INDUSTRIAL AVE,
TE 3
AHWAH NJ 07430

ONE: 201.684.0055
X: 201.684.0066

Transcend Wireless

September 17, 2021

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

RE: Notice of Exempt Modification
151 Waterbury Road, Prospect, CT 067112
Latitude: 41.52302996
Longitude: -72.99779164
T-Mobile Site#: CTNH302A - Anchor

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 137' level of the 150' monopole located at 151 Waterbury Road in Prospect, CT. The monopole and underlying property is owned by American Tower. T-Mobile now intends to remove three (3) antennas and replace three (3) of its existing antennas with three (3) L2500/N2500 antennas. The new antennas would be installed at the same 137' level of the tower. The new antennas support 5G services.

Planned Modifications:
Tower:
Install New:
(3) Ericsson AIR6449 B41 Antennas
(3) Radio 4449 B71 + B85
(3) Radio 4460 B25/B66
(3) 1 ¼" Coax Cables
(1) 6 x 24 HCS Cables

Existing to Remain:
(3) APXVAARR24-43-U-NA20 Antennas

To Be Removed:
(3) Ericsson AIR 32 Antennas
(3) Ericsson AIR 21 Antennas

(3) TMAs
(4) Existing Coax Cables

Ground Work:
Install (1) 6160 Equipment Cabinet, (1) Battery Cabinet B160

This tower was originally approved by the Town of Prospect with no record of approvals. Attached is email confirmation of the lack of records.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.SA. § 16-SOj-73, a copy of this letter is being sent to Mayor Robert J. Chatfield, Elected Official, and Gil Graveline, Chairman of Planning and Zoning, as well as the property and tower owner.

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

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,

Eric Breun
Transcend Wireless
Cell: 201-658-7728
Email: ebreun@transcendwireless.com

Attachments
cc: Robert J Chatfield - Mayor of Prospect
Gil Graveline - Chairman of Planning and Zoning
American Tower - Tower / Property Owner

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
GIL GRAVELINE
36 CENTER STREET
PROSPECT CT 06712

CT 067 9-05

UPS GROUND
TRACKING #: 1Z V25 742 03 9394 2435

BILLING: P/P

Reference #1: CTNH302A

XOL 21.09.06 NV45 35.0A 08/2021*

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
MAYOR ROBERT J CHATFIELD
36 CENTER STREET
PROSPECT CT 06712

CT 067 9-05

UPS GROUND
TRACKING #: 1Z V25 742 03 9941 5431

BILLING: P/P

Reference #1: CTNH302A

XOL 21.09.06 NV45 37.0A 09/2021*


ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430
1 LBS
1 OF 1
SHIP TO:
AMERICAN TOWER CORPORATION
10 PRESIDENTIAL WAY
WOBURN MA 01801
MA 018 9-04
UPS GROUND
TRACKING #: 1Z V25 742 03 9092 0446
BILLING: P/P
Reference #1: CTNH302A
XOL 21.09.06
NV45 35.0A 08/2021*
TM

Hello, your package has been delivered.

Delivery Date: Wednesday, 09/15/2021

Delivery Time: 12:58 PM

Left At: RECEIVER

Signed by: ANDERSON

TRANSCEND WIRELESS

Tracking Number:	1ZV257420393942435
Ship To:	GIL GRAVELINE 36 CENTER STREET PROSPECT, CT 06712 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CTNH302A

Hello, your package has been delivered.

Delivery Date: Wednesday, 09/15/2021

Delivery Time: 12:58 PM

Left At: RECEIVER

Signed by: ANDERSON

TRANSCEND WIRELESS

Tracking Number:	1ZV257420399415431
Ship To:	MAYOR ROBERT J CHATFIELD 36 CENTER STREET PROSPECT, CT 06712 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CTNH302A

Hello, your package has been delivered.

Delivery Date: Wednesday, 09/15/2021

Delivery Time: 11:47 AM

Left At: FRONT DESK

Signed by: ID Verified

TRANSCEND WIRELESS

Tracking Number:	1ZV257420390920446
Ship To:	AMERICAN TOWER CORPORATION 10 PRESIDENTIAL WAY WOBURN, MA 01801 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CTNH302A

Parcel Information

Location:	151 WATERBURY RD	Property Use:	Office	Primary Use:	Office Building
Unique ID:	G0121400	Map Block Lot:	104 160 151	Acres:	3.91
490 Acres:	0.00	Zone:	B	Volume / Page:	0819/0091
Developers Map / Lot:		Census:	3472		
Location:	151 WATERBURY RD	Property Use:	Office	Primary Use:	Office Building
Unique ID:	G0121400	Map Block Lot:	104 160 151	Acres:	3.91
490 Acres:	0.00	Zone:	B	Volume / Page:	0819/0091
Developers Map / Lot:		Census:	3472		

Value Information

	Appraised Value	Assessed Value
Land	151,918	106,340
Buildings	4,774	3,340
Detached Outbuildings	625,394	437,780
Total	782,086	547,460

Owner's Information

Owner's Data
ATC WATERTOWN LLC AMERICAN TOWER PROP TAX P O BOX 723597 ATLANTA GA 31139

Building 1

Photo Not Available

Category:	Office	Use:	Office Building	GLA:	1,816
Stories:	1.00	Construction:	Masonry / Wood Frame	Year Built:	1973
Heating:	FHA	Fuel:	Oil	Cooling Percent:	100
Siding:	Concrete Block/B. V. Solid	Roof Material:		Beds/Units:	0

Special Features

Attached Components

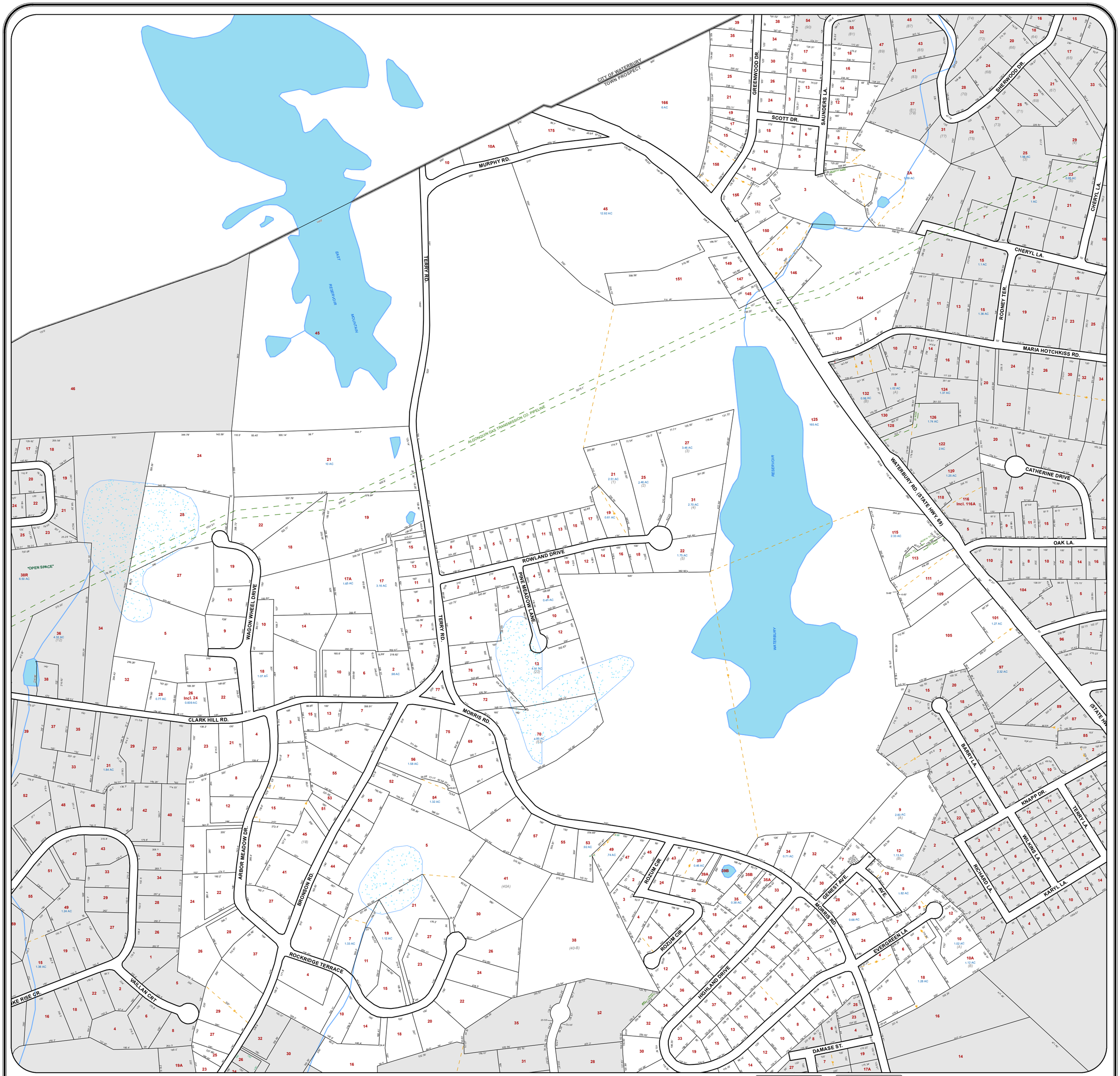
Type:	Year Built:	Area:
Open Porch	1973	64

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Paving	1973	0.00	0.00	2,400
Average Shed	1973	0.00	0.00	120
Cell Tower	2008	0.00	0.00	1
Cell Tower	2008	0.00	0.00	1

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Sale Price
ATC WATERTOWN LLC	0819	0091	04/09/2018	Warranty Deed	$0
RICHLAND TOWERS MANAGEMENT PARKVIEW LLC	0722	0095	03/01/2013	Quit Claim	$666,450
SFX BROADCASTING OF CONNECTICUT	0291	0059	06/30/1997	Warranty Deed	$0



Parcel Lines
Water Feature
ROW
Parcel
Former Parcel
Former ROW

Water
Marsh
Parcel Hooks
Text Leader Lines
Easements
Town Boundary

Text Lot Numbers
Text Acreage Values
Text Easement Text
Text Developer Lot

August 2021

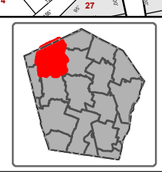
1 inch = 400 feet

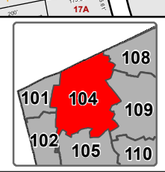
0 200 400 600 800 Feet

N

Town of Prospect

CONNECTICUT





Tax Map:

104

The data displayed on this map is for assessing and planning purposes only. This is not a survey product.

NEGEO
New England GeoSystems
420 East Main Street - Suite 18
Branford, CT 06405

Transcend Wireless

Shappy, Gregg <gshappy@transcendwireless.com>

151 Waterbury Road

3 messages

Rosalyn Moffo <landuse03@sbcglobal.net> Tue, Jun 21, 2016 at 3:24 PM
Reply-To: Rosalyn Moffo <landuse03@sbcglobal.net>
To: "gshappy@transcendwireless.com" <gshappy@transcendwireless.com>

To Whom It May Concern:

All Land Use records for the existing tower at 151 Waterbury Road have been reviewed and the original Zoning decision has not been found.

Please contact the Land Use office if you have any questions @ (203) 758-4461.

Thank you.

Rosalyn Moffo
Land Use Clerk

Shappy, Gregg <gshappy@transcendwireless.com> Tue, Jun 21, 2016 at 3:36 PM
To: Rosalyn Moffo <landuse03@sbcglobal.net>

Thank you Rosalyn

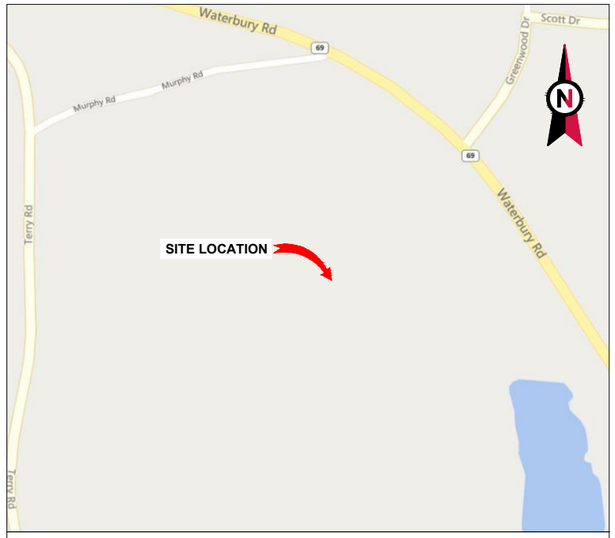
Gregg Shappy
Transcend Wireless
10 Industrial Avenue, Suite 3
Mahwah, NJ 07430
gshappy@transcendwireless.com
(845)553-2045

[Quoted text hidden]

Rosalyn Moffo <landuse03@sbcglobal.net> Wed, Jun 22, 2016 at 10:10 AM
Reply-To: Rosalyn Moffo <landuse03@sbcglobal.net>
To: "Shappy, Gregg" <gshappy@transcendwireless.com>

No Problem!

[Quoted text hidden]



VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: PROSPECT CT
ATC SITE NUMBER: 282660
T-MOBILE SITE NAME:
CTNH302/CLRCHANNEL/PROSP.
T-MOBILE SITE NUMBER: CTNH302A
SITE ADDRESS: 151 WATERBURY PROSPECT RD
PROSPECT, CT 06712

LOCATION MAP

T-MOBILE ANCHOR ANTENNA AMENDMENT PLAN
67D5A998E OUTDOOR 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. CT STATE BUILDING CODE, INCORPORATING THE 2018 INTERNATIONAL BUILDING CODE
2. 2017 NATIONAL ELECTRIC CODE (NEC)
3. LOCAL BUILDING CODE
4. CITY/COUNTY ORDINANCES

UTILITY COMPANIES

POWER COMPANY: EVERSOURCE
PHONE: (877) 659-6326

TELEPHONE COMPANY: FRONTIER COMMUNICATIONS
PHONE: (800) 376-6843

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

PROJECT SUMMARY

SITE ADDRESS:

151 WATERBURY PROSPECT RD

PROSPECT, CT 06712

COUNTY: NEW HAVEN

GEOGRAPHIC COORDINATES:

LATITUDE: 41.52302996

LONGITUDE: -72.99779164

GROUND ELEVATION: 879' AMSL

PROJECT TEAM

TOWER OWNER:

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

APPLICANT:

T-MOBILE

ENGINEER:

COLLIERS ENGINEERING &
DESIGN CT, P.C.
135 NEW ROAD
MADISON, CT 06443

PROJECT#:
21904391A

PROPERTY OWNER:

151 WATERBURY PROSPECT RD
PROSPECT, CT 06712

PROJECT DESCRIPTION

THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW:

TOWER WORK:

REMOVE (6) ANTENNA(s), (3) RRH(s), (3) TTA(s), (4) HYBRID CABLE(s) AND (6) COAX CABLE(s)

INSTALL (3) ANTENNA(s), (6) RRH(s), (3) FIBER CABLE(s), AND (1) HYBRID CABLE(s)

EXISTING (3) ANTENNA(s), TO REMAIN

GROUND WORK:

INSTALL (1) ENCLOSURE 6160 AND (1) B160 BATTERY CABINET

EXISTING (1) RBS 6102 CABINET AND (1) RBS 6131 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

FROM DOWNTOWN WATERBURY CT START OUT GOING EAST ON E MAIN ST TOWARD ORANGE ST. TAKE THE 1ST RIGHT ONTO BRASS MILL DR. TURN LEFT ONTO UNION ST. UNION ST BECOMES CT-69. TURN SHARP RIGHT ONTO MURPHY RD. 45 MURPHY RD, PROSPECT, CT 06712-1134, 45 MURPHY RD IS ON THE LEFT.

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	TITLE SHEET	0	09/14/21	MSG
G-002	GENERAL NOTES	0	09/14/21	MSG
C-101	DETAILED SITE PLAN	0	09/14/21	MSG
C-102	DETAILED GROUND PLAN	0	09/14/21	MSG
C-201	TOWER ELEVATION	0	09/14/21	MSG
C-401	ANTENNA INFORMATION & SCHEDULE	0	09/14/21	MSG
C-501	CONSTRUCTION DETAILS	0	09/14/21	MSG
E-501	GROUNDING DETAILS	0	09/14/21	MSG
E-502	ELECTRICAL DETAILS	0	09/14/21	MSG
R-601	SUPPLEMENTAL			
R-602	SUPPLEMENTAL			
R-603	SUPPLEMENTAL			
R-604	SUPPLEMENTAL			
R-605	SUPPLEMENTAL			

AMERICAN TOWER®

Colliers Engineering & Design
www.colliersengineering.com
Doing Business as MASER CONSULTING
MADISON
135 New Road
Madison, CT 06443
Phone: 860.395.0055
COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING

REV.	DESCRIPTION	BY	DATE
A	PRELIM	MSG	08/26/21
0	FOR CONSTRUCTION	RMD	09/14/21

ATC SITE NUMBER:
282660

ATC SITE NAME:
PROSPECT CT

T-MOBILE SITE NAME:
CTNH302/CLRCHANNEL/PROSP.

SITE ADDRESS:
151 WATERBURY PROSPECT RD
PROSPECT, CT 06712

SEAL:

STATE OF CONNECTICUT · PETROS TSOUKALAS · 32577 · REGISTERED PROFESSIONAL ENGINEER

Petros Tsoukalas
CONNECTICUT LICENSED PROFESSIONAL ENGINEER
LICENSE NUMBER: 32577
COLLIERS ENGINEERING & DESIGN CT, P.C.
C.T. JPC.0000131

T-Mobile

DATE DRAWN:	08/26/21
ATC JOB NO:	13716921_G3
CUSTOMER ID:	CTNH302/CLRCHANNEL/PROSP.
CUSTOMER #:	CTNH302A

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

ELECTRICAL NOTES:

1. ELECTRICAL DESIGN SHALL BE PERFORMED BY ELECTRICAL CONTRACTOR. STRUCTURAL DESIGN SHALL BE PERFORMED BY GENERAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL ENSURE THAT ALL WORK COMPLIES WITH ALL APPLICABLE LOCAL AND STATE CODES AND NATIONAL ELECTRICAL CODE.
2. ALL SUGGESTED ELECTRICAL ELEMENTS (SUCH AS BREAKER SIZES, WIRE SIZES, CONDUITS SIZES ARE FOR ZONING PURPOSES ONLY. IT IS THE RESPONSIBILITY TO OF THE ELECTRICAL CONTRACTOR TO CONFIRM COMPLIANCE WITH LOCAL ELECTRICAL CODES AND PASS ALL APPLICABLE AND NECESSARY INSPECTIONS. IN SOME EVENTS, IT MAY BE NECESSARY TO PERFORM AN ELECTRICAL LOAD STUDY TO VERIFY THE CAPACITY OF THE EXISTING SERVICE. THIS IS NOT THE RESPONSIBILITY OF CONCORDIA. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
3. CONTRACTOR SHALL FIELD LOCATE ALL BELOW GRADE GROUND LINES AND UTILITY LINES PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR RELOCATION OF ALL UTILITIES AND GROUND LINES THAT MAY BECOME DISTURBED OR CONFLICTING IN THE COURSE OF CONSTRUCTION.

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

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COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING

REV.	DESCRIPTION	BY	DATE
A	PRELIM	MSG	08/26/21
0	FOR CONSTRUCTION	RMD	09/14/21

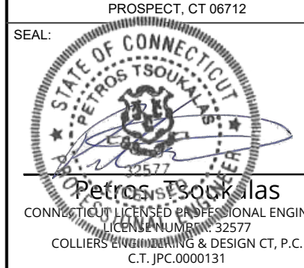
ATC SITE NUMBER:
282660

ATC SITE NAME:
PROSPECT CT

T-MOBILE SITE NAME:
CTNH302/CLRCHANNEL/PROSP.

SITE ADDRESS:
151 WATERBURY PROSPECT RD
PROSPECT, CT 06712

SEAL:



Petros Tsoukalas
CONNECTICUT LICENSED PROFESSIONAL ENGINEER
LICENSE NUMBER: 32577
COLLIERS ENGINEERING & DESIGN CT, P.C.
C.T. JPC.0000131

T-Mobile

DATE DRAWN:	08/26/21
ATC JOB NO:	13716921_G3
CUSTOMER ID:	CTNH302/CLRCHANNEL/PROSP.
CUSTOMER #:	CTNH302A

GENERAL NOTES

SHEET NUMBER:	REVISION:
G-002	0

SITE PLAN NOTES:

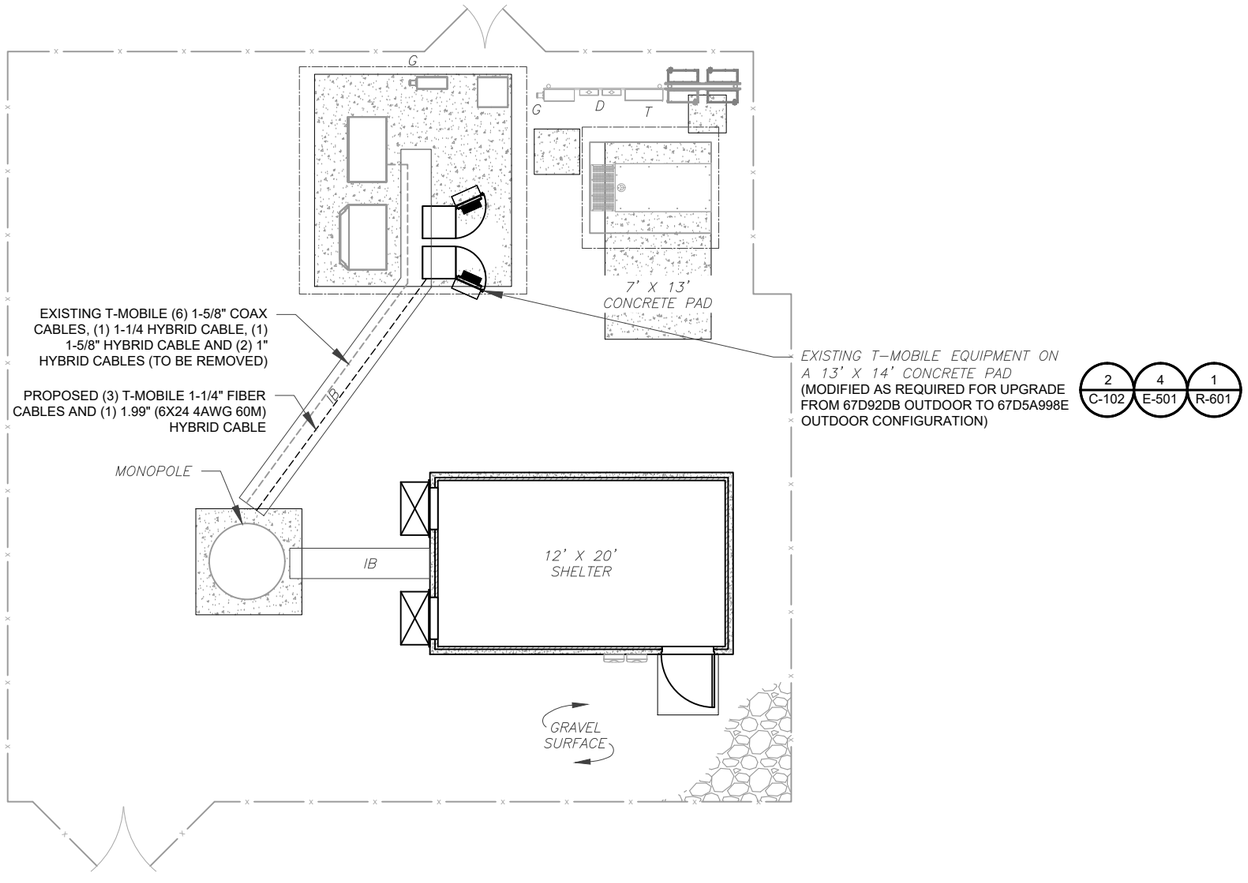
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.

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. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE T-MOBILE REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO 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
x	CHAINLINK FENCE



PROPOSED CABLE LENGTH:

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **175'**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES), CDS DEFER TO GREATEST CABLE LENGTH.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. WHERE POSSIBLE UTILIZE EXISTING CABLE SUPPORT STRUCTURES AS PROVIDED FOR CARRIER TO ADEQUATELY SECURE CABLES, USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER. OTHERWISE, ATTACH CABLES TO HORIZONTAL OR DIAGONAL TOWER MEMBERS USING PROPOSED STAINLESS STEEL ADAPTERS (DO NOT ATTACH TO TOWER LEG).

1 DETAILED SITE PLAN

GRAPHIC SCALE

10 0 5 10

(IN FEET)
1 UNIT = 10 FEET

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PROSPECT, CT 06712

SEAL:

STATE OF CONNECTICUT · PETROS TSOUKALAS · 32577 · LICENSED PROFESSIONAL ENGINEER

Petros Tsoukalas
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LICENSE NUMBER: 32577
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T-Mobile

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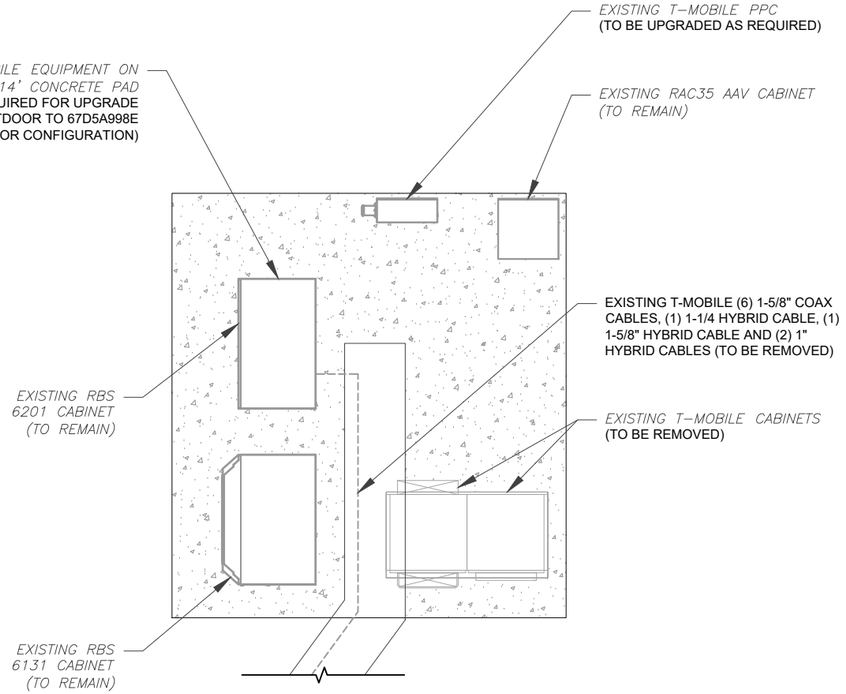
CUSTOMER ID:	CTNH302/CLRCHANNEL/PROSP.
CUSTOMER #:	CTNH302A

DETAILED SITE PLAN

SHEET NUMBER:	REVISION:
C-101	0

SITE PLAN NOTES:

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

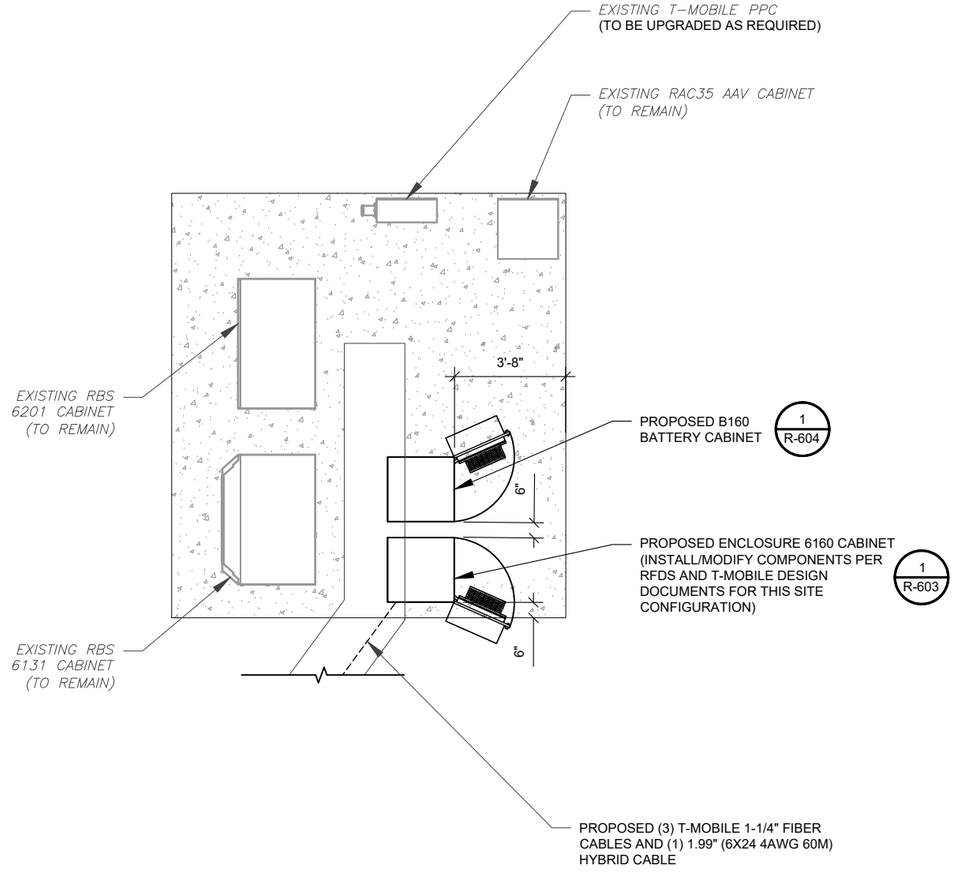


1 EXISTING GROUND EQUIPMENT LAYOUT

0 5' 10'

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

T-MOBILE CM APPROVAL REQUIRED BEFORE INSTALLING CABINETS



2 PROPOSED GROUND EQUIPMENT LAYOUT

0 5' 10'

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

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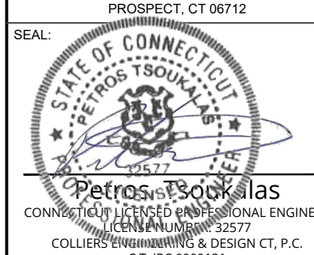
PROSPECT, CT 06712

SEAL:



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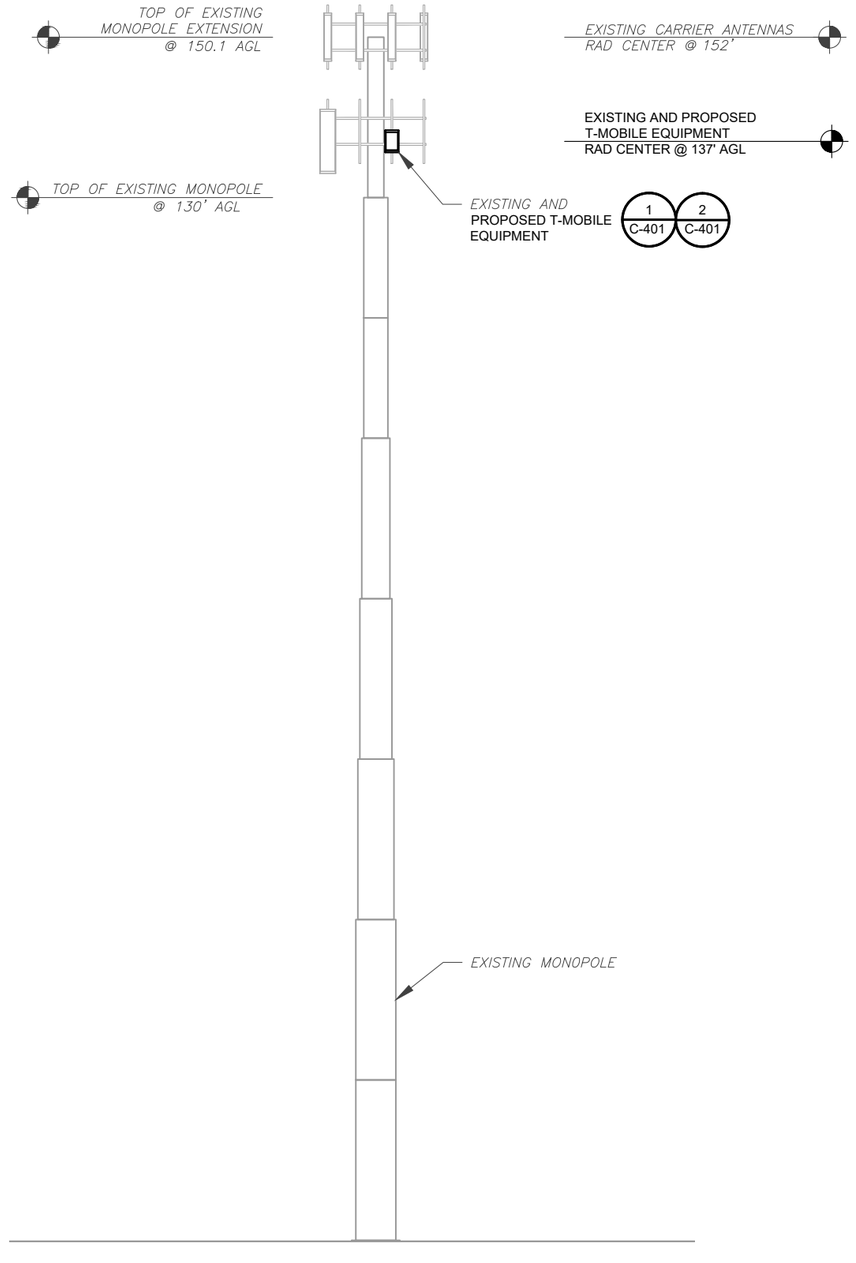
CUSTOMER ID:	CTNH302/CLRCHANNEL/PROSP.
CUSTOMER #:	CTNH302A

DETAILED GROUND PLAN

SHEET NUMBER:	REVISION:
C-102	A



1 TOWER ELEVATION
SCALE: N.T.S.

PER MOUNT ANALYSIS COMPLETED BY AMERICAN TOWER CORPORATION, DATED 08/19/21, THE EXISTING MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.

