

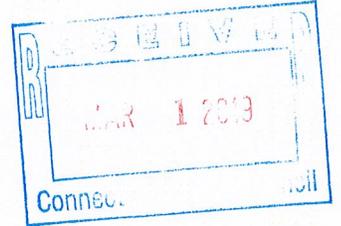


Aaron Meyers, Site Acquisition
c/o New Cingular Wireless, PCS LLC (AT&T)
Centerline Communications, LLC
750 W. Center St., Floor 3
West Bridgewater, MA 02379
Mobile: (774) 420-4202
ameyers@clinellc.com

DATE February 26, 2019

Melanie A. Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

EM-CING-084-190301



**RE: Notice of Exempt Modification // Site Number: CT2083
528 Wheelers Farm Road Milford, CT 06460 (Site Name: Milford Wheelers Farm)
N 41.24841 // W -73.07908**

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC ("AT&T") currently maintains nine (9) antennas at the 98-foot level of the existing 120-foot Monopole tower at 528 Wheelers Farm Road, Milford, CT 06460. The tower is owned by Crown Castle Copr. The property is owned by The Village Foundation, Inc. AT&T now intends to replace three (3) Low Band Combiners (Diplexers). These Combiners would be installed at the 98-foot level of the tower.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Benjamin G. Blake, Mayor, as well as the tower owner, Crown Castle Corp., and the ground owner, The Village Foundation, Inc.

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

Attached to accommodate this filing are construction drawings dated January 29, 2019 by Hudson Design Group, LLC, a structural analysis dated August 3, 2018 by Tower Engineering Professionals, a mount analysis dated February 25, 2019 by Hudson Design Group, LLC, and an Emissions Analysis Report dated February 19, 2019 by Centerline Communications, LLC.

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the extension of the site boundary.

ORIGINAL

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading as shown in the attached structural analysis by American Tower Corporation, dated August 3, 2018

For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,



Aaron Meyers, Site Acquisition
c/o New Cingular Wireless, PCS LLC (AT&T)
Centerline Communications, LLC
750 W. Center St., Floor 3
West Bridgewater, MA 02379
Mobile: (774) 420-4202
ameyers@centerlincommunications.com

Attachments

cc: Benjamin G. Blake, Mayor - as elected official
Crown Castle Corp. – as tower owner
The Village Foundation, Inc. – as property owner
David B. Sulkis – as town Planner



Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT2083

FA#: 10035336

Milford Wheelers Farm
528 Wheelers Farm Road
Milford, CT 6460

February 19, 2019

Centerline Communications Project Number: 950012-198

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	26.33 %



February 19, 2019

AT&T Mobility – New England
Attn: John Benedetto, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **CT2083 – Milford Wheelers Farm**

Centerline Communications, LLC (“Centerline”) was directed to analyze the proposed AT&T facility located at **528 Wheelers Farm Road, Milford, CT**, for the purpose of determining whether the emissions from the Proposed AT&T 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 population 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 population 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.

Population 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 limits for the 700 and 850 MHz Bands are approximately $467 \mu\text{W}/\text{cm}^2$ and $567 \mu\text{W}/\text{cm}^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) 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 performed for the proposed AT&T Wireless antenna facility located at **528 Wheelers Farm Road, Milford, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T 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.

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. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
UMTS	850 MHz	2	30
LTE	700 MHz	4	40
LTE	850 MHz	2	40
LTE	2300 MHz (WCS)	4	30
LTE	1900 MHz (PCS)	4	40

Table 1: Channel Data Table



The following antennas listed in *Table 2* were used in the modeling for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS) and 2300 MHz (WCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. 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.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Powerwave 7770	98
A	2	CCI OPA-65R-LCUU-H6	98
A	3	Quintel QS66512-2	98
B	1	Powerwave 7770	98
B	2	CCI OPA-65R-LCUU-H6	98
B	3	Quintel QS66512-2	98
C	1	Powerwave 7770	98
C	2	CCI OPA-65R-LCUU-H6	98
C	3	Quintel QS66512-2	98

Table 2: Antenna Data

All calculations were done with respect to uncontrolled / general population threshold limits.



RESULTS

Per the calculations completed for the proposed AT&T configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Powerwave 7770	850 MHz	11.4	2	60	828.23	0.62
Antenna A2	CCI OPA-65R-LCUU-H6	700 MHz / 850 MHz / 2300 MHz (WCS)	11.65 / 12.45 / 15.45	8	280	6,785.10	3.91
Antenna A3	Quintel QS66512-2	700 MHz / 1900 MHz (PCS)	10.85 / 13.85	6	240	4,855.52	2.53
Sector A Composite MPE%							7.06
Antenna B1	Powerwave 7770	850 MHz	11.4	2	60	828.23	0.62
Antenna B2	CCI OPA-65R-LCUU-H6	700 MHz / 850 MHz / 2300 MHz (WCS)	11.65 / 12.45 / 15.45	8	280	6,785.10	3.91
Antenna B3	Quintel QS66512-2	700 MHz / 1900 MHz (PCS)	10.85 / 13.85	6	240	4,855.52	2.53
Sector B Composite MPE%							7.06
Antenna C1	Powerwave 7770	850 MHz	11.4	2	60	828.23	0.62
Antenna C2	CCI OPA-65R-LCUU-H6	700 MHz / 850 MHz / 2300 MHz (WCS)	11.65 / 12.45 / 15.45	8	280	6,785.10	3.91
Antenna C3	Quintel QS66512-2	700 MHz / 1900 MHz (PCS)	10.85 / 13.85	6	240	4,855.52	2.53
Sector C Composite MPE%							7.06

Table 3: AT&T Emissions Levels



The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum AT&T MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each AT&T Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	MPE%
AT&T – Max Per Sector Value	7.06 %
XM Satellite Radio	0.20 %
Clearwire	0.15 %
Sprint	4.09 %
T-Mobile	6.18 %
Metricom	0.67 %
Verizon Wireless	7.98 %
Site Total MPE %:	26.33 %

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	7.06 %
AT&T Sector B Total:	7.06 %
AT&T Sector C Total:	7.06 %
Site Total:	
	26.33 %

Table 5: Site MPE Summary



FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

AT&T _ Frequency Band / Technology Max Power Values (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
AT&T 850 MHz UMTS – Antenna 1	2	414.12	98	3.52	850 MHz	567	0.62%
AT&T 700 MHz LTE – Antenna 2	2	584.87	98	4.97	700 MHz	467	1.07%
AT&T 850 MHz LTE – Antenna 2	2	703.17	98	5.97	850 MHz	567	1.05%
AT&T 2300 MHz (WCS) LTE – Antenna 2	4	1,052.26	98	17.88	2300 MHz (WCS)	1000	1.79%
AT&T 700 MHz LTE – Antenna 3	2	486.47	98	4.13	700 MHz	467	0.88%
AT&T 1900 MHz (PCS) LTE – Antenna 3	4	970.64	98	16.49	1900 MHz (PCS)	1000	1.65%
						Total:	7.06%

Table 6: AT&T Maximum Sector MPE Power Values



Summary

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

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

AT&T Sector	Power Density Value (%)
Sector A:	7.06 %
Sector B:	7.06 %
Sector C:	7.06 %
AT&T Maximum Total (per sector):	7.06 %
Site Total:	26.33 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **26.33 %** of the allowable FCC established general population 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.

A handwritten signature in black ink, appearing to read 'Scott Heffernan', is written over a horizontal line.

Scott Heffernan
RF Engineering Director
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767

Date: **January 29, 2019**

Steve Tuttle
Crown Castle
8 Parkmeadow Drive
Pittsford, NY 14534



Tower Engineering Professionals
326 Tryon Road
Raleigh, NC 27603
(919) 661-6351

Subject: Structural Analysis Report

Carrier Designation: **AT&T Mobility Co-Locate**
Carrier Site Number: CT2083
Carrier Site Name: Milford Wheelers Farm Road

Crown Castle Designation: **Crown Castle BU Number:** 876320
Crown Castle Site Name: 528 Wheelers Farm Rd
Crown Castle JDE Job Number: 477812
Crown Castle Work Order Number: 1686687
Crown Castle Order Number: 420940 Rev. 4

Engineering Firm Designation: **TEP Project Number:** 25570.213629

Site Data: **528 Wheelers Farm Road, Milford, New Haven County, CT 06460**
Latitude 41° 14' 54.35", Longitude -73° 4' 44.67"
120 Foot - Monopole Tower

Dear Steve Tuttle,

Tower Engineering Professionals is pleased to submit this "**Structural Analysis Report**" to determine the structural integrity of the above-mentioned tower.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC5: Proposed Equipment Configuration

Sufficient Capacity

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Matthew Fry, E.I.T. / TLI

Respectfully submitted by:

Aaron T. Rucker, P.E.



