

T-Mobile

Ryan Clark
Real Estate Consultant
750 W. Center St, Suite 301
W. Bridgewater, MA 02379
Phone: (203) 300-7310
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June 13, 2022

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

Re: **Request for Tower Share
T-Mobile Northeast, LLC (“T-Mobile”) Request for Approval of the Shared Use of an
Existing Tower at: 353 Pumpkin Hill Road Ashford, CT 06278-1711
T-Mobile site: CTNL145A**

Dear Members of the Council:

T-Mobile proposes to share an existing telecommunications tower located at 353 Pumpkin Hill Road Ashford, CT 06278-1711 (the facility). The subject parcel is identified by the Town of Ashford, CT as Map 46, Block B and lot 1. The property is owned by the Estate of Irene D. Bunte the tower is owned by American Tower Corporation. The property is roughly 10± acres and accommodates an existing telecommunication compound with three shelters a self support tower within the fenced compound. The facility is and will continue to be owned and operated by American Tower Corporation.

Pursuant to Connecticut General Statutes Section 16-50aa (the Statute), T-Mobile requests a finding from the Connecticut Siting Council that the shared use of this facility is technically, legally, environmentally and economically feasible, will meet safety concerns, will avoid the unnecessary proliferation of towers and is in the public interest. It further requests an order approving the shared use of this facility.

The purpose of this request is to use an existing tower to develop T-Mobile’s wireless network to provide high speed wireless data and wireless service within the State of Connecticut and in this part of Ashford: avoiding the need for an additional tower in Ashford.

T-Mobile is licensed by the Federal Communications Commission (“FCC”) to provide multiple technologies, including LTE, NR, 5G and GSM including (600,700,1900, 2100, 2500 MHz frequencies) in Windham County. T-Mobile is building and enhancing its network to take advantage of its licensed spectrum, and improve its broadband high speed wireless voice and data services

Existing Facility & Proposed Modification

The existing facility is and will continue to be a 240' self support tower located at 353 Pumpkin Hill Road Ashford, CT 06278-1711. Site coordinates (NAD83) are 41.84782969 latitude and - 72.1215992 longitude. Currently there are two other major commercial wireless carriers located on this tower along with other users, whereby T-Mobile now intends to use the vacant space on the lowest part of the tower, beneath Verizon and AT&T. The site plan of the facility is included in the proposed Modifications drawings and Construction drawings, prepared by American Tower Corporation dated June 10, 2022 respectively, and enclosed herewith.

T-Mobile intends to install three (3) AIR 6419 B41, three (3) RFS- APXVAALL24_43-U-NA20, three (3) 4460 B25+B66 and three (3) 4480 B71+B85 RRUs, as shown in the construction drawing, to be attached to the self-support tower at the 214' mount level. T-Mobile will also install three (3) 6x24 hybrid fiber cables on the tower. T-Mobile will add a 15' x 10' leased area with a concrete pad and one (1) H-frame and a 9' x 4' concrete pad for a generator . T-Mobile intends to enter into a new agreement, at this tower height, in order to license the portion of space within the existing and proposed compound for the new 15'-0" x 10'-0" concrete pad with (3) three cabinets and another 9' x 4' concrete pad for a 48 KW diesel generator.

Consistent with the requirements of the Statute, it is feasible for T-Mobile to collocate at this facility. T-Mobile is proposing to collocate on the existing monopole tower that will continue to remain in the ownership of American Tower Corporation. Included with this application is a Structural Analysis Report from American Tower Corporation dated April 25, 2022 that shows that the existing tower can support T-Mobile's proposed equipment once modified.

The Proposal is Legally Feasible.

The Council has authority, pursuant to statute, to issue an order approving of the shared use of this tower. By issuing an order approving T-Mobile's shared use of this tower, T-Mobile will be able to proceed with obtaining a building permit for the proposed installation. American Tower Corporation has executed a Letter of Authorization that approved T-Mobile's Request for Tower Share filing, which approval is included with this application. T-Mobile's proposal is legally feasible.

T-Mobile is a telecommunication provider licensed by the FCC to provide service in the State of Connecticut, including but not limited to New London County. T-Mobile will enter into an agreement with the owner of this facility, American Tower Corporation, for the location of this proposed equipment on the existing tower so that it may provide telecommunications services to the surrounding community. Consequently, the proposal is legally feasible.

The Proposal is Environmentally Feasible.

Pursuant to the Statute, the proposal will be environmentally feasible for the following reasons:

- The overall impact on the Colchester area will be decreased with the sharing of a single tower versus the proliferation of multiple towers.

- There will be no material increase in the visibility of the tower with the addition of the antennas and associated equipment on the tower.
- There will be no increased impact on air quality because no air pollutants will be generated during normal operation of the facility.
- There will only be a brief, slight increase in noise pollution while the site is under construction.
- During construction, the proposed project will generate a small amount of traffic as construction takes place. Upon completion, traffic will be limited to an average of one trip per month for maintenance and inspections.
- There will be no adverse impact to the health and safety of the surrounding community or workers at the facility due to the addition of T-Mobile's new antennas to the tower. T-Mobile has performed an analysis of the radio frequency field emanating from the transmitting antennas on the tower to ensure compliance with the National Council on Radiation Protection and measurements (NCRP) standard for maximum permissible exposure (MPE) adopted by the FCC. The analysis indicates that T-Mobile and other antennas on the tower will cumulatively emit 1.74011% of the NCRP standard for maximum permissible exposure. The report indicates that maximum level of exposure will be well below the FCC's mandated radio frequency exposure limits. The report is enclosed herewith.
- T-Mobile expects to enhance safety in this portion of by improving wireless telecommunications for local residents and travelers. T-Mobile is currently developing its network to provide its customers with quality and reliable coverage to comply with their FCC license, the site is a necessary part of T-Mobile's network development.
- Specifically, this proposal is designed to provide reliable wireless coverage for this section of Colchester.

Conclusions:

For the reasons stated above, the attachment of T-Mobile's antennas and associated equipment to the tower would meet all the requirements set forth in the Statute. The proposal is legally, technically, economically and environmentally feasible and meets all public safety concerns. Therefore, T-Mobile respectfully requests that the Council approve this request for the shared use of this tower located at 353 Pumpkin Hill Road Ashford, CT 06278-1711.

Respectfully yours,

Ryan Clark
Real Estate Consultant – Site Acquisition
c/o T-Mobile
Centerline Communications, LLC
750 West Center Street, Floor 3 / Suite 301
West Bridgewater, MA 02379
Mobile: (203) 300-7310
rclark@clinellc.com

cc: American Tower Corporation- tower owner
Estate of Irene D. Bunte - property owner
Cathryn E. Silver, First Selectman, Town of Ashford
Jeffrey A. Silver-Smith, Chairman of the Planning and Zoning Commission, Town of Ashford

Exhibit A

Letter of Authorization



AMERICAN TOWER®
CORPORATION

LETTER OF AUTHORIZATION

ATC SITE#/NAME/PROJECT: 411217 / ASHFORD CT / 14101206

SITE ADDRESS: 353 PUMPKIN HILL RD ASHFORD, CT 06278

ARN: ASHF-000046-B

LICENSEE: T-MOBILE NORTHEAST LLC DBA T-MOBILE

I, Margaret Robinson, Senior Counsel for American Tower*, owner/operator of the tower facility located at the address identified above (the “Tower Facility”), do hereby authorize **T-MOBILE NORTHEAST LLC DBA T-MOBILE, Centerline Communications** their successors and assigns, and/or their agent, (collectively, the “Licensee”) to act as American Tower’s non-exclusive agent for the sole purpose of filing and consummating any land-use, building, or electrical permit application(s) as may be required by the applicable permitting authorities for Licensee’s telecommunications’ installation on the Tower Facility.

American Tower understands that this application may be denied, modified or approved with conditions. The above authorization is limited to the acceptance by Licensee only of conditions related to Licensee’s installation and any such conditions of approval or modifications will be Licensee’s sole responsibility.

Signature:

Print Name: Margaret Robinson
Senior Counsel
American Tower*

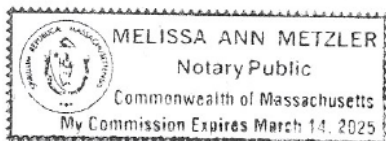
NOTARY BLOCK

Commonwealth of MASSACHUSETTS
County of Middlesex

This instrument was acknowledged before me by Margaret Robinson, Senior Counsel for American Tower*, 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 executed the same.

WITNESS my hand and official seal, this 1st day of June 2022

NOTARY SEAL



Notary Public
My Commission Expires: March 14, 2025

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

Exhibit B

Original Facility Approval

AN APPLICATION SUBMITTED BY TELE-MEDIA : CONNECTICUT SITING
COMPANY OF NORTHEASTERN CONNECTICUT FOR A :
CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY : COUNCIL
AND PUBLIC NEED FOR THE ERECTION OF
COMMUNITY ANTENNA TELEVISION TOWERS AND
ASSOCIATED EQUIPMENT IN THE TOWNS OF
ASHFORD, LEBANON, MANSFIELD (STORRS),
WOODSTOCK, AND CANTERBURY, CONNECTICUT. : June 18, 1984

D E C I S I O N A N D O R D E R

Pursuant to the foregoing opinion, the Council hereby directs that a certificate of environmental compatibility and public need as required by section 16-50k of the General Statutes of Connecticut be issued to Tele-Media Company for the construction, operation and maintenance of CATV towers and associated equipment at the following sites:

Pumpkin Hill Road, Ashford, Connecticut;
South Street, Lebanon, Connecticut;
North Eagleville Road, Mansfield (Storrs), Connecticut;
Perrin Road, Woodstock, Connecticut; and
Colburn Road, Canterbury, Connecticut.

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

1. The towers shall be no taller than necessary to provide the proposed service and in no event shall exceed
 - a) 300 feet at the Ashford site,
 - b) 120 feet at the Lebanon site,
 - c) 120 feet at the Mansfield site,
 - d) 60 feet at the Woodstock site,
 - e) 110 feet at the Canterbury site;
2. The certificate holder shall notify the Council if any additional equipment other than that listed in the findings of fact accompanying this decision and order is added to any of these facilities;
3. The facility construction shall be conducted in accordance with all applicable federal, state, and municipal laws and regulations;

4. The certificate holder shall comply with the reporting requirements of section 16-50j-77 of the Council's Rules of Practice;
5. Prior to the commencement of construction, the certificate holder shall provide plans for evergreen screening at the Lebanon site;
6. Prior to the commencement of construction, the certificate holder shall provide a drainage and erosion control plan for the Ashford site and shall consult with the Ashford Conservation and Inland Wetlands Commission in the preparation of such plan;
7. The certificate holder shall cause radio-frequency electromagnetic radiation (RFER) power densities at the Ashford site to be measured after the facility is installed and operating. Such measurements shall be conducted by an engineer licensed in the State of Connecticut with expertise in electronics and electrical engineering. The certificate holder shall report the results of such measurements to the Council;
8. Construction activities shall take place during daylight working hours; and
9. This decision and order shall be void if all construction authorized is not completed within three years of the issuance of this decision.

Pursuant to section 16-50p of the General Statutes, we hereby direct that a copy of the opinion and decision and order be served on each person listed below. A notice of the issuance shall be published in the Hartford Courant, the Norwich Bulletin, and the Willimantic Chronicle.

The parties to this proceeding are

Tele-Media Company of
Northeastern Connecticut
P.O. Box 280
South Windham, Connecticut 06266
ATTENTION: Mr. Doug Best
General Manager

(Applicant)

Tyler Cooper & Alcorn
P.O. Box 1936
205 Church Street
New Haven, Connecticut 06509
ATTENTION: Mr. Richard G. Bell, Esquire
Ms. Alice A. Bruno, Esquire

(its attorney)

Mansfield Planning and
Zoning Commission

represented by:

Aline L. Booth, Chairman
Mansfield Planning and
Zoning Commission
Municipal Building
Four South Eagleville Road
Storrs, Connecticut 06268-2599

Lebanon Planning and Zoning Commission

represented by:

Janice Bartizek
Clerk
Town of Lebanon
Town Hall - Route 207
Lebanon, Connecticut 06249

Sarah Jane Heath, Trustee
37 Lenox Street
Worcester, Massachusetts 01602

Ernest Levesque
R.R. #1, Box 203
Woodstock, Connecticut 06281

(waive service)

Peter Marble
Chairman P&Z Commission
Town of Ashford
Town Hall, Route 44
P.O. Box 38
Ashford, Connecticut 06278

David B. Schroeder
Chairman
Conservation and Inland Wetlands
Commission
Town of Ashford
Colts Pond Road
Ashford, Connecticut 06278

Alfonso Discepolo
Beddington Lane
Ashford, Connecticut 06278

John W. Bartok, Jr.
R.D. #1, Box 226
Ashford, Connecticut 06278

(waive service)

Raymond Murphy
Zoning Enforcement Officer
158 Oak Street
Willmantic, Connecticut

(waive service)

Planning and Zoning Commission
Town of Lebanon

represented by:

Harold Liebman
Chairman
Town Hall
Route 207
Lebanon, Connecticut 06249

Austin A. Heath
37 Lenox Street
Worcester, Massachusetts 01602

(waive service except
Lebanon materials)

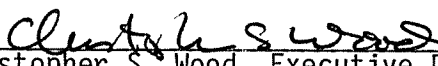
Ruth Leacock
Route 1, Box 249
Ashford, Connecticut 06278

(waive service except
Ashford materials)

STATE OF CONNECTICUT)
 :
COUNTY OF HARTFORD) ss. New Britain, June 18, 1984

I hereby certify that the foregoing is a true and correct copy of the decision and order issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:



Christopher S. Wood, Executive Director
Connecticut Siting Council

Exhibit C

Property Card

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2021. A plus sign (+) at the end of a Map Block Lot (e.g., 23 52 7+) means three or more lots have been merged.