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.)

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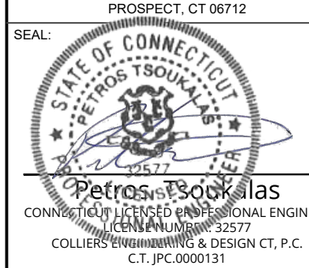

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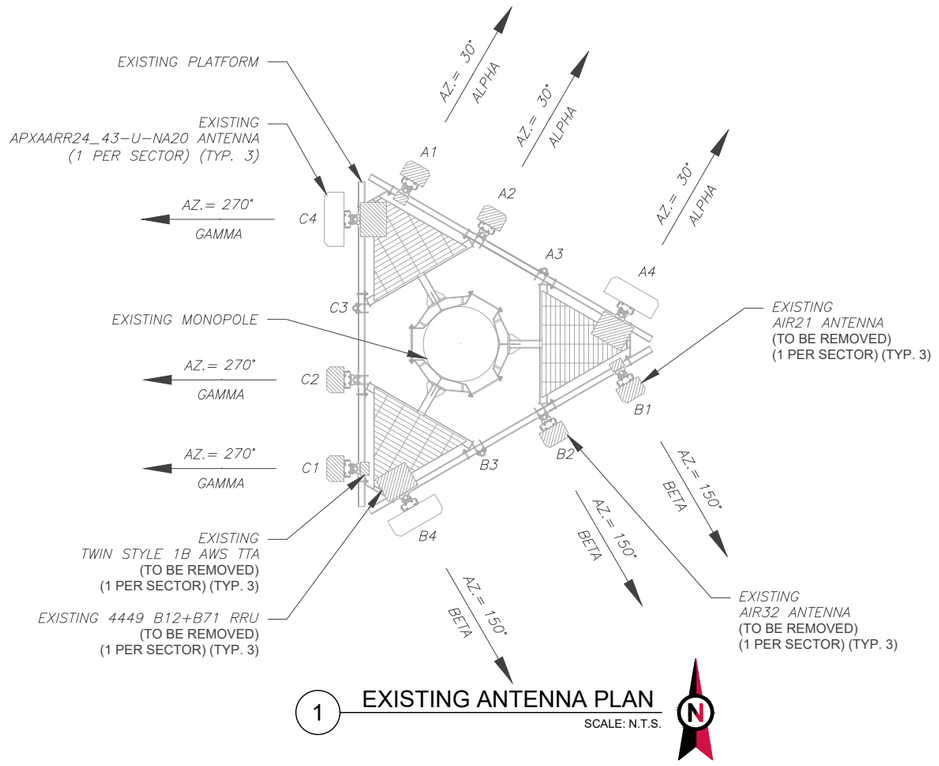
CUSTOMER #:	CTNH302A

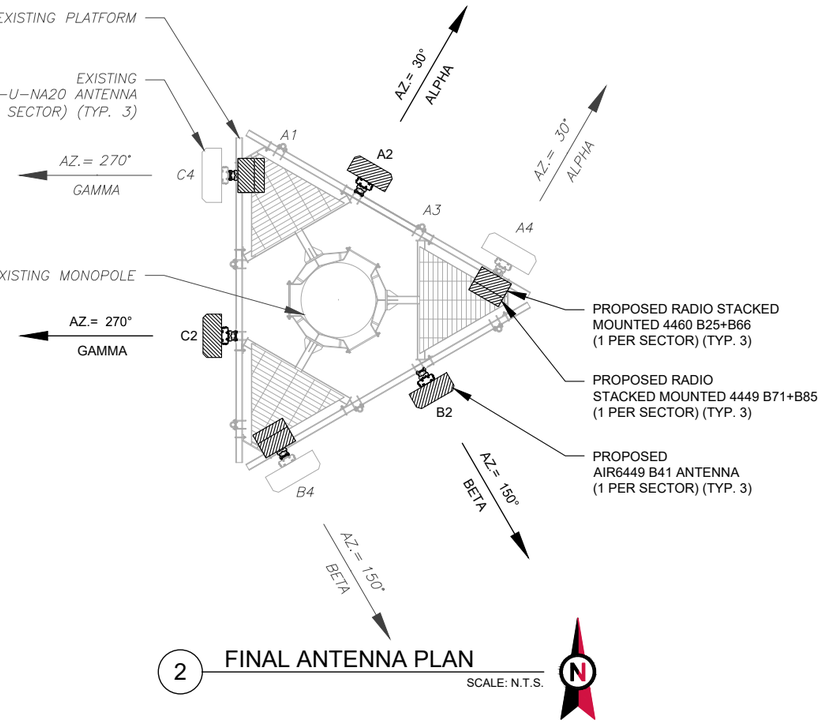
TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-201	0



1 EXISTING ANTENNA PLAN
SCALE: N.T.S.

PER MOUNT ANALYSIS COMPLETED BY AMERICAN TOWER CORPORATION, DATED 08/19/21, THE EXISTING MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.



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	137'	30°	A1	AIR21	G1900 U1900/2100	0/6/6	RMV	TWIN STYLE 1B AWS	RMV
			A2	AIR32	L1900/2100	0/6/6/6/6	RMV	–	–
			A3	–	–	–	–	–	–
			A4	APXVAARR24_43-U-NA20	L700/600/N600	0/6/6	RMN	4449 B12+B71	RMV
BETA	137'	150°	B1	AIR21	G1900 U1900/2100	0/6/6	RMV	TWIN STYLE 1B AWS	RMV
			B2	AIR32	L1900/2100	0/6/6/6/6	RMV	–	–
			B3	–	–	–	–	–	–
			B4	APXVAARR24_43-U-NA20	L700/600/N600	0/6/6	RMN	4449 B12+B71	RMV
GAMMA	137'	270°	C1	AIR21	G1900 U1900/2100	0/6/6	RMV	TWIN STYLE 1B AWS	RMV
			C2	AIR32	L1900/2100	0/6/6/6/6	RMV	–	–
			C3	–	–	–	–	–	–
			C4	APXVAARR24_43-U-NA20	L700/600/N600	0/6/6	RMN	4449 B12+B71	RMV

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

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	137'	30°	A1	-	-	-	-	-	-
			A2	AIR6449 B41	L2500/N2500	0/6/6	ADD	-	-
			A3	-	-	-	-	-	-
			A4	APXVAARR24_43-U-NA20	G1900/N600 U1900/2100 L700/600/1900/2100	0/6/6/6/6	RMN	4449 B71+B85 4460 B25+B66	ADD ADD
BETA	137'	150°	B1	-	-	-	-	-	-
			B2	AIR6449 B41	L2500/N2500	0/6/6	ADD	-	-
			B3	-	-	-	-	-	-
			B4	APXVAARR24_43-U-NA20	G1900/N600 U1900/2100 L700/600/1900/2100	0/6/6/6/6	RMN	4449 B71+B85 4460 B25+B66	ADD ADD
GAMMA	137'	270°	C1	-	-	-	-	-	-
			C2	AIR6449 B41	L2500/N2500	0/6/6	ADD	-	-
			C3	-	-	-	-	-	-
			C4	APXVAARR24_43-U-NA20	G1900/N600 U1900/2100 L700/600/1900/2100	0/6/6/6/6	RMN	4449 B71+B85 4460 B25+B66	ADD ADD

EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
–	–	(6) 1-5/8"	(1) 1-1/4" (1) 1-5/8"	RMV
–	–	–	(2) 1"	RMV

CABLE LENGTHS FOR JUMPERS

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

FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	-	(3) 1-/1/4"	ADD
-	-	-	(1) 1.99" (6X24 4AWG 60M)	ADD

3 EQUIPMENT SCHEDULES

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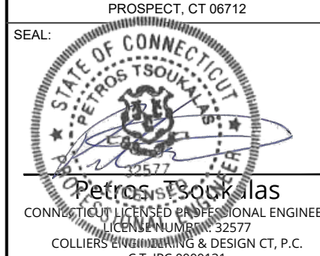
SEAL:



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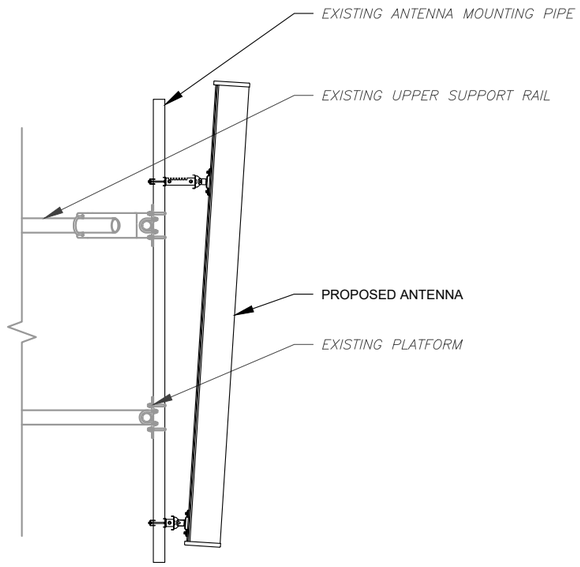
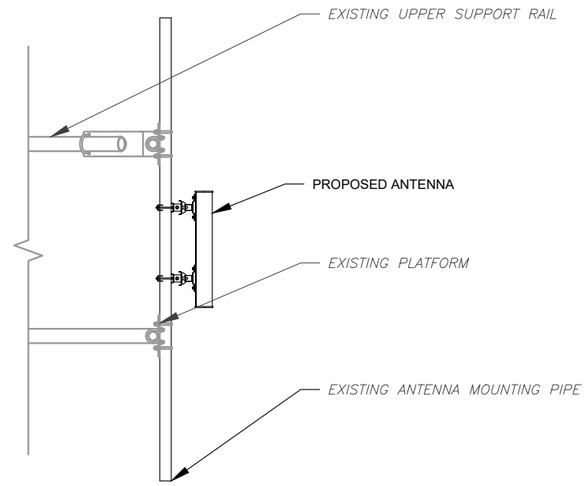
CUSTOMER #:	CTNH302A

ANTENNA INFORMATION & SCHEDULE

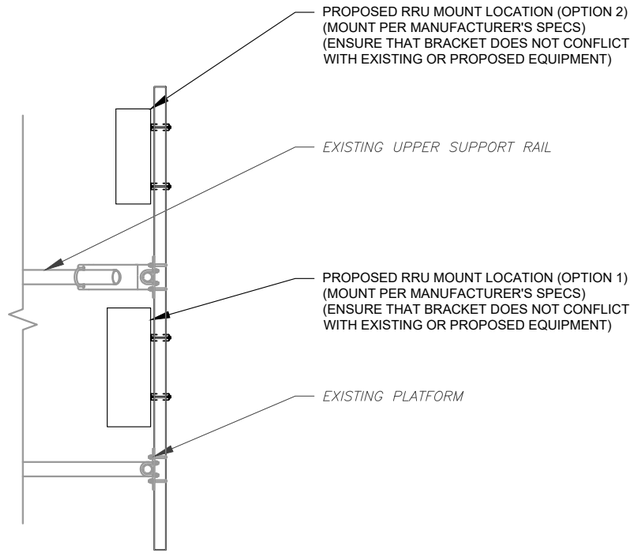
SHEET NUMBER:	REVISION:
C-401	0



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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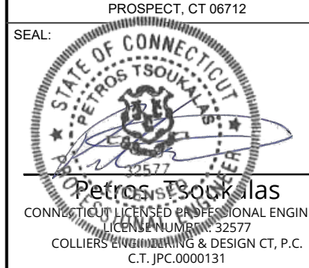
151 WATERBURY PROSPECT RD
PROSPECT, CT 06712

SEAL:



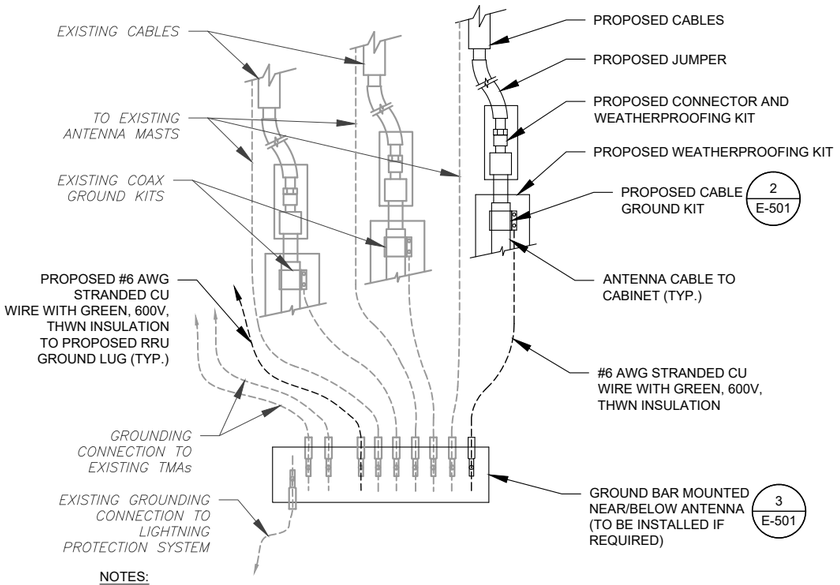
Petros Tsoukalas
CONNECTICUT LICENSED PROFESSIONAL ENGINEER
LICENSE NUMBER: 32577
COLLIERS ENGINEERING & DESIGN CT, P.C.
C.T. JPC.0000131

T-Mobile

DATE DRAWN:	08/26/21
ATC JOB NO:	13716921_G3
CUSTOMER ID:	CTNH302/CLRCHANNEL/PROSP.
CUSTOMER #:	CTNH302A

CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-501	0

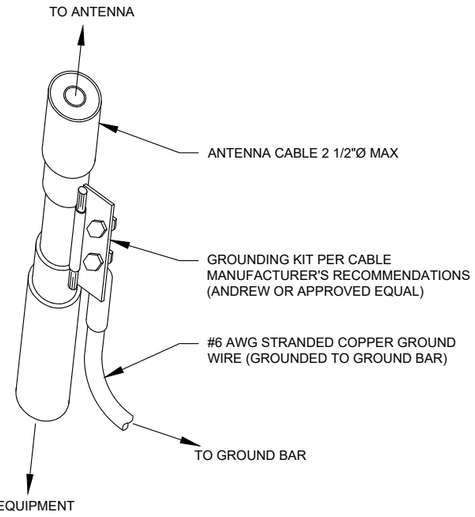


NOTES:

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.

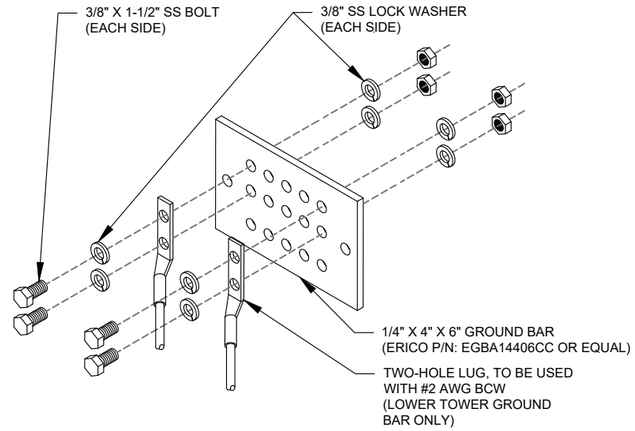


GROUND KIT NOTES:

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.

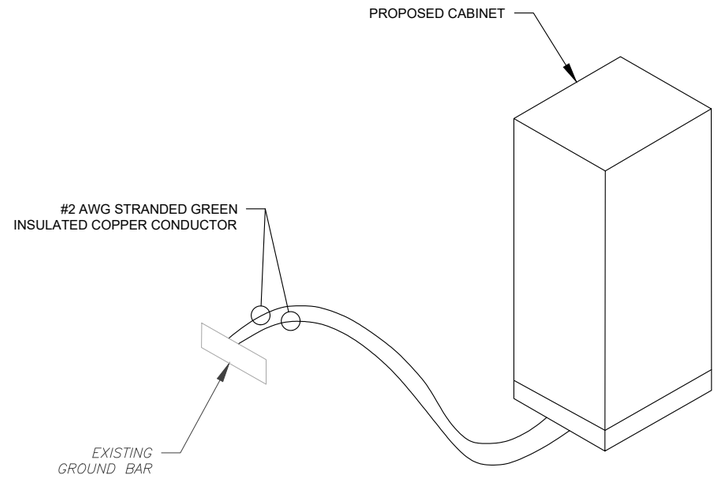
3 TOWER GROUND BAR DETAIL

SCALE: N.T.S.

ELECTRICAL NOTES:

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE T-MOBILE REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.
2. ATC HAS NOT VERIFIED ANY EXISTING T-MOBILE GROUND EQUIPMENT OR ELECTRICAL LOADING. PROPOSED WORK BASED ON INSTALLATION CONFIGURATION PROVIDED BY T-MOBILE. CONTRACTOR TO VERIFY EXISTING T-MOBILE PANEL HAS SUFFICIENT SPACE FOR PROPOSED BREAKER. PROPOSED CABLE AND CONDUIT SHALL BE MINIMUM SIZE PER BELOW IN CHART.
3. FOR SPECIFIC CABINET / ANCILLARY EQUIPMENT WIRING REQUIREMENTS, THE T-MOBILE CONTRACTOR SHOULD REFERENCE DESIGN DOCUMENTS PROVIDED BY T-MOBILE FOR THIS CURRENT PROJECT CONFIGURATION, IN ACCORDANCE WITH LOCAL JURISDICTION REQUIREMENTS & NEC STANDARDS & PRACTICES.

OCPD SIZE	WIRE SIZE	GROUND SIZE	CONDUIT SIZE
80A/2P	2#3 AWG	#8 AWG	1-1/4"
100/2P	2#2 AWG	#8 AWG	1-1/4"
125A/2P	2#1 AWG	#8 AWG	1-1/2"
150A/2P	2#1/0 AWG	#8 AWG	1-1/2"



4 CABINET GROUNDING DETAIL

SCALE: N.T.S.

AMERICAN TOWER®

Colliers Engineering & Design
www.colliersengineering.com
Doing Business as MASER CONSULTING
MADISON
135 New Road
Madison, CT 06443
Phone: 860.395.0055
COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING

REV.	DESCRIPTION	BY	DATE
A	PRELIM	MSG	08/26/21
0	FOR CONSTRUCTION	RMD	09/14/21

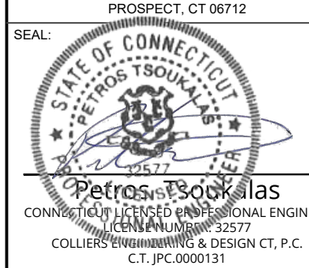
ATC SITE NUMBER:
282660

ATC SITE NAME:
PROSPECT CT

T-MOBILE SITE NAME:
CTNH302/CLRCHANNEL/PROSP.

SITE ADDRESS:
151 WATERBURY PROSPECT RD
PROSPECT, CT 06712

SEAL:



Petros Tsoukalas
CONNECTICUT LICENSED PROFESSIONAL ENGINEER
LICENSE NUMBER: 32577
COLLIERS ENGINEERING & DESIGN CT, P.C.
C.T. JPC.0000131

T-Mobile

DATE DRAWN:	08/26/21
ATC JOB NO:	13716921_G3
CUSTOMER ID:	CTNH302/CLRCHANNEL/PROSP.
CUSTOMER #:	CTNH302A

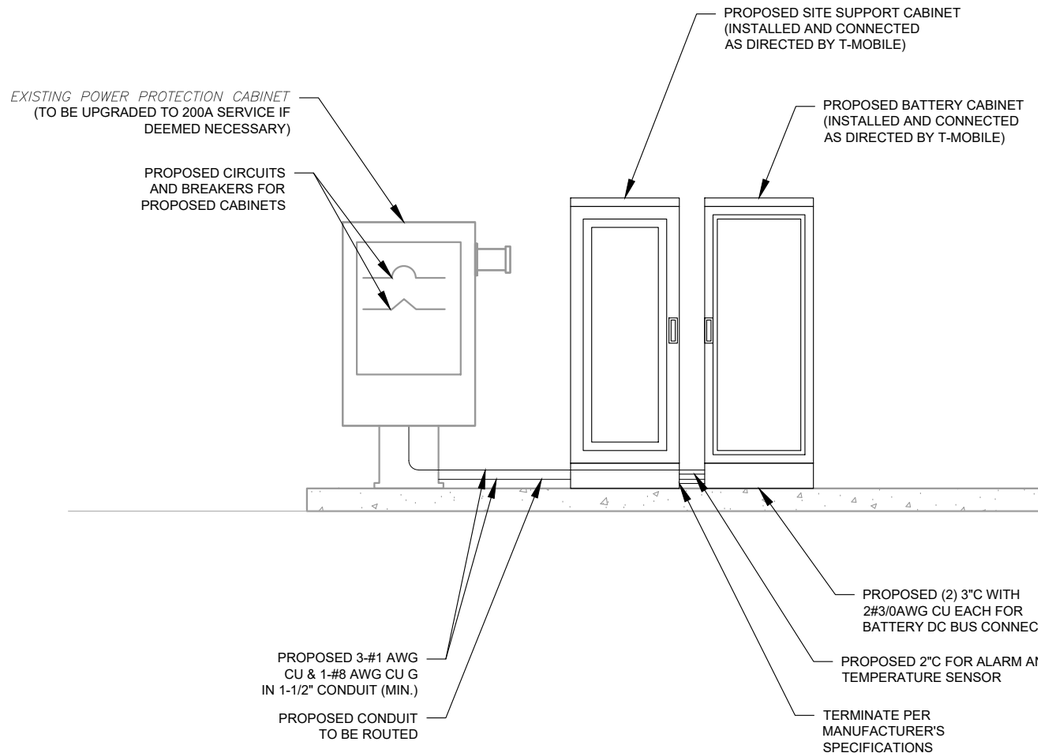
GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	0

NOTES:
1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTSOF THE 2017 EDITION OF NATIONAL ELECTRICAL CODE (NEC), NATIONAL ELECTRICAL SAFETY CODE, NAPA, NETA, OSHA, AND ALL OTHER EXISTING CODES AND REGULATIONS OF AUTHORITIES WHICH WOULD HAVE JURISDICTION.

2. ALL NEW WIRING SHALL BE WITH THWN-2 OR XHHW-2 INSULATION AND RATED FOR 75 DEG CELSIUS.

3. ALL UNDERGROUND CONDUIT SHALL BE PVC SCH40. ALL ABOVE GROUND CONDUIT SHALL BE PVC SCH80 OR RMC.



1 ELECTRICAL UPGRADE DIAGRAM
SCALE: NOT TO SCALE

ELECTRICAL NOTES:

1. THIS DIAGRAM 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. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE T-MOBILE REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.
3. ATC HAS NOT YET VERIFIED ANY EXISTING T-MOBILE GROUND EQUIPMENT OR ELECTRICAL LOADING. PROPOSED WORK BASED ON INSTALLATION CONFIGURATION PROVIDED BY T-MOBILE. CONTRACTOR TO VERIFY EXISTING T-MOBILE PANEL HAS SUFFICIENT SPACE FOR PROPOSED BREAKER.

AMERICAN TOWER®

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Madison, CT 06443
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REV.	DESCRIPTION	BY	DATE
A	PRELIM	MSG	08/26/21
0	FOR CONSTRUCTION	RMD	09/14/21

ATC SITE NUMBER:
282660

ATC SITE NAME:
PROSPECT CT

T-MOBILE SITE NAME:
CTNH302/CLRCHANNEL/PROSP.

SITE ADDRESS:
151 WATERBURY PROSPECT RD
PROSPECT, CT 06712

SEAL:

STATE OF CONNECTICUT
PETROS TSOUKALAS
32577
REGISTERED PROFESSIONAL ENGINEER

Petros Tsoukalas
CONNECTICUT LICENSED PROFESSIONAL ENGINEER
LICENSE NUMBER: 32577
COLLIERS ENGINEERING & DESIGN CT, P.C.
C.T. JPC.0000131

T-Mobile

DATE DRAWN:	08/26/21
ATC JOB NO:	13716921_G3
CUSTOMER ID:	CTNH302/CLRCHANNEL/PROSP.
CUSTOMER #:	CTNH302A

ELECTRICAL DETAILS

SHEET NUMBER:	REVISION:
E-502	0

Proposed RAN Equipment

Template: 67D5A998E Outdoor

Enclosure	1	2	3
Enclosure Type	RBS 6131	Enclosure 6160	B160
Baseband	DUW30 U2100; DUG20 G1900; BB 6630 L2100 L1900; BB 6630 L700 L600 N600; DUW30 U1900	BB 6648 L2500 N2500	
Hybrid Cable System	Ericsson 6x12 HCS *Select Length & AWG* **(x 3)**	Ericsson Hybrid Trunk 6/24 4AWG 60m; PSU 4813	
Transport System		CSR IXRe V2 (Gen2)	

RAN Scope of Work:

There is no 19" Rack on site.

Remove and return all cabinet radios from existing base station cabinet.

Add (1) Enclosure 6160.

Add (1) iXRe Router to new Enclosure 6160.

Add (1) BB6648 for L2500 and N2500 (MMBB - Mixed Mode Baseband) to new Enclosure 6160.

Add (1) PSU4813 Voltage Booster to new Enclosure 6160.

Add (1) Battery Cabinet B160.

