NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Northeast Site Solutions
Victoria Masse
420 Main Street #2, Sturbridge, MA 01566
860-306-2326
victoria@northeastsitesolutions.com

August 31, 2022

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

RE: Notice of Exempt Modification
87 Monce Road, Burlington, CT 06013
Latitude: 41.7391
Longitude: -72.9078
T-Mobile Site#: CTHA560B_L600

Dear Ms. Bachman:
T-Mobile currently maintains nine (9) antennas at the 100-foot level of the existing 119-foot monople located at 87 Monce Road, Burlington, CT 06013. The tower and property are owned by American Tower (Insite Towers). T-Mobile now intends to remove six (6) existing antenna and replace with six (6) new 700/1900/2100 MHz antenna. The new antennas would be installed at the 100-foot level of the monopole. This modification includes B2, B5 hardware that is both 4G (LTE), and 5G capable.
T-Mobile Planned Modifications:
Remove:
(1) Hybrid Line

Remove and Replace:
(3) Andrew LNX-6515DS Antenna (Remove) – (3) RFS APXVAALL24 700/1900/2100 MHz Antenna (Replace)
(3) Air 21 Antenna (Remove) – (3) Air32 B66Aa/B2a Antenna (Replace)
(3) RRUS 11 B12 (Remove) – (3) RRU 4480 B71 (Replace)

Install New:
(1) Hybrid Line

Existing to Remain:
(3) RFS APX16DWV-16DWVS-E-A20
(3) Ericsson RRUS 11 B4
(2) Hybrid Lines

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This facility was approved by the Town of Burlington on August 14, 2014. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Thedore C. Shafer, First Selectman and Jerry Burns Zoning Enforcement Officer, as well as the property owner and the tower owner.

1. The proposed modifications will not result in an increase in the height of the existing structure.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

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).

Sincerely,

Victoria Masse

Victoria Masse
Mobile: 860-306-2326
Fax: 413-521-0558
Office: 420 Main Street, Unit 2, Sturbridge MA 01566
Email: victoria@northeastsitesolutions.com

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Attachments:

cc:
Thedore C. Shafer, First Selectman
Town of Burlington
200 Spielman Highway
Burlington, CT 06013

Jerry Burns. Zoning Enforcement Officer
Town of Burlington
200 Spielman Highway
Burlington, CT 06013

American Tower – as tower and property owner
10 Presidential Way
Worburn, MA 01801

Exhibit A

Original Facility Approval

Town of Burlington

August 15, 2014

Hartford Courant
Classified Department – Legal
Via email: Publicnotices@courant.com

To Whom It May Concern:

Please publish the following legal notice **ONCE** upon receipt in Zone 5 section of your newspaper**.** Thank you.

NOTICE OF DECISION
TOWN OF BURLINGTON
PLANNING & ZONING COMMISSION

The Planning and Zoning Commission at its August 14, 2014 regular meeting took the following action:

Approved: Application 2062-Tharau-Special Use Permit-Dog Grooming-281 Spielman Highway.
IN FAVOR: Miller, Lostocco, Franciamore, Dahle, DiPaola, DiChiara, Parente. OPPOSED, none. ABSTAINED, none.

Approved: Application 2063-Burlington Volunteer Fire Department-Site plan approval & Special Use Permit for new firehouse building to replace existing building and telecommunications tower-87 Monce Road.
IN FAVOR**:** Miller, Lostocco, Franciamore, Dahle, DiPaola, DiChiara, Parente. OPPOSED, none. ABSTAINED, none.

Approved: Application 2061-Lamothe-Special Use Permit-Indoor shooting range-713 George Washington Tpke.
IN FAVOR**:** Miller, Lostocco, Franciamore, Dahle, DiPaola, DiChiara, Parente. OPPOSED, none. ABSTAINED, none.

Richard Miller, Chairman
Planning & Zoning Commission
Dated this 14th Day of August 2014

Please forward an affidavit of publication with tearsheet to the Planning and Zoning Commission, ATTN:Allison Yudelson, 200 Spielman Highway, Burlington, CT, 06013.

Cc: Town Clerk
File 2062
File 2063
File 2061

Town of Burlington

200 Spielman Highway • Burlington, CT 06013-1735 • 860-673-6789

Exhibit B

Property Card

Town of Burlington, CT

Property Listing Report

Map Block Lot	11-06-33-CEL	Building #	1	Section #	1	Account	00039410

Property Information

Property Location	87 MONCE RD
Owner	INSITE TOWERS DEVT LLC
Co-Owner	LEGAL DEPT
Mailing Address	CO RYAN PTS DEPT 607 HOUSTON TX 77056
Land Use	402V Ind Bldg Mdl-00
Land Class	I
Zoning Code	R44
Census Tract	

Street Index	
Acreage	0.23
Utilities	Well,Septic
Lot Setting/Desc	Rural Level
Additional Info	

Photo

Sketch

No Photo Available

Primary Construction Details

Year Built	0
Stories	
Building Style	UNKNOWN
Building Use	Vacant
Building Condition	
Occupancy	
Extra Fixtures	0
Bath Style	NA
Kitchen Style	NA
AC Type	
Heating Type	
Heating Fuel	

Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Total Rooms	0
Roof Style	
Roof Cover	
Interior Floors 1	
Interior Floors 2	
Exterior Walls	
Exterior Walls 2	NA
Interior Walls	
Interior Walls 2	NA

(*Industrial / Commercial Details)

Building Desc.	Ind Bldg Mdl-00
Building Grade	
Heat / AC	NA
Frame Type	NA
Baths / Plumbing	NA
Ceiling / Wall	NA
Rooms / Prtns	NA
Wall Height	NA
First Floor Use	NA

Report Created On 1/26/2022

Town of Burlington, CT

Property Listing Report | Map Block Lot **11-06-33-CEL** | Building # **1** | Section # **1** | Account **00039410**

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	0	0
Extras	0	0
Improvements		
Outbuildings	0	0
Land	240000	168000
Total	240000	168000

Outbuilding and Extra Features

Type	Description

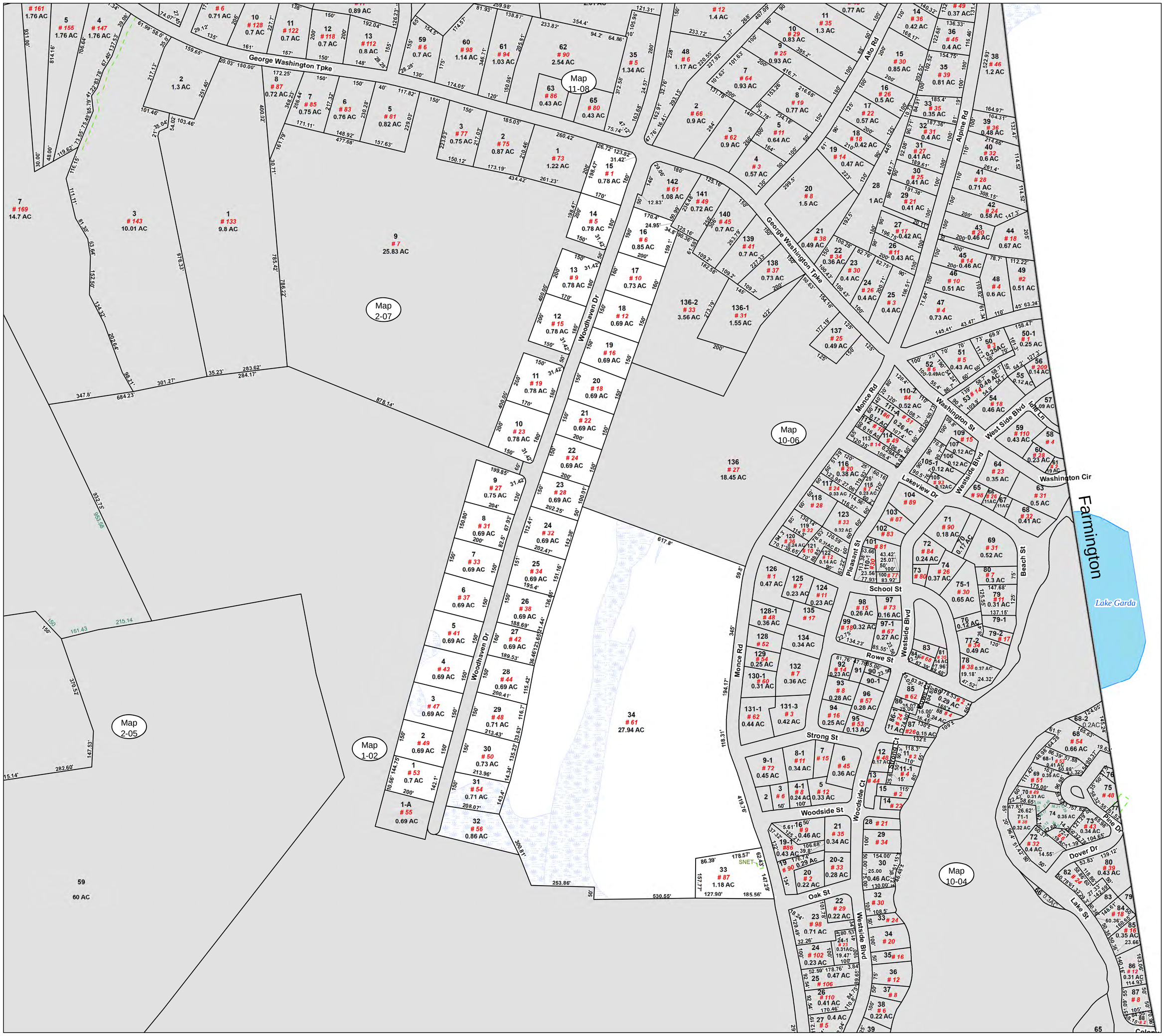
Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area	0	0

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
INSITE TOWERS DEVT LLC	0335/0780	2015-04-06	0

Report Created On **1/26/2022**



Town of Burlington, Connecticut

2020

Assessment Parcel Map

13	Parcel Lot		Easements
# 17	House Number		Streams
2.4 Ac	Acreage		Water Bodies
246.25	Parcel Dimension		Wetlands
	Parcels		

Water features courtesy of CT DEEP

0 300 600

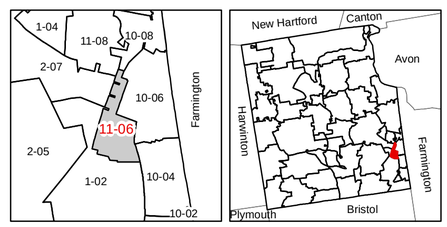
Feet

1 inch = 200 feet

Map: 11-06

Print Date: October 2020

Grand List 2019



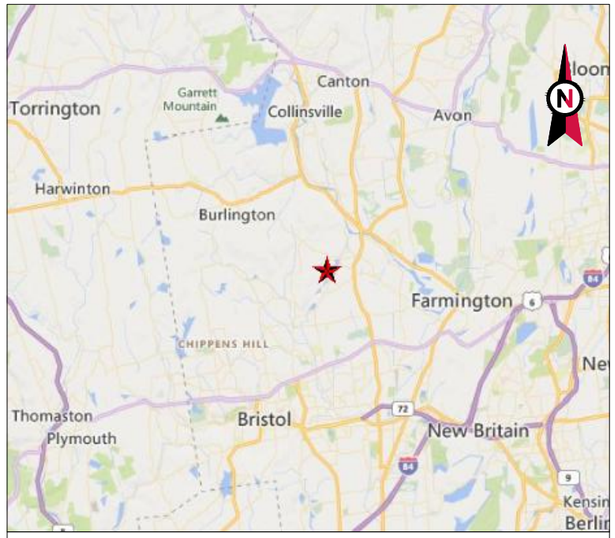
N W E S

Map Coordinates based on NAD 83 Connecticut State Plane Feet.Parcel Features based on aerial photography dated 2012.

NEGEO New England Geosystems www.negeosystems.com

Exhibit C

Construction Drawings



VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: BURLINGTON 2
ATC SITE NUMBER: 209185
T-MOBILE SITE NAME: CTHA560B
T-MOBILE SITE NUMBER: CTHA560B
SITE ADDRESS: 87 MONCE ROAD
BURLINGTON, CT 6013

LOCATION MAP

T-MOBILE L600 AMENDMENT PLAN
67E97DB2 MUAC CONFIGURATION

COMPLIANCE CODE

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

UTILITY COMPANIES

POWER COMPANY: UNKNOWN
PHONE: N/A

TELEPHONE COMPANY: UNKNOWN
PHONE: N/A

811 Know what's below. Call before you dig.

PROJECT SUMMARY

SITE ADDRESS:

87 MONCE ROAD
BURLINGTON, CT 6013
COUNTY: HARTFORD

GEOGRAPHIC COORDINATES:

LATITUDE: 41.73912732
LONGITUDE: -72.90781103
GROUND ELEVATION: 288' AMSL

PROJECT TEAM

TOWER OWNER:

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

APPLICANT:

T-MOBILE

ENGINEER:

ATC TOWER SERVICES, LLC
3500 REGENCY PKWY STE 100
CARY, NC 27518

PROPERTY OWNER:

TOWN OF BURLINGTON
87 MONCE ROAD
BURLINGTON, CT 6013

PROJECT DESCRIPTION

THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW:
TOWER WORK:
REMOVE (6) ANTENNA(s), (3) RRU(s), AND (1) .78" 8 AWG 6 CONTROL CABLE(s)

INSTALL MOUNT MODIFICATION(s), (6) ANTENNA(s), (3) RRU(s), AND (1) 1.99" HYBRID TRUNK 6/24 4AWG CABLE(s)

EXISTING (3) ANTENNA(s), (3) RRU(s), AND (2) 1.4" HYBRID 6X12 HCS CABLE(s) TO REMAIN

GROUND WORK:
INSTALL (1) BB 6648 AND (1) PSU 4813

EXISTING (1) RBS 6102 MU AC CABINET AND (1) HFC CABINET TO REMAIN

PROJECT NOTES

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.
6. THE PROJECT DEPICTED IN THESE PLANS QUALIFIES AS AN ELIGIBLE FACILITIES REQUEST ENTITLED TO EXPEDITED REVIEW UNDER 47 U.S.C. § 1455(A) AS A MODIFICATION OF AN EXISTING WIRELESS TOWER THAT INVOLVES THE COLLOCATION, REMOVAL, AND/OR REPLACEMENT OF TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE UNDER CFR § 1.61000 (B)(7).

PROJECT LOCATION DIRECTIONS

HEAD NORTH TOWARD BRADLEY INTERNATIONAL AIRPORT. SLIGHT LEFT ONTO BRADLEY INTERNATIONAL AIRPORT. CONTINUE STRAIGHT. KEEP RIGHT TO CONTINUE TOWARD BRADLEY INTERNATIONAL AIRPORT CON. CONTINUE ONTO BRADLEY INTERNATIONAL AIRPORT CON. TAKE THE CT-20 W EXIT TOWARD E GRANBY/GRANBY. CONTINUE ONTO CT-20 W. USE THE LEFT 2 LANES TO TURN LEFT ONTO INTERNATIONAL DR. AT THE TRAFFIC CIRCLE, TAKE THE 1ST EXIT ONTO SEYMOUR RD. CONTINUE ONTO STATE HWY 540. TURN LEFT ONTO CT-189 S. TURN RIGHT ONTO ELM ST. ELM ST TURNS SLIGHTLY LEFT AND BECOMES CT-315 W/TARIFFVILLE RD. TURN LEFT ONTO QUARRY RD. MERGE ONTO TERRY'S PLAIN RD. CONTINUE STRAIGHT ONTO E WEATOGUE ST. TURN RIGHT ONTO CT-185 W. TURN LEFT ONTO NOD RD. CONTINUE ONTO CT-10 S. TURN RIGHT ONTO OLD FARMS RD. SLIGHT LEFT ONTO THOMPSON RD. TURN LEFT ONTO CT-167 S. TURN RIGHT TO STAY ON CT-167 S. TURN RIGHT ONTO CT-4 W. TURN LEFT ONTO CT-177 S. TURN RIGHT ONTO WEBSTER ST. TURN LEFT ONTO RIVER RD. TURN RIGHT ONTO BURLINGTON RD. CONTINUE ONTO GEORGE WASHINGTON TURNPIKE. SLIGHT LEFT ONTO MONCE RD. DESTINATION WILL BE ON THE RIGHT.

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	TITLE SHEET	0	07/07/22	AP
G-002	GENERAL NOTES	0	07/07/22	AP
C-101	DETAILED SITE PLAN	0	07/07/22	AP
C-201	TOWER ELEVATION	0	07/07/22	AP
C-401	ANTENNA INFORMATION & SCHEDULE	0	07/07/22	AP
C-501	CONSTRUCTION DETAILS	0	07/07/22	AP
E-501	GROUNDING DETAILS	0	07/07/22	AP
R-601	SUPPLEMENTAL			
R-602	SUPPLEMENTAL			
R-603	SUPPLEMENTAL			
R-604	SUPPLEMENTAL			

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	AP	07/07/22

ATC SITE NUMBER:
209185

ATC SITE NAME:
BURLINGTON 2

T-MOBILE SITE NAME:
CTHA560B

SITE ADDRESS:
87 MONCE ROAD
BURLINGTON, CT 6013

SEAL:

T-Mobile

ATC JOB NO:	14097402_D1
CUSTOMER ID:	CTHA560B
CUSTOMER #:	CTHA560B

TITLE SHEET

SHEET NUMBER:	REVISION:
G-001	0

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 ANSI/EIA/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 NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLECT 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.

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.
   - B. INSTALL ANTENNAS AS INDICATED ON DRAWINGS AND T-MOBILE SPECIFICATIONS.
   - C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS.
   - D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE.
   - 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 GREEN 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 COAXIAL CABLE (NOT WITHIN BENDS)

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.

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	AP	07/07/22

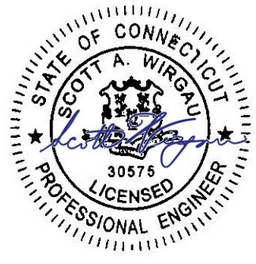
ATC SITE NUMBER:
209185

ATC SITE NAME:
BURLINGTON 2

T-MOBILE SITE NAME:
CTHA560B

SITE ADDRESS:
87 MONCE ROAD
BURLINGTON, CT 6013

SEAL:



T-Mobile

ATC JOB NO:	14097402_D1
CUSTOMER ID:	CTHA560B
CUSTOMER #:	CTHA560B

GENERAL NOTES

SHEET NUMBER:	REVISION:
G-002	0

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.

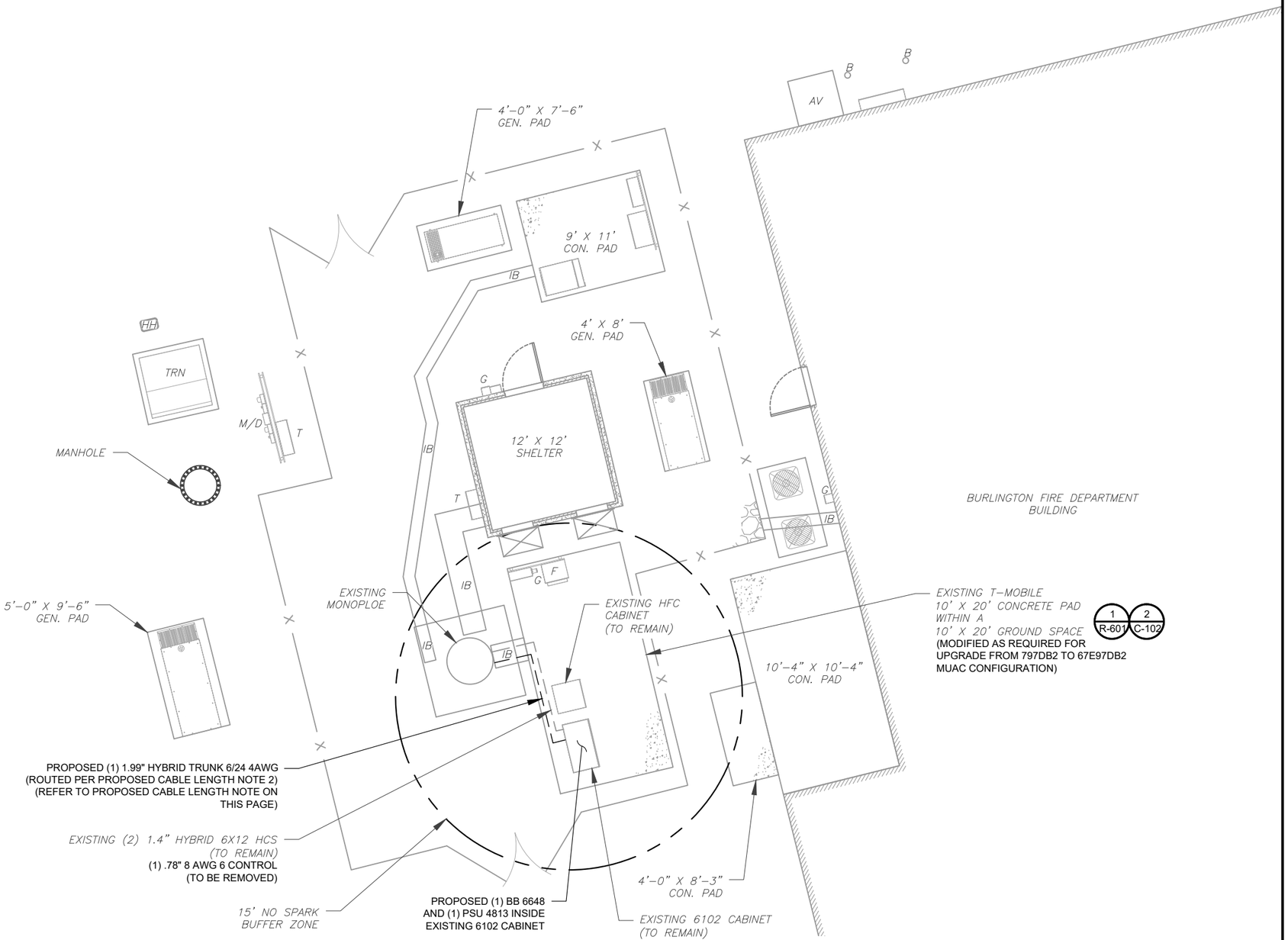
3. NO ELECTRICAL SCOPE IS INCLUDED IN THIS PROJECT.

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
———	CHAINLINK FENCE

PROPOSED CABLE LENGTH:

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **127'**. 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. 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.



1 DETAILED SITE PLAN

GRAPHIC SCALE

10 0 5 10

(IN FEET)
1 UNIT = 10 FEET

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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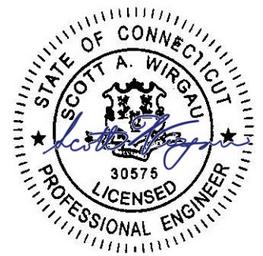


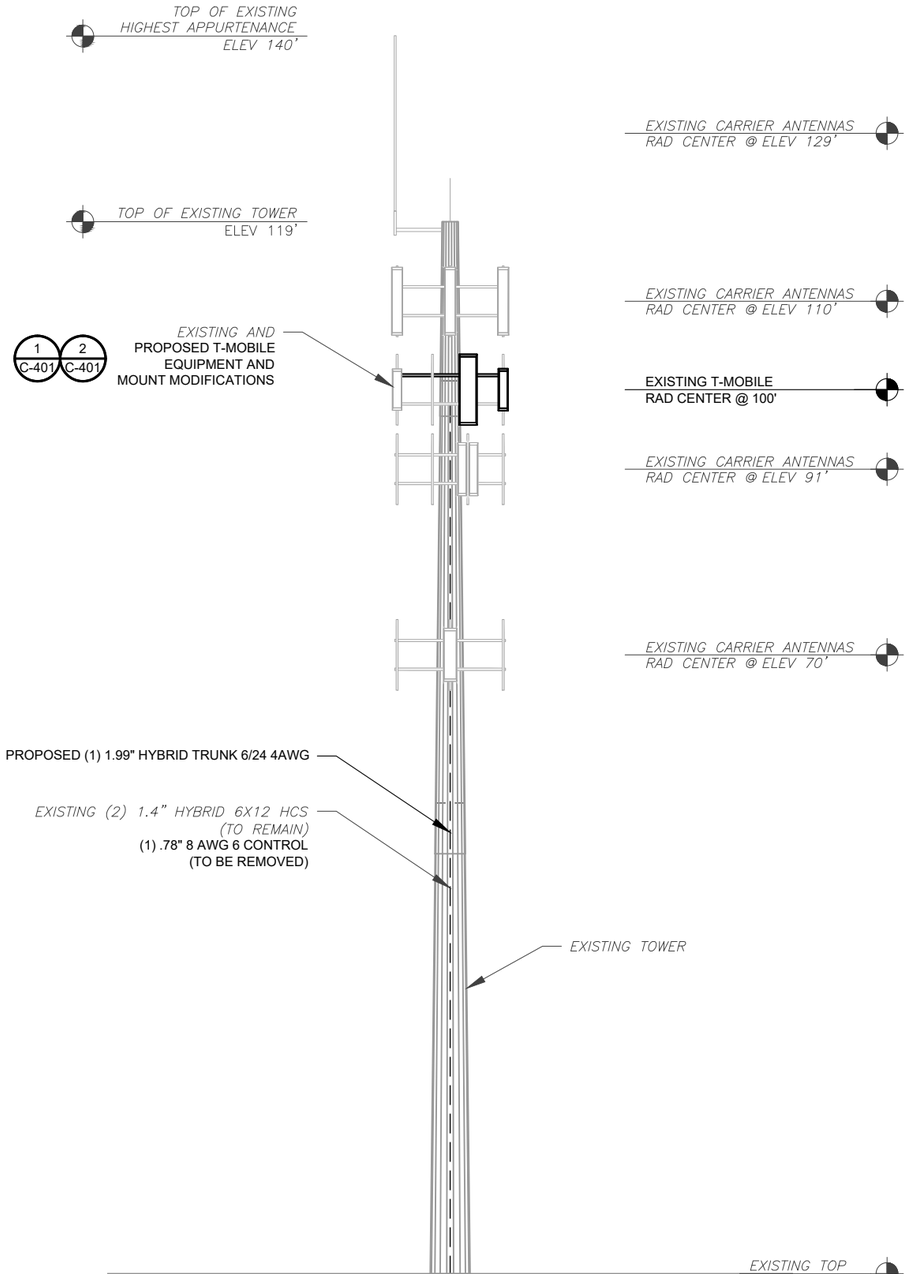
T-Mobile

ATC JOB NO:	14097402_D1
CUSTOMER ID:	CTHA560B
CUSTOMER #:	CTHA560B

DETAILED SITE PLAN

SHEET NUMBER:	REVISION:
C-101	0

PER MOUNT ANALYSIS COMPLETED BY ATC, DATED 06/16/22, THE EXISTING MOUNT MUST BE MODIFIED TO ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT MODIFICATION PROPOSED IN THE MOUNT ANALYSIS, INCLUDED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT.



1 TOWER ELEVATION
SCALE: N.T.S.

TOWER NOTE:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE PROJECT 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.
2. WHERE APPLICABLE, ALL NEW ANTENNAS, EQUIPMENT, MOUNTS, CABLING, ETC. SHALL BE PAINTED/SOCKED TO MATCH EXISTING EQUIPMENT IN ACCORDANCE WITH FAA, JURISDICTION, AND/OR OTHER LOCAL REQUIREMENTS.
3. 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.
4. TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)
5. TOWER ELEVATION DEPICTION MAY NOT REFLECT ALL EQUIPMENT INCLUDED IN STRUCTURAL ANALYSIS. REFER TO STRUCTURAL ANALYSIS FOR FULL TOWER LOADING.

