Transcend Wireless

10 Industrial Ave,
Suite 3
Mahwah NJ 07430

Phone: 201.684.0055
Fax: 201.684.0066

December 30, 2021

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

T-Mobile Northeast LLC – CTNL184A
Tower Share Application
40 Sherman Road, Woodstock, CT 06281
Latitude- 41.97865275
Longitude- -72.09443573

Dear Ms. Bachman,

This letter and attachments are submitted on behalf of T-Mobile Northeast LLC ("T-Mobile"). T-Mobile plans to install antennas and related equipment at the tower site located at 40 Sherman Road, Woodstock, Connecticut.

T-Mobile will install nine (9) 600/700/1900/2100/2500 MHz antennas and six (6) RRHs at the 105' level of the existing 140' monopole tower. Three (3) hybrid cables will also be installed. T-Mobile's equipment cabinets will be placed on a 10' X 15' concrete pad within the existing ground facility. T-Mobile will also be installing a 25 KW diesel fueled backup generator within their concrete pad. Included are plans by American Tower (Colliers Engineering), dated December 30, 2021, depicting the planned changes and attached as **Exhibit A**. Also included is a structural analysis prepared by American Tower, dated December 3, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment with tower modifications and reinforcements. This is attached and detailed in **Exhibit B**.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of T-Mobile's intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Jay Swan, First Selectman of the Town of Woodstock, Zoning Enforcement Officer Ashley Stephens, as well as the tower and property owner, American Tower and Colin Hallquest. Please see the attached letter from American Tower authorizing the proposed shared use of this facility attached as **Exhibit C**.

The planned modifications of the facility fall squarely within those activities explicitly provided for in R.C.S.A. 16-50j-89.

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the monopole is 140'; T-Mobile's proposed antennas will be located at a center line height of 105'.

2. The proposed modifications will not result in the increase of the site boundary as depicted on the attached site plan.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed local and state criteria. T-Mobile's plans include the installation of an emergency back-up generator; noise associated with this installation is exempt from State and local noise standards. The incremental effect of the proposed changes will be negligible.

4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. As indicated in the attached power density calculations, the combined site operations will result in a total power density of 29.89%, as evidenced by **Exhibit D**.

Connecticut General Statutes 16-50aa indicates that the Council must approve the shared use of a telecommunications facility provided it finds the shared use is technically, legally, environmentally, and economically feasible and meets public safety concerns. As demonstrated in this letter, T-Mobile respectfully submits that the shared use of this facility satisfies these criteria.

A. Technical Feasibility. The existing monopole has been deemed structurally capable of supporting T-Mobile's proposed loading, with the tower modifications/reinforcements as detailed in the structural analysis. The structural analysis is included as **Exhibit B**.
B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower such as this monopole in Thompson. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit T-Mobile to obtain a building permit for the proposed installation. Further, a Letter of Authorization is included as **Exhibit C**, authorizing T-Mobile to file this application for shared use.
C. Environmental Feasibility. The proposed shared use of this facility would have minimal environmental impact. The installation of T-Mobile equipment at the 105' level of the existing 125' tower would have an insignificant visual impact on the area around the tower. T-Mobile's ground equipment would be installed within the existing facility compound. T-Mobile's shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by **Exhibit D**, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.
D. Economic Feasibility. T-Mobile will be entering into an agreement with the owner of this facility to mutually agreeable terms. As previously mentioned, the Letter of Authorization has been provided by the owner to assist T-Mobile with this tower sharing application.
E. Public Safety Concerns. As discussed above, the monopole is structurally capable of supporting T-Mobile's proposed loading. T-Mobile is not aware of any public safety concerns relative to the proposed sharing of the existing monopole. T-Mobile's intentions of providing new and improved wireless service through the shared use of this facility is expected to enhance the safety and welfare of local residents and individuals traveling through Thompson and nearby the facility.

Sincerely,

Eric Breun

Eric Breun
Transcend Wireless
10 Industrial Ave., Suite 3
Mahwah, New Jersey
ebreun@transcendwireless.com
201-658-7728

CC: Jay Swan - First Selectmen
Ashley Stephens - ZEO
American Tower
Colin Hallquest

117 SHERMAN RD

Sales | Print | Map It

Location	117 SHERMAN RD	**Mblu**	5122/ 18/ 04/ /
Acct#	H0164700	**Owner**	HALLQUEST COLIN G
Assessment	$159,980	**Appraisal**	$340,400
PID	1730	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$0	$340,400	$340,400
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$0	$159,980	$159,980

Owner of Record

Owner	HALLQUEST COLIN G	**Sale Price**	$0
Co-Owner	AMERICAN TOWER / LAND MANAGEMENT	**Certificate**	1
Address	10 PRESIDENTIAL WAY WOBURN, MA 01801	**Book & Page**	298/ 157
		Sale Date	04/01/1999

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
HALLQUEST COLIN G	$0	1	298/ 157	04/01/1999

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0
Replacement Cost: $0
Building Percent Good:
Replacement Cost Less Depreciation: $0

Building Attributes	
Field	**Description**
Style	Vacant Land
Model	
Grade:	
Stories:	
Living Units	

Building Photo

Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Whirlpool Tubs	
Bsmt. Garages	

Building Layout

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	63W
Description	Op. Space
Zone	
Neighborhood	
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	33.8
Frontage	
Depth	
Assessed Value	$159,980
Appraised Value	$340,400

Outbuildings

Outbuildings	Legend
No Data for Outbuildings	

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$0	$290,600	$290,600
2019	$0	$290,600	$290,600
2018	$0	$290,600	$290,600

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$0	$110,740	$110,740
2019	$0	$110,740	$110,740
2018	$0	$110,740	$110,740

40 SHERMAN RD

Sales | Print | Map It

Location	40 SHERMAN RD	**Mblu**	5124/ 19/ 09/ /
Acct#	O0291500	**Owner**	HALLQUEST COLIN GUNNAR +
Assessment	$198,270	**Appraisal**	$306,200
PID	3052	**Building Count**	1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2021	$227,800	$78,400	$306,200
Assessment			
Valuation Year	Improvements	Land	Total
2021	$159,500	$38,770	$198,270

Owner of Record

Owner	HALLQUEST COLIN GUNNAR +	**Sale Price**	$0
Co-Owner	SCHEUFLER WAYNE + KARIN	**Certificate**	
Address	40 SHERMAN RD WOODSTOCK, CT 06281	**Book & Page**	570/ 499
		Sale Date	07/23/2013

Ownership History

Ownership History				
Owner	Sale Price	Certificate	Book & Page	Sale Date
HALLQUEST COLIN GUNNAR +	$0		570/ 499	07/23/2013
HALLQUEST COLIN GUNNAR	$0	1	88/ 273	

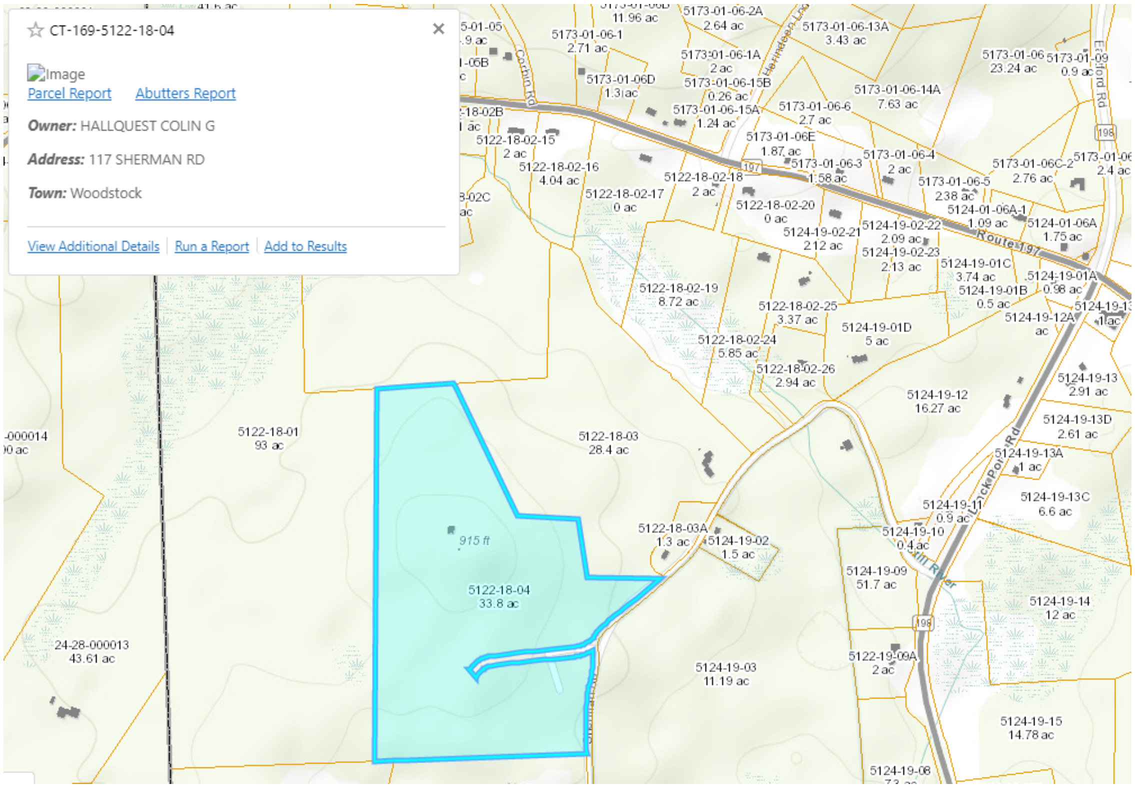
Land

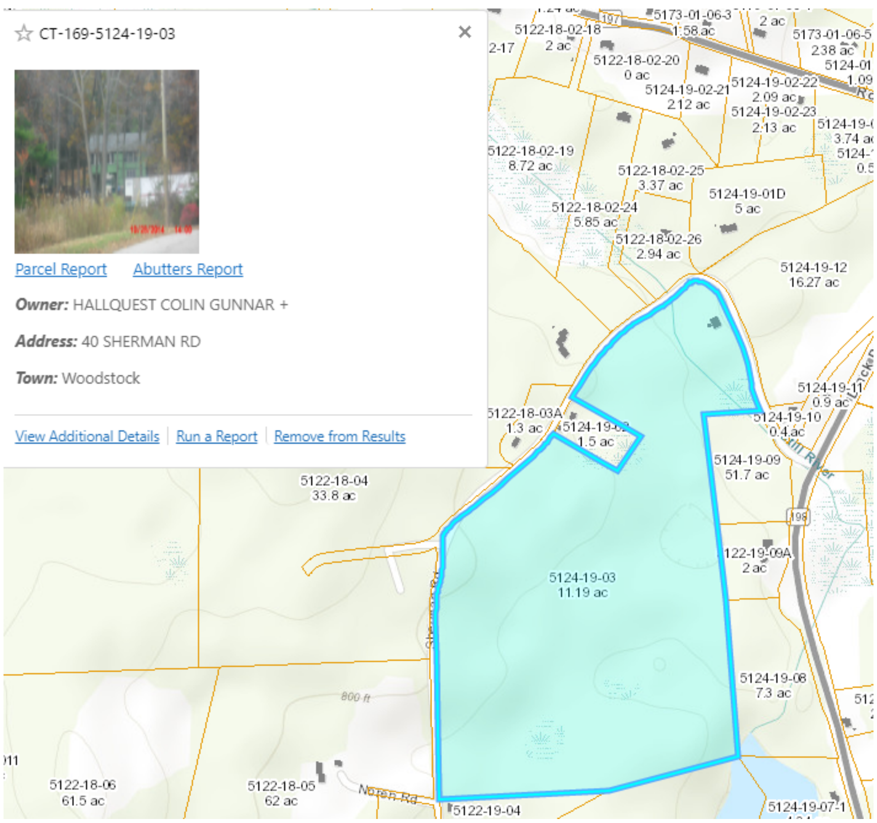
Land Use

Use Code	101
Description	Single Family
Zone	
Neighborhood	
Alt Land Appr	No
Category	

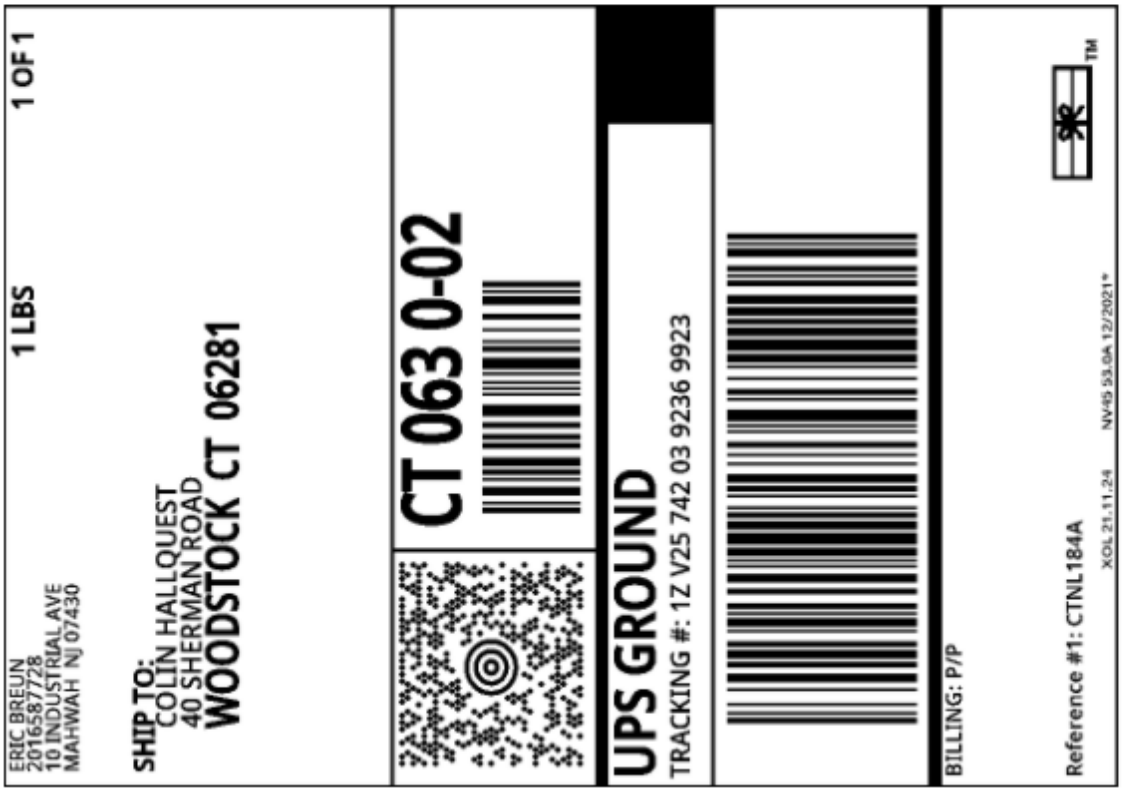
Land Line Valuation

Size (Acres)	11.19
Frontage	
Depth	
Assessed Value	$38,770
Appraised Value	$78,400


CT-169-5122-18-04
Image
Parcel Report
Abutters Report
Owner: HALLQUEST COLIN G
Address: 117 SHERMAN RD
Town: Woodstock
View Additional Details
Run a Report
Add to Results
5122-18-04
33.8 ac
5122-18-01
93 ac
5122-18-03
28.4 ac
5124-19-03
11.19 ac
Route 197


CT-169-5124-19-03
Parcel Report
Abutters Report
Owner: HALLQUEST COLIN GUNNAR +
Address: 40 SHERMAN RD
Town: Woodstock
View Additional Details
Run a Report
Remove from Results
5124-19-03
11.19 ac
5122-18-04
33.8 ac
5124-19-09
51.7 ac
5124-19-08
7.3 ac
Noren Rd

FOLD HERE


ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430
1 LBS
1 OF 1
SHIP TO:
COLIN HALLQUEST
40 SHERMAN ROAD
WOODSTOCK CT 06281
CT 063 0-02
UPS GROUND
TRACKING #: 1Z V25 742 03 9236 9923
BILLING: P/P
Reference #1: CTNL184A
XOL 21.11.24
NV49 53.0A 12/2021*
TM

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ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430
1 LBS
1 OF 1
SHIP TO:
ASHLEY STEPHENS
415 CONNECTICUT 169
WOODSTOCK CT 06281
CT 063 0-02
UPS GROUND
TRACKING #: 1Z V25 742 03 9949 7111
BILLING: P/P
Reference #1: CTNL184A
XOL 21.11.24
NV49 53.0A 12/2021*
TM

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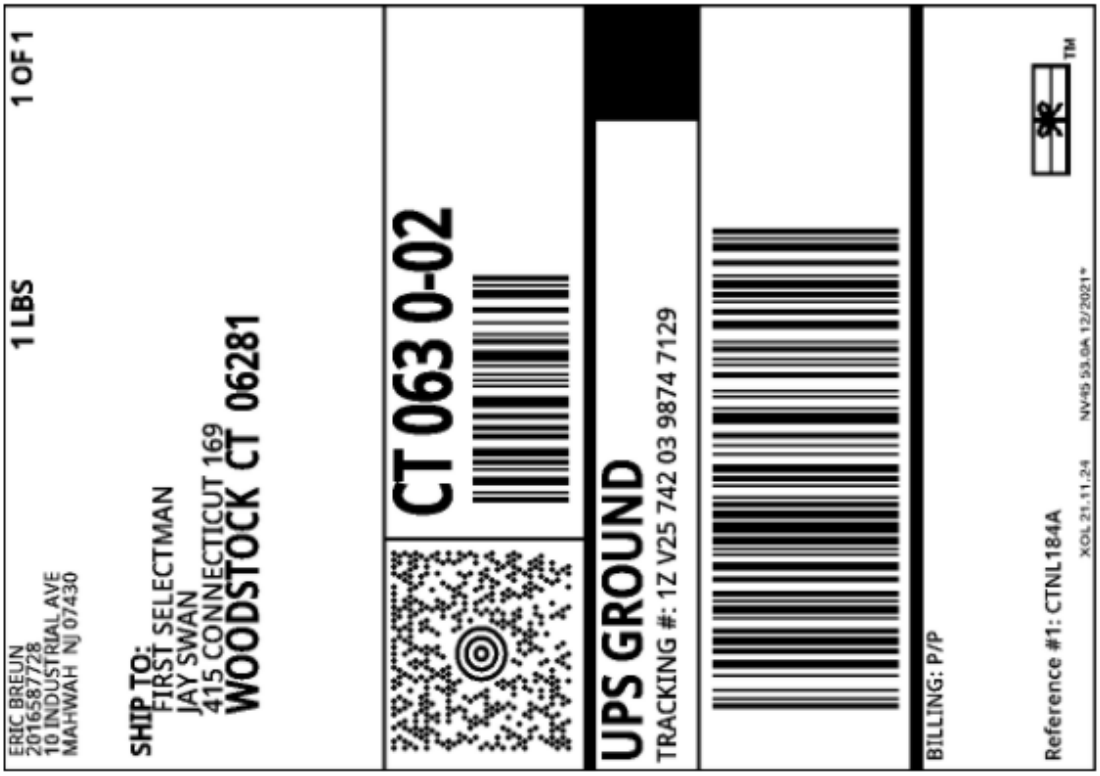
ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430
1 LBS
1 OF 1
SHIP TO:
FIRST SELECTMAN
JAY SWAN
415 CONNECTICUT 169
WOODSTOCK CT 06281
CT 063 0-02
UPS GROUND
TRACKING #: 1Z V25 742 03 9874 7129
BILLING: P/P
Reference #1: CTNL184A
XOL 21.11.24
NV49 53.0A 12/2021*

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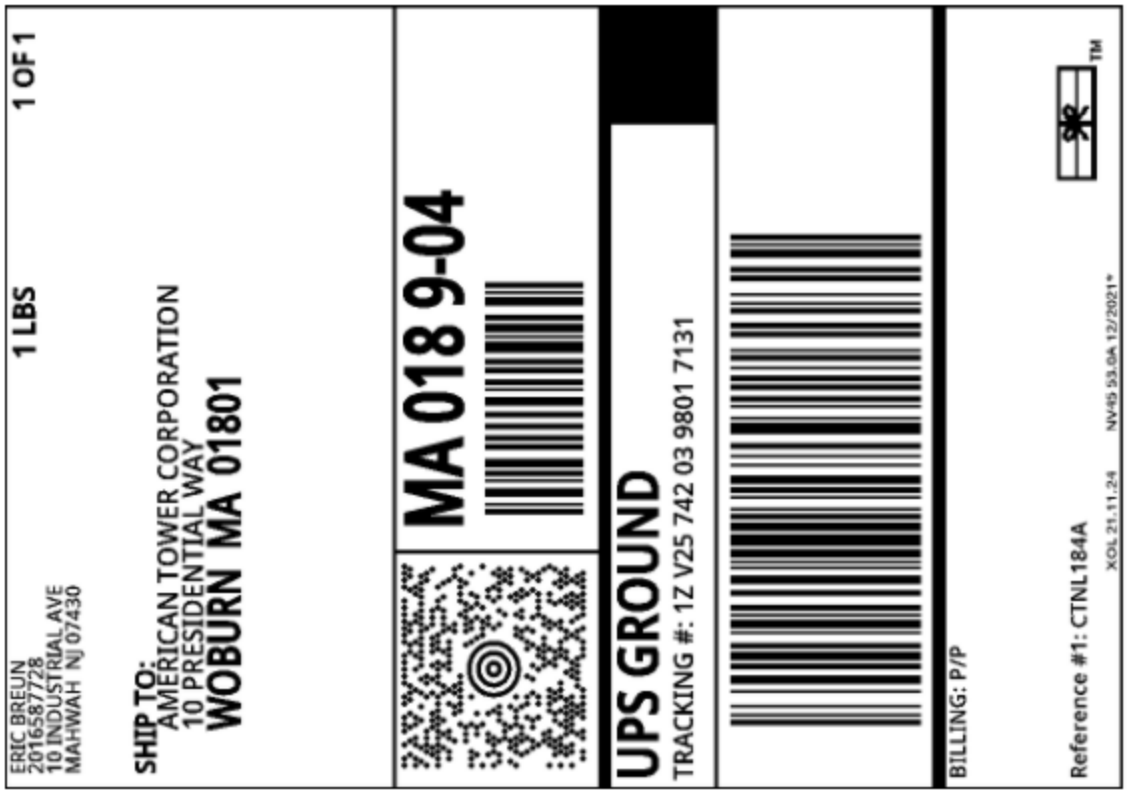

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430
1 LBS
1 OF 1
SHIP TO:
AMERICAN TOWER CORPORATION
10 PRESIDENTIAL WAY
WOBURN MA 01801
MA 018 9-04
UPS GROUND
TRACKING #: 1Z V25 742 03 9801 7131
BILLING: P/P
Reference #1: CTNL184A
XOL 21.11.24 NV49 53.0A 12/2021*
TM

DOCKET NO. 369 - Cellco Partnership d/b/a Verizon Wireless application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located off Sherman Road, Woodstock, Connecticut.	}	Connecticut
	}	Siting
	}	Council
		April 23, 2009

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Cellco Partnership d/b/a Verizon Wireless, hereinafter referred to as the Certificate Holder, for a telecommunications facility off of Sherman Road, Woodstock, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of the Certificate Holder and other entities, both public and private, but such tower shall not exceed a height of 140 feet above ground level. The height at the top of the Certificate Holder's antennas shall not exceed 140 feet above ground level.

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of Woodstock for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
    a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line, and landscaping; and
    b) construction plans for site clearing, grading, landscaping, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

3. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

4. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

6. The Certificate Holder shall provide reasonable space on the tower for no compensation for any Town of Woodstock public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.

7. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed and providing wireless services within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline.

8. Any request for extension of the time period referred to in Condition 7 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the Town of Woodstock. Any proposed modifications to this Decision and Order shall likewise be so served.

9. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

10. The Certificate Holder shall remove any nonfunctioning antenna, and associated antenna mounting equipment, within 60 days of the date the antenna ceased to function.

11. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction and the commencement of site operation.

Pursuant to General Statutes § 16-50p, the Council hereby directs that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in the Norwich Bulletin.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

Applicant	**Its Representative**
Cellco Partnership d/b/a Verizon Wireless	Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103-3597 Sandy Carter, Regulatory Manager Verizon Wireless 99 East River Drive East Hartford, CT 06108

Hello, your package has been delivered.

Delivery Date: Wednesday, 12/29/2021

Delivery Time: 12:29 PM

Left At: FRONT DESK

Signed by: WAHLBURG

TRANSCEND WIRELESS

Tracking Number:	1ZV257420399497111
Ship To:	ASHLEY STEPHENS 415 CONNECTICUT 169 WOODSTOCK, CT 06281 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CTNL184A

Hello, your package has been delivered.

Delivery Date: Wednesday, 12/29/2021

Delivery Time: 12:29 PM

Left At: FRONT DESK

Signed by: WAHLBURG

TRANSCEND WIRELESS

Tracking Number:	1ZV257420398747129
Ship To:	JAY SWAN 415 CONNECTICUT 169 WOODSTOCK, CT 06281 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CTNL184A

Hello, your package has been delivered.

Delivery Date: Wednesday, 12/29/2021

Delivery Time: 12:50 PM

Left At: GARAGE

TRANSCEND WIRELESS

Tracking Number:	1ZV257420392369923
Ship To:	COLIN HALLQUEST 40 SHERMAN ROAD WOODSTOCK, CT 06281 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CTNL184A

Hello, your package has been delivered.

Delivery Date: Wednesday, 12/29/2021

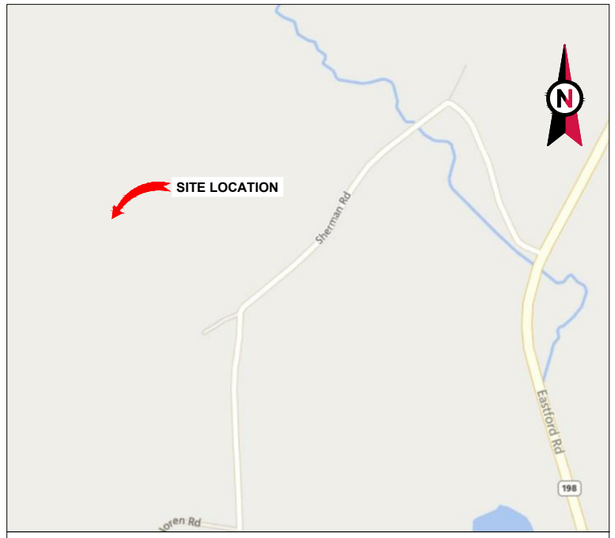
Delivery Time: 10:49 AM

Left At: FRONT DESK

Signed by: LONG

TRANSCEND WIRELESS

Tracking Number:	1ZV257420398017131
Ship To:	AMERICAN TOWER CORPORATION 10 PRESIDENTIAL WAY WOBURN, MA 01801 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CTNL184A



VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: WOODSTOCK NW PCS CT
ATC SITE NUMBER: 415439
T-MOBILE SITE NAME: CTNL184A
T-MOBILE SITE NUMBER:CTNL184A
SITE ADDRESS: 40 SHERMAN ROAD WOODSTOCK, CT 06281

LOCATION MAP

T-MOBILE COVERAGE STRATEGY COLOCATION PLAN
67E5A998E 6160 CONFIGURATION

COMPLIANCE CODE

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1. 2018 CONNECTICUT STATE BUILDING CODE, INCORPORATING THE 2015 IBC
2. 2017 NATIONAL ELECTRICAL CODE - NFPA 70
3. LOCAL BUILDING CODE
4. CITY/COUNTY ORDINANCES

UTILITY COMPANIES

POWER COMPANY: NORTHEAST UTILITY SERVICES
PHONE: (888) 783-6617

TELEPHONE COMPANY: SBC SNET
PHONE: (800) 922-4455

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

PROJECT SUMMARY

SITE ADDRESS:

40 SHERMAN ROAD

WOODSTOCK, CT 06281

COUNTY: WINDHAM

GEOGRAPHIC COORDINATES:

LATITUDE: 41.97865275

LONGITUDE: -72.09443573

GROUND ELEVATION: 902' AMSL

PROJECT TEAM

TOWER OWNER:

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

APPLICANT:

T-MOBILE

ENGINEER:

COLLIERS ENGINEERING & DESIGN CT, P.C. D/B/A MASER CONSULTING
135 NEW ROAD
MADISON, CT 06443

PROJECT #:
21904248A

PROPERTY OWNER:

COLIN HALLQUEST
40 SHERMAN ROAD
WOODSTOCK, CT 06281

PROJECT DESCRIPTION

THE PROPOSED PROJECT INCLUDES INSTALLING EQUIPMENT CABINETS AND A GENERATOR ON A PROPOSED CONCRETE PAD INSIDE A 10' X 15' GROUND SPACE WITHIN THE EXISTING COMPOUND, AND INSTALLING NEW EQUIPMENT AND MOUNTS ON THE EXISTING TOWER.

PROJECT NOTES

1. THE FACILITY IS UNMANNED.
2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE.
3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE.
4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED.
5. HANDICAP ACCESS IS NOT REQUIRED.
6. THE PROJECT DEPICTED IN THESE PLANS QUALIFIES AS AN ELIGIBLE FACILITIES REQUEST ENTITLED TO EXPEDITED REVIEW UNDER 47 U.S.C. § 1455(A) AS A MODIFICATION OF AN EXISTING WIRELESS TOWER THAT INVOLVES THE COLLOCATION, REMOVAL, AND/OR REPLACEMENT OF TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE UNDER CFR § 1.61000 (B)(7).

PROJECT LOCATION DIRECTIONS

I-84 EAST TO EXIT 73. TAKE RIGHT OFF EXIT ONTO ROUT 190. FOLLOW FOR 1.8 MILES AND TAKE A RIGHT ONTO RTE 171. GO OVER 2 MILES AND BEAR LEFT ONTO RTE 197. GO 1.9 MILES AND TAKE A RIGHT ONTO RTE 198. FOLLOW RTE 198FOR 0.2 MILES AND TAKE 1ST RIGHT ONTO SHERMAN ROAD.FOLLOW SHERMAN ROAD APPROX 1/2 AND GATE IS ON THE RIGHT.

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	TITLE SHEET	3	12/02/21	AJC
G-002	GENERAL NOTES	3	12/02/21	AJC
C-001	OVERALL SITE PLAN	3	12/02/21	AJC
C-101	DETAILED SITE PLAN	3	12/02/21	AJC
C-201	TOWER ELEVATION	3	12/02/21	AJC
C-401	ANTENNA INFORMATION & SCHEDULE	3	12/02/21	AJC
C-501	CONSTRUCTION DETAILS	3	12/02/21	AJC
C-502	CONSTRUCTION DETAILS	3	12/02/21	AJC
C-503	CONSTRUCTION DETAILS	3	12/02/21	AJC
C-50X	CIVIL DETAILS	3	12/02/21	AJC
E-101	GROUNDING DETAILS & ELECTRICAL SCHEMATIC	3	12/02/21	AJC
E-102	GROUNDING DETAIL	3	12/02/21	AJC
E-501	GROUNDING DETAILS	3	12/02/21	AJC
E-601	PANEL SCHEDULE	3	12/02/21	AJC
R-602	SUPPLEMENTAL			
R-603	SUPPLEMENTAL			
R-604	SUPPLEMENTAL			
R-605	SUPPLEMENTAL			
R-606	SUPPLEMENTAL			
R-607	SUPPLEMENTAL			

AMERICAN TOWER®

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

REV.	DESCRIPTION	BY	DATE
A	PRELIM	AJC	08/06/21
0	FOR CONSTRUCTION	AMN	08/11/21
1	REVISED PER COMMENTS	AMN	08/18/21
2	REVISED PER COMMENTS	AMN	08/30/21
3	REVISED PER COMMENTS	AMN	12/30/21

ATC SITE NUMBER:
415439

ATC SITE NAME:
WOODSTOCK NW PCS CT

T-MOBILE SITE NAME:
CTNL184A

SITE ADDRESS:
40 SHERMAN ROAD
WOODSTOCK, CT 06281

SEAL:

Digitally signed by Eric Anderson
Date: 2021.12.03 16:53:14-05'00'

C.T. JPC.0000131

T-Mobile

DATE DRAWN:	08/06/21
ATC JOB NO:	13704269_D3
CUSTOMER ID:	CTNL184A
CUSTOMER #:	CTNL184A

TITLE SHEET

SHEET NUMBER:	REVISION:
G-001	3

GENERAL CONSTRUCTION NOTES:

1. OWNER FURNISHED MATERIALS, T-MOBILE "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL
   - A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)
   - B. AC/TELCO INTERFACE BOX (PPC)
   - C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
   - D. TOWERS, MONOPOLES
   - E. TOWER LIGHTING
   - F. GENERATORS & LIQUID PROPANE TANK
   - G. ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING
   - H. ANTENNAS (INSTALLED BY OTHERS)
   - I. TRANSMISSION LINE
   - J. TRANSMISSION LINE JUMPERS
   - K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
   - L. TRANSMISSION LINE GROUND KITS
   - M. HANGERS
   - N. HOISTING GRIPS
   - O. BTS EQUIPMENT
2. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF T-MOBILE TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
3. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS.
4. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
6. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
7. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
8. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
9. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
11. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
12. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE T-MOBILE REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE T-MOBILE REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE T-MOBILE REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
14. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE T-MOBILE CONSTRUCTION MANAGER.
15. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
16. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE T-MOBILE REP AND ENGINEER OF RECORD IMMEDIATELY.
17. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
18. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
19. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AMERICAN TOWER CORPORATION (ATC) AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
20. CONTRACTOR SHALL FURNISH T-MOBILE AND AMERICAN TOWER CORPORATION (ATC) WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.
22. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY T-MOBILE MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH T-MOBILE SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO T-MOBILE FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO T-MOBILE SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
26. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
27. CONTRACTOR SHALL NOTIFY T-MOBILE REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
28. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
29. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
30. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE T-MOBILE REP. ANY WORK FOUND BY THE T-MOBILE REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
31. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.
32. T-MOBILE FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE T-MOBILE WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP.
33. T-MOBILE OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OWN OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO T-MOBILE OR THEIR ARCHITECT/ENGINEER.

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."
2. STRUCTURAL STEEL ROLLED SHAPES, PLATES AND BARS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:
   - A. ASTM A-572, GRADE 50 - ALL W SHAPES, UNLESS NOTED OR A992 OTHERWISE
   - B. ASTM A-36 - ALL OTHER ROLLED SHAPES, PLATES AND BARS UNLESS NOTED OTHERWISE.
   - C. ASTM A-500, GRADE B - HSS SECTION (SQUARE, RECTANGULAR, AND ROUND)
   - D. ASTM A-325, TYPE SC OR N - ALL BOLTS FOR CONNECTING STRUCTURAL MEMBERS
   - E. ASTM F-1554 07 - ALL ANCHOR BOLTS, UNLESS NOTED OTHERWISE
3. ALL EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123. EXPOSED STEEL HARDWARE AND ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A153 OR B695.
4. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.
5. DO NOT DRILL HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
6. CONNECTIONS:
   - A. ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.
   - B. ALL WELDS SHALL BE INSPECTED VISUALLY. 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. REPAIR ALL WELDS AS NECESSARY.
   - C. INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
   - D. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE BURNING/WELDING PERMITS AS REQUIRED BY LOCAL GOVERNING AUTHORITY AND IF REQUIRED SHALL HAVE FIRE DEPARTMENT DETAIL FOR ANY WELDING ACTIVITY.
   - E. ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, UNLESS NOTED OTHERWISE.
   - F. MINIMUM WELD SIZE TO BE 0.1875 INCH FILLET WELDS, UNLESS NOTED OTHERWISE.
   - G. PRIOR TO FIELD WELDING GALVANIZING MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING ½" BEYOND ALL FIELD WELD SURFACES. AFTER WELD AND WELD INSPECTION IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.
   - H. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING AND/OR BRACING WHERE REQUIRED DURING CONSTRUCTION UNTIL ALL CONNECTIONS ARE COMPLETE.
   - I. ANY FIELD CHANGES OR SUBSTITUTIONS SHALL HAVE PRIOR APPROVAL FROM THE ENGINEER, AND T- MOBILE PROJECT MANAGER IN WRITING

SPECIAL CONSTRUCTION ANTENNA INSTALLATION NOTES:

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

CONCRETE AND REINFORCING STEEL NOTES:

1. DESIGN AND CONSTRUCTION OF ALL CONCRETE ELEMENTS SHALL CONFORM TO THE LATEST EDITIONS OF ALL APPLICABLE CODES INCLUDING: ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", ACI 117 "SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS", AND ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE."
2. MIX DESIGN SHALL BE APPROVED BY T-MOBILE REP PRIOR TO PLACING CONCRETE.
3. CONCRETE SHALL BE NORMAL WEIGHT, 6 % AIR ENTRAINED (+/- 1.5%) WITH A SLUMP RANGE OF 3-6" AND HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI UNLESS OTHERWISE NOTED.
4. THE FOLLOWING MATERIALS SHALL BE USED:

PORTLAND CEMENT:	ASTM C150, TYPE 2
REINFORCEMENT:	ASTM A185, PLAIN STEEL WELDED WIRE FABRIC
REINFORCEMENT BARS:	ASTM A615, GRADE 60, DEFORMED
NORMAL WEIGHT AGGREGATE:	ASTM C33
WATER:	ASTM C 94/C 94M
WELDED WIRE FABRIC:	ASTM A185
ADMIXTURES:	
-WATER-REDUCING AGENT:	ASTM C 494/C 494M, TYPE A
-AIR-ENTERING AGENT:	ASTM C 260/C 260M
-SUPERPLASTICIZER:	ASTM C494, TYPE F OR TYPE G
-RETARDING:	ASTM C 494/C 494M, TYPE B

5. MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE NO LESS THAN 3".
6. A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE IN ACCORDANCE WITH ACI 301 SECTION 4.2.4, UNLESS NOTED OTHERWISE.
7. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL, OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR APPROVAL FROM AN ATC ENGINEER WHEN DRILLING HOLES IN CONCRETE.
8. ADMIXTURES SHALL CONFORM TO THE APPROPRIATE ASTM STANDARD AS REFERENCED IN "METHOD 1" OF ACI 301.
9. DO NOT WELD OR TACK WELD REINFORCING STEEL.
10. ALL DOWELS, ANCHOR BOLTS, EMBEDDED STEEL, ELECTRICAL CONDUITS, PIPE SLEEVES, GROUNDS AND ALL OTHER EMBEDDED ITEMS AND FORMED DETAILS SHALL BE IN PLACE BEFORE START OF CONCRETE PLACEMENT.
11. REINFORCEMENT SHALL BE COLD BENT WHENEVER BENDING IS REQUIRED.
12. DO NOT PLACE CONCRETE IN WATER, ICE, OR ON FROZEN GROUND.
13. FOR COLD-WEATHER (ACI 306) AND HOT-WEATHER (ACI 301M) CONCRETE PLACEMENT, CONFORM TO APPLICABLE ACI CODES AND RECOMMENDATIONS. IN EITHER CASE, MATERIALS CONTAINING CHLORIDE, CALCIUM, SALTS, ETC. SHALL NOT BE USED. PROTECT FRESH CONCRETE FROM WEATHER FOR 7 DAYS, MINIMUM.
14. ALL CONCRETE SHALL HAVE A "SMOOTH FORM FINISH."
15. SPLICING OF REINFORCEMENT IS PERMITTED ONLY AT LOCATIONS SHOWN IN THE CONTRACT DRAWINGS OR AS ACCEPTED BY THE ENGINEER. UNLESS OTHERWISE SHOWN OR NOTED REINFORCING STEEL SHALL BE SPLICED TO DEVELOP ITS FULL TENSILE CAPACITY (CLASS A) IN ACCORDANCE WITH ACI 318.
16. DETAILING OF REINFORCING STEEL SHALL CONFORM TO "ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" (ACI 315).
17. ALL SLAB CONSTRUCTION SHALL BE CAST MONOLITHICALLY WITHOUT HORIZONTAL CONSTRUCTION JOINTS, UNLESS SHOWN IN THE CONTRACT DRAWINGS.
18. LOCATION OF ALL CONSTRUCTION JOINTS ARE SUBJECT TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, CONFORMANCE WITH ACI 318, AND ACCEPTANCE OF THE ENGINEER. DRAWINGS SHOWING LOCATION OF DETAILS OF THE PROPOSED CONSTRUCTION JOINTS SHALL BE SUBMITTED WITH REINFORCING STEEL PLACEMENT DRAWINGS.
19. SPLICES OF WWF, AT ALL SPLICED EDGES, SHALL BE SUCH THAT THE OVERLAP MEASURED BETWEEN OUTERMOST CROSS WIRES OF EACH FABRIC SHEET IS NOT LESS THAN THE SPACING OF THE CROSS WIRE PLUS 2 INCHES, NOR LESS THAN 6".
20. BAR SUPPORTS SHALL BE ALL-GALVANIZED METAL WITH PLASTIC TIPS.
21. ALL REINFORCEMENT SHALL BE SECURELY TIED IN PLACE TO PREVENT DISPLACEMENT BY CONSTRUCTION TRAFFIC OR CONCRETE. TIE WIRE SHALL BE OF SUFFICIENT STRENGTH FOR INTENDED PURPOSE, BUT NOT LESS THAN NO. 18 GAUGE.
22. SLAB ON GROUND: COMPACT STRUCTURAL FILL TO 95% DENSITY AND THEN PLACE 6" GRAVEL BENEATH SLAB.

