

August 20, 2020

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

**Regarding:** Notice of Exempt Modification – T-Mobile Site #: CT11606H\_Anchor  
**Address:** 36 Ritch Avenue (aka 48 Ritch Avenue West), Hartford, CT

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 77-foot level of the existing +/- 87-foot monopine at the above-referenced address, latitude 41.005100, longitude -73.648300. The tower is operated by American Tower Corporation.

T-Mobile now intends to modify its existing telecommunications facility by swapping three (3) antennae, adding three (3) remote radio heads (RRH), adding three (3) diplexers and adding three (3) cables as more particularly detailed and described on the enclosed Construction Drawings prepared by A.T. Engineering Service, PLLC, last revised July 29, 2020. The centerline height of the existing and proposed antennas is and will remain at 77 feet.

**Planned Modifications:**

Remove and Replace:

- (3) APX16DWV-16DWVS-E-A20 Antennae (**Remove**) – (3) AIR6449B41 Antennae (**Replace**)

Add:

- (3) Radio 4415 B25 RRH
- (3) CBC1923Q-43 Diplexers
- (3) 1-1/4" Hybrid Cables

Existing to Remain:

- (6) Antennae
- (6) RRH
- (3) 1-1/4" Hybrid Cables

Please accept this letter as notification pursuant to R.C.S.A § 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 Fred Camillo, First Selectmen of the Town of Greenwich as chief elected official, Katie DeLuca, Director of Planning and Zoning for the Town of Greenwich, American Tower Corporation as tower operator and 36 Ritch Avenue LLC, as underlying property owner. Please note, copies of the original tower approval were requested from the Town but have not been made available to date. Should they become available and received I shall supplement this filing with same.

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

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require an extension of the site boundary.
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 modified facility will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. *Please see the RF emissions calculation for T-Mobile's modified facility dated July 24, 2020 and prepared by EBI Consulting enclosed herewith.*
5. The proposed modifications will not cause an ineligible change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading. *Please see the structural analysis dated July 13, 2020 and prepared by American Tower Corporation enclosed herewith.*

For the foregoing reasons, T-Mobile 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).

Respectfully submitted,



Jennifer Iliades  
Site Acquisition Consultant  
Centerline Communications, LLC  
750 West Center Street, Suite 301  
West Bridgewater, MA 02379  
jiliades@clinellc.com

Enclosures:    Exhibit A – Property Card and GIS  
                    Exhibit B – Construction Drawings  
                    Exhibit C – Structural Analysis Report  
                    Exhibit D – Mount Analysis  
                    Exhibit E – Power Density/RF Emissions Report

cc:                Fred Camillo, First Selectman of the Town of Greenwich  
                    Katie DeLuca, Director of Planning and Zoning for the Town of Greenwich  
                    American Tower Corporation, tower operator  
                    36 Ritch Avenue LLC, underlying property owner

# Exhibit A

Property Card

ADMINISTRATIVE INFORMATION

PARCEL NUMBER 04-2334/S

Parent Parcel Number  
Property Address  
RITCH AVENUE 0036  
Neighborhood  
2700 BYRAM

Property Class  
270 Telecommunications  
TAXING DISTRICT INFORMATION

Jurisdiction 57 Greenwich, CT  
Area 001  
Corporation 057  
District 04

Section & Plat 040  
Routing Number 7117N0001

Site Description

Topography:

Public Utilities:  
Water, Sewer, Electric  
Street or Road:

Neighborhood:

Zoning: R-7 Single Family 7.5, 1-Primary Commercial  
Legal Acres: 0.2670

OWNER(SH)P  
36 RITCH AVENUE LLC  
168 ARTHUR STREET  
GREENWICH, CT 06831

LOT NO PT5 & P17A-1-1-3 R ITCH AV NIB

Date

02/15/2002 KELLY BRIAN & LAURA W/S  
11/16/2000 CATALANO ANTHONY ETAL DBA CATALANO B  
08/20/1986 NA BK/Pg: 3492, 86  
BK/Pg: 1611, 290

\$0  
\$125000  
\$0

COMMERCIAL

VALUATION RECORD

Assessment Year	10/01/2015	10/01/2015	10/01/2015	10/01/2016	10/01/2017	10/01/2018	10/01/2019
Reason for Change	2015 Prelim	2015 Final	2015 BAA	2016 List	2017 List	2018 List	2019 List
VALUATION	664000	664000	664000	664000	664000	664000	664000
Market	2350700	2350700	2236000	2236000	2236000	2236000	2236000
	3014700	3014700	2900000	2900000	2900000	2900000	2900000
VALUATION	464800	464800	464800	464800	464800	464800	464800
70% Assessed	1645490	1645490	1565200	1565200	1565200	1565200	1565200
	2110290	2110290	2030000	2030000	2030000	2030000	2030000

LAND DATA AND CALCULATIONS

Rating	Measured	Table	Prod. Factor	Base	Adjusted	Extended	Influence	Value
SolI ID	-or-	-or-	-or-	Rate	Rate	Value	Factor	
Actual	Effective	Effective	Depth					
Frontage	Frontage	Depth	Square Feet					
			11630.52	57.09	57.09	664000		664000

BA10: Sustained

BA15: Decrease Total Value by \$114,700

BP15: 15-0972, \$15,000 9 Antenna Panels

BP17: 16-3234, 16-4235, 16-4392: Cellular Work, \$85,000

CKMP: 8586

DBA: Telecommunications site w/ a 70' flagpole monopole owned by Cingular (land carrier), and a 77' monopole (pole) owned by Verizon (w/ Verizon, ATT & Mobile carriers) both serviced by a custom utility Dig.

LAND: See BP03 memo.

Supplemental Cards

TRUE TAX VALUE

664000

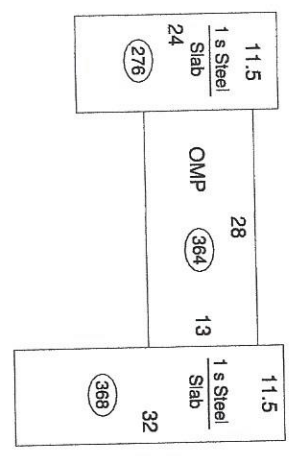
Supplemental Cards  
TOTAL LAND VALUE

664000

IMPROVEMENT DATA

PHYSICAL CHARACTERISTICS

ROOFING				
Build-up				
WALLS	B	1	2	U
Frame				
Brick				
Metal				
Guard				
FRAMING				
F Res	B	1	2	U
		0	0	0
HEATING AND AIR CONDITIONING				
Heat	B	1	2	U
		0	0	0
Sprink		0	0	0



- 01
- 02
- 03
- 04
- 05
- 06

Item Description	Units	Cost	Total	Pct
Base Cost	644	61.99	39922	
Exterior Walls	644	31.57	20331	
Heating & Cooling	644	53.92	34724	
Sprinklers	644	7.68	4946	
Basic Structure Cost	644	155.16	99923	
Physical	0	0.00	2998	3.00
Depreciated Cost	644	150.50	96925	
Rounded Total	0	0.00	96900	
OMP	364	33.87	12330	
Total Exterior Features Value			11960	
Depreciated Ext Features			108860	
Total Before Adjustments			54440	50.00
Neighborhood Adjustment			163300	
TOTAL VALUE			163300	

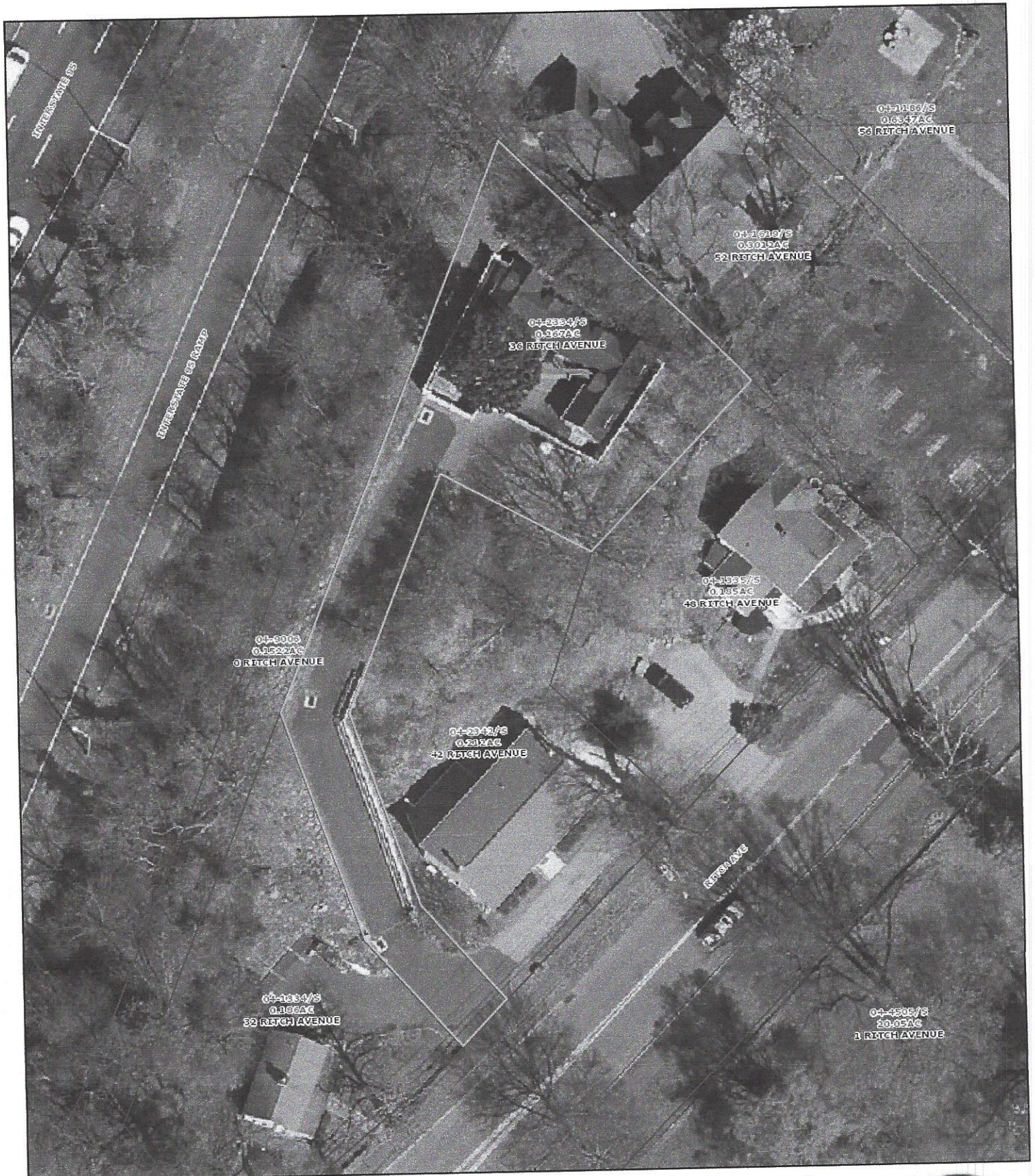
M & S Cost Database Date: 01/2015

SPECIAL FEATURES

Description	Value	ID	Use	Sty	Const	Hgt	Type	Grade	Year	Eff	Const	Year	Cond	Base	Feat-	Adj	Size	or	Computed	Phys	Obsol	Market	%	Value	
C STGCA	0.00								2012	2012	AV	2012	AV	0.00	N		644		0	0	0	150	100	163300	
01 TOWERMON	0.00								2003	2003	GD	2003	GD	1.477	N		70		232630	0	0	100	100	663000	
02 STNWAIGS	8.00								2012	2012	AV	2012	AV	125.00	N		281.25	9928	0	279000	2	0	100	100	779200
03 PAYING	0.00								2012	2012	AV	2012	AV	5.20	N		7.80	2856	0	22280	2	0	100	100	62200
04 RTWBRER	0.00								2012	2012	AV	2012	AV	17.00	N		38.25	4x112	0	17140	2	0	100	100	47900
05 TOWERMON	0.00								2012	2012	AV	2012	AV	0.00	N		0.00	77	0	200000	2	0	SV	100	558600
06 COMCNPHYH	0.00								2012	2012	AV	2012	AV	63.00	N		226.80	8x 18	0	32660	2	0	100	100	91200

SUMMARY OF IMPROVEMENTS

(LCM: 150.00)



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1:480  
1"=40'



8/13/2020 8:43:31 AM

# Exhibit B

Construction Drawings



VICINITY MAP



**AMERICAN TOWER®**

ATC SITE NAME: BYRAM PARK CT  
 ATC SITE NUMBER: 414240  
 T-MOBILE SITE NAME: CT606/VZ BYRAM SHORE  
 T-MOBILE SITE NUMBER: CT11606H  
 SITE ADDRESS: 48 RITCH AVENUE WEST  
 GREENWICH, CT 06830



LOCATION MAP

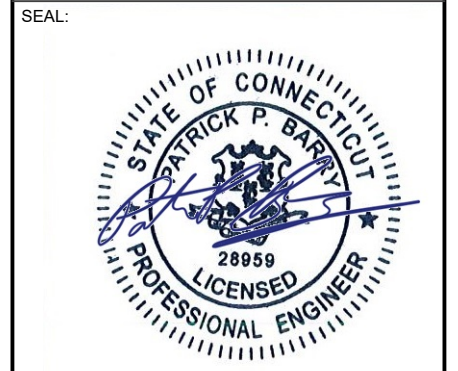
**T-MOBILE ANCHOR ANTENNA AMENDMENT PLAN  
 67D5A997DB CONFIGURATION**

**AMERICAN TOWER®**  
**A.T. ENGINEERING SERVICE, PLLC**  
 3500 REGENCY PARKWAY  
 SUITE 100  
 CARY, NC 27518  
 PHONE: (919) 468-0112  
 COA: PEC.0001553

THESE DRAWINGS AND/OR THE ACCOMPANYING SPECIFICATION AS INSTRUMENTS OR SERVICE ARE THE EXCLUSIVE PROPERTY OF AMERICAN TOWER. THEIR USE AND PUBLICATION SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY ARE PREPARED. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO AMERICAN TOWER OR THE SPECIFIED CARRIER IS STRICTLY PROHIBITED. TITLE TO THESE DOCUMENTS SHALL REMAIN THE PROPERTY OF AMERICAN TOWER WHETHER OR NOT THE PROJECT IS EXECUTED. NEITHER THE ARCHITECT NOR THE ENGINEER WILL BE PROVIDING ON-SITE CONSTRUCTION REVIEW OF THIS PROJECT. CONTRACTOR(S) MUST VERIFY ALL DIMENSIONS AND ADVISE AMERICAN TOWER OF ANY DISCREPANCIES. ANY PRIOR ISSUANCE OF THIS DRAWING IS SUPERSEDED BY THE LATEST VERSION ON FILE WITH AMERICAN TOWER.

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	CWB	07/29/20

ATC SITE NUMBER:  
**414240**  
 ATC SITE NAME:  
**BYRAM PARK CT**  
 T-MOBILE SITE NAME:  
**CT606/VZ BYRAM SHORE**  
 SITE ADDRESS:  
 48 RITCH AVENUE WEST  
 GREENWICH, CT 06830



DATE DRAWN:	07/29/20
ATC JOB NO:	13251816_D1
CUSTOMER ID:	CT606/VZ BYRAM SHORE
CUSTOMER #:	CT11606H

**TITLE SHEET**

SHEET NUMBER: <b>G-001</b>	REVISION: <b>0</b>
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COMPLIANCE CODE	PROJECT SUMMARY	PROJECT DESCRIPTION	SHEET INDEX				
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.  1. INTERNATIONAL BUILDING CODE (IBC) 2. NATIONAL ELECTRIC CODE (NEC) 3. LOCAL BUILDING CODE 4. CITY/COUNTY ORDINANCES	<u>SITE ADDRESS:</u> 48 RITCH AVENUE WEST GREENWICH, CT 06830 COUNTY: FAIRFIELD  <u>GEOGRAPHIC COORDINATES:</u> LATITUDE: 41.00506388 LONGITUDE: -73.64831111 GROUND ELEVATION: 40' AMSL	THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW: <u>TOWER WORK:</u> REMOVE (3) ANTENNA(S)  INSTALL (3) ANTENNA(S), (3) RRH(S), (3) DIPLEXER, AND (3) 1-1/4" HYBRID CABLE(S)  EXISTING (6) ANTENNA(S), (6) RRH(S), AND (3) 1-1/4" HYBRID CABLE(S) TO REMAIN  <u>GROUND WORK:</u> INSTALL (1) ENCLOSURE AND (1) BATTERY CABINET	SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
	<u>PROJECT TEAM</u>  <u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801  <u>ENGINEER:</u> ATC TOWER SERVICES, LLC 3500 REGENCY PKWY STE 100 CARY, NC 27518  <u>PROPERTY OWNER:</u> 36 RITCH AVENUE LLC 16B ARTHUR ST GREENWICH, CT 06831	<u>PROJECT NOTES</u>  1. THE FACILITY IS UNMANNED. 2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE. 3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE. 4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED. 5. HANDICAP ACCESS IS NOT REQUIRED.	G-001	TITLE SHEET	0	07/29/20	CWB
	<u>UTILITY COMPANIES</u>  POWER COMPANY: EVERSOURCE PHONE: (866) 554-6025  TELEPHONE COMPANY: UNKNOWN PHONE: N/A	<u>PROJECT LOCATION DIRECTIONS</u>  TAKE RITCH AVE W AND HAMILTON AVE TO GLEN ST IN GREENWICH, 4 MIN (1.6 MI), HEAD NORTHEAST ON I-95 N, 0.2 MI, TAKE EXIT 2 FOR BYRAM TOWARD DELAVAN AVE, 0.2 MI, CONTINUE ONTO DORAN AVE, 361 FT, TURN LEFT ONTO BYRAM SHORE RD, 167 FT, TURN RIGHT ONTO RITCH AVE W, 0.6 MI, CONTINUE ONTO HAMILTON AVE, 0.5 MI, TAKE RODWELL AVE TO HAMILTON AVE, 43 S (0.2 MI), TURN RIGHT ONTO GLEN ST, 351 FT, GLEN ST TURNS LEFT AND BECOMES RODWELL AVE, 476 FT, RODWELL AVE TURNS LEFT AND BECOMES STONE AVE, 358 FT, CONTINUE ON HAMILTON AVE. DRIVE TO RITCH AVE W, 3 MIN (1.1 MI), TURN LEFT ONTO HAMILTON AVE, 0.6 MI, CONTINUE ONTO RITCH AVE W, DESTINATION WILL BE ON THE RIGHT.	G-002	GENERAL NOTES	0	07/29/20	CWB
<b>811</b> Know what's below. Call before you dig.	<u>PROJECT TEAM</u>  <u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801  <u>ENGINEER:</u> ATC TOWER SERVICES, LLC 3500 REGENCY PKWY STE 100 CARY, NC 27518  <u>PROPERTY OWNER:</u> 36 RITCH AVENUE LLC 16B ARTHUR ST GREENWICH, CT 06831	<u>PROJECT NOTES</u>  1. THE FACILITY IS UNMANNED. 2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE. 3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE. 4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED. 5. HANDICAP ACCESS IS NOT REQUIRED.	C-101	DETAILED SITE PLAN	0	07/29/20	CWB
			C-102	DETAILED GROUND PLAN	0	07/29/20	CWB
			C-201	TOWER ELEVATION	0	07/29/20	CWB
			C-401	ANTENNA INFORMATION & SCHEDULE	0	07/29/20	CWB
			C-501	CONSTRUCTION DETAILS	0	07/29/20	CWB
			E-501	GROUNDING DETAILS	0	07/29/20	CWB
			R-601	SUPPLEMENTAL			
			R-602	EQUIPMENT SPECIFICATIONS			
			R-603	SUPPLEMENTAL			
			R-604	SUPPLEMENTAL			

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**GENERAL CONSTRUCTION NOTES:**

1. OWNER FURNISHED MATERIALS, T-MOBILE "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL
  - A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)
  - B. AC/TELCO INTERFACE BOX (PPC)
  - C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
  - D. TOWERS, MONOPOLES
  - E. TOWER LIGHTING
  - F. GENERATORS & LIQUID PROPANE TANK
  - G. ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING
  - H. ANTENNAS (INSTALLED BY OTHERS)
  - I. TRANSMISSION LINE
  - J. TRANSMISSION LINE JUMPERS
  - K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
  - L. TRANSMISSION LINE GROUND KITS
  - M. HANGERS
  - N. HOISTING GRIPS
  - O. BTS EQUIPMENT
2. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF T-MOBILE TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
3. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSIEIA/TIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS.
4. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
6. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
7. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
8. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
9. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
11. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
12. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE T-MOBILE REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE T-MOBILE REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE T-MOBILE REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
14. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE T-MOBILE CONSTRUCTION MANAGER.
15. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
16. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE T-MOBILE REP AND ENGINEER OF RECORD IMMEDIATELY.
17. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
18. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
19. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AMERICAN TOWER CORPORATION (ATC) AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
20. CONTRACTOR SHALL FURNISH T-MOBILE AND AMERICAN TOWER CORPORATION (ATC) WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.

22. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY T-MOBILE MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH T-MOBILE SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO T-MOBILE FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO T-MOBILE SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
26. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
27. CONTRACTOR SHALL NOTIFY T-MOBILE REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
28. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
29. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
30. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE T-MOBILE REP. ANY WORK FOUND BY THE T-MOBILE REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
31. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.
32. T-MOBILE FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE T-MOBILE WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP.
33. T-MOBILE OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OWN OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO T-MOBILE OR THEIR ARCHITECT/ENGINEER.

COAXIAL CABLE (NOT WITHIN BENDS)

**SPECIAL CONSTRUCTION**

**ANTENNA INSTALLATION NOTES:**

1. WORK INCLUDED:
  - A. ANTENNA AND COAXIAL CABLES ARE FURNISHED BY T-MOBILE UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OF COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL AND
  - B. INSTALL ANTENNA AS INDICATE ON DRAWINGS AND T-MOBILE SPECIFICATIONS.
  - C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS
  - D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE AND PROVIDE PRINTOUT OF THAT TEST.
  - E. CONTRACTOR SHALL PROVIDE FOUR (4) SETS OF SWEEP TESTS USING ANRITZU-PACKARD 8713B RF SCALAR NETWORK ANALYZER. SUBMIT FREQUENCY DOMAIN REFLECTOMETER(FDR) TESTS RESULTS TO THE PROJECT MANAGER. SWEEP TESTS SHALL BE AS PER ATTACHED RFS "MINIMUM FIELD TESTING RECOMMENDED FOR ANTENNA AND HELIAX COAXIAL CABLE SYSTEMS" DATED 10/5/93. TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.
  - F. INSTALL COAXIAL CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTIONS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.
  - G. ANTENNA AND COAXIAL CABLE GROUNDING:
2. ALL EXTERIOR #6 GREED GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPLICE WEATHERPROOFING KIT #221213 OR EQUAL.
3. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF

ALL DISCREPANCIES FROM WHAT IS SHOWN ON THESE CONSTRUCTION DRAWINGS SHALL BE COMMUNICATED TO ATC ENGINEERING IMMEDIATELY FOR CORRECTION OR RE-DESIGN. FAILURE TO COMMUNICATE DIRECTLY WITH ATC ENGINEERING OR ANY CHANGES FROM THE DESIGN CONDUCTED WITHOUT PRIOR APPROVAL FROM ATC ENGINEERING SHALL BE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

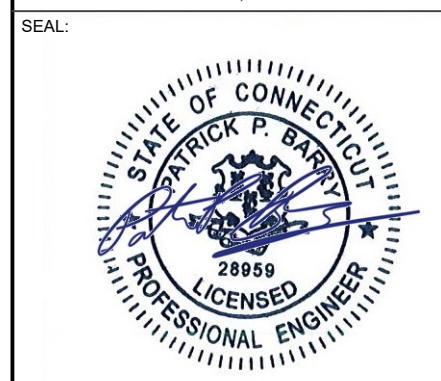


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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	CWB	07/29/20

ATC SITE NUMBER:  
**414240**  
 ATC SITE NAME:  
**BYRAM PARK CT**  
 T-MOBILE SITE NAME:  
**CT606/VZ BYRAM SHORE**  
 SITE ADDRESS:  
 48 RITCH AVENUE WEST  
 GREENWICH, CT 06830



DATE DRAWN:	07/29/20
ATC JOB NO:	13251816_D1
CUSTOMER ID:	CT606/VZ BYRAM SHORE
CUSTOMER #:	CT11606H

**GENERAL NOTES**

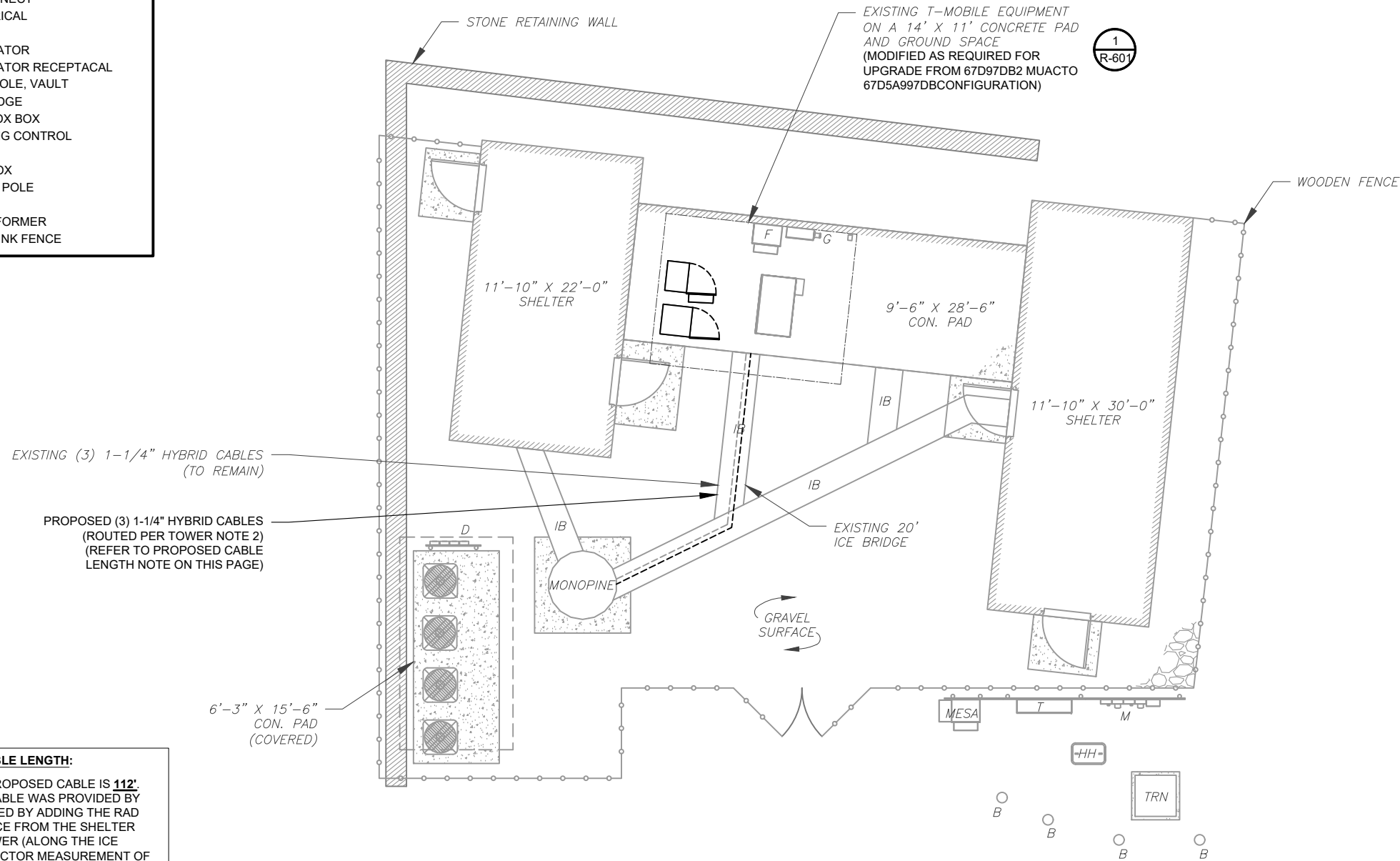
SHEET NUMBER: <b>G-002</b>	REVISION: <b>0</b>
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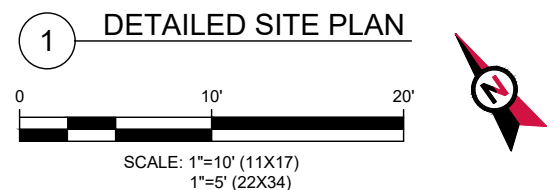

**SITE PLAN NOTES:**

1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.
3. THIS PROJECT INCLUDES NO INSTALL OR MODIFICATION AT GRADE.

