



T-Mobile
Cullen Morgan
Site Acquisition Consultant
750 W Center Street
Suite 301
West Bridgewater, MA 02379
(941)549-7263
cmorgan@clinellc.com

November 20, 2024

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

RE: NOTICE OF EXEMPT MODIFICATION
1725 Stafford Road, Storrs-Mansfield, CT 06268
Latitude: 41.835953
Longitude: -72.307847
T-Mobile Site #: CT11517B

Dear Members of the Siting Council:

T-Mobile currently maintains six (6) antennas at the 162-foot level of the existing 170.5-foot monopole tower at 1725 Stafford Road, Storrs-Mansfield, CT 06268. The 170.5-foot tower is owned by American Tower Corporation and the property is owned by the Town of Mansfield. T-Mobile now intends to modify their equipment located on the existing telecommunications facility. All equipment will be installed at the 77-foot level of the tower.

Planned Modifications:

Remove Existing:

- (3) APXV18-203219-C Antennas
- (3) KRY 112-144/1 TMAs
- (3) RCUs
- (12) 1-5/8" Coax cables
- (1) 1.99" Hybrid cable
- (2) Cabinets

Install New:

- (3) APXVLL19P_43-C-A20 Antennas
- (3) Radio 4460 B25+B66 RRUs
- (3) 2.00" Hybrid cables
- (3) Cabinets

Existing to Remain:

- (3) APXVAARR24_43-U-NA20 Antennas
- (3) RRU 4449 B71+B85 RRUs

750 W Center St, Suite 301
West Bridgewater, MA 02379
781-713-4725

This facility was approved by the Town of Mansfield Planning and Zoning Commission via decision dated January 25, 2002 with conditions. We used the information from the previous filing. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, or construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Mayor Antonia Moran, chief elected official, Building and Housing Director Michael Nintean, as well as the Property Owner/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).

Respectfully Submitted,



Cullen Morgan
Site Acquisition Consultant
Centerline Communications, LLC (Agent to T-Mobile)
Mobile: (941) 549-7263
cmorgan@clinellc.com

cc: Mayor Antonia Moran, chief elected official – Town of Mansfield
Michael Nintean, Building and Housing Director – Town of Mansfield
American Tower Corporation – Tower Owner
Town of Mansfield – Property Owner

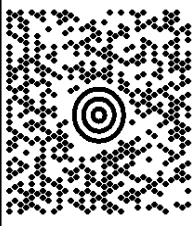
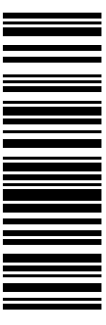
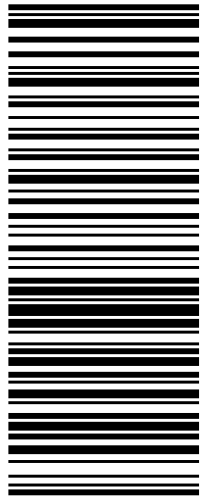

C/O CULLEN MORGAN 9415497263 CENTERLINE COMMUNICATIONS LLC 12579 SAGEWOOD DRIVE VENICE FL 34293		2 LBS	1 OF 1
SHIP TO: ATTN: MEMBERS OF THE COUNCIL CONNECTICUT SITING COUNCIL 10 FRANKLIN SQUARE NEW BRITAIN CT 06051-2655			
	CT 067 9-06 		
UPS GROUND			
TRACKING #: 1Z 9Y4 503 03 2037 3949			
			
BILLING: P/P			
Reference # 1: CT11517B			
CS 24.9.00.		MACNV50.49.0A 12/202.4*	
		 ™	

EXHIBIT A

Original Facility Approval



PLANNING AND ZONING COMMISSION
TOWN OF MANSFIELD

7099 3220 0000 8446 0796

AUDREY P. BECK BUILDING
FOUR SOUTH EAGLEVILLE ROAD
STORRS, CONNECTICUT 06268
(203) 429-3330

January 25, 2002

Wendell G. Davis, Esq.
SBM Properties, Inc.
80 Eastern Boulevard
Glastonbury, CT 06033

Re: Special permit application for telecommunication tower at 1725 Stafford Rd.,
Mansfield, Connecticut, PZC file 1182

Dear Mr. Davis:

At a regular meeting held on January 22, 2002, the Mansfield Planning and Zoning Commission adopted the following motion:

"to approve with conditions the special permit application (file 1182) of SBA Properties, LLC and the Town of Mansfield for a telecommunication tower and related facilities on property located at 1725 Stafford Road in a Neighborhood Business-1 zone, as submitted to the Commission and shown on plans revised to 12/11/01 and as presented at a Public Hearing on 1/7/02. This approval is granted because the application as hereby approved is considered to be in compliance with Article V, Section B, Article X, Section R and other provisions of the Mansfield Zoning Regulations, and is granted with the following conditions:

1. This approval is based on submitted plans and project descriptions. Any change in plans or the proposed use of the site shall require further review and approval as per Mansfield's Zoning Regulations. The applicant shall be responsible for meeting Building Permit requirements and complying with all applicable State and Federal regulations pertaining to the subject telecommunication use.
2. Prior to any use of the telecommunication facilities and the issuance of a Certificate of Compliance, all site work shall be satisfactorily completed. Based on the provisions of Article V, Section B.7.c, a variation of this condition may be authorized by the Commission where public health and safety components of the project have been satisfactorily completed.
3. The final plans shall eliminate the current references to "Mansfield Center."
4. Whereas a \$20,000 bond has been incorporated into the Town's lease arrangement with SBA Properties, LLC, to address removal of telecommunications facilities, a separate bond pursuant to Art. X, Sec. R.6 of the Zoning Regulations shall not be required. If this lease provision is deleted, a separate bond to address the abandonment provisions of the Zoning Regulations shall be required.
5. This permit shall not become valid until the applicant obtains the permit form from the Planning Office and files it on the Land Records."

(over)

If you have any questions regarding this action, you may contact the Planning Office, 429-3330. It is suggested that you call the Planning Office in advance, to make sure the permit form is ready for filing.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Katherine K. Holt", with a horizontal line extending from the end of the signature.

Katherine K. Holt, Secretary
Mansfield Planning and Zoning Commission

blind copy to T.M. 1/22/02.



EXHIBIT B

Property Card

Property Card: 1725 STAFFORD RD

Town of Mansfield, CT



Parcel Information						
Parcel ID: 1.2.2 Vision ID: 17 Owner: MANSFIELD TOWN OF Co-Owner: BUS GARAGE Mailing Address: 4 SO EAGLEVILLE RD Address: STORRS MANSFIELD, CT 06268				Map: 1 Lot: 2-2 Use Description: Town MDL-Com Zone: NB1 Land Area in Acres: 1.1		
Sale History				Assessed Value		
Book/Page: 391/486 Sale Date: 10/17/1997 Sale Price: \$0				Land: \$176,200 Buildings: \$142,500 Extra Bldg Features: \$3,600 Outbuildings: \$7,100 Total: \$329,400		
Building Details: Building # 1						
						
Model: Ind/Comm Living Area: 6300 Style: Commercial Garage Stories: 1 Occupancy: 1 No. Total Rooms: No. Bedrooms: No. Baths: No. Half Baths:				Int Wall Desc 1: Minimum Int Wall Desc 2: Ext Wall Desc 1: Pre-finish Metl Ext Wall Desc 2: Roof Cover: Metal/Tin Roof Structure: Gable Heat Type: Forced Air Heat Fuel: Typical A/C Type: None/partial		
Outbuildings & Extra Features				Sketch Areas		
Code:	Description:	Units:	Sub Area:	Effective Area:	Gross Area:	Living Area:
MEZ3	Mezz-Part Fin	400 S.F.	BAS: First Floor	6300	6300	6300
PAV1	Paving	8000 S.F.				



www.cai-tech.com

This information is believed to be correct but is subject to change and is not warranted.

EXHIBIT C

Construction Drawings



VICINITY MAP

**AMERICAN TOWER®**

ATC SITE NAME: MANSFIELD CENTER 2 CT
ATC SITE NUMBER: 376047
T-MOBILE SITE NAME: CT517/TCP MANSFIELD
T-MOBILE SITE NUMBER: CT11517B
SITE ADDRESS: 1725 STAFFORD RD
STORRS MANSFIELD, CT 06268
SITE CLASS: MONOPOLE



LOCATION MAP



AMERICAN TOWER®
ATC TOWER SERVICES, LLC
1 FENTON MAIN
SUITE 300
CARY, NC 27511
PHONE: (919) 468-0112
PEC.0001553

THE USE AND PUBLICATION OF THESE DRAWINGS SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY ARE PREPARED. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO AMERICAN TOWER OR THE SPECIFIED CARRIER IS STRICTLY PROHIBITED. NEITHER THE ARCHITECT NOR THE ENGINEER WILL BE PROVIDING ON-SITE CONSTRUCTION REVIEW OF THIS PROJECT. CONTRACTOR(S) MUST VERIFY ALL DIMENSIONS AND ADVISE AMERICAN TOWER OR THE SPECIFIED CARRIER OF ANY DISCREPANCIES. ANY PRIOR ISSUANCE OF THIS DRAWING IS SUPERSEDED BY THE LATEST VERSION.

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	EDNA	10/28/2024

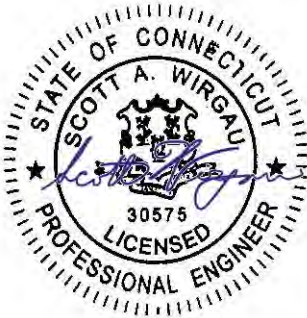
ATC SITE NUMBER:
376047

ATC SITE NAME:
MANSFIELD CENTER 2 CT

T-MOBILE SITE NAME:
CT517/TCP MANSFIELD

SITE ADDRESS:
**1725 STAFFORD RD
STORRS MANSFIELD, CT 06268**

SEAL:



T-Mobile

ATC PROJ. #:	14885740_G0
CUST. ID:	CT517/TCP MANSFIELD
CUST. #:	CT11517B

TITLE SHEET

SHEET NUMBER:

G-001

REVISION:

0

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T-MOBILE EQUIPMENT UPGRADE AMENDMENT PLAN

67E998E 6160 CONFIGURATION

BIRD WATCH SITE:
PLEASE CONTACT BIRD.WATCH@AMERICANTOWER.COM OR
AMERICAN TOWER NOC AT 877-518-6937 FOR ASSISTANCE

[illegible]

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. WHEN THE PROJECT SCOPE REQUIRES THE USE OF THE SAFETY CLIMB, THE GENERAL CONTRACTOR SHALL ENSURE THE SAFETY CLIMB IS FREE OF OBSTRUCTIONS, NOT RUBBING ON OR TRAPPED BY ANY INSTALLED CUSTOMER EQUIPMENT, IS VISUALLY TAUT, MEETS MANUFACTURER INSTALLATION SPECIFICATIONS, AND IS FIRMLY SECURED AT ALL CABLE GUIDE LOCATIONS UPON PROJECT COMPLETION.
29. COMPLETION OF PROJECT SHALL NOT OBSTRUCT, TRAP, LOOSEN, OR OTHERWISE CAUSE FAILURE TO MEET MANUFACTURER INSTALLATION REQUIREMENTS FOR THE SAFETY CLIMB.
30. 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.
31. 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.
32. 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.
33. 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.
34. 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.
35. 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/HYBRID CABLES ARE FURNISHED BY T-MOBILE UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OF COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL.

B. INSTALL ANTENNAS AS INDICATED ON DRAWINGS AND T-MOBILE SPECIFICATIONS.

C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS.

D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE.

E. INSTALL COAXIAL/HYBRID 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/HYBRID CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.
2. ANTENNA AND COAXIAL/HYBRID CABLE GROUNDING:
- A. ALL EXTERIOR #6 GREEN GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPLICE WEATHERPROOFING KIT #221213 OR EQUAL.

- B. ALL COAXIAL/HYBRID CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL/HYBRID CABLE (NOT WITHIN BENDS)

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



AMERICAN TOWER®
ATC TOWER SERVICES, LLC
1 FENTON MAIN
SUITE 300
CARY, NC 27511
PHONE: (919) 468-0112
PEC.0001553

THE USE AND PUBLICATION OF THESE DRAWINGS SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY ARE PREPARED. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO AMERICAN TOWER OR THE SPECIFIED CARRIER IS STRICTLY PROHIBITED. NEITHER THE ARCHITECT NOR THE ENGINEER WILL BE PROVIDING ON-SITE CONSTRUCTION REVIEW OF THIS PROJECT. CONTRACTOR(S) MUST VERIFY ALL DIMENSIONS AND ADVISE AMERICAN TOWER OR THE SPECIFIED CARRIER OF ANY DISCREPANCIES. ANY PRIOR ISSUANCE OF THIS DRAWING IS SUPERSEDED BY THE LATEST VERSION.

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	EDNA	10/28/2024

ATC SITE NUMBER:
376047
ATC SITE NAME:
MANSFIELD CENTER 2 CT
T-MOBILE SITE NAME:
CT517/TCP MANSFIELD
SITE ADDRESS:
1725 STAFFORD RD
STORRS MANSFIELD, CT 06268

SEAL:



Digitally Signed: 2024-10-29



ATC PROJ. #:	14885740_G0
CUST. ID:	CT517/TCP MANSFIELD
CUST. #:	CT11517B

GENERAL NOTES

SHEET NUMBER: G-002	REVISION: 0
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DATUM IS MEAN SEA LEV

-
- EXISTING HIGHWAY LINE/PROPERTY LINE
 PROPOSED LEASE AREA
 PROPERTY SETBACKS
 CHAIN LINK FENCE
 EXISTING UTILITY POLE AND OVERHEAD UTILITIES
 CHD BOUNDARY MONUMENT
 WETLANDS

1. LOCATION

NAD 27-CT
N 385,592.23
E 720,388.95

GEOD LAT/LONG NAD83
N 41°50'09.43"
W 72°18'28.25"

2. GROUND ELEVATION AT TOWER: 368' ± AMSL

3. TYPE: MONOPOLE

4. TOWER HEIGHT: 170' ABOVE TOP OF FOUNDATION

1. LEASE AREA ACCESS:

1725 STAFFORD ROAD

2. PROPERTY OWNER AND ADDRESS:

TOWN OF MANSFIELD
4 SOUTH EAGLEVILLE RD
STORRS, CONNECTICUT 06268

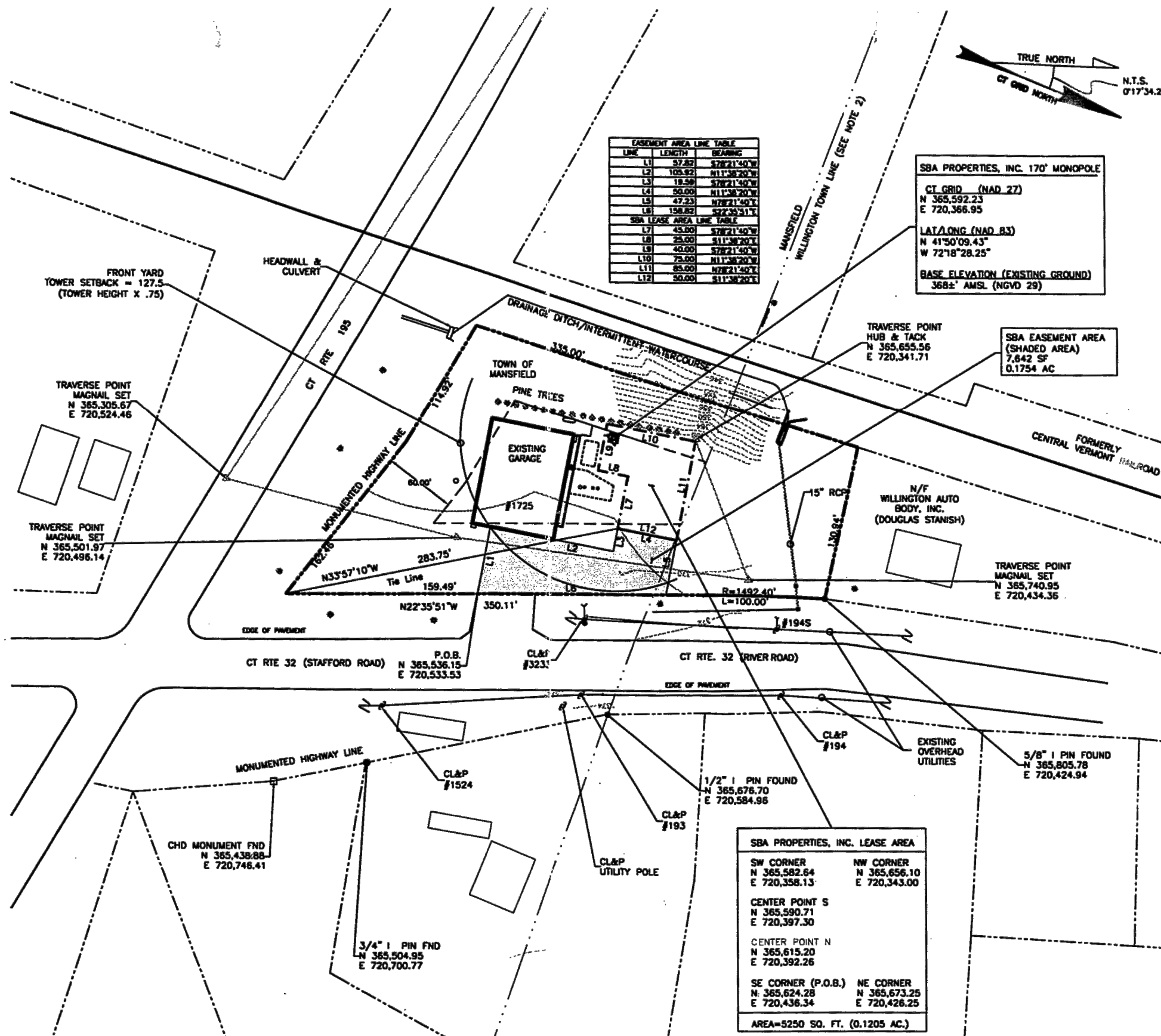
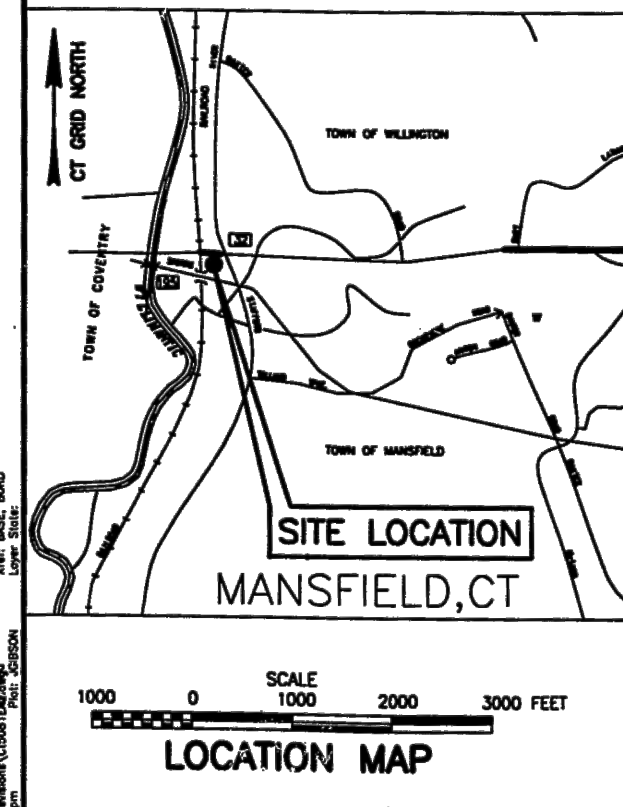
DEED: VOLUME 391 . PAGE 486

2. ASSESSOR'S DATA: MAP 1 . BLOCK 2 . LOT 1

3. ZONING DISTRICT: NB1

4. FEMA FIRM MAP: ZONED "C"

5. LOT AREA: 1.638 ACRES



NOTES:

1. THIS SURVEY AND MAP HAVE BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300B-1 THRU 20-300B-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES - "MINIMUM STANDARDS FOR SURVEY AND MAPS IN THE STATE OF CONNECTICUT," AS ENDORSED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPT. 26, 1996. IT IS A ZONING LOCATION SURVEY BASED ON A DEPENDENT RESURVEY CONFORMING TO HORIZONTAL ACCURACY CLASS A-2 AND INTENDED TO BE USED FOR THE PURPOSE OF DEPICTING ZONING COMPLIANCE.

2. TOWN LINE ON THE TOWN OF MANSFIELD PARCEL (KNOWN AS 1725 STAFFORD ROAD - CONN. ROUTE #32) IS AS SHOWN ON REFERENCE MAP NO.4. MAP ENTITLED "MAP SHOWING SOME LAND OF JOSEPH E. MIHALAK, MANSFIELD & WILLINGTON, CONNECTICUT, SCALE: 1"=20', PREPARED FOR EDWIN SMYTH BY STANLEY W. SZESTOWICKI, R.L.S. 7772, MAY 17, 1978, LAST REVISION OCT. 2, 1979" (MAP ON FILE MANSFIELD TOWN CLERKS OFFICE AS #1747, FILED OCTOBER 17, 1997).

3. THE TYPE OF SURVEY IS FOR LEASED PROPERTY AND IS INTENDED TO DEPICT THE LIMITS OF THE PROJECT AREA OF PROPERTY FOR THE PROJECT REFERENCED HEREON.

4. THE BASE LINE FROM WHICH THIS PROPERTY TRANSACTION IS REFERENCED CONFORMS TO CLASS A-2 HORIZONTAL ACCURACY.

5. COORDINATE SYSTEM IS NORTH AMERICAN DATUM OF 1927 (NAD 27).

6. VERTICAL DATUM IS NATIONAL GEODETIC VERTICAL DATUM OF 1929. (NGVD 29)

7. WETLANDS WERE INVESTIGATED ON 2/8/2001 BY TRITON ENVIRONMENTAL, INC. SOIL SCIENTIST WILLIAM KENNY. WETLAND FLAGS WERE FIELD LOCATED BY GOODKIND & ODEA, INC. ON 2/19/01

REFERENCE MAPS:

CONNECTICUT STATE HIGHWAY DEPARTMENT MAPS ENTITLED:
1., "TOWN OF MANSFIELD, MAP SHOWING LAND AND EASEMENT
ACQUIRED FROM RUDOLPH BOUSA BY THE STATE OF CONNECTICUT,
RELOCATION OF ROUTE 32 AND ROAD 809, SCALE: 1" = 40' AUGUST 1957,
TOWN 77 PROJECT NO. 80 SERIAL NO. 5 SHEET 2 OF 3".

2. TOWNS OF MANSFIELD & WILLINGTON, MERROW ROAD AND STAFFORD ROAD, PLAN SHOWING HIGHWAY LINE AT NORTH WEST CORNER OF CONN. 32 AND 195 ADJACENT TO NF BOUSA, PROPERTY ON CONSTRUCTION PROJECT: 77-90 DATED 1958, SCALE: 1"=40', DECEMBER 1968 BY J.F. BURNS (ACTING) DIV. ENG. SURVEY AND PLANS, NO.4

3. ASSESSOR'S MAP OF TOWN OF MANSFIELD, CONNECTICUT, MAP 1.

4. MAP SHOWING SOME LAND OF JOSEPH E. MIHALIAK, MANSFIELD & WILLINGTON, CONN, SCALE: 1"=20', PREPARED FOR EDWIN SMYTH BY STANLEY W. SZESTOWICKI, R.L.S. 7772, MAY 17, 1978 (LATEST REVISION OCTOBER 2, 1978 (M.L.R. MAP # 1747))

RTP
FINAL

MAP SHOWING EASEMENT AREA TO BE GRANTED TO
SBA PROPERTIES, INC.
ACROSS THE PROPERTY OF
TOWN OF MANSFIELD

1725 STAFFORD ROAD MANSFIELD, CONNECTICUT
SCALE: 1" = 50' DATE: APRIL 5, 2001
SBA, INC. SITE NUMBER: 10125-081

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS
MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

Edward A. Nelson
EDWARD A. NELSON RLS. #6401
for Goodkind & Otten, Inc. MOFF: T

NOTE: THIS MAP IS NOT VALID WITHOUT A LIVE SIGNATURE AND FINGERPRINT SEAL.

Goodkind & O'Dea, Inc.
Consulting Engineers and Planners

59 ELM STREET, SUITE 101
NEW HAVEN, CONNECTICUT 06510
(203) 776-2277

[illegible]

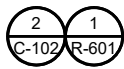
SURVEY PLAN

SCALE 1"=50'



SITE PLAN NOTES:

- 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.
- 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.
- NO ELECTRICAL SCOPE IS INCLUDED IN THIS PROJECT.



EXISTING T-MOBILE
5' X 20' CONCRETE PAD
WITHIN A
225 SQ. FT. GROUND SPACE
(MODIFIED AS REQUIRED FOR
UPGRADE FROM 67D94E TO 67E998E
6160 CONFIGURATION)

PROPOSED (3) 2.00" HYBRID TRUNK
6/24 4AWG (70 M)
(SEE PROPOSED CABLE LENGTH
NOTES ON THIS PAGE FOR LENGTH
AND ROUTING GUIDELINES)

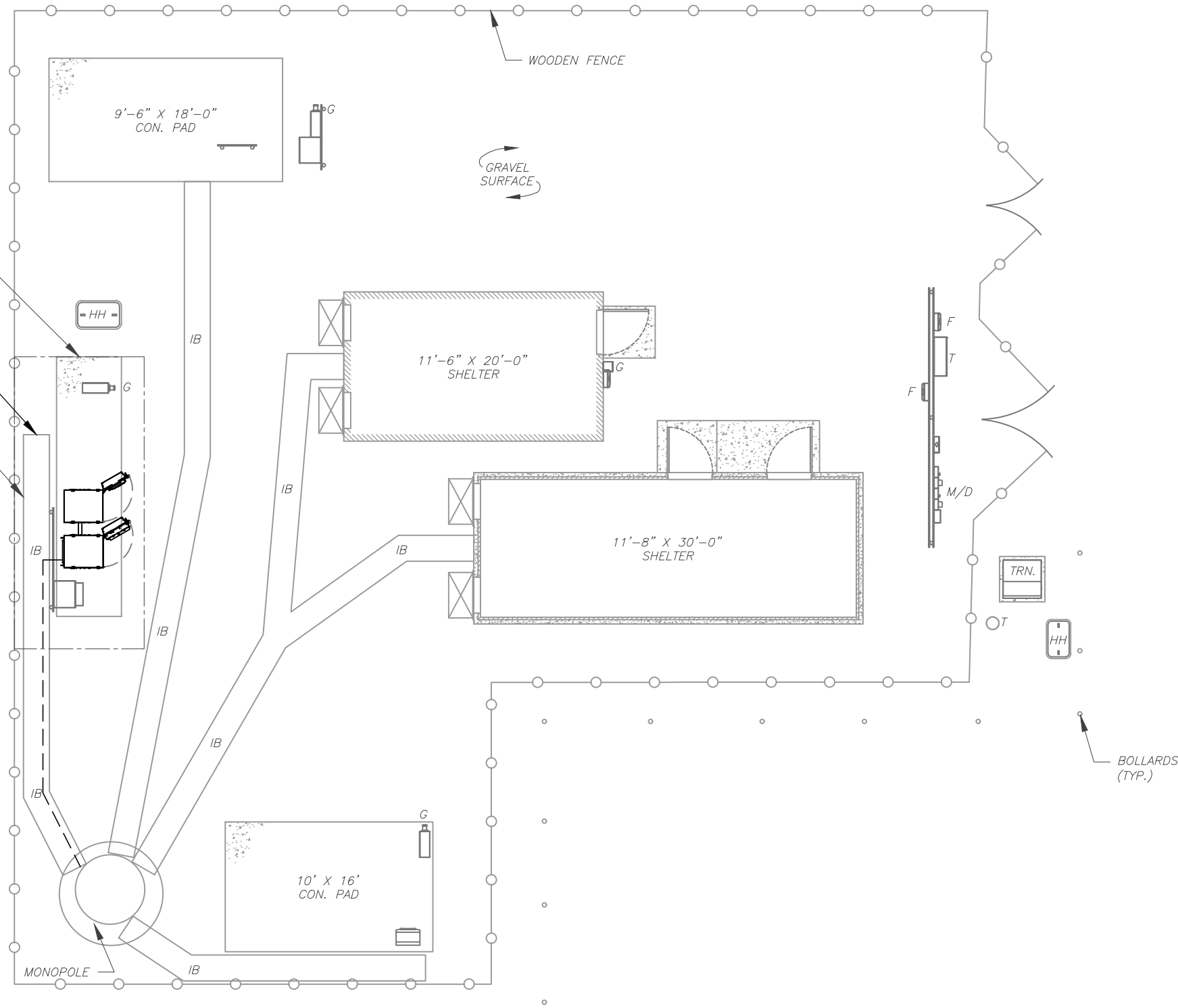
EXISTING
(12) 1-5/8" COAX, AND (1) 1-5/8"
ERICSSON 6X12 HCS
(TO BE REMOVED)

LEGEND

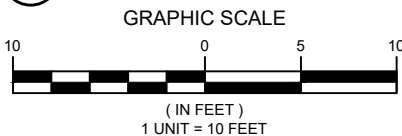
⊗	GROUNDING TEST WELL
ATS	AUTOMATIC TRANSFER SWITCH
B	BOLLARD
CSC	CELL SITE CABINET
D	DISCONNECT
E	ELECTRICAL
F	FIBER
GEN	GENERATOR
G	GENERATOR RECEPTACLE
HH, V	HAND HOLE, VAULT
IB	ICE BRIDGE
K	KENTROX BOX
LC	LIGHTING CONTROL
M	METER
PB	PULL BOX
PP	POWER POLE
T	TELCO
TRN	TRANSFORMER
—	CHAINLINK FENCE

PROPOSED CABLE NOTES:

- ESTIMATED LENGTH OF PROPOSED CABLE IS **230'**. 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.
- ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.



1 DETAILED SITE PLAN



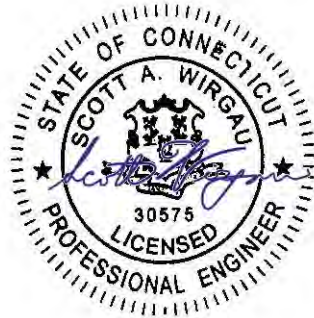
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PEC.0001553

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	EDNA	10/28/2024

ATC SITE NUMBER:
376047
ATC SITE NAME:
MANSFIELD CENTER 2 CT
T-MOBILE SITE NAME:
CT517/TCP MANSFIELD
SITE ADDRESS:
1725 STAFFORD RD
STORRS MANSFIELD, CT 06268

SEAL:



Digitally Signed: 2024-10-29

T-Mobile

ATC PROJ. #:	14885740_G0
CUST. ID:	CT517/TCP MANSFIELD
CUST. #:	CT11517B

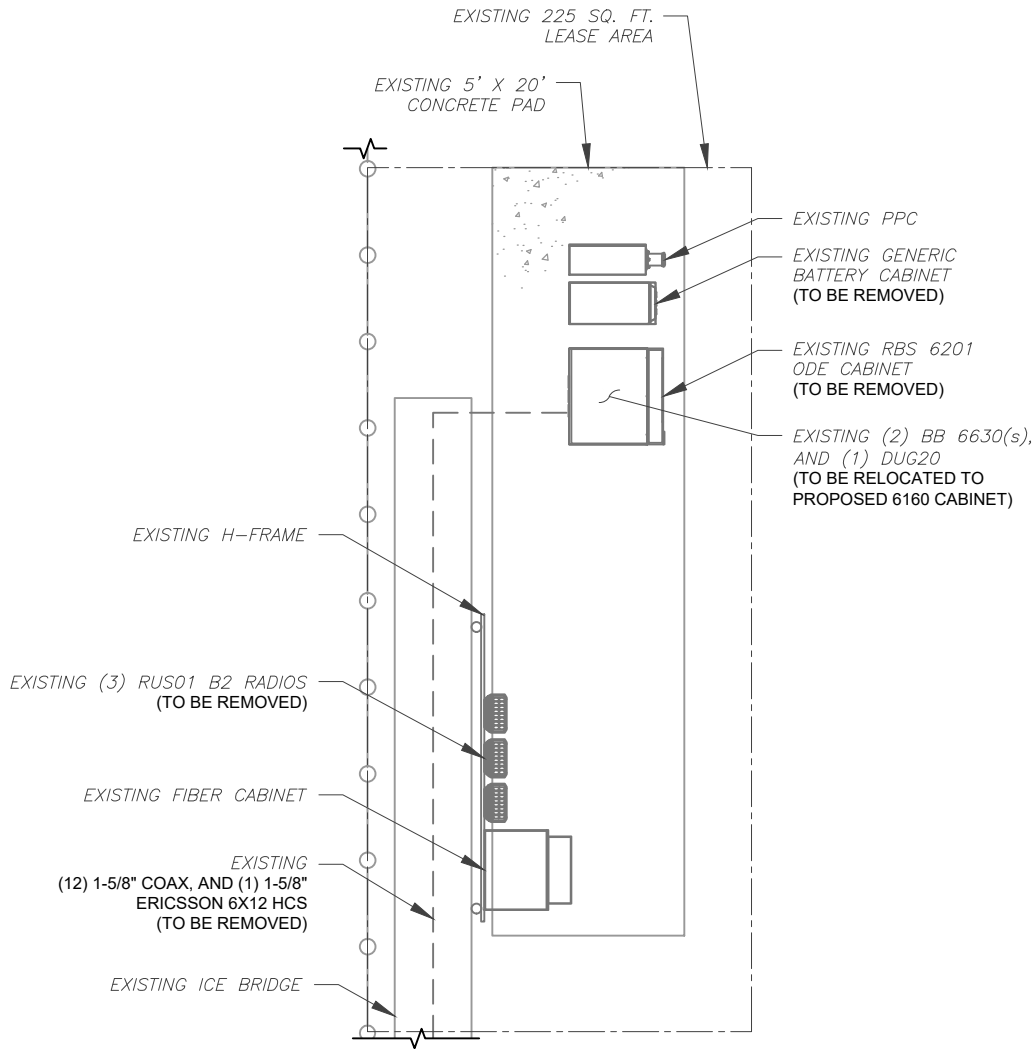
DETAILED SITE PLAN

SHEET NUMBER:	REVISION:
C-101	0

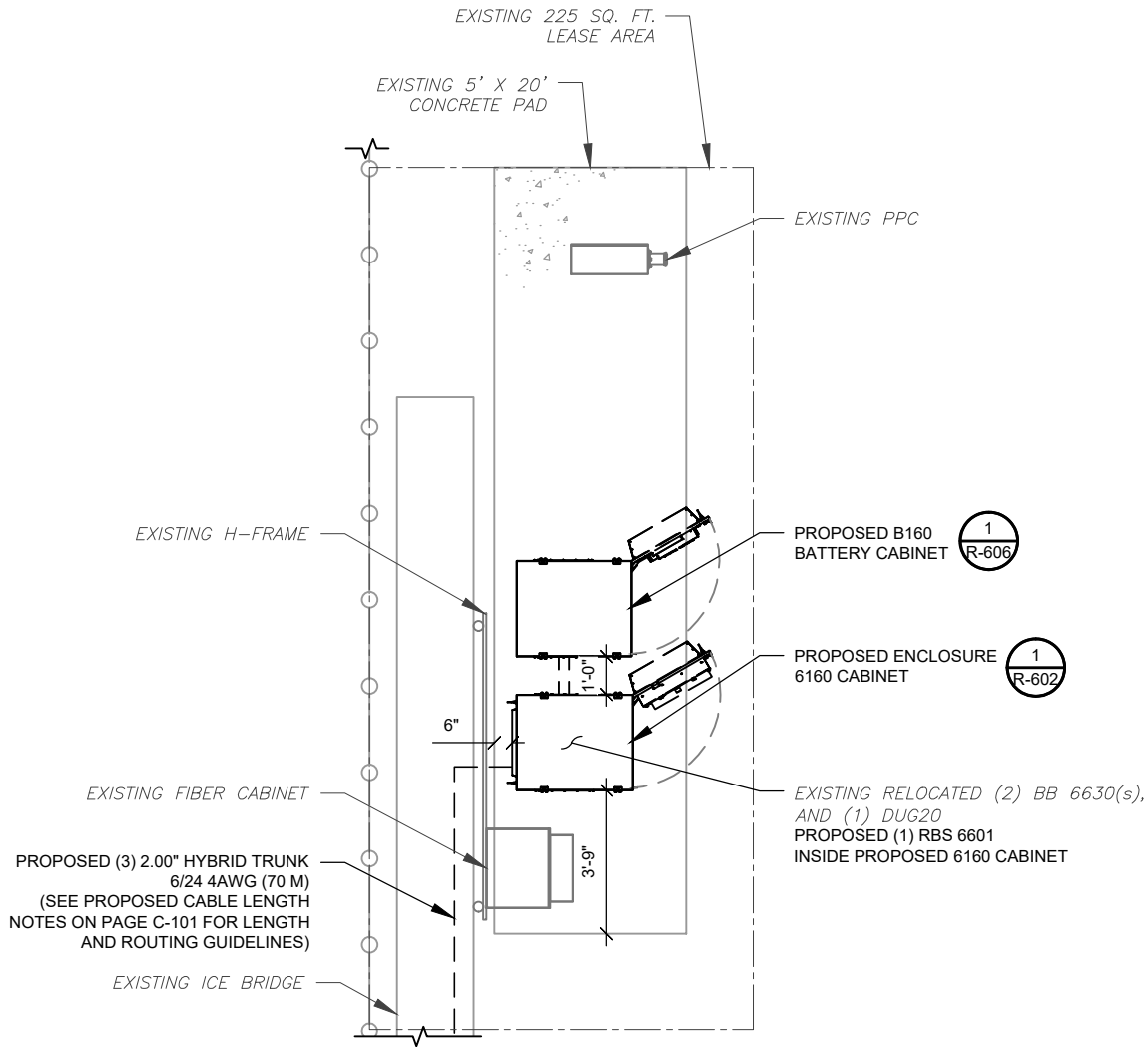
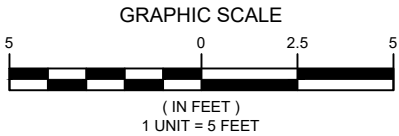
SITE PLAN NOTES:

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. ALL OPEN PORTS NEED TO BE SEALED / WEATHERPROOFED PROPERLY
3. ALL UNNEEDED / EXCESS EQUIPMENT AND GARBAGE TO BE REMOVED FROM EQUIPMENT AREA. DISPOSE OF MATERIALS PROPERLY OFF SITE.

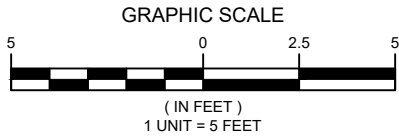
T-MOBILE CM APPROVAL REQUIRED BEFORE INSTALLING CABINETS.