Ashford, Connecticut

Information on the Property Records for the Municipality of Ashford was last updated on 6/8/2022.



Parcel Information

Location:	353 PUMPKIN HILL RD	Property Use:	Vacant Land	Primary Use:	Commercial Vacant Land
Unique ID:	00205600	Map Block Lot:	46 B 1	Acres:	10.73
490 Acres:	0.00	Zone:	RA	Volume / Page:	201/ 837
Developers Map / Lot:		Census:	8301000		

Value Information

	Appraised Value	Assessed Value
Land	621,900	435,330
Buildings	0	0

	Appraised Value	Assessed Value
Detached Outbuildings	128,900	90,230
Total	750,800	525,560

Owner's Information

Owner's Data

BUNTE IRENE D ESTATE OF
 BUNTE TIMOTHY EXECUTOR
 PROPERTY TAX DEPT
 PO BOX 2549
 ADDISON, TX 75001

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
8 Ft Chain Fence	1984	0.00	0.00	430
Generator	2020	0.00	0.00	1
Cell Shed	1990	12.00	21.00	252
Cell Shed	1984	0.00	0.00	100
Cell Tower	2015	0.00	0.00	240

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Sale Price
BUNTE IRENE D ESTATE OF	0201	0837	03/08/2021	Probate	\$0
BUNTE IRENE D	0118	0924	11/01/1999		\$0

Building Permits

Permit Number	Permit Type	Date Opened	Reason
20-16E	Electrical	04/29/2020	GENERATOR
17-31B	Commercial	05/03/2017	INSTALL 3 ANTENNAS + 6 REMOTE RADIO UNITS + ASSOCIATED FIBER/CABLES + SURGE UNIT.
16-74B	Commercial	06/14/2016	AT+T MOLILITY-ADD 3 ANTENNAS TO TOWER + 6 REMOTE RADIO UNITS
16237	Electrical	08/24/2015	NEW ELECTRICAL SERVICES FOR EXISTING TOWER & DEMO EXISTING COMMERCIAL SERVICES 860-617-
16196	Commercial	07/21/2015	REPLACE 300' TOWER WITH 240' TOWER & 12 VERIZON WIRELESS ANTENNAS 860-617-7346. BLDG PLANS GIVEN TO
15635	Commercial	07/26/2013	SWAP 9 ANTENNAS, RMV 3 ANTENNAS, ADD 6 DIPLEXERS. THIS PERMIT WORK WAS DISPLACED BY PERMIT NO 16196
15534	Commercial	03/18/2013	3 LTE ANTENNAS/FIBER& POWER LINES

Information Published With Permission From The Assessor

Parcel Map

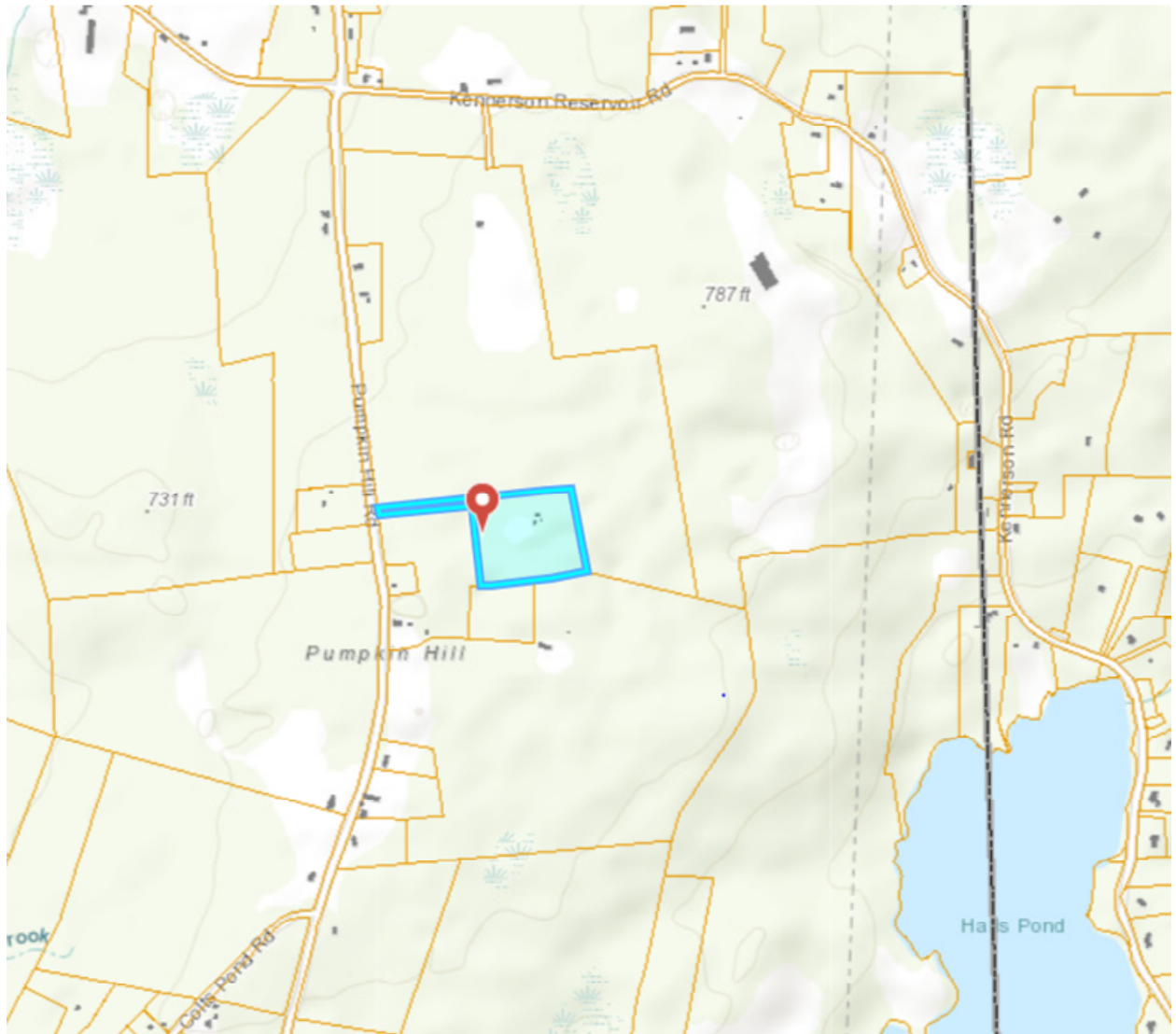
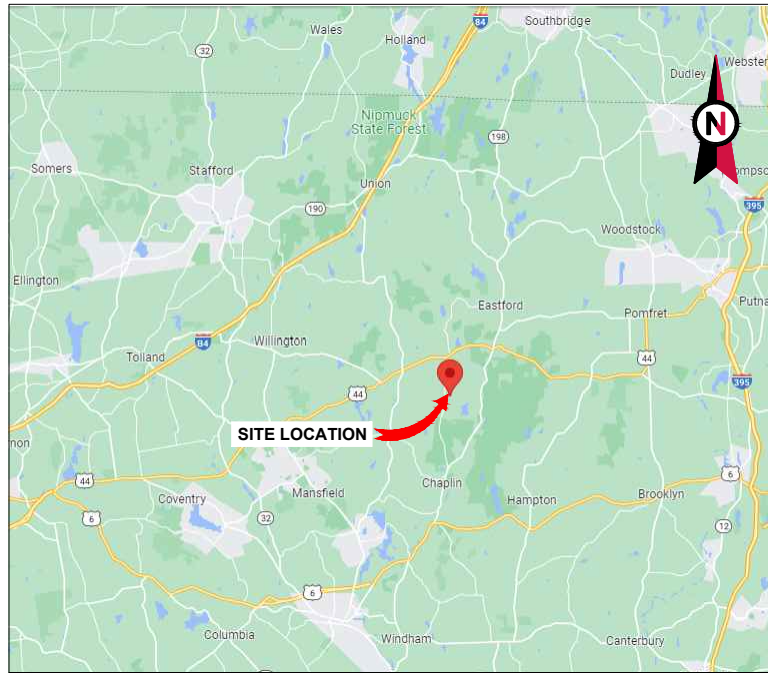


Exhibit D

Construction Drawings



VICINITY MAP



AMERICAN TOWER®

ATC SITE NAME: ASHFORD CT
 ATC SITE NUMBER: 411217
 T-MOBILE SITE NAME: CTNL145A
 T-MOBILE SITE NUMBER: CTNL145A
 SITE ADDRESS: 353 PUMPKIN HILL RD.
 ASHFORD, CT 06278-1711



LOCATION MAP



TOGETHER PLANNING A BETTER TOMORROW
 158 BUSINESS CENTER DRIVE
 BIRMINGHAM, AL 35244
 TEL: 2A5-252-6985 FAX: 2A5-32A-15A4

REV.	DESCRIPTION	BY	DATE
△	PRELIM	RA	05/09/22
△	FINAL	RA	06/10/22
△	REVISED FINAL	RA	06/15/22
△			
△			

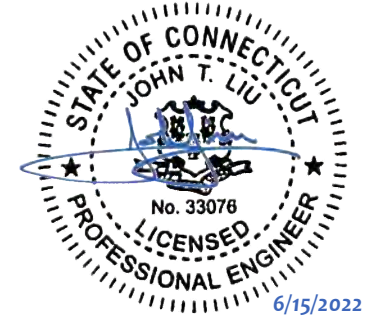
ATC SITE NUMBER:
411217

ATC SITE NAME:
ASHFORD CT

T-MOBILE SITE NAME:
CTNL145A

SITE ADDRESS:
353 PUMPKIN HILL RD.
ASHFORD, CT 06278-1711

SEAL:



T-MOBILE COVERAGE STRATEGY_1 COLOCATION PLAN
 67E5A998E 6160 CONFIGURATION

COMPLIANCE CODE	PROJECT SUMMARY	PROJECT DESCRIPTION	SHEET INDEX				
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES. 1. 2015 INTERNATIONAL BUILDING CODE (IBC) 2. 2017 NATIONAL ELECTRIC CODE (NEC) 3. LOCAL BUILDING CODE 4. CITY/COUNTY ORDINANCES	<u>SITE ADDRESS:</u> 353 PUMPKIN HILL RD. ASHFORD, CT 06278-1711 COUNTY: WINDHAM <u>GEOGRAPHIC COORDINATES:</u> LATITUDE: 41.84782969 LONGITUDE: -72.1215992 GROUND ELEVATION: 762' AMSL	THE PROPOSED PROJECT INCLUDES INSTALLING EQUIPMENT CABINETS 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 COLOCATION, REMOVAL, AND/OR REPLACEMENT OF TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE UNDER CFR § 1.61000 (B)(7).	SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
	PROJECT TEAM <u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801 <u>ENGINEER:</u> JOHN T. LIU SMW ENGINEERING 158 BUSINESS CENTER DRIVE BRIMINGHAM, AL 35244 SMW JOB#: 22-0933 <u>PROPERTY OWNER:</u> ESTATE OF IRENE L BUNTE 353 PUMPKIN HILL RD. ASHFORD, CT 06278-1711		<u>APPLICANT:</u> T-MOBILE	G-001	TITLE SHEET	1	06/15/22
UTILITY COMPANIES POWER COMPANY: N/A TELEPHONE COMPANY: N/A		PROJECT LOCATION DIRECTIONS I-84 EAST TO EXIT 69. TURN RIGHT AT THE END OF RAMP ONTO RTE 74 EAST. FOLLOW UNTIL YOU REACH THE JUNCTION OF RTE 44. TAKE A LEFT ONTO RTE 44 EAST. GO 3 MILES AND JUST BEFORE ASHFORD DAIRY BAR TAKE A RIGHT ONTO PUMPKIN HILL ROAD. KEEP LEFT AT THE FORK, GO THROUGH ONE STOP SIGN AND APPROX. 1/2 MILE ON YOUR LEFT WILL BE THE DIRT ACCESS ROAD. LOOK FOR WHITE CABLE REPEATER BOX MOUNTED SIX FEET OFF THE GROUND AND THE TELEPHONE POLE AT THE ENTRANCE. GATE COMBO 0043	G-002	GENERAL NOTES	1	06/15/22	RA
			C-001	SITE SURVEY	1	06/15/22	RA
			C-101	DETAILED SITE PLAN	1	06/15/22	RA
			C-201	TOWER ELEVATION	1	06/15/22	RA
			C-401	ANTENNA INFORMATION & SCHEDULE	1	06/15/22	RA
			C-501	MOUNT DETAILS	1	06/15/22	RA
			C-502	CONSTRUCTION DETAILS	1	06/15/22	RA
			C-503	CONSTRUCTION DETAILS	1	06/15/22	RA
			E-101	GROUNDING DETAILS	1	06/15/22	RA
			E-501	GROUNDING DETAILS	1	06/15/22	RA
			E-601	PANEL SCHEDULE	1	06/15/22	RA
			R-601	SUPPLEMENTAL			
			R-602	SUPPLEMENTAL			
			R-603	SUPPLEMENTAL			
			R-604	SUPPLEMENTAL			
			R-605	SUPPLEMENTAL			
			R-606	SUPPLEMENTAL			
			R-607	SUPPLEMENTAL			
			R-608	SUPPLEMENTAL			
			R-609	SUPPLEMENTAL			

DATE DRAWN:	05/09/22
ATC JOB NO:	14101206_G2
CUSTOMER ID:	CTNL145A
CUSTOMER #:	CTNL145A

TITLE SHEET

SHEET NUMBER:
G-001

REVISION:
1



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 ANSII/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 NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
30. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE T-MOBILE REP. ANY WORK FOUND BY THE T-MOBILE REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
31. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.
32. T-MOBILE FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE T-MOBILE WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP.
33. T-MOBILE OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OWN OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO T-MOBILE OR THEIR ARCHITECT/ENGINEER.