LEGEND	
⊗	GROUNDING TEST WELL
ATS	AUTOMATIC TRANSFER SWITCH
B	BOLLARD
CSC	CELL SITE CABINET
D	DISCONNECT
E	ELECTRICAL
F	FIBER
GEN	GENERATOR
G	GENERATOR RECEPTACAL
HH, V	HAND HOLE, VAULT
IB	ICE BRIDGE
K	KENTROX BOX
LC	LIGHTING CONTROL
M	METER
PB	PULL BOX
PP	POWER POLE
T	TELCO
TRN	TRANSFORMER
— x —	CHAINLINK FENCE



- PROPOSED CABLE LENGTH:**
1. ESTIMATED LENGTH OF PROPOSED CABLE IS **112'**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES). CDS DEFER TO GREATEST CABLE LENGTH.
  2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. WHERE POSSIBLE UTILIZE EXISTING CABLE SUPPORT STRUCTURES AS PROVIDED FOR CARRIER TO ADEQUATELY SECURE CABLES, USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER. OTHERWISE, ATTACH CABLES TO HORIZONTAL OR DIAGONAL TOWER MEMBERS USING PROPOSED STAINLESS STEEL ADAPTERS (DO NOT ATTACH TO TOWER LEG).

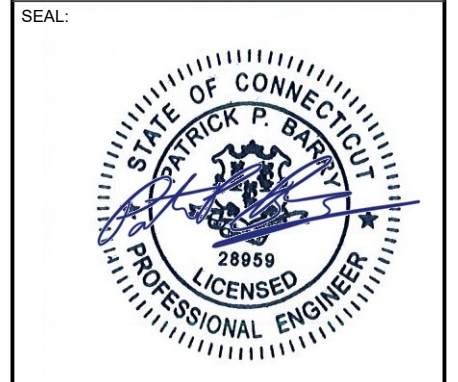



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**414240**  
 ATC SITE NAME:  
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 T-MOBILE SITE NAME:  
**CT606/VZ BYRAM SHORE**  
 SITE ADDRESS:  
 48 RITCH AVENUE WEST  
 GREENWICH, CT 06830



DATE DRAWN:	07/29/20
ATC JOB NO:	13251816_D1
CUSTOMER ID:	CT606/VZ BYRAM SHORE
CUSTOMER #:	CT11606H

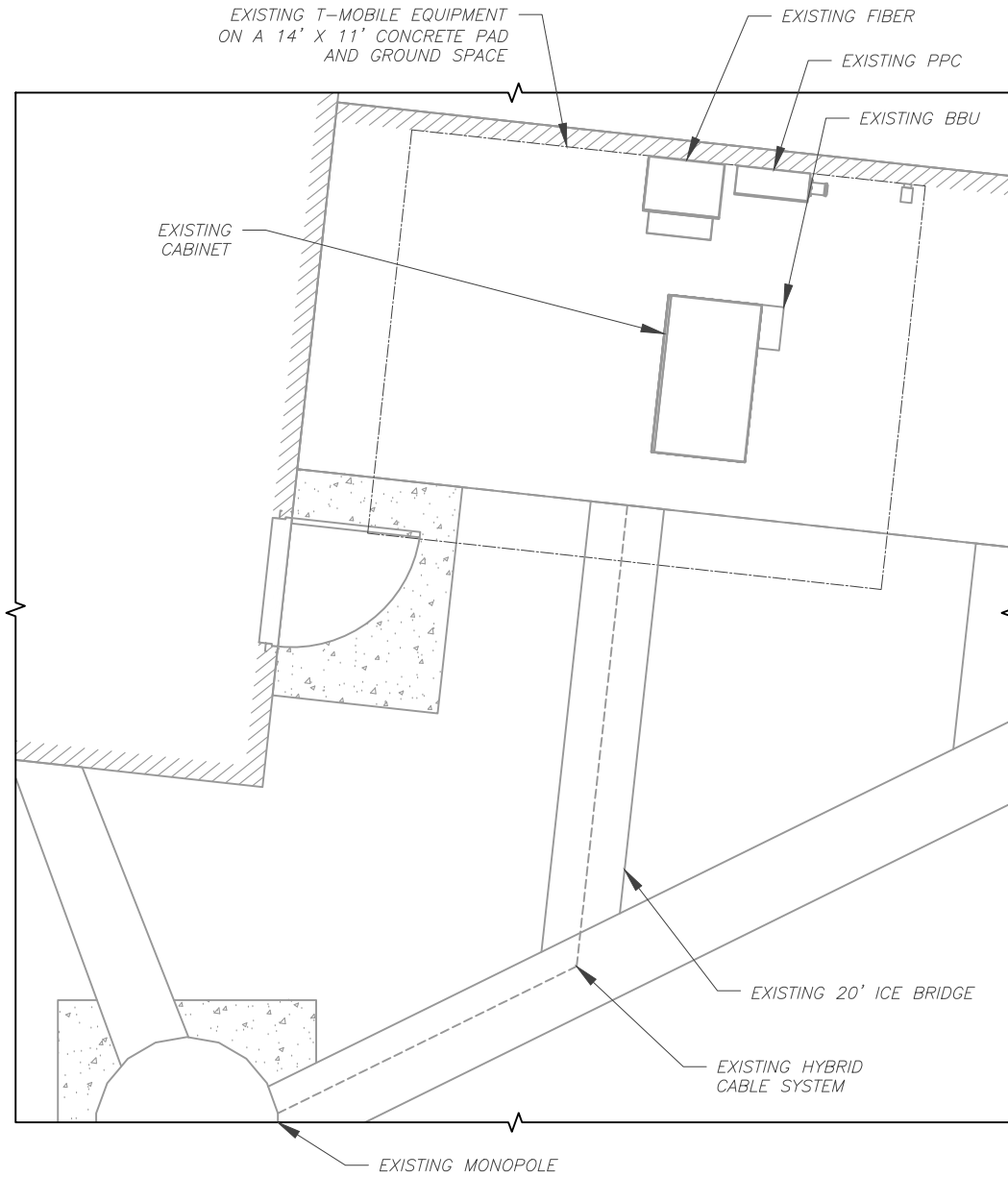
**DETAILED SITE PLAN**

SHEET NUMBER:	REVISION:
<b>C-101</b>	<b>0</b>

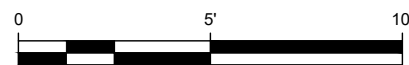
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**SITE PLAN NOTES:**

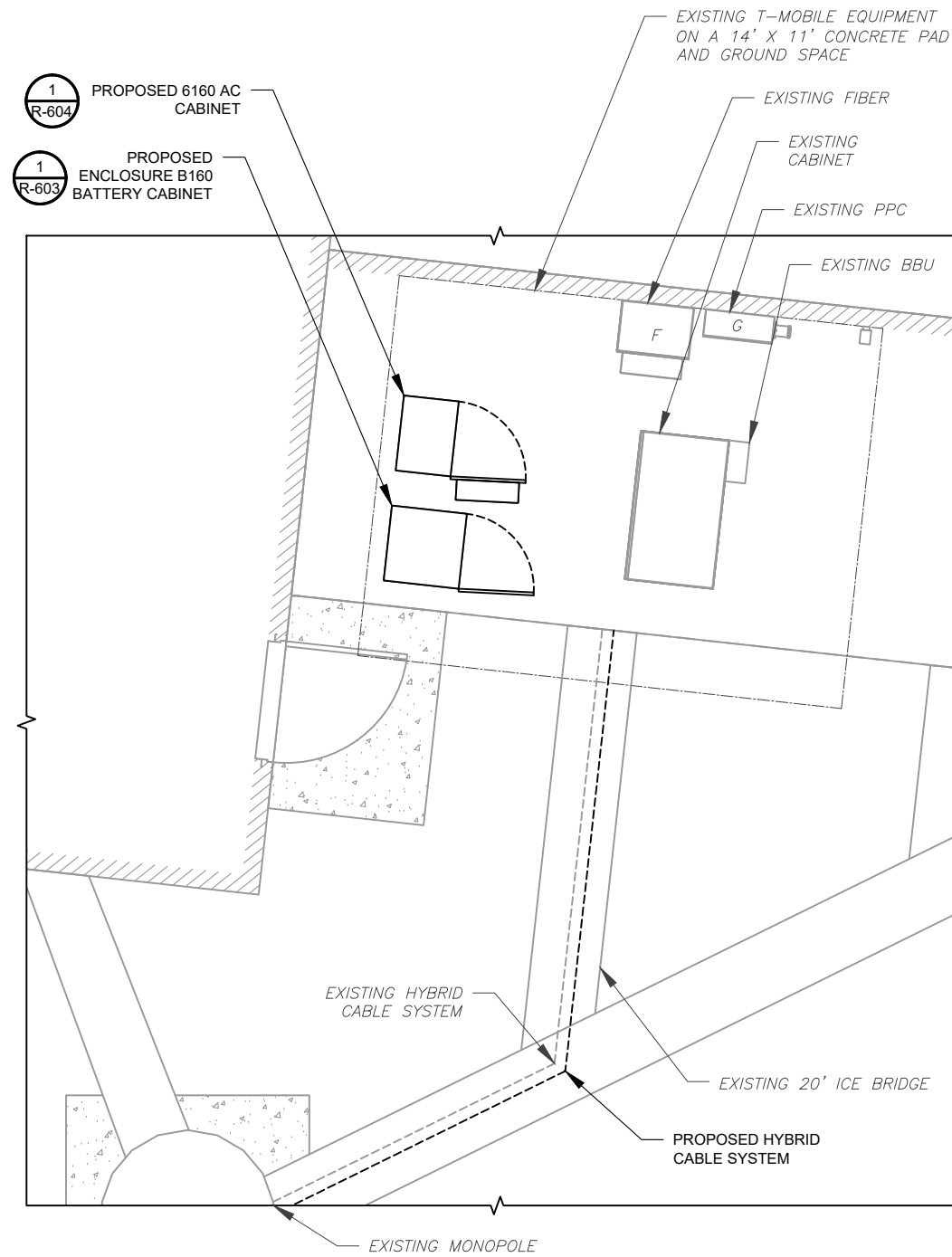
1. CONTRACTOR TO VERIFY THERE IS NO LIVE AAV FIBER RUNNING THROUGH EXISTING DEAD EQUIPMENT. IF SO, THIS WILL NEED TO BE RERUN THROUGH CONDUIT PRIOR TO REMOVING DEAD 2G (6201 CABS) EQUIPMENT.
2. REMOVE EXISTING 2G CABINETS, AND POWER / TELCO WHIPS ASSOCIATED WITH THE DEAD EQUIPMENT IF APPLICABLE.
3. ALL OPEN PORTS NEED TO BE SEALED / WEATHERPROOFED PROPERLY
4. ALL UNNEEDED / EXCESS EQUIPMENT AND GARBAGE TO BE REMOVED FROM EQUIPMENT AREA. DISPOSE OF MATERIALS PROPERLY OFF SITE.



1 EXISTING GROUND EQUIPMENT LAYOUT



SCALE: 1"=5' (11X17)  
1"=2.5' (22X34)



2 PROPOSED GROUND EQUIPMENT LAYOUT



SCALE: 1"=5' (11X17)  
1"=2.5' (22X34)



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 T-MOBILE SITE NAME:  
**CT606/VZ BYRAM SHORE**  
 SITE ADDRESS:  
 48 RITCH AVENUE WEST  
 GREENWICH, CT 06830

SEAL:



DATE DRAWN:	07/29/20
ATC JOB NO:	13251816_D1
CUSTOMER ID:	CT606/VZ BYRAM SHORE
CUSTOMER #:	CT11606H

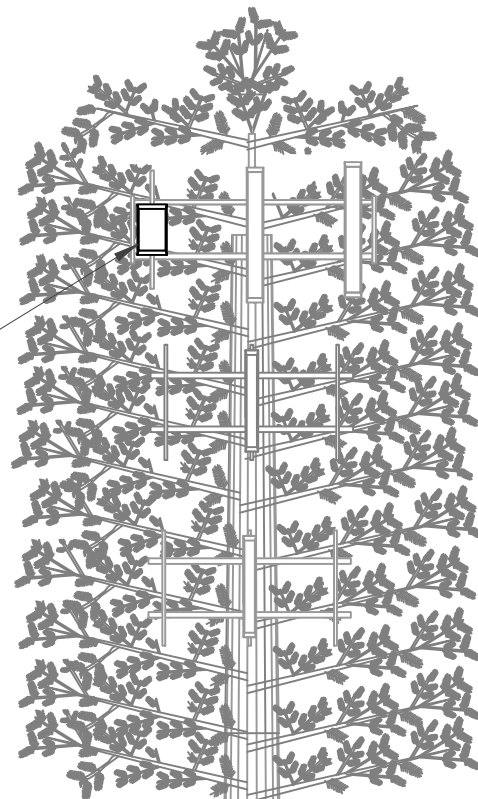
**DETAILED GROUND PLAN**

SHEET NUMBER:  
**C-102**  
 REVISION:  
**0**

TOP OF EXISTING  
HIGHEST APPURTENANCE  
ELEV. 97.7'

TOP OF EXISTING TOWER  
ELEV. 87.7'

EXISTING AND  
PROPOSED T-MOBILE  
EQUIPMENT



**MONOPINE NOTE:**  
MONOPINE BRANCHES ARE SHOWN FOR VISUAL  
REFERENCE ONLY AND DO NOT DEPICT ACTUAL  
FIELD CONDITIONS

PROPOSED ANTENNA  
RAD CENTER @ 77'

EXISTING CARRIER ANTENNAS  
RAD CENTER @ 67'

EXISTING CARRIER ANTENNAS  
RAD CENTER @ 56'

EXISTING TOP  
OF BASE PLATE

**1 TOWER ELEVATION**  
SCALE: N.T.S.

**TOWER NOTE:**

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE AMERICAN TOWER CONSTRUCTION MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
- ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.
- TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)



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**CT606/VZ BYRAM SHORE**  
SITE ADDRESS:  
48 RITCH AVENUE WEST  
GREENWICH, CT 06830

SEAL:



DATE DRAWN:	07/29/20
ATC JOB NO:	13251816_D1
CUSTOMER ID:	CT606/VZ BYRAM SHORE
CUSTOMER #:	CT11606H

**TOWER ELEVATION**

SHEET NUMBER:  
**C-201**  
REVISION:  
**0**



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 48 RITCH AVENUE WEST  
 GREENWICH, CT 06830

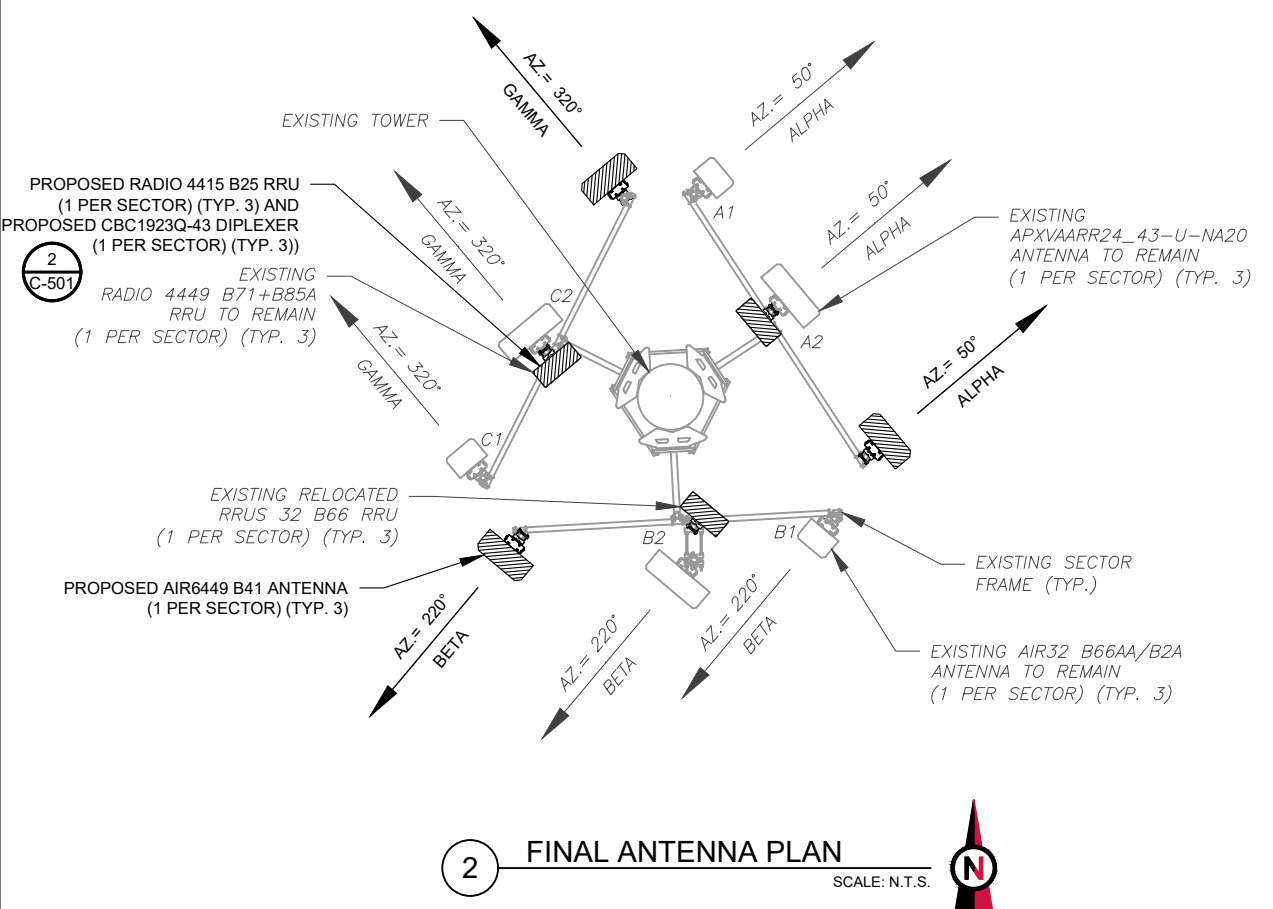
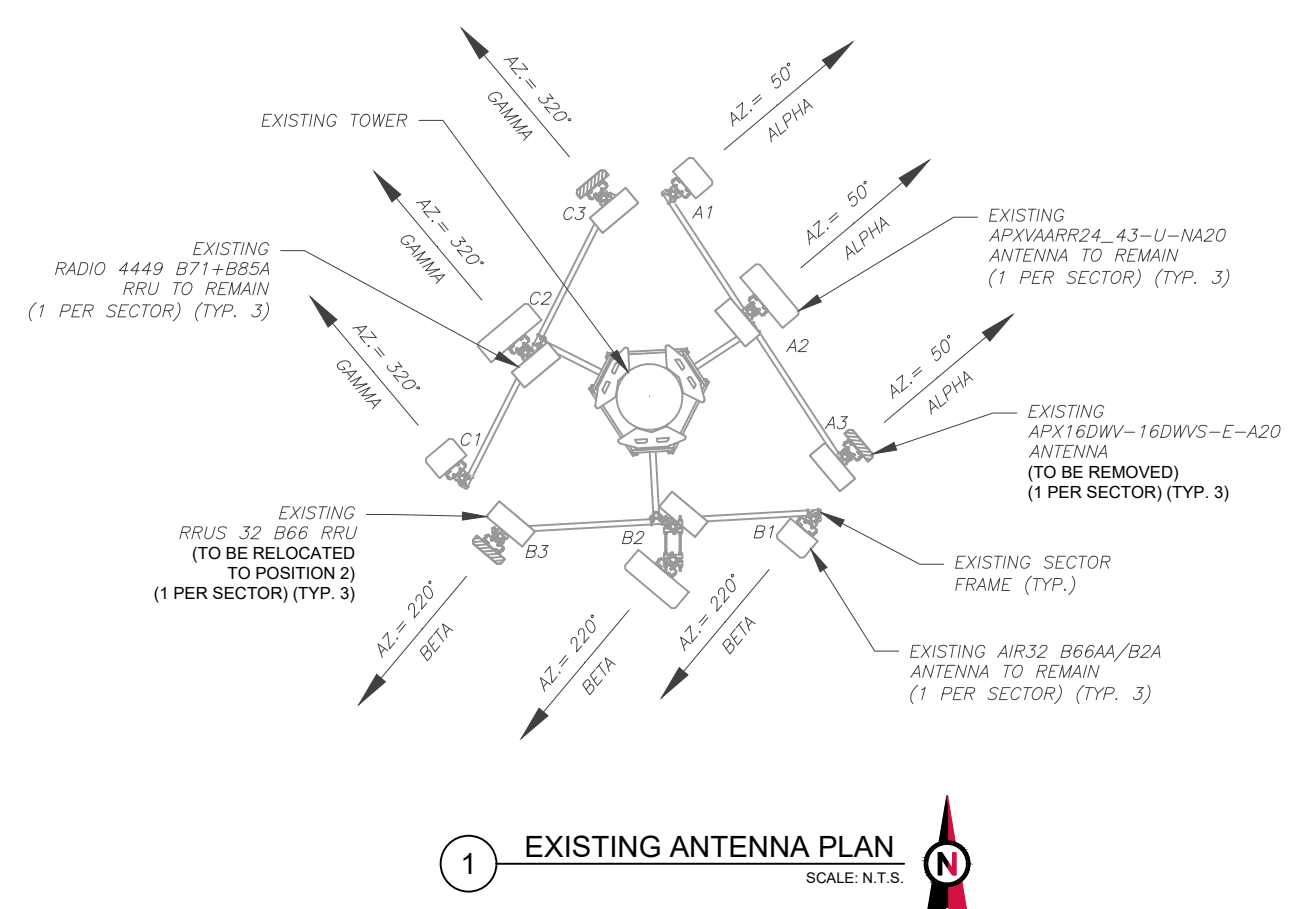


**T-Mobile**

DATE DRAWN:	07/29/20
ATC JOB NO:	13251816_D1
CUSTOMER ID:	CT606/VZ BYRAM SHORE
CUSTOMER #:	CT11606H

**ANTENNA INFORMATION & SCHEDULE**

SHEET NUMBER:	REVISION:
<b>C-401</b>	<b>0</b>



EXISTING ANTENNA SCHEDULE									
LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY		
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	77'	50°	A1	AIR32 B66AA/B2A	L2100/L1900	0°	RMN	-	-
			A2	APXVAARR24_43-U-NA 20	L700/L600/N600	0°	RMN	RADIO 4449 B71+B85A	RMN
			A3	APX16DWV-16DWVS-E -A20	U2100	0°	RMV	RRUS 32 B66	REL
BETA	77'	220°	B1	AIR32 B66AA/B2A	L2100/L1900	0°	RMN	-	-
			B2	APXVAARR24_43-U-NA 20	L700/L600/N600	0°	RMN	RADIO 4449 B71+B85A	RMN
			B3	APX16DWV-16DWVS-E -A20	U2100	0°	RMV	RRUS 32 B66	REL
GAMMA	77'	320°	C1	AIR32 B66AA/B2A	L2100/L1900	0°	RMN	-	-
			C2	APXVAARR24_43-U-NA 20	L700/L600/N600	0°	RMN	RADIO 4449 B71+B85A	RMN
			C3	APX16DWV-16DWVS-E -A20	U2100	0°	RMV	RRUS 32 B66	REL

**NOTES**

- CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
- CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.