1 EXISTING GROUND EQUIPMENT LAYOUT



2 PROPOSED GROUND EQUIPMENT LAYOUT





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1725 STAFFORD RD
STORRS MANSFIELD, CT 06268

SEAL:



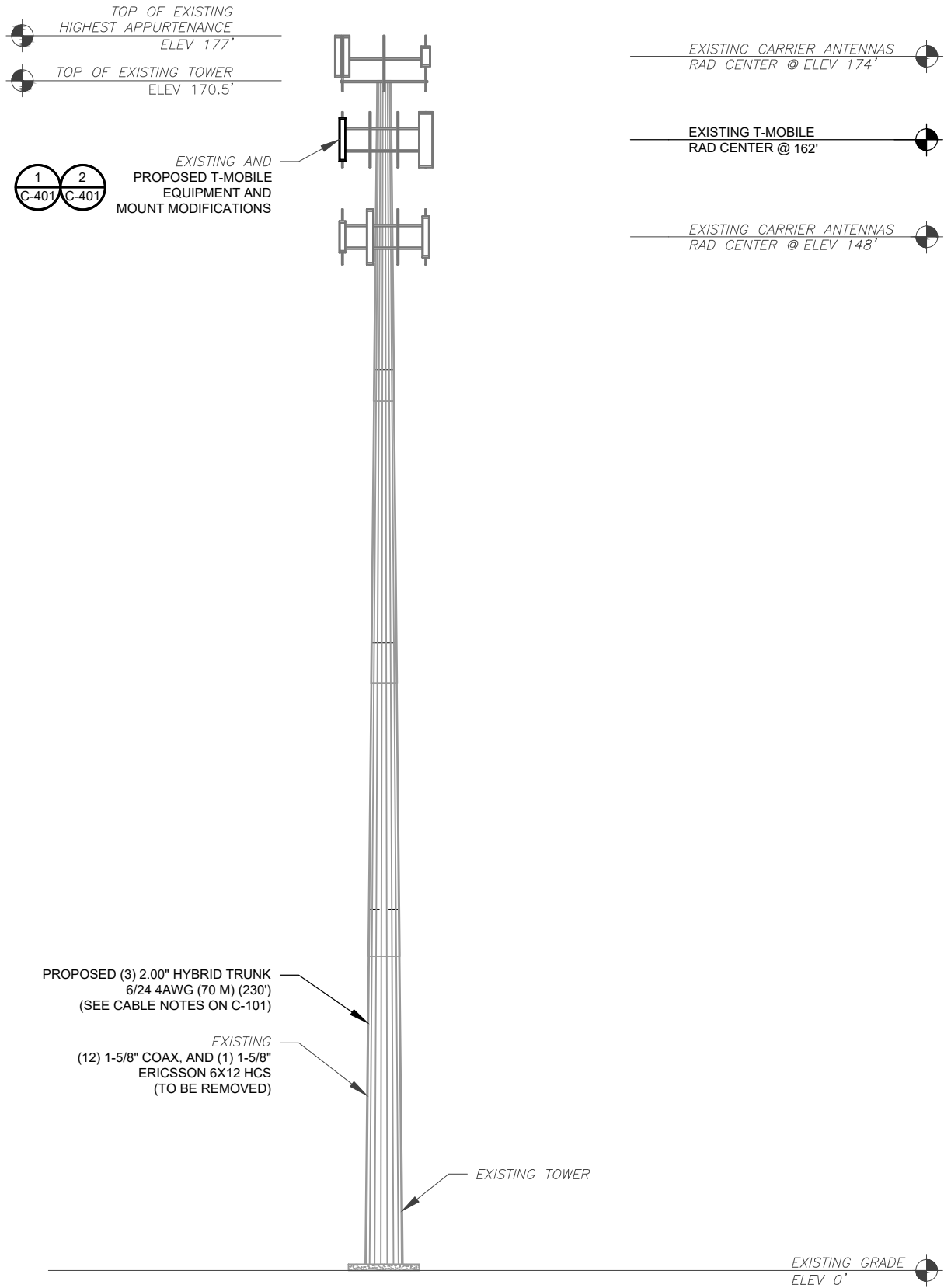
Digitally Signed: 2024-10-29



ATC PROJ. #:	14885740_G0
CUST. ID:	CT517/TCP MANSFIELD
CUST. #:	CT11517B

DETAILED EQUIPMENT
PLAN

SHEET NUMBER:	REVISION:
C-102	0



1 TOWER ELEVATION
SCALE: N.T.S.

PER MOUNT ANALYSIS COMPLETED BY ATC, DATED 10/01/24, THE EXISTING MOUNT MUST BE MODIFIED TO ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT MODIFICATION PROPOSED IN THE MOUNT ANALYSIS, INCLUDED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT.

ALL ELEVATIONS REFLECT ABOVE GROUND LEVEL (A.G.L.)

- TOWER NOTE:
- 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.
 - 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.
 - ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.
 - TOWER ELEVATION DEPICTION MAY NOT REFLECT ALL EQUIPMENT INCLUDED IN STRUCTURAL ANALYSIS. REFER TO STRUCTURAL ANALYSIS FOR FULL TOWER LOADING.



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STORRS MANSFIELD, CT 06268



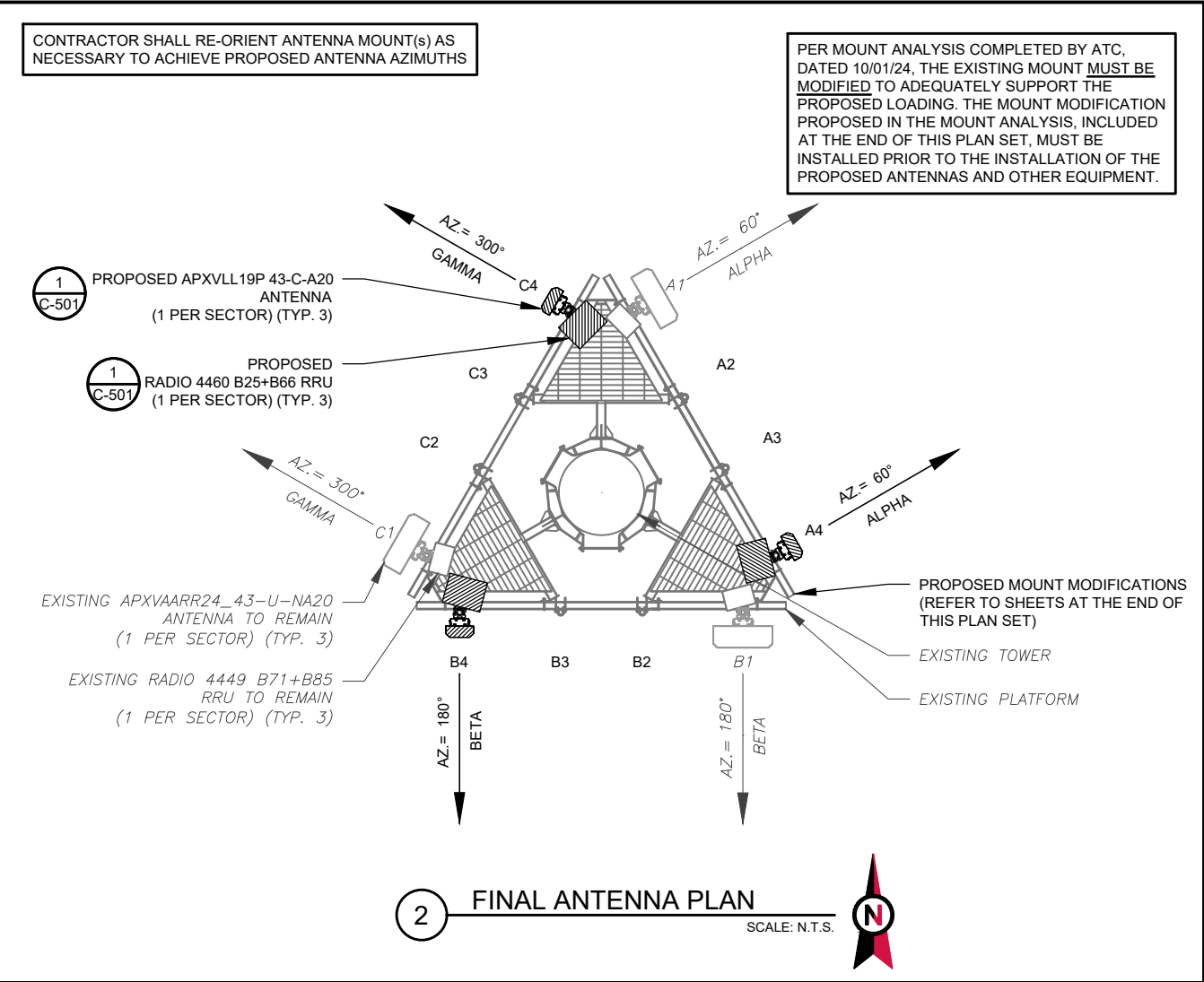
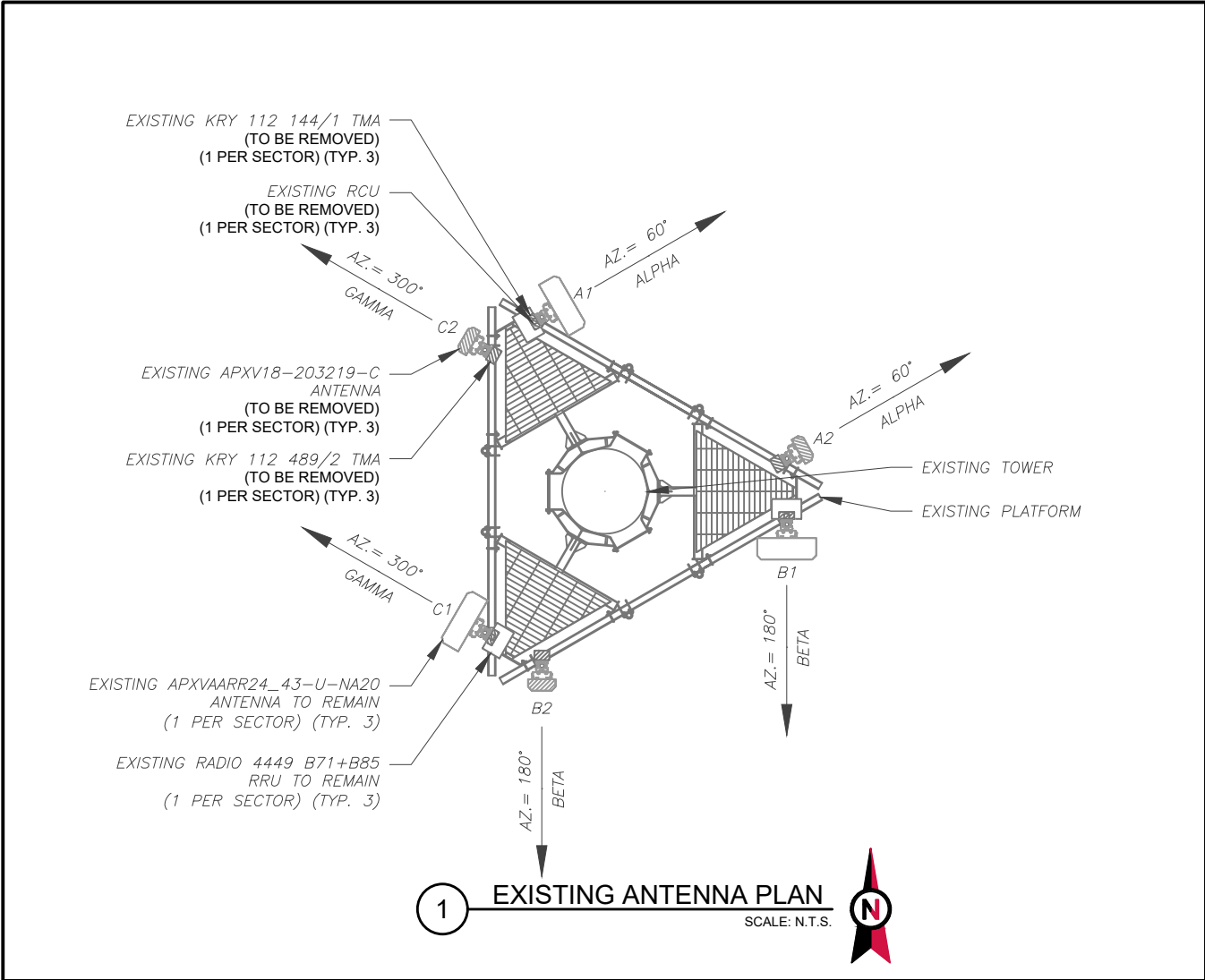
Digitally Signed: 2024-10-29



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CUST. ID:	CT517/TCP MANSFIELD
CUST. #:	CT11517B

TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-201	0



EXISTING ANTENNA SCHEDULE								
LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT
ALPHA	162°	60°	A1	APXVAARR24_43-U-NA20	L700, N600, L600, L2100	0° / 2°	RMN	RCU KRY 112 144/1 RADIO 4449 B71+B85
			A2	APXV18-203219-C	L1900, G1900	0° / 2°	RMV	KRY 112 489/2
BETA	162°	180°	B1	APXVAARR24_43-U-NA20	L700, N600, L600, L2100	0° / 2°	RMN	RCU KRY 112 144/1 RADIO 4449 B71+B85
			B2	APXV18-203219-C	L1900, G1900	0° / 2°	RMV	KRY 112 489/2
GAMMA	162°	300°	C1	APXVAARR24_43-U-NA20	L700, N600, L600, L2100	0° / 2°	RMN	RCU KRY 112 144/1 RADIO 4449 B71+B85
			C2	APXV18-203219-C	L1900, G1900	0° / 2°	RMV	KRY 112 489/2

- NOTES
- GC TO VERIFY THE FINAL RFDS MATCHES THE FINAL CONSTRUCTION DRAWINGS. GC TO NOTIFY ATC PM OF ANY DISCREPANCY PRIOR TO INSTALLING THE EQUIPMENT.
 - GC TO CAP ALL UNUSED PORTS.
 - GC TO CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.
- STATUS ABBREVIATIONS
- RMV: TO BE REMOVED
RMN: TO REMAIN
REL: TO BE RELOCATED
ADD: TO BE ADDED

CABLE LENGTHS FOR JUMPERS


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

FINAL ANTENNA SCHEDULE								
LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT
ALPHA	162°	60°	A1	APXVAARR24_43-U-NA20	L700, N600, L600	0° / 2°	RMN	RADIO 4449 B71+B85
			A2	-	-	-	-	-
			A3	-	-	-	-	-
			A4	APXVLL19P_43-C-A20	L1900, L2100, N1900, G1900	-	ADD	RADIO 4460 B25+B66
BETA	162°	180°	B1	APXVAARR24_43-U-NA20	L700, N600, L600	0° / 2°	RMN	RADIO 4449 B71+B85
			B2	-	-	-	-	-
			B3	-	-	-	-	-
			B4	APXVLL19P_43-C-A20	L1900, L2100, N1900, G1900	-	ADD	RADIO 4460 B25+B66
GAMMA	162°	300°	C1	APXVAARR24_43-U-NA20	L700, N600, L600	0° / 2°	RMN	RADIO 4449 B71+B85
			C2	-	-	-	-	-
			C3	-	-	-	-	-
			C4	APXVLL19P_43-C-A20	L1900, L2100, N1900, G1900	-	ADD	RADIO 4460 B25+B66

EXISTING FIBER DISTRIBUTION / OVP BOX		EXISTING CABLING SUMMARY	
MODEL NUMBER	STATUS	CABLE QTY, SIZE, TYPE	STATUS
-	-	----	-
-	-	(12) 1-5/8" COAX, AND (1) 1-5/8" ERICSSON 6X12 HCS	RMV

3 EQUIPMENT SCHEDULES

FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY	
MODEL NUMBER	STATUS	CABLE QTY, SIZE, TYPE	STATUS
-	-	----	-
-	-	(3) 2.00" HYBRID TRUNK 6/24 4AWG (70 M)	ADD



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MANSFIELD CENTER 2 CT


T-MOBILE SITE NAME:
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SITE ADDRESS:
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STORRS MANSFIELD, CT 06268

SEAL:



Digitally Signed: 2024-10-29

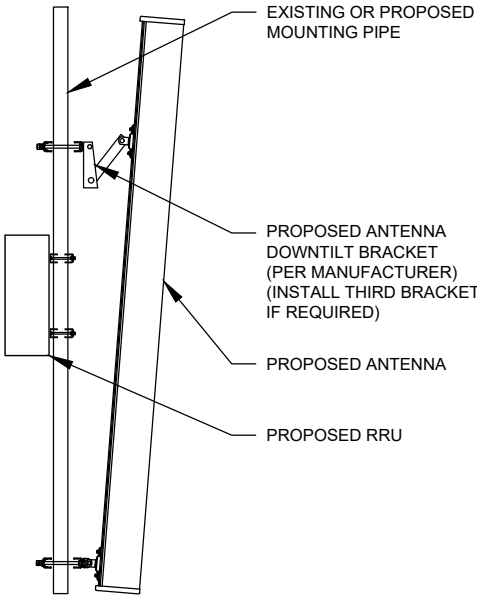


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CUST. #:	CT11517B

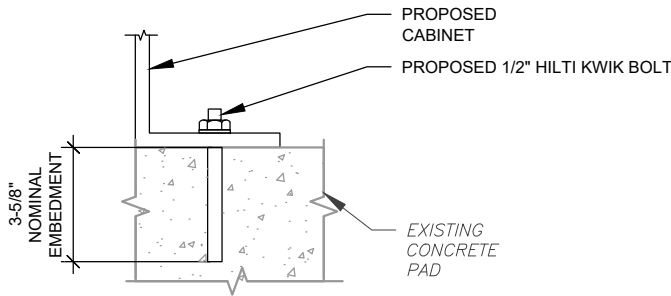
ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER: C-401	REVISION: 0
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EXISTING/PROPOSED MOUNTS AND/OR MOUNT MODIFICATIONS NOT SHOWN FOR CLARITY. REFER TO ANTENNA PLANS, MOUNT ANALYSES AND/OR MOUNT MODIFICATION DOCUMENTS FOR ADDITIONAL DETAIL.



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



NOTE:
INSTALL HILTI KWIK BOLT ANCHORS STRICTLY PER
INSTALLATION INSTRUCTIONS INCLUDED WITH PRODUCT OR
FOUND ONLINE AT WWW.US.HILTI.COM. PROPER
INSTALLATION IS CRITICAL FOR FULL PERFORMANCE.

2 CABINET ATTACHMENT DETAIL
SCALE: N.T.S.



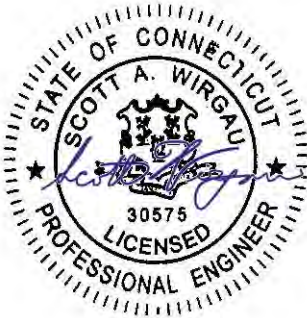
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STORRS MANSFIELD, CT 06268

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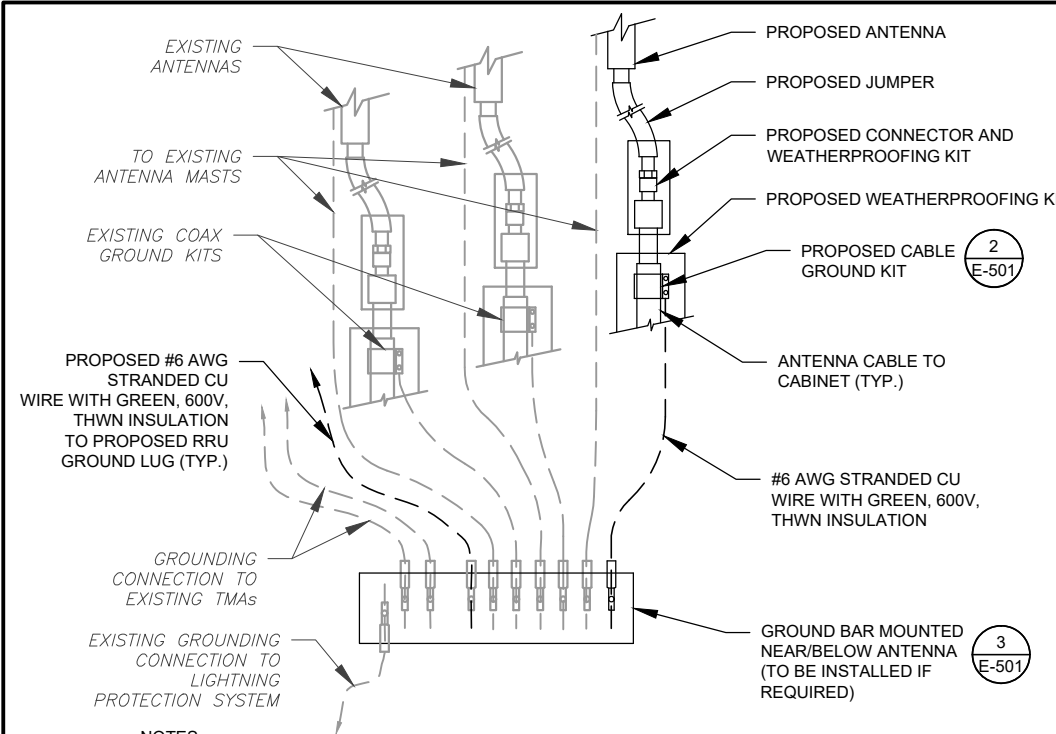
Digitally Signed: 2024-10-29



ATC PROJ. #:	14885740_G0
CUST. ID:	CT517/TCP MANSFIELD
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CONSTRUCTION
DETAILS

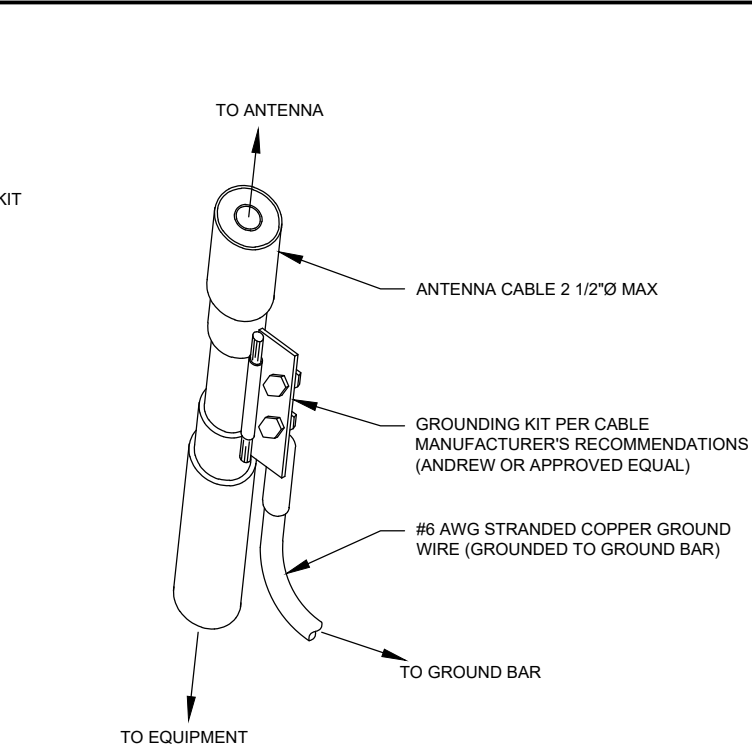
SHEET NUMBER:	REVISION:
C-501	0



NOTES:

- 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.
- 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.

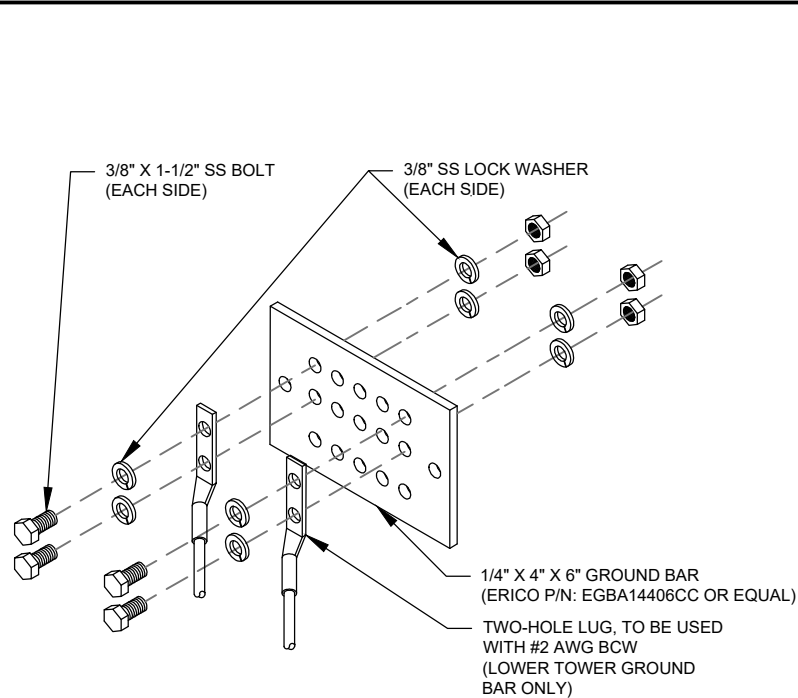
1 TYPICAL ANTENNA GROUNDING DIAGRAM
SCALE: N.T.S.



GROUND KIT NOTES:

- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
- 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:

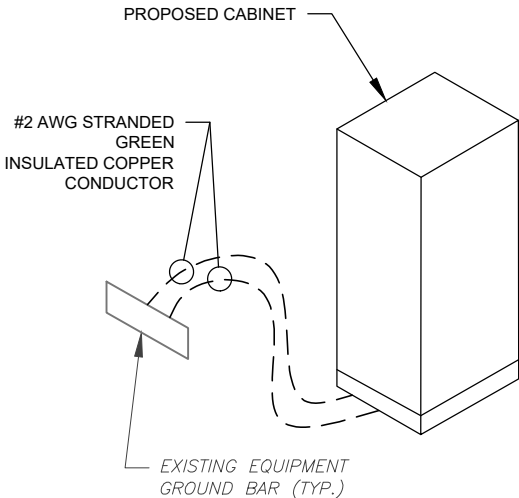
- GROUND BAR KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
- GROUND BAR TO BE BONDED DIRECTLY TO TOWER.

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

ELECTRICAL NOTES:

- 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.
- 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.
- 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.

VOLTS	OCPD SIZE	WIRE SIZE	GROUND	CONDUIT
120/240V OR 120/208V	80A/2P	3-#3 AWG	#8 AWG	1-1/4"
	100/2P	3-#2 AWG	#8 AWG	1-1/4"
	125A/2P	3-#3/0 AWG	#6 AWG	2"
	150A/2P	3-#3/0 AWG	#6 AWG	2"
240V OR 208V	200A/2P	3-#3/0 AWG	#6 AWG	2"
	80A/2P	2-#3 AWG	#8 AWG	1-1/4"
	100/2P	2-#2 AWG	#8 AWG	1-1/4"
	125A/2P	2-#3/0 AWG	#6 AWG	2"
	150A/2P	2-#3/0 AWG	#6 AWG	2"
	200A/2P	2-#3/0 AWG	#6 AWG	2"



5 CABINET GROUNDING DETAIL
SCALE: N.T.S.

6 ELECTRICAL NOTES

STANDARD CONDUIT USE TABLE			
CONDUIT TYPE	USE CASE	LOCATION	USE CASE EXAMPLE
RMC (METALLIC)	AC, DC COMM	ABOVE GROUND	ABOVE GROUND PPC TO SSC
PVC	AC POWER	UNDERGROUND	UNDERGROUND PPC TO SSC OR BACKHAUL TRANSPORT HUB TO SSC
LFMC	AC, DC, COMM	MAX 6' PER CONDUIT RUN, ABOVE GROUND ONLY	TIGHT LOCATIONS BETWEEN HUB AND CONDUIT BUT NOT TO BE USED WHERE IT CAN BE STEPPED ON
EMT	INDOOR AC, DC COMM	INDOOR NOT EXPOSED TO THE OUTDOOR ENVIRONMENT (MUST BE DRY)	CIRCUIT PANEL TO JUNCTION BOX
LFNC	GROUND WIRE	CONCEALING AND PROTECTING BTCW RISERS ONLY	GROUND RING TO MGB OR SSC

EXCEPTION CONDUIT USE TABLE			
CONDUIT TYPE	USE CASE	LOCATION	USE CASE EXAMPLE
EMT (NOT PREFERRED)	OUTDOOR DC, COMM	OUTDOOR WHEN USED WITH WATERTIGHT HUBS ONLY	BETWEEN EQUIPMENT AND BATTERY CABINET OR EQUIPMENT TO EQUIPMENT CABINETS FOR INTER CABINET CONNECTION
RMC NONMETALLIC (ALUMINUM)	OUTDOOR/INDOOR PER NEC GUIDLINES	ABOVE GROUND	MAT BE USED AS A LOWER COST ALTERNATIVE TO METALLIC RMC, MUST MEET OR EXCEED FEDERAL SPEC: WW-C-540C, UL-6A, ANSI C80.5, NEC 344.10 (A) ALLOWS THE USE OF EITHER ALUMINUM OR GALVANIZED FITTINGS

4 CONDUIT USE TABLES

AMERICAN TOWER®
ATC TOWER SERVICES, LLC
1 FENTON MAIN
SUITE 300
CARY, NC 27511
PHONE: (919) 468-0112
PEC.0001553

THE USE AND PUBLICATION OF THESE DRAWINGS SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY ARE PREPARED. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO AMERICAN TOWER OR THE SPECIFIED CARRIER IS STRICTLY PROHIBITED. NEITHER THE ARCHITECT NOR THE ENGINEER WILL BE PROVIDING ON-SITE CONSTRUCTION REVIEW OF THIS PROJECT. CONTRACTOR(S) MUST VERIFY ALL DIMENSIONS AND ADVISE AMERICAN TOWER OR THE SPECIFIED CARRIER OF ANY DISCREPANCIES. ANY PRIOR ISSUANCE OF THIS DRAWING IS SUPERSEDED BY THE LATEST VERSION.

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	EDNA	10/28/2024

ATC SITE NUMBER:
376047

ATC SITE NAME:
MANSFIELD CENTER 2 CT

T-MOBILE SITE NAME:
CT517/TCP MANSFIELD

SITE ADDRESS:
1725 STAFFORD RD
STORRS MANSFIELD, CT 06268

SEAL:

Digitally Signed: 2024-10-29

ATC PROJ. #: 14885740_G0

CUST. ID: CT517/TCP MANSFIELD

CUST. #: CT11517B

GROUNDING DETAILS

SHEET NUMBER: E-501	REVISION: 0
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Existing RAN Equipment

Template: 67D94E

Enclosure	1		
Enclosure Type	RBS 6201 ODE		
Radio	<div>RUS01 B2 (x3)<div>G1900</div></div> <div>RUS01 B2 (x3)<div>L1900</div></div>		
Baseband	<div>BB 6630<div>L1900</div><div>L2100</div></div> <div>BB 6630<div>N600</div><div>L600 (DECOMMISSIONED)</div><div>L700</div></div> <div>DUG20<div>G1900</div></div>		
Hybrid Cable System	Ericsson 6x12 HCS *Select Length & AWG*		

Proposed RAN Equipment

Template: 67E998E 6160

Enclosure	1	2	3
Enclosure Type	Enclosure 6160_v2 AC	RBS 6601	B160
Baseband	<div>BB 6630<div>N1900</div><div>L1900</div><div>L2100</div></div> <div>BB 6630<div>N600</div><div>L600 (DECOMMISSIONED)</div><div>L700</div></div> <div>DUG20<div>G1900</div></div>		
Hybrid Cable System	Hybrid Trunk 6/24 4AWG 70m (x3)		

RAN Scope of Work:

we have skew in all sectors, we may need to adjust the azimuth or fix the mount later.

Replace DUS31 with (1) BB6630 for L2100, L1900, L700, and L600.
Add (1) BB6630 for future 5G N600.
Remove all (6) RUS01 B12 Radios in Cabinet.
Add (3) 4415 B66A for L2100 on ground.

Add (1) 6X12 HCS.
Existing: (12) 1-5/8" Coaxial Lines. Need to run new Coaxial Lines due to relocation to platform at new Rad Center.

Keep existing BBU.

ODE Cabinet upgrade will require 5 PSUs.
ODE Cabinet upgrade will require a PDU upgrade.

1

CABINET CONFIGURATION

SUPPLEMENTAL

SHEET NUMBER:

R-601

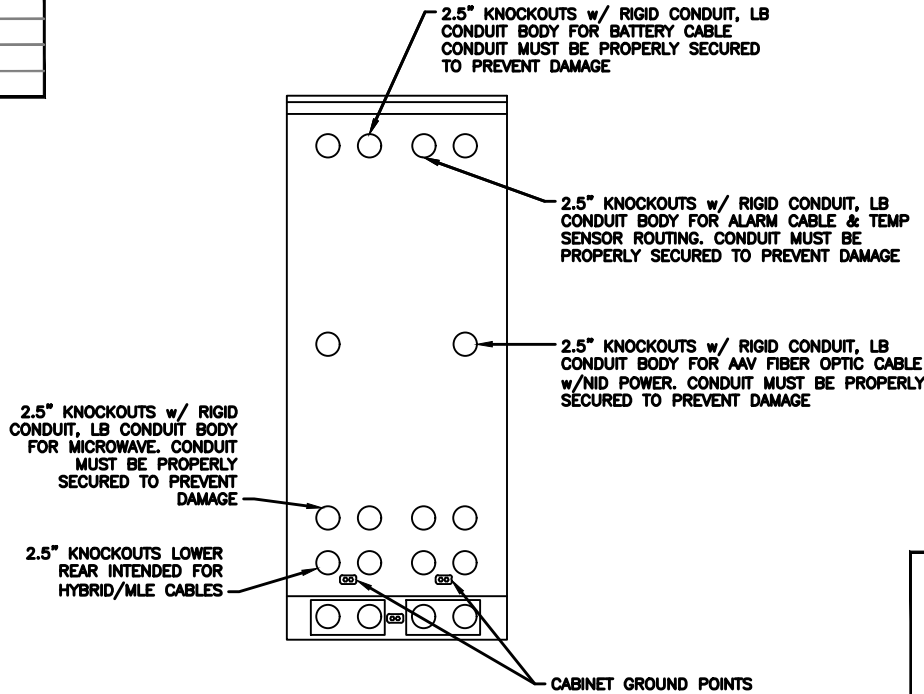
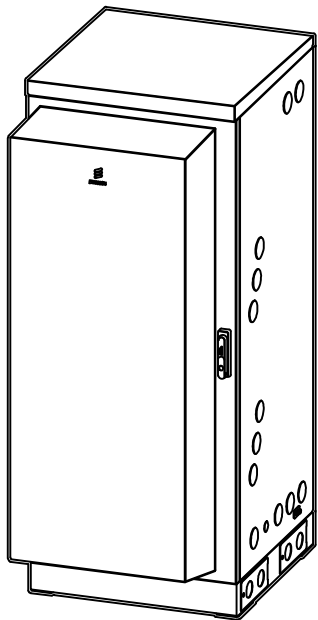
REVISION:

0

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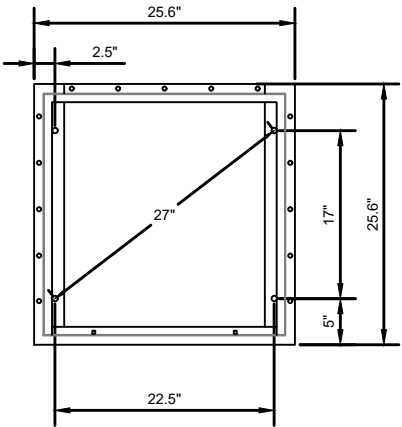
MANUFACTURER:	ERICSSON
MODEL:	6160 SITE SUPPORT CABINET
DIMENSIONS:	63" x 25.6" x 33.6" (H x W x D)
WEIGHT:	373 LBS



REAR VIEW

NOTE:

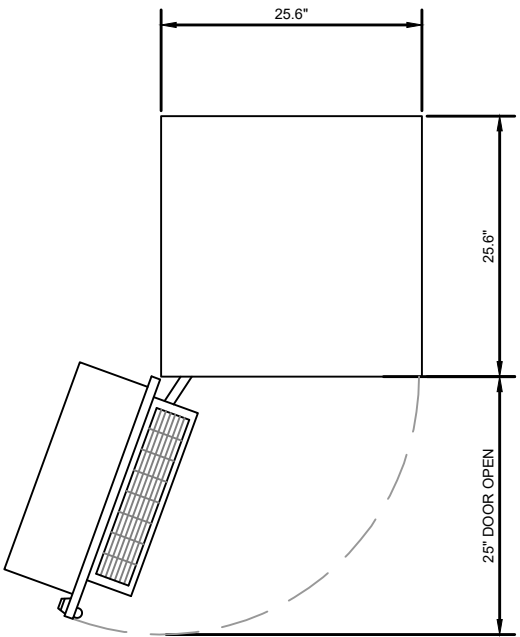
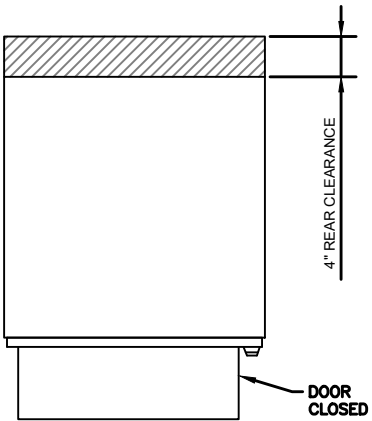
- CORRECT KNOCKOUT TOOL REQUIRED FOR PUNCHING KNOCKOUTS. DO NOT DRILL THROUGH KNOCKOUTS
- CONDUIT MUST BE PROPERLY SECURED TO PREVENT DAMAGE TO CABINETS AND OR CABLING



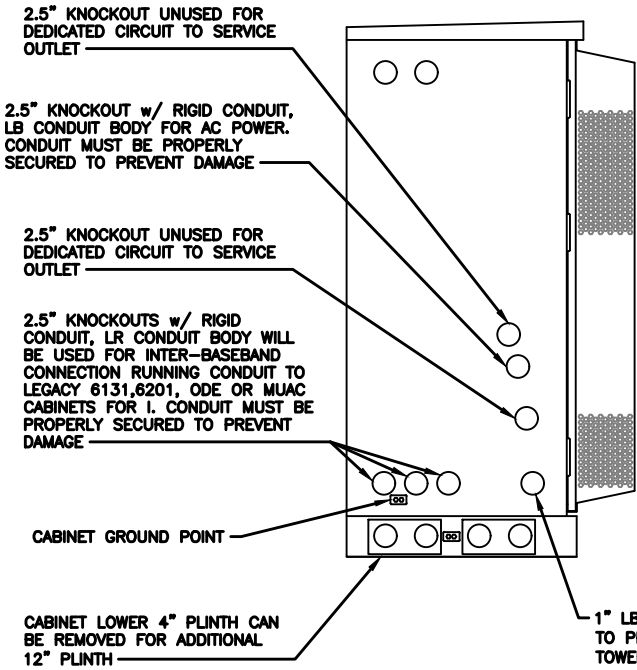
BOLT DOWN PATTERN

GROUNDING NOTE:

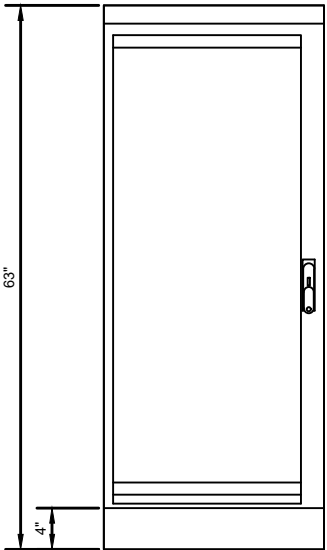
"CABINET GROUNDING TO USE A SINGLE, #2 BTCW CONDUCTOR, W/ 2-HOLE, 1" C-C, LONG BARREL, WINDOW LUG, IN 3/4" LFNC TO GROUND RING. PLINTH GROUNDING IS NOT REQUIRED."