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 1/8" 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 OF COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL AND
 - B. INSTALL ANTENNA AS INDICATE ON DRAWINGS AND T-MOBILE SPECIFICATIONS.
 - C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS
 - D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE AND PROVIDE PRINTOUT OF THAT TEST.
 - E. CONTRACTOR SHALL PROVIDE FOUR (4) SETS OF SWEEP TESTS USING ANRITZU-PACKARD 8713B RF SCALAR NETWORK ANALYZER. SUBMIT FREQUENCY DOMAIN REFLECTOMETER(FDR) TESTS RESULTS TO THE PROJECT MANAGER. SWEEP TESTS SHALL BE AS PER ATTACHED RFS "MINIMUM FIELD TESTING RECOMMENDED FOR ANTENNA AND HELIAX COAXIAL CABLE SYSTEMS" DATED 10/5/93. TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.
 - F. INSTALL COAXIAL CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTIONS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.
 - G. ANTENNA AND COAXIAL CABLE GROUNDING:
2. ALL EXTERIOR #6 GREED GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPICE 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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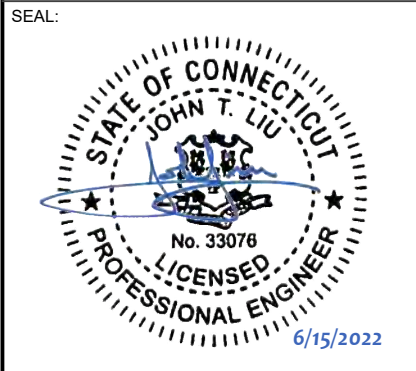
REV.	DESCRIPTION	BY	DATE
A	PRELIM	RA	05/09/22
0	FINAL	RA	06/10/22
1	REVISED FINAL	RA	06/15/22

ATC SITE NUMBER:
411217

ATC SITE NAME:
ASHFORD CT

T-MOBILE SITE NAME:
CTNL145A

SITE ADDRESS:
353 PUMPKIN HILL RD.
ASHFORD, CT 06278-1711



DATE DRAWN:	05/09/22
ATC JOB NO:	14101206_G2
CUSTOMER ID:	CTNL145A
CUSTOMER #:	CTNL145A

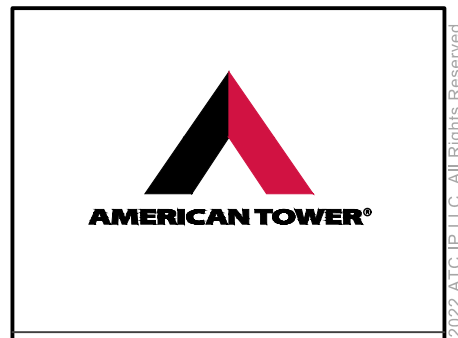
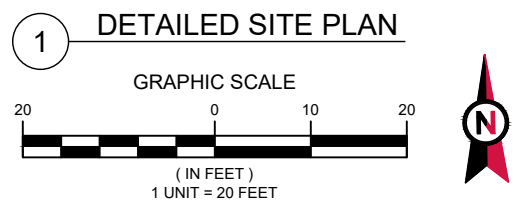
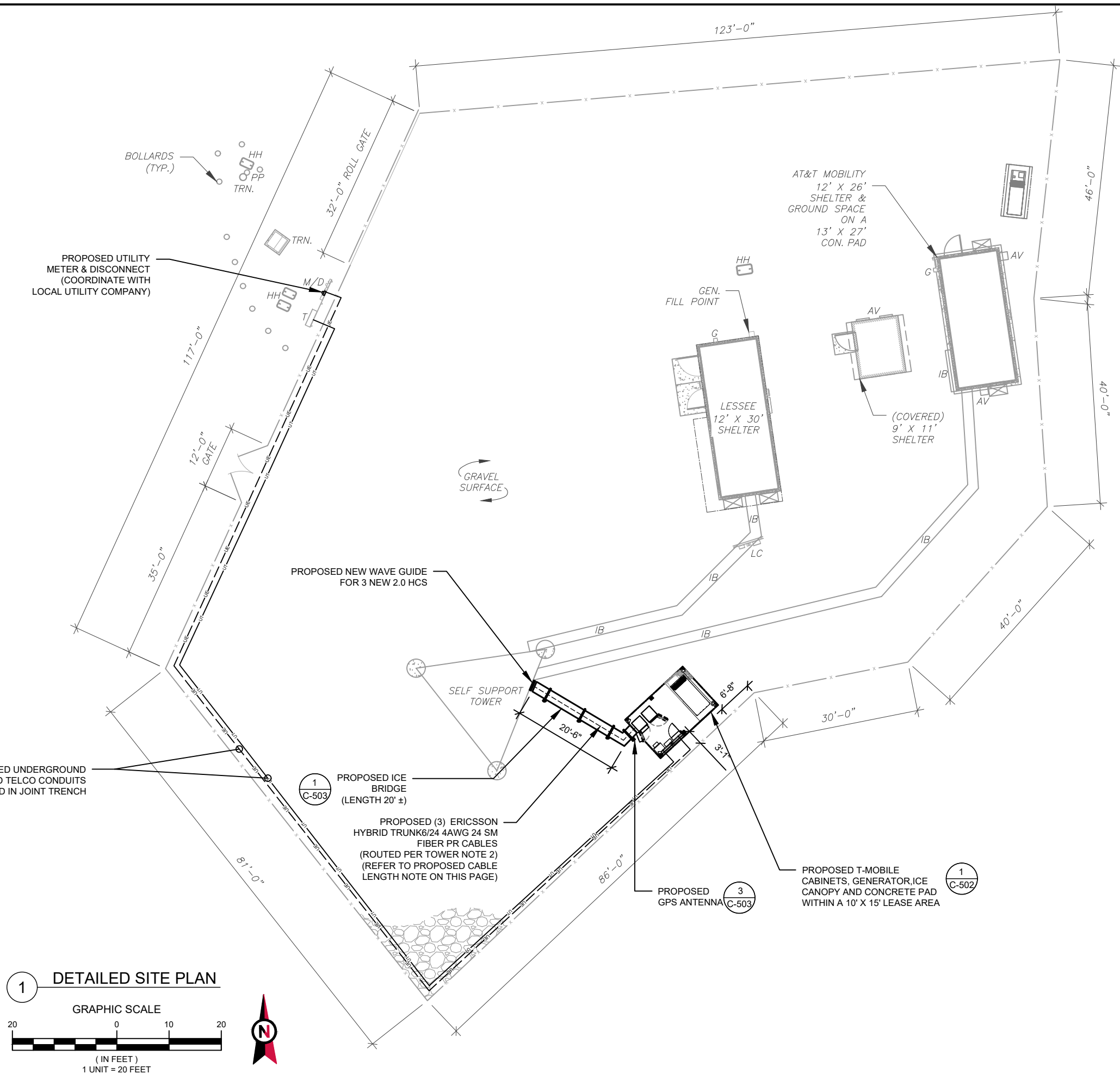
GENERAL NOTES	
SHEET NUMBER: G-002	REVISION: 1

SITE PLAN NOTES:

- THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
- ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.
- 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:**
- ESTIMATED LENGTH OF PROPOSED CABLE IS ±240'. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES). CDS DEFER TO GREATEST CABLE LENGTH.
 - ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. WHERE POSSIBLE UTILIZE EXISTING CABLE SUPPORT STRUCTURES AS PROVIDED FOR CARRIER TO ADEQUATELY SECURE CABLES, USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER. OTHERWISE, ATTACH CABLES TO HORIZONTAL OR DIAGONAL TOWER MEMBERS USING PROPOSED STAINLESS STEEL ADAPTERS (DO NOT ATTACH TO TOWER LEG).



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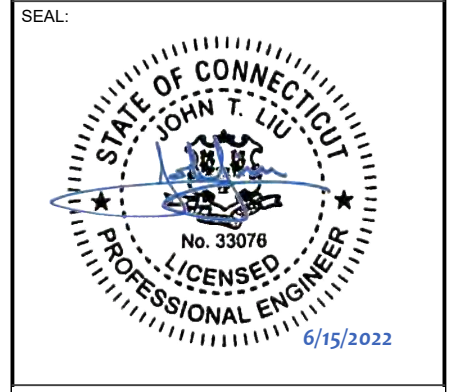
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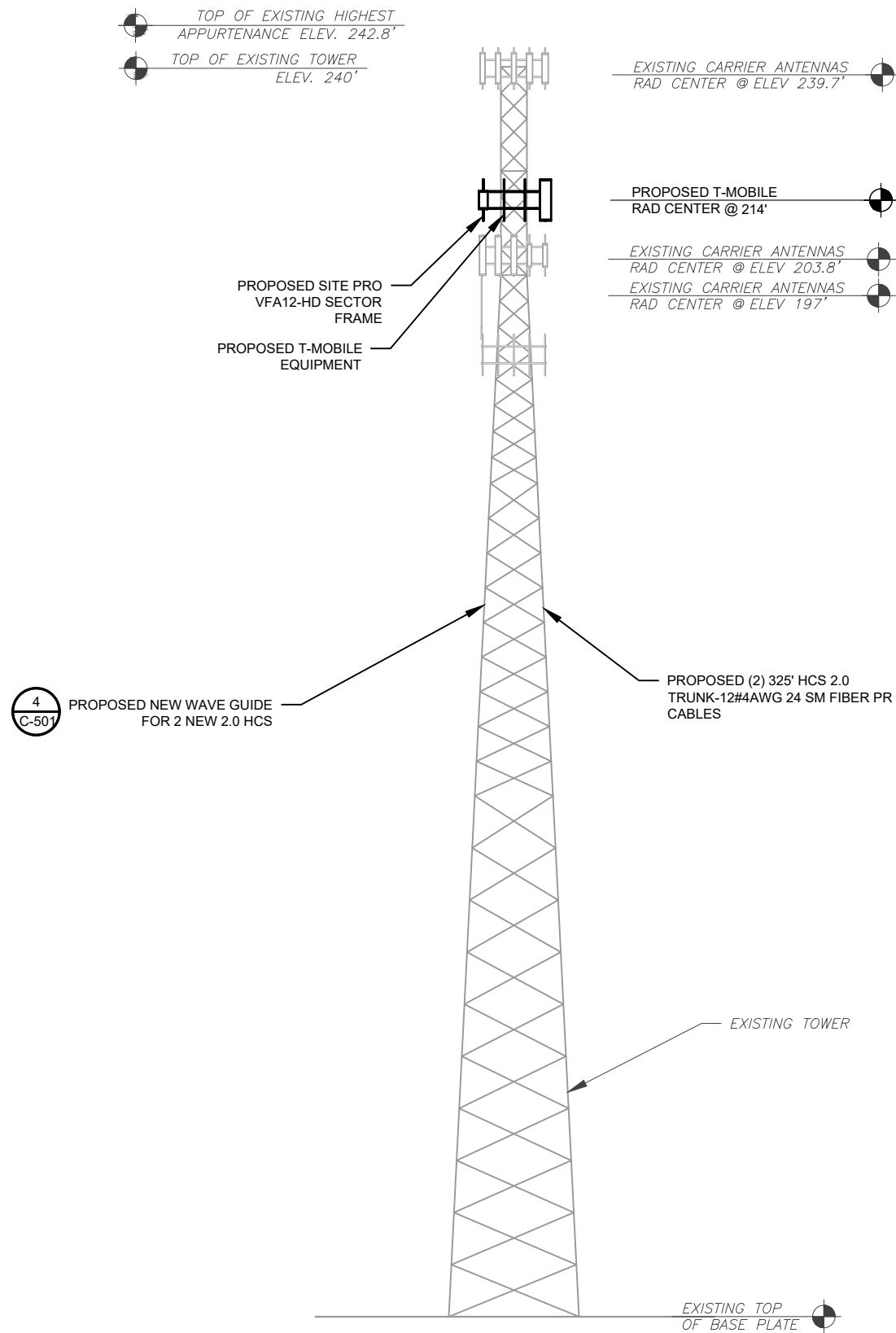
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DATE DRAWN:	05/09/22
ATC JOB NO:	14101206_G2
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CUSTOMER #:	CTNL145A

DETAILED SITE PLAN

SHEET NUMBER:	REVISION:
C-101	1

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1 TOWER ELEVATION
SCALE: N.T.S.