**STATUS ABBREVIATIONS**

RMV: TO BE REMOVED  
 RMN: TO REMAIN  
 REL: TO BE RELOCATED  
 ADD: TO BE ADDED

**CABLE LENGTHS FOR JUMPERS**

JUNCTION BOX TO RRU: 15'  
 RRU TO ANTENNA: 10'

FINAL ANTENNA SCHEDULE									
LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY		
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	77'	50°	A1	AIR32 B66AA/B2A	L2100/L1900	0°	RMN	-	-
			A2	APXVAARR24_43-U-NA 20	L700/L600/N600/L1900/U2100	0°	RMN	RADIO 4449 B71+B85A RADIO 4415 B25 CBC1923Q-43 RRUS 32 B66	RMN ADD ADD RMN
			A3	AIR6449 B41	L2500/N2500	0°	ADD	-	-
BETA	77'	220°	B1	AIR32 B66AA/B2A	L2100/L1900	0°	RMN	-	-
			B2	APXVAARR24_43-U-NA 20	L700/L600/N600/L1900/U2100	0°	RMN	RADIO 4449 B71+B85A RADIO 4415 B25 CBC1923Q-43 RRUS 32 B66	RMN ADD ADD RMN
			B3	AIR6449 B41	L2500/N2500	0°	ADD	-	-
GAMMA	77'	320°	C1	AIR32 B66AA/B2A	L2100/L1900	0°	RMN	-	-
			C2	APXVAARR24_43-U-NA 20	L700/L600/N600/L1900/U2100	0°	RMN	RADIO 4449 B71+B85A RADIO 4415 B25 CBC1923Q-43 RRUS 32 B66	RMN ADD ADD RMN
			C3	AIR6449 B41	L2500/N2500	0°	ADD	-	-

EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	-	(3) 1-1/4"	RMN

**3 EQUIPMENT SCHEDULES**

FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	-	(3) 1-1/4"	RMN
-	-	-	(3) 1-1/4"	ADD

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SEAL:

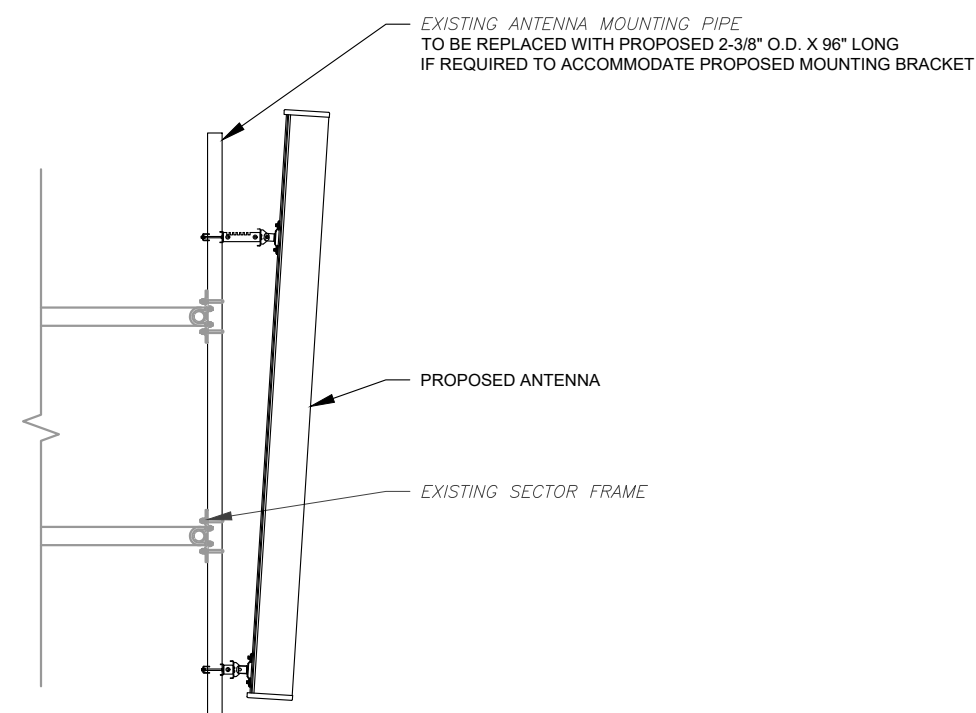


DATE DRAWN:	07/29/20
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CUSTOMER ID:	CT606/VZ BYRAM SHORE
CUSTOMER #:	CT11606H

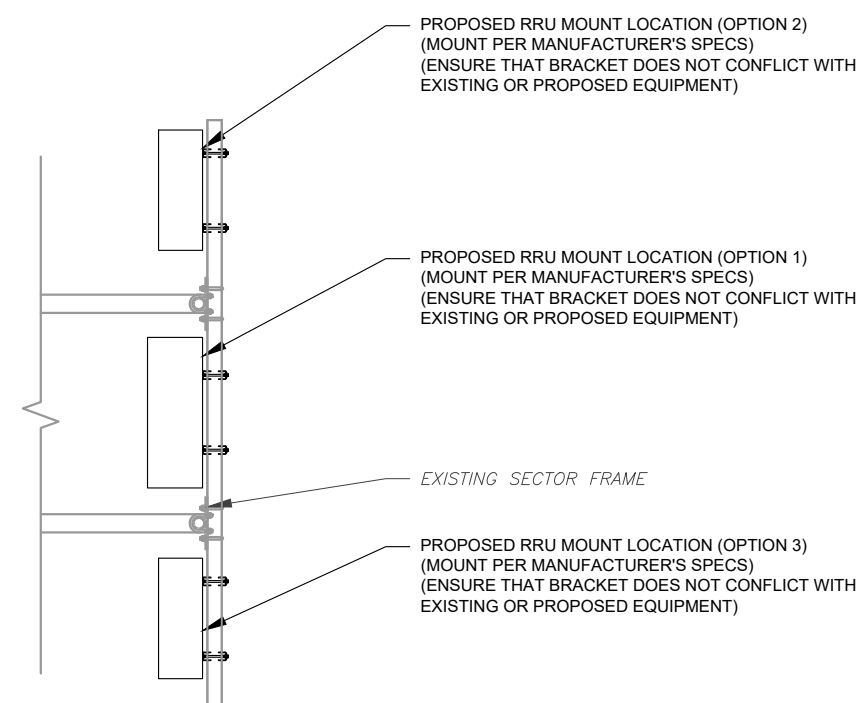
**CONSTRUCTION  
 DETAILS**

SHEET NUMBER:  
**C-501**

REVISION:  
**0**

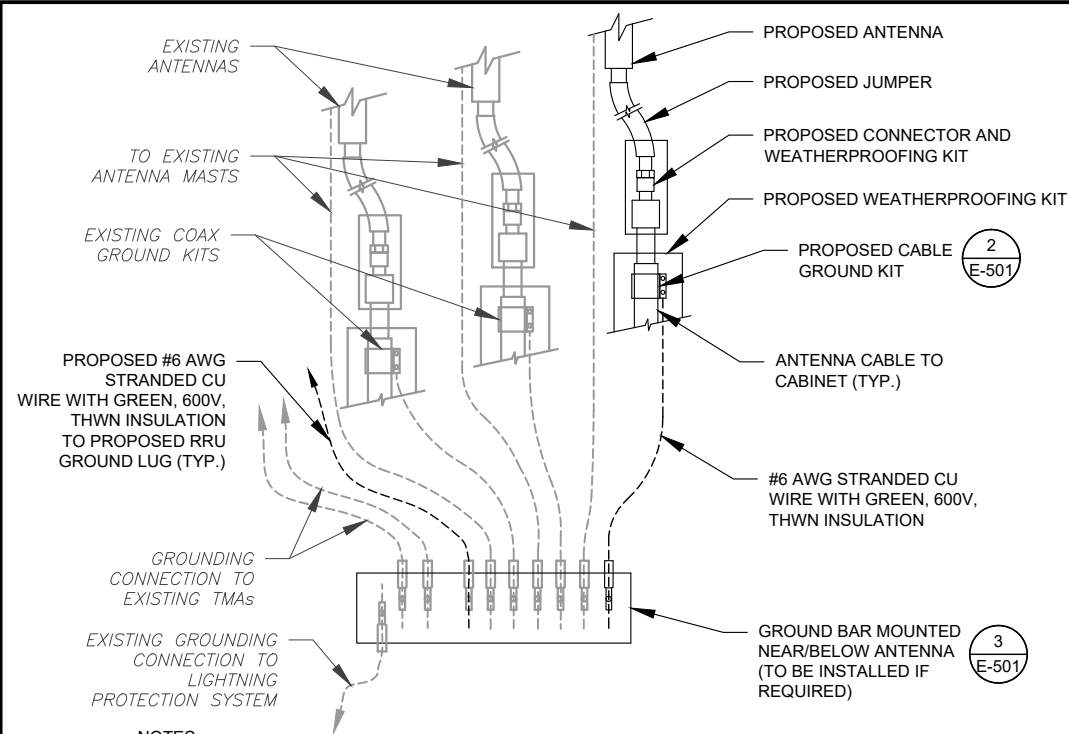


1 PROPOSED ANTENNA MOUNTING DETAIL - TYPICAL  
 SCALE: N.T.S.



2 PROPOSED RRU MOUNTING DETAIL - TYPICAL  
 SCALE: N.T.S.

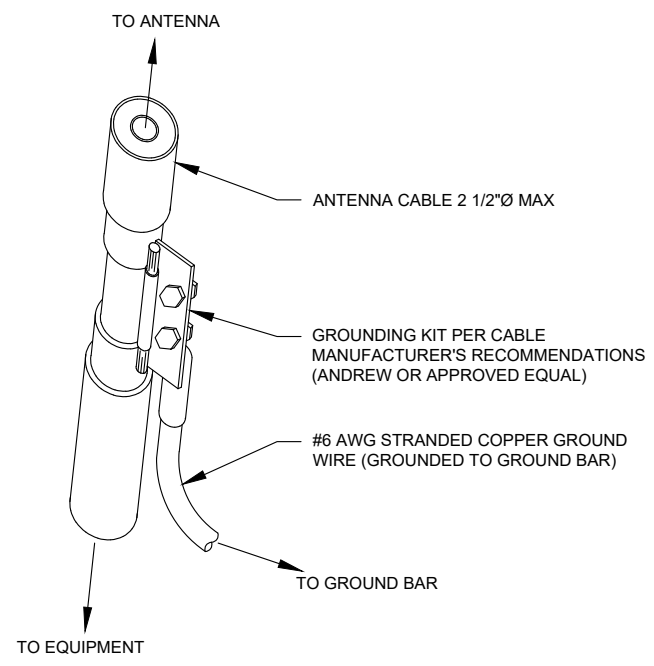
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**NOTES:**

1. THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
2. SITE GROUNDING SHALL COMPLY WITH T-MOBILE GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH T-MOBILE GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT THEY SHALL GOVERN.

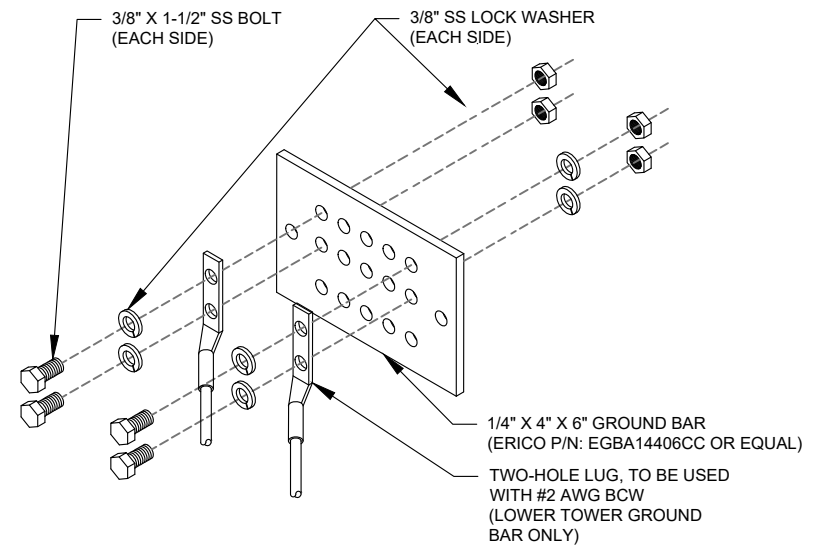
**1** TYPICAL ANTENNA GROUNDING DIAGRAM  
SCALE: N.T.S.



**GROUND KIT NOTES:**

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. CONTRACTOR SHALL PROVIDE WEATHERPROOFING KIT (ANDREW PART NUMBER 221213) AND INSTALL/TAPE PER MANUFACTURER'S SPECIFICATIONS.

**2** CABLE GROUND KIT CONNECTION DETAIL  
SCALE: N.T.S.



**GROUND BAR NOTES:**

1. GROUND BAR KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
2. GROUND BAR TO BE BONDED DIRECTLY TO TOWER.

**3** TOWER GROUND BAR DETAIL  
SCALE: N.T.S.



**AMERICAN TOWER®**  
**A.T. ENGINEERING SERVICE, PLLC**  
 3500 REGENCY PARKWAY  
 SUITE 100  
 CARY, NC 27518  
 PHONE: (919) 468-0112  
 COA: PEC.0001553

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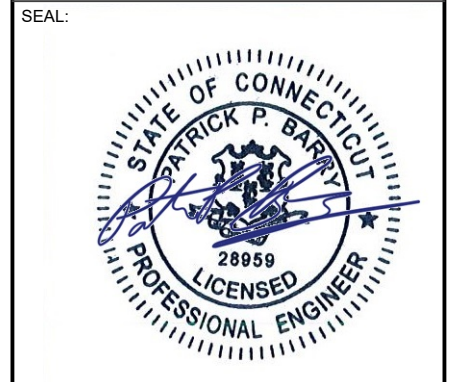
REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	CWB	07/29/20

ATC SITE NUMBER:  
**414240**

ATC SITE NAME:  
**BYRAM PARK CT**

T-MOBILE SITE NAME:  
**CT606/VZ BYRAM SHORE**

SITE ADDRESS:  
 48 RITCH AVENUE WEST  
 GREENWICH, CT 06830



DATE DRAWN:	07/29/20
ATC JOB NO:	13251816_D1
CUSTOMER ID:	CT606/VZ BYRAM SHORE
CUSTOMER #:	CT11606H

**GROUNDING DETAILS**

SHEET NUMBER:	REVISION:
<b>E-501</b>	<b>0</b>

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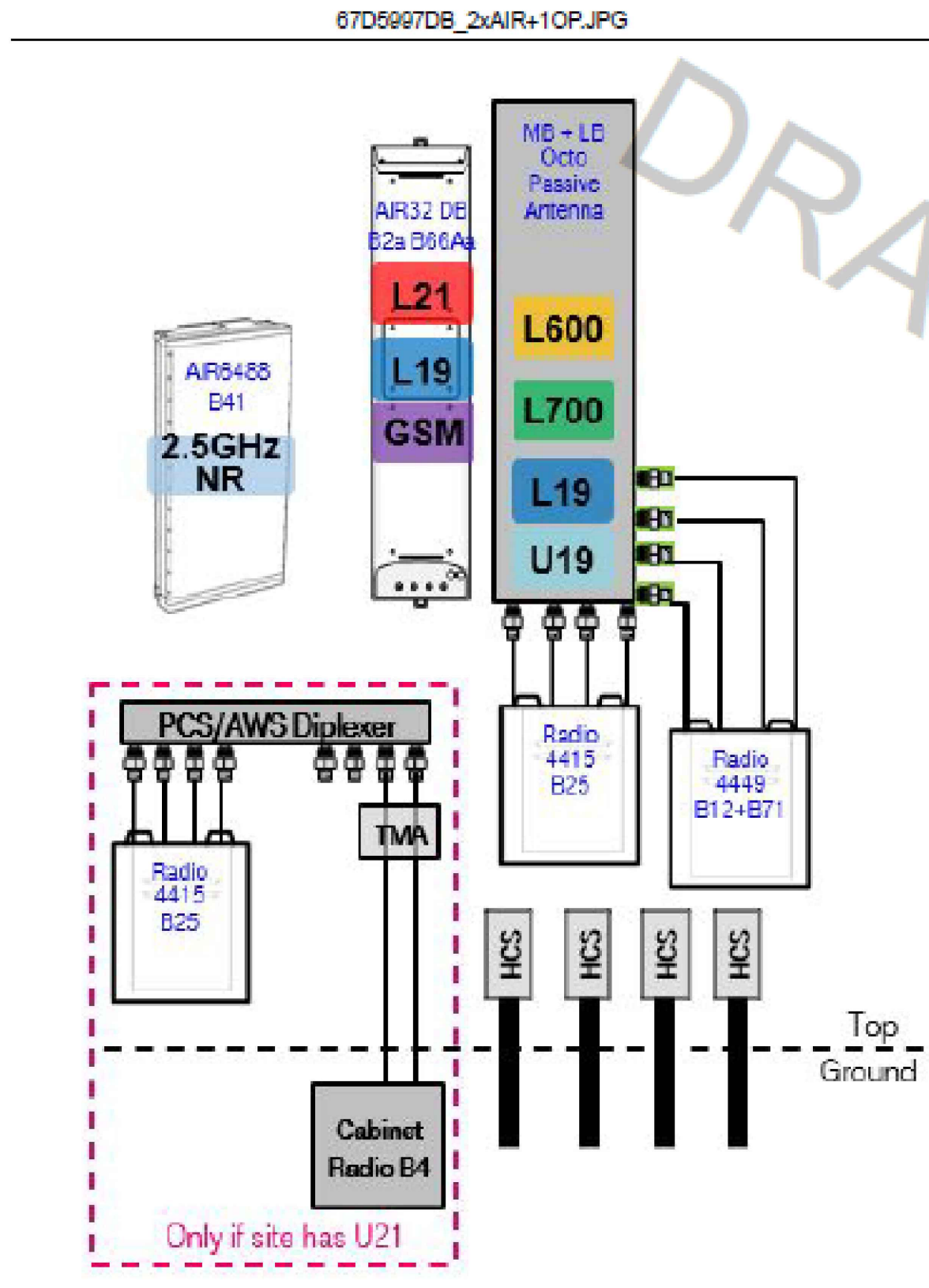
**Existing RAN Equipment**  
Template: 67D97DB2 MUAC

Enclosure	1	2
Enclosure Type	RBS 6102 MU AC	Ancillary Equipment (Ericsson)
Baseband	DUW30 (U2100) BB 6630 (L2100, L1900, L700, L600) BB 6630 (N600)	
Hybrid Cable System		Ericsson 9x18 HCS "Select Length" (x 3)

**Proposed RAN Equipment**  
Template: 67D5A997DB

Enclosure	1	2	3	4
Enclosure Type	RBS 6102 MU AC	Ancillary Equipment (Ericsson)	Enclosure 6160	B160
Baseband	DUW30 (U2100) BB 6630 (L2100, L1900, L700, L600) BB 6630 (N600)		BB 6630 (x 3) (L2500) BB 6648 (N2500)	
Hybrid Cable System		Ericsson 9x18 HCS "Select Length" (x 3)	Ericsson 6x12 HCS "Select AWG & Length" (x 3)	

1 CABINET CONFIGURATION  
SCALE: NOT TO SCALE



2 ANTENNA CONFIGURATION  
SCALE: NOT TO SCALE

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SUPPLEMENTAL

SHEET NUMBER:  
**R-601**

REVISION:  
**0**



## AIR6449 B41

Frequency Range	LTE TDD B41: 2496 – 2690 MHz
Instantaneous BW	DL 194 MHz
Antenna Ports	64T64R
Technology	NR, LTE and NR+LTE MSMM
Antenna Elements	192
Output RF Power	300 W (=64 TRX x 4.6875W)
Data Ports	4 x 25Gb/s CPRI
5G NR Support	YES
DC Feed	-48V DC power connector
Cooling	Passive cooling (vs. active cooling on AIR32 DB)
Dimensions (H x W x D)	33.1" x 20.6" x 8.6" inches (=841 x 524 x 217 mm)
Weight	104 lbs (=47 kg)
Electrical downtilt	-3 to 11 degrees
Horizontal beamwidth	+/- 65 degrees
HW/SW Availability	July 2020
Material SAP #	34105 – AIR 6449 B41



## RRUS 4415 B25

- › B25
  - TX = 1930 – 1995 MHz
  - RX = 1850 – 1915 MHz
- › CPRI 2 ports x 2.5/4.9/9.8/10.1 Gbps. Install 2 SFPs and connect 2 fiber pair to the RRUS 4415 during initial install.
- › Only use Ericsson supplied and approved SFPs RDH10265/25
  - Exception: SFP7 RDH 10265/3 for CPRI 1.4km to 10km
  - Exception: SFP7 (pair): RDH 102 70/1 and RDH 102 70/2 for CPRI > 10km
- › 2 external alarm inputs
- › Max wind load @ 50m/sec = 260N
- › Breaker size = 25A, DC Power Consumption = 670 W (for dimensioning)
- › 200mm horizontal separation required for side by side mounting
- › 200mm separation required from antenna backplane to radio
- › 400mm vertical outdoor/indoor separation required between 2 radios
- › 500mm vertical separation below antenna
- › Min, Max DC cable size from squid to radio = 10,8 AWG
  - Adapter is required for 2-wire connection
  - Shielded DC cable is required
- › Ground cable size = 2AWG
- › Dimensions (incl. handles, feet and sunshield, w/o fan unit)
  - Height: 16.5" (420 mm)
  - Width: 13.4" (342 mm)
  - Depth: 5.9" (149 mm)
- › Weight, excl. mounting hardware = 46 lbs (21 kg)

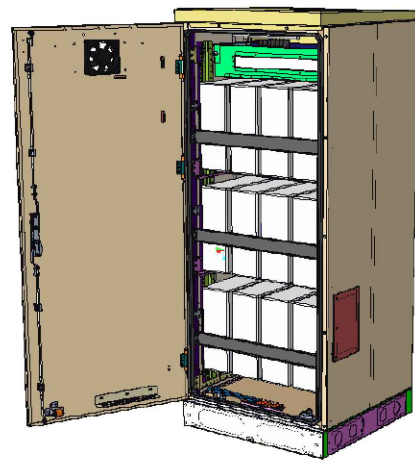


### EQUIPMENT SPECIFICATIONS

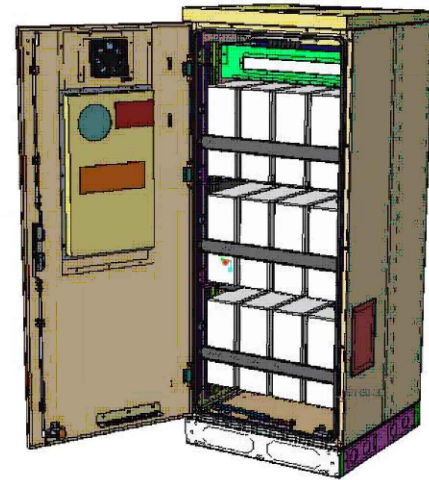
SHEET NUMBER:  
**R-602**

REVISION:  
**0**

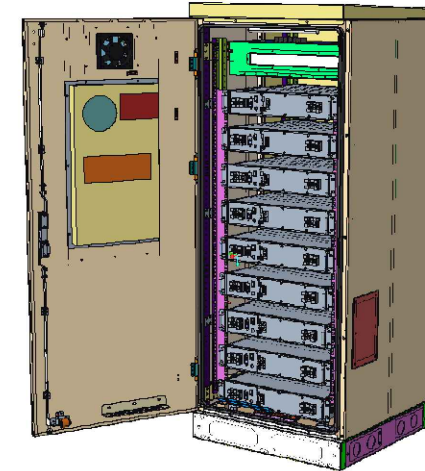
# Enclosure B160



Enclosure B160  
AirCon + VRLA



Enclosure B160  
AirCon + Li-Ion



Enclosure B160  
Convection Cooling  
+ VRLA

PA1 | 2019-02-03 | Ericsson Confidential | Page 1

# Enclosure B160

- Capacity
- VRLA 12V: 100Ah / 150Ah / 170Ah / 190Ah / 210Ah
  - Li-Ion: 24U 19" / 23"
  - Sodium-Nickel: 3x FIAMM
- Electrical specification
- DC Output: -48VDC/200A
  - Battery breakers: 2x 125/2p
  - Alarms: Door open, Climate failure, MCB Connection
- Mechanical specification
- Weight: 134kg
  - Dimensions: 63 x 26 x 26 in. (incl. Base frame)
  - Base frame height: 6 in.
  - Material: Galvanized steel (180g/m<sup>2</sup>)
  - Color: Powder paint NCS 2002-B
  - Door: Front access
  - Locking type: Pad lock / cylinder

- Environmental specification
- Ingress protection: VRLA/Sodium IP44  
Li-Ion IP55
  - Relative humidity: 15-100%
- Climate system
- Air Conditioner
  - Fan type: DC
  - Cooling capacity: 500W @L35/L35
  - Convection cooling
  - Emergency fan

PA1 | 2019-02-03 | Ericsson Confidential | Page 2

SUPPLEMENTAL

SHEET NUMBER: <b>R-603</b>	REVISION: <b>0</b>
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# Enclosure 6160 AC

The Enclosure 6160 is a multi-purpose site cabinet designed to support a multitude of equipment such as ERS Baseband, Transport, Li-Ion battery and 3PP vendor equipment. It also provides a highly capable power system and battery back-up - all in a streamlined design and minimized footprint to support cost efficient expansion of mobile broadband.

Being an all-in-one enclosure, the Enclosure 6160 is a very fitting choice for all types of sites where the capacity need is large or room for future expansion is needed. It is ideally used for modernizing existing sites or in greenfield scenarios to match both current and future needs.

With a robust design, IP65 compliance and a sealed Heat Exchanger (HEX) climate system the Enclosure 6160 ensures optimal environmental protection of the active equipment - enabling them for a long-lasting service. The complete system is also integrated and verified for the entire Ericsson Radio System and ensures best-in-class service.

The power system offers 31,5kW of power in total and provides 24kW of -48V DC power for both internal and external consumers.