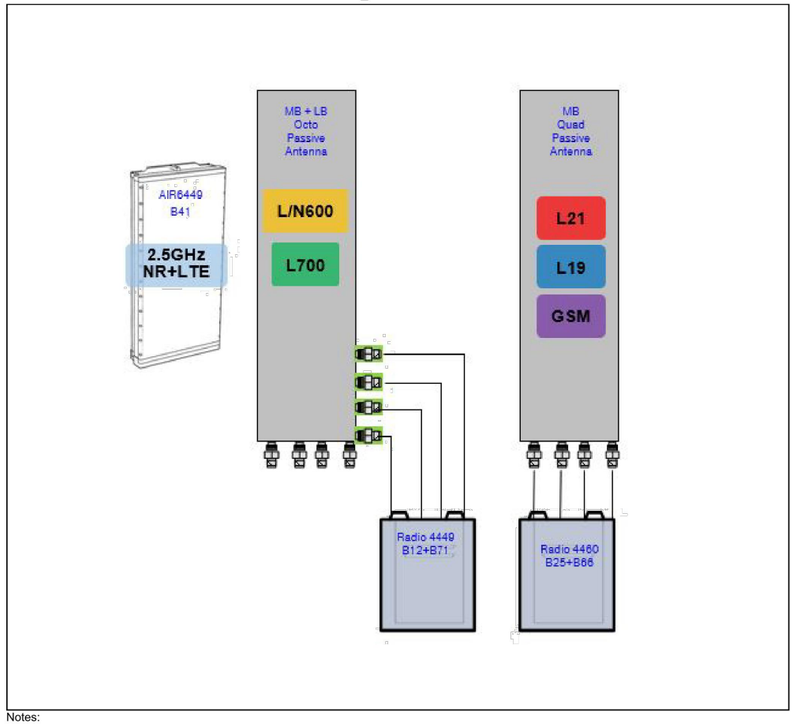
Add (1) 6X24 HCS terminating at the Enclosure 6160. Connect DC for the AIR6449 B41 to the PSU4813 Voltage Booster.

Remove 1 - 9x18

1 CABINET CONFIGURATION

SCALE: NOT TO SCALE

67D5998E_1xAIR+1OP+1QP.JPG



Notes:

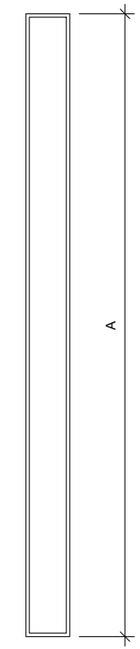
2 ANTENNA CONFIGURATION

SCALE: NOT TO SCALE

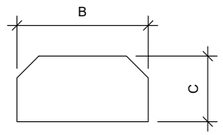
NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-601	-



FRONT VIEW

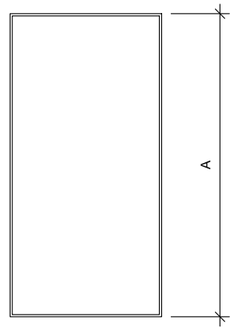


TOP VIEW

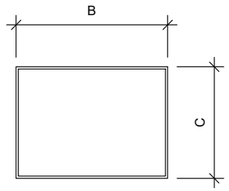
1 ANTENNA SPECIFICATIONS

FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

ANTENNA SPECIFICATIONS				
ANTENNA MODEL	A	B	C	WEIGHT (LBS)
AIR6449 B41	33.1"	20.6"	8.6"	104.0



FRONT VIEW



TOP VIEW

2 RRU SPECIFICATIONS

FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

RRU SPECIFICATIONS				
RRU MODEL	A	B	C	WEIGHT (LBS)
4460	19.6"	15.7"	12.1"	109.0
4449 B71+B85	15.0"	13.2"	10.5"	75.0

SUPPLEMENTAL

SHEET NUMBER: R-602

REVISION: -

Enclosure 6160 AC

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

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

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

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

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

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

Preliminary technical specification for Enclosure 6160 AC

CAPACITY	
Rack space user equipment	19U (19" rack)
Hardware capabilities	Power and CPRI support for multi-standard remote radios (RRU or AIR) ERS Baseband and Transport units Li-Ion batteries 3PP equipment Additional power feed available as option
MECHANICAL SPECIFICATION	
Weight	145 kg (excluding active equipment) 320 lbs (excluding active equipment)
Dimension (H x W x D)	1600 x 650 x 650 mm (incl. Base frame) 63 x 26 x 26 in. (incl. Base frame)
Base frame height	150 mm 6 in.
Mounting position	Ground
Enclosure material	Aluminum
Color	Power paint NCS 2002-B
Door	Front access
Rack type	19" (IEC 60297-3-100)
Locking type	Pad lock or Cylinder
POWER SYSTEM	
Input voltage	3P+N+PE: 346/200-415/240 VAC 2P+N+PE: 208/120-220/127 VAC 1P+N+PE: 200-250 VAC
Input power	<33kW
Output load (-48VDC)	24kW
Total capacity (-48VDC)	31.5kW
AC SPD	Class 2/Type 2
DC SPD	Class 2/Type 2
PSU Slots	9x
Service outlet	Optional
Priority load	8x Circuit Breaker
LLVD 1	6x Circuit Breaker
LLVD 2	6x Circuit Breaker
CB ratings	3A / 5A / 10A / 15A / 20A / 25A / 30A / 40A / 50A / 60A / 80A / 100A
Battery Interface	2x Circuit Breaker
Battery Circuit Breaker rating	125A 2pol (200A)
PSU capacity	3500W

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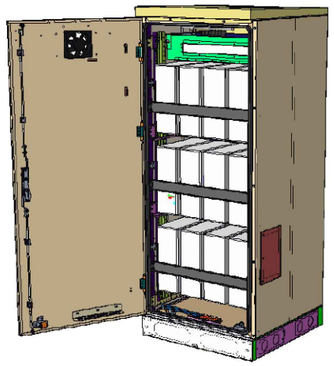
SUPPLEMENTAL

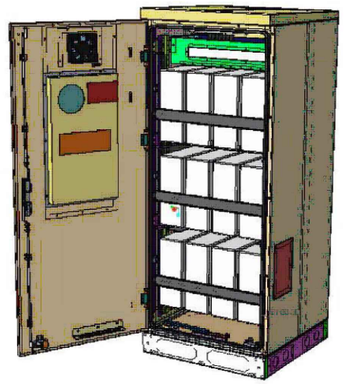
SHEET NUMBER: R-603

REVISION: -

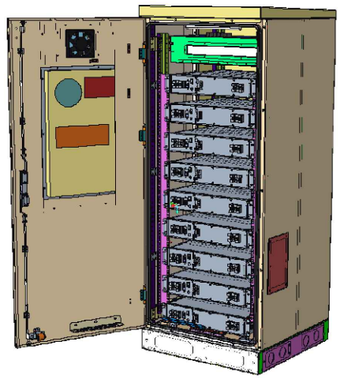
Enclosure B160



Enclosure B160
AirCon + VRLA



Enclosure B160
AirCon + Li-Ion



Enclosure B160
Convection Cooling
+ VRLA

Enclosure B160

Capacity
- VRLA 12V: 100Ah / 150Ah / 170Ah / 190Ah / 210Ah
- Li-Ion: 24U 19" / 23"
- Sodium-Nickel: 3x FIAMM

Electrical specification
- DC Output: -48VDC/200A
- Battery breakers: 2x 125/2p
- Alarms: Door open, Climate failure, MCB Connection

Mechanical specification
- Weight: 134kg
- Dimensions: 63 x 26 x 26 in. (incl. Base frame)
- Base frame height: 6 in.
- Material: Galvanized steel (180g/m^2)
- Color: Powder paint NCS 2002-B
- Door: Front access
- Locking type: Pad lock / cylinder

Environmental specification
- Ingress protection: VRLA/Sodium IP44
Li-Ion IP55
- Relative humidity: 15-100%

Climate system
- Air Conditioner
  - Fan type: DC
  - Cooling capacity: 500W @L35/L35
- Convection cooling
  - Emergency fan

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

SUPPLEMENTAL

SHEET NUMBER: R-604

REVISION: -

AMERICAN TOWER®
CORPORATION

Mount Analysis Report

ATC Site Name	:	**PROSPECT CT, CT**
ATC Site Number	:	**282660**
Engineering Number	:	**13716921_C8_01**
Mount Elevation	:	**138.25 ft**
Carrier	:	**T-Mobile**
Carrier Site Name	:	**CTNH302/ClrChannel/Prosp**
Carrier Site Number	:	**CTNH302A**
Site Location	:	**151 Waterbury Prospect road** **PROSPECT, CT 06712-1228** **41.52302996 , -72.99779164**
County	:	**New Haven**
Date	:	**August 19, 2021**
Max Usage	:	**54%**
Result	:	**Pass**

Prepared By:
Max Carter
Structural Engineer I

Max Carter

Reviewed By:

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32593
LICENSED
PROFESSIONAL ENGINEER

Authorized by "EOR"
19 Aug 2021 10:29:37 cosign

COA: PEC.0001553

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

Application Loading

Mount Centerline (ft)	Equipment Centerline (ft)	Qty	Equipment Manufacturer & Model
138.3	137.0	3	Ericsson Air6449 B41
		3	RFS APXVAARR24_43-U-NA20
		3	Ericsson Radio 4460 B25+B66
		3	Ericsson Radio 4449 B71 B85A

1 MOUNT ANALYSIS

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 VERIFY THEY HAVE THE MOST RECENT MOUNT ANALYSIS PRIOR TO CONSTRUCTION.

SUPPLEMENTAL

SHEET NUMBER: R-605

REVISION: -

AMERICAN TOWER®
CORPORATION

Mount Analysis Report

ATC Site Name	:	**PROSPECT CT, CT**
ATC Site Number	:	**282660**
Engineering Number	:	**13716921_C8_01**
Mount Elevation	:	**138.25 ft**
Carrier	:	**T-Mobile**
Carrier Site Name	:	**CTNH302/ClrChannel/Prosp**
Carrier Site Number	:	**CTNH302A**
Site Location	:	**151 Waterbury Prospect road** **PROSPECT, CT 06712-1228** **41.52302996 , -72.99779164**
County	:	**New Haven**
Date	:	**August 19, 2021**
Max Usage	:	**54%**
Result	:	**Pass**

Prepared By:
Max Carter
Structural Engineer I

Max Carter

Reviewed By:

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32593
LICENSED
PROFESSIONAL ENGINEER

Authorized by "EOR"
19 Aug 2021 10:29:37 cosign

COA: PEC.0001553

AMERICAN TOWER®
CORPORATION

Table of Contents

Introduction 1

Supporting Documents 1

Analysis 1

Conclusion 1

Application Loading 2

Structure Usages 2

Mount Layout 3

Equipment Layout 4

Standard Conditions 7

Calculations ..... Attached

Introduction

The purpose of this report is to summarize results of the mount analysis performed for T-Mobile at 138.25 ft.

Supporting Documents

Specifications Sheet	Site Pro 1 RMQP-496-HK, dated July 14, 2014
Radio Frequency Data Sheet	RFDS ID #CTNH302A, dated July 26, 2021
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:	118 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1'' radial ice concurrent
Codes:	ANSI/TIA-222-H
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Flat
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.196, S1 = 0.054
Site Class:	D - Stiff Soil
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. The mount 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.

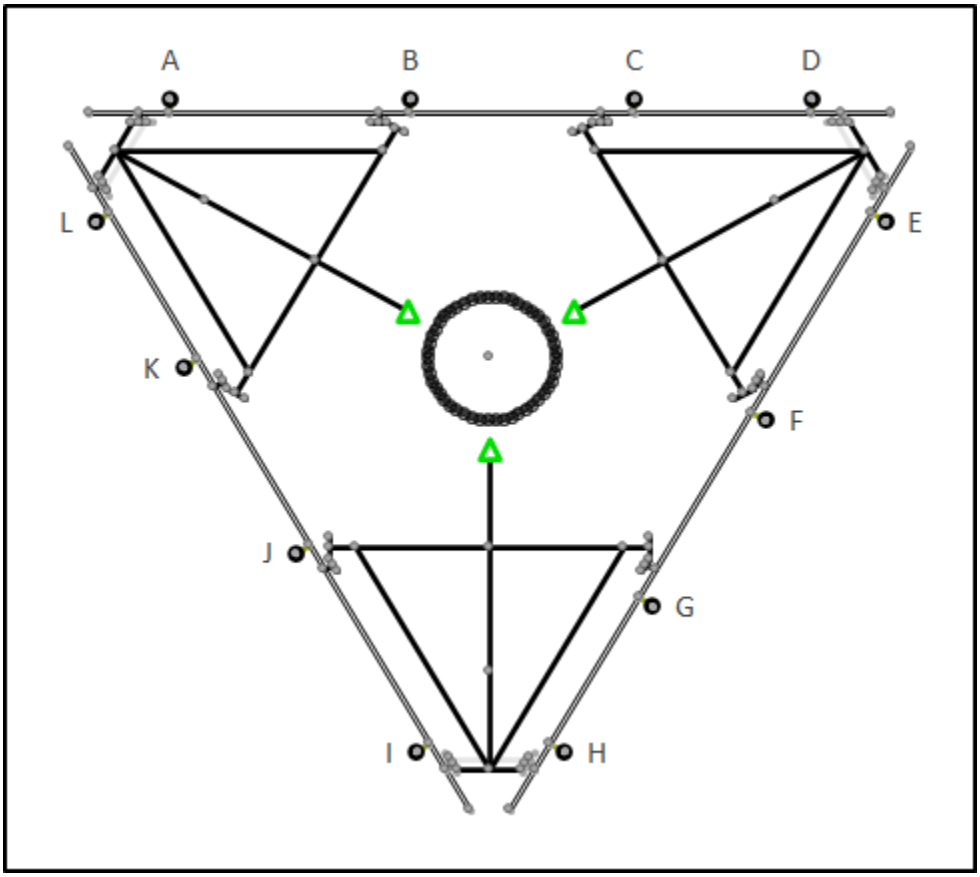
Application Loading

Mount Centerline (ft)	Equipment Centerline (ft)	Qty	Equipment Manufacturer & Model
138.3	137.0	3	Ericsson Air6449 B41
		3	RFS APXVAARR24_43-U-NA20
		3	Ericsson Radio 4460 B25+B66
		3	Ericsson Radio 4449 B71 B85A

Structure Usages

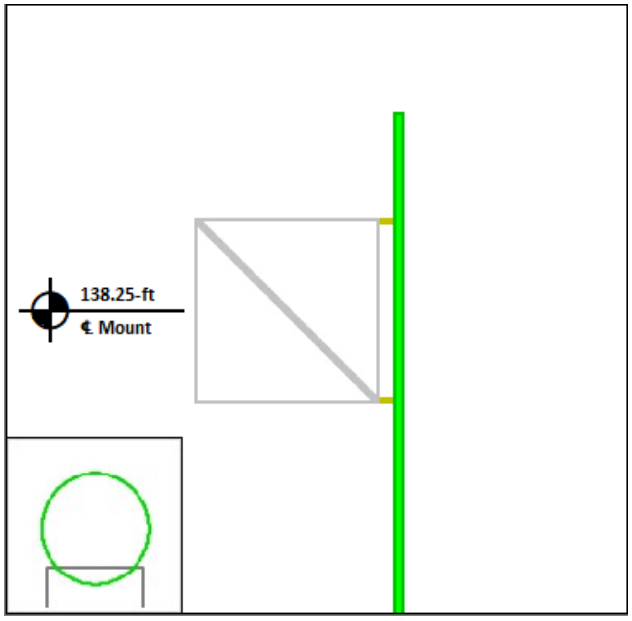
Structural Component	Controlling Usage	Pass/Fail
Horizontals	46%	Pass
Diagonals	8%	Pass
Mount Pipes	54%	Pass
Support Rail	46%	Pass
Connection	17%	Pass

Mount Layout

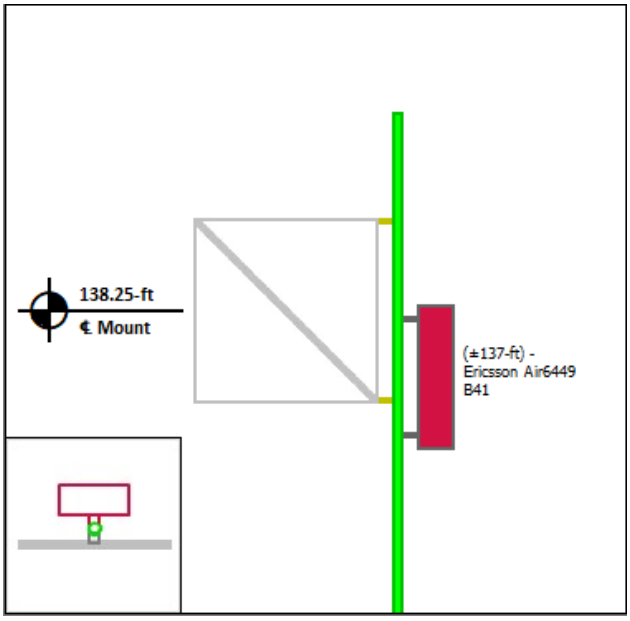


Equipment Layout

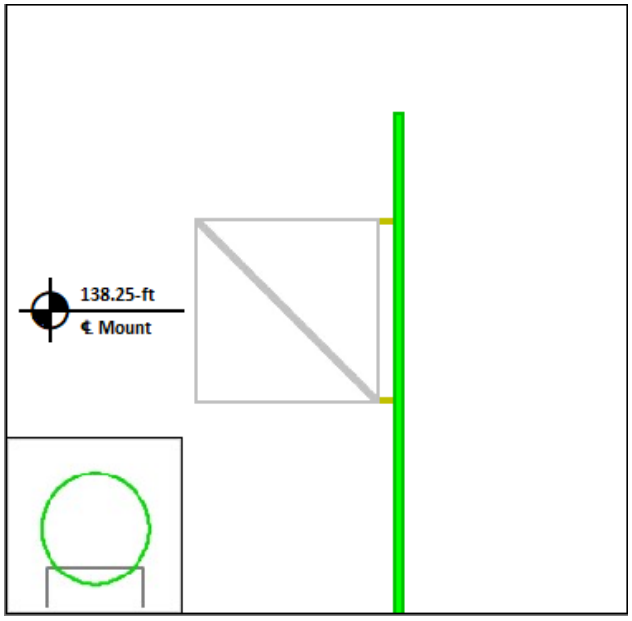
Mount Pipe A



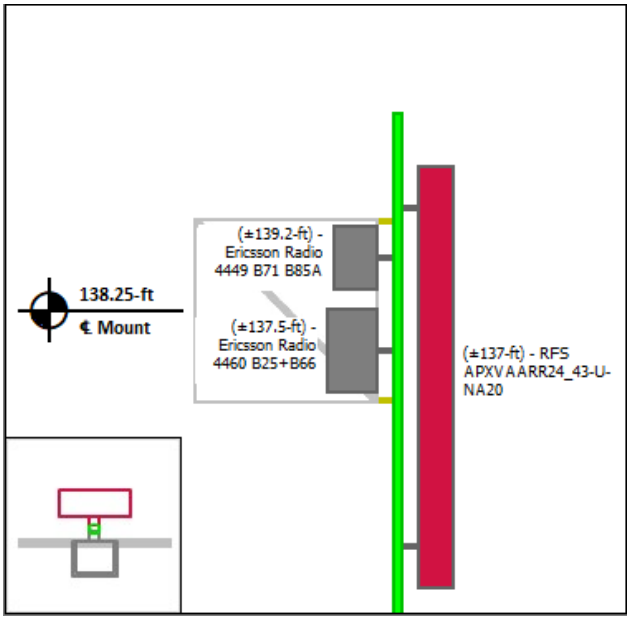
Mount Pipe B



Mount Pipe C

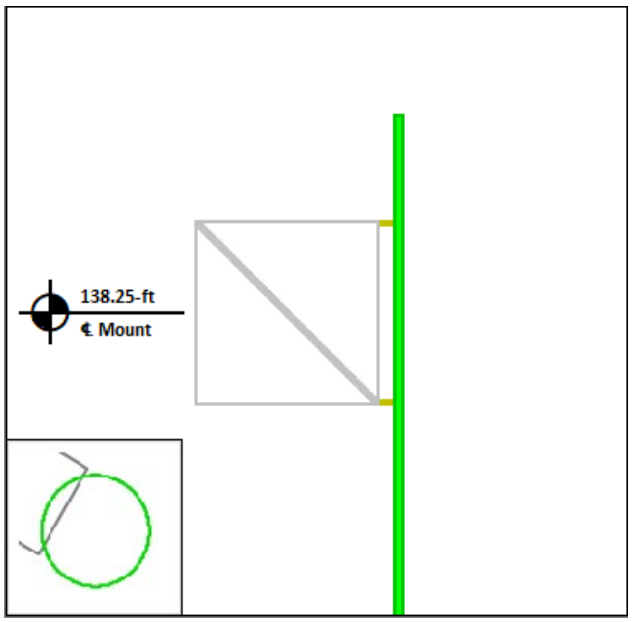


Mount Pipe D

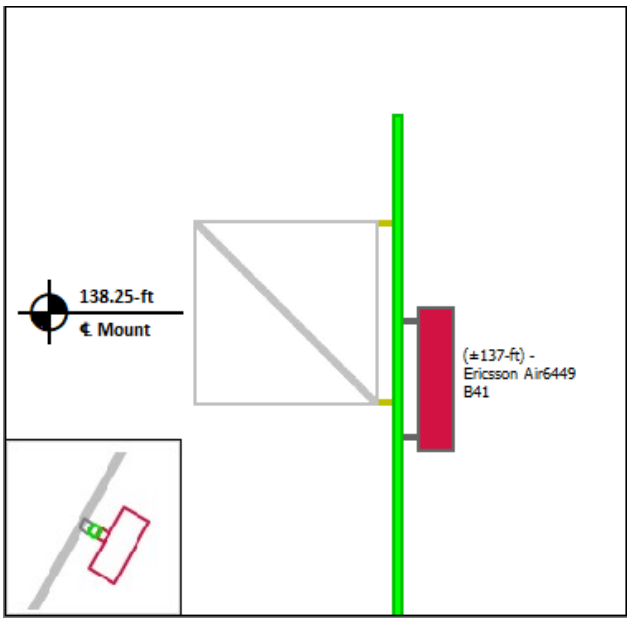


Equipment Layout Cont'd.

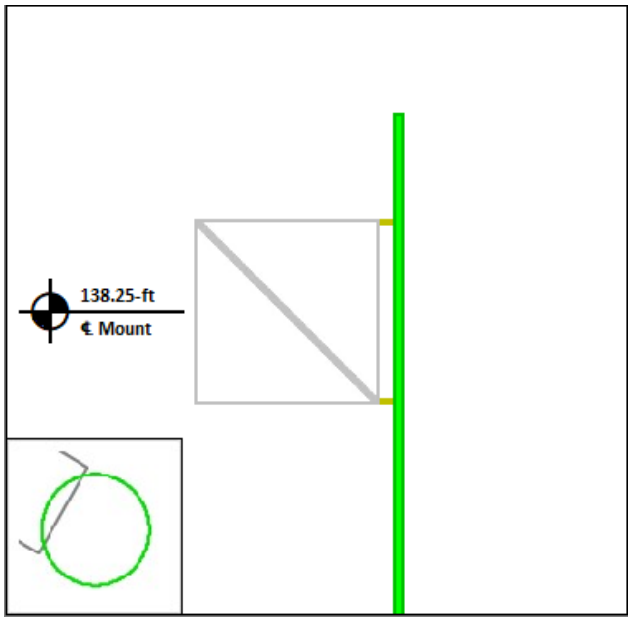
Mount Pipe E



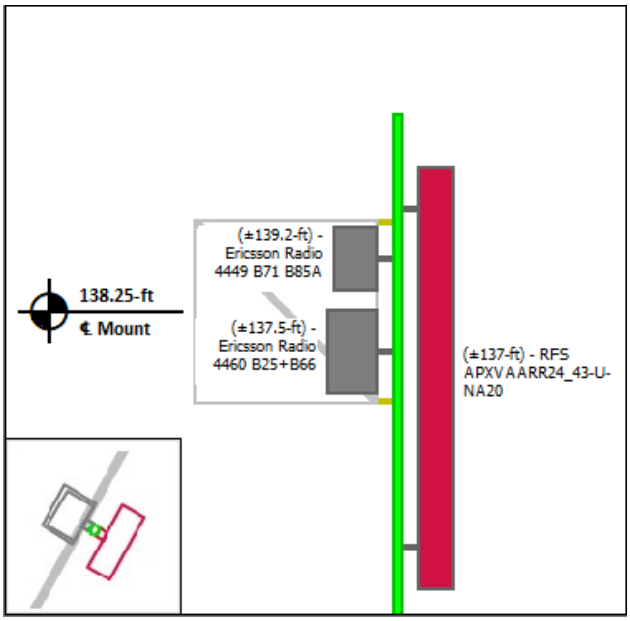
Mount Pipe F



Mount Pipe G

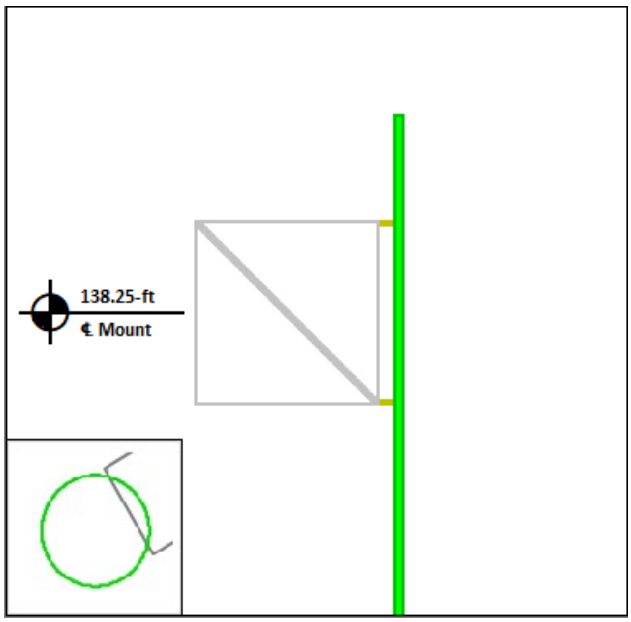


Mount Pipe H

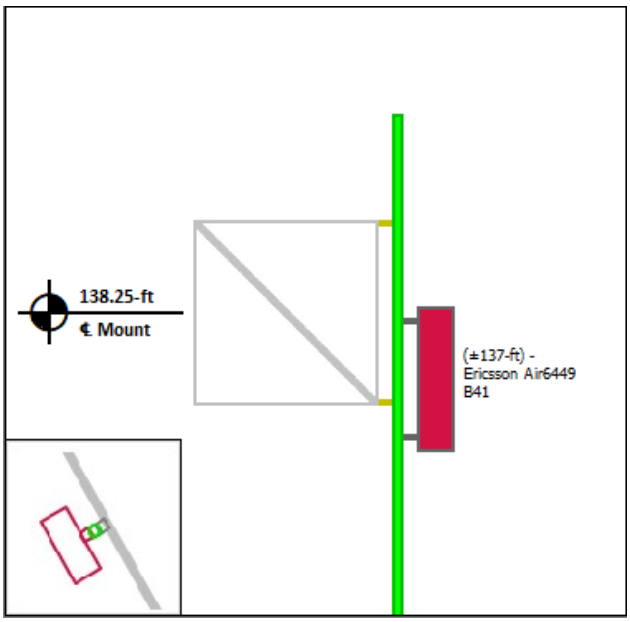


Equipment Layout Cont'd.