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REV.	DESCRIPTION	BY	DATE
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209185

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BURLINGTON 2

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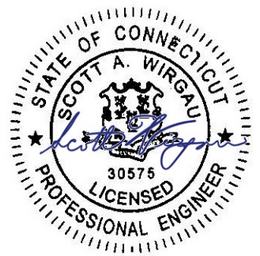
CTHA560B

SITE ADDRESS:
87 MONCE ROAD
BURLINGTON, CT 6013

SEAL:

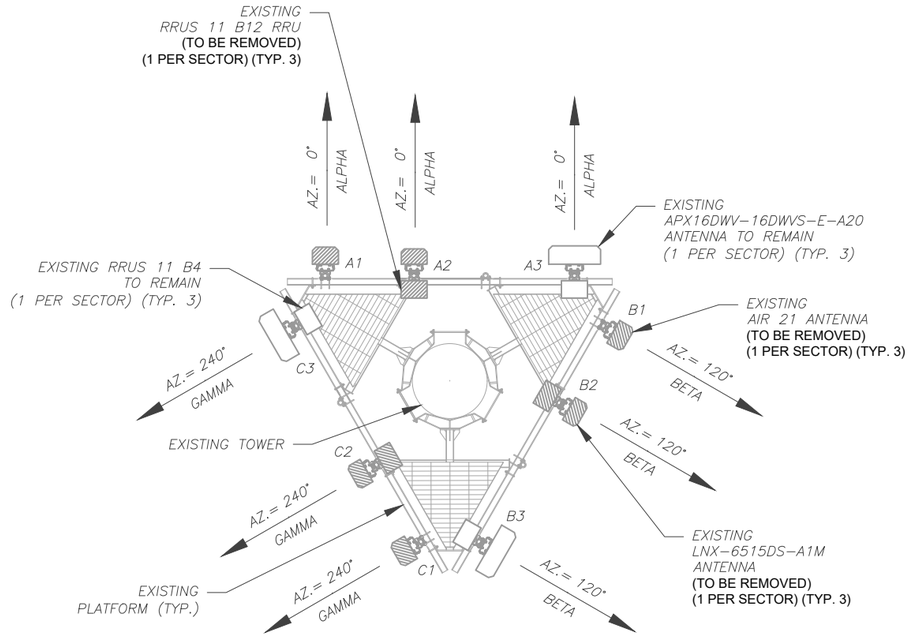


T-Mobile

ATC JOB NO:	14097402_D1
CUSTOMER ID:	CTHA560B
CUSTOMER #:	CTHA560B

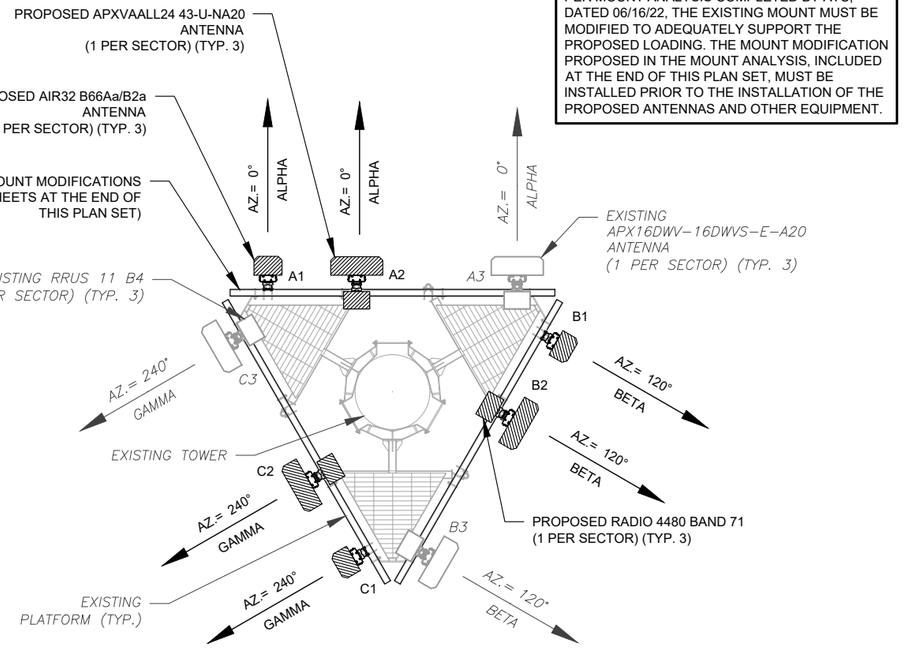
TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-201	0



1 EXISTING ANTENNA PLAN

SCALE: N.T.S.



PER MOUNT ANALYSIS COMPLETED BY ATC, DATED 06/16/22, THE EXISTING MOUNT MUST BE MODIFIED TO ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT MODIFICATION PROPOSED IN THE MOUNT ANALYSIS, INCLUDED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT.

2 FINAL ANTENNA PLAN

SCALE: N.T.S.

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	100'	0°	A1	AIR 21	–	0° / 2°	RMV	–	–
			A2	LNX-6515DS-A1M	L700	0° / 2°	RMV	RRUS 11 B12	RMV
			A3	APX16DWV-16DWVS-E-A20	U2100	0° / 2°	RMN	RRUS 11 B4	RMN
BETA	100'	120°	B1	AIR 21	–	0° / 2°	RMV	–	–
			B2	LNX-6515DS-A1M	L700	0° / 2°	RMV	RRUS 11 B12	RMV
			B3	APX16DWV-16DWVS-E-A20	U2100	0° / 2°	RMN	RRUS 11 B4	RMN
GAMMA	100'	240°	C1	AIR 21	–	0° / 2°	RMV	–	–
			C2	LNX-6515DS-A1M	L700	0° / 2°	RMV	RRUS 11 B12	RMV
			C3	APX16DWV-16DWVS-E-A20	U2100	0° / 2°	RMN	RRUS 11 B4	RMN

NOTES

1. CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
2. 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	100'	0°	A1	AIR32 B66Aa/B2a	L2100, L1900	0° / 2°	ADD	-	-
			A2	APXVAALL24 43-U-NA20	L700, L600, N600	0° / 2°	ADD	4480 BAND 71	ADD
			A3	APX16DWV-16DWVS-E-A20	U2100	0° / 2°	RMN	RRUS 11 B4	RMN
BETA	100'	120°	B1	AIR32 B66Aa/B2a	L2100, L1900	0° / 2°	ADD	-	-
			B2	APXVAALL24 43-U-NA20	L700, L600, N600	0° / 2°	ADD	4480 BAND 71	ADD
			B3	APX16DWV-16DWVS-E-A20	U2100	0° / 2°	RMN	RRUS 11 B4	RMN
GAMMA	100'	240°	C1	AIR32 B66Aa/B2a	L2100, L1900	0° / 2°	ADD	-	-
			C2	APXVAALL24 43-U-NA20	L700, L600, N600	0° / 2°	ADD	4480 BAND 71	ADD
			C3	APX16DWV-16DWVS-E-A20	U2100	0° / 2°	RMN	RRUS 11 B4	RMN

EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY	
MODEL NUMBER	STATUS	CABLE QTY, SIZE, TYPE	STATUS
–	–	(2) 1.4" HYBRID 6X12 HCS	RMN
–	–	(1) .78" 8 AWG 6 CONTROL	RMV

FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY	
MODEL NUMBER	STATUS	CABLE QTY, SIZE, TYPE	STATUS
-	-	(2) 1.4" HYBRID 6X12 HCS	RMN
-	-	(1) 1.99" HYBRID TRUNK 6/24 4AWG	ADD

3 EQUIPMENT SCHEDULES

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	AP	07/07/22

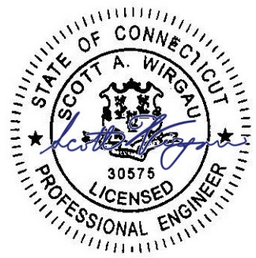
ATC SITE NUMBER:
209185

ATC SITE NAME:
BURLINGTON 2

T-MOBILE SITE NAME:
CTHA560B

SITE ADDRESS:
87 MONCE ROAD
BURLINGTON, CT 6013

SEAL:

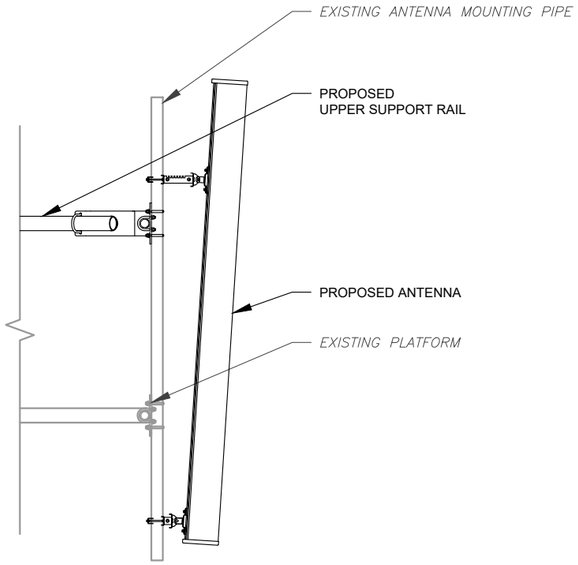


T-Mobile

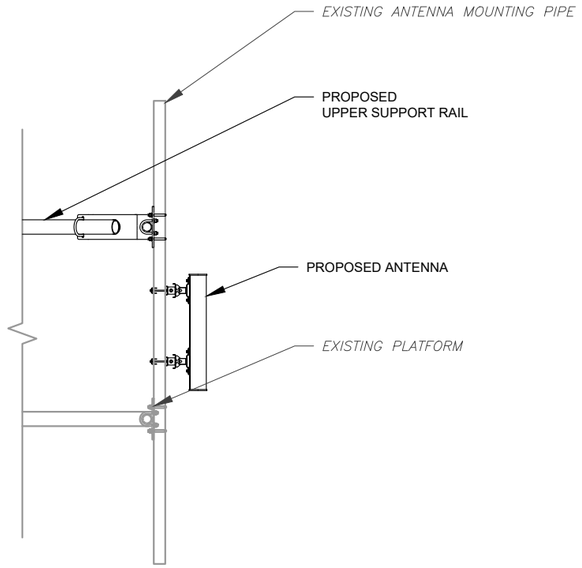
ATC JOB NO:	14097402_D1
CUSTOMER ID:	CTHA560B
CUSTOMER #:	CTHA560B

ANTENNA INFORMATION & SCHEDULE

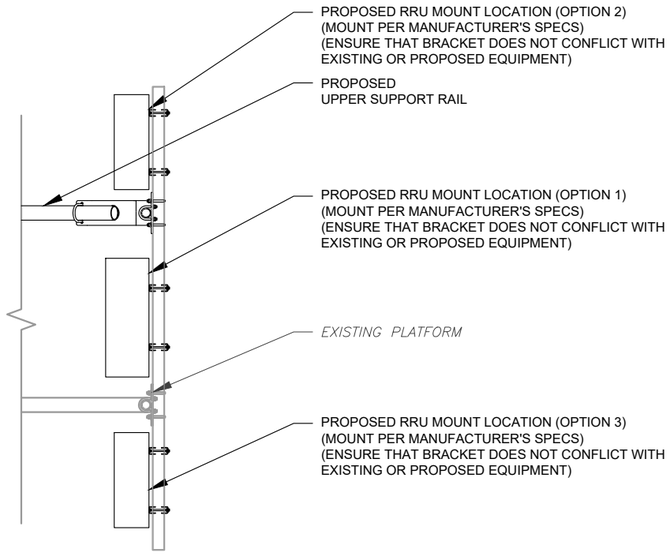
SHEET NUMBER:	REVISION:
C-401	0



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



2 PROPOSED 5G ANTENNA MOUNTING DETAIL - TYPICAL
SCALE: N.T.S.



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

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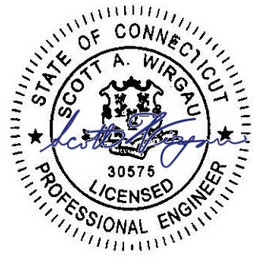
BURLINGTON, CT 6013

SEAL:

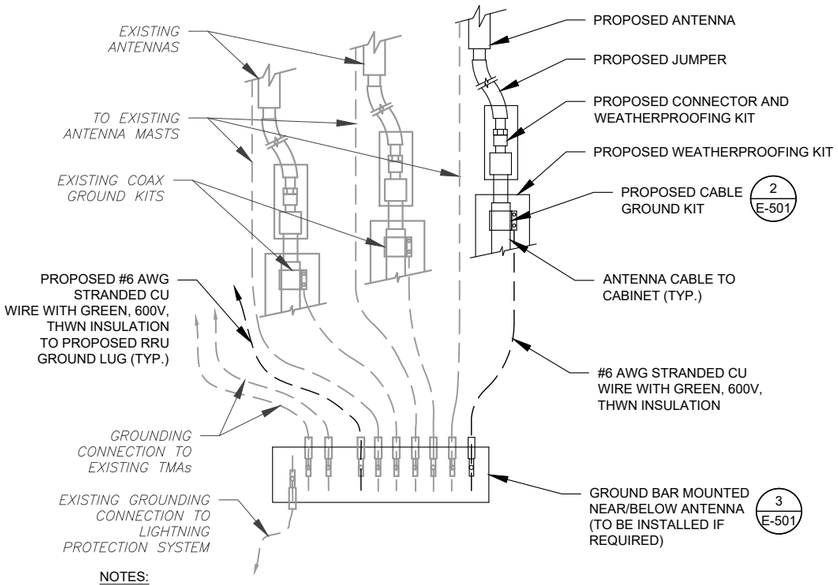


T-Mobile

ATC JOB NO:	14097402_D1
CUSTOMER ID:	CTHA560B
CUSTOMER #:	CTHA560B

CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-501	0

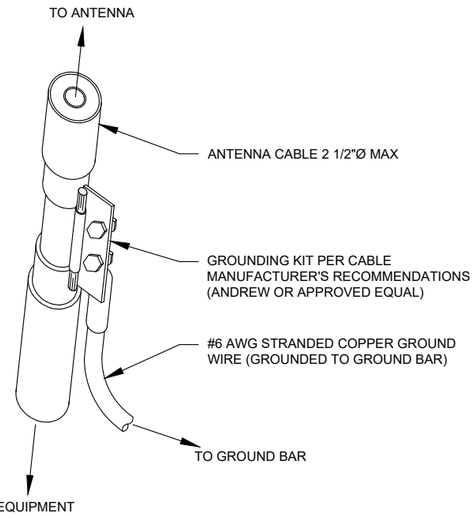


NOTES:

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.

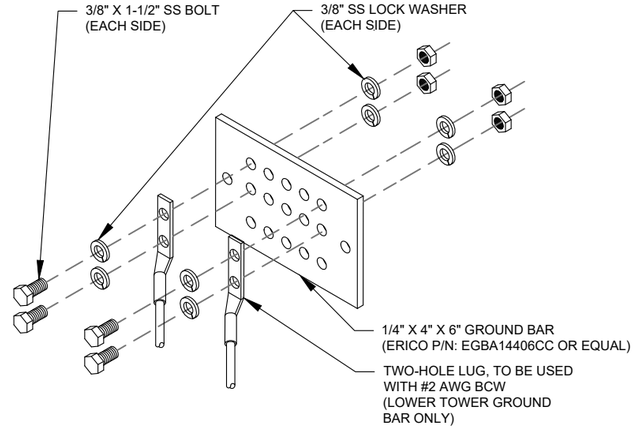


GROUND KIT NOTES:

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.

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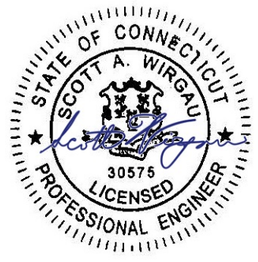


T-Mobile

ATC JOB NO:	14097402_D1
CUSTOMER ID:	CTHA560B
CUSTOMER #:	CTHA560B

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	0

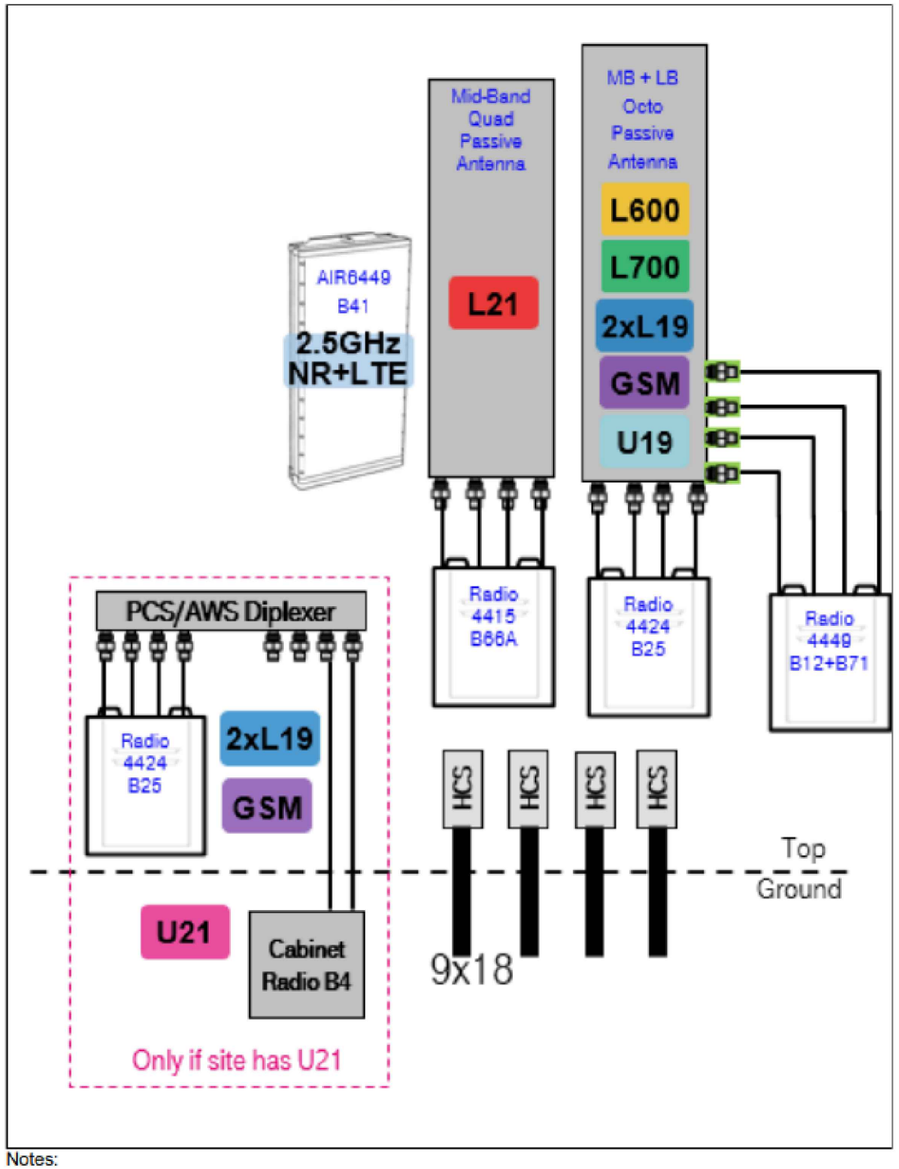
Proposed RAN Equipment		
Template: 67E97DB2 MUAC		
Enclosure	1	2
Enclosure Type	RBS 6102 MU AC	Ancillary Equipment (Ericsson)
Baseband	DUW30 U2100; BB 5216 L2100 L1900; BB 6648 L700 L600 N600	
Hybrid Cable System		Ericsson 6x12 HCS *Select AWG & Length* **(x 2)**; Hybrid Trunk 6/24 4AWG 50m
Multiplexer	XMU	

RAN Scope of Work:

CTHA560B
Keep existing cabinet 6102.
Add BB6648 for low band(L7/L6/N6).
Add PSU 4813
Use Existing 2 Hybrids . Adding one 6x24 50m Hybrid.
Antenna Swap from Andrew - LNX-6515DS-A1M to RFS - APXVAALL24_43-U-NA20
Adding 4480s Radio at the antenna for low band..
Ericsson - AIR32 KRD901146-1_B66A_B2A and RFS - APX16DWV-16DWV-S-E-A20 antenna remains .
Height and azimuth of site remain same.

1 CABINET CONFIGURATION

67D5998C_1xAIR+1QP+1OP.PNG



Notes:

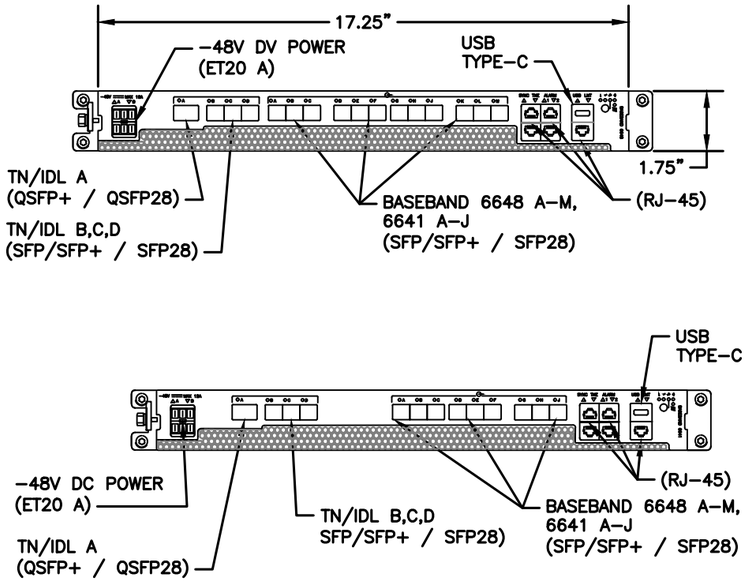
2 ANTENNA CONFIGURATION

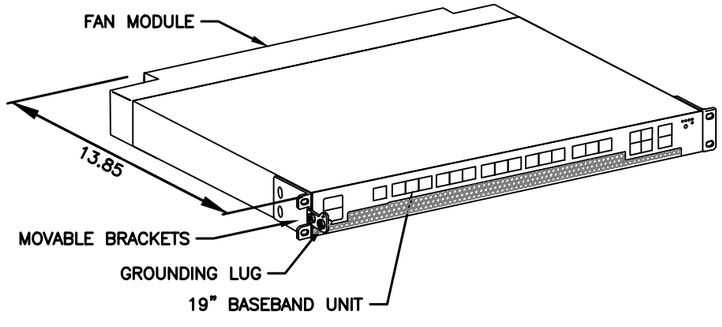
NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-601	0

MANUFACTURER:	ERICSSON
MODEL:	BASEBAND 6648
DIMENSIONS:	1.75" x 17.25" x 13.85" (H" x W" x D")
WEIGHT:	16.54 LBS



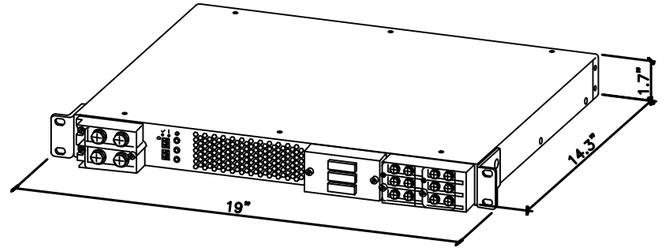


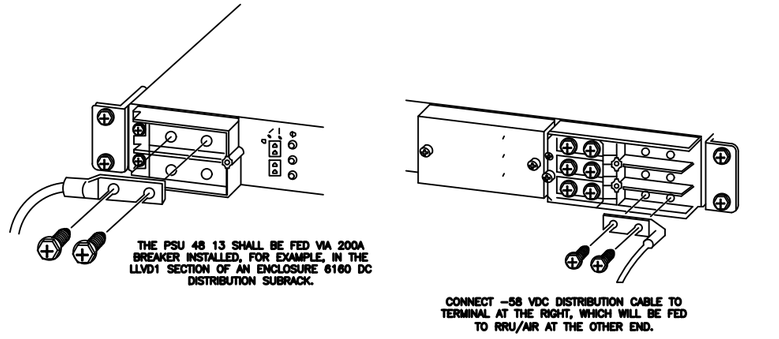
1 34111 - ERICSSON BASEBAND 6648 (WITH FAN)

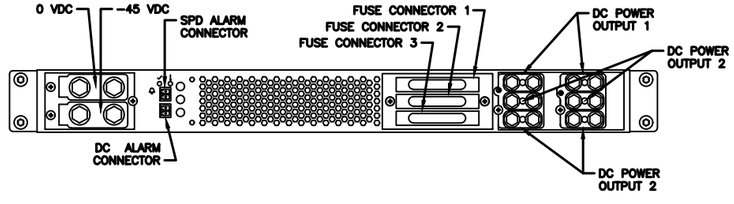
SCALE: N.T.S.

MANUFACTURER:	ERICSSON
MODEL:	PSU 48 13
WEIGHT:	17.1 LBS
DIMENSIONS:	19"x 1.7"x 14.3"

NEEDED INSTALL KIT (PICK 1)
34133 PSU4813 INSTALL KIT FOR RBS61XX
34134 PSU4813 INSTALL KIT FOR PBC6200
34135 PSU4813 INSTALL KIT FOR 6X60/RBS6230







2 SKU# 34132 - PSU 48 13

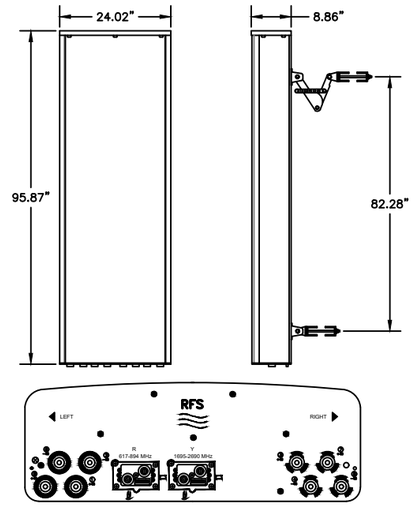
SCALE: N.T.S.

NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-602	0

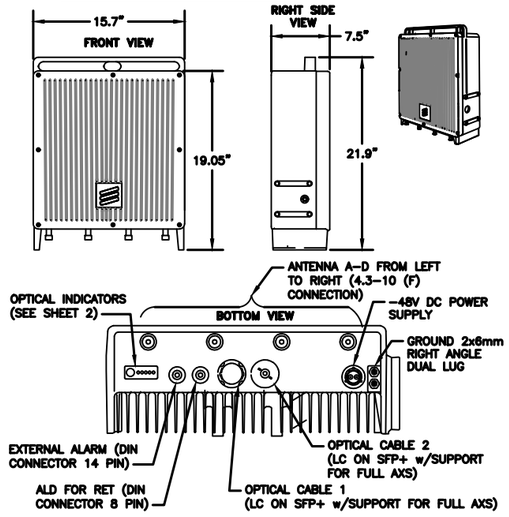
MANUFACTURER:	RFS
MODEL:	APXVAALL24_43-U-NA20
DIMENSIONS:	95.87" x 24.02" x 8.86"
WEIGHT:	119 LB
BAND:	QUAD BAND (8 PORT)
MOUNTING KIT & WEIGHT:	APM40-10E BEAM TILT KIT (INCLUDED) (16.53 LBS)



1 34087 - RFS APXVAALL24_43-U-NA20

SCALE: N.T.S.