ELECTRICAL NOTES:

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

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

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Madison, CT 06443
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COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING

REV.	DESCRIPTION	BY	DATE
A	PRELIM	AJC	08/06/21
0	FOR CONSTRUCTION	AMN	08/11/21
1	REVISED PER COMMENTS	AMN	08/18/21
2	REVISED PER COMMENTS	AMN	08/30/21
3	REVISED PER COMMENTS	AMN	12/30/21

ATC SITE NUMBER:
415439

ATC SITE NAME:
WOODSTOCK NW PCS CT

T-MOBILE SITE NAME:
CTNL184A

SITE ADDRESS:
40 SHERMAN ROAD
WOODSTOCK, CT 06281

SEAL:

Digitally signed by Eric Anderson
Date: 2021.12.03 16:53:17-05'00'

C.T. JPC.0000131

T-Mobile

DATE DRAWN:	08/06/21
ATC JOB NO:	13704269_D3
CUSTOMER ID:	CTNL184A
CUSTOMER #:	CTNL184A

GENERAL NOTES

SHEET NUMBER:	REVISION:
G-002	3

NOTES:

1. BOUNDARY LINES OBTAINED FROM CONNECTICUT ONLINE GIS. HTTPS://CT-DEEP-GIS-OPEN-DATA-WEBSITE-CTDEEP.HUB.ARCGIS.COM

N/F
GALE ROGER W/GALE NANCY M
WOOD–005122–000018–000003

EXISTING TELECOMMUNICATIONS COMPOUND

EXISTING MONOPOLE

PROPOSED T-MOBILE CABINETS AND CONCRETE PAD WITHIN A 10' X 15' LEASE AREA

N/F
CLENDENEN NANCY E
WOOD–005122–000018–000003A

N/F
CONNECTICUT, STATE OF
WOOD–005122–000018–000001

N/F
HALLQUEST COLIN G
WOOD–005122–000018–000004

SHERMAN ROAD

MURPHY ROAD

N/F
HALLQUEST COLIN G
WOOD–005124–000019–000003

N/F
KELLER STEVEN H
WOOD–005122–000018–000005

1 OVERALL SITE PLAN

GRAPHIC SCALE

200 0 100 200

(IN FEET)
1 UNIT = 200 FEET

N

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REV.	DESCRIPTION	BY	DATE
A	PRELIM	AJC	08/06/21
0	FOR CONSTRUCTION	AMN	08/11/21
1	REVISED PER COMMENTS	AMN	08/18/21
2	REVISED PER COMMENTS	AMN	08/30/21
3	REVISED PER COMMENTS	AMN	12/30/21

ATC SITE NUMBER:
415439

ATC SITE NAME:
WOODSTOCK NW PCS CT

T-MOBILE SITE NAME:
CTNL184A

SITE ADDRESS:
40 SHERMAN ROAD
WOODSTOCK, CT 06281

SEAL:

STATE OF CONNECTICUT · ERIC T. ANDERSON · 32224 · LICENSED PROFESSIONAL ENGINEER

Digitally signed by Eric Anderson
Date: 2021.12.03 16:53:20-05'00'

C.T. JPC.0000131

T-Mobile

DATE DRAWN:	08/06/21
ATC JOB NO:	13704269_D3
CUSTOMER ID:	CTNL184A
CUSTOMER #:	CTNL184A

OVERALL SITE PLAN

SHEET NUMBER: C-001

REVISION: 3

SITE PLAN NOTES:

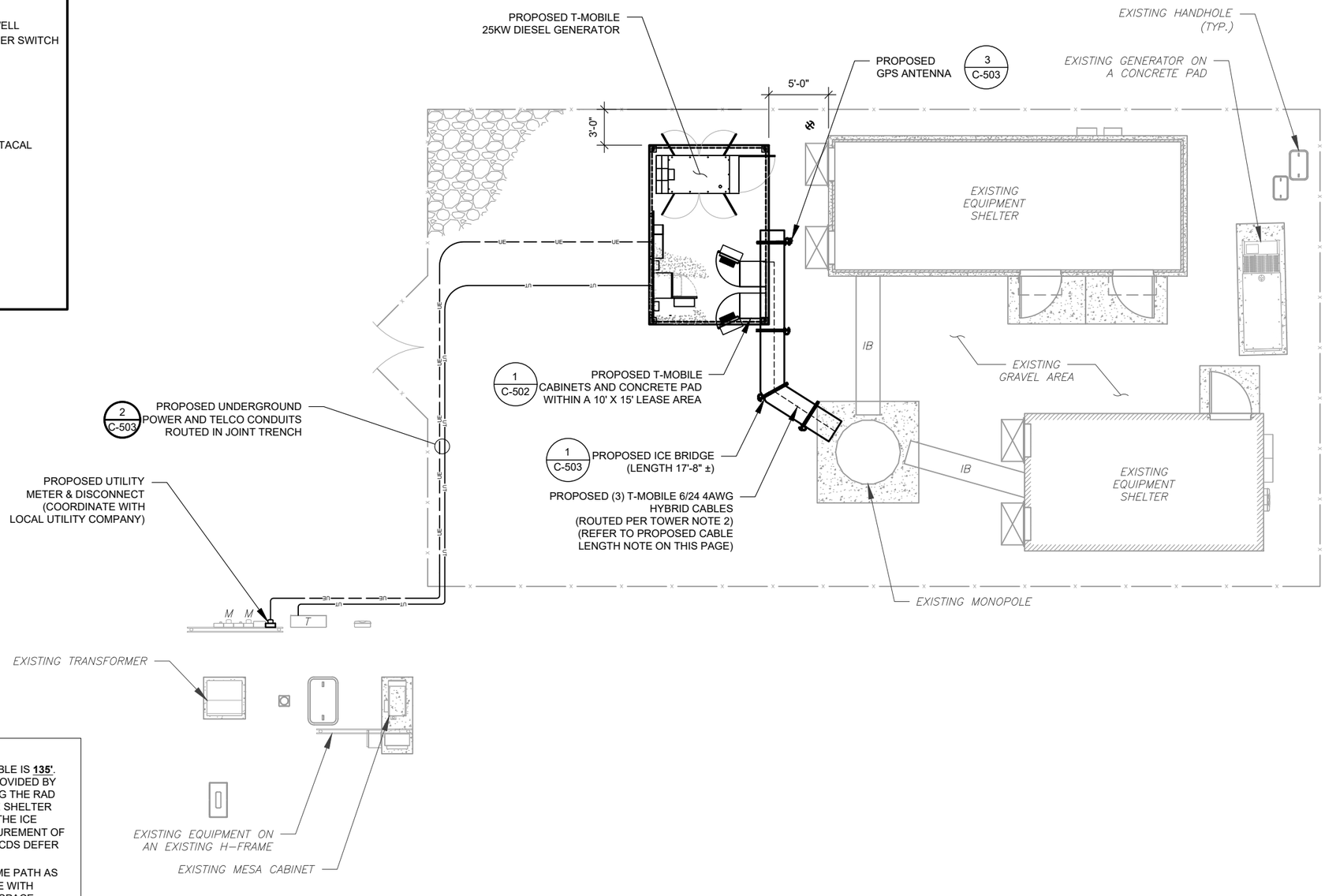
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.

2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.

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

LEGEND

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



PROPOSED CABLE LENGTH:

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **135'**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES), CDS DEFER TO GREATEST CABLE LENGTH.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.

1 DETAILED SITE PLAN

GRAPHIC SCALE

10 0 5 10

(IN FEET)
1 UNIT = 10 FEET

AMERICAN TOWER®

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

REV.	DESCRIPTION	BY	DATE
A	PRELIM	AJC	08/06/21
0	FOR CONSTRUCTION	AMN	08/11/21
1	REVISED PER COMMENTS	AMN	08/18/21
2	REVISED PER COMMENTS	AMN	08/30/21
3	REVISED PER COMMENTS	AMN	12/30/21

ATC SITE NUMBER:
415439

ATC SITE NAME:
WOODSTOCK NW PCS CT

T-MOBILE SITE NAME:
CTNL184A

SITE ADDRESS:
40 SHERMAN ROAD
WOODSTOCK, CT 06281

SEAL:

STATE OF CONNECTICUT · ERIC M. ANDERSON · 32224 · LICENSED PROFESSIONAL ENGINEER

Digitally signed by Eric Anderson
Date: 2021.12.03 16:53:23-05'00'

C.T. JPC.0000131

T-Mobile

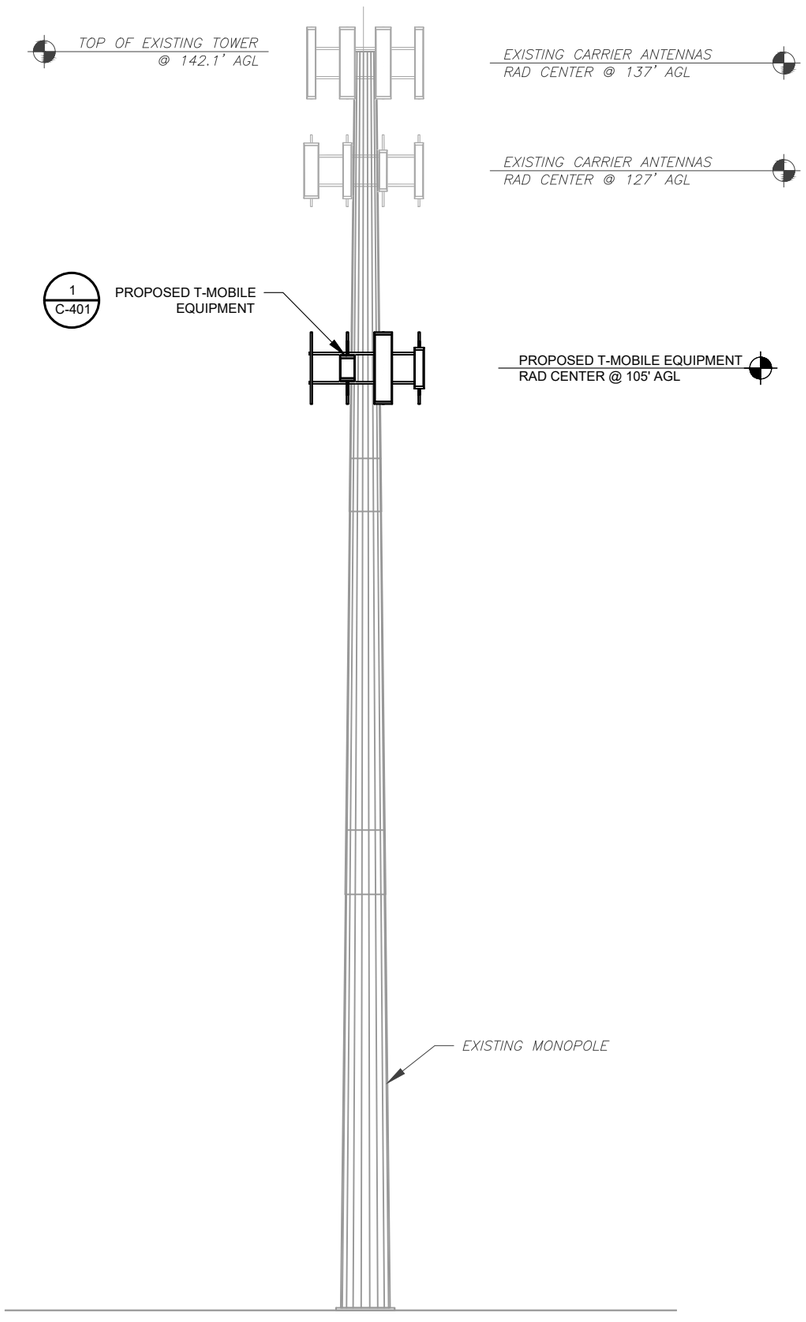
DATE DRAWN:	08/06/21
ATC JOB NO:	13704269_D3
CUSTOMER ID:	CTNL184A
CUSTOMER #:	CTNL184A

DETAILED SITE PLAN

SHEET NUMBER: C-101

REVISION: 3

PER MOUNT ANALYSIS COMPLETED BY CENTEK ENGINEERING, DATED 11/24/21, THE PROPOSED MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.



1 TOWER ELEVATION
SCALE: N.T.S.

TOWER NOTE:
1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE PROJECT MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
2. WHERE APPLICABLE, ALL NEW ANTENNAS, EQUIPMENT, MOUNTS, CABLING, ETC. SHALL BE PAINTED/SOCKED TO MATCH EXISTING EQUIPMENT IN ACCORDANCE WITH FAA, JURISDICTION, AND/OR OTHER LOCAL REQUIREMENTS.
3. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.
4. TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)

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T-MOBILE SITE NAME:
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SITE ADDRESS:
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WOODSTOCK, CT 06281

SEAL:

Digitally signed by Eric Anderson
Date: 2021.12.03 16:53:25-05'00'

C.T. JPC.0000131

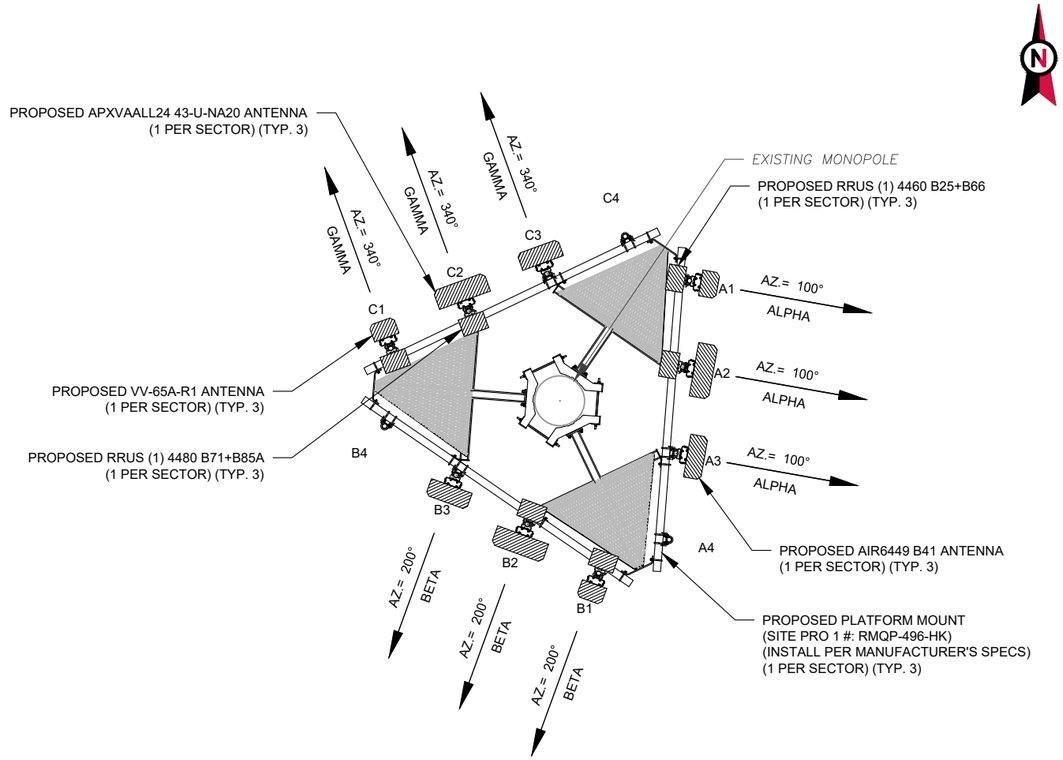
T-Mobile

DATE DRAWN:	08/06/21
ATC JOB NO:	13704269_D3
CUSTOMER ID:	CTNL184A
CUSTOMER #:	CTNL184A

TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-201	3

PER MOUNT ANALYSIS COMPLETED BY CENTEK ENGINEERING, DATED 11/24/21, THE PROPOSED MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.



1 FINAL ANTENNA PLAN

SCALE: N.T.S.

FINAL ANTENNA SCHEDULE								
LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	ADDITIONAL TOWER MOUNTED EQUIPMENT	DISTRIBUTION BOX / CABLING
ALPHA	105'	100°	A1	VV-65A-R1	G1900/L1900/L2100	0/2/2	4460 B25+B6	(3) 6/24 4AWG HYBRID W/ PENDANT
			A2	APXVAALL24 43-U-NA20	L600/N600/L700	0/2/2/2/2	4480 B71+B85	
			A3	AIR6449 B41	L2500/N2500	0/2/2	-	
			A4	-	-	-	-	
BETA	105'	200°	B1	VV-65A-R1	G1900/L1900/L2100	0/2/2	4460 B25+B6	
			B2	APXVAALL24 43-U-NA20	L600/N600/L700	0/2/2/2/2	4480 B71+B85	
			B3	AIR6449 B41	L2500/N2500	0/2/2	-	
			B4	-	-	-	-	
GAMMA	105'	340°	C1	VV-65A-R1	G1900/L1900/L2100	0/2/2	4460 B25+B6	
			C2	APXVAALL24 43-U-NA20	L600/N600/L700	0/2/2/2/2	4480 B71+B85	
			C3	AIR6449 B41	L2500/N2500	0/2/2	-	
			C4	-	-	-	-	
1. CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS. 2. CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.								

2 ANTENNA SCHEDULE

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WOODSTOCK, CT 06281

SEAL:

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T-Mobile

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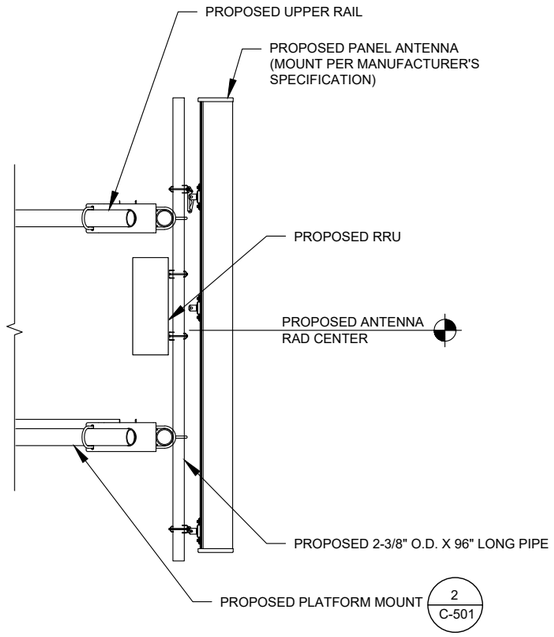
CUSTOMER ID:	CTNL184A
CUSTOMER #:	CTNL184A

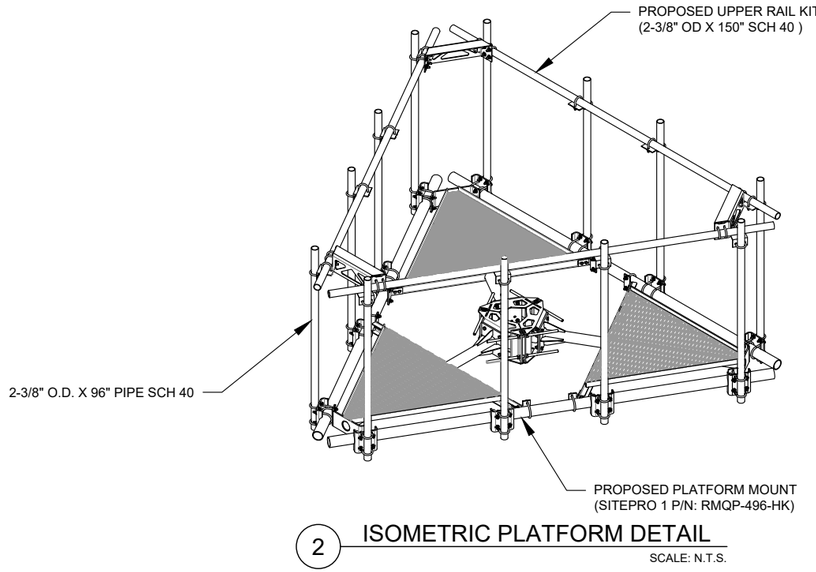
ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:	REVISION:
C-401	3



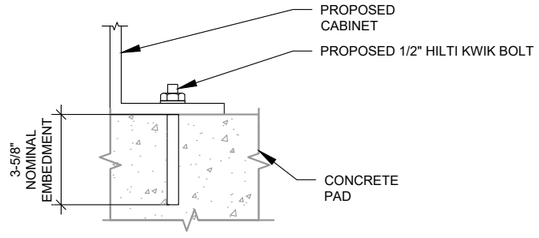
1 PROPOSED ANTENNA MOUNTING DETAIL (ELEVATION)

SCALE: NOT TO SCALE



2 ISOMETRIC PLATFORM DETAIL

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.

3 CABINET ATTACHMENT DETAIL

SCALE: NOT TO SCALE

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T-Mobile

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CUSTOMER ID:	CTNL184A
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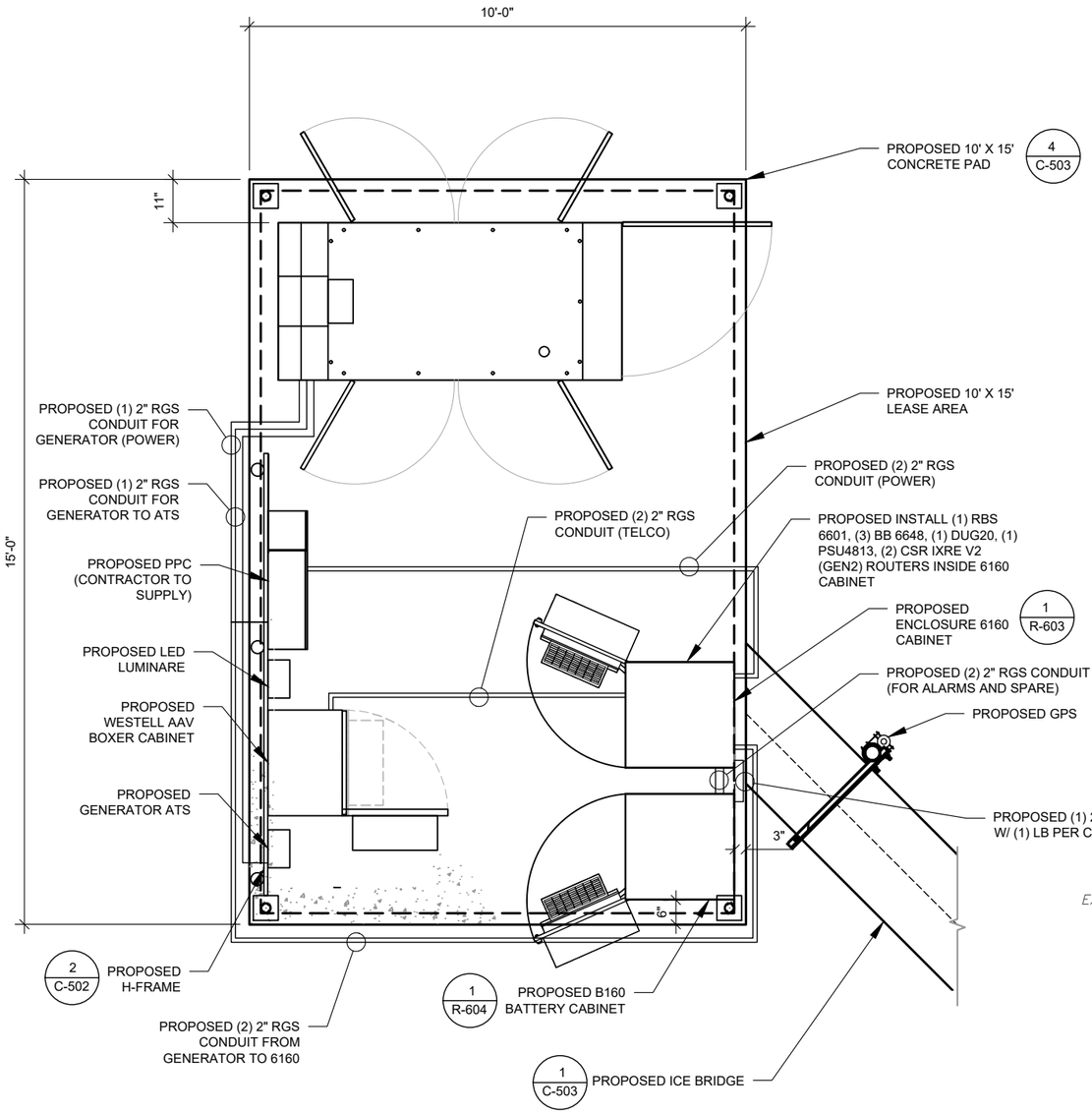
CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-501	3

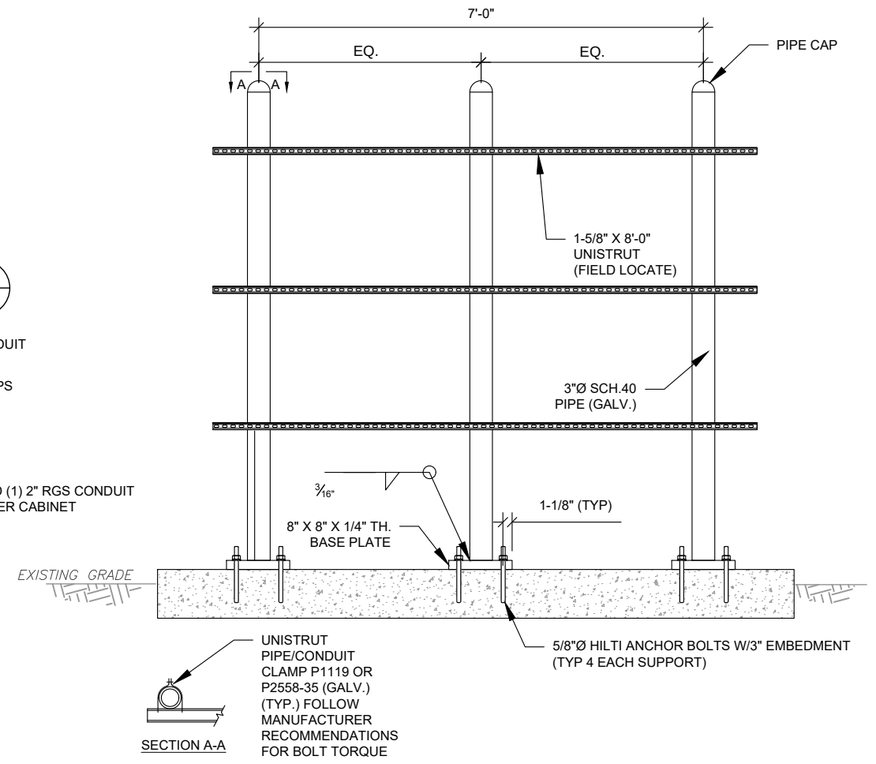


NOTE:
1. CABINETS SHALL BE ORIENTED AND INSTALLED EXACTLY AS SHOWN
2. WEIGHT OF BTS UNIT IS 615 LBS (WEIGHT IS WITHOUT EQUIPMENT)

1 DETAILED EQUIPMENT LAYOUT
SCALE: NOT TO SCALE

H-FRAME NOTES:

1. IF IT IS NECESSARY TO EXTEND THE H-FRAME, AN ADDITIONAL POST WILL ALWAYS BE REQUIRED.
2. PROPOSED UNISTRUTS TO BE FIELD CUT AND SHOULD NOT EXTEND MORE THAN 6 INCHES BEYOND THE LAST POST.
3. SPRAY ENDS OF UNISTRUT WITH COLD GALVANIZING SPRAY PAINT, ALLOW TO DRY, THEN COVER WITH RUBBER PROTECTIVE CAPS FOR SAFETY.
4. UNISTRUT TO BE CUT FLUSH WITH NO SHARP OR JAGGED EDGES.
5. ALL PROPOSED HARDWARE TO BE MOUNTED PER MANUFACTURERS SPECS.



2 TYPICAL H-FRAME DETAIL
SCALE: NOT TO SCALE

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SITE ADDRESS:
40 SHERMAN ROAD
WOODSTOCK, CT 06281

SEAL:

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T-Mobile

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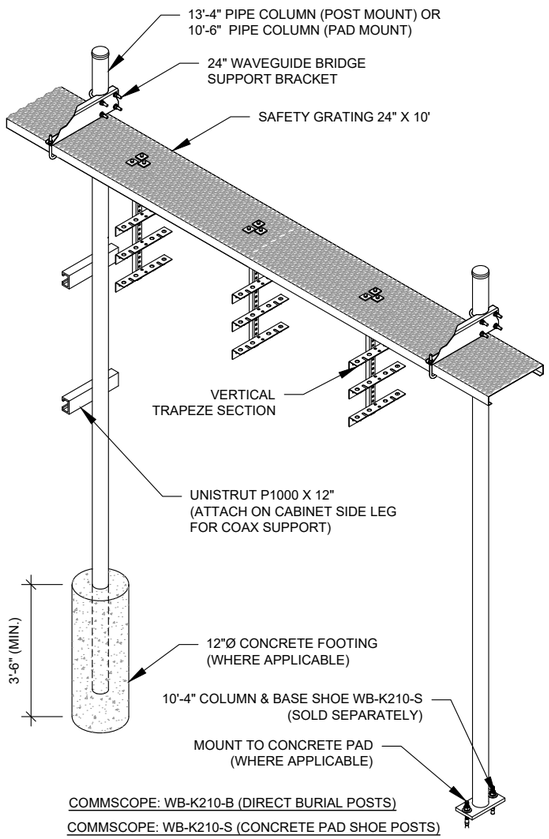
CUSTOMER ID:	CTNL184A
CUSTOMER #:	CTNL184A

CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-502	3

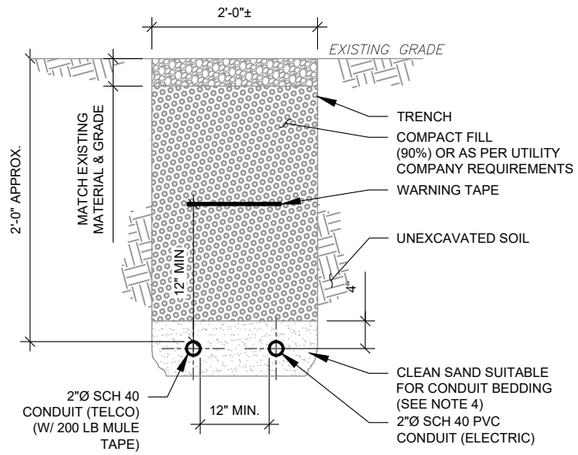


CONSTRUCTION NOTE:

1. INSTALL ICE BRIDGE TO ALLOW 7 FEET CLEARANCE ABOVE GRADE TO LOWEST APPURTENANCE.
2. INSTALL PER MANUFACTURES SPECIFICATION.

1 WAVEGUIDE BRIDGE KIT

SCALE: NOT TO SCALE

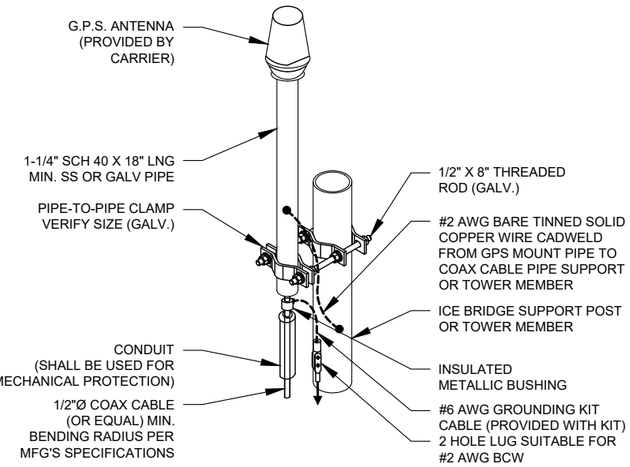


TRENCH NOTES:

1. IF FREE OF ORGANIC OR OTHER DELETERIOUS MATERIAL, EXCAVATED MATERIAL MAY BE USED FOR BACKFILL.
2. IF NOT, PROVIDE CLEAN, COMPACTIBLE MATERIAL. COMPACT IN 8" LIFTS. REMOVE ANY LARGE ROCKS PRIOR TO BACKFILLING. CONTRACTOR TO VERIFY LOCATION OF EXISTING U/G UTILITIES PRIOR TO DIGGING.
3. IF CURRENT AS-BUILT DRAWINGS ARE NOT AVAILABLE CONTRACTOR SHALL HAND DIG U/G TRENCHING.
4. CONCRETE ENCASE CONDUIT WHEN TRENCHING UNDER SITE ACCESS ROAD.

2 TELCO AND POWER CONDUIT JOINT TRENCH

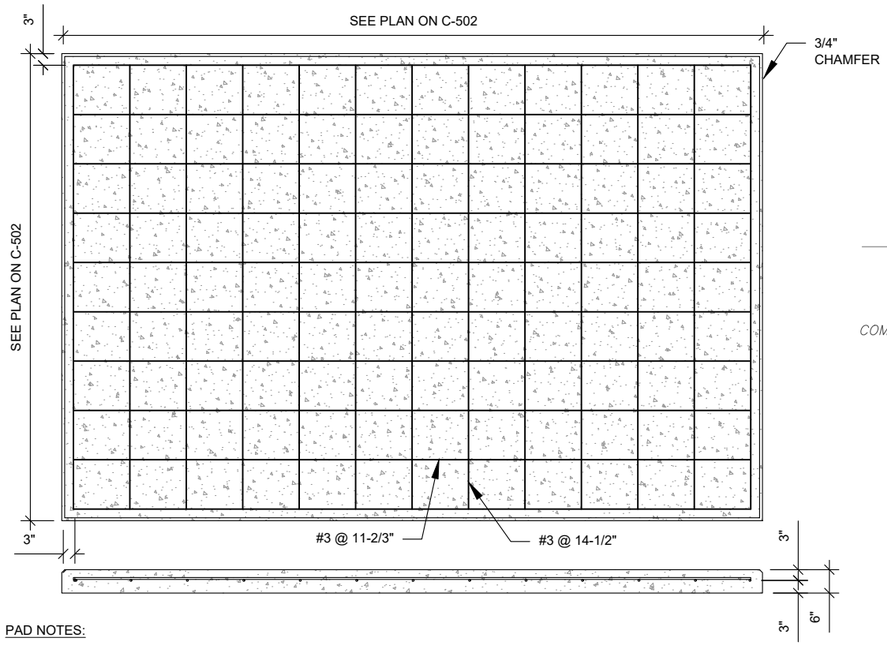
SCALE: N.T.S.



NOTE:
1. GPS SHALL BE PLACED WITH CLEAR SIGHT LINE TO THE SOUTHERN SKY.
2. CONTRACTOR TO SUPPLY COAX FOR GPS UNIT.

3 GPS ANTENNA ATTACHMENT DETAIL

SCALE: NOT TO SCALE

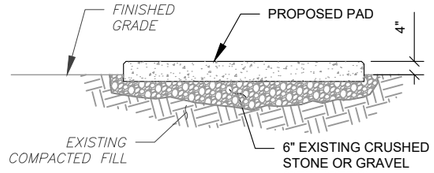


PAD NOTES:

1. PADS SHALL BE PRE-CAST MATCHING THIS DESIGN WHERE ALLOWED BY LOCAL JURISDICTION.
2. REFER TO CONCRETE & REINFORCED STEEL NOTES ON SHEET G-002 & ATC SPEC 033000 FOR CAST-IN-PLACE PADS.

4 REINFORCED PAD LAYOUT

SCALE: NOT TO SCALE



PAD NOTES:

1. SUBGRADE AND FILL SHALL CONSIST OF CLEAN SOIL. DELETRIOUS MATERIAL AND ORGANICS SHALL BE REMOVED.
2. MECHANICALLY COMPACT FOOTPRINT OF PAD PLUS 2' PERIMETER.
3. USE GALVANIZED HILTI EXPANSION ANCHORS OR, APPROVED EQUAL, FOR EQUIPMENT ANCHORAGE.
4. FOR SIZE AND LOCATION OF ANCHORS AND OTHER REQUIREMENT, SEE EQUIPMENT VENDOR DRAWINGS.

5 GRAVEL PREPARATION

SCALE: NOT TO SCALE

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CUSTOMER #:	CTNL184A

CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-503	3

GROUNDING NOTES:

1. ALL EQUIPMENT ENCLOSURES, DEVICES AND CONDUITS SHALL BE GROUNDED TO CONFORM WITH THE LATEST REQUIREMENTS OF THE NEC BY THE INSTALLATION OF A SEPARATE, GREEN, INSULATED GROUND CONDUCTOR FOR ALL FEEDER AND BRANCH CIRCUITS. GROUND CONDUCTORS SHALL BE OF THE SIZE INDICATED ON THE DRAWINGS. GROUND CONDUCTORS SHALL BE CONTINUOUS IN LENGTH AND SHALL BE BONDED TO EACH ENCLOSURE THEY PASS THROUGH. CONDUIT SHALL NOT BE USED AS A GROUNDING CONDUCTOR.

2. GROUNDING CONDUCTORS SHALL:
   - A. BE #2 AWG SOLID BARE TINNED COPPER (SBTC) FOR ALL GROUNDING SYSTEM WIRE UNLESS OTHERWISE NOTED, OR OTHERWISE REQUIRED BY CODE.
   - B. BE MINIMUM 12" BEND RADIUS. KEEP NUMBER OF BENDS TO A MINIMUM.
   - C. AVOID LONG BONDING CONNECTION RUNS. MAKE DIRECT AS POSSIBLE.
   - D. NOT HAVE ANY U-SHAPED RUNS.
   - E. BE IN NON-METALLIC CONDUIT ONLY, IF IN CONDUIT.
   - F. BE PLACED THROUGH NON-METALLIC SLEEVES IN FLOORS, WALLS, CEILINGS, ETC.
   - G. PROTECTED IN NON-METALLIC CONDUIT WHERE EXPOSED ABOVE GRADE.

2. INSTALL ALL GROUNDING RINGS AND RADIALS WITH CONDUCTIVE CEMENT, SANKOSHA AS DISTRIBUTED BY ELECTRIC MOTION COMPANY, INC., WINSTED, CT 06098, OR AS SPECIFICALLY INDICATED. INSTALL PER MANUFACTURER'S SPECIFICATIONS.

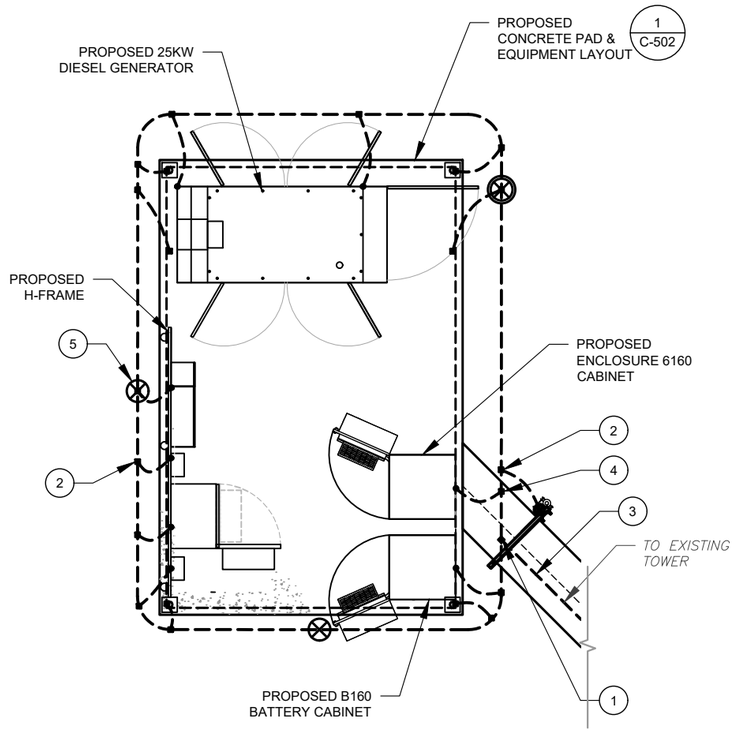
3. GROUND RINGS SHALL BE:
   - A. MINIMUM 30" BELOW GRADE, OR BELOW FROST LINE WHICHEVER IS DEEPER.
   - B. MINIMUM 2' FROM FOUNDATIONS, FOOTINGS, OTHER GROUNDING SYSTEMS AND ALL CONDUCTIVE OBJECTS.
   - C. WITH MINIMUM 12" BEND RADII.
   - D. WITH ALL CONNECTIONS IN CONTACT WITH EARTH, BONDED BY EXOTHERMIC WELDING.
   - E. BONDED TO A SINGLE POINT GROUND (SPG) WITH A SINGLE WIRE AS INDICATED ON DRAWINGS.

4. GROUND RODS SHALL BE:
   - A. MINIMUM 5/8" DIAMETER.
   - B. MINIMUM 10' LONG.
   - C. COPPER-CLAD GALVANIZED STEEL OR STAINLESS STEEL.
   - D. PLACED IN UNDISTURBED SOIL AND BELOW THE FROST LINE.
   - E. INSTALLED WITH MINIMUM SEPARATION DISTANCE OF TWICE THE DEPTH OF THE ROD(S), OR AS INDICATED ON DRAWINGS.
   - F. MINIMUM TWO (2) RODS ON THE TOWER RING OR ONE (1) PER LEG WHICHEVER IS LARGER, MINIMUM FOUR (4) RODS ON EVERY EQUIPMENT BUILDING RING WITH ONE AT EACH CORNER OR AS INDICATED, MINIMUM ONE (1) ROD FOR POWER SERVICE GROUNDING ELECTRODE, AND MINIMUM ONE (1) ROD AT END OF EACH RADIAL.

5. CONDUCTIVE OBJECTS, SUCH AS FENCES, SHALL BE BONDED TO THE GROUNDING SYSTEM IF WITHIN 20' OF THE TOWER GROUNDING SYSTEM, OR 5' OF ANY OTHER GROUNDED COMPONENT.