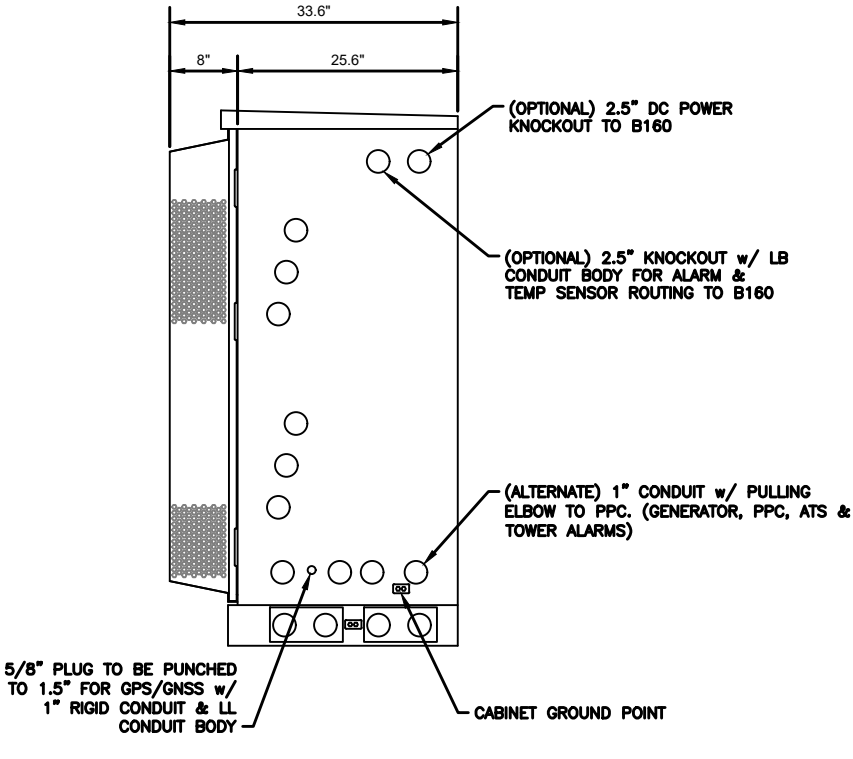
PLAN VIEW



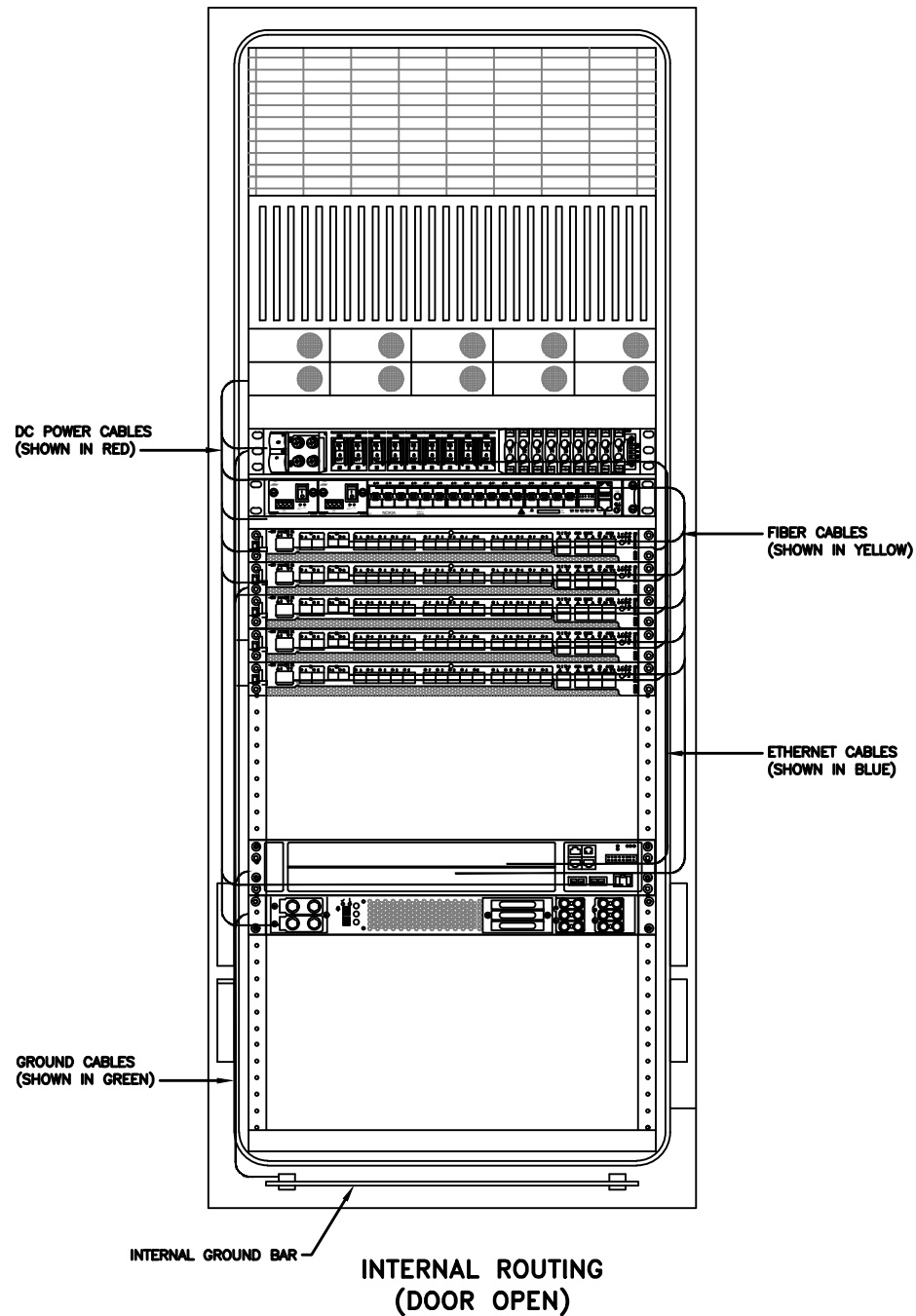
LEFT VIEW



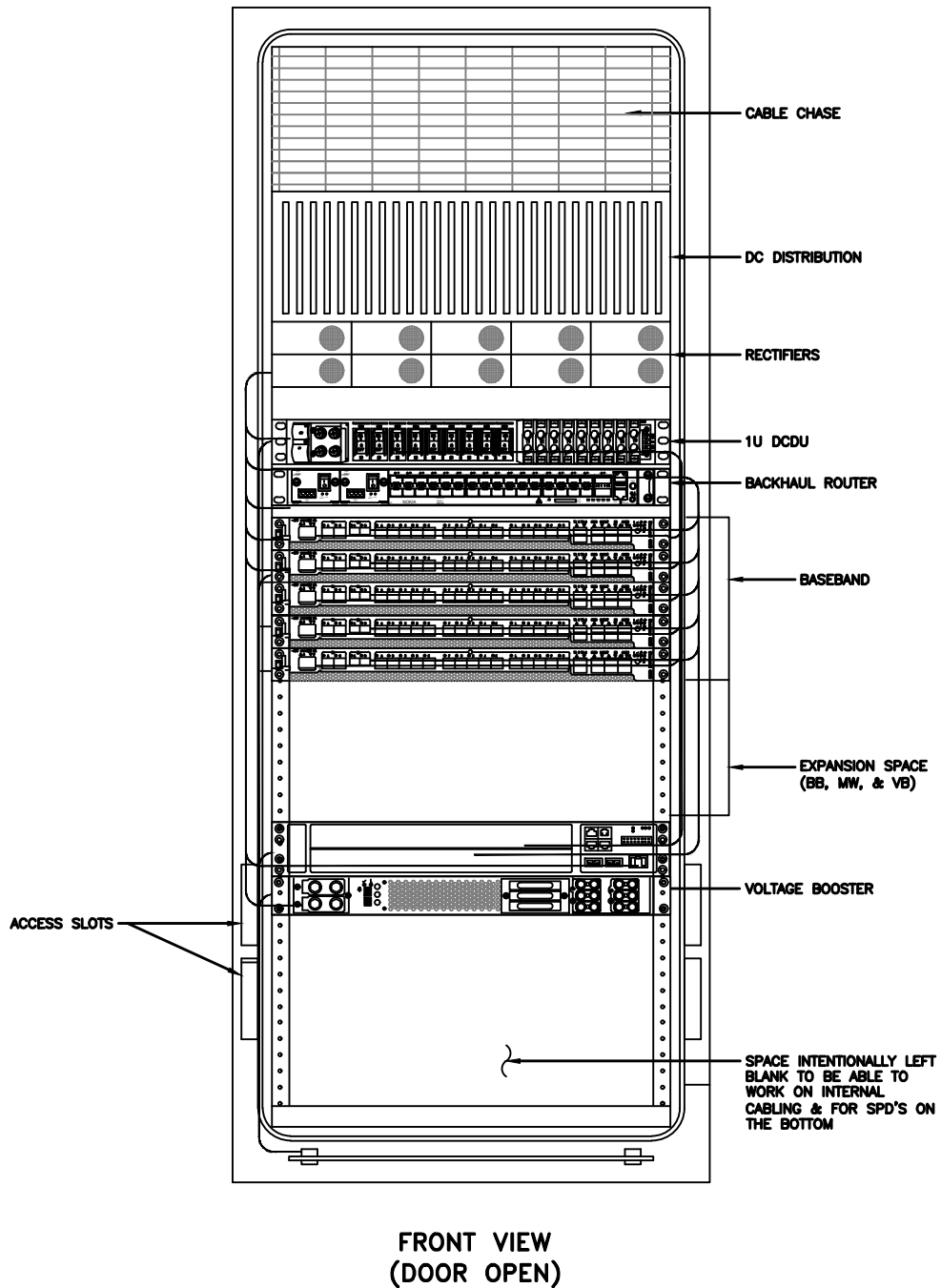
FRONT VIEW



RIGHT VIEW

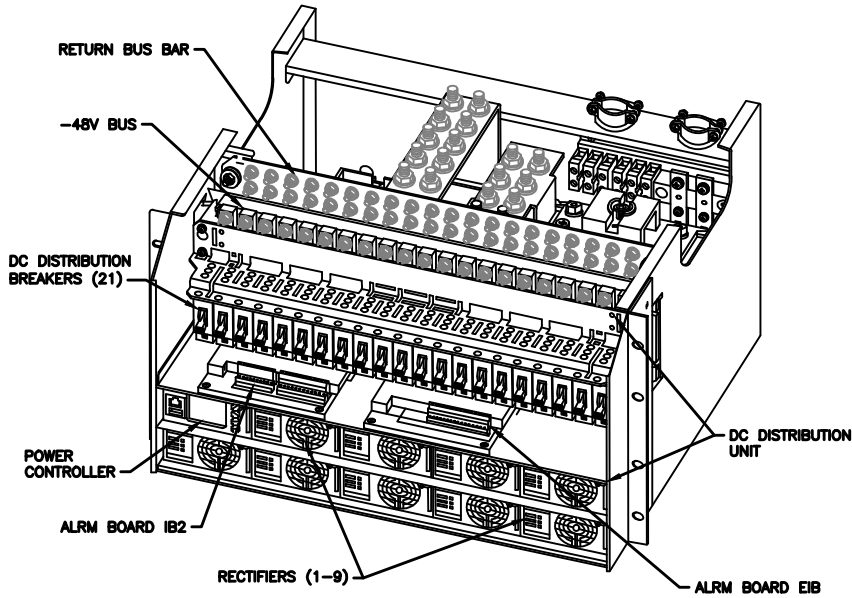


RACK ASSIGNMENTS	
RU SLOTS	DESCRIPTION
1	DC DISTRIBUTION
2	
3	
4	
5	RECTIFIER SHELF
6	
7	FIBER BOX
8	DCDU
9	BACKHAUL ROUTER
10	
11	1ST BASEBAND
12	2ND BASEBAND
13	3RD BASEBAND
14	4TH BASEBAND
15	5TH BASEBAND
16	EXPANSION
17	
18	
19	EXPANSION / LEGACY BASEBAND / VOLTAGE BOOSTER
20	
21	VOLTAGE BOOSTER
22	
23	OPEN SPACE FOR SPD ACCESS
24	
25	

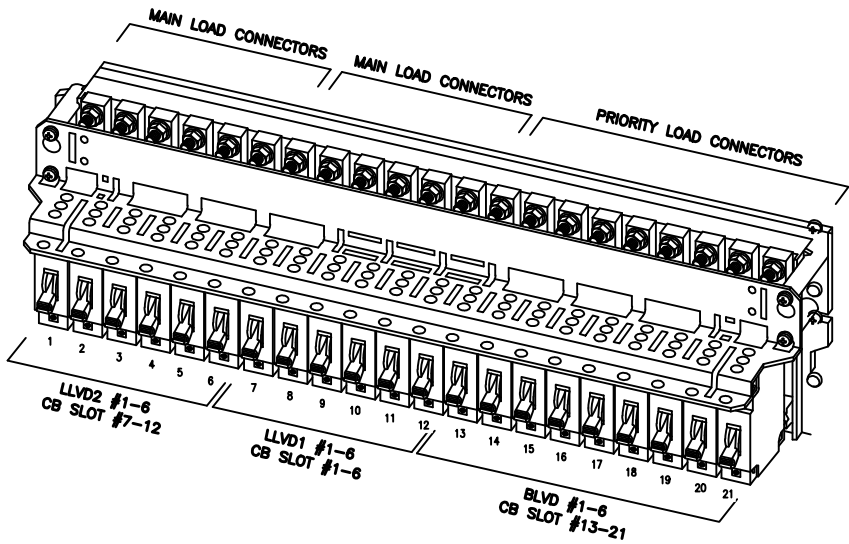


NOTE:
THIS IS FOR REFERENCE ONLY, CHECK
FOR SPECIFIC DETAIL IN T-MOBILE
CABINET SPECIFIC INSTALLATION GUIDES

Breaker Allocation for L6160				
Circuit Slot	Ckt #	w/ DCDU Prior to availability of the 4460 and 4480	w/ DCDU Later Design Post-4460 and Post-4480	w/ DCDU 4 and 6 Sector designs
1	LVLD1 45.12V	1	Router PS 2*/Future	Radio 4460 B25/66 ζ-1
2		2	Future	Radio 4460 B25/66 ζ-2
3		3	PSU 4813 feeding B75/66 α, β and γ (AIR 1641s)	PSU 4813 feeding B41-δ & 371/12-δ
4		4		(Air 6449s and Radio 4480s)
5		5	PSU 4813 feeding B41 α, β and γ (Air 6449s)	
6		6		
7	LVLD2 45.14V	1	PSU 4813 feeding B71/12 α, β and γ (Radio 4449s)	PSU 4813 feeding B71/12 α, β and γ (Radio 4480s)
8		2		
9		3	Future	Radio 4460 B25/66 δ-1
10		4	Future	Radio 4460 B25/66 δ-2
11		5	Future	Radio 4460 B25/66 ε-1
12		6	Future	Radio 4460 B25/66 ε-2
13	BLVD 45.2V	1	Router PS-1	
14		2	Radio 4415 B25/66 α	Radio 4460 B25/66 α-1
15		3	Radio 4415 B25/66 β	Radio 4460 B25/66 α-2
16		4	Radio 4415 B25/66 γ	Radio 4460 B25/66 β-1
17		5	PSU 4813 feeding B2/25 α, β and γ (Radio 4424s)	Radio 4460 B25/66 β-2
18		6		Radio 4460 B25/66 γ-1
19		7	Future	Radio 4460 B25/66 γ-2
20		8	DCDU	
21		9	AAV	
Sector Identification α = Alpha, β = Beta, γ = Gamma, δ = Delta, ε = Epsilon, ζ = Zeta				



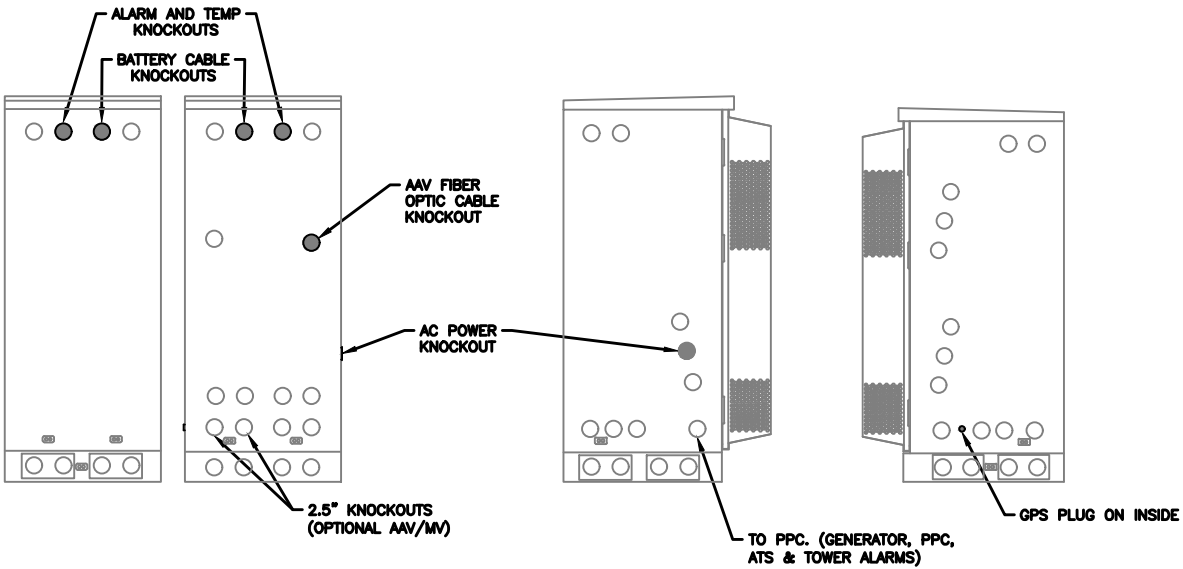
POWER SUBRACK



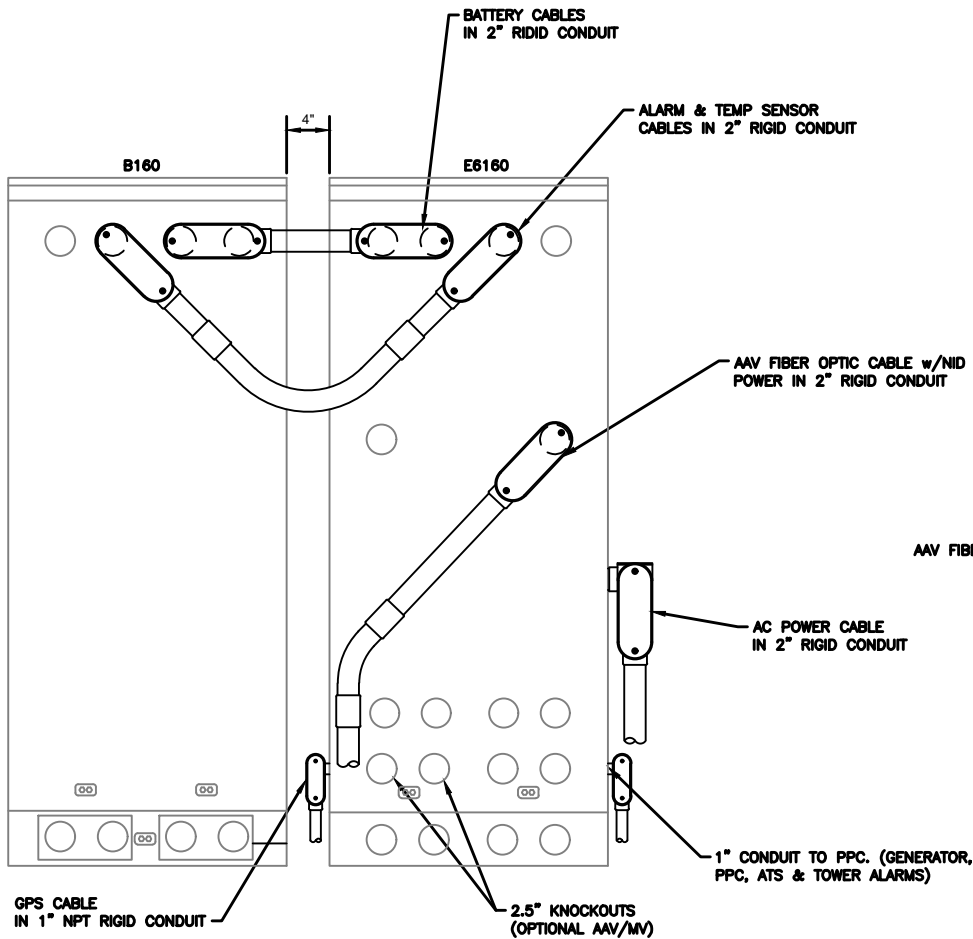
DC DISTRIBUTION

NOTE:

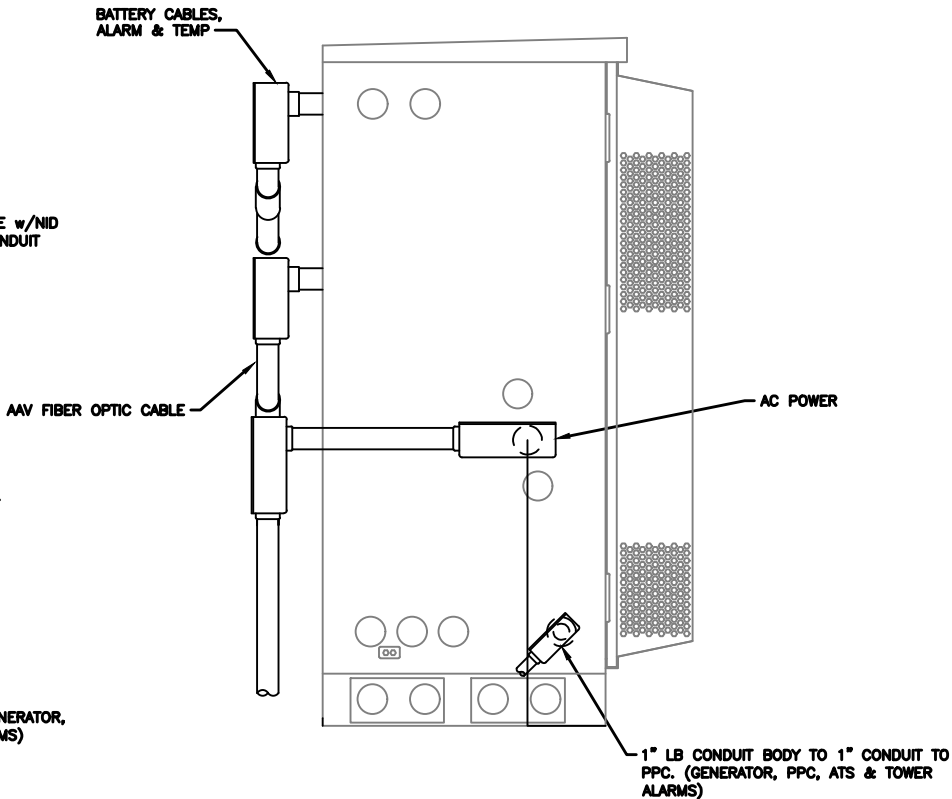
1. ALL CONDUIT AND FITTING ENTRANCES INTO CABINETS AND ENCLOSURES MUST UTILIZE MYERS OR EQUIVALENT HUBS OR SEALING WASHERS TO PREVENT WATER ENTRY/SEEPAGE INTO CABINETS AND ENCLOSURES.
2. (LIQUIDFLEX) FLEXIBLE METALLIC CONDUIT (LFMC) & ASSOCIATED FITTINGS CAN BE USED AS NEEDED BUT ONLY FOR TIGHT CONDUIT BENDS AND RUNS SUBJECT TO UL AND NEC LIMITATIONS. 6' MAX PER CONDUIT RUN.
3. POWER CONDUIT BODY ATTACHED WITH SHORT NIPPLE AND SEALING WASHER INSIDE & OUT. (FOR DOOR HOOD CLEARANCE)
4. PULLING ELBOWS MAY BE USED IN LIEU OF A CONDUIT BODIES WHEN CLEARANCE IS LIMITED.
5. ALL EXTERNAL ALARM CONDUITS ARE TOO TERMINATE AT THE PPC WITH A SINGLE 1" ALARM CONDUIT TO THE 6160.
6. (DO NOT USE CHASE NIPPLES) CONDUIT SHOULD HAVE SEALING WASHERS INSIDE AND OUT w/ LOCK NUT AND CAP.



CONDUIT LOCATIONS

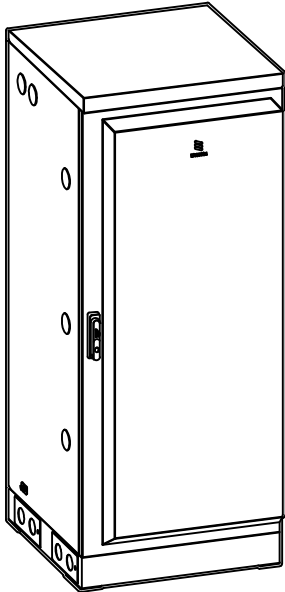


REAR VIEW



SIDE VIEW

MANUFACTURER:	ERICSSON
MODEL:	B160 BATTERY CABINET
DIMENSIONS:	63" x 25.6" x 29.5" (H x W x D)
WEIGHT:	295 LBS (WITHOUT BATTERIES)



2.5" KNOCKOUTS w/ RIGID CONDUIT, LB CONDUIT BODY FOR ALARM CABLE & TEMP SENSOR ROUTING. CONDUIT MUST BE PROPERLY SECURED TO PREVENT DAMAGE

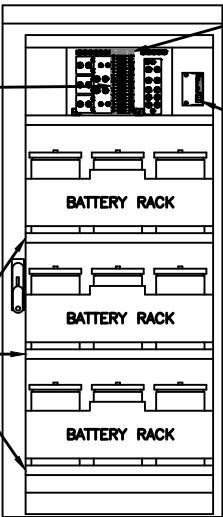
CABINET GROUND POINTS

REAR VIEW

2.5" KNOCKOUTS w/ RIGID CONDUIT, LB CONDUIT BODY FOR BATTERY CABLE CONDUIT MUST BE PROPERLY SECURED TO PREVENT DAMAGE

3 x 300A BREAKERS

BATTERY VIBRATION MOUNTS



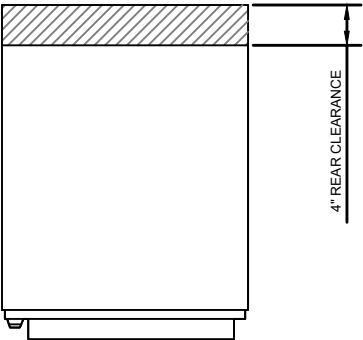
25A AUX BREAKERS, FANS, LIGHTS, ETC.

ALARM BOX, PRELABLED

3X BATTERY SHELVES, UP TO 200A HR, w/ PREINSTALLED HEATERS

FRONT VIEW (DOOR OPEN)

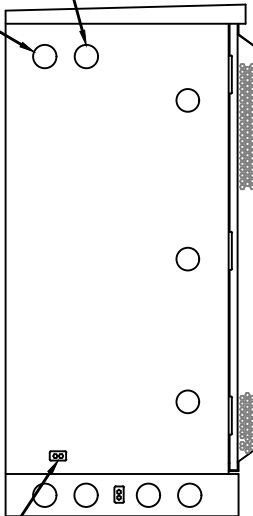
- NOTE:
- CORRECT KNOCKOUT TOOL REQUIRED FOR PUNCHING KNOCKOUTS. DO NOT DRILL THROUGH KNOCKOUTS
 - CONDUIT MUST BE PROPERLY SECURED TO PREVENT DAMAGE TO CABINETS AND OR CABLING



4" REAR CLEARANCE

(OPTIONAL) 2.5" KNOCKOUTS FOR ALARM & TEMP SENSOR ROUTING TO 6160

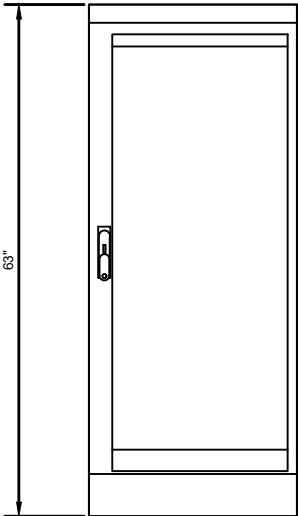
(OPTIONAL) 2.5" DC POWER KNOCKOUTS TO 6160



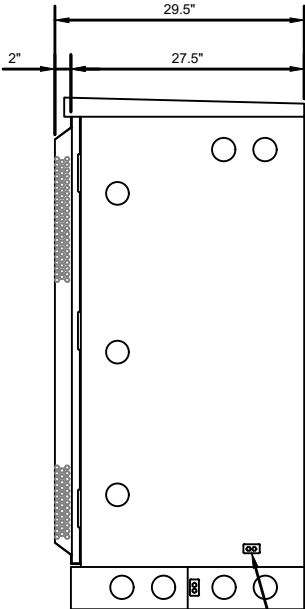
CABINET GROUND POINT

LEFT VIEW

GROUNDING NOTE:
"CABINET GROUNDING TO USE A SINGLE, #2 BTCW CONDUCTOR, W/ 2-HOLE, 1" C-C, LONG BARREL, WINDOW LUG, IN 3/4" LFNC TO GROUND RING. PLINTH GROUNDING IS NOT REQUIRED."

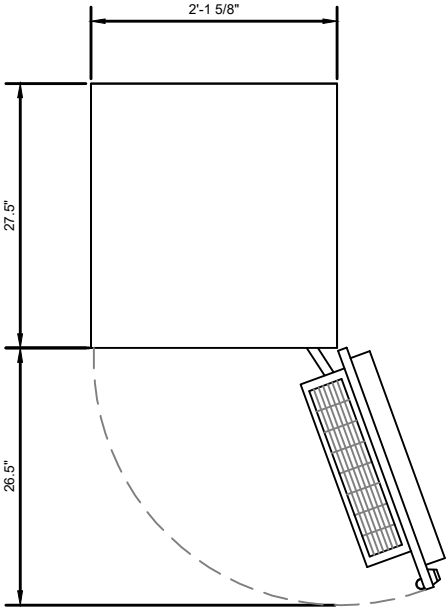


FRONT VIEW



CABINET GROUND POINT

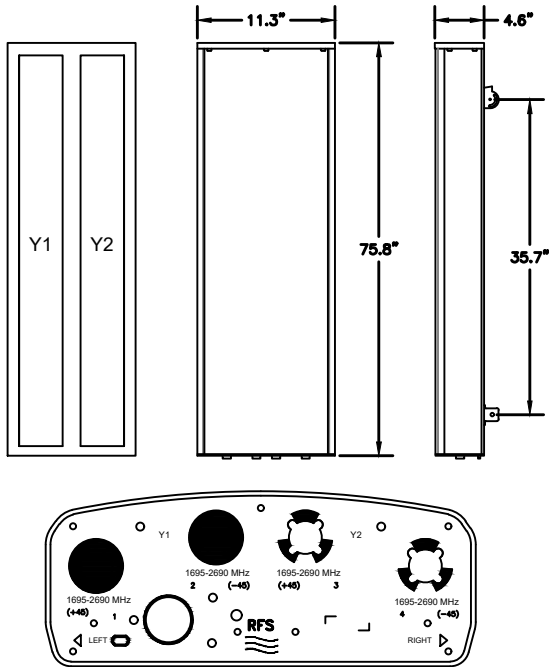
RIGHT VIEW



PLAN VIEW

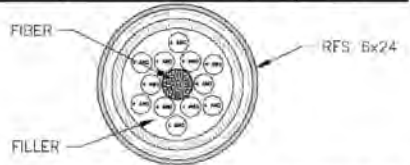
B160 ERICSSON SITE SUPPORT BATTERY CABINET

MANUFACTURER:	RFS
MODEL:	APXVLL19P_43-C-A20
DIMENSIONS:	75.8" x 11.3" x 4.6" H x W x D
WEIGHT:	40.9 LBS
CONNECTOR TYPE:	4 x 4.3-10 FEMALE/BOTTOM + 2 AISG CONNECTORS (1 MALE, 1 FEMALE)
MOUNTING KIT WEIGHT:	7.49 LBS (APM40-2 BEAM TILT KIT)

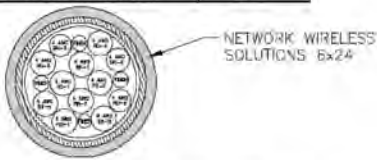


1 34403 - RFS APXVLL19P_43-C-A20
SCALE: N.T.S.

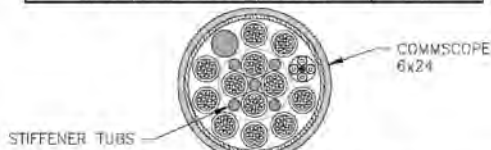
PARAMETER	VALUE
NOMINAL DIAMETER (INCHES)	2
CROSS-SECTION AREA (SQUARE INCHES)	3.13
JACKET COLOR	BLACK
WEIGHT/LINEAR FOOT (POUNDS)	2.55



PARAMETER	VALUE
NOMINAL DIAMETER (INCHES)	1.79
CROSS-SECTION AREA (SQUARE INCHES)	2.52
JACKET COLOR	BLACK
WEIGHT/LINEAR FOOT (POUNDS)	2.65

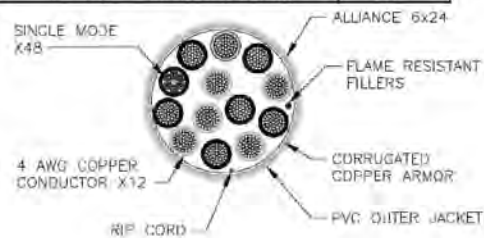


PARAMETER	VALUE
NOMINAL DIAMETER (INCHES)	1.75
CROSS-SECTION AREA (SQUARE INCHES)	2.43
JACKET COLOR	BLACK
WEIGHT/LINEAR FOOT (POUNDS)	2.29

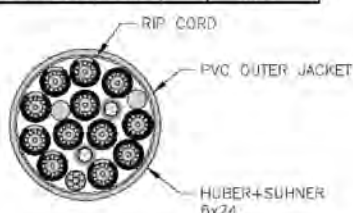


1 (6x24) HYBRID TRUNK CROSS SECTION
8.5" x 11" SCALE N.T.S. 11" x 17" SCALE N.T.S.

PARAMETER	VALUE
NOMINAL DIAMETER (INCHES)	1.8
CROSS-SECTION AREA (SQUARE INCHES)	2.54
JACKET COLOR	BLACK
WEIGHT/LINEAR FOOT (POUNDS)	2.48

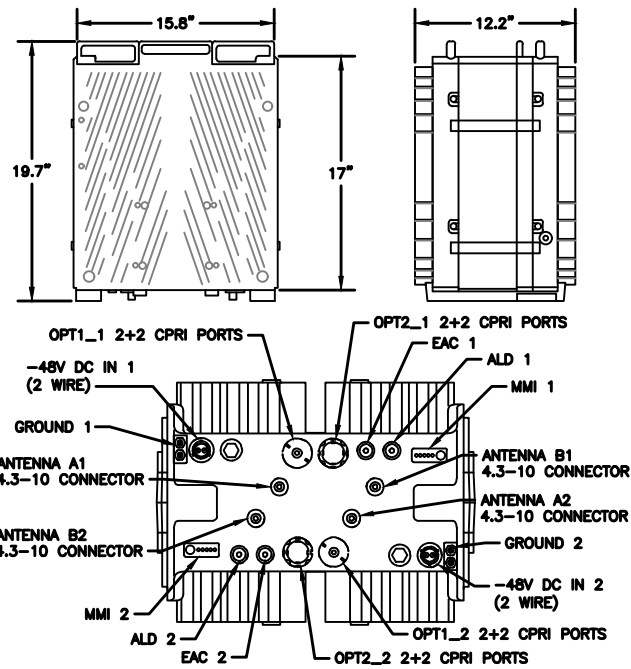


PARAMETER	VALUE
NOMINAL DIAMETER (INCHES)	1.62
CROSS-SECTION AREA (SQUARE INCHES)	2.04
JACKET COLOR	BLACK
WEIGHT/LINEAR FOOT (POUNDS)	2.39



2 (6x24) HYBRID TRUNK CROSS SECTION
8.5" x 11" SCALE N.T.S. 11" x 17" SCALE N.T.S.

MANUFACTURER:	ERICSSON
MODEL:	4460 RADIO B2/25 B66 (KRC 161 912/3)
DIMENSIONS:	19.7" x 15.8" x 12.2" (H" x W" x D")
WEIGHT:	109 LBS
BRACKET WEIGHT:	4.8 LBS (ERS HEAVY #SXX1255993/1)



2 34373 - ERICSSON 4460 RADIO B2/25 B66
SCALE: N.T.S.

Cable Vendor	Cable Type	Nominal OD (in.)	C.S. Area (sq. in.)	Weight (lbs./ft)	enTop Breakout	MAX ENTITLEMENT
HCS 2.0	6 AWG 25' to 225' cable lengths				HCS Pendant (Breakout) Dimension (in.)	
Alliance	6x24 6AWG	1.46	1.67	1.61	16.36 x 9.30 x 5.79 (sq./in 152.15)	Nominal OD (in.) 1.55
CommScope	6x24 6AWG	1.55	1.89	1.71	19.37 x 10.83 x 5.12 (sq./in 235.07)	C.S. Area (sq./in.) 1.89
NWS	6x24 6AWG	1.48	1.72	1.61	15.95 x 10.20 x 3.21 (sq./in 162.69)	Weight (lbs./ft) 1.71
Amphenol	6x24 6AWG	1.46	1.67	1.65	19.37 x 10.83 x 5.12 (sq./in 209.78)	Pendant (sq./in) 235.07
	4 AWG 250' to 450' cable lengths					
Alliance	6x24 4AWG	1.8	2.54	2.48	16.36 x 9.30 x 5.79 (sq./in 152.15)	Nominal OD (in.) 1.8
CommScope	6x24 4AWG	1.76	2.43	2.4	19.37 x 10.83 x 5.12 (sq./in 235.07)	C.S. Area (sq./in.) 2.54
NWS	6x24 4AWG	1.79	2.52	2.65	15.95 x 10.20 x 3.21 (sq./in 162.69)	Weight (lbs./ft) 2.65
Amphenol	6x24 4AWG	1.71	2.3	2.55	19.37 x 10.83 x 5.12 (sq./in 209.78)	Pendant (sq./in) 235.07
6x24					6x24 Canister Breakout - OD x Length (in.)	
Alliance	6x24 4AWG	1.8	2.54	2.48	3.11 x 9.45 (c.s. Area 7.60)	Nominal OD (in.) 2
CommScope	6x24 4AWG	1.76	2.43	2.29	2.68 x 9.81 (c.s. Area 5.64)	C.S. Area (sq./in.) 3.13
H&S	6x24 4AWG	1.62	2.04	2.39	3.82 x 9.26 (c.s. Area 11.46)	Weight (lbs./ft) 2.65
NWS	6x24 4AWG	1.79	2.52	2.65	2.99 x 8.82 (c.s. Area 7.02)	Canister (sq./in) 11.46
RFS	6x24 4AWG	2	3.13	2.55	2.88 x 9.72 (c.s. Area 6.51)	

3 (6x24) HYBRID TRUNK ENTITLEMENT INFORMATION
8.5" x 11" SCALE N.T.S. 11" x 17" SCALE N.T.S.

3 HYBRID TRUNK INFORMATION (6X24)
SCALE: N.T.S.

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

SUPPLEMENTAL

SHEET NUMBER:

R-607

REVISION:

0



Eng. Number 14885740_C8_01
September 30, 2024
Page 3

Mount Analysis Report

Mount Type : 12.5 ft Platform w/ Handrails
ATC Asset Name : MANSFIELD CENTER 2 CT
ATC Asset Number : 376047
Engineering Number : 14885740_C8_01
Mount Elevation : 160 ft
Proposed Carrier : T-Mobile
Carrier Site Name : CT517/TCP Mansfield
Carrier Site Number : CT11517B
Site Location : 1725 Stafford Road
STORRS MANSFIELD, CT 06268-1138
41.836, -72.3078
County : Tolland
Date : September 30, 2024
Max Usage : 63%
Analysis Result : Contingent Pass

Prepared By:
Zach Stoll
Structural Engineer I

Digitally signed by
Esha Modi
Date: 2024.10.01
18:01:29 -04'00'

COA: PEC.0001553

A.T. Engineering Service, PLLC - 1 Fenton Main, Suite 300 - Cary, NC 27511 - 919.468.0112 Office - 919.466.5414 Fax - www.americantower.com

A.T. Engineering Service, PLLC - 1 Fenton Main, Suite 300 - Cary, NC 27511 - 919.468.0112 Office - 919.466.5414 Fax - www.americantower.com

Introduction

The purpose of this report is to summarize results of the mount analysis performed for T-Mobile at 160 ft.

Supporting Documents

Specifications Sheet:	Perfect Vision PV-LPPGS-12M-HR2-AP1, dated November 1, 2019
Radio Frequency Data Sheet:	RFDS ID #CT11517B, dated August 8, 2024
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:	119 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.50" radial ice concurrent
Codes:	ANSI/TIA-222-H / 2021 IBC / 2022 Connecticut State Building Code
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 = 0.184, S1 = 0.055
Site Class:	D - Stiff Soil - Default
Live Loads:	Lm = 500 lbs

*Live Load(s) reduction is confirmed to either not govern or not be applicable

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

Conclusion

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

- Rotate existing mount(s) to align with antenna azimuths.
- No structural failures were addressed with the noted contingencies. Contingencies address Carrier's antenna spacing requirements.

If you have any questions or require additional information, please reach out to your American Tower contact. If you do not have an American Tower contact and have an Engineering question, please contact MountAnalysis@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

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 CONTRUCTION.

SUPPLEMENTAL

SHEET NUMBER:

R-608

REVISION:

0

EXHIBIT D

Structural Analysis Report



Structural Analysis Report

Structure : 170 ft Monopole
ATC Asset Name : MANSFIELD CENTER 2 CT
ATC Asset Number : 376047
Engineering Number : 14885740_C3_03
Proposed Carrier : T-MOBILE
Carrier Site Name : CT517/TCP Mansfield
Carrier Site Number : CT11517B
Site Location : 1725 Stafford Road
STORRS MANSFIELD, CT 06268-1138
41.836° N, 72.3078° W
County : Tolland
Date : September 20, 2024
Max Usage : 48%
Analysis Result : Pass



COA: PEC.0001553



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Standard Conditions	Attached
Calculations	Attached

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 170 ft Monopole tower to reflect the change in loading by T-MOBILE.