TOWER NOTE:

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



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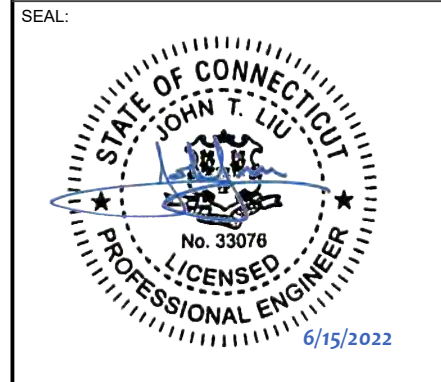
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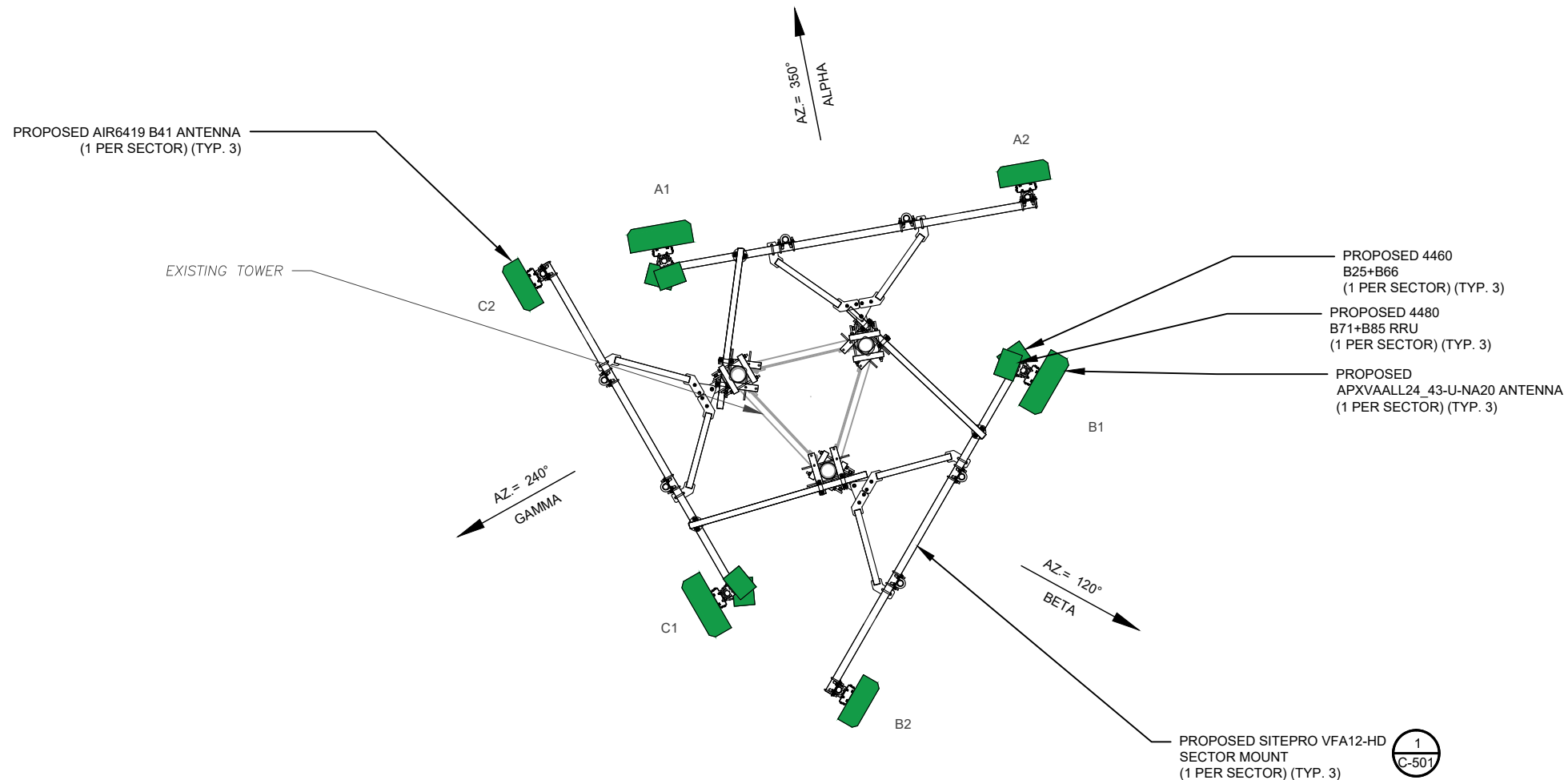


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CUSTOMER ID:	CTNL145A
CUSTOMER #:	CTNL145A

TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-201	1

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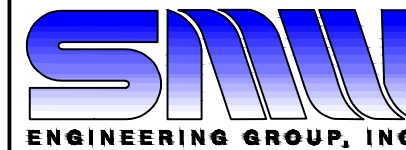


1 FINAL ANTENNA PLAN SCALE: 1:5

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	214'	350°	A1	APXVAALL24_43-U-NA20	L700/L600/N600/L2100/L1900	0°	RADIO 4480 B71+B85 RADIO 4460 B25+B66	(3) ERICSSON HYBRID 6/24 4AWG HYBRID W/ PENDANT
ALPHA	214'	350°	A2	AIR6419 B41	L2500/N2500	0°	-	
BETA	214'	120°	B1	APXVAALL24_43-U-NA20	L700/L600/N600/L2100/L1900	0°	RADIO 4480 B71+B85 RADIO 4460 B25+B66-	
BETA	214'	120°	B2	AIR6419 B41	L2500/N2500	0°	-	
GAMMA	214'	240°	C1	APXVAALL24_43-U-NA20	L700/L600/N600/L2100/L1900	0°	RADIO 4480 B71+B85 RADIO 4460 B25+B66	
GAMMA	214'	240°	C2	AIR6419 B41	L2500/N2500	0°	-	

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



TOGETHER PLANNING A BETTER TOMORROW
158 BUSINESS CENTER DRIVE
BIRMINGHAM, AL 35244
TEL: 2A5-252-6985 FAX: 2A5-32A-15A4

REV.	DESCRIPTION	BY	DATE
A	PRELIM	RA	05/09/22
0	FINAL	RA	06/10/22
1	REVISED FINAL	RA	06/15/22

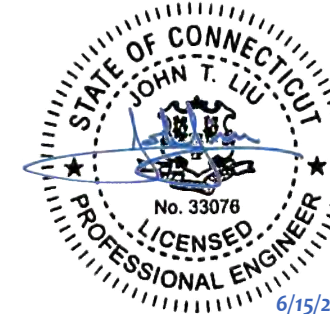
ATC SITE NUMBER:
411217

ATC SITE NAME:
ASHFORD CT

T-MOBILE SITE NAME:
CTNL145A

SITE ADDRESS:
353 PUMPKIN HILL RD.
ASHFORD, CT 06278-1711

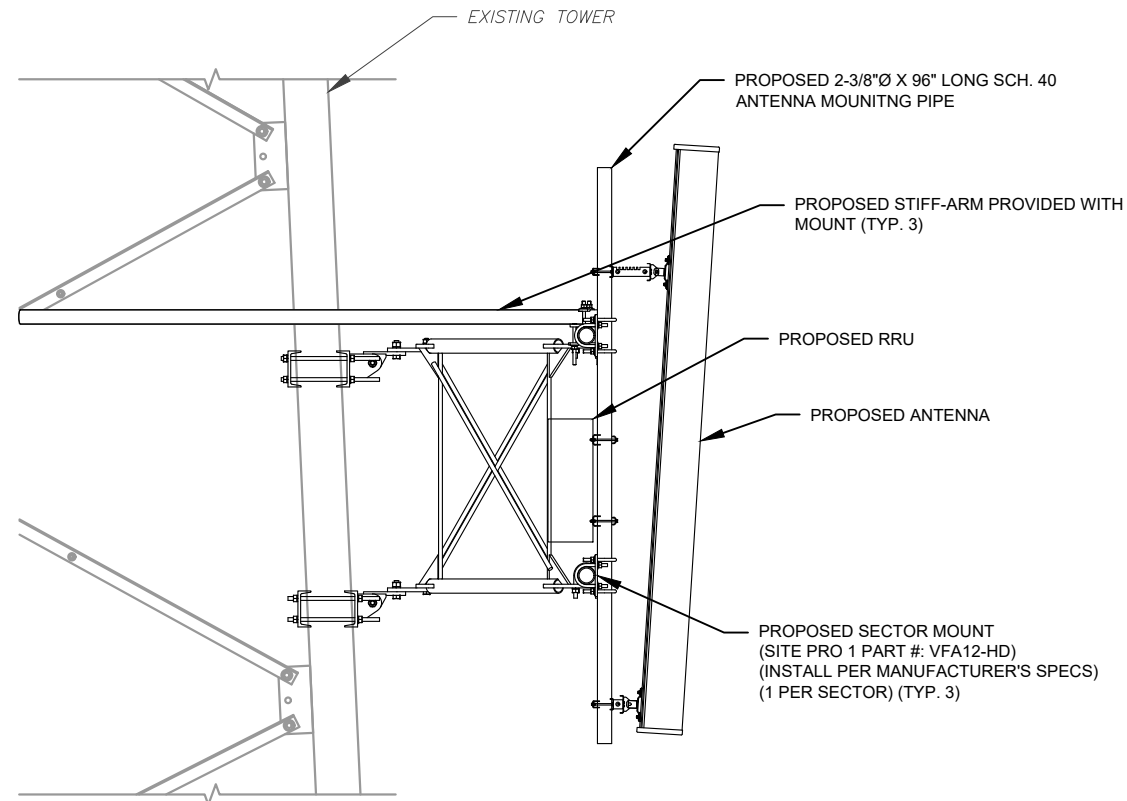
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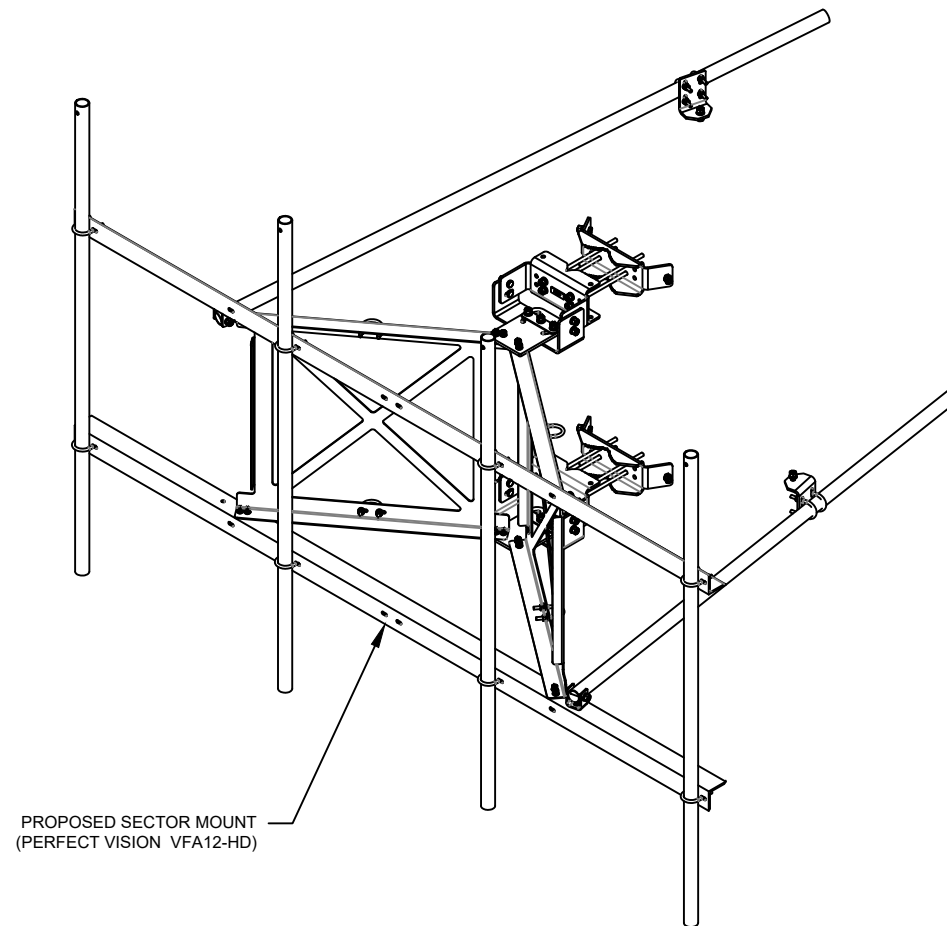
DATE DRAWN:	05/09/22
ATC JOB NO:	14101206_G2
CUSTOMER ID:	CTNL145A
CUSTOMER #:	CTNL145A

ANTENNA INFORMATION & SCHEDULE

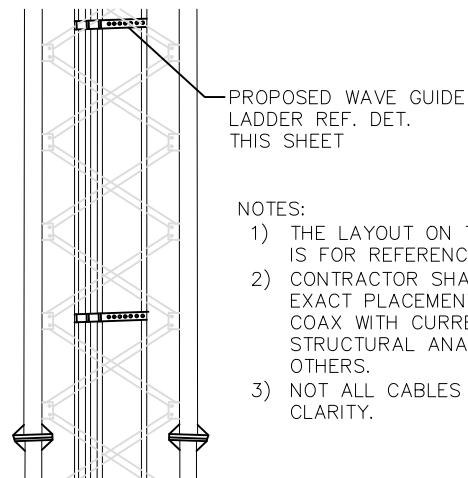
SHEET NUMBER:	REVISION:
C-401	1



1 PROPOSED ANTENNA MOUNTING DETAIL (ELEVATION)
SCALE: N.T.S.



2 ISOMETRIC MOUNT DETAIL
SCALE: N.T.S.



- NOTES:
- 1) THE LAYOUT ON THIS DETAIL IS FOR REFERENCE ONLY.
 - 2) CONTRACTOR SHALL VERIFY EXACT PLACEMENT OF NEW COAX WITH CURRENT STRUCTURAL ANALYSIS BY OTHERS.
 - 3) NOT ALL CABLES SHOWN FOR CLARITY.

