz RRH	148	AM-X-CD-16-65-00T-RET w/ Mount Pipe	108
800 MHz RRH	148	AM-X-CD-16-65-00T-RET w/ Mount Pipe	108
800 MHz RRH	148	(2) LGP21401 TMA	108
800 MHz External Notch Filter	148	(2) LGP21401 TMA	108
800 MHz External Notch Filter	148	(2) LGP21401 TMA	108
800 MHz External Notch Filter	148	(2) LGP21903 Diplexer	108
800 MHz External Notch Filter	148	(2) LGP21903 Diplexer	108
ACU-A20-N RET	148	(2) LGP21903 Diplexer	108
ACU-A20-N RET	148	(2) RRUS-11	108
(2) ACU-A20-N RET	148	(2) RRUS-11	108
(3) Empty Mount Pipe	148	(2) RRUS-11	108
(3) Empty Mount Pipe	148	(2) RRUS-11	108
(3) Empty Mount Pipe	148	ABT-DFDM-ADBH	108
Low Profile Platform	148	DC6-48-60-18-8F Surge Arrestor	108
APXVSPP18-C-A20 w/ Mount Pipe	148	Low Profile Platform	108
APXVSPP18-C-A20 w/ Mount Pipe	148	(2) 7770 w/ Mount Pipe	108
(2) LPA-60080/6CF w/ Mount Pipe	137	(2) 7770 w/ Mount Pipe	108
BXA-70063/6CF-2 w/ Mount Pipe	137	GPS	75
BXA-70063/6CF-2 w/ Mount Pipe	137	Pipe Mount	75
BXA-70063/6CF-2 w/ Mount Pipe	137		
BXA-70063/6CF-2 w/ Mount Pipe	137		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A607-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Litchfield County, Connecticut.
2. Tower designed for a 80 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 28 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 80.6%



FDH Engineering, Inc.
6521 Meridian Drive
Raleigh, NC 27616
Phone: (919) 755-1012
FAX: (919) 755-1031