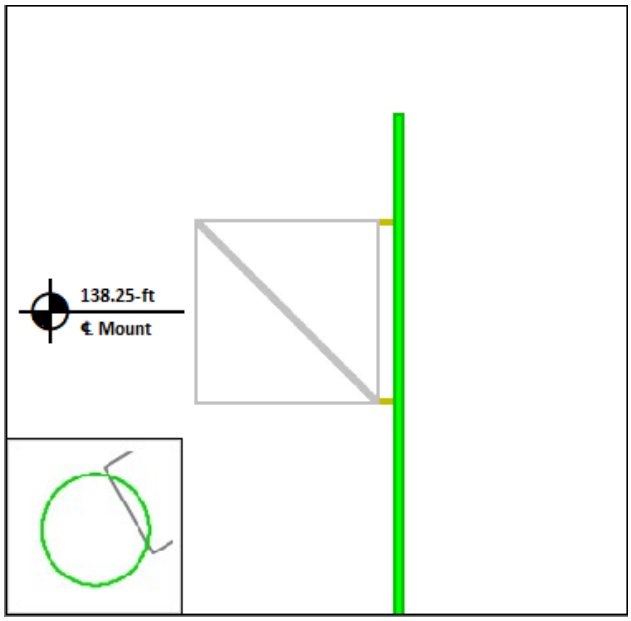
Mount Pipe I



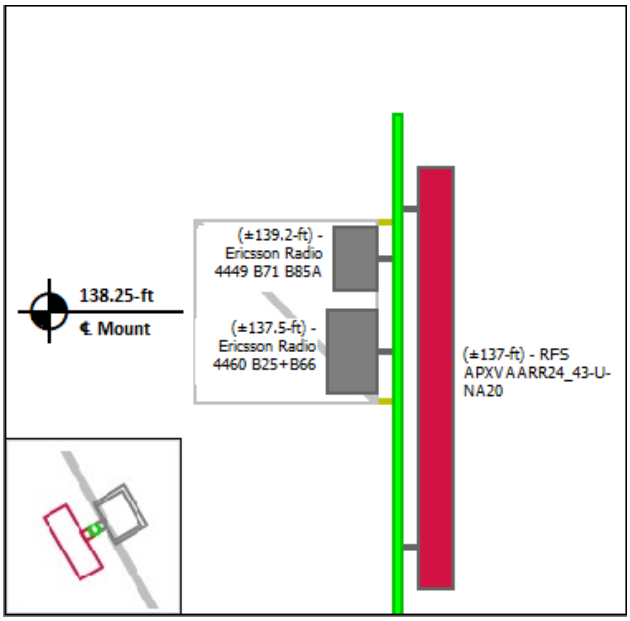
Mount Pipe J



Mount Pipe K



Mount Pipe L



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:	*282660*
Project Number:	*13716921_C8_01*
Carrier:	*T-Mobile*
Mount Elevation:	*138.25 ft*
Date:	8/19/2021

Mount Analysis Force Calculations

Wind & Ice Load Calculations			
Velocity Pressure Coefficient	K_z	1.08	
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	0.97	
Wind Direction Probability Factor	K_d	0.95	
Basic Wind Speed	V	118	mph
Velocity Pressure	q_z	35.6	psf
Height Escalation Factor	K_{iz}	1.15	
Thickness of Radial Glaze Ice	T_{iz}	1.15	in

Seismic Load Calculations			
Short Period DSRAP	S_{DS}	0.209	
1 Second DSRAP	S_{D1}	0.086	
Importance Factor	I	1.0	
Response Modification Coefficient	R	2.0	
Seismic Response Coefficient	C_S	0.105	
Amplification Factor	A	1.0	
Total Weight	W	2778.9	lbs
Total Shear Force	V_S	290.5	lbs
Horizontal Seismic Load	Eh	290.5	lbs
Vertical Seismic Load	Ev	116.2	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
Ericsson Air6449 B41	33.1	20.6	8.6	104.0	5.68	1.56	6.76	2.12
RFS APXVAARR24_43-U-NA20	95.9	24.0	8.7	127.9	20.24	3.48	22.72	4.50
Ericsson Radio 4460 B25+B66	19.6	15.7	12.1	109.0	2.56	1.98	3.29	2.63
Ericsson Radio 4449 B71 B85A	15.0	13.2	10.5	75.0	1.65	1.31	2.24	1.85

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

AMERICAN TOWER®
CORPORATION

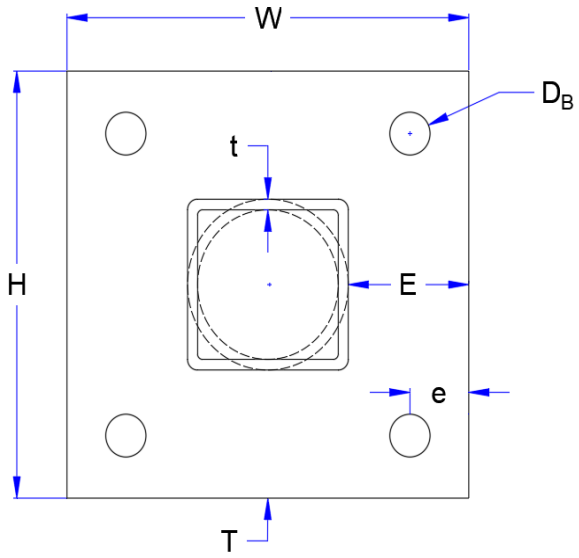
Site Number:	*282660*
Project Number:	*13716921_C8_01*
Carrier:	*T-Mobile*
Mount Elevation:	*138.25 ft*
Date:	8/19/2021

Mount-to-Tower Connection Analysis

Applied Loads from RISA 3D			
Controlling Load Combination		5	
Node Label		N002	
Force in X	Fx	1264.9	lbs
Force in Y	Fy	93.7	lbs
Force in Z	Fz	1385.2	lbs
Moment about X	Mx	118.3	lb-ft
Moment about Y	My	-1693.7	lb-ft
Moment about Z	Mz	-338.9	lb-ft

Bolt Shear and Tensile Capacity			
Bolt Quantity	n	4	
Bolt Diameter	D_B	5/8	in
Bolt Edge Distance	e	1	in
Bolt Grade		A325	
Bolt Fy	Fy_B	92	ksi
Bolt Fu	Fu_B	120	ksi
Applied Shear	Vu	0.26	k
Applied Tension	Tu	2.16	k
Tensile Strength	ϕTn	20.3	k
Interaction Capacity	(Tu+Vu)/ϕTn	12%	Pass

Plate Flexural Capacity			
Plate Height	H	8	in
Plate Width	W	8	in
Plate Thickness	T	1/2	in
Plate Grade		A36	
Plate Fy	Fy_P	36	ksi
Plate Fu	Fu_P	58	ksi
Shear Capacity	ϕVn	26.9	k
Applied Moment	Mu	4.3	k-in
Flexural Strength	ϕMn	26.1	k-in
Flexural Capacity	Mu/ϕMn	17%	Pass

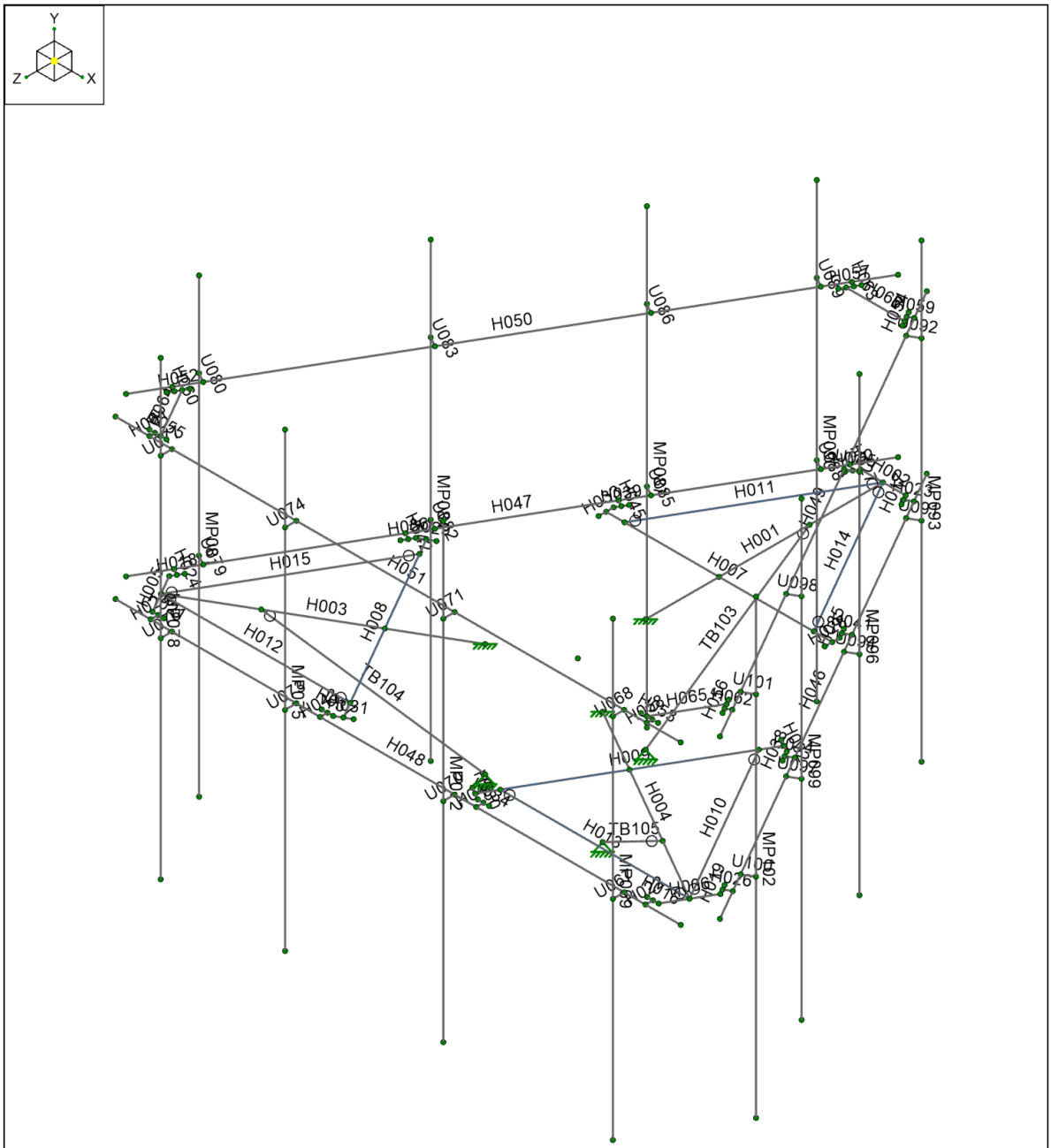


Weld and Base Metal Capacity			
Standoff Type		Tube	
Standoff Member		HSS4x4x4	
Member Edge Distance	E	2	in
Member Width	w	4	in
Member Thickness	t	0.250	in
Member Grade		A53 Gr. B	
Member Fy	Fy_M	35	ksi
Member Fu	Fu_M	60	ksi
Weld Size	a	1/4	in
Weld Length	l	16.0	in
Applied Load	Pu	4.3	k
Weld Strength	ϕRn	44.5	k
Weld Capacity	Pu/ϕRn	10%	Pass

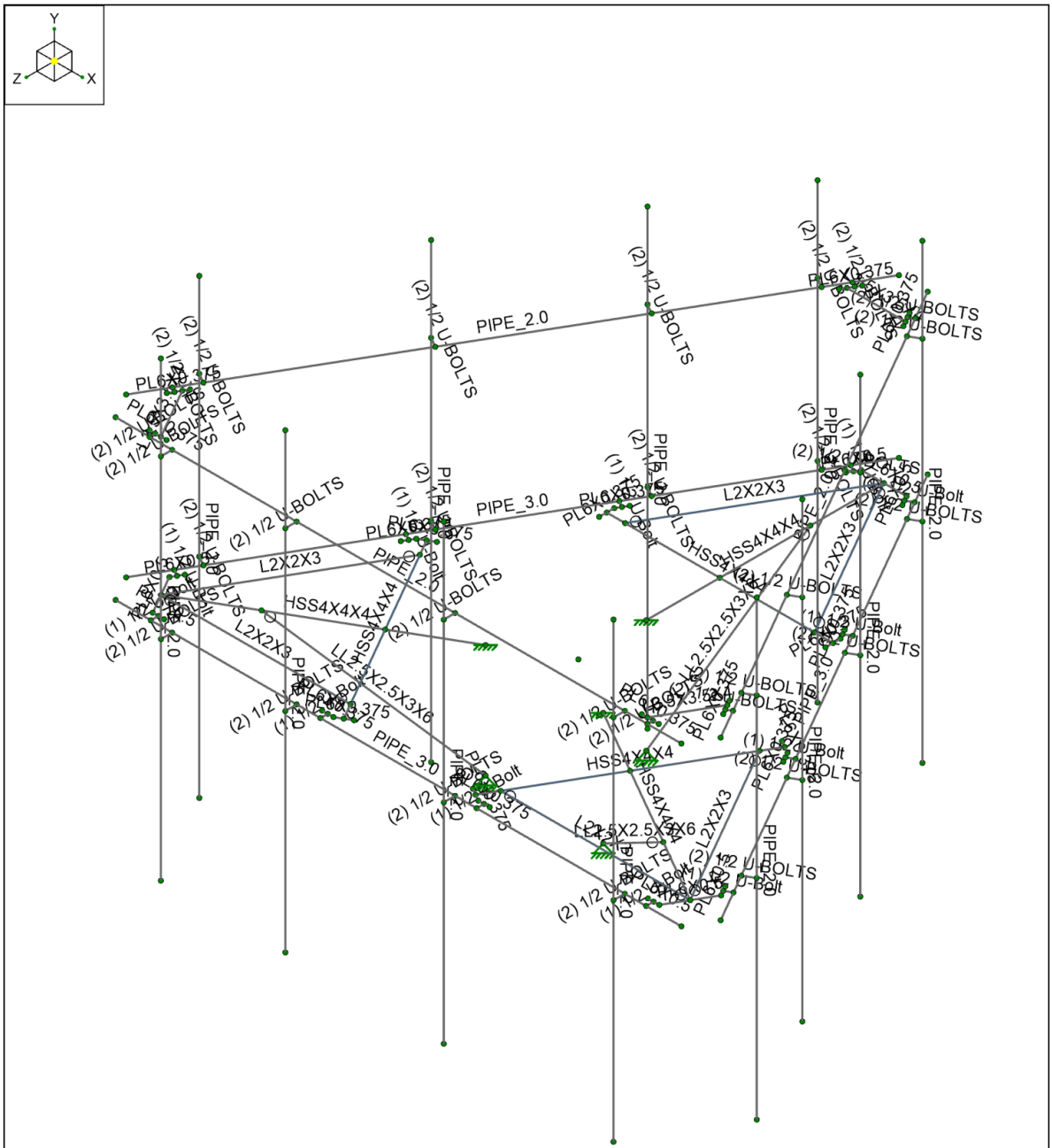
Minimum Base Metal Thickness	0.206	in
Controlling Base Metal Thickness	0.250	in
Base Metal Result	Acceptable	

Prying Action Considerations							
Moment Arm	b	1.00	in	Minimum Thickness	t_{min}	0.15	in
Effective Moment Arm	b'	0.69	in	No Prying Thickness	t_{np}	0.20	in
Tributary Length	p	2.75	in	Min Bolt Strength Thickness	t_c	0.62	k-in
Effective Edge Distance	a'	1.31	in	Prying Action Bolt Tension	T_{up}	0.00	k

American Tower Corp.	282660, PROSPECT CT	SK-2
Max.Carter		Aug 19, 2021
13716921_C8_01		R3D. T-MOBILE @ 282660, PRO…



American Tower Corp.	282660, PROSPECT CT	SK-3
Max.Carter		Aug 19, 2021
13716921_C8_01		R3D. T-MOBILE @ 282660, PRO…



American Tower Corp.	282660, PROSPECT CT	SK-4
Max.Carter		Aug 19, 2021
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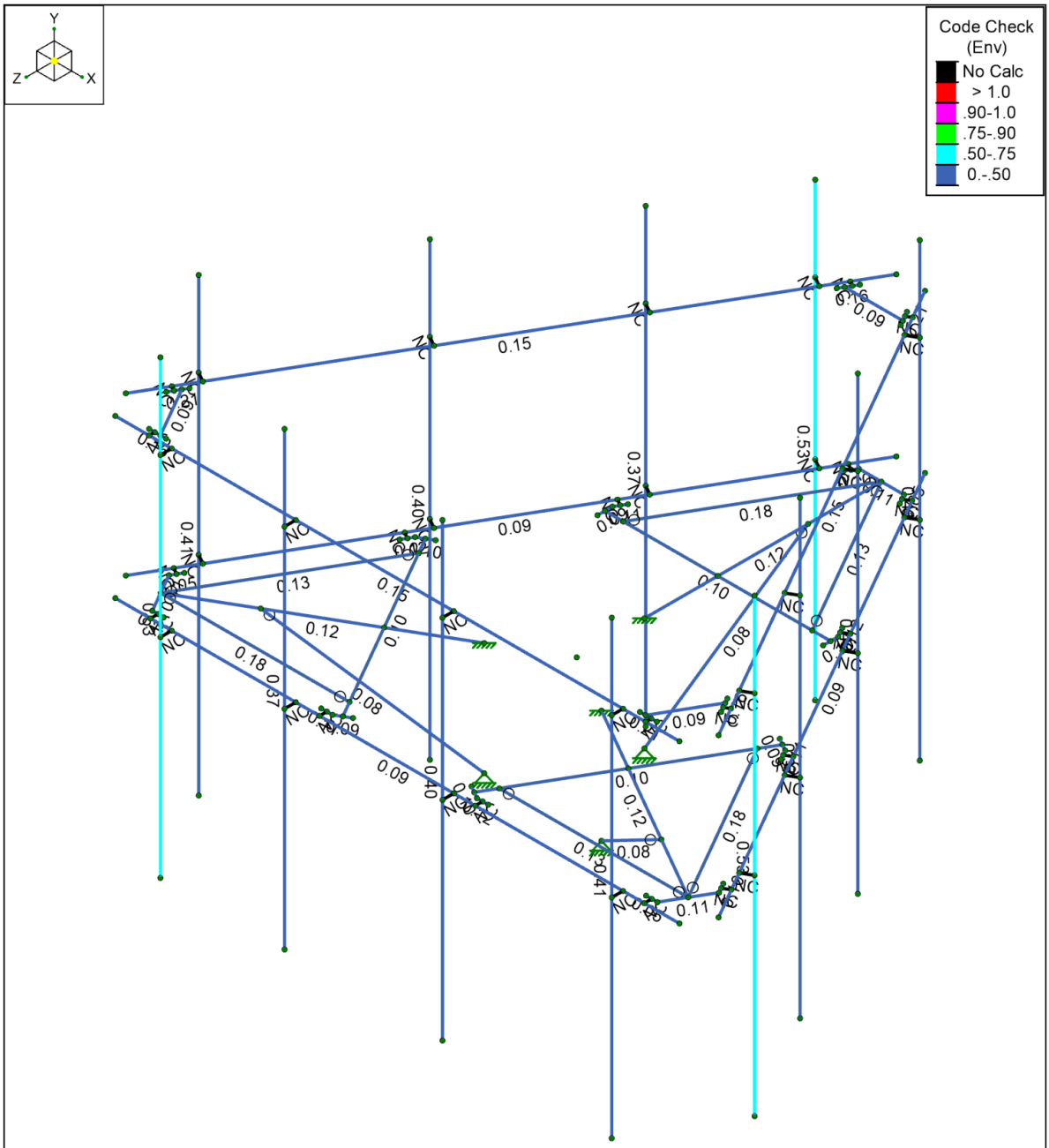
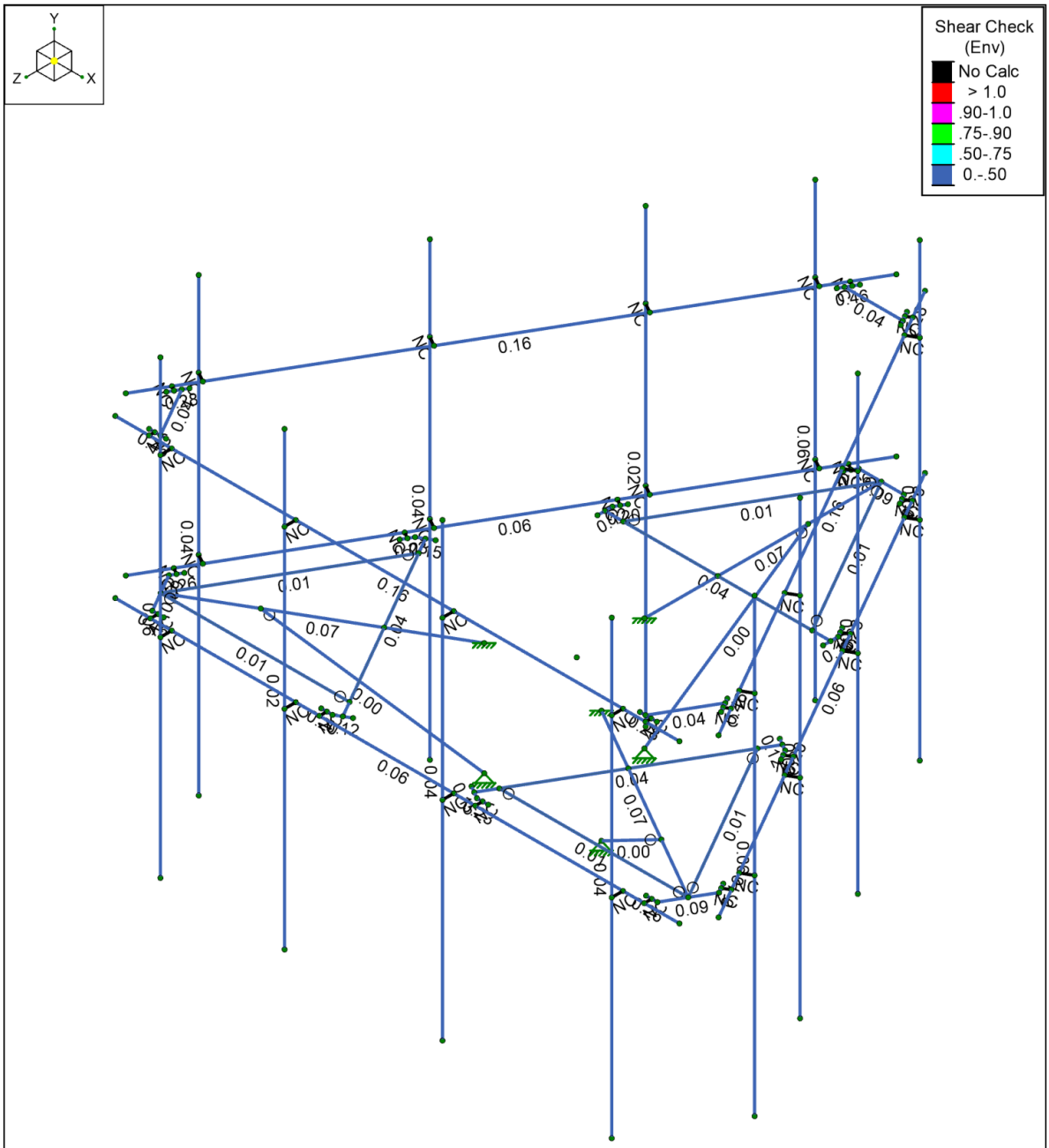


Member Code Checks Displayed (Enveloped)

American Tower Corp.	282660, PROSPECT CT	SK-5
Max.Carter		Aug 19, 2021
13716921_C8_01		R3D. T-MOBILE @ 282660, PRO…



American Tower Corp.	282660, PROSPECT CT	SK-6
Max.Carter		Aug 19, 2021
13716921_C8_01		R3D. T-MOBILE @ 282660, PRO…