3 WAVEGUIDE DETAIL
SCALE: N.T.S.



TOGETHER PLANNING A BETTER TOMORROW
158 BUSINESS CENTER DRIVE
BIRMINGHAM, AL 35244
TEL: 2A5-252-6985 FAX: 2A5-32A-15A4

REV.	DESCRIPTION	BY	DATE
A	PRELIM	RA	05/09/22
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1	REVISED FINAL	RA	06/15/22

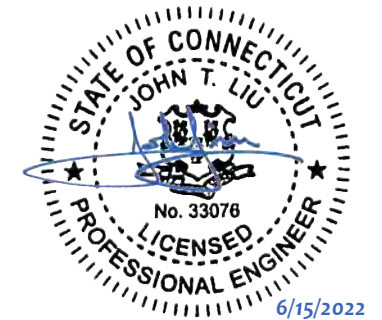
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411217

ATC SITE NAME:
ASHFORD CT

T-MOBILE SITE NAME:
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SITE ADDRESS:
353 PUMPKIN HILL RD.
ASHFORD, CT 06278-1711

SEAL:



DATE DRAWN:	05/09/22
ATC JOB NO:	14101206_G2
CUSTOMER ID:	CTNL145A
CUSTOMER #:	CTNL145A

MOUNT DETAILS

SHEET NUMBER:	REVISION:
C-501	1

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A	PRELIM	RA	05/09/22
0	FINAL	RA	06/10/22
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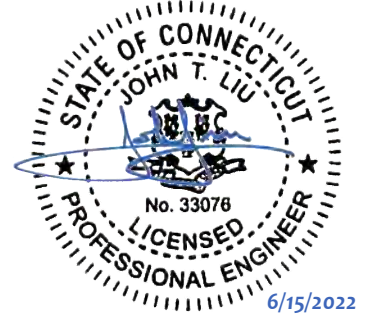
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411217

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SITE ADDRESS:
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ASHFORD, CT 06278-1711

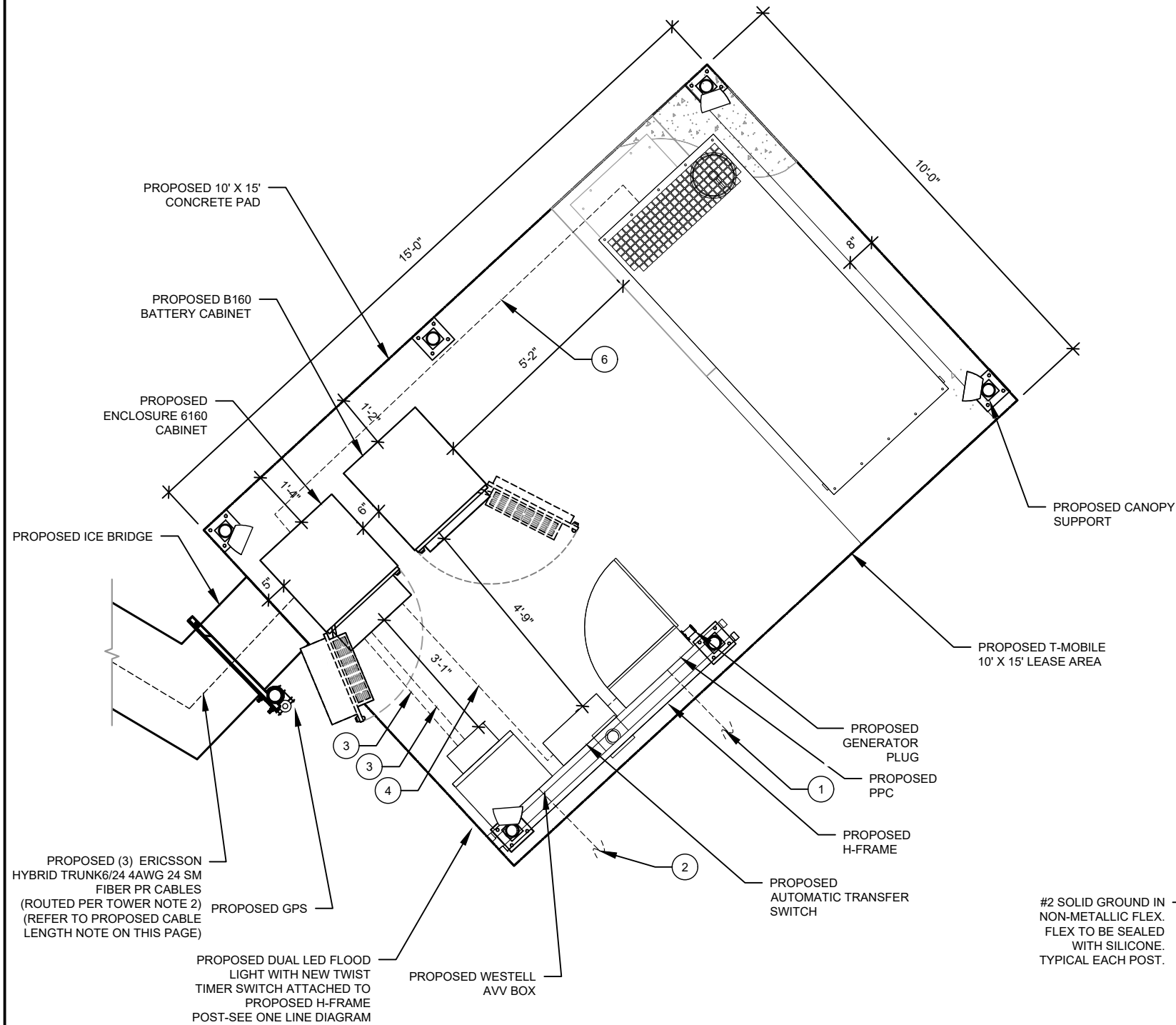
SEAL:



DATE DRAWN:	05/09/22
ATC JOB NO:	14101206_G2
CUSTOMER ID:	CTNL145A
CUSTOMER #:	CTNL145A

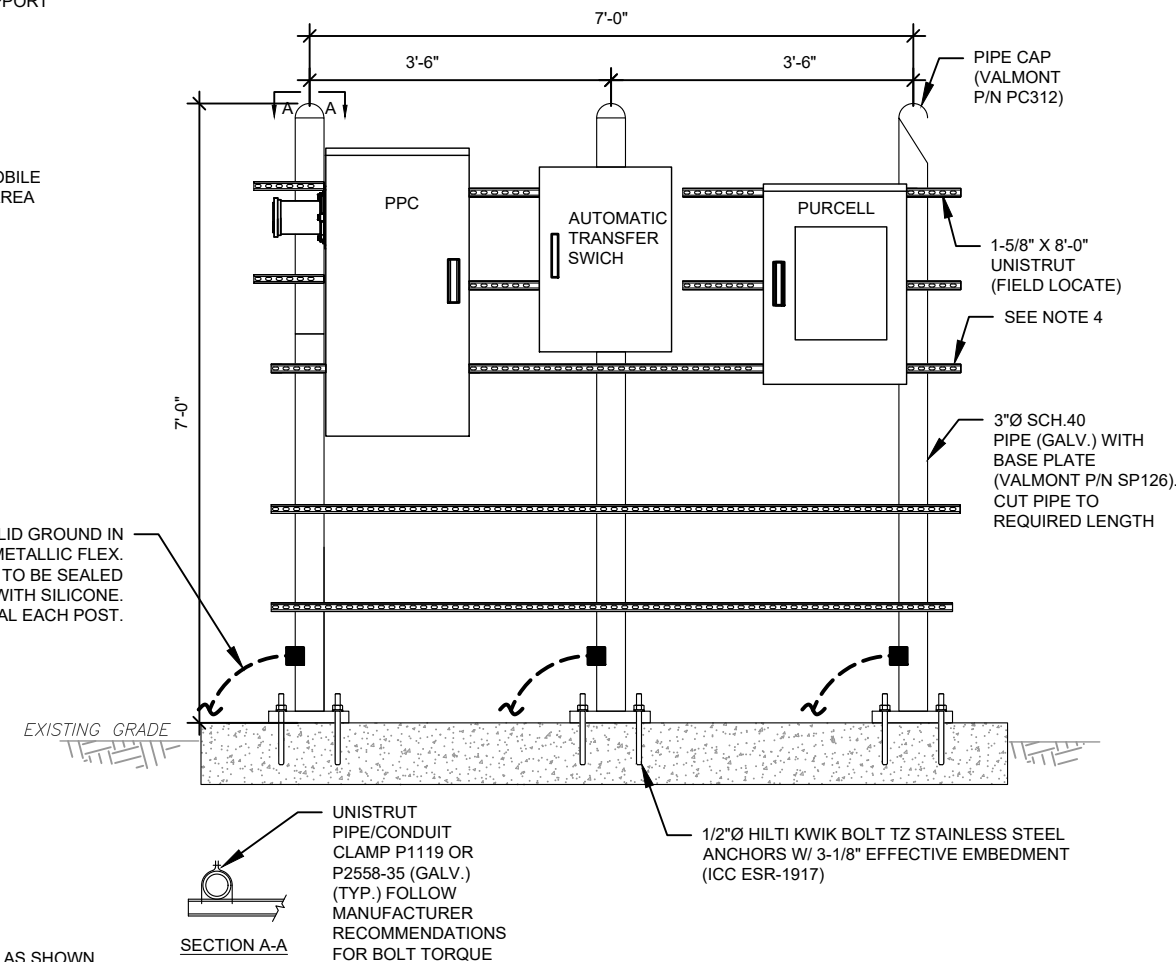
**CONSTRUCTION
DETAILS**

SHEET NUMBER:	REVISION:
C-502	1



H-FRAME NOTES:

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



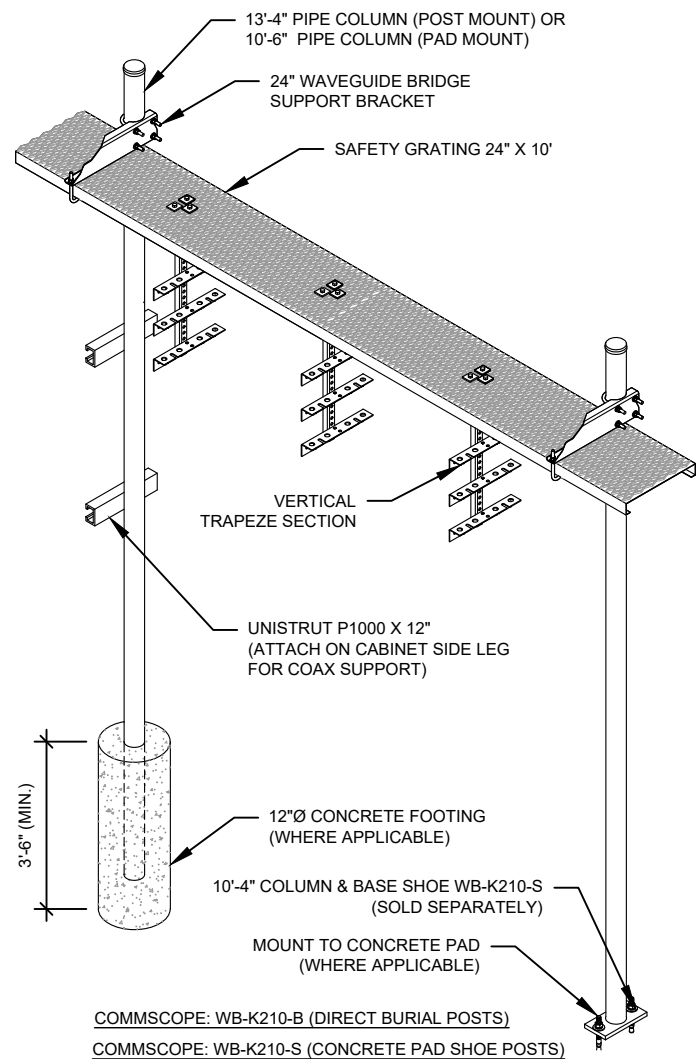
2 TYPICAL H-FRAME DETAIL
SCALE: NOT TO SCALE

- NOTE:**
- CABINETS SHALL BE ORIENTED AND INSTALLED EXACTLY AS SHOWN
 - WEIGHT OF BTS UNIT IS 1,060 LBS (WEIGHT IS WITHOUT EQUIPMENT)

1 DETAILED EQUIPMENT LAYOUT
SCALE: NOT TO SCALE

EQUIPMENT POWER NOTES:

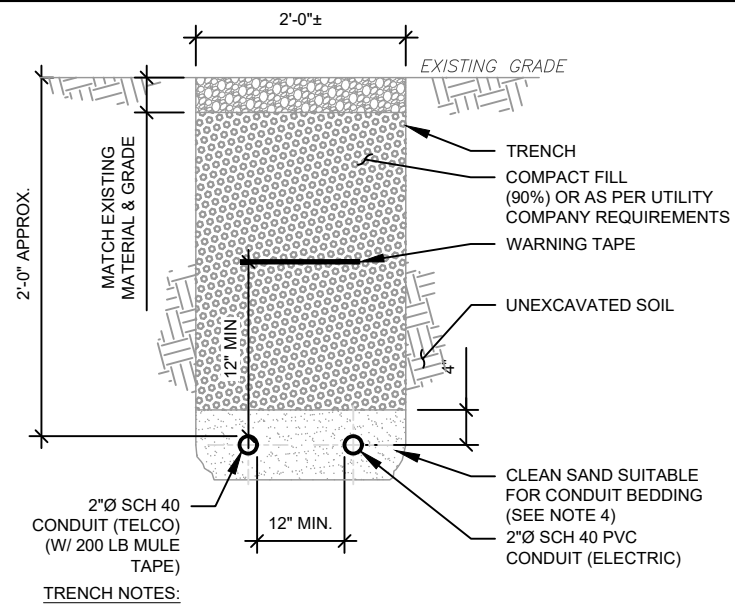
- 2" CONDUIT W/ 3-#3/0 CU, (1) #6 AWG G, TO PPC
- 2" CONDUIT FOR TELCO FEEDER SERVICE TO PURCELL/RAC 24
- 2-#12, 1 #12G IN 3/4" CONDUIT FROM TELCO CAB TO 6160
- 3-#1/0 WITH #6 GROUND IN 2" CONDUIT
- 2" CONDUIT, FOR CAT6
- (2) CONDUITS CONNECTING FROM AC GENERATOR TO ATS PER MANUFACTURER SPECIFICATION



CONSTRUCTION NOTE:

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

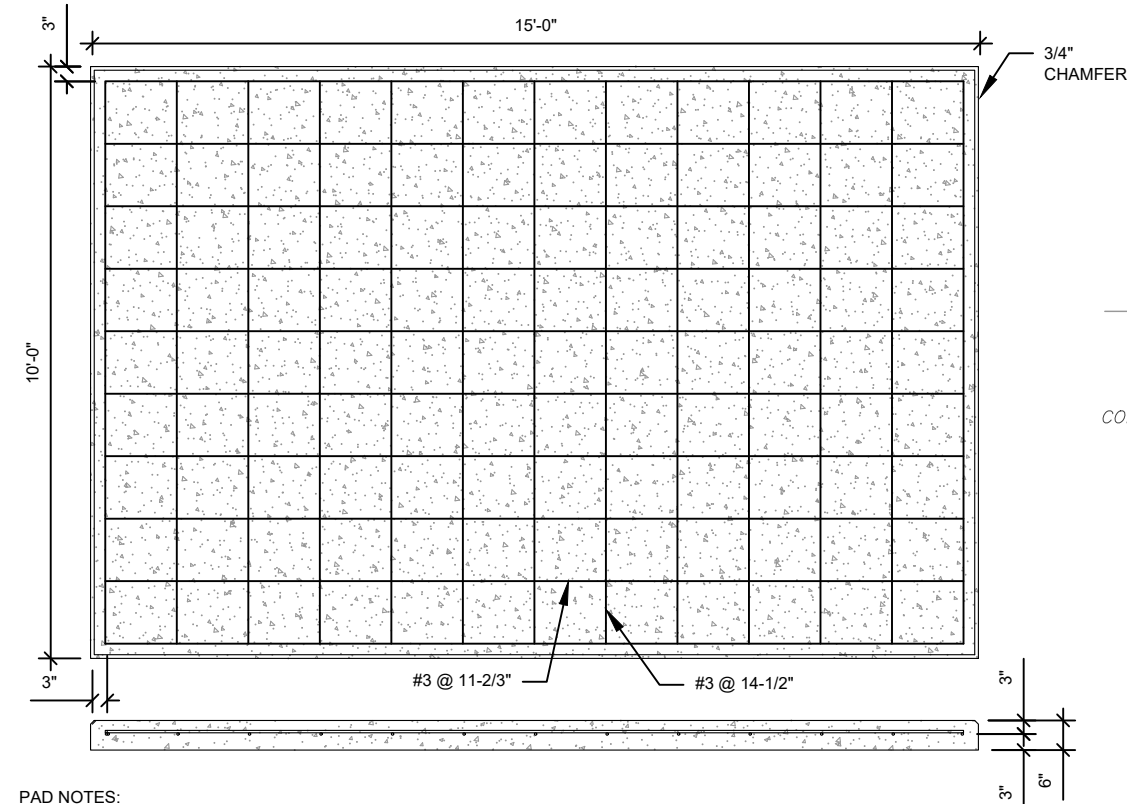
1 WAVEGUIDE BRIDGE KIT
SCALE: NOT TO SCALE



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.

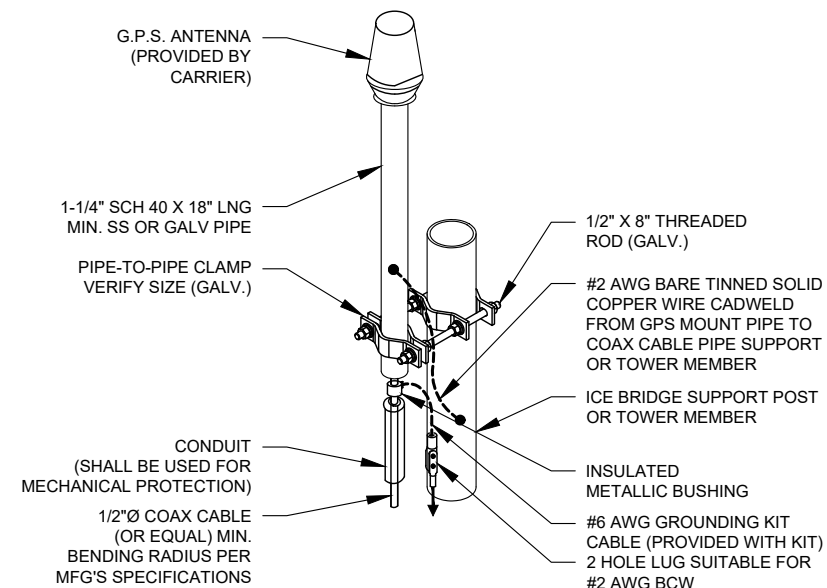
2 TELCO AND POWER CONDUIT JOINT TRENCH
SCALE: N.T.S.



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.

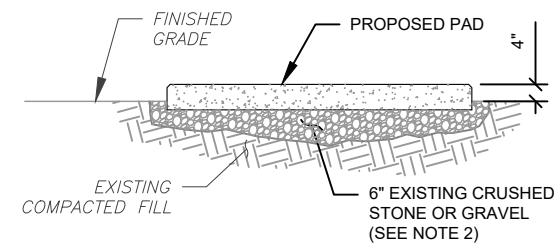
4 REINFORCED PAD LAYOUT
SCALE: NOT TO SCALE



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. 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



TOGETHER PLANNING A BETTER TOMORROW
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BIRMINGHAM, AL 35244
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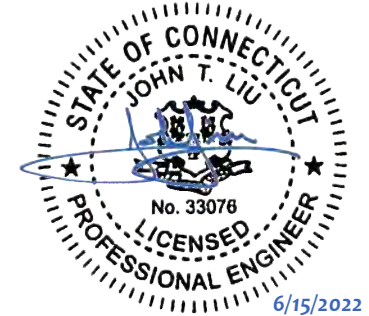
ATC SITE NUMBER:
411217

ATC SITE NAME:
ASHFORD CT

T-MOBILE SITE NAME:
CTNL145A

SITE ADDRESS:
353 PUMPKIN HILL RD.
ASHFORD, CT 06278-1711

SEAL:



DATE DRAWN:	05/09/22
ATC JOB NO:	14101206_G2
CUSTOMER ID:	CTNL145A
CUSTOMER #:	CTNL145A

CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-503	1

GROUNDING NOTES:

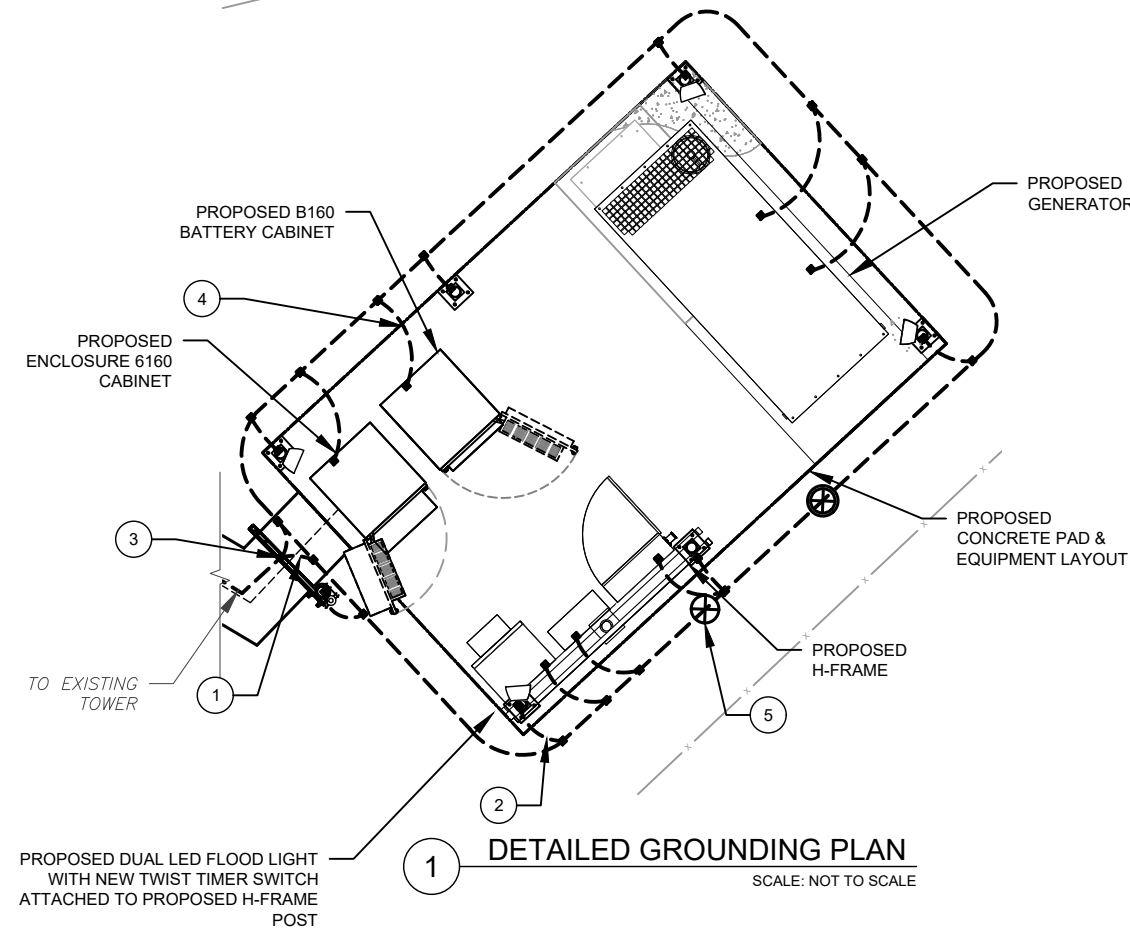
1. ALL EQUIPMENT ENCLOSURES, DEVICES AND CONDUITS SHALL BE GROUNDED TO CONFORM WITH THE LATEST REQUIREMENTS OF THE NEC BY THE INSTALLATION OF A SEPARATE, GREEN, INSULATED GROUND CONDUCTOR FOR ALL FEEDER AND BRANCH CIRCUITS. GROUND CONDUCTORS SHALL BE OF THE SIZE INDICATED ON THE DRAWINGS. GROUND CONDUCTORS 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.

GROUNDING PLAN LEGEND:

---	EXISTING GROUND WIRE	⊗	COPPER GROUND ROD
---	GROUND WIRE	⊗	TEST WELL
■	EXOTHERMIC WELD		
●	MECHANICAL WELD		

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 5/8" X 10 FT GROUND ROD.



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REV.	DESCRIPTION	BY	DATE
△	PRELIM	RA	05/09/22
△	FINAL	RA	06/10/22
△	REVISED FINAL	RA	06/15/22
△			
△			

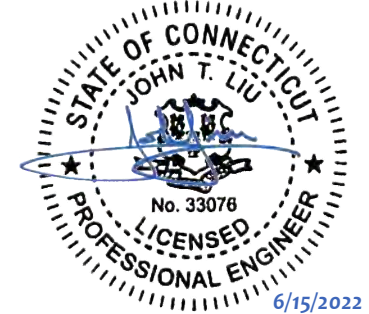
ATC SITE NUMBER:
411217

ATC SITE NAME:
ASHFORD CT

T-MOBILE SITE NAME:
CTNL145A

SITE ADDRESS:
353 PUMPKIN HILL RD.
ASHFORD, CT 06278-1711

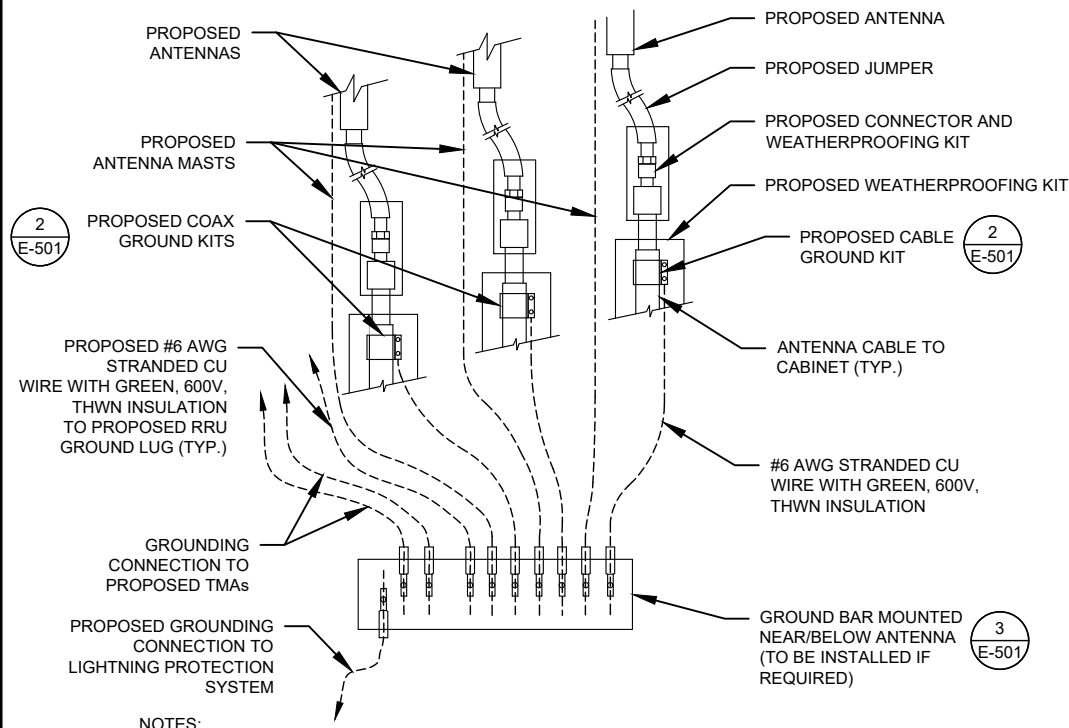
SEAL:



DATE DRAWN:	05/09/22
ATC JOB NO:	14101206_G2
CUSTOMER ID:	CTNL145A
CUSTOMER #:	CTNL145A

GROUNDING DETAILS & ELECTRICAL SCHEMATIC

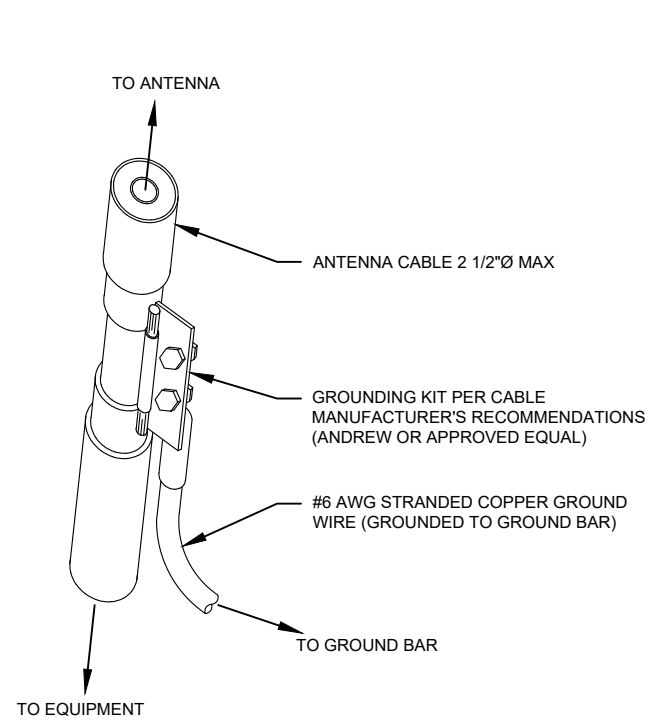
SHEET NUMBER:	REVISION:
E-101	1



NOTES:

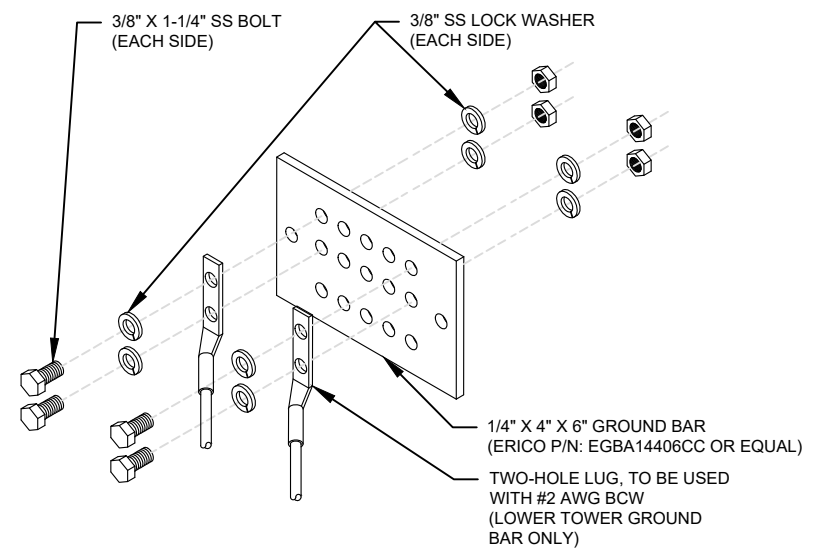
1. THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
2. SITE GROUNDING SHALL COMPLY WITH T-MOBILE GROUNDING 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.

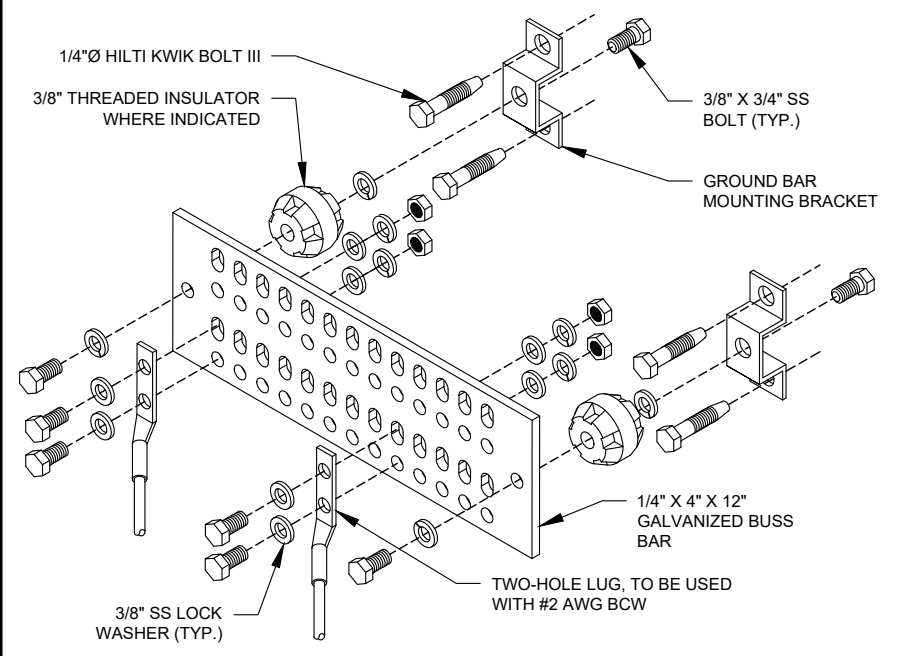
2 CABLE GROUND KIT CONNECTION DETAIL
SCALE: N.T.S.



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.

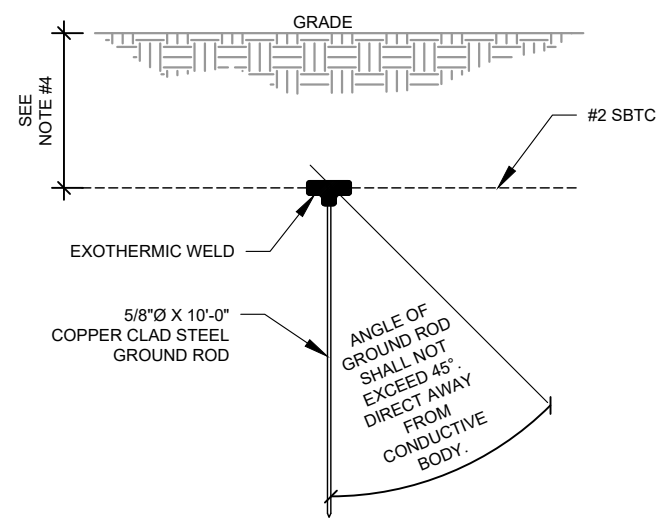
3 TOWER GROUND BAR DETAIL
SCALE: N.T.S.



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.

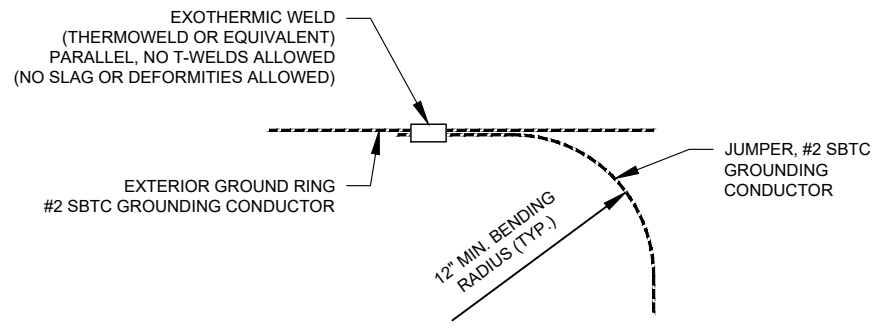
4 MAIN GROUND BAR DETAIL
SCALE: N.T.S.



NOTES:

1. SEPARATION DIMENSION TO BE VERIFIED WITH LOCAL UTILITY COMPANY REQUIREMENTS.
2. COORDINATE UTILITY, LOCATE BEFORE DIGGING.
3. CONDUIT TRENCHING DEPTHS AT 36\"/>

5 GROUND ROD DETAIL
SCALE: N.T.S.



6 TIE CONNECTION DETAIL
SCALE: N.T.S.



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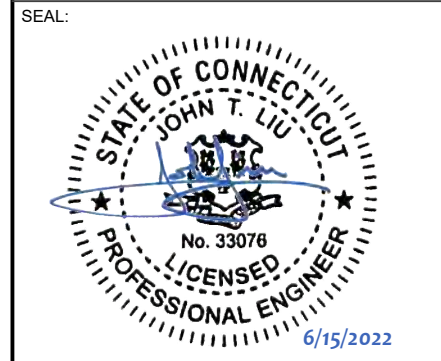
REV.	DESCRIPTION	BY	DATE
A	PRELIM	RA	05/09/22
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C	REVISED FINAL	RA	06/15/22

ATC SITE NUMBER:
411217

ATC SITE NAME:
ASHFORD CT

T-MOBILE SITE NAME:
CTNL145A

SITE ADDRESS:
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ASHFORD, CT 06278-1711



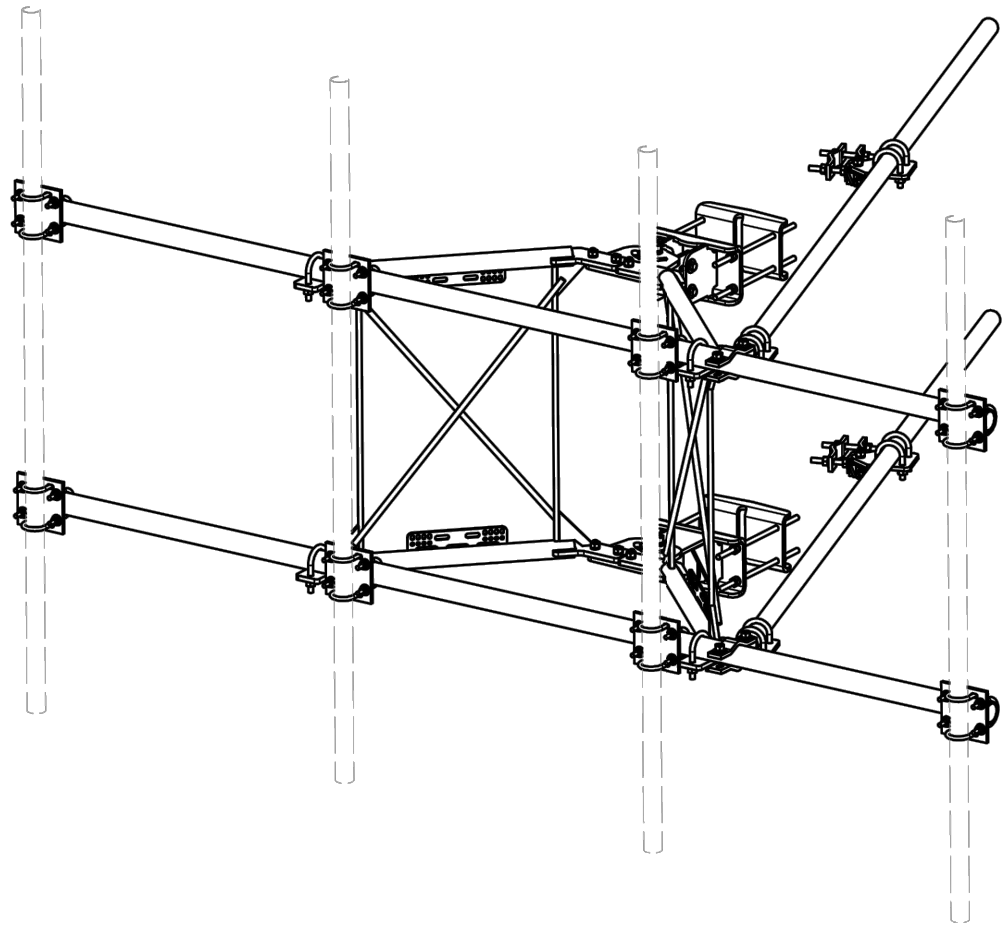
DATE DRAWN:	05/09/22
ATC JOB NO:	14101206_G2
CUSTOMER ID:	CTNL145A
CUSTOMER #:	CTNL145A