Electronic Copy

01/29/2019

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1) INTRODUCTION

This tower is a 120-ft monopole tower designed by Paul J. Ford and Company. The tower has been modified multiple times in the past to accommodate additional loading. Shaft reinforcement designed by Semaan Engineering in February of 2004 was considered ineffective. All information provided to TEP was assumed to be accurate and complete.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	C
Topographic Factor:	1.0
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
97.0	97.0	3	Ericsson	RRUS 32 B30	-	-
		2	Raycap	DC6-48-60-18-8F		
		1	Tower Mounts	Side Arm Mount [SO 102-3]		
96.0	98.0	3	CCI Antennas	OPA-65R-LCUU-H6 w/ Mount Pipe	2 4 12	3/8 3/4 1-1/4
		1	Commscope	WCS-IMFQ-AMT		
		3	Ericsson	RRUS 11 B12		
		3	Ericsson	RRUS 32 B2		
		3	Kaelus	DBC0061F1V51-2		
		3	Powerwave Technologies	7770.00 w/ Mount Pipe		
		3	Quintel Technology	QS66512-2 w/ Mount Pipe		
	96.0	1	Tower Mounts	Miscellaneous [NA 507-1]		
		1	Tower Mounts	Platform Mount [LP 712-1]		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
122.0	125.0	2	Andrew	VHLP2-11	6 1 3 4	5/16 1/8 7983A 1-1/4
	123.0	1	MTI Wireless Edge	MT-485025		
		1	Andrew	PX2F-52		
	122.0	3	Argus Technologies	LLPX310R w/ Mount Pipe		
		3	Samsung Telecommunications	FDD_R6_RRH		
		1	Tower Mounts	Miscellaneous [NA 507-1]		
		1	Tower Mounts	Platform Mount [LP 712-1]		
	121.0	3	RFS Celwave	APXVTM14-ALU-I20 w/ Mount Pipe		
		3	RFS Celwave	APXVSPP18-C-A20 w/ Mount Pipe		
		2	Alcatel Lucent	PCS 1900MHz 4x45W-65MHz		
		1	Alcatel Lucent	800MHZ RRH		
		3	Alcatel Lucent	TD-RRH8x20-25		
		3	RFS Celwave	ACU-A20-N		
	120.0	9	RFS Celwave	ACU-A20-N		
		1	Alcatel Lucent	PCS 1900MHz 4x45W-65MHz		
2		Alcatel Lucent	800MHZ RRH			
		3	Alcatel Lucent	800 External Notch Filter		
113.0	116.0	1	Trimble	ACUTIME 2000	14	1-5/8
	114.0	2	Commscope	SBNHH-1D65B w/ Mount Pipe		
		4	Commscope	SBNHH-1D45B w/ Mount Pipe		
		3	Antel	BXA-171063/8CF w/ Mount Pipe		
		2	Andrew	DB846F65ZAXY w/ Mount Pipe		
		4	Antel	LPA-80063/4CF w/ Mount Pipe		
		2	RFS Celwave	DB-T1-6Z-8AB-0Z		
		3	Alcatel Lucent	RRH2X60-1900		
		3	Alcatel Lucent	RRH2x60-700		
		3	Alcatel Lucent	AWS-3 RRH4x45		
	6	RFS Celwave	FD9R6004/2C-3L			
113.0	1	Tower Mounts	Platform Mount [LP 305-1]			
105.0	107.0	3	Ericsson	AIR 32 B2A/B66AA w/ Mount Pipe	7	1-5/8
		3	Ericsson	AIR 21 B2A B4P w/ Mount Pipe		
		3	Commscope	LNx-6515DS-VTM w/ Mount Pipe		
		1	Ericsson	KRY 112 144/1		
		3	Ericsson	RRUS 11 B12		
	105.0	2	Ericsson	KRY 112 144/1		
		1	Tower Mounts	Platform Mount [LP 1201-1]		
82.0	82.0	-	-	-	12	7/8

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
75.0	76.0	1	Trimble	ACUTIME 2000	1	1/2
	75.0	1	Tower Mounts	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
Supplemental Geotechnical Report	FDH, Inc.	1613534	CCISites
Tower Foundation Drawings	Paul J. Ford and Co.	1614583	CCISites
Tower Manufacturer Drawings	Paul J. Ford and Co.	1614557	CCISites
Tower Reinforcement Drawings	Semaan Engineering Solutions	1613579	CCISites
Post Modification Inspection	Semaan Engineering Solutions	3350209	CCISites
Tower Reinforcement Drawings	B&T Engineering	2460630	CCISites
Post Modification Inspection	B&T Engineering	2460628	CCISites
Tower Reinforcement Drawings	B&T Engineering	3349207	CCISites
Post Modification Inspection	B&T Engineering	3349204	CCISites
Tower Reinforcement Drawings	Paul J. Ford and Co.	3338935	CCISites
Post Modification Inspection	Tower Engineering Professionals	3753892	CCISites
Tower Reinforcement Drawings	Paul J. Ford and Co.	4961357	CCISites
Post Modification Inspection	SGS, Inc.	5760332	CCISites
Tower Reinforcement Drawings	Paul J. Ford and Co.	5873963	CCISites
Post Modification Inspection	FDH Velocitel	6112300	CCISites

3.1) Analysis Method

tnxTower (version 8.0.5.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

tnxTower was used to determine the loads on the modified structure. Additional calculations were performed to determine the stresses in the pole and in the reinforcing elements. These calculations are presented in Appendix C.

3.2) Assumptions

- 1) The tower and foundation were built and maintained in accordance with the manufacturer's specification.
- 2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2, and the referenced drawings.
- 3) All tower components are in sufficient condition to carry their full design capacity.
- 4) Serviceability with respect to antenna twist, tilt, roll, or lateral translation, is not checked and is left to the carrier or tower owner to ensure conformance.
- 5) All antenna mounts and mounting hardware are structurally sufficient to carry the full design capacity requirements of appurtenance wind area and weight as provided by the original manufacturer specifications. It is the carrier's responsibility to ensure compliance to the structural limitations of the existing and/or proposed antenna mounts. TEP did not perform a site visit to verify the size, condition or capacity of the antenna mounts and did not analyze antennas supporting mounts as part of this structural analysis report.
- 6) The existing base plate grout was not considered in this analysis.
- 7) The shaft modifications designed by Semaan Engineering in February of 2004 were determined to be ineffective and not considered structurally in this analysis.

This analysis may be affected if any assumptions are not valid or have been made in error. Tower Engineering Professionals should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)^{1,2}