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
4	N119	Reaction	Reaction	Reaction			
5	N120	Reaction	Reaction	Reaction			
6	N121	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	N029	N013		L2X2X3	Beam	None	A36	Typical
11	H011	N030	N003		L2X2X3	Beam	None	A36	Typical
12	H012	N025	N012		L2X2X3	Beam	None	A36	Typical
13	H013	N026	N013	270	L2X2X3	Beam	None	A36	Typical
14	H014	N027	N003	270	L2X2X3	Beam	None	A36	Typical
15	H015	N028	N012	270	L2X2X3	Beam	None	A36	Typical
16	H016	N009	N032		PL6X0.5	Beam	None	A36	Typical
17	H017	N004	N038		PL6X0.5	Beam	None	A36	Typical
18	H018	N008	N039		PL6X0.5	Beam	None	A36	Typical
19	H019	N011	N044		PL6X0.5	Beam	None	A36	Typical
20	H020	N005	N045		PL6X0.5	Beam	None	A36	Typical
21	H021	N010	N033		PL6X0.5	Beam	None	A36	Typical
22	H022	N034	N036		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
23	H023	N040	N046		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
24	H024	N041	N047		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
25	H025	N035	N037		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
26	H026	N042	N048		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
27	H027	N043	N049		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
28	H028	N050	N051		PL6X0.375	Beam	None	A36	Typical
29	H029	N052	N054		PL6X0.375	Beam	None	A36	Typical
30	H030	N053	N055		PL6X0.375	Beam	None	A36	Typical
31	H031	N056	N058		PL6X0.375	Beam	None	A36	Typical
32	H032	N057	N059		PL6X0.375	Beam	None	A36	Typical
33	H033	N060	N031		PL6X0.375	Beam	None	A36	Typical
34	H034	N055	N061		PL6X0.375	Beam	None	A36	Typical
35	H035	N051	N067		PL6X0.375	Beam	None	A36	Typical
36	H036	N054	N068		PL6X0.375	Beam	None	A36	Typical
37	H037	N058	N062		PL6X0.375	Beam	None	A36	Typical
38	H038	N059	N069		PL6X0.375	Beam	None	A36	Typical
39	H039	N031	N070		PL6X0.375	Beam	None	A36	Typical
40	H040	N063	N065		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
41	H041	N071	N075		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
42	H042	N072	N076		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
43	H043	N064	N066		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
44	H044	N073	N077		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
45	H045	N074	N078		(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
46	H046	N079	N081		PIPE_3.0	Beam	None	A53 Gr. B	Typical
47	H047	N080	N082		PIPE_3.0	Beam	None	A53 Gr. B	Typical
48	H048	N017	N018		PIPE_3.0	Beam	None	A53 Gr. B	Typical
49	H049	N085	N087		PIPE_2.0	Beam	None	A53 Gr. B	Typical
50	H050	N086	N088		PIPE_2.0	Beam	None	A53 Gr. B	Typical
51	H051	N083	N084		PIPE_2.0	Beam	None	A53 Gr. B	Typical
52	H052	N102	N104		PL6X0.375	Beam	None	A36	Typical
53	H053	N117	N089		PL6X0.375	Beam	None	A36	Typical
54	H054	N101	N103		PL6X0.375	Beam	None	A36	Typical
55	H055	N092	N112		PL6X0.375	Beam	None	A36	Typical
56	H056	N109	N105		PL6X0.375	Beam	None	A36	Typical
57	H057	N110	N106		PL6X0.375	Beam	None	A36	Typical
58	H058	N115	N118		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
59	H059	N097	N090		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
60	H060	N098	N091		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
61	H061	N114	N113		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
62	H062	N095	N093		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
63	H063	N096	N094		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
64	H064	N100	N111	90	L3.5X3.5X4	Beam	None	A36	Typical
65	H065	N116	N107	90	L3.5X3.5X4	Beam	None	A36	Typical
66	H066	N099	N108	90	L3.5X3.5X4	Beam	None	A36	Typical
67	U067	N123	N135		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
68	U068	N136	N137		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
69	MP069	N138	N139		PIPE_2.0	Column	None	A53 Gr. B	Typical
70	U070	N125	N140		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
71	U071	N141	N142		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
72	MP072	N143	N144		PIPE_2.0	Column	None	A53 Gr. B	Typical
73	U073	N126	N145		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
74	U074	N146	N147		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
75	MP075	N148	N149		PIPE_2.0	Column	None	A53 Gr. B	Typical
76	U076	N124	N150		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
77	U077	N151	N152		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
78	MP078	N153	N154		PIPE_2.0	Column	None	A53 Gr. B	Typical
79	U079	N128	N155		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
80	U080	N156	N157		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
81	MP081	N158	N159		PIPE_2.0	Column	None	A53 Gr. B	Typical
82	U082	N130	N160		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
83	U083	N161	N162		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
84	MP084	N163	N164		PIPE_2.0	Column	None	A53 Gr. B	Typical
85	U085	N132	N165		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
86	U086	N166	N167		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
87	MP087	N168	N169		PIPE_2.0	Column	None	A53 Gr. B	Typical
88	U088	N134	N170		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
89	U089	N171	N172		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
90	MP090	N173	N174		PIPE_2.0	Column	None	A53 Gr. B	Typical
91	U091	N127	N175		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
92	U092	N176	N177		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
93	MP093	N178	N179		PIPE_2.0	Column	None	A53 Gr. B	Typical
94	U094	N129	N180		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
95	U095	N181	N182		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
96	MP096	N183	N184		PIPE_2.0	Column	None	A53 Gr. B	Typical
97	U097	N131	N185		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
98	U098	N186	N187		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
99	MP099	N188	N189		PIPE_2.0	Column	None	A53 Gr. B	Typical
100	U100	N133	N190		(2) 1/2 U-BOLTS	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
101	U101	N191	N192		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
102	MP102	N193	N194		PIPE_2.0	Column	None	A53 Gr. B	Typical
103	TB103	N122	N119		LL2.5X2.5X3X6	Column	None	A36	Typical
104	TB104	N195	N120		LL2.5X2.5X3X6	Column	None	A36	Typical
105	TB105	N196	N121		LL2.5X2.5X3X6	Column	None	A36	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
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			Yes	Default	Exclude	None
23	H023			Yes	Default	Exclude	None
24	H024			Yes	Default	Exclude	None
25	H025			Yes	Default	Exclude	None
26	H026			Yes	Default	Exclude	None
27	H027			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	Default	Exclude	None
41	H041			Yes	Default	Exclude	None
42	H042			Yes	Default	Exclude	None
43	H043			Yes	Default	Exclude	None
44	H044			Yes	Default	Exclude	None
45	H045			Yes	Default	Exclude	None
46	H046			Yes	N/A		None
47	H047			Yes	N/A		None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Activation	Seismic DR
48	H048			Yes	N/A		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	Exclude	None
59	H059			Yes	N/A	Exclude	None
60	H060			Yes	N/A	Exclude	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		None
65	H065			Yes	N/A		None
66	H066			Yes	N/A		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
97	U097			Yes	N/A	Exclude	None
98	U098			Yes	N/A	Exclude	None
99	MP099			Yes	** NA **		None
100	U100			Yes	N/A	Exclude	None
101	U101			Yes	N/A	Exclude	None
102	MP102			Yes	** NA **		None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Activation	Seismic DR
103	TB103	BenPIN		Yes	** NA **		None
104	TB104	BenPIN		Yes	** NA **		None
105	TB105	BenPIN		Yes	** NA **		None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lcomp top [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
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	PL6X0.375	4	Lbyy	0.65	0.65	Lateral
29	H029	PL6X0.375	4	Lbyy	0.65	0.65	Lateral
30	H030	PL6X0.375	4	Lbyy	0.65	0.65	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	3	Lbyy	1	1	Lateral
35	H035	PL6X0.375	3	Lbyy	1	1	Lateral
36	H036	PL6X0.375	3	Lbyy	1	1	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	(1) 1/2 U-Bolt	1.965	Lbyy	0.65	0.65	Lateral
41	H041	(1) 1/2 U-Bolt	1.965	Lbyy	0.65	0.65	Lateral
42	H042	(1) 1/2 U-Bolt	1.965	Lbyy	0.65	0.65	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	PIPE_3.0	150	Lbyy	1	1	Lateral
47	H047	PIPE_3.0	150	Lbyy	1	1	Lateral
48	H048	PIPE_3.0	150	Lbyy	1	1	Lateral
49	H049	PIPE_2.0	150	Lbyy	1	1	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lcomp top [in]	K y-y	K z-z	Function
50	H050	PIPE_2.0	150	Lbyy	1	1	Lateral
51	H051	PIPE_2.0	150	Lbyy	1	1	Lateral
52	H052	PL6X0.375	4.5	Lbyy	0.65	0.65	Lateral
53	H053	PL6X0.375	4.5	Lbyy	0.65	0.65	Lateral
54	H054	PL6X0.375	4.5	Lbyy	0.65	0.65	Lateral
55	H055	PL6X0.375	4.5	Lbyy	0.65	0.65	Lateral
56	H056	PL6X0.375	4.5	Lbyy	0.65	0.65	Lateral
57	H057	PL6X0.375	4.5	Lbyy	0.65	0.65	Lateral
58	H058	(2) 1/2 U-BOLTS	1.5	Lbyy	0.65	0.65	Lateral
59	H059	(2) 1/2 U-BOLTS	1.5	Lbyy	0.65	0.65	Lateral
60	H060	(2) 1/2 U-BOLTS	1.5	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	L3.5X3.5X4	15.514	Lbyy	0.65	0.65	Lateral
65	H065	L3.5X3.5X4	15.514	Lbyy	0.65	0.65	Lateral
66	H066	L3.5X3.5X4	15.514	Lbyy	0.65	0.65	Lateral
67	U067	(2) 1/2 U-BOLTS	3	Lbyy	0.5	0.5	Lateral
68	U068	(2) 1/2 U-BOLTS	3	Lbyy	0.5	0.5	Lateral
69	MP069	PIPE_2.0	120	Lbyy	2.1	2.1	Lateral
70	U070	(2) 1/2 U-BOLTS	3	Lbyy	0.5	0.5	Lateral
71	U071	(2) 1/2 U-BOLTS	3	Lbyy	0.5	0.5	Lateral
72	MP072	PIPE_2.0	120	Lbyy	2.1	2.1	Lateral
73	U073	(2) 1/2 U-BOLTS	3	Lbyy	0.5	0.5	Lateral
74	U074	(2) 1/2 U-BOLTS	3	Lbyy	0.5	0.5	Lateral
75	MP075	PIPE_2.0	120	Lbyy	2.1	2.1	Lateral
76	U076	(2) 1/2 U-BOLTS	3	Lbyy	0.5	0.5	Lateral
77	U077	(2) 1/2 U-BOLTS	3	Lbyy	0.5	0.5	Lateral
78	MP078	PIPE_2.0	120	Lbyy	2.1	2.1	Lateral
79	U079	(2) 1/2 U-BOLTS	3	Lbyy	0.5	0.5	Lateral
80	U080	(2) 1/2 U-BOLTS	3	Lbyy	0.5	0.5	Lateral
81	MP081	PIPE_2.0	120	Lbyy	2.1	2.1	Lateral
82	U082	(2) 1/2 U-BOLTS	3	Lbyy	0.5	0.5	Lateral
83	U083	(2) 1/2 U-BOLTS	3	Lbyy	0.5	0.5	Lateral
84	MP084	PIPE_2.0	120	Lbyy	2.1	2.1	Lateral
85	U085	(2) 1/2 U-BOLTS	3	Lbyy	0.5	0.5	Lateral
86	U086	(2) 1/2 U-BOLTS	3	Lbyy	0.5	0.5	Lateral
87	MP087	PIPE_2.0	120	Lbyy	2.1	2.1	Lateral
88	U088	(2) 1/2 U-BOLTS	3	Lbyy	0.5	0.5	Lateral
89	U089	(2) 1/2 U-BOLTS	3	Lbyy	0.5	0.5	Lateral
90	MP090	PIPE_2.0	120	Lbyy	2.1	2.1	Lateral
91	U091	(2) 1/2 U-BOLTS	3	Lbyy	0.5	0.5	Lateral
92	U092	(2) 1/2 U-BOLTS	3	Lbyy	0.5	0.5	Lateral
93	MP093	PIPE_2.0	120	Lbyy	2.1	2.1	Lateral
94	U094	(2) 1/2 U-BOLTS	3	Lbyy	0.5	0.5	Lateral
95	U095	(2) 1/2 U-BOLTS	3	Lbyy	0.5	0.5	Lateral
96	MP096	PIPE_2.0	120	Lbyy	2.1	2.1	Lateral
97	U097	(2) 1/2 U-BOLTS	3	Lbyy	0.5	0.5	Lateral
98	U098	(2) 1/2 U-BOLTS	3	Lbyy	0.5	0.5	Lateral
99	MP099	PIPE_2.0	120	Lbyy	2.1	2.1	Lateral
100	U100	(2) 1/2 U-BOLTS	3	Lbyy	0.5	0.5	Lateral
101	U101	(2) 1/2 U-BOLTS	3	Lbyy	0.5	0.5	Lateral
102	MP102	PIPE_2.0	120	Lbyy	2.1	2.1	Lateral
103	TB103	LL2.5X2.5X3X6	52.842	Lbyy	1	1	Lateral
104	TB104	LL2.5X2.5X3X6	52.842	Lbyy	1	1	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lcomp top [in]	K y-y	K z-z	Function
105	TB105	LL2.5X2.5X3X6	52.842	Lbyy	1	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	527	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	1264.947	17	416.809	175	3977.974	2	465.993	175	1689.556	23	649.113	179
2		min	-1266.203	11	-91.725	169	-1782.848	20	-28.876	169	-1693.681	5	-789.758	137
3	N006	max	3437.621	6	416.809	131	1086.84	14	329.597	123	1689.522	15	238.112	105
4		min	-1535.677	24	-91.725	113	-2183.164	8	-886.359	93	-1693.647	9	-727.347	123
5	N007	max	1556.94	16	416.809	75	880.455	16	481.541	193	1689.536	19	745.461	193
6		min	-3457.051	10	-91.725	69	-1979.618	10	-794.7	79	-1693.662	13	-170.288	67
7	N119	max	28.478	17	2089.016	26	-576.52	20	0	205	0	205	0	205
8		min	-28.528	23	398.25	20	-2973.934	26	0	1	0	1	0	1
9	N120	max	-501.548	24	2088.985	30	1485.199	30	0	205	0	205	0	205
10		min	-2575.013	30	398.296	24	296.67	24	0	1	0	1	0	1
11	N121	max	2574.986	34	2088.984	34	1485.243	34	0	205	0	205	0	205
12		min	501.603	16	398.3	16	296.584	16	0	1	0	1	0	1
13	Totals:	max	4451.496	5	6479.967	26	4763.26	2						
14		min	-4451.496	23	2494.204	19	-4763.26	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	0.117	0	11	0.067	0	y	137	124317.885	139518	16180.5	16180.5	1.931	H1-1b
2	H002	PL6X0.5	0.112	6	2	0.086	6	y	148	83348.625	97200	1012.5	12150	1.274	H1-1b
3	H003	HSS4X4X4	0.117	0	3	0.067	0	y	93	124317.885	139518	16180.5	16180.5	1.931	H1-1b
4	H004	HSS4X4X4	0.117	0	7	0.067	0	y	193	124317.885	139518	16180.5	16180.5	1.931	H1-1b
5	H005	PL6X0.5	0.112	6	6	0.086	6	y	104	83348.625	97200	1012.5	12150	1.274	H1-1b
6	H006	PL6X0.5	0.112	6	10	0.086	6	y	204	83348.625	97200	1012.5	12150	1.274	H1-1b
7	H007	HSS4X4X4	0.103	30	171	0.037	55.625	z	3	133484.923	139518	16180.5	16180.5	1.422	H1-1b
8	H008	HSS4X4X4	0.103	30	127	0.037	55.625	z	7	133484.923	139518	16180.5	16180.5	1.422	H1-1b
9	H009	HSS4X4X4	0.103	30	83	0.037	55.625	z	11	133484.923	139518	16180.5	16180.5	1.422	H1-1b
10	H010	L2X2X3	0.176	25.638	23	0.005	50.229	z	12	9724.796	23392.8	557.717	1072.365	1.136	H2-1
11	H011	L2X2X3	0.176	25.638	15	0.005	50.229	z	4	9724.796	23392.8	557.717	1072.365	1.136	H2-1
12	H012	L2X2X3	0.176	25.638	19	0.005	50.229	z	8	9724.796	23392.8	557.717	1072.365	1.136	H2-1
13	H013	L2X2X3	0.131	25.115	20	0.005	50.229	y	2	9724.796	23392.8	557.717	1072.365	1.136	H2-1
14	H014	L2X2X3	0.131	25.115	24	0.005	50.229	y	6	9724.796	23392.8	557.717	1072.365	1.136	H2-1
15	H015	L2X2X3	0.131	25.115	16	0.005	50.229	y	10	9724.796	23392.8	557.717	1072.365	1.136	H2-1
16	H016	PL6X0.5	0.053	0	4	0.261	0	y	7	95014.386	97200	1012.5	12150	1.486	H1-1b
17	H017	PL6X0.5	0.053	0	8	0.261	0	y	11	95014.386	97200	1012.5	12150	1.486	H1-1b
18	H018	PL6X0.5	0.053	0	12	0.261	0	y	3	95014.386	97200	1012.5	12150	1.486	H1-1b
19	H019	PL6X0.5	0.096	1.5	6	0.163	0	y	202	95014.386	97200	1012.5	12150	1.818	H1-1b
20	H020	PL6X0.5	0.096	1.5	10	0.163	0	y	146	95014.386	97200	1012.5	12150	1.818	H1-1b
21	H021	PL6X0.5	0.096	1.5	2	0.163	0	y	102	95014.386	97200	1012.5	12150	1.818	H1-1b
22	H028	PL6X0.375	0.097	2	11	0.155	2	y	5	70719.442	72900	569.531	9112.5	1.379	H1-1b
23	H029	PL6X0.375	0.097	2	3	0.155	2	y	9	70719.442	72900	569.531	9112.5	1.379	H1-1b
24	H030	PL6X0.375	0.097	2	7	0.155	2	y	13	70719.442	72900	569.531	9112.5	1.379	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
25	H031	PL6X0.375	0.085	2	9	0.125	2	y	2	70719.442	72900	569.531	9112.5	1.375	H1-1b
26	H032	PL6X0.375	0.085	2	13	0.125	2	y	6	70719.442	72900	569.531	9112.5	1.375	H1-1b
27	H033	PL6X0.375	0.085	2	5	0.125	2	y	10	70719.442	72900	569.531	9112.5	1.375	H1-1b
28	H034	PL6X0.375	0.116	1.5	13	0.228	0	y	8	70011.374	72900	569.531	9112.5	1.848	H1-1b
29	H035	PL6X0.375	0.116	1.5	5	0.228	0	y	12	70011.374	72900	569.531	9112.5	1.848	H1-1b
30	H036	PL6X0.375	0.116	1.5	9	0.228	0	y	4	70011.374	72900	569.531	9112.5	1.848	H1-1b
31	H037	PL6X0.375	0.105	1.5	9	0.197	0	y	8	70011.374	72900	569.531	9112.5	1.845	H1-1b
32	H038	PL6X0.375	0.105	1.5	13	0.197	0	y	12	70011.374	72900	569.531	9112.5	1.845	H1-1b
33	H039	PL6X0.375	0.105	1.5	5	0.197	0	y	4	70011.374	72900	569.531	9112.5	1.845	H1-1b
34	H046	PIPE_3.0	0.087	134.375	11	0.062	103.125		6	28250.554	65205	5748.75	5748.75	3	H1-1b
35	H047	PIPE_3.0	0.087	134.375	3	0.062	103.125		10	28250.554	65205	5748.75	5748.75	3	H1-1b
36	H048	PIPE_3.0	0.087	134.375	7	0.062	103.125		2	28250.554	65205	5748.75	5748.75	3	H1-1b
37	H049	PIPE_2.0	0.152	134.375	5	0.164	140.625		6	6295.422	32130	1871.625	1871.625	3	H1-1b
38	H050	PIPE_2.0	0.152	134.375	9	0.164	140.625		10	6295.422	32130	1871.625	1871.625	3	H1-1b
39	H051	PIPE_2.0	0.152	134.375	13	0.164	140.625		2	6295.422	32130	1871.625	1871.625	3	H1-1b
40	H052	PL6X0.375	0.214	3	7	0.279	3	y	3	70151.276	72900	569.531	9112.5	3	H1-1b
41	H053	PL6X0.375	0.214	3	11	0.279	3	y	7	70151.276	72900	569.531	9112.5	3	H1-1b
42	H054	PL6X0.375	0.214	3	3	0.279	3	y	11	70151.276	72900	569.531	9112.5	3	H1-1b
43	H055	PL6X0.375	0.16	1.5	13	0.46	1.5	y	2	70151.276	72900	569.531	9112.5	2.065	H1-1b
44	H056	PL6X0.375	0.16	1.5	5	0.46	1.5	y	6	70151.276	72900	569.531	9112.5	2.065	H1-1b
45	H057	PL6X0.375	0.16	1.5	9	0.46	1.5	y	10	70151.276	72900	569.531	9112.5	2.065	H1-1b
46	H064	L3.5X3.5X4	0.086	15.514	2	0.042	15.514	z	9	50610.907	55080	2415.558	5228.96	1.5	H2-1
47	H065	L3.5X3.5X4	0.086	15.514	6	0.042	15.514	z	13	50610.907	55080	2415.558	5228.96	1.5	H2-1
48	H066	L3.5X3.5X4	0.086	15.514	10	0.042	15.514	z	5	50610.907	55080	2415.558	5228.96	1.5	H2-1
49	MP069	PIPE_2.0	0.411	63.75	65	0.036	63.75		7	2230.521	32130	1871.625	1871.625	1.857	H1-1a
50	MP072	PIPE_2.0	0.402	63.75	85	0.036	63.75		9	2230.521	32130	1871.625	1871.625	1.766	H1-1a
51	MP075	PIPE_2.0	0.37	63.75	97	0.021	63.75		12	2230.521	32130	1871.625	1871.625	1.739	H1-1a
52	MP078	PIPE_2.0	0.535	63.75	99	0.06	22.5		7	2230.521	32130	1871.625	1871.625	1.81	H1-1a
53	MP081	PIPE_2.0	0.411	63.75	121	0.036	63.75		3	2230.521	32130	1871.625	1871.625	1.958	H1-1a
54	MP084	PIPE_2.0	0.402	63.75	129	0.036	63.75		5	2230.521	32130	1871.625	1871.625	1.761	H1-1a
55	MP087	PIPE_2.0	0.37	63.75	141	0.021	63.75		8	2230.521	32130	1871.625	1871.625	1.732	H1-1a
56	MP090	PIPE_2.0	0.535	63.75	155	0.06	22.5		3	2230.521	32130	1871.625	1871.625	1.886	H1-1a
57	MP093	PIPE_2.0	0.411	63.75	165	0.036	63.75		11	2230.521	32130	1871.625	1871.625	2.025	H1-1a
58	MP096	PIPE_2.0	0.402	63.75	173	0.036	63.75		13	2230.521	32130	1871.625	1871.625	1.913	H1-1a
59	MP099	PIPE_2.0	0.37	63.75	185	0.021	63.75		4	2230.521	32130	1871.625	1871.625	1.968	H1-1a
60	MP102	PIPE_2.0	0.535	63.75	199	0.06	22.5		11	2230.521	32130	1871.625	1871.625	1.864	H1-1a
61	TB103	LL2.5X2.5X3X6	0.084	52.842	26	0.002	52.842	y	26	43271.207	58320	4643.061	2549.586	1	H1-1b*
62	TB104	LL2.5X2.5X3X6	0.084	52.842	30	0.002	52.842	y	30	43271.207	58320	4643.061	2549.586	1.136	H1-1b*
63	TB105	LL2.5X2.5X3X6	0.084	52.842	34	0.002	52.842	y	34	43271.207	58320	4643.061	2549.586	1.136	H1-1b*

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**150 ft Monopole**
ATC Site Name	:	**PROSPECT CT,CT**
ATC Site Number	:	**282660**
Engineering Number	:	**13716921_C3_03**
Proposed Carrier	:	**T-MOBILE**
Carrier Site Name	:	**CTNH302/ClrChannel/Prosp**
Carrier Site Number	:	**CTNH302A**
Site Location	:	**151 Waterbury Prospect road** **PROSPECT, CT 06712-1228** **41.523, -72.9978**
County	:	**New Haven**
Date	:	**August 27, 2021**
Max Usage	:	**49%**
Result	:	**Pass**

Prepared By:

Sarah Kramer
Structural Engineer

Sarah D. Kramer

Reviewed By:

Authorized by "EOR"
27 Aug 2021 09:54:46 cosign

COA : PEC.0001553

Table of Contents

Introduction....3
Supporting Documents....3
Analysis....3
Conclusion....3
Existing and Reserved Equipment....4
Equipment to be Removed....4
Proposed Equipment....4
Structure Usages....5
Foundations....5
Deflection and Sway*....5
Standard Conditions....6
Calculations ....Attached

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 150 ft Monopole to reflect the change in loading by T-MOBILE.

Supporting Documents

Tower Drawings	ERI Project #25148/001, dated November 13, 2009
Foundation Drawing	ERI Project #25148/002, dated November 13, 2009
Geotechnical Report	FDH Project #09-10144E G1, dated November 9, 2009

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:	118 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.20, 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
152.0	1	Raycap DC6-48-60-18-8F ("Squid")	Triangular Platform with Handrails	(1) 2" conduit (2) 0.39" (10mm) Fiber Trunk (8) 0.78" (19.7mm) 8 AWG 6 (12) 1 5/8" Coax (2) 2" conduit	AT&T MOBILITY
	1	Commscope WCS-IMFQ-AMT			
	3	Ericsson Radio 8843 - B2 + B66A			
	3	Ericsson RRUS 4478 B5			
	3	Ericsson RRUS 4478 B14			
	3	Ericsson RRUS 32 (50.8 lbs)			
	3	Ericsson RRUS 12			
	1	Ericsson RRUS E2 B29			
	9	Kaelus DBCT108F1V92-1			
	6	Powerwave Allgon TT08-19DB111-001			
	3	Kathrein Scala 80010966			
	2	CCI TPA-65R-LCUUUU-H8			
	3	CCI HPA-65R-BUU-H8			
	6	Ericsson RRUS-11			
	3	Powerwave Allgon 7770.00			
	1	Quintel QS66512-2			
	3	Raycap DC6-48-60-0-8F			
137.0	3	RFS APXVAARR24_43-U-NA20	Triangular Platform with Handrails	-	T-MOBILE

Equipment to be Removed

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
137.0	3	Ericsson KRY 112 144/1	-	(2) 0.27" (6.7mm) Cat 5e (1) 0.33" (8.7mm) Fiber (1) 1 1/4" Hybriflex Cable (6) 1 5/8" Coax (3) 1 5/8" Hybriflex	T-MOBILE
	1	Fastback Networks Intelligent Backhaul Radio 1300 Series			
	3	Ericsson AIR32 B66Aa/B2a			
	3	Ericsson AIR 21, 1.3 M, B2A B4P			
	3	Ericsson Radio 4449 B12,B71			

Proposed Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
137.0	3	Ericsson Radio 4449 B71 B85A	Triangular Platform with Handrails	(3) 1 1/4" (1.25"-31.8mm) Fiber (1) 1.99" (50.7mm) Hybrid	T-MOBILE
	3	Ericsson Radio 4460 B25+B66			
	3	Ericsson Air6449 B41			

[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	40%	Pass
Shaft	47%	Pass
Base Plate	49%	Pass
Flanges	45%	Pass

Foundations

Reaction Component	Original Design Reactions	Analysis Reactions	% of Design
Moment (Kips-Ft)	4816.0	2086.1	43%
Shear (Kips)	50.0	19.3	39%

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
137.0	Ericsson Radio 4449 B71 B85A	T-MOBILE	0.513	0.430
	Ericsson Air6449 B41			
	Ericsson Radio 4460 B25+B66			

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

Standard Conditions

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

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

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

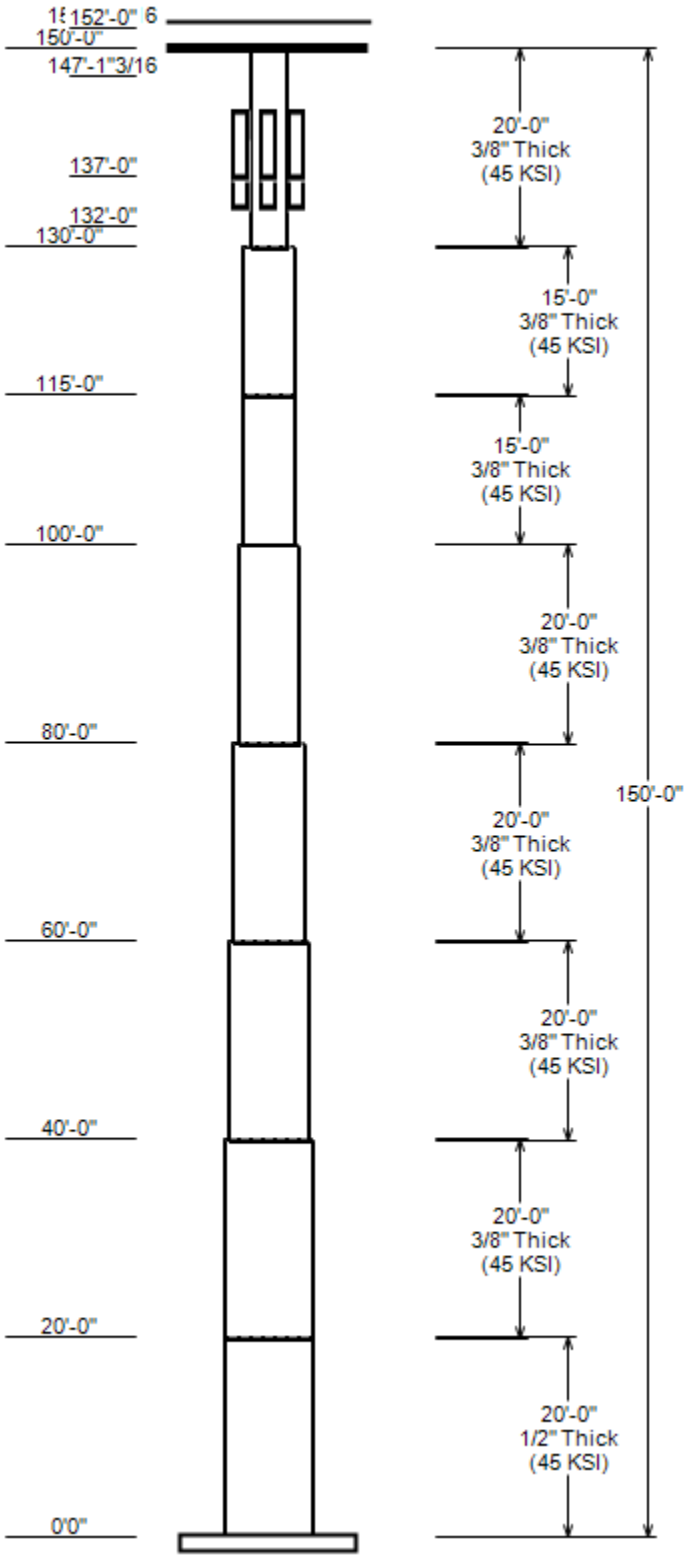
All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with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

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

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

JOB INFORMATION

Asset :	282660, PROSPECT CT	Height :	150 ft
Client :	T-MOBILE	Base Width :	60
Code :	ANSI/TIA-222-H	Shape :	Round



SITE PARAMETERS

Base Elev (ft):	0.00	Structure Class:	II
Taper :	0.00000 (In/ft)	Exposure :	B
Topographic Category :	1	Topographic Feature:	
Topo Method :	Method 1		

SECTION PROPERTIES

Shaft Section	Length (ft)	Diameter (in) Across Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	20.000	60.00	60.00	0.500		0.000	Round	45
2	20.000	60.00	60.00	0.375	Butt Joint	0.000	Round	45
3	20.000	54.00	54.00	0.375	Butt Joint	0.000	Round	45
4	20.000	48.00	48.00	0.375	Butt Joint	0.000	Round	45
5	20.000	42.00	42.00	0.375	Butt Joint	0.000	Round	45
6	15.000	36.00	36.00	0.375	Butt Joint	0.000	Round	45
7	15.000	36.00	36.00	0.375	Butt Joint	0.000	Round	45
8	20.000	24.00	24.00	0.375	Butt Joint	0.000	Round	45

DISCRETE APPURTENANCE

Attach Elev (ft)	Force Elev (ft)	Qty	Description
152.1	153.3	1	Raycap DC6-48-60-18-8F ("Squid
152.0	150.6	9	Kaelus DBCT108F1V92-1
152.0	151.2	6	Powerwave Allgon TT08-19DB111-
152.0	152.0	1	Commscope WCS-IMFQ-AMT
152.0	152.2	3	Ericsson Radio 8843 - B2 + B66
152.0	150.7	3	Ericsson RRUS 4478 B5
152.0	150.8	3	Ericsson RRUS 4478 B14
152.0	151.7	3	Ericsson RRUS 32 (50.8 lbs)
152.0	152.0	3	Ericsson RRUS 12
152.0	152.0	1	Ericsson RRUS E2 B29
152.0	152.3	6	Ericsson RRUS-11
152.0	151.9	3	Powerwave Allgon 7770.00
152.0	150.7	1	Quintel QS66512-2
152.0	151.5	3	CCI HPA-65R-BUU-H8
152.0	152.0	2	CCI TPA-65R-LCUUUU-H8
152.0	150.7	3	Kathrein Scala 80010966
150.0	150.0	1	Generic Mount Reinforcement
150.0	150.0	1	Generic Round Platform with Ha
147.1	147.1	3	Raycap DC6-48-60-0-8F
137.0	137.0	3	Ericsson Radio 4449 B71 B85A
137.0	137.0	3	Ericsson Radio 4460 B25+B66
137.0	137.0	3	Ericsson Air6449 B41
137.0	137.5	3	RFS APXVAARR24_43-U-NA20
132.0	132.0	1	Perfect Vision PV-LLP12M-HR-B

LINEAR APPURTENANCE

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
0.0	152.1	2" conduit	No
0.0	152.0	1 5/8" Coax	No
0.0	152.0	0.78" (19.7mm) 8 AWG 6	No
0.0	152.0	0.39" (10mm) Fiber Trunk	No
0.0	147.0	2" conduit	No
0.0	137.0	1.99" (50.7mm) Hybrid	No
0.0	137.0	1 1/4" (1.25"- 31.8mm) Fiber	No

LOAD CASES

1.2D + 1.0W	118 mph wind with no ice
0.9D + 1.0W	118 mph wind with no ice
1.2D + 1.0Di + 1.0Wi	50 mph wind with 1" radial ice

JOB INFORMATION			
Asset :	282660, PROSPECT CT	Height :	150 ft
Client :	T-MOBILE	Base Width :	60
Code :	ANSI/TIA-222-H	Shape :	Round

1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	60 mph Wind with No Ice

REACTIONS

Load Case	Moment (kip-ft)	Shear (Kip)	Axial (Kip)
1.2D + 1.0W	2086.09	19.30	50.21
0.9D + 1.0W	2072.42	19.29	37.65
1.2D + 1.0Di + 1.0Wi	605.07	6.01	64.54
1.2D + 1.0Ev + 1.0Eh	162.13	1.32	49.80
0.9D - 1.0Ev + 1.0Eh	160.83	1.32	34.42
1.0D + 1.0W	480.47	4.46	41.85

DISH DEFLECTIONS

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

ANALYSIS PARAMETERS

Location:	New Haven County,CT	Height:	150 ft
Type and Shape:	Stepped, Round	Base Diameter:	60.00 in
Manufacturer:	ERI	Top Diameter:	24.00 in
K_d (non-service):	0.95	Taper:	0.0000 in/ft
K_e:	0.97	Rotation:	0.000°

ICE & WIND PARAMETERS

Exposure Category:	B	Design Wind Speed w/o Ice:	118 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:	1.00 in
Crest Height:	0 ft	HMSL:	879.00 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil			Period Based on Rayleigh Method (sec):	1.83
T_L (sec):	6	P:	1	$C_{s:}$	0.032
$S_{s:}$	0.196	$S_{1:}$	0.054	C_s Max:	0.032
$F_{a:}$	1.600	$F_{v:}$	2.400	C_s Min:	0.030
$S_{ds:}$	0.209	$S_{d1:}$	0.086		

LOAD CASES

1.2D + 1.0W	118 mph wind with no ice
0.9D + 1.0W	118 mph wind with no ice
1.2D + 1.0Di + 1.0Wi	50 mph wind with 1" radial ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	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 (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (in)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-R	20.00	0.5000	45		0.00	6,361	60.00	0.000	93.46	41,391.7	0.00	120.00	60.00	20.00	93.46	41,391.7	0.00	120.00	0.0000
2-R	20.00	0.3750	45	Butt	0.00	4,781	60.00	20.000	70.24	31,239.9	0.00	160.00	60.00	40.00	70.24	31,239.9	0.00	160.00	0.0000
3-R	20.00	0.3750	45	Butt	0.00	4,299	54.00	40.000	63.18	22,726.1	0.00	144.00	54.00	60.00	63.18	22,726.1	0.00	144.00	0.0000
4-R	20.00	0.3750	45	Butt	0.00	3,818	48.00	60.000	56.11	15,919.5	0.00	128.00	48.00	80.00	56.11	15,919.5	0.00	128.00	0.0000
5-R	20.00	0.3750	45	Butt	0.00	3,337	42.00	80.000	49.04	10,628.9	0.00	112.00	42.00	100.00	49.04	10,628.9	0.00	112.00	0.0000
6-R	15.00	0.3750	45	Butt	0.00	2,142	36.00	100.000	41.97	6,663.3	0.00	96.00	36.00	115.00	41.97	6,663.3	0.00	96.00	0.0000
7-R	15.00	0.3750	45	Butt	0.00	2,142	36.00	115.000	41.97	6,663.3	0.00	96.00	36.00	130.00	41.97	6,663.3	0.00	96.00	0.0000
8-R	20.00	0.3750	45	Butt	0.00	1,894	24.00	130.000	27.83	1,943.3	0.00	64.00	24.00	150.00	27.83	1,943.3	0.00	64.00	0.0000
				Shaft Weight		28,774													