MANUFACTURER:	ERICSSON
MODEL:	4480 RADIO (KRC 161 922/1)
DIMENSIONS:	21.9" x 15.7" x 7.5" (H x W x D)
MODEL BAND:	B71, B85 FOR NR AND LTE
WEIGHT:	81 LBS
BRACKET WEIGHT:	3.75 LBS (MULTI ERS #109 1973/2)



2 34372 - ERICSSON 4480 RADIO

SCALE: N.T.S.

NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-603	0

Mount Analysis Report

ATC Site Name	:	**Burlington 2, CT**
ATC Site Number	:	**209185**
Engineering Number	:	**14097402_C8_01**
Mount Elevation	:	**101.5 ft**
Carrier	:	**T-Mobile**
Carrier Site Name	:	**CTHA560B**
Carrier Site Number	:	**CTHA560B**
Site Location	:	**87 Monce Road** **Burlington, CT 6013-2542** **41.73912732, -72.90781103**
County	:	**Hartford**
Date	:	**June 16, 2022**
Max Usage	:	**48%**
Result	:	**Contingent Pass**

Prepared By:
Michael Ellis
Structural Engineer I

Reviewed By:

STATE OF CONNECTICUT · ESHA KAUSHAL MODI · 32593 · LICENSED PROFESSIONAL ENGINEER

Authorized by "EOR"
16 Jun 2022 04:34:45 cosign

COA: PEC.0001553

1 MOUNT ANALYSIS

Introduction

The purpose of this report is to summarize results of the mount analysis performed for T-Mobile at 101.5 ft.

Supporting Documents

Mount Modification	Site Pro 1 HRK12, dated July 13, 2014
Radio Frequency Data Sheet	RFDS ID #CTHA560B, dated May 31, 2022
Reference Photos	Site photos from 2021

Analysis

This mount was analyzed using American Tower Corporation's Mount Analysis Program and RISA-3D

Basic Wind Speed:	116 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.50'' radial ice concurrent
Codes:	ANSI/TIA-222-H
Exposure Category:	C
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Flat
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.184, S1 = 0.054
Site Class:	D - Stiff Soil - Default
Live Loads:	Lm = 500 lbs

*** Based on experience, it has been determined that the Lv load cases will not control over Lm load cases in platform mount analyses. Therefore, these load cases have been excluded from this analysis.**

Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above provided the modifications listed below are completed:

- Install Site Pro 1 HRK12 handrail reinforcement kit (or similar) as requested by T-MOBILE.
- A handrail kit was modeled due to the Carrier's proposed Mount Type. The mount geometry before this addition was not assessed.

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

A.T. Engineering Service, PLLC - 3500 Regency Parkway, Suite 100 - Cary, NC 27518 - 919.468.0112 Office - 919.466.5414 Fax - www.americantower.com

NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT. PLEASE REFERENCE THE MOUNT ANALYSIS REPORT FOR COMPLETE MOUNT ANALYSIS CALCULATIONS AND DETAILS. SUPPLEMENTAL PAGES INCLUDED IN THE CONSTRUCTION DRAWINGS ARE FOR REFERENCE ONLY. GENERAL CONTRACTOR IS TO VERYIFY THEY HAVE THE MOST RECENT MOUNT ANALYSIS PRIOR TO CONTRUCTION.

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-604	0

Exhibit D

Structural Analysis Report

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**119 ft Monopole**
ATC Site Name	:	**Burlington 2,CT**
ATC Site Number	:	**209185**
Engineering Number	:	**14097402_C3_05**
Proposed Carrier	:	**T-MOBILE**
Carrier Site Name	:	**CTHA560B**
Carrier Site Number	:	**CTHA560B**
Site Location	:	**87 Monce Road** **Burlington, CT 6013-2542** **41.7391, -72.9078**
County	:	**Hartford**
Date	:	**August 25, 2022**
Max Usage	:	**56%**
Result	:	**Pass**

Prepared By:

Sarah Kramer
Structural Engineer

Sarah D. Kramer

Reviewed By:

COA : PEC.0001553

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 119 ft Monopole to reflect the change in loading by T-MOBILE.

Supporting Documents

Tower Drawings	Sabre Job #160579, dated April 5, 2017
Foundation Drawing	Sabre Job #160579, dated April 5, 2017
Geotechnical Report	Geotechnical Report by Dr. Clarence Welti, P.E., dated March 17, 2014
Mount Analysis	ATC Project #14097402_C8_01, dated June 16, 2022

Analysis

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

Basic Wind Speed:	116 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.50" radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Spectral Response:	Ss = 0.18, S_1 = 0.05
Site Class:	D - Stiff Soil - Default

Conclusion

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

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

Existing and Reserved Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
129.0	2	Generic 22' Omni	Stand-Off	(3) 7/8" Coax	OTHER
123.5	1	Generic 12' Omni	Stand-Off	-	
110.0	3	Ericsson RRUS 32 B66A	Square Platform with Handrails	(3) 2" conduit (2) 0.39" (10mm) Fiber Trunk (8) 0.76" (19.2mm) 8 AWG 6	AT&T MOBILITY
	3	Ericsson RRUS-32 (77 lbs)			
	4	Raycap DC6-48-60-18-8F (31.25" Height)			
	12	CCI HPA-65R-BUU-H8			
	6	Ericsson RRUS-11 (19.7")			
	6	Ericsson RRUS-12 B2			
100.0	3	Ericsson RRUS 11 B4	Triangular Low Profile Platform	(2) 1.4" (35.6mm) Hybrid	T-MOBILE
	3	RFS APX16DWV-16DWVS-E-A20			
91.0	3	Samsung B5/B13 RRH-BR04C	Triangular Platform with Handrails	(1) 1 5/8" Hybriflex	VERIZON WIRELESS
	1	Raycap RVZDC-6627-PF-48			
	3	Samsung MT6407-77A			
	3	Commscope NHHSS-65B-R2BT4			
	3	Samsung B2/B66A RRH-BR049			
	3	Samsung RT4401-48A			
	3	Commscope NHH-65B-R2B			
70.0	3	Fujitsu TA08025-B605	Triangular Platform with Handrails	(1) 1.60" (40.6mm) Hybrid	DISH WIRELESS L.L.C.
	3	JMA Wireless MX08FRO665-21			
	1	Commscope RDIDC-9181-PF-48			
	3	Fujitsu TA08025-B604			
3.0	3	Ericsson RRUS E2	Flush	-	AT&T MOBILITY

Equipment to be Removed

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
100.0	3	Andrew LNX-6515DS-A1M (43.7lbs)	-	(1) 1.4" (35.6mm) Hybrid	T-MOBILE
	3	Ericsson RRUS 11 B12			
	3	Ericsson Air21 Panel			

Proposed Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
100.0	3	Ericsson 4480 BAND 71	Triangular Low Profile Platform with Reinforcement	(1) 1.99" (50.7mm) Hybrid	T-MOBILE
	3	Ericsson AIR32 B66Aa/B2a			
	3	RFS APXVAALL24 43-U-NA20			

[1] Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Install proposed lines inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	47%	Pass
Shaft	56%	Pass
Base Plate	24%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	2516.5	48%
Axial (Kips)	45.3	47%
Shear (Kips)	29.0	31%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
100.0	Ericsson 4480 BAND 71	T-MOBILE	0.678	0.720
	RFS APXVAALL24 43-U-NA20			
	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 Services LLC 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 Services LLC

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

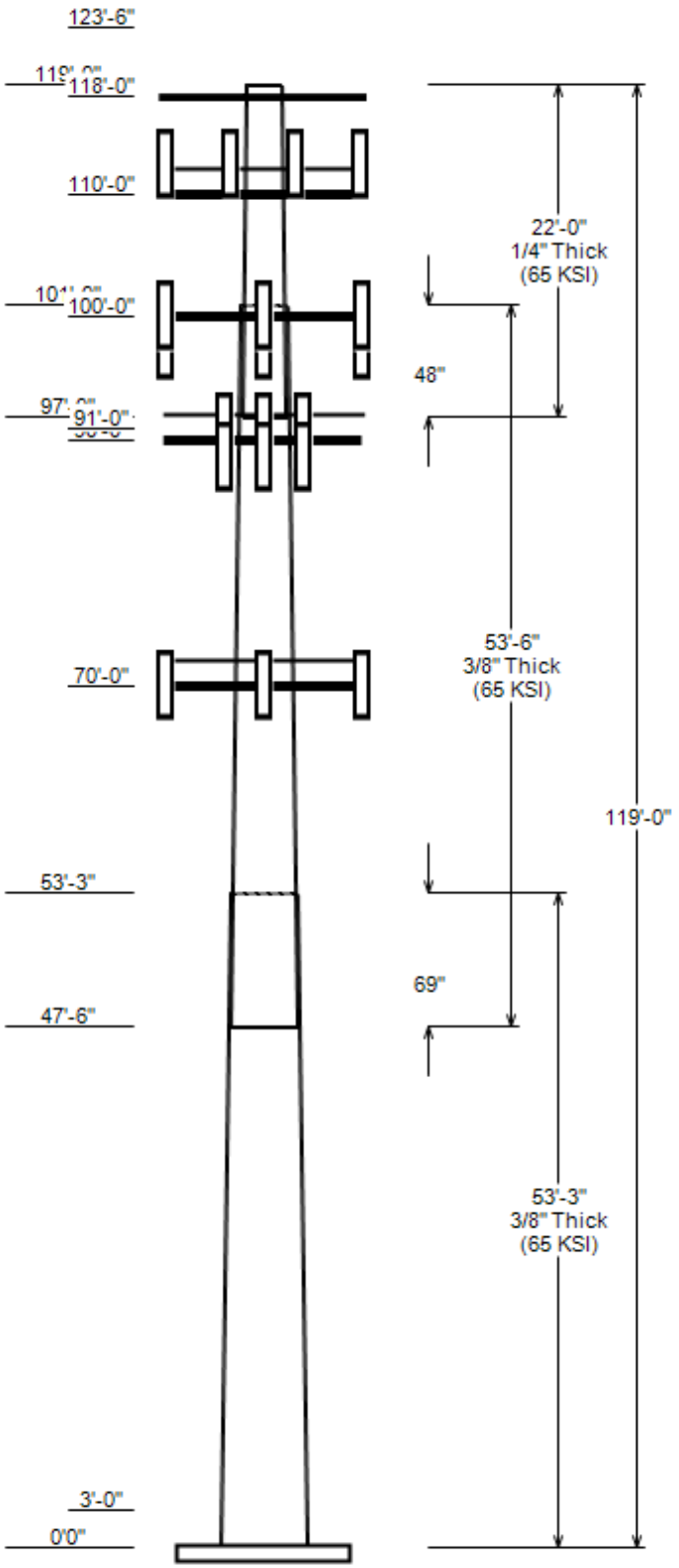
All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with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

Unless explicitly agreed by both the client and A.T. Engineering Services LLC, 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 Services LLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

JOB INFORMATION

Asset :	209185, Burlington 2	Height :	119 ft
Client :	T-MOBILE	Base Width :	53.34
Code :	ANSI/TIA-222-H	Shape :	18 Sides



SITE PARAMETERS

Nominal Wind: 116 mph wind with no ice **Topo Category:** 1

Ice Wind: 50 mph wind with 1.5" radi **Topo Method:** Method 1

Base Elev (ft): 0.00 **Taper :** 0.27800(In/ft) **Topo Feature:**

Structure Class: II **Exposure :** C **S_s :** 0.184 **S_1** : 0.054

SECTION PROPERTIES

Shaft Section	Length (ft)	Diameter (in) Across Flats Top	Diameter (in) Across Flats Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	53.250	38.56	53.34	0.375		0.000	18 Sides	65
2	53.500	26.05	40.90	0.375	Slip Joint	69.000	18 Sides	65
3	22.000	21.55	27.66	0.250	Slip Joint	48.000	18 Sides	65

DISCRETE APPURTENANCE

Attach Elev (ft)	Force Elev (ft)	Qty	Description
128.8	128.8	2	Generic 22' Omni
123.5	123.5	1	Generic 12' Omni
118.0	118.0	3	Generic Flat Stand-Off
110.0	110.0	3	Ericsson RRUS 32 B66A
110.0	110.0	6	Ericsson RRUS-11 (19.7")
110.0	110.0	6	Ericsson RRUS-12 B2
110.0	110.0	3	Ericsson RRUS-32 (77 lbs)
110.0	110.0	4	Raycap DC6-48-60-18-8F (31.25"
110.0	111.6	12	CCI HPA-65R-BUU-H8
110.0	110.0	1	Generic Square Platform with H
100.0	100.0	3	Ericsson RRUS 11 B4
100.0	100.0	3	Ericsson 4480 BAND 71
100.0	100.0	3	Ericsson AIR32 B66Aa/B2a
100.0	99.5	3	RFS APX16DWV-16DWVS-E-A20
100.0	100.0	1	Generic Mount Reinforcement
100.0	100.0	3	RFS APXVAALL24 43-U-NA20
100.0	100.0	1	Generic Round Low Profile Plat
91.0	91.0	3	Samsung RT4401-48A
91.0	91.0	3	Samsung B5/B13 RRH-BR04C
91.0	91.0	3	Samsung B2/B66A RRH-BR049
91.0	91.0	1	Raycap RVZDC-6627-PF-48
91.0	91.0	3	Samsung MT6407-77A
91.0	90.0	3	Commscope NHH-65B-R2B
91.0	91.0	3	Commscope NHHSS-65B-R2BT4
90.0	90.0	1	Generic Round Platform with Ha
70.0	70.0	1	Commscope RDIDC-9181-PF-48
70.0	70.0	3	Fujitsu TA08025-B604
70.0	70.0	3	Fujitsu TA08025-B605
70.0	70.0	3	JMA Wireless MX08FRO665-21
70.0	70.0	1	Generic Flat Platform with Han
3.0	3.0	3	Ericsson RRUS E2

LINEAR APPURTENANCE

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
0.0	129.0	7/8" Coax	No
0.0	111.0	2" conduit	No
0.0	110.0	0.76" (19.2mm) 8 AWG 6	No
0.0	110.0	0.39" (10mm) Fiber Trunk	No
0.0	100.0	1.99" (50.7mm) Hybrid	No
0.0	100.0	1.4" (35.6mm) Hybrid	No
0.0	91.0	1 5/8" Hybriflex	No
0.0	70.0	1.60" (40.6mm) Hybrid	No

JOB INFORMATION			
Asset :	209185, Burlington 2	Height :	119 ft
Client :	T-MOBILE	Base Width :	53.34
Code :	ANSI/TIA-222-H	Shape :	18 Sides

LOAD CASES	
1.2D + 1.0W Normal	116 mph wind with no ice
0.9D + 1.0W Normal	116 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Nor	50 mph wind with 1.5" radial ice
1.2D + 1.0Ev + 1.0Eh Nor	Seismic
0.9D - 1.0Ev + 1.0Eh Nor	Seismic (Reduced DL)
1.0D + 1.0W Service Norm	60 mph Wind with No Ice

REACTIONS

Load Case	Moment (kip-ft)	Shear (Kip)	Axial (Kip)
1.2D + 1.0W Normal	2516.52	29.00	45.26
0.9D + 1.0W Normal	2495.70	28.99	33.94
1.2D + 1.0Di + 1.0Wi Normal	798.50	8.97	70.46
1.2D + 1.0Ev + 1.0Eh Normal	116.31	1.23	45.88
0.9D - 1.0Ev + 1.0Eh Normal	115.13	1.23	31.87
1.0D + 1.0W Service Normal	599.30	6.94	37.74

DISH DEFLECTIONS

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

ANALYSIS PARAMETERS

Location:	Hartford County,CT	**Height:**	119 ft
Type and Shape:	Taper, 18 Sides	**Base Diameter:**	53.34 in
Manufacturer:	Sabre	**Top Diameter:**	21.55 in
K_d (non-service):	0.95	**Taper:**	0.2780 in/ft
K_e:	0.99	**Rotation:**	0.000°

ICE & WIND PARAMETERS

Exposure Category:	C	**Design Wind Speed w/o Ice:**	116 mph
Risk Category:	II	**Design Wind Speed w/Ice:**	50 mph
Topo Factor Procedure:	Method 1	**Operational Wind Speed:**	60 mph
Topographic Category:	1	**Design Ice Thickness:**	1.50 in
Crest Height:	0 ft	**HMSL:**	288.00 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil			**Period Based on Rayleigh Method (sec):**	1.77
T_L (sec):	6	**P:**	1	**C_s:**	0.033
S_s:	0.184	**S_1:**	0.054	**C_s Max:**	0.033
F_a:	1.600	**F_v:**	2.400	**C_s Min:**	0.030
S_{ds}:	0.196	**S_{d1}:**	0.086		

LOAD CASES

1.2D + 1.0W Normal	116 mph wind with no ice
0.9D + 1.0W Normal	116 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Normal	50 mph wind with 1.5" radial ice
1.2D + 1.0Ev + 1.0Eh Normal	Seismic
0.9D - 1.0Ev + 1.0Eh Normal	Seismic (Reduced DL)
1.0D + 1.0W Service Normal	60 mph Wind with No Ice

SHAFT SECTION PROPERTIES

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in^2)	Bottom Ix (in^4)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (in)	Top Area (in^2)	Top Ix (in^4)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	53.25	0.3750	65		0.00	9,828	53.34	0.000	63.04	22,343.1	23.32	142.24	38.56	53.25	45.44	8,369.4	16.37	102.81	0.2776
2-18	53.50	0.3750	65	Slip	69.00	7,172	40.90	47.500	48.24	10,009.2	17.47	109.07	26.05	101.00	30.56	2,544.4	10.48	69.46	0.2776
3-18	22.00	0.2500	65	Slip	48.00	1,447	27.66	97.000	21.75	2,064.1	17.74	110.63	21.55	119.00	16.90	968.8	13.44	86.20	0.2776
				Shaft Weight		18,447													

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor
128.80	Generic 22' Omni	2	1.00	0.000	70.00	6.600	1.00	231.75	14.214	1.00
123.50	Generic 12' Omni	1	1.00	0.000	40.00	3.600	1.00	128.86	7.805	1.00
118.00	Generic Flat Stand-Off	3	1.00	0.000	187.50	6.300	0.67	317.68	9.345	0.67
110.00	Ericsson RRUS-32 (77 lbs)	3	0.75	0.000	77.00	3.314	0.71	171.26	4.558	0.71
110.00	Ericsson RRUS 32 B66A	3	0.75	0.000	50.70	2.720	0.67	121.73	3.848	0.67
110.00	Ericsson RRUS-11 (19.7")	6	0.75	0.000	51.00	2.791	0.67	124.76	3.852	0.67
110.00	Ericsson RRUS-12 B2	6	0.75	0.000	58.00	3.145	0.62	136.40	4.268	0.62
110.00	CCI HPA-65R-BUU-H8	12	0.75	1.600	68.00	12.976	0.67	317.04	16.446	0.67
110.00	Generic Square Platform with H	1	1.00	0.000	3790.00	49.300	1.00	8089.22	131.854	1.00
110.00	Raycap DC6-48-60-18-8F (31.25"	4	0.75	0.000	32.80	3.340	0.67	127.19	4.759	0.67
100.00	Generic Round Low Profile Plat	1	1.00	0.000	1875.00	21.700	1.00	2653.10	40.146	1.00
100.00	RFS APXVAALL24 43-U-NA20	3	0.80	0.000	122.80	20.243	0.63	497.03	23.806	0.63
100.00	Generic Mount Reinforcement	1	1.00	0.000	200.00	7.500	1.00	385.94	14.694	1.00
100.00	RFS APX16DWV-16DWVS-E-A20	3	0.80	-0.500	40.70	6.586	0.60	152.94	8.667	0.60
100.00	Ericsson AIR32 B66Aa/B2a	3	0.80	0.000	132.20	6.510	0.71	285.55	8.615	0.71
100.00	Ericsson RRUS 11 B4	3	0.80	0.000	50.70	2.791	0.67	120.27	3.845	0.67
100.00	Ericsson 4480 BAND 71	3	0.80	0.000	81.00	2.878	0.67	154.14	3.957	0.67
91.00	Commscope NHHSS-65B-R2BT4	3	0.75	0.000	51.00	8.079	0.69	216.59	10.744	0.69
91.00	Samsung MT6407-77A	3	0.75	0.000	81.60	4.709	0.61	178.70	6.156	0.61
91.00	Raycap RVZDC-6627-PF-48	1	0.75	0.000	32.00	3.781	0.69	136.47	5.041	0.69
91.00	Samsung B5/B13 RRH-BR04C	3	0.75	0.000	70.30	1.875	0.50	124.80	2.735	0.50
91.00	Samsung B2/B66A RRH-BR049	3	0.75	0.000	84.40	1.875	0.50	145.18	2.735	0.50
91.00	Samsung RT4401-48A	3	0.75	0.000	18.60	0.996	0.50	44.33	1.648	0.50
91.00	Commscope NHH-65B-R2B	3	0.75	-1.000	43.70	8.079	0.69	209.80	10.733	0.69
90.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	4037.88	50.409	1.00
70.00	JMA Wireless MX08FRO665-21	3	0.75	0.000	64.50	12.489	0.64	302.29	15.089	0.64
70.00	Fujitsu TA08025-B605	3	0.75	0.000	75.00	1.962	0.50	132.96	2.813	0.50
70.00	Fujitsu TA08025-B604	3	0.75	0.000	63.90	1.962	0.50	117.85	2.813	0.50
70.00	Commscope RDIDC-9181-PF-48	1	0.75	0.000	21.90	1.867	1.00	74.55	2.700	1.00
70.00	Generic Flat Platform with Han	1	1.00	0.000	2500.00	42.400	1.00	4143.50	61.802	1.00
3.00	Ericsson RRUS E2	3	1.00	0.000	52.90	2.475	0.67	92.46	3.127	0.67
Totals	Num Loadings: 31	92			16,745.60			36,149.90		

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg) : 0.00

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax/ Row	Dist Between Rows(in)	Dist Between Cols(in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	129.00	3	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	OTHER
0.00	111.00	3	2" conduit	2.38	3.65	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	110.00	8	0.76" (19.2mm) 8 AWG	0.76	0.53	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	110.00	2	0.39" (10mm) Fiber Tr	0.39	0.06	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	100.00	2	1.4" (35.6mm) Hybrid	1.4	1.3	N	0	0	0	0	0	N	T-MOBILE
0.00	100.00	1	1.99" (50.7mm) Hybrid	1.99	1.9	N	0	0	0	0	0	N	T-MOBILE
0.00	91.00	1	1 5/8" Hybriflex	1.98	1.3	N	0	0	0	0	0	N	VERIZON WIREL
0.00	70.00	1	1.60" (40.6mm) Hybrid	1.6	2.34	N	0	0	0	0	0	N	DISH WIRELESS

SEGMENT PROPERTIES

(Max Len: 5.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.3750	53.340	63.039	22,343.10	23.32	142.24	74	825.0	0.0	0.0
3.00		0.3750	52.507	62.048	21,305.40	22.93	140.02	74.4	799.2	0.0	638.5
5.00		0.3750	51.952	61.387	20,631.80	22.66	138.54	74.7	782.2	0.0	420.0
10.00		0.3750	50.564	59.735	19,010.30	22.01	134.84	75.5	740.5	0.0	1,030.4
15.00		0.3750	49.175	58.082	17,476.00	21.36	131.13	76.3	700.0	0.0	1,002.3
20.00		0.3750	47.787	56.430	16,026.60	20.71	127.43	77	660.6	0.0	974.2
25.00		0.3750	46.399	54.778	14,659.70	20.05	123.73	77.8	622.3	0.0	946.0
30.00		0.3750	45.011	53.126	13,372.70	19.40	120.03	78.6	585.2	0.0	917.9
35.00		0.3750	43.622	51.473	12,163.40	18.75	116.33	79.3	549.2	0.0	889.8
40.00		0.3750	42.234	49.821	11,029.20	18.10	112.62	80.1	514.4	0.0	861.7
45.00		0.3750	40.846	48.169	9,967.90	17.44	108.92	80.9	480.7	0.0	833.6
47.50	Bot - Section 2	0.3750	40.152	47.343	9,463.80	17.12	107.07	81.3	464.2	0.0	406.3
50.00		0.3750	39.458	46.516	8,976.90	16.79	105.22	81.7	448.1	0.0	806.0
53.25	Top - Section 1	0.3750	39.305	46.335	8,872.40	16.72	104.81	81.7	444.6	0.0	1,026.8
55.00		0.3750	38.819	45.757	8,544.30	16.49	103.52	82	433.5	0.0	274.2
60.00		0.3750	37.431	44.105	7,651.70	15.84	99.82	82.6	402.6	0.0	764.4
65.00		0.3750	36.043	42.452	6,823.50	15.18	96.11	82.6	372.9	0.0	736.3
70.00		0.3750	34.655	40.800	6,057.40	14.53	92.41	82.6	344.3	0.0	708.2
75.00		0.3750	33.266	39.148	5,350.90	13.88	88.71	82.6	316.8	0.0	680.1
80.00		0.3750	31.878	37.495	4,701.60	13.23	85.01	82.6	290.5	0.0	652.0
85.00		0.3750	30.490	35.843	4,107.00	12.57	81.31	82.6	265.3	0.0	623.9
90.00		0.3750	29.102	34.191	3,564.80	11.92	77.60	82.6	241.3	0.0	595.8
91.00		0.3750	28.824	33.860	3,462.40	11.79	76.86	82.6	236.6	0.0	115.8
95.00		0.3750	27.714	32.539	3,072.60	11.27	73.90	82.6	218.4	0.0	451.9
97.00	Bot - Section 3	0.3750	27.158	31.878	2,889.10	11.01	72.42	82.6	209.5	0.0	219.2
100.00		0.3750	26.325	30.886	2,627.90	10.62	70.20	82.6	196.6	0.0	539.0
101.00	Top - Section 2	0.2500	26.548	20.866	1,823.20	16.96	106.19	81.5	135.3	0.0	175.9
105.00		0.2500	25.437	19.985	1,601.80	16.18	101.75	82.4	124.0	0.0	278.0
110.00		0.2500	24.049	18.884	1,351.30	15.20	96.20	82.6	110.7	0.0	330.7
115.00		0.2500	22.661	17.782	1,128.40	14.22	90.64	82.6	98.1	0.0	311.9
118.00		0.2500	21.828	17.121	1,007.20	13.63	87.31	82.6	90.9	0.0	178.2
119.00		0.2500	21.550	16.901	968.80	13.44	86.20	82.6	88.5	0.0	57.9
								Totals:			18,446.9