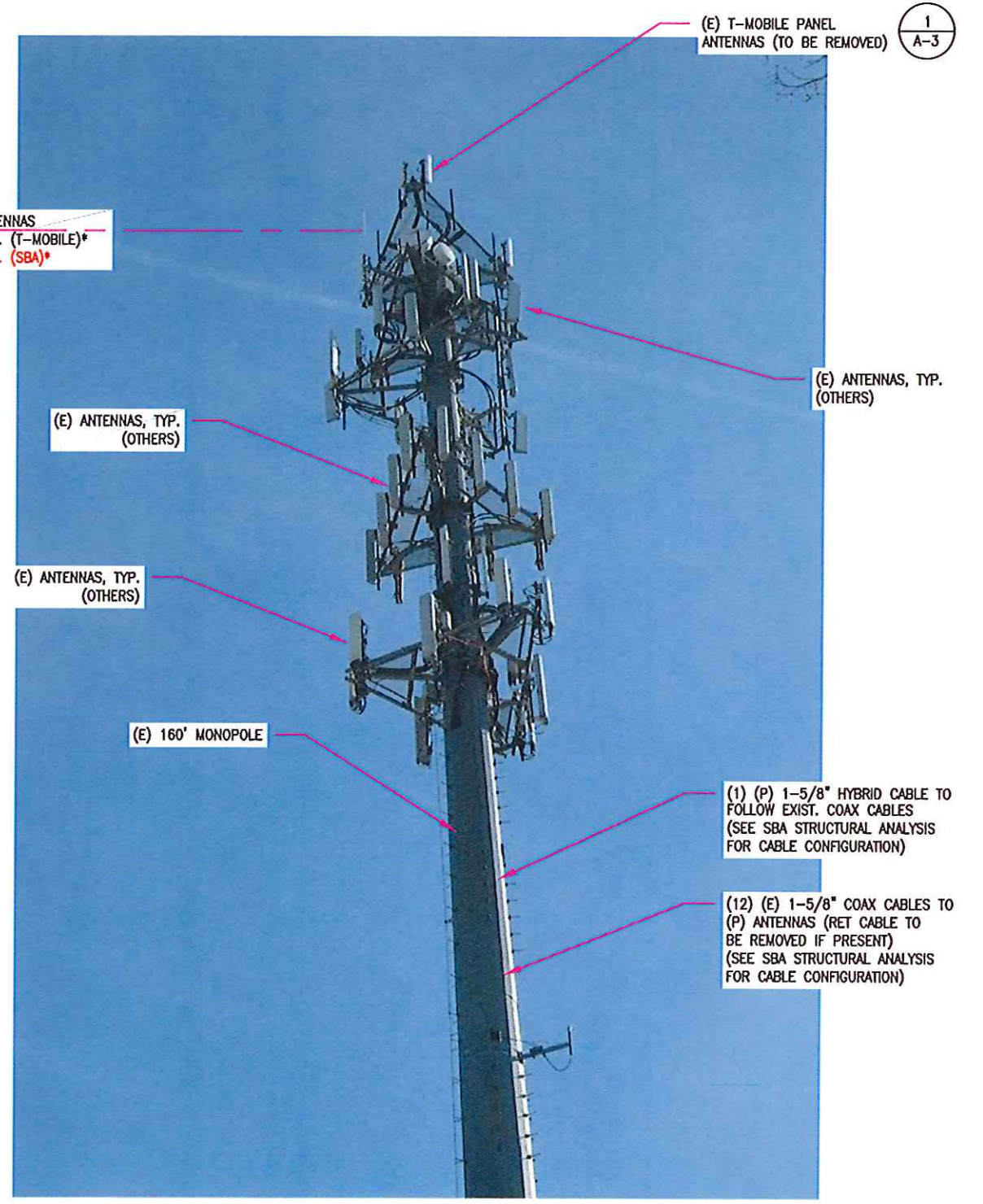