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
152.10	Raycap DC6-48-60-18-8F ("Squid	1	0.75	1.200	31.80	1.470	1.00	72.98	1.936	1.00
152.00	Ericsson Radio 8843 - B2 + B66	3	0.75	0.200	71.90	1.650	0.50	113.02	2.215	0.50
152.00	Kathrein Scala 80010966	3	0.75	-1.300	114.60	17.363	0.63	328.90	19.825	0.63
152.00	CCI TPA-65R-LCUUUU-H8	2	0.75	0.000	81.60	13.298	0.77	266.33	15.790	0.77
152.00	CCI HPA-65R-BUU-H8	3	0.75	-0.500	68.00	12.976	0.67	239.48	15.365	0.67
152.00	Quintel QS66512-2	1	0.75	-1.300	111.00	8.133	1.00	243.99	9.993	1.00
152.00	Powerwave Allgon 7770.00	3	0.75	-0.100	35.00	5.508	0.65	118.28	6.194	0.65
152.00	Ericsson RRUS-11	6	0.75	0.300	55.00	3.792	0.61	114.91	4.649	0.61
152.00	Ericsson RRUS E2 B29	1	0.75	0.000	60.00	3.145	1.00	113.98	3.919	1.00
152.00	Kaelus DBCT108F1V92-1	9	0.75	-1.400	13.90	0.633	0.50	30.70	0.997	0.50
152.00	Powerwave Allgon TT08-19DB111-	6	0.75	-0.800	22.00	0.793	0.50	39.73	1.217	0.50
152.00	Commscope WCS-IMFQ-AMT	1	0.75	0.000	29.50	0.989	1.00	51.98	1.430	1.00
152.00	Ericsson RRUS 4478 B5	3	0.75	-1.300	59.90	1.842	0.50	96.80	2.441	0.50
152.00	Ericsson RRUS 4478 B14	3	0.75	-1.200	59.90	1.842	0.50	96.80	2.441	0.50
152.00	Ericsson RRUS 32 (50.8 lbs)	3	0.75	-0.300	50.80	2.692	0.67	98.53	3.463	0.67
152.00	Ericsson RRUS 12	3	0.75	0.000	50.00	3.145	0.62	103.98	3.919	0.62
150.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	3580.98	43.514	1.00
150.00	Generic Mount Reinforcement	1	1.00	0.000	200.00	7.500	1.00	329.16	12.497	1.00
147.10	Raycap DC6-48-60-0-8F	3	0.75	0.000	32.80	1.360	1.00	71.53	1.802	1.00
137.00	RFS APXVAARR24_43-U-NA20	3	0.75	0.500	127.90	20.243	0.63	387.60	22.697	0.63
137.00	Ericsson Air6449 B41	3	0.75	0.000	104.00	5.682	0.63	194.15	6.732	0.63
137.00	Ericsson Radio 4460 B25+B66	3	0.75	0.000	109.00	2.564	0.67	167.47	3.261	0.67
137.00	Ericsson Radio 4449 B71 B85A	3	0.75	0.000	75.00	1.650	0.50	114.78	2.212	0.50
132.00	Perfect Vision PV-LLP12M-HR-B	1	1.00	0.000	2000.00	36.800	1.00	2918.26	53.696	1.00
Totals	Num Loadings: 24	69			8,559.00			15,442.09		

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg) : _

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	152.10	1	2" conduit	2.38	3.65	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	152.00	12	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	152.00	8	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	152.00	2	0.39" (10mm) Fiber Tr	0.39	0.06	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	147.00	2	2" conduit	2.38	3.65	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	137.00	3	1 1/4" (1.25"- 31.8mm	1.25	1.05	N	0	0	0	0	0	N	T-MOBILE
0.00	137.00	1	1.99" (50.7mm) Hybrid	1.99	1.9	N	0	0	0	0	0	N	T-MOBILE

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		0.5000	60.000	93.462	41,391.70	0.00	120.00	39.2	1379.7	1770.2	0.0
5.00		0.5000	60.000	93.462	41,391.70	0.00	120.00	39.2	1379.7	1770.2	1,590.2
10.00		0.5000	60.000	93.462	41,391.70	0.00	120.00	39.2	1379.7	1770.2	1,590.2
15.00		0.5000	60.000	93.462	41,391.70	0.00	120.00	39.2	1379.7	1770.2	1,590.2
20.00	Top - Section 1	0.5000	60.000	93.462	41,391.70	0.00	120.00	39.2	1379.7	1770.2	1,590.2
20.00	Bot - Section 2	0.3750	60.000	70.244	31,239.90	0.00	160.00	36.9	1041.3	1333.2	
25.00		0.3750	60.000	70.244	31,239.90	0.00	160.00	36.9	1041.3	1333.2	1,195.1
30.00		0.3750	60.000	70.244	31,239.90	0.00	160.00	36.9	1041.3	1333.2	1,195.1
35.00		0.3750	60.000	70.244	31,239.90	0.00	160.00	36.9	1041.3	1333.2	1,195.1
40.00	Top - Section 2	0.3750	60.000	70.244	31,239.90	0.00	160.00	36.9	1041.3	1333.2	1,195.1
40.00	Bot - Section 3	0.3750	54.000	63.175	22,726.10	0.00	144.00	37.6	841.7	1078.4	
45.00		0.3750	54.000	63.175	22,726.10	0.00	144.00	37.6	841.7	1078.4	1,074.9
50.00		0.3750	54.000	63.175	22,726.10	0.00	144.00	37.6	841.7	1078.4	1,074.9
55.00		0.3750	54.000	63.175	22,726.10	0.00	144.00	37.6	841.7	1078.4	1,074.9
60.00	Top - Section 3	0.3750	54.000	63.175	22,726.10	0.00	144.00	37.6	841.7	1078.4	1,074.9
60.00	Bot - Section 4	0.3750	48.000	56.107	15,919.50	0.00	128.00	38.6	663.3	850.6	
65.00		0.3750	48.000	56.107	15,919.50	0.00	128.00	38.6	663.3	850.6	954.6
70.00		0.3750	48.000	56.107	15,919.50	0.00	128.00	38.6	663.3	850.6	954.6
75.00		0.3750	48.000	56.107	15,919.50	0.00	128.00	38.6	663.3	850.6	954.6
80.00	Top - Section 4	0.3750	48.000	56.107	15,919.50	0.00	128.00	38.6	663.3	850.6	954.6
80.00	Bot - Section 5	0.3750	42.000	49.038	10,628.90	0.00	112.00	39.8	506.1	649.8	
85.00		0.3750	42.000	49.038	10,628.90	0.00	112.00	39.8	506.1	649.8	834.3
90.00		0.3750	42.000	49.038	10,628.90	0.00	112.00	39.8	506.1	649.8	834.3
95.00		0.3750	42.000	49.038	10,628.90	0.00	112.00	39.8	506.1	649.8	834.3
100.00	Top - Section 5	0.3750	42.000	49.038	10,628.90	0.00	112.00	39.8	506.1	649.8	834.3
100.00	Bot - Section 6	0.3750	36.000	41.970	6,663.30	0.00	96.00	41.4	370.2	475.9	
105.00		0.3750	36.000	41.970	6,663.30	0.00	96.00	41.4	370.2	475.9	714.1
110.00		0.3750	36.000	41.970	6,663.30	0.00	96.00	41.4	370.2	475.9	714.1
115.00	Top - Section 6	0.3750	36.000	41.970	6,663.30	0.00	96.00	41.4	370.2	475.9	714.1
115.00	Bot - Section 7	0.3750	36.000	41.970	6,663.30	0.00	96.00	41.4	370.2	475.9	
120.00		0.3750	36.000	41.970	6,663.30	0.00	96.00	41.4	370.2	475.9	714.1
125.00		0.3750	36.000	41.970	6,663.30	0.00	96.00	41.4	370.2	475.9	714.1
130.00	Top - Section 7	0.3750	36.000	41.970	6,663.30	0.00	96.00	41.4	370.2	475.9	714.1
130.00	Bot - Section 8	0.3750	24.000	27.833	1,943.30	0.00	64.00	45	161.9	209.3	
132.00		0.3750	24.000	27.833	1,943.30	0.00	64.00	45	161.9	209.3	189.4
135.00		0.3750	24.000	27.833	1,943.30	0.00	64.00	45	161.9	209.3	284.1
137.00		0.3750	24.000	27.833	1,943.30	0.00	64.00	45	161.9	209.3	189.4
140.00		0.3750	24.000	27.833	1,943.30	0.00	64.00	45	161.9	209.3	284.1
145.00		0.3750	24.000	27.833	1,943.30	0.00	64.00	45	161.9	209.3	473.5
147.10		0.3750	24.000	27.833	1,943.30	0.00	64.00	45	161.9	209.3	198.9
150.00		0.3750	24.000	27.833	1,943.30	0.00	64.00	45	161.9	209.3	274.7
								Totals:			28,775.1

Load Case: 1.2D + 1.0W 118 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	-50.21	-19.30	0.00	-2,086.1	0.00	2,086.09	3,293.92	1,135.57	5,940.32	5,174.22	0	0	0.419
5.00	-48.09	-18.98	0.00	-1,989.6	0.00	1,989.60	3,293.92	1,135.57	5,940.32	5,174.22	0.04	-0.07	0.399
10.00	-45.98	-18.65	0.00	-1,894.7	0.00	1,894.72	3,293.92	1,135.57	5,940.32	5,174.22	0.15	-0.14	0.380
15.00	-43.87	-18.31	0.00	-1,801.5	0.00	1,801.49	3,293.92	1,135.57	5,940.32	5,174.22	0.32	-0.2	0.362
20.00	-41.76	-17.96	0.00	-1,710.0	0.00	1,709.95	3,293.92	1,135.57	5,940.32	5,174.22	0.57	-0.26	0.343
20.00	-41.76	-17.96	0.00	-1,710.0	0.00	1,709.95	2,330.87	853.47	4,473.98	3,807.50	0.57	-0.26	0.467
25.00	-40.12	-17.62	0.00	-1,620.1	0.00	1,620.13	2,330.87	853.47	4,473.98	3,807.50	0.87	-0.32	0.443
30.00	-38.49	-17.28	0.00	-1,532.0	0.00	1,532.02	2,330.87	853.47	4,473.98	3,807.50	1.24	-0.39	0.419
35.00	-36.85	-16.91	0.00	-1,445.6	0.00	1,445.65	2,330.87	853.47	4,473.98	3,807.50	1.69	-0.46	0.396
40.00	-35.22	-16.54	0.00	-1,361.1	0.00	1,361.10	2,330.87	853.47	4,473.98	3,807.50	2.2	-0.52	0.373
40.00	-35.22	-16.54	0.00	-1,361.1	0.00	1,361.10	2,139.71	767.58	3,618.86	3,103.93	2.2	-0.52	0.455
45.00	-33.73	-16.19	0.00	-1,278.4	0.00	1,278.38	2,139.71	767.58	3,618.86	3,103.93	2.78	-0.58	0.428
50.00	-32.24	-15.82	0.00	-1,197.4	0.00	1,197.45	2,139.71	767.58	3,618.86	3,103.93	3.43	-0.66	0.401
55.00	-30.75	-15.43	0.00	-1,118.4	0.00	1,118.36	2,139.71	767.58	3,618.86	3,103.93	4.16	-0.73	0.375
60.00	-29.26	-15.05	0.00	-1,041.2	0.00	1,041.20	2,139.71	767.58	3,618.86	3,103.93	4.96	-0.8	0.350
60.00	-29.26	-15.05	0.00	-1,041.2	0.00	1,041.20	1,948.48	681.70	2,854.35	2,471.99	4.96	-0.8	0.437
65.00	-27.92	-14.69	0.00	-965.9	0.00	965.94	1,948.48	681.70	2,854.35	2,471.99	5.83	-0.86	0.406
70.00	-26.58	-14.32	0.00	-892.5	0.00	892.48	1,948.48	681.70	2,854.35	2,471.99	6.78	-0.94	0.375
75.00	-25.24	-13.94	0.00	-820.9	0.00	820.88	1,948.48	681.70	2,854.35	2,471.99	7.81	-1.02	0.345
80.00	-23.90	-13.56	0.00	-751.2	0.00	751.19	1,948.48	681.70	2,854.35	2,471.99	8.92	-1.09	0.317
80.00	-23.90	-13.56	0.00	-751.2	0.00	751.19	1,757.14	595.82	2,180.45	1,911.67	8.92	-1.09	0.407
85.00	-22.70	-13.21	0.00	-683.4	0.00	683.37	1,757.14	595.82	2,180.45	1,911.67	10.1	-1.16	0.371
90.00	-21.51	-12.86	0.00	-617.3	0.00	617.31	1,757.14	595.82	2,180.45	1,911.67	11.36	-1.24	0.336
95.00	-20.32	-12.49	0.00	-553.0	0.00	553.03	1,757.14	595.82	2,180.45	1,911.67	12.7	-1.32	0.301
100.00	-19.13	-12.13	0.00	-490.6	0.00	490.59	1,757.14	595.82	2,180.45	1,911.67	14.12	-1.39	0.268
100.00	-19.13	-12.13	0.00	-490.6	0.00	490.59	1,565.64	509.93	1,597.15	1,422.98	14.12	-1.39	0.358
105.00	-18.08	-11.81	0.00	-429.9	0.00	429.92	1,565.64	509.93	1,597.15	1,422.98	15.61	-1.45	0.314
110.00	-17.03	-11.47	0.00	-370.9	0.00	370.89	1,565.64	509.93	1,597.15	1,422.98	17.18	-1.54	0.272
115.00	-15.99	-11.13	0.00	-313.5	0.00	313.53	1,565.64	509.93	1,597.15	1,422.98	18.83	-1.61	0.231
120.00	-14.94	-10.78	0.00	-257.9	0.00	257.88	1,565.64	509.93	1,597.15	1,422.98	20.55	-1.67	0.191
125.00	-13.91	-10.41	0.00	-204.0	0.00	204.00	1,565.64	509.93	1,597.15	1,422.98	22.33	-1.72	0.153
130.00	-12.87	-10.17	0.00	-151.9	0.00	151.94	1,565.64	509.93	1,597.15	1,422.98	24.15	-1.76	0.115
130.00	-12.87	-10.17	0.00	-151.9	0.00	151.94	1,127.22	338.17	702.39	660.47	24.15	-1.76	0.242
132.00	-10.21	-8.56	0.00	-131.6	0.00	131.60	1,127.22	338.17	702.39	660.47	24.89	-1.77	0.209
135.00	-9.76	-8.43	0.00	-105.9	0.00	105.93	1,127.22	338.17	702.39	660.47	26.02	-1.82	0.170
137.00	-8.01	-6.60	0.00	-88.5	0.00	88.50	1,127.22	338.17	702.39	660.47	26.8	-1.85	0.141
140.00	-7.58	-6.41	0.00	-68.7	0.00	68.69	1,127.22	338.17	702.39	660.47	27.97	-1.89	0.111
145.00	-6.86	-6.22	0.00	-36.6	0.00	36.65	1,127.22	338.17	702.39	660.47	29.97	-1.93	0.062
147.10	-6.45	-5.96	0.00	-23.6	0.00	23.60	1,127.22	338.17	702.39	660.47	30.82	-1.93	0.042
150.00	0.00	-5.74	0.00	-6.3	0.00	6.30	1,127.22	338.17	702.39	660.47	32	-1.94	0.010

Load Case: 0.9D + 1.0W 118 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	-37.65	-19.29	0.00	-2,072.4	0.00	2,072.42	3,293.92	1,135.57	5,940.32	5,174.22	0	0	0.412
5.00	-36.06	-18.95	0.00	-1,976.0	0.00	1,975.96	3,293.92	1,135.57	5,940.32	5,174.22	0.04	-0.07	0.393
10.00	-34.47	-18.61	0.00	-1,881.2	0.00	1,881.19	3,293.92	1,135.57	5,940.32	5,174.22	0.15	-0.14	0.374
15.00	-32.88	-18.26	0.00	-1,788.1	0.00	1,788.14	3,293.92	1,135.57	5,940.32	5,174.22	0.32	-0.2	0.356
20.00	-31.30	-17.91	0.00	-1,696.8	0.00	1,696.83	3,293.92	1,135.57	5,940.32	5,174.22	0.56	-0.26	0.338
20.00	-31.30	-17.91	0.00	-1,696.8	0.00	1,696.83	2,330.87	853.47	4,473.98	3,807.50	0.56	-0.26	0.460
25.00	-30.07	-17.56	0.00	-1,607.3	0.00	1,607.28	2,330.87	853.47	4,473.98	3,807.50	0.87	-0.32	0.435
30.00	-28.83	-17.20	0.00	-1,519.5	0.00	1,519.49	2,330.87	853.47	4,473.98	3,807.50	1.23	-0.39	0.412
35.00	-27.60	-16.83	0.00	-1,433.5	0.00	1,433.48	2,330.87	853.47	4,473.98	3,807.50	1.68	-0.45	0.389
40.00	-26.38	-16.46	0.00	-1,349.3	0.00	1,349.33	2,330.87	853.47	4,473.98	3,807.50	2.19	-0.52	0.366
40.00	-26.38	-16.46	0.00	-1,349.3	0.00	1,349.33	2,139.71	767.58	3,618.86	3,103.93	2.19	-0.52	0.448
45.00	-25.25	-16.09	0.00	-1,267.0	0.00	1,267.05	2,139.71	767.58	3,618.86	3,103.93	2.76	-0.58	0.420
50.00	-24.13	-15.72	0.00	-1,186.6	0.00	1,186.59	2,139.71	767.58	3,618.86	3,103.93	3.41	-0.65	0.394
55.00	-23.01	-15.33	0.00	-1,108.0	0.00	1,108.00	2,139.71	767.58	3,618.86	3,103.93	4.13	-0.73	0.368
60.00	-21.90	-14.94	0.00	-1,031.4	0.00	1,031.37	2,139.71	767.58	3,618.86	3,103.93	4.93	-0.79	0.343
60.00	-21.90	-14.94	0.00	-1,031.4	0.00	1,031.37	1,948.48	681.70	2,854.35	2,471.99	4.93	-0.79	0.429
65.00	-20.89	-14.58	0.00	-956.7	0.00	956.66	1,948.48	681.70	2,854.35	2,471.99	5.79	-0.85	0.398
70.00	-19.88	-14.20	0.00	-883.8	0.00	883.77	1,948.48	681.70	2,854.35	2,471.99	6.73	-0.94	0.368
75.00	-18.87	-13.82	0.00	-812.8	0.00	812.75	1,948.48	681.70	2,854.35	2,471.99	7.75	-1.01	0.339
80.00	-17.86	-13.44	0.00	-743.7	0.00	743.67	1,948.48	681.70	2,854.35	2,471.99	8.85	-1.08	0.310
80.00	-17.86	-13.44	0.00	-743.7	0.00	743.67	1,757.14	595.82	2,180.45	1,911.67	8.85	-1.08	0.400
85.00	-16.96	-13.09	0.00	-676.5	0.00	676.46	1,757.14	595.82	2,180.45	1,911.67	10.02	-1.15	0.364
90.00	-16.06	-12.73	0.00	-611.0	0.00	611.01	1,757.14	595.82	2,180.45	1,911.67	11.26	-1.23	0.329
95.00	-15.17	-12.36	0.00	-547.4	0.00	547.36	1,757.14	595.82	2,180.45	1,911.67	12.6	-1.31	0.295
100.00	-14.27	-12.01	0.00	-485.6	0.00	485.55	1,757.14	595.82	2,180.45	1,911.67	14.01	-1.38	0.263
100.00	-14.27	-12.01	0.00	-485.6	0.00	485.55	1,565.64	509.93	1,597.15	1,422.98	14.01	-1.38	0.351
105.00	-13.49	-11.68	0.00	-425.5	0.00	425.50	1,565.64	509.93	1,597.15	1,422.98	15.48	-1.44	0.308
110.00	-12.70	-11.35	0.00	-367.1	0.00	367.08	1,565.64	509.93	1,597.15	1,422.98	17.04	-1.52	0.267
115.00	-11.92	-11.01	0.00	-310.3	0.00	310.33	1,565.64	509.93	1,597.15	1,422.98	18.67	-1.6	0.226
120.00	-11.13	-10.66	0.00	-255.3	0.00	255.29	1,565.64	509.93	1,597.15	1,422.98	20.38	-1.66	0.187
125.00	-10.36	-10.30	0.00	-202.0	0.00	201.99	1,565.64	509.93	1,597.15	1,422.98	22.14	-1.71	0.149
130.00	-9.58	-10.07	0.00	-150.5	0.00	150.47	1,565.64	509.93	1,597.15	1,422.98	23.95	-1.74	0.112
130.00	-9.58	-10.07	0.00	-150.5	0.00	150.47	1,127.22	338.17	702.39	660.47	23.95	-1.74	0.237
132.00	-7.60	-8.47	0.00	-130.3	0.00	130.34	1,127.22	338.17	702.39	660.47	24.68	-1.76	0.205
135.00	-7.26	-8.35	0.00	-104.9	0.00	104.93	1,127.22	338.17	702.39	660.47	25.8	-1.81	0.166
137.00	-5.96	-6.54	0.00	-87.7	0.00	87.67	1,127.22	338.17	702.39	660.47	26.56	-1.84	0.138
140.00	-5.64	-6.34	0.00	-68.1	0.00	68.06	1,127.22	338.17	702.39	660.47	27.73	-1.87	0.108
145.00	-5.10	-6.16	0.00	-36.4	0.00	36.36	1,127.22	338.17	702.39	660.47	29.71	-1.91	0.060
147.10	-4.79	-5.91	0.00	-23.4	0.00	23.43	1,127.22	338.17	702.39	660.47	30.55	-1.92	0.040
150.00	0.00	-5.74	0.00	-6.3	0.00	6.30	1,127.22	338.17	702.39	660.47	31.72	-1.92	0.010

Load Case: 1.2D + 1.0Di + 1.0Wi		50 mph wind with 1" radial ice			19 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	-64.54	-6.01	0.00	-605.1	0.00	605.07	3,293.92	1,135.57	5,940.32	5,174.22	0	0	0.137
5.00	-62.16	-5.89	0.00	-575.0	0.00	575.04	3,293.92	1,135.57	5,940.32	5,174.22	0.01	-0.02	0.130
10.00	-59.75	-5.77	0.00	-545.6	0.00	545.60	3,293.92	1,135.57	5,940.32	5,174.22	0.04	-0.04	0.124
15.00	-57.31	-5.64	0.00	-516.8	0.00	516.76	3,293.92	1,135.57	5,940.32	5,174.22	0.09	-0.06	0.117
20.00	-54.87	-5.51	0.00	-488.6	0.00	488.56	3,293.92	1,135.57	5,940.32	5,174.22	0.16	-0.08	0.111
20.00	-54.87	-5.51	0.00	-488.6	0.00	488.56	2,330.87	853.47	4,473.98	3,807.50	0.16	-0.08	0.152
25.00	-52.89	-5.39	0.00	-461.0	0.00	460.98	2,330.87	853.47	4,473.98	3,807.50	0.25	-0.09	0.144
30.00	-50.91	-5.26	0.00	-434.0	0.00	434.04	2,330.87	853.47	4,473.98	3,807.50	0.36	-0.11	0.136
35.00	-48.92	-5.12	0.00	-407.7	0.00	407.74	2,330.87	853.47	4,473.98	3,807.50	0.49	-0.13	0.128
40.00	-46.92	-4.99	0.00	-382.1	0.00	382.12	2,330.87	853.47	4,473.98	3,807.50	0.63	-0.15	0.121
40.00	-46.92	-4.99	0.00	-382.1	0.00	382.12	2,139.71	767.58	3,618.86	3,103.93	0.63	-0.15	0.145
45.00	-45.10	-4.86	0.00	-357.2	0.00	357.18	2,139.71	767.58	3,618.86	3,103.93	0.8	-0.17	0.136
50.00	-43.28	-4.72	0.00	-332.9	0.00	332.90	2,139.71	767.58	3,618.86	3,103.93	0.98	-0.19	0.128
55.00	-41.45	-4.58	0.00	-309.3	0.00	309.30	2,139.71	767.58	3,618.86	3,103.93	1.19	-0.21	0.119
60.00	-39.62	-4.43	0.00	-286.4	0.00	286.43	2,139.71	767.58	3,618.86	3,103.93	1.42	-0.23	0.111
60.00	-39.62	-4.43	0.00	-286.4	0.00	286.43	1,948.48	681.70	2,854.35	2,471.99	1.42	-0.23	0.136
65.00	-37.97	-4.30	0.00	-264.3	0.00	264.26	1,948.48	681.70	2,854.35	2,471.99	1.66	-0.24	0.126
70.00	-36.32	-4.16	0.00	-242.8	0.00	242.76	1,948.48	681.70	2,854.35	2,471.99	1.93	-0.27	0.117
75.00	-34.66	-4.02	0.00	-222.0	0.00	221.96	1,948.48	681.70	2,854.35	2,471.99	2.22	-0.29	0.108
80.00	-33.01	-3.88	0.00	-201.9	0.00	201.88	1,948.48	681.70	2,854.35	2,471.99	2.53	-0.31	0.099
80.00	-33.01	-3.88	0.00	-201.9	0.00	201.88	1,757.14	595.82	2,180.45	1,911.67	2.53	-0.31	0.124
85.00	-31.53	-3.74	0.00	-182.5	0.00	182.50	1,757.14	595.82	2,180.45	1,911.67	2.86	-0.32	0.113
90.00	-30.06	-3.61	0.00	-163.8	0.00	163.78	1,757.14	595.82	2,180.45	1,911.67	3.21	-0.35	0.103
95.00	-28.58	-3.47	0.00	-145.7	0.00	145.73	1,757.14	595.82	2,180.45	1,911.67	3.59	-0.37	0.093
100.00	-27.10	-3.34	0.00	-128.4	0.00	128.37	1,757.14	595.82	2,180.45	1,911.67	3.98	-0.39	0.083
100.00	-27.10	-3.34	0.00	-128.4	0.00	128.37	1,565.64	509.93	1,597.15	1,422.98	3.98	-0.39	0.108
105.00	-25.81	-3.21	0.00	-111.7	0.00	111.69	1,565.64	509.93	1,597.15	1,422.98	4.39	-0.4	0.095
110.00	-24.51	-3.09	0.00	-95.6	0.00	95.62	1,565.64	509.93	1,597.15	1,422.98	4.82	-0.42	0.083
115.00	-23.21	-2.96	0.00	-80.2	0.00	80.19	1,565.64	509.93	1,597.15	1,422.98	5.28	-0.44	0.071
120.00	-21.91	-2.82	0.00	-65.4	0.00	65.40	1,565.64	509.93	1,597.15	1,422.98	5.75	-0.46	0.060
125.00	-20.62	-2.69	0.00	-51.3	0.00	51.29	1,565.64	509.93	1,597.15	1,422.98	6.24	-0.47	0.049
130.00	-19.32	-2.59	0.00	-37.9	0.00	37.86	1,565.64	509.93	1,597.15	1,422.98	6.73	-0.48	0.039
130.00	-19.32	-2.59	0.00	-37.9	0.00	37.86	1,127.22	338.17	702.39	660.47	6.73	-0.48	0.075
132.00	-15.83	-2.15	0.00	-32.7	0.00	32.68	1,127.22	338.17	702.39	660.47	6.93	-0.48	0.064
135.00	-15.27	-2.10	0.00	-26.2	0.00	26.23	1,127.22	338.17	702.39	660.47	7.24	-0.5	0.053
137.00	-12.35	-1.69	0.00	-21.9	0.00	21.92	1,127.22	338.17	702.39	660.47	7.45	-0.5	0.044
140.00	-11.81	-1.61	0.00	-16.9	0.00	16.86	1,127.22	338.17	702.39	660.47	7.77	-0.51	0.036
145.00	-10.91	-1.54	0.00	-8.8	0.00	8.82	1,127.22	338.17	702.39	660.47	8.31	-0.52	0.023
147.10	-10.33	-1.45	0.00	-5.6	0.00	5.59	1,127.22	338.17	702.39	660.47	8.54	-0.52	0.018
150.00	0.00	-1.36	0.00	-1.4	0.00	1.37	1,127.22	338.17	702.39	660.47	8.86	-0.52	0.002

Load Case: 1.0D + 1.0W 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	-41.85	-4.46	0.00	-480.5	0.00	480.47	3,293.92	1,135.57	5,940.32	5,174.22	0	0	0.106
5.00	-40.10	-4.39	0.00	-458.2	0.00	458.16	3,293.92	1,135.57	5,940.32	5,174.22	0.01	-0.02	0.101
10.00	-38.36	-4.31	0.00	-436.2	0.00	436.23	3,293.92	1,135.57	5,940.32	5,174.22	0.03	-0.03	0.096
15.00	-36.61	-4.23	0.00	-414.7	0.00	414.69	3,293.92	1,135.57	5,940.32	5,174.22	0.07	-0.05	0.091
20.00	-34.87	-4.15	0.00	-393.6	0.00	393.56	3,293.92	1,135.57	5,940.32	5,174.22	0.13	-0.06	0.087
20.00	-34.87	-4.15	0.00	-393.6	0.00	393.56	2,330.87	853.47	4,473.98	3,807.50	0.13	-0.06	0.118
25.00	-33.52	-4.07	0.00	-372.8	0.00	372.82	2,330.87	853.47	4,473.98	3,807.50	0.2	-0.07	0.112
30.00	-32.17	-3.98	0.00	-352.5	0.00	352.49	2,330.87	853.47	4,473.98	3,807.50	0.29	-0.09	0.106
35.00	-30.82	-3.90	0.00	-332.6	0.00	332.57	2,330.87	853.47	4,473.98	3,807.50	0.39	-0.11	0.101
40.00	-29.47	-3.81	0.00	-313.1	0.00	313.07	2,330.87	853.47	4,473.98	3,807.50	0.51	-0.12	0.095
40.00	-29.47	-3.81	0.00	-313.1	0.00	313.07	2,139.71	767.58	3,618.86	3,103.93	0.51	-0.12	0.115
45.00	-28.24	-3.73	0.00	-294.0	0.00	294.01	2,139.71	767.58	3,618.86	3,103.93	0.64	-0.13	0.108
50.00	-27.01	-3.64	0.00	-275.4	0.00	275.36	2,139.71	767.58	3,618.86	3,103.93	0.79	-0.15	0.101
55.00	-25.78	-3.55	0.00	-257.1	0.00	257.14	2,139.71	767.58	3,618.86	3,103.93	0.96	-0.17	0.095
60.00	-24.56	-3.47	0.00	-239.4	0.00	239.38	2,139.71	767.58	3,618.86	3,103.93	1.14	-0.18	0.089
60.00	-24.56	-3.47	0.00	-239.4	0.00	239.38	1,948.48	681.70	2,854.35	2,471.99	1.14	-0.18	0.109
65.00	-23.45	-3.38	0.00	-222.0	0.00	222.05	1,948.48	681.70	2,854.35	2,471.99	1.34	-0.2	0.102
70.00	-22.34	-3.29	0.00	-205.2	0.00	205.15	1,948.48	681.70	2,854.35	2,471.99	1.56	-0.22	0.094
75.00	-21.23	-3.21	0.00	-188.7	0.00	188.67	1,948.48	681.70	2,854.35	2,471.99	1.8	-0.23	0.087
80.00	-20.12	-3.12	0.00	-172.6	0.00	172.65	1,948.48	681.70	2,854.35	2,471.99	2.05	-0.25	0.080
80.00	-20.12	-3.12	0.00	-172.6	0.00	172.65	1,757.14	595.82	2,180.45	1,911.67	2.05	-0.25	0.102
85.00	-19.13	-3.04	0.00	-157.0	0.00	157.05	1,757.14	595.82	2,180.45	1,911.67	2.32	-0.27	0.093
90.00	-18.14	-2.96	0.00	-141.9	0.00	141.86	1,757.14	595.82	2,180.45	1,911.67	2.61	-0.29	0.085
95.00	-17.16	-2.87	0.00	-127.1	0.00	127.09	1,757.14	595.82	2,180.45	1,911.67	2.92	-0.3	0.076
100.00	-16.17	-2.79	0.00	-112.7	0.00	112.74	1,757.14	595.82	2,180.45	1,911.67	3.25	-0.32	0.068
100.00	-16.17	-2.79	0.00	-112.7	0.00	112.74	1,565.64	509.93	1,597.15	1,422.98	3.25	-0.32	0.090
105.00	-15.30	-2.71	0.00	-98.8	0.00	98.80	1,565.64	509.93	1,597.15	1,422.98	3.59	-0.33	0.079
110.00	-14.43	-2.64	0.00	-85.2	0.00	85.24	1,565.64	509.93	1,597.15	1,422.98	3.95	-0.35	0.069
115.00	-13.57	-2.56	0.00	-72.1	0.00	72.06	1,565.64	509.93	1,597.15	1,422.98	4.33	-0.37	0.059
120.00	-12.70	-2.48	0.00	-59.3	0.00	59.27	1,565.64	509.93	1,597.15	1,422.98	4.73	-0.38	0.050
125.00	-11.83	-2.39	0.00	-46.9	0.00	46.90	1,565.64	509.93	1,597.15	1,422.98	5.14	-0.4	0.041
130.00	-10.96	-2.34	0.00	-34.9	0.00	34.93	1,565.64	509.93	1,597.15	1,422.98	5.56	-0.4	0.032
130.00	-10.96	-2.34	0.00	-34.9	0.00	34.93	1,127.22	338.17	702.39	660.47	5.56	-0.4	0.063
132.00	-8.71	-1.97	0.00	-30.3	0.00	30.26	1,127.22	338.17	702.39	660.47	5.73	-0.41	0.054
135.00	-8.34	-1.94	0.00	-24.4	0.00	24.36	1,127.22	338.17	702.39	660.47	5.99	-0.42	0.044
137.00	-6.84	-1.52	0.00	-20.4	0.00	20.35	1,127.22	338.17	702.39	660.47	6.16	-0.43	0.037
140.00	-6.48	-1.47	0.00	-15.8	0.00	15.80	1,127.22	338.17	702.39	660.47	6.43	-0.43	0.030
145.00	-5.88	-1.43	0.00	-8.4	0.00	8.44	1,127.22	338.17	702.39	660.47	6.89	-0.44	0.018
147.10	-5.53	-1.37	0.00	-5.4	0.00	5.43	1,127.22	338.17	702.39	660.47	7.09	-0.44	0.013
150.00	0.00	-1.33	0.00	-1.5	0.00	1.46	1,127.22	338.17	702.39	660.47	7.36	-0.45	0.002