Load Case: 1.2D + 1.0W Normal — 116 mph wind with no ice — 20 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	-45.26	-29.00	0.00	-2,516.5	0.00	2,516.52	4,197.01	1,106.34	5,292.54	4,577.40	0	0	0.561
3.00	-44.18	-28.66	0.00	-2,429.5	0.00	2,429.52	4,156.73	1,088.94	5,127.40	4,461.67	0.03	-0.09	0.556
5.00	-43.56	-28.41	0.00	-2,372.2	0.00	2,372.20	4,129.42	1,077.34	5,018.76	4,384.81	0.08	-0.16	0.552
10.00	-42.10	-28.05	0.00	-2,230.2	0.00	2,230.16	4,059.55	1,048.34	4,752.26	4,193.75	0.34	-0.32	0.543
15.00	-40.67	-27.69	0.00	-2,089.9	0.00	2,089.92	3,987.39	1,019.35	4,493.02	4,004.43	0.76	-0.48	0.533
20.00	-39.28	-27.32	0.00	-1,951.5	0.00	1,951.48	3,912.95	990.35	4,241.06	3,817.03	1.35	-0.64	0.522
25.00	-37.93	-26.93	0.00	-1,814.9	0.00	1,814.91	3,836.23	961.35	3,996.37	3,631.76	2.11	-0.81	0.510
30.00	-36.61	-26.53	0.00	-1,680.3	0.00	1,680.27	3,757.23	932.35	3,758.94	3,448.80	3.05	-0.98	0.498
35.00	-35.33	-26.13	0.00	-1,547.6	0.00	1,547.61	3,675.94	903.36	3,528.79	3,268.37	4.17	-1.15	0.484
40.00	-34.08	-25.72	0.00	-1,417.0	0.00	1,416.97	3,592.36	874.36	3,305.91	3,090.65	5.47	-1.33	0.469
45.00	-32.88	-25.41	0.00	-1,288.4	0.00	1,288.36	3,506.51	845.36	3,090.30	2,915.85	6.95	-1.5	0.452
47.50	-32.29	-25.20	0.00	-1,224.8	0.00	1,224.84	3,462.72	830.86	2,985.22	2,829.60	7.76	-1.59	0.443
50.00	-31.21	-24.95	0.00	-1,161.8	0.00	1,161.83	3,418.37	816.36	2,881.95	2,744.16	8.62	-1.68	0.433
53.25	-29.86	-24.72	0.00	-1,080.7	0.00	1,080.74	3,408.56	813.18	2,859.53	2,725.51	9.8	-1.79	0.406
55.00	-29.44	-24.44	0.00	-1,037.5	0.00	1,037.48	3,377.08	803.03	2,788.61	2,666.32	10.47	-1.86	0.399
60.00	-28.32	-24.02	0.00	-915.3	0.00	915.26	3,276.75	774.03	2,590.88	2,492.78	12.51	-2.02	0.377
65.00	-27.24	-23.60	0.00	-795.2	0.00	795.16	3,153.99	745.04	2,400.42	2,308.60	14.71	-2.18	0.354
70.00	-22.57	-20.26	0.00	-677.2	0.00	677.17	3,031.23	716.04	2,217.23	2,131.50	17.08	-2.33	0.326
75.00	-21.59	-19.84	0.00	-575.9	0.00	575.89	2,908.48	687.04	2,041.31	1,961.46	19.6	-2.48	0.302
80.00	-20.65	-19.42	0.00	-476.7	0.00	476.71	2,785.72	658.04	1,872.66	1,798.48	22.27	-2.62	0.273
85.00	-19.75	-19.01	0.00	-379.6	0.00	379.61	2,662.96	629.05	1,711.29	1,642.58	25.09	-2.75	0.239
90.00	-15.95	-17.40	0.00	-284.6	0.00	284.55	2,540.21	600.05	1,557.18	1,493.74	28.03	-2.86	0.198
91.00	-14.57	-15.43	0.00	-267.2	0.00	267.15	2,515.65	594.25	1,527.23	1,464.83	28.63	-2.89	0.189
95.00	-13.93	-15.18	0.00	-205.4	0.00	205.41	2,417.45	571.05	1,410.34	1,351.98	31.08	-2.96	0.158
97.00	-13.62	-14.99	0.00	-175.0	0.00	175.04	2,368.35	559.45	1,353.64	1,297.25	32.33	-3	0.141
100.00	-9.09	-10.56	0.00	-130.1	0.00	130.08	2,294.69	542.05	1,270.77	1,217.28	34.23	-3.04	0.111
101.00	-8.86	-10.37	0.00	-119.5	0.00	119.51	1,529.64	366.21	869.88	826.32	34.87	-3.06	0.151
105.00	-8.46	-10.04	0.00	-78.0	0.00	78.02	1,481.61	350.74	797.97	766.26	37.45	-3.1	0.108
110.00	-1.47	-1.89	0.00	-22.1	0.00	22.06	1,402.96	331.41	712.44	685.20	40.73	-3.15	0.033
115.00	-1.09	-1.61	0.00	-12.6	0.00	12.59	1,321.13	312.08	631.76	607.20	44.04	-3.17	0.022
118.00	-0.24	-0.84	0.00	-7.8	0.00	7.76	1,272.02	300.48	585.68	562.66	46.03	-3.17	0.014
119.00	0.00	-0.83	0.00	-6.9	0.00	6.92	1,255.66	296.61	570.71	548.20	46.69	-3.18	0.013

Load Case: 0.9D + 1.0W Normal — 116 mph wind with no ice — 20 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	-33.94	-28.99	0.00	-2,495.7	0.00	2,495.70	4,197.01	1,106.34	5,292.54	4,577.40	0	0	0.554
3.00	-33.12	-28.64	0.00	-2,408.7	0.00	2,408.74	4,156.73	1,088.94	5,127.40	4,461.67	0.03	-0.09	0.549
5.00	-32.64	-28.36	0.00	-2,351.5	0.00	2,351.46	4,129.42	1,077.34	5,018.76	4,384.81	0.08	-0.16	0.545
10.00	-31.53	-27.97	0.00	-2,209.6	0.00	2,209.65	4,059.55	1,048.34	4,752.26	4,193.75	0.33	-0.31	0.535
15.00	-30.44	-27.58	0.00	-2,069.8	0.00	2,069.80	3,987.39	1,019.35	4,493.02	4,004.43	0.75	-0.47	0.525
20.00	-29.38	-27.19	0.00	-1,931.9	0.00	1,931.88	3,912.95	990.35	4,241.06	3,817.03	1.34	-0.64	0.514
25.00	-28.35	-26.77	0.00	-1,796.0	0.00	1,795.95	3,836.23	961.35	3,996.37	3,631.76	2.09	-0.8	0.503
30.00	-27.34	-26.35	0.00	-1,662.1	0.00	1,662.08	3,757.23	932.35	3,758.94	3,448.80	3.02	-0.97	0.490
35.00	-26.36	-25.93	0.00	-1,530.3	0.00	1,530.31	3,675.94	903.36	3,528.79	3,268.37	4.13	-1.14	0.476
40.00	-25.41	-25.50	0.00	-1,400.7	0.00	1,400.67	3,592.36	874.36	3,305.91	3,090.65	5.42	-1.31	0.461
45.00	-24.50	-25.18	0.00	-1,273.2	0.00	1,273.16	3,506.51	845.36	3,090.30	2,915.85	6.89	-1.48	0.445
47.50	-24.05	-24.96	0.00	-1,210.2	0.00	1,210.22	3,462.72	830.86	2,985.22	2,829.60	7.69	-1.57	0.436
50.00	-23.24	-24.70	0.00	-1,147.8	0.00	1,147.82	3,418.37	816.36	2,881.95	2,744.16	8.54	-1.66	0.426
53.25	-22.21	-24.47	0.00	-1,067.5	0.00	1,067.54	3,408.56	813.18	2,859.53	2,725.51	9.71	-1.78	0.399
55.00	-21.89	-24.18	0.00	-1,024.7	0.00	1,024.73	3,377.08	803.03	2,788.61	2,666.32	10.37	-1.84	0.392
60.00	-21.04	-23.74	0.00	-903.8	0.00	903.83	3,276.75	774.03	2,590.88	2,492.78	12.38	-2	0.370
65.00	-20.22	-23.31	0.00	-785.1	0.00	785.11	3,153.99	745.04	2,400.42	2,308.60	14.56	-2.16	0.347
70.00	-16.73	-20.00	0.00	-668.6	0.00	668.55	3,031.23	716.04	2,217.23	2,131.50	16.9	-2.31	0.320
75.00	-15.99	-19.58	0.00	-568.5	0.00	568.53	2,908.48	687.04	2,041.31	1,961.46	19.4	-2.45	0.296
80.00	-15.28	-19.16	0.00	-470.6	0.00	470.64	2,785.72	658.04	1,872.66	1,798.48	22.04	-2.59	0.268
85.00	-14.60	-18.75	0.00	-374.8	0.00	374.84	2,662.96	629.05	1,711.29	1,642.58	24.82	-2.72	0.235
90.00	-11.77	-17.19	0.00	-281.1	0.00	281.09	2,540.21	600.05	1,557.18	1,493.74	27.73	-2.83	0.194
91.00	-10.75	-15.23	0.00	-263.9	0.00	263.91	2,515.65	594.25	1,527.23	1,464.83	28.33	-2.85	0.185
95.00	-10.27	-14.99	0.00	-203.0	0.00	202.98	2,417.45	571.05	1,410.34	1,351.98	30.75	-2.93	0.155
97.00	-10.03	-14.79	0.00	-173.0	0.00	173.00	2,368.35	559.45	1,353.64	1,297.25	31.99	-2.97	0.138
100.00	-6.69	-10.43	0.00	-128.6	0.00	128.62	2,294.69	542.05	1,270.77	1,217.28	33.87	-3.01	0.109
101.00	-6.52	-10.24	0.00	-118.2	0.00	118.19	1,529.64	366.21	869.88	826.32	34.5	-3.02	0.148
105.00	-6.22	-9.91	0.00	-77.2	0.00	77.22	1,481.61	350.74	797.97	766.26	37.05	-3.07	0.106
110.00	-1.08	-1.87	0.00	-21.9	0.00	21.89	1,402.96	331.41	712.44	685.20	40.29	-3.11	0.033
115.00	-0.80	-1.59	0.00	-12.5	0.00	12.53	1,321.13	312.08	631.76	607.20	43.56	-3.13	0.021
118.00	-0.17	-0.84	0.00	-7.8	0.00	7.75	1,272.02	300.48	585.68	562.66	45.53	-3.14	0.014
119.00	0.00	-0.83	0.00	-6.9	0.00	6.92	1,255.66	296.61	570.71	548.20	46.19	-3.14	0.013

Load Case: 1.2D + 1.0Di + 1.0Wi Normal		50 mph wind with 1.5" radial ice			20 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	-70.46	-8.97	0.00	-798.5	0.00	798.50	4,197.01	1,106.34	5,292.54	4,577.40	0	0	0.191
3.00	-69.10	-8.89	0.00	-771.6	0.00	771.58	4,156.73	1,088.94	5,127.40	4,461.67	0.01	-0.03	0.190
5.00	-68.37	-8.82	0.00	-753.8	0.00	753.80	4,129.42	1,077.34	5,018.76	4,384.81	0.03	-0.05	0.189
10.00	-66.56	-8.73	0.00	-709.7	0.00	709.69	4,059.55	1,048.34	4,752.26	4,193.75	0.11	-0.1	0.186
15.00	-64.77	-8.63	0.00	-666.0	0.00	666.05	3,987.39	1,019.35	4,493.02	4,004.43	0.24	-0.15	0.183
20.00	-63.01	-8.53	0.00	-622.9	0.00	622.88	3,912.95	990.35	4,241.06	3,817.03	0.43	-0.2	0.179
25.00	-61.29	-8.43	0.00	-580.2	0.00	580.23	3,836.23	961.35	3,996.37	3,631.76	0.67	-0.26	0.176
30.00	-59.61	-8.32	0.00	-538.1	0.00	538.09	3,757.23	932.35	3,758.94	3,448.80	0.97	-0.31	0.172
35.00	-57.96	-8.20	0.00	-496.5	0.00	496.51	3,675.94	903.36	3,528.79	3,268.37	1.33	-0.37	0.168
40.00	-56.36	-8.09	0.00	-455.5	0.00	455.49	3,592.36	874.36	3,305.91	3,090.65	1.74	-0.42	0.163
45.00	-54.80	-8.00	0.00	-415.0	0.00	415.04	3,506.51	845.36	3,090.30	2,915.85	2.22	-0.48	0.158
47.50	-54.03	-7.94	0.00	-395.0	0.00	395.04	3,462.72	830.86	2,985.22	2,829.60	2.48	-0.51	0.155
50.00	-52.78	-7.87	0.00	-375.2	0.00	375.19	3,418.37	816.36	2,881.95	2,744.16	2.75	-0.54	0.152
53.25	-51.19	-7.80	0.00	-349.6	0.00	349.62	3,408.56	813.18	2,859.53	2,725.51	3.13	-0.57	0.143
55.00	-50.67	-7.72	0.00	-336.0	0.00	335.97	3,377.08	803.03	2,788.61	2,666.32	3.34	-0.59	0.141
60.00	-49.21	-7.60	0.00	-297.4	0.00	297.36	3,276.75	774.03	2,590.88	2,492.78	3.99	-0.65	0.134
65.00	-47.80	-7.47	0.00	-259.4	0.00	259.38	3,153.99	745.04	2,400.42	2,308.60	4.7	-0.7	0.128
70.00	-40.36	-6.55	0.00	-222.0	0.00	222.04	3,031.23	716.04	2,217.23	2,131.50	5.46	-0.75	0.118
75.00	-39.06	-6.42	0.00	-189.3	0.00	189.30	2,908.48	687.04	2,041.31	1,961.46	6.27	-0.8	0.110
80.00	-37.80	-6.28	0.00	-157.2	0.00	157.22	2,785.72	658.04	1,872.66	1,798.48	7.13	-0.84	0.101
85.00	-36.58	-6.15	0.00	-125.8	0.00	125.80	2,662.96	629.05	1,711.29	1,642.58	8.04	-0.89	0.090
90.00	-31.12	-5.58	0.00	-95.0	0.00	95.04	2,540.21	600.05	1,557.18	1,493.74	8.99	-0.92	0.076
91.00	-28.06	-5.05	0.00	-89.4	0.00	89.45	2,515.65	594.25	1,527.23	1,464.83	9.19	-0.93	0.072
95.00	-27.17	-4.96	0.00	-69.3	0.00	69.26	2,417.45	571.05	1,410.34	1,351.98	9.98	-0.96	0.063
97.00	-26.74	-4.90	0.00	-59.3	0.00	59.34	2,368.35	559.45	1,353.64	1,297.25	10.38	-0.97	0.057
100.00	-19.01	-3.62	0.00	-44.6	0.00	44.65	2,294.69	542.05	1,270.77	1,217.28	11	-0.99	0.045
101.00	-18.72	-3.56	0.00	-41.0	0.00	41.03	1,529.64	366.21	869.88	826.32	11.2	-0.99	0.062
105.00	-18.08	-3.44	0.00	-26.8	0.00	26.80	1,481.61	350.74	797.97	766.26	12.04	-1.01	0.047
110.00	-2.70	-0.68	0.00	-8.2	0.00	8.23	1,402.96	331.41	712.44	685.20	13.1	-1.02	0.014
115.00	-2.05	-0.58	0.00	-4.8	0.00	4.84	1,321.13	312.08	631.76	607.20	14.18	-1.03	0.010
118.00	-0.68	-0.34	0.00	-3.1	0.00	3.11	1,272.02	300.48	585.68	562.66	14.83	-1.03	0.006
119.00	0.00	-0.33	0.00	-2.8	0.00	2.77	1,255.66	296.61	570.71	548.20	15.04	-1.03	0.005

Load Case: 1.0D + 1.0W Service Normal 60 mph Wind with No Ice 19 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	-37.74	-6.94	0.00	-599.3	0.00	599.30	4,197.01	1,106.34	5,292.54	4,577.40	0	0	0.140
3.00	-36.86	-6.86	0.00	-578.5	0.00	578.48	4,156.73	1,088.94	5,127.40	4,461.67	0.01	-0.02	0.139
5.00	-36.39	-6.79	0.00	-564.8	0.00	564.77	4,129.42	1,077.34	5,018.76	4,384.81	0.02	-0.04	0.138
10.00	-35.23	-6.70	0.00	-530.8	0.00	530.80	4,059.55	1,048.34	4,752.26	4,193.75	0.08	-0.08	0.135
15.00	-34.11	-6.61	0.00	-497.3	0.00	497.30	3,987.39	1,019.35	4,493.02	4,004.43	0.18	-0.11	0.133
20.00	-33.01	-6.52	0.00	-464.2	0.00	464.24	3,912.95	990.35	4,241.06	3,817.03	0.32	-0.15	0.130
25.00	-31.93	-6.42	0.00	-431.6	0.00	431.65	3,836.23	961.35	3,996.37	3,631.76	0.5	-0.19	0.127
30.00	-30.89	-6.32	0.00	-399.6	0.00	399.55	3,757.23	932.35	3,758.94	3,448.80	0.73	-0.23	0.124
35.00	-29.87	-6.22	0.00	-367.9	0.00	367.93	3,675.94	903.36	3,528.79	3,268.37	0.99	-0.27	0.121
40.00	-28.88	-6.12	0.00	-336.8	0.00	336.81	3,592.36	874.36	3,305.91	3,090.65	1.3	-0.32	0.117
45.00	-27.93	-6.05	0.00	-306.2	0.00	306.20	3,506.51	845.36	3,090.30	2,915.85	1.65	-0.36	0.113
47.50	-27.46	-6.00	0.00	-291.1	0.00	291.08	3,462.72	830.86	2,985.22	2,829.60	1.85	-0.38	0.111
50.00	-26.59	-5.93	0.00	-276.1	0.00	276.09	3,418.37	816.36	2,881.95	2,744.16	2.05	-0.4	0.108
53.25	-25.48	-5.88	0.00	-256.8	0.00	256.80	3,408.56	813.18	2,859.53	2,725.51	2.33	-0.43	0.102
55.00	-25.16	-5.81	0.00	-246.5	0.00	246.51	3,377.08	803.03	2,788.61	2,666.32	2.49	-0.44	0.100
60.00	-24.27	-5.71	0.00	-217.5	0.00	217.46	3,276.75	774.03	2,590.88	2,492.78	2.98	-0.48	0.095
65.00	-23.41	-5.61	0.00	-188.9	0.00	188.91	3,153.99	745.04	2,400.42	2,308.60	3.5	-0.52	0.089
70.00	-19.45	-4.81	0.00	-160.9	0.00	160.88	3,031.23	716.04	2,217.23	2,131.50	4.06	-0.55	0.082
75.00	-18.66	-4.71	0.00	-136.8	0.00	136.82	2,908.48	687.04	2,041.31	1,961.46	4.66	-0.59	0.076
80.00	-17.90	-4.61	0.00	-113.3	0.00	113.26	2,785.72	658.04	1,872.66	1,798.48	5.3	-0.62	0.069
85.00	-17.16	-4.51	0.00	-90.2	0.00	90.21	2,662.96	629.05	1,711.29	1,642.58	5.97	-0.65	0.061
90.00	-13.96	-4.14	0.00	-67.6	0.00	67.64	2,540.21	600.05	1,557.18	1,493.74	6.67	-0.68	0.051
91.00	-12.74	-3.67	0.00	-63.5	0.00	63.50	2,515.65	594.25	1,527.23	1,464.83	6.81	-0.69	0.048
95.00	-12.21	-3.61	0.00	-48.8	0.00	48.84	2,417.45	571.05	1,410.34	1,351.98	7.39	-0.7	0.041
97.00	-11.95	-3.56	0.00	-41.6	0.00	41.62	2,368.35	559.45	1,353.64	1,297.25	7.69	-0.71	0.037
100.00	-8.00	-2.51	0.00	-30.9	0.00	30.94	2,294.69	542.05	1,270.77	1,217.28	8.14	-0.72	0.029
101.00	-7.81	-2.47	0.00	-28.4	0.00	28.43	1,529.64	366.21	869.88	826.32	8.3	-0.73	0.040
105.00	-7.47	-2.39	0.00	-18.6	0.00	18.57	1,481.61	350.74	797.97	766.26	8.91	-0.74	0.029
110.00	-1.30	-0.45	0.00	-5.3	0.00	5.26	1,402.96	331.41	712.44	685.20	9.69	-0.75	0.009
115.00	-0.98	-0.38	0.00	-3.0	0.00	3.01	1,321.13	312.08	631.76	607.20	10.48	-0.75	0.006
118.00	-0.24	-0.20	0.00	-1.9	0.00	1.86	1,272.02	300.48	585.68	562.66	10.95	-0.75	0.003
119.00	0.00	-0.20	0.00	-1.7	0.00	1.66	1,255.66	296.61	570.71	548.20	11.11	-0.76	0.003

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

(Based on ASCE7-16 Chapters 11, 12 and 15)

Spectral Response Acceleration for Short Period (S_S):	0.184
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.054
Long-Period Transition Period (T_L – Seconds):	6
Importance Factor (I_e):	1.000
Site Coefficient F_a:	1.600
Site Coefficient F_v:	2.400
Response Modification Coefficient (R):	1.500
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.196
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.086
Seismic Response Coefficient (C_s):	0.033
Upper Limit C_S:	0.033
Lower Limit C_S:	0.030
Period based on Rayleigh Method (sec):	1.770
Redundancy Factor (p):	1.000
Seismic Force Distribution Exponent (k):	1.640
Total Unfactored Dead Load:	37.740 k
Seismic Base Shear (E):	1.230 k

1.2D + 1.0Ev + 1.0Eh Normal **Seismic**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
31	118.5	59	145	0.003	4	73
30	116.5	181	435	0.010	12	224
29	112.5	328	743	0.016	20	406
28	107.5	412	868	0.019	24	511
27	103	343	674	0.015	18	425
26	100.5	192	362	0.008	10	238
25	98.5	601	1,097	0.024	30	745
24	96	261	456	0.010	12	323
23	93	535	889	0.020	24	663
22	90.5	138	219	0.005	6	171
21	87.5	706	1,062	0.024	29	875
20	82.5	734	1,003	0.022	27	910
19	77.5	762	940	0.021	26	945
18	72.5	791	874	0.019	24	980
17	67.5	830	817	0.018	22	1,029
16	62.5	859	744	0.016	20	1,064
15	57.5	887	671	0.015	18	1,099
14	54.125	317	217	0.005	6	393
13	51.625	1,106	702	0.016	19	1,371
12	48.75	867	501	0.011	14	1,075
11	46.25	467	248	0.006	7	579
10	42.5	956	441	0.010	12	1,184
9	37.5	984	370	0.008	10	1,219
8	32.5	1,012	301	0.007	8	1,254
7	27.5	1,040	235	0.005	6	1,289
6	22.5	1,068	174	0.004	5	1,324
5	17.5	1,096	118	0.003	3	1,359
4	12.5	1,124	70	0.002	2	1,393
3	7.5	1,153	31	0.001	1	1,428
2	4	469	5	0.000	0	581
1	1.5	712	1	0.000	0	882
Generic 22' Omni	119	140	348	0.008	9	173
Generic 12' Omni	119	40	99	0.002	3	50
Generic Flat Stand-Off	118	562	1,379	0.031	38	697

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
Ericsson RRUS 32 B66A	110	152	333	0.007	9	188
Ericsson RRUS-11 (19.7")	110	306	669	0.015	18	379
Ericsson RRUS-12 B2	110	348	761	0.017	21	431
Ericsson RRUS-32 (77 lbs)	110	231	505	0.011	14	286
Raycap DC6-48-60-18-8F (31.25" Height)	110	131	287	0.006	8	163
CCI HPA-65R-BUU-H8	110	816	1,784	0.040	49	1,011
Generic Square Platform with Handrails	110	3,790	8,286	0.184	225	4,697
Ericsson RRUS 11 B4	100	152	285	0.006	8	188
Ericsson 4480 BAND 71	100	243	455	0.010	12	301
Ericsson AIR32 B66Aa/B2a	100	397	742	0.016	20	491
RFS APX16DWV-16DWVS-E-A20	100	122	228	0.005	6	151
Generic Mount Reinforcement	100	200	374	0.008	10	248
RFS APXVAALL24 43-U-NA20	100	368	689	0.015	19	457
Generic Round Low Profile Platform	100	1,875	3,507	0.078	95	2,324
Samsung RT4401-48A	91	56	89	0.002	2	69
Samsung B2/B66A RRH-BR049	91	253	406	0.009	11	314
Samsung B5/B13 RRH-BR04C	91	211	338	0.008	9	261
Raycap RVZDC-6627-PF-48	91	32	51	0.001	1	40
Samsung MT6407-77A	91	245	392	0.009	11	303
Commscope NHHSS-65B-R2BT4	91	153	245	0.005	7	190
Commscope NHH-65B-R2B	91	131	210	0.005	6	162
Generic Round Platform with Handrails	90	2,500	3,936	0.087	107	3,098
Commscope RDIDC-9181-PF-48	70	22	23	0.000	1	27
Fujitsu TA08025-B604	70	192	200	0.004	5	238
Fujitsu TA08025-B605	70	225	235	0.005	6	279
JMA Wireless MX08FRO665-21	70	194	202	0.004	5	240
Generic Flat Platform with Handrails	70	2,500	2,609	0.058	71	3,098
Ericsson RRUS E2	3	159	1	0.000	0	197
		37,737	45,082	1.000	1,227	46,766

0.9D - 1.0Ev + 1.0Eh Normal **Seismic (Reduced DL)**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
31	118.5	59	145	0.003	4	51
30	116.5	181	435	0.010	12	156
29	112.5	328	743	0.016	20	282
28	107.5	412	868	0.019	24	355
27	103	343	674	0.015	18	295
26	100.5	192	362	0.008	10	165
25	98.5	601	1,097	0.024	30	518
24	96	261	456	0.010	12	224
23	93	535	889	0.020	24	461
22	90.5	138	219	0.005	6	119
21	87.5	706	1,062	0.024	29	608
20	82.5	734	1,003	0.022	27	632
19	77.5	762	940	0.021	26	656
18	72.5	791	874	0.019	24	681
17	67.5	830	817	0.018	22	715
16	62.5	859	744	0.016	20	739
15	57.5	887	671	0.015	18	763
14	54.125	317	217	0.005	6	273
13	51.625	1,106	702	0.016	19	952
12	48.75	867	501	0.011	14	746
11	46.25	467	248	0.006	7	402
10	42.5	956	441	0.010	12	823
9	37.5	984	370	0.008	10	847
8	32.5	1,012	301	0.007	8	871
7	27.5	1,040	235	0.005	6	895
6	22.5	1,068	174	0.004	5	919
5	17.5	1,096	118	0.003	3	944
4	12.5	1,124	70	0.002	2	968
3	7.5	1,153	31	0.001	1	992