Supporting Documents

Tower:	PennSummit Order #19122, dated December 9, 2002
Foundation:	PennSummit, PJF Job #29202-0365, dated December 17, 2002
Geotechnical:	GEOservices Project #31-151383K, dated December 21, 2015

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:	119 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.50" radial ice concurrent
Code(s):	ANSI/TIA-222-H / 2021 IBC / 2022 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Spectral Response:	$S_s = 0.18$, $S_i = 0.06$
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 reach out to your American Tower contact. If you do not have an American Tower contact and have an Engineering question, please contact Engineering@americantower.com. Please include the American Tower asset name, asset number, and engineering number in the subject line for any questions.

Structure Usages

Structural Component	Usage	Control	Result
Pole Shaft	47.7%	1.2D + 1.0W	Pass
Serviceability Usage	28.0%	1.0D + 1.0W	Pass
Base Plate @ 0.0 ft	45.8%	Rods	Pass
Pier	41.4%	Axial [Soil]	Pass

Maximum Reactions

Foundation	Moment (k-ft)	Axial (k)	Shear (k)
Monopole Base	3,392.4	63.6	28.1

**Reactions shown reflect the results from the Load Case with maximum Moment*

Structure base reactions were analyzed using available geotechnical and foundation information.

T-MOBILE Final Loading

Elev (ft)	Qty	Equipment	Lines
162.0	1	PerfectVision PV-LPP12M-HR-12-96 Platform w/ PVPKBK-M Kicker Kit	(3) 2.00" (50.8mm) Hybrid
	3	Andrew ATSBT-BOTTOM-MF	
	3	Commscope LNX-6515DS-VTM	
	3	Ericsson 4460 BAND 2/25	
	3	Ericsson Radio 4449 B71+B85	
	3	RFS APXV18-203219-C (54.1" x 11.3")	
	3	RFS APXVAARR24_43-U-NA20	
	3	RFS APXVLL19P_43-C-A20	

Install proposed lines inside the pole shaft.

Other Existing/Reserved Loading

Elev (ft)	Qty	Equipment	Lines	Carrier
174.0	2	Kaelus KA-6030	(6) 1 5/8" Coax (2) 1 5/8" Hybriflex	VERIZON WIRELESS
	2	Raycap RVZDC-6627-PF-48		
	3	Amphenol Antel BXA-70080-4BF-EDIN-X		
	3	Samsung B2/B66A RRH-BR049		
	3	Samsung B5/B13 RRH-BR04C		
	3	Samsung MT6407-77A		
	6	Commscope NHH-65B-R2B		
170.0	1	Low Profile Platform	-	VERIZON
162.0	3	RCU (Remote Control Unit)	-	T-MOBILE
	3	Andrew HBX-6516DS-VTM	(6) 1 5/8" Coax (1) 3/8" (0.38"- 9.5mm) RET Control Cable	METRO PCS INC
150.0	1	Powerwave Allgon P65-17-XLH-RR	(12) 1 5/8" Coax (12) 1/2" Coax (2) 3" conduit	AT&T MOBILITY
	2	KMW AM-X-CD-16-65-00T-RET		
	6	Ericsson RRUS 11 (Band 12)		
	6	Powerwave Allgon 7770.00		
	6	Powerwave Allgon LGP21401		
	6	Powerwave Allgon LGP21901		
	6	Powerwave Allgon LGP21901		
148.0	1	Low Profile Platform	(1) 0.39" (10mm) Fiber Trunk (2) 0.78" (19.7mm) 8 AWG 6	AT&T MOBILITY
	1	SSB (271b)		
130.0	1	Low Profile Platform	-	SPRINT NEXTEL
119.0	1	Commscope MC-PK8-DSH	-	DISH WIRELESS L.L.C.

(If table breaks across pages, please see previous page for data in merged cells)



Standard Conditions

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

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

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

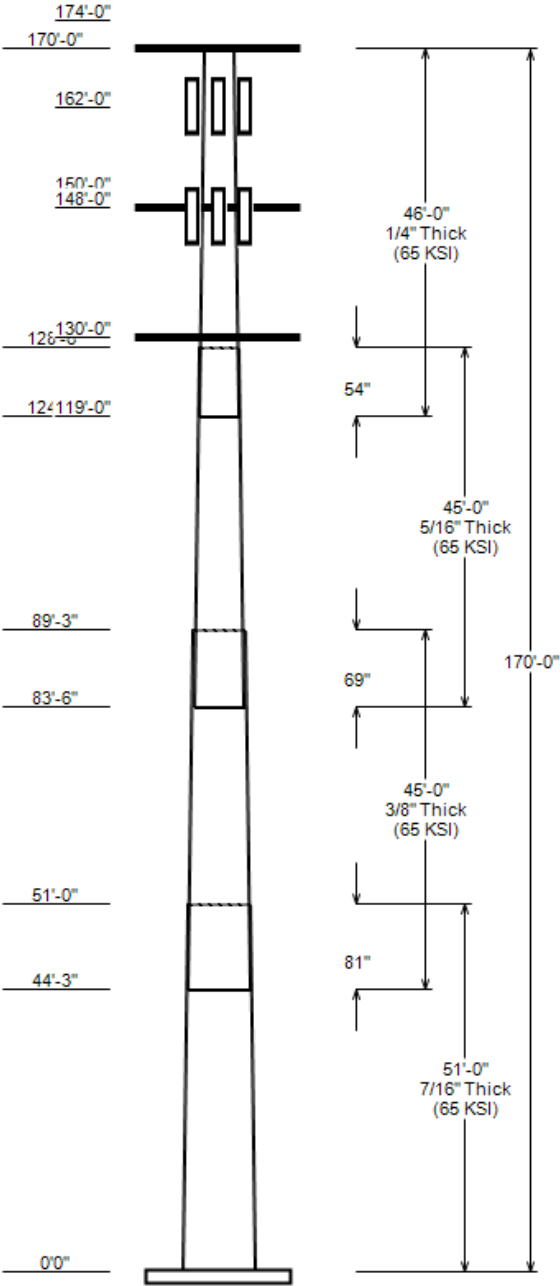
All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with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

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

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

ANALYSIS PARAMETERS			
Design Wind:	119 mph	Ice Wind:	50 mph w/ 1.5" ice
Risk Category:	II	Exposure:	B
Topo Factor:	Method 1	Topo Feature:	
Structure Height:	170.0 ft	Base Elevation:	0.00 ft
Base Diameter:	64.11 in	Base Rotation:	0.00°
Service Wind:	60 mph	S _g :	0.184
		S _i :	0.055
		Topo Category:	1
		Structure Type:	Taper
		Taper:	0.2470 (in/ft)

POLE SECTION PROPERTIES							
Section	Length (ft)	Flat Diameter (in)		Thick (in)	Joint Type	Joint Length (in)	Yield Strength (ksi)
		Top	Bottom				
1	51.000	51.52	64.11	0.438		0.00	65
2	45.000	42.82	53.93	0.375	Slip Joint	81.00	65
3	45.000	33.75	44.86	0.312	Slip Joint	69.00	65
4	46.000	24.00	35.36	0.250	Slip Joint	54.00	65



DISCRETE APPURTENANCE		LINEAR APPURTENANCE	
Elev (ft)	Description	Elev To (ft)	Description
174.0	(2) Kaelus KA-6030	174.0	(6) 1 5/8" Coax
174.0	(3) Samsung MT6407-77A	174.0	(2) 1 5/8" Hybriflex
174.0	(6) Commscope NHH-65B-R2B	162.0	(6) 1 5/8" Coax
174.0	(3) Samsung B2/B66A RRH-BR049	162.0	(3) 2.00" (50.8mm) Hybrid
174.0	(3) Amphenol Antel BXA-70080-4BF-EDI	162.0	(1) 3/8" (0.38"- 9.5mm) RET Control Cabl
174.0	(2) Raycap RVZDC-6627-PF-48	150.0	(12) 1/2" Coax
174.0	(3) Samsung B5/B13 RRH-BR04C	150.0	(2) 3" conduit
170.0	(1) Generic Flat Low Profile Platform	150.0	(12) 1 5/8" Coax
162.0	(3) Ericsson 4460 BAND 2/25	148.0	(1) 0.39" (10mm) Fiber Trunk
162.0	(3) Andrew HBX-6516DS-VTM	148.0	(2) 0.78" (19.7mm) 8 AWG 6
162.0	(3) Commscope LNX-6515DS-VTM		
162.0	(3) RFS APXVLL19P_43-C-A20		
162.0	(3) RFS APXVAARR24_43-U-NA20		
162.0	(3) Generic RCU (Remote Control Unit)		
162.0	(3) Ericsson Radio 4449 B71+B85		
162.0	(3) RFS APXV18-203219-C (54.1" x 11.3		
162.0	(1) PerfectVision PV-LPP12M-HR-12-96		
162.0	(3) Andrew ATSBT-BOTTOM-MF		
150.0	(6) Powerwave Allgon LGP21401		
150.0	(6) Ericsson RRUS 11 (Band 12)		
150.0	(6) Powerwave Allgon 7770.00		
150.0	(2) KMW AM-X-CD-16-65-00T-RET		
150.0	(1) Powerwave Allgon P65-17-XLH-RR		
150.0	(6) Powerwave Allgon LGP21901		
148.0	(1) Generic SSB (27lb)		
148.0	(1) Generic Flat Low Profile Platform		
130.0	(1) Generic Flat Low Profile Platform		
119.0	(1) Commscope MC-PK8-DSH		

GLOBAL BASE REACTIONS

Load Case	Moment (kip-ft)	Axial (kip)	Shear (kip)
1.2D + 1.0W	3392.44	63.59	28.09
0.9D + 1.0W	3354.02	47.69	28.07
1.2D + 1.0Di + 1.0Wi	990.56	89.88	8.18
1.2D + 1.0Ev + 1.0Eh	224.29	63.74	1.59
0.9D - 1.0Ev + 1.0Eh	221.13	44.27	1.59
1.0D + 1.0W	766.20	53.01	6.39

ANALYSIS PARAMETERS			
Location:	Tolland County,CT	Height:	170 ft
Type and Shape:	Taper, 18 Sides	Base Diameter:	64.11 in
Manufacturer:	Undetermined	Top Diameter:	24.00 in
K _d (non-service):	0.95	Taper:	0.2470 in/ft
K _e :	0.99	Rotation:	0.000°

ICE & WIND PARAMETERS			
Risk Category:	II	Design Wind Speed:	119 mph
Exposure Category:	B	Design Wind Speed w/ Ice:	50 mph
Topo Factor Procedure:	Method 1	Design Ice Thickness:	1.50 in
Topographic Category:	1	Service Wind Speed:	60 mph
Crest Height:	0 ft	HMSL:	368.00 ft

SEISMIC PARAMETERS					
Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil	Period Based on Rayleigh Method (sec):		2.49	
T _L (sec):	6	P:	1	C _s :	0.030
S _{ds} :	0.196	S _{d1} :	0.088	C _s Max:	0.030
S _s :	0.184	S ₁ :	0.055	C _s Min:	0.030
F _a :	1.600	F _v :	2.400		

LOAD CASES	
1.2D + 1.0W	119 mph Wind with No Ice
0.9D + 1.0W	119 mph Wind with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph Wind with 1.5" 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																			
Section	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Weight (lb)	Bottom						Top						Taper (in/ft)
							Dia (in)	Elev (ft)	Area (in²)	Ix (in⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in²)	Ix (in⁴)	W/t Ratio	D/t Ratio	
1-18	51.00	0.4375	65		0.00	13,826	64.11	0.000	88.41	45,287.5	24.08	146.54	51.52	51.00	70.92	23,377.	19.00	117.75	0.2470
2-18	45.00	0.3750	65	Slip	81.00	8,748	53.93	44.250	63.74	23,100.1	23.60	143.82	42.82	89.25	50.52	11,497.	18.37	114.18	0.2470
3-18	45.00	0.3125	65	Slip	69.00	5,922	44.86	83.500	44.19	11,080.3	23.55	143.56	33.75	128.50	33.16	4,684.5	17.28	108.00	0.2470
4-18	46.00	0.2500	65	Slip	54.00	3,655	35.36	124.000	27.86	4,339.1	23.18	141.44	24.00	170.00	18.84	1,343.0	15.16	96.00	0.2470
Total Shaft Weight						32,151													

DISCRETE APPURTENANCE PROPERTIES										
Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice			Ice		
					Weight (lb)	EPAA (sf)	Orientation Factor	Weight (lb)	EPAA (sf)	Orientation Factor
174.00	Samsung MT6407-77A	3	0.80	0.000	81.60	4.709	0.61	184.87	6.248	0.61
174.00	Raycap RVZDC-6627-PF-48	2	0.80	0.000	32.00	3.781	0.77	143.10	5.121	0.77
174.00	Amphenol Antel BXA-70080-4BF-E	3	0.80	-2.000	9.90	3.286	0.72	92.50	5.030	0.72
174.00	Samsung B5/B13 RRH-BR04C	3	0.80	0.000	70.30	1.875	0.50	128.26	2.789	0.50
174.00	Samsung B2/B66A RRH-BR049	3	0.80	0.000	84.40	1.875	0.50	149.04	2.789	0.50
174.00	Kaelus KA-6030	2	0.80	0.000	17.60	0.963	0.50	41.49	1.625	0.50
174.00	Commscope NHH-65B-R2B	6	0.80	0.000	43.70	8.079	0.69	220.35	10.902	0.69
170.00	Generic Flat Low Profile Platf	1	1.00	0.000	1875.00	26.100	1.00	2695.53	45.443	1.00
162.00	Ericsson 4460 BAND 2/25	3	0.75	0.000	109.00	2.564	0.67	198.20	3.628	0.67
162.00	PerfectVision PV-LPP12M-HR-12	1	1.00	0.000	2500.00	27.200	1.00	4257.61	46.323	1.00
162.00	RFS APXVAARR24_43-U-NA20	3	0.75	0.000	127.90	20.243	0.63	524.08	23.986	0.63
162.00	Commscope LNX-6515DS-VTM	3	0.75	0.000	50.30	11.440	0.70	281.82	14.705	0.70
162.00	RFS APXVLL19P_43-C-A20	3	0.75	0.000	40.90	8.250	0.65	194.68	11.231	0.65
162.00	RFS APXV18-203219-C (54.1" x 1	3	0.75	0.000	39.00	5.940	0.67	151.01	8.208	0.67
162.00	Andrew HBX-6516DS-VTM	3	0.75	0.000	9.90	3.360	0.67	77.45	5.160	0.67
162.00	Ericsson Radio 4449 B71+B85	3	0.75	0.000	75.00	1.650	0.50	135.48	2.505	0.50
162.00	Andrew ATSBT-BOTTOM-MF	3	0.75	0.000	1.80	0.170	0.50	7.68	0.467	0.50
162.00	Generic RCU (Remote Control Un	3	0.75	0.000	1.00	0.141	1.00	6.58	0.482	1.00
150.00	Powerwave Allgon 7770.00	6	0.80	-2.000	35.00	5.508	0.65	148.83	7.637	0.65
150.00	Powerwave Allgon P65-17-XLH-RR	1	0.80	-2.000	59.00	11.460	1.00	275.46	14.698	1.00
150.00	Ericsson RRUS 11 (Band 12)	6	0.80	-2.000	50.00	2.566	0.67	118.26	3.615	0.67
150.00	KMW AM-X-CD-16-65-00T-RET	2	0.80	-2.000	48.50	8.024	0.75	210.67	10.817	0.75
150.00	Powerwave Allgon LGP21901	6	0.80	-2.000	5.50	0.200	0.50	13.19	0.520	0.50
150.00	Powerwave Allgon LGP21401	6	0.80	-2.000	14.10	1.104	0.50	39.08	1.819	0.50
148.00	Generic Flat Low Profile Platf	1	1.00	0.000	1875.00	26.100	1.00	2684.61	45.186	1.00
148.00	Generic SSB (27lb)	1	0.80	0.000	27.00	3.200	1.00	130.48	4.390	1.00
130.00	Generic Flat Low Profile Platf	1	1.00	0.000	1875.00	26.100	1.00	2674.53	44.948	1.00
119.00	Commscope MC-PK8-DSH	1	1.00	0.000	1802.00	27.200	1.00	3029.08	45.722	1.00
Totals	Row Count: 28	82			13,202.00			26,171.03		

LINEAR APPURTENANCE PROPERTIES													
Load Case Azimuth (deg): 0.00													
Elev From (ft)	Elev To (ft)	Qty	Description	Diameter (in)	Weight (lb/ft)	Flat	Max/ Row	Distance Between Rows(in)	Distance Between Cols(in)	Azimuth (deg)	Distance From Face (in)	Exposed To Wind	Carrier
5.00	174.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	VERIZON WIRELESS
0.00	174.00	2	1 5/8" Hybriflex	1.98	1.3	N	0	0	0	0	0	N	VERIZON WIRELESS
0.00	162.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	METRO PCS INC
0.00	162.00	3	2.00" (50.8mm) Hybrid	2	3.09	N	0	0	0	0	0	N	T-MOBILE
0.00	162.00	1	3/8" (0.38"- 9.5mm) R	0.38	0.23	N	0	0	0	0	0	N	METRO PCS INC
5.00	150.00	12	1/2" Coax	0.63	0.15	N	0	0	0	0	0	N	AT&T MOBILITY
5.00	150.00	12	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	AT&T MOBILITY
5.00	150.00	2	3" conduit	3.5	7.58	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	148.00	2	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	148.00	1	0.39" (10mm) Fiber Tr	0.39	0.06	N	0	0	0	0	0	N	AT&T MOBILITY

SEGMENT PROPERTIES												
Seg Top Elev (ft)	Description	(Max Length: 5 ft)	Thick (in)	Flat Dia (in)	Area (in²)	Ix (in⁴)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in³)	Z (in³)	Weight (lb)
0.00			0.4375	64.110	88.414	45,287.50	24.08	146.54	73.1	1391.3	0.0	0.0
5.00			0.4375	62.875	86.699	42,703.40	23.58	143.71	73.7	1337.7	0.0	1,489.7
10.00			0.4375	61.640	84.985	40,219.50	23.08	140.89	74.3	1285.1	0.0	1,460.5
15.00			0.4375	60.405	83.270	37,833.80	22.58	138.07	74.8	1233.6	0.0	1,431.3
20.00			0.4375	59.171	81.555	35,544.40	22.08	135.25	75.4	1183.2	0.0	1,402.2
25.00			0.4375	57.936	79.841	33,349.20	21.59	132.42	76	1133.8	0.0	1,373.0
30.00			0.4375	56.701	78.126	31,246.40	21.09	129.60	76.6	1085.4	0.0	1,343.8
35.00			0.4375	55.466	76.411	29,233.90	20.59	126.78	77.2	1038.1	0.0	1,314.6
40.00			0.4375	54.231	74.697	27,309.60	20.09	123.96	77.8	991.9	0.0	1,285.5
44.25	Bot - Section 2		0.4375	53.182	73.239	25,742.00	19.67	121.56	78.3	953.4	0.0	1,069.7
45.00			0.4375	52.996	72.982	25,471.80	19.60	121.13	78.4	946.7	0.0	349.0
50.00			0.4375	51.761	71.267	23,718.30	19.10	118.31	78.9	902.5	0.0	2,295.4
51.00	Top - Section 1		0.3750	52.264	61.759	21,009.40	22.81	139.37	74.6	791.8	0.0	452.6
55.00			0.3750	51.277	60.583	19,832.20	22.35	136.74	75.1	761.8	0.0	832.6
60.00			0.3750	50.042	59.114	18,423.50	21.77	133.44	75.8	725.1	0.0	1,018.3
65.00			0.3750	48.807	57.644	17,083.20	21.19	130.15	76.5	689.4	0.0	993.3
70.00			0.3750	47.572	56.174	15,809.60	20.61	126.86	77.2	654.6	0.0	968.2
75.00			0.3750	46.337	54.705	14,600.90	20.02	123.57	77.8	620.6	0.0	943.2
80.00			0.3750	45.102	53.235	13,455.40	19.44	120.27	78.5	587.6	0.0	918.2
83.50	Bot - Section 3		0.3750	44.238	52.206	12,690.20	19.04	117.97	79	565.0	0.0	627.9
85.00			0.3750	43.867	51.765	12,371.40	18.86	116.98	79.2	555.5	0.0	489.9
89.25	Top - Section 2		0.3125	43.443	42.778	10,054.10	22.75	139.02	74.6	455.8	0.0	1,365.8
90.00			0.3125	43.258	42.595	9,925.10	22.64	138.42	74.8	451.9	0.0	108.9
95.00			0.3125	42.023	41.370	9,093.40	21.95	134.47	75.6	426.2	0.0	714.3
100.00			0.3125	40.788	40.145	8,309.40	21.25	130.52	76.4	401.3	0.0	693.4
105.00			0.3125	39.553	38.920	7,571.80	20.55	126.57	77.2	377.1	0.0	672.6
110.00			0.3125	38.318	37.696	6,879.30	19.86	122.62	78	353.6	0.0	651.8
115.00			0.3125	37.083	36.471	6,230.30	19.16	118.67	78.9	330.9	0.0	630.9
119.00			0.3125	36.095	35.491	5,741.50	18.60	115.51	79.5	313.3	0.0	489.7
120.00			0.3125	35.849	35.246	5,623.40	18.46	114.72	79.7	309.0	0.0	120.4
124.00	Bot - Section 4		0.3125	34.861	34.266	5,167.40	17.91	111.55	80.3	292.0	0.0	473.1
125.00			0.3125	34.614	34.021	5,057.30	17.77	110.76	80.5	287.8	0.0	210.6
128.50	Top - Section 3		0.2500	34.249	26.977	3,940.00	22.39	137.00	75.1	226.6	0.0	725.5
130.00			0.2500	33.879	26.684	3,812.60	22.13	135.52	75.4	221.7	0.0	136.9
135.00			0.2500	32.644	25.704	3,407.80	21.26	130.58	76.4	205.6	0.0	445.7
140.00			0.2500	31.409	24.724	3,032.80	20.39	125.64	77.4	190.2	0.0	429.0
145.00			0.2500	30.174	23.744	2,686.30	19.52	120.70	78.4	175.3	0.0	412.3
148.00			0.2500	29.433	23.156	2,491.70	19.00	117.73	79.1	166.7	0.0	239.4
150.00			0.2500	28.939	22.764	2,367.30	18.65	115.76	79.5	161.1	0.0	156.3
155.00			0.2500	27.705	21.784	2,074.60	17.78	110.82	80.5	147.5	0.0	379.0
160.00			0.2500	26.470	20.805	1,807.00	16.91	105.88	81.5	134.5	0.0	362.3
162.00			0.2500	25.976	20.413	1,706.80	16.56	103.90	81.9	129.4	0.0	140.3
165.00			0.2500	25.235	19.825	1,563.60	16.04	100.94	82.5	122.0	0.0	205.4
170.00			0.2500	24.000	18.845	1,343.00	15.16	96.00	82.6	110.2	0.0	329.0
Total:												32,151.5

CALCULATED FORCES													
Load Case: 1.2D + 1.0W			119 mph Wind with No Ice									23 Iterations	
Gust Response Factor:		1.10											
Dead load Factor:		1.20											
Wind Load Factor:		1.00											
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	-63.59	-28.09	0.00	-3,392.4	0.00	3,392.44	5,815.49	1,551.67	8,923.47	7,626.37	0	0	0.456
5.00	-61.64	-27.69	0.00	-3,252.0	0.00	3,252.00	5,748.38	1,521.57	8,580.74	7,391.16	0.06	-0.1	0.451
10.00	-59.54	-27.30	0.00	-3,113.5	0.00	3,113.54	5,679.46	1,491.48	8,244.72	7,157.12	0.22	-0.21	0.446
15.00	-57.47	-26.91	0.00	-2,977.0	0.00	2,977.05	5,608.74	1,461.39	7,915.42	6,924.38	0.5	-0.32	0.441
20.00	-55.44	-26.53	0.00	-2,842.5	0.00	2,842.51	5,536.21	1,431.30	7,592.82	6,693.07	0.89	-0.43	0.435
25.00	-53.45	-26.15	0.00	-2,709.9	0.00	2,709.88	5,461.87	1,401.20	7,276.94	6,463.35	1.4	-0.54	0.429

CALCULATED FORCES

30.00	-51.49	-25.76	0.00	-2,579.2	0.00	2,579.15	5,385.73	1,371.11	6,967.76	6,235.34	2.03	-0.65	0.424
35.00	-49.57	-25.37	0.00	-2,450.3	0.00	2,450.34	5,307.78	1,341.02	6,665.30	6,009.18	2.77	-0.77	0.417
40.00	-47.68	-25.00	0.00	-2,323.5	0.00	2,323.48	5,228.02	1,310.92	6,369.55	5,785.01	3.63	-0.88	0.411
44.25	-46.12	-24.78	0.00	-2,217.2	0.00	2,217.25	5,158.81	1,285.35	6,123.44	5,596.14	4.47	-0.98	0.406
45.00	-45.64	-24.54	0.00	-2,198.7	0.00	2,198.66	5,146.46	1,280.83	6,080.51	5,562.98	4.62	-1	0.404
50.00	-42.56	-24.25	0.00	-2,075.9	0.00	2,075.94	5,063.09	1,250.74	5,798.19	5,343.22	5.73	-1.12	0.397
51.00	-41.93	-24.03	0.00	-2,051.7	0.00	2,051.70	4,144.85	1,083.87	5,079.80	4,428.07	5.97	-1.14	0.474
55.00	-40.66	-23.65	0.00	-1,955.6	0.00	1,955.57	4,095.73	1,063.24	4,888.24	4,291.69	6.97	-1.24	0.466
60.00	-39.09	-23.21	0.00	-1,837.3	0.00	1,837.33	4,032.70	1,037.45	4,653.97	4,122.38	8.35	-1.38	0.456
65.00	-37.56	-22.77	0.00	-1,721.3	0.00	1,721.27	3,967.86	1,011.65	4,425.45	3,954.50	9.87	-1.52	0.445
70.00	-36.06	-22.33	0.00	-1,607.4	0.00	1,607.41	3,901.22	985.86	4,202.69	3,788.19	11.53	-1.65	0.434
75.00	-34.59	-21.89	0.00	-1,495.8	0.00	1,495.76	3,832.77	960.06	3,985.67	3,623.58	13.34	-1.79	0.422
80.00	-33.15	-21.50	0.00	-1,386.3	0.00	1,386.33	3,762.52	934.27	3,774.41	3,460.82	15.29	-1.93	0.410
83.50	-32.17	-21.26	0.00	-1,311.1	0.00	1,311.09	3,712.27	916.22	3,629.95	3,348.06	16.75	-2.03	0.401
85.00	-31.47	-21.01	0.00	-1,279.2	0.00	1,279.20	3,690.46	908.48	3,568.90	3,300.04	17.39	-2.08	0.397
89.25	-29.57	-20.73	0.00	-1,189.9	0.00	1,189.92	2,873.82	750.76	2,924.65	2,551.88	19.3	-2.2	0.477
90.00	-29.37	-20.50	0.00	-1,174.4	0.00	1,174.37	2,866.19	747.54	2,899.58	2,534.10	19.64	-2.22	0.474
95.00	-28.17	-20.06	0.00	-1,071.9	0.00	1,071.87	2,814.29	726.04	2,735.25	2,416.15	22.06	-2.38	0.454
100.00	-27.01	-19.62	0.00	-971.6	0.00	971.57	2,760.58	704.55	2,575.71	2,299.35	24.64	-2.54	0.433
105.00	-25.87	-19.18	0.00	-873.5	0.00	873.47	2,705.06	683.05	2,420.96	2,183.84	27.38	-2.7	0.410
110.00	-24.76	-18.75	0.00	-777.6	0.00	777.55	2,647.74	661.56	2,271.00	2,069.77	30.29	-2.85	0.386
115.00	-23.68	-18.35	0.00	-683.8	0.00	683.80	2,588.61	640.06	2,125.84	1,957.26	33.36	-3.01	0.359
119.00	-20.74	-16.95	0.00	-610.4	0.00	610.38	2,540.00	622.87	2,013.17	1,868.48	35.93	-3.12	0.336
120.00	-20.53	-16.75	0.00	-593.4	0.00	593.43	2,527.67	618.57	1,985.48	1,846.46	36.59	-3.15	0.330
124.00	-19.72	-16.52	0.00	-526.4	0.00	526.43	2,477.62	601.37	1,876.64	1,759.15	39.28	-3.27	0.308
125.00	-19.40	-16.33	0.00	-509.9	0.00	509.92	2,464.93	597.07	1,849.90	1,737.51	39.97	-3.3	0.302
128.50	-18.31	-16.08	0.00	-452.8	0.00	452.77	1,822.50	473.45	1,453.91	1,275.58	42.42	-3.39	0.366
130.00	-15.87	-14.65	0.00	-428.6	0.00	428.65	1,810.02	468.30	1,422.40	1,252.94	43.49	-3.43	0.352
135.00	-15.02	-14.23	0.00	-355.4	0.00	355.41	1,767.25	451.10	1,319.87	1,178.09	47.16	-3.58	0.311
140.00	-14.21	-13.81	0.00	-284.3	0.00	284.27	1,722.68	433.90	1,221.17	1,104.26	50.98	-3.71	0.267
145.00	-13.41	-13.48	0.00	-215.2	0.00	215.20	1,676.30	416.71	1,126.31	1,031.61	54.93	-3.83	0.218
148.00	-10.75	-11.93	0.00	-174.8	0.00	174.77	1,647.60	406.39	1,071.23	988.64	57.35	-3.89	0.184
150.00	-9.65	-9.65	0.00	-150.9	0.00	150.91	1,628.11	399.51	1,035.28	960.26	58.99	-3.93	0.164
155.00	-9.08	-9.26	0.00	-102.7	0.00	102.68	1,578.12	382.32	948.09	890.37	63.14	-4	0.122
160.00	-8.53	-8.98	0.00	-56.4	0.00	56.38	1,526.32	365.12	864.73	822.06	67.36	-4.06	0.075
162.00	-4.01	-3.97	0.00	-38.4	0.00	38.42	1,505.09	358.24	832.46	795.21	69.06	-4.07	0.051
165.00	-3.76	-3.69	0.00	-26.5	0.00	26.50	1,472.71	347.92	785.21	755.48	71.62	-4.09	0.038
170.00	0.00	-3.42	0.00	-8.0	0.00	8.03	1,400.09	330.73	709.52	682.38	75.91	-4.1	0.012

CALCULATED FORCES

Load Case: 0.9D + 1.0W

119 mph Wind with No Ice (Reduced DL)

23 Iterations

Gust Response Factor: 1.10
 Dead Load Factor: 0.90
 Wind Load Factor: 1.00

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	-47.69	-28.07	0.00	-3,354.0	0.00	3,354.02	5,815.49	1,551.67	8,923.47	7,626.37	0	0	0.448
5.00	-46.21	-27.65	0.00	-3,213.6	0.00	3,213.65	5,748.38	1,521.57	8,580.74	7,391.16	0.06	-0.1	0.443
10.00	-44.62	-27.23	0.00	-3,075.4	0.00	3,075.42	5,679.46	1,491.48	8,244.72	7,157.12	0.22	-0.21	0.438
15.00	-43.06	-26.81	0.00	-2,939.3	0.00	2,939.29	5,608.74	1,461.39	7,915.42	6,924.38	0.5	-0.31	0.432
20.00	-41.53	-26.40	0.00	-2,805.2	0.00	2,805.22	5,536.21	1,431.30	7,592.82	6,693.07	0.88	-0.42	0.427
25.00	-40.02	-26.00	0.00	-2,673.2	0.00	2,673.21	5,461.87	1,401.20	7,276.94	6,463.35	1.38	-0.53	0.421
30.00	-38.54	-25.60	0.00	-2,543.2	0.00	2,543.21	5,385.73	1,371.11	6,967.76	6,235.34	2	-0.64	0.415
35.00	-37.09	-25.19	0.00	-2,415.2	0.00	2,415.22	5,307.78	1,341.02	6,665.30	6,009.18	2.74	-0.76	0.409
40.00	-35.67	-24.79	0.00	-2,289.3	0.00	2,289.30	5,228.02	1,310.92	6,369.55	5,785.01	3.59	-0.87	0.403
44.25	-34.50	-24.57	0.00	-2,183.9	0.00	2,183.93	5,158.81	1,285.35	6,123.44	5,596.14	4.41	-0.97	0.397
45.00	-34.12	-24.32	0.00	-2,165.5	0.00	2,165.50	5,146.46	1,280.83	6,080.51	5,562.98	4.56	-0.99	0.396
50.00	-31.81	-24.03	0.00	-2,043.9	0.00	2,043.89	5,063.09	1,250.74	5,798.19	5,343.22	5.66	-1.11	0.389
51.00	-31.34	-23.80	0.00	-2,019.9	0.00	2,019.87	4,144.85	1,083.87	5,079.80	4,428.07	5.9	-1.13	0.464
55.00	-30.37	-23.40	0.00	-1,924.7	0.00	1,924.66	4,095.73	1,063.24	4,888.24	4,291.69	6.88	-1.23	0.456
60.00	-29.19	-22.95	0.00	-1,807.6	0.00	1,807.65	4,032.70	1,037.45	4,653.97	4,122.38	8.24	-1.36	0.446
65.00	-28.03	-22.50	0.00	-1,692.9	0.00	1,692.89	3,967.86	1,011.65	4,425.45	3,954.50	9.73	-1.49	0.436
70.00	-26.89	-22.04	0.00	-1,580.4	0.00	1,580.41	3,901.22	985.86	4,202.69	3,788.19	11.37	-1.63	0.425
75.00	-25.78	-21.59	0.00	-1,470.2	0.00	1,470.20	3,832.77	960.06	3,985.67	3,623.58	13.16	-1.77	0.413
80.00	-24.70	-21.19	0.00	-1,362.3	0.00	1,362.27	3,762.52	934.27	3,774.41	3,460.82	15.08	-1.91	0.401
83.50	-23.96	-20.96	0.00	-1,288.1	0.00	1,288.10	3,712.27	916.22	3,629.95	3,348.06	16.52	-2	0.392
85.00	-23.43	-20.69	0.00	-1,256.7	0.00	1,256.66	3,690.46	908.48	3,568.90	3,300.04	17.15	-2.05	0.388
89.25	-22.00	-20.43	0.00	-1,168.7	0.00	1,168.72	2,873.82	750.76	2,924.65	2,551.88	19.03	-2.17	0.466
90.00	-21.84	-20.18	0.00	-1,153.4	0.00	1,153.40	2,866.19	747.54	2,899.58	2,534.10	19.37	-2.19	0.464
95.00	-20.94	-19.73	0.00	-1,052.5	0.00	1,052.48	2,814.29	726.04	2,735.25	2,416.15	21.75	-2.34	0.444
100.00	-20.06	-19.29	0.00	-953.8	0.00	953.81	2,760.58	704.55	2,575.71	2,299.35	24.29	-2.5	0.423
105.00	-19.20	-18.85	0.00	-857.4	0.00	857.37	2,705.06	683.05	2,420.96	2,183.84	26.99	-2.66	0.400
110.00	-18.36	-18.41	0.00	-763.2	0.00	763.15	2,647.74	661.56	2,271.00	2,069.77	29.85	-2.81	0.376
115.00	-17.55	-18.01	0.00	-671.1	0.00	671.12	2,588.61	640.06	2,125.84	1,957.26	32.88	-2.96	0.350
119.00	-15.36	-16.64	0.00	-599.1	0.00	599.08	2,540.00	622.87	2,013.17	1,868.48	35.4	-3.07	0.327
120.00	-15.20	-16.44	0.00	-582.4	0.00	582.44	2,527.67	618.57	1,985.48	1,846.46	36.05	-3.1	0.322
124.00	-14.58	-16.21	0.00	-516.7	0.00	516.69	2,477.62	601.37	1,876.64	1,759.15	38.7	-3.21	0.300
125.00	-14.34	-16.02	0.00	-500.5	0.00	500.49	2,464.93	597.07	1,849.90	1,737.51	39.37	-3.24	0.295
128.50	-13.53	-15.78	0.00	-444.4	0.00	444.42	1,822.50	473.45	1,453.91	1,275.58	41.78	-3.33	0.357
130.00	-11.71	-14.38	0.00	-420.8	0.00	420.76	1,810.02	468.30	1,422.40	1,252.94	42.84	-3.37	0.343
135.00	-11.07	-13.96	0.00	-348.8	0.00	348.85	1,767.25	451.10	1,319.87	1,178.09	46.45	-3.52	0.303
140.00	-10.46	-13.56	0.00	-279.0	0.00	279.03	1,722.68	433.90	1,221.17	1,104.26	50.2	-3.65	0.260
145.00	-9.86	-13.22	0.00	-211.3	0.00	211.26	1,676.30	416.71	1,126.31	1,031.61	54.09	-3.76	0.212
148.00	-7.89	-11.72	0.00	-171.6	0.00	171.58	1,647.60	406.39	1,071.23	988.64	56.47	-3.82	0.179
150.00	-7.09	-9.46	0.00	-148.1	0.00	148.13	1,628.11	399.51	1,035.28	960.26	58.08	-3.86	0.159
155.00	-6.67	-9.08	0.00	-100.8	0.00	100.83	1,578.12	382.32	948.09	890.37	62.17	-3.94	0.118
160.00	-6.26	-8.81	0.00	-55.4	0.00	55.43	1,526.32	365.12	864.73	822.06	66.32	-3.99	0.072
162.00	-2.95	-3.90	0.00	-37.8	0.00	37.81	1,505.09	358.24	832.46	795.21	67.99	-4	0.050
165.00	-2.76	-3.62	0.00	-26.1	0.00	26.13	1,472.71	347.92	785.21	755.48	70.51	-4.02	0.037
170.00	0.00	-3.42	0.00	-8.0	0.00	8.03	1,400.09	330.73	709.52	682.38	74.73	-4.04	0.012