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

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

Spectral Response Acceleration for Short Period (S_S):	0.196
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}):	0.209
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.086
Seismic Response Coefficient (C_s):	0.032
Upper Limit C_S:	0.032
Lower Limit C_S:	0.030
Period based on Rayleigh Method (sec):	1.830
Redundancy Factor (p):	1.000
Seismic Force Distribution Exponent (k):	1.660
Total Unfactored Dead Load:	41.850 k
Seismic Base Shear (E):	1.320 k

1.2D + 1.0Ev + 1.0Eh **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	-49.80	-1.32	0.00	-162.13	0.00	162.13	3,293.92	1,135.57	5,940	5,174.22	0.00	0.00	0.05
5.00	-47.64	-1.33	0.00	-155.53	0.00	155.53	3,293.92	1,135.57	5,940	5,174.22	0.00	-0.01	0.05
10.00	-45.47	-1.33	0.00	-148.90	0.00	148.90	3,293.92	1,135.57	5,940	5,174.22	0.01	-0.01	0.04
15.00	-43.31	-1.33	0.00	-142.26	0.00	142.26	3,293.92	1,135.57	5,940	5,174.22	0.03	-0.02	0.04
20.00	-41.63	-1.33	0.00	-135.63	0.00	135.63	3,293.92	1,135.57	5,940	5,174.22	0.04	-0.02	0.04
20.00	-41.63	-1.33	0.00	-135.63	0.00	135.63	2,330.87	853.47	4,474	3,807.50	0.04	-0.02	0.05
25.00	-39.96	-1.32	0.00	-129.00	0.00	129.00	2,330.87	853.47	4,474	3,807.50	0.07	-0.03	0.05
30.00	-38.28	-1.32	0.00	-122.39	0.00	122.39	2,330.87	853.47	4,474	3,807.50	0.10	-0.03	0.05
35.00	-36.61	-1.31	0.00	-115.81	0.00	115.81	2,330.87	853.47	4,474	3,807.50	0.13	-0.04	0.05
40.00	-35.08	-1.30	0.00	-109.26	0.00	109.26	2,330.87	853.47	4,474	3,807.50	0.17	-0.04	0.04
40.00	-35.08	-1.30	0.00	-109.26	0.00	109.26	2,139.71	767.58	3,619	3,103.93	0.17	-0.04	0.05
45.00	-33.56	-1.29	0.00	-102.76	0.00	102.76	2,139.71	767.58	3,619	3,103.93	0.22	-0.05	0.05
50.00	-32.03	-1.27	0.00	-96.31	0.00	96.31	2,139.71	767.58	3,619	3,103.93	0.27	-0.05	0.05
55.00	-30.51	-1.26	0.00	-89.94	0.00	89.94	2,139.71	767.58	3,619	3,103.93	0.33	-0.06	0.04
60.00	-29.13	-1.24	0.00	-83.65	0.00	83.65	2,139.71	767.58	3,619	3,103.93	0.39	-0.06	0.04
60.00	-29.13	-1.24	0.00	-83.65	0.00	83.65	1,948.48	681.70	2,854	2,471.99	0.39	-0.06	0.05
65.00	-27.75	-1.22	0.00	-77.45	0.00	77.45	1,948.48	681.70	2,854	2,471.99	0.46	-0.07	0.05
70.00	-26.38	-1.20	0.00	-71.36	0.00	71.36	1,948.48	681.70	2,854	2,471.99	0.54	-0.08	0.04
75.00	-25.00	-1.17	0.00	-65.38	0.00	65.38	1,948.48	681.70	2,854	2,471.99	0.62	-0.08	0.04
80.00	-23.78	-1.14	0.00	-59.53	0.00	59.53	1,948.48	681.70	2,854	2,471.99	0.71	-0.09	0.04
80.00	-23.78	-1.14	0.00	-59.53	0.00	59.53	1,757.14	595.82	2,180	1,911.67	0.71	-0.09	0.05
85.00	-22.55	-1.11	0.00	-53.82	0.00	53.82	1,757.14	595.82	2,180	1,911.67	0.80	-0.09	0.04
90.00	-21.32	-1.08	0.00	-48.26	0.00	48.26	1,757.14	595.82	2,180	1,911.67	0.90	-0.10	0.04
95.00	-20.10	-1.04	0.00	-42.86	0.00	42.86	1,757.14	595.82	2,180	1,911.67	1.01	-0.10	0.03
100.00	-19.02	-1.01	0.00	-37.64	0.00	37.64	1,757.14	595.82	2,180	1,911.67	1.12	-0.11	0.03
100.00	-19.02	-1.01	0.00	-37.64	0.00	37.64	1,565.64	509.93	1,597	1,422.98	1.12	-0.11	0.04
105.00	-17.94	-0.97	0.00	-32.59	0.00	32.59	1,565.64	509.93	1,597	1,422.98	1.24	-0.12	0.03
110.00	-16.86	-0.93	0.00	-27.74	0.00	27.74	1,565.64	509.93	1,597	1,422.98	1.36	-0.12	0.03
115.00	-15.79	-0.89	0.00	-23.08	0.00	23.08	1,565.64	509.93	1,597	1,422.98	1.49	-0.13	0.03
115.00	-15.79	-0.89	0.00	-23.08	0.00	23.08	1,565.64	509.93	1,597	1,422.98	1.49	-0.13	0.03
120.00	-14.71	-0.84	0.00	-18.64	0.00	18.64	1,565.64	509.93	1,597	1,422.98	1.63	-0.13	0.02
125.00	-13.63	-0.79	0.00	-14.45	0.00	14.45	1,565.64	509.93	1,597	1,422.98	1.77	-0.13	0.02
130.00	-13.32	-0.77	0.00	-10.50	0.00	10.50	1,565.64	509.93	1,597	1,422.98	1.91	-0.14	0.02
130.00	-13.32	-0.77	0.00	-10.50	0.00	10.50	1,127.22	338.17	702	660.47	1.91	-0.14	0.03

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
132.00	-10.37	-0.62	0.00	-8.96	0.00	8.96	1,127.22	338.17	702	660.47	1.97	-0.14	0.02
135.00	-10.06	-0.61	0.00	-7.09	0.00	7.09	1,127.22	338.17	702	660.47	2.06	-0.14	0.02
137.00	-8.06	-0.50	0.00	-5.87	0.00	5.87	1,127.22	338.17	702	660.47	2.12	-0.14	0.02
140.00	-7.31	-0.46	0.00	-4.38	0.00	4.38	1,127.22	338.17	702	660.47	2.21	-0.15	0.01
145.00	-7.00	-0.44	0.00	-2.09	0.00	2.09	1,127.22	338.17	702	660.47	2.36	-0.15	0.01
147.10	-6.47	-0.41	0.00	-1.18	0.00	1.18	1,127.22	338.17	702	660.47	2.43	-0.15	0.01
150.00	0.00	-0.39	0.00	0.00	0.00	0.00	1,127.22	338.17	702	660.47	2.52	-0.15	0.00

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

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (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	-34.42	-1.32	0.00	-160.83	0.00	160.83	3,293.92	1,135.57	5,940	5,174.22	0.00	0.00	0.04
5.00	-32.92	-1.32	0.00	-154.23	0.00	154.23	3,293.92	1,135.57	5,940	5,174.22	0.00	-0.01	0.04
10.00	-31.42	-1.32	0.00	-147.61	0.00	147.61	3,293.92	1,135.57	5,940	5,174.22	0.01	-0.01	0.04
15.00	-29.93	-1.32	0.00	-140.99	0.00	140.99	3,293.92	1,135.57	5,940	5,174.22	0.03	-0.02	0.04
20.00	-28.77	-1.32	0.00	-134.38	0.00	134.38	3,293.92	1,135.57	5,940	5,174.22	0.04	-0.02	0.04
20.00	-28.77	-1.32	0.00	-134.38	0.00	134.38	2,330.87	853.47	4,474	3,807.50	0.04	-0.02	0.05
25.00	-27.61	-1.32	0.00	-127.78	0.00	127.78	2,330.87	853.47	4,474	3,807.50	0.07	-0.02	0.05
30.00	-26.46	-1.31	0.00	-121.20	0.00	121.20	2,330.87	853.47	4,474	3,807.50	0.10	-0.03	0.04
35.00	-25.30	-1.30	0.00	-114.65	0.00	114.65	2,330.87	853.47	4,474	3,807.50	0.13	-0.04	0.04
40.00	-24.24	-1.29	0.00	-108.14	0.00	108.14	2,330.87	853.47	4,474	3,807.50	0.17	-0.04	0.04
40.00	-24.24	-1.29	0.00	-108.14	0.00	108.14	2,139.71	767.58	3,619	3,103.93	0.17	-0.04	0.05
45.00	-23.19	-1.28	0.00	-101.68	0.00	101.68	2,139.71	767.58	3,619	3,103.93	0.22	-0.05	0.04
50.00	-22.14	-1.27	0.00	-95.28	0.00	95.28	2,139.71	767.58	3,619	3,103.93	0.27	-0.05	0.04
55.00	-21.08	-1.25	0.00	-88.96	0.00	88.96	2,139.71	767.58	3,619	3,103.93	0.33	-0.06	0.04
60.00	-20.13	-1.23	0.00	-82.72	0.00	82.72	2,139.71	767.58	3,619	3,103.93	0.39	-0.06	0.04
60.00	-20.13	-1.23	0.00	-82.72	0.00	82.72	1,948.48	681.70	2,854	2,471.99	0.39	-0.06	0.04
65.00	-19.18	-1.21	0.00	-76.57	0.00	76.57	1,948.48	681.70	2,854	2,471.99	0.46	-0.07	0.04
70.00	-18.23	-1.18	0.00	-70.53	0.00	70.53	1,948.48	681.70	2,854	2,471.99	0.53	-0.07	0.04
75.00	-17.28	-1.16	0.00	-64.61	0.00	64.61	1,948.48	681.70	2,854	2,471.99	0.61	-0.08	0.04
80.00	-16.43	-1.13	0.00	-58.82	0.00	58.82	1,948.48	681.70	2,854	2,471.99	0.70	-0.09	0.03
80.00	-16.43	-1.13	0.00	-58.82	0.00	58.82	1,757.14	595.82	2,180	1,911.67	0.70	-0.09	0.04
85.00	-15.58	-1.10	0.00	-53.17	0.00	53.17	1,757.14	595.82	2,180	1,911.67	0.79	-0.09	0.04
90.00	-14.73	-1.07	0.00	-47.67	0.00	47.67	1,757.14	595.82	2,180	1,911.67	0.89	-0.10	0.03
95.00	-13.89	-1.03	0.00	-42.33	0.00	42.33	1,757.14	595.82	2,180	1,911.67	1.00	-0.10	0.03
100.00	-13.14	-1.00	0.00	-37.17	0.00	37.17	1,757.14	595.82	2,180	1,911.67	1.11	-0.11	0.03
100.00	-13.14	-1.00	0.00	-37.17	0.00	37.17	1,565.64	509.93	1,597	1,422.98	1.11	-0.11	0.04
105.00	-12.40	-0.96	0.00	-32.18	0.00	32.18	1,565.64	509.93	1,597	1,422.98	1.23	-0.11	0.03
110.00	-11.65	-0.92	0.00	-27.38	0.00	27.38	1,565.64	509.93	1,597	1,422.98	1.35	-0.12	0.03
115.00	-10.91	-0.88	0.00	-22.78	0.00	22.78	1,565.64	509.93	1,597	1,422.98	1.48	-0.13	0.02
115.00	-10.91	-0.88	0.00	-22.78	0.00	22.78	1,565.64	509.93	1,597	1,422.98	1.48	-0.13	0.02
120.00	-10.16	-0.83	0.00	-18.40	0.00	18.40	1,565.64	509.93	1,597	1,422.98	1.61	-0.13	0.02
125.00	-9.42	-0.78	0.00	-14.26	0.00	14.26	1,565.64	509.93	1,597	1,422.98	1.75	-0.13	0.02
130.00	-9.21	-0.76	0.00	-10.37	0.00	10.37	1,565.64	509.93	1,597	1,422.98	1.89	-0.14	0.01
130.00	-9.21	-0.76	0.00	-10.37	0.00	10.37	1,127.22	338.17	702	660.47	1.89	-0.14	0.02
132.00	-7.17	-0.62	0.00	-8.84	0.00	8.84	1,127.22	338.17	702	660.47	1.95	-0.14	0.02
135.00	-6.95	-0.60	0.00	-6.99	0.00	6.99	1,127.22	338.17	702	660.47	2.04	-0.14	0.02
137.00	-5.57	-0.49	0.00	-5.80	0.00	5.80	1,127.22	338.17	702	660.47	2.10	-0.14	0.01
140.00	-5.05	-0.45	0.00	-4.32	0.00	4.32	1,127.22	338.17	702	660.47	2.19	-0.14	0.01
145.00	-4.84	-0.43	0.00	-2.07	0.00	2.07	1,127.22	338.17	702	660.47	2.34	-0.15	0.01
147.10	-4.47	-0.40	0.00	-1.16	0.00	1.16	1,127.22	338.17	702	660.47	2.40	-0.15	0.01
150.00	0.00	-0.39	0.00	0.00	0.00	0.00	1,127.22	338.17	702	660.47	2.49	-0.15	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	19.30	0.00	50.21	0.00	0.00	2086.09	20.00	0.47
0.9D + 1.0W	19.29	0.00	37.65	0.00	0.00	2072.42	20.00	0.46
1.2D + 1.0Di + 1.0Wi	6.01	0.00	64.54	0.00	0.00	605.07	20.00	0.15
1.2D + 1.0Ev + 1.0Eh	1.33	0.00	49.80	0.00	0.00	162.13	20.00	0.05
0.9D - 1.0Ev + 1.0Eh	1.32	0.00	34.42	0.00	0.00	160.83	20.00	0.05
1.0D + 1.0W	4.46	0.00	41.85	0.00	0.00	480.47	20.00	0.12

Base Plate & Anchor Rod Analysis

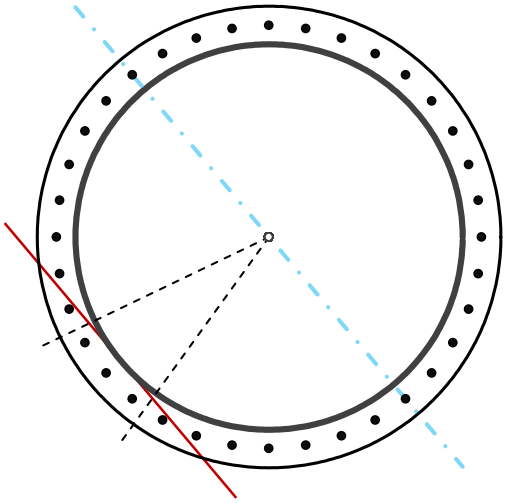
Pole Dimensions		
Shape	Round	-
Diameter	60	in
Thickness	1/2	in
Orientation Offset		°

Base Reactions		
Moment, Mu	2,086.1	k-ft
Axial, Pu	50.2	k
Shear, Vu	19.3	k
Neutral Axis	130	°

Report Capacities		
Component	Capacity	Result
Base Plate	49%	Pass
Anchor Rods	40%	Pass
Dwyidag	-	-

Base Plate		
Shape	Round	-
Diameter, ø	72	in
Thickness	1 1/2	in
Grade	A572-50	
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	N/A	in
Orientation Offset		°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	238.5	k
Bending Stress, ϕMn	485.2	k

Original Anchor Rods		
Arrangement	Radial	-
Quantity	36	-
Diameter, ø	1 1/2	in
Bolt Circle	66	in
Grade	Other	
Yield Strength, Fy	81	ksi
Tensile Strength, Fu	105	ksi
Spacing	5.8	in
Orientation Offset		°
Applied Force, Pu	44.6	k
Anchor Rods, ϕPn	110.7	k



Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	19.3	2086.1	1.00
Anchor Rod Forces	19.3	2086.1	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	93.4612	0.2596	0.0217		41367.32
Bolt	1.7671	1.4053	0.1571	6	26211.69
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Round	-
Diameter, D	72	in
Thickness, t	1.5	in
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Base Plate Chord	39.799	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods		
Anchor Rod Quantity, N	36	-
Rod Diameter, d	1.5	in
Bolt Circle, BC	66	in
Yield Strength, Fy	81	ksi
Tensile Strength, Fu	105	ksi
Applied Axial, Pu	44.6	k
Applied Shear, Vu	0.0	k
Compressive Capacity, ϕPn	110.7	k
Tensile Capacity, ϕRnt	0.403	OK
Interaction Capacity	0.162	OK

External Base Plate		
Chord Length AA	31.226	in
Additional AA	3.000	in
Section Modulus, Z	19.252	in^3
Applied Moment, Mu	254.0	k-ft
Bending Capacity, ϕMn	866.3	k-ft
Capacity, Mu/ϕMn	0.293	OK
Chord Length AB	31.226	in
Additional AB	3.000	in
Section Modulus, Z	19.252	in^3
Applied Moment, Mu	254.0	k-ft
Bending Capacity, ϕMn	866.3	k-ft
Capacity, Mu/ϕMn	0.293	OK
Bend Line Length	19.167	in
Additional Bend Line	0.000	in
Section Modulus, Z	10.782	in^3
Applied Moment, Mu	238.5	k-ft
Bending Capacity, ϕMn	485.2	k-ft
Capacity, Mu/ϕMn	0.492	OK

Internal Base Plate		
Arc Length	0.000	in
Section Modulus, Z	0.000	in^3
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

Flange Plate Analysis

Flange Plate			
	Plate Type	***Flange***	***at 20 ft***
	Pole Diameter	60	in
	Pole Thickness	0.375	in
	Plate Diameter	72	in
	Plate Thickness	1 1/2	in
	Plate Fy	50	ksi
	Weld Length	5/16	in
	f_s Resistance	482.68	k-in
	Applied	51.21	k-in

Stiffeners	#	***9***	***Show***
	Thickness	1/2	in
	Length	6	in
	Height	24	in
	Chamfer		in
	Offset Angle		°
	Fy	36	ksi

Bolts	#	***44***	
	Bolt Circle	66	in
	(R)adial / (S)quare	R	
	Diameter	1 1/2	in
	Hole Diameter	1 5/8	in
	Type	A325	
	Fy	81	ksi
	Fu	105	ksi
	f_s Resistance	110.66	k
	Applied	27.31	k

Reinforcement	#		

Extra Bolts O	#		

Code Rev.	***H***
Moment	1710.0 k-ft
Axial	41.8 k

Date	8/27/2021
Engineer	SDK
Site #	282660
Carrier	T-MOBILE

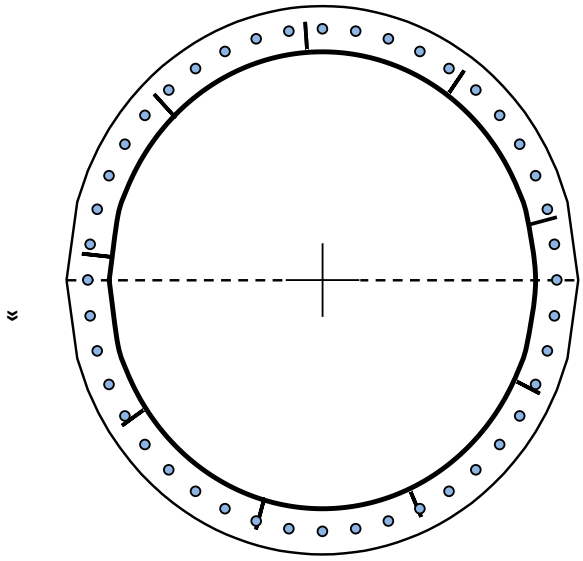


Plate Stress Ratio:

11% Pass

Bolt Stress Ratio:

25% Pass

Flange Plate Analysis

Flange Plate

Plate Type	***Flange***	***at 40 ft***
Pole Diameter	54	in
Pole Thickness	0.375	in
Plate Diameter	60	in
Plate Thickness	1 1/4	in
Plate Fy	50	ksi
Weld Length	5/16	in
f_s Resistance	62.13	k-in
Applied	14.46	k-in

Code Rev.	***H***
Moment	1361.1 k-ft
Axial	35.2 k

Required Flange Thickness:
0.60 in OK

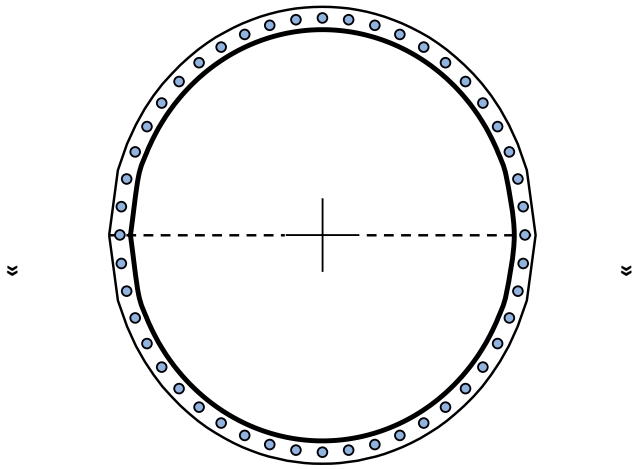
Date	8/27/2021
Engineer	SDK
Site #	282660
Carrier	T-MOBILE

Stiffeners

#	

Bolts

#	***48***	
Bolt Circle	57	in
(R)adial / (S)quare	R	
Diameter	1	in
Hole Diameter	1 1/8	in
Type	A325	
Fy	92	ksi
Fu	120	ksi
f_s Resistance	54.52	k
Applied	23.14	k



Reinforcement

#	

Plate Stress Ratio:
23% Pass

Bolt Stress Ratio:
42% Pass

Extra Bolts O

#	

Flange Plate Analysis

Flange Plate

Plate Type	***Flange***	***at 60 ft***
Pole Diameter	48	in
Pole Thickness	0.375	in
Plate Diameter	54	in
Plate Thickness	1 1/4	in
Plate Fy	50	ksi
Weld Length	5/16	in
f_s Resistance	66.27	k-in
Applied	14.85	k-in

Code Rev.	***H***
Moment	1041.2 k-ft
Axial	29.3 k

Required Flange Thickness:
0.59 in OK

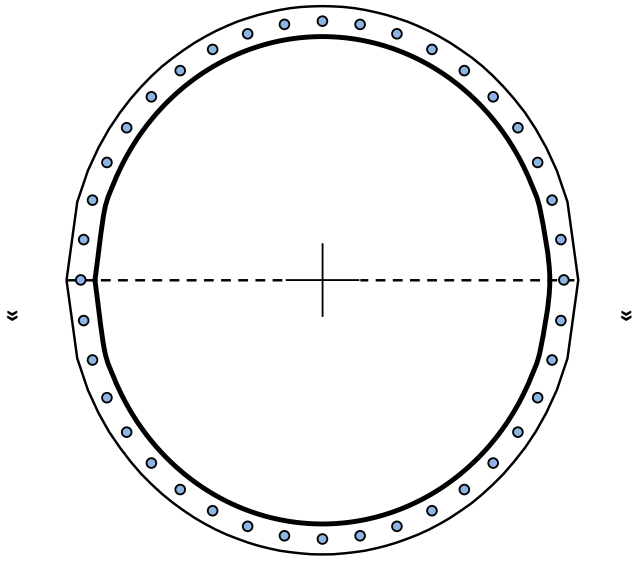
Date	8/27/2021
Engineer	SDK
Site #	282660
Carrier	T-MOBILE

Stiffeners

#	

Bolts

#	***40***	
Bolt Circle	51	in
(R)adial / (S)quare	R	
Diameter	1	in
Hole Diameter	1 1/8	in
Type	A325	
Fy	92	ksi
Fu	120	ksi
f_s Resistance	54.52	k
Applied	23.76	k



Reinforcement

#	

Plate Stress Ratio:
22% Pass

Bolt Stress Ratio:
44% Pass

Extra Bolts O

#	

Flange Plate Analysis

Flange Plate

Plate Type	***Flange***	***at 80 ft***
Pole Diameter	42	in
Pole Thickness	0.375	in
Plate Diameter	48	in
Plate Thickness	1 1/2	in
Plate Fy	50	ksi
Weld Length	5/16	in
f_s Resistance	104.13	k-in
Applied	15.18	k-in

Code Rev.	***H***
Moment	751.2 k-ft
Axial	23.9 k

Required Flange Thickness:
0.57 in OK

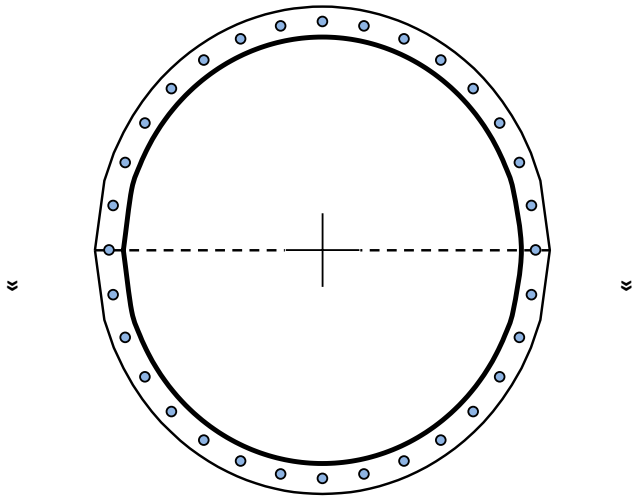
Date	8/27/2021
Engineer	SDK
Site #	282660
Carrier	T-MOBILE

Stiffeners

#	

Bolts

#	***32***	
Bolt Circle	45	in
(R)adial / (S)quare	R	
Diameter	1	in
Hole Diameter	1 1/8	in
Type	A325	
Fy	92	ksi
Fu	120	ksi
f_s Resistance	54.52	k
Applied	24.29	k



Reinforcement

#	

Plate Stress Ratio:
15% Pass

Bolt Stress Ratio:
45% Pass

Extra Bolts O

#	

Flange Plate Analysis

Flange Plate

Plate Type	***Flange***	***at 100 ft***
Pole Diameter	36	in
Pole Thickness	0.375	in
Plate Diameter	48	in
Plate Thickness	1 1/2	in
Plate Fy	50	ksi
Weld Length	5/16	in
f_s Resistance	119.28	k-in
Applied	42.29	k-in

Code Rev.	***H***
Moment	490.6 k-ft
Axial	19.1 k

Required Flange Thickness:
0.89 in OK

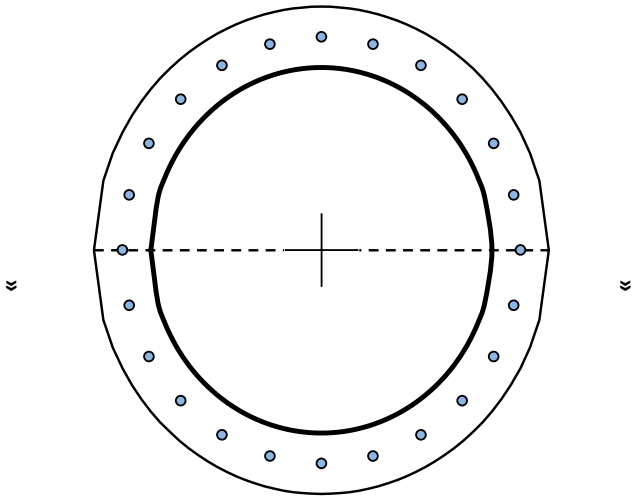
Date	8/27/2021
Engineer	SDK
Site #	282660
Carrier	T-MOBILE