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
120 - 115	Pole	TP23.01x22x0.25	Pole	8.4%	Pass
115 - 110	Pole	TP24.02x23.01x0.25	Pole	18.4%	Pass
110 - 105	Pole	TP25.031x24.02x0.25	Pole	28.4%	Pass
105 - 100	Pole	TP26.041x25.031x0.25	Pole	41.8%	Pass
100 - 99.25	Pole	TP26.193x26.041x0.25	Pole	43.5%	Pass
99.25 - 99	Pole + Reinf.	TP26.243x26.193x0.3625	Reinf. 14 Tension Rupture	40.4%	Pass
99 - 94	Pole + Reinf.	TP27.253x26.243x0.3563	Reinf. 14 Tension Rupture	52.9%	Pass
94 - 90.08	Pole + Reinf.	TP28.045x27.253x0.35	Reinf. 14 Tension Rupture	62.7%	Pass
90.08 - 89.83	Pole + Reinf.	TP28.096x28.045x0.5125	Reinf. 11 Tension Rupture	51.9%	Pass
89.83 - 89.5	Pole + Reinf.	TP28.162x28.096x0.5125	Reinf. 11 Tension Rupture	52.5%	Pass
89.5 - 89.25	Pole + Reinf.	TP28.213x28.162x0.725	Reinf. 15 Tension Rupture	40.6%	Pass
89.25 - 84.25	Pole + Reinf.	TP29.223x28.213x0.7	Reinf. 15 Tension Rupture	48.4%	Pass
84.25 - 81.75	Pole + Reinf.	TP30.486x29.223x0.7	Reinf. 15 Tension Rupture	52.1%	Pass
81.75 - 77	Pole + Reinf.	TP30.188x29.228x0.8625	Reinf. 17 Tension Rupture	46.8%	Pass
77 - 76.75	Pole + Reinf.	TP30.239x30.188x0.8625	Reinf. 17 Tension Rupture	47.1%	Pass
76.75 - 76.5	Pole + Reinf.	TP30.289x30.239x0.9625	Reinf. 14 Tension Rupture	44.2%	Pass
76.5 - 75.5	Pole + Reinf.	TP30.491x30.289x0.9625	Reinf. 14 Tension Rupture	45.3%	Pass
75.5 - 75.25	Pole + Reinf.	TP30.542x30.491x0.7625	Reinf. 17 Tension Rupture	52.1%	Pass
75.25 - 74.5	Pole + Reinf.	TP30.693x30.542x0.7625	Reinf. 17 Tension Rupture	52.9%	Pass
74.5 - 74.25	Pole + Reinf.	TP30.744x30.693x0.8375	Reinf. 17 Tension Rupture	55.8%	Pass
74.25 - 72	Pole + Reinf.	TP31.198x30.744x0.825	Reinf. 17 Tension Rupture	58.4%	Pass
72 - 71.75	Pole + Reinf.	TP31.249x31.198x0.7625	Reinf. 17 Tension Rupture	56.0%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
71.75 - 70.5	Pole + Reinf.	TP31.501x31.249x0.7625	Reinf. 17 Tension Rupture	57.4%	Pass
70.5 - 70.25	Pole + Reinf.	TP31.552x31.501x0.7875	Reinf. 17 Tension Rupture	57.4%	Pass
70.25 - 70	Pole + Reinf.	TP31.602x31.552x0.7875	Reinf. 17 Tension Rupture	57.7%	Pass
70 - 69.75	Pole + Reinf.	TP31.653x31.602x0.725	Reinf. 17 Tension Rupture	59.8%	Pass
69.75 - 69.5	Pole + Reinf.	TP31.703x31.653x0.875	Reinf. 4 Tension Rupture	50.8%	Pass
69.5 - 69.25	Pole + Reinf.	TP31.754x31.703x0.75	Reinf. 4 Tension Rupture	56.8%	Pass
69.25 - 64.25	Pole + Reinf.	TP32.764x31.754x0.7375	Reinf. 4 Tension Rupture	61.8%	Pass
64.25 - 59.25	Pole + Reinf.	TP33.774x32.764x0.7125	Reinf. 4 Tension Rupture	66.7%	Pass
59.25 - 56	Pole + Reinf.	TP34.431x33.774x0.7125	Reinf. 4 Tension Rupture	69.7%	Pass
56 - 55.75	Pole + Reinf.	TP34.481x34.431x0.8125	Reinf. 7 Tension Rupture	67.0%	Pass
55.75 - 55.5	Pole + Reinf.	TP34.532x34.481x0.8125	Reinf. 7 Tension Rupture	67.3%	Pass
55.5 - 55.25	Pole + Reinf.	TP34.582x34.532x0.8875	Reinf. 7 Tension Rupture	60.6%	Pass
55.25 - 54	Pole + Reinf.	TP34.835x34.582x0.875	Reinf. 7 Tension Rupture	61.6%	Pass
54 - 53.75	Pole + Reinf.	TP34.885x34.835x0.75	Reinf. 7 Tension Rupture	70.7%	Pass
53.75 - 53.5	Pole + Reinf.	TP34.936x34.885x0.7375	Reinf. 7 Tension Rupture	70.9%	Pass
53.5 - 53.25	Pole + Reinf.	TP34.986x34.936x0.6625	Reinf. 4 Tension Rupture	76.1%	Pass
53.25 - 53	Pole + Reinf.	TP35.037x34.986x0.6	Reinf. 12 Tension Rupture	78.7%	Pass
53 - 48	Pole + Reinf.	TP36.047x35.037x0.5875	Reinf. 12 Tension Rupture	83.5%	Pass
48 - 44.5	Pole + Reinf.	TP37.714x36.047x0.5875	Reinf. 12 Tension Rupture	86.7%	Pass
44.5 - 38.75	Pole + Reinf.	TP37.291x36.129x0.6625	Reinf. 4 Tension Rupture	84.7%	Pass
38.75 - 34.75	Pole + Reinf.	TP38.099x37.291x0.6625	Reinf. 4 Tension Rupture	87.5%	Pass
34.75 - 34.5	Pole + Reinf.	TP38.15x38.099x0.825	Reinf. 3 Tension Rupture	70.2%	Pass
34.5 - 33.75	Pole + Reinf.	TP38.301x38.15x0.825	Reinf. 3 Tension Rupture	70.6%	Pass
33.75 - 33.5	Pole + Reinf.	TP38.352x38.301x0.625	Reinf. 6 Tension Rupture	86.9%	Pass
33.5 - 28.5	Pole + Reinf.	TP39.362x38.352x0.6125	Reinf. 6 Tension Rupture	90.0%	Pass
28.5 - 24	Pole + Reinf.	TP40.271x39.362x0.6625	Reinf. 3 Tension Rupture	92.9%	Pass
24 - 23.75	Pole + Reinf.	TP40.322x40.271x0.7	Reinf. 3 Tension Rupture	88.8%	Pass
23.75 - 18.75	Pole + Reinf.	TP41.332x40.322x0.6875	Reinf. 3 Tension Rupture	91.7%	Pass
18.75 - 14.25	Pole + Reinf.	TP42.241x41.332x0.675	Reinf. 3 Tension Rupture	94.2%	Pass
14.25 - 14	Pole + Reinf.	TP42.291x42.241x0.775	Reinf. 3 Tension Rupture	81.7%	Pass
14 - 9	Pole + Reinf.	TP43.302x42.291x0.7625	Reinf. 3 Tension Rupture	84.1%	Pass
9 - 4.75	Pole + Reinf.	TP44.16x43.302x0.75	Reinf. 3 Tension Rupture	86.1%	Pass
4.75 - 4.5	Pole + Reinf.	TP44.211x44.16x0.6625	Reinf. 5 Tension Rupture	94.0%	Pass
4.5 - 0	Pole + Reinf.	TP45.12x44.211x0.65	Reinf. 5 Tension Rupture	96.0%	Pass
				Summary	
			Pole	78.8%	Pass
			Reinforcement	96.0%	Pass
			Overall	96.0%	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Anchor Rods	-	70.1	Pass
1,2	Base Plate	-	52.9	Pass
1,2	Base Foundation Soil Interaction	-	62.4	Pass
1,2	Base Foundation Structural	-	54.0	Pass
Structure Rating (max from all components) =				96.0%

Notes:

- 1) See additional documentation in "Appendix C - Additional Calculations" for calculations supporting the % capacity listed.
- 2) Rating per TIA-222-H Section 15.5

4.1) Recommendations

- 1) If the load differs from that described in Tables 1 and 2 of this report, the referenced drawings, or the provisions of this analysis are found to be invalid, another structural analysis should be performed.
- 2) The tower and its foundation have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

APPENDIX A
TNXTOWER OUTPUT

PROJECT INFORMATION

SCOPE OF WORK: ITEMS TO BE MOUNTED ON THE MONOPOLE:
 • NEW LOW BAND COMBINERS (DBC0061F1V51-2) (TYP. OF 1 PER SECTOR, TOTAL OF 3).

ITEMS TO BE MOUNTED @ EXISTING EQUIPMENT SHELTER:
 • SWAP DUS WITH 5216 & ADD 2ND XMU.
 • NEW LOW BAND COMBINERS (DBC0061F1V51-2) (TOTAL OF 3)
 (TO REPLACE EXISTING DIPLEXERS FOR LTE ANTENNA @ POS. 2).
 • NEW AT&T RRUS-E2 (700) (TOTAL OF 3) TO BE INSTALLED ON EXISTING RRU RACK.
 • NEW AT&T RRUS-12 (850) (TOTAL OF 3) TO BE INSTALLED ON EXISTING RRU RACK.
 • NEW SURGE ARRESTORS (ABT-DFDM-ADBH) (TOTAL OF 12) TO BE INSTALLED WITH NEW RRH'S.

SITE ADDRESS: 528 WHEELERS FARM RD.
MILFORD, CT 06460

LATITUDE: 41.24841° N 41° 14' 54.27" N
 LONGITUDE: 73.07908° W 73° 04' 44.69" W
 TYPE OF SITE: MONOPOLE, INDOOR EQUIPMENT
 MONOPOLE HEIGHT: 120'± A.G.L.
 RAD CENTER: 98'± A.G.L.
 CURRENT USE: TELECOMMUNICATIONS FACILITY
 PROPOSED USE: TELECOMMUNICATIONS FACILITY

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	1
GN-1	GENERAL NOTES	1
A-1	COMPOUND & EQUIPMENT PLANS	1
A-2	ANTENNA PLANS & ELEVATION	1
A-3	DETAILS	1
G-1	GROUNDING DETAILS	1
RF-1	RF PLUMBING DIAGRAM (ALPHA & BETA)	1
RF-2	RF PLUMBING DIAGRAM (GAMMA)	1



SITE NUMBER: CT2083

SITE NAME: MILFORD WHEELERS FARM

FA CODE: 10035336

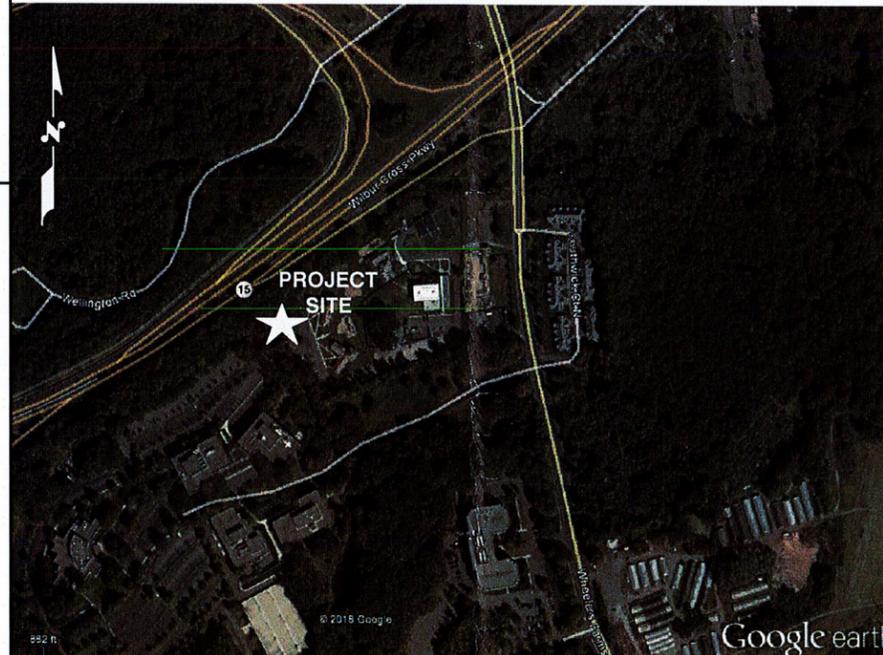
PACE ID: MRCTB022765, MRCTB022833

PROJECT: LTE 3C_4C 2018 UPGRADE

VICINITY MAP

DIRECTIONS TO SITE:

2083 MILFORD WHEELERS FARM MERRITT PARKWAY NORTH. GET OFF AT EXIT 55-A WHEELERS FARM ROAD. TAKE A RIGHT OFF THE EXIT, JUST BEFORE YOU GET TO THE FIRST LIGHT YOU WILL TURN RIGHT INTO BOYS VILLAGE. FOLLOW DRIVEWAY STRAIGHT BACK PAST DUMPSTER TO COMPOUND. IT IS A SHELTER TELCO IS INSIDE. CHARLIE 2033866245 MAIN CONTACT FOR IN BUILDING SYSTEM IN SIKORSKY ADDRESS: 528 WHEELERS FARM ROAD, MILFORD CT 06460 ACCESS: 24/7 COMBO (0043) CONTACT: SPRINT NOC (800) 859-1400 SECURITY: NONEPOWER COMPANY: UNITED ILLUMINATING (800) 722-5584 FIRE: (203) 877-1465 POLICE: (203) 878-5991T-1 CIRCUIT NUMBERS DHPV //931005 DHPV //931006 DHXV //238856 DHXV// 238857 AND HCGS 716959 SNET: (800) 448-1008 AND (203) 420-3131 (24-HR REPAIR) METER 19 917 026 POTS 203 878-6090.



GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T MOBILITY REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
4. CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OR RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN.

72 HOURS



CALL BEFORE YOU DIG



CALL TOLL FREE 1-800-922-4455

OR CALL 811

CROWN CASTLE SITE #: 876320
CROWN CASTLE SITE NAME: 528 WHEELERS FARM RD.

UNDERGROUND SERVICE ALERT

HDG HUDSON Design Group LLC
 45 BEECHWOOD DRIVE NORTH ANDOVER, MA 01845
 TEL: (978) 557-5553 FAX: (978) 336-5586

CENTERLINE COMMUNICATIONS
 750 WEST CENTER STREET SUITE #301 WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT2083
SITE NAME: MILFORD WHEELERS FARM
CCI SITE #876320
 528 WHEELERS FARM RD. MILFORD, CT 06460 NEW HAVEN COUNTY

at&t
 550 COCHITUATE ROAD FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D	JOB NUMBER	DRAWING NUMBER	REV
1	02/25/19	ISSUED FOR CONSTRUCTION	AM	AT	DPH	CT2083	T-1	1
A	02/12/18	ISSUED FOR REVIEW	ET	AT	DPH			

SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: ET



AT&T

TITLE SHEET (LTE 3C_4C)

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTNING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
 CONTRACTOR - CENTERLINE
 SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)
 OWNER - AT&T MOBILITY
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."
17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
20. APPLICABLE BUILDING CODES:
 SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

BUILDING CODE: IBC 2015 WITH 2018 CT STATE BUILDING CODE AMENDMENTS
 ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE (NFPA 70-2017)

SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;

TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G,
 STRUCTURAL STANDARDS FOR STEEL

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BTCW	BARE TINNED SOLID COPPER WIRE	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BGR	BURIED GROUND RING	MIN	MINIMUM	TBRR	TO BE REMOVED AND REPLACED
BTS	BASE TRANSCEIVER STATION	P	PROPOSED	TYP	TYPICAL
E	EXISTING	NTS	NOT TO SCALE	UG	UNDER GROUND
EGB	EQUIPMENT GROUND BAR	RAD	RADIATION CENTER LINE (ANTENNA)	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		

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 SUITE #301
 WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT2083
SITE NAME: MILFORD WHEELERS FARM
CCI SITE #876320
 528 WHEELERS FARM RD.
 MILFORD, CT 06460
 NEW HAVEN COUNTY

at&t
 550 COCHITUATE ROAD
 FRAMINGHAM, MA 01701

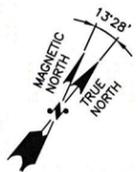
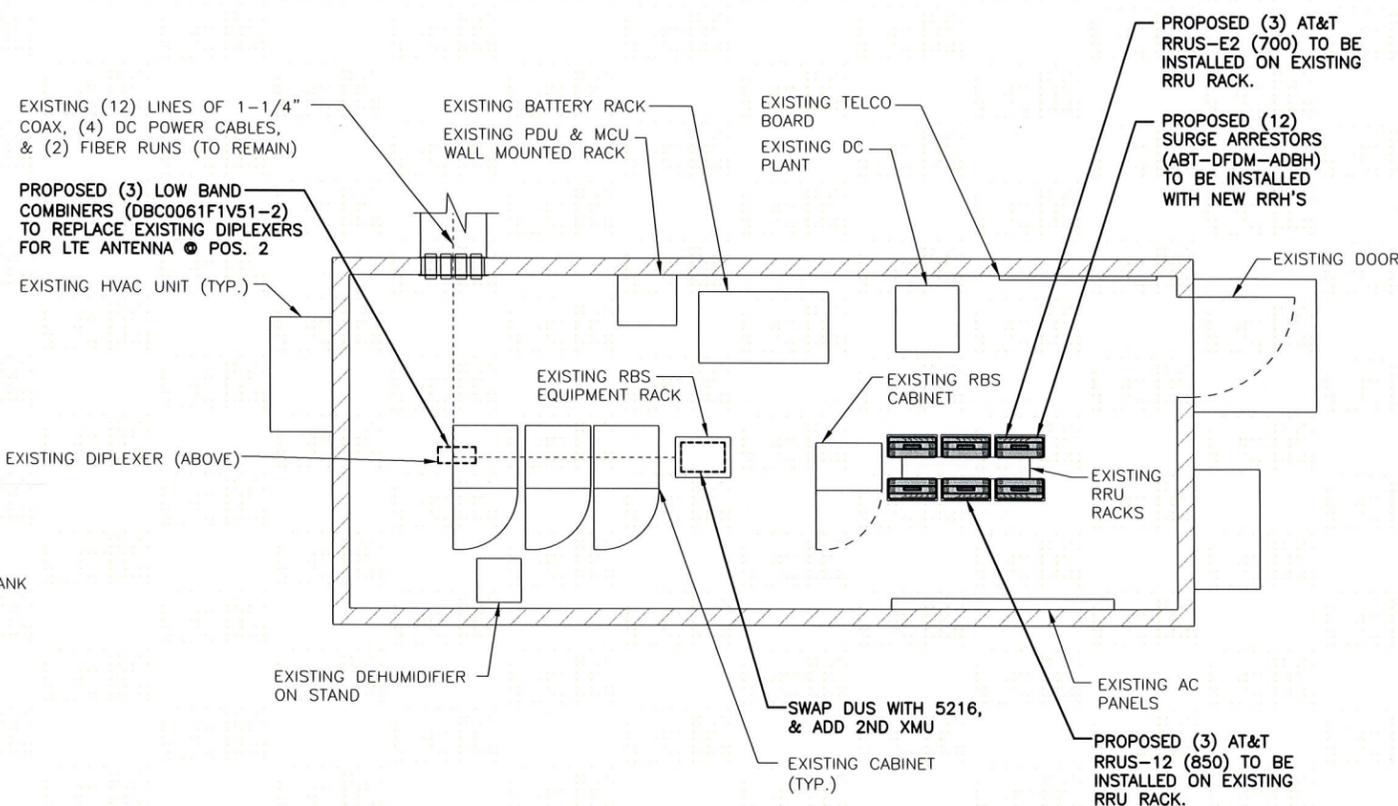
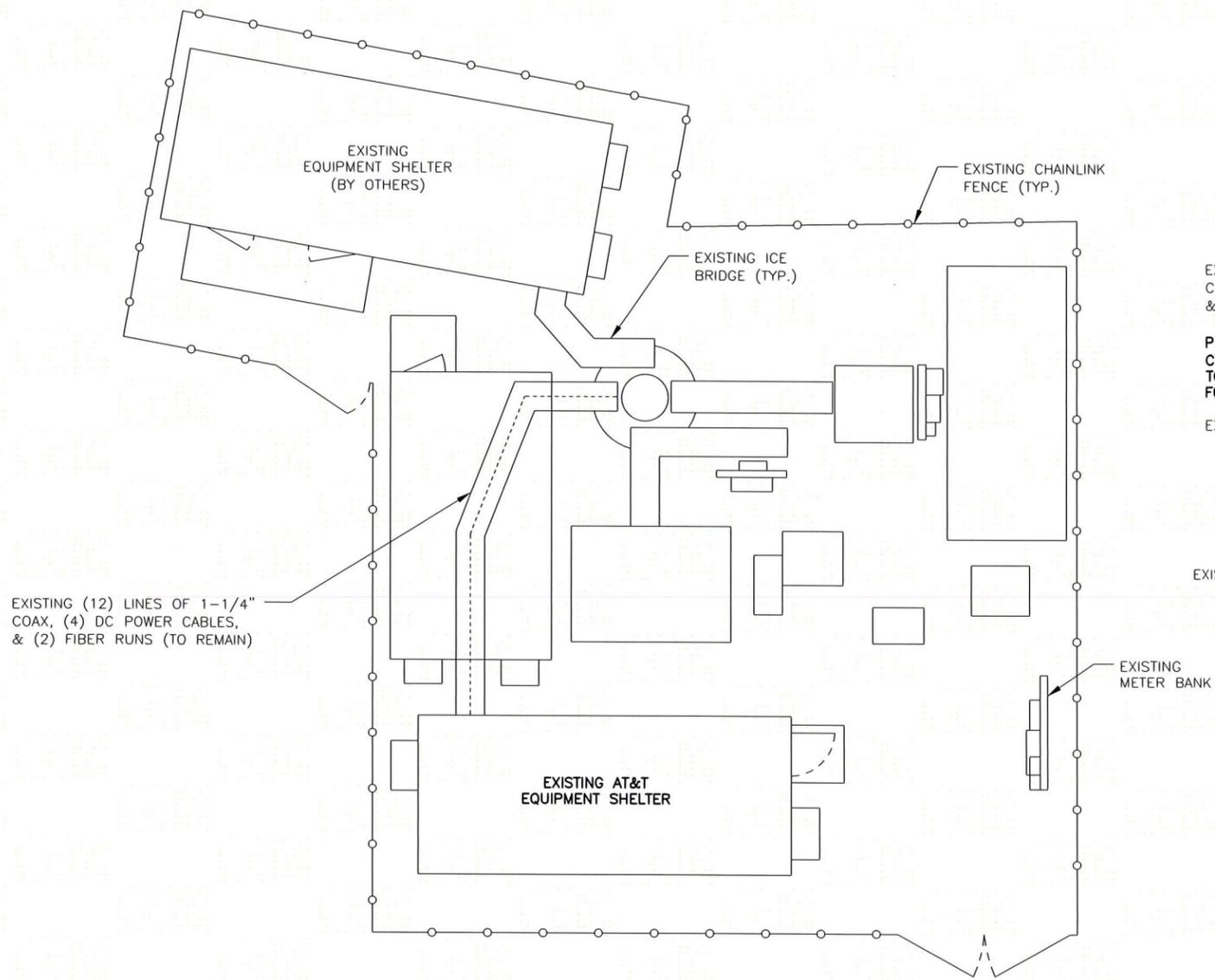
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						GENERAL NOTES (LTE 3C_4C)	
NO.	DATE	REVISIONS	BY	CHK	APP'D	JOB NUMBER	DRAWING NUMBER
1	02/25/19	ISSUED FOR CONSTRUCTION	AM	AT	DPH	CT2083	GN-1
A	02/12/18	ISSUED FOR REVIEW	ET	AT	DPH		
SCALE: AS SHOWN		DESIGNED BY: AT		DRAWN BY: ET		REV	
						1	