CALCULATED FORCES

Load Case: 1.2D + 1.0Di + 1.0Wi													
50 mph Wind with 1.5" Radial Ice													
23 Iterations													
Gust Response Factor: 1.10													
Ice Dead Load Factor 1.00													
Dead load Factor: 1.20													
Wind Load Factor: 1.00													
Ice Importance Factor 1.00													
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	-89.88	-8.18	0.00	-990.6	0.00	990.56	5,815.49	1,551.67	8,923.47	7,626.37	0	0	0.145
5.00	-87.51	-8.07	0.00	-949.7	0.00	949.68	5,748.38	1,521.57	8,580.74	7,391.16	0.02	-0.03	0.144
10.00	-84.95	-7.96	0.00	-909.3	0.00	909.34	5,679.46	1,491.48	8,244.72	7,157.12	0.07	-0.06	0.142
15.00	-82.40	-7.86	0.00	-869.5	0.00	869.53	5,608.74	1,461.39	7,915.42	6,924.38	0.15	-0.09	0.140
20.00	-79.88	-7.75	0.00	-830.2	0.00	830.25	5,536.21	1,431.30	7,592.82	6,693.07	0.26	-0.12	0.139
25.00	-77.39	-7.65	0.00	-791.5	0.00	791.50	5,461.87	1,401.20	7,276.94	6,463.35	0.41	-0.16	0.137
30.00	-74.94	-7.54	0.00	-753.3	0.00	753.27	5,385.73	1,371.11	6,967.76	6,235.34	0.59	-0.19	0.135
35.00	-72.52	-7.43	0.00	-715.6	0.00	715.57	5,307.78	1,341.02	6,665.30	6,009.18	0.81	-0.22	0.133
40.00	-70.14	-7.33	0.00	-678.4	0.00	678.42	5,228.02	1,310.92	6,369.55	5,785.01	1.06	-0.26	0.131
44.25	-68.16	-7.26	0.00	-647.3	0.00	647.29	5,158.81	1,285.35	6,123.44	5,596.14	1.3	-0.29	0.129
45.00	-67.61	-7.20	0.00	-641.8	0.00	641.84	5,146.46	1,280.83	6,080.51	5,562.98	1.35	-0.29	0.129
50.00	-64.03	-7.11	0.00	-605.8	0.00	605.85	5,063.09	1,250.74	5,798.19	5,343.22	1.67	-0.33	0.126
51.00	-63.32	-7.05	0.00	-598.7	0.00	598.74	4,144.85	1,083.87	5,079.80	4,428.07	1.74	-0.33	0.151
55.00	-61.66	-6.94	0.00	-570.5	0.00	570.54	4,095.73	1,063.24	4,888.24	4,291.69	2.04	-0.36	0.148
60.00	-59.62	-6.82	0.00	-535.8	0.00	535.83	4,032.70	1,037.45	4,653.97	4,122.38	2.44	-0.4	0.145
65.00	-57.62	-6.69	0.00	-501.8	0.00	501.75	3,967.86	1,011.65	4,425.45	3,954.50	2.88	-0.44	0.141
70.00	-55.66	-6.56	0.00	-468.3	0.00	468.30	3,901.22	985.86	4,202.69	3,788.19	3.37	-0.48	0.138
75.00	-53.73	-6.43	0.00	-435.5	0.00	435.49	3,832.77	960.06	3,985.67	3,623.58	3.89	-0.52	0.134
80.00	-51.85	-6.32	0.00	-403.3	0.00	403.33	3,762.52	934.27	3,774.41	3,460.82	4.46	-0.56	0.130
83.50	-50.56	-6.25	0.00	-381.2	0.00	381.21	3,712.27	916.22	3,629.95	3,348.06	4.89	-0.59	0.128
85.00	-49.73	-6.17	0.00	-371.8	0.00	371.84	3,690.46	908.48	3,568.90	3,300.04	5.08	-0.61	0.126
89.25	-47.44	-6.09	0.00	-345.6	0.00	345.60	2,873.82	750.76	2,924.65	2,551.88	5.63	-0.64	0.152
90.00	-47.20	-6.03	0.00	-341.0	0.00	341.03	2,866.19	747.54	2,899.58	2,534.10	5.73	-0.65	0.151
95.00	-45.58	-5.90	0.00	-310.9	0.00	310.91	2,814.29	726.04	2,735.25	2,416.15	6.44	-0.69	0.145
100.00	-44.00	-5.77	0.00	-281.4	0.00	281.43	2,760.58	704.55	2,575.71	2,299.35	7.19	-0.74	0.138
105.00	-42.46	-5.63	0.00	-252.6	0.00	252.60	2,705.06	683.05	2,420.96	2,183.84	7.99	-0.79	0.131
110.00	-40.95	-5.50	0.00	-224.4	0.00	224.43	2,647.74	661.56	2,271.00	2,069.77	8.84	-0.83	0.124
115.00	-39.48	-5.38	0.00	-196.9	0.00	196.92	2,588.61	640.06	2,125.84	1,957.26	9.73	-0.87	0.116
119.00	-35.13	-4.94	0.00	-175.4	0.00	175.39	2,540.00	622.87	2,013.17	1,868.48	10.48	-0.91	0.108
120.00	-34.84	-4.88	0.00	-170.4	0.00	170.45	2,527.67	618.57	1,985.48	1,846.46	10.67	-0.92	0.106
124.00	-33.72	-4.81	0.00	-150.9	0.00	150.91	2,477.62	601.37	1,876.64	1,759.15	11.46	-0.95	0.099
125.00	-33.33	-4.75	0.00	-146.1	0.00	146.10	2,464.93	597.07	1,849.90	1,737.51	11.66	-0.96	0.098
128.50	-31.98	-4.67	0.00	-129.5	0.00	129.46	1,822.50	473.45	1,453.91	1,275.58	12.37	-0.99	0.119
130.00	-28.68	-4.23	0.00	-122.4	0.00	122.45	1,810.02	468.30	1,422.40	1,252.94	12.68	-1	0.114
135.00	-27.47	-4.10	0.00	-101.3	0.00	101.30	1,767.25	451.10	1,319.87	1,178.09	13.75	-1.04	0.102
140.00	-26.30	-3.96	0.00	-80.8	0.00	80.82	1,722.68	433.90	1,221.17	1,104.26	14.85	-1.08	0.089
145.00	-25.16	-3.85	0.00	-61.0	0.00	61.00	1,676.30	416.71	1,126.31	1,031.61	16	-1.11	0.074
148.00	-21.43	-3.37	0.00	-49.4	0.00	49.44	1,647.60	406.39	1,071.23	988.64	16.7	-1.13	0.063
150.00	-18.50	-2.75	0.00	-42.7	0.00	42.70	1,628.11	399.51	1,035.28	960.26	17.18	-1.14	0.056
155.00	-17.59	-2.62	0.00	-28.9	0.00	28.93	1,578.12	382.32	948.09	890.37	18.38	-1.16	0.044
160.00	-16.71	-2.53	0.00	-15.8	0.00	15.80	1,526.32	365.12	864.73	822.06	19.61	-1.17	0.030
162.00	-7.36	-1.16	0.00	-10.8	0.00	10.75	1,505.09	358.24	832.46	795.21	20.1	-1.18	0.018
165.00	-6.91	-1.06	0.00	-7.3	0.00	7.27	1,472.71	347.92	785.21	755.48	20.84	-1.18	0.014
170.00	0.00	-0.92	0.00	-2.0	0.00	1.95	1,400.09	330.73	709.52	682.38	22.08	-1.19	0.003

CALCULATED FORCES

Load Case: 1.0D + 1.0W

60 mph Wind with No Ice

22 Iterations

Gust Response Factor: 1.10
 Dead load Factor: 1.00
 Wind Load Factor: 1.00

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	-53.01	-6.39	0.00	-766.2	0.00	766.20	5,815.49	1,551.67	8,923.47	7,626.37	0	0	0.110
5.00	-51.43	-6.29	0.00	-734.3	0.00	734.27	5,748.38	1,521.57	8,580.74	7,391.16	0.01	-0.02	0.108
10.00	-49.71	-6.20	0.00	-702.8	0.00	702.81	5,679.46	1,491.48	8,244.72	7,157.12	0.05	-0.05	0.107
15.00	-48.03	-6.11	0.00	-671.8	0.00	671.82	5,608.74	1,461.39	7,915.42	6,924.38	0.11	-0.07	0.106
20.00	-46.38	-6.01	0.00	-641.3	0.00	641.29	5,536.21	1,431.30	7,592.82	6,693.07	0.2	-0.1	0.104
25.00	-44.75	-5.92	0.00	-611.2	0.00	611.22	5,461.87	1,401.20	7,276.94	6,463.35	0.32	-0.12	0.103
30.00	-43.16	-5.83	0.00	-581.6	0.00	581.60	5,385.73	1,371.11	6,967.76	6,235.34	0.46	-0.15	0.101
35.00	-41.59	-5.74	0.00	-552.4	0.00	552.42	5,307.78	1,341.02	6,665.30	6,009.18	0.63	-0.17	0.100
40.00	-40.05	-5.65	0.00	-523.7	0.00	523.71	5,228.02	1,310.92	6,369.55	5,785.01	0.82	-0.2	0.098
44.25	-38.77	-5.60	0.00	-499.7	0.00	499.68	5,158.81	1,285.35	6,123.44	5,596.14	1.01	-0.22	0.097
45.00	-38.38	-5.55	0.00	-495.5	0.00	495.48	5,146.46	1,280.83	6,080.51	5,562.98	1.04	-0.23	0.097
50.00	-35.83	-5.48	0.00	-467.7	0.00	467.73	5,063.09	1,250.74	5,798.19	5,343.22	1.29	-0.25	0.095
51.00	-35.33	-5.43	0.00	-462.2	0.00	462.25	4,144.85	1,083.87	5,079.80	4,428.07	1.35	-0.26	0.113
55.00	-34.30	-5.34	0.00	-440.5	0.00	440.52	4,095.73	1,063.24	4,888.24	4,291.69	1.57	-0.28	0.111
60.00	-33.02	-5.24	0.00	-413.8	0.00	413.81	4,032.70	1,037.45	4,653.97	4,122.38	1.88	-0.31	0.109
65.00	-31.78	-5.14	0.00	-387.6	0.00	387.60	3,967.86	1,011.65	4,425.45	3,954.50	2.23	-0.34	0.106
70.00	-30.56	-5.04	0.00	-361.9	0.00	361.91	3,901.22	985.86	4,202.69	3,788.19	2.6	-0.37	0.103
75.00	-29.36	-4.93	0.00	-336.7	0.00	336.72	3,832.77	960.06	3,985.67	3,623.58	3.01	-0.4	0.101
80.00	-28.19	-4.85	0.00	-312.0	0.00	312.05	3,762.52	934.27	3,774.41	3,460.82	3.45	-0.44	0.098
83.50	-27.39	-4.79	0.00	-295.1	0.00	295.09	3,712.27	916.22	3,629.95	3,348.06	3.78	-0.46	0.096
85.00	-26.83	-4.73	0.00	-287.9	0.00	287.90	3,690.46	908.48	3,568.90	3,300.04	3.92	-0.47	0.095
89.25	-25.25	-4.67	0.00	-267.8	0.00	267.79	2,873.82	750.76	2,924.65	2,551.88	4.35	-0.5	0.114
90.00	-25.10	-4.62	0.00	-264.3	0.00	264.28	2,866.19	747.54	2,899.58	2,534.10	4.43	-0.5	0.113
95.00	-24.13	-4.52	0.00	-241.2	0.00	241.20	2,814.29	726.04	2,735.25	2,416.15	4.97	-0.54	0.108
100.00	-23.19	-4.42	0.00	-218.6	0.00	218.61	2,760.58	704.55	2,575.71	2,299.35	5.56	-0.57	0.104
105.00	-22.26	-4.32	0.00	-196.5	0.00	196.53	2,705.06	683.05	2,420.96	2,183.84	6.17	-0.61	0.098
110.00	-21.36	-4.22	0.00	-175.0	0.00	174.95	2,647.74	661.56	2,271.00	2,069.77	6.83	-0.64	0.093
115.00	-20.48	-4.13	0.00	-153.9	0.00	153.87	2,588.61	640.06	2,125.84	1,957.26	7.52	-0.68	0.087
119.00	-17.99	-3.81	0.00	-137.4	0.00	137.36	2,540.00	622.87	2,013.17	1,868.48	8.1	-0.7	0.081
120.00	-17.82	-3.77	0.00	-133.5	0.00	133.54	2,527.67	618.57	1,985.48	1,846.46	8.25	-0.71	0.079
124.00	-17.15	-3.71	0.00	-118.5	0.00	118.48	2,477.62	601.37	1,876.64	1,759.15	8.86	-0.74	0.074
125.00	-16.88	-3.67	0.00	-114.8	0.00	114.76	2,464.93	597.07	1,849.90	1,737.51	9.01	-0.74	0.073
128.50	-15.98	-3.62	0.00	-101.9	0.00	101.91	1,822.50	473.45	1,453.91	1,275.58	9.56	-0.76	0.089
130.00	-13.90	-3.30	0.00	-96.5	0.00	96.48	1,810.02	468.30	1,422.40	1,252.94	9.8	-0.77	0.085
135.00	-13.20	-3.20	0.00	-80.0	0.00	80.00	1,767.25	451.10	1,319.87	1,178.09	10.63	-0.81	0.075
140.00	-12.52	-3.11	0.00	-64.0	0.00	63.99	1,722.68	433.90	1,221.17	1,104.26	11.49	-0.84	0.065
145.00	-11.86	-3.03	0.00	-48.4	0.00	48.45	1,676.30	416.71	1,126.31	1,031.61	12.38	-0.86	0.054
148.00	-9.58	-2.69	0.00	-39.4	0.00	39.35	1,647.60	406.39	1,071.23	988.64	12.93	-0.88	0.046
150.00	-8.55	-2.17	0.00	-34.0	0.00	33.97	1,628.11	399.51	1,035.28	960.26	13.3	-0.88	0.041
155.00	-8.06	-2.08	0.00	-23.1	0.00	23.12	1,578.12	382.32	948.09	890.37	14.23	-0.9	0.031
160.00	-7.59	-2.02	0.00	-12.7	0.00	12.70	1,526.32	365.12	864.73	822.06	15.18	-0.91	0.020
162.00	-3.56	-0.89	0.00	-8.7	0.00	8.66	1,505.09	358.24	832.46	795.21	15.57	-0.92	0.013
165.00	-3.33	-0.83	0.00	-6.0	0.00	5.98	1,472.71	347.92	785.21	755.48	16.15	-0.92	0.010
170.00	0.00	-0.78	0.00	-1.8	0.00	1.83	1,400.09	330.73	709.52	682.38	17.11	-0.92	0.003

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

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

Spectral Response Acceleration for Short Period (S_S):	0.184
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.055
Long-Period Transition Period (T_L - Seconds):	6
Importance Factor (I_e):	1.000
Site Coefficient F_a :	1.600
Site Coefficient F_v :	2.400
Response Modification Coefficient (R):	1.500
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.196
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.088
Seismic Response Coefficient (C_s):	0.030
Upper Limit C_s :	0.030
Lower Limit C_s :	0.030
Period based on Rayleigh Method (sec):	2.490
Redundancy Factor (p):	1.000
Seismic Force Distribution Exponent (k):	1.990
Total Unfactored Dead Load:	53.010 k
Seismic Base Shear (E):	1.590 k

SEISMIC FORCES

1.2D + 1.0Ev + 1.0Eh

Seismic

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
43	167.5	367	9,915	0.018	29	454
42	163.5	228	5,876	0.011	17	282
41	161	184	4,603	0.008	13	228
40	157.5	472	11,293	0.021	33	585
39	152.5	489	10,964	0.020	32	606
38	149	254	5,435	0.010	16	314
37	146.5	389	8,063	0.015	24	482
36	142.5	662	12,979	0.024	38	821
35	137.5	679	12,392	0.023	36	841
34	132.5	696	11,793	0.022	34	862
33	129.25	212	3,419	0.006	10	263
32	126.75	900	13,974	0.026	41	1,116
31	124.5	261	3,903	0.007	11	323
30	122	673	9,679	0.018	28	834
29	119.5	170	2,351	0.004	7	211
28	117	690	9,125	0.017	27	855
27	112.5	881	10,778	0.020	32	1,092
26	107.5	902	10,078	0.018	29	1,117
25	102.5	923	9,377	0.017	27	1,143
24	97.5	943	8,679	0.016	25	1,169
23	92.5	964	7,987	0.015	23	1,195
22	89.625	146	1,139	0.002	3	181
21	87.125	1,578	11,603	0.021	34	1,956
20	84.25	565	3,885	0.007	11	700
19	81.75	803	5,199	0.010	15	995
18	77.5	1,168	6,801	0.012	20	1,448
17	72.5	1,193	6,083	0.011	18	1,479
16	67.5	1,218	5,386	0.010	16	1,510
15	62.5	1,243	4,715	0.009	14	1,541
14	57.5	1,268	4,073	0.008	12	1,572
13	53	1,033	2,819	0.005	8	1,280
12	50.5	503	1,246	0.002	4	623
11	47.5	2,545	5,587	0.010	16	3,154
10	44.625	386	749	0.001	2	479
9	42.125	1,282	2,215	0.004	6	1,589
8	37.5	1,535	2,104	0.004	6	1,903
7	32.5	1,565	1,612	0.003	5	1,939
6	27.5	1,594	1,177	0.002	3	1,975

SEISMIC FORCES

1.2D + 1.0Ev + 1.0Eh

Seismic

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
5	22.5	1,623	804	0.002	2	2,011
4	17.5	1,652	496	0.001	1	2,047
3	12.5	1,681	258	0.000	1	2,083
2	7.5	1,710	95	0.000	0	2,120
1	2.5	1,581	10	0.000	0	1,959
Kaelus KA-6030	170	35	981	0.002	3	44
Samsung B2/B66A RRH-BR049	170	253	7,054	0.013	21	314
Samsung B5/B13 RRH-BR04C	170	211	5,876	0.011	17	261
Amphenol Antel BXA-70080-4BF-EDIN-X	170	30	827	0.002	2	37
Raycap RVZDC-6627-PF-48	170	64	1,783	0.003	5	79
Samsung MT6407-77A	170	245	6,820	0.012	20	303
Commscope NHH-65B-R2B	170	262	7,305	0.013	21	325
Generic Flat Low Profile Platform	170	1,875	52,236	0.096	153	2,324
Generic Flat Low Profile Platform	148	1,875	39,630	0.073	116	2,324
Generic Flat Low Profile Platform	130	1,875	30,605	0.056	89	2,324
Generic RCU (Remote Control Unit)	162	3	76	0.000	0	4
Andrew ATSBT-BOTTOM-MF	162	5	137	0.000	0	7
Ericsson Radio 4449 B71+B85	162	225	5,694	0.010	17	279
Ericsson 4460 BAND 2/25	162	327	8,276	0.015	24	405
Andrew HBX-6516DS-VTM	162	30	752	0.001	2	37
RFS APXV18-203219-C (54.1" x 11.3")	162	117	2,961	0.005	9	145
RFS APXVLL19P_43-C-A20	162	123	3,105	0.006	9	152
Commscope LNX-6515DS-VTM	162	151	3,819	0.007	11	187
RFS APXVAARR24_43-U-NA20	162	384	9,711	0.018	28	476
PerfectVision PV-LPP12M-HR-12-96 Platform w/ PVPKBK-M Kicker Kit	162	2,500	63,269	0.116	185	3,098
Powerwave Allgon LGP21901	150	33	716	0.001	2	41
Powerwave Allgon LGP21401	150	85	1,837	0.003	5	105
Ericsson RRUS 11 (Band 12)	150	300	6,513	0.012	19	372
Powerwave Allgon 7770.00	150	210	4,559	0.008	13	260
KMW AM-X-CD-16-65-00T-RET	150	97	2,106	0.004	6	120
Powerwave Allgon P65-17-XLH-RR	150	59	1,281	0.002	4	73
Generic SSB (27lb)	148	27	571	0.001	2	33
Commscope MC-PK8-DSH	119	1,802	24,662	0.045	72	2,233
Totals:		53,013	543,878	1.000	1,590	65,696

SEISMIC FORCES

0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
43	167.5	367	9,915	0.018	29	316
42	163.5	228	5,876	0.011	17	196
41	161	184	4,603	0.008	13	158
40	157.5	472	11,293	0.021	33	406
39	152.5	489	10,964	0.020	32	421
38	149	254	5,435	0.010	16	218
37	146.5	389	8,063	0.015	24	335
36	142.5	662	12,979	0.024	38	570
35	137.5	679	12,392	0.023	36	584
34	132.5	696	11,793	0.022	34	599
33	129.25	212	3,419	0.006	10	182
32	126.75	900	13,974	0.026	41	775
31	124.5	261	3,903	0.007	11	224
30	122	673	9,679	0.018	28	579
29	119.5	170	2,351	0.004	7	147
28	117	690	9,125	0.017	27	594
27	112.5	881	10,778	0.020	32	758
26	107.5	902	10,078	0.018	29	776
25	102.5	923	9,377	0.017	27	794
24	97.5	943	8,679	0.016	25	812
23	92.5	964	7,987	0.015	23	830

SEISMIC FORCES

0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
22	89.625	146	1,139	0.002	3	126
21	87.125	1,578	11,603	0.021	34	1,358
20	84.25	565	3,885	0.007	11	486
19	81.75	803	5,199	0.010	15	691
18	77.5	1,168	6,801	0.012	20	1,005
17	72.5	1,193	6,083	0.011	18	1,027
16	67.5	1,218	5,386	0.010	16	1,049
15	62.5	1,243	4,715	0.009	14	1,070
14	57.5	1,268	4,073	0.008	12	1,092
13	53	1,033	2,819	0.005	8	889
12	50.5	503	1,246	0.002	4	433
11	47.5	2,545	5,587	0.010	16	2,191
10	44.625	386	749	0.001	2	333
9	42.125	1,282	2,215	0.004	6	1,104
8	37.5	1,535	2,104	0.004	6	1,322
7	32.5	1,565	1,612	0.003	5	1,347
6	27.5	1,594	1,177	0.002	3	1,372
5	22.5	1,623	804	0.002	2	1,397
4	17.5	1,652	496	0.001	1	1,422
3	12.5	1,681	258	0.000	1	1,447
2	7.5	1,710	95	0.000	0	1,472
1	2.5	1,581	10	0.000	0	1,361
Kaelus KA-6030	170	35	981	0.002	3	30
Samsung B2/B66A RRH-BR049	170	253	7,054	0.013	21	218
Samsung B5/B13 RRH-BR04C	170	211	5,876	0.011	17	182
Amphenol Antel BXA-70080-4BF-EDIN-X	170	30	827	0.002	2	26
Raycap RVZDC-6627-PF-48	170	64	1,783	0.003	5	55
Samsung MT6407-77A	170	245	6,820	0.012	20	211
Commscope NHH-65B-R2B	170	262	7,305	0.013	21	226
Generic Flat Low Profile Platform	170	1,875	52,236	0.096	153	1,614
Generic Flat Low Profile Platform	148	1,875	39,630	0.073	116	1,614
Generic Flat Low Profile Platform	130	1,875	30,605	0.056	89	1,614
Generic RCU (Remote Control Unit)	162	3	76	0.000	0	3
Andrew ATSBT-BOTTOM-MF	162	5	137	0.000	0	5
Ericsson Radio 4449 B71+B85	162	225	5,694	0.010	17	194
Ericsson 4460 BAND 2/25	162	327	8,276	0.015	24	281
Andrew HBX-6516DS-VTM	162	30	752	0.001	2	26
RFS APXV18-203219-C (54.1" x 11.3")	162	117	2,961	0.005	9	101
RFS APXVLL19P_43-C-A20	162	123	3,105	0.006	9	106
Commscope LNX-6515DS-VTM	162	151	3,819	0.007	11	130
RFS APXVAARR24_43-U-NA20	162	384	9,711	0.018	28	330
PerfectVision PV-LPP12M-HR-12-96 Platform w/ PVPKBM-M Kicker Kit	162	2,500	63,269	0.116	185	2,152
Powerwave Allgon LGP21901	150	33	716	0.001	2	28
Powerwave Allgon LGP21401	150	85	1,837	0.003	5	73
Ericsson RRUS 11 (Band 12)	150	300	6,513	0.012	19	258
Powerwave Allgon 7770.00	150	210	4,559	0.008	13	181
KMW AM-X-CD-16-65-00T-RET	150	97	2,106	0.004	6	83
Powerwave Allgon P65-17-XLH-RR	150	59	1,281	0.002	4	51
Generic SSB (27lb)	148	27	571	0.001	2	23
Commscope MC-PK8-DSH	119	1,802	24,662	0.045	72	1,551
Totals:		53,013	543,878	1.000	1,590	45,630

1.2D + 1.0Ev + 1.0Eh

Seismic

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-63.74	-1.59	0.00	-224.29	0.00	224.29	5,815.49	1,551.67	8,923	7,626.37	0.00	0.00	0.04
5.00	-61.62	-1.60	0.00	-216.32	0.00	216.32	5,748.38	1,521.57	8,581	7,391.16	0.00	-0.01	0.04
10.00	-59.53	-1.61	0.00	-208.32	0.00	208.32	5,679.46	1,491.48	8,245	7,157.12	0.01	-0.01	0.04

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
15.00	-57.49	-1.61	0.00	-200.29	0.00	200.29	5,608.74	1,461.39	7,915	6,924.38	0.03	-0.02	0.04
20.00	-55.47	-1.62	0.00	-192.23	0.00	192.23	5,536.21	1,431.30	7,593	6,693.07	0.06	-0.03	0.04
25.00	-53.50	-1.62	0.00	-184.15	0.00	184.15	5,461.87	1,401.20	7,277	6,463.35	0.09	-0.04	0.04
30.00	-51.56	-1.62	0.00	-176.06	0.00	176.06	5,385.73	1,371.11	6,968	6,235.34	0.14	-0.04	0.04
35.00	-49.66	-1.62	0.00	-167.96	0.00	167.96	5,307.78	1,341.02	6,665	6,009.18	0.19	-0.05	0.04
40.00	-48.07	-1.62	0.00	-159.86	0.00	159.86	5,228.02	1,310.92	6,370	5,785.01	0.24	-0.06	0.04
44.25	-47.59	-1.62	0.00	-152.99	0.00	152.99	5,158.81	1,285.35	6,123	5,596.14	0.30	-0.07	0.04
45.00	-44.43	-1.60	0.00	-151.78	0.00	151.78	5,146.46	1,280.83	6,081	5,562.98	0.31	-0.07	0.04
50.00	-43.81	-1.60	0.00	-143.77	0.00	143.77	5,063.09	1,250.74	5,798	5,343.22	0.39	-0.08	0.04
51.00	-42.53	-1.59	0.00	-142.17	0.00	142.17	4,144.85	1,083.87	5,080	4,428.07	0.40	-0.08	0.04
55.00	-40.96	-1.59	0.00	-135.80	0.00	135.80	4,095.73	1,063.24	4,888	4,291.69	0.47	-0.08	0.04
60.00	-39.42	-1.58	0.00	-127.87	0.00	127.87	4,032.70	1,037.45	4,654	4,122.38	0.56	-0.09	0.04
65.00	-37.91	-1.56	0.00	-119.99	0.00	119.99	3,967.86	1,011.65	4,425	3,954.50	0.67	-0.10	0.04
70.00	-36.43	-1.55	0.00	-112.17	0.00	112.17	3,901.22	985.86	4,203	3,788.19	0.78	-0.11	0.04
75.00	-34.98	-1.53	0.00	-104.43	0.00	104.43	3,832.77	960.06	3,986	3,623.58	0.91	-0.12	0.04
80.00	-33.99	-1.52	0.00	-96.76	0.00	96.76	3,762.52	934.27	3,774	3,460.82	1.04	-0.13	0.04
83.50	-33.29	-1.51	0.00	-91.44	0.00	91.44	3,712.27	916.22	3,630	3,348.06	1.14	-0.14	0.04
85.00	-31.33	-1.47	0.00	-89.18	0.00	89.18	3,690.46	908.48	3,569	3,300.04	1.18	-0.14	0.04
89.25	-31.15	-1.47	0.00	-82.91	0.00	82.91	2,873.82	750.76	2,925	2,551.88	1.31	-0.15	0.04
90.00	-29.96	-1.45	0.00	-81.81	0.00	81.81	2,866.19	747.54	2,900	2,534.10	1.34	-0.15	0.04
95.00	-28.79	-1.43	0.00	-74.56	0.00	74.56	2,814.29	726.04	2,735	2,416.15	1.50	-0.16	0.04
100.00	-27.64	-1.40	0.00	-67.42	0.00	67.42	2,760.58	704.55	2,576	2,299.35	1.68	-0.18	0.04
105.00	-26.53	-1.37	0.00	-60.41	0.00	60.41	2,705.06	683.05	2,421	2,183.84	1.87	-0.19	0.04
110.00	-25.43	-1.34	0.00	-53.55	0.00	53.55	2,647.74	661.56	2,271	2,069.77	2.07	-0.20	0.04
115.00	-24.58	-1.32	0.00	-46.83	0.00	46.83	2,588.61	640.06	2,126	1,957.26	2.28	-0.21	0.03
119.00	-22.13	-1.23	0.00	-41.56	0.00	41.56	2,540.00	622.87	2,013	1,868.48	2.46	-0.22	0.03
120.00	-21.30	-1.20	0.00	-40.33	0.00	40.33	2,527.67	618.57	1,985	1,846.46	2.51	-0.22	0.03
124.00	-20.98	-1.19	0.00	-35.52	0.00	35.52	2,477.62	601.37	1,877	1,759.15	2.69	-0.22	0.03
125.00	-19.86	-1.15	0.00	-34.33	0.00	34.33	2,464.93	597.07	1,850	1,737.51	2.74	-0.23	0.03
128.50	-19.60	-1.14	0.00	-30.31	0.00	30.31	1,822.50	473.45	1,454	1,275.58	2.91	-0.23	0.04
130.00	-16.41	-1.00	0.00	-28.61	0.00	28.61	1,810.02	468.30	1,422	1,252.94	2.98	-0.24	0.03
135.00	-15.57	-0.97	0.00	-23.59	0.00	23.59	1,767.25	451.10	1,320	1,178.09	3.23	-0.25	0.03
140.00	-14.75	-0.93	0.00	-18.77	0.00	18.77	1,722.68	433.90	1,221	1,104.26	3.50	-0.25	0.03
145.00	-14.27	-0.90	0.00	-14.14	0.00	14.14	1,676.30	416.71	1,126	1,031.61	3.77	-0.26	0.02
148.00	-11.60	-0.76	0.00	-11.43	0.00	11.43	1,647.60	406.39	1,071	988.64	3.93	-0.27	0.02
150.00	-10.02	-0.67	0.00	-9.92	0.00	9.92	1,628.11	399.51	1,035	960.26	4.04	-0.27	0.02
155.00	-9.44	-0.63	0.00	-6.58	0.00	6.58	1,578.12	382.32	948	890.37	4.33	-0.27	0.01
160.00	-9.21	-0.62	0.00	-3.41	0.00	3.41	1,526.32	365.12	865	822.06	4.62	-0.28	0.01
162.00	-4.14	-0.29	0.00	-2.18	0.00	2.18	1,505.09	358.24	832	795.21	4.73	-0.28	0.01
165.00	-3.69	-0.26	0.00	-1.30	0.00	1.30	1,472.71	347.92	785	755.48	4.91	-0.28	0.00
170.00	0.00	-0.24	0.00	0.00	0.00	0.00	1,400.09	330.73	710	682.38	5.20	-0.28	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	-44.27	-1.59	0.00	-221.13	0.00	221.13	5,815.49	1,551.67	8,923	7,626.37	0.00	0.00	0.04
5.00	-42.80	-1.60	0.00	-213.16	0.00	213.16	5,748.38	1,521.57	8,581	7,391.16	0.00	-0.01	0.04
10.00	-41.35	-1.60	0.00	-205.18	0.00	205.18	5,679.46	1,491.48	8,245	7,157.12	0.01	-0.01	0.04
15.00	-39.93	-1.60	0.00	-197.17	0.00	197.17	5,608.74	1,461.39	7,915	6,924.38	0.03	-0.02	0.04
20.00	-38.53	-1.61	0.00	-189.15	0.00	189.15	5,536.21	1,431.30	7,593	6,693.07	0.06	-0.03	0.04
25.00	-37.16	-1.61	0.00	-181.12	0.00	181.12	5,461.87	1,401.20	7,277	6,463.35	0.09	-0.04	0.04
30.00	-35.81	-1.61	0.00	-173.09	0.00	173.09	5,385.73	1,371.11	6,968	6,235.34	0.13	-0.04	0.03
35.00	-34.49	-1.60	0.00	-165.06	0.00	165.06	5,307.78	1,341.02	6,665	6,009.18	0.18	-0.05	0.03
40.00	-33.39	-1.60	0.00	-157.04	0.00	157.04	5,228.02	1,310.92	6,370	5,785.01	0.24	-0.06	0.03
44.25	-33.05	-1.60	0.00	-150.24	0.00	150.24	5,158.81	1,285.35	6,123	5,596.14	0.30	-0.07	0.03
45.00	-30.86	-1.58	0.00	-149.04	0.00	149.04	5,146.46	1,280.83	6,081	5,562.98	0.31	-0.07	0.03
50.00	-30.43	-1.58	0.00	-141.12	0.00	141.12	5,063.09	1,250.74	5,798	5,343.22	0.38	-0.07	0.03
51.00	-29.54	-1.57	0.00	-139.54	0.00	139.54	4,144.85	1,083.87	5,080	4,428.07	0.40	-0.08	0.04

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 (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
55.00	-28.45	-1.57	0.00	-133.24	0.00	133.24	4,095.73	1,063.24	4,888	4,291.69	0.46	-0.08	0.04
60.00	-27.38	-1.55	0.00	-125.42	0.00	125.42	4,032.70	1,037.45	4,654	4,122.38	0.56	-0.09	0.04
65.00	-26.33	-1.54	0.00	-117.65	0.00	117.65	3,967.86	1,011.65	4,425	3,954.50	0.66	-0.10	0.04
70.00	-25.30	-1.53	0.00	-109.94	0.00	109.94	3,901.22	985.86	4,203	3,788.19	0.77	-0.11	0.04
75.00	-24.30	-1.51	0.00	-102.31	0.00	102.31	3,832.77	960.06	3,986	3,623.58	0.89	-0.12	0.04
80.00	-23.61	-1.49	0.00	-94.77	0.00	94.77	3,762.52	934.27	3,774	3,460.82	1.02	-0.13	0.03
83.50	-23.12	-1.48	0.00	-89.54	0.00	89.54	3,712.27	916.22	3,630	3,348.06	1.12	-0.14	0.03
85.00	-21.76	-1.45	0.00	-87.32	0.00	87.32	3,690.46	908.48	3,569	3,300.04	1.16	-0.14	0.03
89.25	-21.64	-1.45	0.00	-81.16	0.00	81.16	2,873.82	750.76	2,925	2,551.88	1.29	-0.15	0.04
90.00	-20.80	-1.42	0.00	-80.07	0.00	80.07	2,866.19	747.54	2,900	2,534.10	1.32	-0.15	0.04
95.00	-19.99	-1.40	0.00	-72.95	0.00	72.95	2,814.29	726.04	2,735	2,416.15	1.48	-0.16	0.04
100.00	-19.20	-1.37	0.00	-65.95	0.00	65.95	2,760.58	704.55	2,576	2,299.35	1.65	-0.17	0.04
105.00	-18.42	-1.35	0.00	-59.08	0.00	59.08	2,705.06	683.05	2,421	2,183.84	1.84	-0.18	0.03
110.00	-17.66	-1.31	0.00	-52.36	0.00	52.36	2,647.74	661.56	2,271	2,069.77	2.04	-0.19	0.03
115.00	-17.07	-1.29	0.00	-45.78	0.00	45.78	2,588.61	640.06	2,126	1,957.26	2.24	-0.20	0.03
119.00	-15.37	-1.20	0.00	-40.63	0.00	40.63	2,540.00	622.87	2,013	1,868.48	2.42	-0.21	0.03
120.00	-14.79	-1.18	0.00	-39.42	0.00	39.42	2,527.67	618.57	1,985	1,846.46	2.46	-0.21	0.03
124.00	-14.57	-1.16	0.00	-34.72	0.00	34.72	2,477.62	601.37	1,877	1,759.15	2.64	-0.22	0.03
125.00	-13.79	-1.12	0.00	-33.56	0.00	33.56	2,464.93	597.07	1,850	1,737.51	2.69	-0.22	0.03
128.50	-13.61	-1.11	0.00	-29.63	0.00	29.63	1,822.50	473.45	1,454	1,275.58	2.86	-0.23	0.03
130.00	-11.40	-0.98	0.00	-27.96	0.00	27.96	1,810.02	468.30	1,422	1,252.94	2.93	-0.23	0.03
135.00	-10.82	-0.94	0.00	-23.06	0.00	23.06	1,767.25	451.10	1,320	1,178.09	3.17	-0.24	0.03
140.00	-10.25	-0.90	0.00	-18.34	0.00	18.34	1,722.68	433.90	1,221	1,104.26	3.43	-0.25	0.02
145.00	-9.91	-0.88	0.00	-13.82	0.00	13.82	1,676.30	416.71	1,126	1,031.61	3.70	-0.26	0.02
148.00	-8.06	-0.74	0.00	-11.17	0.00	11.17	1,647.60	406.39	1,071	988.64	3.86	-0.26	0.02
150.00	-6.96	-0.65	0.00	-9.70	0.00	9.70	1,628.11	399.51	1,035	960.26	3.97	-0.26	0.01
155.00	-6.55	-0.62	0.00	-6.43	0.00	6.43	1,578.12	382.32	948	890.37	4.25	-0.27	0.01
160.00	-6.40	-0.60	0.00	-3.34	0.00	3.34	1,526.32	365.12	865	822.06	4.53	-0.27	0.01
162.00	-2.87	-0.28	0.00	-2.13	0.00	2.13	1,505.09	358.24	832	795.21	4.64	-0.27	0.01
165.00	-2.56	-0.25	0.00	-1.27	0.00	1.27	1,472.71	347.92	785	755.48	4.82	-0.27	0.00
170.00	0.00	-0.24	0.00	0.00	0.00	0.00	1,400.09	330.73	710	682.38	5.10	-0.27	0.00

ANALYSIS SUMMARY

Load Case	Base Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.0W	28.09	0.00	63.59	0.00	0.00	3392.44	89.25	0.48
0.9D + 1.0W	28.07	0.00	47.69	0.00	0.00	3354.02	89.25	0.47
1.2D + 1.0Di + 1.0Wi	8.18	0.00	89.88	0.00	0.00	990.56	89.25	0.15
1.2D + 1.0Ev + 1.0Eh	1.59	0.00	63.74	0.00	0.00	224.29	89.25	0.04
0.9D - 1.0Ev + 1.0Eh	1.59	0.00	44.27	0.00	0.00	221.13	89.25	0.04
1.0D + 1.0W	6.39	0.00	53.01	0.00	0.00	766.20	89.25	0.11

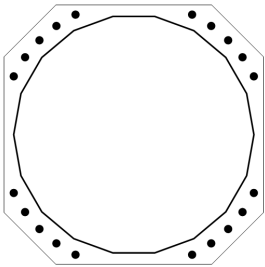
BASE PLATE ANALYSIS @ 0 FT

APPLIED REACTIONS

Moment (k-ft)	Axial (k)	Shear (k)
3392.44	63.59	28.09

PLATE PARAMETERS (ID# 23544)

Width:	70	in
Shape:	Square	
Thickness:	3.25	in
Grade:	A572-55	
Yield Strength:	55	ksi
Tensile Strength:	70	ksi
Clip Length:	14	in
Rod Detail Type:	d	
Clear Distance	3.125	in
Base Weld Size:	0.125	in
Orientation Offset:	-	°
Analysis Type:	Plastic	
Neutral Axis:	225	°



ANCHOR ROD PARAMETERS

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	F _y (ksi)	F _u (ksi)	Spacing (in)	Offset (°)
Original [ID#24160]	Cluster	20	2.25	72	A615-75	75	100	6	-

COMPONENT PROPERTIES

Component	ID	Gross Area (in ²)	Net Area (in ²)	Individual Inertia (in ⁴)	Moment of Inertia (in ⁴)	Threads/in
Pole	64.11"ø x 0.4375" (18 Sides)	87.0708	-	-	44130.76	-
Bolt Group	Original (20) 2.25"ø	3.9761	3.2477	0.8393	39093.72	4.5

REACTION DISTRIBUTION

Component	ID	Moment M _u (k-ft)	Axial Load P _u (k)	Shear V _u (k)	Moment Factor
Pole	64.11"ø x 0.4375" (18 Sides)	3392.4	63.59	28.09	1.000
Bolt Group	Original (20) 2.25"ø	3392.4	-	28.09	1.000

BASE PLATE BEND LINE ANALYSIS @ 0 FT

POLE PROPERTIES					PLATE PROPERTIES		
Flat-to-Flat Diameter:	64.24	in	Flat Width:	11.326	in	Neutral Axis:	225°
Point-to-Point Diameter:	65.23	in	Flat Radians:	0.349	rad		
Orientation Offset:	-	°					
Bend Line	Chord Length (in)	Additional Length (in)	Section Modulus (in ³)	Applied Moment M _u (k-in)	Moment Capacity ΦM _n (k-in)	Flexure Result M _u /ΦM _n	
Flats	34.760	0.00	91.788	957.0	4543.5	21.1%	✓
Corners	33.769	0.00	89.171	666.6	4414.0	15.1%	✓

PLASTIC ANCHOR ROD ANALYSIS

Class	Group Quantity	Rod Diameter (in)	Applied Axial Load P _u (k)	Applied Shear Load V _u (k)	Compressive Capacity ΦP _n (k)	Interaction Result
Original	20	2.25	106.7	2.4	243.6	45.8% ✓

PIER FOUNDATION ANALYSIS

GLOBAL REACTIONS

Moment (k-ft)	Axial (k)	Shear (k)
3,392.44	63.59	28.09

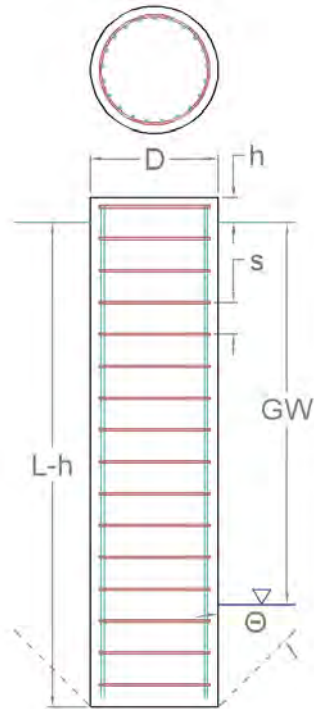
FOUNDATION PARAMETERS

Pier Diameter:	D	8.00	ft
Pier Embedment Depth:	L-h	34.0	ft
Pier Height above Grade:	h	0.50	ft
Concrete Compressive Strength:		3,000	psi
Vertical Rebar:		(36) #11 bars [60 ksi]	
Tie Rebar:	s	#5 bars @ 18.0" c/c [40 ksi]	
Rebar Clear Cover:		4.00	in

SOIL PARAMETERS

Water Table Depth [BGL]:	GW	-	ft
--------------------------	----	---	----

Layer Depth (ft)		Unit Weight	Cohesion	Friction Angle	Ultimate Skin Friction	Ultimate Net Bearing
Top	Bottom	pcf	psf	°	psf	psf
0	4.5	105	0	0	0	0
4.5	7	125	0	28	140	0
7	29	125	0	32	224	0
29	35	125	0	32	464	3,900



SOIL STRENGTH ANALYSIS

Volume of Concrete (ft³)	Buoyant Weight of Concrete (k)	Skin Friction Resistance (k)	Inflection Point [BGL] (ft)
1,734.16	260.12	190.96	24.42

SOIL MOMENT ANALYSIS

Total Lateral Resistance (k)	Moment at Inflection Point, M _u (k-ft)	Additional Resistance (k-ft)	Nominal Moment Capacity, ΦM _n (k-ft)	Soil Moment Usage, M _u / ΦM _n
4,532.10	4,092.51	0.00	21,434.01	19.1%

SOIL COMPRESSION ANALYSIS

Compressive Bearing Resistance (k)	Compressive Force, P _u (k)	Additional Resistance (k)	Nominal Compressive Capacity, ΦP _n (k)	Soil Compressive Usage, P _u / ΦP _n
196.04	120.29	0.00	290.25	41.4%

REINFORCING STEEL STRENGTH ANALYSIS

Rebar Cage Diameter (in)	Steel Elastic Modulus, E (ksi)	Strength Bending/Tension Reduction Factor, Φ_b	Strength Shear Reduction Factor, Φ_v	Strength Compression Reduction Factor, Φ_c
85.34	29,000	0.9	0.75	0.65

PIER REINFORCING MOMENT ANALYSIS

Design Moment, M_u (k-ft)	Nominal Moment Capacity, $\Phi_b M_n$ (k-ft)	Bending Reinforcement Ratio	Pier Rebar Flexure Usage, $M_u / \Phi_b M_n$
3,408.09	10,546.89	0.01	32.3%



PIER REINFORCING COMPRESSION ANALYSIS

Buoyant Weight of Concrete (k)	Design Compression, P_u (k)	Nominal Compressive Capacity, $\Phi_p P_n$ (k)	Pier Rebar Compressive Usage, $P_u / \Phi_p P_n$
260.12	120.29	11,275.62	1.1%



PIER REINFORCING SHEAR ANALYSIS

Design Shear, V_u (k)	Nominal Shear Capacity, $\Phi_v V_n$ (k)	Pier Rebar Shear Usage, $V_u / \Phi_v V_n$
259.50	676.65	38.4%



EXHIBIT E

Mount Analysis Report



Mount Analysis Report

Mount Type : 12.5 ft Platform w/ Handrails
ATC Asset Name : MANSFIELD CENTER 2 CT
ATC Asset Number : 376047
Engineering Number : 14885740_C8_01
Mount Elevation : 160 ft
Proposed Carrier : T-Mobile
Carrier Site Name : CT517/TCP Mansfield
Carrier Site Number : CT11517B
Site Location : 1725 Stafford Road
STORRS MANSFIELD, CT 06268-1138
41.836, -72.3078
County : Tolland
Date : September 30, 2024
Max Usage : 63%
Analysis Result : Contingent Pass

Prepared By:
Zach Stoll
Structural Engineer I

A handwritten signature in black ink, appearing to read 'Zach Stoll'.