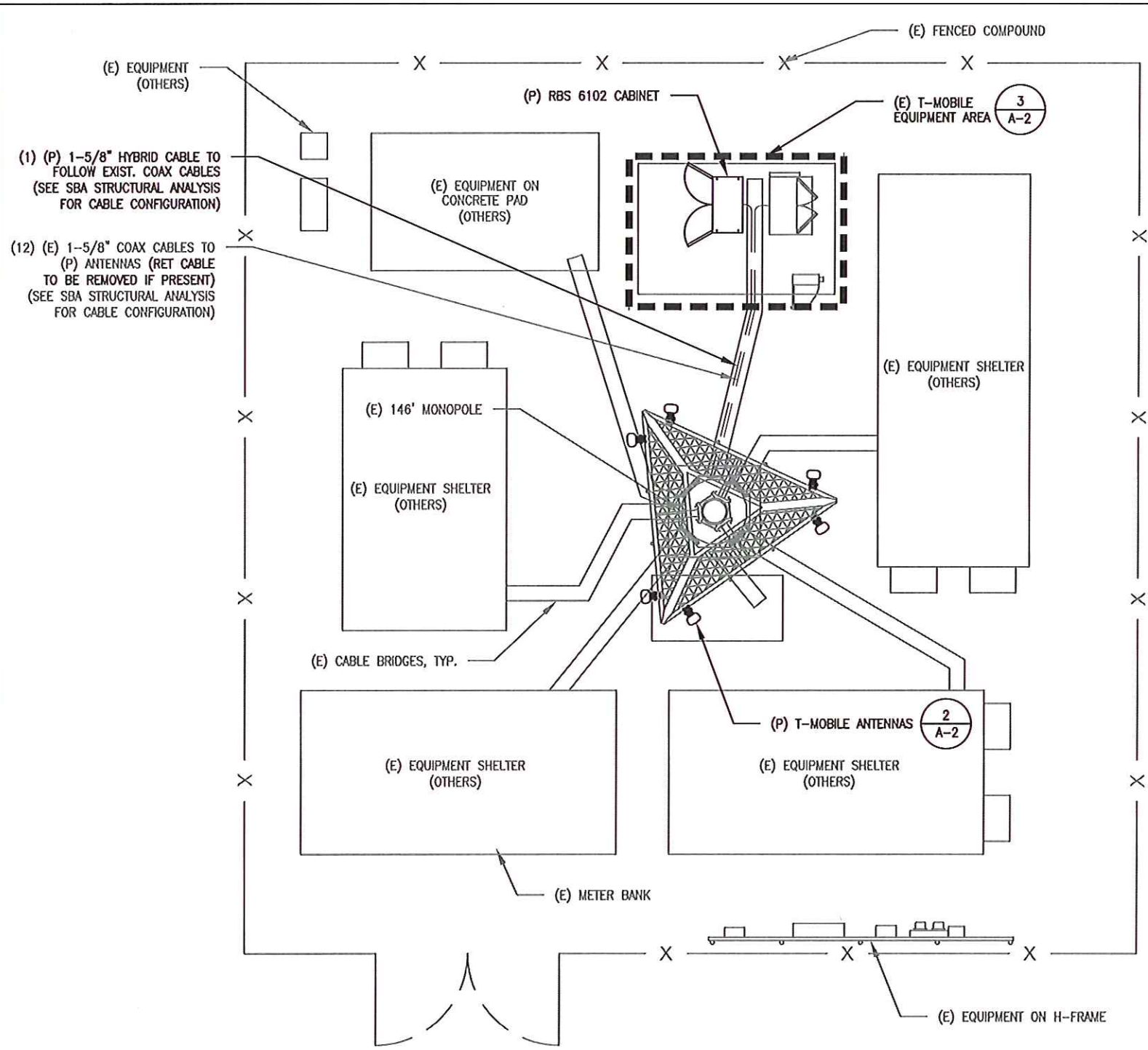
Job: **South Plymouth, CT03538-S-06**