EQUIPMENT POWER NOTES:

1. 2" CONDUIT W/ 3-#3/0 CU, (1) #6 AWG G, PPC POWER
2. 2" CONDUIT W/ MULE TAPE FOR TELCO FEEDER SERVICE TO TELCO SOURCE PER UTILITY
3. 2-#12, 1 #12G IN 3/4" CONDUIT FROM TELCO CAB TO 6160
4. 3-#1/0, 1-#6 IN 2" CONDUIT
5. 2" CONDUIT, FOR CAT6



1 DETAILED GROUNDING PLAN

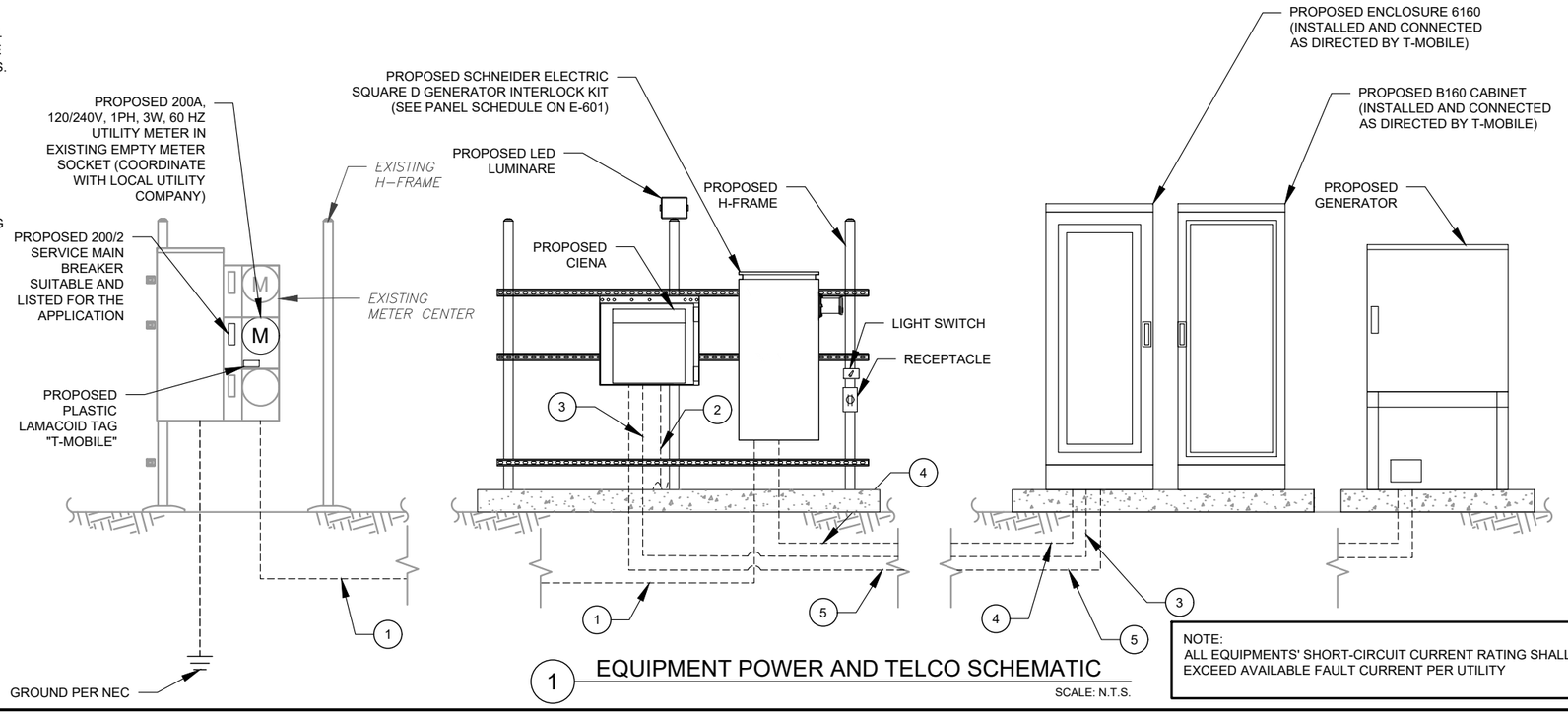
SCALE: NOT TO SCALE

GROUNDING PLAN LEGEND:

- EXISTING GROUND WIRE
- GROUND WIRE
- EXOTHERMIC WELD
- MECHANICAL WELD
- COPPER GROUND ROD
- TEST WELL

GROUNDING KEYED NOTES:

1. BOND TO TOWER GROUND RING
2. #2 AWG BOND FROM VERTICAL H-FRAME AND ICE BRIDGE POST TO EXTERNAL GROUND RING (TYP. EVERY POST).
3. #2 AWG SBTC BOND FROM TOWER GROUND RING TO EQUIPMENT.
4. EQUIPMENT BOND TO GROUND RING (TYP.)
5. 5/8Ø" X 10 FT GROUND ROD.



1 EQUIPMENT POWER AND TELCO SCHEMATIC

SCALE: N.T.S.

NOTE:
ALL EQUIPMENTS' SHORT-CIRCUIT CURRENT RATING SHALL EXCEED AVAILABLE FAULT CURRENT PER UTILITY

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MADISON
135 New Road
Madison, CT 06443
Phone: 860.395.0055
COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING

REV.	DESCRIPTION	BY	DATE
A	PRELIM	AJC	08/06/21
0	FOR CONSTRUCTION	AMN	08/11/21
1	REVISED PER COMMENTS	AMN	08/18/21
2	REVISED PER COMMENTS	AMN	08/30/21
3	REVISED PER COMMENTS	AMN	12/30/21

ATC SITE NUMBER:
415439

ATC SITE NAME:
WOODSTOCK NW PCS CT

T-MOBILE SITE NAME:
CTNL184A

SITE ADDRESS:
40 SHERMAN ROAD
WOODSTOCK, CT 06281

SEAL:

STATE OF CONNECTICUT · ERIC A. ANDERSON · 32224 · LICENSED PROFESSIONAL ENGINEER

Digitally signed by Eric Anderson
Date: 2021.12.03 16:53:42-05'00'

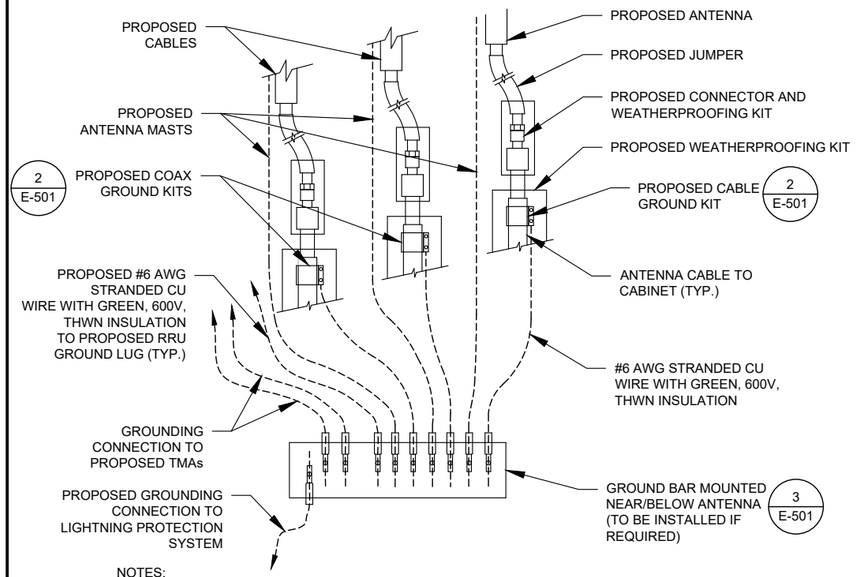
C.T. JPC.0000131

T-Mobile

DATE DRAWN:	08/06/21
ATC JOB NO:	13704269_D3
CUSTOMER ID:	CTNL184A
CUSTOMER #:	CTNL184A

GROUNDING DETAILS & ELECTRICAL SCHEMATIC

SHEET NUMBER:	REVISION:
E-101	3

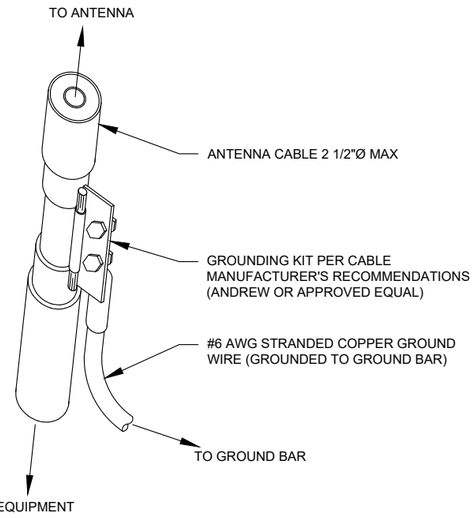


NOTES:

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

1 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: N.T.S.

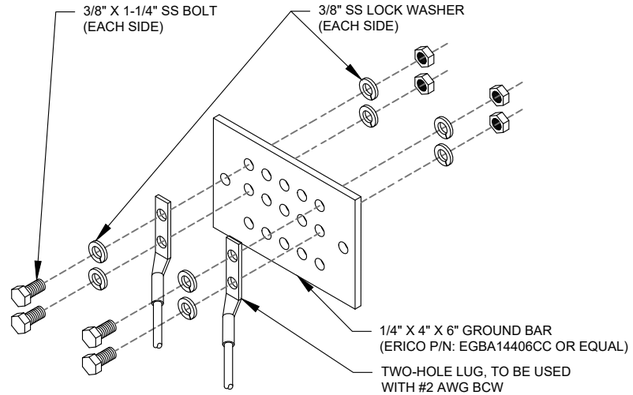


GROUND KIT NOTES:

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

2 CABLE GROUND KIT CONNECTION DETAIL

SCALE: N.T.S.

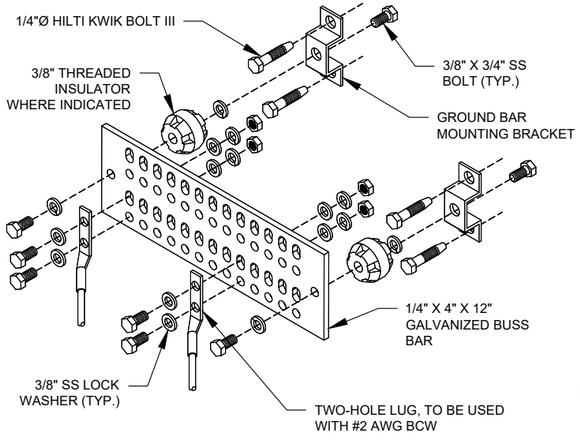


GROUND BAR NOTES:

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

3 TOWER GROUND BAR DETAIL

SCALE: N.T.S.

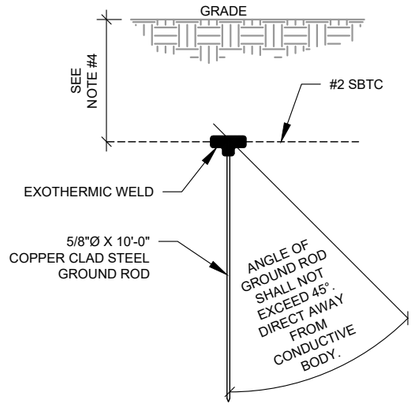


GROUND BAR NOTES

1. GROUND KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
2. GROUND BAR SHALL BE BOLTED TO STRUCTURAL MEMBER OR ANCHORED TO CONCRETE SLAB W/ HILTI KWIK BOLT III.

4 MAIN GROUND BAR DETAIL

SCALE: N.T.S.

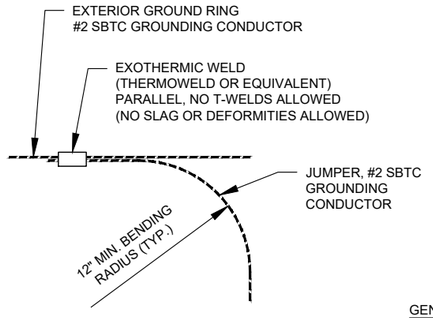


NOTES:

1. SEPARATION DIMENSION TO BE VERIFIED WITH LOCAL UTILITY COMPANY REQUIREMENTS.
2. COORDINATE UTILITY, LOCATE BEFORE DIGGING.
3. CONDUIT TRENCHING DEPTHS AT 36" OR 6" BELOW FROST LINE, WHICHEVER IS GREATER.
4. ALL RING AND RADIAL DEPTHS AT 30" OR 6" BELOW FROST LINE, WHICHEVER IS GREATER.

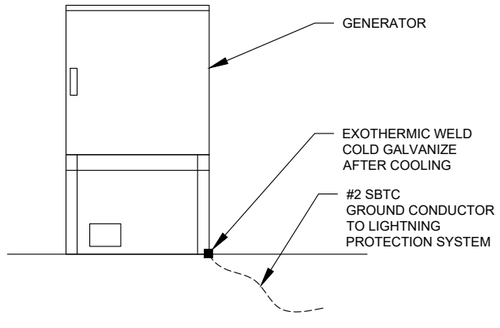
5 GROUND ROD DETAIL

SCALE: N.T.S.



6 TIE CONNECTION DETAIL

SCALE: N.T.S.



GENERATOR INSTALLATION NOTE:

INSTALL GENERATOR AND TRANSFER SWITCH WITH ALL SUPPLIED ACCESSORIES PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND SPECIFICATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, ACCESSORIES FOR THE EXHAUST SYSTEM, FUEL SYSTEM, ENCLOSURE INTEGRITY (CAPS, PLUGS, COVERS, ETC.), ELECTRICAL CONNECTIONS, AND GROUNDING CONNECTIONS.

7 GENERATOR GROUNDING

SCALE: N.T.S.

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SEAL:

Digitally signed by Eric Anderson
Date: 2021.12.03 16:53:44-05'00'

C.T. JPC.0000131

T-Mobile

DATE DRAWN:	08/06/21
ATC JOB NO:	13704269_D3
CUSTOMER ID:	CTNL184A
CUSTOMER #:	CTNL184A

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	3

PANEL DESIGNATION: ***TMO***

TYPE: LIGHTING & APPLIANCE
MOUNTING: SURFACE
ENCLOSURE: NEMA 3R

SYSTEM: 120/240V, 1Ø, 3W, 20 CKT
MAIN BREAKER (MB): 200A
MAIN BUS RATING: 200A
MIN. A.I.C. RATING: N/A

LOCATION: TMO LEASE EQUIPMENT AREA

PANEL NOTES: PROPOSED

CONNECTED LOAD (kVA)		BRIEF DESCRIPTION	FEEDER OR BRANCH CIRCUIT								FEEDER OR BRANCH CIRCUIT							BRIEF DESCRIPTION	CONNECTED LOAD (kVA)	
			BREAKER		CIRCUIT			POLE NO.	CIRC. NOTES		CIRC. NOTES	POLE NO.	CIRCUIT			BREAKER				
A	B		AMPS	POLES	WIRE	GND	COND.						COND.	GND	WIRE	POLES	AMPS		A	B
7.50		ENCLOSURE 6160	150	2	3-#1/0	#6	2"	1				2	1/2"	#12	2-#12	1	20	RECEPTACLE	0.18	
	7.50							3				4	1/2"	#12	2-#12	1	20	LIGHT		0.50
0.01		SURGE	60	2	3-#6	#10	1"	5				6	1/2"	#12	2-#12	1	20	AAV GFCI RECEPTACLE	0.18	
	0.01							7				8	2"	#12	2-#12	1	20	GENERATOR		1.92
0.00								9				10		#12	2-#12	1	20	GENERATOR	1.92	
	0.00							11				12								0.00
0.00								13				14							0.00	
	0.00							15				16								0.00
0.00								17				18							0.00	
	0.00							19				20								0.00
7.5	7.5								A	B	TOTAL								2.3	2.4
									9.8	9.9	19.7	CONNECTED LOAD (kVA)								
									9.8	9.9	19.7	DEMAND LOAD (kVA)								

DERATING FACTOR (80%)
DEMANDLOAD SIZING: *103 AMPS*

1 PANEL SCHEDULE

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C.T. JPC.0000131

T-Mobile

DATE DRAWN:	08/06/21
ATC JOB NO:	13704269_D3
CUSTOMER ID:	CTNL184A
CUSTOMER #:	CTNL184A

PANEL SCHEDULE

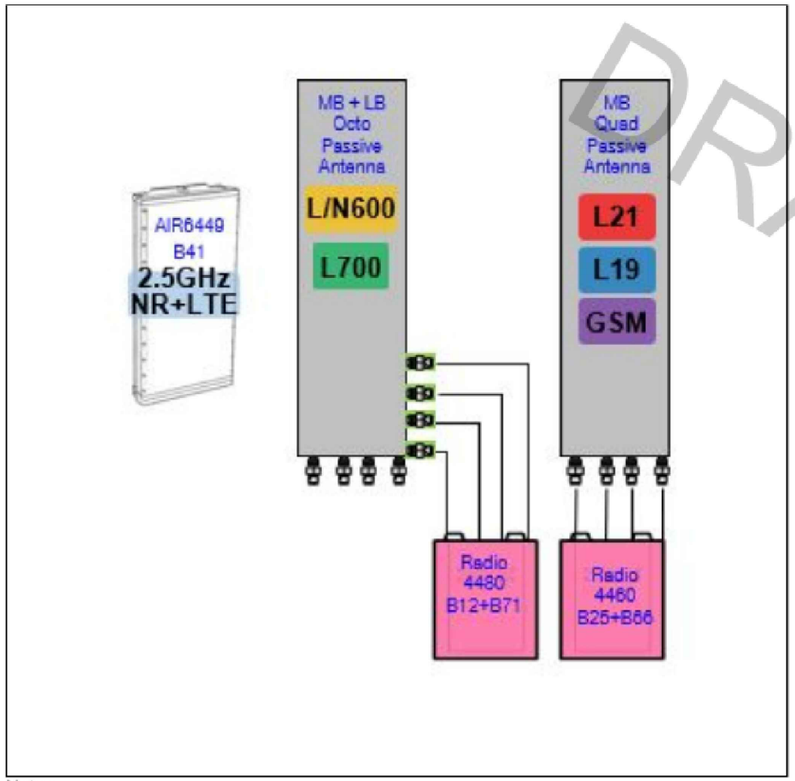
SHEET NUMBER: E-601

REVISION: 3

Proposed RAN Equipment			
Template: 67E5A998E 6160			
Enclosure	**1**	**2**	**3**
Enclosure Type	Enclosure 6160	RBS 6601	B160
Baseband	BB 6648 (L700, L600, N600); BB 6648 (L2500, N2500); BB 6648 (L2100, L1900)	DUG20 (G1900)	
Transport System	CSR IXRe V2 (Gen2)		
Functionality Groups	Ericsson Hybrid Trunk 6/24 4AWG *Select Length* **(x 3)**		
RAN Scope of Work:			

1 CABINET CONFIGURATION

SCALE: NOT TO SCALE



Notes:

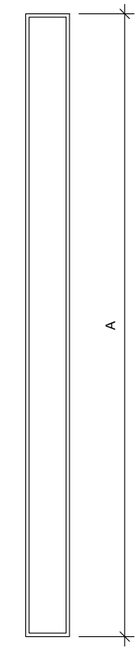
2 ANTENNA CONFIGURATION

SCALE: NOT TO SCALE

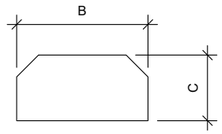
NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-601	-



FRONT VIEW

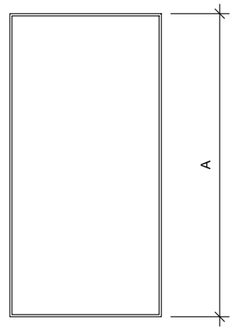


TOP VIEW

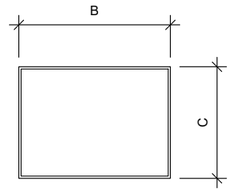
1 ANTENNA SPECIFICATIONS

FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

ANTENNA SPECIFICATIONS				
ANTENNA MODEL	A	B	C	WEIGHT (LBS)
AIR6449 B41	33.1"	20.6"	8.6"	104.0
VV-65A-R1	54.7"	12.0"	4.6"	24.7
APXVAALL24 43-U-NA20	95.9"	24.0"	8.5"	122.8



FRONT VIEW



TOP VIEW

2 RRU SPECIFICATIONS

FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

RRU SPECIFICATIONS				
RRU MODEL	A	B	C	WEIGHT (LBS)
4460	19.6"	15.7"	12.1"	109.0
4480	21.8"	15.7"	7.5"	84.0

SUPPLEMENTAL

SHEET NUMBER: R-602

REVISION: -

ERICSSON

Enclosure 6160 AC

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

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

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

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

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

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

Preliminary technical specification for Enclosure 6160 AC

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

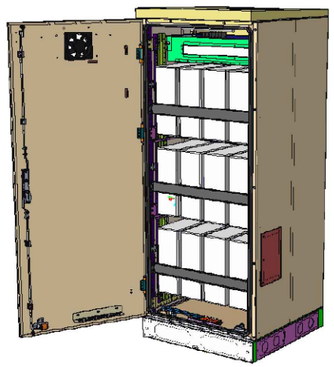
NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

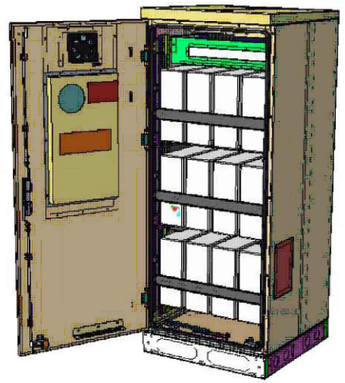
SHEET NUMBER: R-603

REVISION: -

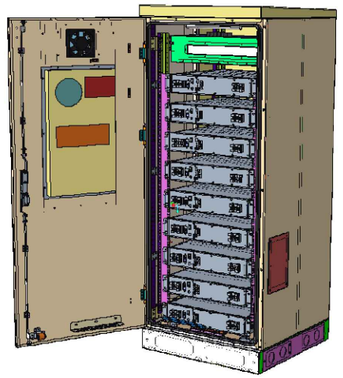
Enclosure B160



Enclosure B160
AirCon + VRLA



Enclosure B160
AirCon + Li-Ion



Enclosure B160
Convection Cooling
+ VRLA

Enclosure B160

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

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

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

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

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

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

SUPPLEMENTAL

SHEET NUMBER: R-604

REVISION: -

CENTEK engineering
Centered on Solutions

Structural Analysis Report

Antenna Mount Analysis

Proposed T-Mobile
Equipment Installation

T-Mobile Site #: CTNL184A

71 Sherman Road
Woodstock, CT

Centek Project No. 21085.04

~~Date: July 22, 2021~~
Rev.1: November 24, 2021

Max Stress Ratio = 63.7%

Prepared for:

T-Mobile USA
35 Griffin Road
Bloomfield, CT 06002

63-2 North Branford Road, Branford, CT 06405 203.488.0580 Fax 203.488.8587 www.CentekEng.com

CENTEK engineering
Centered on Solutions

Rev.1 ~ November 24, 2021

Mr. Dan Reid
Transcend Wireless
10 Industrial Ave
Mahwah, NJ 07430

Re: Structural Letter ~ Antenna Mount
T-Mobile – Site Ref: CTNL184A
71 Sherman Road
Woodstock, CT 06281

Centek Project No. 21085.04

Dear Mr. Reid,

Centek Engineering, Inc. has reviewed the T-Mobile antenna installation at the above-referenced site. The purpose of the review is to determine the structural adequacy of the proposed 12'-6" low profile platform with handrail (SitePro P/N: RMQP-496-HK). The review considered the effects of wind load, dead load, and ice load in accordance with the 2015 International Building Code as modified by the 2018 Connecticut State Building Code (CTBC), including ASCE 7-10 and ANSI/TIA-222-G Structural Standards for Steel Antenna Towers and Supporting Structures.

The loads considered in this analysis consist of the following:

- **T-Mobile:**
  Low Profile Platform: Three (3) RFS APXVAALL24_43-U-NA20 panel antennas, three (3) Commscope VV-65A-R1 panel antennas, three (3) Ericsson AIR6449 b41 panel antennas, three (3) Ericsson 4480 B71+B85 remote radio heads and three (3) Ericsson 4460 B25+B66 remote radio heads on the proposed mount with a RAD center elevation of 105-ft +/- AGL.

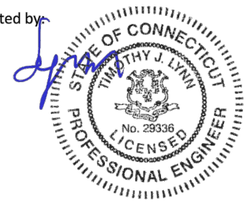
The antenna mount was analyzed per the requirements of the 2015 International Building Code as modified by the 2018 Connecticut State Building Code considering a nominal design wind speed of 101 mph for Woodstock as required in Appendix N of the 2018 Connecticut State Building Code.

Based on our review of the installation, it is our opinion that the **subject antenna mount has sufficient capacity** to support the aforementioned antenna configuration.

If there are any questions regarding this matter, please feel free to call.

Respectfully Submitted by:

Timothy J. Lynn, PE
Structural Engineer



Prepared by:

Fernando J. Palacios
Engineer

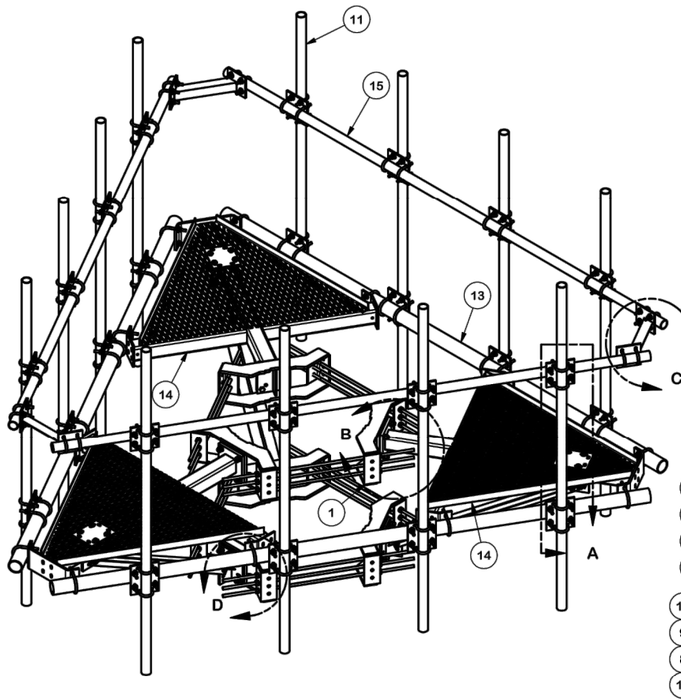
63-2 North Branford Road, Branford, CT 06405 203.488.0580 Fax 203.488.8587 www.CentekEng.com

1 MOUNT ANALYSIS

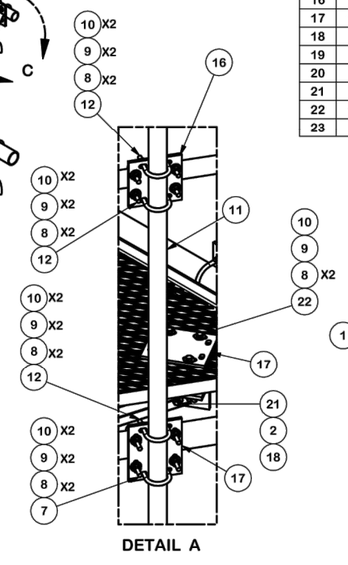
NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT. PLEASE REFERENCE THE MOUNT ANALYSIS REPORT FOR COMPLETE MOUNT ANALYSIS CALCULATIONS AND DETAILS. SUPPLEMENTAL PAGES INCLUDED IN THE CONSTRUCTION DRAWINGS ARE FOR REFERENCE ONLY. GENERAL CONTRACTOR IS TO VERIFY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

SUPPLEMENTAL

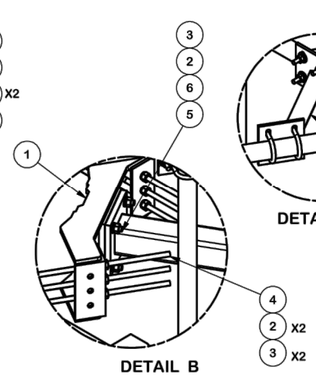
SHEET NUMBER:	REVISION:
R-605	-



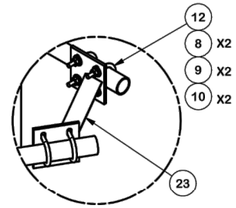
PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	6	X-LWRM	RING MOUNT WELDMENT		68.16	408.95
2	66	G58LW	5/8" HDG LOCKWASHER		0.03	1.72
3	60	A58NUT	5/8" HDG A325 HEX NUT		0.13	7.78
4	18	G58R-24	5/8" x 24" THREADED ROD (HDG.)		0.55	9.88
4	18	G58R-48	5/8" x 48" THREADED ROD (HDG.)		0.55	9.88
5	24	A58234	5/8" x 2-3/4" HDG A325 HEX BOLT	2 3/4 in	0.36	8.53
6	24	A58FW	5/8" HDG A325 FLATWASHER		0.03	0.82
7	36	X-UB1306	1/2" X 3-5/8" X 6" X 3" U-BOLT (HDG.)		0.73	26.34
8	264	G12FW	1/2" HDG USS FLATWASHER		0.03	8.99
9	252	G12LW	1/2" HDG LOCKWASHER		0.01	3.50
10	252	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	18.03
11	12	P296	2-3/8" X 96" SCH. 40 GALVANIZED PIPE	96 in	30.76	369.08
12	84	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.73	61.46
13	3	P3150	3-1/2" X 150" SCH 40 GALVANIZED PIPE	150 in	94.80	284.40
14	3	X-SV196	LOW PROFILE PLATFORM CORNER		212.10	636.31
15	3	P2150	2-3/8" OD X 150" SCH 40 GALVANIZED PIPE	150 in	48.06	144.17
16	12	SCX2	CROSSOVER PLATE	7 in	4.80	57.56
17	15	SCX4	CROSSOVER PLATE	8 1/2 in	6.02	90.32
18	6	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	0.78
19	6	X-253993	PLATFORM REINFORCEMENT KIT ANGLE	52 25/32 in	14.33	85.99
20	6	X-253992	T-BRACKET FOR REINFORCEMENT KIT		13.55	81.27
21	6	G5802	5/8" x 2" HDG HEX BOLT GR5		0.27	1.62
22	12	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	6 1/2 in	0.41	4.91
23	3	X-AHCP	ANGLE HANDRAIL CORNER PLATE		12.92	38.76
					TOTAL WT. #	2448.72



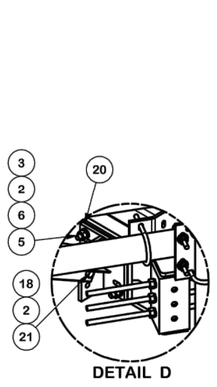
DETAIL A



DETAIL B



DETAIL C



DETAIL D

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

DESCRIPTION
12' 6" LOW PROFILE PLATFORM
WITH TWELVE 2-3/8" ANTENNA MOUTING
PIPES, AND HANDRAIL

SITE PRO 1 — A valmont COMPANY
Engineering Support Team: 1-888-753-7446
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
4488	CEK 7/14/2014		RMQP-496-HK	1 OF 3

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	02	CUSTOMER	BMC 7/14/2014	RMQP-496-HK

1 MOUNT MODIFICATION

SUPPLEMENTAL

SHEET NUMBER: R-606

REVISION: -

RD025 | 2.2L | 25kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

Model Numbers
25kW: G0071920

Standby Power Rating
25 kW, 31.25 kVA, 60 Hz

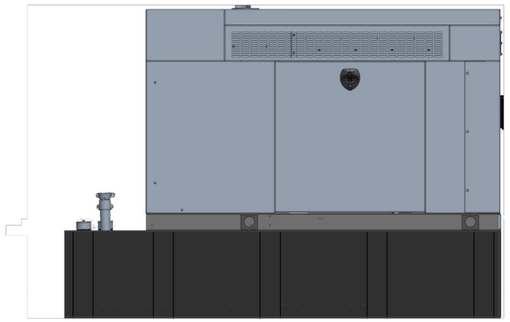


Image used for illustration purposes only

CODES AND STANDARDS

Not all codes and standards apply to all configurations.
Contact factory for details.

- UL2200, UL489, UL142
- CSA C22.2
- BS5514 and DIN 6271
- SAE J1349
- NFPA 37, 70, 99
- ISO 3046, 8528, 9001
- NEMA ICS1, ICS10, MG1, 250, ICS6, AB1
- ANSI/IEEE C62.41

POWERING AHEAD

For over 50 years, Generac has led the industry with innovative design and superior manufacturing. Generac ensures superior quality by designing and manufacturing most of its generator components, including alternators, enclosures and base tanks, control systems and communications software.

Generac's gensets utilize a wide variety of options, configurations and arrangements, allowing us to meet the standby power needs of practically every application. Generac searched globally to ensure the most reliable engines power our generators. We choose only engines that have already been proven in heavy-duty industrial application under adverse conditions.

Generac is committed to ensuring our customers' service support continues after their generator purchase.

SPEC SHEET

1 OF 5

RD025 | 2.2L | 25kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

STANDARD FEATURES

ENGINE SYSTEM

- Block Heater
- Oil Drain Extension
- Fan Guard
- Factory Filled Oil and Coolant

GENERATOR SET

- Sound Attenuated Aluminum Enclosure
- Internal Genset Vibration Isolation
- Separation of Circuits - High/Low Voltage
- Wrapped Exhaust Piping
- Standard Factory Testing
- Ready to Accept Full Load in <10 Seconds
- External Emergency Stop Push Button

ENCLOSURE

- Lockable Doors- Keyed Lock with Padlock Hasp
- Rust Proof Hardware
- RhinoCoat™ Textured Polyester Powder Coat

Electrical System

- Battery
- Battery Charging Alternator
- Battery Cables
- Battery Tray
- Rubber-Booted Engine Electrical Connections
- Solenoid Activated Starter Motor
- Smart Battery Charger
- Battery Disconnect

ALTERNATOR SYSTEM

- 2/3 Pitch
- Skewed Stator
- Sealed Bearings
- Low Temperature Rise <120°C
- Low THD <5%

Cooling System

- Closed Coolant Recovery System
- Factory-Installed Radiator
- 50/50 Ethylene Glycol Antifreeze
- Radiator Drain Extension
- Can Operate at up to 122°F (50°C) Ambient Temperature

Fuel System

- Primary Fuel Filter
- Stainless Steel Fuel Lines

FUEL TANK

- 48 Minimum Hour Run Time
- UL142 Listed
- Lockable Fuel Cap

CONTROL SYSTEM

Evolution™ Controller

- Two-Line Plain Text LCD Display
- Programmable Start Delay Between 10-30Seconds
- 10 Second Engine Start Sequence
- 5 Second Engine Warm Up
- 1 Minute Engine Cool-Down
- Starter Lock-Out
- Smart Battery Charger
- Automatic Voltage Regulation with Over and Under Protection
- Automatic Low Oil Pressure Shutdown
- Overspeed Shutdown
- High Temperature Shutdown
- Overcrank Protection
- Safety Fused
- Failure to Transfer Protection
- Low Battery Protection
- 50 Event Run Log
- Future Set Capable Exerciser
- Incorrect Wiring Protection
- Internal Fault Protection
- Common External Fault Capability
- Governor Failure Protection
- OBD2 Diagnostic Port

Alarms

- Door Open
- Fuel Level
  - 90% Full
  - 50% Low Fuel
  - 10% Shutdownl
- Generator Running
- Not in Auto
- Common Shutdown

OPTIONAL SHIPPED LOOSE AND FIELD INSTALL KITS

GENERATOR SET

- Paint Kit
- Scheduled Maintenance Kit

FUEL TANK

- Fuel Fill Drop Tube
- Spill Box
- 90% Fuel Audible Alarm
- Tank Risers
- Spill Box Drainback Kit
- Vent Extension Support Kit
- Overfill Prevention Valve

SPEC SHEET

2 OF 5

1 GENERATOR SPECIFICATIONS

SUPPLEMENTAL

SHEET NUMBER: R-607

REVISION: -

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**140 ft Monopole**
ATC Site Name	:	**Woodstock NW PCS CT,CT**
ATC Site Number	:	**415439**
Engineering Number	:	**13751041_C3_01**
Proposed Carrier	:	**T-MOBILE**
Carrier Site Name	:	**CTNL184A**
Carrier Site Number	:	**CTNL184A**
Site Location	:	**40 Sherman Road** **Woodstock, CT 06281-1901** **41.9787, -72.0944**
County	:	**Windham**
Date	:	**December 3, 2021**
Max Usage	:	**55%**
Result	:	**Pass**

Prepared By:

Michael Imbimbo
Structural Engineer

Michael Imbimbo

Reviewed By:

Authorized by "EOR"
08 Dec 2021 07:28:17 cosign

COA : PEC.0001553

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 140 ft Monopole to reflect the change in loading by T-MOBILE.

Supporting Documents

Tower Drawings	Valmont Order #12650-09, dated October 28, 2009
Foundation Drawing	Valmont Order #12650-09, dated June 26, 2009
Geotechnical Report	Terracon Project #J2095149, datedMay 29, 2009
Mount Analysis	Centek Project #21085.04 Rev 1, dated November 24, 2021

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:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.18, S_1 = 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 contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
138.4	3	Alcatel-Lucent RRH2x60	Triangular Low Profile Platform	(2) 1 1/4" Hybriflex Cable (11) 1 5/8" Coax (2) 1 5/8" Hybriflex	VERIZON WIRELESS
137.0	3	Samsung B2/B66A RRH-BR049			
	3	Samsung B5/B13 RRH-BR04C			
	3	Samsung MT6407-77A			
	2	RFS DB-T1-6Z-8AB-0Z			
	6	JMA Wireless MX06FRO660-03			
	3	Commscope LNX-8514DS-A1M			
136.0	1	VZW Unused Reserve (14552.07 sqin)			
127.0	3	Ericsson RRUS 4449 B5, B12	Triangular Platform with Handrails w/ Kickers	(4) 0.39" (10mm) Fiber Trunk (2) 0.78" (19.7mm) 8 AWG 6 (4) 0.82" (20.8mm) 8 AWG 6 (12) 1 5/8" Coax (2) 2" conduit	AT&T MOBILITY
	3	Ericsson Radio 8843 - B2 + B66A			
	3	Powerwave Allgon 7770.00			
	3	CCI HPA65R-BU8A			
	3	CCI DMP65R-BU8D			
	3	Powerwave Allgon TT08-19DB111-001			
	2	Raycap DC6-48-60-18-8F(32.8 lbs)			
116.0	3	Commscope FFVV-65B-R2	Triangular Platform with Handrails	(1) 1.60" (40.6mm) Hybrid	DISH WIRELESS L.L.C.
	3	Fujitsu TA08025-B604			
	3	Fujitsu TA08025-B605			
	1	Raycap RDIDC-9181-PF-48			
105.0	3	Ericsson Air6449 B41	Triangular Platform with Handrails	(3) 1.99" (50.7mm) Hybrid	T-MOBILE
	3	RFS APXVAALL24 43-U-NA20			

Equipment to be Removed

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
105.0	3	Ericsson Radio 4460 B25+B66	-	-	T-MOBILE
	3	RFS APX16DWV-16DWVS-E-A20			
	3	Ericsson Radio 4480 B71+B85A			

Proposed Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
105.0	3	Ericsson 4460 BAND 2/25	Triangular Platform with Handrails	-	T-MOBILE
	3	Ericsson 4480 BAND 71			
	3	Commscope VV-65A-R1			

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

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	55%	Pass
Shaft	49%	Pass
Base Plate	11%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	3747.3	50%
Shear (Kips)	36.9	38%
Axial (Kips	59.5	38%

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
105.0	Ericsson 4460 BAND 2/25	T-MOBILE	0.524	0.580
	Commscope VV-65A-R1			
	Ericsson 4480 BAND 71			

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

Standard Conditions

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

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

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

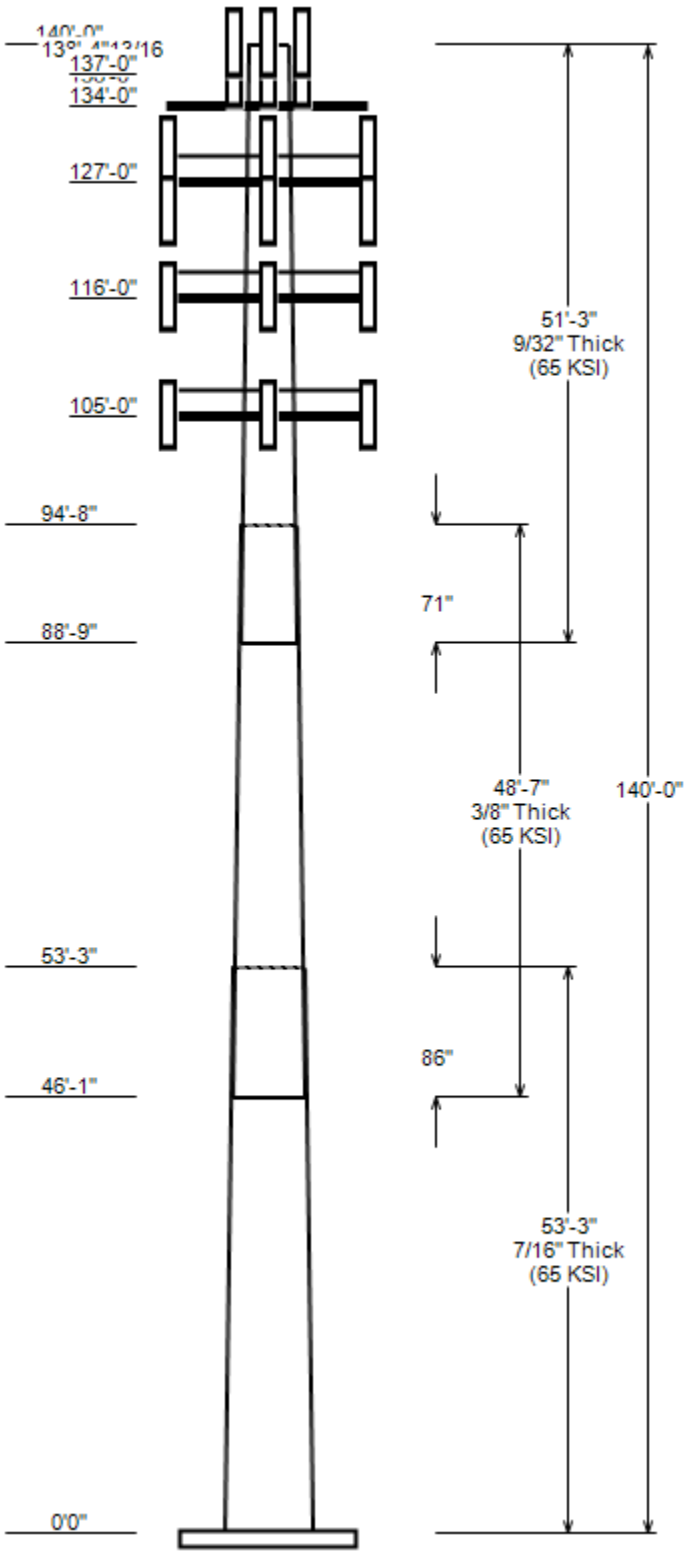
All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with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

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

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

JOB INFORMATION

Asset :	415439, Woodstock NW PCS CT	Height :	140 ft
Client :	T-MOBILE	Base Width :	65
Code :	ANSI/TIA-222-H	Shape :	12 Sides



SITE PARAMETERS

Base Elev (ft):	0.00	Structure Class:	II
Taper :	0.27000 (In/ft)	Exposure :	C
Topographic Category :	1	Topographic Feature:	
Topo Method :	Method 1		

SECTION PROPERTIES

Shaft Section	Length (ft)	Diameter (in) Across Flats Top	Diameter (in) Across Flats Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	53.250	50.65	65.00	0.438		0.000	12 Sides	65
2	48.583	40.24	53.33	0.375	Slip Joint	86.000	12 Sides	65
3	51.250	28.58	42.39	0.281	Slip Joint	71.000	18 Sides	65