COA: PEC.0001553

Table of Contents

Introduction	3
Supporting Documents	3
Analysis.....	3
Conclusion.....	3
Application Loading	4
Structure Usages	4
Mount Layout.....	5
Equipment Layout.....	7
Standard Conditions	Attached
Calculations.....	Attached

Introduction

The purpose of this report is to summarize results of the mount analysis performed for T-Mobile at 160 ft.

Supporting Documents

Specifications Sheet:	Perfect Vision PV-LPPGS-12M-HR2-AP1, dated November 1, 2019
Radio Frequency Data Sheet:	RFDS ID #CT11517B, dated August 8, 2024
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:	119 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.50" radial ice concurrent
Codes:	ANSI/TIA-222-H / 2021 IBC / 2022 Connecticut State Building Code
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 = 0.184, S1 = 0.055
Site Class:	D - Stiff Soil - Default
Live Loads:	Lm = 500 lbs

*Live Load(s) reduction is confirmed to either not govern or not be applicable

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

Conclusion

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

- Rotate existing mount(s) to align with antenna azimuths.
- No structural failures were addressed with the noted contingencies. Contingencies address Carrier's antenna spacing requirements.

If you have any questions or require additional information, please reach out to your American Tower contact. If you do not have an American Tower contact and have an Engineering question, please contact MountAnalysis@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Application Loading

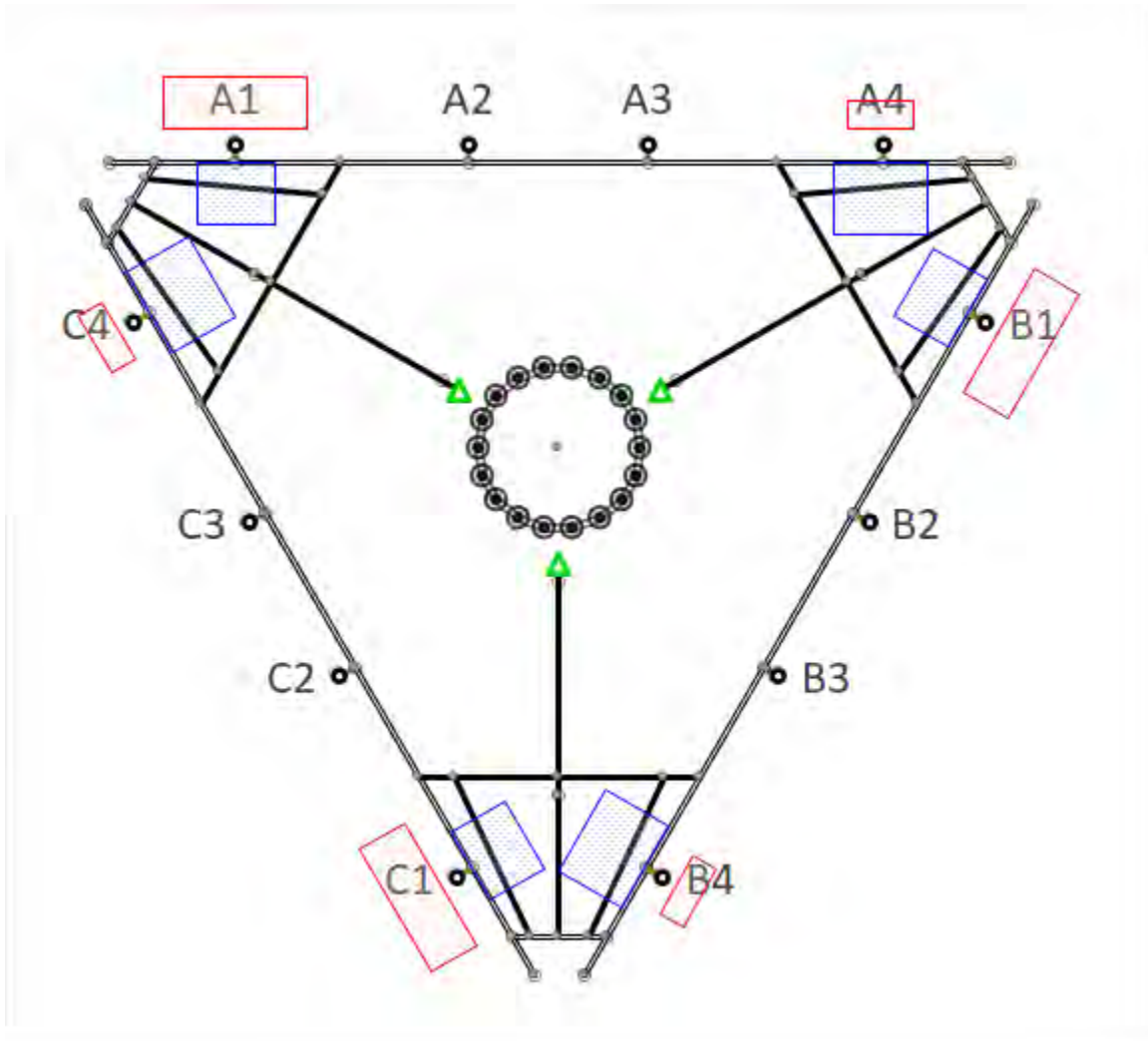
Mount Centerline (ft)	Equipment Centerline (ft)	Qty	Equipment Manufacturer & Model
160.0	162.0	3	RFS APXVAARR24_43-U-NA20
		3	RFS APXVLL19P_43-C-A20
		3	Ericsson Radio 4449 B71+B85
		3	Ericsson 4460 BAND 2/25

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Horizontals	38%	Pass
Diagonals	7%	Pass
Mount Pipes	63%	Pass
Collar Check	2%	Pass

**Based on visual inspection and available manufacturer design, Mount to Tower connection hardware is deemed adequate.*

Mount Layout



Equipment Position Table

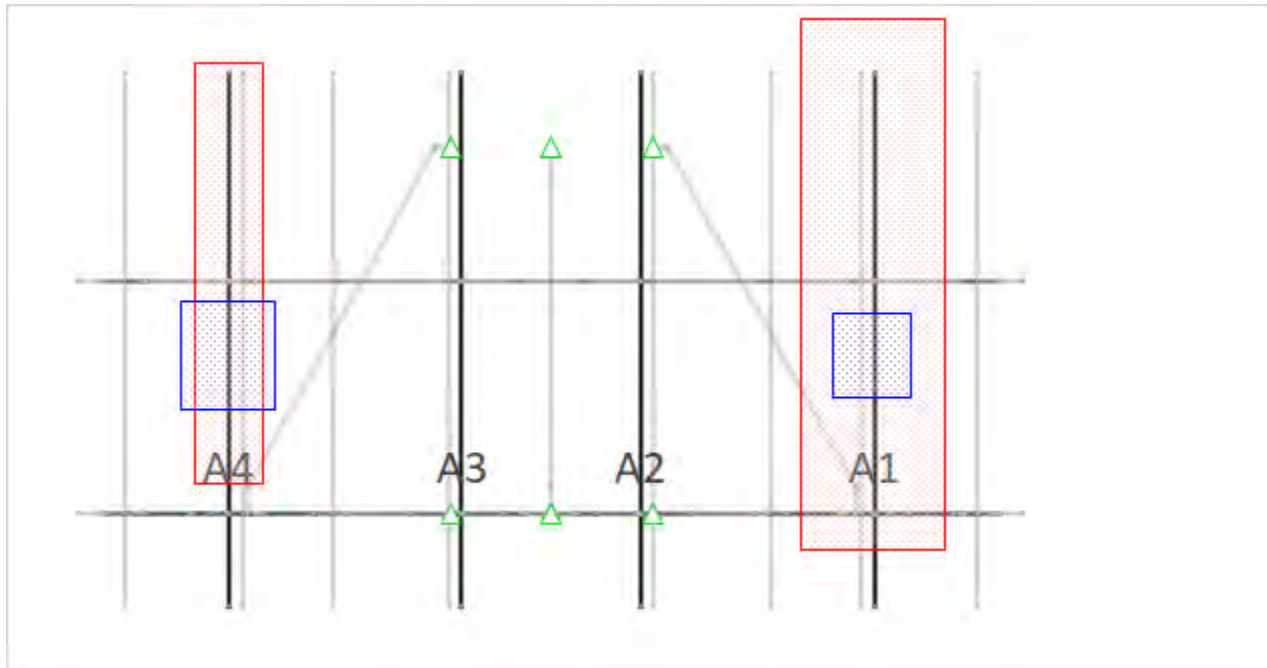
MP	RAD Center (ft)	Qty.	Antenna Model	Max Width (in)	Left (in)	Right (in)
A1	162.0	1	RFS APXVAARR24_43-U-NA20	24	31.19	90.35
	162.0	1	Ericsson Radio 4449 B71+B85			
A2	-	-	Empty	-	-	-
A3	-	-	Empty	-	-	-
A4	162.0	1	RFS APXVLL19P_43-C-A20	11.3	90.35	31.19
	162.0	1	Ericsson 4460 BAND 2/25			
B1	162.0	1	RFS APXVAARR24_43-U-NA20	24	31.19	90.35
	162.0	1	Ericsson Radio 4449 B71+B85			
B2	-	-	Empty	-	-	-
B3	-	-	Empty	-	-	-

Equipment Position Table Cont.

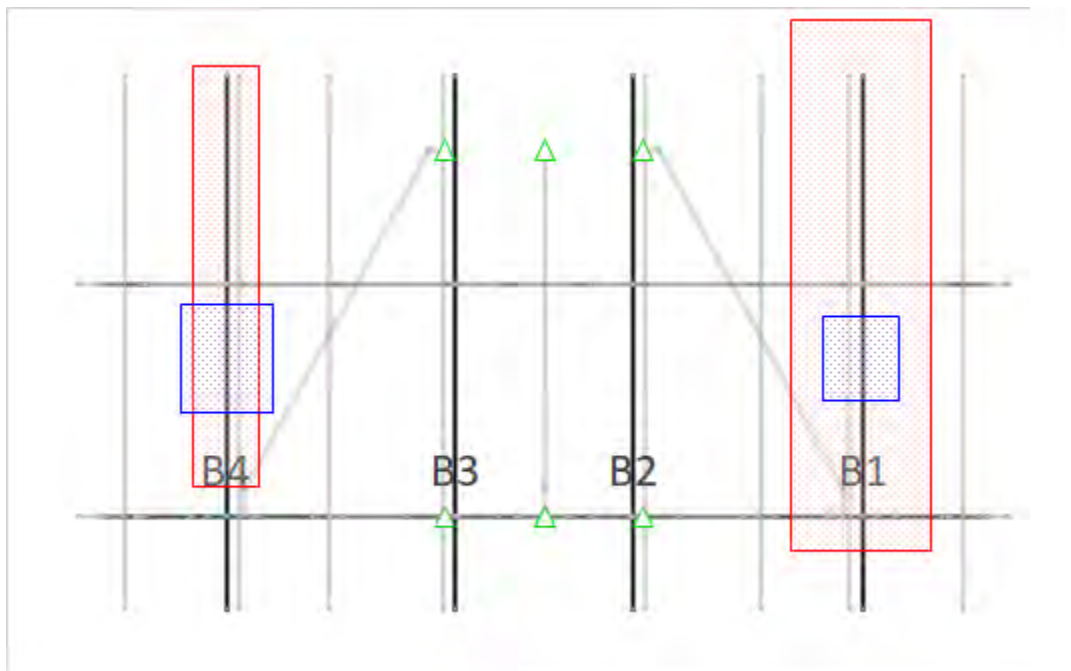
MP	RAD Center (ft)	Qty.	Antenna Model	Max Width (in)	Left (in)	Right (in)
B4	162.0	1	RFS APXVLL19P_43-C-A20	11.3	90.35	31.19
	162.0	1	Ericsson 4460 BAND 2/25			
C1	162.0	1	RFS APXVAARR24_43-U-NA20	24	31.19	90.35
	162.0	1	Ericsson Radio 4449 B71+B85			
C2	-	-	Empty	-	-	-
C3	-	-	Empty	-	-	-
C4	162.0	1	RFS APXVLL19P_43-C-A20	11.3	90.35	31.19
	162.0	1	Ericsson 4460 BAND 2/25			

Equipment Layout

Front View - Alpha

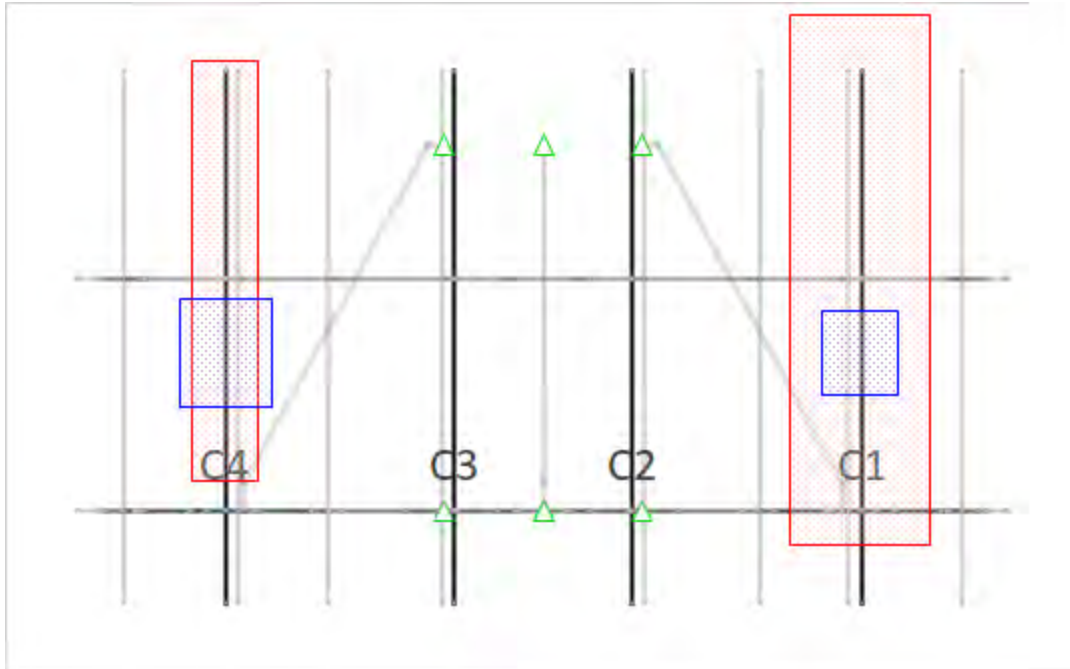


Front View - Beta



Equipment Layout Cont.

Front View - Gamma





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.



Site Number: 376047
 Project Number: 14885740_C8_01
 Carrier: T-Mobile
 Mount Elevation: 160 ft
 Date: 9/30/2024

Mount Analysis Force Calculations

Wind & Ice Load Calculations			
Velocity Pressure Coefficient	K_z	1.13	
Topographic Factor	K_{zt}	1.00	
Rooftop Wind Speed-up Factor	K_s	1.00	
Shielding Factor	K_a	0.90	
Ground Elevation Factor	K_e	0.99	
Wind Direction Probability Factor	K_d	0.95	
Basic Wind Speed	V	119	mph
Velocity Pressure	q_z	38.4	psf
Height Escalation Factor	K_{iz}	1.17	
Thickness of Radial Glaze Ice	T_{iz}	1.76	in

Seismic Load Calculations			
Short Period DSRAP	S_{DS}	0.147	
1 Second DSRAP	S_{D1}	0.088	
Importance Factor	I	1.0	
Response Modification Coefficient	R	2.0	
Seismic Response Coefficient	C_s	0.074	
Amplification Factor	A	1.0	
Total Weight	W	2387.1	lbs
Total Shear Force	V_s	175.7	lbs
Horizontal Seismic Load	E_h	175.7	lbs
Vertical Seismic Load	E_v	70.3	lbs

Antenna Calculations (Elevations per Application/RFDS)*								
Equipment	Height	Width	Depth	Weight	EPA_N	EPA_T	EPA_{Ni}	EPA_{Ti}
Model #	in	in	in	lbs	sqft	sqft	sqft	sqft
RFS APXVAARR24_43-U-NA20	95.9	24.0	8.7	127.9	20.24	3.48	24.06	5.06
RFS APXVLL19P_43-C-A20	75.8	11.3	4.6	40.9	8.25	2.08	11.32	3.83
Ericsson Radio 4449 B71+B85	15.0	13.2	10.4	75.0	1.65	1.30	2.58	2.15
Ericsson 4460 BAND 2/25	19.6	15.7	12.1	109.0	2.56	1.98	3.70	3.01

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

**Equipment EPA has been adjusted per wind tunnel and CFD testing



Site Number: 376047
 Project Number: 14885740_C8_01
 Carrier: T-Mobile
 Mount Elevation: 160 ft
 Date: 9/30/2024

Monopole Connection Capacity Check

Applied Loads from RISA 3D

Controlling Load Combination		2	
Node Label / Orientation (Degrees)		N002	180
Force in X	F _x	13.7	lbs
Force in Y	F _y	-557.2	lbs
Force in Z	F _z	874.7	lbs
Moment about X	M _x	-459.2	lb-ft
Moment about Y	M _y	-78.6	lb-ft
Moment about Z	M _z	85.2	lb-ft

Monopole Properties

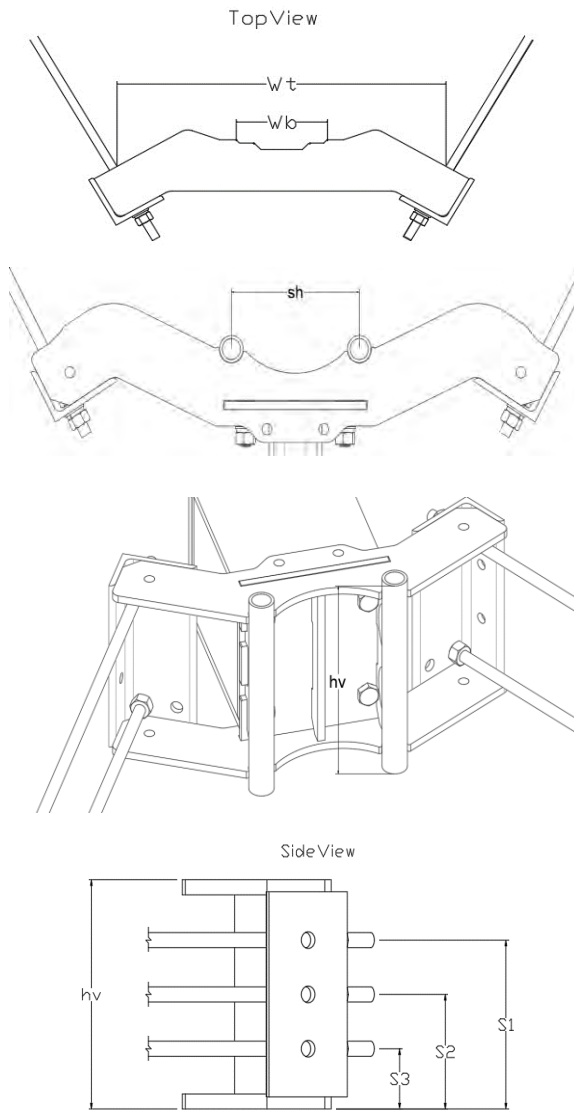
Monopole Yield Strength	F _y	65	ksi
Pole Thickness	t	0.250	in
Pole Diameter	D	26.74	in
Pole D/t Ratio	D/t	106.960	

Collar Properties

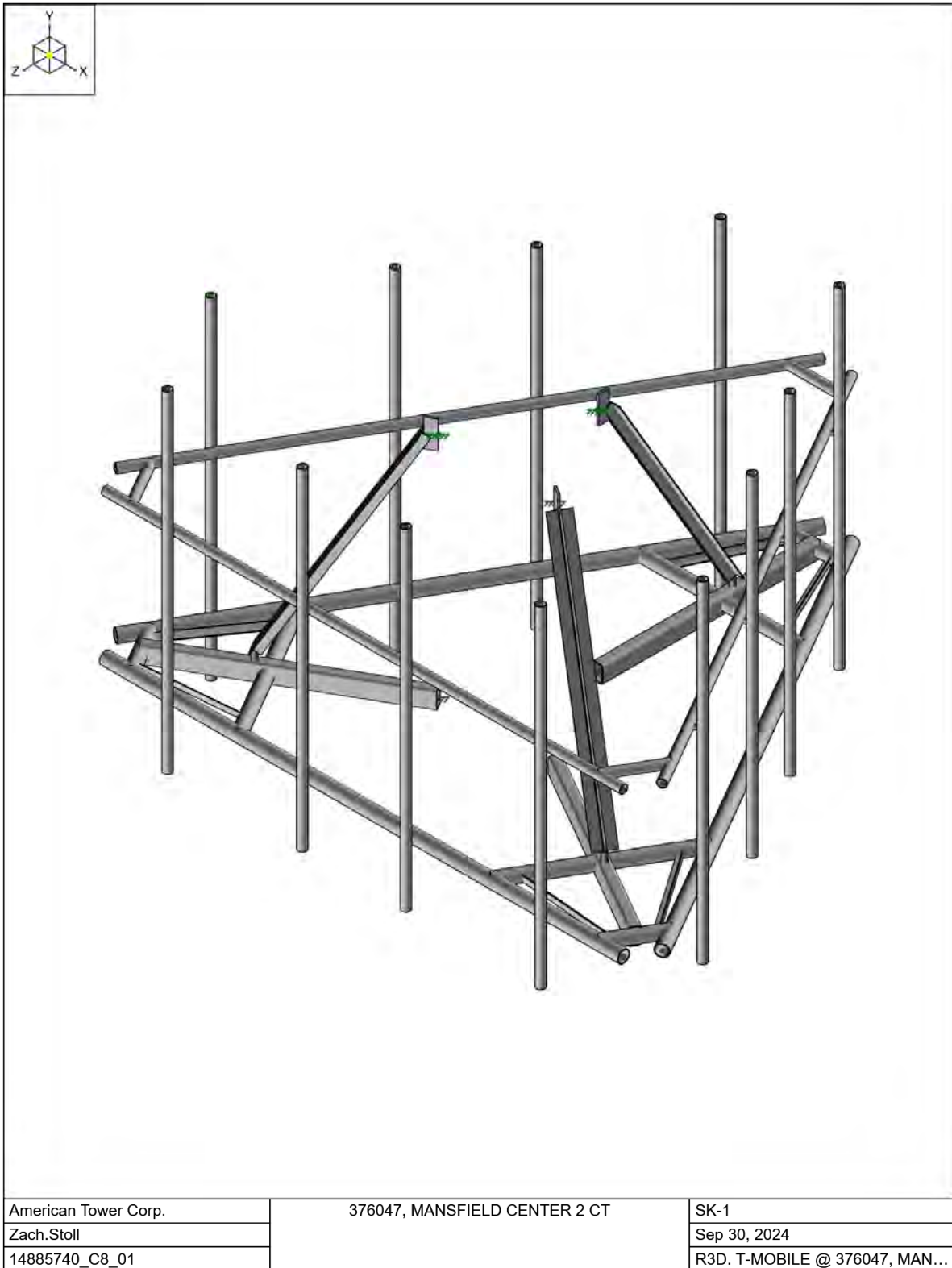
Collar		PV-RM1045-MD	
Collar Type		Tri	
Bearing Zone Type		Vertical	
Bearing Point Width	B _p / S _h / W _b	9.08	in
Threaded Rod Width	W _t	24.3	in
Collar Height	h _v	11.875	in
Aspect Ratio	AR	0.76	
	C _v	2	
Applied Moment	M _u	0.46	k-in
Collar / Shaft Capacity	φM _n	22.1	k-in
Utilization Ratio	M _u /φM _n	2%	Pass

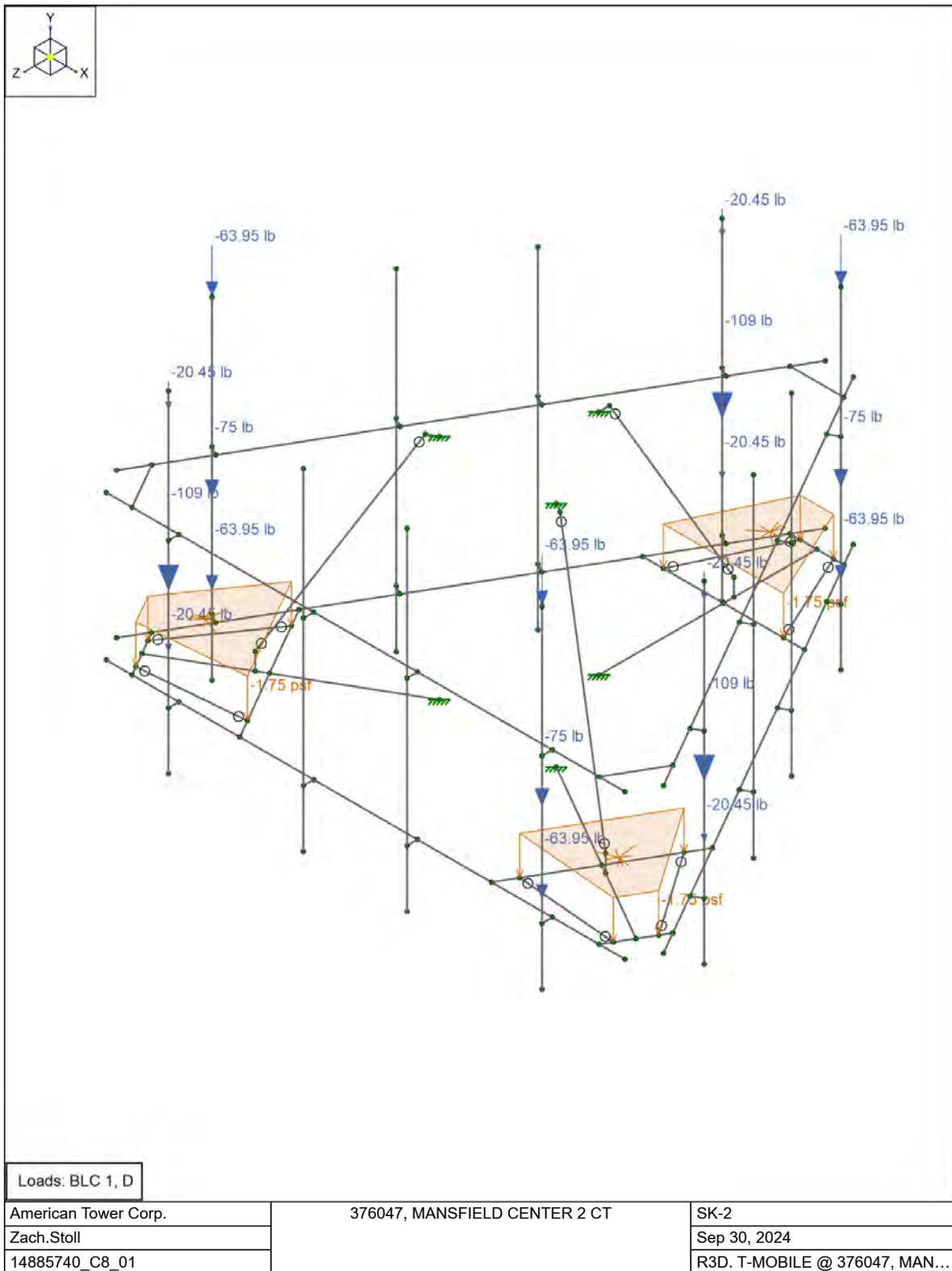
Threaded Rod Properties

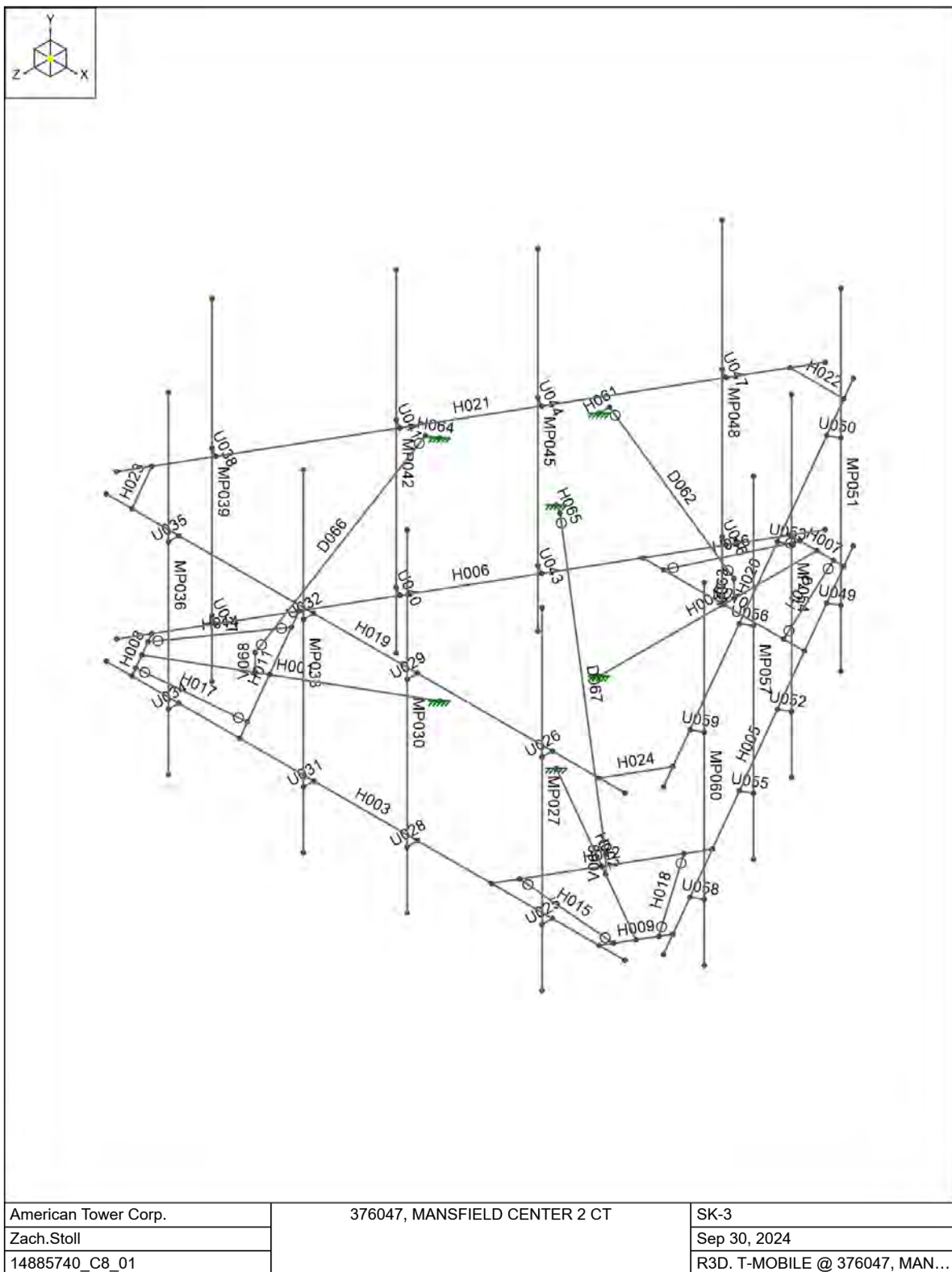
Quantity	n	2	
Rod Diameter	D _B	3/4	in
Vertical Rod 1 Spacing	S ₁	10	in
Vertical Rod 2 Spacing	S ₂	1	in
Rod Grade		A449	

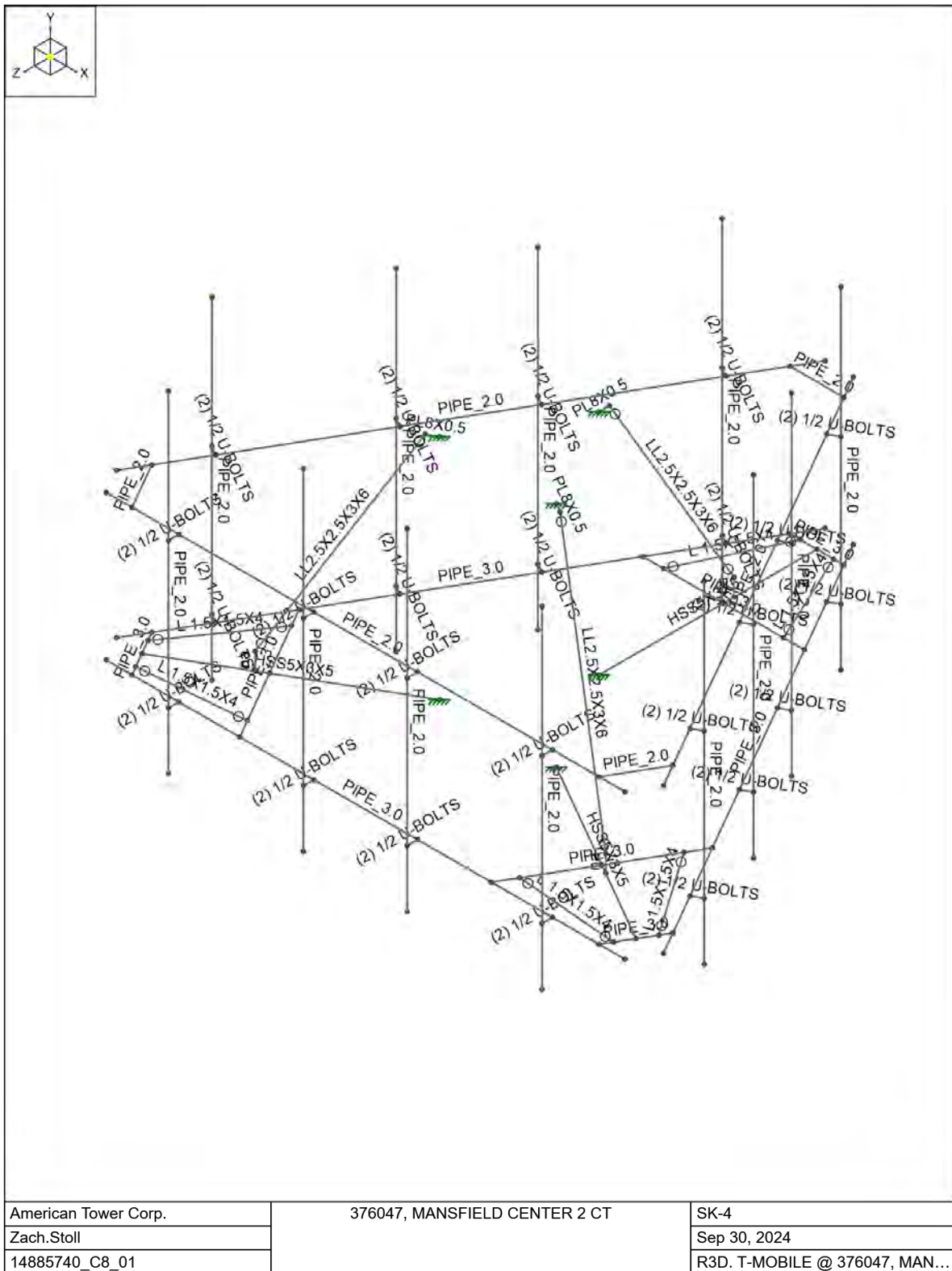


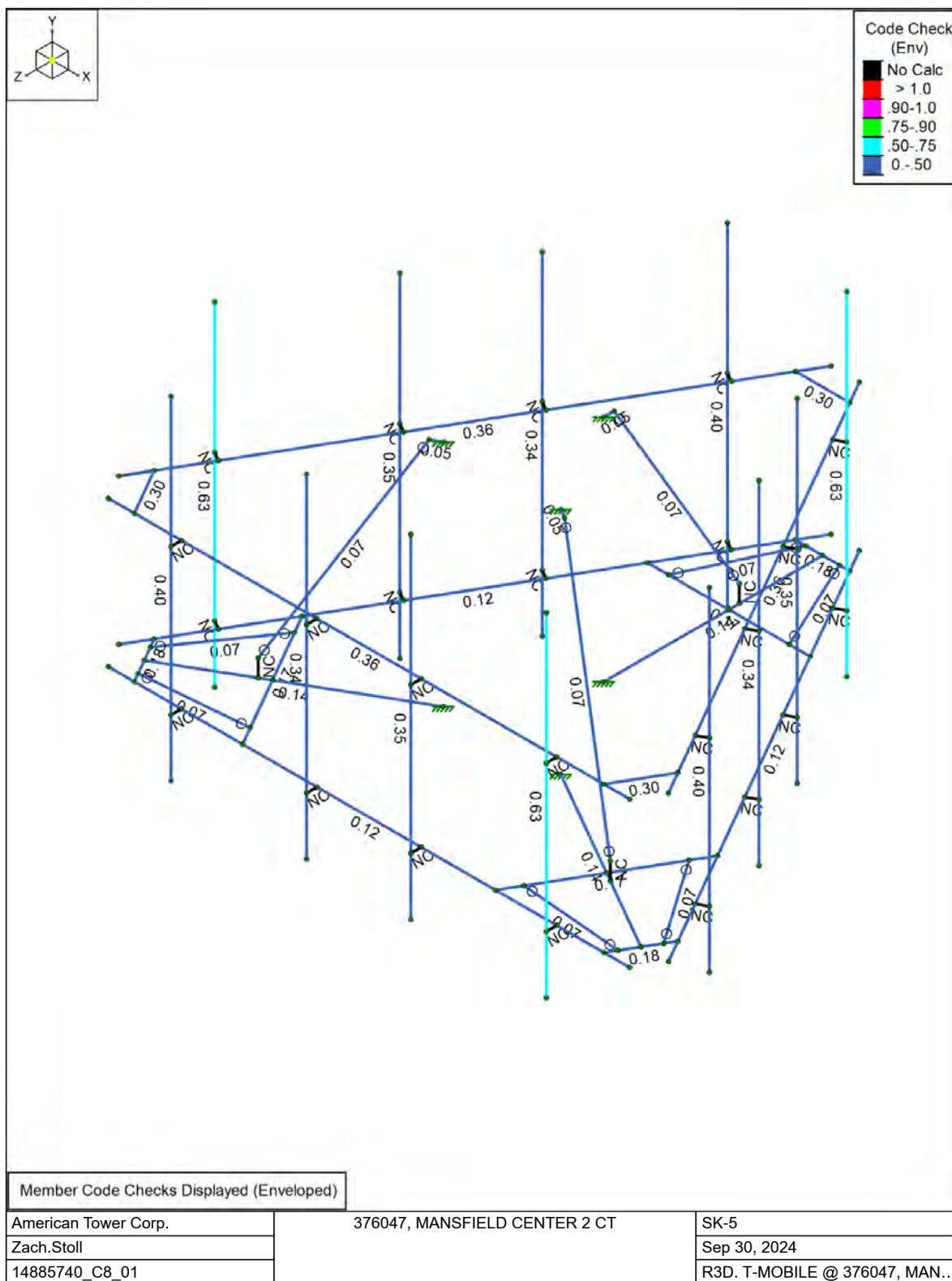
Rod Fy	F _{yB}	92	ksi
Rod Fu	F _{uB}	120	ksi
Max Applied Tension	T _u	0.32	k
Tensile Strength	φT _n	30.1	k
Utilization Ratio	T _u /φT _n	1%	Pass

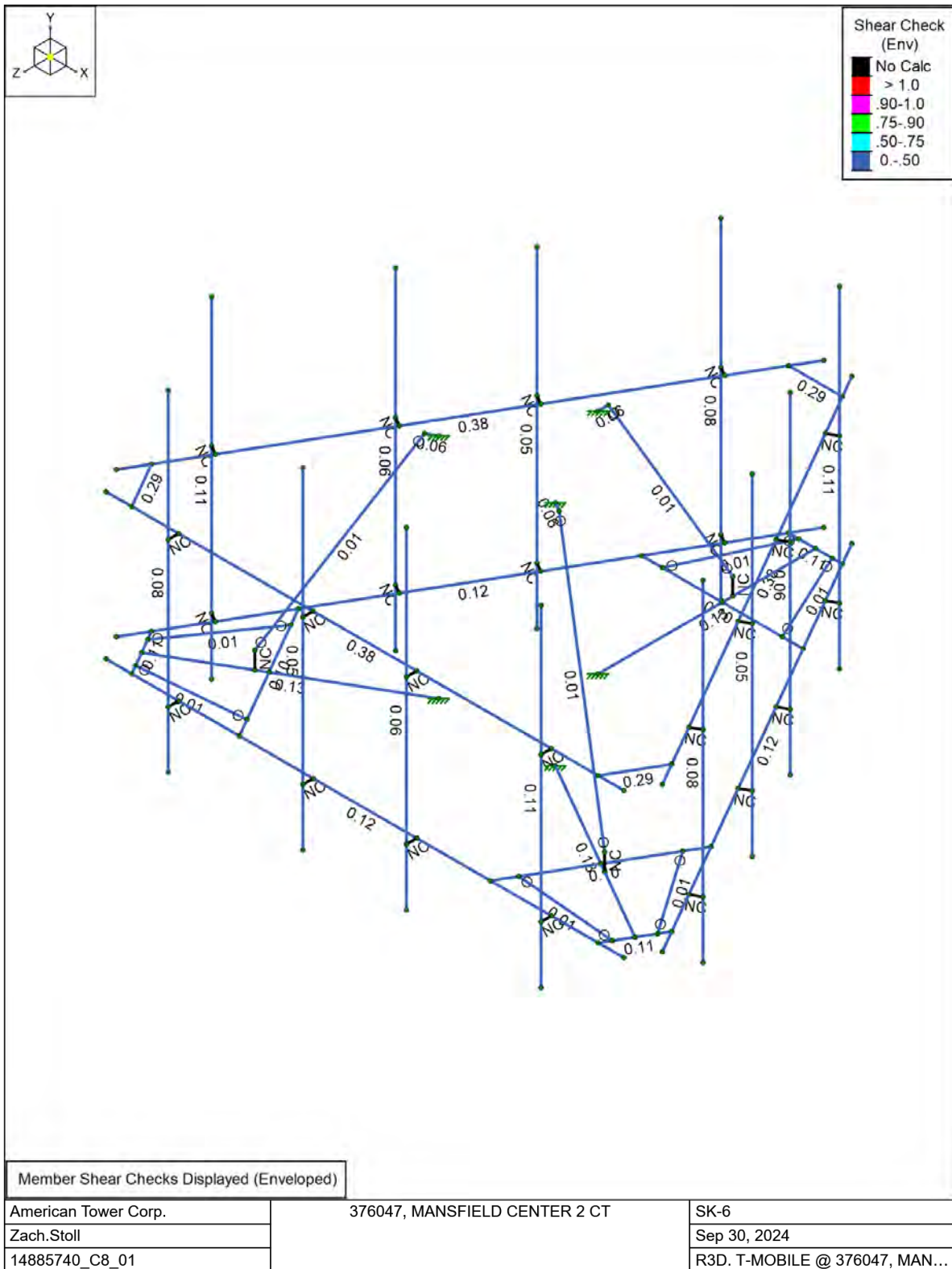














Company : American Tower Corp.
 Designer : Zach.Stoll
 Job Number : 14885740_C8_01
 Model Name : 376047, MANSFIELD CENTER 2 ...