Project: 1424IX1400

Client: SBA Network Services, Inc. | Drawn by: Mark S. Girgis | App'd:

Code: TIA/EIA-222-F | Date: 03/14/14 | Scale: NTS

Path: | Dwg No. E-1



⊙ OF T-MOBILE ANTENNAS
 ELEV. = 160'± A.G.L. (T-MOBILE)*
 ELEV. = 157'± A.G.L. (SBA)*

1
 A-1
COMPOUND PLAN
 SCALE: 3/32"=1'-0"
 0' 5'-4" 10'-8" 21'-4"

NOTE:
 GROUND EQUIPMENT NOT SHOWN FOR CLARITY

2
 A-1
EXISTING ELEVATION
 SCALE: NTS

***NOTE:**
 ANTENNA ELEVATION BASED ON CLIENT-PROVIDED INFORMATION



EG ADVANCED
 ENGINEERING GROUP, P.C.
 Civil Engineering - Site Development Surveying - Telecommunications
 500 NORTH BROADWAY
 EAST PROVIDENCE, RI 02914
 P/E: (401) 354-2403
 FAX: (401) 833-8354

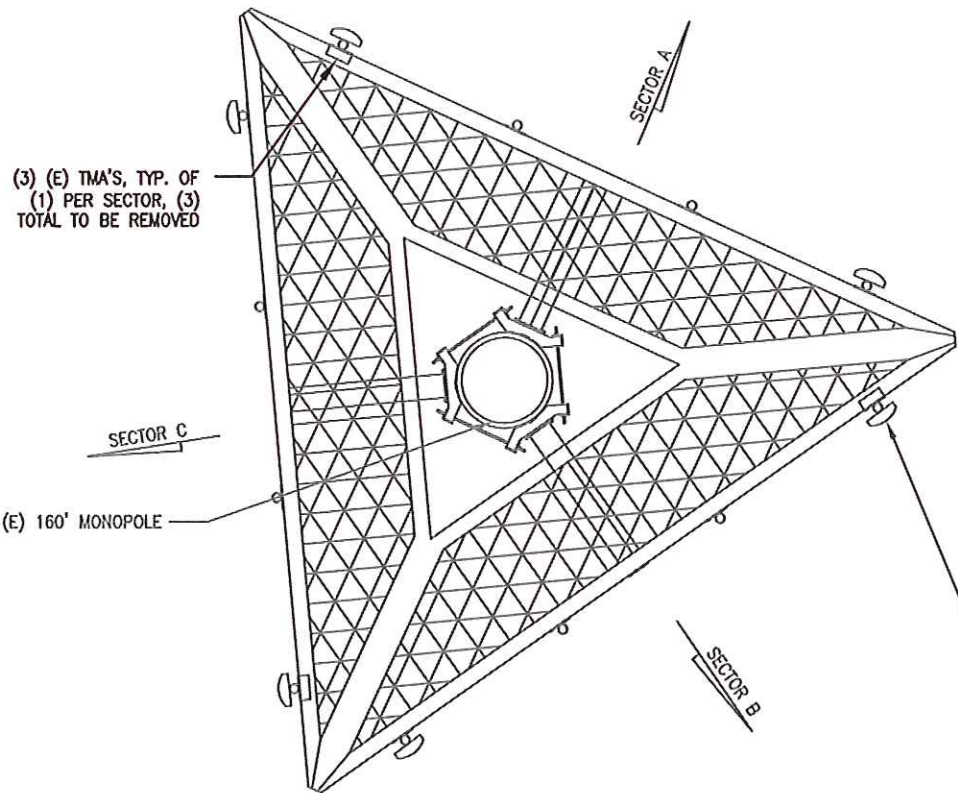
SBA
 SBA COMMUNICATIONS CORPORATION
 33 BOSTON POST ROAD WEST, SUITE 320
 MARLBOROUGH, MA 01752
 PHONE: 508-251-0720

SITE NUMBER: CT11363D
SITE NAME: SBA SOUTH PLYMOUTH
 170 MOUNT TOBE ROAD
 PLYMOUTH, CT 06782

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	03/14/14	CONSTRUCTION	SO	MRC	MRC
SCALE: AS SHOWN			DESIGNED BY: MRC	DRAWN BY: SO	

T-MOBILE		
COMPOUND PLAN AND ELEVATION		
JOB NUMBER	DRAWING NUMBER	REV
CT11363D	A-1	0



EXISTING ANTENNA PLAN
 SCALE: 1/4"=1'-0"
 0' 2'-0" 4'-0"

EXISTING ANTENNA SCHEDULE			
SECTOR	MAKE	MODEL#	SIZE (INCHES)
SECTOR A:	EMS	RR90-17-02DP	8x2.8x56
	EMS	RR90-17-02DP	8x2.8x56
SECTOR B:	EMS	RR90-17-02DP	8x2.8x56
	EMS	RR90-17-02DP	8x2.8x56
SECTOR C:	EMS	RR90-17-02DP	8x2.8x56
	EMS	RR90-17-02DP	8x2.8x56