Stiffeners

#	

Bolts

#	***24***	
Bolt Circle	42	in
(R)adial / (S)quare	R	
Diameter	1 1/2	in
Hole Diameter	1 5/8	in
Type	A325	
Fy	81	ksi
Fu	105	ksi
f_s Resistance	110.66	k
Applied	22.55	k



Reinforcement

#	

Plate Stress Ratio:
35% Pass

Bolt Stress Ratio:
20% Pass

Extra Bolts O

#	

Flange Plate Analysis

Flange Plate

Plate Type	***Flange***	***at 115 ft***
Pole Diameter	36	in
Pole Thickness	0.375	in
Plate Diameter	48	in
Plate Thickness	1 1/2	in
Plate Fy	50	ksi
Weld Length	5/16	in
f_s Resistance	119.28	k-in
Applied	26.73	k-in

Code Rev.	***H***
Moment	313.5 k-ft
Axial	16.0 k

Required Flange Thickness:
0.71 in OK

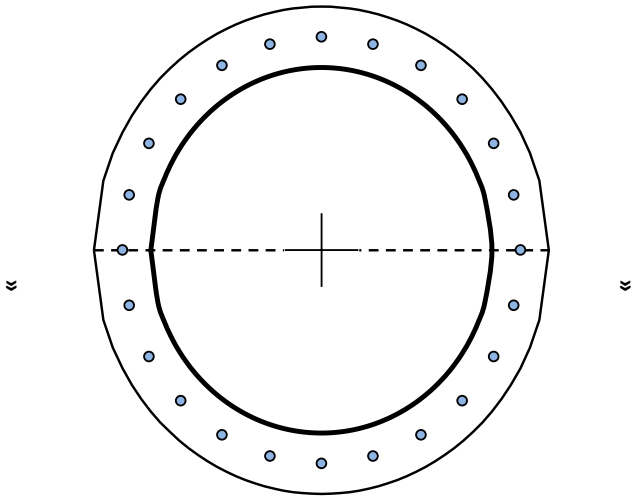
Date	8/27/2021
Engineer	SDK
Site #	282660
Carrier	T-MOBILE

Stiffeners

#	

Bolts

#	***24***	
Bolt Circle	42	in
(R)adial / (S)quare	R	
Diameter	1 1/2	in
Hole Diameter	1 5/8	in
Type	A325	
Fy	81	ksi
Fu	105	ksi
f_s Resistance	110.66	k
Applied	14.25	k



Reinforcement

#	

Plate Stress Ratio:
22% Pass

Bolt Stress Ratio:
13% Pass

Extra Bolts O

#	

Flange Plate Analysis

Flange Plate

Plate Type	***Flange***	***at 130 ft***
Pole Diameter	24	in
Pole Thickness	0.375	in
Plate Diameter	30	in
Plate Thickness	1	in
Plate Fy	50	ksi
Weld Length	1/4	in
f_s Resistance	42.41	k-in
Applied	8.84	k-in

Code Rev.	***H***
Moment	151.9 k-ft
Axial	12.9 k

Required Flange Thickness:
0.46 in OK

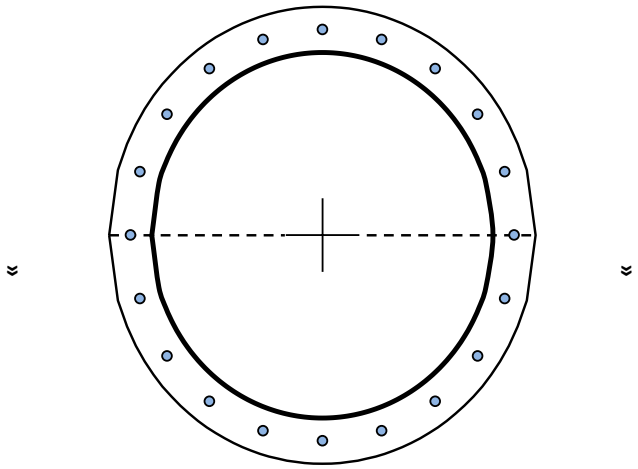
Date	8/27/2021
Engineer	SDK
Site #	282660
Carrier	T-MOBILE

Stiffeners

#	

Bolts

#	***20***	
Bolt Circle	27	in
(R)adial / (S)quare	R	
Diameter	1	in
Hole Diameter	1 1/8	in
Type	A325	
Fy	92	ksi
Fu	120	ksi
f_s Resistance	54.52	k
Applied	12.85	k



Reinforcement

#	

Plate Stress Ratio:
21% Pass

Bolt Stress Ratio:
24% Pass

Extra Bolts O

#	

RAN Template:	A&L Template:
67D5A998E Outdoor	67D5998E_1xAIR+1OP+1QP

CTNH302A_Anchor_5_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: Anchor_Phase 3

Section 1 - Site Information

Site ID: CTNH302A
Status: Draft
Version: 5
Project Type: Anchor
Approved: Not Approved
Approved By: Not Approved
Last Modified: 7/8/2021 12:34:01 PM
Last Modified By: Hansraj.Rana4@T-Mobile.com

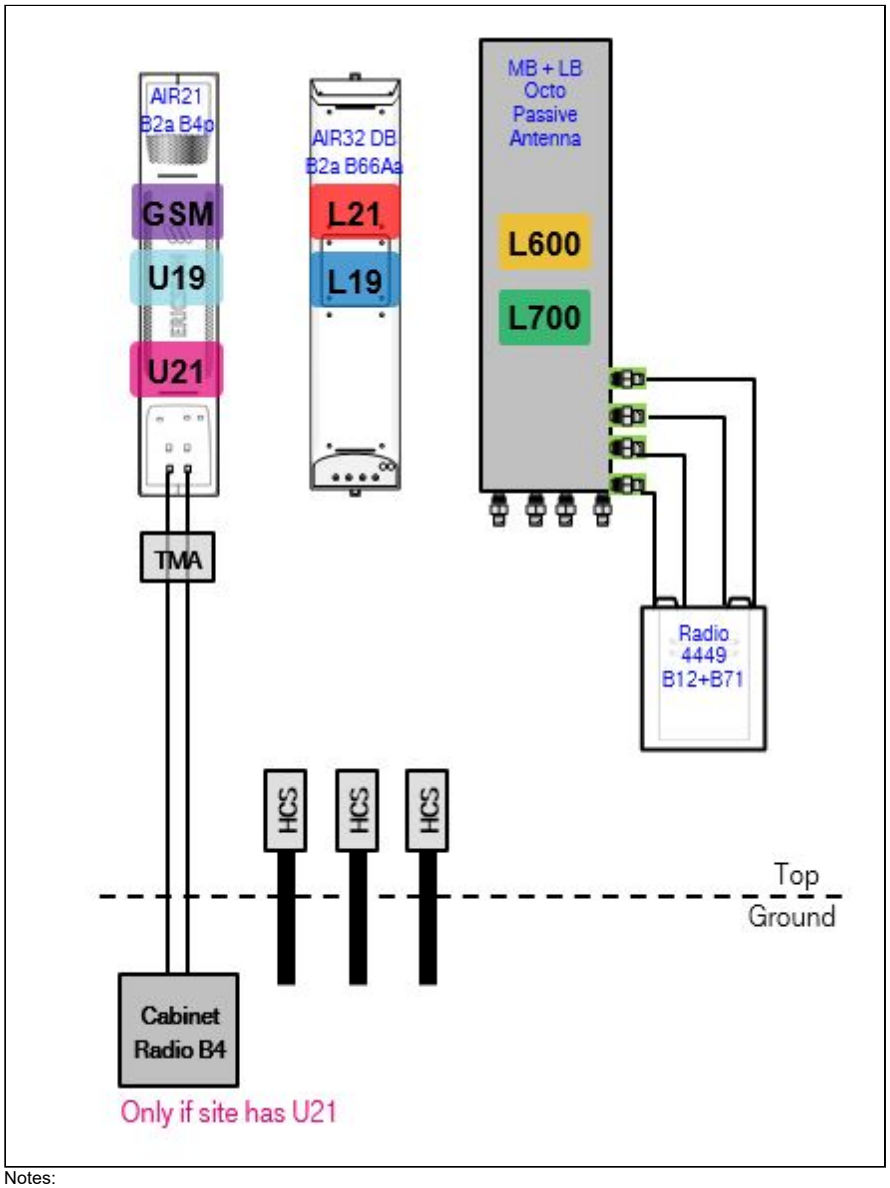
Site Name: CTNH302/ClrChannel/Prosp.
Site Class: Monopole
Site Type: Structure Non Building
Plan Year: 2021
Market: CONNECTICUT CT
Vendor: Ericsson
Landlord: Clear Channel

Latitude: 41.52300600
Longitude: -72.99781800
Address: 151 Waterbury Road
City, State: Prospect, CT
Region: NORTHEAST

RAN Template: 67D5A998E Outdoor			AL Template: 67D5998E_1xAIR+1OP+1QP	
Sector Count: 3	**Antenna Count:** 6	**Coax Line Count:** 0	**TMA Count:** 0	**RRU Count:** 6

Section 2 - Existing Template Images

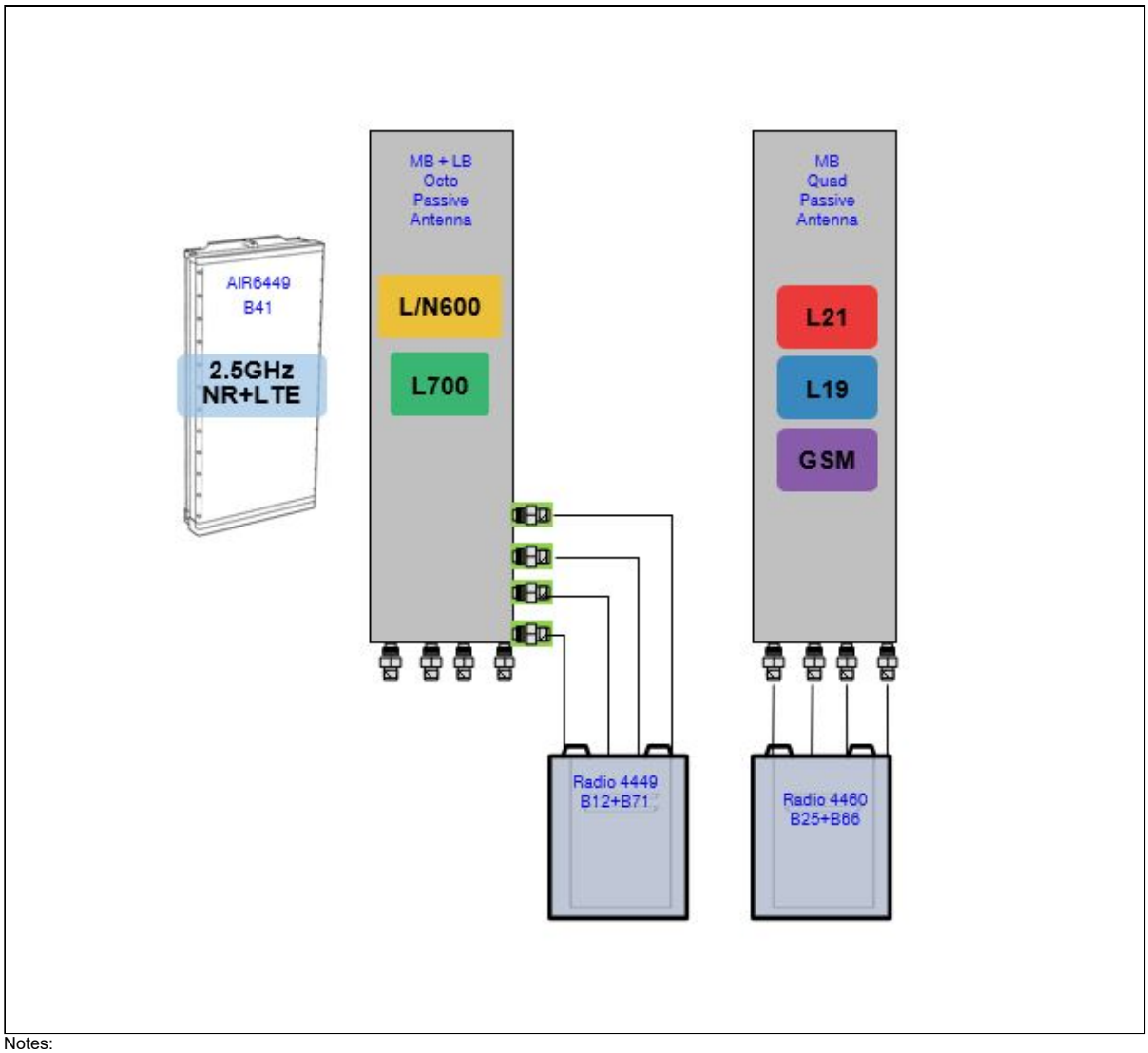
67D92DB_2xAIR+1OP.JPG



Notes:

Section 3 - Proposed Template Images

67D5998E_1xAIR+1OP+1QP.JPG



Notes:

Section 4 - Siteplan Images

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RAN Template:	A&L Template:
67D5A998E Outdoor	67D5998E_1xAIR+1OP+1QP

CTNH302A_Anchor_5_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: Anchor_Phase 3

Section 5 - RAN Equipment

Existing RAN Equipment

Template: 67D92DB Outdoor

Enclosure	1	2
Enclosure Type	RBS 6131	19 Inch Rack (Ericsson)
Baseband	DUW30 U2100; DUW30 U1900; DUG20 G1900; BB 6630 L2100 L1900; BB 6630 N600 L700 L600	
Hybrid Cable System		Ericsson 9x18 HCS *Select Length* Ericsson 6x12 HCS *Select Length & AWG* **(x 3)**
Radio	RU22 **(x 6)** U2100	

Proposed RAN Equipment

Template: 67D5A998E Outdoor

Enclosure	1	2	3
Enclosure Type	RBS 6131	Enclosure 6160	B160
Baseband	DUW30 U2100; DUG20 G1900; BB 6630 L2100 L1900; BB 6630 L700 L600 N600; DUW30 U1900	BB 6648 L2500 N2500	
Hybrid Cable System	Ericsson 6x12 HCS *Select Length & AWG* **(x 3)**	Ericsson Hybrid Trunk 6/24 4AWG 60m PSU 4813	
Transport System		CSR IXRe V2 (Gen2)	

RAN Scope of Work:

There is no 19" Rack on site.

Remove and return all cabinet radios from existing base station cabinet.

Add (1) Enclosure 6160.

Add (1) iXRe Router to new Enclosure 6160.

Add (1) BB6648 for L2500 and N2500 (MMBB - Mixed Mode Baseband) to new Enclosure 6160.

Add (1) PSU4813 Voltage Booster to new Enclosure 6160.

Add (1) Battery Cabinet B160.

Add (1) 6X24 HCS terminating at the Enclosure 6160. Connect DC for the AIR6449 B41 to the PSU4813 Voltage Booster.

Remove 1 - 9x18

RAN Template:	A&L Template:
67D5A998E Outdoor	67D5998E_1xAIR+1OP+1QP

CTNH302A_Anchor_5_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: Anchor_Phase 3

Section 6 - A&L Equipment

Existing Template: 67D92DB_2xAIR+1OP
Proposed Template: 67D5998E_1xAIR+1OP+1QP

Sector 1 (Existing) view from behind

Coverage Type	A - Outdoor Macro									
Antenna	1		2				3			
Antenna Model	Ericsson - AIR21 KRC118023-1_B2A_B4P (Quad)		Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo)				RFS - APXVAARR24_43-U-NA20 (Octo)			
Azimuth	30		30				30			
M. Tilt	0		0				0			
Height	137		137				137			
Ports	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
Active Tech.	U1900 G1900	U2100	L2100	L2100	L1900	L1900	L700 L600 N600	L700 L600 N600		
Dark Tech.										
Restricted Tech.										
Decomm. Tech.										
E. Tilt	6	6	6	6	6	6		6	6	
Cables	Fiber Jumper - 15 ft. **(x2)**	1-5/8" Coax - 176 ft. **(x2)**	Fiber Jumper - 15 ft.		Fiber Jumper - 15 ft.		Coax Jumper **(x2)**	Coax Jumper **(x2)** Fiber Jumper - 15 ft.		
TMAs		Generic Twin Style 1B - AWS (AtAntenna)								
Diplexers / Combiners										
Radio							Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)		
Sector Equipment										

Unconnected Equipment:

Scope of Work:

Replace LB Dual in Position 3 with (1) LB/MB Octo.
Replace RRUS11 B12 in Position 3 with (1) Radio 4449 B71+B12 for L600 and L700.

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

RAN Template:	A&L Template:
67D5A998E Outdoor	67D5998E_1xAIR+1OP+1QP

CTNH302A_Anchor_5_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: Anchor_Phase 3

Sector 1 (Proposed) view from behind

Coverage Type	A - Outdoor Macro						
Antenna	1		2				
Antenna Model	Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)		RFS - APXVAARR24_43-U-NA20 (Octo)				
Azimuth	30		30				
M. Tilt	0		0				
Height	137		137				
Ports	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**
Active Tech.	L2500 N2500	L2500 N2500	L700 L600 N600	L700 L600 N600	U1900 L2100 L1900 U2100 G1900	U1900 L2100 L1900 U2100 G1900
Dark Tech.						
Restricted Tech.						
Decomm. Tech.						
E. Tilt	6	6	6	6	6	6
Cables	Fiber Jumper - 15 ft. **(x2)**	Fiber Jumper - 15 ft. **(x2)**	Coax Jumper - 15 ft. **(x2)** Fiber Jumper - 15 ft.	Coax Jumper - 15 ft. **(x2)** Fiber Jumper - 15 ft.	Coax Jumper - 15 ft. **(x2)** Fiber Jumper - 15 ft.	Coax Jumper - 15 ft. **(x2)** Fiber Jumper - 15 ft.
TMAs						
Diplexers / Combiners						
Radio			Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)
Sector Equipment						

Unconnected Equipment:

Scope of Work:

There will be two antennae per sector.

Remove all TMAs.

Remove all Coaxial Lines.

Remove AIR21 B2P/B4A from Position 1.

Install (1) Antenna AIR6449 B41 for L2500 and N2500 in Position 1.

Remove AIR32 B66A/B2A Dual Band from Position 2.

Add (1) Radio 4460 B25+B66 for L2100, L1900, U2100, U1900 and GSM to Position 2 at antenna with Octo Port antenna.

Ensure RET control is enabled for all technology layers according to the Design Documents.

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

RAN Template:	A&L Template:
67D5A998E Outdoor	67D5998E_1xAIR+1OP+1QP

CTNH302A_Anchor_5_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: Anchor_Phase 3

Sector 2 (Existing) view from behind

Coverage Type	A - Outdoor Macro									
Antenna	1		2				3			
Antenna Model	Ericsson - AIR21 KRC118023-1_B2A_B4P (Quad)		Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo)				RFS - APXVAARR24_43-U-NA20 (Octo)			
Azimuth	150		150				150			
M. Tilt	0		0				0			
Height	137		137				137			
Ports	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
Active Tech.	U1900 G1900	U2100	L2100	L2100	L1900	L1900	L700 L600 N600	L700 L600 N600		
Dark Tech.										
Restricted Tech.										
Decomm. Tech.										
E. Tilt	6	6	6	6	6	6		6	6	
Cables	Fiber Jumper - 15 ft. **(x2)**	1-5/8" Coax - 176 ft. **(x2)**	Fiber Jumper - 15 ft.		Fiber Jumper - 15 ft.		Coax Jumper **(x2)**	Coax Jumper **(x2)** Fiber Jumper - 15 ft.		
TMAs		Generic Twin Style 1B - AWS (AtAntenna)								
Diplexers / Combiners										
Radio							Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)		
Sector Equipment										

Unconnected Equipment:

Scope of Work:

Replace LB Dual in Position 3 with (1) LB/MB Octo.
Replace RRUS11 B12 in Position 3 with (1) Radio 4449 B71+B12 for L600 and L700.

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

RAN Template:	A&L Template:
67D5A998E Outdoor	67D5998E_1xAIR+1OP+1QP

CTNH302A_Anchor_5_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: Anchor_Phase 3

Sector 2 (Proposed) view from behind

Coverage Type	A - Outdoor Macro						
Antenna	1		2				
Antenna Model	Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)		RFS - APXVAARR24_43-U-NA20 (Octo)				
Azimuth	150		150				
M. Tilt	0		0				
Height	137		137				
Ports	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**
Active Tech.	L2500 N2500	L2500 N2500	L700 L600 N600	L700 L600 N600	U1900 L2100 L1900 U2100 G1900	U1900 L2100 L1900 U2100 G1900
Dark Tech.						
Restricted Tech.						
Decomm. Tech.						
E. Tilt	6	6	6	6	6	6
Cables	Fiber Jumper - 15 ft. **(x2)**	Fiber Jumper - 15 ft. **(x2)**	Coax Jumper - 15 ft. **(x2)** Fiber Jumper - 15 ft.	Coax Jumper - 15 ft. **(x2)** Fiber Jumper - 15 ft.	Coax Jumper - 15 ft. **(x2)** Fiber Jumper - 15 ft.	Coax Jumper - 15 ft. **(x2)** Fiber Jumper - 15 ft.
TMAs						
Diplexers / Combiners						
Radio			Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)
Sector Equipment						

Unconnected Equipment:

Scope of Work:

There will be two antennae per sector.

Remove all TMAs.

Remove all Coaxial Lines.

Remove AIR21 B2P/B4A from Position 1.

Install (1) Antenna AIR6449 B41 for L2500 and N2500 in Position 1.

Remove AIR32 B66A/B2A Dual Band from Position 2.

Add (1) Radio 4460 B25+B66 for L2100, L1900, U2100, U1900 and GSM to Position 2 at antenna with Octo Port antenna.

Ensure RET control is enabled for all technology layers according to the Design Documents.

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

RAN Template:	A&L Template:
67D5A998E Outdoor	67D5998E_1xAIR+1OP+1QP

CTNH302A_Anchor_5_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: Anchor_Phase 3

Sector 3 (Existing) view from behind

Coverage Type	A - Outdoor Macro									
Antenna	1		2				3			
Antenna Model	Ericsson - AIR21 KRC118023-1_B2A_B4P (Quad)		Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo)				RFS - APXVAARR24_43-U-NA20 (Octo)			
Azimuth	270		270				270			
M. Tilt	0		0				0			
Height	137		137				137			
Ports	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
Active Tech.	U1900 G1900	U2100	L2100	L2100	L1900	L1900	L700 L600 N600	L700 L600 N600		
Dark Tech.										
Restricted Tech.										
Decomm. Tech.										
E. Tilt	6	6	6	6	6	6		6	6	
Cables	Fiber Jumper - 15 ft. **(x2)**	1-5/8" Coax - 176 ft. **(x2)**	Fiber Jumper - 15 ft.		Fiber Jumper - 15 ft.		Coax Jumper **(x2)**	Coax Jumper **(x2)** Fiber Jumper - 15 ft.		
TMAs		Generic Twin Style 1B - AWS (AtAntenna)								
Diplexers / Combiners										
Radio							Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)		
Sector Equipment										

Unconnected Equipment:

Scope of Work:

Replace LB Dual in Position 3 with (1) LB/MB Octo.
Replace RRUS11 B12 in Position 3 with (1) Radio 4449 B71+B12 for L600 and L700.

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

RAN Template:	A&L Template:
67D5A998E Outdoor	67D5998E_1xAIR+1OP+1QP

CTNH302A_Anchor_5_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: Anchor_Phase 3

Sector 3 (Proposed) view from behind

Coverage Type	A - Outdoor Macro						
Antenna	1		2				
Antenna Model	Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)		RFS - APXVAARR24_43-U-NA20 (Octo)				
Azimuth	270		270				
M. Tilt	0		0				
Height	137		137				
Ports	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**
Active Tech.	L2500 N2500	L2500 N2500	L700 L600 N600	L700 L600 N600	U1900 L2100 L1900 U2100 G1900	U1900 L2100 L1900 U2100 G1900
Dark Tech.						
Restricted Tech.						
Decomm. Tech.						
E. Tilt	6	6	6	6	6	6
Cables	Fiber Jumper - 15 ft. **(x2)**	Fiber Jumper - 15 ft. **(x2)**	Coax Jumper - 15 ft. **(x2)** Fiber Jumper - 15 ft.	Coax Jumper - 15 ft. **(x2)** Fiber Jumper - 15 ft.	Coax Jumper - 15 ft. **(x2)** Fiber Jumper - 15 ft.	Coax Jumper - 15 ft. **(x2)** Fiber Jumper - 15 ft.
TMAs						
Diplexers / Combiners						
Radio			Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)
Sector Equipment						

Unconnected Equipment:

Scope of Work:

There will be two antennae per sector.

Remove all TMAs.

Remove all Coaxial Lines.

Remove AIR21 B2P/B4A from Position 1.

Install (1) Antenna AIR6449 B41 for L2500 and N2500 in Position 1.

Remove AIR32 B66A/B2A Dual Band from Position 2.

Add (1) Radio 4460 B25+B66 for L2100, L1900, U2100, U1900 and GSM to Position 2 at antenna with Octo Port antenna.

Ensure RET control is enabled for all technology layers according to the Design Documents.

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

RAN Template:	A&L Template:
67D5A998E Outdoor	67D5998E_1xAIR+1OP+1QP

CTNH302A_Anchor_5_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: Anchor_Phase 3

Section 7 - Power Systems Equipment

Existing Power Systems Equipment
----- This section is intentionally blank. -----

	Proposed Power Systems Equipment
Enclosure	1
Enclosure Type	Enclosure 6160

EBI Consulting

environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CTNH302A

CTNH302/ClrChannel/Prosp.
151 Waterbury Road
Prospect, California 06712

September 9, 2021

EBI Project Number: 6221005208

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**22.91%**

21 B Street, Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

September 9, 2021

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

Emissions Analysis for Site: CTNH302A - CTNH302/ClrChannel/Prosp.

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **151 Waterbury Road** in **Prospect, California** 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 ($\mu W/cm^2$). 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.

Public 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 and 700 MHz frequency 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), 2100 MHz (AWS) and 11 GHz frequency 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 done for the proposed T-Mobile Wireless antenna facility located at 151 Waterbury Road in Prospect, California using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower. For power density calculations, the broadcast footprint of the AIR6449 antenna has been considered. Due to the beamforming nature of this antenna, the actual beam locations vary depending on demand and are narrow in nature. Using the broadcast footprint accounts for the potential location of beams at any given time.

For all calculations, all equipment was calculated using the following assumptions:

1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.

3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

5) 2 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

6) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

7) 2 UMTS channels (AWS Band - 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

8) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

9) 1 LTE Traffic channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 60 Watts.

10) 1 LTE Broadcast channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 20 Watts.

11) 1 NR Traffic channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.

12) 1 NR Broadcast channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts.

13) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

14) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

15) The antennas used in this modeling are the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz channel(s) in Sector A, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz channel(s) in Sector B, the Ericsson

AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

16) The antenna mounting height centerline of the proposed antennas is 137 feet above ground level (AGL).

17) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd
Height (AGL):	137 feet	Height (AGL):	137 feet	Height (AGL):	137 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	36,356.09	ERP (W):	36,356.09	ERP (W):	36,356.09
Antenna A1 MPE %:	**7.62%**	Antenna B1 MPE %:	**7.62%**	Antenna C1 MPE %:	**7.62%**
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd / 15.65 dBd / 16.35 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd / 15.65 dBd / 16.35 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd / 15.65 dBd / 16.35 dBd / 16.35 dBd
Height (AGL):	137 feet	Height (AGL):	137 feet	Height (AGL):	137 feet
Channel Count:	17	Channel Count:	17	Channel Count:	17
Total TX Power (W):	680 Watts	Total TX Power (W):	680 Watts	Total TX Power (W):	680 Watts
ERP (W):	22,844.84	ERP (W):	22,844.84	ERP (W):	22,844.84
Antenna A2 MPE %:	**5.96%**	Antenna B2 MPE %:	**5.96%**	Antenna C2 MPE %:	**5.96%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	13.58%
AT&T	9.33%
Site Total MPE % :	22.91%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	13.58%
T-Mobile Sector B Total:	13.58%
T-Mobile Sector C Total:	13.58%
Site Total MPE % :	22.91%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 2500 MHz LTE 1C & 2C Traffic	1	11044.63	137.0	23.14	2500 MHz LTE 1C & 2C Traffic	1000	2.31%
T-Mobile 2500 MHz LTE 1C & 2C Broadcast	1	1074.06	137.0	2.25	2500 MHz LTE 1C & 2C Broadcast	1000	0.23%
T-Mobile 2500 MHz NR Traffic	1	22089.26	137.0	46.28	2500 MHz NR Traffic	1000	4.63%
T-Mobile 2500 MHz NR Broadcast	1	2148.13	137.0	4.50	2500 MHz NR Broadcast	1000	0.45%
T-Mobile 600 MHz LTE	2	591.73	137.0	2.48	600 MHz LTE	400	0.62%
T-Mobile 600 MHz NR	1	1577.94	137.0	3.31	600 MHz NR	400	0.83%
T-Mobile 700 MHz LTE	2	648.82	137.0	2.72	700 MHz LTE	467	0.58%
T-Mobile 1900 MHz GSM	4	1101.85	137.0	9.23	1900 MHz GSM	1000	0.92%
T-Mobile 1900 MHz UMTS	2	1101.85	137.0	4.62	1900 MHz UMTS	1000	0.46%
T-Mobile 1900 MHz LTE	2	2203.69	137.0	9.23	1900 MHz LTE	1000	0.92%
T-Mobile 2100 MHz UMTS	2	1294.56	137.0	5.42	2100 MHz UMTS	1000	0.54%
T-Mobile 2100 MHz LTE	2	2589.11	137.0	10.85	2100 MHz LTE	1000	1.08%
						Total:	**13.58%**

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

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	13.58%
Sector B:	13.58%
Sector C:	13.58%
T-Mobile Maximum MPE % (Sector A):	13.58%
Site Total:	22.91%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **22.91%** 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.