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
2	4	469	5	0.000	0	404
1	1.5	712	1	0.000	0	613
Generic 22' Omni	119	140	348	0.008	9	121
Generic 12' Omni	119	40	99	0.002	3	34
Generic Flat Stand-Off	118	562	1,379	0.031	38	484
Ericsson RRUS 32 B66A	110	152	333	0.007	9	131
Ericsson RRUS-11 (19.7")	110	306	669	0.015	18	263
Ericsson RRUS-12 B2	110	348	761	0.017	21	300
Ericsson RRUS-32 (77 lbs)	110	231	505	0.011	14	199
Raycap DC6-48-60-18-8F (31.25" Height)	110	131	287	0.006	8	113
CCI HPA-65R-BUU-H8	110	816	1,784	0.040	49	702
Generic Square Platform with Handrails	110	3,790	8,286	0.184	225	3,262
Ericsson RRUS 11 B4	100	152	285	0.006	8	131
Ericsson 4480 BAND 71	100	243	455	0.010	12	209
Ericsson AIR32 B66Aa/B2a	100	397	742	0.016	20	341
RFS APX16DWV-16DWVS-E-A20	100	122	228	0.005	6	105
Generic Mount Reinforcement	100	200	374	0.008	10	172
RFS APXVAALL24 43-U-NA20	100	368	689	0.015	19	317
Generic Round Low Profile Platform	100	1,875	3,507	0.078	95	1,614
Samsung RT4401-48A	91	56	89	0.002	2	48
Samsung B2/B66A RRH-BR049	91	253	406	0.009	11	218
Samsung B5/B13 RRH-BR04C	91	211	338	0.008	9	182
Raycap RVZDC-6627-PF-48	91	32	51	0.001	1	28
Samsung MT6407-77A	91	245	392	0.009	11	211
Commscope NHHSS-65B-R2BT4	91	153	245	0.005	7	132
Commscope NHH-65B-R2B	91	131	210	0.005	6	113
Generic Round Platform with Handrails	90	2,500	3,936	0.087	107	2,152
Commscope RDIDC-9181-PF-48	70	22	23	0.000	1	19
Fujitsu TA08025-B604	70	192	200	0.004	5	165
Fujitsu TA08025-B605	70	225	235	0.005	6	194
JMA Wireless MX08FRO665-21	70	194	202	0.004	5	167
Generic Flat Platform with Handrails	70	2,500	2,609	0.058	71	2,152
Ericsson RRUS E2	3	159	1	0.000	0	137
		37,737	45,082	1.000	1,227	32,482

1.2D + 1.0Ev + 1.0Eh Normal **Seismic**

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-45.88	-1.23	0.00	-116.31	0.00	116.31	4,197.01	1,106.34	5,293	4,577.40	0.00	0.00	0.04
3.00	-45.11	-1.23	0.00	-112.62	0.00	112.62	4,156.73	1,088.94	5,127	4,461.67	0.00	0.00	0.04
5.00	-43.68	-1.23	0.00	-110.16	0.00	110.16	4,129.42	1,077.34	5,019	4,384.81	0.00	-0.01	0.04
10.00	-42.28	-1.24	0.00	-103.99	0.00	103.99	4,059.55	1,048.34	4,752	4,193.75	0.02	-0.01	0.04
15.00	-40.93	-1.24	0.00	-97.81	0.00	97.81	3,987.39	1,019.35	4,493	4,004.43	0.04	-0.02	0.04
20.00	-39.60	-1.24	0.00	-91.62	0.00	91.62	3,912.95	990.35	4,241	3,817.03	0.06	-0.03	0.03
25.00	-38.31	-1.24	0.00	-85.42	0.00	85.42	3,836.23	961.35	3,996	3,631.76	0.10	-0.04	0.03
30.00	-37.06	-1.23	0.00	-79.24	0.00	79.24	3,757.23	932.35	3,759	3,448.80	0.14	-0.05	0.03
35.00	-35.84	-1.23	0.00	-73.07	0.00	73.07	3,675.94	903.36	3,529	3,268.37	0.19	-0.05	0.03
40.00	-34.65	-1.22	0.00	-66.94	0.00	66.94	3,592.36	874.36	3,306	3,090.65	0.26	-0.06	0.03
45.00	-34.07	-1.22	0.00	-60.84	0.00	60.84	3,506.51	845.36	3,090	2,915.85	0.33	-0.07	0.03
47.50	-33.00	-1.20	0.00	-57.81	0.00	57.81	3,462.72	830.86	2,985	2,829.60	0.36	-0.07	0.03
50.00	-31.63	-1.18	0.00	-54.80	0.00	54.80	3,418.37	816.36	2,882	2,744.16	0.40	-0.08	0.03
53.25	-31.24	-1.18	0.00	-50.95	0.00	50.95	3,408.56	813.18	2,860	2,725.51	0.46	-0.08	0.03
55.00	-30.14	-1.16	0.00	-48.89	0.00	48.89	3,377.08	803.03	2,789	2,666.32	0.49	-0.09	0.03
60.00	-29.07	-1.14	0.00	-43.07	0.00	43.07	3,276.75	774.03	2,591	2,492.78	0.59	-0.09	0.03
65.00	-28.04	-1.12	0.00	-37.35	0.00	37.35	3,153.99	745.04	2,400	2,308.60	0.69	-0.10	0.03
70.00	-23.18	-1.01	0.00	-31.72	0.00	31.72	3,031.23	716.04	2,217	2,131.50	0.80	-0.11	0.02
75.00	-22.24	-0.98	0.00	-26.70	0.00	26.70	2,908.48	687.04	2,041	1,961.46	0.92	-0.12	0.02
80.00	-21.33	-0.95	0.00	-21.79	0.00	21.79	2,785.72	658.04	1,873	1,798.48	1.04	-0.12	0.02
85.00	-20.45	-0.93	0.00	-17.02	0.00	17.02	2,662.96	629.05	1,711	1,642.58	1.18	-0.13	0.02
90.00	-17.18	-0.81	0.00	-12.40	0.00	12.40	2,540.21	600.05	1,557	1,493.74	1.31	-0.13	0.02
91.00	-15.18	-0.73	0.00	-11.59	0.00	11.59	2,515.65	594.25	1,527	1,464.83	1.34	-0.13	0.01
95.00	-14.86	-0.72	0.00	-8.67	0.00	8.67	2,417.45	571.05	1,410	1,351.98	1.46	-0.14	0.01

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
97.00	-14.11	-0.69	0.00	-7.24	0.00	7.24	2,368.35	559.45	1,354	1,297.25	1.52	-0.14	0.01
100.00	-9.71	-0.49	0.00	-5.18	0.00	5.18	2,294.69	542.05	1,271	1,217.28	1.60	-0.14	0.01
101.00	-9.29	-0.48	0.00	-4.68	0.00	4.68	1,529.64	366.21	870	826.32	1.63	-0.14	0.01
105.00	-8.78	-0.45	0.00	-2.78	0.00	2.78	1,481.61	350.74	798	766.26	1.75	-0.14	0.01
110.00	-1.22	-0.07	0.00	-0.52	0.00	0.52	1,402.96	331.41	712	685.20	1.90	-0.15	0.00
115.00	-0.99	-0.06	0.00	-0.18	0.00	0.18	1,321.13	312.08	632	607.20	2.06	-0.15	0.00
118.00	-0.22	-0.01	0.00	-0.01	0.00	0.01	1,272.02	300.48	586	562.66	2.15	-0.15	0.00
119.00	0.00	-0.01	0.00	0.00	0.00	0.00	1,255.66	296.61	571	548.20	2.18	-0.15	0.00

0.9D - 1.0Ev + 1.0Eh Normal **Seismic (Reduced DL)**

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-31.87	-1.23	0.00	-115.13	0.00	115.13	4,197.01	1,106.34	5,293	4,577.40	0.00	0.00	0.03
3.00	-31.33	-1.23	0.00	-111.45	0.00	111.45	4,156.73	1,088.94	5,127	4,461.67	0.00	0.00	0.03
5.00	-30.34	-1.23	0.00	-108.99	0.00	108.99	4,129.42	1,077.34	5,019	4,384.81	0.00	-0.01	0.03
10.00	-29.37	-1.23	0.00	-102.83	0.00	102.83	4,059.55	1,048.34	4,752	4,193.75	0.02	-0.01	0.03
15.00	-28.43	-1.23	0.00	-96.67	0.00	96.67	3,987.39	1,019.35	4,493	4,004.43	0.03	-0.02	0.03
20.00	-27.51	-1.23	0.00	-90.51	0.00	90.51	3,912.95	990.35	4,241	3,817.03	0.06	-0.03	0.03
25.00	-26.61	-1.23	0.00	-84.35	0.00	84.35	3,836.23	961.35	3,996	3,631.76	0.10	-0.04	0.03
30.00	-25.74	-1.22	0.00	-78.21	0.00	78.21	3,757.23	932.35	3,759	3,448.80	0.14	-0.05	0.03
35.00	-24.89	-1.22	0.00	-72.09	0.00	72.09	3,675.94	903.36	3,529	3,268.37	0.19	-0.05	0.03
40.00	-24.07	-1.21	0.00	-66.02	0.00	66.02	3,592.36	874.36	3,306	3,090.65	0.25	-0.06	0.03
45.00	-23.67	-1.20	0.00	-59.98	0.00	59.98	3,506.51	845.36	3,090	2,915.85	0.32	-0.07	0.03
47.50	-22.92	-1.19	0.00	-56.98	0.00	56.98	3,462.72	830.86	2,985	2,829.60	0.36	-0.07	0.03
50.00	-21.97	-1.17	0.00	-54.01	0.00	54.01	3,418.37	816.36	2,882	2,744.16	0.40	-0.08	0.03
53.25	-21.69	-1.17	0.00	-50.21	0.00	50.21	3,408.56	813.18	2,860	2,725.51	0.45	-0.08	0.03
55.00	-20.93	-1.15	0.00	-48.17	0.00	48.17	3,377.08	803.03	2,789	2,666.32	0.48	-0.09	0.02
60.00	-20.19	-1.13	0.00	-42.43	0.00	42.43	3,276.75	774.03	2,591	2,492.78	0.58	-0.09	0.02
65.00	-19.48	-1.11	0.00	-36.78	0.00	36.78	3,153.99	745.04	2,400	2,308.60	0.68	-0.10	0.02
70.00	-16.10	-0.99	0.00	-31.24	0.00	31.24	3,031.23	716.04	2,217	2,131.50	0.79	-0.11	0.02
75.00	-15.44	-0.97	0.00	-26.28	0.00	26.28	2,908.48	687.04	2,041	1,961.46	0.91	-0.11	0.02
80.00	-14.81	-0.94	0.00	-21.45	0.00	21.45	2,785.72	658.04	1,873	1,798.48	1.03	-0.12	0.02
85.00	-14.20	-0.91	0.00	-16.76	0.00	16.76	2,662.96	629.05	1,711	1,642.58	1.16	-0.13	0.02
90.00	-11.93	-0.79	0.00	-12.20	0.00	12.20	2,540.21	600.05	1,557	1,493.74	1.30	-0.13	0.01
91.00	-10.54	-0.72	0.00	-11.41	0.00	11.41	2,515.65	594.25	1,527	1,464.83	1.33	-0.13	0.01
95.00	-10.32	-0.71	0.00	-8.54	0.00	8.54	2,417.45	571.05	1,410	1,351.98	1.44	-0.14	0.01
97.00	-9.80	-0.68	0.00	-7.12	0.00	7.12	2,368.35	559.45	1,354	1,297.25	1.50	-0.14	0.01
100.00	-6.75	-0.49	0.00	-5.10	0.00	5.10	2,294.69	542.05	1,271	1,217.28	1.58	-0.14	0.01
101.00	-6.45	-0.47	0.00	-4.61	0.00	4.61	1,529.64	366.21	870	826.32	1.61	-0.14	0.01
105.00	-6.10	-0.44	0.00	-2.74	0.00	2.74	1,481.61	350.74	798	766.26	1.73	-0.14	0.01
110.00	-0.85	-0.07	0.00	-0.52	0.00	0.52	1,402.96	331.41	712	685.20	1.88	-0.14	0.00
115.00	-0.69	-0.06	0.00	-0.18	0.00	0.18	1,321.13	312.08	632	607.20	2.03	-0.14	0.00
118.00	-0.15	-0.01	0.00	-0.01	0.00	0.01	1,272.02	300.48	586	562.66	2.12	-0.14	0.00
119.00	0.00	-0.01	0.00	0.00	0.00	0.00	1,255.66	296.61	571	548.20	2.15	-0.14	0.00

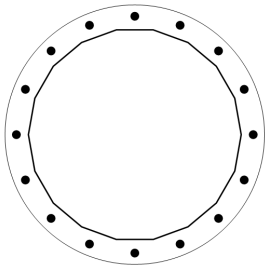
ANALYSIS SUMMARY

	Reactions						Max Usage	
Load Case	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 Normal	29.00	0.00	45.26	0.00	0.00	2516.52	0.00	0.56
0.9D + 1.0W Normal	28.99	0.00	33.94	0.00	0.00	2495.70	0.00	0.55
1.2D + 1.0Di + 1.0Wi Normal	8.97	0.00	70.46	0.00	0.00	798.50	0.00	0.19
1.2D + 1.0Ev + 1.0Eh Normal	1.24	0.00	45.88	0.00	0.00	116.31	0.00	0.04
0.9D - 1.0Ev + 1.0Eh Normal	1.23	0.00	31.87	0.00	0.00	115.13	0.00	0.03
1.0D + 1.0W Service Normal	6.94	0.00	37.74	0.00	0.00	599.30	0.00	0.14

BASE PLATE ANALYSIS @ 0 FT

PLATE PARAMETERS (ID# 10190)

Diameter:	65.75	in
Shape:	Round	
Thickness:	2	in
Grade:	A572-50	
Yield Strength:	50	ksi
Tensile Strength:	65	ksi
Rod Detail Type:	d	
Clear Distance	3.25	in
Base Weld Size:	0.125	in
Orientation Offset:	-	°
Analysis Type:	Plastic	
Neutral Axis:	236	°



ANCHOR ROD PARAMETERS

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	Fy (ksi)	Fu (ksi)	Spacing (in)	Offset (°)
Original [ID# 986]	Radial	16	2.25	60	A615-75	75	100	-	-

ANCHOR ROD GEOMETRY AND APPLIED LOADS --- ORIGINAL (16) 2.25"ø [ID 986]

Position	Radians	X (in)	Y (in)	Moment Arm (in)	Inertia (in^4)	Axial Load (k)	Shear Load (k)
1	0.393	27.72	11.48	15.834	815.054	108.34	2.36
2	0.785	21.21	21.21	5.474	98.150	108.34	2.78
3	1.178	11.48	27.72	-5.719	107.075	-97.03	2.77
4	1.571	0.00	30.00	-16.042	836.602	-97.03	2.34
5	1.963	-11.48	27.72	-23.922	1859.383	-97.03	1.56
6	2.356	-21.21	21.21	-28.160	2576.288	-97.03	0.54
7	2.749	-27.72	11.48	-28.112	2567.363	-97.03	0.56
8	3.142	-30.00	0.00	-23.783	1837.835	-97.03	1.58
9	3.534	-27.72	-11.48	-15.834	815.053	-97.03	2.36
10	3.927	-21.21	-21.21	-5.474	98.149	-97.03	2.78
11	4.320	-11.48	-27.72	5.719	107.075	108.34	2.77
12	4.712	0.00	-30.00	16.042	836.603	108.34	2.34
13	5.105	11.48	-27.72	23.922	1859.384	108.34	1.56
14	5.498	21.21	-21.21	28.160	2576.289	108.34	0.54
15	5.890	27.72	-11.48	28.112	2567.364	108.34	0.56
16	6.283	30.00	0.00	23.783	1837.837	108.34	1.58

REACTION DISTRIBUTION

Component	ID	Moment Mu (k-ft)	Axial Load Pu (k)	Shear Vu (k)	Moment Factor
Pole	53.34"ø x 0.375" (18 Sides)	2516.5	45.26	29.00	1.000
Bolt Group	Original (16) 2.25"ø	2516.5	-	29.00	1.000
	TOTALS	**2516.52**	**45.26**	**29**	

COMPONENT PROPERTIES

Component	ID	Gross Area (in^2)	Net Area (in^2)	Individual Inertia (in^4)	Moment of Inertia (in^4)	Threads/in
Pole	53.34"ø x 0.375" (18 Sides)	62.0816	-	-	21772.55	-
Bolt Group	Original (16) 2.25"ø	3.9761	3.2477	0.8393	21395.50	4.5

EXTERNAL BASE PLATE BEND LINE ANALYSIS @ 0 FT

POLE PROPERTIES

Flat-to-Flat Diameter:	53.46	in
Point-to-Point Diameter:	54.29	in
Flat Width:	9.427	in
Flat Radians:	0.349	rad

PLATE PROPERTIES

Neutral Axis:	236	°
Bend Line Lower Limit:	5.231	rad
Bend Line Upper Limit:	6.158	rad

Bend Line	Chord Length (in)	Additional Length (in)	Section Modulus (in^3)	Applied Moment Mu (k-in)	Moment Capacity ϕMn (k-in)	Ratio
Flat	34.056	0.00	34.056	370.0	1532.5	0.241
Corner	32.725	0.00	32.725	261.3	1472.6	0.177
Circumferential	39.251	0.00	39.251	406.6	1766.3	0.230

PLASTIC ANCHOR ROD ANALYSIS

Class	Group Quantity	Rod Diameter (in)	Applied Axial Load Pu (k)	Applied Shear Load Vu (k)	Compressive Capacity ϕPn (k)	Ratio
Original	16	2.25	108.4	2.8	243.6	0.468

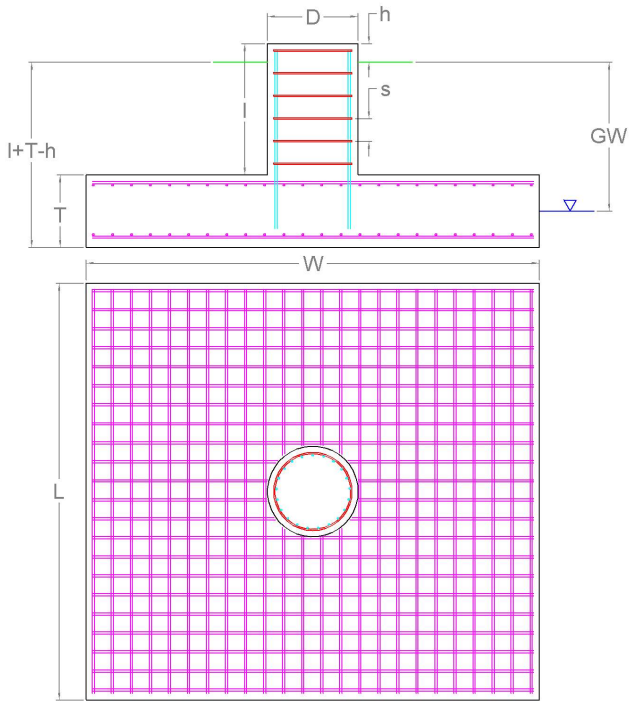
Monolithic Mat Foundation Analysis (ANSI/TIA-222-H)

Foundation & Tower Parameters			
Ignore Mat Rebar?		N	
Ignore Pier Rebar?		N	
Foundation has Pier(s)?		Y	
Pier Shape		Round	
Pier Diameter	*D*	8	ft
Pier Height Above Ground	*h*	0.5	ft
Pier Length	*l*	5	ft
Mat Base Depth	*l+T-h*	6	ft
Mat Length	*L*	24	ft
Mat Width	*W*	24	ft
Mat Thickness	*T*	1.5	ft
Unit Weight of Concrete		150	pcf
Tower Eccentricity	ecc	0	ft
Tower Face Width	FW	4.44	ft
Tower Leg Count		1	

Soil Parameters			
Water Table Depth [BGL]	*GW*	-	ft
Unit Weight of Soil		125	pcf
Unit Weight of Soil [Submerged]		62.6	pcf
Shear Friction Coefficient		0.2	
Ultimate Bearing Pressure		8,000	psf
Bearing Pressure Type		Net	
Conical Failure Angle		30	°
Capacity Increase (Transient Loads)		1.00	
Soil Strength Reduction Factor, ϕ_s		0.75	
Dead Load Factor		1.2	

Soil Capacities		
Design Moment, M_u	2,705.02	k-ft
Nominal Moment Capacity, $\phi_m M_n$	5,687.56	k-ft
$M_u / \phi_s M_n$	47.6%	
Net Bearing Pressure	1,579	k
Nominal Bearing Capacity, $\phi_b P_n$	6,562	k
Bearing Pressure Controlling Load Direction	Diagonal to Pad Edge	
$P_u / \phi_s P_n$	24.1%	
Ultimate Friction Resistance	100.15	k
Ultimate Passive Pressure Resistance	23.62	k
Nominal Shear Capacity, $\phi_s V_n$	92.83	k
$V_u / \phi_s V_n$	31.0%	

Reactions		
Moment, M_u	2,516.52	k-ft
Shear, V_u	29	k
Axial, P_u	45.26	k
Uplift, T_u	0	k
Tower Weight	45.26	k
Tower Dead Load Factor	0.9	



Mat Reinforcement Parameters		
Concrete Compressive Strength, f'_c	4,500	psi
Mat Rebar Quantity [Lower]	52	
Mat Rebar Size # [Lower]	8	
Mat Single Rebar Area [Lower]	0.79	in^2
Mat Rebar Quantity [Upper]	52	
Mat Rebar Size # [Upper]	8	
Mat Single Rebar Area [Upper]	0.79	in^2
Mat Rebar Yield Strength, F_y	60	ksi
Mat Clear Cover	3	in
Bending Reduction Factor, ϕ_B	0.9	
Shear Reduction Factor, ϕ_V	0.75	
Compression Reduction Factor, ϕ_C	0.65	
Steel Elastic Modulus	29,000	ksi

Mat Reinforcement Capacities		
Compression Zone Factor, β_1	0.825	
Lower Reinforcement Spacing	5.52	in
Upper Reinforcement Spacing	5.52	in
One Way Design Shear, V_u	115.48	k
One Way Shear Capacity, ϕV_c	399.08	k
One Way Shear Controlling Load Direction	Diagonal to Pad Edge	
$V_u / \phi V_c$	**28.9%**	
Punching Design Shear Stress, v_u	85.89	psi
Punching Shear Capacity, $\phi_c V_n$	182.15	psi
$v_u / \phi_c V_n$	**47.2%**	
Moment Transfer Effective Flexural Width, $_f$	12.5	in
Neutral Axis Depth	2.33	In
Moment Transfer Flexural Capacity, $\phi M_{sc,f}$	15,638.64	k-in
$\gamma_f M_{sc} / \phi M_{sc,f}$	**0.0%**	
Flexure Due to Soil Pressure, M_u	974.2	k-ft
Lower Steel Mat Moment Capacity, ϕM_n	2,412.25	k-ft
Flexural Steel Controlling Load Direction	Parallel to Pad Edge	
$M_u / \phi M_n$	**40.4%**	
Flexure Due to Uplift, M_u	604.8	k-ft
Upper Steel Mat Moment Capacity, ϕM_n	2,412.25	k-ft
$M_u / \phi M_n$	**25.1%**	

Pier Reinforcement Parameters			
Concrete Compressive Strength (f'_c)		4,500	psi
Pier Rebar Quantity		48	
Pier Rebar Size #		8	
Pier Single Rebar Area		0.79	in^2
Pier Rebar Yield Strength (F_y)		60	ksi
Tie Rebar Size #		5	
Tie Rebar Area (Single)		0.31	in^2
Tie Rebar Spacing	*s*	12	in
Tie Rebar Yield Strength (F_y)		60	ksi
Rebar Cage Diameter		87.75	in

Pier Reinforcement Capacities		
Design Moment (M_u)	2,661.52	k-ft
Nominal Moment Capacity ($\phi_B M_n$)	7,322.04	k-ft
$M_u / \phi_B M_n$	**36.3%**	
Design Shear (V_u)	29	k
Nominal Shear Capacity ($\phi_V V_n$)	909.17	k
$V_u / \phi_V V_n$	**3.2%**	
Design Compression (P_u)	45.26	k
Nominal Compression Capacity ($\phi_P P_n$)	14,346.06	k
$P_u / \phi_P P_n$	**0.3%**	
Pier Reinforcement Ratio	0.001	-
$M_u / \phi_B M_n + T_u / \phi_T T_n$	**36.3%**	

Exhibit E

Mount Analysis

AMERICAN TOWER®
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Mount Analysis Report

ATC Site Name	:	**Burlington 2, CT**
ATC Site Number	:	**209185**
Engineering Number	:	**14097402_C8_01**
Mount Elevation	:	**101.5 ft**
Carrier	:	**T-Mobile**
Carrier Site Name	:	**CTHA560B**
Carrier Site Number	:	**CTHA560B**
Site Location	:	**87 Monce Road** **Burlington, CT 6013-2542** **41.73912732, -72.90781103**
County	:	**Hartford**
Date	:	**June 16, 2022**
Max Usage	:	**48%**
Result	:	**Contingent Pass**

Prepared By:
Michael Ellis
Structural Engineer I

Reviewed By:

COA: PEC.0001553

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Table of Contents

Introduction

The purpose of this report is to summarize results of the mount analysis performed for T-Mobile at 101.5 ft.

Supporting Documents

Mount Modification	Site Pro 1 HRK12, dated July 13, 2014
Radio Frequency Data Sheet	RFDS ID #CTHA560B, dated May 31, 2022
Reference Photos	Site photos from 2021

Analysis

This mount was analyzed using American Tower Corporation's Mount Analysis Program and RISA-3D

Basic Wind Speed:	116 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.50'' radial ice concurrent
Codes:	ANSI/TIA-222-H
Exposure Category:	C
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Flat
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.184, S1 = 0.054
Site Class:	D - Stiff Soil - Default
Live Loads:	Lm = 500 lbs

*** Based on experience, it has been determined that the Lv load cases will not control over Lm load cases in platform mount analyses. Therefore, these load cases have been excluded from this analysis.**

Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above provided the modifications listed below are completed:

- Install Site Pro 1 HRK12 handrail reinforcement kit (or similar) as requested by T-MOBILE.
- A handrail kit was modeled due to the Carrier's proposed Mount Type. The mount geometry before this addition was not assessed.