NOTE:
ALL ANTENNAS AND LINES TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY CROWN CASTLE AND FINAL AT&T RF DATA SHEET.

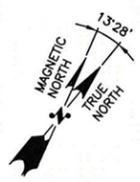
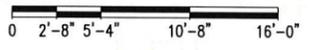
NOTE:
REFER TO STRUCTURAL ANALYSIS BY: TOWER ENGINEERING PROFESSIONALS, DATED: JANUARY 15, 2019 FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

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

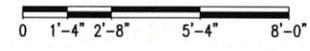
NOTE:
AN ASSESSMENT FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: APRIL 17, 2018



COMPOUND PLAN
22x34 SCALE: 3/16"=1'-0"
11x17 SCALE: 3/32"=1'-0"
1 A-1



EQUIPMENT PLAN
22x34 SCALE: 3/8"=1'-0"
11x17 SCALE: 3/16"=1'-0"
2 A-1



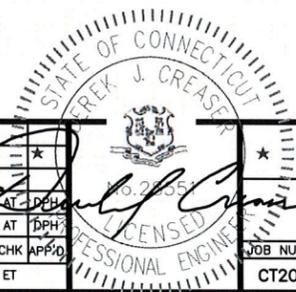
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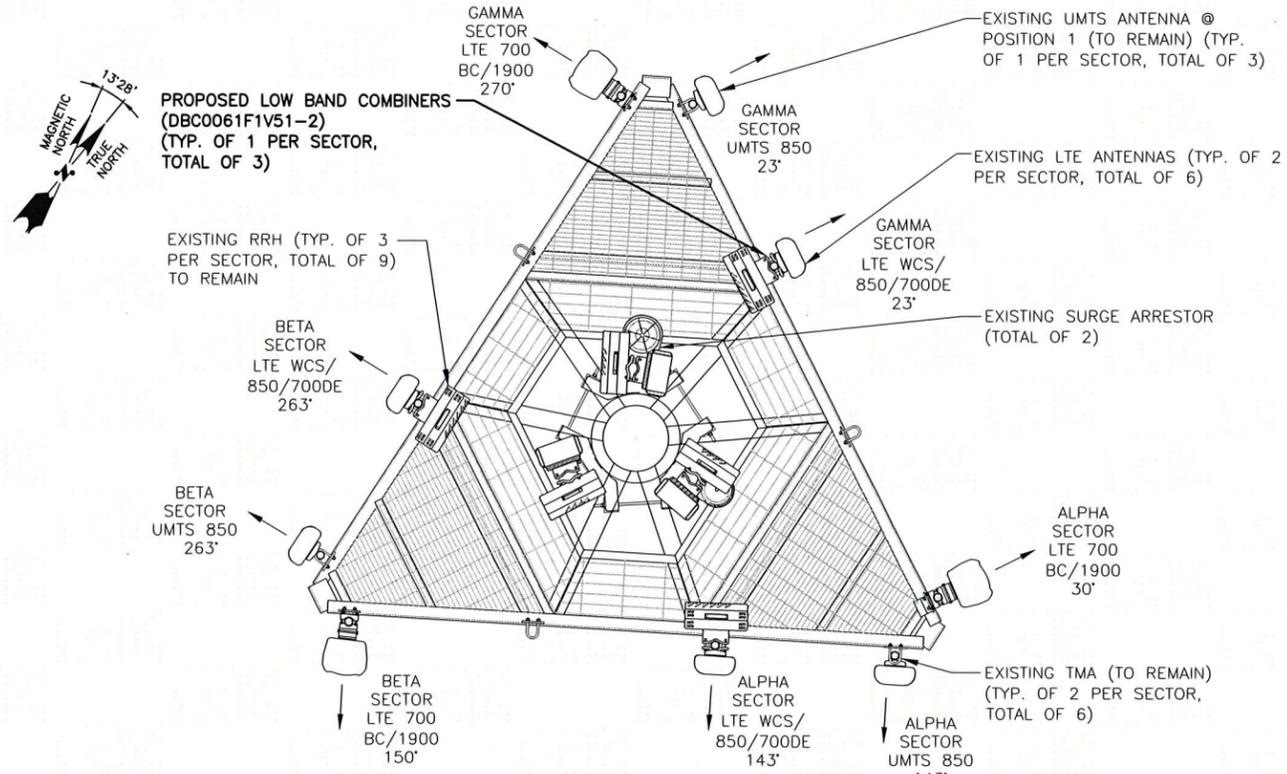
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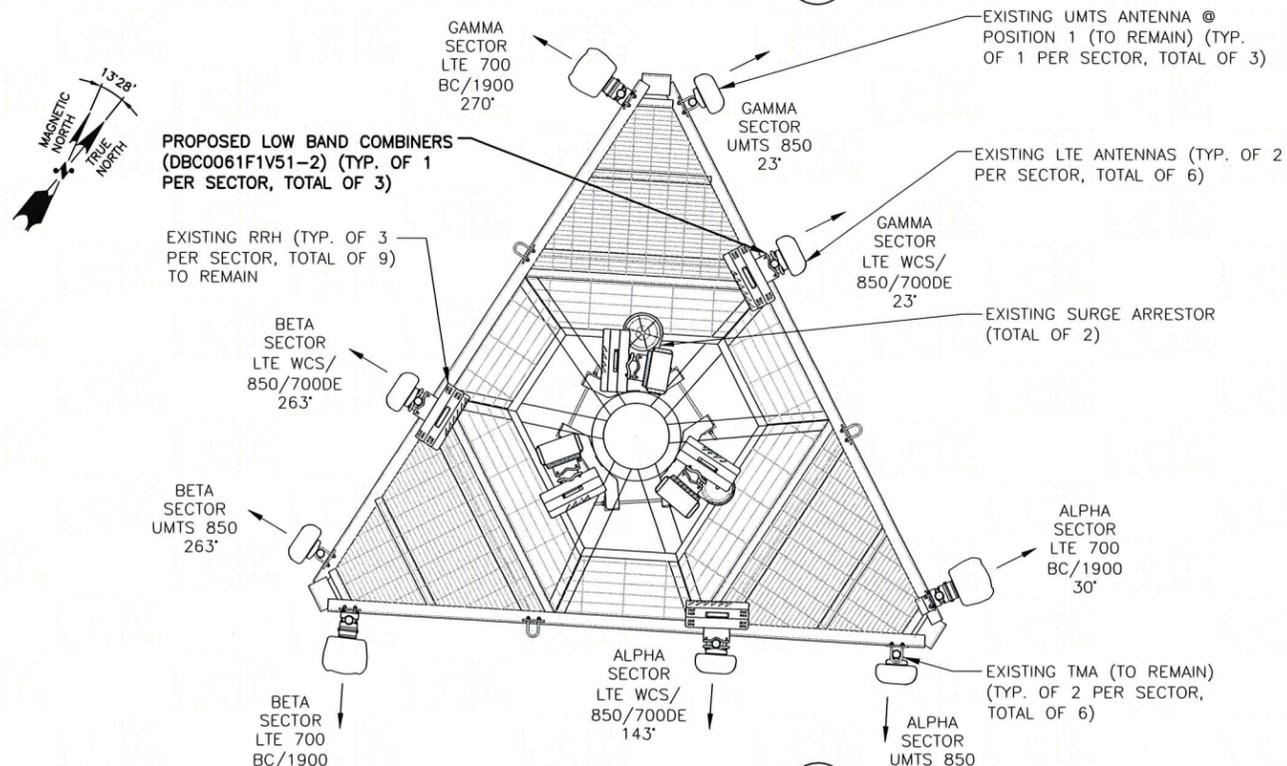
NO.	DATE	REVISIONS	BY	CHK	APP'D
1	02/25/19	ISSUED FOR CONSTRUCTION	AM	AT	DPH
A	02/12/18	ISSUED FOR REVIEW	ET	AT	DPH