The equipment space allows 19U of rack space ensuring well enough capacity for existing need and future expansion.

One of the main advantages of the Enclosure 6160 is its default integration with ENM - allowing for advanced remote monitoring and control such a fault management (alarms), inventory management and performance measurements. The cabinet also provides an open O&M interface for integration to 3PP O&M systems.



## Preliminary technical specification for Enclosure 6160 AC

### CAPACITY

Rack space user equipment	19U (19" rack)
Hardware capabilities	Power and CPRI support for multi-standard remote radios (RRU or AIR) ERS Baseband and Transport units Li-Ion batteries 3PP equipment Additional power feed available as option

### MECHANICAL SPECIFICATION

Weight	145 kg (excluding active equipment) 320 lbs (excluding active equipment)
Dimension (H x W x D)	1600 x 650 x 650 mm (incl. Base frame) 63 x 26 x 26 in. (incl. Base frame)
Base frame height	150 mm 6 in.
Mounting position	Ground
Enclosure material	Aluminum
Color	Power paint NCS 2002-B
Door	Front access
Rack type	19" (IEC 60297-3-100)
Locking type	Pad lock or Cylinder

### POWER SYSTEM

Input voltage	3P+N+PE: 346/200-415/240 VAC 2P+N+PE: 208/120-220/127 VAC 1P+N+PE: 200-250 VAC
Input power	<33kW
Output load (-48VDC)	24kW
Total capacity (-48VDC)	31.5kW
AC SPD	Class 2/Type 2
DC SPD	Class 2/Type 2
PSU Slots	9x
Service outlet	Optional
Priority load	8x Circuit Breaker
LLVD 1	6x Circuit Breaker
LLVD 2	6x Circuit Breaker
CB ratings	3A / 5A / 10A / 15A / 20A / 25A / 30A / 40A / 50A / 60A / 80A / 100A
Battery Interface	2x Circuit Breaker
Battery Circuit Breaker rating	125A 2pol (200A)
PSU capacity	3500W

SUPPLEMENTAL

SHEET NUMBER:

R-604

REVISION:

0

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# Exhibit C

## Structural Analysis Report



**AMERICAN TOWER®**  
CORPORATION

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## Structural Analysis Report

**Structure** : 83.2 ft Monopine  
**ATC Site Name** : Byram Park CT, CT  
**ATC Asset Number** : 414240  
**Engineering Number** : 13251816\_C3\_05  
**Proposed Carrier** : T-MOBILE  
**Carrier Site Name** : CT606/VZ Byram Shore  
**Carrier Site Number** : CT11606H  
**Site Location** : 48 RITCH AVENUE WEST  
GREENWICH, CT 06830-9992  
41.005100,-73.648300  
**County** : Fairfield  
**Date** : July 13, 2020  
**Max Usage** : 99%  
**Result** : Pass



Prepared By:  
Tim Wiperman  
Engineer Intern

Reviewed By:

**COA: PEC.0001553**



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Deflection and Sway .....	3
Standard Conditions .....	4
Calculations .....	Attached



## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 83.2 ft monopine to reflect the change in loading by T-MOBILE.

## Supporting Documents

<b>Tower Drawings</b>	EI Project #16733 Rev. 3, dated December 9, 2011
<b>Foundation Drawing</b>	Centek Engineering Job #09129 Rev. 0, dated February 14, 2012
<b>Geotechnical Report</b>	DET Job #2010.14, dated October 4, 2010
<b>Modifications</b>	ATC Project #OAA711130_C6_09, dated October 26, 2018
<b>Mount Analysis</b>	Infinigy Job #1009-Z0003-B, dated July 1, 2020

## Analysis

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

<b>Basic Wind Speed:</b>	116 mph (3-Second Gust)
<b>Basic Wind Speed w/ Ice:</b>	50 mph (3-Second Gust) w/ 1" radial ice concurrent
<b>Code:</b>	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
<b>Exposure Category:</b>	D
<b>Risk Category:</b>	II
<b>Topographic Factor Procedure:</b>	Method 1
<b>Topographic Category:</b>	1
<b>Crest Height (H):</b>	0 ft
<b>Spectral Response:</b>	$S_s = 0.28, S_1 = 0.06$
<b>Site Class:</b>	D - Stiff Soil

## Conclusion

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

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



**Existing and Reserved Equipment**

Elev. <sup>1</sup> (ft)	Qty	Antenna	Mount Type	Lines	Carrier
89.0	2	dbSpectra DS7C09P36U-D	Pole Mount	(2) 1/2" Coax (2) 7/8" Coax	TOWN OF GREENWICH, CT
	1	Bird 428D-83I-01-T			
77.0	3	Ericsson RRUS 32 B66	T-Arm	(3) 1 5/8" (1.63"-41.3mm) Fiber	T-MOBILE
	3	RFS APXVAARR24_43-U-NA20			
67.0	3	Ericsson RRUS 4449 B5, B12	Site Pro 1 RMV12-496	(2) 0.39" (10mm) Fiber Trunk (6) 0.78" (19.7mm) 8 AWG 6 (12) 1 5/8" Coax (1) 2" conduit	AT&T MOBILITY
	3	Ericsson RRUS 4478 B14			
	3	Ericsson RRUS 32 B2			
	3	Ericsson RRUS 4426 B66			
	2	Raycap DC6-48-60-18-8F(32.8 lbs)			
	1	Raycap DC6-48-60-0-8C-EV			
	6	CCI DTMAPB7819VG12A			
	3	Ericsson RRUS-32 (77 lbs)			
	3	CCI OPA-65R-LCUU-H6			
	6	CCI DMP65R-BU4D			
56.0	3	Powerwave Allgon P65-16-XLH-RR	T-Arm	(1) 1 5/8" (1.63"-41.3mm) Fiber (16) 1 5/8" Coax (1) 1 5/8" Hybriflex	VERIZON WIRELESS
	3	Alcatel-Lucent RRH 2X60-1900			
	3	Alcatel-Lucent RRH2x60 700			
	3	Alcatel-Lucent B66 RRH4x45			
	2	Commscope RC2DC-4750-PF-48			
	1	VZW Unused Reserve (14138.31 sqin)			
	6	Amphenol Antel LPA-80063-6CF-EDIN-X			
	4	Commscope SBNHH-1D45A			
	2	Commscope SBNHH-1D65A			
	3	Amphenol Antel BXA-171063-12CF			

**Equipment to be Removed**

Elev. <sup>1</sup> (ft)	Qty	Antenna	Mount Type	Lines	Carrier
77.0	3	Ericsson Radio 4449 B12,B71	-	-	T-MOBILE
	3	RFS APX16DWV-16DWVS-E-A20 (60" Height)			
	3	Ericsson AIR-32 B2A/B66Aa			

**Proposed Equipment**

Elev. <sup>1</sup> (ft)	Qty	Antenna	Mount Type	Lines	Carrier
77.0	3	Commscope CBC1923Q-43	T-Arm	(3) 1 1/4" (1.25"-31.8mm) Fiber	T-MOBILE
	3	Ericsson RRUS 4415 B25			
	3	Ericsson Radio 4449 B71 B85A			
	3	Ericsson Air6449 B41			
	3	Ericsson AIR32 B66Aa/B2a			

<sup>1</sup> Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Install proposed lines inside pole shaft.





**Structure Usages**

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	50%	Pass
Shaft	99%	Pass
Base Plate	24%	Pass
Flange	3%	Pass

**Foundations**

Reaction Component	Original Design Reactions	Analysis Reactions	% of Design
Moment (Kips-Ft)	4,725.0	2,798.4	59%
Shear (Kips)	75.6	52.6	70%

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

**Deflection and Sway\***

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
77.0	Commscope CBC1923Q-43	T-MOBILE	0.305	0.376
	Ericsson RRUS 4415 B25			
	Ericsson Radio 4449 B71 B85A			
	Ericsson Air6449 B41			
	Ericsson AIR32 B66Aa/B2a			

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



## Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

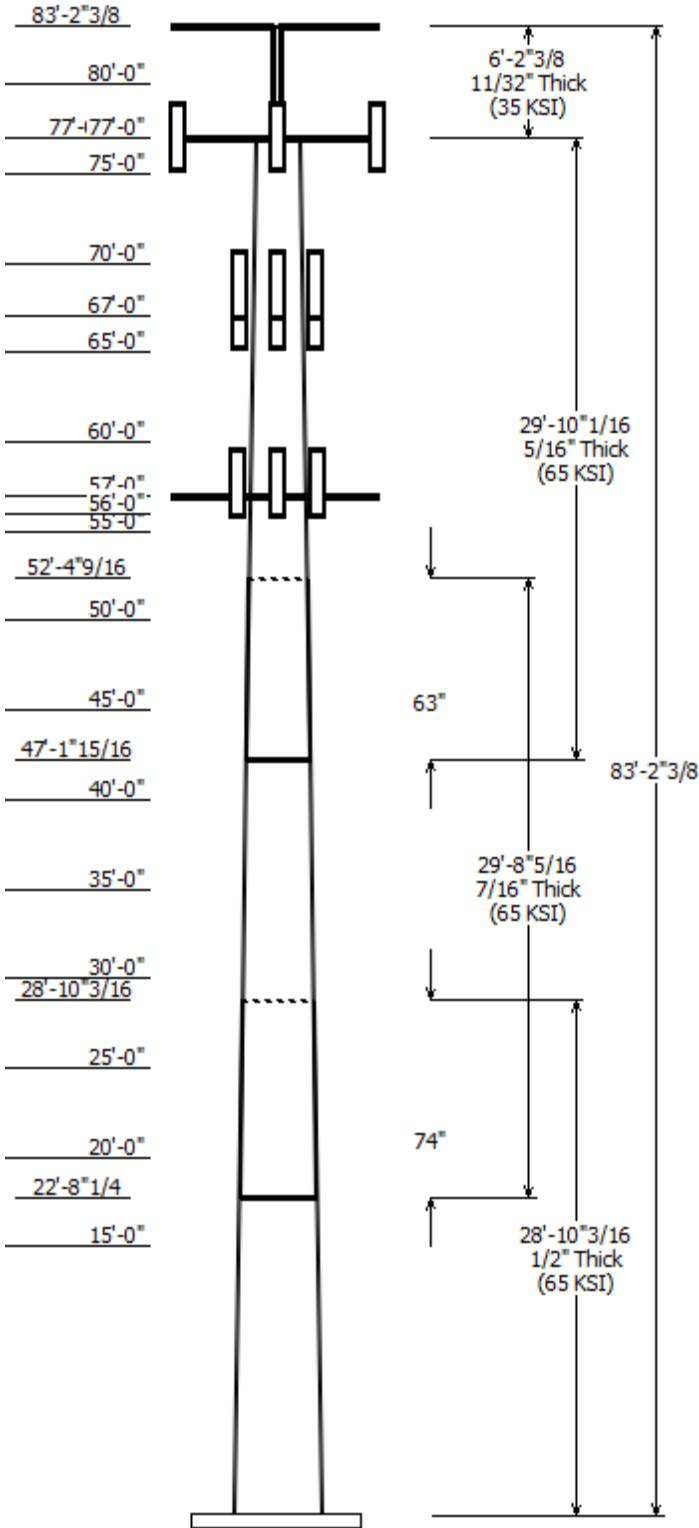
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

All assets of American Tower Corporation, its affiliates and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

Job Information	
Client : T-MOBILE	Code: ANSI/TIA-222-H
Pole : 414240	
Location : Byram Park CT, CT	
Description : 83.2 ft monopine	Risk Category : II
Shape : 18 Sides	Exposure : D
Height : 83.20 (ft)	Topo Method : Method 1
Base Elev (ft): 0.00	Topographic Category : 1
Taper: 0.33766in/ft	



Sections Properties							
Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap Length (in)	Steel Grade
		Top	Bottom				
1	28.852	42.25	52.00	0.500		0.000	18 Sides 65
2	29.693	35.18	45.21	0.438	Slip Joint	73.969	18 Sides 65
3	29.841	27.50	37.57	0.313	Slip Joint	62.656	18 Sides 65
4	6.200	4.500	4.500	0.337	Butt Joint	0.000	Round 35

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
89.000	94.800	2	dbSpectra DS7C09P36U-D
89.000	94.800	1	Bird 428D-83I-01-T
83.200	83.200	2	Pole Mount
80.000	80.000	1	Pine Branches
77.000	77.000	3	Flat T-Arms
77.000	77.000	3	RFS APXVAARR24_43-U-NA20
77.000	77.000	3	Ericsson AIR32 B66Aa/B2a
77.000	77.000	3	Ericsson Air6449 B41
77.000	77.000	3	Ericsson RRUS 32 B66
77.000	77.000	3	Ericsson Radio 4449 B71 B85A
77.000	77.000	3	Ericsson RRUS 4415 B25
77.000	77.000	3	Commscope CBC1923Q-43
75.000	75.400	1	Pine Branches
70.000	70.000	1	Pine Branches
67.000	67.000	3	Site PRO1, RMV12-496
67.000	68.000	3	CCI OPA-65R-LCUU-H6
67.000	67.000	6	CCI DMP65R-BU4D
67.000	68.000	3	Powerwave Allgon P65-16-
67.000	68.000	3	Ericsson RRUS-32 (77 lbs)
67.000	68.000	3	Ericsson RRUS 32 B2
67.000	67.000	3	Ericsson RRUS 4478 B14
67.000	67.000	3	Ericsson RRUS 4449 B5, B12
67.000	68.000	3	Ericsson RRUS 4426 B66
67.000	68.000	2	Raycap DC6-48-60-18-8F(32.8 lb
67.000	67.000	1	Raycap DC6-48-60-0-8C-EV
67.000	68.000	6	CCI DTMABP7819VG12A
65.000	65.000	1	Pine Branches
60.000	60.000	1	Pine Branches
57.000	57.000	3	Flat T-Arm
56.000	56.000	1	VZW Unused Reserve
56.000	57.000	6	Amphenol Antel LPA-80063-
56.000	57.000	4	Commscope SBNHH-1D45A
56.000	57.000	2	Commscope SBNHH-1D65A
56.000	57.000	3	Amphenol Antel BXA-171063-
56.000	57.000	2	Commscope RC2DC-4750-PF-
56.000	57.000	3	Alcatel-Lucent B66 RRH4x45
56.000	57.000	3	Alcatel-Lucent RRH2x60 700
56.000	57.000	3	Alcatel-Lucent RRH 2X60-1900
55.000	55.000	1	Pine Branches
50.000	50.000	1	Pine Branches
45.000	45.000	1	Pine Branches
40.000	40.000	1	Pine Branches
35.000	35.000	1	Pine Branches
30.000	30.000	1	Pine Branches

25.000	25.000	1	Pine Branches
20.000	20.000	1	Pine Branches
15.000	15.000	1	Pine Branches

### Linear Appurtenance

Elev (ft)		Description	Exposed To Wind
From	To		
0.000	56.000	1 5/8" (1.63"-	No
0.000	56.000	1 5/8" Coax	No
0.000	56.000	1 5/8" Hybriflex	No
0.000	67.000	0.39" (10mm)	No
0.000	67.000	0.78" (19.7mm) 8	No
0.000	67.000	1 5/8" Coax	No
0.000	67.000	2" conduit	No
0.000	77.000	1 1/4" (1.25"-	No
0.000	77.000	1 5/8" (1.63"-	No
0.000	89.000	1/2" Coax	No
0.000	89.000	7/8" Coax	No

### Load Cases

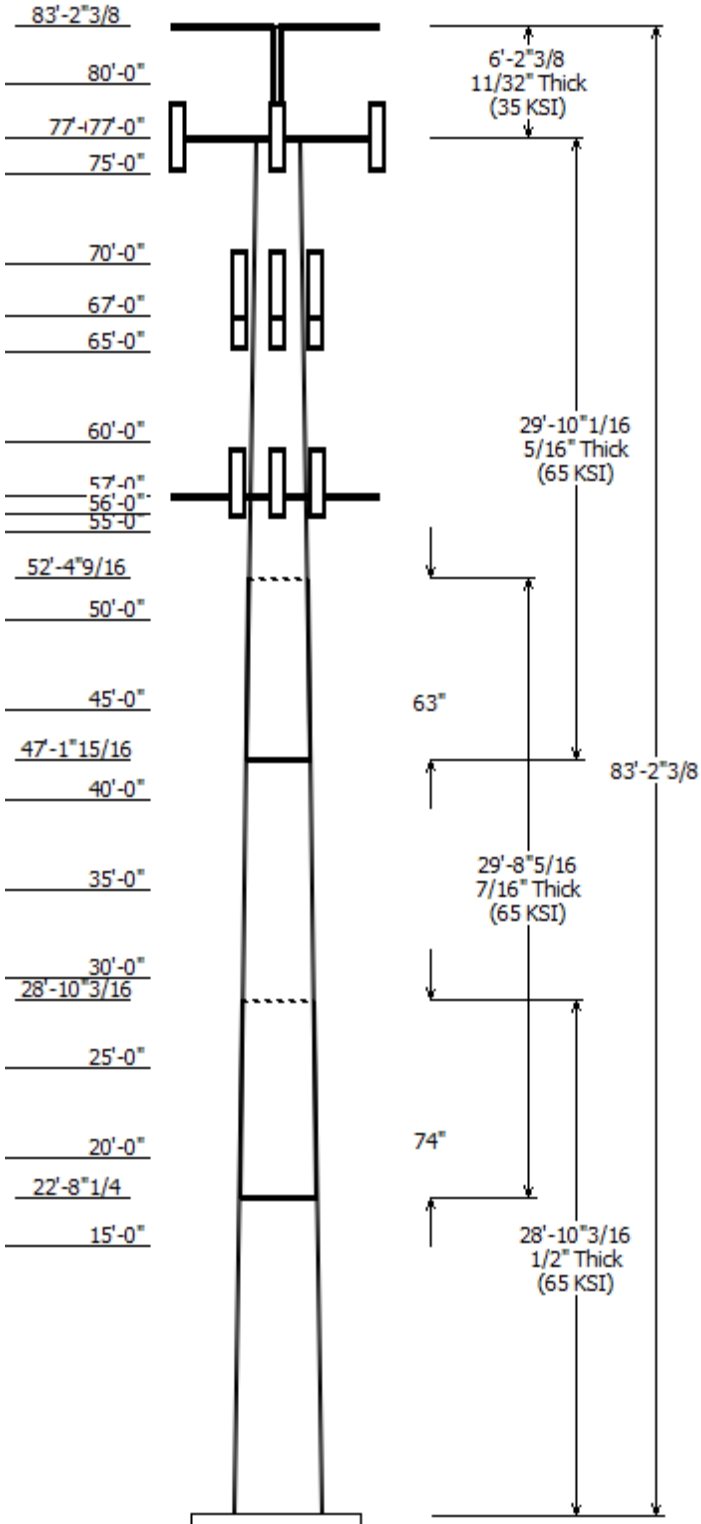
1.2D + 1.0W	116 mph with No Ice
0.9D + 1.0W	116 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	Serviceability 60 mph

### Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.0W	2798.43	52.63	43.68
0.9D + 1.0W	2792.14	52.62	32.74
1.2D + 1.0Di + 1.0Wi	732.84	13.89	57.06
1.2D + 1.0Ev + 1.0Eh	171.92	3.02	43.88
0.9D - 1.0Ev + 1.0Eh	171.40	3.02	29.36
1.0D + 1.0W	669.56	12.60	36.45

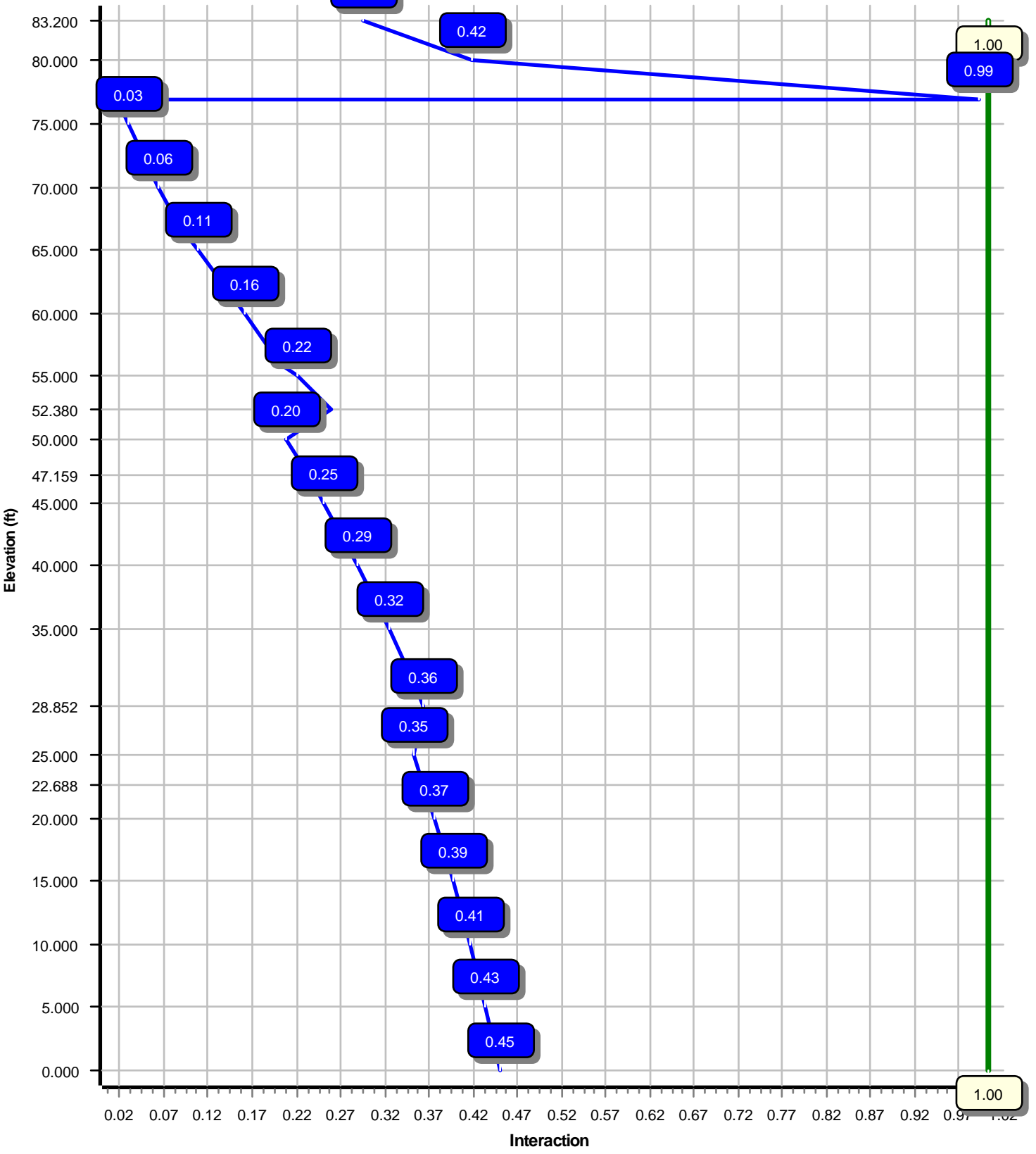
### Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
	0.00	0.000	0.000



Load Case : 1.2D + 1.0W

Max Ratio 98.93% at 77.0 ft



Site Number: 414240

Code: ANSI/TIA-222-H

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Site Name: Byram Park CT, CT

Engineering Number: 13251816\_C3\_05

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Customer: T-MOBILE

Analysis Parameters

Location :	Fairfield County, CT	Height (ft) :	83.2
Code :	ANSI/TIA-222-H	Base Diameter (in) :	52.00
Shape :	18 Sides, Sect 4: Round	Top Diameter (in) :	4.50
Pole Type :	Custom	Taper (in/ft) :	0.338
Pole Manufacturer :	EEI	Rotation (deg) :	0.00
Kd (non-service) :	0.95	Ke :	1.00

Ice & Wind Parameters

Exposure Category:	D	Design Wind Speed Without Ice:	116 mph
Risk Category:	II	Design Wind Speed With Ice:	50 mph
Topographic Factor Procedure:	Method 1	Operational Wind Speed:	60 mph
Topographic Category:	1	Design Ice Thickness:	1.00 in
Crest Height:	0 ft	HMSL:	53.00 ft

Seismic Parameters

Analysis Method:	Equivalent Lateral Force Method		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	0.77		
T <sub>L</sub> (sec):	6	p:	1
S <sub>s</sub> :	0.277	S <sub>1</sub> :	0.060
F <sub>a</sub> :	1.578	F <sub>v</sub> :	2.400
S <sub>ds</sub> :	0.291	S <sub>d1</sub> :	0.096
		C <sub>s</sub> :	0.083
		C <sub>s</sub> Max:	0.083
		C <sub>s</sub> Min:	0.030

Load Cases

1.2D + 1.0W	116 mph with No Ice
0.9D + 1.0W	116 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	Serviceability 60 mph

Site Number: 414240

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Site Name: Byram Park CT, CT

Engineering Number: 13251816\_C3\_05

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Customer: T-MOBILE

**Shaft Section Properties**

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Weight (lb)	Bottom						Top							
							Dia (in)	Elev (ft)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Taper (in/ft)	
1-18	28.852	0.5000	65		0.00	7,265	52.00	0.00	81.73	27386.5	16.57	104.00	42.25	28.85	66.27	14599.3	13.14	84.52	0.337662	
2-18	29.693	0.4375	65	Slip	73.97	5,579	45.21	22.69	62.18	15750.0	16.46	103.35	35.18	52.38	48.25	7362.3	12.42	80.43	0.337662	
3-18	29.841	0.3125	65	Slip	62.66	3,246	37.57	47.16	36.96	6484.2	19.44	120.24	27.50	77.00	26.97	2518.3	13.75	88.00	0.337662	
4-R	6.200	0.3370	35	Butt	0.00	93	4.500	77.00	4.41	9.6	0.00	13.35	4.500	83.20	4.41	9.6	0.00	13.35	0.000000	
Shaft Weight						16,182														