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

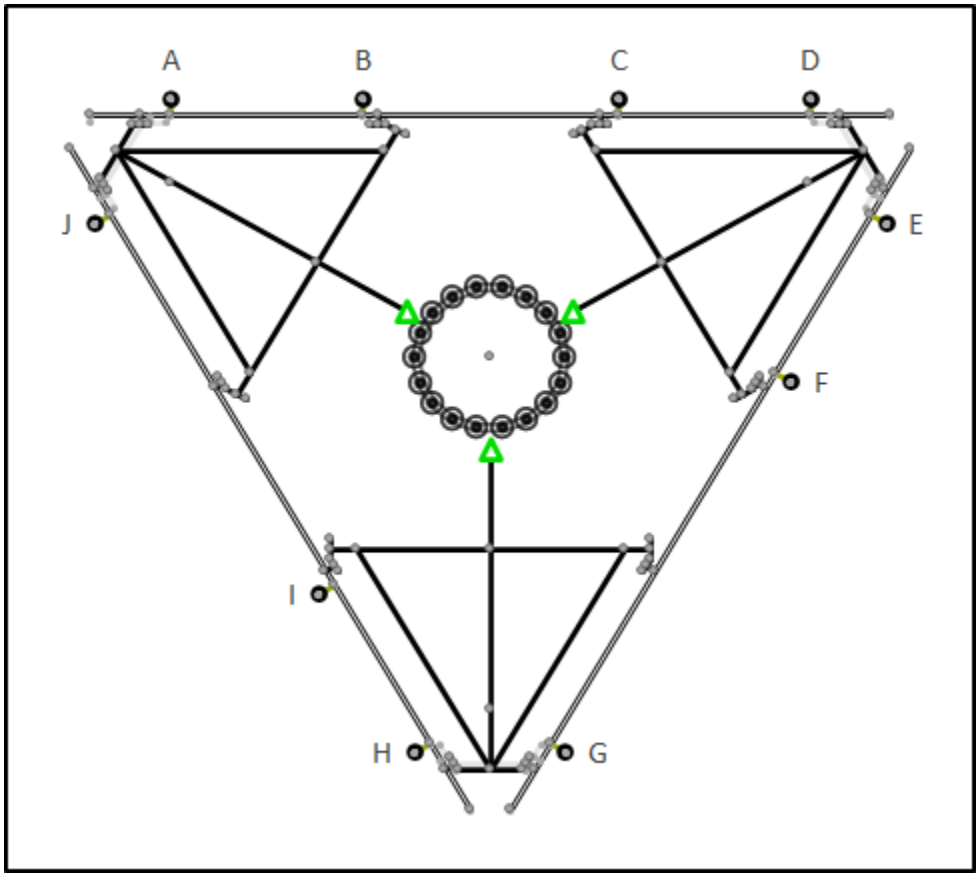
Application Loading

Mount Centerline (ft)	Equipment Centerline (ft)	Qty	Equipment Manufacturer & Model
101.5	100.0	3	RFS APX16DWV-16DWVS-E-A20
		3	RFS APXVAALL24 43-U-NA20
		3	Ericsson AIR32 B66Aa/B2a
		3	Ericsson RRUS 11 B4
		3	Ericsson 4480 BAND 71

Structure Usages

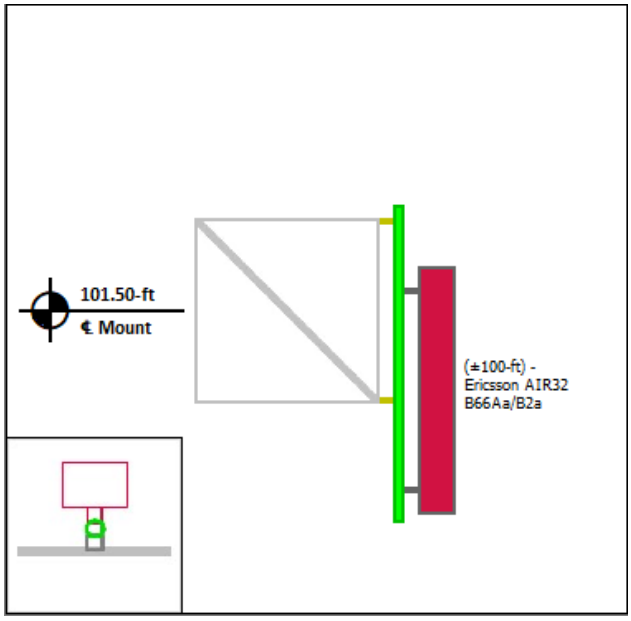
Structural Component	Controlling Usage	Pass/Fail
Horizontals	42%	Pass
Mount Pipes	48%	Pass

Mount Layout

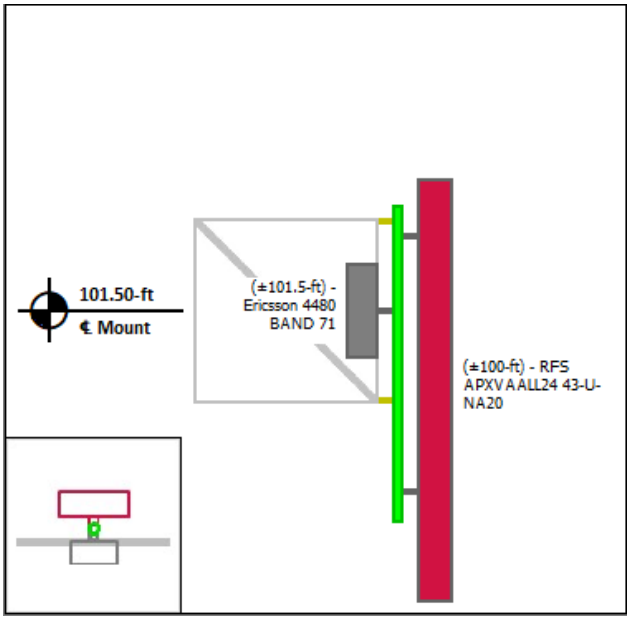


Equipment Layout

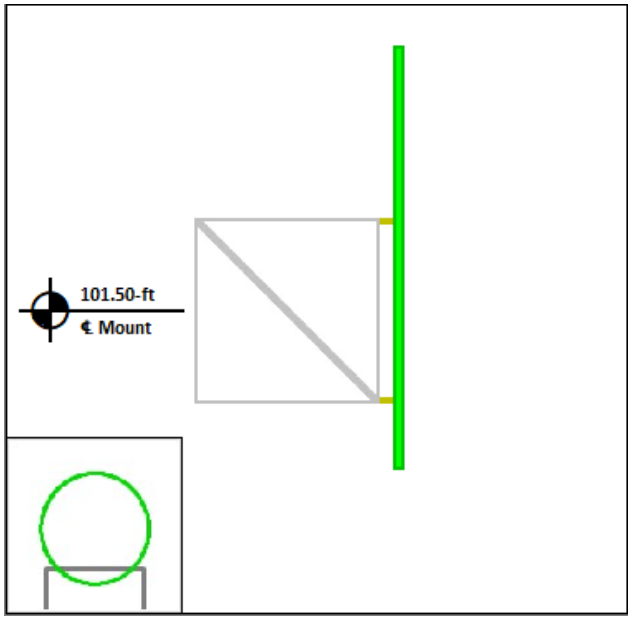
Mount Pipe A



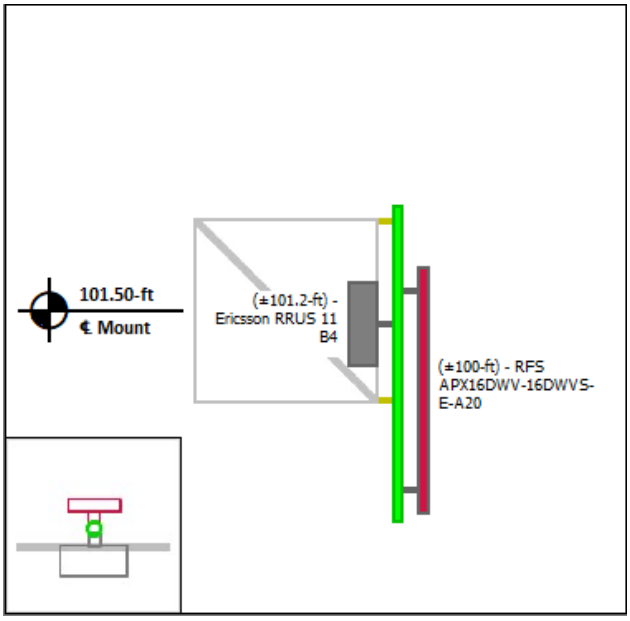
Mount Pipe B



Mount Pipe C

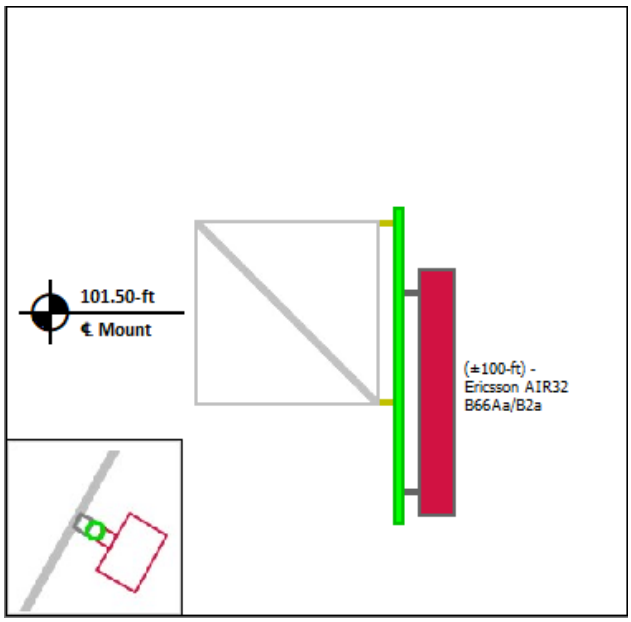


Mount Pipe D

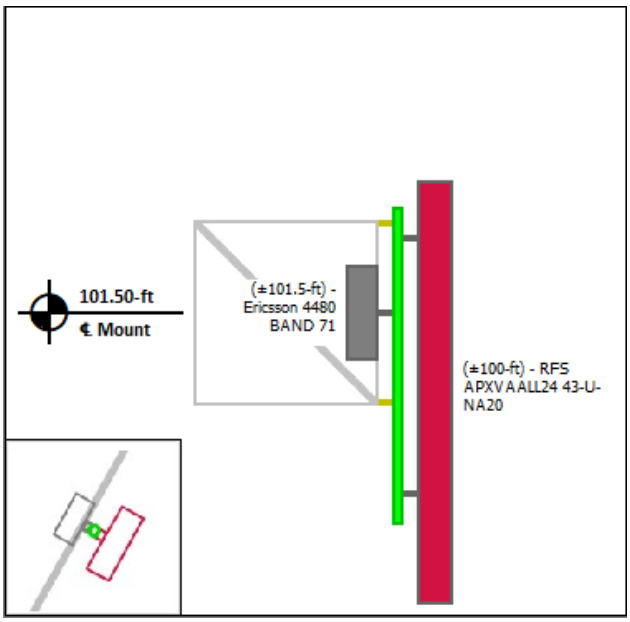


Equipment Layout Cont'd.

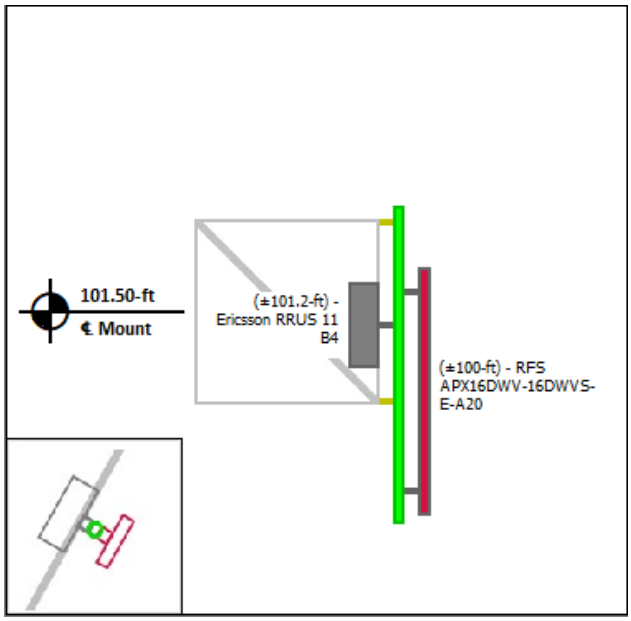
Mount Pipe E



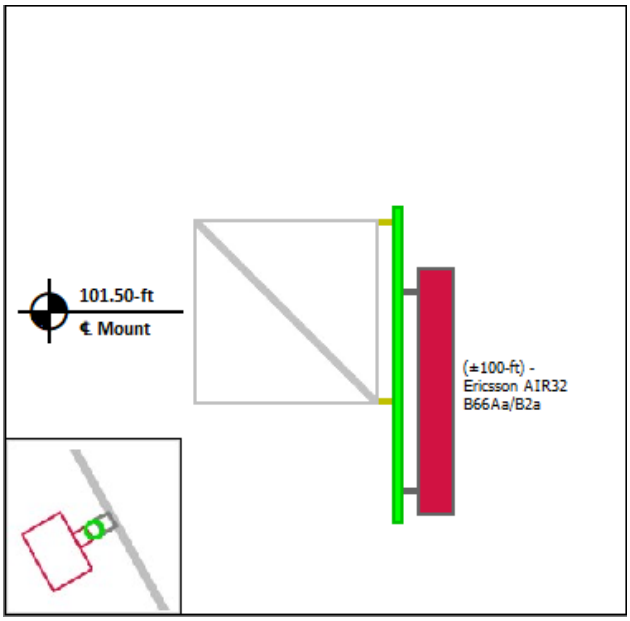
Mount Pipe F



Mount Pipe G

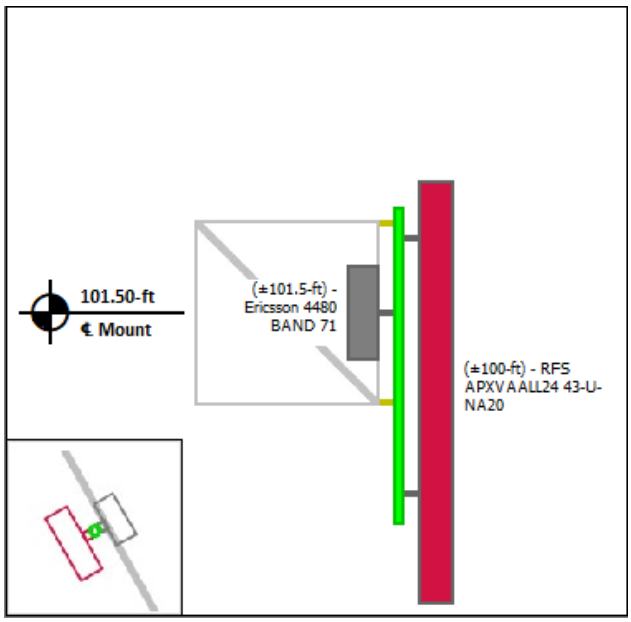


Mount Pipe H

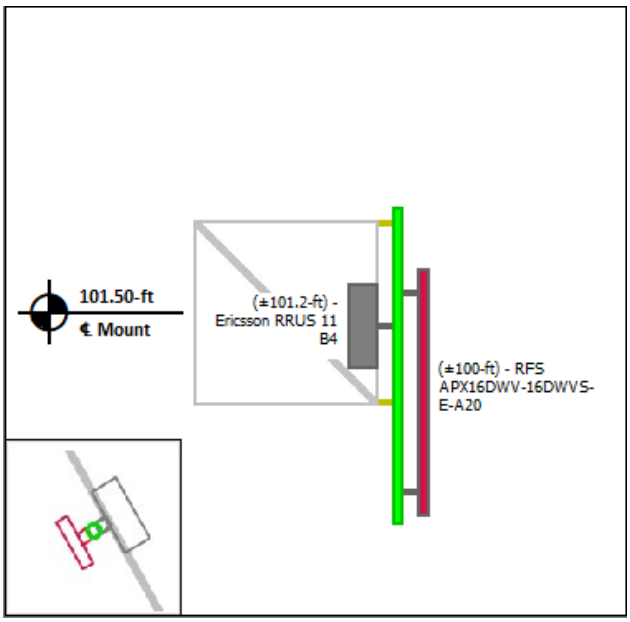


Equipment Layout Cont'd.

Mount Pipe I



Mount Pipe J



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 equipment, 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.

American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

All connections are to be verified for condition and tightness by the installation contractor preceding any changes to the appurtenance mounting system and/or equipment attached to it.

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.

Installation of all equipment and steel should be confirmed not to cause tower conflicts nor impede the tower climbing pegs.

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.

AMERICAN TOWER®
CORPORATION

Site Number:	*209185*
Project Number:	*14097402_C8_01*
Carrier:	*T-Mobile*
Mount Elevation:	*101.5 ft*
Date:	6/16/2022

Mount Analysis Force Calculations

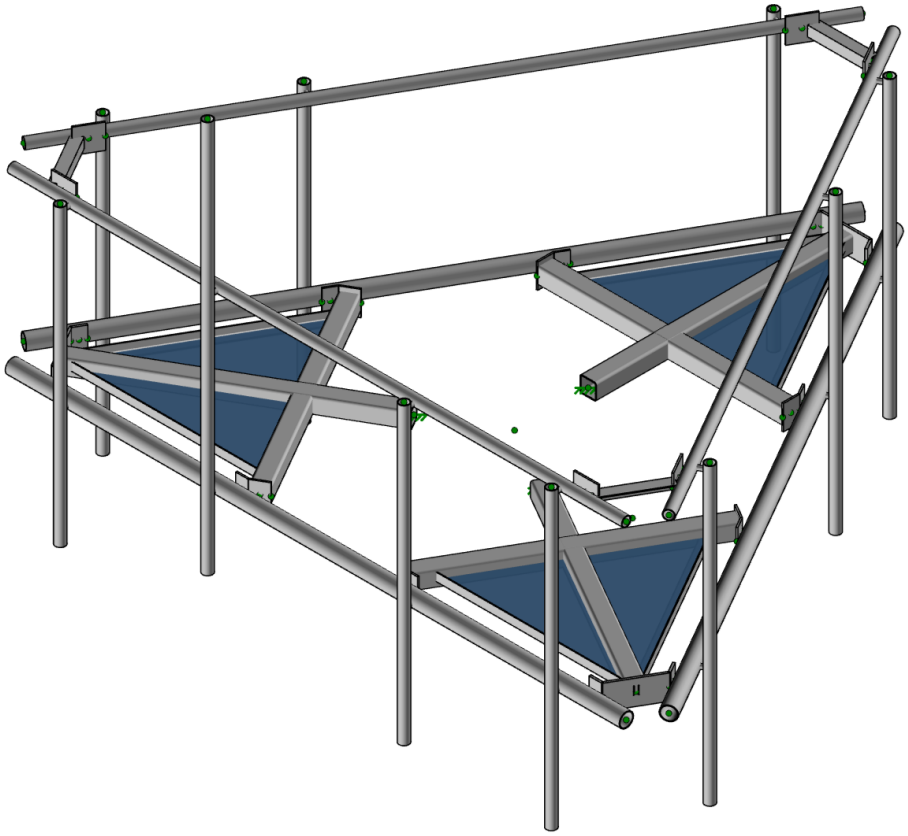
Wind & Ice Load Calculations			
Velocity Pressure Coefficient	K_z	1.27	
Topographic Factor	K_{zt}	1.00	
Rooftop Wind Speed-up Factor	K_s	1.00	
Shielding Factor	K_a	0.90	
Ground Elevation Factor	K_e	0.99	
Wind Direction Probability Factor	K_d	0.95	
Basic Wind Speed	V	116	mph
Velocity Pressure	q_z	41.1	psf
Height Escalation Factor	K_{iz}	1.12	
Thickness of Radial Glaze Ice	T_{iz}	1.68	in

Seismic Load Calculations			
Short Period DSRAP	S_{DS}	0.147	
1 Second DSRAP	S_{D1}	0.086	
Importance Factor	I	1.0	
Response Modification Coefficient	R	2.0	
Seismic Response Coefficient	C_S	0.074	
Amplification Factor	A	1.0	
Total Weight	W	2524.5	lbs
Total Shear Force	V_S	185.8	lbs
Horizontal Seismic Load	Eh	185.8	lbs
Vertical Seismic Load	Ev	74.3	lbs

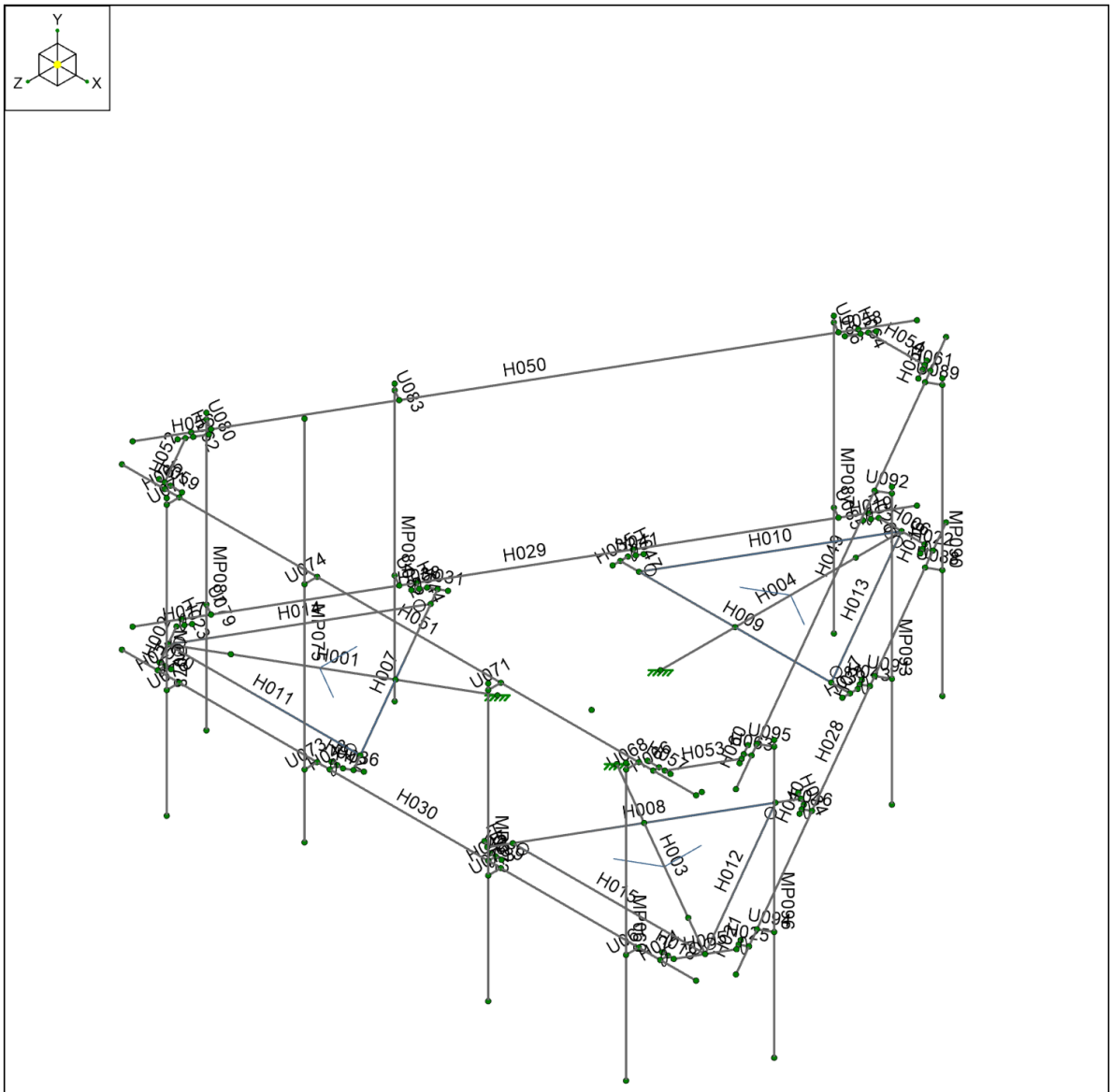
Antenna Calculations (Elevations per Application/RFDS)*

Equipment	Height	Width	Depth	Weight	EPA_N	EPA_T	EPA_{Ni}	EPA_{Ti}
Model #	in	in	in	lbs	sqft	sqft	sqft	sqft
RFS APX16DWV-16DWVS-E-A20	55.9	13.3	3.1	40.7	6.59	1.26	8.74	2.78
RFS APXVAALL24 43-U-NA20	95.9	24.0	8.5	122.8	20.24	3.40	23.88	4.90
Ericsson AIR32 B66Aa/B2a	56.6	12.9	8.7	132.2	6.51	3.31	8.69	4.85
Ericsson RRUS 11 B4	19.7	17.0	7.2	50.7	2.79	1.19	3.91	2.05
Ericsson 4480 BAND 71	22.0	15.7	7.5	81.0	2.88	1.40	4.03	2.33

**** Equipment with EPA values N/A were not considered in the mount analysis***



American Tower Corp.	209185, Burlington 2	SK-1
Michael.Ellis		Jun 16, 2022
14097402_C8_01		R3D. T-MOBILE @ 209185, Burlin…