DISCRETE APPURTENANCE

Attach Elev (ft)	Force Elev (ft)	Qty	Description
138.4	138.4	3	Alcatel-Lucent RRH2x60
137.0	137.0	3	Samsung B2/B66A RRH-BR049
137.0	137.0	3	Samsung B5/B13 RRH-BR04C
137.0	137.0	3	Samsung MT6407-77A
137.0	137.9	2	RFS DB-T1-6Z-8AB-0Z
137.0	137.0	6	JMA Wireless MX06FRO660-03
137.0	137.1	3	Commscope LNX-8514DS-A1M
136.0	136.0	1	VZW Unused Reserve (14552.07 s
134.0	134.0	1	Generic Round Low Profile Plat
127.0	126.9	3	Powerwave Allgon TT08-19DB111-
127.0	126.7	2	Raycap DC6-48-60-18-8F(32.8 lb
127.0	127.2	3	Ericsson Radio 8843 - B2 + B66
127.0	127.2	3	Ericsson RRUS 4449 B5, B12
127.0	127.8	3	Powerwave Allgon 7770.00
127.0	127.0	1	Generic Mount Reinforcement
127.0	126.6	3	CCI HPA65R-BU8A
127.0	126.6	3	CCI DMP65R-BU8D
127.0	127.0	1	Generic Round Platform with Ha
116.0	116.0	1	Raycap RDIDC-9181-PF-48
116.0	116.0	3	Fujitsu TA08025-B605
116.0	116.0	3	Fujitsu TA08025-B604
116.0	116.0	3	Commscope FFVV-65B-R2
116.0	116.0	1	Generic Flat Platform with Han
105.0	105.0	3	Ericsson 4460 BAND 2/25
105.0	105.0	3	Ericsson 4480 BAND 71
105.0	105.0	3	Ericsson Air6449 B41
105.0	105.0	3	Commscope VV-65A-R1
105.0	105.0	3	RFS APXVAALL24 43-U-NA20
105.0	105.0	1	Generic Flat Platform with Han

LINEAR APPURTENANCE

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
0.0	138.4	1 1/4" Hybriflex Cable	No
0.0	137.0	1 5/8" Hybriflex	No
0.0	137.0	1 5/8" Coax	No
0.0	127.0	2" conduit	No
0.0	127.0	1 5/8" Coax	No
0.0	127.0	0.82" (20.8mm) 8 AWG 6	No
0.0	127.0	0.78" (19.7mm) 8 AWG 6	No
0.0	127.0	0.39" (10mm) Fiber Trunk	No
0.0	126.7	2" conduit	No
0.0	126.7	0.82" (20.8mm) 8 AWG 6	No
0.0	116.0	1.60" (40.6mm) Hybrid	No

JOB INFORMATION

Asset :	415439, Woodstock NW PCS CT	Height :	140 ft
Client :	T-MOBILE	Base Width :	65
Code :	ANSI/TIA-222-H	Shape :	12 Sides

LINEAR APPURTENANCE

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
0.0	105.0	1.99" (50.7mm) Hybrid	No

LOAD CASES

1.2D + 1.0W Normal	119 mph wind with no ice
0.9D + 1.0W Normal	119 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Nor	50 mph wind with 1.5" radial ice
1.2D + 1.0Ev + 1.0Eh Nor	Seismic
0.9D - 1.0Ev + 1.0Eh Nor	Seismic (Reduced DL)
1.0D + 1.0W Service Norm	60 mph Wind with No Ice

REACTIONS

Load Case	Moment (kip-ft)	Shear (Kip)	Axial (Kip)
1.2D + 1.0W Normal	3747.28	36.86	59.53
0.9D + 1.0W Normal	3722.44	36.85	44.65
1.2D + 1.0Di + 1.0Wi Normal	1056.89	10.42	86.36
1.2D + 1.0Ev + 1.0Eh Normal	186.90	1.68	60.58
0.9D - 1.0Ev + 1.0Eh Normal	185.37	1.68	42.17
1.0D + 1.0W Service Normal	848.75	8.38	49.62

DISH DEFLECTIONS

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

ANALYSIS PARAMETERS

Location:	Windham County,CT	**Height:**	140 ft
Type and Shape:	Taper, 18 Sides	**Base Diameter:**	65.00 in
Manufacturer:	Valmont	**Top Diameter:**	28.58 in
K_d (non-service):	0.95	**Taper:**	0.2700 in/ft
K_e:	0.97	**Rotation:**	0.000°

ICE & WIND PARAMETERS

Exposure Category:	C	**Design Wind Speed w/o Ice:**	119 mph
Risk Category:	II	**Design Wind Speed w/Ice:**	50 mph
Topo Factor Procedure:	Method 1	**Operational Wind Speed:**	60 mph
Topographic Category:	1	**Design Ice Thickness:**	1.50 in
Crest Height:	0 ft	**HMSL:**	902.00 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil			**Period Based on Rayleigh Method (sec):**	1.73
T_L (sec):	6	**P:**	1	**$C_{s:}$**	0.034
$S_{s:}$	0.179	**$S_{1:}$**	0.055	**C_s Max:**	0.034
$F_{a:}$	1.600	**$F_{v:}$**	2.400	**C_s Min:**	0.030
$S_{ds:}$	0.191	**$S_{d1:}$**	0.088		

LOAD CASES

1.2D + 1.0W Normal	119 mph wind with no ice
0.9D + 1.0W Normal	119 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Normal	50 mph wind with 1.5" radial ice
1.2D + 1.0Ev + 1.0Eh Normal	Seismic
0.9D - 1.0Ev + 1.0Eh Normal	Seismic (Reduced DL)
1.0D + 1.0W Service Normal	60 mph Wind with No Ice

SHAFT SECTION PROPERTIES

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in^2)	Bottom Ix (in^4)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (in)	Top Area (in^2)	Top Ix (in^4)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-12	53.25	0.4375	65		0.00	14,439	65.00	0.000	89.65	47,213.2	24.79	148.57	50.65	53.25	69.72	22,208.3	19.00	115.77	0.2695
2-12	48.58	0.3750	65	Slip	86.00	9,131	53.33	46.087	63.03	22,330.3	23.67	142.21	40.24	94.67	47.44	9,524.0	17.51	107.30	0.2695
3-18	51.25	0.2813	65	Slip	71.00	5,480	42.39	88.750	37.60	8,424.2	25.16	150.70	28.58	140.00	25.27	2,556.5	16.50	101.60	0.2695
				Shaft Weight		29,050													

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor
138.40	Alcatel-Lucent RRH2x60	3	0.80	0.000	60.00	3.500	0.65	138.64	4.959	0.65
137.00	JMA Wireless MX06FRO660-03	6	0.80	0.000	60.00	9.872	0.71	298.00	12.596	0.71
137.00	RFS DB-T1-6Z-8AB-0Z	2	0.80	0.900	44.00	4.800	0.72	168.94	6.211	0.72
137.00	Samsung MT6407-77A	3	0.80	0.000	81.60	4.709	0.61	182.78	6.217	0.61
137.00	Samsung B2/B66A RRH-BR049	3	0.80	0.000	84.40	1.875	0.50	147.73	2.771	0.50
137.00	Commscope LNX-8514DS-A1M	3	0.80	0.100	50.90	11.440	0.70	278.64	14.652	0.70
137.00	Samsung B5/B13 RRH-BR04C	3	0.80	0.000	70.30	1.875	0.50	127.08	2.771	0.50
136.00	VZW Unused Reserve (14552.07 s	1	0.80	0.000	1010.40	101.056	0.90	1708.35	170.862	0.90
134.00	Generic Round Low Profile Plat	1	1.00	0.000	1875.00	21.700	1.00	2676.82	40.709	1.00
127.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	4095.63	51.281	1.00
127.00	CCI DMP65R-BU8D	3	0.75	-0.400	95.70	17.871	0.63	430.53	21.501	0.63
127.00	CCI HPA65R-BU8A	3	0.75	-0.400	54.00	11.230	0.71	282.84	14.405	0.71
127.00	Generic Mount Reinforcement	1	1.00	0.000	200.00	7.500	1.00	390.65	14.876	1.00
127.00	Powerwave Allgon 7770.00	3	0.75	0.800	35.00	5.508	0.65	146.98	7.602	0.65
127.00	Ericsson RRUS 4449 B5, B12	3	0.75	0.200	71.00	1.969	0.50	134.49	2.888	0.50
127.00	Ericsson Radio 8843 - B2 + B66	3	0.75	0.200	71.90	1.650	0.50	132.59	2.485	0.50
127.00	Powerwave Allgon TT08-19DB111-	3	0.75	-0.100	22.00	0.793	0.50	48.17	1.419	0.50
127.00	Raycap DC6-48-60-18-8F(32.8 lb	2	0.75	-0.300	32.80	1.470	1.00	93.58	2.158	1.00
116.00	Commscope FFVV-65B-R2	3	0.75	0.000	70.80	12.271	0.64	316.02	15.007	0.64
116.00	Fujitsu TA08025-B604	3	0.75	0.000	63.90	1.962	0.50	120.80	2.860	0.50
116.00	Fujitsu TA08025-B605	3	0.75	0.000	75.00	1.962	0.50	136.13	2.860	0.50
116.00	Raycap RDIDC-9181-PF-48	1	0.75	0.000	21.90	1.867	1.00	77.43	2.745	1.00
116.00	Generic Flat Platform with Han	1	1.00	0.000	2500.00	42.400	1.00	4233.44	62.864	1.00
105.00	RFS APXVAALL24 43-U-NA20	3	0.75	0.000	122.80	20.243	0.63	499.25	23.828	0.63
105.00	Commscope VV-65A-R1	3	0.75	0.000	23.80	5.928	0.63	137.29	7.976	0.63
105.00	Ericsson Air6449 B41	3	0.75	0.000	104.00	5.682	0.63	235.71	7.216	0.63
105.00	Ericsson 4480 BAND 71	3	0.75	0.000	81.00	2.878	0.67	154.57	3.963	0.67
105.00	Ericsson 4460 BAND 2/25	3	0.75	0.000	109.00	2.564	0.67	194.43	3.583	0.67
105.00	Generic Flat Platform with Han	1	1.00	0.000	2500.00	42.400	1.00	4216.93	62.669	1.00
Totals	Num Loadings: 29	74			15,162.20			31,246.30		

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg) : _

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax/ Row	Dist Between Rows(in)	Dist Between Cols(in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	138.40	2	1 1/4" Hybriflex Cabl	1.54	1	N	0	0	0	0	0	N	VERIZON WIREL
0.00	137.00	11	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	VERIZON WIREL
0.00	137.00	2	1 5/8" Hybriflex	1.98	1.3	N	0	0	0	0	0	N	VERIZON WIREL
0.00	127.00	12	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	127.00	4	0.39" (10mm) Fiber Tr	0.39	0.06	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	127.00	2	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	127.00	2	0.82" (20.8mm) 8 AWG	0.82	0.62	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	127.00	1	2" conduit	2.38	3.65	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	126.70	2	0.82" (20.8mm) 8 AWG	0.82	0.62	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	126.70	1	2" conduit	2.38	3.65	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	116.00	1	1.60" (40.6mm) Hybrid	1.6	2.34	N	0	0	0	0	0	N	DISH WIRELESS
0.00	105.00	3	1.99" (50.7mm) Hybrid	1.99	1.9	N	0	0	0	0	0	N	T-MOBILE

SEGMENT PROPERTIES

(Max Len: 2.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.4375	65.000	89.650	47,213.20	24.79	148.57	72.2	1430.6	0.0	0.0
2.00		0.4375	64.461	88.901	46,040.50	24.57	147.34	72.5	1406.8	0.0	607.6
4.00		0.4375	63.922	88.153	44,887.40	24.35	146.11	72.8	1383.1	0.0	602.5
6.00		0.4375	63.383	87.404	43,753.70	24.13	144.88	73	1359.6	0.0	597.4
8.00		0.4375	62.844	86.656	42,639.20	23.92	143.64	73.3	1336.4	0.0	592.3
10.00		0.4375	62.305	85.907	41,543.90	23.70	142.41	73.5	1313.3	0.0	587.2
12.00		0.4375	61.766	85.159	40,467.40	23.48	141.18	73.8	1290.4	0.0	582.1
14.00		0.4375	61.227	84.411	39,409.80	23.27	139.95	74	1267.8	0.0	577.0
16.00		0.4375	60.688	83.662	38,370.70	23.05	138.71	74.3	1245.3	0.0	571.9
18.00		0.4375	60.149	82.914	37,350.00	22.83	137.48	74.5	1223.1	0.0	566.8
20.00		0.4375	59.610	82.165	36,347.60	22.61	136.25	74.8	1201.0	0.0	561.7
22.00		0.4375	59.071	81.417	35,363.30	22.40	135.02	75.1	1179.1	0.0	556.6
24.00		0.4375	58.532	80.668	34,396.90	22.18	133.79	75.3	1157.5	0.0	551.5
26.00		0.4375	57.993	79.920	33,448.30	21.96	132.55	75.6	1136.0	0.0	546.4
28.00		0.4375	57.454	79.171	32,517.30	21.75	131.32	75.8	1114.8	0.0	541.4
30.00		0.4375	56.915	78.423	31,603.80	21.53	130.09	76.1	1093.7	0.0	536.3
32.00		0.4375	56.376	77.674	30,707.50	21.31	128.86	76.3	1072.8	0.0	531.2
34.00		0.4375	55.837	76.926	29,828.30	21.09	127.63	76.6	1052.2	0.0	526.1
36.00		0.4375	55.297	76.177	28,966.10	20.88	126.39	76.8	1031.7	0.0	521.0
38.00		0.4375	54.758	75.429	28,120.60	20.66	125.16	77.1	1011.5	0.0	515.9
40.00		0.4375	54.219	74.680	27,291.80	20.44	123.93	77.4	991.4	0.0	510.8
42.00		0.4375	53.680	73.932	26,479.40	20.22	122.70	77.6	971.6	0.0	505.7
44.00		0.4375	53.141	73.183	25,683.30	20.01	121.47	77.9	951.9	0.0	500.6
46.00		0.4375	52.602	72.435	24,903.30	19.79	120.23	78.1	932.5	0.0	495.5
46.08	Bot - Section 2	0.4375	52.580	72.404	24,871.10	19.78	120.18	78.1	931.7	0.0	20.5
48.00		0.4375	52.063	71.686	24,139.20	19.57	119.00	78.4	913.2	0.0	878.9
50.00		0.4375	51.524	70.938	23,391.00	19.36	117.77	78.6	894.2	0.0	907.9
52.00		0.4375	50.985	70.189	22,658.30	19.14	116.54	78.9	875.3	0.0	898.4
53.25	Top - Section 1	0.3750	51.398	60.728	19,974.80	22.76	137.06	74.6	765.4	0.0	556.7
54.00		0.3750	51.196	60.488	19,738.40	22.66	136.52	74.7	759.4	0.0	154.7
56.00		0.3750	50.657	59.846	19,116.90	22.41	135.09	75	743.3	0.0	409.5
58.00		0.3750	50.118	59.205	18,508.70	22.16	133.65	75.3	727.4	0.0	405.1
60.00		0.3750	49.579	58.563	17,913.50	21.90	132.21	75.6	711.6	0.0	400.7
62.00		0.3750	49.040	57.922	17,331.20	21.65	130.77	75.9	696.1	0.0	396.4
64.00		0.3750	48.501	57.280	16,761.70	21.39	129.34	76.2	680.7	0.0	392.0
66.00		0.3750	47.962	56.638	16,204.70	21.14	127.90	76.5	665.5	0.0	387.6
68.00		0.3750	47.423	55.997	15,660.30	20.89	126.46	76.8	650.4	0.0	383.3
70.00		0.3750	46.884	55.355	15,128.20	20.63	125.02	77.1	635.5	0.0	378.9
72.00		0.3750	46.345	54.714	14,608.30	20.38	123.59	77.4	620.8	0.0	374.5
74.00		0.3750	45.806	54.072	14,100.40	20.13	122.15	77.7	606.3	0.0	370.2
76.00		0.3750	45.267	53.431	13,604.40	19.87	120.71	78	591.9	0.0	365.8
78.00		0.3750	44.728	52.789	13,120.20	19.62	119.27	78.3	577.8	0.0	361.4
80.00		0.3750	44.189	52.148	12,647.70	19.37	117.84	78.6	563.7	0.0	357.1
82.00		0.3750	43.650	51.506	12,186.60	19.11	116.40	78.9	549.9	0.0	352.7
84.00		0.3750	43.111	50.864	11,736.80	18.86	114.96	79.2	536.2	0.0	348.3
86.00		0.3750	42.572	50.223	11,298.30	18.61	113.52	79.5	522.7	0.0	344.0
88.00		0.3750	42.033	49.581	10,870.80	18.35	112.09	79.8	509.4	0.0	339.6
88.75	Bot - Section 3	0.3750	41.831	49.341	10,713.40	18.26	111.55	79.9	504.4	0.0	126.2
90.00		0.3750	41.494	48.940	10,454.30	18.10	110.65	80.1	496.2	0.0	368.3
92.00		0.3750	40.955	48.298	10,048.50	17.85	109.21	80.4	483.3	0.0	583.1
94.00		0.3750	40.416	47.657	9,653.40	17.59	107.78	80.7	470.4	0.0	575.4
94.67	Top - Section 2	0.2813	40.799	36.174	7,503.00	24.16	145.04	73	362.2	0.0	190.1
96.00		0.2813	40.439	35.854	7,305.10	23.94	143.76	73.2	355.8	0.0	163.4
98.00		0.2813	39.900	35.372	7,014.90	23.60	141.84	73.6	346.3	0.0	242.4
100.00		0.2813	39.361	34.891	6,732.50	23.26	139.93	74	336.9	0.0	239.1
102.00		0.2813	38.822	34.410	6,457.70	22.92	138.01	74.4	327.6	0.0	235.8
104.00		0.2813	38.283	33.929	6,190.50	22.59	136.09	74.8	318.5	0.0	232.5
105.00		0.2813	38.014	33.688	6,059.70	22.42	135.14	75	314.0	0.0	115.0
106.00		0.2813	37.744	33.447	5,930.80	22.25	134.18	75.2	309.5	0.0	114.2
108.00		0.2813	37.205	32.966	5,678.50	21.91	132.26	75.6	300.6	0.0	226.0

SEGMENT PROPERTIES

(Max Len: 2.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
110.00		0.2813	36.666	32.485	5,433.40	21.57	130.34	76	291.9	0.0	222.7
112.00		0.2813	36.127	32.004	5,195.50	21.23	128.43	76.4	283.3	0.0	219.4
114.00		0.2813	35.588	31.522	4,964.60	20.90	126.51	76.8	274.8	0.0	216.2
116.00		0.2813	35.049	31.041	4,740.70	20.56	124.60	77.2	266.4	0.0	212.9
118.00		0.2813	34.510	30.560	4,523.60	20.22	122.68	77.6	258.2	0.0	209.6
120.00		0.2813	33.971	30.079	4,313.20	19.88	120.76	78	250.1	0.0	206.3
122.00		0.2813	33.432	29.597	4,109.50	19.55	118.85	78.4	242.1	0.0	203.1
124.00		0.2813	32.893	29.116	3,912.30	19.21	116.93	78.8	234.3	0.0	199.8
126.00		0.2813	32.354	28.635	3,721.50	18.87	115.02	79.2	226.6	0.0	196.5
127.00		0.2813	32.084	28.394	3,628.40	18.70	114.06	79.4	222.7	0.0	97.0
128.00		0.2813	31.815	28.154	3,537.00	18.53	113.10	79.6	219.0	0.0	96.2
130.00		0.2813	31.276	27.672	3,358.70	18.19	111.18	80	211.5	0.0	190.0
132.00		0.2813	30.737	27.191	3,186.50	17.86	109.27	80.4	204.2	0.0	186.7
134.00		0.2813	30.198	26.710	3,020.20	17.52	107.35	80.8	197.0	0.0	183.4
136.00		0.2813	29.659	26.229	2,859.90	17.18	105.43	81.2	189.9	0.0	180.1
137.00		0.2813	29.389	25.988	2,781.90	17.01	104.48	81.4	186.4	0.0	88.8
138.00		0.2813	29.120	25.747	2,705.40	16.84	103.52	81.6	183.0	0.0	88.0
138.40		0.2813	29.012	25.651	2,675.10	16.77	103.13	81.7	181.6	0.0	35.0
140.00		0.2813	28.581	25.266	2,556.50	16.50	101.60	82	176.2	0.0	138.6
								Totals:			29,051.5

Load Case: 1.2D + 1.0W Normal 119 mph wind with no ice 22 Iterations
Gust Response Factor: 1.10
Dead load Factor: 1.20
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-59.53	-36.86	0.00	-3,747.3	0.00	3,747.28	5,829.27	1,573.36	9,174.65	7,752.02	0	0	0.494
2.00	-58.67	-36.66	0.00	-3,673.6	0.00	3,673.57	5,801.05	1,560.22	9,022.10	7,649.65	0.01	-0.04	0.491
4.00	-57.82	-36.45	0.00	-3,600.3	0.00	3,600.26	5,772.48	1,547.08	8,870.84	7,547.45	0.04	-0.09	0.488
6.00	-56.97	-36.25	0.00	-3,527.4	0.00	3,527.35	5,743.57	1,533.95	8,720.86	7,445.45	0.09	-0.13	0.484
8.00	-56.13	-36.05	0.00	-3,454.8	0.00	3,454.85	5,714.31	1,520.81	8,572.15	7,343.65	0.15	-0.18	0.481
10.00	-55.29	-35.85	0.00	-3,382.7	0.00	3,382.74	5,684.71	1,507.68	8,424.72	7,242.07	0.24	-0.23	0.477
12.00	-54.47	-35.66	0.00	-3,311.0	0.00	3,311.03	5,654.76	1,494.54	8,278.58	7,140.71	0.34	-0.27	0.474
14.00	-53.64	-35.46	0.00	-3,239.7	0.00	3,239.72	5,624.47	1,481.40	8,133.71	7,039.60	0.47	-0.32	0.470
16.00	-52.83	-35.26	0.00	-3,168.8	0.00	3,168.80	5,593.84	1,468.27	7,990.12	6,938.73	0.61	-0.36	0.467
18.00	-52.02	-35.06	0.00	-3,098.3	0.00	3,098.28	5,562.86	1,455.13	7,847.80	6,838.13	0.77	-0.41	0.463
20.00	-51.22	-34.85	0.00	-3,028.2	0.00	3,028.16	5,531.54	1,442.00	7,706.77	6,737.80	0.96	-0.46	0.459
22.00	-50.42	-34.64	0.00	-2,958.5	0.00	2,958.46	5,499.87	1,428.86	7,567.02	6,637.75	1.16	-0.5	0.455
24.00	-49.63	-34.43	0.00	-2,889.2	0.00	2,889.18	5,467.86	1,415.73	7,428.54	6,538.00	1.38	-0.55	0.452
26.00	-48.84	-34.21	0.00	-2,820.3	0.00	2,820.33	5,435.50	1,402.59	7,291.34	6,438.56	1.62	-0.6	0.448
28.00	-48.07	-33.99	0.00	-2,751.9	0.00	2,751.92	5,402.81	1,389.45	7,155.43	6,339.43	1.88	-0.65	0.444
30.00	-47.30	-33.76	0.00	-2,684.0	0.00	2,683.95	5,369.76	1,376.32	7,020.79	6,240.64	2.16	-0.69	0.439
32.00	-46.53	-33.54	0.00	-2,616.4	0.00	2,616.42	5,336.37	1,363.18	6,887.43	6,142.19	2.47	-0.74	0.435
34.00	-45.77	-33.31	0.00	-2,549.3	0.00	2,549.34	5,302.64	1,350.05	6,755.34	6,044.10	2.79	-0.79	0.431
36.00	-45.02	-33.09	0.00	-2,482.7	0.00	2,482.71	5,268.57	1,336.91	6,624.54	5,946.37	3.13	-0.84	0.427
38.00	-44.28	-32.86	0.00	-2,416.5	0.00	2,416.54	5,234.14	1,323.77	6,495.02	5,849.01	3.49	-0.88	0.422
40.00	-43.54	-32.62	0.00	-2,350.8	0.00	2,350.83	5,199.38	1,310.64	6,366.77	5,752.05	3.87	-0.93	0.418
42.00	-42.81	-32.39	0.00	-2,285.6	0.00	2,285.59	5,164.27	1,297.50	6,239.81	5,655.49	4.27	-0.98	0.413
44.00	-42.08	-32.16	0.00	-2,220.8	0.00	2,220.80	5,128.82	1,284.37	6,114.12	5,559.33	4.69	-1.03	0.408
46.00	-41.37	-32.03	0.00	-2,156.5	0.00	2,156.48	5,093.02	1,271.23	5,989.71	5,463.61	5.14	-1.08	0.403
46.08	-41.33	-31.92	0.00	-2,153.8	0.00	2,153.81	5,091.52	1,270.68	5,984.55	5,459.63	5.16	-1.08	0.403
48.00	-40.16	-31.68	0.00	-2,092.6	0.00	2,092.64	5,056.88	1,258.09	5,866.58	5,368.31	5.6	-1.13	0.398
50.00	-38.94	-31.43	0.00	-2,029.3	0.00	2,029.29	5,020.39	1,244.96	5,744.73	5,273.46	6.08	-1.18	0.393
52.00	-37.75	-31.22	0.00	-1,966.4	0.00	1,966.43	4,983.56	1,231.82	5,624.15	5,179.08	6.59	-1.22	0.388
53.25	-37.00	-31.09	0.00	-1,927.4	0.00	1,927.41	4,079.17	1,065.78	4,911.65	4,284.64	6.91	-1.25	0.460
54.00	-36.76	-30.93	0.00	-1,904.1	0.00	1,904.10	4,069.10	1,061.56	4,872.82	4,257.00	7.11	-1.27	0.457
56.00	-36.15	-30.69	0.00	-1,842.2	0.00	1,842.24	4,042.00	1,050.30	4,770.01	4,183.47	7.66	-1.33	0.450
58.00	-35.54	-30.46	0.00	-1,780.8	0.00	1,780.85	4,014.55	1,039.04	4,668.30	4,110.19	8.22	-1.38	0.443
60.00	-34.93	-30.22	0.00	-1,719.9	0.00	1,719.94	3,986.76	1,027.78	4,567.69	4,037.18	8.81	-1.43	0.436
62.00	-34.33	-29.98	0.00	-1,659.5	0.00	1,659.50	3,958.62	1,016.52	4,468.17	3,964.44	9.43	-1.49	0.428
64.00	-33.74	-29.75	0.00	-1,599.5	0.00	1,599.53	3,930.14	1,005.26	4,369.75	3,891.99	10.06	-1.54	0.420
66.00	-33.15	-29.51	0.00	-1,540.0	0.00	1,540.04	3,901.32	994.00	4,272.42	3,819.84	10.72	-1.6	0.413
68.00	-32.57	-29.27	0.00	-1,481.0	0.00	1,481.02	3,872.15	982.75	4,176.19	3,748.00	11.4	-1.65	0.404
70.00	-31.99	-29.04	0.00	-1,422.5	0.00	1,422.48	3,842.64	971.49	4,081.06	3,676.48	12.1	-1.7	0.396
72.00	-31.42	-28.80	0.00	-1,364.4	0.00	1,364.40	3,812.79	960.23	3,987.02	3,605.30	12.83	-1.75	0.388
74.00	-30.86	-28.57	0.00	-1,306.8	0.00	1,306.80	3,782.59	948.97	3,894.08	3,534.46	13.57	-1.81	0.379
76.00	-30.30	-28.33	0.00	-1,249.7	0.00	1,249.67	3,752.04	937.71	3,802.23	3,463.99	14.34	-1.86	0.370
78.00	-29.75	-28.10	0.00	-1,193.0	0.00	1,193.01	3,721.15	926.45	3,711.49	3,393.88	15.13	-1.91	0.360
80.00	-29.20	-27.86	0.00	-1,136.8	0.00	1,136.81	3,689.92	915.19	3,621.83	3,324.15	15.94	-1.96	0.351
82.00	-28.66	-27.63	0.00	-1,081.1	0.00	1,081.09	3,658.34	903.93	3,533.28	3,254.81	16.77	-2.01	0.341
84.00	-28.12	-27.40	0.00	-1,025.8	0.00	1,025.83	3,626.42	892.67	3,445.81	3,185.88	17.63	-2.06	0.331
86.00	-27.59	-27.17	0.00	-971.0	0.00	971.03	3,594.15	881.41	3,359.45	3,117.36	18.5	-2.11	0.320
88.00	-27.07	-27.00	0.00	-916.7	0.00	916.70	3,561.54	870.15	3,274.18	3,049.27	19.39	-2.15	0.309
88.75	-26.88	-26.89	0.00	-896.5	0.00	896.46	3,549.23	865.93	3,242.49	3,023.84	19.73	-2.17	0.305
90.00	-26.36	-26.69	0.00	-862.8	0.00	862.85	3,528.59	858.89	3,190.01	2,981.61	20.3	-2.2	0.298
92.00	-25.55	-26.45	0.00	-809.5	0.00	809.46	3,495.29	847.63	3,106.93	2,914.41	21.24	-2.25	0.286
94.00	-24.75	-26.27	0.00	-756.6	0.00	756.57	3,461.65	836.37	3,024.95	2,847.66	22.19	-2.29	0.274
94.67	-24.48	-26.16	0.00	-739.0	0.00	739.05	2,376.03	634.86	2,323.29	1,982.62	22.51	-2.31	0.385
96.00	-24.21	-25.97	0.00	-704.2	0.00	704.17	2,363.50	629.23	2,282.26	1,954.56	23.16	-2.33	0.372
98.00	-23.80	-25.75	0.00	-652.2	0.00	652.22	2,344.43	620.78	2,221.41	1,912.58	24.15	-2.39	0.353
100.00	-23.40	-25.53	0.00	-600.7	0.00	600.72	2,325.01	612.34	2,161.38	1,870.75	25.16	-2.44	0.333
102.00	-23.00	-25.31	0.00	-549.7	0.00	549.66	2,305.25	603.89	2,102.18	1,829.09	26.19	-2.49	0.312
104.00	-22.61	-25.14	0.00	-499.0	0.00	499.04	2,285.14	595.45	2,043.79	1,787.59	27.24	-2.53	0.291
105.00	-18.04	-20.34	0.00	-473.9	0.00	473.90	2,274.96	591.22	2,014.91	1,766.91	27.78	-2.55	0.277
106.00	-17.85	-20.18	0.00	-453.6	0.00	453.56	2,264.69	587.00	1,986.23	1,746.28	28.31	-2.58	0.269
108.00	-17.49	-19.96	0.00	-413.2	0.00	413.21	2,243.90	578.55	1,929.49	1,705.16	29.4	-2.62	0.251
110.00	-17.13	-19.74	0.00	-373.3	0.00	373.30	2,222.76	570.11	1,873.58	1,664.26	30.51	-2.66	0.233
112.00	-16.78	-19.52	0.00	-333.8	0.00	333.82	2,201.28	561.66	1,818.48	1,623.57	31.63	-2.69	0.214
114.00	-16.43	-19.30	0.00	-294.8	0.00	294.78	2,179.45	553.22	1,764.21	1,583.11	32.77	-2.73	0.195
116.00	-12.46	-15.75	0.00	-256.2	0.00	256.17	2,157.28	544.77	1,710.76	1,542.89	33.92	-2.76	0.173
118.00	-12.13	-15.54	0.00	-224.7	0.00	224.66	2,134.76	536.32	1,658.13	1,502.92	35.08	-2.79	0.156

120.00	-11.80	-15.33	0.00	-193.6	0.00	193.58	2,111.90	527.88	1,606.32	1,463.22	36.25	-2.82	0.139
122.00	-11.48	-15.12	0.00	-162.9	0.00	162.93	2,088.70	519.43	1,555.34	1,423.80	37.44	-2.84	0.121
124.00	-11.16	-14.91	0.00	-132.7	0.00	132.70	2,065.15	510.99	1,505.17	1,384.67	38.63	-2.86	0.102
126.00	-10.85	-14.75	0.00	-102.9	0.00	102.89	2,041.25	502.54	1,455.84	1,345.83	39.84	-2.88	0.083
127.00	-6.35	-9.87	0.00	-88.1	0.00	88.14	2,029.18	498.32	1,431.47	1,326.53	40.44	-2.88	0.070
128.00	-6.23	-9.72	0.00	-78.3	0.00	78.27	2,017.02	494.09	1,407.32	1,307.31	41.04	-2.89	0.063
130.00	-5.97	-9.52	0.00	-58.8	0.00	58.83	1,992.44	485.65	1,359.62	1,269.10	42.26	-2.9	0.050
132.00	-5.73	-9.32	0.00	-39.8	0.00	39.79	1,967.51	477.20	1,312.75	1,231.24	43.47	-2.91	0.036
134.00	-3.29	-7.94	0.00	-21.1	0.00	21.14	1,942.24	468.76	1,266.70	1,193.72	44.69	-2.92	0.020
136.00	-2.02	-4.13	0.00	-5.3	0.00	5.26	1,916.63	460.31	1,221.47	1,156.55	45.92	-2.92	0.006
137.00	-0.51	-0.50	0.00	-0.8	0.00	0.78	1,903.69	456.09	1,199.16	1,138.11	46.53	-2.92	0.001
138.00	-0.40	-0.43	0.00	-0.3	0.00	0.28	1,890.67	451.86	1,177.06	1,119.75	47.14	-2.92	0.000
138.40	-0.16	-0.07	0.00	-0.1	0.00	0.11	1,885.43	450.18	1,168.28	1,112.44	47.38	-2.92	0.000
140.00	0.00	-0.06	0.00	0.0	0.00	0.00	1,864.36	443.42	1,133.48	1,083.34	48.36	-2.92	0.000

Load Case: 0.9D + 1.0W Normal 119 mph wind with no ice 22 Iterations
Gust Response Factor: 1.10
Dead load Factor: 0.90
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-44.65	-36.85	0.00	-3,722.4	0.00	3,722.44	5,829.27	1,573.36	9,174.65	7,752.02	0	0	0.488
2.00	-43.99	-36.64	0.00	-3,648.7	0.00	3,648.73	5,801.05	1,560.22	9,022.10	7,649.65	0.01	-0.04	0.485
4.00	-43.35	-36.42	0.00	-3,575.5	0.00	3,575.46	5,772.48	1,547.08	8,870.84	7,547.45	0.04	-0.09	0.482
6.00	-42.70	-36.21	0.00	-3,502.6	0.00	3,502.61	5,743.57	1,533.95	8,720.86	7,445.45	0.09	-0.13	0.478
8.00	-42.07	-36.00	0.00	-3,430.2	0.00	3,430.19	5,714.31	1,520.81	8,572.15	7,343.65	0.15	-0.18	0.475
10.00	-41.43	-35.79	0.00	-3,358.2	0.00	3,358.19	5,684.71	1,507.68	8,424.72	7,242.07	0.24	-0.22	0.472
12.00	-40.81	-35.59	0.00	-3,286.6	0.00	3,286.60	5,654.76	1,494.54	8,278.58	7,140.71	0.34	-0.27	0.468
14.00	-40.18	-35.38	0.00	-3,215.4	0.00	3,215.43	5,624.47	1,481.40	8,133.71	7,039.60	0.47	-0.32	0.464
16.00	-39.56	-35.17	0.00	-3,144.7	0.00	3,144.68	5,593.84	1,468.27	7,990.12	6,938.73	0.61	-0.36	0.461
18.00	-38.95	-34.96	0.00	-3,074.3	0.00	3,074.34	5,562.86	1,455.13	7,847.80	6,838.13	0.77	-0.41	0.457
20.00	-38.34	-34.74	0.00	-3,004.4	0.00	3,004.42	5,531.54	1,442.00	7,706.77	6,737.80	0.95	-0.45	0.453
22.00	-37.74	-34.52	0.00	-2,934.9	0.00	2,934.94	5,499.87	1,428.86	7,567.02	6,637.75	1.15	-0.5	0.450
24.00	-37.14	-34.30	0.00	-2,865.9	0.00	2,865.90	5,467.86	1,415.73	7,428.54	6,538.00	1.37	-0.55	0.446
26.00	-36.54	-34.07	0.00	-2,797.3	0.00	2,797.31	5,435.50	1,402.59	7,291.34	6,438.56	1.61	-0.59	0.442
28.00	-35.96	-33.84	0.00	-2,729.2	0.00	2,729.17	5,402.81	1,389.45	7,155.43	6,339.43	1.87	-0.64	0.438
30.00	-35.37	-33.61	0.00	-2,661.5	0.00	2,661.49	5,369.76	1,376.32	7,020.79	6,240.64	2.15	-0.69	0.434
32.00	-34.79	-33.38	0.00	-2,594.3	0.00	2,594.26	5,336.37	1,363.18	6,887.43	6,142.19	2.45	-0.74	0.429
34.00	-34.22	-33.15	0.00	-2,527.5	0.00	2,527.51	5,302.64	1,350.05	6,755.34	6,044.10	2.77	-0.78	0.425
36.00	-33.65	-32.91	0.00	-2,461.2	0.00	2,461.22	5,268.57	1,336.91	6,624.54	5,946.37	3.11	-0.83	0.421
38.00	-33.08	-32.67	0.00	-2,395.4	0.00	2,395.40	5,234.14	1,323.77	6,495.02	5,849.01	3.46	-0.88	0.416
40.00	-32.52	-32.44	0.00	-2,330.0	0.00	2,330.05	5,199.38	1,310.64	6,366.77	5,752.05	3.84	-0.93	0.412
42.00	-31.97	-32.20	0.00	-2,265.2	0.00	2,265.18	5,164.27	1,297.50	6,239.81	5,655.49	4.24	-0.97	0.407
44.00	-31.42	-31.96	0.00	-2,200.8	0.00	2,200.78	5,128.82	1,284.37	6,114.12	5,559.33	4.66	-1.02	0.403
46.00	-30.89	-31.83	0.00	-2,136.9	0.00	2,136.87	5,093.02	1,271.23	5,989.71	5,463.61	5.1	-1.07	0.398
46.08	-30.85	-31.71	0.00	-2,134.2	0.00	2,134.21	5,091.52	1,270.68	5,984.55	5,459.63	5.12	-1.07	0.398
48.00	-29.97	-31.47	0.00	-2,073.4	0.00	2,073.43	5,056.88	1,258.09	5,866.58	5,368.31	5.56	-1.12	0.393
50.00	-29.05	-31.21	0.00	-2,010.5	0.00	2,010.50	5,020.39	1,244.96	5,744.73	5,273.46	6.04	-1.17	0.388
52.00	-28.15	-31.00	0.00	-1,948.1	0.00	1,948.07	4,983.56	1,231.82	5,624.15	5,179.08	6.54	-1.21	0.382
53.25	-27.59	-30.88	0.00	-1,909.3	0.00	1,909.32	4,079.17	1,065.78	4,911.65	4,284.64	6.86	-1.24	0.453
54.00	-27.41	-30.71	0.00	-1,886.2	0.00	1,886.16	4,069.10	1,061.56	4,872.82	4,257.00	7.06	-1.26	0.451
56.00	-26.94	-30.47	0.00	-1,824.7	0.00	1,824.74	4,042.00	1,050.30	4,770.01	4,183.47	7.6	-1.32	0.444
58.00	-26.48	-30.23	0.00	-1,763.8	0.00	1,763.80	4,014.55	1,039.04	4,668.30	4,110.19	8.16	-1.37	0.437
60.00	-26.02	-29.99	0.00	-1,703.3	0.00	1,703.34	3,986.76	1,027.78	4,567.69	4,037.18	8.75	-1.42	0.429
62.00	-25.56	-29.75	0.00	-1,643.4	0.00	1,643.37	3,958.62	1,016.52	4,468.17	3,964.44	9.35	-1.48	0.422
64.00	-25.11	-29.50	0.00	-1,583.9	0.00	1,583.88	3,930.14	1,005.26	4,369.75	3,891.99	9.98	-1.53	0.414
66.00	-24.67	-29.26	0.00	-1,524.9	0.00	1,524.87	3,901.32	994.00	4,272.42	3,819.84	10.64	-1.58	0.406
68.00	-24.23	-29.02	0.00	-1,466.4	0.00	1,466.35	3,872.15	982.75	4,176.19	3,748.00	11.31	-1.63	0.398
70.00	-23.79	-28.78	0.00	-1,408.3	0.00	1,408.30	3,842.64	971.49	4,081.06	3,676.48	12.01	-1.69	0.390
72.00	-23.36	-28.54	0.00	-1,350.7	0.00	1,350.73	3,812.79	960.23	3,987.02	3,605.30	12.72	-1.74	0.382
74.00	-22.93	-28.31	0.00	-1,293.6	0.00	1,293.64	3,782.59	948.97	3,894.08	3,534.46	13.46	-1.79	0.373
76.00	-22.51	-28.07	0.00	-1,237.0	0.00	1,237.03	3,752.04	937.71	3,802.23	3,463.99	14.23	-1.84	0.364
78.00	-22.09	-27.83	0.00	-1,180.9	0.00	1,180.90	3,721.15	926.45	3,711.49	3,393.88	15.01	-1.89	0.355
80.00	-21.67	-27.60	0.00	-1,125.2	0.00	1,125.23	3,689.92	915.19	3,621.83	3,324.15	15.81	-1.94	0.345
82.00	-21.27	-27.36	0.00	-1,070.0	0.00	1,070.04	3,658.34	903.93	3,533.28	3,254.81	16.64	-1.99	0.335
84.00	-20.86	-27.13	0.00	-1,015.3	0.00	1,015.32	3,626.42	892.67	3,445.81	3,185.88	17.48	-2.04	0.325
86.00	-20.46	-26.89	0.00	-961.1	0.00	961.07	3,594.15	881.41	3,359.45	3,117.36	18.35	-2.09	0.315
88.00	-20.07	-26.73	0.00	-907.3	0.00	907.29	3,561.54	870.15	3,274.18	3,049.27	19.23	-2.13	0.304
88.75	-19.92	-26.61	0.00	-887.2	0.00	887.24	3,549.23	865.93	3,242.49	3,023.84	19.57	-2.15	0.300
90.00	-19.53	-26.42	0.00	-854.0	0.00	853.98	3,528.59	858.89	3,190.01	2,981.61	20.14	-2.18	0.293
92.00	-18.92	-26.18	0.00	-801.1	0.00	801.13	3,495.29	847.63	3,106.93	2,914.41	21.06	-2.23	0.281
94.00	-18.32	-26.01	0.00	-748.8	0.00	748.78	3,461.65	836.37	3,024.95	2,847.66	22	-2.27	0.269
94.67	-18.12	-25.89	0.00	-731.4	0.00	731.44	2,376.03	634.86	2,323.29	1,982.62	22.32	-2.28	0.378
96.00	-17.91	-25.71	0.00	-696.9	0.00	696.91	2,363.50	629.23	2,282.26	1,954.56	22.96	-2.31	0.366
98.00	-17.60	-25.48	0.00	-645.5	0.00	645.50	2,344.43	620.78	2,221.41	1,912.58	23.94	-2.37	0.347
100.00	-17.30	-25.26	0.00	-594.5	0.00	594.54	2,325.01	612.34	2,161.38	1,870.75	24.95	-2.42	0.327
102.00	-17.00	-25.04	0.00	-544.0	0.00	544.01	2,305.25	603.89	2,102.18	1,829.09	25.97	-2.46	0.307
104.00	-16.70	-24.87	0.00	-493.9	0.00	493.94	2,285.14	595.45	2,043.79	1,787.59	27.01	-2.51	0.285
105.00	-13.32	-20.12	0.00	-469.1	0.00	469.07	2,274.96	591.22	2,014.91	1,766.91	27.54	-2.53	0.272
106.00	-13.18	-19.96	0.00	-449.0	0.00	448.95	2,264.69	587.00	1,986.23	1,746.28	28.07	-2.55	0.264
108.00	-12.91	-19.74	0.00	-409.0	0.00	409.03	2,243.90	578.55	1,929.49	1,705.16	29.15	-2.59	0.247
110.00	-12.64	-19.52	0.00	-369.6	0.00	369.55	2,222.76	570.11	1,873.58	1,664.26	30.25	-2.63	0.229
112.00	-12.37	-19.31	0.00	-330.5	0.00	330.50	2,201.28	561.66	1,818.48	1,623.57	31.36	-2.67	0.210