**Discrete Appurtenance Properties**

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor	Weight (lb)	Ice EPAa (sf)	Orientation Factor
89.00	Bird 428D-831-01-T	1	1.00	5.800	8.90	0.465	1.00	19.90	0.763	1.00
89.00	dbSpectra DS7C09P36U-D	2	1.00	5.800	70.00	3.550	1.00	127.66	6.723	1.00
83.20	Pole Mount	2	1.00	0.000	40.00	1.630	1.00	69.65	2.343	1.00
80.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	861.73	64.629	1.00
77.00	Commscope CBC1923Q-43	3	0.80	0.000	7.30	0.318	0.50	14.20	0.570	0.50
77.00	Ericsson RRUS 4415 B25	3	0.80	0.000	46.00	1.650	0.50	73.02	2.180	0.50
77.00	Ericsson Radio 4449 B71 B85A	3	0.80	0.000	75.00	1.650	0.50	112.53	2.180	0.50
77.00	Ericsson RRUS 32 B66	3	0.80	0.000	53.00	2.743	0.67	98.90	3.473	0.67
77.00	Ericsson Air6449 B41	3	0.80	0.000	104.00	5.682	0.63	189.06	6.673	0.63
77.00	Ericsson AIR32 B66Aa/B2a	3	0.80	0.000	132.20	6.510	0.71	231.81	7.877	0.71
77.00	Flat T-Arms	3	0.75	0.000	250.00	12.900	0.67	380.44	18.004	0.67
77.00	RFS APXVAARR24_43-U-NA20	3	0.80	0.000	127.90	20.243	0.63	372.92	22.558	0.63
75.00	Pine Branches	1	1.00	0.400	600.00	45.000	1.00	859.65	64.474	1.00
70.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	858.18	64.364	1.00
67.00	CCI DTMABP7819VG12A	6	0.80	1.000	19.20	0.972	0.50	34.87	1.375	0.50
67.00	Raycap DC6-48-60-0-8C-EV	1	0.80	0.000	16.00	1.020	1.00	43.87	1.368	1.00
67.00	Raycap DC6-48-60-18-8F(32.8	2	0.80	1.000	32.80	1.470	1.00	70.77	1.900	1.00
67.00	Ericsson RRUS 4426 B66	3	0.80	1.000	48.40	1.650	0.50	75.87	2.173	0.50
67.00	Ericsson RRUS 4449 B5, B12	3	0.80	0.000	71.00	1.969	0.50	110.66	2.543	0.50
67.00	Ericsson RRUS 4478 B14	3	0.80	0.000	59.40	2.021	0.67	97.17	2.602	0.67
67.00	Ericsson RRUS 32 B2	3	0.80	1.000	53.00	2.743	0.67	98.26	3.463	0.67
67.00	Ericsson RRUS-32 (77 lbs)	3	0.80	1.000	77.00	3.314	0.71	136.85	4.104	0.71
67.00	Powerwave Allgon P65-16-XLH-	3	0.80	1.000	53.00	8.133	0.67	154.36	9.848	0.67
67.00	CCI DMP65R-BU4D	6	0.80	0.000	67.90	8.280	0.62	179.04	9.526	0.62
67.00	CCI OPA-65R-LCUU-H6	3	0.80	1.000	73.00	9.658	0.66	198.25	11.364	0.66
67.00	Site PRO1, RMV12-496	3	0.75	0.000	452.60	9.700	0.67	646.63	13.858	0.67
65.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	855.83	64.187	1.00
60.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	854.14	64.061	1.00
57.00	Flat T-Arm	3	0.75	0.000	250.00	12.900	0.67	376.63	17.855	0.67
56.00	Alcatel-Lucent RRH 2X60-1900	3	0.80	1.000	39.60	1.876	0.50	72.80	2.443	0.50
56.00	Alcatel-Lucent RRH2x60 700	3	0.80	1.000	56.70	2.150	0.67	97.86	2.756	0.67
56.00	Alcatel-Lucent B66 RRH4x45	3	0.80	1.000	67.00	2.580	0.67	109.85	3.262	0.67
56.00	Commscope RC2DC-4750-PF-48	2	0.80	1.000	26.00	3.781	0.77	92.30	4.581	0.77
56.00	Amphenol Antel BXA-171063-	3	0.80	1.000	12.80	4.790	0.72	70.71	6.217	0.72
56.00	Commscope SBNHH-1D65A	2	0.80	1.000	33.50	5.883	0.77	115.37	7.169	0.77
56.00	Commscope SBNHH-1D45A	4	0.80	1.000	50.50	7.244	0.63	146.08	8.428	0.63
56.00	Amphenol Antel LPA-80063-6CF-	6	0.80	1.000	27.00	9.732	0.75	184.82	11.389	0.75
56.00	VZW Unused Reserve (14138.31	1	0.80	0.000	1,488.70	98.183	0.90	2,115.96	139.552	0.90
55.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	851.97	63.898	1.00
50.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	849.46	63.710	1.00
45.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	846.15	63.461	1.00
40.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	843.09	63.232	1.00
35.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	839.63	62.973	1.00
30.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	837.26	62.795	1.00
25.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	832.33	62.424	1.00
20.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	825.25	61.894	1.00
15.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	817.80	61.335	1.00

Site Number: 414240

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Site Name: Byram Park CT, CT

Engineering Number: 13251816\_C3\_05

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Customer: T-MOBILE

Totals	Num Loadings:47	112	17,531.50	29,096.84
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Linear Appurtenance Properties      Load Case Azimuth (deg) :

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Max Coax / Flat Row	Dist Between Rows (in)	Dist Between Cols (in)	Azimuth (deg)	Dist From Face (in)	Dist To Face (in)	Exposed Wind	Carrier
0.00	89.00	2	1/2" Coax	0.63	0.15	N 0	0.00	0.00	0	0.00	0.00	N	TOWN OF
0.00	89.00	2	7/8" Coax	1.09	0.33	N 0	0.00	0.00	0	0.00	0.00	N	TOWN OF
0.00	77.00	3	1 1/4" (1.25"- 31.8mm)	1.25	1.05	N 0	0.00	0.00	0	0.00	0.00	N	T-MOBILE
0.00	77.00	3	1 5/8" (1.63"-41.3mm)	1.63	1.61	N 0	0.00	0.00	0	0.00	0.00	N	T-MOBILE
0.00	67.00	2	0.39" (10mm) Fiber	0.39	0.06	N 0	0.00	0.00	0	0.00	0.00	N	AT&T MOBILITY
0.00	67.00	6	0.78" (19.7mm) 8 AWG	0.78	0.59	N 0	0.00	0.00	0	0.00	0.00	N	AT&T MOBILITY
0.00	67.00	12	1 5/8" Coax	1.98	0.82	N 0	0.00	0.00	0	0.00	0.00	N	AT&T MOBILITY
0.00	67.00	1	2" conduit	2.38	3.65	N 0	0.00	0.00	0	0.00	0.00	N	AT&T MOBILITY
0.00	56.00	1	1 5/8" (1.63"-41.3mm)	1.63	1.61	N 0	0.00	0.00	0	0.00	0.00	N	VERIZON WIRELESS
0.00	56.00	16	1 5/8" Coax	1.98	0.82	N 0	0.00	0.00	0	0.00	0.00	N	VERIZON WIRELESS
0.00	56.00	1	1 5/8" Hybriflex	1.98	1.30	N 0	0.00	0.00	0	0.00	0.00	N	VERIZON WIRELESS



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Site Name: Byram Park CT, CT

Engineering Number: 13251816\_C3\_05

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Customer: T-MOBILE

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	F'y (ksi)	S (in <sup>3</sup> )	Z (in <sup>3</sup> )	Weight (lb)
0.00		0.5000	52.000	81.728	27,386.5	16.57	104.00	81.9	1037.	0.0	0.0
5.00		0.5000	50.312	79.048	24,780.4	15.98	100.62	82.6	970.1	0.0	1,367.7
10.00		0.5000	48.623	76.369	22,345.1	15.38	97.25	82.6	905.1	0.0	1,322.1
15.00		0.5000	46.935	73.690	20,074.9	14.79	93.87	82.6	842.4	0.0	1,276.5
20.00		0.5000	45.247	71.011	17,963.8	14.19	90.49	82.6	782.0	0.0	1,231.0
22.69	Bot - Section 2	0.5000	44.339	69.570	16,892.9	13.87	88.68	82.6	750.4	0.0	642.8
25.00		0.5000	43.558	68.331	16,006.2	13.60	87.12	82.6	723.8	0.0	1,027.6
28.85	Top - Section 1	0.4375	43.133	59.286	13,654.2	15.62	98.59	82.6	623.5	0.0	1,670.9
30.00		0.4375	42.745	58.747	13,285.5	15.46	97.70	82.6	612.2	0.0	230.6
35.00		0.4375	41.057	56.403	11,757.6	14.78	93.84	82.6	564.0	0.0	979.6
40.00		0.4375	39.369	54.059	10,351.6	14.10	89.99	82.6	517.9	0.0	939.7
45.00		0.4375	37.680	51.714	9,062.5	13.42	86.13	82.6	473.7	0.0	899.8
47.16	Bot - Section 3	0.4375	36.951	50.702	8,540.7	13.13	84.46	82.6	455.2	0.0	376.2
50.00		0.4375	35.992	49.370	7,885.0	12.74	82.27	82.6	431.5	0.0	836.5
52.38	Top - Section 2	0.3125	35.813	35.211	5,606.7	18.44	114.60	79.7	308.3	0.0	683.8
55.00		0.3125	34.929	34.334	5,197.9	17.95	111.77	80.3	293.1	0.0	310.0
56.00		0.3125	34.591	33.999	5,047.3	17.75	110.69	80.5	287.4	0.0	116.3
57.00		0.3125	34.253	33.664	4,899.6	17.56	109.61	80.7	281.7	0.0	115.1
60.00		0.3125	33.240	32.659	4,473.8	16.99	106.37	81.4	265.1	0.0	338.5
65.00		0.3125	31.552	30.985	3,820.4	16.04	100.97	82.5	238.5	0.0	541.4
67.00		0.3125	30.877	30.315	3,577.9	15.66	98.81	82.6	228.2	0.0	208.6
70.00		0.3125	29.864	29.310	3,233.8	15.09	95.56	82.6	213.3	0.0	304.3
75.00		0.3125	28.175	27.635	2,710.6	14.13	90.16	82.6	189.5	0.0	484.4
77.00	Top - Section 3	0.3125	27.500	26.966	2,518.3	13.75	88.00	82.6	180.4	0.0	185.8
77.00	Bot - Section 4	0.3370	4.500	4.407	9.6	0.00	13.35	35.0	4.2	5.9	
80.00		0.3370	4.500	4.407	9.6	0.00	13.35	35.0	4.2	5.9	45.0
83.20		0.3370	4.500	4.407	9.6	0.00	13.35	35.0	4.2	5.9	48.0
16,182.1											

<b>Load Case: 1.2D + 1.0W</b>	<b>116 mph with No Ice</b>	<b>15 Iterations</b>
Gust Response Factor :1.10		
Dead Load Factor :1.20		
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		292.3	0.0					0.0	0.0	292.3	0.0	0.0	0.0
5.00		575.0	1,641.3					0.0	252.7	575.0	1,894.0	0.0	0.0
10.00		555.8	1,586.6					0.0	252.7	555.8	1,839.3	0.0	0.0
15.00	Appurtenance(s)	543.7	1,531.9	1,665.7	0.0	0.0	720.0	0.0	252.7	2,209.3	2,504.6	0.0	0.0
20.00	Appurtenance(s)	417.0	1,477.1	1,751.1	0.0	0.0	720.0	0.0	252.7	2,168.1	2,449.9	0.0	0.0
22.69	Bot - Section 2	274.8	771.4					0.0	135.8	274.8	907.2	0.0	0.0
25.00	Appurtenance(s)	341.9	1,233.1	1,820.4	0.0	0.0	720.0	0.0	116.9	2,162.3	2,070.0	0.0	0.0
28.85	Top - Section 1	276.8	2,005.0					0.0	194.7	276.8	2,199.7	0.0	0.0
30.00	Appurtenance(s)	337.4	276.8	1,879.1	0.0	0.0	720.0	0.0	58.0	2,216.4	1,054.8	0.0	0.0
35.00	Appurtenance(s)	543.6	1,175.5	1,930.1	0.0	0.0	720.0	0.0	252.7	2,473.7	2,148.2	0.0	0.0
40.00	Appurtenance(s)	533.5	1,127.6	1,975.5	0.0	0.0	720.0	0.0	252.7	2,509.0	2,100.3	0.0	0.0
45.00	Appurtenance(s)	375.9	1,079.8	2,016.3	0.0	0.0	720.0	0.0	252.7	2,392.2	2,052.5	0.0	0.0
47.16	Bot - Section 3	259.8	451.4					0.0	109.1	259.8	560.5	0.0	0.0
50.00	Appurtenance(s)	269.8	1,003.7	2,053.6	0.0	0.0	720.0	0.0	143.6	2,323.4	1,867.3	0.0	0.0
52.38	Top - Section 2	254.2	820.5					0.0	120.3	254.2	940.8	0.0	0.0
55.00	Appurtenance(s)	182.1	372.0	2,087.9	0.0	0.0	720.0	0.0	132.4	2,270.1	1,224.4	0.0	0.0
56.00	Appurtenance(s)	99.5	139.5	7,010.4	0.0	3,720.1	3,000.0	0.0	50.5	7,109.8	3,190.1	0.0	0.0
57.00	Appurtenance(s)	196.2	138.1	907.9	0.0	0.0	900.0	0.0	31.3	1,104.1	1,069.5	0.0	0.0
60.00	Appurtenance(s)	384.0	406.2	2,119.8	0.0	0.0	720.0	0.0	93.9	2,503.8	1,220.2	0.0	0.0
65.00	Appurtenance(s)	329.7	649.7	2,149.5	0.0	0.0	720.0	0.0	156.5	2,479.2	1,526.2	0.0	0.0
67.00	Appurtenance(s)	228.0	250.3	4,365.3	0.0	2,171.2	3,919.7	0.0	62.6	4,593.3	4,232.6	0.0	0.0
70.00	Appurtenance(s)	353.8	365.2	2,177.4	0.0	0.0	720.0	0.0	32.2	2,531.2	1,117.4	0.0	0.0
75.00	Appurtenance(s)	302.6	581.3	2,205.7	0.0	882.3	720.0	0.0	53.6	2,508.3	1,355.0	0.0	0.0
77.00	Top - Section 3	109.9	223.0	3,861.3	0.0	0.0	2,863.4	0.0	21.5	3,971.3	3,107.9	0.0	0.0
80.00	Appurtenance(s)	52.8	54.0	2,228.5	0.0	0.0	720.0	0.0	3.5	2,281.4	777.4	0.0	0.0
83.20		27.3	57.6					0.0	3.7	27.3	61.3	0.0	0.0
<b>Totals:</b>										<b>52,322.8</b>	<b>43,470.9</b>	<b>0.00</b>	<b>0.00</b>

**Load Case: 1.2D + 1.0W**

116 mph with No Ice

15 Iterations

Gust Response Factor :1.10

Dead Load Factor :1.20

Wind Load Factor :1.00

**Calculated Forces**

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-43.68	-52.63	0.00	-2,798.43	0.00	2,798.43	6,024.56	1,434.32	6,672.27	6,372.20	0.00	0.00	0.448
5.00	-41.66	-52.16	0.00	-2,535.26	0.00	2,535.26	5,872.89	1,387.30	6,242.03	6,006.19	0.08	-0.14	0.431
10.00	-39.70	-51.69	0.00	-2,274.48	0.00	2,274.48	5,673.84	1,340.28	5,826.13	5,603.99	0.30	-0.28	0.414
15.00	-37.09	-49.55	0.00	-2,016.03	0.00	2,016.03	5,474.78	1,293.26	5,424.57	5,215.73	0.66	-0.41	0.395
20.00	-34.57	-47.43	0.00	-1,768.26	0.00	1,768.26	5,275.73	1,246.23	5,037.34	4,841.40	1.17	-0.55	0.373
22.69	-33.61	-47.18	0.00	-1,640.81	0.00	1,640.81	5,168.74	1,220.96	4,835.14	4,645.96	1.50	-0.62	0.361
25.00	-31.51	-45.04	0.00	-1,531.70	0.00	1,531.70	5,076.67	1,199.21	4,664.46	4,481.02	1.82	-0.68	0.349
28.85	-29.26	-44.77	0.00	-1,358.22	0.00	1,358.22	4,404.64	1,040.47	4,012.70	3,860.27	2.41	-0.78	0.360
30.00	-28.18	-42.58	0.00	-1,306.81	0.00	1,306.81	4,364.63	1,031.02	3,940.15	3,790.11	2.60	-0.81	0.353
35.00	-25.98	-40.13	0.00	-1,093.93	0.00	1,093.93	4,190.46	989.87	3,632.01	3,492.17	3.52	-0.94	0.321
40.00	-23.85	-37.63	0.00	-893.29	0.00	893.29	4,016.29	948.73	3,336.41	3,206.42	4.57	-1.06	0.286
45.00	-21.80	-35.23	0.00	-705.14	0.00	705.14	3,842.11	907.59	3,053.35	2,932.87	5.74	-1.17	0.248
47.16	-21.21	-34.97	0.00	-629.09	0.00	629.09	3,766.91	889.82	2,935.01	2,818.52	6.29	-1.21	0.230
50.00	-19.37	-32.63	0.00	-529.73	0.00	529.73	3,667.94	866.44	2,782.84	2,671.51	7.03	-1.27	0.205
52.38	-18.41	-32.37	0.00	-452.07	0.00	452.07	2,525.90	617.95	1,981.53	1,843.32	7.67	-1.31	0.255
55.00	-17.22	-30.08	0.00	-367.28	0.00	367.28	2,481.10	602.55	1,884.02	1,765.11	8.40	-1.35	0.218
56.00	-14.19	-22.90	0.00	-333.48	0.00	333.48	2,463.76	596.68	1,847.45	1,735.52	8.69	-1.37	0.199
57.00	-13.14	-21.78	0.00	-310.58	0.00	310.58	2,446.28	590.80	1,811.24	1,706.08	8.98	-1.39	0.189
60.00	-11.96	-19.25	0.00	-245.26	0.00	245.26	2,393.02	573.17	1,704.75	1,618.68	9.87	-1.44	0.158
65.00	-10.49	-16.74	0.00	-148.99	0.00	148.99	2,301.57	543.78	1,534.44	1,476.24	11.41	-1.50	0.106
67.00	-6.37	-12.04	0.00	-113.33	0.00	113.33	2,252.23	532.02	1,468.82	1,413.06	12.05	-1.52	0.084
70.00	-5.32	-9.48	0.00	-77.20	0.00	77.20	2,177.58	514.39	1,373.09	1,320.49	13.01	-1.54	0.061
75.00	-4.03	-6.94	0.00	-28.89	0.00	28.89	2,053.18	485.00	1,220.70	1,173.17	14.64	-1.57	0.027
77.00	-1.03	-2.89	0.00	-15.01	0.00	15.01	2,003.41	473.25	1,162.25	1,116.68	15.30	-1.57	0.014
77.00	-1.03	-2.89	0.00	-15.01	0.00	15.01	138.83	41.65	15.24	15.36	15.30	-1.57	0.989
80.00	-0.32	-0.59	0.00	-6.35	0.00	6.35	138.83	41.65	15.24	15.36	16.29	-1.58	0.416
83.20	0.00	-0.58	0.00	-4.48	0.00	4.48	138.83	41.65	15.24	15.36	17.53	-2.09	0.292

<b>Load Case:</b> 0.9D + 1.0W	116 mph with No Ice (Reduced DL)	15 Iterations
Gust Response Factor :1.10		
Dead Load Factor :0.90		
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		292.3	0.0					0.0	0.0	292.3	0.0	0.0	0.0
5.00		575.0	1,230.9					0.0	189.5	575.0	1,420.5	0.0	0.0
10.00		555.8	1,189.9					0.0	189.5	555.8	1,379.5	0.0	0.0
15.00	Appurtenance(s)	543.7	1,148.9	1,665.7	0.0	0.0	540.0	0.0	189.5	2,209.3	1,878.4	0.0	0.0
20.00	Appurtenance(s)	417.0	1,107.9	1,751.1	0.0	0.0	540.0	0.0	189.5	2,168.1	1,837.4	0.0	0.0
22.69	Bot - Section 2	274.8	578.5					0.0	101.9	274.8	680.4	0.0	0.0
25.00	Appurtenance(s)	341.9	924.8	1,820.4	0.0	0.0	540.0	0.0	87.7	2,162.3	1,552.5	0.0	0.0
28.85	Top - Section 1	276.8	1,503.8					0.0	146.0	276.8	1,649.8	0.0	0.0
30.00	Appurtenance(s)	337.4	207.6	1,879.1	0.0	0.0	540.0	0.0	43.5	2,216.4	791.1	0.0	0.0
35.00	Appurtenance(s)	543.6	881.6	1,930.1	0.0	0.0	540.0	0.0	189.5	2,473.7	1,611.2	0.0	0.0
40.00	Appurtenance(s)	533.5	845.7	1,975.5	0.0	0.0	540.0	0.0	189.5	2,509.0	1,575.3	0.0	0.0
45.00	Appurtenance(s)	375.9	809.8	2,016.3	0.0	0.0	540.0	0.0	189.5	2,392.2	1,539.4	0.0	0.0
47.16	Bot - Section 3	259.8	338.6					0.0	81.8	259.8	420.4	0.0	0.0
50.00	Appurtenance(s)	269.8	752.8	2,053.6	0.0	0.0	540.0	0.0	107.7	2,323.4	1,400.5	0.0	0.0
52.38	Top - Section 2	254.2	615.4					0.0	90.2	254.2	705.6	0.0	0.0
55.00	Appurtenance(s)	182.1	279.0	2,087.9	0.0	0.0	540.0	0.0	99.3	2,270.1	918.3	0.0	0.0
56.00	Appurtenance(s)	99.5	104.6	7,010.4	0.0	3,720.1	2,250.0	0.0	37.9	7,109.8	2,392.5	0.0	0.0
57.00	Appurtenance(s)	196.2	103.6	907.9	0.0	0.0	675.0	0.0	23.5	1,104.1	802.1	0.0	0.0
60.00	Appurtenance(s)	384.0	304.7	2,119.8	0.0	0.0	540.0	0.0	70.4	2,503.8	915.1	0.0	0.0
65.00	Appurtenance(s)	329.7	487.3	2,149.5	0.0	0.0	540.0	0.0	117.4	2,479.2	1,144.7	0.0	0.0
67.00	Appurtenance(s)	228.0	187.7	4,365.3	0.0	2,171.2	2,939.8	0.0	47.0	4,593.3	3,174.5	0.0	0.0
70.00	Appurtenance(s)	353.8	273.9	2,177.4	0.0	0.0	540.0	0.0	24.1	2,531.2	838.0	0.0	0.0
75.00	Appurtenance(s)	302.6	436.0	2,205.7	0.0	882.3	540.0	0.0	40.2	2,508.3	1,016.2	0.0	0.0
77.00	Top - Section 3	109.9	167.2	3,861.3	0.0	0.0	2,147.6	0.0	16.1	3,971.3	2,330.9	0.0	0.0
80.00	Appurtenance(s)	52.8	40.5	2,228.5	0.0	0.0	540.0	0.0	2.6	2,281.4	583.1	0.0	0.0
83.20		27.3	43.2					0.0	2.8	27.3	46.0	0.0	0.0
Totals:										52,322.8	32,603.1	0.00	0.00

Site Number: 414240

Code: ANSI/TIA-222-H

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Site Name: Byram Park CT, CT

Engineering Number: 13251816\_C3\_05

7/13/2020 5:44:55 PM

Customer: T-MOBILE

**Load Case: 0.9D + 1.0W**

116 mph with No Ice (Reduced DL)

15 Iterations

Gust Response Factor :1.10

Dead Load Factor :0.90

Wind Load Factor :1.00

**Calculated Forces**

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-32.74	-52.62	0.00	-2,792.14	0.00	2,792.14	6,024.56	1,434.32	6,672.27	6,372.20	0.00	0.00	0.445
5.00	-31.20	-52.12	0.00	-2,529.04	0.00	2,529.04	5,872.89	1,387.30	6,242.03	6,006.19	0.08	-0.14	0.428
10.00	-29.70	-51.63	0.00	-2,268.45	0.00	2,268.45	5,673.84	1,340.28	5,826.13	5,603.99	0.30	-0.28	0.412
15.00	-27.71	-49.47	0.00	-2,010.31	0.00	2,010.31	5,474.78	1,293.26	5,424.57	5,215.73	0.66	-0.41	0.392
20.00	-25.81	-47.34	0.00	-1,762.94	0.00	1,762.94	5,275.73	1,246.23	5,037.34	4,841.40	1.17	-0.55	0.370
22.69	-25.08	-47.08	0.00	-1,635.73	0.00	1,635.73	5,168.74	1,220.96	4,835.14	4,645.96	1.50	-0.62	0.358
25.00	-23.49	-44.94	0.00	-1,526.85	0.00	1,526.85	5,076.67	1,199.21	4,664.46	4,481.02	1.81	-0.68	0.347
28.85	-21.79	-44.66	0.00	-1,353.77	0.00	1,353.77	4,404.64	1,040.47	4,012.70	3,860.27	2.40	-0.78	0.357
30.00	-20.97	-42.47	0.00	-1,302.48	0.00	1,302.48	4,364.63	1,031.02	3,940.15	3,790.11	2.59	-0.81	0.350
35.00	-19.31	-40.01	0.00	-1,090.15	0.00	1,090.15	4,190.46	989.87	3,632.01	3,492.17	3.51	-0.94	0.318
40.00	-17.71	-37.51	0.00	-890.10	0.00	890.10	4,016.29	948.73	3,336.41	3,206.42	4.56	-1.06	0.284
45.00	-16.17	-35.11	0.00	-702.56	0.00	702.56	3,842.11	907.59	3,053.35	2,932.87	5.73	-1.17	0.245
47.16	-15.72	-34.85	0.00	-626.76	0.00	626.76	3,766.91	889.82	2,935.01	2,818.52	6.27	-1.21	0.228
50.00	-14.35	-32.51	0.00	-527.74	0.00	527.74	3,667.94	866.44	2,782.84	2,671.51	7.01	-1.27	0.203
52.38	-13.62	-32.25	0.00	-450.35	0.00	450.35	2,525.90	617.95	1,981.53	1,843.32	7.65	-1.31	0.252
55.00	-12.74	-29.97	0.00	-365.86	0.00	365.86	2,481.10	602.55	1,884.02	1,765.11	8.38	-1.35	0.215
56.00	-10.51	-22.81	0.00	-332.17	0.00	332.17	2,463.76	596.68	1,847.45	1,735.52	8.66	-1.37	0.197
57.00	-9.72	-21.69	0.00	-309.36	0.00	309.36	2,446.28	590.80	1,811.24	1,706.08	8.95	-1.39	0.187
60.00	-8.85	-19.17	0.00	-244.29	0.00	244.29	2,393.02	573.17	1,704.75	1,618.68	9.84	-1.43	0.156
65.00	-7.76	-16.67	0.00	-148.42	0.00	148.42	2,301.57	543.78	1,534.44	1,476.24	11.38	-1.50	0.105
67.00	-4.70	-12.00	0.00	-112.91	0.00	112.91	2,252.23	532.02	1,468.82	1,413.06	12.01	-1.52	0.083
70.00	-3.93	-9.45	0.00	-76.92	0.00	76.92	2,177.58	514.39	1,373.09	1,320.49	12.97	-1.54	0.060
75.00	-2.98	-6.91	0.00	-28.80	0.00	28.80	2,053.18	485.00	1,220.70	1,173.17	14.60	-1.56	0.026
77.00	-0.76	-2.88	0.00	-14.98	0.00	14.98	2,003.41	473.25	1,162.25	1,116.68	15.25	-1.57	0.014
77.00	-0.76	-2.88	0.00	-14.98	0.00	14.98	138.83	41.65	15.24	15.36	15.25	-1.57	0.985
80.00	-0.23	-0.58	0.00	-6.34	0.00	6.34	138.83	41.65	15.24	15.36	16.24	-1.57	0.415
83.20	0.00	-0.58	0.00	-4.48	0.00	4.48	138.83	41.65	15.24	15.36	17.48	-2.09	0.292