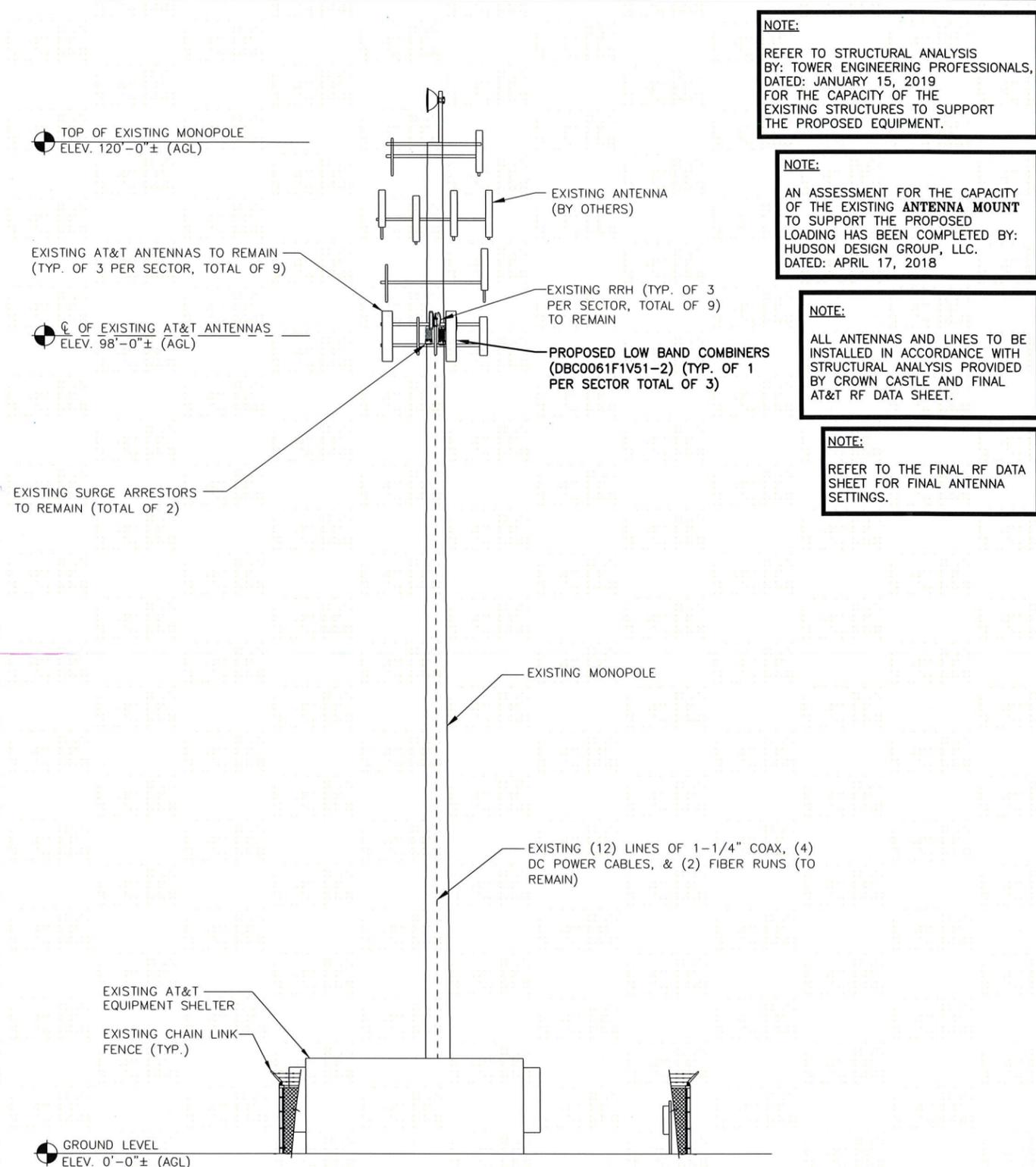
AT&T
COMPOUND AND EQUIPMENT PLAN
(LTE 3C_4C)
JOB NUMBER: CT2083
DRAWING NUMBER: A-1
REV: 1



EXISTING ANTENNA LAYOUT 1
SCALE: N.T.S. A-2



PROPOSED ANTENNA LAYOUT 2
SCALE: N.T.S. A-2



SOUTH ELEVATION 3
22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0" A-2

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: TOWER ENGINEERING PROFESSIONALS, DATED: JANUARY 15, 2019 FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:
AN ASSESSMENT FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: APRIL 17, 2018

NOTE:
ALL ANTENNAS AND LINES TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY CROWN CASTLE AND FINAL AT&T RF DATA SHEET.

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

HDG HUDSON
Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

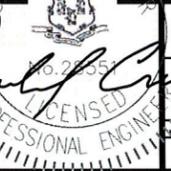
CENTERLINE
COMMUNICATIONS
750 WEST CENTER STREET
SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT2083
SITE NAME: MILFORD WHEELERS FARM
CCI SITE #876320
528 WHEELERS FARM RD.
MILFORD, CT 06460
NEW HAVEN COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

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SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: ET



AT&T
ANTENNA LAYOUT AND ELEVATION
(LTE 3C_4C)
JOB NUMBER: CT2083 DRAWING NUMBER: A-2 REV: 1

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: TOWER ENGINEERING PROFESSIONALS, DATED: JANUARY 15, 2019 FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:
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NOTE:
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FINAL ANTENNA SCHEDULE											
SECTOR	EXISTING/PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L X W X D)	RAD CENTER	AZIMUTH	TMA/DIPLEXER	RRU	SIZE (INCHES) (L X W X D)	FEEDER	COAX
A1	EXISTING	UMTS 850	7770	55X11X5	98'-0"±	143'	(E)(2) LGP21401	-	-	(2) 1-1/4 COAX (LENGTH 150' ±)	-
A2	EXISTING	LTE WCS/850/700DE	OPA-65R-LCUU-H6	72X14.8X7.4	98'-0"±	143'	(P)(1) DBC0061F1V51-2	(E)(1) RRUS-32 (WCS) (P)(G)(1) RRUS-E2 (700) (P)(G)(1) RRUS-12 (850)	-	(2) 1-1/4 COAX (LENGTH 250' ±)	(E) (1) RAYCAP DC6-48-60-18-B-C
A3	-	-	-	-	-	-	-	-	-	-	
A4	EXISTING	LTE 700 BC/1900	QS66512-2	72.0X12.0X9.6	98'-0"±	30'	-	(E)(1) RRUS-11 (700) (E)(1) RRUS-32 B2 (PCS)	-	-	-
B1	EXISTING	UMTS 850	7770	55X11X5	98'-0"±	263'	(E)(2) LGP21401	-	-	(2) 1-1/4 COAX (LENGTH 150' ±)	-
B2	EXISTING	LTE WCS/850/700DE	OPA-65R-LCUU-H6	72X14.8X7.4	98'-0"±	263'	(P)(1) DBC0061F1V51-2	(E)(1) RRUS-32 (WCS) (P)(G)(1) RRUS-E2 (700) (P)(G)(1) RRUS-12 (850)	-	(2) 1-1/4 COAX (LENGTH 250' ±)	(E) (1) RAYCAP DC6-48-60-18-8C
B3	-	-	-	-	-	-	-	-	-	-	
B4	EXISTING	LTE 700 BC/1900	QS66512-2	72.0X12.0X9.6	98'-0"±	150'	-	(E)(1) RRUS-11 (700) (E)(1) RRUS-32 B2 (PCS)	-	-	-
C1	EXISTING	UMTS 850	7770	55X11X5	98'-0"±	23'	(E)(2) LGP21401	-	-	(2) 1-1/4 COAX (LENGTH 150' ±)	-
C2	EXISTING	LTE WCS/850/700DE	OPA-65R-LCUU-H6	72X14.8X7.4	98'-0"±	23'	(P)(1) DBC0061F1V51-2	(E)(1) RRUS-32 (WCS) (P)(G)(1) RRUS-E2 (700) (P)(G)(1) RRUS-12 (850)	-	(2) 1-1/4 COAX (LENGTH 250' ±)	SHARED
C3	-	-	-	-	-	-	-	-	-	-	
C4	EXISTING	LTE 700 BC/1900	QS66512-2	72.0X12.0X9.6	98'-0"±	270'	-	(E)(1) RRUS-11 (700) (E)(1) RRUS-32 B2 (PCS)	-	-	-