114.00	-12.11	-19.09	0.00	-291.9	0.00	291.89	2,179.45	553.22	1,764.21	1,583.11	32.49	-2.7	0.191
116.00	-9.17	-15.59	0.00	-253.7	0.00	253.71	2,157.28	544.77	1,710.76	1,542.89	33.63	-2.74	0.170
118.00	-8.92	-15.38	0.00	-222.5	0.00	222.53	2,134.76	536.32	1,658.13	1,502.92	34.78	-2.76	0.153
120.00	-8.68	-15.17	0.00	-191.8	0.00	191.77	2,111.90	527.88	1,606.32	1,463.22	35.94	-2.79	0.136
122.00	-8.44	-14.96	0.00	-161.4	0.00	161.43	2,088.70	519.43	1,555.34	1,423.80	37.12	-2.81	0.118
124.00	-8.20	-14.75	0.00	-131.5	0.00	131.52	2,065.15	510.99	1,505.17	1,384.67	38.3	-2.83	0.100
126.00	-7.96	-14.60	0.00	-102.0	0.00	102.01	2,041.25	502.54	1,455.84	1,345.83	39.49	-2.85	0.081
127.00	-4.65	-9.78	0.00	-87.4	0.00	87.41	2,029.18	498.32	1,431.47	1,326.53	40.09	-2.86	0.069
128.00	-4.56	-9.64	0.00	-77.6	0.00	77.63	2,017.02	494.09	1,407.32	1,307.31	40.69	-2.86	0.062
130.00	-4.37	-9.44	0.00	-58.4	0.00	58.36	1,992.44	485.65	1,359.62	1,269.10	41.89	-2.88	0.049
132.00	-4.18	-9.24	0.00	-39.5	0.00	39.49	1,967.51	477.20	1,312.75	1,231.24	43.09	-2.88	0.035
134.00	-2.37	-7.89	0.00	-21.0	0.00	21.00	1,942.24	468.76	1,266.70	1,193.72	44.3	-2.89	0.019
136.00	-1.47	-4.10	0.00	-5.2	0.00	5.22	1,916.63	460.31	1,221.47	1,156.55	45.51	-2.89	0.005
137.00	-0.38	-0.49	0.00	-0.8	0.00	0.77	1,903.69	456.09	1,199.16	1,138.11	46.12	-2.89	0.001
138.00	-0.30	-0.43	0.00	-0.3	0.00	0.28	1,890.67	451.86	1,177.06	1,119.75	46.73	-2.89	0.000
138.40	-0.12	-0.07	0.00	-0.1	0.00	0.11	1,885.43	450.18	1,168.28	1,112.44	46.97	-2.89	0.000
140.00	0.00	-0.06	0.00	0.0	0.00	0.00	1,864.36	443.42	1,133.48	1,083.34	47.94	-2.89	0.000

Load Case: 1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1.5" radial ice 21 Iterations
Gust Response Factor: 1.10 Ice Dead Load Factor 1.00
Dead load Factor: 1.20 Ice Importance Factor 1.00
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-86.36	-10.42	0.00	-1,056.9	0.00	1,056.89	5,829.27	1,573.36	9,174.65	7,752.02	0	0	0.151
2.00	-85.35	-10.36	0.00	-1,036.0	0.00	1,036.05	5,801.05	1,560.22	9,022.10	7,649.65	0	-0.01	0.150
4.00	-84.33	-10.30	0.00	-1,015.3	0.00	1,015.33	5,772.48	1,547.08	8,870.84	7,547.45	0.01	-0.03	0.149
6.00	-83.31	-10.25	0.00	-994.7	0.00	994.73	5,743.57	1,533.95	8,720.86	7,445.45	0.02	-0.04	0.148
8.00	-82.29	-10.19	0.00	-974.2	0.00	974.23	5,714.31	1,520.81	8,572.15	7,343.65	0.04	-0.05	0.147
10.00	-81.27	-10.14	0.00	-953.8	0.00	953.84	5,684.71	1,507.68	8,424.72	7,242.07	0.07	-0.06	0.146
12.00	-80.25	-10.08	0.00	-933.6	0.00	933.57	5,654.76	1,494.54	8,278.58	7,140.71	0.1	-0.08	0.145
14.00	-79.24	-10.03	0.00	-913.4	0.00	913.40	5,624.47	1,481.40	8,133.71	7,039.60	0.13	-0.09	0.144
16.00	-78.23	-9.97	0.00	-893.3	0.00	893.34	5,593.84	1,468.27	7,990.12	6,938.73	0.17	-0.1	0.143
18.00	-77.23	-9.92	0.00	-873.4	0.00	873.40	5,562.86	1,455.13	7,847.80	6,838.13	0.22	-0.12	0.142
20.00	-76.24	-9.86	0.00	-853.6	0.00	853.57	5,531.54	1,442.00	7,706.77	6,737.80	0.27	-0.13	0.141
22.00	-75.25	-9.80	0.00	-833.9	0.00	833.86	5,499.87	1,428.86	7,567.02	6,637.75	0.33	-0.14	0.139
24.00	-74.26	-9.74	0.00	-814.3	0.00	814.26	5,467.86	1,415.73	7,428.54	6,538.00	0.39	-0.16	0.138
26.00	-73.28	-9.67	0.00	-794.8	0.00	794.79	5,435.50	1,402.59	7,291.34	6,438.56	0.46	-0.17	0.137
28.00	-72.31	-9.61	0.00	-775.4	0.00	775.44	5,402.81	1,389.45	7,155.43	6,339.43	0.53	-0.18	0.136
30.00	-71.35	-9.55	0.00	-756.2	0.00	756.22	5,369.76	1,376.32	7,020.79	6,240.64	0.61	-0.2	0.135
32.00	-70.39	-9.48	0.00	-737.1	0.00	737.13	5,336.37	1,363.18	6,887.43	6,142.19	0.7	-0.21	0.133
34.00	-69.44	-9.42	0.00	-718.2	0.00	718.16	5,302.64	1,350.05	6,755.34	6,044.10	0.79	-0.22	0.132
36.00	-68.49	-9.35	0.00	-699.3	0.00	699.33	5,268.57	1,336.91	6,624.54	5,946.37	0.88	-0.24	0.131
38.00	-67.56	-9.29	0.00	-680.6	0.00	680.62	5,234.14	1,323.77	6,495.02	5,849.01	0.98	-0.25	0.129
40.00	-66.63	-9.22	0.00	-662.0	0.00	662.05	5,199.38	1,310.64	6,366.77	5,752.05	1.09	-0.26	0.128
42.00	-65.70	-9.15	0.00	-643.6	0.00	643.61	5,164.27	1,297.50	6,239.81	5,655.49	1.2	-0.28	0.127
44.00	-64.79	-9.08	0.00	-625.3	0.00	625.31	5,128.82	1,284.37	6,114.12	5,559.33	1.32	-0.29	0.125
46.00	-63.88	-9.05	0.00	-607.1	0.00	607.14	5,093.02	1,271.23	5,989.71	5,463.61	1.45	-0.3	0.124
46.08	-63.84	-9.01	0.00	-606.4	0.00	606.39	5,091.52	1,270.68	5,984.55	5,459.63	1.45	-0.3	0.124
48.00	-62.48	-8.94	0.00	-589.1	0.00	589.11	5,056.88	1,258.09	5,866.58	5,368.31	1.58	-0.32	0.122
50.00	-61.08	-8.87	0.00	-571.2	0.00	571.23	5,020.39	1,244.96	5,744.73	5,273.46	1.71	-0.33	0.121
52.00	-59.69	-8.81	0.00	-553.5	0.00	553.49	4,983.56	1,231.82	5,624.15	5,179.08	1.86	-0.34	0.119
53.25	-58.83	-8.77	0.00	-542.5	0.00	542.48	4,079.17	1,065.78	4,911.65	4,284.64	1.95	-0.35	0.141
54.00	-58.52	-8.73	0.00	-535.9	0.00	535.90	4,069.10	1,061.56	4,872.82	4,257.00	2	-0.36	0.140
56.00	-57.72	-8.66	0.00	-518.4	0.00	518.45	4,042.00	1,050.30	4,770.01	4,183.47	2.16	-0.37	0.138
58.00	-56.92	-8.59	0.00	-501.1	0.00	501.14	4,014.55	1,039.04	4,668.30	4,110.19	2.32	-0.39	0.136
60.00	-56.14	-8.52	0.00	-484.0	0.00	483.96	3,986.76	1,027.78	4,567.69	4,037.18	2.48	-0.4	0.134
62.00	-55.35	-8.45	0.00	-466.9	0.00	466.93	3,958.62	1,016.52	4,468.17	3,964.44	2.66	-0.42	0.132
64.00	-54.58	-8.38	0.00	-450.0	0.00	450.03	3,930.14	1,005.26	4,369.75	3,891.99	2.84	-0.43	0.130
66.00	-53.81	-8.31	0.00	-433.3	0.00	433.28	3,901.32	994.00	4,272.42	3,819.84	3.02	-0.45	0.127
68.00	-53.05	-8.24	0.00	-416.7	0.00	416.66	3,872.15	982.75	4,176.19	3,748.00	3.21	-0.46	0.125
70.00	-52.29	-8.17	0.00	-400.2	0.00	400.18	3,842.64	971.49	4,081.06	3,676.48	3.41	-0.48	0.123
72.00	-51.55	-8.10	0.00	-383.8	0.00	383.85	3,812.79	960.23	3,987.02	3,605.30	3.62	-0.49	0.120
74.00	-50.80	-8.03	0.00	-367.6	0.00	367.65	3,782.59	948.97	3,894.08	3,534.46	3.83	-0.51	0.118
76.00	-50.07	-7.96	0.00	-351.6	0.00	351.59	3,752.04	937.71	3,802.23	3,463.99	4.04	-0.52	0.115
78.00	-49.34	-7.89	0.00	-335.7	0.00	335.68	3,721.15	926.45	3,711.49	3,393.88	4.26	-0.54	0.112
80.00	-48.62	-7.82	0.00	-319.9	0.00	319.90	3,689.92	915.19	3,621.83	3,324.15	4.49	-0.55	0.109
82.00	-47.91	-7.75	0.00	-304.3	0.00	304.26	3,658.34	903.93	3,533.28	3,254.81	4.73	-0.57	0.107
84.00	-47.20	-7.68	0.00	-288.8	0.00	288.77	3,626.42	892.67	3,445.81	3,185.88	4.97	-0.58	0.104
86.00	-46.51	-7.61	0.00	-273.4	0.00	273.41	3,594.15	881.41	3,359.45	3,117.36	5.21	-0.59	0.101
88.00	-45.81	-7.56	0.00	-258.2	0.00	258.19	3,561.54	870.15	3,274.18	3,049.27	5.46	-0.61	0.098
88.75	-45.56	-7.52	0.00	-252.5	0.00	252.53	3,549.23	865.93	3,242.49	3,023.84	5.56	-0.61	0.096
90.00	-44.94	-7.47	0.00	-243.1	0.00	243.12	3,528.59	858.89	3,190.01	2,981.61	5.72	-0.62	0.094
92.00	-43.95	-7.39	0.00	-228.2	0.00	228.19	3,495.29	847.63	3,106.93	2,914.41	5.98	-0.63	0.091
94.00	-42.98	-7.34	0.00	-213.4	0.00	213.41	3,461.65	836.37	3,024.95	2,847.66	6.25	-0.65	0.087
94.67	-42.66	-7.30	0.00	-208.5	0.00	208.52	2,376.03	634.86	2,323.29	1,982.62	6.34	-0.65	0.123
96.00	-42.28	-7.25	0.00	-198.8	0.00	198.78	2,363.50	629.23	2,282.26	1,954.56	6.52	-0.66	0.120
98.00	-41.71	-7.18	0.00	-184.3	0.00	184.29	2,344.43	620.78	2,221.41	1,912.58	6.8	-0.67	0.114
100.00	-41.15	-7.11	0.00	-169.9	0.00	169.93	2,325.01	612.34	2,161.38	1,870.75	7.09	-0.69	0.109
102.00	-40.59	-7.04	0.00	-155.7	0.00	155.70	2,305.25	603.89	2,102.18	1,829.09	7.38	-0.7	0.103
104.00	-40.04	-6.99	0.00	-141.6	0.00	141.61	2,285.14	595.45	2,043.79	1,787.59	7.68	-0.71	0.097
105.00	-31.74	-5.79	0.00	-134.6	0.00	134.62	2,274.96	591.22	2,014.91	1,766.91	7.83	-0.72	0.090
106.00	-31.47	-5.74	0.00	-128.8	0.00	128.84	2,264.69	587.00	1,986.23	1,746.28	7.98	-0.73	0.088
108.00	-30.95	-5.67	0.00	-117.4	0.00	117.36	2,243.90	578.55	1,929.49	1,705.16	8.28	-0.74	0.083
110.00	-30.43	-5.60	0.00	-106.0	0.00	106.03	2,222.76	570.11	1,873.58	1,664.26	8.6	-0.75	0.077
112.00	-29.92	-5.53	0.00	-94.8	0.00	94.83	2,201.28	561.66	1,818.48	1,623.57	8.91	-0.76	0.072

114.00	-29.41	-5.46	0.00	-83.8	0.00	83.77	2,179.45	553.22	1,764.21	1,583.11	9.23	-0.77	0.067
116.00	-22.69	-4.52	0.00	-72.8	0.00	72.85	2,157.28	544.77	1,710.76	1,542.89	9.56	-0.78	0.058
118.00	-22.20	-4.45	0.00	-63.8	0.00	63.81	2,134.76	536.32	1,658.13	1,502.92	9.89	-0.79	0.053
120.00	-21.71	-4.38	0.00	-54.9	0.00	54.90	2,111.90	527.88	1,606.32	1,463.22	10.22	-0.79	0.048
122.00	-21.24	-4.32	0.00	-46.1	0.00	46.13	2,088.70	519.43	1,555.34	1,423.80	10.55	-0.8	0.043
124.00	-20.77	-4.25	0.00	-37.5	0.00	37.50	2,065.15	510.99	1,505.17	1,384.67	10.89	-0.81	0.037
126.00	-20.30	-4.20	0.00	-29.0	0.00	29.00	2,041.25	502.54	1,455.84	1,345.83	11.23	-0.81	0.032
127.00	-11.77	-2.82	0.00	-24.8	0.00	24.80	2,029.18	498.32	1,431.47	1,326.53	11.4	-0.81	0.025
128.00	-11.56	-2.78	0.00	-22.0	0.00	21.98	2,017.02	494.09	1,407.32	1,307.31	11.57	-0.82	0.023
130.00	-11.16	-2.71	0.00	-16.4	0.00	16.43	1,992.44	485.65	1,359.62	1,269.10	11.91	-0.82	0.019
132.00	-10.77	-2.64	0.00	-11.0	0.00	11.01	1,967.51	477.20	1,312.75	1,231.24	12.25	-0.82	0.014
134.00	-7.45	-2.18	0.00	-5.7	0.00	5.72	1,942.24	468.76	1,266.70	1,193.72	12.6	-0.82	0.009
136.00	-5.27	-1.03	0.00	-1.4	0.00	1.35	1,916.63	460.31	1,221.47	1,156.55	12.94	-0.82	0.004
137.00	-0.93	-0.15	0.00	-0.2	0.00	0.24	1,903.69	456.09	1,199.16	1,138.11	13.11	-0.82	0.001
138.00	-0.76	-0.13	0.00	-0.1	0.00	0.09	1,890.67	451.86	1,177.06	1,119.75	13.29	-0.82	0.000
138.40	-0.27	-0.02	0.00	-0.0	0.00	0.04	1,885.43	450.18	1,168.28	1,112.44	13.36	-0.82	0.000
140.00	0.00	-0.02	0.00	0.0	0.00	0.00	1,864.36	443.42	1,133.48	1,083.34	13.63	-0.82	0.000

Load Case: 1.0D + 1.0W Service Normal 60 mph Wind with No Ice 21 Iterations
Gust Response Factor: 1.10
Dead load Factor: 1.00
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-49.62	-8.38	0.00	-848.8	0.00	848.75	5,829.27	1,573.36	9,174.65	7,752.02	0	0	0.118
2.00	-48.93	-8.33	0.00	-832.0	0.00	831.99	5,801.05	1,560.22	9,022.10	7,649.65	0	-0.01	0.117
4.00	-48.24	-8.29	0.00	-815.3	0.00	815.32	5,772.48	1,547.08	8,870.84	7,547.45	0.01	-0.02	0.116
6.00	-47.55	-8.24	0.00	-798.8	0.00	798.75	5,743.57	1,533.95	8,720.86	7,445.45	0.02	-0.03	0.116
8.00	-46.88	-8.19	0.00	-782.3	0.00	782.27	5,714.31	1,520.81	8,572.15	7,343.65	0.03	-0.04	0.115
10.00	-46.20	-8.14	0.00	-765.9	0.00	765.89	5,684.71	1,507.68	8,424.72	7,242.07	0.05	-0.05	0.114
12.00	-45.53	-8.10	0.00	-749.6	0.00	749.60	5,654.76	1,494.54	8,278.58	7,140.71	0.08	-0.06	0.113
14.00	-44.87	-8.05	0.00	-733.4	0.00	733.41	5,624.47	1,481.40	8,133.71	7,039.60	0.11	-0.07	0.112
16.00	-44.21	-8.01	0.00	-717.3	0.00	717.30	5,593.84	1,468.27	7,990.12	6,938.73	0.14	-0.08	0.111
18.00	-43.56	-7.96	0.00	-701.3	0.00	701.29	5,562.86	1,455.13	7,847.80	6,838.13	0.18	-0.09	0.110
20.00	-42.91	-7.91	0.00	-685.4	0.00	685.38	5,531.54	1,442.00	7,706.77	6,737.80	0.22	-0.1	0.110
22.00	-42.26	-7.86	0.00	-669.6	0.00	669.56	5,499.87	1,428.86	7,567.02	6,637.75	0.26	-0.11	0.109
24.00	-41.63	-7.81	0.00	-653.8	0.00	653.84	5,467.86	1,415.73	7,428.54	6,538.00	0.31	-0.12	0.108
26.00	-40.99	-7.76	0.00	-638.2	0.00	638.22	5,435.50	1,402.59	7,291.34	6,438.56	0.37	-0.14	0.107
28.00	-40.36	-7.71	0.00	-622.7	0.00	622.70	5,402.81	1,389.45	7,155.43	6,339.43	0.43	-0.15	0.106
30.00	-39.74	-7.66	0.00	-607.3	0.00	607.28	5,369.76	1,376.32	7,020.79	6,240.64	0.49	-0.16	0.105
32.00	-39.12	-7.60	0.00	-592.0	0.00	591.97	5,336.37	1,363.18	6,887.43	6,142.19	0.56	-0.17	0.104
34.00	-38.51	-7.55	0.00	-576.8	0.00	576.76	5,302.64	1,350.05	6,755.34	6,044.10	0.63	-0.18	0.103
36.00	-37.90	-7.50	0.00	-561.7	0.00	561.66	5,268.57	1,336.91	6,624.54	5,946.37	0.71	-0.19	0.102
38.00	-37.30	-7.45	0.00	-546.7	0.00	546.67	5,234.14	1,323.77	6,495.02	5,849.01	0.79	-0.2	0.101
40.00	-36.70	-7.39	0.00	-531.8	0.00	531.78	5,199.38	1,310.64	6,366.77	5,752.05	0.88	-0.21	0.100
42.00	-36.11	-7.34	0.00	-517.0	0.00	516.99	5,164.27	1,297.50	6,239.81	5,655.49	0.97	-0.22	0.098
44.00	-35.52	-7.28	0.00	-502.3	0.00	502.32	5,128.82	1,284.37	6,114.12	5,559.33	1.06	-0.23	0.097
46.00	-34.94	-7.26	0.00	-487.8	0.00	487.75	5,093.02	1,271.23	5,989.71	5,463.61	1.16	-0.24	0.096
46.08	-34.92	-7.23	0.00	-487.1	0.00	487.14	5,091.52	1,270.68	5,984.55	5,459.63	1.17	-0.24	0.096
48.00	-33.96	-7.17	0.00	-473.3	0.00	473.29	5,056.88	1,258.09	5,866.58	5,368.31	1.27	-0.26	0.095
50.00	-32.96	-7.12	0.00	-458.9	0.00	458.94	5,020.39	1,244.96	5,744.73	5,273.46	1.38	-0.27	0.094
52.00	-31.98	-7.07	0.00	-444.7	0.00	444.71	4,983.56	1,231.82	5,624.15	5,179.08	1.49	-0.28	0.092
53.25	-31.37	-7.04	0.00	-435.9	0.00	435.87	4,079.17	1,065.78	4,911.65	4,284.64	1.56	-0.28	0.109
54.00	-31.18	-7.00	0.00	-430.6	0.00	430.59	4,069.10	1,061.56	4,872.82	4,257.00	1.61	-0.29	0.109
56.00	-30.68	-6.95	0.00	-416.6	0.00	416.59	4,042.00	1,050.30	4,770.01	4,183.47	1.73	-0.3	0.107
58.00	-30.19	-6.89	0.00	-402.7	0.00	402.69	4,014.55	1,039.04	4,668.30	4,110.19	1.86	-0.31	0.106
60.00	-29.70	-6.84	0.00	-388.9	0.00	388.91	3,986.76	1,027.78	4,567.69	4,037.18	2	-0.32	0.104
62.00	-29.22	-6.78	0.00	-375.2	0.00	375.23	3,958.62	1,016.52	4,468.17	3,964.44	2.13	-0.34	0.102
64.00	-28.74	-6.73	0.00	-361.7	0.00	361.66	3,930.14	1,005.26	4,369.75	3,891.99	2.28	-0.35	0.100
66.00	-28.27	-6.68	0.00	-348.2	0.00	348.20	3,901.32	994.00	4,272.42	3,819.84	2.43	-0.36	0.098
68.00	-27.80	-6.62	0.00	-334.8	0.00	334.85	3,872.15	982.75	4,176.19	3,748.00	2.58	-0.37	0.097
70.00	-27.33	-6.57	0.00	-321.6	0.00	321.60	3,842.64	971.49	4,081.06	3,676.48	2.74	-0.38	0.095
72.00	-26.87	-6.51	0.00	-308.5	0.00	308.47	3,812.79	960.23	3,987.02	3,605.30	2.9	-0.4	0.093
74.00	-26.42	-6.46	0.00	-295.4	0.00	295.44	3,782.59	948.97	3,894.08	3,534.46	3.07	-0.41	0.091
76.00	-25.96	-6.41	0.00	-282.5	0.00	282.52	3,752.04	937.71	3,802.23	3,463.99	3.25	-0.42	0.089
78.00	-25.52	-6.35	0.00	-269.7	0.00	269.71	3,721.15	926.45	3,711.49	3,393.88	3.42	-0.43	0.086
80.00	-25.07	-6.30	0.00	-257.0	0.00	257.00	3,689.92	915.19	3,621.83	3,324.15	3.61	-0.44	0.084
82.00	-24.63	-6.25	0.00	-244.4	0.00	244.40	3,658.34	903.93	3,533.28	3,254.81	3.8	-0.45	0.082
84.00	-24.20	-6.19	0.00	-231.9	0.00	231.91	3,626.42	892.67	3,445.81	3,185.88	3.99	-0.47	0.080
86.00	-23.77	-6.14	0.00	-219.5	0.00	219.52	3,594.15	881.41	3,359.45	3,117.36	4.19	-0.48	0.077
88.00	-23.34	-6.10	0.00	-207.2	0.00	207.24	3,561.54	870.15	3,274.18	3,049.27	4.39	-0.49	0.075
88.75	-23.19	-6.08	0.00	-202.7	0.00	202.67	3,549.23	865.93	3,242.49	3,023.84	4.47	-0.49	0.074
90.00	-22.76	-6.03	0.00	-195.1	0.00	195.07	3,528.59	858.89	3,190.01	2,981.61	4.6	-0.5	0.072
92.00	-22.09	-5.98	0.00	-183.0	0.00	183.00	3,495.29	847.63	3,106.93	2,914.41	4.81	-0.51	0.069
94.00	-21.43	-5.94	0.00	-171.0	0.00	171.05	3,461.65	836.37	3,024.95	2,847.66	5.02	-0.52	0.066
94.67	-21.21	-5.91	0.00	-167.1	0.00	167.09	2,376.03	634.86	2,323.29	1,982.62	5.09	-0.52	0.093
96.00	-20.99	-5.87	0.00	-159.2	0.00	159.20	2,363.50	629.23	2,282.26	1,954.56	5.24	-0.53	0.090
98.00	-20.67	-5.82	0.00	-147.5	0.00	147.46	2,344.43	620.78	2,221.41	1,912.58	5.46	-0.54	0.086
100.00	-20.34	-5.77	0.00	-135.8	0.00	135.82	2,325.01	612.34	2,161.38	1,870.75	5.69	-0.55	0.081
102.00	-20.02	-5.72	0.00	-124.3	0.00	124.28	2,305.25	603.89	2,102.18	1,829.09	5.93	-0.56	0.077
104.00	-19.70	-5.68	0.00	-112.8	0.00	112.84	2,285.14	595.45	2,043.79	1,787.59	6.16	-0.57	0.072
105.00	-15.73	-4.60	0.00	-107.2	0.00	107.16	2,274.96	591.22	2,014.91	1,766.91	6.29	-0.58	0.068
106.00	-15.58	-4.56	0.00	-102.6	0.00	102.56	2,264.69	587.00	1,986.23	1,746.28	6.41	-0.58	0.066
108.00	-15.28	-4.51	0.00	-93.4	0.00	93.44	2,243.90	578.55	1,929.49	1,705.16	6.65	-0.59	0.062
110.00	-14.98	-4.46	0.00	-84.4	0.00	84.42	2,222.76	570.11	1,873.58	1,664.26	6.9	-0.6	0.058
112.00	-14.69	-4.41	0.00	-75.5	0.00	75.50	2,201.28	561.66	1,818.48	1,623.57	7.16	-0.61	0.053

114.00	-14.40	-4.36	0.00	-66.7	0.00	66.68	2,179.45	553.22	1,764.21	1,583.11	7.41	-0.62	0.049
116.00	-10.97	-3.56	0.00	-58.0	0.00	57.95	2,157.28	544.77	1,710.76	1,542.89	7.68	-0.62	0.043
118.00	-10.69	-3.51	0.00	-50.8	0.00	50.83	2,134.76	536.32	1,658.13	1,502.92	7.94	-0.63	0.039
120.00	-10.41	-3.47	0.00	-43.8	0.00	43.80	2,111.90	527.88	1,606.32	1,463.22	8.2	-0.64	0.035
122.00	-10.14	-3.42	0.00	-36.9	0.00	36.87	2,088.70	519.43	1,555.34	1,423.80	8.47	-0.64	0.031
124.00	-9.87	-3.37	0.00	-30.0	0.00	30.03	2,065.15	510.99	1,505.17	1,384.67	8.74	-0.65	0.027
126.00	-9.61	-3.33	0.00	-23.3	0.00	23.29	2,041.25	502.54	1,455.84	1,345.83	9.01	-0.65	0.022
127.00	-5.68	-2.23	0.00	-20.0	0.00	19.96	2,029.18	498.32	1,431.47	1,326.53	9.15	-0.65	0.018
128.00	-5.57	-2.20	0.00	-17.7	0.00	17.72	2,017.02	494.09	1,407.32	1,307.31	9.29	-0.65	0.016
130.00	-5.35	-2.16	0.00	-13.3	0.00	13.32	1,992.44	485.65	1,359.62	1,269.10	9.56	-0.66	0.013
132.00	-5.14	-2.11	0.00	-9.0	0.00	9.01	1,967.51	477.20	1,312.75	1,231.24	9.84	-0.66	0.010
134.00	-3.05	-1.80	0.00	-4.8	0.00	4.79	1,942.24	468.76	1,266.70	1,193.72	10.11	-0.66	0.006
136.00	-1.85	-0.94	0.00	-1.2	0.00	1.19	1,916.63	460.31	1,221.47	1,156.55	10.39	-0.66	0.002
137.00	-0.44	-0.11	0.00	-0.2	0.00	0.18	1,903.69	456.09	1,199.16	1,138.11	10.53	-0.66	0.000
138.00	-0.35	-0.10	0.00	-0.1	0.00	0.06	1,890.67	451.86	1,177.06	1,119.75	10.67	-0.66	0.000
138.40	-0.14	-0.02	0.00	-0.0	0.00	0.02	1,885.43	450.18	1,168.28	1,112.44	10.72	-0.66	0.000
140.00	0.00	-0.01	0.00	0.0	0.00	0.00	1,864.36	443.42	1,133.48	1,083.34	10.94	-0.66	0.000

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

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

Spectral Response Acceleration for Short Period (S_S):	0.179
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}):	0.191
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.088
Seismic Response Coefficient (C_s):	0.034
Upper Limit C_S:	0.034
Lower Limit C_S:	0.030
Period based on Rayleigh Method (sec):	1.730
Redundancy Factor (p):	1.000
Seismic Force Distribution Exponent (k):	1.610
Total Unfactored Dead Load:	49.620 k
Seismic Base Shear (E):	1.680 k

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

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
78	139.2	139	400	0.006	11	172
77	138.2	36	102	0.002	3	44
76	137.5	90	255	0.004	7	111
75	136.5	102	287	0.004	8	127
74	135	207	570	0.009	15	257
73	133	211	565	0.009	15	261
72	131	214	560	0.009	15	265
71	129	217	555	0.009	15	269
70	127.5	110	275	0.004	7	136
69	126.5	130	322	0.005	9	161
68	125	266	645	0.010	17	329
67	123	269	636	0.010	17	333
66	121	272	627	0.010	17	337
65	119	276	618	0.010	16	341
64	117	279	609	0.010	16	345
63	115	287	609	0.010	16	355
62	113	290	598	0.009	16	359
61	111	293	588	0.009	16	363
60	109	297	577	0.009	15	367
59	107	300	567	0.009	15	371
58	105.5	151	279	0.004	7	187
57	104.5	158	287	0.004	8	195
56	103	318	565	0.009	15	394
55	101	321	553	0.009	15	398
54	99	324	541	0.008	14	402
53	97	328	528	0.008	14	406
52	95.3333	220	345	0.005	9	273
51	94.3333	219	337	0.005	9	271
50	93	661	995	0.016	26	818
49	91	668	972	0.015	26	828
48	89.375	422	596	0.009	16	522
47	88.375	158	219	0.003	6	196
46	87	425	575	0.009	15	526
45	85	429	559	0.009	15	532

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
44	83	434	544	0.008	14	537
43	81	438	528	0.008	14	542
42	79	442	512	0.008	14	548
41	77	447	496	0.008	13	553
40	75	451	480	0.008	13	559
39	73	456	464	0.007	12	564
38	71	460	448	0.007	12	569
37	69	464	432	0.007	11	575
36	67	469	416	0.006	11	580
35	65	473	400	0.006	11	586
34	63	477	383	0.006	10	591
33	61	482	367	0.006	10	597
32	59	486	351	0.006	9	602
31	57	491	335	0.005	9	607
30	55	495	319	0.005	8	613
29	53.625	187	116	0.002	3	231
28	52.625	610	366	0.006	10	755
27	51	984	562	0.009	15	1,218
26	49	993	532	0.008	14	1,230
25	47.0417	961	481	0.008	13	1,190
24	46.0417	24	12	0.000	0	30
23	45	581	271	0.004	7	719
22	43	586	254	0.004	7	726
21	41	591	237	0.004	6	732
20	39	596	221	0.004	6	738
19	37	601	205	0.003	5	744
18	35	606	189	0.003	5	751
17	33	611	173	0.003	5	757
16	31	617	158	0.002	4	763
15	29	622	143	0.002	4	770
14	27	627	128	0.002	3	776
13	25	632	114	0.002	3	782
12	23	637	101	0.002	3	789
11	21	642	88	0.001	2	795
10	19	647	75	0.001	2	801
9	17	652	63	0.001	2	808
8	15	657	52	0.001	1	814
7	13	662	42	0.001	1	820
6	11	668	32	0.000	1	826
5	9	673	23	0.000	1	833
4	7	678	16	0.000	0	839
3	5	683	9	0.000	0	845
2	3	688	4	0.000	0	852
1	1	693	1	0.000	0	858
Alcatel-Lucent RRH2x60	138.4	180	515	0.008	14	223
Samsung B2/B66A RRH-BR049	137	253	713	0.011	19	314
Samsung B5/B13 RRH-BR04C	137	211	594	0.009	16	261
Samsung MT6407-77A	137	245	689	0.011	18	303
RFS DB-T1-6Z-8AB-0Z	137	88	248	0.004	7	109
JMA Wireless MX06FRO660-03	137	360	1,013	0.016	27	446
Commscope LNX-8514DS-A1M	137	153	430	0.007	11	189
VZW Unused Reserve (14552.07 sqin)	136	1,010	2,810	0.044	74	1,251
Generic Round Low Profile Platform	134	1,875	5,092	0.080	134	2,322
Powerwave Allgon TT08-19DB111-001	127	66	164	0.003	4	82
Raycap DC6-48-60-18-8F(32.8 lbs)	127	66	163	0.003	4	81
Ericsson Radio 8843 - B2 + B66A	127	216	537	0.008	14	267
Ericsson RRUS 4449 B5, B12	127	213	530	0.008	14	264
Powerwave Allgon 7770.00	127	105	261	0.004	7	130
Generic Mount Reinforcement	127	200	498	0.008	13	248
CCI HPA65R-BU8A	127	162	403	0.006	11	201
CCI DMP65R-BU8D	127	287	715	0.011	19	355
Generic Round Platform with Handrails	127	2,500	6,226	0.098	164	3,095
Raycap RDIDC-9181-PF-48	116	22	47	0.001	1	27
Fujitsu TA08025-B605	116	225	484	0.008	13	279
Fujitsu TA08025-B604	116	192	412	0.006	11	237
Commscope FFVV-65B-R2	116	212	457	0.007	12	263
Generic Flat Platform with Handrails	116	2,500	5,379	0.084	142	3,095
Generic Flat Platform with Handrails	105	2,500	4,580	0.072	121	3,095
Ericsson 4460 BAND 2/25	105	327	599	0.009	16	405
Ericsson 4480 BAND 71	105	243	445	0.007	12	301

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
Ericsson Air6449 B41	105	312	572	0.009	15	386
Commscope VV-65A-R1	105	71	131	0.002	3	88
RFS APXVAALL24 43-U-NA20	105	368	675	0.011	18	456
		49,623	63,841	1.000	1,684	61,443

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

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
78	139.2	139	400	0.006	11	119
77	138.2	36	102	0.002	3	31
76	137.5	90	255	0.004	7	78
75	136.5	102	287	0.004	8	88
74	135	207	570	0.009	15	179
73	133	211	565	0.009	15	182
72	131	214	560	0.009	15	184
71	129	217	555	0.009	15	187
70	127.5	110	275	0.004	7	95
69	126.5	130	322	0.005	9	112
68	125	266	645	0.010	17	229
67	123	269	636	0.010	17	232
66	121	272	627	0.010	17	235
65	119	276	618	0.010	16	238
64	117	279	609	0.010	16	240
63	115	287	609	0.010	16	247
62	113	290	598	0.009	16	250
61	111	293	588	0.009	16	253
60	109	297	577	0.009	15	256
59	107	300	567	0.009	15	259
58	105.5	151	279	0.004	7	130
57	104.5	158	287	0.004	8	136
56	103	318	565	0.009	15	274
55	101	321	553	0.009	15	277
54	99	324	541	0.008	14	280
53	97	328	528	0.008	14	282
52	95.3333	220	345	0.005	9	190
51	94.3333	219	337	0.005	9	188
50	93	661	995	0.016	26	570
49	91	668	972	0.015	26	576
48	89.375	422	596	0.009	16	363
47	88.375	158	219	0.003	6	136
46	87	425	575	0.009	15	366
45	85	429	559	0.009	15	370
44	83	434	544	0.008	14	374
43	81	438	528	0.008	14	378
42	79	442	512	0.008	14	381
41	77	447	496	0.008	13	385
40	75	451	480	0.008	13	389
39	73	456	464	0.007	12	393
38	71	460	448	0.007	12	396
37	69	464	432	0.007	11	400
36	67	469	416	0.006	11	404
35	65	473	400	0.006	11	408
34	63	477	383	0.006	10	411
33	61	482	367	0.006	10	415
32	59	486	351	0.006	9	419
31	57	491	335	0.005	9	423
30	55	495	319	0.005	8	426
29	53.625	187	116	0.002	3	161
28	52.625	610	366	0.006	10	526
27	51	984	562	0.009	15	848
26	49	993	532	0.008	14	856
25	47.0417	961	481	0.008	13	828

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
24	46.0417	24	12	0.000	0	21
23	45	581	271	0.004	7	501
22	43	586	254	0.004	7	505
21	41	591	237	0.004	6	509
20	39	596	221	0.004	6	514
19	37	601	205	0.003	5	518
18	35	606	189	0.003	5	523
17	33	611	173	0.003	5	527
16	31	617	158	0.002	4	531
15	29	622	143	0.002	4	536
14	27	627	128	0.002	3	540
13	25	632	114	0.002	3	545
12	23	637	101	0.002	3	549
11	21	642	88	0.001	2	553
10	19	647	75	0.001	2	558
9	17	652	63	0.001	2	562
8	15	657	52	0.001	1	566
7	13	662	42	0.001	1	571
6	11	668	32	0.000	1	575
5	9	673	23	0.000	1	580
4	7	678	16	0.000	0	584
3	5	683	9	0.000	0	588
2	3	688	4	0.000	0	593
1	1	693	1	0.000	0	597
Alcatel-Lucent RRH2x60	138.4	180	515	0.008	14	155
Samsung B2/B66A RRH-BR049	137	253	713	0.011	19	218
Samsung B5/B13 RRH-BR04C	137	211	594	0.009	16	182
Samsung MT6407-77A	137	245	689	0.011	18	211
RFS DB-T1-6Z-8AB-0Z	137	88	248	0.004	7	76
JMA Wireless MX06FRO660-03	137	360	1,013	0.016	27	310
Commscope LNX-8514DS-A1M	137	153	430	0.007	11	132
VZW Unused Reserve (14552.07 sqin)	136	1,010	2,810	0.044	74	871
Generic Round Low Profile Platform	134	1,875	5,092	0.080	134	1,616
Powerwave Allgon TT08-19DB111-001	127	66	164	0.003	4	57
Raycap DC6-48-60-18-8F(32.8 lbs)	127	66	163	0.003	4	57
Ericsson Radio 8843 - B2 + B66A	127	216	537	0.008	14	186
Ericsson RRUS 4449 B5, B12	127	213	530	0.008	14	184
Powerwave Allgon 7770.00	127	105	261	0.004	7	90
Generic Mount Reinforcement	127	200	498	0.008	13	172
CCI HPA65R-BU8A	127	162	403	0.006	11	140
CCI DMP65R-BU8D	127	287	715	0.011	19	247
Generic Round Platform with Handrails	127	2,500	6,226	0.098	164	2,155
Raycap RDIDC-9181-PF-48	116	22	47	0.001	1	19
Fujitsu TA08025-B605	116	225	484	0.008	13	194
Fujitsu TA08025-B604	116	192	412	0.006	11	165
Commscope FFVV-65B-R2	116	212	457	0.007	12	183
Generic Flat Platform with Handrails	116	2,500	5,379	0.084	142	2,155
Generic Flat Platform with Handrails	105	2,500	4,580	0.072	121	2,155
Ericsson 4460 BAND 2/25	105	327	599	0.009	16	282
Ericsson 4480 BAND 71	105	243	445	0.007	12	209
Ericsson Air6449 B41	105	312	572	0.009	15	269
Commscope VV-65A-R1	105	71	131	0.002	3	62
RFS APXVAALL24 43-U-NA20	105	368	675	0.011	18	317
		49,623	63,841	1.000	1,684	42,766

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

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-60.58	-1.68	0.00	-186.90	0.00	186.90	5,829.27	1,573.36	9,175	7,752.02	0.00	0.00	0.04
2.00	-59.73	-1.69	0.00	-183.54	0.00	183.54	5,801.05	1,560.22	9,022	7,649.65	0.00	0.00	0.03
4.00	-58.89	-1.69	0.00	-180.16	0.00	180.16	5,772.48	1,547.08	8,871	7,547.45	0.00	0.00	0.03
6.00	-58.05	-1.69	0.00	-176.79	0.00	176.79	5,743.57	1,533.95	8,721	7,445.45	0.00	-0.01	0.03