9/30/2024
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 Checked By : -

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Point	Distributed	Area(Member)
1	D	DL		-1			18		3
2	Di	IL					18	42	3
3	W 0	WL					18	42	
4	W 30	WL					36	84	
5	W 60	WL					36	84	
6	W 90	WL					18	48	
7	W 120	WL					36	84	
8	W 150	WL					36	84	
9	W 180	WL					18	42	
10	W 210	WL					36	84	
11	W 240	WL					36	84	
12	W 270	WL					18	48	
13	W 300	WL					36	84	
14	W 330	WL					36	84	
15	Wi 0	WL					18	42	
16	Wi 30	WL					36	84	
17	Wi 60	WL					36	84	
18	Wi 90	WL					18	48	
19	Wi 120	WL					36	84	
20	Wi 150	WL					36	84	
21	Wi 180	WL					18	42	
22	Wi 210	WL					36	84	
23	Wi 240	WL					36	84	
24	Wi 270	WL					18	48	
25	Wi 300	WL					36	84	
26	Wi 330	WL					36	84	
27	Ws 0	WL					18	42	
28	Ws 30	WL					36	84	
29	Ws 60	WL					36	84	
30	Ws 90	WL					18	48	
31	Ws 120	WL					36	84	
32	Ws 150	WL					36	84	
33	Ws 180	WL					18	42	
34	Ws 210	WL					36	84	
35	Ws 240	WL					36	84	
36	Ws 270	WL					18	48	
37	Ws 300	WL					36	84	
38	Ws 330	WL					36	84	
39	Ev -Y	ELY		-0.029			18		3
40	Eh -Z	ELZ			-0.074		18		3
41	Eh -X	ELX	-0.074				18		3
42	Lm (1)	LL				1			
43	Lm (2)	LL				1			
44	Lm (3)	LL				1			
45	Lm (4)	LL				1			
46	Lm (5)	LL				1			
47	Lm (6)	LL				1			
48	Lm (7)	LL				1			
49	Lm (8)	LL				1			
50	Lm (9)	LL				1			
51	Lm (10)	LL				1			
52	Lm (11)	LL				1			
53	Lm (12)	LL				1			
54	BLC 1 Transient Area Loads	None						66	
55	BLC 2 Transient Area Loads	None						66	



Company : American Tower Corp.
Designer : Zach.Stoll
Job Number : 14885740_C8_01
Model Name : 376047, MANSFIELD CENTER 2 ...

9/30/2024
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Checked By : -

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Point	Distributed	Area(Member)
56	BLC 39 Transient Area Loads	None						66	
57	BLC 40 Transient Area Loads	None						66	
58	BLC 41 Transient Area Loads	None						66	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4D	Yes	Y	DL	1.4						
2	1.2D + 1.0W [0°]	Yes	Y	DL	1.2	3	1				
3	1.2D + 1.0W [30°]	Yes	Y	DL	1.2	4	1				
4	1.2D + 1.0W [60°]	Yes	Y	DL	1.2	5	1				
5	1.2D + 1.0W [90°]	Yes	Y	DL	1.2	6	1				
6	1.2D + 1.0W [120°]	Yes	Y	DL	1.2	7	1				
7	1.2D + 1.0W [150°]	Yes	Y	DL	1.2	8	1				
8	1.2D + 1.0W [180°]	Yes	Y	DL	1.2	9	1				
9	1.2D + 1.0W [210°]	Yes	Y	DL	1.2	10	1				
10	1.2D + 1.0W [240°]	Yes	Y	DL	1.2	11	1				
11	1.2D + 1.0W [270°]	Yes	Y	DL	1.2	12	1				
12	1.2D + 1.0W [300°]	Yes	Y	DL	1.2	13	1				
13	1.2D + 1.0W [330°]	Yes	Y	DL	1.2	14	1				
14	0.9D + 1.0W [0°]	Yes	Y	DL	0.9	3	1				
15	0.9D + 1.0W [30°]	Yes	Y	DL	0.9	4	1				
16	0.9D + 1.0W [60°]	Yes	Y	DL	0.9	5	1				
17	0.9D + 1.0W [90°]	Yes	Y	DL	0.9	6	1				
18	0.9D + 1.0W [120°]	Yes	Y	DL	0.9	7	1				
19	0.9D + 1.0W [150°]	Yes	Y	DL	0.9	8	1				
20	0.9D + 1.0W [180°]	Yes	Y	DL	0.9	9	1				
21	0.9D + 1.0W [210°]	Yes	Y	DL	0.9	10	1				
22	0.9D + 1.0W [240°]	Yes	Y	DL	0.9	11	1				
23	0.9D + 1.0W [270°]	Yes	Y	DL	0.9	12	1				
24	0.9D + 1.0W [300°]	Yes	Y	DL	0.9	13	1				
25	0.9D + 1.0W [330°]	Yes	Y	DL	0.9	14	1				
26	1.2D + 1.0Di + 1.0Wi [0°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	15	1		
27	1.2D + 1.0Di + 1.0Wi [30°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	16	1		
28	1.2D + 1.0Di + 1.0Wi [60°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	17	1		
29	1.2D + 1.0Di + 1.0Wi [90°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	18	1		
30	1.2D + 1.0Di + 1.0Wi [120°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	19	1		
31	1.2D + 1.0Di + 1.0Wi [150°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	20	1		
32	1.2D + 1.0Di + 1.0Wi [180°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	21	1		
33	1.2D + 1.0Di + 1.0Wi [210°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	22	1		
34	1.2D + 1.0Di + 1.0Wi [240°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	23	1		
35	1.2D + 1.0Di + 1.0Wi [270°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	24	1		
36	1.2D + 1.0Di + 1.0Wi [300°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	25	1		
37	1.2D + 1.0Di + 1.0Wi [330°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	26	1		
38	1.2D + 1.0Ev + 1.0Eh [0°]	Yes	Y	DL	1.2	ELY	1	ELZ	1	ELX	0.001
39	1.2D + 1.0Ev + 1.0Eh [30°]	Yes	Y	DL	1.2	ELY	1	ELZ	0.866	ELX	0.5
40	1.2D + 1.0Ev + 1.0Eh [60°]	Yes	Y	DL	1.2	ELY	1	ELZ	0.5	ELX	0.866
41	1.2D + 1.0Ev + 1.0Eh [90°]	Yes	Y	DL	1.2	ELY	1	ELZ	0.001	ELX	1
42	1.2D + 1.0Ev + 1.0Eh [120°]	Yes	Y	DL	1.2	ELY	1	ELZ	-0.5	ELX	0.866
43	1.2D + 1.0Ev + 1.0Eh [150°]	Yes	Y	DL	1.2	ELY	1	ELZ	-0.866	ELX	0.5
44	1.2D + 1.0Ev + 1.0Eh [180°]	Yes	Y	DL	1.2	ELY	1	ELZ	-1	ELX	0.001
45	1.2D + 1.0Ev + 1.0Eh [210°]	Yes	Y	DL	1.2	ELY	1	ELZ	-0.866	ELX	-0.5
46	1.2D + 1.0Ev + 1.0Eh [240°]	Yes	Y	DL	1.2	ELY	1	ELZ	-0.5	ELX	-0.866
47	1.2D + 1.0Ev + 1.0Eh [270°]	Yes	Y	DL	1.2	ELY	1	ELZ	0.001	ELX	-1
48	1.2D + 1.0Ev + 1.0Eh [300°]	Yes	Y	DL	1.2	ELY	1	ELZ	0.5	ELX	-0.866
49	1.2D + 1.0Ev + 1.0Eh [330°]	Yes	Y	DL	1.2	ELY	1	ELZ	0.866	ELX	-0.5



Company : American Tower Corp.
Designer : Zach.Stoll
Job Number : 14885740_C8_01
Model Name : 376047, MANSFIELD CENTER 2 ...

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Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
50	0.9D + 1.0Ev + 1.0Eh [0°]	Yes	Y	DL	0.9	ELY	1	ELZ	1	ELX	0.001
51	0.9D + 1.0Ev + 1.0Eh [30°]	Yes	Y	DL	0.9	ELY	1	ELZ	0.866	ELX	0.5
52	0.9D + 1.0Ev + 1.0Eh [60°]	Yes	Y	DL	0.9	ELY	1	ELZ	0.5	ELX	0.866
53	0.9D + 1.0Ev + 1.0Eh [90°]	Yes	Y	DL	0.9	ELY	1	ELZ	0.001	ELX	1
54	0.9D + 1.0Ev + 1.0Eh [120°]	Yes	Y	DL	0.9	ELY	1	ELZ	-0.5	ELX	0.866
55	0.9D + 1.0Ev + 1.0Eh [150°]	Yes	Y	DL	0.9	ELY	1	ELZ	-0.866	ELX	0.5
56	0.9D + 1.0Ev + 1.0Eh [180°]	Yes	Y	DL	0.9	ELY	1	ELZ	-1	ELX	0.001
57	0.9D + 1.0Ev + 1.0Eh [210°]	Yes	Y	DL	0.9	ELY	1	ELZ	-0.866	ELX	-0.5
58	0.9D + 1.0Ev + 1.0Eh [240°]	Yes	Y	DL	0.9	ELY	1	ELZ	-0.5	ELX	-0.866
59	0.9D + 1.0Ev + 1.0Eh [270°]	Yes	Y	DL	0.9	ELY	1	ELZ	0.001	ELX	-1
60	0.9D + 1.0Ev + 1.0Eh [300°]	Yes	Y	DL	0.9	ELY	1	ELZ	0.5	ELX	-0.866
61	0.9D + 1.0Ev + 1.0Eh [330°]	Yes	Y	DL	0.9	ELY	1	ELZ	0.866	ELX	-0.5
62	1.2D + 1.5Lm(1) + 1.0Wm [0°]	Yes	Y	DL	1.2	42	1.5	27	1		
63	1.2D + 1.5Lm(1) + 1.0Wm [30°]	Yes	Y	DL	1.2	42	1.5	28	1		
64	1.2D + 1.5Lm(1) + 1.0Wm [60°]	Yes	Y	DL	1.2	42	1.5	29	1		
65	1.2D + 1.5Lm(1) + 1.0Wm [90°]	Yes	Y	DL	1.2	42	1.5	30	1		
66	1.2D + 1.5Lm(1) + 1.0Wm [120°]	Yes	Y	DL	1.2	42	1.5	31	1		
67	1.2D + 1.5Lm(1) + 1.0Wm [150°]	Yes	Y	DL	1.2	42	1.5	32	1		
68	1.2D + 1.5Lm(1) + 1.0Wm [180°]	Yes	Y	DL	1.2	42	1.5	33	1		
69	1.2D + 1.5Lm(1) + 1.0Wm [210°]	Yes	Y	DL	1.2	42	1.5	34	1		
70	1.2D + 1.5Lm(1) + 1.0Wm [240°]	Yes	Y	DL	1.2	42	1.5	35	1		
71	1.2D + 1.5Lm(1) + 1.0Wm [270°]	Yes	Y	DL	1.2	42	1.5	36	1		
72	1.2D + 1.5Lm(1) + 1.0Wm [300°]	Yes	Y	DL	1.2	42	1.5	37	1		
73	1.2D + 1.5Lm(1) + 1.0Wm [330°]	Yes	Y	DL	1.2	42	1.5	38	1		
74	1.2D + 1.5Lm(2) + 1.0Wm [0°]	Yes	Y	DL	1.2	43	1.5	27	1		
75	1.2D + 1.5Lm(2) + 1.0Wm [30°]	Yes	Y	DL	1.2	43	1.5	28	1		
76	1.2D + 1.5Lm(2) + 1.0Wm [60°]	Yes	Y	DL	1.2	43	1.5	29	1		
77	1.2D + 1.5Lm(2) + 1.0Wm [90°]	Yes	Y	DL	1.2	43	1.5	30	1		
78	1.2D + 1.5Lm(2) + 1.0Wm [120°]	Yes	Y	DL	1.2	43	1.5	31	1		
79	1.2D + 1.5Lm(2) + 1.0Wm [150°]	Yes	Y	DL	1.2	43	1.5	32	1		
80	1.2D + 1.5Lm(2) + 1.0Wm [180°]	Yes	Y	DL	1.2	43	1.5	33	1		
81	1.2D + 1.5Lm(2) + 1.0Wm [210°]	Yes	Y	DL	1.2	43	1.5	34	1		
82	1.2D + 1.5Lm(2) + 1.0Wm [240°]	Yes	Y	DL	1.2	43	1.5	35	1		
83	1.2D + 1.5Lm(2) + 1.0Wm [270°]	Yes	Y	DL	1.2	43	1.5	36	1		
84	1.2D + 1.5Lm(2) + 1.0Wm [300°]	Yes	Y	DL	1.2	43	1.5	37	1		
85	1.2D + 1.5Lm(2) + 1.0Wm [330°]	Yes	Y	DL	1.2	43	1.5	38	1		
86	1.2D + 1.5Lm(3) + 1.0Wm [0°]	Yes	Y	DL	1.2	44	1.5	27	1		
87	1.2D + 1.5Lm(3) + 1.0Wm [30°]	Yes	Y	DL	1.2	44	1.5	28	1		
88	1.2D + 1.5Lm(3) + 1.0Wm [60°]	Yes	Y	DL	1.2	44	1.5	29	1		
89	1.2D + 1.5Lm(3) + 1.0Wm [90°]	Yes	Y	DL	1.2	44	1.5	30	1		
90	1.2D + 1.5Lm(3) + 1.0Wm [120°]	Yes	Y	DL	1.2	44	1.5	31	1		
91	1.2D + 1.5Lm(3) + 1.0Wm [150°]	Yes	Y	DL	1.2	44	1.5	32	1		
92	1.2D + 1.5Lm(3) + 1.0Wm [180°]	Yes	Y	DL	1.2	44	1.5	33	1		
93	1.2D + 1.5Lm(3) + 1.0Wm [210°]	Yes	Y	DL	1.2	44	1.5	34	1		
94	1.2D + 1.5Lm(3) + 1.0Wm [240°]	Yes	Y	DL	1.2	44	1.5	35	1		
95	1.2D + 1.5Lm(3) + 1.0Wm [270°]	Yes	Y	DL	1.2	44	1.5	36	1		
96	1.2D + 1.5Lm(3) + 1.0Wm [300°]	Yes	Y	DL	1.2	44	1.5	37	1		
97	1.2D + 1.5Lm(3) + 1.0Wm [330°]	Yes	Y	DL	1.2	44	1.5	38	1		
98	1.2D + 1.5Lm(4) + 1.0Wm [0°]	Yes	Y	DL	1.2	45	1.5	27	1		
99	1.2D + 1.5Lm(4) + 1.0Wm [30°]	Yes	Y	DL	1.2	45	1.5	28	1		
100	1.2D + 1.5Lm(4) + 1.0Wm [60°]	Yes	Y	DL	1.2	45	1.5	29	1		
101	1.2D + 1.5Lm(4) + 1.0Wm [90°]	Yes	Y	DL	1.2	45	1.5	30	1		
102	1.2D + 1.5Lm(4) + 1.0Wm [120°]	Yes	Y	DL	1.2	45	1.5	31	1		
103	1.2D + 1.5Lm(4) + 1.0Wm [150°]	Yes	Y	DL	1.2	45	1.5	32	1		
104	1.2D + 1.5Lm(4) + 1.0Wm [180°]	Yes	Y	DL	1.2	45	1.5	33	1		



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Designer : Zach.Stoll
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Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
105	1.2D + 1.5Lm(4) + 1.0Wm [210°]	Yes	Y	DL	1.2	45	1.5	34	1		
106	1.2D + 1.5Lm(4) + 1.0Wm [240°]	Yes	Y	DL	1.2	45	1.5	35	1		
107	1.2D + 1.5Lm(4) + 1.0Wm [270°]	Yes	Y	DL	1.2	45	1.5	36	1		
108	1.2D + 1.5Lm(4) + 1.0Wm [300°]	Yes	Y	DL	1.2	45	1.5	37	1		
109	1.2D + 1.5Lm(4) + 1.0Wm [330°]	Yes	Y	DL	1.2	45	1.5	38	1		
110	1.2D + 1.5Lm(5) + 1.0Wm [0°]	Yes	Y	DL	1.2	46	1.5	27	1		
111	1.2D + 1.5Lm(5) + 1.0Wm [30°]	Yes	Y	DL	1.2	46	1.5	28	1		
112	1.2D + 1.5Lm(5) + 1.0Wm [60°]	Yes	Y	DL	1.2	46	1.5	29	1		
113	1.2D + 1.5Lm(5) + 1.0Wm [90°]	Yes	Y	DL	1.2	46	1.5	30	1		
114	1.2D + 1.5Lm(5) + 1.0Wm [120°]	Yes	Y	DL	1.2	46	1.5	31	1		
115	1.2D + 1.5Lm(5) + 1.0Wm [150°]	Yes	Y	DL	1.2	46	1.5	32	1		
116	1.2D + 1.5Lm(5) + 1.0Wm [180°]	Yes	Y	DL	1.2	46	1.5	33	1		
117	1.2D + 1.5Lm(5) + 1.0Wm [210°]	Yes	Y	DL	1.2	46	1.5	34	1		
118	1.2D + 1.5Lm(5) + 1.0Wm [240°]	Yes	Y	DL	1.2	46	1.5	35	1		
119	1.2D + 1.5Lm(5) + 1.0Wm [270°]	Yes	Y	DL	1.2	46	1.5	36	1		
120	1.2D + 1.5Lm(5) + 1.0Wm [300°]	Yes	Y	DL	1.2	46	1.5	37	1		
121	1.2D + 1.5Lm(5) + 1.0Wm [330°]	Yes	Y	DL	1.2	46	1.5	38	1		
122	1.2D + 1.5Lm(6) + 1.0Wm [0°]	Yes	Y	DL	1.2	47	1.5	27	1		
123	1.2D + 1.5Lm(6) + 1.0Wm [30°]	Yes	Y	DL	1.2	47	1.5	28	1		
124	1.2D + 1.5Lm(6) + 1.0Wm [60°]	Yes	Y	DL	1.2	47	1.5	29	1		
125	1.2D + 1.5Lm(6) + 1.0Wm [90°]	Yes	Y	DL	1.2	47	1.5	30	1		
126	1.2D + 1.5Lm(6) + 1.0Wm [120°]	Yes	Y	DL	1.2	47	1.5	31	1		
127	1.2D + 1.5Lm(6) + 1.0Wm [150°]	Yes	Y	DL	1.2	47	1.5	32	1		
128	1.2D + 1.5Lm(6) + 1.0Wm [180°]	Yes	Y	DL	1.2	47	1.5	33	1		
129	1.2D + 1.5Lm(6) + 1.0Wm [210°]	Yes	Y	DL	1.2	47	1.5	34	1		
130	1.2D + 1.5Lm(6) + 1.0Wm [240°]	Yes	Y	DL	1.2	47	1.5	35	1		
131	1.2D + 1.5Lm(6) + 1.0Wm [270°]	Yes	Y	DL	1.2	47	1.5	36	1		
132	1.2D + 1.5Lm(6) + 1.0Wm [300°]	Yes	Y	DL	1.2	47	1.5	37	1		
133	1.2D + 1.5Lm(6) + 1.0Wm [330°]	Yes	Y	DL	1.2	47	1.5	38	1		
134	1.2D + 1.5Lm(7) + 1.0Wm [0°]	Yes	Y	DL	1.2	48	1.5	27	1		
135	1.2D + 1.5Lm(7) + 1.0Wm [30°]	Yes	Y	DL	1.2	48	1.5	28	1		
136	1.2D + 1.5Lm(7) + 1.0Wm [60°]	Yes	Y	DL	1.2	48	1.5	29	1		
137	1.2D + 1.5Lm(7) + 1.0Wm [90°]	Yes	Y	DL	1.2	48	1.5	30	1		
138	1.2D + 1.5Lm(7) + 1.0Wm [120°]	Yes	Y	DL	1.2	48	1.5	31	1		
139	1.2D + 1.5Lm(7) + 1.0Wm [150°]	Yes	Y	DL	1.2	48	1.5	32	1		
140	1.2D + 1.5Lm(7) + 1.0Wm [180°]	Yes	Y	DL	1.2	48	1.5	33	1		
141	1.2D + 1.5Lm(7) + 1.0Wm [210°]	Yes	Y	DL	1.2	48	1.5	34	1		
142	1.2D + 1.5Lm(7) + 1.0Wm [240°]	Yes	Y	DL	1.2	48	1.5	35	1		
143	1.2D + 1.5Lm(7) + 1.0Wm [270°]	Yes	Y	DL	1.2	48	1.5	36	1		
144	1.2D + 1.5Lm(7) + 1.0Wm [300°]	Yes	Y	DL	1.2	48	1.5	37	1		
145	1.2D + 1.5Lm(7) + 1.0Wm [330°]	Yes	Y	DL	1.2	48	1.5	38	1		
146	1.2D + 1.5Lm(8) + 1.0Wm [0°]	Yes	Y	DL	1.2	49	1.5	27	1		
147	1.2D + 1.5Lm(8) + 1.0Wm [30°]	Yes	Y	DL	1.2	49	1.5	28	1		
148	1.2D + 1.5Lm(8) + 1.0Wm [60°]	Yes	Y	DL	1.2	49	1.5	29	1		
149	1.2D + 1.5Lm(8) + 1.0Wm [90°]	Yes	Y	DL	1.2	49	1.5	30	1		
150	1.2D + 1.5Lm(8) + 1.0Wm [120°]	Yes	Y	DL	1.2	49	1.5	31	1		
151	1.2D + 1.5Lm(8) + 1.0Wm [150°]	Yes	Y	DL	1.2	49	1.5	32	1		
152	1.2D + 1.5Lm(8) + 1.0Wm [180°]	Yes	Y	DL	1.2	49	1.5	33	1		
153	1.2D + 1.5Lm(8) + 1.0Wm [210°]	Yes	Y	DL	1.2	49	1.5	34	1		
154	1.2D + 1.5Lm(8) + 1.0Wm [240°]	Yes	Y	DL	1.2	49	1.5	35	1		
155	1.2D + 1.5Lm(8) + 1.0Wm [270°]	Yes	Y	DL	1.2	49	1.5	36	1		
156	1.2D + 1.5Lm(8) + 1.0Wm [300°]	Yes	Y	DL	1.2	49	1.5	37	1		
157	1.2D + 1.5Lm(8) + 1.0Wm [330°]	Yes	Y	DL	1.2	49	1.5	38	1		
158	1.2D + 1.5Lm(9) + 1.0Wm [0°]	Yes	Y	DL	1.2	50	1.5	27	1		
159	1.2D + 1.5Lm(9) + 1.0Wm [30°]	Yes	Y	DL	1.2	50	1.5	28	1		



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Designer : Zach.Stoll
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Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
160	1.2D + 1.5Lm(9) + 1.0Wm [60°]	Yes	Y	DL	1.2	50	1.5	29	1		
161	1.2D + 1.5Lm(9) + 1.0Wm [90°]	Yes	Y	DL	1.2	50	1.5	30	1		
162	1.2D + 1.5Lm(9) + 1.0Wm [120°]	Yes	Y	DL	1.2	50	1.5	31	1		
163	1.2D + 1.5Lm(9) + 1.0Wm [150°]	Yes	Y	DL	1.2	50	1.5	32	1		
164	1.2D + 1.5Lm(9) + 1.0Wm [180°]	Yes	Y	DL	1.2	50	1.5	33	1		
165	1.2D + 1.5Lm(9) + 1.0Wm [210°]	Yes	Y	DL	1.2	50	1.5	34	1		
166	1.2D + 1.5Lm(9) + 1.0Wm [240°]	Yes	Y	DL	1.2	50	1.5	35	1		
167	1.2D + 1.5Lm(9) + 1.0Wm [270°]	Yes	Y	DL	1.2	50	1.5	36	1		
168	1.2D + 1.5Lm(9) + 1.0Wm [300°]	Yes	Y	DL	1.2	50	1.5	37	1		
169	1.2D + 1.5Lm(9) + 1.0Wm [330°]	Yes	Y	DL	1.2	50	1.5	38	1		
170	1.2D + 1.5Lm(10) + 1.0Wm [0°]	Yes	Y	DL	1.2	51	1.5	27	1		
171	1.2D + 1.5Lm(10) + 1.0Wm [30°]	Yes	Y	DL	1.2	51	1.5	28	1		
172	1.2D + 1.5Lm(10) + 1.0Wm [60°]	Yes	Y	DL	1.2	51	1.5	29	1		
173	1.2D + 1.5Lm(10) + 1.0Wm [90°]	Yes	Y	DL	1.2	51	1.5	30	1		
174	1.2D + 1.5Lm(10) + 1.0Wm [120°]	Yes	Y	DL	1.2	51	1.5	31	1		
175	1.2D + 1.5Lm(10) + 1.0Wm [150°]	Yes	Y	DL	1.2	51	1.5	32	1		
176	1.2D + 1.5Lm(10) + 1.0Wm [180°]	Yes	Y	DL	1.2	51	1.5	33	1		
177	1.2D + 1.5Lm(10) + 1.0Wm [210°]	Yes	Y	DL	1.2	51	1.5	34	1		
178	1.2D + 1.5Lm(10) + 1.0Wm [240°]	Yes	Y	DL	1.2	51	1.5	35	1		
179	1.2D + 1.5Lm(10) + 1.0Wm [270°]	Yes	Y	DL	1.2	51	1.5	36	1		
180	1.2D + 1.5Lm(10) + 1.0Wm [300°]	Yes	Y	DL	1.2	51	1.5	37	1		
181	1.2D + 1.5Lm(10) + 1.0Wm [330°]	Yes	Y	DL	1.2	51	1.5	38	1		
182	1.2D + 1.5Lm(11) + 1.0Wm [0°]	Yes	Y	DL	1.2	52	1.5	27	1		
183	1.2D + 1.5Lm(11) + 1.0Wm [30°]	Yes	Y	DL	1.2	52	1.5	28	1		
184	1.2D + 1.5Lm(11) + 1.0Wm [60°]	Yes	Y	DL	1.2	52	1.5	29	1		
185	1.2D + 1.5Lm(11) + 1.0Wm [90°]	Yes	Y	DL	1.2	52	1.5	30	1		
186	1.2D + 1.5Lm(11) + 1.0Wm [120°]	Yes	Y	DL	1.2	52	1.5	31	1		
187	1.2D + 1.5Lm(11) + 1.0Wm [150°]	Yes	Y	DL	1.2	52	1.5	32	1		
188	1.2D + 1.5Lm(11) + 1.0Wm [180°]	Yes	Y	DL	1.2	52	1.5	33	1		
189	1.2D + 1.5Lm(11) + 1.0Wm [210°]	Yes	Y	DL	1.2	52	1.5	34	1		
190	1.2D + 1.5Lm(11) + 1.0Wm [240°]	Yes	Y	DL	1.2	52	1.5	35	1		
191	1.2D + 1.5Lm(11) + 1.0Wm [270°]	Yes	Y	DL	1.2	52	1.5	36	1		
192	1.2D + 1.5Lm(11) + 1.0Wm [300°]	Yes	Y	DL	1.2	52	1.5	37	1		
193	1.2D + 1.5Lm(11) + 1.0Wm [330°]	Yes	Y	DL	1.2	52	1.5	38	1		
194	1.2D + 1.5Lm(12) + 1.0Wm [0°]	Yes	Y	DL	1.2	53	1.5	27	1		
195	1.2D + 1.5Lm(12) + 1.0Wm [30°]	Yes	Y	DL	1.2	53	1.5	28	1		
196	1.2D + 1.5Lm(12) + 1.0Wm [60°]	Yes	Y	DL	1.2	53	1.5	29	1		
197	1.2D + 1.5Lm(12) + 1.0Wm [90°]	Yes	Y	DL	1.2	53	1.5	30	1		
198	1.2D + 1.5Lm(12) + 1.0Wm [120°]	Yes	Y	DL	1.2	53	1.5	31	1		
199	1.2D + 1.5Lm(12) + 1.0Wm [150°]	Yes	Y	DL	1.2	53	1.5	32	1		
200	1.2D + 1.5Lm(12) + 1.0Wm [180°]	Yes	Y	DL	1.2	53	1.5	33	1		
201	1.2D + 1.5Lm(12) + 1.0Wm [210°]	Yes	Y	DL	1.2	53	1.5	34	1		
202	1.2D + 1.5Lm(12) + 1.0Wm [240°]	Yes	Y	DL	1.2	53	1.5	35	1		
203	1.2D + 1.5Lm(12) + 1.0Wm [270°]	Yes	Y	DL	1.2	53	1.5	36	1		
204	1.2D + 1.5Lm(12) + 1.0Wm [300°]	Yes	Y	DL	1.2	53	1.5	37	1		
205	1.2D + 1.5Lm(12) + 1.0Wm [330°]	Yes	Y	DL	1.2	53	1.5	38	1		

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	H001	N003	N005		HSS5X3X5	Beam	None	A500 Gr. B [SQR]	Typical
2	H002	N004	N006		HSS5X3X5	Beam	None	A500 Gr. B [SQR]	Typical
3	H003	N009	N010		PIPE 3.0	Beam	None	A500 Gr. B [RND]	Typical
4	H004	N002	N015		HSS5X3X5	Beam	None	A500 Gr. B [SQR]	Typical
5	H005	N011	N013		PIPE 3.0	Beam	None	A500 Gr. B [RND]	Typical
6	H006	N012	N014		PIPE 3.0	Beam	None	A500 Gr. B [RND]	Typical



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Designer : Zach.Stoll
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Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
7	H007	N019	N017		PIPE 3.0	Beam	None	A500 Gr. B [RND]	Typical
8	H008	N021	N023		PIPE 3.0	Beam	None	A500 Gr. B [RND]	Typical
9	H009	N022	N024		PIPE 3.0	Beam	None	A500 Gr. B [RND]	Typical
10	H010	N018	N020		PIPE 3.0	Beam	None	A500 Gr. B [RND]	Typical
11	H011	N025	N027		PIPE 3.0	Beam	None	A500 Gr. B [RND]	Typical
12	H012	N026	N028		PIPE 3.0	Beam	None	A500 Gr. B [RND]	Typical
13	H013	N037	N029	270	L 1.5X1.5X4	Beam	None	A36	Typical
14	H014	N038	N030	270	L 1.5X1.5X4	Beam	None	A36	Typical
15	H015	N039	N040	270	L 1.5X1.5X4	Beam	None	A36	Typical
16	H016	N034	N031		L 1.5X1.5X4	Beam	None	A36	Typical
17	H017	N035	N032		L 1.5X1.5X4	Beam	None	A36	Typical
18	H018	N036	N033		L 1.5X1.5X4	Beam	None	A36	Typical
19	H019	N041	N042		PIPE 2.0	Beam	None	A500 Gr. B [RND]	Typical
20	H020	N043	N045		PIPE 2.0	Beam	None	A500 Gr. B [RND]	Typical
21	H021	N044	N046		PIPE 2.0	Beam	None	A500 Gr. B [RND]	Typical
22	H022	N048	N047		PIPE 2.0	Beam	None	A500 Gr. B [RND]	Typical
23	H023	N049	N051		PIPE 2.0	Beam	None	A500 Gr. B [RND]	Typical
24	H024	N050	N052		PIPE 2.0	Beam	None	A500 Gr. B [RND]	Typical
25	U025	N053	N065		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
26	U026	N066	N067		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
27	MP027	N068	N069		PIPE 2.0	Column	None	A53 Gr. B	Typical
28	U028	N054	N070		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
29	U029	N071	N072		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
30	MP030	N073	N074		PIPE 2.0	Column	None	A53 Gr. B	Typical
31	U031	N055	N075		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
32	U032	N076	N077		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
33	MP033	N078	N079		PIPE 2.0	Column	None	A53 Gr. B	Typical
34	U034	N056	N080		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
35	U035	N081	N082		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
36	MP036	N083	N084		PIPE 2.0	Column	None	A53 Gr. B	Typical
37	U037	N058	N085		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
38	U038	N086	N087		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
39	MP039	N088	N089		PIPE 2.0	Column	None	A53 Gr. B	Typical
40	U040	N060	N090		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
41	U041	N091	N092		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
42	MP042	N093	N094		PIPE 2.0	Column	None	A53 Gr. B	Typical
43	U043	N062	N095		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
44	U044	N096	N097		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
45	MP045	N098	N099		PIPE 2.0	Column	None	A53 Gr. B	Typical
46	U046	N064	N100		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
47	U047	N101	N102		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
48	MP048	N103	N104		PIPE 2.0	Column	None	A53 Gr. B	Typical
49	U049	N057	N105		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
50	U050	N106	N107		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
51	MP051	N108	N109		PIPE 2.0	Column	None	A53 Gr. B	Typical
52	U052	N059	N110		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
53	U053	N111	N112		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
54	MP054	N113	N114		PIPE 2.0	Column	None	A53 Gr. B	Typical
55	U055	N061	N115		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
56	U056	N116	N117		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
57	MP057	N118	N119		PIPE 2.0	Column	None	A53 Gr. B	Typical
58	U058	N063	N120		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
59	U059	N121	N122		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
60	MP060	N123	N124		PIPE 2.0	Column	None	A53 Gr. B	Typical
61	H061	N125	N126		PL8X0.5	Beam	None	A36	Typical



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Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
62	D062	N126	N127		LL2.5X2.5X3X6	Column	None	A36	Typical
63	V063	N128	N127		RIGID	None	None	RIGID	Typical
64	H064	N129	N131		PL8X0.5	Beam	None	A36	Typical
65	H065	N130	N132		PL8X0.5	Beam	None	A36	Typical
66	D066	N131	N133		LL2.5X2.5X3X6	Column	None	A36	Typical
67	D067	N132	N134		LL2.5X2.5X3X6	Column	None	A36	Typical
68	V068	N135	N133		RIGID	None	None	RIGID	Typical
69	V069	N136	N134		RIGID	None	None	RIGID	Typical

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function
1	H001	HSS5X3X5	63			Lbyy		1	1	Lateral
2	H002	HSS5X3X5	63			Lbyy		1	1	Lateral
3	H003	PIPE 3.0	149.998			Lbyy		1	1	Lateral
4	H004	HSS5X3X5	63			Lbyy		1	1	Lateral
5	H005	PIPE 3.0	149.998			Lbyy		1	1	Lateral
6	H006	PIPE 3.0	149.998			Lbyy		1	1	Lateral
7	H007	PIPE 3.0	15.588			Lbyy		0.65	0.65	Lateral
8	H008	PIPE 3.0	15.588			Lbyy		0.65	0.65	Lateral
9	H009	PIPE 3.0	15.588			Lbyy		0.65	0.65	Lateral
10	H010	PIPE 3.0	46.765			Lbyy		0.65	0.65	Lateral
11	H011	PIPE 3.0	46.765			Lbyy		0.65	0.65	Lateral
12	H012	PIPE 3.0	46.765			Lbyy		0.65	0.65	Lateral
13	H013	L 1.5X1.5X4	29.79			Lbyy		1	1	Lateral
14	H014	L 1.5X1.5X4	29.79			Lbyy		1	1	Lateral
15	H015	L 1.5X1.5X4	29.79			Lbyy		1	1	Lateral
16	H016	L 1.5X1.5X4	29.79			Lbyy		1	1	Lateral
17	H017	L 1.5X1.5X4	29.79			Lbyy		1	1	Lateral
18	H018	L 1.5X1.5X4	29.79			Lbyy		1	1	Lateral
19	H019	PIPE 2.0	149.998			Lbyy		1	1	Lateral
20	H020	PIPE 2.0	149.998			Lbyy		1	1	Lateral
21	H021	PIPE 2.0	149.998			Lbyy		1	1	Lateral
22	H022	PIPE 2.0	15.588			Lbyy		0.65	0.65	Lateral
23	H023	PIPE 2.0	15.588			Lbyy		0.65	0.65	Lateral
24	H024	PIPE 2.0	15.588			Lbyy		0.65	0.65	Lateral
25	U025	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
26	U026	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
27	MP027	PIPE 2.0	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
28	U028	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
29	U029	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
30	MP030	PIPE 2.0	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
31	U031	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
32	U032	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
33	MP033	PIPE 2.0	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
34	U034	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
35	U035	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
36	MP036	PIPE 2.0	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
37	U037	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
38	U038	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
39	MP039	PIPE 2.0	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
40	U040	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
41	U041	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
42	MP042	PIPE 2.0	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
43	U043	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
44	U044	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral



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Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function
45	MP045	PIPE 2.0	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
46	U046	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
47	U047	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
48	MP048	PIPE 2.0	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
49	U049	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
50	U050	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
51	MP051	PIPE 2.0	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
52	U052	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
53	U053	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
54	MP054	PIPE 2.0	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
55	U055	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
56	U056	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
57	MP057	PIPE 2.0	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
58	U058	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
59	U059	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
60	MP060	PIPE 2.0	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
61	H061	PL8X0.5	3			Lbyy		1	1	Lateral
62	D062	LL2.5X2.5X3X6	70.831			Lbyy		1	1	Lateral
63	H064	PL8X0.5	3			Lbyy		1	1	Lateral
64	H065	PL8X0.5	3			Lbyy		1	1	Lateral
65	D066	LL2.5X2.5X3X6	70.831			Lbyy		1	1	Lateral
66	D067	LL2.5X2.5X3X6	70.831			Lbyy		1	1	Lateral

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	N003	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N004	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N125	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N129	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N130	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

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			Yes	N/A		None
11	H011			Yes	N/A		None
12	H012			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	BenPIN	BenPIN	Yes	N/A		None
17	H017	BenPIN	BenPIN	Yes	N/A		None
18	H018	BenPIN	BenPIN	Yes	N/A		None
19	H019			Yes	N/A		None



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Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Activation	Seismic DR
20	H020			Yes	N/A		None
21	H021			Yes	N/A		None
22	H022			Yes	N/A		None
23	H023			Yes	N/A		None
24	H024			Yes	N/A		None
25	U025			Yes	N/A	Exclude	None
26	U026			Yes	N/A	Exclude	None
27	MP027			Yes	** NA **		None
28	U028			Yes	N/A	Exclude	None
29	U029			Yes	N/A	Exclude	None
30	MP030			Yes	** NA **		None
31	U031			Yes	N/A	Exclude	None
32	U032			Yes	N/A	Exclude	None
33	MP033			Yes	** NA **		None
34	U034			Yes	N/A	Exclude	None
35	U035			Yes	N/A	Exclude	None
36	MP036			Yes	** NA **		None
37	U037			Yes	N/A	Exclude	None
38	U038			Yes	N/A	Exclude	None
39	MP039			Yes	** NA **		None
40	U040			Yes	N/A	Exclude	None
41	U041			Yes	N/A	Exclude	None
42	MP042			Yes	** NA **		None
43	U043			Yes	N/A	Exclude	None
44	U044			Yes	N/A	Exclude	None
45	MP045			Yes	** NA **		None
46	U046			Yes	N/A	Exclude	None
47	U047			Yes	N/A	Exclude	None
48	MP048			Yes	** NA **		None
49	U049			Yes	N/A	Exclude	None
50	U050			Yes	N/A	Exclude	None
51	MP051			Yes	** NA **		None
52	U052			Yes	N/A	Exclude	None
53	U053			Yes	N/A	Exclude	None
54	MP054			Yes	** NA **		None
55	U055			Yes	N/A	Exclude	None
56	U056			Yes	N/A	Exclude	None
57	MP057			Yes	** NA **		None
58	U058			Yes	N/A	Exclude	None
59	U059			Yes	N/A	Exclude	None
60	MP060			Yes	** NA **		None
61	H061			Yes	N/A		None
62	D062	BenPIN	BenPIN	Yes	** NA **		None
63	V063			Yes	** NA **		None
64	H064			Yes	N/A		None
65	H065			Yes	N/A		None
66	D066	BenPIN	BenPIN	Yes	** NA **		None
67	D067	BenPIN	BenPIN	Yes	** NA **		None
68	V068			Yes	** NA **		None
69	V069			Yes	** NA **		None

Hot Rolled Steel Properties

	Label	E [psi]	G [psi]	Nu	Therm. Coeff. [1e ⁵ °F ⁻¹]	Density [lb/ft ³]	Yield [psi]	Ry	Fu [psi]	Rt
1	A500 Gr. B [SQR]	2.9e+07	1.115e+07	0.3	0.65	490	46000	1.4	58000	1.3
2	A500 Gr. B [RND]	2.9e+07	1.115e+07	0.3	0.65	490	42000	1.4	58000	1.3



Company : American Tower Corp.
Designer : Zach.Stoll
Job Number : 14885740_C8_01
Model Name : 376047, MANSFIELD CENTER 2 ...