American Tower Corp.	209185, Burlington 2	SK-2
Michael.Ellis		Jun 16, 2022
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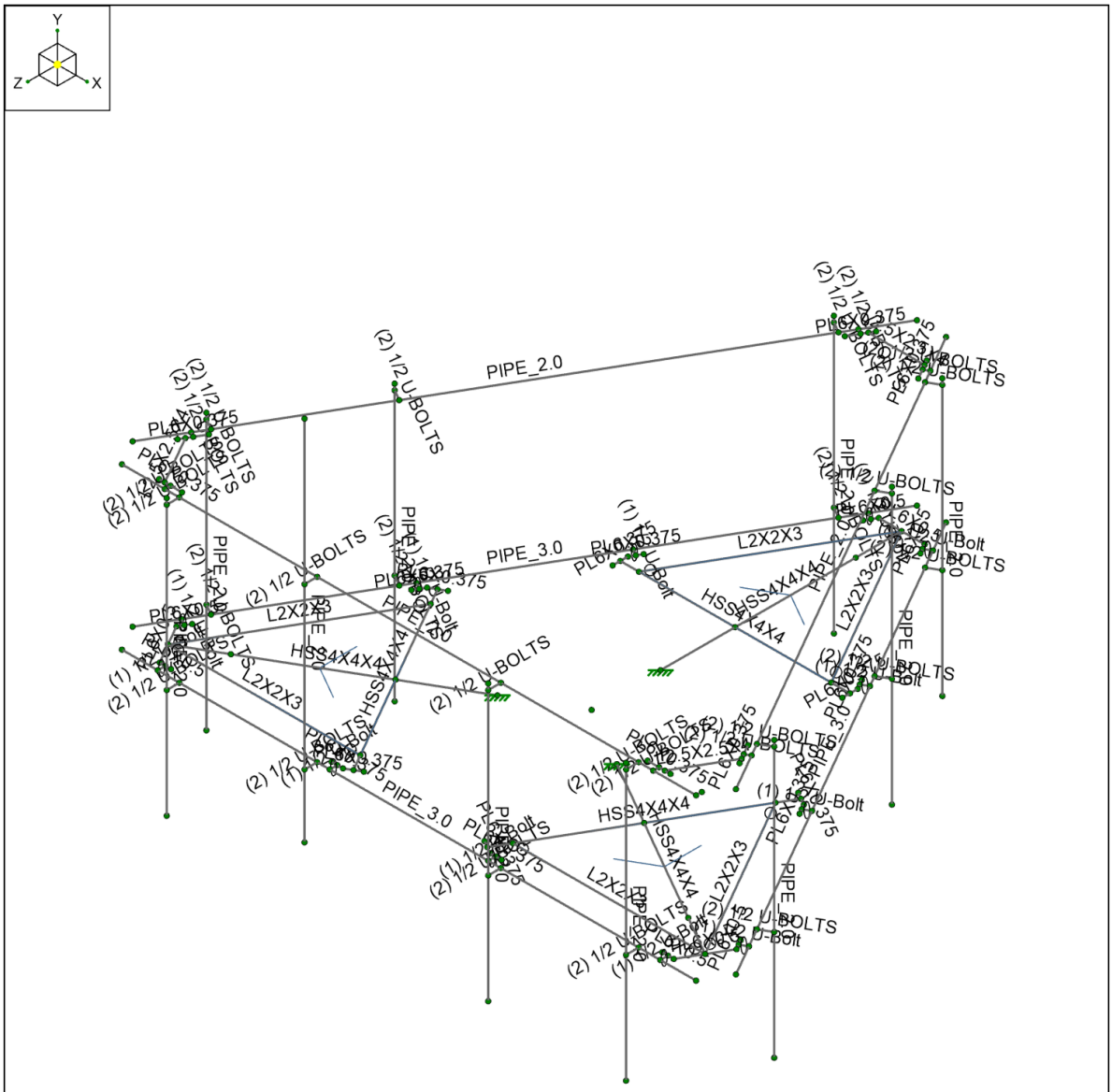
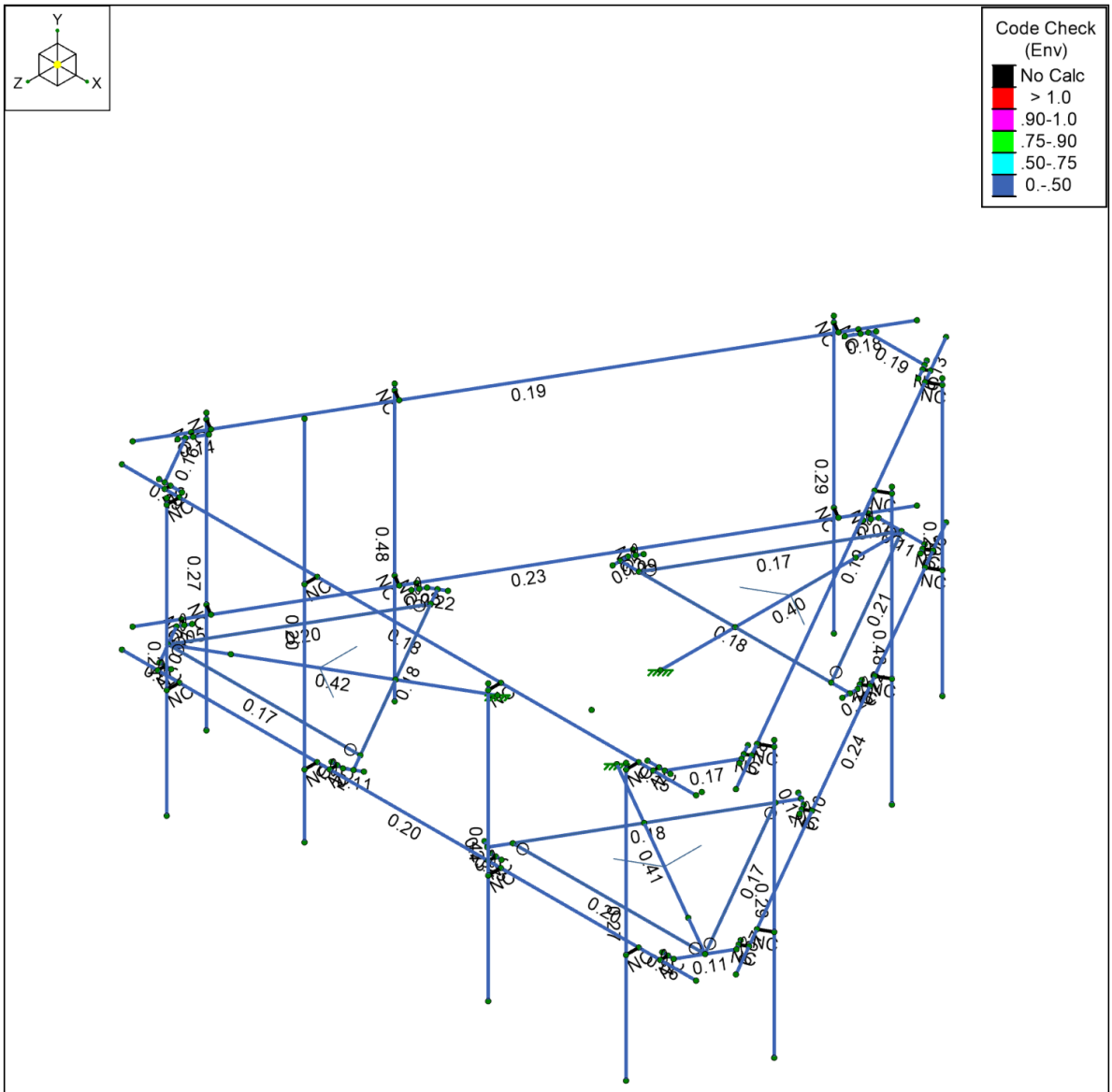
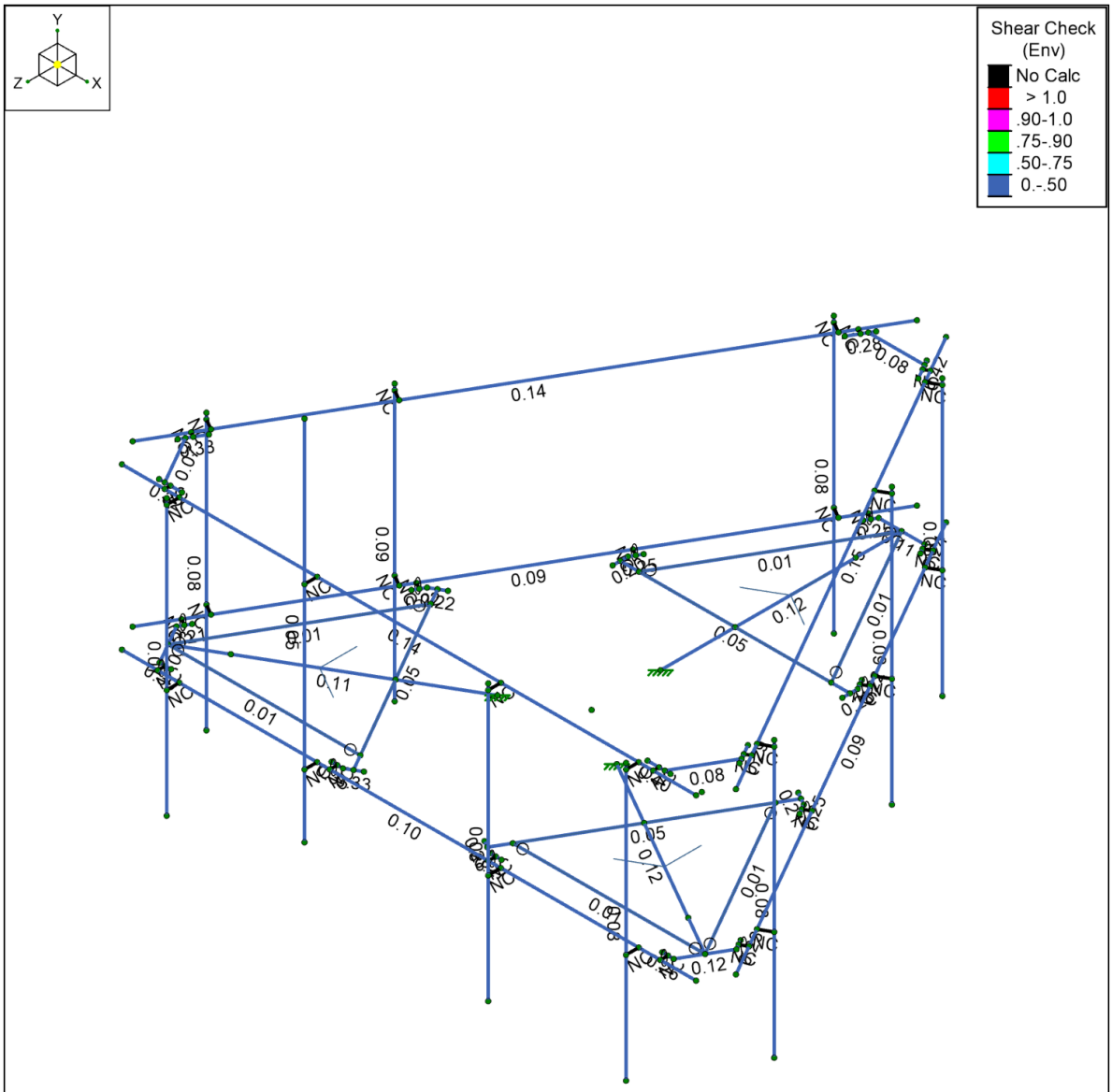


American Tower Corp.	209185, Burlington 2	SK-3
Michael.Ellis		Jun 16, 2022
14097402_C8_01		R3D. T-MOBILE @ 209185, Burlin…



American Tower Corp.	209185, Burlington 2	SK-4
Michael.Ellis		Jun 16, 2022
14097402_C8_01		R3D. T-MOBILE @ 209185, Burlin…



American Tower Corp.	209185, Burlington 2	SK-5
Michael.Ellis		Jun 16, 2022
14097402_C8_01		R3D. T-MOBILE @ 209185, Burlin…

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Surface(Plate/Wall)
1	D	DL	-1		24		
2	Di	IL			24	58	3
3	W 0	WL			24	96	
4	W 30	WL			48	192	
5	W 60	WL			48	192	
6	W 90	WL			24	97	
7	W 120	WL			48	192	
8	W 150	WL			48	192	
9	W 180	WL			24	96	
10	W 210	WL			48	192	
11	W 240	WL			48	192	
12	W 270	WL			24	97	
13	W 300	WL			48	192	
14	W 330	WL			48	192	
15	Wi 0	WL			24	96	
16	Wi 30	WL			48	192	
17	Wi 60	WL			48	192	
18	Wi 90	WL			24	97	
19	Wi 120	WL			48	192	
20	Wi 150	WL			48	192	
21	Wi 180	WL			24	96	
22	Wi 210	WL			48	192	
23	Wi 240	WL			48	192	
24	Wi 270	WL			24	97	
25	Wi 300	WL			48	192	
26	Wi 330	WL			48	192	
27	Ws 0	WL			24	96	
28	Ws 30	WL			48	192	
29	Ws 60	WL			48	192	
30	Ws 90	WL			24	97	
31	Ws 120	WL			48	192	
32	Ws 150	WL			48	192	
33	Ws 180	WL			24	96	
34	Ws 210	WL			48	192	
35	Ws 240	WL			48	192	
36	Ws 270	WL			24	97	
37	Ws 300	WL			48	192	
38	Ws 330	WL			48	192	
39	Ev -Y	ELY				58	
40	Eh -Z	ELZ				58	
41	Eh -X	ELX				58	
42	Lm (1)	LL		1			
43	Lm (2)	LL		1			
44	Lm (3)	LL		1			
45	Lm (4)	LL		1			
46	Lm (5)	LL		1			
47	Lm (6)	LL		1			
48	Lm (7)	LL		1			
49	Lm (8)	LL		1			
50	Lm (9)	LL		1			
51	Lm (10)	LL		1			

Node Boundary Conditions

	Node Label	X [lb/in]	Y [lb/in]	Z [lb/in]	X Rot [k-in/rad]	Y Rot [k-in/rad]	Z Rot [k-in/rad]
1	N002	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N006	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N007	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	H001	N002	N003		HSS4X4X4	Beam	None	A500 Gr. B [SQR]	Typical
2	H002	N004	N005		PL6X0.5	Beam	None	A36	Typical
3	H003	N006	N012		HSS4X4X4	Beam	None	A500 Gr. B [SQR]	Typical
4	H004	N007	N013		HSS4X4X4	Beam	None	A500 Gr. B [SQR]	Typical
5	H005	N008	N010		PL6X0.5	Beam	None	A36	Typical
6	H006	N009	N011		PL6X0.5	Beam	None	A36	Typical
7	H007	N015	N016		HSS4X4X4	Beam	None	A500 Gr. B [SQR]	Typical
8	H008	N021	N023		HSS4X4X4	Beam	None	A500 Gr. B [SQR]	Typical
9	H009	N022	N024		HSS4X4X4	Beam	None	A500 Gr. B [SQR]	Typical
10	H010	N033	N013		L2X2X3	Beam	None	A36	Typical
11	H011	N034	N003		L2X2X3	Beam	None	A36	Typical
12	H012	N029	N012		L2X2X3	Beam	None	A36	Typical
13	H013	N030	N013	270	L2X2X3	Beam	None	A36	Typical
14	H014	N031	N003	270	L2X2X3	Beam	None	A36	Typical
15	H015	N032	N012	270	L2X2X3	Beam	None	A36	Typical
16	H016	N009	N036		PL6X0.5	Beam	None	A36	Typical
17	H017	N004	N042		PL6X0.5	Beam	None	A36	Typical
18	H018	N008	N043		PL6X0.5	Beam	None	A36	Typical
19	H019	N011	N048		PL6X0.5	Beam	None	A36	Typical
20	H020	N005	N049		PL6X0.5	Beam	None	A36	Typical
21	H021	N010	N037		PL6X0.5	Beam	None	A36	Typical
22	H022	N038	N040		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
23	H023	N044	N050		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
24	H024	N045	N051		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
25	H025	N039	N041		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
26	H026	N046	N052		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
27	H027	N047	N053		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
28	H028	N017	N018		PIPE_3.0	Beam	None	A53 Gr. B	Typical
29	H029	N025	N027		PIPE_3.0	Beam	None	A53 Gr. B	Typical
30	H030	N026	N028		PIPE_3.0	Beam	None	A53 Gr. B	Typical
31	H031	N054	N055		PL6X0.375	Beam	None	A36	Typical
32	H032	N056	N058		PL6X0.375	Beam	None	A36	Typical
33	H033	N057	N059		PL6X0.375	Beam	None	A36	Typical
34	H034	N060	N062		PL6X0.375	Beam	None	A36	Typical
35	H035	N061	N063		PL6X0.375	Beam	None	A36	Typical
36	H036	N064	N035		PL6X0.375	Beam	None	A36	Typical
37	H037	N059	N065		PL6X0.375	Beam	None	A36	Typical
38	H038	N055	N071		PL6X0.375	Beam	None	A36	Typical
39	H039	N058	N072		PL6X0.375	Beam	None	A36	Typical
40	H040	N062	N066		PL6X0.375	Beam	None	A36	Typical
41	H041	N063	N073		PL6X0.375	Beam	None	A36	Typical
42	H042	N035	N074		PL6X0.375	Beam	None	A36	Typical
43	H043	N067	N069		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
44	H044	N075	N079		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
45	H045	N076	N080		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
46	H046	N068	N070		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
47	H047	N077	N081		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
48	H048	N078	N082		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
49	H049	N083	N084		PIPE_2.0	Beam	None	A53 Gr. B	Typical
50	H050	N085	N087		PIPE_2.0	Beam	None	A53 Gr. B	Typical
51	H051	N086	N088		PIPE_2.0	Beam	None	A53 Gr. B	Typical
52	H052	N094	N095	90	L2.5X2.5X4	Beam	None	A36	Typical
53	H053	N091	N092	90	L2.5X2.5X4	Beam	None	A36	Typical
54	H054	N090	N093	90	L2.5X2.5X4	Beam	None	A36	Typical
55	H055	N096	N099		PL6X0.375	Beam	None	A36	Typical
56	H056	N097	N100		PL6X0.375	Beam	None	A36	Typical
57	H057	N098	N101		PL6X0.375	Beam	None	A36	Typical
58	H058	N103	N106		PL6X0.375	Beam	None	A36	Typical
59	H059	N104	N107		PL6X0.375	Beam	None	A36	Typical
60	H060	N102	N105		PL6X0.375	Beam	None	A36	Typical
61	H061	N108	N114		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
62	H062	N109	N115		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
63	H063	N111	N116		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
64	H064	N112	N117		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
65	H065	N113	N118		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
66	H066	N110	N122		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
67	U067	N123	N133		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
68	U068	N134	N135		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
69	MP069	N136	N137		PIPE_2.0	Column	None	A53 Gr. B	Typical
70	U070	N126	N138		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
71	U071	N139	N140		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
72	MP072	N141	N142		PIPE_2.0	Column	None	A53 Gr. B	Typical
73	U073	N129	N143		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
74	U074	N144	N145		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
75	MP075	N146	N147		PIPE_2.0	Column	None	A53 Gr. B	Typical
76	U076	N130	N148		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
77	U077	N149	N150		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
78	MP078	N151	N152		PIPE_2.0	Column	None	A53 Gr. B	Typical
79	U079	N125	N153		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
80	U080	N154	N155		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
81	MP081	N156	N157		PIPE_2.0	Column	None	A53 Gr. B	Typical
82	U082	N128	N158		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
83	U083	N159	N160		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
84	MP084	N161	N162		PIPE_2.0	Column	None	A53 Gr. B	Typical
85	U085	N132	N163		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
86	U086	N164	N165		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
87	MP087	N166	N167		PIPE_2.0	Column	None	A53 Gr. B	Typical
88	U088	N124	N168		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
89	U089	N169	N170		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
90	MP090	N171	N172		PIPE_2.0	Column	None	A53 Gr. B	Typical
91	U091	N127	N173		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
92	U092	N174	N175		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
93	MP093	N176	N177		PIPE_2.0	Column	None	A53 Gr. B	Typical
94	U094	N131	N178		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
95	U095	N179	N180		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
96	MP096	N181	N182		PIPE_2.0	Column	None	A53 Gr. B	Typical

Member Advanced Data

	Label	I Release	J Release	Physical	Deflection Ratio Options	Activation	Seismic DR
1	H001			Yes	N/A		None
2	H002			Yes	N/A		None
3	H003			Yes	N/A		None
4	H004			Yes	N/A		None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Activation	Seismic DR
5	H005			Yes	N/A		None
6	H006			Yes	N/A		None
7	H007			Yes	N/A		None
8	H008			Yes	N/A		None
9	H009			Yes	N/A		None
10	H010	BenPIN	BenPIN	Yes	N/A		None
11	H011	BenPIN	BenPIN	Yes	N/A		None
12	H012	BenPIN	BenPIN	Yes	N/A		None
13	H013	BenPIN	BenPIN	Yes	N/A		None
14	H014	BenPIN	BenPIN	Yes	N/A		None
15	H015	BenPIN	BenPIN	Yes	N/A		None
16	H016			Yes	N/A		None
17	H017			Yes	N/A		None
18	H018			Yes	N/A		None
19	H019			Yes	N/A		None
20	H020			Yes	N/A		None
21	H021			Yes	N/A		None
22	H022	OOOXOO		Yes	Default	Exclude	None
23	H023	OOOXOO		Yes	Default	Exclude	None
24	H024	OOOXOO		Yes	Default	Exclude	None
25	H025	OOOXOO		Yes	Default	Exclude	None
26	H026	OOOXOO		Yes	Default	Exclude	None
27	H027	OOOXOO		Yes	Default	Exclude	None
28	H028			Yes	N/A		None
29	H029			Yes	N/A		None
30	H030			Yes	N/A		None
31	H031			Yes	N/A		None
32	H032			Yes	N/A		None
33	H033			Yes	N/A		None
34	H034			Yes	N/A		None
35	H035			Yes	N/A		None
36	H036			Yes	N/A		None
37	H037			Yes	N/A		None
38	H038			Yes	N/A		None
39	H039			Yes	N/A		None
40	H040			Yes	N/A		None
41	H041			Yes	N/A		None
42	H042			Yes	N/A		None
43	H043	OOOXOO		Yes	Default	Exclude	None
44	H044	OOOXOO		Yes	Default	Exclude	None
45	H045	OOOXOO		Yes	Default	Exclude	None
46	H046	OOOXOO		Yes	Default	Exclude	None
47	H047	OOOXOO		Yes	Default	Exclude	None
48	H048	OOOXOO		Yes	Default	Exclude	None
49	H049			Yes	N/A		None
50	H050			Yes	N/A		None
51	H051			Yes	N/A		None
52	H052			Yes	N/A		None
53	H053			Yes	N/A		None
54	H054			Yes	N/A		None
55	H055			Yes	N/A		None
56	H056			Yes	N/A		None
57	H057			Yes	N/A		None
58	H058			Yes	N/A		None
59	H059			Yes	N/A		None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Activation	Seismic DR
60	H060			Yes	N/A		None
61	H061			Yes	N/A	Exclude	None
62	H062			Yes	N/A	Exclude	None
63	H063			Yes	N/A	Exclude	None
64	H064			Yes	N/A	Exclude	None
65	H065			Yes	N/A	Exclude	None
66	H066			Yes	N/A	Exclude	None
67	U067			Yes	N/A	Exclude	None
68	U068			Yes	N/A	Exclude	None
69	MP069			Yes	** NA **		None
70	U070			Yes	N/A	Exclude	None
71	U071			Yes	N/A	Exclude	None
72	MP072			Yes	** NA **		None
73	U073			Yes	N/A	Exclude	None
74	U074			Yes	N/A	Exclude	None
75	MP075			Yes	** NA **		None
76	U076			Yes	N/A	Exclude	None
77	U077			Yes	N/A	Exclude	None
78	MP078			Yes	** NA **		None
79	U079			Yes	N/A	Exclude	None
80	U080			Yes	N/A	Exclude	None
81	MP081			Yes	** NA **		None
82	U082			Yes	N/A	Exclude	None
83	U083			Yes	N/A	Exclude	None
84	MP084			Yes	** NA **		None
85	U085			Yes	N/A	Exclude	None
86	U086			Yes	N/A	Exclude	None
87	MP087			Yes	** NA **		None
88	U088			Yes	N/A	Exclude	None
89	U089			Yes	N/A	Exclude	None
90	MP090			Yes	** NA **		None
91	U091			Yes	N/A	Exclude	None
92	U092			Yes	N/A	Exclude	None
93	MP093			Yes	** NA **		None
94	U094			Yes	N/A	Exclude	None
95	U095			Yes	N/A	Exclude	None
96	MP096			Yes	** NA **		None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function
1	H001	HSS4X4X4	63			Lbyy		1	1	Lateral
2	H002	PL6X0.5	12			Lbyy		0.65	0.65	Lateral
3	H003	HSS4X4X4	63			Lbyy		1	1	Lateral
4	H004	HSS4X4X4	63			Lbyy		1	1	Lateral
5	H005	PL6X0.5	12			Lbyy		0.65	0.65	Lateral
6	H006	PL6X0.5	12			Lbyy		0.65	0.65	Lateral
7	H007	HSS4X4X4	60			Lbyy		0.65	0.65	Lateral
8	H008	HSS4X4X4	60			Lbyy		0.65	0.65	Lateral
9	H009	HSS4X4X4	60			Lbyy		0.65	0.65	Lateral
10	H010	L2X2X3	50.229			Lbyy		1	1	Lateral
11	H011	L2X2X3	50.229			Lbyy		1	1	Lateral
12	H012	L2X2X3	50.229			Lbyy		1	1	Lateral
13	H013	L2X2X3	50.229			Lbyy		1	1	Lateral
14	H014	L2X2X3	50.229			Lbyy		1	1	Lateral
15	H015	L2X2X3	50.229			Lbyy		1	1	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function
16	H016	PL6X0.5	3			Lbyy		1	1	Lateral
17	H017	PL6X0.5	3			Lbyy		1	1	Lateral
18	H018	PL6X0.5	3			Lbyy		1	1	Lateral
19	H019	PL6X0.5	3			Lbyy		1	1	Lateral
20	H020	PL6X0.5	3			Lbyy		1	1	Lateral
21	H021	PL6X0.5	3			Lbyy		1	1	Lateral
22	H022	(1) 1/2 U-Bolt	2			Lbyy		0.65	0.65	Lateral
23	H023	(1) 1/2 U-Bolt	2			Lbyy		0.65	0.65	Lateral
24	H024	(1) 1/2 U-Bolt	2			Lbyy		0.65	0.65	Lateral
25	H025	(1) 1/2 U-Bolt	2			Lbyy		0.65	0.65	Lateral
26	H026	(1) 1/2 U-Bolt	2			Lbyy		0.65	0.65	Lateral
27	H027	(1) 1/2 U-Bolt	2			Lbyy		0.65	0.65	Lateral
28	H028	PIPE_3.0	149.998			Lbyy		1	1	Lateral
29	H029	PIPE_3.0	149.998			Lbyy		1	1	Lateral
30	H030	PIPE_3.0	149.998			Lbyy		1	1	Lateral
31	H031	PL6X0.375	4			Lbyy		0.65	0.65	Lateral
32	H032	PL6X0.375	4			Lbyy		0.65	0.65	Lateral
33	H033	PL6X0.375	4			Lbyy		0.65	0.65	Lateral
34	H034	PL6X0.375	4			Lbyy		0.65	0.65	Lateral
35	H035	PL6X0.375	4			Lbyy		0.65	0.65	Lateral
36	H036	PL6X0.375	4			Lbyy		0.65	0.65	Lateral
37	H037	PL6X0.375	3			Lbyy		1	1	Lateral
38	H038	PL6X0.375	3			Lbyy		1	1	Lateral
39	H039	PL6X0.375	3			Lbyy		1	1	Lateral
40	H040	PL6X0.375	3			Lbyy		1	1	Lateral
41	H041	PL6X0.375	3			Lbyy		1	1	Lateral
42	H042	PL6X0.375	3			Lbyy		1	1	Lateral
43	H043	(1) 1/2 U-Bolt	1.965			Lbyy		0.65	0.65	Lateral
44	H044	(1) 1/2 U-Bolt	1.965			Lbyy		0.65	0.65	Lateral
45	H045	(1) 1/2 U-Bolt	1.965			Lbyy		0.65	0.65	Lateral
46	H046	(1) 1/2 U-Bolt	1.965			Lbyy		0.65	0.65	Lateral
47	H047	(1) 1/2 U-Bolt	1.965			Lbyy		0.65	0.65	Lateral
48	H048	(1) 1/2 U-Bolt	1.965			Lbyy		0.65	0.65	Lateral
49	H049	PIPE_2.0	149.998			Lbyy		0.65	0.65	Lateral
50	H050	PIPE_2.0	149.998			Lbyy		0.65	0.65	Lateral
51	H051	PIPE_2.0	149.998			Lbyy		0.65	0.65	Lateral
52	H052	L2.5X2.5X4	14.71			Lbyy		0.65	0.65	Lateral
53	H053	L2.5X2.5X4	14.71			Lbyy		0.65	0.65	Lateral
54	H054	L2.5X2.5X4	14.71			Lbyy		0.65	0.65	Lateral
55	H055	PL6X0.375	6			Lbyy		0.65	0.65	Lateral
56	H056	PL6X0.375	6			Lbyy		0.65	0.65	Lateral
57	H057	PL6X0.375	6			Lbyy		0.65	0.65	Lateral
58	H058	PL6X0.375	6			Lbyy		0.65	0.65	Lateral
59	H059	PL6X0.375	6			Lbyy		0.65	0.65	Lateral
60	H060	PL6X0.375	6			Lbyy		0.65	0.65	Lateral
61	H061	(2) 1/2 U-BOLTS	1.5			Lbyy		0.65	0.65	Lateral
62	H062	(2) 1/2 U-BOLTS	1.5			Lbyy		0.65	0.65	Lateral
63	H063	(2) 1/2 U-BOLTS	1.5			Lbyy		0.65	0.65	Lateral
64	H064	(2) 1/2 U-BOLTS	1.5			Lbyy		0.65	0.65	Lateral
65	H065	(2) 1/2 U-BOLTS	1.5			Lbyy		0.65	0.65	Lateral
66	H066	(2) 1/2 U-BOLTS	1.5			Lbyy		0.65	0.65	Lateral
67	U067	(2) 1/2 U-BOLTS	3.304			Lbyy		0.5	0.5	Lateral
68	U068	(2) 1/2 U-BOLTS	3.304			Lbyy		0.5	0.5	Lateral
69	MP069	PIPE_2.0	72	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
70	U070	(2) 1/2 U-BOLTS	3.304			Lbyy		0.5	0.5	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function
71	U071	(2) 1/2 U-BOLTS	3.304			Lbyy		0.5	0.5	Lateral
72	MP072	PIPE_2.0	72	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
73	U073	(2) 1/2 U-BOLTS	3.304			Lbyy		0.5	0.5	Lateral
74	U074	(2) 1/2 U-BOLTS	3.304			Lbyy		0.5	0.5	Lateral
75	MP075	PIPE_2.0	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
76	U076	(2) 1/2 U-BOLTS	3.304			Lbyy		0.5	0.5	Lateral
77	U077	(2) 1/2 U-BOLTS	3.304			Lbyy		0.5	0.5	Lateral
78	MP078	PIPE_2.0	72	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
79	U079	(2) 1/2 U-BOLTS	3.304			Lbyy		0.5	0.5	Lateral
80	U080	(2) 1/2 U-BOLTS	3.304			Lbyy		0.5	0.5	Lateral
81	MP081	PIPE_2.0	72	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
82	U082	(2) 1/2 U-BOLTS	3.304			Lbyy		0.5	0.5	Lateral
83	U083	(2) 1/2 U-BOLTS	3.304			Lbyy		0.5	0.5	Lateral
84	MP084	PIPE_2.0	72	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
85	U085	(2) 1/2 U-BOLTS	3.304			Lbyy		0.5	0.5	Lateral
86	U086	(2) 1/2 U-BOLTS	3.304			Lbyy		0.5	0.5	Lateral
87	MP087	PIPE_2.0	72	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
88	U088	(2) 1/2 U-BOLTS	3.304			Lbyy		0.5	0.5	Lateral
89	U089	(2) 1/2 U-BOLTS	3.304			Lbyy		0.5	0.5	Lateral
90	MP090	PIPE_2.0	72	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
91	U091	(2) 1/2 U-BOLTS	3.304			Lbyy		0.5	0.5	Lateral
92	U092	(2) 1/2 U-BOLTS	3.304			Lbyy		0.5	0.5	Lateral
93	MP093	PIPE_2.0	72	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
94	U094	(2) 1/2 U-BOLTS	3.304			Lbyy		0.5	0.5	Lateral
95	U095	(2) 1/2 U-BOLTS	3.304			Lbyy		0.5	0.5	Lateral
96	MP096	PIPE_2.0	72	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral

Hot Rolled Steel Properties

	Label	E [psi]	G [psi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [lb/ft³]	Yield [psi]	Ry	Fu [psi]	Rt
1	A500 Gr. B [SQR]	2.9e+07	1.115e+07	0.3	0.65	490	46000	1.4	58000	1.3
2	A36	2.9e+07	1.115e+07	0.3	0.65	490	36000	1.5	58000	1.2
3	SAE J429 Gr. 2	2.9e+07	1.115e+07	0.3	0.65	490	57000	1.1	74000	1.1
4	A53 Gr. B	2.9e+07	1.115e+07	0.3	0.65	490	35000	1.6	60000	1.2

Envelope Node Reactions

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N002	max	2318.506	18	2796.451	30	1425.313	3	-63.212	14	2368.928	3	-582.304	24
2		min	-2343.887	12	464.067	24	-1412.38	21	-3077.788	32	-2354.328	21	-5752.844	30
3	N006	max	2022.944	4	2656.299	34	1864.274	2	-319.676	14	2325.15	7	5194.3	34
4		min	-2010.604	22	414.647	16	-1851.354	20	-3659.896	32	-2313.676	25	547.641	16
5	N007	max	1723.816	5	2623.361	26	2447.496	14	6327.02	26	2234.338	11	1021.454	167
6		min	-1711.855	23	441.84	20	-2473.423	8	681.974	20	-2231.198	17	-382.762	17
7	Totals:	max	5230.828	17	7774.681	32	5634.896	2						
8		min	-5230.828	11	2244.487	14	-5634.896	20						

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
1	H001	HSS4X4X4	0.417	0	27	0.114	0	y	123	124317.885	139518	16180.5	16180.5	2.781	H1-1b
2	H002	PL6X0.5	0.111	6	6	0.132	6	y	8	83348.625	97200	1012.5	12150	1.121	H1-1b
3	H003	HSS4X4X4	0.405	0	31	0.118	0	y	32	124317.885	139518	16180.5	16180.5	2.681	H1-1b
4	H004	HSS4X4X4	0.405	0	29	0.119	0	y	167	124317.885	139518	16180.5	16180.5	2.642	H1-1b
5	H005	PL6X0.5	0.11	6	10	0.119	0	y	2	83348.625	97200	1012.5	12150	1.225	H1-1b

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
6	H006	PL6X0.5	0.11	6	2	0.109	0	y	6	83348.625	97200	1012.5	12150	1.178	H1-1b
7	H007	HSS4X4X4	0.183	30	29	0.054	30	y	29	133484.923	139518	16180.5	16180.5	1.345	H1-1b
8	H008	HSS4X4X4	0.181	30	33	0.053	30	y	33	133484.923	139518	16180.5	16180.5	1.37	H1-1b
9	H009	HSS4X4X4	0.176	30	37	0.052	30	y	37	133484.923	139518	16180.5	16180.5	1.371	H1-1b
10	H010	L2X2X3	0.17	25.638	3	0.006	50.229	z	10	9724.796	23392.8	557.717	1072.365	1.136	H2-1
11	H011	L2X2X3	0.171	25.638	7	0.008	50.229	y	27	9724.796	23392.8	557.717	1072.365	1.136	H2-1
12	H012	L2X2X3	0.17	25.638	11	0.006	50.229	y	31	9724.796	23392.8	557.717	1072.365	1.136	H2-1
13	H013	L2X2X3	0.205	25.115	12	0.007	50.229	z	29	9724.796	23392.8	557.717	1072.365	1.136	H2-1
14	H014	L2X2X3	0.204	25.115	4	0.007	50.229	z	33	9724.796	23392.8	557.717	1072.365	1.136	H2-1
15	H015	L2X2X3	0.203	25.115	8	0.007	50.229	z	37	9724.796	23392.8	557.717	1072.365	1.136	H2-1
16	H016	PL6X0.5	0.056	1.5	6	0.242	1.5	y	6	95014.386	97200	1012.5	12150	3	H1-1b
17	H017	PL6X0.5	0.054	1.5	12	0.206	1.5	y	10	95014.386	97200	1012.5	12150	2.965	H1-1b
18	H018	PL6X0.5	0.057	1.5	4	0.261	1.5	y	2	95014.386	97200	1012.5	12150	2.843	H1-1b
19	H019	PL6X0.5	0.071	1.5	10	0.245	0	y	4	95014.386	97200	1012.5	12150	3	H1-1b
20	H020	PL6X0.5	0.069	1.5	2	0.3	0	y	8	95014.386	97200	1012.5	12150	3	H1-1b
21	H021	PL6X0.5	0.071	1.5	6	0.232	0	y	12	95014.386	97200	1012.5	12150	3	H1-1b
22	H028	PIPE_3.0	0.238	95.311	34	0.093	53.124		29	28251.28	65205	5748.75	5748.75	1.948	H1-1b
23	H029	PIPE_3.0	0.233	95.311	26	0.094	53.124		33	28251.28	65205	5748.75	5748.75	1.944	H1-1b
24	H030	PIPE_3.0	0.202	95.311	30	0.097	96.874		27	28251.28	65205	5748.75	5748.75	1.872	H1-1b
25	H031	PL6X0.375	0.222	2	3	0.224	2	y	10	70719.442	72900	569.531	9112.5	1.412	H1-1b
26	H032	PL6X0.375	0.225	2	7	0.28	2	y	2	70719.442	72900	569.531	9112.5	1.403	H1-1b
27	H033	PL6X0.375	0.219	2	11	0.245	2	y	30	70719.442	72900	569.531	9112.5	1.411	H1-1b
28	H034	PL6X0.375	0.125	2	11	0.205	2	y	6	70719.442	72900	569.531	9112.5	1.414	H1-1b
29	H035	PL6X0.375	0.126	2	3	0.196	2	y	10	70719.442	72900	569.531	9112.5	1.412	H1-1b
30	H036	PL6X0.375	0.114	2	7	0.327	2	y	2	70719.442	72900	569.531	9112.5	1.405	H1-1b
31	H037	PL6X0.375	0.223	1.5	5	0.222	0	y	6	70011.374	72900	569.531	9112.5	3	H1-1b
32	H038	PL6X0.375	0.227	1.5	9	0.221	0	y	4	70011.374	72900	569.531	9112.5	3	H1-1b
33	H039	PL6X0.375	0.229	1.5	13	0.275	0	y	8	70011.374	72900	569.531	9112.5	3	H1-1b
34	H040	PL6X0.375	0.101	1.5	7	0.246	0	y	12	70011.374	72900	569.531	9112.5	3	H1-1b
35	H041	PL6X0.375	0.094	1.5	11	0.248	0	y	4	70011.374	72900	569.531	9112.5	3	H1-1b
36	H042	PL6X0.375	0.123	1.5	3	0.351	0	y	8	70011.374	72900	569.531	9112.5	3	H1-1b
37	H049	PIPE_2.0	0.192	49.999	34	0.149	12.5		5	14560.293	32130	1871.625	1871.625	2.721	H1-1b
38	H050	PIPE_2.0	0.189	49.999	26	0.137	12.5		9	14560.293	32130	1871.625	1871.625	2.641	H1-1b
39	H051	PIPE_2.0	0.181	99.998	34	0.143	12.5		13	14560.293	32130	1871.625	1871.625	2.255	H1-1b
40	H052	L2.5X2.5X4	0.164	0	10	0.073	14.71	z	9	37765.457	38556	1113.554	2537.388	1.5	H2-1
41	H053	L2.5X2.5X4	0.173	0	2	0.08	0	z	7	37765.457	38556	1113.554	2537.388	1.5	H2-1
42	H054	L2.5X2.5X4	0.186	0	6	0.079	0	z	11	37765.457	38556	1113.554	2537.388	1.5	H2-1
43	H055	PL6X0.375	0.127	1.5	3	0.419	1.5	y	6	68085.235	72900	569.531	9112.5	1.469	H1-1b
44	H056	PL6X0.375	0.141	1.5	7	0.383	1.5	y	10	68085.235	72900	569.531	9112.5	1.468	H1-1b
45	H057	PL6X0.375	0.15	1.5	11	0.401	1.5	y	2	68085.235	72900	569.531	9112.5	1.463	H1-1b
46	H058	PL6X0.375	0.18	1.5	13	0.285	1.5	y	10	68085.235	72900	569.531	9112.5	1.629	H1-1b
47	H059	PL6X0.375	0.19	1.5	5	0.322	1.5	y	3	68085.235	72900	569.531	9112.5	1.503	H1-1b
48	H060	PL6X0.375	0.18	1.5	9	0.288	1.5	y	7	68085.235	72900	569.531	9112.5	1.549	H1-1b
49	MP069	PIPE_2.0	0.27	43.5	13	0.076	43.5		7	16811.605	32130	1871.625	1871.625	1.701	H1-1b
50	MP072	PIPE_2.0	0.436	43.5	7	0.081	43.5		9	16811.605	32130	1871.625	1871.625	2.394	H1-1b
51	MP075	PIPE_2.0	0.205	79	2	0.052	79		7	16811.605	32130	1871.625	1871.625	2.037	H1-1b
52	MP078	PIPE_2.0	0.241	43.5	3	0.07	43.5		9	16811.605	32130	1871.625	1871.625	1.959	H1-1b
53	MP081	PIPE_2.0	0.273	43.5	9	0.077	43.5		4	16811.605	32130	1871.625	1871.625	2.054	H1-1b
54	MP084	PIPE_2.0	0.477	43.5	10	0.09	43.5		5	16811.605	32130	1871.625	1871.625	1.778	H1-1b
55	MP087	PIPE_2.0	0.292	43.5	11	0.079	43.5		5	16811.605	32130	1871.625	1871.625	2.084	H1-1b
56	MP090	PIPE_2.0	0.285	43.5	5	0.075	43.5		11	16811.605	32130	1871.625	1871.625	2.465	H1-1b
57	MP093	PIPE_2.0	0.48	43.5	6	0.087	43.5		13	16811.605	32130	1871.625	1871.625	2.333	H1-1b
58	MP096	PIPE_2.0	0.293	43.5	7	0.084	43.5		13	16811.605	32130	1871.625	1871.625	2.524	H1-1b

Exhibit F

Power Density/RF Emissions Report

Fox Hill Telecom

Radio Frequency Emissions Analysis Report

T-Mobile

Site ID: CTHA560A

ATC Burlington 2
87 Monce Road
Burlington, CT 06013

September 1, 2022

Fox Hill Telecom Project Number: 221461

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**29.02 %**

Fox Hill Telecom

September 1, 2022

T-MOBILE
Attn: RF Manager
35 Griffin Road South
Bloomfield, CT 06009

Emissions Analysis for Site: **CTHA560A – ATC Burlington 2**

Fox Hill Telecom, Inc ("Fox Hill") was directed to analyze the proposed upgrades to the T-MOBILE facility located at **87 Monce Road, Burlington, CT**, for the purpose of determining whether the emissions from the Proposed T-MOBILE Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ 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.

General population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz & 700 MHz bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (AWS) bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed upgrades to the T-MOBILE antenna facility located at **87 Monce Road, Burlington, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-MOBILE is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

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

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

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
LTE	700 MHz	2	20
LTE / 5G NR	600 MHz	2	40
LTE	1900 MHz (PCS)	4	40
LTE	2100 MHz (AWS)	4	40
UMTS	2100 MHz (AWS)	1	40

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz, 700 MHz, 1900 MHz (PCS) and 2100 MHz (AWS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	RFS APXVAALL24_43-U-NA20	100
A	2	Ericsson AIR32 B66A / B2A	100
A	3	RFS APX16DWV-16DWV-S-E-A20	100
B	1	RFS APXVAALL24_43-U-NA20	100
B	2	Ericsson AIR32 B66A / B2A	100
B	3	RFS APX16DWV-16DWV-S-E-A20	100
C	1	RFS APXVAALL24_43-U-NA20	100
C	2	Ericsson AIR32 B66A / B2A	100
C	3	RFS APX16DWV-16DWV-S-E-A20	100

Table 2: Antenna Data

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

RESULTS

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

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	RFS APXVAALL24_43-U-NA20	700 MHz / 600 MHz	14.55	4	120	2,824.56	2.74
Antenna A2	Ericsson AIR32 B66A / B2A	1900 MHz (PCS) / 2100 MHz (AWS)	15.85 / 15.85	8	320	12,306.94	5.00
Antenna A3	RFS APX16DWV-16DWV-S-E-A20	2100 MHz (AWS)	15.9	1	40	1,556.18	0.63
						Sector A Composite MPE%	**8.37**
Antenna B1	RFS APXVAALL24_43-U-NA20	700 MHz / 600 MHz	14.55	4	120	2,824.56	2.74
Antenna B2	Ericsson AIR32 B66A / B2A	1900 MHz (PCS) / 2100 MHz (AWS)	15.85 / 15.85	8	320	12,306.94	5.00
Antenna B3	RFS APX16DWV-16DWV-S-E-A20	2100 MHz (AWS)	15.9	1	40	1,556.18	0.63
						Sector B Composite MPE%	**8.37**
Antenna C1	RFS APXVAALL24_43-U-NA20	700 MHz / 600 MHz	14.55	4	120	2,824.56	2.74
Antenna C2	Ericsson AIR32 B66A / B2A	1900 MHz (PCS) / 2100 MHz (AWS)	15.85 / 15.85	8	320	12,306.94	5.00
Antenna C3	RFS APX16DWV-16DWV-S-E-A20	2100 MHz (AWS)	15.9	1	40	1,556.18	0.63
						Sector C Composite MPE%	**8.37**

Table 3: T-MOBILE Emissions Levels

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

Site Composite MPE%	
Carrier	**MPE%**
T-MOBILE – Max Per Sector Value	**8.37 %**
Dish	5.78 %
Verizon Wireless	11.58 %
AT&T	2.42 %
Public Safety	0.87 %
Site Total MPE %:	**29.02 %**

Table 4: All Carrier MPE Contributions

T-MOBILE Sector A Total:	8.37 %
T-MOBILE Sector B Total:	8.37 %
T-MOBILE Sector C Total:	8.37 %
Site Total:	29.02 %

Table 5: Site MPE Summary

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

T-MOBILE _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile 700 MHz LTE	2	485.32	100	3.95	700 MHz	467	0.85%
T-Mobile 600 MHz LTE / 5G NR	2	926.96	100	7.54	600 MHz	400	1.89%
T-Mobile 1900 MHz (PCS) LTE	4	1,538.37	100	25.04	1900 MHz (PCS)	1000	2.50%
T-Mobile 2100 MHz (AWS) LTE	4	1,538.37	100	25.04	2100 MHz (AWS)	1000	2.50%
T-Mobile 2100 MHz (AWS) UMTS	1	1,556.18	100	6.33	2100 MHz (AWS)	1000	0.63%
						Total:	**8.37%**

Table 6: T-MOBILE Maximum Sector MPE Power Values

Summary

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

The anticipated maximum composite contributions from the 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:	8.37 %
Sector B:	8.37 %
Sector C:	8.37 %
T-MOBILE Maximum Total (per sector):	8.37 %
Site Total:	29.02 %
Site Compliance Status:	**COMPLIANT**

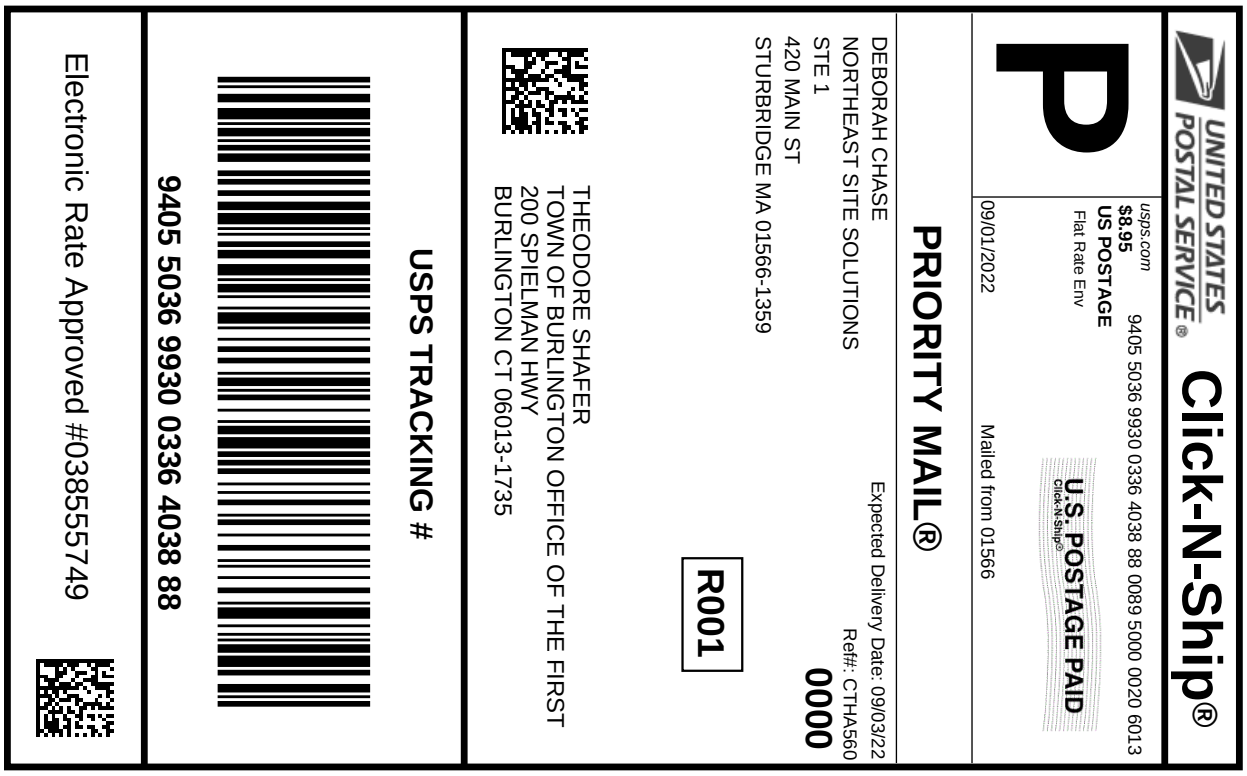
The anticipated composite MPE value for this site assuming all carriers present is **29.02 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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.

Scott Heffernan
Principal RF Engineer
Fox Hill Telecom, Inc
Worcester, MA 01520
(978)660-3998

Exhibit G

Recipient Mailings



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Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

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Ref#: CTHA560

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TOWN OF BURLINGTON OFFICE OF THE FIRST SELECTMAN
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BURLINGTON CT 06013-1735

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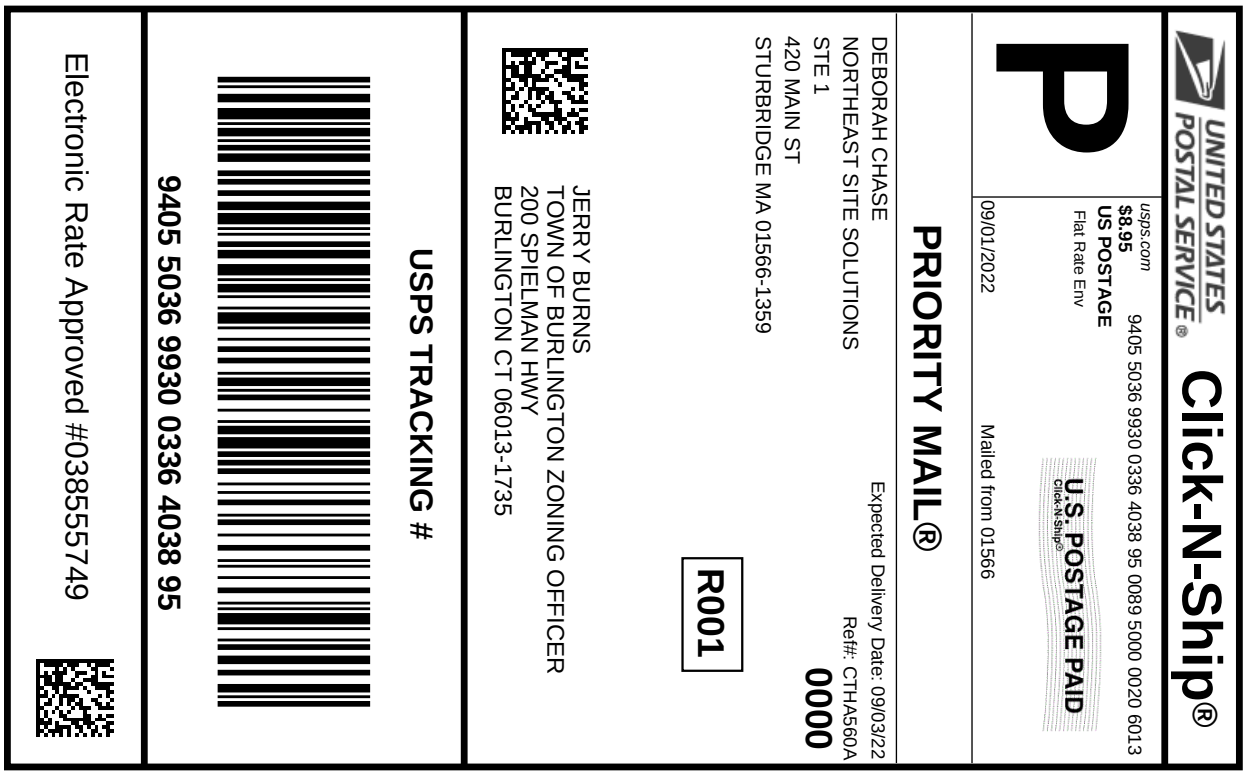

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Print Date:	09/01/2022
Ship Date:	09/01/2022
Expected Delivery Date:	09/03/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
STE 1
420 MAIN ST
STURBRIDGE MA 01566-1359

Ref#: CTHA560A

To: JERRY BURNS
TOWN OF BURLINGTON ZONING OFFICER
200 SPIELMAN HWY
BURLINGTON CT 06013-1735

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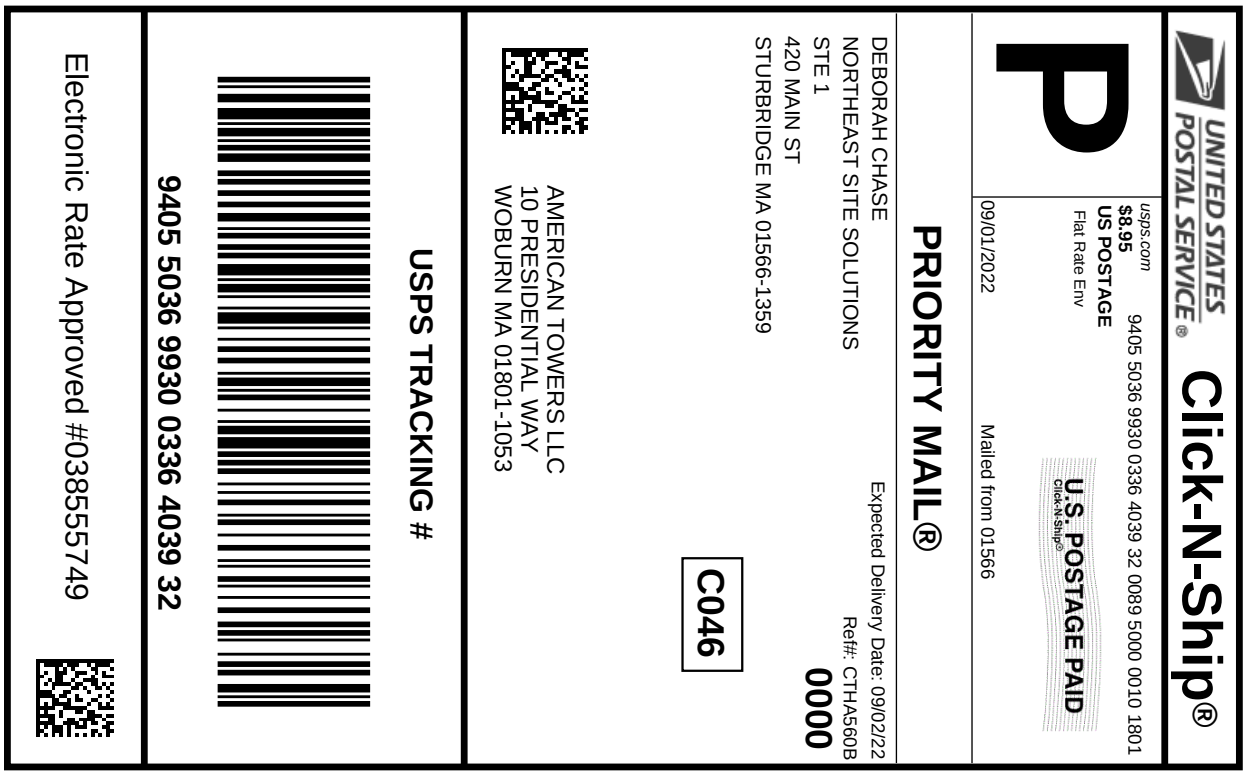

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9405 5036 9930 0336 4039 32

Trans. #:	570954494
Print Date:	09/01/2022
Ship Date:	09/01/2022
Expected Delivery Date:	09/02/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
STE 1
420 MAIN ST
STURBRIDGE MA 01566-1359

Ref#: CTHA560B

To: AMERICAN TOWERS LLC
10 PRESIDENTIAL WAY
WOBURN MA 01801-1053

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Product	Qty	Unit Price	Price
Prepaid Mail Woburn, MA 01801 Weight: 0 lb 2.00 oz Acceptance Date: Wed 09/07/2022 Tracking #: 9405 5036 9930 0336 4039 32	1		$0.00
Prepaid Mail Burlington, CT 06013 Weight: 0 lb 8.50 oz Acceptance Date: Wed 09/07/2022 Tracking #: 9405 5036 9930 0336 4038 95	1		$0.00
Prepaid Mail Burlington, CT 06013 Weight: 0 lb 8.60 oz Acceptance Date: Wed 09/07/2022 Tracking #: 9405 5036 9930 0336 4038 88	1		$0.00
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