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
8.00	-57.22	-1.69	0.00	-173.41	0.00	173.41	5,714.31	1,520.81	8,572	7,343.65	0.01	-0.01	0.03
10.00	-56.39	-1.69	0.00	-170.02	0.00	170.02	5,684.71	1,507.68	8,425	7,242.07	0.01	-0.01	0.03
12.00	-55.57	-1.69	0.00	-166.64	0.00	166.64	5,654.76	1,494.54	8,279	7,140.71	0.02	-0.01	0.03
14.00	-54.75	-1.69	0.00	-163.25	0.00	163.25	5,624.47	1,481.40	8,134	7,039.60	0.02	-0.02	0.03
16.00	-53.95	-1.69	0.00	-159.86	0.00	159.86	5,593.84	1,468.27	7,990	6,938.73	0.03	-0.02	0.03
18.00	-53.15	-1.69	0.00	-156.47	0.00	156.47	5,562.86	1,455.13	7,848	6,838.13	0.04	-0.02	0.03
20.00	-52.35	-1.69	0.00	-153.08	0.00	153.08	5,531.54	1,442.00	7,707	6,737.80	0.05	-0.02	0.03
22.00	-51.56	-1.69	0.00	-149.70	0.00	149.70	5,499.87	1,428.86	7,567	6,637.75	0.06	-0.03	0.03
24.00	-50.78	-1.69	0.00	-146.31	0.00	146.31	5,467.86	1,415.73	7,429	6,538.00	0.07	-0.03	0.03
26.00	-50.00	-1.69	0.00	-142.93	0.00	142.93	5,435.50	1,402.59	7,291	6,438.56	0.08	-0.03	0.03
28.00	-49.23	-1.69	0.00	-139.55	0.00	139.55	5,402.81	1,389.45	7,155	6,339.43	0.09	-0.03	0.03
30.00	-48.47	-1.69	0.00	-136.17	0.00	136.17	5,369.76	1,376.32	7,021	6,240.64	0.11	-0.03	0.03
32.00	-47.71	-1.68	0.00	-132.80	0.00	132.80	5,336.37	1,363.18	6,887	6,142.19	0.12	-0.04	0.03
34.00	-46.96	-1.68	0.00	-129.43	0.00	129.43	5,302.64	1,350.05	6,755	6,044.10	0.14	-0.04	0.03
36.00	-46.22	-1.68	0.00	-126.07	0.00	126.07	5,268.57	1,336.91	6,625	5,946.37	0.16	-0.04	0.03
38.00	-45.48	-1.67	0.00	-122.72	0.00	122.72	5,234.14	1,323.77	6,495	5,849.01	0.18	-0.04	0.03
40.00	-44.75	-1.67	0.00	-119.38	0.00	119.38	5,199.38	1,310.64	6,367	5,752.05	0.19	-0.05	0.03
42.00	-44.02	-1.66	0.00	-116.05	0.00	116.05	5,164.27	1,297.50	6,240	5,655.49	0.22	-0.05	0.03
44.00	-43.30	-1.65	0.00	-112.73	0.00	112.73	5,128.82	1,284.37	6,114	5,559.33	0.24	-0.05	0.03
46.00	-43.27	-1.66	0.00	-109.42	0.00	109.42	5,093.02	1,271.23	5,990	5,463.61	0.26	-0.05	0.03
46.08	-42.08	-1.64	0.00	-109.28	0.00	109.28	5,091.52	1,270.68	5,985	5,459.63	0.26	-0.05	0.03
48.00	-40.85	-1.63	0.00	-106.14	0.00	106.14	5,056.88	1,258.09	5,867	5,368.31	0.28	-0.06	0.03
50.00	-39.63	-1.61	0.00	-102.88	0.00	102.88	5,020.39	1,244.96	5,745	5,273.46	0.31	-0.06	0.03
52.00	-38.88	-1.61	0.00	-99.65	0.00	99.65	4,983.56	1,231.82	5,624	5,179.08	0.33	-0.06	0.03
53.25	-38.65	-1.60	0.00	-97.64	0.00	97.64	4,079.17	1,065.78	4,912	4,284.64	0.35	-0.06	0.03
54.00	-38.04	-1.59	0.00	-96.44	0.00	96.44	4,069.10	1,061.56	4,873	4,257.00	0.36	-0.06	0.03
56.00	-37.43	-1.59	0.00	-93.25	0.00	93.25	4,042.00	1,050.30	4,770	4,183.47	0.39	-0.07	0.03
58.00	-36.83	-1.58	0.00	-90.08	0.00	90.08	4,014.55	1,039.04	4,668	4,110.19	0.41	-0.07	0.03
60.00	-36.23	-1.57	0.00	-86.92	0.00	86.92	3,986.76	1,027.78	4,568	4,037.18	0.44	-0.07	0.03
62.00	-35.64	-1.56	0.00	-83.78	0.00	83.78	3,958.62	1,016.52	4,468	3,964.44	0.48	-0.08	0.03
64.00	-35.05	-1.55	0.00	-80.66	0.00	80.66	3,930.14	1,005.26	4,370	3,891.99	0.51	-0.08	0.03
66.00	-34.47	-1.54	0.00	-77.55	0.00	77.55	3,901.32	994.00	4,272	3,819.84	0.54	-0.08	0.03
68.00	-33.90	-1.53	0.00	-74.47	0.00	74.47	3,872.15	982.75	4,176	3,748.00	0.58	-0.08	0.03
70.00	-33.33	-1.52	0.00	-71.41	0.00	71.41	3,842.64	971.49	4,081	3,676.48	0.61	-0.09	0.03
72.00	-32.76	-1.51	0.00	-68.37	0.00	68.37	3,812.79	960.23	3,987	3,605.30	0.65	-0.09	0.03
74.00	-32.20	-1.50	0.00	-65.36	0.00	65.36	3,782.59	948.97	3,894	3,534.46	0.69	-0.09	0.03
76.00	-31.65	-1.48	0.00	-62.36	0.00	62.36	3,752.04	937.71	3,802	3,463.99	0.72	-0.09	0.03
78.00	-31.10	-1.47	0.00	-59.40	0.00	59.40	3,721.15	926.45	3,711	3,393.88	0.76	-0.10	0.03
80.00	-30.56	-1.46	0.00	-56.46	0.00	56.46	3,689.92	915.19	3,622	3,324.15	0.80	-0.10	0.03
82.00	-30.02	-1.44	0.00	-53.54	0.00	53.54	3,658.34	903.93	3,533	3,254.81	0.85	-0.10	0.03
84.00	-29.49	-1.43	0.00	-50.66	0.00	50.66	3,626.42	892.67	3,446	3,185.88	0.89	-0.10	0.02
86.00	-28.97	-1.41	0.00	-47.80	0.00	47.80	3,594.15	881.41	3,359	3,117.36	0.93	-0.11	0.02
88.00	-28.77	-1.41	0.00	-44.97	0.00	44.97	3,561.54	870.15	3,274	3,049.27	0.98	-0.11	0.02
88.75	-28.25	-1.39	0.00	-43.92	0.00	43.92	3,549.23	865.93	3,242	3,023.84	1.00	-0.11	0.02
90.00	-27.42	-1.37	0.00	-42.18	0.00	42.18	3,528.59	858.89	3,190	2,981.61	1.02	-0.11	0.02
92.00	-26.60	-1.34	0.00	-39.45	0.00	39.45	3,495.29	847.63	3,107	2,914.41	1.07	-0.11	0.02
94.00	-26.33	-1.33	0.00	-36.77	0.00	36.77	3,461.65	836.37	3,025	2,847.66	1.12	-0.12	0.02
94.67	-26.06	-1.32	0.00	-35.88	0.00	35.88	2,376.03	634.86	2,323	1,982.62	1.14	-0.12	0.03
96.00	-25.65	-1.31	0.00	-34.12	0.00	34.12	2,363.50	629.23	2,282	1,954.56	1.17	-0.12	0.03
98.00	-25.25	-1.29	0.00	-31.51	0.00	31.51	2,344.43	620.78	2,221	1,912.58	1.22	-0.12	0.03
100.00	-24.85	-1.28	0.00	-28.92	0.00	28.92	2,325.01	612.34	2,161	1,870.75	1.27	-0.12	0.03
102.00	-24.46	-1.26	0.00	-26.36	0.00	26.36	2,305.25	603.89	2,102	1,829.09	1.32	-0.12	0.03
104.00	-24.26	-1.26	0.00	-23.83	0.00	23.83	2,285.14	595.45	2,044	1,787.59	1.37	-0.13	0.02
105.00	-19.35	-1.05	0.00	-22.58	0.00	22.58	2,274.96	591.22	2,015	1,766.91	1.40	-0.13	0.02
106.00	-18.97	-1.04	0.00	-21.52	0.00	21.52	2,264.69	587.00	1,986	1,746.28	1.43	-0.13	0.02
108.00	-18.61	-1.02	0.00	-19.45	0.00	19.45	2,243.90	578.55	1,929	1,705.16	1.48	-0.13	0.02
110.00	-18.24	-1.01	0.00	-17.40	0.00	17.40	2,222.76	570.11	1,874	1,664.26	1.54	-0.13	0.02
112.00	-17.88	-0.99	0.00	-15.38	0.00	15.38	2,201.28	561.66	1,818	1,623.57	1.59	-0.13	0.02
114.00	-17.53	-0.98	0.00	-13.40	0.00	13.40	2,179.45	553.22	1,764	1,583.11	1.65	-0.14	0.02
116.00	-13.28	-0.77	0.00	-11.45	0.00	11.45	2,157.28	544.77	1,711	1,542.89	1.71	-0.14	0.01
118.00	-12.94	-0.75	0.00	-9.91	0.00	9.91	2,134.76	536.32	1,658	1,502.92	1.76	-0.14	0.01
120.00	-12.60	-0.74	0.00	-8.40	0.00	8.40	2,111.90	527.88	1,606	1,463.22	1.82	-0.14	0.01
122.00	-12.27	-0.72	0.00	-6.93	0.00	6.93	2,088.70	519.43	1,555	1,423.80	1.88	-0.14	0.01
124.00	-11.94	-0.70	0.00	-5.49	0.00	5.49	2,065.15	510.99	1,505	1,384.67	1.94	-0.14	0.01
126.00	-11.78	-0.69	0.00	-4.09	0.00	4.09	2,041.25	502.54	1,456	1,345.83	2.00	-0.14	0.01
127.00	-6.92	-0.42	0.00	-3.39	0.00	3.39	2,029.18	498.32	1,431	1,326.53	2.03	-0.14	0.01
128.00	-6.65	-0.41	0.00	-2.97	0.00	2.97	2,017.02	494.09	1,407	1,307.31	2.06	-0.14	0.01
130.00	-6.39	-0.39	0.00	-2.15	0.00	2.15	1,992.44	485.65	1,360	1,269.10	2.12	-0.14	0.01
132.00	-6.13	-0.38	0.00	-1.37	0.00	1.37	1,967.51	477.20	1,313	1,231.24	2.18	-0.14	0.00
134.00	-3.55	-0.22	0.00	-0.62	0.00	0.62	1,942.24	468.76	1,267	1,193.72	2.24	-0.14	0.00
136.00	-2.17	-0.14	0.00	-0.17	0.00	0.17	1,916.63	460.31	1,221	1,156.55	2.30	-0.14	0.00
137.00	-0.44	-0.03	0.00	-0.04	0.00	0.04	1,903.69	456.09	1,199	1,138.11	2.33	-0.14	0.00

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
138.00	-0.39	-0.03	0.00	-0.01	0.00	0.01	1,890.67	451.86	1,177	1,119.75	2.36	-0.14	0.00
138.40	0.00	0.00	0.00	0.00	0.00	0.00	1,885.43	450.18	1,168	1,112.44	2.37	-0.14	0.00
140.00	0.00	0.00	0.00	0.00	0.00	0.00	1,864.36	443.42	1,133	1,083.34	2.42	-0.14	0.00

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

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-42.17	-1.68	0.00	-185.37	0.00	185.37	5,829.27	1,573.36	9,175	7,752.02	0.00	0.00	0.03
2.00	-41.58	-1.69	0.00	-182.01	0.00	182.01	5,801.05	1,560.22	9,022	7,649.65	0.00	0.00	0.03
4.00	-40.99	-1.69	0.00	-178.64	0.00	178.64	5,772.48	1,547.08	8,871	7,547.45	0.00	0.00	0.03
6.00	-40.40	-1.69	0.00	-175.26	0.00	175.26	5,743.57	1,533.95	8,721	7,445.45	0.00	-0.01	0.03
8.00	-39.82	-1.69	0.00	-171.89	0.00	171.89	5,714.31	1,520.81	8,572	7,343.65	0.01	-0.01	0.03
10.00	-39.25	-1.69	0.00	-168.51	0.00	168.51	5,684.71	1,507.68	8,425	7,242.07	0.01	-0.01	0.03
12.00	-38.68	-1.69	0.00	-165.13	0.00	165.13	5,654.76	1,494.54	8,279	7,140.71	0.02	-0.01	0.03
14.00	-38.11	-1.69	0.00	-161.76	0.00	161.76	5,624.47	1,481.40	8,134	7,039.60	0.02	-0.02	0.03
16.00	-37.55	-1.69	0.00	-158.38	0.00	158.38	5,593.84	1,468.27	7,990	6,938.73	0.03	-0.02	0.03
18.00	-36.99	-1.69	0.00	-155.00	0.00	155.00	5,562.86	1,455.13	7,848	6,838.13	0.04	-0.02	0.03
20.00	-36.44	-1.69	0.00	-151.62	0.00	151.62	5,531.54	1,442.00	7,707	6,737.80	0.05	-0.02	0.03
22.00	-35.89	-1.69	0.00	-148.25	0.00	148.25	5,499.87	1,428.86	7,567	6,637.75	0.06	-0.03	0.03
24.00	-35.34	-1.68	0.00	-144.88	0.00	144.88	5,467.86	1,415.73	7,429	6,538.00	0.07	-0.03	0.03
26.00	-34.80	-1.68	0.00	-141.51	0.00	141.51	5,435.50	1,402.59	7,291	6,438.56	0.08	-0.03	0.03
28.00	-34.27	-1.68	0.00	-138.14	0.00	138.14	5,402.81	1,389.45	7,155	6,339.43	0.09	-0.03	0.03
30.00	-33.74	-1.68	0.00	-134.79	0.00	134.79	5,369.76	1,376.32	7,021	6,240.64	0.11	-0.03	0.03
32.00	-33.21	-1.67	0.00	-131.43	0.00	131.43	5,336.37	1,363.18	6,887	6,142.19	0.12	-0.04	0.03
34.00	-32.69	-1.67	0.00	-128.09	0.00	128.09	5,302.64	1,350.05	6,755	6,044.10	0.14	-0.04	0.03
36.00	-32.17	-1.66	0.00	-124.75	0.00	124.75	5,268.57	1,336.91	6,625	5,946.37	0.16	-0.04	0.03
38.00	-31.65	-1.66	0.00	-121.42	0.00	121.42	5,234.14	1,323.77	6,495	5,849.01	0.17	-0.04	0.03
40.00	-31.15	-1.65	0.00	-118.10	0.00	118.10	5,199.38	1,310.64	6,367	5,752.05	0.19	-0.05	0.03
42.00	-30.64	-1.65	0.00	-114.79	0.00	114.79	5,164.27	1,297.50	6,240	5,655.49	0.21	-0.05	0.03
44.00	-30.14	-1.64	0.00	-111.50	0.00	111.50	5,128.82	1,284.37	6,114	5,559.33	0.23	-0.05	0.03
46.00	-30.12	-1.64	0.00	-108.21	0.00	108.21	5,093.02	1,271.23	5,990	5,463.61	0.26	-0.05	0.03
46.08	-29.29	-1.63	0.00	-108.08	0.00	108.08	5,091.52	1,270.68	5,985	5,459.63	0.26	-0.05	0.03
48.00	-28.43	-1.62	0.00	-104.95	0.00	104.95	5,056.88	1,258.09	5,867	5,368.31	0.28	-0.06	0.03
50.00	-27.59	-1.60	0.00	-101.72	0.00	101.72	5,020.39	1,244.96	5,745	5,273.46	0.30	-0.06	0.03
52.00	-27.06	-1.59	0.00	-98.52	0.00	98.52	4,983.56	1,231.82	5,624	5,179.08	0.33	-0.06	0.02
53.25	-26.90	-1.59	0.00	-96.53	0.00	96.53	4,079.17	1,065.78	4,912	4,284.64	0.35	-0.06	0.03
54.00	-26.47	-1.58	0.00	-95.34	0.00	95.34	4,069.10	1,061.56	4,873	4,257.00	0.36	-0.06	0.03
56.00	-26.05	-1.57	0.00	-92.17	0.00	92.17	4,042.00	1,050.30	4,770	4,183.47	0.38	-0.07	0.03
58.00	-25.63	-1.56	0.00	-89.03	0.00	89.03	4,014.55	1,039.04	4,668	4,110.19	0.41	-0.07	0.03
60.00	-25.22	-1.56	0.00	-85.90	0.00	85.90	3,986.76	1,027.78	4,568	4,037.18	0.44	-0.07	0.03
62.00	-24.80	-1.55	0.00	-82.79	0.00	82.79	3,958.62	1,016.52	4,468	3,964.44	0.47	-0.07	0.03
64.00	-24.40	-1.54	0.00	-79.69	0.00	79.69	3,930.14	1,005.26	4,370	3,891.99	0.50	-0.08	0.03
66.00	-23.99	-1.53	0.00	-76.62	0.00	76.62	3,901.32	994.00	4,272	3,819.84	0.54	-0.08	0.03
68.00	-23.59	-1.52	0.00	-73.57	0.00	73.57	3,872.15	982.75	4,176	3,748.00	0.57	-0.08	0.03
70.00	-23.20	-1.50	0.00	-70.54	0.00	70.54	3,842.64	971.49	4,081	3,676.48	0.60	-0.09	0.03
72.00	-22.80	-1.49	0.00	-67.53	0.00	67.53	3,812.79	960.23	3,987	3,605.30	0.64	-0.09	0.03
74.00	-22.41	-1.48	0.00	-64.55	0.00	64.55	3,782.59	948.97	3,894	3,534.46	0.68	-0.09	0.02
76.00	-22.03	-1.47	0.00	-61.59	0.00	61.59	3,752.04	937.71	3,802	3,463.99	0.72	-0.09	0.02
78.00	-21.65	-1.45	0.00	-58.65	0.00	58.65	3,721.15	926.45	3,711	3,393.88	0.76	-0.10	0.02
80.00	-21.27	-1.44	0.00	-55.75	0.00	55.75	3,689.92	915.19	3,622	3,324.15	0.80	-0.10	0.02
82.00	-20.90	-1.43	0.00	-52.87	0.00	52.87	3,658.34	903.93	3,533	3,254.81	0.84	-0.10	0.02
84.00	-20.53	-1.41	0.00	-50.01	0.00	50.01	3,626.42	892.67	3,446	3,185.88	0.88	-0.10	0.02
86.00	-20.16	-1.40	0.00	-47.19	0.00	47.19	3,594.15	881.41	3,359	3,117.36	0.92	-0.10	0.02
88.00	-20.02	-1.39	0.00	-44.40	0.00	44.40	3,561.54	870.15	3,274	3,049.27	0.97	-0.11	0.02
88.75	-19.66	-1.38	0.00	-43.35	0.00	43.35	3,549.23	865.93	3,242	3,023.84	0.99	-0.11	0.02
90.00	-19.08	-1.35	0.00	-41.64	0.00	41.64	3,528.59	858.89	3,190	2,981.61	1.01	-0.11	0.02
92.00	-18.51	-1.32	0.00	-38.94	0.00	38.94	3,495.29	847.63	3,107	2,914.41	1.06	-0.11	0.02
94.00	-18.33	-1.31	0.00	-36.29	0.00	36.29	3,461.65	836.37	3,025	2,847.66	1.11	-0.11	0.02
94.67	-18.14	-1.30	0.00	-35.42	0.00	35.42	2,376.03	634.86	2,323	1,982.62	1.12	-0.11	0.03
96.00	-17.85	-1.29	0.00	-33.68	0.00	33.68	2,363.50	629.23	2,282	1,954.56	1.16	-0.12	0.03
98.00	-17.57	-1.28	0.00	-31.10	0.00	31.10	2,344.43	620.78	2,221	1,912.58	1.21	-0.12	0.02
100.00	-17.30	-1.26	0.00	-28.54	0.00	28.54	2,325.01	612.34	2,161	1,870.75	1.26	-0.12	0.02
102.00	-17.02	-1.25	0.00	-26.02	0.00	26.02	2,305.25	603.89	2,102	1,829.09	1.31	-0.12	0.02
104.00	-16.89	-1.24	0.00	-23.52	0.00	23.52	2,285.14	595.45	2,044	1,787.59	1.36	-0.13	0.02
105.00	-13.46	-1.04	0.00	-22.28	0.00	22.28	2,274.96	591.22	2,015	1,766.91	1.39	-0.13	0.02
106.00	-13.21	-1.03	0.00	-21.24	0.00	21.24	2,264.69	587.00	1,986	1,746.28	1.41	-0.13	0.02

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
108.00	-12.95	-1.01	0.00	-19.19	0.00	19.19	2,243.90	578.55	1,929	1,705.16	1.47	-0.13	0.02
110.00	-12.70	-0.99	0.00	-17.17	0.00	17.17	2,222.76	570.11	1,874	1,664.26	1.52	-0.13	0.02
112.00	-12.45	-0.98	0.00	-15.18	0.00	15.18	2,201.28	561.66	1,818	1,623.57	1.58	-0.13	0.02
114.00	-12.20	-0.96	0.00	-13.23	0.00	13.23	2,179.45	553.22	1,764	1,583.11	1.63	-0.13	0.01
116.00	-9.24	-0.76	0.00	-11.30	0.00	11.30	2,157.28	544.77	1,711	1,542.89	1.69	-0.14	0.01
118.00	-9.01	-0.74	0.00	-9.78	0.00	9.78	2,134.76	536.32	1,658	1,502.92	1.75	-0.14	0.01
120.00	-8.77	-0.73	0.00	-8.29	0.00	8.29	2,111.90	527.88	1,606	1,463.22	1.80	-0.14	0.01
122.00	-8.54	-0.71	0.00	-6.84	0.00	6.84	2,088.70	519.43	1,555	1,423.80	1.86	-0.14	0.01
124.00	-8.31	-0.69	0.00	-5.42	0.00	5.42	2,065.15	510.99	1,505	1,384.67	1.92	-0.14	0.01
126.00	-8.20	-0.68	0.00	-4.03	0.00	4.03	2,041.25	502.54	1,456	1,345.83	1.98	-0.14	0.01
127.00	-4.82	-0.42	0.00	-3.35	0.00	3.35	2,029.18	498.32	1,431	1,326.53	2.01	-0.14	0.01
128.00	-4.63	-0.40	0.00	-2.93	0.00	2.93	2,017.02	494.09	1,407	1,307.31	2.04	-0.14	0.01
130.00	-4.45	-0.39	0.00	-2.13	0.00	2.13	1,992.44	485.65	1,360	1,269.10	2.10	-0.14	0.00
132.00	-4.26	-0.37	0.00	-1.35	0.00	1.35	1,967.51	477.20	1,313	1,231.24	2.16	-0.14	0.00
134.00	-2.47	-0.22	0.00	-0.61	0.00	0.61	1,942.24	468.76	1,267	1,193.72	2.22	-0.14	0.00
136.00	-1.51	-0.13	0.00	-0.17	0.00	0.17	1,916.63	460.31	1,221	1,156.55	2.28	-0.14	0.00
137.00	-0.31	-0.03	0.00	-0.04	0.00	0.04	1,903.69	456.09	1,199	1,138.11	2.31	-0.14	0.00
138.00	-0.27	-0.02	0.00	-0.01	0.00	0.01	1,890.67	451.86	1,177	1,119.75	2.34	-0.14	0.00
138.40	0.00	0.00	0.00	0.00	0.00	0.00	1,885.43	450.18	1,168	1,112.44	2.35	-0.14	0.00
140.00	0.00	0.00	0.00	0.00	0.00	0.00	1,864.36	443.42	1,133	1,083.34	2.40	-0.14	0.00

ANALYSIS SUMMARY

	Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.0W Normal	36.86	0.00	59.53	0.00	0.00	3747.28	0.00	0.49
0.9D + 1.0W Normal	36.85	0.00	44.65	0.00	0.00	3722.44	0.00	0.49
1.2D + 1.0Di + 1.0Wi Normal	10.42	0.00	86.36	0.00	0.00	1056.89	0.00	0.15
1.2D + 1.0Ev + 1.0Eh Normal	1.69	0.00	60.58	0.00	0.00	186.90	0.00	0.03
0.9D - 1.0Ev + 1.0Eh Normal	1.69	0.00	42.17	0.00	0.00	185.37	0.00	0.03
1.0D + 1.0W Service Normal	8.38	0.00	49.62	0.00	0.00	848.75	0.00	0.12

Base Plate & Anchor Rod Analysis

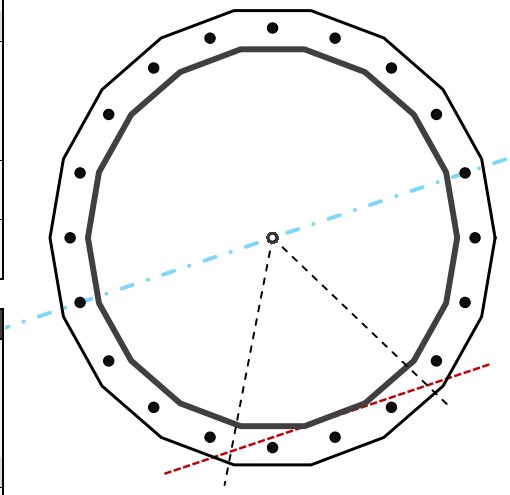
Pole Dimensions		
Number of Sides	18	-
Diameter	65	in
Thickness	7/16	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	3,747.3	k-ft
Axial, Pu	59.5	k
Shear, Vu	36.9	k
Neutral Axis	198	°

Report Capacities		
Component	Capacity	Result
Base Plate	11%	Pass
Anchor Rods	55%	Pass
Dwyidag	-	-

3

Base Plate		
Number of Sides	18	-
Diameter, ø	78.5	in
Thickness	3 1/4	in
Grade	A572-50	
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	N/A	in
Orientation Offset	0	°
Anchor Rod Detail	d	η=0.5
Clear Distance	2 1/2	in
Applied Moment, Mu	523.7	k
Bending Stress, ϕMn	4636.5	k



Original Anchor Rods		
Arrangement	Radial	-
Quantity	20	-
Diameter, ø	2 1/4	in
Bolt Circle	72.5	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	11.4	in
Orientation Offset	0	°
Applied Force, Pu	131.2	k
Anchor Rods, ϕPn	243.6	k

Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	36.9	3747.3	1.00
Anchor Rod Forces	36.9	3747.3	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	88.3881	4.9105	0.3151		46058.66
Bolt	3.9761	3.2477	0.8393	4.5	39943.20
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	18	-
Width, W	78.5	in
Thickness, t	3.25	in
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Base Plate Chord	44.014	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	2.5	-

Anchor Rods		
Anchor Rod Quantity, N	20	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	72.5	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	131.2	k
Applied Shear, Vu	0.9	k
Compressive Capacity, ϕPn	243.6	k
Tensile Capacity, ϕRnt	0.539	OK
Interaction Capacity	0.546	OK

External Base Plate		
Chord Length AA	45.891	in
Additional AA	6.000	in
Section Modulus, Z	137.024	in^3
Applied Moment, Mu	523.7	k-ft
Bending Capacity, ϕMn	6166.1	k-ft
Capacity, Mu/ϕMn	0.085	OK
Chord Length AB	44.886	in
Additional AB	6.000	in
Section Modulus, Z	134.371	in^3
Applied Moment, Mu	332.4	k-ft
Bending Capacity, ϕMn	6046.7	k-ft
Capacity, Mu/ϕMn	0.055	OK
Bend Line Length	39.018	in
Additional Bend Line	0.000	in
Section Modulus, Z	103.033	in^3
Applied Moment, Mu	523.7	k-ft
Bending Capacity, ϕMn	4636.5	k-ft
Capacity, Mu/ϕMn	0.113	OK

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

Site Name: Woodstock NW PCS CT, CT
Site Number: 415439
Tower Type: MP
Design Loads (Factored) - Analysis per TIA-222-H Standards

Monolithic Mat & Pier Foundation Analysis

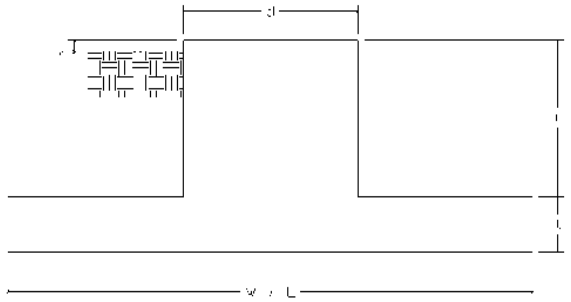
Foundation Analysis Parameters		
Design / Analysis / Mapping:	Analysis	-
Compression/Leg:	59.5	k
Uplift/Leg:	0.0	k
Total Shear:	36.9	k
Moment:	3,747.3	k-ft
Tower + Appurtenance Weight:	59.5	k
Depth to Base of Foundation (l + t - h):	7	ft
Diameter of Pier (d):	8.5	ft
Length of Pier (l):	4.5	ft
Height of Pier above Ground (h):	0.5	ft
Width of Pad (W):	26	ft
Length of Pad (L):	26	ft
Thickness of Pad (t):	3	ft
Tower Leg Center to Center:	0	ft
Number of Tower Legs:	1	-
Tower Center from Mat Center:	0	ft
Depth Below Ground Surface to Water Table:	99	ft
Unit Weight of Concrete:	150	pcf
Unit Weight of Soil Above Water Table:	120	pcf
Unit Weight of Water:	62.4	pcf
Unit Weight of Soil Below Water Table:	57.6	pcf
Friction Angle of Uplift:	0	°
Coefficient of Shear Friction:	0.5	-
Ultimate Compressive Bearing Pressure:	12,000	psf
Ultimate Passive Pressure on Pad Face:	0	psf
$f_{Soil\ and\ Concrete\ Weight}$:	0.9	-
f_{Soil}:	0.75	-

Overturning Moment Usage		
Design OTM:	4023.8	k-ft
OTM Resistance:	8007.1	k-ft
Design OTM / OTM Resistance:	50%	Pass

Soil Bearing Pressure Usage		
Net Bearing Pressure:	3431	psf
Factored Nominal Bearing Pressure:	9000	psf
Factored Nominal (Net) Bearing Pressure:	38%	Pass
Load Direction Controling Design Bearing Pressure:	*Diagonal to Pad Edge*	

Sliding Factor of Safety		
Ultimate Friction Resistance:	344.7	k
Ultimate Passive Pressure Resistance:	0.0	k
Total Factored Sliding Resistance:	258.5	k
Sliding Design / Sliding Resistance:	14%	Pass

Foundation Steel Parameters		
Shear/Leg (Compression):	24.6	k
Shear/Leg (Uplift):	20.3	k
Concrete Strength (f'_c):	3,000	psi
Pad Tension Steel Depth:	32.44	in
Dead Load Factor:	0.9	-
f_{Shear}:	0.75	-
$f_{Flexure\ /\ Tension}$:	0.9	-
$f_{Compression:}$	0.65	-
b:	0.85	-
Bottom Pad Rebar Size #:	9	-
# of Bottom Pad Rebar:	34	-
Pad Bottom Steel Area:	34.00	in^2
Pad Steel F_y:	60,000	psi
Top Pad Rebar Size #:	7	-
# of Top Pad Rebar:	21	-
Pad Top Steel Area:	12.60	in^2
Pier Rebar Size #:	11	-
Pier Steel Area (Single Bar):	1.56	in^2
# of Pier Rebar:	52	-
Pier Steel F_y:	60,000	psi
Pier Cage Diameter:	93.4	in
Rebar Strain Limit:	0.008	-
Steel Elastic Modulus:	29,000	ksi
Tie Rebar Size #:	5	-
Tie Steel Area (Single Bar):	0.31	in^2
Tie Spacing:	8	in
Tie Steel F_y:	60,000	psi
Clear Cover:	3	in



Pad Strength Capacity			
Factored One Way Shear (V_u):	274.9	k	
One Way Shear Capacity (fV_c):	731.2	k	*ACI 318-14 25.5.5.1*
V_u / fV_c:	38%	Pass	
Load Direction Controling Shear Capacity:	*Diagonal to Pad Edge*		
Lower Steel Pad Factored Moment (M_u):	2070.9	k-ft	
Lower Steel Pad Moment Capacity (fM_n):	5195.7	k-ft	*ACI 318-14 22.3.1.1*
M_u / fM_n:	40%	Pass	
Load Direction Controling Flexural Capacity:	*Diagonal to Pad Edge*		
Upper Steel Pad Factored Moment (M_u):	913.2	k-ft	
Upper Steel Pad Moment Capacity (fM_n):	1816.3	k-ft	
M_u / fM_n:	50%	Pass	
Lower Pad Flexural Reinforcement Ratio:	0.0034		*OK - ACI 318-14 7.6.1.1 & 8.6.1.1*
Upper Pad Flexural Reinforcement Ratio:	0.0012		*OK - ACI 318-14 7.6.1.1 & 8.6.1.1*
Pad Shrinkage Reinforcement Ratio:	0.0046		*OK - ACI 318-14 24.4.3.2*
Lower Pad Reinforcement Spacing:	9.3	in	*OK - ACI 318-14 7.7.2.3, 8.7.2.2, & 24.4.3.3*
Upper Pad Reinforcement Spacing:	15.3	in	*OK - ACI 318-14 7.7.2.3, 8.7.2.2, & 24.4.3.3*
Ultimate Punching Shear Stress, v_u:	30.49	psi	*ACI 318-14 R8.4.4.2.3*
Nominal Punching Shear Capacity (f_cv_c):	164.3	psi	*ACI 318-14 22.6.5.2*
v_u / f_cv_c:	19%	Pass	
Pier Moment Pad Flexure Transfer Ratio, γ_f:	0.60		*TIA-222-H 9.4.2*
Moment Transfer Effective Flexural Width, B_{eff}:	17.50	ft	*TIA-222-H 9.4.2*
Moment Transfer Through Pad Flexure:	28174.82	k-in	*TIA-222-H 9.4.2*
Moment Transfer Flexural Capacity ($fM_{sc,f}$):	40050.86	k-in	
g_fM_{sc} / $fM_{sc,f}$:	0%	Pass	

Pier Strength Capacity			
Factored Moment in Pier (M_u):	3913.2	k-ft	
Pier Moment Capacity (fM_n):	16666.3	k-ft	
M_u / fM_n:	23%	Pass	
Factored Shear in Pier (V_u):	36.9	k	
Pier Shear Capacity (fV_n):	958.4	k	*ACI 318-14 22.5.1.1*
V_u / fV_c:	4%	Pass	
Pier Shear Reinforcement Ratio:	0.0005		*OK - No Ties Necessary for Shear - ACI11.5.6.1*
Factored Tension in Pier (T_u):	0.0	k	
Pier Tension Capacity (fT_n):	4380.5	k	
T_u / fT_n:	0%	Pass	
Factored Compression in Pier (P_u):	59.5	k	
Pier Compression Capacity (fP_n):	10776.2	k	*ACI 318-14 22.4.2.1*
P_u / fP_n:	1%	Pass	
Pier Compression Reinforcement Ratio:	0.010		*OK - TIA-222-H 9.4.1*
Minimum Depth to Develop Vertical Rebar:	63	in	*ACI 318-14 25.4.2.3*
Minimum Hook Development Length:	31	in	*ACI 318-14 25.4.3.1*
Minimum Mat Thickness / Edge Distance from Pier:	34.0	in	
Minimum Foundation Depth:	8.35	ft	
$M_u/f_BM_n + T_u/f_TT_n$:	23%	Pass	

AMERICAN TOWER®
CORPORATION

LETTER OF AUTHORIZATION

SITE NO/PROJECT NO: 415439 / 13704269 **SITE NAME: Woodstock NW PCS CT**

ADDRESS: 40 Sherman Road Woodstock, CT 06281-1901

I, Margaret Robinson, Senior Counsel, US Tower Division on behalf of American Tower*, owner of the tower facility located at the address identified above (the "Tower Facility"), do hereby authorize **Transcend Wireless** its successors and assigns, to act as American Tower's non-exclusive agent for the purpose of filing and securing any zoning, land-use, building permit and/or electrical permit application(s) and approvals of the applicable jurisdiction for and to conduct the construction of the installation of antennas and related telecommunications equipment on the Tower Facility located at the above address. This installation shall not affect adjoining lands and will occur only within the area leased by American Tower.

American Tower understands that the application may be denied, modified or approved with conditions. The above authorization is limited to the acceptance by American Tower of conditions related to American Tower's installation. Any such conditions of approval or modifications will not be effective unless approved in writing by American Tower.

The above authorization does not permit **Transcend Wireless** to modify or alter any existing permit(s) and/or zoning or land-use conditions or impose any additional conditions unrelated to American Tower's installation of telecommunications equipment without the prior written approval of American Tower.

Signature: _____

Margaret Robinson, Senior Counsel
US Tower Division

NOTARY BLOCK

COMMONWEALTH OF MASSACHUSETTS
County of Middlesex

This instrument was acknowledged before me by Margaret Robinson, Senior Counsel of American Tower (Tower Facility owner and/or operator), personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same.

WITNESS my hand and official seal, this 5th day of October 2021.

NOTARY SEAL

Catrine Galhana Vaz
Notary Public
COMMONWEALTH OF MASSACHUSETTS
My Commission Expires
February 24, 2028

Notary Public _____
My Commission Expires: February 24, 2028

* American Tower as used herein is defined as American Tower Corporation and any of its affiliates or subsidiaries.

EBI Consulting

environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CTNL184A

40 Sherman Road
Woodstock, Connecticut 06281

December 22, 2021

EBI Project Number: 6221004545

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**29.89%**

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

December 22, 2021

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

Emissions Analysis for Site: CTNL184A -

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **40 Sherman Road** in **Woodstock, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu W/cm^2$). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits; therefore, it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 40 Sherman Road in Woodstock, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower. For power density calculations, the broadcast footprint of the AIR6449 antenna has been considered. Due to the beamforming nature of this antenna, the actual beam locations vary depending on demand and are narrow in nature. Using the broadcast footprint accounts for the potential location of beams at any given time.

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

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

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

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

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

5) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

6) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

7) 1 LTE Traffic channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 60 Watts.

8) 1 LTE Broadcast channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 20 Watts.

9) 1 NR Traffic channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.

10) 1 NR Broadcast channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts.

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

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

13) The antennas used in this modeling are the Commscope VV-65A-R1 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector A, the Commscope VV-65A-R1 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector B, the Commscope VV-65A-R1 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels

are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

14) The antenna mounting height centerline of the proposed antennas is 105 feet above ground level (AGL).

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

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Commscope VV-65A-R1	Make / Model:	Commscope VV-65A-R1	Make / Model:	Commscope VV-65A-R1
Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz
Gain:	15.55 dBd / 15.55 dBd / 16.05 dBd	Gain:	15.55 dBd / 15.55 dBd / 16.05 dBd	Gain:	15.55 dBd / 15.55 dBd / 16.05 dBd
Height (AGL):	105 feet	Height (AGL):	105 feet	Height (AGL):	105 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts
ERP (W):	13,446.73	ERP (W):	13,446.73	ERP (W):	13,446.73
Antenna A1 MPE %:	**4.93%**	Antenna B1 MPE %:	**4.93%**	Antenna C1 MPE %:	**4.93%**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd
Height (AGL):	105 feet	Height (AGL):	105 feet	Height (AGL):	105 feet
Channel Count:	5	Channel Count:	5	Channel Count:	5
Total TX Power (W):	200 Watts	Total TX Power (W):	200 Watts	Total TX Power (W):	200 Watts
ERP (W):	4,151.83	ERP (W):	4,151.83	ERP (W):	4,151.83
Antenna A2 MPE %:	**3.62%**	Antenna B2 MPE %:	**3.62%**	Antenna C2 MPE %:	**3.62%**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd
Height (AGL):	105 feet	Height (AGL):	105 feet	Height (AGL):	105 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	36,356.09	ERP (W):	36,356.09	ERP (W):	36,356.09
Antenna A3 MPE %:	**13.34%**	Antenna B3 MPE %:	**13.34%**	Antenna C3 MPE %:	**13.34%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	21.89%
Verizon	3.19%
AT&T	4.81%
Site Total MPE % :	29.89%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	21.89%
T-Mobile Sector B Total:	21.89%
T-Mobile Sector C Total:	21.89%
Site Total MPE % :	29.89%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 1900 MHz GSM	4	1076.77	105.0	15.80	1900 MHz GSM	1000	1.58%
T-Mobile 1900 MHz LTE	2	2153.53	105.0	15.80	1900 MHz LTE	1000	1.58%
T-Mobile 2100 MHz LTE	2	2416.30	105.0	17.73	2100 MHz LTE	1000	1.77%
T-Mobile 600 MHz LTE	2	591.73	105.0	4.34	600 MHz LTE	400	1.09%
T-Mobile 600 MHz NR	1	1577.94	105.0	5.79	600 MHz NR	400	1.45%
T-Mobile 700 MHz LTE	2	695.22	105.0	5.10	700 MHz LTE	467	1.09%
T-Mobile 2500 MHz LTE 1C & 2C Traffic	1	11044.63	105.0	40.51	2500 MHz LTE 1C & 2C Traffic	1000	4.05%
T-Mobile 2500 MHz LTE 1C & 2C Broadcast	1	1074.06	105.0	3.94	2500 MHz LTE 1C & 2C Broadcast	1000	0.39%
T-Mobile 2500 MHz NR Traffic	1	22089.26	105.0	81.03	2500 MHz NR Traffic	1000	8.10%
T-Mobile 2500 MHz NR Broadcast	1	2148.13	105.0	7.88	2500 MHz NR Broadcast	1000	0.79%
						Total:	**21.89%**

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

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	21.89%
Sector B:	21.89%
Sector C:	21.89%
T-Mobile Maximum MPE % (Sector A):	21.89%
Site Total:	29.89%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **29.89%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

CENTEK engineering
Centered on Solutions℠

Structural Analysis Report

Antenna Mount Analysis

Proposed T-Mobile
Equipment Installation

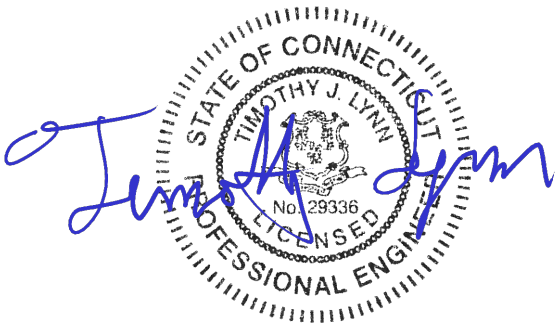
T-Mobile Site #: CTNL184A

71 Sherman Road
Woodstock, CT

Centek Project No. 21085.04

~~Date: July 22, 2021~~
Rev.1: November 24, 2021

Max Stress Ratio = 63.7%



Prepared for:

T-Mobile USA
35 Griffin Road
Bloomfield, CT 06002

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CENTEK engineering

Centered on Solutions℠

Rev.1 ~ November 24, 2021

Mr. Dan Reid
Transcend Wireless
10 Industrial Ave
Mahwah, NJ 07430

Re: Structural Letter ~ Antenna Mount
T-Mobile – Site Ref: CTNL184A
71 Sherman Road
Woodstock, CT 06281

Centek Project No. 21085.04

Dear Mr. Reid,

Centek Engineering, Inc. has reviewed the T-Mobile antenna installation at the above-referenced site. The purpose of the review is to determine the structural adequacy of the proposed 12'-6" low profile platform with handrail (SitePro P/N: RMQP-496-HK). The review considered the effects of wind load, dead load, and ice load in accordance with the 2015 International Building Code as modified by the 2018 Connecticut State Building Code (CTBC), including ASCE 7-10 and ANSI/TIA-222-G Structural Standards for Steel Antenna Towers and Supporting Structures.