<b>Load Case:</b> 1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice	14 Iterations
Gust Response Factor :1.10	Ice Dead Load Factor :1.00	
Dead Load Factor :1.20		Ice Importance Factor :1.00
Wind Load Factor :1.00		

**Applied Segment Forces Summary**

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		91.9	0.0					0.0	0.0	91.9	0.0	0.0	0.0
5.00		181.2	1,888.5					0.0	252.7	181.2	2,141.2	0.0	0.0
10.00		175.8	1,853.9					0.0	252.7	175.8	2,106.6	0.0	0.0
15.00	Appurtenance(s)	172.5	1,803.8	421.8	0.0	0.0	877.8	0.0	252.7	594.3	2,934.4	0.0	0.0
20.00	Appurtenance(s)	132.5	1,748.7	447.5	0.0	0.0	885.2	0.0	252.7	580.0	2,886.7	0.0	0.0
22.69	Bot - Section 2	87.5	917.4					0.0	135.8	87.5	1,053.2	0.0	0.0
25.00	Appurtenance(s)	109.0	1,360.4	469.2	0.0	0.0	892.3	0.0	116.9	578.1	2,369.6	0.0	0.0
28.85	Top - Section 1	88.3	2,213.6					0.0	194.7	88.3	2,408.3	0.0	0.0
30.00	Appurtenance(s)	107.8	339.0	487.2	0.0	0.0	897.3	0.0	58.0	595.0	1,294.3	0.0	0.0
35.00	Appurtenance(s)	174.0	1,438.5	501.8	0.0	0.0	899.6	0.0	252.7	675.8	2,590.9	0.0	0.0
40.00	Appurtenance(s)	171.2	1,383.8	515.7	0.0	0.0	903.1	0.0	252.7	687.0	2,539.7	0.0	0.0
45.00	Appurtenance(s)	120.9	1,328.4	528.3	0.0	0.0	906.1	0.0	252.7	649.2	2,487.3	0.0	0.0
47.16	Bot - Section 3	83.7	557.6					0.0	109.1	83.7	666.8	0.0	0.0
50.00	Appurtenance(s)	87.0	1,143.1	540.2	0.0	0.0	909.5	0.0	143.6	627.2	2,196.1	0.0	0.0
52.38	Top - Section 2	82.1	935.3					0.0	120.3	82.1	1,055.7	0.0	0.0
55.00	Appurtenance(s)	58.9	495.9	550.8	0.0	0.0	912.0	0.0	132.4	609.7	1,540.3	0.0	0.0
56.00	Appurtenance(s)	32.2	186.5	1,700.0	0.0	831.1	5,118.9	0.0	50.5	1,732.2	5,356.0	0.0	0.0
57.00	Appurtenance(s)	63.6	184.8	233.5	0.0	0.0	1,189.9	0.0	31.3	297.1	1,406.0	0.0	0.0
60.00	Appurtenance(s)	124.7	542.7	560.7	0.0	0.0	914.1	0.0	93.9	685.4	1,550.8	0.0	0.0
65.00	Appurtenance(s)	107.3	867.5	569.6	0.0	0.0	915.8	0.0	156.5	676.9	1,939.8	0.0	0.0
67.00	Appurtenance(s)	74.4	336.1	1,008.6	0.0	495.0	6,033.3	0.0	62.6	1,083.1	6,432.0	0.0	0.0
70.00	Appurtenance(s)	115.8	490.3	578.6	0.0	0.0	918.2	0.0	32.2	694.5	1,440.6	0.0	0.0
75.00	Appurtenance(s)	99.3	779.6	587.1	0.0	234.9	919.7	0.0	53.6	686.4	1,752.9	0.0	0.0
77.00	Top - Section 3	37.0	300.8	879.8	0.0	0.0	4,428.5	0.0	21.5	916.8	4,750.7	0.0	0.0
80.00	Appurtenance(s)	19.1	76.3	594.7	0.0	0.0	1,581.7	0.0	3.5	613.7	1,661.5	0.0	0.0
83.20		9.9	81.5					0.0	3.7	9.9	85.2	0.0	0.0
<b>Totals:</b>										13,782.8	56,646.5	0.00	0.00

Site Number: 414240

Code: ANSI/TIA-222-H

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Site Name: Byram Park CT, CT

Engineering Number: 13251816\_C3\_05

7/13/2020 5:44:57 PM

Customer: T-MOBILE

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 1.00 in Radial Ice

14 Iterations

Gust Response Factor :1.10

Ice Dead Load Factor :1.00

Dead Load Factor :1.20

Ice Importance Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-57.06	-13.89	0.00	-732.84	0.00	732.84	6,024.56	1,434.32	6,672.27	6,372.20	0.00	0.00	0.125
5.00	-54.91	-13.74	0.00	-663.41	0.00	663.41	5,872.89	1,387.30	6,242.03	6,006.19	0.02	-0.04	0.120
10.00	-52.80	-13.60	0.00	-594.71	0.00	594.71	5,673.84	1,340.28	5,826.13	5,603.99	0.08	-0.07	0.116
15.00	-49.85	-13.03	0.00	-526.73	0.00	526.73	5,474.78	1,293.26	5,424.57	5,215.73	0.17	-0.11	0.110
20.00	-46.96	-12.46	0.00	-461.60	0.00	461.60	5,275.73	1,246.23	5,037.34	4,841.40	0.31	-0.14	0.104
22.69	-45.91	-12.39	0.00	-428.11	0.00	428.11	5,168.74	1,220.96	4,835.14	4,645.96	0.39	-0.16	0.101
25.00	-43.53	-11.82	0.00	-399.46	0.00	399.46	5,076.67	1,199.21	4,664.46	4,481.02	0.48	-0.18	0.098
28.85	-41.12	-11.73	0.00	-353.95	0.00	353.95	4,404.64	1,040.47	4,012.70	3,860.27	0.63	-0.20	0.101
30.00	-39.83	-11.15	0.00	-340.47	0.00	340.47	4,364.63	1,031.02	3,940.15	3,790.11	0.68	-0.21	0.099
35.00	-37.23	-10.48	0.00	-284.73	0.00	284.73	4,190.46	989.87	3,632.01	3,492.17	0.92	-0.25	0.091
40.00	-34.69	-9.80	0.00	-232.32	0.00	232.32	4,016.29	948.73	3,336.41	3,206.42	1.20	-0.28	0.081
45.00	-32.20	-9.15	0.00	-183.31	0.00	183.31	3,842.11	907.59	3,053.35	2,932.87	1.50	-0.31	0.071
47.16	-31.53	-9.07	0.00	-163.55	0.00	163.55	3,766.91	889.82	2,935.01	2,818.52	1.64	-0.32	0.067
50.00	-29.34	-8.44	0.00	-137.78	0.00	137.78	3,667.94	866.44	2,782.84	2,671.51	1.84	-0.33	0.060
52.38	-28.28	-8.36	0.00	-117.70	0.00	117.70	2,525.90	617.95	1,981.53	1,843.32	2.00	-0.34	0.075
55.00	-26.75	-7.74	0.00	-95.81	0.00	95.81	2,481.10	602.55	1,884.02	1,765.11	2.19	-0.35	0.065
56.00	-21.40	-5.98	0.00	-87.24	0.00	87.24	2,463.76	596.68	1,847.45	1,735.52	2.27	-0.36	0.059
57.00	-20.00	-5.67	0.00	-81.26	0.00	81.26	2,446.28	590.80	1,811.24	1,706.08	2.34	-0.36	0.056
60.00	-18.45	-4.98	0.00	-64.24	0.00	64.24	2,393.02	573.17	1,704.75	1,618.68	2.58	-0.38	0.047
65.00	-16.51	-4.30	0.00	-39.33	0.00	39.33	2,301.57	543.78	1,534.44	1,476.24	2.98	-0.39	0.034
67.00	-10.09	-3.17	0.00	-30.24	0.00	30.24	2,252.23	532.02	1,468.82	1,413.06	3.15	-0.40	0.026
70.00	-8.65	-2.47	0.00	-20.73	0.00	20.73	2,177.58	514.39	1,373.09	1,320.49	3.40	-0.40	0.020
75.00	-6.90	-1.77	0.00	-8.16	0.00	8.16	2,053.18	485.00	1,220.70	1,173.17	3.82	-0.41	0.010
77.00	-2.16	-0.82	0.00	-4.63	0.00	4.63	2,003.41	473.25	1,162.25	1,116.68	4.00	-0.41	0.005
77.00	-2.16	-0.82	0.00	-4.63	0.00	4.63	138.83	41.65	15.24	15.36	4.00	-0.41	0.317
80.00	-0.50	-0.19	0.00	-2.18	0.00	2.18	138.83	41.65	15.24	15.36	4.25	-0.41	0.145
83.20	0.00	-0.19	0.00	-1.56	0.00	1.56	138.83	41.65	15.24	15.36	4.59	-0.59	0.102

<b>Load Case:</b> 1.0D + 1.0W	Serviceability 60 mph	14 Iterations
Gust Response Factor :1.10		
Dead Load Factor :1.00		
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		70.0	0.0					0.0	0.0	70.0	0.0	0.0	0.0
5.00		137.7	1,367.7					0.0	210.6	137.7	1,578.3	0.0	0.0
10.00		133.0	1,322.1					0.0	210.6	133.0	1,532.7	0.0	0.0
15.00	Appurtenance(s)	130.1	1,276.5	398.7	0.0	0.0	600.0	0.0	210.6	528.9	2,087.1	0.0	0.0
20.00	Appurtenance(s)	99.8	1,231.0	419.2	0.0	0.0	600.0	0.0	210.6	519.0	2,041.6	0.0	0.0
22.69	Bot - Section 2	65.8	642.8					0.0	113.2	65.8	756.0	0.0	0.0
25.00	Appurtenance(s)	81.8	1,027.6	435.8	0.0	0.0	600.0	0.0	97.4	517.6	1,725.0	0.0	0.0
28.85	Top - Section 1	66.3	1,670.9					0.0	162.2	66.3	1,833.1	0.0	0.0
30.00	Appurtenance(s)	80.8	230.6	449.8	0.0	0.0	600.0	0.0	48.4	530.6	879.0	0.0	0.0
35.00	Appurtenance(s)	130.1	979.6	462.0	0.0	0.0	600.0	0.0	210.6	592.1	1,790.2	0.0	0.0
40.00	Appurtenance(s)	127.7	939.7	472.9	0.0	0.0	600.0	0.0	210.6	600.6	1,750.3	0.0	0.0
45.00	Appurtenance(s)	90.0	899.8	482.7	0.0	0.0	600.0	0.0	210.6	572.6	1,710.4	0.0	0.0
47.16	Bot - Section 3	62.2	376.2					0.0	90.9	62.2	467.1	0.0	0.0
50.00	Appurtenance(s)	64.6	836.5	491.6	0.0	0.0	600.0	0.0	119.7	556.2	1,556.1	0.0	0.0
52.38	Top - Section 2	60.9	683.8					0.0	100.3	60.9	784.0	0.0	0.0
55.00	Appurtenance(s)	43.6	310.0	499.8	0.0	0.0	600.0	0.0	110.3	543.4	1,020.3	0.0	0.0
56.00	Appurtenance(s)	23.8	116.3	1,678.1	0.0	890.5	2,500.0	0.0	42.1	1,701.9	2,658.4	0.0	0.0
57.00	Appurtenance(s)	47.0	115.1	217.3	0.0	0.0	750.0	0.0	26.1	264.3	891.2	0.0	0.0
60.00	Appurtenance(s)	91.9	338.5	507.4	0.0	0.0	600.0	0.0	78.3	599.3	1,016.8	0.0	0.0
65.00	Appurtenance(s)	78.9	541.4	514.5	0.0	0.0	600.0	0.0	130.4	593.5	1,271.9	0.0	0.0
67.00	Appurtenance(s)	54.6	208.6	1,045.0	0.0	519.7	3,266.4	0.0	52.2	1,099.5	3,527.2	0.0	0.0
70.00	Appurtenance(s)	84.7	304.3	521.2	0.0	0.0	600.0	0.0	26.8	605.9	931.2	0.0	0.0
75.00	Appurtenance(s)	72.4	484.4	528.0	0.0	211.2	600.0	0.0	44.7	600.4	1,129.1	0.0	0.0
77.00	Top - Section 3	28.2	185.8	924.3	0.0	0.0	2,386.2	0.0	17.9	952.5	2,589.9	0.0	0.0
80.00	Appurtenance(s)	16.5	45.0	533.5	0.0	0.0	600.0	0.0	2.9	550.0	647.9	0.0	0.0
83.20		8.6	48.0					0.0	3.1	8.6	51.1	0.0	0.0
Totals:										12,532.6	36,225.7	0.00	0.00



Site Number: 414240

Code: ANSI/TIA-222-H

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Site Name: Byram Park CT, CT

Engineering Number: 13251816\_C3\_05

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Customer: T-MOBILE

Load Case: 1.0D + 1.0W

Serviceability 60 mph

14 Iterations

Gust Response Factor :1.10

Dead Load Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-36.45	-12.60	0.00	-669.56	0.00	669.56	6,024.56	1,434.32	6,672.27	6,372.20	0.00	0.00	0.111
5.00	-34.87	-12.49	0.00	-606.53	0.00	606.53	5,872.89	1,387.30	6,242.03	6,006.19	0.02	-0.03	0.107
10.00	-33.33	-12.37	0.00	-544.10	0.00	544.10	5,673.84	1,340.28	5,826.13	5,603.99	0.07	-0.07	0.103
15.00	-31.23	-11.86	0.00	-482.25	0.00	482.25	5,474.78	1,293.26	5,424.57	5,215.73	0.16	-0.10	0.098
20.00	-29.19	-11.35	0.00	-422.96	0.00	422.96	5,275.73	1,246.23	5,037.34	4,841.40	0.28	-0.13	0.093
22.69	-28.43	-11.29	0.00	-392.47	0.00	392.47	5,168.74	1,220.96	4,835.14	4,645.96	0.36	-0.15	0.090
25.00	-26.70	-10.77	0.00	-366.37	0.00	366.37	5,076.67	1,199.21	4,664.46	4,481.02	0.43	-0.16	0.087
28.85	-24.87	-10.71	0.00	-324.87	0.00	324.87	4,404.64	1,040.47	4,012.70	3,860.27	0.58	-0.19	0.090
30.00	-23.98	-10.18	0.00	-312.58	0.00	312.58	4,364.63	1,031.02	3,940.15	3,790.11	0.62	-0.19	0.088
35.00	-22.19	-9.60	0.00	-261.66	0.00	261.66	4,190.46	989.87	3,632.01	3,492.17	0.84	-0.22	0.080
40.00	-20.44	-9.00	0.00	-213.68	0.00	213.68	4,016.29	948.73	3,336.41	3,206.42	1.09	-0.25	0.072
45.00	-18.73	-8.42	0.00	-168.70	0.00	168.70	3,842.11	907.59	3,053.35	2,932.87	1.37	-0.28	0.062
47.16	-18.26	-8.36	0.00	-150.51	0.00	150.51	3,766.91	889.82	2,935.01	2,818.52	1.50	-0.29	0.058
50.00	-16.71	-7.80	0.00	-126.75	0.00	126.75	3,667.94	866.44	2,782.84	2,671.51	1.68	-0.30	0.052
52.38	-15.92	-7.74	0.00	-108.18	0.00	108.18	2,525.90	617.95	1,981.53	1,843.32	1.83	-0.31	0.065
55.00	-14.90	-7.19	0.00	-87.91	0.00	87.91	2,481.10	602.55	1,884.02	1,765.11	2.01	-0.32	0.056
56.00	-12.25	-5.48	0.00	-79.83	0.00	79.83	2,463.76	596.68	1,847.45	1,735.52	2.08	-0.33	0.051
57.00	-11.36	-5.21	0.00	-74.35	0.00	74.35	2,446.28	590.80	1,811.24	1,706.08	2.15	-0.33	0.048
60.00	-10.35	-4.61	0.00	-58.73	0.00	58.73	2,393.02	573.17	1,704.75	1,618.68	2.36	-0.34	0.041
65.00	-9.08	-4.01	0.00	-35.70	0.00	35.70	2,301.57	543.78	1,534.44	1,476.24	2.73	-0.36	0.028
67.00	-5.56	-2.88	0.00	-27.17	0.00	27.17	2,252.23	532.02	1,468.82	1,413.06	2.88	-0.36	0.022
70.00	-4.63	-2.27	0.00	-18.52	0.00	18.52	2,177.58	514.39	1,373.09	1,320.49	3.11	-0.37	0.016
75.00	-3.51	-1.67	0.00	-6.94	0.00	6.94	2,053.18	485.00	1,220.70	1,173.17	3.50	-0.37	0.008
77.00	-0.92	-0.70	0.00	-3.61	0.00	3.61	2,003.41	473.25	1,162.25	1,116.68	3.66	-0.38	0.004
77.00	-0.92	-0.70	0.00	-3.61	0.00	3.61	138.83	41.65	15.24	15.36	3.66	-0.38	0.242
80.00	-0.28	-0.14	0.00	-1.53	0.00	1.53	138.83	41.65	15.24	15.36	3.90	-0.38	0.101
83.20	0.00	-0.14	0.00	-1.07	0.00	1.07	138.83	41.65	15.24	15.36	4.19	-0.50	0.070

Equivalent Lateral Forces Method Analysis

Spectral Response Acceleration for Short Period ( $S_s$ ):	0.28
Spectral Response Acceleration at 1.0 Second Period ( $S_1$ ):	0.06
Long-Period Transition Period ( $T_L$ ):	6
Importance Factor ( $I_E$ ):	1.00
Site Coefficient $F_a$ :	1.58
Site Coefficient $F_v$ :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period ( $S_{ds}$ ):	0.29
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.10
Seismic Response Coefficient ( $C_s$ ):	0.08
Upper Limit $C_s$	0.08
Lower Limit $C_s$	0.03
Period based on Rayleigh Method (sec):	0.77
Redundancy Factor ( $\rho$ ):	1.00
Seismic Force Distribution Exponent (k):	1.14
Total Unfactored Dead Load:	36.45 k
Seismic Base Shear (E):	3.02 k

Load Case 1.2D + 1.0Ev + 1.0Eh

Seismic

Segment	Height Above Base (ft)	Weight (lb)	$W_z$ (lb-ft)	$C_{vx}$	Horizontal Force (lb)	Vertical Force (lb)
25	81.60	51	8	0.003	8	64
24	78.50	48	7	0.002	7	60
23	76.00	204	28	0.010	31	256
22	72.50	529	69	0.025	75	666
21	68.50	331	40	0.015	44	417
20	66.00	261	30	0.011	33	328
19	62.50	672	74	0.027	81	845
18	58.50	417	42	0.015	47	524
17	56.50	141	14	0.005	15	178
16	55.50	158	15	0.006	17	199
15	53.69	420	39	0.014	43	529
14	51.19	784	69	0.025	75	987
13	48.58	956	79	0.029	86	1,203
12	46.08	467	36	0.013	40	588
11	42.50	1,110	79	0.029	86	1,397
10	37.50	1,150	71	0.026	78	1,447
9	32.50	1,190	62	0.023	68	1,498
8	29.43	279	13	0.005	14	351
7	26.93	1,833	77	0.028	85	2,307
6	23.84	1,125	41	0.015	45	1,416
5	21.34	756	24	0.009	27	951
4	17.50	1,442	37	0.014	41	1,814
3	12.50	1,487	26	0.010	29	1,871
2	7.50	1,533	15	0.005	17	1,929
1	2.50	1,578	4	0.002	5	1,986

Site Number: 414240

Code: ANSI/TIA-222-H

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Site Name: Byram Park CT, CT

Engineering Number: 13251816\_C3\_05

7/13/2020 5:44:59 PM

Customer: T-MOBILE

Bird 428D-831-01-T	83.20	9	1	0.000	1	11
dbSpectra DS7C09P36U	83.20	140	21	0.008	23	176
Pole Mount	83.20	80	12	0.004	13	101
Pine Branches	80.00	600	87	0.032	96	755
Commscope CBC1923Q-4	77.00	22	3	0.001	3	28
Ericsson RRUS 4415 B	77.00	138	19	0.007	21	174
Ericsson Radio 4449	77.00	225	31	0.011	34	283
Ericsson RRUS 32 B66	77.00	159	22	0.008	24	200
Ericsson Air6449 B41	77.00	312	43	0.016	48	393
Ericsson AIR32 B66Aa	77.00	397	55	0.020	61	499
Flat T-Arms	77.00	750	104	0.038	114	944
RFS APXVAARR24_43-U-	77.00	384	53	0.019	59	483
Pine Branches	75.00	600	81	0.029	89	755
Pine Branches	70.00	600	75	0.027	82	755
CCI DTMAPB7819VG12A	67.00	115	14	0.005	15	145
Raycap DC6-48-60-0-8	67.00	16	2	0.001	2	20
Raycap DC6-48-60-18-	67.00	66	8	0.003	9	83
Ericsson RRUS 4426 B	67.00	145	17	0.006	19	183
Ericsson RRUS 4449 B	67.00	213	25	0.009	28	268
Ericsson RRUS 4478 B	67.00	178	21	0.008	23	224
Ericsson RRUS 32 B2	67.00	159	19	0.007	21	200
Ericsson RRUS-32 (77	67.00	231	27	0.010	30	291
Powerwave Allgon P65	67.00	159	19	0.007	21	200
CCI DMP65R-BU4D	67.00	407	48	0.018	53	513
CCI OPA-65R-LCUU-H6	67.00	219	26	0.009	29	276
Site PRO1, RMV12-496	67.00	1,358	161	0.059	177	1,709
Pine Branches	65.00	600	69	0.025	76	755
Pine Branches	60.00	600	63	0.023	69	755
Flat T-Arm	57.00	750	74	0.027	81	944
Alcatel-Lucent RRH 2	56.00	119	11	0.004	13	149
Alcatel-Lucent RRH2x	56.00	170	16	0.006	18	214
Alcatel-Lucent B66 R	56.00	201	19	0.007	21	253
Commscope RC2DC-4750	56.00	52	5	0.002	6	65
Amphenol Antel BXA-1	56.00	38	4	0.001	4	48
Commscope SBNHH-1D65	56.00	67	6	0.002	7	84
Commscope SBNHH-1D45	56.00	202	20	0.007	21	254
Amphenol Antel LPA-8	56.00	162	16	0.006	17	204
VZW Unused Reserve (	56.00	1,489	144	0.052	158	1,873
Pine Branches	55.00	600	57	0.021	62	755
Pine Branches	50.00	600	51	0.019	56	755
Pine Branches	45.00	600	45	0.016	50	755
Pine Branches	40.00	600	40	0.014	44	755
Pine Branches	35.00	600	34	0.012	37	755
Pine Branches	30.00	600	29	0.010	31	755
Pine Branches	25.00	600	23	0.008	26	755
Pine Branches	20.00	600	18	0.007	20	755
Pine Branches	15.00	600	13	0.005	14	755
		36,455	2,753	1.000	3,023	45,871

Load Case 0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
25	81.60	51	8	0.003	8	43
24	78.50	48	7	0.002	7	40
23	76.00	204	28	0.010	31	171
22	72.50	529	69	0.025	75	445
21	68.50	331	40	0.015	44	279
20	66.00	261	30	0.011	33	219
19	62.50	672	74	0.027	81	566
18	58.50	417	42	0.015	47	351