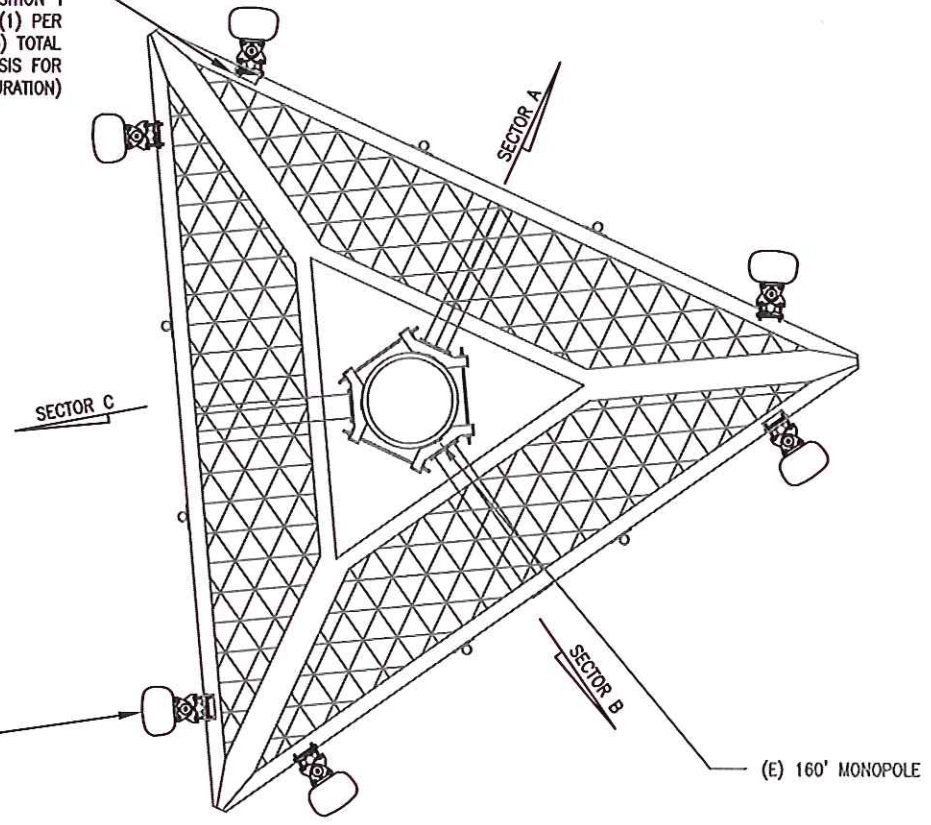
PROPOSED ANTENNA SCHEDULE			
SECTOR	MAKE	MODEL#	SIZE (INCHES)
SECTOR A:	ERICSSON	AIR21 B2A/B4P	12x8x56
	ERICSSON	AIR21 B4A/B2P	12x8x56
SECTOR B:	ERICSSON	AIR21 B2A/B4P	12x8x56
	ERICSSON	AIR21 B4A/B2P	12x8x56
SECTOR C:	ERICSSON	AIR21 B2A/B4P	12x8x56
	ERICSSON	AIR21 B4A/B2P	12x8x56