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Hot Rolled Steel Properties (Continued)

	Label	E [psi]	G [psi]	Nu	Therm. Coeff. [10^{-6}F^{-1}]	Density [lb/ft ³]	Yield [psi]	Ry	Fu [psi]	Rt
3	A36	2.9e+07	1.115e+07	0.3	0.65	490	36000	1.5	58000	1.2
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	1165.273	17	434.068	20	995.583	14	418.368	20	2084.327	23	1348.221	11
2		min	-1166.081	23	-557.178	2	-1832.115	8	-459.222	2	-2081.14	17	-1315.718	17
3	N003	max	860.064	18	436.092	24	1229.3	3	1182.219	3	2084.296	15	723.471	8
4		min	-1584.426	12	-559.2	6	-811.428	21	-1134.932	21	-2081.11	21	-703.468	14
5	N004	max	1598.273	4	436.093	16	1275.421	2	1144.531	13	2084.288	19	770.654	14
6		min	-873.709	22	-559.199	10	-856.424	20	-1152.926	7	-2081.101	25	-821.207	8
7	N125	max	55.139	5	3302.092	26	1913.138	26	824.308	26	13.081	11	0.432	11
8		min	-55.195	11	-888.132	20	-572.133	20	-222.42	20	-13.051	5	-0.424	17
9	N129	max	1658.435	30	3302.744	30	304.947	24	111.478	24	13.081	3	193.072	24
10		min	-501.483	24	-890.229	24	-961.399	30	-412.219	30	-13.051	9	-714.023	30
11	N130	max	501.441	16	3302.746	34	305.022	16	111.464	16	13.081	7	714.004	34
12		min	-1658.391	34	-890.23	16	-961.477	34	-412.252	34	-13.051	13	-193.08	16
13	Totals:	max	4506.567	5	7800.509	26	4830.804	14						
14		min	-4506.567	23	2088.437	20	-4830.804	8						

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	HSS5X3X5	0.138	0	3	0.126	0	z	3	139602.037	169740	15456	22149	2.058	H1-1b
2	H002	HSS5X3X5	0.138	0	7	0.126	0	z	7	139602.037	169740	15456	22149	2.058	H1-1b
3	H003	PIPE 3.0	0.117	21.875	7	0.121	7.812		8	28616.29	78246	6898.5	6898.5	2.507	H1-1b
4	H004	HSS5X3X5	0.138	0	11	0.126	0	z	11	139602.037	169740	15456	22149	2.058	H1-1b
5	H005	PIPE 3.0	0.117	21.875	11	0.121	7.812		12	28616.29	78246	6898.5	6898.5	2.507	H1-1b
6	H006	PIPE 3.0	0.117	21.875	3	0.121	7.812		4	28616.29	78246	6898.5	6898.5	2.507	H1-1b
7	H007	PIPE 3.0	0.175	7.794	2	0.113	7.794		12	77888.459	78246	6898.5	6898.5	1.111	H1-1b
8	H008	PIPE 3.0	0.175	7.794	6	0.113	7.794		4	77888.459	78246	6898.5	6898.5	1.111	H1-1b
9	H009	PIPE 3.0	0.175	7.794	10	0.113	7.794		8	77888.459	78246	6898.5	6898.5	1.111	H1-1b
10	H010	PIPE 3.0	0.171	23.383	26	0.103	23.383		11	75086.325	78246	6898.5	6898.5	1.344	H1-1b
11	H011	PIPE 3.0	0.171	23.383	30	0.103	23.383		3	75086.325	78246	6898.5	6898.5	1.344	H1-1b
12	H012	PIPE 3.0	0.171	23.383	34	0.103	23.383		7	75086.325	78246	6898.5	6898.5	1.344	H1-1b
13	H013	L 1.5X1.5X4	0.069	14.895	37	0.007	29.79	z	27	8987.293	22469.4	217.337	863.167	1.142	H2-1
14	H014	L 1.5X1.5X4	0.069	14.895	29	0.007	29.79	z	31	8987.293	22469.4	217.337	863.167	1.142	H2-1
15	H015	L 1.5X1.5X4	0.069	14.895	33	0.007	29.79	z	35	8987.293	22469.4	217.337	863.165	1.142	H2-1
16	H016	L 1.5X1.5X4	0.07	14.895	27	0.007	29.79	y	37	8987.293	22469.4	217.337	863.165	1.142	H2-1
17	H017	L 1.5X1.5X4	0.07	14.895	31	0.007	29.79	y	29	8987.293	22469.4	217.337	863.166	1.142	H2-1
18	H018	L 1.5X1.5X4	0.07	14.895	35	0.007	29.79	y	33	8987.293	22469.4	217.337	863.167	1.142	H2-1
19	H019	PIPE 2.0	0.362	20.312	8	0.383	7.812		2	6295.584	38556	2245.95	2245.95	2.244	H3-6
20	H020	PIPE 2.0	0.361	20.312	12	0.383	7.812		6	6295.584	38556	2245.95	2245.95	2.244	H3-6
21	H021	PIPE 2.0	0.362	20.312	4	0.383	7.812		10	6295.584	38556	2245.95	2245.95	2.244	H3-6
22	H022	PIPE 2.0	0.303	0	6	0.288	15.588		5	38162.512	38556	2245.95	2245.95	1.734	H3-6
23	H023	PIPE 2.0	0.303	0	10	0.288	15.588		9	38162.512	38556	2245.95	2245.95	1.735	H3-6
24	H024	PIPE 2.0	0.303	0	2	0.288	15.588		13	38162.512	38556	2245.95	2245.95	1.735	H3-6
25	MP027	PIPE 2.0	0.63	37	2	0.112	79		9	19171.622	32130	1871.625	1871.625	1.697	H1-1b
26	MP030	PIPE 2.0	0.352	79	4	0.057	79		13	16811.605	32130	1871.625	1871.625	2.311	H1-1b
27	MP033	PIPE 2.0	0.34	79	4	0.047	79		7	16811.605	32130	1871.625	1871.625	2.35	H1-1b
28	MP036	PIPE 2.0	0.405	79	3	0.076	79		7	16811.605	32130	1871.625	1871.625	2.482	H1-1b
29	MP039	PIPE 2.0	0.63	37	10	0.112	79		5	19171.622	32130	1871.625	1871.625	1.765	H1-1b
30	MP042	PIPE 2.0	0.352	79	12	0.057	79		9	16811.605	32130	1871.625	1871.625	2.397	H1-1b
31	MP045	PIPE 2.0	0.34	79	12	0.047	79		3	16811.605	32130	1871.625	1871.625	2.37	H1-1b



Company : American Tower Corp.
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Job Number : 14885740_C8_01
Model Name : 376047, MANSFIELD CENTER 2 ...

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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
32	MP048	PIPE 2.0	0.405	79	11	0.076	79		3	16811.605	32130	1871.625	1871.625	2.128	H1-1b		
33	MP051	PIPE 2.0	0.63	37	6	0.112	79		13	19171.622	32130	1871.625	1871.625	1.714	H1-1b		
34	MP054	PIPE 2.0	0.352	79	8	0.057	79		5	16811.605	32130	1871.625	1871.625	2.172	H1-1b		
35	MP057	PIPE 2.0	0.34	79	8	0.047	79		11	16811.605	32130	1871.625	1871.625	2.321	H1-1b		
36	MP060	PIPE 2.0	0.405	79	7	0.076	79		11	16811.605	32130	1871.625	1871.625	2.222	H1-1b		
37	H061	PL8X0.5	0.046	0	26	0.064	0	y	26	126685.849	129600	1350	21600	1.667	H1-1b		
38	D062	LL2.5X2.5X3X6	0.065	0	26	0.006	70.831	z	11	37398.698	58320	4643.061	2542.289	1	H1-1b*		
39	H064	PL8X0.5	0.046	0	30	0.064	0	y	30	126685.849	129600	1350	21600	1.667	H1-1b		
40	H065	PL8X0.5	0.046	0	34	0.064	0	y	34	126685.849	129600	1350	21600	1.667	H1-1b		
41	D066	LL2.5X2.5X3X6	0.065	0	30	0.006	70.831	z	3	37398.698	58320	4643.061	2542.289	1.136	H1-1b*		
42	D067	LL2.5X2.5X3X6	0.065	0	34	0.006	70.831	z	7	37398.698	58320	4643.061	2542.289	1.136	H1-1b*		

EXHIBIT F

Power Density/RF Emissions Report



CENTERLINE

Radio Frequency Exposure Analysis Report

November 14, 2024

T-Mobile

Site Name: CT517/TCP Mansfield

Site ID: CT11517B

Site Address: 1725 Stafford Rd, Mansfield, CT 06268



Michael Fischer, P.E.
Registered Professional Engineer (Electrical)
Connecticut License Number 33928
Expires January 31, 2025

Signed 14 November 2024

Site Compliance Summary

T-Mobile Compliance Status:	Compliant
Cumulative Calculated Power Density (Ground Level):	1.57879 $\mu\text{W}/\text{cm}^2$
Cumulative General Population % MPE (Ground Level):	0.19348%
Cumulative Calculated Power Density (Adj. Structure):	2.05784 $\mu\text{W}/\text{cm}^2$
Cumulative General Population % MPE (Adj. Structure):	0.25281%



November 14, 2024

T-Mobile
Attn: Adam Sullivan
15 Commerce Way, Suite B
Norton, MA 02379

RF Exposure Analysis for Site: **CT517/TCP Mansfield**

Centerline was contracted to analyze the proposed T-Mobile facility at **1725 Stafford Rd, Mansfield, CT 06268** for the purpose of determining whether the predictive exposure from the proposed facility is within specified federal limits.

All information used in this report was analyzed as a percentage of the Maximum Permissible Exposure (% MPE) limits as detailed in 47 CFR § 1.1310 as well as Federal Communications Commission (FCC) OET Bulletin 65 Edition 97-01. The FCC MPE limits are typically expressed in units of milliwatts per square centimeter (mW/cm^2) or microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The exposure limits vary depending upon the frequencies being utilized. The General Population/Uncontrolled MPE limit (in mW/cm^2) for frequencies between 300 and 1500 is defined as frequency (in MHz) divided by 1500 ($f_{\text{MHz}}/1500$). Frequencies between 1500 and 100,000 MHz have a General Population/Uncontrolled MPE limit of $1 \text{ mW}/\text{cm}^2$ ($1000 \mu\text{W}/\text{cm}^2$). The calculated power density at each sample point divided by the limit at each calculated frequency provides a result in % MPE. Summing the calculated % MPE from all contributors provides a cumulative % MPE at a particular sample point. Wireless carriers use different frequency bands with varying MPE limits; therefore, it is useful to report results in terms of % MPE as opposed to power density.

All results were compared to the FCC radio frequency exposure rules as detailed in 47 CFR § 1.1307(b) to determine compliance with the 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.

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, 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.



Calculation Methodology

Centerline has performed theoretical modeling of the site using a software tool, RoofMaster®, which incorporates calculation methodologies detailed in FCC OET 65. RoofMaster® uses a cylindrical model for conservative power density predictions within the near field of the antenna where the antenna pattern has not truly formed yet. Within this area power density values tend to decrease based upon an inverse distance function. At the point where it is appropriate for modeling to change from near-field calculations to far-field calculations, the power decreases inversely with the square of the distance. The modeling is based on worst-case assumptions in terms of transmitter power and duty cycle. No losses were included in the power calculations unless they were specifically provided for the project.

In OET 65, a far field model is presented to calculate the spatial peak power density. The RoofMaster® implementation of this model incorporates antenna manufacturer's horizontal and vertical pattern data to determine the power density in all directions. This model yields the power density at a single point in space. In order to determine the spatial power density for comparison to the FCC limits, the average of several points calculated within the human profile (0-6') must be conducted. RoofMaster® calculates seven power density values between 0-6' above the specified study plane and performs a linear spatial average.



Data & Results

The following table details the antennas and operating parameters for the T-Mobile antenna system as well as any other antenna systems at the site. This is based on antenna information provided by the client and data compiled from other sources where necessary. The data below was input into Roofmaster® to perform the theoretical exposure calculations at ground level & the adjacent building.

The theoretical calculations performed in Roofmaster® determine the cumulative exposure at all sample points at ground level (0-6' spatial average) & the adjacent building. The results from highest cumulative sample point at ground level & the adjacent building surrounding the site are displayed in the tables below. The contribution from directional antennas to the maximum cumulative totals varies greatly depending on location; therefore, the contribution from one antenna sector at the highest calculated exposure point may be greater or less than other sectors since sectorized directional antennas are pointed in different directions and there is not much overlapping exposure.

The contribution to the cumulative power density and % MPE for each antenna/frequency band is listed in the table(s) below. The cumulative power density and cumulative % MPE are displayed at the bottom of the table(s) below.

The following files were used in completing this report:

RFDS:	CT11517B_Equipment Upgrade_3_draft_2024-10-24
CD:	CT11517B_CD's Preliminary
SA:	CT11517B_SA (Passing)



Maximum Calculated Cumulative Power Density (Location: Ground @ approximately 10' NW of site)

Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBi)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density ($\mu\text{W}/\text{cm}^2$)	General Population MPE Limit ($\mu\text{W}/\text{cm}^2$)	General Population % MPE
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	700	13.65	162.00	4.00	40.00	3707.83	0.05014	466.67	0.01074
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	600	12.95	162.00	4.00	40.00	3155.88	0.04672	400.00	0.01168
T-Mobile A 2	RFS APXVLL19P_43-C-A20	1900	16.24	162.00	2.00	10.00	841.45	0.00755	1000.00	0.00076
T-Mobile A 2	RFS APXVLL19P_43-C-A20	1900	16.24	162.00	4.00	35.00	5890.17	0.05291	1000.00	0.00529
T-Mobile A 2	RFS APXVLL19P_43-C-A20	1900	16.24	162.00	4.00	40.00	6731.63	0.06047	1000.00	0.00605
T-Mobile A 2	RFS APXVLL19P_43-C-A20	2100	17.33	162.00	4.00	60.00	12978.10	0.09023	1000.00	0.00902
T-Mobile B 3	RFS APXVAALL24 43-U-NA20	700	13.65	162.00	4.00	40.00	3707.83	0.00004	466.67	0.00001
T-Mobile B 3	RFS APXVAALL24 43-U-NA20	600	12.95	162.00	4.00	40.00	3155.88	0.00028	400.00	0.00007
T-Mobile B 3	RFS APXVLL19P_43-C-A20	1900	16.24	162.00	2.00	10.00	841.45	0.00002	1000.00	0.00000
T-Mobile B 4	RFS APXVLL19P_43-C-A20	1900	16.24	162.00	4.00	35.00	5890.17	0.00014	1000.00	0.00001
T-Mobile B 4	RFS APXVLL19P_43-C-A20	1900	16.24	162.00	4.00	40.00	6731.63	0.00016	1000.00	0.00002
T-Mobile B 4	RFS APXVLL19P_43-C-A20	2100	17.33	162.00	4.00	60.00	12978.10	0.00010	1000.00	0.00001
T-Mobile C 5	RFS APXVAALL24 43-U-NA20	700	13.65	162.00	4.00	40.00	3707.83	0.00049	466.67	0.00011
T-Mobile C 5	RFS APXVAALL24 43-U-NA20	600	12.95	162.00	4.00	40.00	3155.88	0.00019	400.00	0.00005
T-Mobile C 6	RFS APXVLL19P_43-C-A20	1900	16.24	162.00	2.00	10.00	841.45	0.00002	1000.00	0.00000
T-Mobile C 6	RFS APXVLL19P_43-C-A20	1900	16.24	162.00	4.00	35.00	5890.17	0.00013	1000.00	0.00001
T-Mobile C 6	RFS APXVLL19P_43-C-A20	1900	16.24	162.00	4.00	40.00	6731.63	0.00015	1000.00	0.00002
T-Mobile C 6	RFS APXVLL19P_43-C-A20	2100	17.33	162.00	4.00	60.00	12978.10	0.00015	1000.00	0.00002
Verizon A 7	Samsung SON_MT6407 TB	3700	23.45	174.00	2.00	100.00	44261.89	0.76232	1000.00	0.07623
Verizon A 8	COMMSCOPE NHH-65B-R2B	700	12.29	174.00	2.00	40.00	1355.47	0.02694	466.67	0.00577
Verizon A 8	COMMSCOPE NHH-65B-R2B	850	12.70	174.00	2.00	40.00	1489.67	0.02921	566.67	0.00515
Verizon A 8	COMMSCOPE NHH-65B-R2B	1900	15.65	174.00	4.00	40.00	5876.52	0.05195	1000.00	0.00520
Verizon A 9	COMMSCOPE NHH-65B-R2B	700	12.29	174.00	2.00	40.00	1355.47	0.02694	466.67	0.00577
Verizon A 9	COMMSCOPE NHH-65B-R2B	850	12.70	174.00	2.00	40.00	1489.67	0.02921	566.67	0.00515
Verizon A 9	COMMSCOPE NHH-65B-R2B	2100	16.22	174.00	4.00	40.00	6700.70	0.05601	1000.00	0.00560
Verizon A 10	AMPHENOL BXA-70080	850	12.00	174.00	0.00	0.00	0.00 (Not in Use)	0.00000	566.67	0.00000
Verizon B 11	Samsung SON_MT6407	3700	23.45	174.00	2.00	100.00	44261.89	0.01787	1000.00	0.00179
Verizon B 12	COMMSCOPE NHH-65B-R2B	700	12.29	174.00	2.00	40.00	1355.47	0.00007	466.67	0.00001
Verizon B 12	COMMSCOPE NHH-65B-R2B	850	12.70	174.00	2.00	40.00	1489.67	0.00000	566.67	0.00000
Verizon B 12	COMMSCOPE NHH-65B-R2B	1900	15.65	174.00	4.00	40.00	5876.52	0.00003	1000.00	0.00000
Verizon B 13	COMMSCOPE NHH-65B-R2B	700	12.29	174.00	2.00	40.00	1355.47	0.00007	466.67	0.00001
Verizon B 13	COMMSCOPE NHH-65B-R2B	850	12.70	174.00	2.00	40.00	1489.67	0.00000	566.67	0.00000
Verizon B 13	COMMSCOPE NHH-65B-R2B	2100	16.22	174.00	4.00	40.00	6700.70	0.00003	1000.00	0.00000



Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density ($\mu\text{W}/\text{cm}^2$)	General Population MPE Limit ($\mu\text{W}/\text{cm}^2$)	General Population % MPE
Verizon B 14	AMPHENOL BXA-70080	850	12.00	174.00	0.00	0.00	0.00 (Not in Use)	0.00000	566.67	0.00000
Verizon C 15	Samsung SON_MT6407 TB	3700	23.45	174.00	2.00	100.00	44261.89	0.01707	1000.00	0.00171
Verizon C 16	COMMSCOPE NHH-65B-R2B	700	12.29	174.00	2.00	40.00	1355.47	0.00015	466.67	0.00003
Verizon C 16	COMMSCOPE NHH-65B-R2B	850	12.70	174.00	2.00	40.00	1489.67	0.00002	566.67	0.00000
Verizon C 16	COMMSCOPE NHH-65B-R2B	1900	15.65	174.00	4.00	40.00	5876.52	0.00009	1000.00	0.00001
Verizon C 17	COMMSCOPE NHH-65B-R2B	700	12.29	174.00	2.00	40.00	1355.47	0.00015	466.67	0.00003
Verizon C 17	COMMSCOPE NHH-65B-R2B	850	12.70	174.00	2.00	40.00	1489.67	0.00002	566.67	0.00000
Verizon C 17	COMMSCOPE NHH-65B-R2B	2100	16.22	174.00	4.00	40.00	6700.70	0.00006	1000.00	0.00001
Verizon C 18	AMPHENOL BXA-70080	850	12.00	174.00	0.00	0.00	0.00 (Not in Use)	0.00000	566.67	0.00000
MetroPCS A 19	COMMSCOPE HBX-6516DS	1900	15.37	162.00	0.00	0.00	0.00 (Not in Use)	0.00000	1000.00	0.00000
MetroPCS B 20	COMMSCOPE HBX-6516DS	1900	15.37	162.00	0.00	0.00	0.00 (Not in Use)	0.00000	1000.00	0.00000
MetroPCS C 21	COMMSCOPE HBX-6516DS	1900	15.37	162.00	0.00	0.00	0.00 (Not in Use)	0.00000	1000.00	0.00000
AT&T A 22	P65-17-XLH-RR	700	13.38	150.00	4.00	40.00	3484.34	0.05520	466.67	0.01183
AT&T A 22	P65-17-XLH-RR	2100	16.24	150.00	4.00	40.00	6731.63	0.05755	1000.00	0.00576
AT&T A 23	POWERWAVE 7770 00	850	11.35	150.00	4.00	40.00	2183.33	0.07368	566.67	0.01300
AT&T A 24	POWERWAVE 7770 00	1900	13.35	150.00	4.00	40.00	3460.35	0.06182	1000.00	0.00618
AT&T B 25	KMW AM-X-CD-16-65	700	13.38	150.00	4.00	40.00	3484.34	0.00004	466.67	0.00001
AT&T B 25	KMW AM-X-CD-16-65	2100	16.24	150.00	4.00	40.00	6731.63	0.00004	1000.00	0.00000
AT&T B 26	POWERWAVE 7770 00	850	11.35	150.00	4.00	40.00	2183.33	0.00067	566.67	0.00012
AT&T B 27	POWERWAVE 7770 00	1900	13.35	150.00	4.00	40.00	3460.35	0.00016	1000.00	0.00002
AT&T C 28	KMW AM-X-CD-16-65	700	13.38	150.00	4.00	40.00	3484.34	0.00007	466.67	0.00001
AT&T C 28	KMW AM-X-CD-16-65	2100	16.24	150.00	4.00	40.00	6731.63	0.00004	1000.00	0.00000
AT&T C 29	POWERWAVE 7770 00	850	11.35	150.00	4.00	40.00	2183.33	0.00093	566.67	0.00016
AT&T C 30	POWERWAVE 7770 00	1900	13.35	150.00	4.00	40.00	3460.35	0.00049	1000.00	0.00005
							Cumulative Power Density:	1.57879 $\mu\text{W}/\text{cm}^2$	Cumulative % MPE:	0.19348%



Maximum Calculated Cumulative Power Density
(Location: Adjacent Building @ approximately 30' SSE of site)

Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density ($\mu\text{W}/\text{cm}^2$)	General Population MPE Limit ($\mu\text{W}/\text{cm}^2$)	General Population % MPE
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	700	13.65	162.00	4.00	40.00	3707.83	0.06610	466.67	0.01417
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	600	12.95	162.00	4.00	40.00	3155.88	0.06160	400.00	0.01540
T-Mobile A 2	RFS APXVLL19P_43-C-A20	1900	16.24	162.00	2.00	10.00	841.45	0.00995	1000.00	0.00100
T-Mobile A 2	RFS APXVLL19P_43-C-A20	1900	16.24	162.00	4.00	35.00	5890.17	0.06967	1000.00	0.00697
T-Mobile A 2	RFS APXVLL19P_43-C-A20	1900	16.24	162.00	4.00	40.00	6731.63	0.07962	1000.00	0.00796
T-Mobile A 2	RFS APXVLL19P_43-C-A20	2100	17.33	162.00	4.00	60.00	12978.10	0.11880	1000.00	0.01188
T-Mobile B 3	RFS APXVAALL24 43-U-NA20	700	13.65	162.00	4.00	40.00	3707.83	0.00005	466.67	0.00001
T-Mobile B 3	RFS APXVAALL24 43-U-NA20	600	12.95	162.00	4.00	40.00	3155.88	0.00037	400.00	0.00009
T-Mobile B 3	RFS APXVLL19P_43-C-A20	1900	16.24	162.00	2.00	10.00	841.45	0.00002	1000.00	0.00000
T-Mobile B 4	RFS APXVLL19P_43-C-A20	1900	16.24	162.00	4.00	35.00	5890.17	0.00019	1000.00	0.00002
T-Mobile B 4	RFS APXVLL19P_43-C-A20	1900	16.24	162.00	4.00	40.00	6731.63	0.00021	1000.00	0.00002
T-Mobile B 4	RFS APXVLL19P_43-C-A20	2100	17.33	162.00	4.00	60.00	12978.10	0.00013	1000.00	0.00001
T-Mobile C 5	RFS APXVAALL24 43-U-NA20	700	13.65	162.00	4.00	40.00	3707.83	0.00065	466.67	0.00014
T-Mobile C 5	RFS APXVAALL24 43-U-NA20	600	12.95	162.00	4.00	40.00	3155.88	0.00026	400.00	0.00006
T-Mobile C 6	RFS APXVLL19P_43-C-A20	1900	16.24	162.00	2.00	10.00	841.45	0.00003	1000.00	0.00000
T-Mobile C 6	RFS APXVLL19P_43-C-A20	1900	16.24	162.00	4.00	35.00	5890.17	0.00018	1000.00	0.00002
T-Mobile C 6	RFS APXVLL19P_43-C-A20	1900	16.24	162.00	4.00	40.00	6731.63	0.00020	1000.00	0.00002
T-Mobile C 6	RFS APXVLL19P_43-C-A20	2100	17.33	162.00	4.00	60.00	12978.10	0.00020	1000.00	0.00002
Verizon A 7	Samsung SON_MT6407 TB	3700	23.45	174.00	2.00	100.00	44261.89	0.98174	1000.00	0.09817
Verizon A 8	COMMSCOPE NHH-65B-R2B	700	12.29	174.00	2.00	40.00	1355.47	0.03472	466.67	0.00744
Verizon A 8	COMMSCOPE NHH-65B-R2B	850	12.70	174.00	2.00	40.00	1489.67	0.03764	566.67	0.00664
Verizon A 8	COMMSCOPE NHH-65B-R2B	1900	15.65	174.00	4.00	40.00	5876.52	0.06695	1000.00	0.00670
Verizon A 9	COMMSCOPE NHH-65B-R2B	700	12.29	174.00	2.00	40.00	1355.47	0.03472	466.67	0.00744
Verizon A 9	COMMSCOPE NHH-65B-R2B	850	12.70	174.00	2.00	40.00	1489.67	0.03764	566.67	0.00664
Verizon A 9	COMMSCOPE NHH-65B-R2B	2100	16.22	174.00	4.00	40.00	6700.70	0.07219	1000.00	0.00722
Verizon A 10	AMPHENOL BXA-70080	850	12.00	174.00	0.00	0.00	0.00 (Not in Use)	0.00000	566.67	0.00000
Verizon B 11	Samsung SON_MT6407	3700	23.45	174.00	2.00	100.00	44261.89	0.02301	1000.00	0.00230
Verizon B 12	COMMSCOPE NHH-65B-R2B	700	12.29	174.00	2.00	40.00	1355.47	0.00008	466.67	0.00002
Verizon B 12	COMMSCOPE NHH-65B-R2B	850	12.70	174.00	2.00	40.00	1489.67	0.00001	566.67	0.00000
Verizon B 12	COMMSCOPE NHH-65B-R2B	1900	15.65	174.00	4.00	40.00	5876.52	0.00003	1000.00	0.00000
Verizon B 13	COMMSCOPE NHH-65B-R2B	700	12.29	174.00	2.00	40.00	1355.47	0.00008	466.67	0.00002
Verizon B 13	COMMSCOPE NHH-65B-R2B	850	12.70	174.00	2.00	40.00	1489.67	0.00001	566.67	0.00000



Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density ($\mu\text{W}/\text{cm}^2$)	General Population MPE Limit ($\mu\text{W}/\text{cm}^2$)	General Population % MPE
Verizon B 13	COMMSCOPE NHH-65B-R2B	2100	16.22	174.00	4.00	40.00	6700.70	0.00003	1000.00	0.00000
Verizon B 14	AMPHENOL BXA-70080	850	12.00	174.00	0.00	0.00	0.00 (Not in Use)	0.00000	566.67	0.00000
Verizon C 15	Samsung SON_MT6407 TB	3700	23.45	174.00	2.00	100.00	44261.89	0.02198	1000.00	0.00220
Verizon C 16	COMMSCOPE NHH-65B-R2B	700	12.29	174.00	2.00	40.00	1355.47	0.00019	466.67	0.00004
Verizon C 16	COMMSCOPE NHH-65B-R2B	850	12.70	174.00	2.00	40.00	1489.67	0.00002	566.67	0.00000
Verizon C 16	COMMSCOPE NHH-65B-R2B	1900	15.65	174.00	4.00	40.00	5876.52	0.00012	1000.00	0.00001
Verizon C 17	COMMSCOPE NHH-65B-R2B	700	12.29	174.00	2.00	40.00	1355.47	0.00019	466.67	0.00004
Verizon C 17	COMMSCOPE NHH-65B-R2B	850	12.70	174.00	2.00	40.00	1489.67	0.00002	566.67	0.00000
Verizon C 17	COMMSCOPE NHH-65B-R2B	2100	16.22	174.00	4.00	40.00	6700.70	0.00007	1000.00	0.00001
Verizon C 18	AMPHENOL BXA-70080	850	12.00	174.00	0.00	0.00	0.00 (Not in Use)	0.00000	566.67	0.00000
MetroPCS A 19	COMMSCOPE HBX-6516DS	1900	15.37	162.00	0.00	0.00	0.00 (Not in Use)	0.00000	1000.00	0.00000
MetroPCS B 20	COMMSCOPE HBX-6516DS	1900	15.37	162.00	0.00	0.00	0.00 (Not in Use)	0.00000	1000.00	0.00000
MetroPCS C 21	COMMSCOPE HBX-6516DS	1900	15.37	162.00	0.00	0.00	0.00 (Not in Use)	0.00000	1000.00	0.00000
AT&T A 22	P65-17-XLH-RR	700	13.38	150.00	4.00	40.00	3484.34	0.07462	466.67	0.01599
AT&T A 22	P65-17-XLH-RR	2100	16.24	150.00	4.00	40.00	6731.63	0.07779	1000.00	0.00778
AT&T A 23	POWERWAVE 7770 00	850	11.35	150.00	4.00	40.00	2183.33	0.09922	566.67	0.01751
AT&T A 24	POWERWAVE 7770 00	1900	13.35	150.00	4.00	40.00	3460.35	0.08324	1000.00	0.00832
AT&T B 25	KMW AM-X-CD-16-65	700	13.38	150.00	4.00	40.00	3484.34	0.00006	466.67	0.00001
AT&T B 25	KMW AM-X-CD-16-65	2100	16.24	150.00	4.00	40.00	6731.63	0.00006	1000.00	0.00001
AT&T B 26	POWERWAVE 7770 00	850	11.35	150.00	4.00	40.00	2183.33	0.00091	566.67	0.00016
AT&T B 27	POWERWAVE 7770 00	1900	13.35	150.00	4.00	40.00	3460.35	0.00021	1000.00	0.00002
AT&T C 28	KMW AM-X-CD-16-65	700	13.38	150.00	4.00	40.00	3484.34	0.00009	466.67	0.00002
AT&T C 28	KMW AM-X-CD-16-65	2100	16.24	150.00	4.00	40.00	6731.63	0.00006	1000.00	0.00001
AT&T C 29	POWERWAVE 7770 00	850	11.35	150.00	4.00	40.00	2183.33	0.00125	566.67	0.00022
AT&T C 30	POWERWAVE 7770 00	1900	13.35	150.00	4.00	40.00	3460.35	0.00066	1000.00	0.00007
							Cumulative Power Density:	2.05784 $\mu\text{W}/\text{cm}^2$	Cumulative % MPE:	0.25281%



Summary

The theoretical calculations performed for this analysis yielded cumulative power density totals in all areas at ground level & the adjacent building that are within the allowable federal limits for public exposure to RF energy. Therefore, the site is **compliant** with FCC rules and regulations.

Michelle Stone

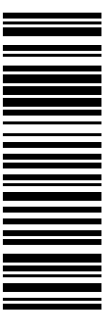
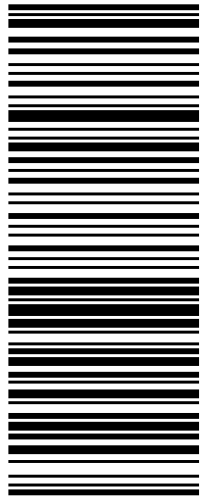

Michelle Stone

RF EME Technical Writer II

Centerline

EXHIBIT G

Mailing Receipts/Proof of Notice

C/O CULLEN MORGAN 941-549-7263 CENTERLINE COMMUNICATIONS LLC 12579 SAGEWOOD DRIVE VENICE FL 34293		1 LBS	1 OF 1
SHIP TO: AMERICAN TOWER CORPORATION 10 PRESIDENTIAL WAY WOBURN MA 01801-1053			
	MA 018 9-04 		
UPS GROUND TRACKING #: 1Z 9Y4 503 03 0414 8204			
			
BILLING: P/P			
Reference # 1: CT11517B - Tower Owner CC			
CS 24.9.00. MACNV50.47.0A 11/202.4*			
 ™			

Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030304148204

Date: Monday, December 2, 2024 at 11:56:40 AM Eastern Standard Time

From: UPS <pkginfo@ups.com>

To: Cullen Morgan <CMORGAN@CLINELLC.COM>

CAUTION: this email is from an external sender. Avoid opening attachments or links unless the sender is trusted.



Hello, your package has been delivered.

Delivery Date: Monday, 12/02/2024

Delivery Time: 11:54 AM

Signed by: DONNA

CENTERLINE SITE ACQUISITION

Tracking Number:	<u>1Z9Y45030304148204</u>
Ship To:	AMERICAN TOWER CORPORATION 10 PRESIDENTIAL WAY WOBURN, MA 018011053 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	0.8 LBS
Reference Number:	CT11517B - TOWER OWNER CC

Discover more about UPS:

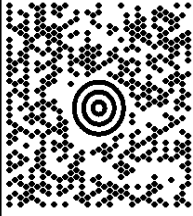
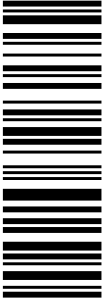
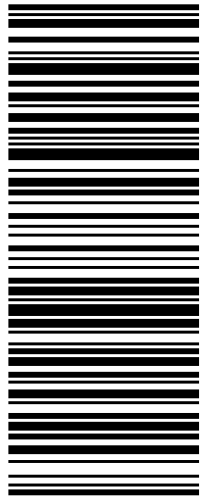

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C/O CULLEN MORGAN 941-549-7263 CENTERLINE COMMUNICATIONS LLC 12579 SAGEWOOD DRIVE VENICE FL 34293		1 LBS	1 OF 1
SHIP TO: ATTN: MAYOR & BLDG/ZONING OFFICER TOWN OF MANSFIELD 4 S EAGLEVILLE ROAD STORRS MANSFIELD CT 06268-2574			
	CT 061 9-19 		
UPS GROUND TRACKING #: 1Z 9Y4 503 03 1379 1215			
			
BILLING: P/P			
Reference # 1: CT11517B - Town CC			
CS 24.9.00. MACNV50.47.0A 11/202.4*			
 ™			

Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030313791215
Date: Tuesday, November 26, 2024 at 11:44:38 AM Eastern Standard Time
From: UPS <pkginfo@ups.com>
To: Cullen Morgan <CMORGAN@CLINELLC.COM>

CAUTION: this email is from an external sender. Avoid opening attachments or links unless the sender is trusted.



Hello, your package has been delivered.

Delivery Date: Tuesday, 11/26/2024

Delivery Time: 11:42 AM

Signed by: QUINN

CENTERLINE SITE ACQUISITION

Tracking Number:	<u>1Z9Y45030313791215</u>
Ship To:	TOWN OF MANSFIELD 4 S EAGLEVILLE ROAD STORRS MANSFIELD, CT 062682574 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	0.8 LBS
Reference Number:	CT11517B - TOWN CC

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