17	56.50	141	14	0.005	15	119
16	55.50	158	15	0.006	17	133
15	53.69	420	39	0.014	43	354
14	51.19	784	69	0.025	75	660
13	48.58	956	79	0.029	86	805
12	46.08	467	36	0.013	40	393
11	42.50	1,110	79	0.029	86	935
10	37.50	1,150	71	0.026	78	968
9	32.50	1,190	62	0.023	68	1,002
8	29.43	279	13	0.005	14	235
7	26.93	1,833	77	0.028	85	1,543
6	23.84	1,125	41	0.015	45	947
5	21.34	756	24	0.009	27	636
4	17.50	1,442	37	0.014	41	1,213
3	12.50	1,487	26	0.010	29	1,252
2	7.50	1,533	15	0.005	17	1,290
1	2.50	1,578	4	0.002	5	1,328
Bird 428D-831-01-T	83.20	9	1	0.000	1	7
dbSpectra DS7C09P36U	83.20	140	21	0.008	23	118
Pole Mount	83.20	80	12	0.004	13	67
Pine Branches	80.00	600	87	0.032	96	505
Commscope CBC1923Q-4	77.00	22	3	0.001	3	18
Ericsson RRUS 4415 B	77.00	138	19	0.007	21	116
Ericsson Radio 4449	77.00	225	31	0.011	34	189
Ericsson RRUS 32 B66	77.00	159	22	0.008	24	134
Ericsson Air6449 B41	77.00	312	43	0.016	48	263
Ericsson AIR32 B66Aa	77.00	397	55	0.020	61	334
Flat T-Arms	77.00	750	104	0.038	114	631
RFS APXVAARR24_43-U-	77.00	384	53	0.019	59	323
Pine Branches	75.00	600	81	0.029	89	505
Pine Branches	70.00	600	75	0.027	82	505
CCI DTMAPB7819VG12A	67.00	115	14	0.005	15	97
Raycap DC6-48-60-0-8	67.00	16	2	0.001	2	13
Raycap DC6-48-60-18-	67.00	66	8	0.003	9	55
Ericsson RRUS 4426 B	67.00	145	17	0.006	19	122
Ericsson RRUS 4449 B	67.00	213	25	0.009	28	179
Ericsson RRUS 4478 B	67.00	178	21	0.008	23	150
Ericsson RRUS 32 B2	67.00	159	19	0.007	21	134
Ericsson RRUS-32 (77	67.00	231	27	0.010	30	194
Powerwave Allgon P65	67.00	159	19	0.007	21	134
CCI DMP65R-BU4D	67.00	407	48	0.018	53	343
CCI OPA-65R-LCUU-H6	67.00	219	26	0.009	29	184
Site PRO1, RMV12-496	67.00	1,358	161	0.059	177	1,143
Pine Branches	65.00	600	69	0.025	76	505
Pine Branches	60.00	600	63	0.023	69	505
Flat T-Arm	57.00	750	74	0.027	81	631
Alcatel-Lucent RRH 2	56.00	119	11	0.004	13	100
Alcatel-Lucent RRH2x	56.00	170	16	0.006	18	143
Alcatel-Lucent B66 R	56.00	201	19	0.007	21	169
Commscope RC2DC-4750	56.00	52	5	0.002	6	44
Amphenol Antel BXA-1	56.00	38	4	0.001	4	32
Commscope SBNHH-1D65	56.00	67	6	0.002	7	56
Commscope SBNHH-1D45	56.00	202	20	0.007	21	170
Amphenol Antel LPA-8	56.00	162	16	0.006	17	136
VZW Unused Reserve (	56.00	1,489	144	0.052	158	1,253
Pine Branches	55.00	600	57	0.021	62	505
Pine Branches	50.00	600	51	0.019	56	505
Pine Branches	45.00	600	45	0.016	50	505
Pine Branches	40.00	600	40	0.014	44	505
Pine Branches	35.00	600	34	0.012	37	505
Pine Branches	30.00	600	29	0.010	31	505
Pine Branches	25.00	600	23	0.008	26	505
Pine Branches	20.00	600	18	0.007	20	505
Pine Branches	15.00	600	13	0.005	14	505

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Site Number: 414240

Code: ANSI/TIA-222-H

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Site Name: Byram Park CT, CT

Engineering Number: 13251816\_C3\_05

7/13/2020 5:44:59 PM

Customer: T-MOBILE

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36,455

2,753

1.000

3,023

30,684

Load Case 1.2D + 1.0Ev + 1.0Eh

Seismic

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-43.88	-3.02	0.00	-171.92	0.00	171.92	6,024.56	1,434.32	6,672.27	6,372.20	0.00	0.00	0.034
5.00	-41.96	-3.01	0.00	-156.82	0.00	156.82	5,872.89	1,387.30	6,242.03	6,006.19	0.00	-0.01	0.033
10.00	-40.08	-2.99	0.00	-141.77	0.00	141.77	5,673.84	1,340.28	5,826.13	5,603.99	0.02	-0.02	0.032
15.00	-37.51	-2.94	0.00	-126.84	0.00	126.84	5,474.78	1,293.26	5,424.57	5,215.73	0.04	-0.03	0.031
20.00	-35.81	-2.89	0.00	-112.16	0.00	112.16	5,275.73	1,246.23	5,037.34	4,841.40	0.07	-0.03	0.030
22.69	-34.39	-2.85	0.00	-104.39	0.00	104.39	5,168.74	1,220.96	4,835.14	4,645.96	0.09	-0.04	0.029
25.00	-31.33	-2.74	0.00	-97.80	0.00	97.80	5,076.67	1,199.21	4,664.46	4,481.02	0.11	-0.04	0.028
28.85	-30.98	-2.73	0.00	-87.25	0.00	87.25	4,404.64	1,040.47	4,012.70	3,860.27	0.15	-0.05	0.030
30.00	-28.73	-2.63	0.00	-84.12	0.00	84.12	4,364.63	1,031.02	3,940.15	3,790.11	0.16	-0.05	0.029
35.00	-26.52	-2.51	0.00	-70.98	0.00	70.98	4,190.46	989.87	3,632.01	3,492.17	0.22	-0.06	0.027
40.00	-24.37	-2.39	0.00	-58.40	0.00	58.40	4,016.29	948.73	3,336.41	3,206.42	0.29	-0.07	0.024
45.00	-23.03	-2.30	0.00	-46.47	0.00	46.47	3,842.11	907.59	3,053.35	2,932.87	0.36	-0.07	0.022
47.16	-21.83	-2.21	0.00	-41.51	0.00	41.51	3,766.91	889.82	2,935.01	2,818.52	0.40	-0.08	0.021
50.00	-20.08	-2.08	0.00	-35.23	0.00	35.23	3,667.94	866.44	2,782.84	2,671.51	0.44	-0.08	0.019
52.38	-19.56	-2.04	0.00	-30.29	0.00	30.29	2,525.90	617.95	1,981.53	1,843.32	0.48	-0.08	0.024
55.00	-18.60	-1.96	0.00	-24.96	0.00	24.96	2,481.10	602.55	1,884.02	1,765.11	0.53	-0.09	0.022
56.00	-15.28	-1.67	0.00	-23.00	0.00	23.00	2,463.76	596.68	1,847.45	1,735.52	0.55	-0.09	0.019
57.00	-13.81	-1.54	0.00	-21.33	0.00	21.33	2,446.28	590.80	1,811.24	1,706.08	0.57	-0.09	0.018
60.00	-12.21	-1.39	0.00	-16.71	0.00	16.71	2,393.02	573.17	1,704.75	1,618.68	0.62	-0.09	0.015
65.00	-11.13	-1.28	0.00	-9.77	0.00	9.77	2,301.57	543.78	1,534.44	1,476.24	0.72	-0.10	0.011
67.00	-6.60	-0.80	0.00	-7.21	0.00	7.21	2,252.23	532.02	1,468.82	1,413.06	0.76	-0.10	0.008
70.00	-5.18	-0.64	0.00	-4.81	0.00	4.81	2,177.58	514.39	1,373.09	1,320.49	0.83	-0.10	0.006
75.00	-4.17	-0.52	0.00	-1.60	0.00	1.60	2,053.18	485.00	1,220.70	1,173.17	0.93	-0.10	0.003
77.00	-1.11	-0.14	0.00	-0.55	0.00	0.55	2,003.41	473.25	1,162.25	1,116.68	0.97	-0.10	0.001
77.00	-1.11	-0.14	0.00	-0.55	0.00	0.55	138.83	41.65	15.24	15.36	0.97	-0.10	0.044
80.00	-0.29	-0.04	0.00	-0.12	0.00	0.12	138.83	41.65	15.24	15.36	1.04	-0.10	0.010
83.20	0.00	-0.04	0.00	0.00	0.00	0.00	138.83	41.65	15.24	15.36	1.11	-0.11	0.000

Load Case 0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-29.36	-3.02	0.00	-171.40	0.00	171.40	6,024.56	1,434.32	6,672.27	6,372.20	0.00	0.00	0.032
5.00	-28.06	-3.01	0.00	-156.30	0.00	156.30	5,872.89	1,387.30	6,242.03	6,006.19	0.00	-0.01	0.031
10.00	-26.81	-2.98	0.00	-141.27	0.00	141.27	5,673.84	1,340.28	5,826.13	5,603.99	0.02	-0.02	0.030
15.00	-25.09	-2.93	0.00	-126.36	0.00	126.36	5,474.78	1,293.26	5,424.57	5,215.73	0.04	-0.03	0.029
20.00	-23.95	-2.89	0.00	-111.72	0.00	111.72	5,275.73	1,246.23	5,037.34	4,841.40	0.07	-0.03	0.028
22.69	-23.01	-2.84	0.00	-103.96	0.00	103.96	5,168.74	1,220.96	4,835.14	4,645.96	0.09	-0.04	0.027
25.00	-20.96	-2.73	0.00	-97.39	0.00	97.39	5,076.67	1,199.21	4,664.46	4,481.02	0.11	-0.04	0.026
28.85	-20.72	-2.72	0.00	-86.87	0.00	86.87	4,404.64	1,040.47	4,012.70	3,860.27	0.15	-0.05	0.027
30.00	-19.21	-2.62	0.00	-83.75	0.00	83.75	4,364.63	1,031.02	3,940.15	3,790.11	0.16	-0.05	0.027
35.00	-17.74	-2.51	0.00	-70.66	0.00	70.66	4,190.46	989.87	3,632.01	3,492.17	0.22	-0.06	0.024
40.00	-16.30	-2.38	0.00	-58.13	0.00	58.13	4,016.29	948.73	3,336.41	3,206.42	0.29	-0.07	0.022
45.00	-15.40	-2.29	0.00	-46.25	0.00	46.25	3,842.11	907.59	3,053.35	2,932.87	0.36	-0.07	0.020
47.16	-14.60	-2.20	0.00	-41.32	0.00	41.32	3,766.91	889.82	2,935.01	2,818.52	0.39	-0.08	0.019
50.00	-13.43	-2.07	0.00	-35.07	0.00	35.07	3,667.94	866.44	2,782.84	2,671.51	0.44	-0.08	0.017
52.38	-13.08	-2.03	0.00	-30.15	0.00	30.15	2,525.90	617.95	1,981.53	1,843.32	0.48	-0.08	0.022
55.00	-12.44	-1.95	0.00	-24.84	0.00	24.84	2,481.10	602.55	1,884.02	1,765.11	0.53	-0.09	0.019
56.00	-10.22	-1.66	0.00	-22.89	0.00	22.89	2,463.76	596.68	1,847.45	1,735.52	0.55	-0.09	0.017
57.00	-9.24	-1.53	0.00	-21.23	0.00	21.23	2,446.28	590.80	1,811.24	1,706.08	0.57	-0.09	0.016
60.00	-8.17	-1.38	0.00	-16.63	0.00	16.63	2,393.02	573.17	1,704.75	1,618.68	0.62	-0.09	0.014
65.00	-7.44	-1.27	0.00	-9.72	0.00	9.72	2,301.57	543.78	1,534.44	1,476.24	0.72	-0.10	0.010
67.00	-4.41	-0.80	0.00	-7.18	0.00	7.18	2,252.23	532.02	1,468.82	1,413.06	0.76	-0.10	0.007
70.00	-3.46	-0.64	0.00	-4.78	0.00	4.78	2,177.58	514.39	1,373.09	1,320.49	0.82	-0.10	0.005
75.00	-2.79	-0.52	0.00	-1.59	0.00	1.59	2,053.18	485.00	1,220.70	1,173.17	0.93	-0.10	0.003
77.00	-0.74	-0.14	0.00	-0.55	0.00	0.55	2,003.41	473.25	1,162.25	1,116.68	0.97	-0.10	0.001
77.00	-0.74	-0.14	0.00	-0.55	0.00	0.55	138.83	41.65	15.24	15.36	0.97	-0.10	0.041
80.00	-0.19	-0.04	0.00	-0.12	0.00	0.12	138.83	41.65	15.24	15.36	1.03	-0.10	0.009
83.20	0.00	-0.04	0.00	0.00	0.00	0.00	138.83	41.65	15.24	15.36	1.10	-0.11	0.000

Site Number: 414240

Code: ANSI/TIA-222-H

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Site Name: Byram Park CT, CT

Engineering Number: 13251816\_C3\_05

7/13/2020 5:44:59 PM

Customer: T-MOBILE

## Analysis Summary

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.0W	52.63	0.00	43.68	0.00	0.00	2798.43	77.00	0.99
0.9D + 1.0W	52.62	0.00	32.74	0.00	0.00	2792.14	77.00	0.99
1.2D + 1.0Di + 1.0Wi	13.89	0.00	57.06	0.00	0.00	732.84	77.00	0.32
1.2D + 1.0Ev + 1.0Eh	3.02	0.00	43.88	0.00	0.00	171.92	77.00	0.04
0.9D - 1.0Ev + 1.0Eh	3.02	0.00	29.36	0.00	0.00	171.40	77.00	0.04
1.0D + 1.0W	12.60	0.00	36.45	0.00	0.00	669.56	77.00	0.24





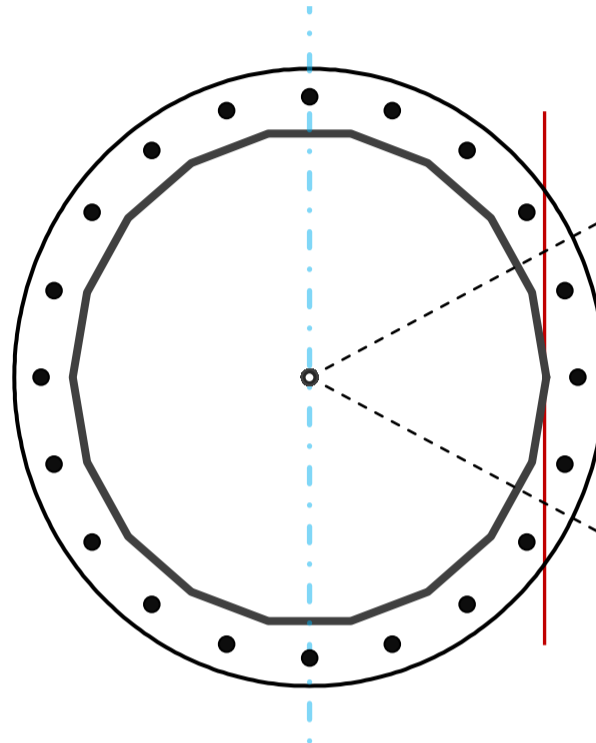
## Base Plate & Anchor Rod Analysis

Pole Dimensions		
Number of Sides	18	-
Diameter	52	in
Thickness	1/2	in
Orientation Offset		°

Base Reactions		
Moment, Mu	2,798.4	k-ft
Axial, Pu	43.7	k
Shear, Vu	52.6	k
Neutral Axis	270	°

Report Capacities		
Component	Capacity	Result
Base Plate	24%	Pass
Anchor Rods	50%	Pass
Dwyidag	-	-

Base Plate		
Shape	Round	-
Diameter, $\phi$	66	in
Thickness	2 3/4	in
Grade	A572-50	
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	N/A	in
Orientation Offset		°
Anchor Rod Detail	d	$\eta=0.5$
Clear Distance	3	in
Applied Moment, Mu	629.0	k
Bending Stress, $\phi Mn$	2601.6	k



Original Anchor Rods		
Arrangement	Radial	-
Quantity	20	-
Diameter, $\phi$	2 1/4	in
Bolt Circle	60	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	9.4	in
Orientation Offset		°
Applied Force, Pu	118.7	k
Anchor Rods, $\phi Pn$	243.6	k

# Calculations for Monopole Base Plate & Anchor Rod Analysis

## Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	52.6	2798.4	1.00
Anchor Rod Forces	52.6	2798.4	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

## Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in <sup>2</sup>	in <sup>2</sup>	in <sup>4</sup>	#	in <sup>4</sup>
Pole	80.4859	4.4714	0.3744		26690.34
Bolt	3.9761	3.2477	0.8393	4.5	26977.81
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Round	-
Diameter, D	66	in
Thickness, t	2.75	in
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Base Plate Chord	40.645	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods		
Anchor Rod Quantity, N	20	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	60	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	118.7	k
Applied Shear, Vu	1.3	k
Compressive Capacity, $\phi P_n$	243.6	k
Tensile Capacity, $\phi R_n$	0.487	OK
Interaction Capacity	0.498	OK

External Base Plate		
Chord Length AA	34.485	in
Additional AA	5.500	in
Section Modulus, Z	75.597	in <sup>3</sup>
Applied Moment, Mu	629.0	k-ft
Bending Capacity, $\phi M_n$	3401.9	k-ft
Capacity, Mu/ $\phi M_n$	0.185	OK
Chord Length AB	33.238	in
Additional AB	5.500	in
Section Modulus, Z	73.239	in <sup>3</sup>
Applied Moment, Mu	490.5	k-ft
Bending Capacity, $\phi M_n$	3295.7	k-ft
Capacity, Mu/ $\phi M_n$	0.149	OK
Bend Line Length	30.579	in
Additional Bend Line	0.000	in
Section Modulus, Z	57.814	in <sup>3</sup>
Applied Moment, Mu	629.0	k-ft
Bending Capacity, $\phi M_n$	2601.6	k-ft
Capacity, Mu/ $\phi M_n$	0.242	OK

Internal Base Plate		
Arc Length	0.000	in
Section Modulus, Z	0.000	in <sup>3</sup>
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, $\phi M_n$	0.0	k-ft
Capacity, Mu/ $\phi M_n$		

si  
si

# Flange Plate Analysis

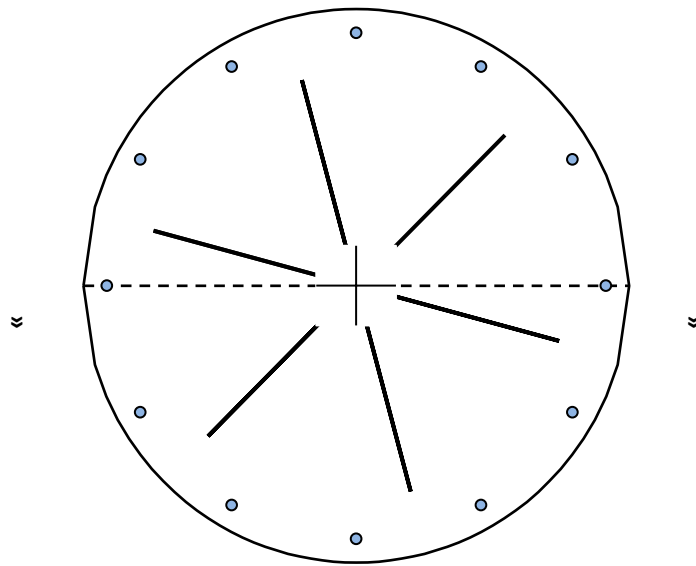
Flange Plate	Plate Type	<b>Flange</b>	<b>@ 77.00 ft</b>
	Pole Diameter	4.5	in
	Pole Thickness	0.337	in
	Plate Diameter	35	in
	Plate Thickness	1.5	in
	Plate Fy	50	ksi
	Weld Length	0.3125	in
	f <sub>s</sub> Resistance	936.85	k-in
	Applied	23.04	k-in

Code Rev.	<b>H</b>
Moment	15.0 k-ft
Axial	1.0 k

Date	7/13/2020
Engineer	Tim.Wipperman
Site #	414240
Carrier	AT&T MOBILITY

Stiffeners	#	<b>6</b>	<b>Show</b>
	Thickness	0.75	in
	Length	12	in
	Height	12	in
	Chamfer	1.25	in
	Offset Angle	0	°
	Fy	50	ksi

Bolts	#	<b>12</b>	
	Bolt Circle (R)adial / (S)quare	32	in
	Bolt Gap	R	
	Diameter	6	in
	Hole Diameter	1	in
	Type	1.125	in
	Fy	A325	
	Fu	92	ksi
	f <sub>s</sub> Resistance	120	ksi
	Applied	54.52	k
	1.79	k	



Reinforcement	#	<b>0</b>	
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**Plate Stress Ratio:**  
2% Pass

**Bolt Stress Ratio:**  
3% Pass

Extra Bolts	#	<b>0</b>	
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# Exhibit D

Mount Analysis

# INFINIGY

FROM ZERO TO INFINIGY  
the solutions are endless

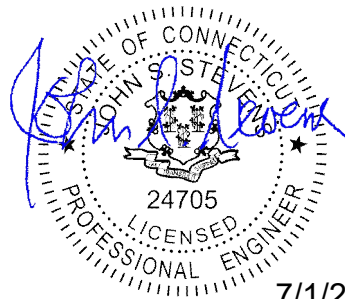
1033 WATERVLIT SHAKER RD, ALBANY, NY 12205

## Mount Analysis Report

July 1, 2020

T-Mobile Site Name	CT606/VZ Byram Shore
T-Mobile Site Number	CT11606H
ATC Site Name	Byram Park CT, CT
ATC Site Number	414240
ATC Engineering Number	13251816 C8_01
Infinigy Job Number	1009-Z0003-B
Client	ATC
Carrier	T-Mobile
Site Location	48 Ritch Avenue West Greenwich, CT 6830 Fairfield County 41.0051 N NAD83 73.6483 W NAD83
Mount Centerline EL.	77.0 ft
Mount Type	T-Arm
Structural Usage Ratio	<b>82.1%</b>
<b>Overall Result</b>	<b>Pass</b>

Upon reviewing the results of this analysis, it is our opinion that the structure meets the specified TIA code requirements. The mounts and connections for the proposed carrier are therefore deemed adequate to support the final loading configuration as listed in this report.



Bryan P. Mawhinney  
Project Engineer II

AZ CA CO FL GA MD NC NH NJ NY TX WA

INFINIGY

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Calculations.....	Appended

**Introduction**

Infinigy Engineering has been requested to perform a mount analysis on the existing T-Mobile mounts. All referenced supporting documents have been obtained from the client and are assumed to be accurate and applicable to this site. The mount was analyzed using RISA-3D Version 17.0.4 analysis software.

**Supporting Documentation**

<b>Collocation Application</b>	Collo App ID #13251816, dated June 12, 2020
<b>RFDS</b>	RFDS ID #CT11606H, dated May 13, 2020
<b>Structural Report</b>	ATC Engineering #13251816_C3_04, dated June 15, 2020
<b>Site Photos</b>	ATC Provided, dated July 05, 2019

**Analysis Code Requirements**

Wind Speed	116 mph (3-Second Gust)
Wind Speed w/ Ice	50 mph (3 Second Gust) w/ 1.0" Ice
TIA Revision	ANSI/TIA-222-H
Risk Category	II
Exposure Category	D
Topographic Factor Procedure	Method 1, Category 1
Calculated Crest Height (H)	0 ft
Spectral Response	$S_s = 0.277$ g, $S_1 = 0.06$ g
Site Class	D - Stiff Soil (Assumed)
HMSL	53 ft.

**Conclusion**

Upon reviewing the results of this analysis, it is our opinion that the structure meets the specified TIA code requirements. The mount and connections are therefore deemed adequate to support the existing and proposed loading as listed in this report.

If you have any questions, require additional information, or actual conditions differ from those as detailed in this report please contact me via the information below:

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**Final Configuration Loading**

Mount CL (ft)	Vert. O/S (ft)	Rad. HT (ft)	Horiz. O/S (ft)*	Qty	Appurtenance	Carrier
77.0	0.0	77.0	11.5	3	ERICSSON AIR32 DB B66AA B2A	T-Mobile
			0.3	3	ERICSSON AIR6449 B41	
			7.5	3	RFS APXVAARR24_43-U-NA20	
			7.5	3	COMMSCOPE CBC1923Q-43	
			7.5	3	ERICSSON RADIO 4449 B71 B85A	
			7.5	3	ERICSSON RRUS 4415 B25	
			7.5	3	ERICSSON RRUS 32 B66	

\*Horizontal Offset is defined as the distance from the left most edge of the mount face horizontal when viewed facing the tower

**Structure Usages**

Horizontals	46.3%	Pass
Standoffs	68.8%	Pass
Mount Pipes	82.1%	Pass
<b>Max Usage</b>	<b>82.1%</b>	<b>Pass</b>

**Mount Connection Usages**

Reaction Data	Design Capacity*	Analysis Reactions	Results
Max Tension (lbs.)	10,170.1	7,571.3	74.4%
Max Shear (lbs.)	6,902.9	397.1	5.8%
Unity Check	-	-	56.0%

\*Assumed (4) 0.625" A307 Bolts. Contractor to field verify prior to proposed installation.



## **Assumptions and Limitations**

Our structural calculations are completed assuming all information provided to Infinigy Engineering is accurate and applicable to this site. For the purposes of calculations, we assume an overall structure condition of “like new” and all members and connections to be free of corrosion and/or structural defects. The structure owner and/or contractor shall verify the structure’s condition prior to installation of any proposed equipment. If actual conditions differ from those described in this report Infinigy Engineering should be notified immediately to complete a revised evaluation.

Our evaluation is completed using standard TIA, AISC, ACI, and ASCE methods and procedures. Our structural results are proprietary and should not be used by others as their own. Infinigy Engineering is not responsible for decisions made by others that are or are not based on our supplied assumptions and conclusions.

This report is an evaluation of the proposed carriers mount structure only and does not reflect adequacy of the existing tower, other mounts, or coax mounting attachments. These elements are assumed to be adequate for the purposes of this analysis and are assumed to have been installed per their manufacturer requirements.