NOTE:
 1. REFER TO FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

(E) T-MOBILE PANEL ANTENNAS TYP. OF (2) PER SECTOR, (6) TOTAL TO BE REMOVED

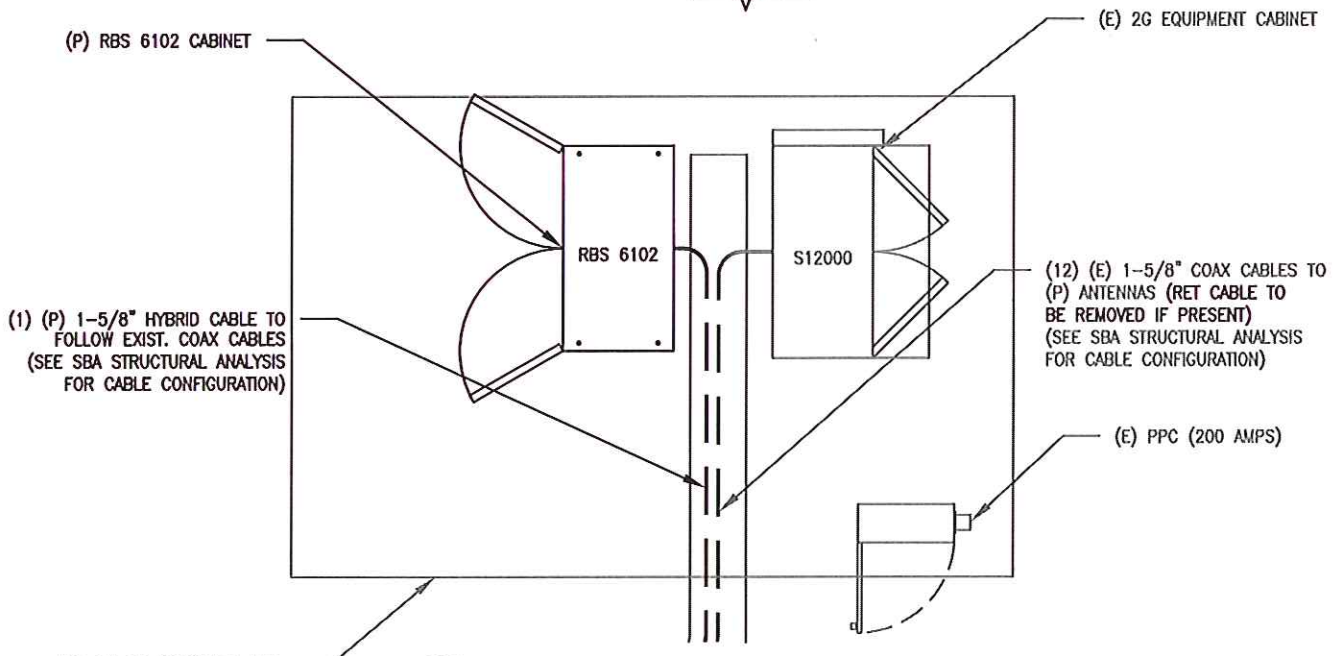
(P) T-MOBILE PANEL ANTENNAS TO BE MOUNTED TO (E) PIPE TYP. OF (2) PER SECTOR, (6) TOTAL (SEE SBA STRUCTURAL ANALYSIS FOR SPECIAL MOUNTING CONFIGURATION)

(P) AWS TMA TO POSITION 1 BEHIND (P) AIR ANTENNA, (1) PER SECTOR, (3) TOTAL (SEE SBA STRUCTURAL ANALYSIS FOR SPECIAL MOUNTING CONFIGURATION)

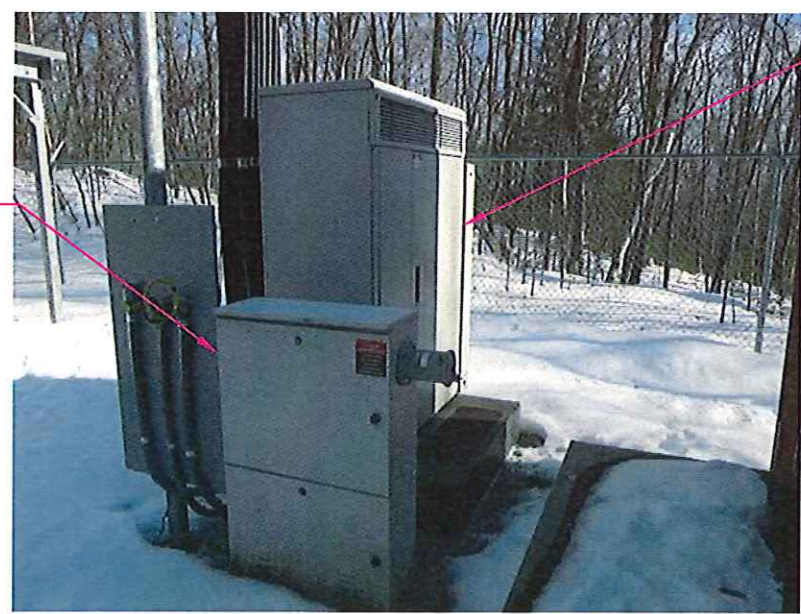


PROPOSED ANTENNA PLAN
 SCALE: 1/4"=1'-0"
 0' 2'-0" 4'-0"

*** SPECIAL INSTALLATION NOTE:**
 PROPOSED ANTENNAS SHALL BE VERTICALLY CENTERED ON EXISTING PLATFORM RAIL. ADJUST ANTENNA MOUNTING PIPE AS REQUIRED.