The loads considered in this analysis consist of the following:

- **<u>T-Mobile:</u>**
  <u>Low Profile Platform:</u> Three (3) RFS APXVAALL24_43-U-NA20 panel antennas, three (3) Commscope VV-65A-R1 panel antennas, three (3) Ericsson AIR6449 b41 panel antennas, three (3) Ericsson 4480 B71+B85 remote radio heads and three (3) Ericsson 4460 B25+B66 remote radio heads on the proposed mount with a RAD center elevation of 105-ft +/- AGL.

The antenna mount was analyzed per the requirements of the 2015 International Building Code as modified by the 2018 Connecticut State Building Code considering a nominal design wind speed of 101 mph for Woodstock as required in Appendix N of the 2018 Connecticut State Building Code.

Based on our review of the installation, it is our opinion that the **subject antenna mount has sufficient capacity** to support the aforementioned antenna configuration.

If there are any questions regarding this matter, please feel free to call.

Respectfully Submitted by:

Timothy J. Lynn, PE
Structural Engineer

Prepared by:

Fernando J. Palacios
Engineer

Section 2 - Calculations

CENTEK engineering
Centered on Solutions℠ www.centekeng.com
63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

Subject: Loads on Equipment

Location: Woodstock,CT

Rev. 1: 11/24/2021

Prepared by: F.J.P.. Checked by: T.J.L.
Job No. 21085.04

Development of Design Heights, Exposure Coefficients, and Velocity Pressures Per TIA-222-G

Wind Speeds

Basic Wind Speed	$V := 101$	mph	(User Input - 2018 CSBC Appendix N)
Basic Wind Speed with Ice	$V_i := 50$	mph	(User Input per Annex B of TIA-222-G)

Input

Structure Type =	$Structure\_Type := Pole$		(User Input)
Structure Category =	$SC := II$		(User Input)
Exposure Category =	$Exp := B$		(User Input)
Structure Height =	$h := 140$	ft	(User Input)
Height to Center of Antennas =	$z := 105$	ft	(User Input)
Radial Ice Thickness =	$t_i := 1.00$	in	(User Input per Annex B of TIA-222-G)
Radial Ice Density =	$Id := 56.00$	pcf	(User Input)
Topographic Factor =	$K_{zt} := 1.0$		(User Input)
	$K_a := 1.0$		(User Input)
Gust Response Factor =	$G_H = 1.1$		(User Input)

Output

Wind Direction Probability Factor =

$$K_d := \begin{cases} 0.95 & \text{if } Structure\_Type = Pole \\ 0.85 & \text{if } Structure\_Type = Lattice \end{cases} = 0.95$$

(Per Table 2-2 of TIA-222-G)

(Per Table 3-3 of TIA-222-G)

Importance Factors =

$$I_{Wind} := \begin{cases} 0.87 & \text{if } SC = 1 \\ 1.00 & \text{if } SC = 2 \\ 1.15 & \text{if } SC = 3 \end{cases} = 1$$

$$I_{Wind\_w\_Ice} := \begin{cases} 0 & \text{if } SC = 1 \\ 1.00 & \text{if } SC = 2 \\ 1.00 & \text{if } SC = 3 \end{cases} = 1$$

$$I_{ice} := \begin{cases} 0 & \text{if } SC = 1 \\ 1.00 & \text{if } SC = 2 \\ 1.25 & \text{if } SC = 3 \end{cases} = 1$$

$$K_{iz} := \left(\frac{z}{33}\right)^{0.1} = 1.123$$

Velocity Pressure Coefficient Antennas =

$$t_{iz} := 2.0 \cdot t_i \cdot I_{ice} \cdot K_{iz} \cdot K_{zt}^{0.35} = 2.245$$

$$Kz := 2.01 \cdot \left(\left(\frac{z}{zg}\right)\right)^{\overline{\alpha}} = 1.002$$

Velocity Pressure w/o Ice Antennas = $qz := 0.00256 \cdot K_d \cdot Kz \cdot V^2 \cdot I_{Wind} = 25$ psf

Velocity Pressure with Ice Antennas = $qz_{ice} := 0.00256 \cdot K_d \cdot Kz \cdot V_i^2 \cdot I_{Wind} = 6$ psf

CENTEK engineering
Centered on Solutions℠ www.centekeng.com
63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	RFS APXVAALL24_43-U-NA20		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 95.9$	in	(User Input)
Antenna Width =	$W_{ant} := 24.0$	in	(User Input)
Antenna Thickness =	$T_{ant} := 8.5$	in	(User Input)
Antenna Weight =	$WT_{ant} := 150$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)
Antenna Aspect Ratio =	$Ar_{ant} := \frac{L_{ant}}{W_{ant}} = 4.0$		
Antenna Force Coefficient =	$Ca_{ant} = 1.27$		

Wind Load (without ice)

Surface Area for One Antenna =	$SA_{antF} := \frac{L_{ant} \cdot W_{ant}}{144} = 16$	sf
Total Antenna Wind Force Front =	$F_{ant} := qz \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antF} = 554$	lbs
Surface Area for One Antenna =	$SA_{antS} := \frac{L_{ant} \cdot T_{ant}}{144} = 5.7$	sf
Total Antenna Wind Force Side =	$F_{ant} := qz \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antS} = 196$	lbs

Wind Load (with ice)

Surface Area for One Antenna w/ Ice =	$SA_{ICEantF} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz})}{144} = 19.9$	sf
Total Antenna Wind Force w/ Ice Front =	$Fi_{ant} := qz_{ice} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantF} = 169$	lbs
Surface Area for One Antenna w/ Ice =	$SA_{ICEantS} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz})}{144} = 9.1$	sf
Total Antenna Wind Force w/ Ice Side =	$Fi_{ant} := qz_{ice} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantS} = 77$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 150$	lbs

Gravity Loads (ice only)

Volume of Each Antenna =	$V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 2 \cdot 10^4$	cu in
Volume of Ice on Each Antenna =	$V_{ice} := (L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz}) - V_{ant} = 2 \cdot 10^4$	cu in
Weight of Ice on Each Antenna =	$W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 570$	lbs
Weight of Ice on All Antennas =	$W_{ICEant} \cdot N_{ant} = 570$	lbs

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	Commscope VV-65A-R1		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 54.73$	in	(User Input)
Antenna Width =	$W_{ant} := 12.1$	in	(User Input)
Antenna Thickness =	$T_{ant} := 4.64$	in	(User Input)
Antenna Weight =	$WT_{ant} := 50.5$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)
Antenna Aspect Ratio =	$Ar_{ant} := \frac{L_{ant}}{W_{ant}} = 4.5$		
Antenna Force Coefficient =	$Ca_{ant} = 1.27$		

Wind Load (without ice)

Surface Area for One Antenna =	$SA_{antF} := \frac{L_{ant} \cdot W_{ant}}{144} = 4.6$	sf
Total Antenna Wind Force Front =	$F_{ant} := qz \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antF} = 162$	lbs
Surface Area for One Antenna =	$SA_{antS} := \frac{L_{ant} \cdot T_{ant}}{144} = 1.8$	sf
Total Antenna Wind Force Side =	$F_{ant} := qz \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antS} = 62$	lbs

Wind Load (with ice)

Surface Area for One Antenna w/ Ice =	$SA_{ICEantF} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz})}{144} = 6.8$	sf
Total Antenna Wind Force w/ Ice Front =	$Fi_{ant} := qz_{ice} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantF} = 59$	lbs
Surface Area for One Antenna w/ Ice =	$SA_{ICEantS} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz})}{144} = 3.8$	sf
Total Antenna Wind Force w/ Ice Side =	$Fi_{ant} := qz_{ice} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantS} = 32$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 103$	lbs

Gravity Loads (ice only)

Volume of Each Antenna =	$V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 3073$	cu in
Volume of Ice on Each Antenna =	$V_{ice} := (L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz}) - V_{ant} = 5899$	cu in
Weight of Ice on Each Antenna =	$W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 191$	lbs
Weight of Ice on All Antennas =	$W_{ICEant} \cdot N_{ant} = 191$	lbs

CENTEK engineering
Centered on Solutions℠ www.centekeng.com
63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	Ericsson - AIR6449 B41		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 33.1$	in	(User Input)
Antenna Width =	$W_{ant} := 20.5$	in	(User Input)
Antenna Thickness =	$T_{ant} := 8.3$	in	(User Input)
Antenna Weight =	$WT_{ant} := 103$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)
Antenna Aspect Ratio =	$Ar_{ant} := \frac{L_{ant}}{W_{ant}} = 1.6$		
Antenna Force Coefficient =	$Ca_{ant} = 1.2$		

Wind Load (without ice)

Surface Area for One Antenna =	$SA_{antF} := \frac{L_{ant} \cdot W_{ant}}{144} = 4.7$	sf
Total Antenna Wind Force Front =	$F_{ant} := qz \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antF} = 155$	lbs
Surface Area for One Antenna =	$SA_{antS} := \frac{L_{ant} \cdot T_{ant}}{144} = 1.9$	sf
Total Antenna Wind Force Side =	$F_{ant} := qz \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antS} = 63$	lbs

Wind Load (with ice)

Surface Area for One Antenna w/ Ice =	$SA_{ICEantF} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz})}{144} = 6.5$	sf
Total Antenna Wind Force w/ Ice Front =	$Fi_{ant} := qz_{ice} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantF} = 52$	lbs
Surface Area for One Antenna w/ Ice =	$SA_{ICEantS} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz})}{144} = 3.3$	sf
Total Antenna Wind Force w/ Ice Side =	$Fi_{ant} := qz_{ice} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantS} = 27$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 103$	lbs

Gravity Loads (ice only)

Volume of Each Antenna =	$V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 5632$	cu in
Volume of Ice on Each Antenna =	$V_{ice} := (L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz}) - V_{ant} = 6384$	cu in
Weight of Ice on Each Antenna =	$W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 207$	lbs
Weight of Ice on All Antennas =	$W_{ICEant} \cdot N_{ant} = 207$	lbs

Development of Wind & Ice Load on RRUS's

RRUS Data:

RRUS Model =	Ericsson 4480 B71+B85		
RRUS Shape =	Flat		(User Input)
RRUS Height =	$L_{RRUS} := 21.8$	in	(User Input)
RRUS Width =	$W_{RRUS} := 15.7$	in	(User Input)
RRUS Thickness =	$T_{RRUS} := 7.5$	in	(User Input)
RRUS Weight =	$WT_{RRUS} := 84$	lbs	(User Input)
Number of RRUS's =	$N_{RRUS} := 1$		
RRUS Aspect Ratio =	$Ar_{RRUS} := \frac{L_{RRUS}}{W_{RRUS}} = 1.4$		
RRUS Force Coefficient =	$Ca_{RRUS} = 1.2$		

Wind Load (without ice)

Surface Area for One RRUS =	$SA_{RRUSF} := \frac{L_{RRUS} \cdot W_{RRUS}}{144} = 2.4$	sf
Total RRUS Wind Force =	$F_{RRUS} := qz \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{RRUSF} = 78$	lbs
Surface Area for One RRUS =	$SA_{RRUSS} := \frac{L_{RRUS} \cdot T_{RRUS}}{144} = 1.1$	sf
Total RRUS Wind Force =	$F_{RRUS} := qz \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{RRUSS} = 37$	lbs

Wind Load (with ice)

Surface Area for One RRUS w/ Ice =	$SA_{ICERRUSF} := \frac{(L_{RRUS} + 2 \cdot t_{iz}) \cdot (W_{RRUS} + 2 \cdot t_{iz})}{144} = 3.7$	sf
Total RRUS Wind Force w/ Ice =	$Fi_{RRUS} := qz_{ice} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{ICERRUSF} = 30$	lbs
Surface Area for One RRUS w/ Ice =	$SA_{ICERRUSS} := \frac{(L_{RRUS} + 2 \cdot t_{iz}) \cdot (T_{RRUS} + 2 \cdot t_{iz})}{144} = 2.2$	sf
Total RRUS Wind Force w/ Ice =	$Fi_{RRUS} := qz_{ice} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{ICERRUSS} = 18$	lbs

Gravity Load (without ice)

Weight of All RRUSs =	$WT_{RRUS} \cdot N_{RRUS} = 84$	lbs

Gravity Loads (ice only)

Volume of Each RRUS =	$V_{RRUS} := L_{RRUS} \cdot W_{RRUS} \cdot T_{RRUS} = 2567$	cu in
Volume of Ice on Each RRUS =	$V_{ice} := (L_{RRUS} + 2 \cdot t_{iz}) \cdot (W_{RRUS} + 2 \cdot t_{iz}) \cdot (T_{RRUS} + 2 \cdot t_{iz}) - V_{RRUS} = 3798$	cu in
Weight of Ice on Each RRUS =	$W_{ICERRUS} := \frac{V_{ice}}{1728} \cdot Id = 123$	lbs
Weight of Ice on All RRUSs =	$W_{ICERRUS} \cdot N_{RRUS} = 123$	lbs

Development of Wind & Ice Load on RRUS's

RRUS Data:

RRUS Model =	Ericsson 4460 B25+B66		
RRUS Shape =	Flat		(User Input)
RRUS Height =	$L_{RRUS} := 19.6$	in	(User Input)
RRUS Width =	$W_{RRUS} := 15.7$	in	(User Input)
RRUS Thickness =	$T_{RRUS} := 12.1$	in	(User Input)
RRUS Weight =	$WT_{RRUS} := 109$	lbs	(User Input)
Number of RRUS's =	$N_{RRUS} := 1$		
RRUS Aspect Ratio =	$Ar_{RRUS} := \frac{L_{RRUS}}{W_{RRUS}} = 1.2$		
RRUS Force Coefficient =	$Ca_{RRUS} = 1.2$		

Wind Load (without ice)

Surface Area for One RRUS =	$SA_{RRUSF} := \frac{L_{RRUS} \cdot W_{RRUS}}{144} = 2.1$	sf
Total RRUS Wind Force =	$F_{RRUS} := qz \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{RRUSF} = 70$	lbs
Surface Area for One RRUS =	$SA_{RRUSS} := \frac{L_{RRUS} \cdot T_{RRUS}}{144} = 1.6$	sf
Total RRUS Wind Force =	$F_{RRUS} := qz \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{RRUSS} = 54$	lbs

Wind Load (with ice)

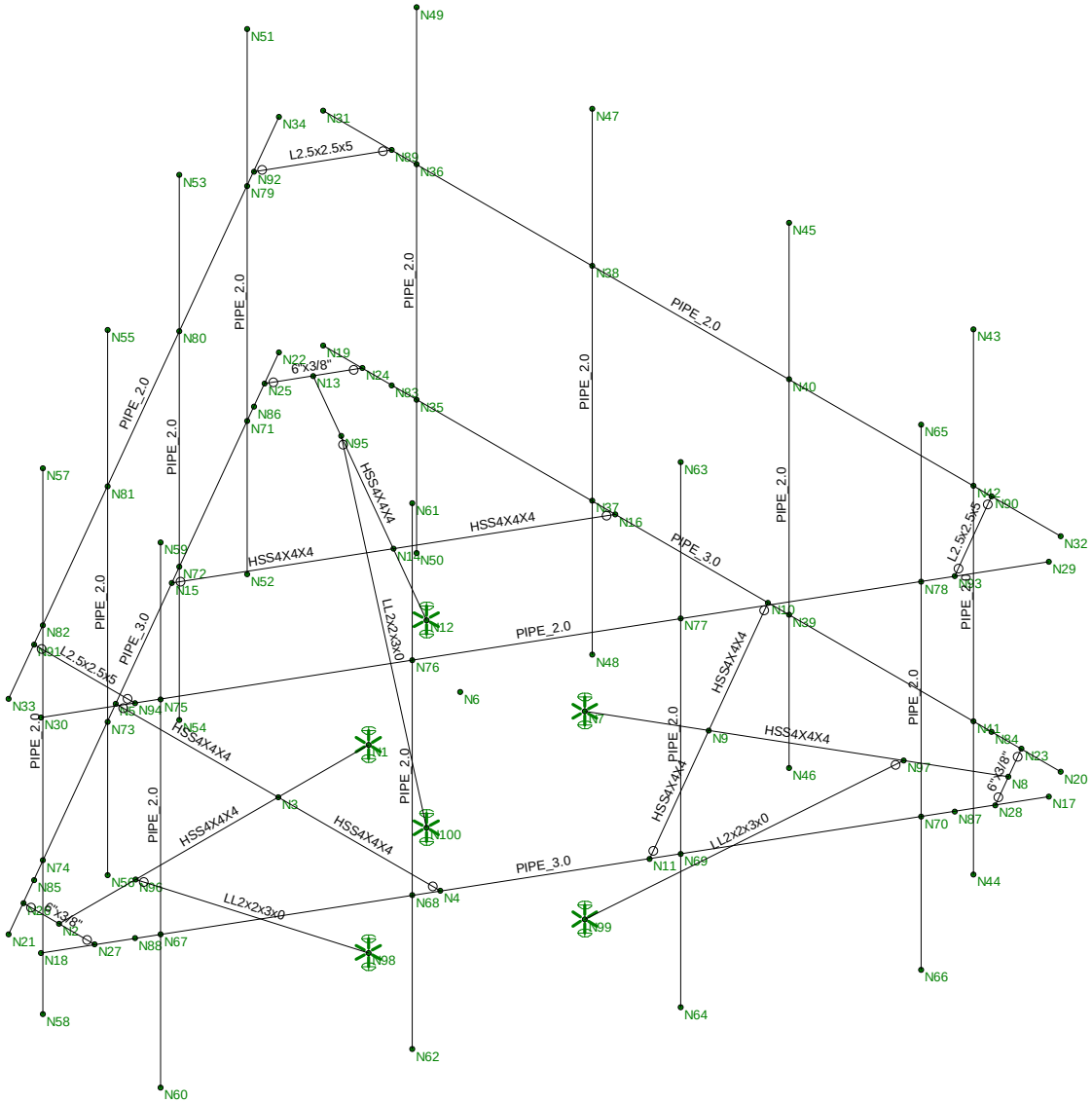
Surface Area for One RRUS w/ Ice =	$SA_{ICERRUSF} := \frac{(L_{RRUS} + 2 \cdot t_{iz}) \cdot (W_{RRUS} + 2 \cdot t_{iz})}{144} = 3.4$	sf
Total RRUS Wind Force w/ Ice =	$Fi_{RRUS} := qz_{ice} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{ICERRUSF} = 27$	lbs
Surface Area for One RRUS w/ Ice =	$SA_{ICERRUSS} := \frac{(L_{RRUS} + 2 \cdot t_{iz}) \cdot (T_{RRUS} + 2 \cdot t_{iz})}{144} = 2.8$	sf
Total RRUS Wind Force w/ Ice =	$Fi_{RRUS} := qz_{ice} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{ICERRUSS} = 22$	lbs

Gravity Load (without ice)

Weight of All RRUSs =	$WT_{RRUS} \cdot N_{RRUS} = 109$	lbs

Gravity Loads (ice only)

Volume of Each RRUS =	$V_{RRUS} := L_{RRUS} \cdot W_{RRUS} \cdot T_{RRUS} = 3723$	cu in
Volume of Ice on Each RRUS =	$V_{ice} := (L_{RRUS} + 2 \cdot t_{iz}) \cdot (W_{RRUS} + 2 \cdot t_{iz}) \cdot (T_{RRUS} + 2 \cdot t_{iz}) - V_{RRUS} = 4347$	cu in
Weight of Ice on Each RRUS =	$W_{ICERRUS} := \frac{V_{ice}}{1728} \cdot Id = 141$	lbs
Weight of Ice on All RRUSs =	$W_{ICERRUS} \cdot N_{RRUS} = 141$	lbs



Envelope Only Solution

Centek Engineering		
FJP	CTNL184A - Mount	July 22, 2021 at 8:27 AM
21085.04	Member Framing	CTNL184A_AMA.R3D

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 15th(360-16): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 14th(360-10): ASD
Cold Formed Steel Code	AISI S100-10: ASD
Wood Code	AWC NDS-12: ASD
Wood Temperature	< 100F
Concrete Code	ACI 318-11
Masonry Code	ACI 530-11: ASD
Aluminum Code	AA ADM1-10: ASD - Building
Stainless Steel Code	AISC 14th(360-10): ASD
Adjust Stiffness?	Yes(Iterative)

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

(Global) Model Settings, Continued

Seismic Code	ASCE 7-10
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	1
Cd X	1
Rho Z	1
Rho X	1

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1...	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	58	1.2
3	A992	29000	11154	.3	.65	.49	50	1.1	58	1.2
4	A500 Gr.42	29000	11154	.3	.65	.49	42	1.3	58	1.1
5	A500 Gr.46	29000	11154	.3	.65	.49	46	1.2	58	1.1
6	A53 Grade B	29000	11154	.3	.65	.49	35	1.5	58	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Outrigger_HSS4X4	HSS4X4X4	Beam	HSS Pipe	A500 Gr....	Typical	3.37	7.8	7.8	12.8
2	Face Tube_Pipe 3.0 STD	PIPE_3.0	Beam	Pipe	A53 Grad...	Typical	2.07	2.85	2.85	5.69
3	Handrails _Pipe 2.0 STD	PIPE_2.0	Beam	Pipe	A53 Grad...	Typical	1.02	.627	.627	1.25
4	Antenna Mast_Pipe 2.0 STD	PIPE_2.0	Column	Pipe	A53 Grad...	Typical	1.02	.627	.627	1.25
5	Plat. Horz_HSS4X4	HSS4X4X4	Beam	HSS Pipe	A500 Gr....	Typical	3.37	7.8	7.8	12.8
6	PL 3/8"x6 "	6"x3/8"	Beam	RECT	A36 Gr.36	Typical	2.25	.026	6.75	.101
7	Side railings	L2.5x2.5x5	Beam	RECT	A36 Gr.36	Typical	1.46	.837	.837	.05
8	Mount Reinforcement	LL2x2x3x0	Beam	RECT	A36 Gr.36	Typical	1.44	.994	.542	.018

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[...	Lcomp bot[...	L-torq...	Kyy	Kzz	Cb	Functi...
1	M1	Outrigger_...	5.248			Lbyy						Lateral
2	M2	Plat. Horz_...	2.75			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[...	Lcomp bot[...	L-torq...	Kyy	Kzz	Cb	Functi...
3	M3	Plat. Horz_...	2.75			Lbyy						Lateral
4	M4	Outrigger_...	5.248			Lbyy						Lateral
5	M5	Plat. Horz_...	2.75			Lbyy						Lateral
6	M6	Plat. Horz_...	2.75			Lbyy						Lateral
7	M7	Outrigger_...	5.248			Lbyy						Lateral
8	M8	Plat. Horz_...	2.75			Lbyy						Lateral
9	M9	Plat. Horz_...	2.75			Lbyy						Lateral
10	M10	Face Tube...	12.5			Lbyy						Lateral
11	M13	Face Tube...	12.5			Lbyy						Lateral
12	M14	Face Tube...	12.5			Lbyy						Lateral
13	M13A	PL 3/8"x6 "	1.212			Lbyy						Lateral
14	M14A	PL 3/8"x6 "	1.212			Lbyy						Lateral
15	M15	PL 3/8"x6 "	1.212			Lbyy						Lateral
16	M16	Handrails _...	12.5			Lbyy						Lateral
17	M17	Handrails _...	12.5			Lbyy						Lateral
18	M18	Handrails _...	12.5			Lbyy						Lateral
19	PSA.1	Antenna M...	8			Lbyy						Lateral
20	PSA.2	Antenna M...	8			Lbyy						Lateral
21	PSA.3	Antenna M...	8			Lbyy						Lateral
22	PSA.4	Antenna M...	8			Lbyy						Lateral
23	PSB.1	Antenna M...	8			Lbyy						Lateral
24	PSB.2	Antenna M...	8			Lbyy						Lateral
25	PSB.3	Antenna M...	8			Lbyy						Lateral
26	PSB.4	Antenna M...	8			Lbyy						Lateral
27	PSC.1	Antenna M...	8			Lbyy						Lateral
28	PSC.2	Antenna M...	8			Lbyy						Lateral
29	PSC.3	Antenna M...	8			Lbyy						Lateral
30	PSC.4	Antenna M...	8			Lbyy						Lateral
31	M31	Side railings	1.712			Lbyy						Lateral
32	M32	Side railings	1.712			Lbyy						Lateral
33	M33	Side railings	1.712			Lbyy						Lateral
34	M34	Mount Rein...	4.991			Lbyy						Lateral
35	M35	Mount Rein...	4.991			Lbyy						Lateral
36	M36	Mount Rein...	4.991			Lbyy						Lateral

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design ...
1	M1	N1	N2			Outrigger_HSS4X4	Beam	HSS Pipe	A500 ...	Typical
2	M2	N4	N3		180	Plat. Horz_HSS4X4	Beam	HSS Pipe	A500 ...	Typical
3	M3	N5	N3			Plat. Horz_HSS4X4	Beam	HSS Pipe	A500 ...	Typical
4	M4	N7	N8			Outrigger_HSS4X4	Beam	HSS Pipe	A500 ...	Typical
5	M5	N10	N9		180	Plat. Horz_HSS4X4	Beam	HSS Pipe	A500 ...	Typical
6	M6	N11	N9			Plat. Horz_HSS4X4	Beam	HSS Pipe	A500 ...	Typical
7	M7	N12	N13			Outrigger_HSS4X4	Beam	HSS Pipe	A500 ...	Typical
8	M8	N15	N14		180	Plat. Horz_HSS4X4	Beam	HSS Pipe	A500 ...	Typical
9	M9	N16	N14			Plat. Horz_HSS4X4	Beam	HSS Pipe	A500 ...	Typical
10	M10	N17	N18			Face Tube_Pipe 3.0 STD	Beam	Pipe	A53 Gr...	Typical
11	M13	N19	N20			Face Tube_Pipe 3.0 STD	Beam	Pipe	A53 Gr...	Typical
12	M14	N21	N22			Face Tube_Pipe 3.0 STD	Beam	Pipe	A53 Gr...	Typical
13	M13A	N28	N23			PL 3/8"x6 "	Beam	RECT	A36 Gr...	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design ...
14	M14A	N24	N25			PL 3/8"x6 "	Beam	RECT	A36 Gr...	Typical
15	M15	N27	N26			PL 3/8"x6 "	Beam	RECT	A36 Gr...	Typical
16	M16	N29	N30			Handrails _Pipe 2.0 STD	Beam	Pipe	A53 Gr...	Typical
17	M17	N31	N32			Handrails _Pipe 2.0 STD	Beam	Pipe	A53 Gr...	Typical
18	M18	N33	N34			Handrails _Pipe 2.0 STD	Beam	Pipe	A53 Gr...	Typical
19	PSA.1	N43	N44			Antenna Mast_Pipe 2.0 STD	Colu...	Pipe	A53 Gr...	Typical
20	PSA.2	N45	N46			Antenna Mast_Pipe 2.0 STD	Colu...	Pipe	A53 Gr...	Typical
21	PSA.3	N47	N48			Antenna Mast_Pipe 2.0 STD	Colu...	Pipe	A53 Gr...	Typical
22	PSA.4	N49	N50			Antenna Mast_Pipe 2.0 STD	Colu...	Pipe	A53 Gr...	Typical
23	PSB.1	N51	N52			Antenna Mast_Pipe 2.0 STD	Colu...	Pipe	A53 Gr...	Typical
24	PSB.2	N53	N54			Antenna Mast_Pipe 2.0 STD	Colu...	Pipe	A53 Gr...	Typical
25	PSB.3	N55	N56			Antenna Mast_Pipe 2.0 STD	Colu...	Pipe	A53 Gr...	Typical
26	PSB.4	N57	N58			Antenna Mast_Pipe 2.0 STD	Colu...	Pipe	A53 Gr...	Typical
27	PSC.1	N59	N60			Antenna Mast_Pipe 2.0 STD	Colu...	Pipe	A53 Gr...	Typical
28	PSC.2	N61	N62			Antenna Mast_Pipe 2.0 STD	Colu...	Pipe	A53 Gr...	Typical
29	PSC.3	N63	N64			Antenna Mast_Pipe 2.0 STD	Colu...	Pipe	A53 Gr...	Typical
30	PSC.4	N65	N66			Antenna Mast_Pipe 2.0 STD	Colu...	Pipe	A53 Gr...	Typical
31	M31	N91	N94		180	Side railings	Beam	RECT	A36 Gr...	Typical
32	M32	N93	N90		180	Side railings	Beam	RECT	A36 Gr...	Typical
33	M33	N89	N92		180	Side railings	Beam	RECT	A36 Gr...	Typical
34	M34	N97	N99			Mount Reinforcement	Beam	RECT	A36 Gr...	Typical
35	M35	N95	N100			Mount Reinforcement	Beam	RECT	A36 Gr...	Typical
36	M36	N96	N98			Mount Reinforcement	Beam	RECT	A36 Gr...	Typical

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N1	Reaction	Reaction	Reaction		Reaction	
2	N7	Reaction	Reaction	Reaction		Reaction	
3	N12	Reaction	Reaction	Reaction		Reaction	
4	N95						
5	N96						
6	N97						
7	N98	Reaction	Reaction	Reaction		Reaction	
8	N99	Reaction	Reaction	Reaction		Reaction	
9	N100	Reaction	Reaction	Reaction		Reaction	

Member Point Loads (BLC 2 : Equipment Weight)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	PSA.2	Y	-.075	1.083
2	PSA.2	Y	-.075	5.917
3	PSA.4	Y	-.052	1.667
4	PSA.4	Y	-.052	4.417
5	PSA.1	Y	-.052	.667
6	PSA.1	Y	-.052	5.333
7	PSA.2	Y	-.084	1
8	PSA.2	Y	-.109	7
9	PSB.2	Y	-.075	1.083
10	PSB.2	Y	-.075	5.917
11	PSB.4	Y	-.052	1.667

Member Point Loads (BLC 2 : Equipment Weight) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
12	PSB.4	Y	-.052	4.417
13	PSB.1	Y	-.052	.667
14	PSB.1	Y	-.052	5.25
15	PSB.2	Y	-.084	1
16	PSB.2	Y	-.109	7
17	PSC.2	Y	-.075	1.083
18	PSC.2	Y	-.075	5.917
19	PSC.4	Y	-.052	1.667
20	PSC.4	Y	-.052	4.417
21	PSC.1	Y	-.052	.667
22	PSC.1	Y	-.052	5.333
23	PSC.2	Y	-.084	1
24	PSC.2	Y	-.109	7

Member Point Loads (BLC 3 : Ice Weight)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	PSA.2	Y	-.285	1.083
2	PSA.2	Y	-.285	5.917
3	PSA.4	Y	-.104	1.667
4	PSA.4	Y	-.104	4.417
5	PSA.1	Y	-.096	.667
6	PSA.1	Y	-.096	5.333
7	PSA.2	Y	-.123	1
8	PSA.2	Y	-.141	7
9	PSB.2	Y	-.285	1.083
10	PSB.2	Y	-.285	5.917
11	PSB.4	Y	-.104	1.667
12	PSB.4	Y	-.104	4.417
13	PSB.1	Y	-.096	.667
14	PSB.1	Y	-.096	5.25
15	PSB.2	Y	-.123	1
16	PSB.2	Y	-.141	7
17	PSC.2	Y	-.285	1.083
18	PSC.2	Y	-.285	5.917
19	PSC.4	Y	-.104	1.667
20	PSC.4	Y	-.104	4.417
21	PSC.1	Y	-.096	.667
22	PSC.1	Y	-.096	5.333
23	PSC.2	Y	-.123	1
24	PSC.2	Y	-.141	7

Member Point Loads (BLC 4 : Wind w/ Ice X (6 psf))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	PSA.2	X	.039	1.083
2	PSA.2	X	.039	5.917
3	PSA.4	X	.014	1.667
4	PSA.4	X	.014	4.417
5	PSA.1	X	.016	.667
6	PSA.1	X	.016	5.333
7	PSA.2	X	.018	1
8	PSA.2	X	.022	7

Member Point Loads (BLC 4 : Wind w/ Ice X (6 psf)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
9	PSB.2	X	.085	1.083
10	PSB.2	X	.085	5.917
11	PSB.4	X	.026	1.667
12	PSB.4	X	.026	4.417
13	PSB.1	X	.03	.667
14	PSB.1	X	.03	5.25
15	PSB.2	X	.03	1
16	PSB.2	X	.027	7
17	PSC.2	X	.085	1.083
18	PSC.2	X	.085	5.917
19	PSC.4	X	.026	1.667
20	PSC.4	X	.026	4.417
21	PSC.1	X	.03	.667
22	PSC.1	X	.03	5.333
23	PSC.2	X	.03	1
24	PSC.2	X	.027	7

Member Point Loads (BLC 5 : Wind X(25 psf))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	PSA.2	X	.098	1.083
2	PSA.2	X	.098	5.917
3	PSA.4	X	.032	1.667
4	PSA.4	X	.032	4.417
5	PSA.1	X	.031	.667
6	PSA.1	X	.031	5.333
7	PSA.2	X	.037	1
8	PSA.2	X	.054	7
9	PSB.2	X	.277	1.083
10	PSB.2	X	.277	5.917
11	PSB.4	X	.078	1.667
12	PSB.4	X	.078	4.417
13	PSB.1	X	.081	.667
14	PSB.1	X	.081	5.25
15	PSB.2	X	.078	1
16	PSB.2	X	.07	7
17	PSC.2	X	.277	1.083
18	PSC.2	X	.277	5.917
19	PSC.4	X	.078	1.667
20	PSC.4	X	.078	4.417
21	PSC.1	X	.081	.667
22	PSC.1	X	.081	5.333
23	PSC.2	X	.078	1
24	PSC.2	X	.07	7

Member Point Loads (BLC 6 : Wind w/ Ice Z(6 psf))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	PSA.2	Z	.085	1.083
2	PSA.2	Z	.085	5.917
3	PSA.4	Z	.026	1.667
4	PSA.4	Z	.026	4.417
5	PSA.1	Z	.03	.667

Member Point Loads (BLC 6 : Wind w/ Ice Z(6 psf)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
6	PSA.1	Z	.03	5.333
7	PSA.2	Z	.03	1
8	PSA.2	Z	.027	7
9	PSB.2	Z	.039	1.083
10	PSB.2	Z	.039	5.917
11	PSB.4	Z	.014	1.667
12	PSB.4	Z	.014	4.417
13	PSB.1	Z	.016	.667
14	PSB.1	Z	.016	5.25
15	PSB.2	Z	.018	1
16	PSB.2	Z	.022	7
17	PSC.2	Z	.039	1.083
18	PSC.2	Z	.039	5.917
19	PSC.4	Z	.014	1.667
20	PSC.4	Z	.014	4.417
21	PSC.1	Z	.016	.667
22	PSC.1	Z	.016	5.333
23	PSC.2	Z	.018	1
24	PSC.2	Z	.022	7

Member Point Loads (BLC 7 : Wind Z (25 psf))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	PSA.2	Z	.277	1.083
2	PSA.2	Z	.277	5.917
3	PSA.4	Z	.078	1.667
4	PSA.4	Z	.078	4.417
5	PSA.1	Z	.081	.667
6	PSA.1	Z	.081	5.333
7	PSA.2	Z	.078	1
8	PSA.2	Z	.07	7
9	PSB.2	Z	.098	1.083
10	PSB.2	Z	.098	5.917
11	PSB.4	Z	.032	1.667
12	PSB.4	Z	.032	4.417
13	PSB.1	Z	.031	.667
14	PSB.1	Z	.031	5.25
15	PSB.2	Z	.037	1
16	PSB.2	Z	.054	7
17	PSC.2	Z	.098	1.083
18	PSC.2	Z	.098	5.917
19	PSC.4	Z	.032	1.667
20	PSC.4	Z	.032	4.417
21	PSC.1	Z	.031	.667
22	PSC.1	Z	.031	5.333
23	PSC.2	Z	.037	1
24	PSC.2	Z	.054	7

Member Distributed Loads (BLC 4 : Wind w/ Ice X (6 psf))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[f...	End Location[ft...
1	M34	X	.001	.001	0	0
2	M35	X	.001	.001	0	0
3	M36	X	.001	.001	0	0
4	PSA.2	X	.001	.001	0	0
5	PSA.3	X	.001	.001	0	0
6	PSB.2	X	.001	.001	0	0
7	PSB.3	X	.001	.001	0	0
8	PSC.2	X	.001	.001	0	0
9	PSC.3	X	.001	.001	0	0
10	M16	X	.001	.001	0	0
11	M18	X	.001	.001	0	0
12	M10	X	.002	.002	0	0
13	M14	X	.002	.002	0	0

Member Distributed Loads (BLC 5 : Wind X(25 psf))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[f...	End Location[ft...
1	M34	X	.004	.004	0	0
2	M35	X	.004	.004	0	0
3	M36	X	.004	.004	0	0
4	PSA.2	X	.005	.005	0	0
5	PSA.3	X	.005	.005	0	0
6	PSB.2	X	.005	.005	0	0
7	PSB.3	X	.005	.005	0	0
8	PSC.2	X	.005	.005	0	0
9	PSC.3	X	.005	.005	0	0
10	M16	X	.005	.005	0	0
11	M18	X	.005	.005	0	0
12	M10	X	.007	.007	0	0
13	M14	X	.007	.007	0	0

Member Distributed Loads (BLC 6 : Wind w/ Ice Z(6 psf))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[f...	End Location[ft...
1	M34	Z	.001	.001	0	0
2	M35	Z	.001	.001	0	0
3	PSA.2	Z	.001	.001	0	0
4	PSA.3	Z	.001	.001	0	0
5	PSB.2	Z	.001	.001	0	0
6	PSB.3	Z	.001	.001	0	0
7	PSC.2	Z	.001	.001	0	0
8	PSC.3	Z	.001	.001	0	0
9	M13	Z	.001	.001	0	0
10	M17	Z	.002	.002	0	0

Member Distributed Loads (BLC 7 : Wind Z (25 psf))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[f...	End Location[ft...
1	M13	Z	.007	.007	0	0
2	PSC.3	Z	.005	.005	0	0
3	PSC.2	Z	.005	.005	0	0
4	PSB.3	Z	.005	.005	0	0

Member Distributed Loads (BLC 7 : Wind Z (25 psf)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[f...	End Location[ft...
5	PSB.2	Z	.005	.005	0	0
6	PSA.3	Z	.005	.005	0	0
7	PSA.2	Z	.005	.005	0	0
8	M17	Z	.005	.005	0	0
9	M34	Z	.004	.004	0	0
10	M35	Z	.004	.004	0	0

Member Distributed Loads (BLC 8 : BLC 2 Transient Area Loads)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[f...	End Location[ft...
1	M1	Y	-.015	-.007	2.099	3.149
2	M1	Y	-.007	-.004	3.149	4.198
3	M1	Y	-.004	-.005	4.198	5.248
4	M2	Y	-.004	-.004	.169	2.704
5	M3	Y	-.004	-.004	.169	2.704
6	M10	Y	-.00071	-.003	7.5	9.167
7	M10	Y	-.003	-.003	9.167	10.833
8	M10	Y	-.003	-.0004574	10.833	12.5
9	M14	Y	-.0004575	-.003	0	1.667
10	M14	Y	-.003	-.003	1.667	3.333
11	M14	Y	-.003	-.0007098	3.333	5
12	M15	Y	-.0008711	-.0008711	0	1.212
13	M7	Y	-.015	-.007	2.099	3.149
14	M7	Y	-.007	-.004	3.149	4.198
15	M7	Y	-.004	-.005	4.198	5.248
16	M8	Y	-.004	-.004	.169	2.704
17	M9	Y	-.004	-.004	.169	2.704
18	M13	Y	-.0004575	-.003	0	1.667
19	M13	Y	-.003	-.003	1.667	3.333
20	M13	Y	-.003	-.0007098	3.333	5
21	M14	Y	-.00071	-.003	7.5	9.167
22	M14	Y	-.003	-.003	9.167	10.833
23	M14	Y	-.003	-.0004574	10.833	12.5
24	M14A	Y	-.0008711	-.0008711	0	1.212
25	M4	Y	-.015	-.007	2.099	3.149
26	M4	Y	-.007	-.004	3.149	4.198
27	M4	Y	-.004	-.005	4.198	5.248
28	M5	Y	-.004	-.004	.169	2.704
29	M6	Y	-.004	-.004	.169	2.704
30	M10	Y	-.0004575	-.003	0	1.667
31	M10	Y	-.003	-.003	1.667	3.333
32	M10	Y	-.003	-.0007098	3.333	5
33	M13	Y	-.00071	-.003	7.5	9.167
34	M13	Y	-.003	-.003	9.167	10.833
35	M13	Y	-.003	-.0004574	10.833	12.5
36	M13A	Y	-.0008711	-.0008711	0	1.212

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	J...	Point	Distribu...	Area(M...	Surface...
1	Self Weight	None		-1						
2	Equipment Weight	None					24		3	
3	Ice Weight	None					24			
4	Wind w/ Ice X (6 psf)	None					24	13		
5	Wind X(25 psf)	None					24	13		
6	Wind w/ Ice Z(6 psf)	None					24	10		
7	Wind Z (25 psf)	None					24	10		
8	BLC 2 Transient Area Loads	None						36		