FINAL ANTENNA SCHEDULE 1
SCALE: N.T.S. A-3

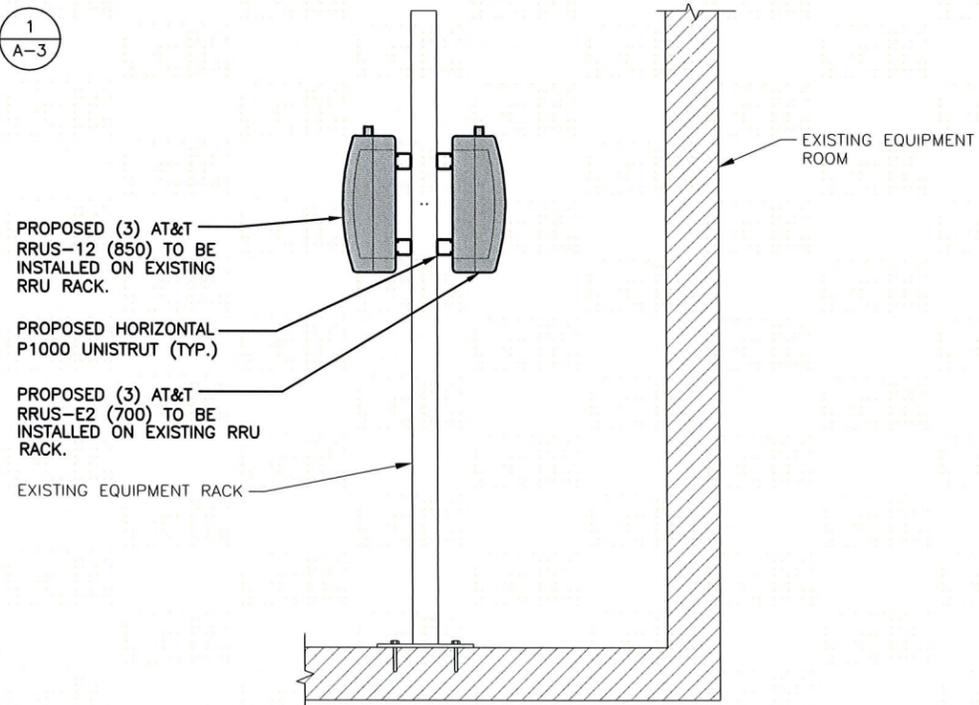
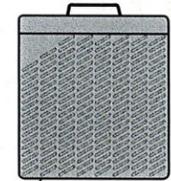
RRU CHART				
QUANTITY	MODEL	L	W	D
6(E)	RRUS-11	19.7"	17.0"	7.2"
6(E)	RRUS-32	27.2"	12.1"	7.0"
3(P)(G)	RRUS-E2	20.4"	18.5"	7.5"
3(P)(G)	RRUS-12	20.4"	18.5"	7.5"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

NOTE:
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.



PROPOSED RRUS DETAIL 2
SCALE: N.T.S. A-3

PROPOSED RRUS MOUNTING DETAIL ON EXISTING RACK 3
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"
A-3

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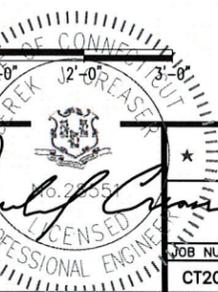
CENTERLINE
COMMUNICATIONS
750 WEST CENTER STREET
SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT2083
SITE NAME: MILFORD WHEELERS FARM
CCI SITE #876320
528 WHEELERS FARM RD.
MILFORD, CT 06460
NEW HAVEN COUNTY

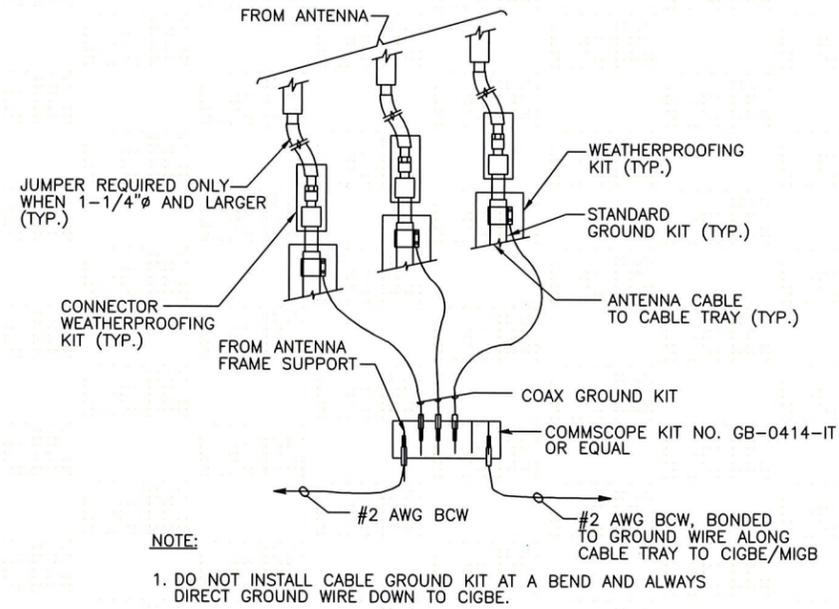
at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

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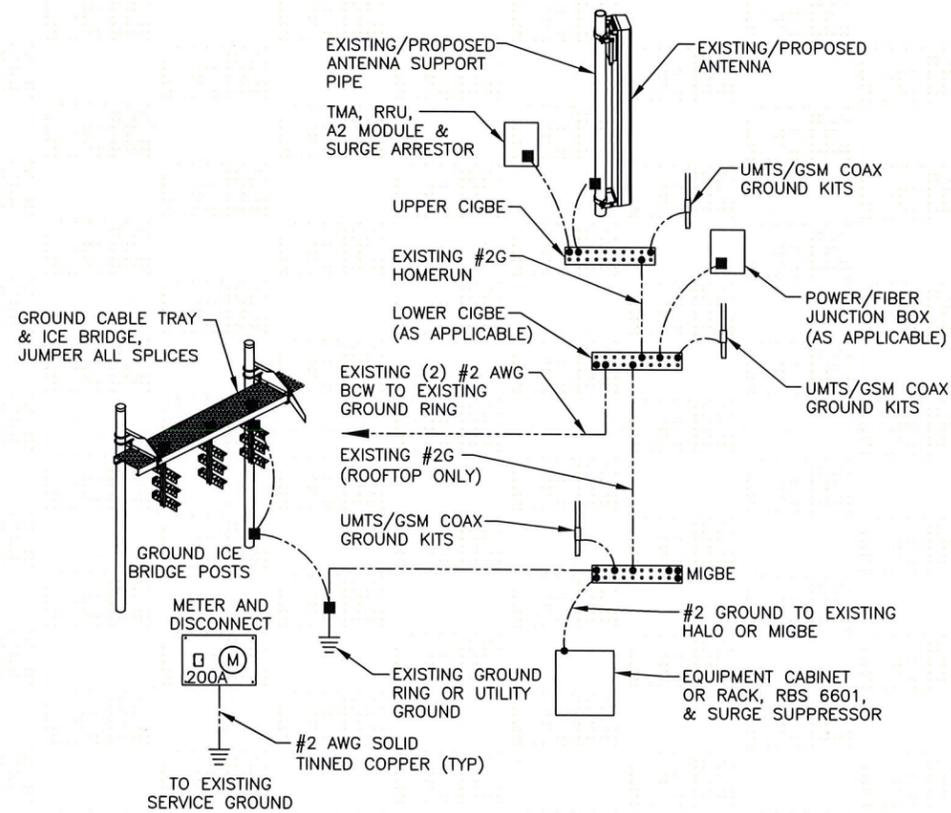
SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: ET



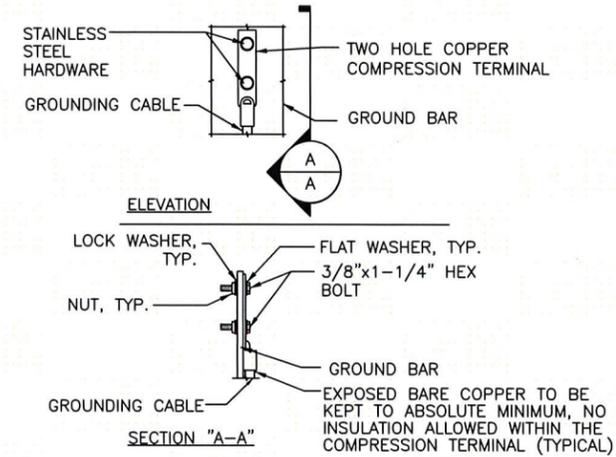
AT&T
DETAILS
(LTE 3C_4C)
JOB NUMBER: CT2083
DRAWING NUMBER: A-3
REV: 1



GROUND WIRE TO GROUND BAR CONNECTION DETAIL 1
SCALE: N.T.S. G-1



GROUNDING RISER DIAGRAM 2
SCALE: N.T.S. G-1



NOTE:
1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATION.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB

TYPICAL GROUND BAR CONNECTION DETAIL 3
SCALE: N.T.S. G-1

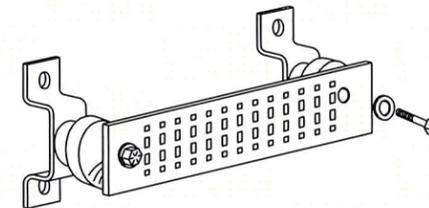
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" - SURGE PRODUCERS

- CABLE ENTRY PORTS (HATCH PLATES) (#2)
- GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
- TELCO GROUND BAR
- COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
- +24V POWER SUPPLY RETURN BAR (#2)
- 48V POWER SUPPLY RETURN BAR (#2)
- RECTIFIER FRAMES.