EQUIPMENT PLAN
 SCALE: 1/4"=1'-0"
 0' 2'-0" 4'-0"



EXISTING EQUIPMENT AREA.
 N.T.S.



NO.	DATE	REVISIONS	BY	CHK	APP'D
0	03/14/14	CONSTRUCTION	SO	MRC	MRC

SCALE: AS SHOWN DESIGNED BY: MRC DRAWN BY: SO

T-MOBILE		
PLANS AND ANTENNA SCHEDULES		
JOB NUMBER	DRAWING NUMBER	REV
CT11363D	A-2	0

(6) (E) ANTENNAS TYP. OF (2) PER SECTOR, (6) TOTAL TO BE REMOVED

(3) (E) TMA'S TYP. OF (1) PER SECTOR, (3) TOTAL TO BE REMOVED



1
A-3
EXISTING ANTENNA MOUNT TYP.
N.T.S.

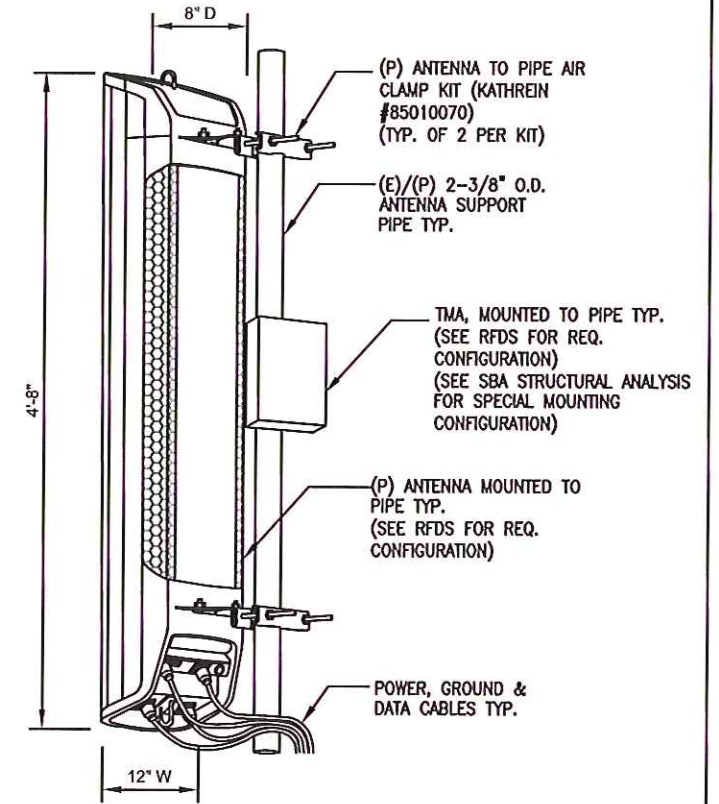
3
A-3
*(P) ANTENNA TYP. OF (2) PER SECTOR, (6) TOTAL (SEE SBA STRUCTURAL ANALYSIS FOR SPECIAL MOUNTING CONFIGURATION)

RELOCATE AWS TMA TO POSITION 1 BEHIND (P) AIR ANTENNA, (1) PER SECTOR, (3) TOTAL (SEE SBA STRUCTURAL ANALYSIS FOR SPECIAL MOUNTING CONFIGURATION)

* SPECIAL INSTALLATION NOTE: PROPOSED ANTENNAS SHALL BE VERTICALLY CENTERED ON EXISTING PLATFORM RAIL. ADJUST ANTENNA MOUNTING PIPE AS REQUIRED.