Load Combinations

	Description	Solve	PDelta	...	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.2D + 1.6W (X-directi...	Yes	Y		1	1.2	2	1.2	5	1.6																
2	0.9D + 1.6W (X-directi...	Yes	Y		1	.9	2	.9	5	1.6																
3	1.2D + 1.0Di + 1.0Wi (...	Yes	Y		1	1.2	2	1.2	3	1	4	1														
4	1.2D + 1.6W (X-directi...	Yes	Y		1	1.2	2	1.2	7	1.6																
5	0.9D + 1.6W (X-directi...	Yes	Y		1	.9	2	.9	7	1.6																
6	1.2D + 1.0Di + 1.0Wi (...	Yes	Y		1	1.2	2	1.2	3	1	6	1														

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N1	max	-.032	6	.631	3	-1.199	2	0	6	-.013	6	0	6
2		min	-2.414	1	-.044	5	-3.331	4	0	1	-3.039	2	0	1
3	N7	max	-.365	5	.666	6	1.667	1	0	6	1.699	4	0	6
4		min	-3.286	1	-.135	2	-1.646	5	0	1	.014	2	0	1
5	N12	max	1.937	6	.702	3	1.009	3	0	6	.44	1	0	6
6		min	-2.107	2	.416	5	-.92	5	0	1	-1.229	4	0	1
7	N98	max	0	6	2.068	6	2.662	6	0	6	0	6	0	6
8		min	-.016	2	.686	2	.875	2	0	1	-.001	2	0	1
9	N99	max	2.361	1	2.132	1	-.107	5	0	6	0	4	0	6
10		min	.156	5	.15	5	-1.373	1	0	1	0	2	0	1
11	N100	max	.574	2	1.706	6	.341	2	0	6	0	3	0	6
12		min	-1.899	6	-.516	2	-1.098	6	0	1	0	5	0	1
13	Totals:	max	0	6	7.379	6	0	3						
14		min	-4.89	1	2.758	2	-3.641	4						

Envelope Joint Displacements

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [...	LC	Y Rotation [...	LC	Z Rotation [...	LC
1	N1	max	0	6	0	6	0	6	8.596e-4	6	0	6	-3.067e-4	5
2		min	0	1	0	1	0	1	2.417e-4	2	0	1	-1.159e-3	1
3	N2	max	.103	2	-.011	2	.002	4	1.078e-3	6	1.857e-3	2	7.661e-4	2
4		min	0	4	-.027	6	0	2	4.785e-4	2	-5.691e-6	4	-1.468e-3	6
5	N3	max	.023	2	-.003	2	0	4	5.889e-4	4	1.452e-3	2	-3.067e-4	5
6		min	0	6	-.013	6	0	2	1.923e-5	2	-4.05e-5	4	-1.159e-3	1
7	N4	max	.023	2	-.046	5	.026	4	6.897e-3	1	8.886e-4	2	-9.887e-4	6
8		min	0	4	-.088	3	-.026	2	1.498e-3	6	1.179e-4	6	-1.712e-2	1
9	N5	max	.023	2	.025	2	.043	2	1.746e-3	5	2.438e-4	1	4.722e-3	4
10		min	0	6	-.039	6	.005	6	-7.31e-3	1	-2.79e-4	5	-1.919e-2	1

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [...	LC	Y Rotation [...	LC	Z Rotation [...	LC
11	N6	max	0	6	0	6	0	6	0	6	0	6	0	6
12		min	0	1	0	1	0	1	0	1	0	1	0	1
13	N7	max	0	6	0	6	0	6	4.024e-4	5	0	6	-3.969e-4	6
14		min	0	1	0	1	0	1	-1.005e-3	3	0	1	-6.663e-4	1
15	N8	max	.029	4	-.003	5	.05	5	-6.511e-4	5	-6.561e-5	3	2.133e-4	5
16		min	.003	3	-.027	3	.001	3	-1.809e-3	3	-1.119e-3	4	-5.658e-4	1
17	N9	max	.006	4	-.001	5	.01	5	5.896e-4	5	1.696e-4	2	1.366e-4	6
18		min	0	2	-.013	3	-.001	1	-7.519e-4	3	-5.671e-4	4	-7.274e-4	2
19	N10	max	.009	1	.012	5	.018	5	1.797e-2	4	9.348e-5	2	-2.764e-4	2
20		min	-.008	5	-.082	3	-.006	1	-3.605e-4	2	-1.21e-3	5	-3.205e-3	4
21	N11	max	.033	2	-.034	5	.02	4	1.02e-2	1	-4.088e-5	6	-1.853e-3	6
22		min	-.011	4	-.055	1	-.02	2	2.422e-3	6	-6.339e-4	2	-1.255e-2	1
23	N12	max	0	6	0	6	0	6	6.906e-4	4	0	6	1.114e-3	6
24		min	0	1	0	1	0	1	-4.485e-4	2	0	1	-1.564e-4	2
25	N13	max	.009	2	.007	2	.039	5	8.191e-4	3	8.554e-4	5	1.476e-3	6
26		min	-.023	4	-.023	6	-.014	1	-1.758e-4	5	-4.274e-4	1	-1.642e-4	2
27	N14	max	.001	2	.001	2	.008	5	9.169e-4	4	5.345e-4	5	5.767e-4	6
28		min	-.005	4	-.011	6	0	1	-1.784e-4	2	7.012e-6	3	-6.243e-4	2
29	N15	max	.05	2	.015	2	.027	2	4.526e-3	5	2.939e-4	4	6.049e-3	4
30		min	.002	6	-.084	6	.003	6	-1.215e-2	1	-1.431e-3	2	-1.458e-2	1
31	N16	max	.009	1	.023	5	.006	4	1.723e-2	4	3.304e-4	4	2.619e-3	5
32		min	-.008	5	-.037	3	.001	3	-4.561e-3	1	-6.067e-5	1	-1.101e-3	1
33	N17	max	.042	4	.006	5	.051	4	8.953e-3	4	1.406e-4	2	-2.68e-3	3
34		min	.009	3	-.019	1	-.017	2	2.446e-3	3	-1.072e-3	4	-1.44e-2	4
35	N18	max	.115	2	.001	2	.027	1	1.147e-2	2	1.754e-3	1	-2.229e-3	6
36		min	-.002	4	-.023	4	.006	3	-1.233e-3	6	-1.802e-4	5	-2.168e-2	1
37	N19	max	.009	1	.012	2	.054	5	1.894e-2	4	8.601e-4	5	-2.773e-4	5
38		min	-.008	5	-.007	6	-.014	1	-1.066e-2	1	-1.373e-4	1	-8.496e-4	3
39	N20	max	.01	1	-.002	5	.076	4	2.131e-2	4	-2.564e-5	1	2.259e-3	6
40		min	-.007	5	-.024	1	0	2	9.74e-4	3	-5.501e-4	4	4.011e-4	2
41	N21	max	.119	2	-.009	3	.02	4	1.07e-3	5	2.199e-3	2	2.372e-3	4
42		min	0	4	-.017	4	-.012	2	-1.315e-2	1	-1.118e-5	4	-2.211e-2	1
43	N22	max	.062	1	.014	2	.039	5	7.299e-3	4	7.974e-4	5	1.056e-2	5
44		min	-.033	5	-.015	6	.002	3	-9.043e-3	2	5.717e-5	3	-1.785e-2	1
45	N23	max	.01	1	-.008	5	.071	4	2.131e-2	4	-2.564e-5	1	2.26e-3	6
46		min	-.007	5	-.038	3	0	2	9.74e-4	3	-5.489e-4	4	4.018e-4	2
47	N24	max	.009	1	.008	2	.048	5	1.894e-2	4	8.588e-4	5	-2.781e-4	5
48		min	-.008	5	-.013	6	-.013	1	-1.066e-2	1	-1.373e-4	1	-8.506e-4	3
49	N25	max	.065	1	.006	2	.036	5	7.3e-3	4	7.974e-4	5	1.056e-2	5
50		min	-.027	4	-.033	6	.002	3	-9.042e-3	2	5.734e-5	3	-1.785e-2	1
51	N26	max	.103	2	-.016	3	.02	4	1.07e-3	5	2.198e-3	2	2.372e-3	4
52		min	0	4	-.019	1	-.003	1	-1.315e-2	1	-1.118e-5	4	-2.211e-2	1
53	N27	max	.103	2	-.005	2	.026	4	1.147e-2	2	1.753e-3	1	-2.23e-3	6
54		min	0	4	-.038	6	.005	3	-1.234e-3	6	-1.802e-4	5	-2.168e-2	1
55	N28	max	.039	1	.002	5	.047	4	8.954e-3	4	1.417e-4	2	-2.68e-3	3
56		min	.007	6	-.022	1	-.017	2	2.447e-3	3	-1.072e-3	4	-1.44e-2	4
57	N29	max	1.026	4	.045	5	.748	4	1.544e-2	4	9.425e-3	1	-3.604e-3	3
58		min	.111	3	-.046	1	.035	3	1.747e-3	3	-1.019e-2	4	-2.178e-2	4
59	N30	max	1.382	1	.04	2	.631	1	1.766e-2	1	1.019e-3	1	-1.041e-3	6
60		min	-.006	6	-.064	6	.037	6	9.484e-4	6	-6.934e-3	4	-3.643e-2	1
61	N31	max	.149	1	.053	2	.854	4	2.581e-2	4	-1.002e-3	6	1.145e-3	4
62		min	-.017	5	-.034	4	-.989	1	-1.878e-2	1	-1.206e-2	1	-2.663e-3	2

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [...	LC	Y Rotation [...	LC	Z Rotation [...	LC
63	N32	max	.149	1	-.03	5	1.123	4	3.476e-2	4	6.037e-3	5	-7.766e-5	6
64		min	-.018	5	-.078	1	.132	3	2.345e-3	3	-9.423e-3	1	-2.423e-3	1
65	N33	max	1.413	1	-.033	6	.04	5	1.745e-3	4	7.121e-3	4	-6.092e-5	6
66		min	.034	6	-.088	1	-.604	1	-1.58e-2	1	7.998e-4	3	-3.426e-2	1
67	N34	max	.854	1	.025	5	.587	4	1.271e-2	4	9.458e-3	1	1.765e-2	4
68		min	-.78	4	-.047	3	-.281	1	-1.386e-2	1	1.309e-3	6	-2.666e-2	1
69	N35	max	.009	1	.002	2	.038	5	1.907e-2	4	8.092e-4	5	-2.605e-4	5
70		min	-.008	5	-.022	6	-.011	1	-1.073e-2	1	-4.381e-4	1	-7.047e-4	1
71	N36	max	.149	1	.002	2	.957	4	2.591e-2	4	-9.768e-4	6	9.464e-4	4
72		min	-.017	5	-.022	6	-.761	1	-1.889e-2	1	-1.167e-2	1	-2.501e-3	2
73	N37	max	.009	1	.012	5	.008	4	1.811e-2	4	4.52e-4	5	1.981e-3	5
74		min	-.008	5	-.034	3	.001	3	-5.479e-3	1	-3.253e-4	1	-1.043e-3	1
75	N38	max	.149	1	.012	5	1.167	4	3.315e-2	4	-1.328e-3	6	-2.243e-4	5
76		min	-.017	5	-.034	3	-.34	1	-9.484e-3	1	-1.005e-2	1	-1.233e-3	1
77	N39	max	.009	1	0	5	.024	5	1.894e-2	4	-1.951e-5	3	-3.435e-4	2
78		min	-.007	5	-.086	3	-.006	1	1.581e-4	3	-1.343e-3	4	-2.395e-3	4
79	N40	max	.149	1	0	5	1.383	4	4.188e-2	4	-4.042e-4	6	2.618e-4	4
80		min	-.017	5	-.087	3	.012	3	3.633e-4	3	-9.054e-3	1	-1.899e-3	2
81	N41	max	.01	1	-.016	5	.066	4	2.145e-2	4	-8.943e-5	3	1.923e-3	6
82		min	-.007	5	-.059	3	0	2	1.015e-3	3	-5.891e-4	4	1.044e-4	2
83	N42	max	.149	1	-.016	5	1.231	4	3.486e-2	4	5.909e-3	5	-1.509e-5	6
84		min	-.018	5	-.059	3	.095	3	2.356e-3	3	-9.249e-3	1	-2.317e-3	1
85	N43	max	.227	1	-.016	5	2.23	4	3.66e-2	4	5.909e-3	5	-1.512e-5	6
86		min	0	5	-.059	3	.16	3	2.361e-3	3	-9.249e-3	1	-2.974e-3	1
87	N44	max	.051	3	-.016	5	-.027	3	2.145e-2	4	-8.943e-5	3	1.923e-3	6
88		min	.012	5	-.059	3	-.513	4	1.015e-3	3	-5.891e-4	4	1.044e-4	2
89	N45	max	.242	1	0	5	2.643	4	4.645e-2	4	-4.042e-4	6	2.624e-4	4
90		min	-.024	5	-.087	3	.022	3	3.662e-4	3	-9.054e-3	1	-3.709e-3	1
91	N46	max	.019	2	0	5	-.006	3	1.781e-2	4	-1.951e-5	3	4.929e-4	2
92		min	-.072	4	-.086	3	-.463	4	1.568e-4	3	-1.343e-3	4	-2.388e-3	4
93	N47	max	.186	1	.012	5	2.085	4	3.331e-2	4	-1.328e-3	6	-2.243e-4	5
94		min	-.011	5	-.034	3	-.602	1	-9.485e-3	1	-1.005e-2	1	-1.391e-3	1
95	N48	max	.046	5	.012	5	.151	1	1.796e-2	4	4.52e-4	5	1.981e-3	5
96		min	-.016	1	-.034	3	-.478	4	-5.479e-3	1	-3.253e-4	1	-8.955e-4	1
97	N49	max	.22	1	.002	2	1.679	4	2.619e-2	4	-9.768e-4	6	9.473e-4	4
98		min	-.043	4	-.022	6	-1.282	1	-1.891e-2	1	-1.167e-2	1	-2.604e-3	2
99	N50	max	-.008	2	.002	2	.279	1	1.907e-2	4	8.092e-4	5	-2.605e-4	5
100		min	-.017	6	-.022	6	-.477	4	-1.073e-2	1	-4.381e-4	1	-7.046e-4	1
101	N51	max	1.777	1	-.005	2	.889	4	1.333e-2	4	9.286e-3	1	1.778e-2	4
102		min	-1.162	4	-.055	6	-.745	1	-1.377e-2	1	1.288e-3	6	-2.855e-2	1
103	N52	max	.266	5	-.005	2	.258	2	7.278e-3	4	9.516e-4	5	1.062e-2	5
104		min	-.418	1	-.055	6	-.164	4	-8.941e-3	2	5.356e-5	3	-1.804e-2	1
105	N53	max	2.355	1	.003	2	.692	4	1.14e-2	4	6.937e-3	4	1.373e-2	4
106		min	-.811	4	-.088	6	-1.014	1	-1.811e-2	1	5.062e-4	3	-4.05e-2	1
107	N54	max	.19	4	.004	2	.338	1	3.975e-3	5	5.63e-4	4	6.778e-3	4
108		min	-.342	1	-.087	6	-.095	5	-1.161e-2	1	-1.254e-3	2	-1.452e-2	1
109	N55	max	2.214	1	.01	2	.356	5	4.332e-3	5	6.806e-3	4	6.273e-3	4
110		min	-.349	4	-.036	6	-1.049	1	-1.896e-2	1	6.887e-5	3	-3.399e-2	1
111	N56	max	.116	4	.011	2	.272	1	1.877e-3	4	7.653e-4	1	4.32e-3	4
112		min	-.515	1	-.036	6	-.031	4	-8.513e-3	1	-1.001e-4	5	-1.999e-2	1
113	N57	max	2.307	1	-.019	5	.157	4	1.797e-3	4	6.901e-3	4	-4.523e-5	6
114		min	.008	6	-.025	6	-1.017	1	-1.615e-2	1	7.735e-4	3	-3.453e-2	1

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [...	LC	Y Rotation [...	LC	Z Rotation [...	LC
115	N58	max	.059	4	-.019	5	.361	1	1.314e-3	5	2.266e-3	2	2.218e-3	4
116		min	-.522	1	-.024	6	-.015	5	-1.302e-2	1	2.473e-5	6	-2.239e-2	1
117	N59	max	2.41	1	-.012	2	1.116	1	1.789e-2	1	1.019e-3	1	-1.056e-3	6
118		min	.049	6	-.059	6	.083	6	1.144e-3	6	-6.809e-3	4	-3.82e-2	1
119	N60	max	-.054	6	-.012	2	.031	6	1.157e-2	2	1.854e-3	2	-2.001e-3	6
120		min	-.499	1	-.059	6	-.301	2	-8.932e-4	6	-2.712e-4	4	-2.175e-2	1
121	N61	max	2.419	1	-.043	5	1.114	1	1.957e-2	1	5.645e-3	1	-2.536e-3	6
122		min	.145	6	-.091	3	.15	6	2.464e-3	6	-6.055e-3	4	-4.189e-2	1
123	N62	max	-.03	6	-.043	5	-.023	6	7.956e-3	1	1.339e-3	2	-1.103e-3	6
124		min	-.433	1	-.09	3	-.238	1	1.081e-3	6	7.387e-5	6	-1.687e-2	1
125	N63	max	1.665	1	-.026	5	.79	4	1.398e-2	1	9.418e-3	1	-3.526e-3	6
126		min	.226	6	-.045	1	.184	3	3.14e-3	6	-7.448e-3	4	-2.545e-2	1
127	N64	max	-.062	6	-.026	5	-.055	6	9.625e-3	1	-8.681e-5	3	-2.206e-3	6
128		min	-.324	1	-.045	1	-.279	1	2.224e-3	6	-6.544e-4	4	-1.326e-2	1
129	N65	max	1.466	4	-.002	5	1.077	4	1.546e-2	4	9.15e-3	1	-3.672e-3	3
130		min	.243	3	-.025	3	.101	3	1.765e-3	3	-9.871e-3	4	-2.201e-2	4
131	N66	max	-.068	3	-.002	5	-.061	6	9.008e-3	4	2.337e-4	2	-2.818e-3	3
132		min	-.367	4	-.024	3	-.224	1	2.207e-3	3	-1.302e-3	4	-1.449e-2	4
133	N67	max	.088	2	-.012	2	.027	4	1.158e-2	2	1.854e-3	2	-2.001e-3	6
134		min	0	6	-.059	6	.003	3	-8.933e-4	6	-2.712e-4	4	-2.175e-2	1
135	N68	max	.028	2	-.043	5	.027	4	7.979e-3	1	1.339e-3	2	-1.112e-3	6
136		min	0	6	-.09	3	-.023	2	1.288e-3	6	7.387e-5	6	-1.799e-2	1
137	N69	max	.035	2	-.026	5	.021	4	9.626e-3	1	-8.681e-5	3	-2.206e-3	6
138		min	-.009	4	-.045	1	-.019	2	2.247e-3	6	-6.544e-4	4	-1.341e-2	1
139	N70	max	.04	2	-.002	5	.041	4	9.009e-3	4	2.337e-4	2	-2.818e-3	3
140		min	.005	6	-.024	3	-.016	2	2.207e-3	3	-1.302e-3	4	-1.449e-2	4
141	N71	max	.069	2	-.005	2	.032	5	7.278e-3	4	9.516e-4	5	1.062e-2	5
142		min	-.02	4	-.055	6	.002	3	-8.942e-3	2	5.356e-5	3	-1.804e-2	1
143	N72	max	.055	2	.004	2	.025	2	4.822e-3	5	5.63e-4	4	6.798e-3	4
144		min	.002	6	-.087	6	.004	6	-1.164e-2	1	-1.254e-3	2	-1.564e-2	1
145	N73	max	.025	1	.011	2	.042	2	2.024e-3	4	7.653e-4	1	4.321e-3	4
146		min	0	5	-.036	6	.005	6	-8.514e-3	1	-1.001e-4	5	-2.014e-2	1
147	N74	max	.082	2	-.019	5	.02	5	1.314e-3	5	2.266e-3	2	2.218e-3	4
148		min	0	4	-.024	6	.001	3	-1.302e-2	1	2.473e-5	6	-2.24e-2	1
149	N75	max	1.367	1	-.012	2	.622	1	1.787e-2	1	1.019e-3	1	-1.053e-3	6
150		min	.02	6	-.059	6	.052	6	9.303e-4	6	-6.809e-3	4	-3.645e-2	1
151	N76	max	1.284	1	-.043	5	.575	1	1.951e-2	1	5.645e-3	1	-2.516e-3	6
152		min	.075	6	-.091	3	.085	6	1.985e-3	6	-6.055e-3	4	-3.733e-2	1
153	N77	max	.963	1	-.026	5	.481	4	1.398e-2	1	9.418e-3	1	-3.525e-3	6
154		min	.128	6	-.045	1	.087	3	3.116e-3	6	-7.448e-3	4	-2.528e-2	1
155	N78	max	.859	4	-.002	5	.651	4	1.534e-2	4	9.15e-3	1	-3.612e-3	3
156		min	.142	3	-.025	3	.053	3	1.761e-3	3	-9.871e-3	4	-2.199e-2	4
157	N79	max	1	1	-.005	2	.525	4	1.266e-2	4	9.286e-3	1	1.776e-2	4
158		min	-.672	4	-.055	6	-.365	1	-1.376e-2	1	1.288e-3	6	-2.681e-2	1
159	N80	max	1.259	1	.003	2	.387	4	9.568e-3	4	6.937e-3	4	1.369e-2	4
160		min	-.433	4	-.088	6	-.515	1	-1.806e-2	1	5.062e-4	3	-3.595e-2	1
161	N81	max	1.277	1	.01	2	.238	4	4.174e-3	5	6.806e-3	4	6.272e-3	4
162		min	-.176	4	-.036	6	-.526	1	-1.896e-2	1	6.887e-5	3	-3.383e-2	1
163	N82	max	1.355	1	-.019	5	.108	4	1.694e-3	4	6.901e-3	4	-4.513e-5	6
164		min	.007	6	-.025	6	-.571	1	-1.614e-2	1	7.735e-4	3	-3.425e-2	1
165	N83	max	.009	1	.005	2	.042	5	1.901e-2	4	8.432e-4	5	-3.288e-4	5
166		min	-.008	5	-.018	6	-.013	1	-1.07e-2	1	-2.268e-4	1	-8.006e-4	3

Envelope Joint Displacements (Continued)

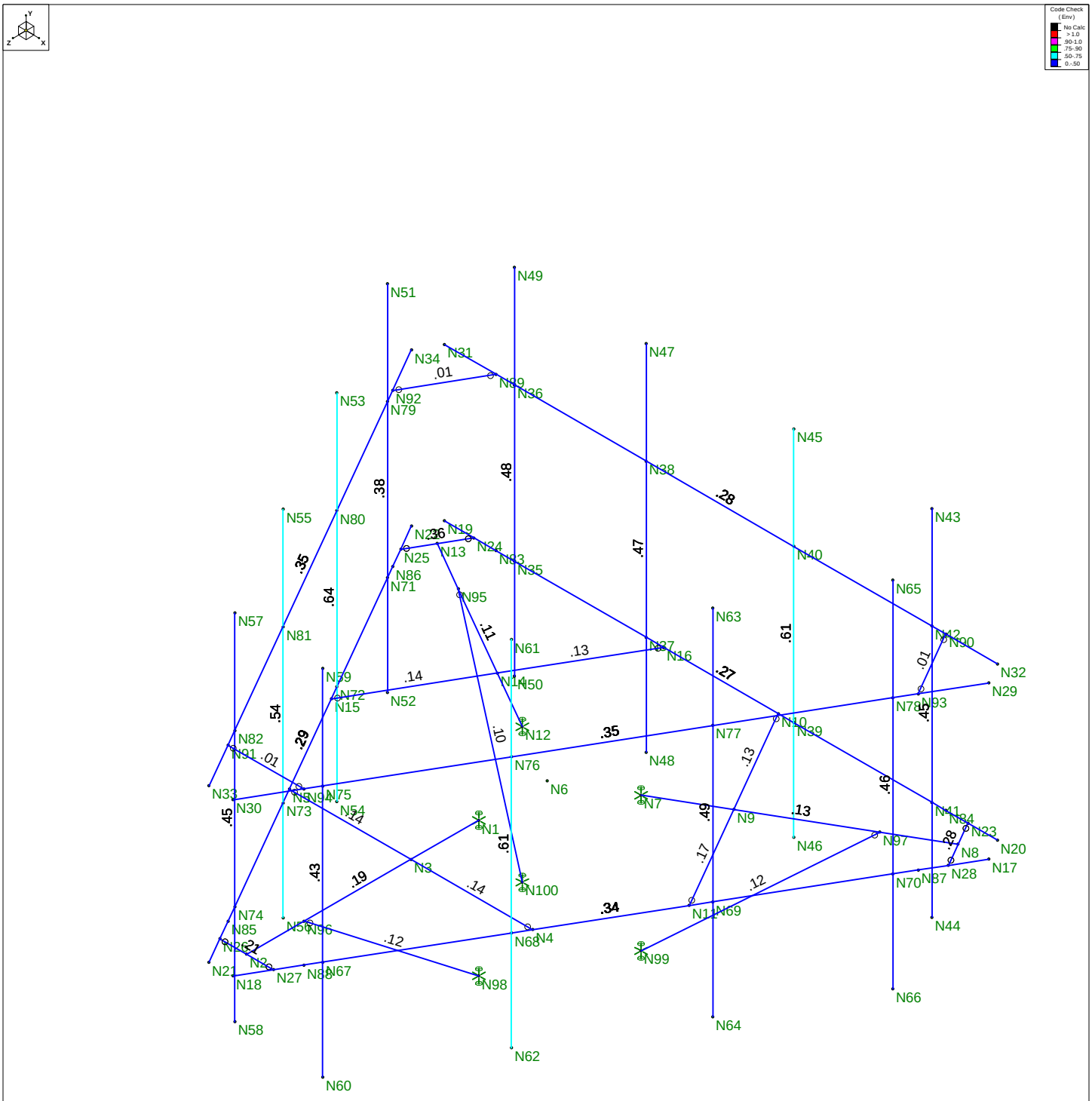
	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [...	LC	Y Rotation [...	LC	Z Rotation [...	LC
167	N84	max	.01	1	-.013	5	.068	4	2.14e-2	4	-6.357e-5	3	2.158e-3	6
168		min	-.007	5	-.051	3	0	2	9.993e-4	3	-5.634e-4	4	3.059e-4	2
169	N85	max	.092	2	-.018	5	.02	5	1.144e-3	5	2.217e-3	2	2.327e-3	4
170		min	0	4	-.022	1	0	3	-1.32e-2	1	-9.546e-8	6	-2.22e-2	1
171	N86	max	.067	1	0	2	.034	5	7.279e-3	4	8.558e-4	5	1.061e-2	5
172		min	-.023	4	-.047	6	.002	3	-8.976e-3	2	5.601e-5	3	-1.798e-2	1
173	N87	max	.039	1	0	5	.044	4	8.946e-3	4	1.698e-4	2	-2.721e-3	3
174		min	.006	6	-.023	1	-.016	2	2.376e-3	3	-1.141e-3	4	-1.447e-2	4
175	N88	max	.094	2	-.009	2	.027	4	1.157e-2	2	1.79e-3	1	-2.143e-3	6
176		min	0	6	-.051	6	.004	3	-1.118e-3	6	-2.145e-4	5	-2.171e-2	1
177	N89	max	.149	1	.015	2	.93	4	2.581e-2	4	-1.007e-3	6	1.134e-3	4
178		min	-.017	5	-.024	6	-.821	1	-1.878e-2	1	-1.206e-2	1	-2.671e-3	2
179	N90	max	.149	1	-.018	5	1.208	4	3.476e-2	4	6.058e-3	5	-6.674e-5	6
180		min	-.018	5	-.061	3	.103	3	2.345e-3	3	-9.423e-3	1	-2.412e-3	1
181	N91	max	1.37	1	-.027	5	.09	4	1.736e-3	4	7.121e-3	4	-5.547e-5	6
182		min	.014	6	-.04	1	-.58	1	-1.581e-2	1	7.971e-4	3	-3.425e-2	1
183	N92	max	.969	1	0	2	.538	4	1.272e-2	4	9.475e-3	1	1.764e-2	4
184		min	-.695	4	-.053	6	-.348	1	-1.385e-2	1	1.309e-3	6	-2.666e-2	1
185	N93	max	.903	4	.01	5	.676	4	1.545e-2	4	9.443e-3	1	-3.598e-3	3
186		min	.134	3	-.03	1	.048	3	1.756e-3	3	-1.019e-2	4	-2.177e-2	4
187	N94	max	1.37	1	-.001	2	.624	1	1.765e-2	1	1.001e-3	1	-1.046e-3	6
188		min	.014	6	-.06	6	.049	6	9.39e-4	6	-6.934e-3	4	-3.644e-2	1
189	N95	max	.005	2	.004	2	.027	5	8.088e-4	3	8.886e-4	5	9.516e-4	6
190		min	-.016	4	-.01	6	-.007	1	-2.834e-5	2	-4.905e-4	1	-1.083e-4	2
191	N96	max	.074	2	-.004	2	.002	4	4.532e-4	6	1.909e-3	2	1.162e-4	2
192		min	0	4	-.012	6	0	2	2.642e-4	2	-1.295e-6	6	-1.223e-3	6
193	N97	max	.02	4	0	5	.034	5	-2.568e-4	5	-7.015e-5	3	2.634e-4	6
194		min	.002	3	-.013	1	0	1	-1.249e-3	3	-1.182e-3	4	-1.404e-4	2
195	N98	max	0	6	0	6	0	6	4.529e-4	6	0	6	5.757e-6	4
196		min	0	1	0	1	0	1	2.679e-4	2	0	1	-2.349e-3	2
197	N99	max	0	6	0	6	0	6	1.147e-3	5	0	6	-4.515e-4	3
198		min	0	1	0	1	0	1	-1.906e-4	3	0	1	-8.444e-4	4
199	N100	max	0	6	0	6	0	6	9.509e-4	5	0	6	7.352e-4	4
200		min	0	1	0	1	0	1	-3.66e-4	1	0	1	-2.552e-4	2

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

	Me...	Sha...	Code C...	Lo...	LC	Shea...	Loc...	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y...	phi*Mn...	Cb	Eqn
1	M1	HS...	.193	0	1	.063	0	z	1	124.328	139.518	16.181	16.181	1.525	H1-1b
2	M2	HS...	.140	2.75	4	.191	2.75	y	1	135.171	139.518	16.181	16.181	1.693	H1-1b
3	M3	HS...	.140	2.75	6	.200	2.75	y	1	135.171	139.518	16.181	16.181	1.683	H1-1b
4	M4	HS...	.128	1.5...	1	.045	3.9...	y	1	124.328	139.518	16.181	16.181	2.12	H1-1b
5	M5	HS...	.126	2.75	6	.173	0	z	5	135.171	139.518	16.181	16.181	1.686	H1-1b
6	M6	HS...	.172	2.75	1	.147	2.75	y	1	135.171	139.518	16.181	16.181	1.689	H1-1b
7	M7	HS...	.115	1.5...	1	.037	3.9...	y	3	124.328	139.518	16.181	16.181	1.933	H1-1b
8	M8	HS...	.142	2.75	1	.181	0	z	2	135.171	139.518	16.181	16.181	1.8	H1-1b
9	M9	HS...	.129	2.75	3	.167	0	z	4	135.171	139.518	16.181	16.181	1.684	H1-1b
10	M10	PIP...	.339	7.5...	1	.377	7.5...		1	28.251	65.205	5.749	5.749	1.988	H3-6
11	M13	PIP...	.265	7.8...	4	.286	7.5...		4	28.251	65.205	5.749	5.749	1.521	H3-6
12	M14	PIP...	.295	5.0...	1	.339	4.9...		1	28.251	65.205	5.749	5.749	1.691	H1-1b
13	M1...	6"x...	.282	.606	4	.361	.606	y	4	28.164	72.9	.57	9.113	1.444	H1-1b

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

	Me...	Sha...	Code C...	Lo...	LC	Shea...	Loc...	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y...	phi*Mn...	Cb	Eqn
14	M1...	6"x...	.361	.606	2	.326	.606	y	1	28.164	72.9	.57	9.113	1.509	H1-1b
15	M15	6"x...	.210	.606	1	.429	.606	y	1	28.164	72.9	.57	9.113	1.49	H1-1b
16	M16	PIP...	.354	7.8...	1	.257	4.6...		1	6.295	32.13	1.872	1.872	3.652	H3-6
17	M17	PIP...	.285	7.9...	4	.209	7.8...		1	6.295	32.13	1.872	1.872	2.239	H1-1b
18	M18	PIP...	.353	7.9...	2	.221	10....		2	6.295	32.13	1.872	1.872	3.158	H1-1b
19	PS...	PIP...	.450	5.75	1	.193	5.4...		1	14.916	32.13	1.872	1.872	3.617	H1-1b
20	PS...	PIP...	.612	5.75	4	.178	5.75		1	14.916	32.13	1.872	1.872	3.58	H1-1b
21	PS...	PIP...	.470	5.75	4	.190	5.75		1	14.916	32.13	1.872	1.872	3.114	H1-1b
22	PS...	PIP...	.479	5.75	2	.230	4.5		1	14.916	32.13	1.872	1.872	4.141	H1-1b
23	PS...	PIP...	.377	5.75	5	.175	5.3...		2	14.916	32.13	1.872	1.872	2.945	H1-1b
24	PS...	PIP...	.637	5.75	1	.139	5.75		1	14.916	32.13	1.872	1.872	1.997	H1-1b
25	PS...	PIP...	.545	5.75	1	.143	5.75		4	14.916	32.13	1.872	1.872	2.973	H1-1b
26	PS...	PIP...	.452	5.75	1	.140	4.5		4	14.916	32.13	1.872	1.872	3.004	H1-1b
27	PS...	PIP...	.432	5.75	2	.140	5.4...		4	14.916	32.13	1.872	1.872	2.351	H1-1b
28	PS...	PIP...	.610	5.75	1	.134	5.75		4	14.916	32.13	1.872	1.872	1.888	H1-1b
29	PS...	PIP...	.487	5.75	1	.205	5.75		1	14.916	32.13	1.872	1.872	3.033	H1-1b
30	PS...	PIP...	.458	5.75	4	.181	4.5		4	14.916	32.13	1.872	1.872	3.072	H1-1b
31	M31	L2....	.008	.856	4	.244	0	y	1	42.973	47.304	1.316	3.061	1.136	H2-1
32	M32	L2....	.011	.856	4	.203	0	y	4	42.973	47.304	1.316	3.061	1.136	H2-1
33	M33	L2....	.013	.856	1	.170	0	y	1	42.973	47.304	1.316	3.061	1.136	H2-1
34	M34	LL2...	.123	0	1	.004	4.9...	z	4	28.249	46.656	2.147	1.607	1.138	H1-1b*
35	M35	LL2...	.098	4.9...	6	.003	4.9...	z	5	28.249	46.656	2.147	1.607	1.13	H1-1b*
36	M36	LL2...	.119	4.9...	6	.006	4.9...	z	2	28.249	46.656	2.147	1.607	1.667	H1-1b*



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Centek Engineering		SK - 1
FJP	CTNL184A - Mount - Rev.1	Nov 24, 2021 at 10:24 AM
21085.04	Member Unity Check	CTNL184A_AMA - Rev.1.R3D

RAN Template:	A&L Template:
67E5A998E 6160	67E5998E_1xAIR+1OP+1QP

CTNL184A_Coverage Strategy_1_draft

Print Name: Standard (Rad changed)
PORs: Coverage Strategy_Regional Coverage

Section 1 - Site Information

Site ID: CTNL184A
Status: Draft
Version: 1
Project Type: Coverage Strategy
Approved: Not Approved
Approved By: Not Approved
Last Modified: 11/10/2021 9:8:48 AM
Last Modified By: Michael.Low1@T-Mobile.com

Site Name: CTNL184A
Site Class: Monopole
Site Type: Structure Non Building
Plan Year: 2021
Market: CONNECTICUT CT
Vendor: Ericsson
Landlord: Not Specified

Latitude: 41.97865000
Longitude: -72.09443000
Address: 71 Sherman Rd
City, State: Woodstock, CT
Region: NORTHEAST

RAN Template: 67E5A998E 6160			**AL Template:** 67E5998E_1xAIR+1OP+1QP	
Sector Count: 3	**Antenna Count:** 9	**Coax Line Count:** 0	**TMA Count:** 0	**RRU Count:** 6

Section 2 - Existing Template Images

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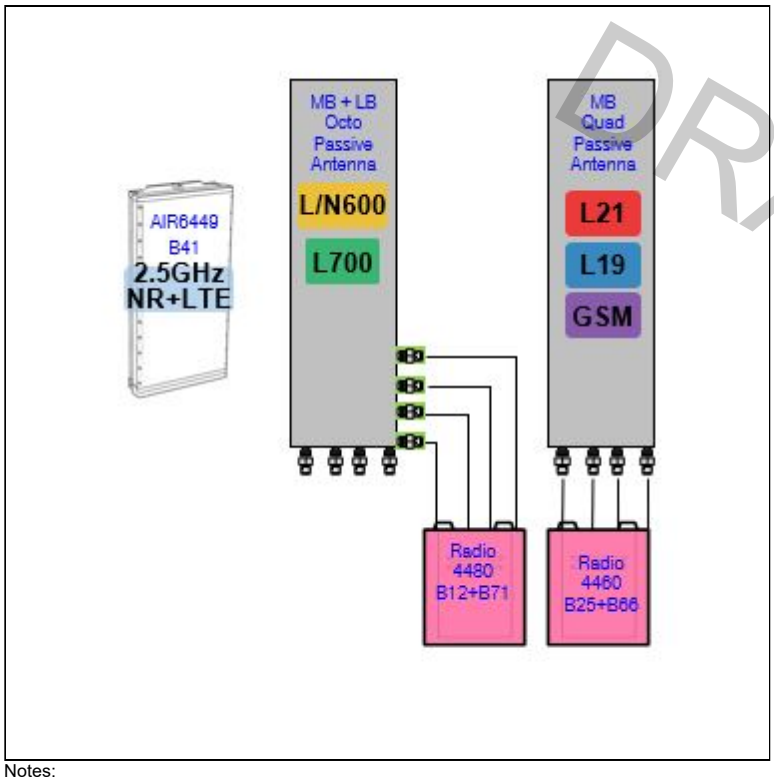
Section 3 - Proposed Template Images

67E5A998E.JPG



Notes:

Section 4 - Siteplan Images

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RAN Template:	A&L Template:
67E5A998E 6160	67E5998E_1xAIR+1OP+1QP

CTNL184A_Coverage Strategy_1_draft

Print Name: Standard (Rad changed)
PORs: Coverage Strategy_Regional Coverage

Section 5 - RAN Equipment

Existing RAN Equipment

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Proposed RAN Equipment

Template: 67E5A998E 6160

Enclosure	1	2	3
Enclosure Type	Enclosure 6160 AC V1	RBS 6601	B160
Baseband	BB 6648 (L700, L600, N600); BB 6648 (L2500, N2500); BB 6648 (L2100, L1900)	DUG20 (G1900)	
Transport System	CSR IXRe V2 (Gen2)		
Functionality Groups	Ericsson Hybrid Trunk 6/24 4AWG *Select Length* **(x 3)**		

RAN Scope of Work:

RAD center at 105' not 117' due to another application with ACT to occupy 117'

RAN Template:	A&L Template:
67E5A998E 6160	67E5998E_1xAIR+1OP+1QP

CTNL184A_Coverage Strategy_1_draft

Print Name: Standard (Rad changed)
PORs: Coverage Strategy_Regional Coverage

Section 6 - A&L Equipment

Existing Template: Custom
Proposed Template: 67E5998E_1xAIR+1OP+1QP

Sector 1 (Proposed) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2				3	
Antenna Model	Commscope_VV-65A-R1 (Quad)		RFS - APXVAALL24_43-U-NA20 (Octo)				Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)	
Azimuth	100		100				100	
M. Tilt	0		0				0	
Height	105		105				105	
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	L2100 L1900 G1900	L2100 L1900 G1900	L700 L600 N600	L700 L600 N600			L2500 N2500	L2500 N2500
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt	2	2	2	2	2	2	2	2
Cables	Coax Jumper **(x2)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**				
TMAs								
Diplexers / Combiners								
Radio	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)	Radio 4480 B71+B85 (At Antenna)	SHARED Radio 4480 B71+B85 (At Antenna)				
Sector Equipment								

Unconnected Equipment:

Scope of Work:

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

RAN Template:	A&L Template:
67E5A998E 6160	67E5998E_1xAIR+1OP+1QP

CTNL184A_Coverage Strategy_1_draft

Print Name: Standard (Rad changed)
PORs: Coverage Strategy_Regional Coverage

Sector 2 (Proposed) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2				3	
Antenna Model	Commscope_VV-65A-R1 (Quad)		RFS - APXVAALL24_43-U-NA20 (Octo)				Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)	
Azimuth	200		200				200	
M. Tilt	0		0				0	
Height	105		105				105	
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	L2100 L1900 G1900	L2100 L1900 G1900	L700 L600 N600	L700 L600 N600			L2500 N2500	L2500 N2500
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt	2	2	2	2	2	2	2	2
Cables	Coax Jumper **(x2)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**				
TMAs								
Diplexers / Combiners								
Radio	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)	Radio 4480 B71+B85 (At Antenna)	SHARED Radio 4480 B71+B85 (At Antenna)				
Sector Equipment								

Unconnected Equipment:

Scope of Work:

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

RAN Template:	A&L Template:
67E5A998E 6160	67E5998E_1xAIR+1OP+1QP

CTNL184A_Coverage Strategy_1_draft

Print Name: Standard (Rad changed)
PORs: Coverage Strategy_Regional Coverage

Sector 3 (Proposed) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2				3	
Antenna Model	Commscope_VV-65A-R1 (Quad)		RFS - APXVAALL24_43-U-NA20 (Octo)				Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)	
Azimuth	340		340				340	
M. Tilt	0		0				0	
Height	105		105				105	
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	L2100 L1900 G1900	L2100 L1900 G1900	L700 L600 N600	L700 L600 N600			L2500 N2500	L2500 N2500
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt	2	2	2	2	2	2	2	2
Cables	Coax Jumper **(x2)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**				
TMAs								
Diplexers / Combiners								
Radio	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)	Radio 4480 B71+B85 (At Antenna)	SHARED Radio 4480 B71+B85 (At Antenna)				
Sector Equipment								

Unconnected Equipment:

Scope of Work:

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

RAN Template:	A&L Template:
67E5A998E 6160	67E5998E_1xAIR+1OP+1QP

CTNL184A_Coverage Strategy_1_draft

Print Name: Standard (Rad changed)
PORs: Coverage Strategy_Regional Coverage

Section 7 - Power Systems Equipment

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

	Proposed Power Systems Equipment
Enclosure	1
Enclosure Type	Enclosure 6160 AC V1