## Program Inputs

PROJECT INFORMATION		
Client:	ATC	
Carrier:	T-Mobile	
Engineer:	Bryan P. Mawhinney	

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	D	
Topo Factor Procedure:	Method 1, Category 1	
Site Class:	D - Stiff Soil	
Ground Elevation:	53	ft *Rev H

MOUNT INFORMATION		
Mount Type:	T-Arm	
Num Sectors:	3	
Centerline AGL:	77.0	ft
Tower Height AGL:	83.2	ft

TOPOGRAPHIC DATA		
Topo Feature:	N/A	
Slope Distance:	N/A	ft
Crest Distance:	N/A	ft
Crest Height:	N/A	ft

FACTORS		
Directionality Fact. ( $K_d$ ):	0.95	
Ground Ele. Factor ( $K_e$ ):	1.00	*Rev H Only
Rooftop Speed-Up ( $K_s$ ):	1.00	*Rev H Only
Topographic Factor ( $K_{zt}$ ):	1.00	
Gust Effect Factor ( $G_h$ ):	1.0	

CODE STANDARDS		
Building Code:	2018 IBC	
TIA Standard:	TIA-222-H	
ASCE Standard:	ASCE 7-16	

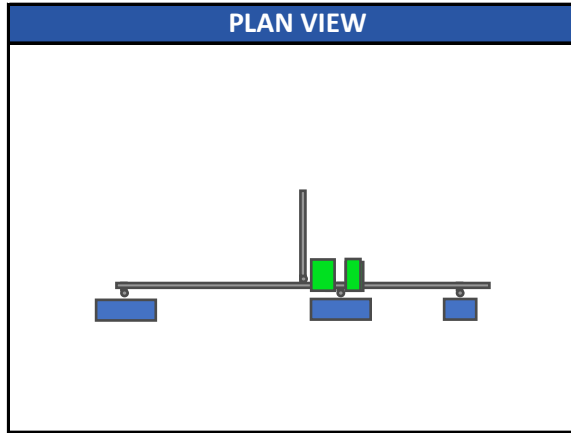
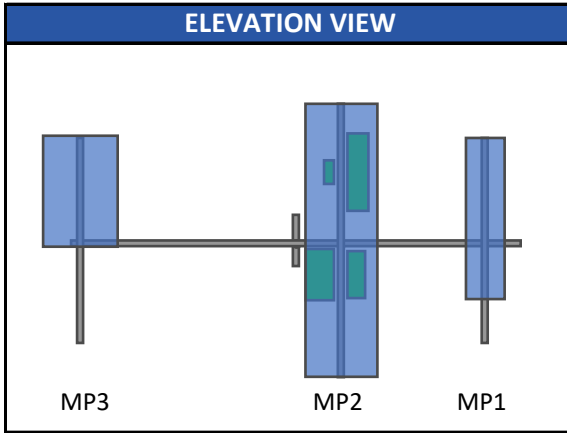
WIND AND ICE DATA		
Ultimate Wind ( $V_{ult}$ ):	116	mph
Design Wind ( $V$ ):	N/A	mph
Ice Wind ( $V_{ice}$ ):	50	mph
Base Ice Thickness ( $t_i$ ):	1	in
Flat Pressure:	89.45	psf
Round Pressure:	53.67	psf
Ice Wind Pressure:	9.97	psf

SEISMIC DATA		
Short-Period Accel. ( $S_s$ ):	0.28	g
1-Second Accel. ( $S_1$ ):	0.06	g
Short-Period Design ( $S_{DS}$ ):	0.29	
1-Second Design ( $S_{D1}$ ):	0.10	
Short-Period Coeff. ( $F_a$ ):	1.58	
1-Second Coeff. ( $F_v$ ):	2.40	
Amplification Factor ( $a_p$ ):	1.00	
Response Mod. ( $R_p$ ):	2.50	
Overstrength ( $\Omega_o$ ):	1.00	



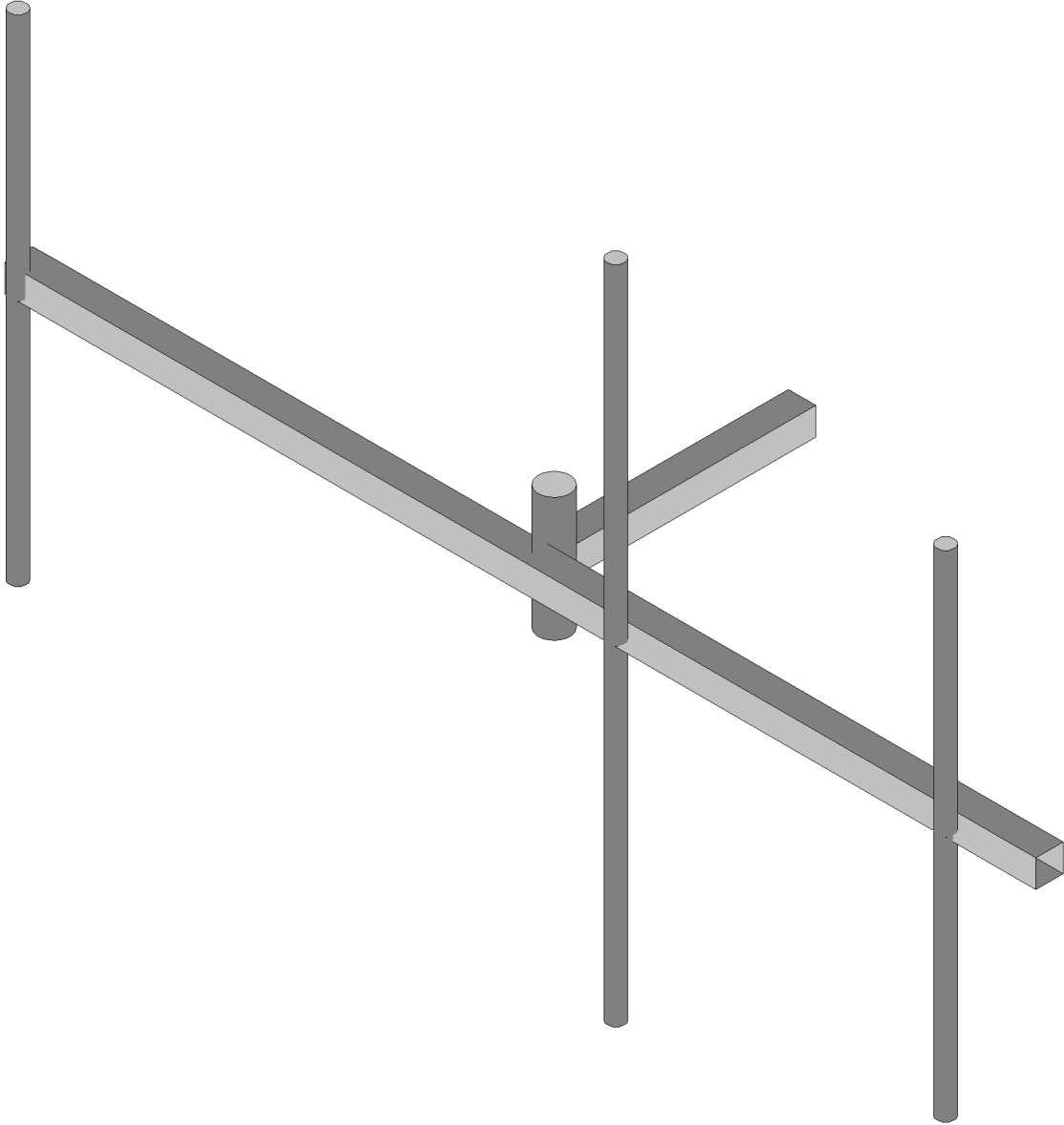
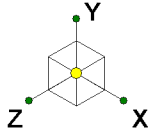
Infinigy Load Calculator V2.1.4

# Program Inputs



Infinigy Load Calculator V2.1.4

APPURTENANCE INFORMATION												
Appurtenance Name	Elevation	Qty.	$K_a$	$q_z$ (psf)	$EPA_N$ (ft <sup>2</sup> )	$EPA_T$ (ft <sup>2</sup> )	Wind $F_z$ (lbs)	Wind $F_x$ (lbs)	Weight (lbs)	Seismic F (lbs)	Member ( $\alpha$ sector)	
ERICSSON AIR32 DB B66AA B2A	77.0	3	0.90	44.72	6.51	4.71	262.03	189.67	105.80	15.42	MP1	
ERICSSON AIR6449 B41	77.0	3	0.90	44.72	5.68	2.49	228.71	100.25	104.00	15.16	MP3	
ELWAVE APXVAARR24_43-U-NA20_T-M	77.0	3	0.90	44.72	14.69	6.87	591.42	276.66	153.30	22.34	MP2	
COMMSCOPE CBC1923Q-43	77.0	3	0.90	44.72	0.32	0.23	12.81	9.19	7.30	1.06	MP2	
ERICSSON TME-RADIO 4449 B71 B85A	77.0	3	0.90	44.72	1.98	1.41	79.70	56.75	70.00	10.20	MP2	
ERICSSON TME-RRUS 4415 B25	77.0	3	0.90	44.72	1.84	0.82	74.16	33.01	46.00	6.70	MP2	
ERICSSON TME-RRUS 32 B66	77.0	3	0.90	44.72	2.74	1.67	110.39	67.14	53.00	7.72	MP2	



Infinigy Engineering

Bryan P. Mawhinney

1009-Z0003-B

414240

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FF	T ÚG	Ý	€	€
FG	T ÚG	Z	HÍ ÈÌ	€
FH	T ÚG	Ý	€	Ì G
FI	T ÚG	Z	GÈÌ	Ì G
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FG	T ÚG	Z	G ÈG	€
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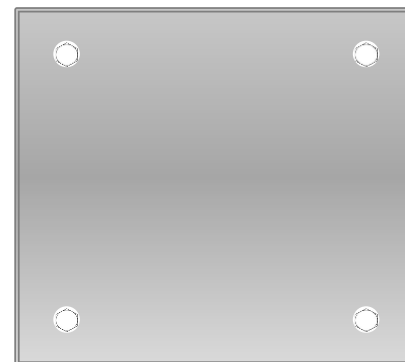
**Bolt Calculation Tool, V1.4**

PROJECT DATA	
Site Name:	Byram Park CT
Site Number:	414240
Job Code:	1009-Z0003-B
Connection Description:	Standoff to Collar

APPLIED LOADS		
Bolt Tension:	7571.31	lbs
Bolt Shear:	397.10	lbs

BOLT PROPERTIES		
Bolt Type:	Bolt	-
Bolt Diameter:	0.625	in
Bolt Grade:	A307	-
# of Bolts:	4	-
Threads Excluded?	No	-

BOLT CHECK		
Tensile Strength	10170.07	
Shear Strength	6902.91	
Tensile Usage	74.4%	
Shear Usage	5.8%	
Interaction Check	0.56	<b>≤1.05</b>
Result	Pass	



# Exhibit E

Power Density/RF Emissions Report



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

T-Mobile Existing Facility

Site ID: CT11606H

CT606/VZ Byram Shore  
48 Ritch Avenue W  
Greenwich, Connecticut 06830

**July 24, 2020**

**EBI Project Number: 6220003388**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general population allowable limit:	<b>75.11%</b>

July 24, 2020

T-Mobile

Attn: Jason Overbey, RF Manager  
35 Griffin Road South  
Bloomfield, Connecticut 06002

Emissions Analysis for Site: CT11606H - CT606/VZ Byram Shore

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **48 Ritch Avenue W** in **Greenwich, Connecticut** 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 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.

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 limits for the 600 MHz and 700 MHz frequency bands are approximately  $400 \mu\text{W}/\text{cm}^2$  and  $467 \mu\text{W}/\text{cm}^2$ , respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency 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 48 Ritch Avenue W in Greenwich, Connecticut 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 manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.
- 3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 4) 4 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.
- 5) 2 UMTS channels (AWS Band - 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

- 6) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 7) 2 LTE channels (BRS Band - 2500 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 8) 2 NR channels (BRS Band - 2500 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 9) 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.
- 10) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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.
- 11) The antennas used in this modeling are the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAARR24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector A, the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAARR24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector B, the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAARR24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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.

- 12) The antenna mounting height centerline of the proposed antennas is 77 feet above ground level (AGL).
- 13) 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.
- 14) All calculations were done with respect to uncontrolled / general population threshold limits.

## T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32
Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz
Gain:	15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.85 dBd
Height (AGL):	77 feet	Height (AGL):	77 feet	Height (AGL):	77 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	8,728.31	ERP (W):	8,728.31	ERP (W):	8,728.31
Antenna A1 MPE %:	<b>5.29%</b>	Antenna B1 MPE %:	<b>5.29%</b>	Antenna C1 MPE %:	<b>5.29%</b>
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 16.35 dBd
Height (AGL):	77 feet	Height (AGL):	77 feet	Height (AGL):	77 feet
Channel Count:	9	Channel Count:	9	Channel Count:	9
Total TX Power (W):	380 Watts	Total TX Power (W):	380 Watts	Total TX Power (W):	380 Watts
ERP (W):	11,055.53	ERP (W):	11,055.53	ERP (W):	11,055.53
Antenna A2 MPE %:	<b>10.11%</b>	Antenna B2 MPE %:	<b>10.11%</b>	Antenna C2 MPE %:	<b>10.11%</b>
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz
Gain:	22.05 dBd / 22.05 dBd	Gain:	22.05 dBd / 22.05 dBd	Gain:	22.05 dBd / 22.05 dBd
Height (AGL):	77 feet	Height (AGL):	77 feet	Height (AGL):	77 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	160 Watts	Total TX Power (W):	160 Watts	Total TX Power (W):	160 Watts
ERP (W):	25,651.93	ERP (W):	25,651.93	ERP (W):	25,651.93
Antenna A3 MPE %:	<b>15.55%</b>	Antenna B3 MPE %:	<b>15.55%</b>	Antenna C3 MPE %:	<b>15.55%</b>

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	30.96%
AT&T	28.91%
Verizon	15.24%
<b>Site Total MPE % :</b>	<b>75.11%</b>

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	30.96%
T-Mobile Sector B Total:	30.96%
T-Mobile Sector C Total:	30.96%
Site Total MPE % :	75.11%

T-Mobile Maximum MPE Power Values (Sector A)							
T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ( $\mu\text{W}/\text{cm}^2$ )	Frequency (MHz)	Allowable MPE ( $\mu\text{W}/\text{cm}^2$ )	Calculated % MPE
T-Mobile 1900 MHz LTE	2	2056.61	77.0	24.94	1900 MHz LTE	1000	2.49%
T-Mobile 2100 MHz LTE	2	2307.55	77.0	27.98	2100 MHz LTE	1000	2.80%
T-Mobile 600 MHz LTE	2	591.73	77.0	7.18	600 MHz LTE	400	1.79%
T-Mobile 600 MHz NR	1	1577.94	77.0	9.57	600 MHz NR	400	2.39%
T-Mobile 700 MHz LTE	2	648.82	77.0	7.87	700 MHz LTE	467	1.68%
T-Mobile 1900 MHz LTE	2	2203.69	77.0	26.72	1900 MHz LTE	1000	2.67%
T-Mobile 2100 MHz UMTS	2	1294.56	77.0	15.70	2100 MHz UMTS	1000	1.57%
T-Mobile 2500 MHz LTE	2	6412.98	77.0	77.77	2500 MHz LTE	1000	7.78%
T-Mobile 2500 MHz NR	2	6412.98	77.0	77.77	2500 MHz NR	1000	7.78%
						<b>Total:</b>	<b>30.96%</b>

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

## 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 T-Mobile 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:

T-Mobile Sector	Power Density Value (%)
Sector A:	30.96%
Sector B:	30.96%
Sector C:	30.96%
T-Mobile Maximum MPE % (Sector A):	30.96%
Site Total:	75.11%
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **75.11%** 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.



# Exhibit F

Mailing Receipts/Proof of Notice

**UPS CampusShip: View/Print Label**

- 1. Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.
- 2. Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.
- 3. GETTING YOUR SHIPMENT TO UPS**  
**Customers with a Daily Pickup**  
 Your driver will pickup your shipment(s) as usual.

**Customers without a Daily Pickup**

Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.


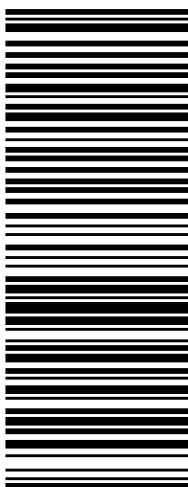

Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages. Hand the package to any UPS driver in your area.

UPS Access Point™  
CVS STORE # 972  
555 WASHINGTON ST  
SOUTH EASTON ,MA 02375

UPS Access Point™  
CVS STORE # 7232  
689 DEPOT ST  
NORTH EASTON ,MA 02356

UPS Access Point™  
TOWN LINE GENERAL STORE  
450 E CENTER ST  
WEST BRIDGEWATER ,MA 02379

FOLD HERE

<p style="text-align: right;"><b>1 OF 1</b></p> <p><b>1 LBS</b></p> <p>CENTERLINE COMMUNICATIONS 5082655599 CENTERLINE CORPORATE 95 RYAN DR. RAYNHAM MA 02767</p> <p><b>SHIP TO:</b> FRED CAMILLO, FIRST SELECTMAN TOWN OF GREENWICH 101 FIELD POINT ROAD <b>GREENWICH CT 06830-6463</b></p>	<p style="font-size: 2em;"><b>CT 069 9-01</b></p> 	<p><b>UPS GROUND</b></p> <p>TRACKING #: 1Z 9Y4 503 03 0101 1419</p> 	<p style="text-align: center;"><b>BILLING: P/P</b></p> <p>Reference # 1: CT1160H - CSC to First Selectman CS 22.0.11. WNTNV50 31.0A 07/2020*</p> 
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## Jennifer Iliades

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**From:** UPS Quantum View <pkginfo@ups.com>  
**Sent:** Friday, August 21, 2020 11:34 AM  
**To:** Jennifer Iliades  
**Subject:** UPS Delivery Notification, Tracking Number 1Z9Y45030301011419



**Hello, your package has been delivered.**

**Delivery Date:** Friday, 08/21/2020

**Delivery Time:** 11:32 AM

**Left At:** MAIL ROOM

**Signed by:** MARK

### CENTERLINE SITE ACQUISITION

**Tracking Number:** [1Z9Y45030301011419](#)

**Ship To:** TOWN OF GREENWICH  
101 FIELD POINT ROAD  
GREENWICH, CT 068306463  
US

**Number of Packages:** 1

**UPS Service:** UPS Ground

**Package Weight:** 0.2 LBS

**Reference Number:** CT1160H - CSC TO FIRST SELECTMAN



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**UPS CampusShip: View/Print Label**

- 1. Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.
- 2. Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.
- 3. GETTING YOUR SHIPMENT TO UPS**  
**Customers with a Daily Pickup**  
 Your driver will pickup your shipment(s) as usual.

**Customers without a Daily Pickup**

Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.


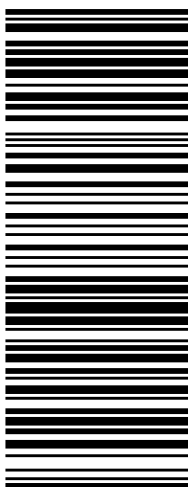

Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages. Hand the package to any UPS driver in your area.

UPS Access Point™  
CVS STORE # 972  
555 WASHINGTON ST  
SOUTH EASTON ,MA 02375

UPS Access Point™  
CVS STORE # 7232  
689 DEPOT ST  
NORTH EASTON ,MA 02356

UPS Access Point™  
TOWN LINE GENERAL STORE  
450 E CENTER ST  
WEST BRIDGEWATER ,MA 02379

FOLD HERE

<p style="text-align: right;"><b>1 OF 1</b></p> <p><b>1 LBS</b></p> <p>CENTERLINE COMMUNICATIONS 5082655599 CENTERLINE CORPORATE 95 RYAN DR. RAYNHAM MA 02767</p> <p><b>SHIP TO:</b> KATIE DELUCA, DIR PLANNING &amp; ZONING TOWN OF GREENWICH 101 FIELD POINT ROAD <b>GREENWICH CT 06830-6463</b></p>	<p><b>CT 069 9-01</b></p> 	<p><b>UPS GROUND</b></p> <p>TRACKING #: 1Z 9Y4 503 03 0329 6421</p> 	<p><b>BILLING: P/P</b></p>  <p style="font-size: small;">CS 22.0.11. WNTNV50 31.0A 07/2020*</p>
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## Jennifer Iliades

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**From:** UPS Quantum View <pkginfo@ups.com>  
**Sent:** Friday, August 21, 2020 11:34 AM  
**To:** Jennifer Iliades  
**Subject:** UPS Delivery Notification, Tracking Number 1Z9Y45030303296421



**Hello, your package has been delivered.**

**Delivery Date:** Friday, 08/21/2020

**Delivery Time:** 11:32 AM

**Left At:** MAIL ROOM

**Signed by:** MARK

### CENTERLINE SITE ACQUISITION

**Tracking Number:** [1Z9Y45030303296421](#)

**Ship To:** TOWN OF GREENWICH  
101 FIELD POINT ROAD  
GREENWICH, CT 068306463  
US

**Number of Packages:** 1

**UPS Service:** UPS Ground

**Package Weight:** 0.2 LBS



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**UPS CampusShip: View/Print Label**

- 1. Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.
- 2. Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.
- 3. GETTING YOUR SHIPMENT TO UPS**  
**Customers with a Daily Pickup**  
 Your driver will pickup your shipment(s) as usual.

**Customers without a Daily Pickup**

Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.

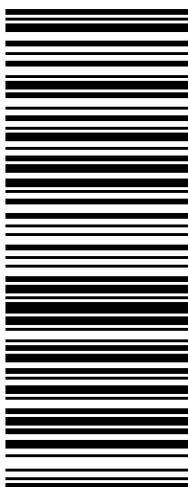

Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages. Hand the package to any UPS driver in your area.

UPS Access Point™  
CVS STORE # 972  
555 WASHINGTON ST  
SOUTH EASTON ,MA 02375

UPS Access Point™  
CVS STORE # 7232  
689 DEPOT ST  
NORTH EASTON ,MA 02356

UPS Access Point™  
TOWN LINE GENERAL STORE  
450 E CENTER ST  
WEST BRIDGEWATER ,MA 02379

FOLD HERE

<p style="text-align: right;"><b>1 OF 1</b></p> <p style="text-align: center;"><b>1 LBS</b></p> <p>CENTERLINE COMMUNICATIONS 5082655599 CENTERLINE CORPORATE 95 RYAN DR. RAYNHAM MA 02767</p> <p><b>SHIP TO:</b> PATRICK MASSEY, PM, SITE DEVT. AMERICAN TOWER CORP 10 PRESIDENTIAL WAY <b>WOBURN MA 01801-1053</b></p>	<p style="font-size: 2em; font-weight: bold;">MA 018 9-04</p> 	<p style="font-size: 1.5em; font-weight: bold;">UPS GROUND</p> <p>TRACKING #: 1Z 9Y4 503 03 1927 2444</p> 	<p style="text-align: center;"><b>BILLING: P/P</b></p> <p>Reference # 1: CT1160H - CSC to ATC</p> <p style="font-size: 0.8em;">CS 22.0.11. WNTNV50 31.0A 07/2020*</p> 
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## Jennifer Iliades

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**From:** UPS Quantum View <pkginfo@ups.com>  
**Sent:** Friday, August 21, 2020 10:37 AM  
**To:** Jennifer Iliades  
**Subject:** UPS Delivery Notification, Tracking Number 1Z9Y45030319272444



**Hello, your package has been delivered.**

**Delivery Date:** Friday, 08/21/2020

**Delivery Time:** 10:36 AM

**Left At:** RECEIVER

**Signed by:** ACRI

### CENTERLINE SITE ACQUISITION

**Tracking Number:** [1Z9Y45030319272444](#)

**Ship To:** AMERICAN TOWER CORP  
10 PRESIDENTIAL WAY  
WOBURN, MA 018011053  
US

**Number of Packages:** 1

**UPS Service:** UPS Ground

**Package Weight:** 0.2 LBS

**Reference Number:** CT1160H - CSC TO ATC



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UPS Access Point™  
TOWN LINE GENERAL STORE  
450 E CENTER ST  
WEST BRIDGEWATER ,MA 02379

FOLD HERE

<p style="text-align: right;"><b>1 OF 1</b></p> <p style="text-align: center;"><b>1 LBS</b></p> <p>CENTERLINE COMMUNICATIONS 5082655599 CENTERLINE CORPORATE 95 RYAN DR. RAYNHAM MA 02767</p> <p><b>SHIP TO:</b> 36 RITCH AVENUE LLC 16B ARTHUR STREET <b>GREENWICH CT 06831-5107</b></p>	<p><b>CT 069 9-01</b></p> 	<p><b>UPS GROUND</b></p> <p>TRACKING #: 1Z 9Y4 503 03 0645 6467</p> 	<p style="text-align: right;"><b>BILLING: P/P</b></p> <p>Reference # 1: CT1160H - CSC to Property CS 22.0.11. WNTNV50 31.0A 07/2020*</p> 
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## Jennifer Iliades

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**From:** UPS Quantum View <pkginfo@ups.com>  
**Sent:** Friday, August 21, 2020 4:33 PM  
**To:** Jennifer Iliades  
**Subject:** UPS Delivery Notification, Tracking Number 1Z9Y45030306456467



**Hello, your package has been delivered.**

**Delivery Date:** Friday, 08/21/2020

**Delivery Time:** 04:31 PM

**Left At:** FRONT DOOR



[Set Delivery Instructions](#)

[Manage Preferences](#)

[View Delivery Planner](#)

### CENTERLINE SITE ACQUISITION

<b>Tracking Number:</b>	<a href="#">1Z9Y45030306456467</a>
<b>Ship To:</b>	36 RITCH AVENUE LLC 16B ARTHUR STREET GREENWICH, CT 068315107 US
<b>Number of Packages:</b>	1
<b>UPS Service:</b>	UPS Ground
<b>Package Weight:</b>	0.2 LBS
<b>Reference Number:</b>	CT1160H - CSC TO PROPERTY



**IMPORTANT UPDATES**  
**How we're responding to Coronavirus**

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