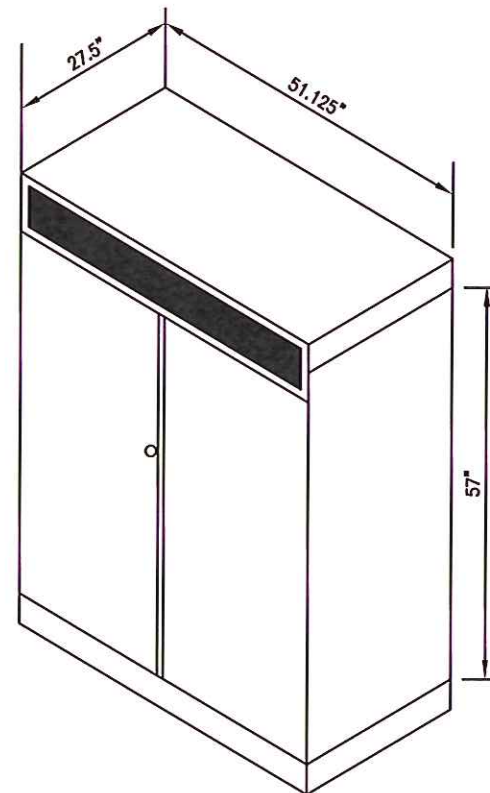
2
A-3
PROPOSED ANTENNA MOUNT TYP.
N.T.S.



3
A-3
ANTENNA MOUNT TYP.
SCALE: NTS

RBS 6102 OUTDOOR DIMENSIONS		
CABINET	DEPTH x WIDTH x HEIGHT	
OUTDOOR RBS 6102	27.5" x 51.125" x 57"	
RBS 6102 OUTDOOR WEIGHT		
CABINET	APPROX. MAX WEIGHT	MAX. FLOOR LOADING
OUTDOOR RBS 6102	1028 LBS.	
RBS 6102 MINIMUM CLEARANCE		
DIRECTION	MINIMUM CLEARANCE	
CABINET REAR	8"	
CABINET SIDES	4"	
ABOVE THE CABINET	20"	
IN FRONT OF THE CABINET	28"	

4
A-3
RBS 6102 CABINET
SCALE: N.T.S.

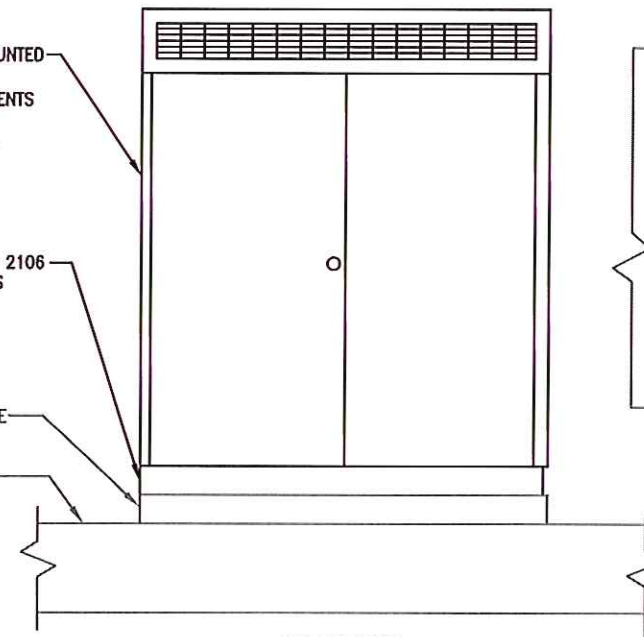


(P) RBS 6102 CABINET MOUNTED TO (P) GBF 6102 PER MANUFACTURER'S REQUIREMENTS (SEE RFDS FOR INTERNAL EQUIPMENT CONFIGURATION)

(P) GBF 6102 BOLTED TO 2106 BASE PER MANUFACTURER'S REQUIREMENTS

2106 BASE

(E) CONCRETE FLOOR



5
A-3
RBS 6102 MOUNTING DETAIL
SCALE: 1"=2'-0"