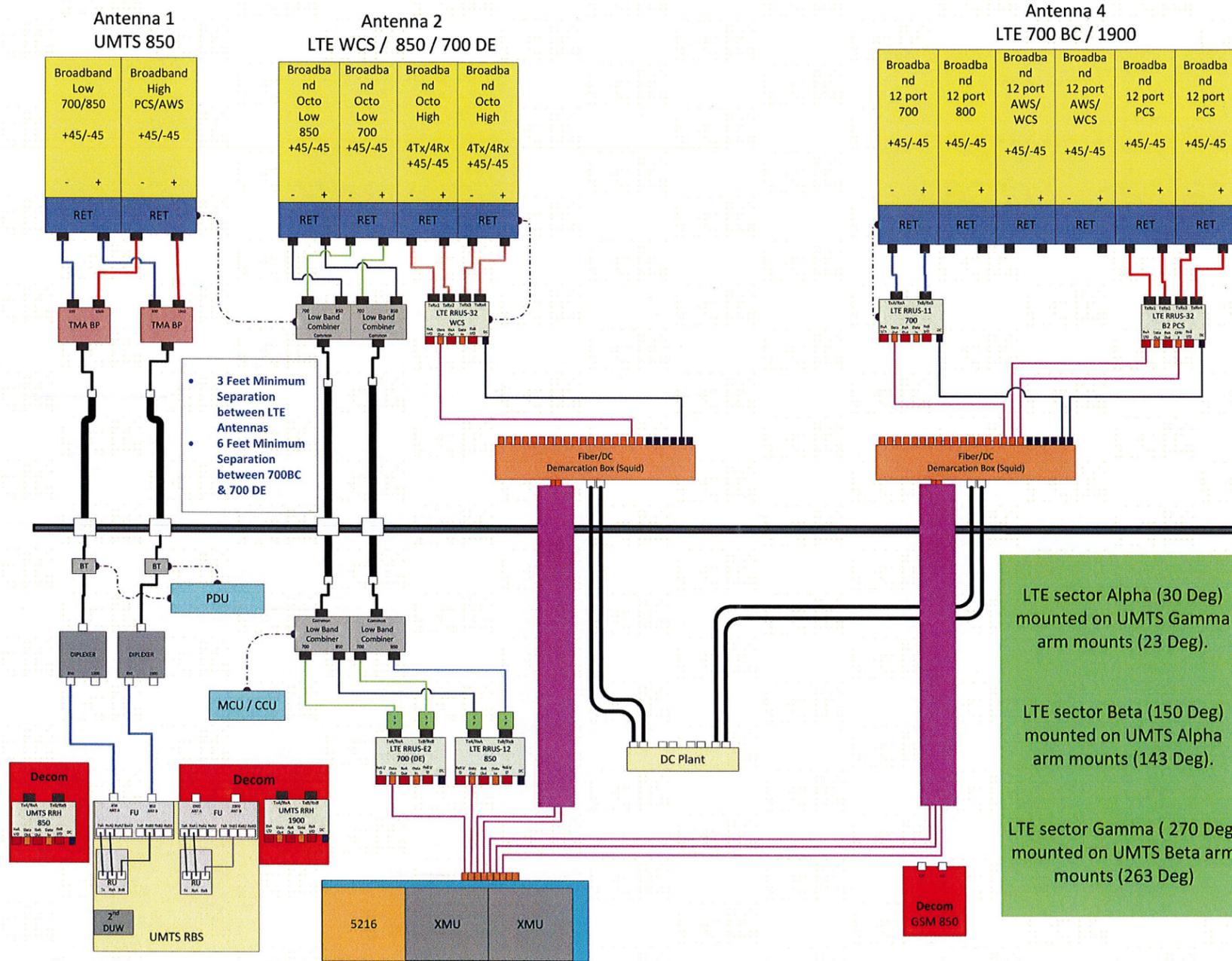
SECTION "A" - SURGE ABSORBERS

- INTERIOR GROUND RING (#2)
- EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
- METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
- BUILDING STEEL (IF AVAILABLE) (#2)



GROUND BAR - DETAIL 4
SCALE: N.T.S. G-1

ALPHA & BETA SECTORS



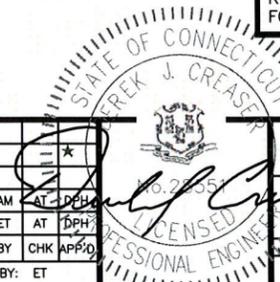
RF PLUMBING DIAGRAM
SCALE: N.T.S.

NOTE:
1. CONTRACTOR TO CONFIRM ALL PARTS.
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS

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

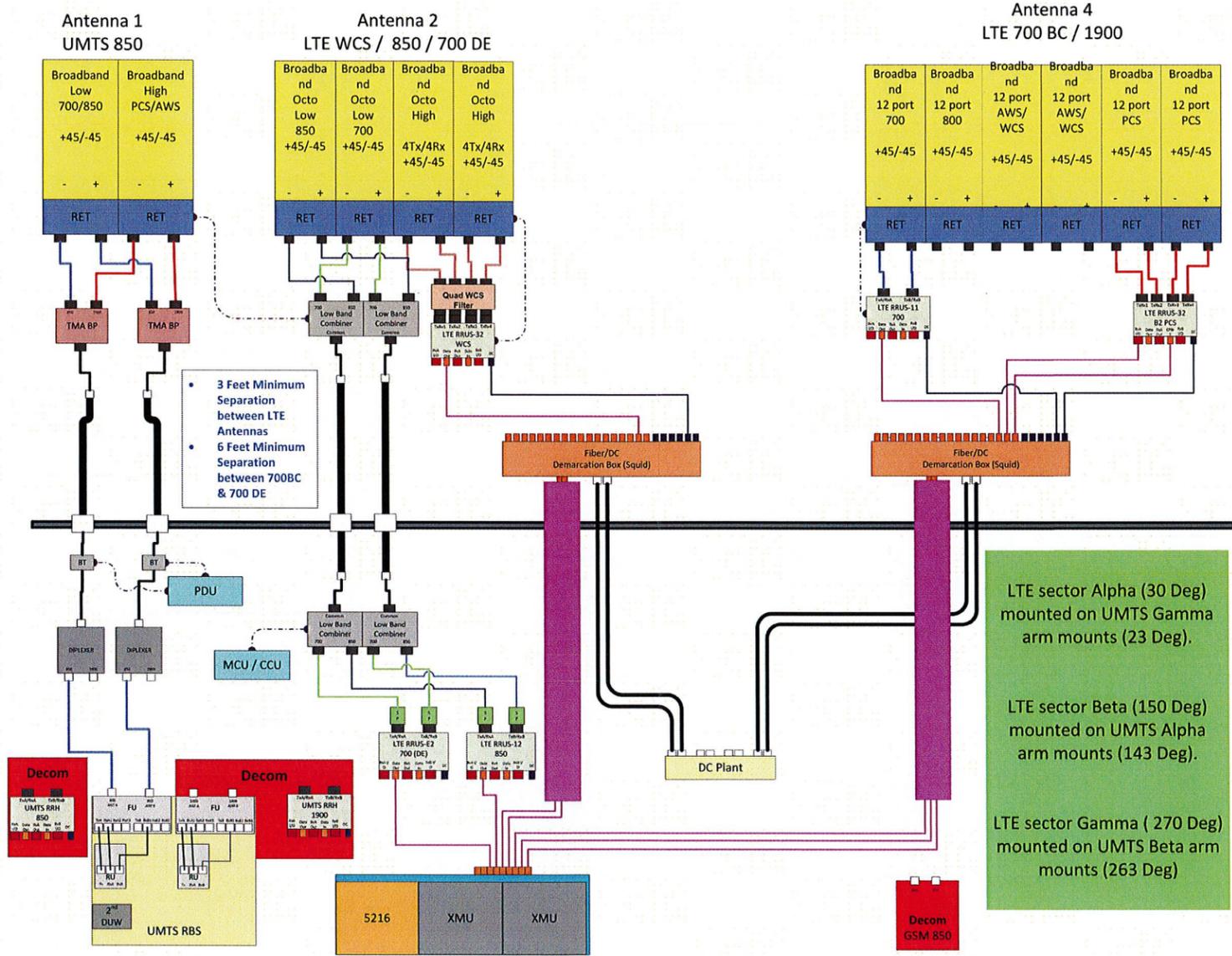
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SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: ET



AT&T	
RF PLUMBING DIAGRAM (LTE 3C_4C)	
JOB NUMBER	DRAWING NUMBER
CT2083	RF-1
REV	1

GAMMA SECTOR



LTE sector Alpha (30 Deg) mounted on UMTS Gamma arm mounts (23 Deg).
 LTE sector Beta (150 Deg) mounted on UMTS Alpha arm mounts (143 Deg).
 LTE sector Gamma (270 Deg) mounted on UMTS Beta arm mounts (263 Deg)

RF PLUMBING DIAGRAM
 SCALE: N.T.S.

NOTE:
 1. CONTRACTOR TO CONFIRM ALL PARTS.
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SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: ET		
JOB NUMBER		DRAWING NUMBER		REV	
CT2083		RF-2		1	