GROUNDING DETAILS

SHEET NUMBER:
E-501

REVISION:
1

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PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	2	X-VFAW	SUPPORT ARM		71.41	142.81
2	1	X-HDCAMTBW	CLAMP WELDMENT FOR BCAM-HD		33.86	33.86
3	1	X-MHTPHD	MULTI-HOLE TAPER PLATE WELDMENT		36.24	36.24
4	2	X-VFAPL4	VFA-HD PIVOT PLATE	12 in	15.88	31.77
5	2	X-LCBP4	BENT BACKING PLATE	13 in	19.00	38.01
6	1	X-HDCAMSS	ANGLE ADJUSTMENT WELDMENT FOR BCAM-HD		16.39	16.39
7	4	X-SPTB	SLIDING PIPE TIE BACK PLATE	5 1/2 in	5.87	23.49
8	1	X-HDCAMSP	POSITIONING PLATE WELDMENT FOR BCAM-HD		2.58	2.58
9	4	X-TBCA	TIE BACK CLIP ANGLE		2.01	8.02
10	8	SCX2	CROSSOVER PLATE	7 in	4.80	38.37
11	4	MCP	CLAMP HALF 1/2" THICK, 11-5/8" LONG	12 1/16 in	3.59	14.37
12	8	DCP	1/2" THICK, 5-3/4" CENTER TO CENTER CLAMP HALF	8 1/8 in	2.36	18.90
13	2	P2126	2-3/8" X 126" (2" SCH. 40) GALVANIZED PIPE	126 in	40.75	81.50
14	2	P30150	2-7/8" X 150" (2-1/2" SCH. 40) GALVANIZED PIPE	150 in	76.94	153.87
15	4	A34212	3/4" X 2-1/2" UNC HEX BOLT (A325)	2 1/2 in	0.48	1.92
16	4	G34FW	3/4" HDG USS FLATWASHER		0.06	0.24
17	4	G34LW	3/4" HDG LOCKWASHER		0.04	0.17
18	4	G34NUT	3/4" HDG HEAVY 2H HEX NUT		0.21	0.85
19	8	G58R-18	5/8" X 18" THREADED ROD (HDG.)	18 in	0.40	3.19
20	4	G58R-12	5/8" X 12" THREADED ROD (HDG.)		1.05	4.18
21	4	G58R-8	5/8" X 8" THREADED ROD (HDG.)		0.70	2.79
22	4	X-UB5300	5/8" X 3" X 5-1/4" X 2-1/2" U-BOLT (HDG.)		1.15	4.60
23	8	X-UB5258	5/8" X 2-5/8" X 4-1/2" X 2" U-BOLT (HDG.)		1.00	8.00
24	2	G5807	5/8" X 7" HDG HEX BOLT GR5 FULL THREAD	7 in	0.70	1.41
25	1	G5806	5/8" X 6" HDG HEX BOLT GR5 FULL THREAD	6 in	0.62	0.62
26	8	G5804	5/8" X 4" HDG HEX BOLT GR5		0.44	3.55
27	4	G5802	5/8" X 2" HDG HEX BOLT GR5		0.27	1.08
28	8	A582114	5/8" X 2-1/4" HDG A325 HEX BOLT	2 1/4 in	0.31	2.50
29	25	G58FW	5/8" HDG USS FLATWASHER	1/8 in	0.07	1.76
30	66	G58LW	5/8" HDG LOCKWASHER		0.03	1.72
31	71	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	9.22
32	32	X-UB1300	1/2" X 3" X 5" X 2" GALV U-BOLT		0.74	23.64
33	16	X-UB1212	1/2" X 2" X 3" X 1-1/4" U-BOLT (HDG.)		0.60	9.56
34	64	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	2.18
35	64	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	0.89
36	64	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	4.58
					TOTAL WT. #	738.06

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
D	UPDATED BCAM VERSION 1 TO BCAM VERSION 2		CEK	6/29/2018
C	UPDATED PIN LEG CONNECTION TO B-CAM CONNECTION		CEK	12/7/2017
B	CHANGED TIE-BACK BACK CONNECTION		CEK	7/31/2017
A	CHANGED TIE-BACK FRONT CONNECTION		CEK	2/2/2017
REVISION HISTORY				

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

PROPRIETARY NOTE:
 THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

DESCRIPTION		12' 6" HEAVY DUTY V-FRAME ASSEMBLY WITH TWO STIFF ARMS	
CPD NO.	DRAWN BY	ENG. APPROVAL	
	CEK 1/25/2017		
CLASS	SUB	DRAWING USAGE	CHECKED BY
81	02	CUSTOMER	BMC 12/13/2017

 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
	PART NO. VFA12-HD	DWG. NO. VFA12-HD

PAGE
1 OF 5

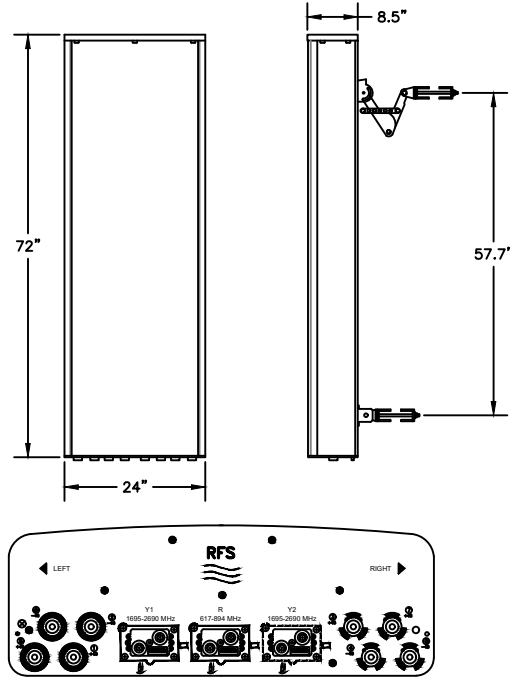
SUPPLEMENTAL

SHEET NUMBER:
R-601

REVISION:
1

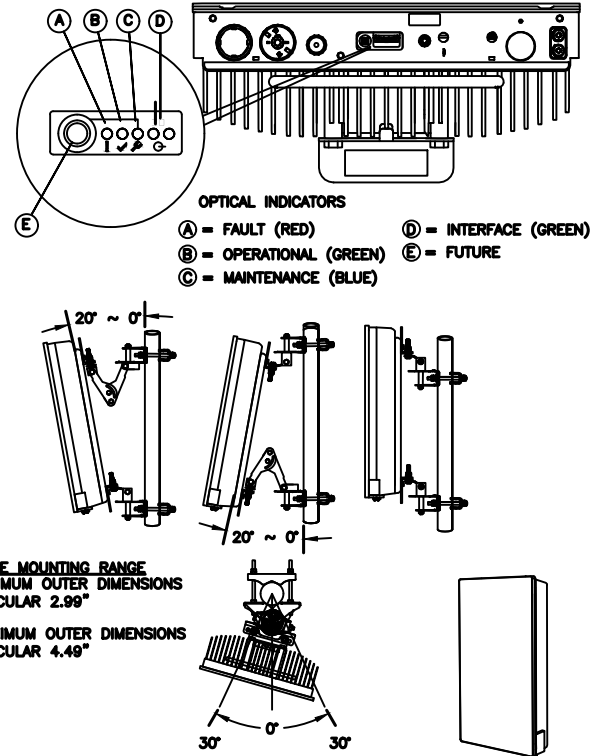
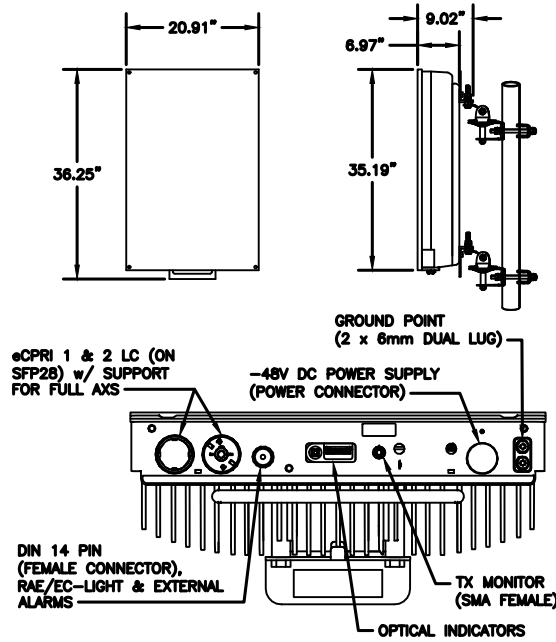
NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

MANUFACTURER:	RFS
MODEL:	APXVAALL18_43-U-NA20
DIMENSIONS:	72" x 24" x 8.5"
WEIGHT:	92.6 LB
BAND:	QUAD BAND (8 PORT)
MOUNTING KIT:	APM40-10E BEAM TILT KIT (INCLUDED) (16.53 LBS)



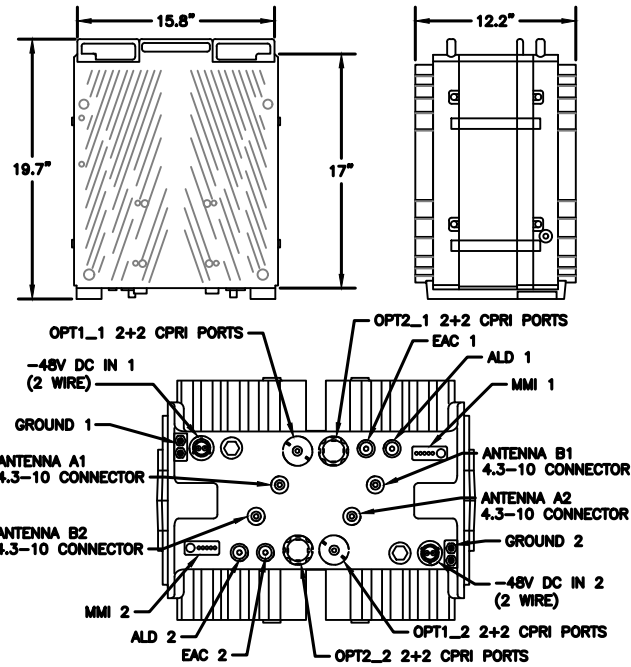
1 34086 - RFS APXVAALL18 43-U-NA20
SCALE: N.T.S.

MANUFACTURER:	ERICSSON
MODEL:	AIR 6419 B41 (2.5GHz M-MIMO)
DIMENSIONS:	36.25" x 20.91" x 9.02" NOT TO EXCEED (H x W x D)
WEIGHT:	83 LBS (EXCLUDING MOUNTING KIT)
MOUNT WEIGHT:	13.5 LBS (SXX109 2016/1)



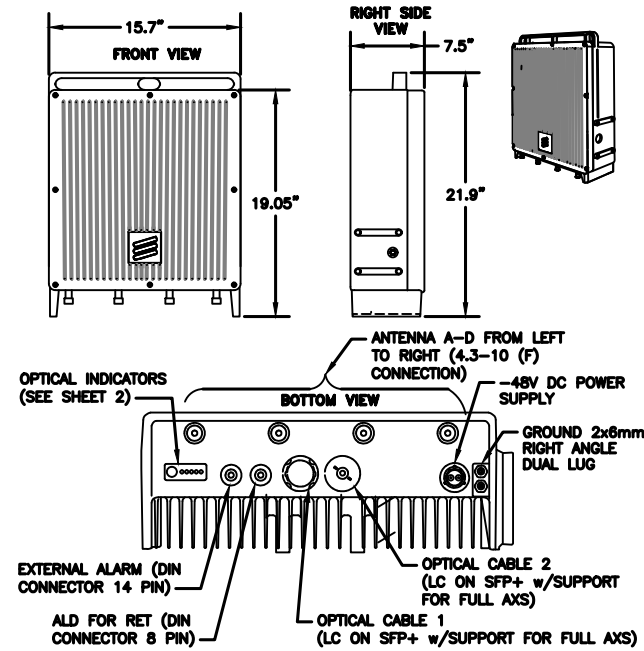
1 34552 - ERICSSON AIR 6419 BAND 41
SCALE: N.T.S.

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



3 34373 - ERICSSON 4460 RADIO B2/25 B66
SCALE: N.T.S.

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



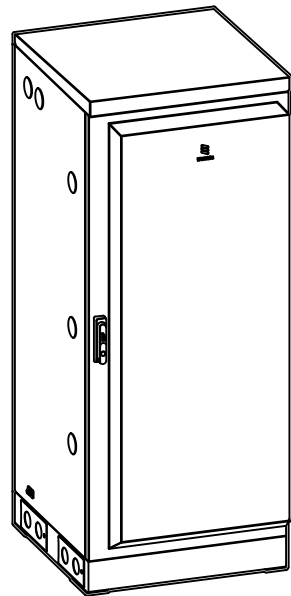
4 34372 - ERICSSON 4480 RADIO
SCALE: N.T.S.

SUPPLEMENTAL

SHEET NUMBER:
R-602

REVISION:
1

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



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

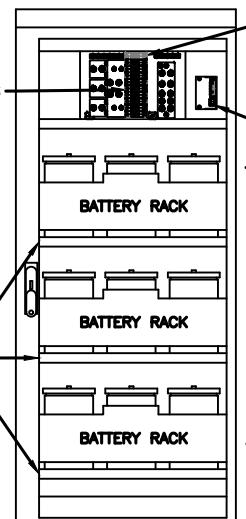
CABINET GROUND POINTS

REAR VIEW

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

3 x 300A BREAKERS

BATTERY VIBRATION MOUNTS



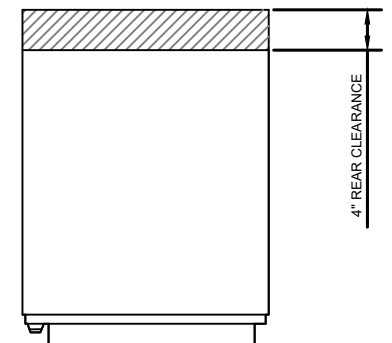
25A AUX BREAKERS, FANS, LIGHTS, ETC.

ALARM BOX, PRELABELLED

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

FRONT VIEW (DOOR OPEN)

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

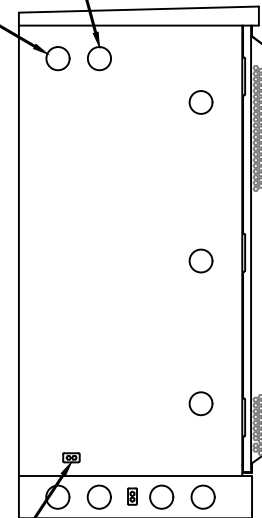


4" REAR CLEARANCE

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

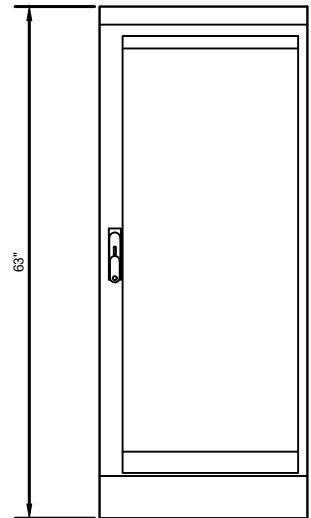
(OPTIONAL) 2.5" KNOCKOUTS FOR ALARM & TEMP SENSOR ROUTING TO 6160

(OPTIONAL) 2.5" DC POWER KNOCKOUTS TO 6160

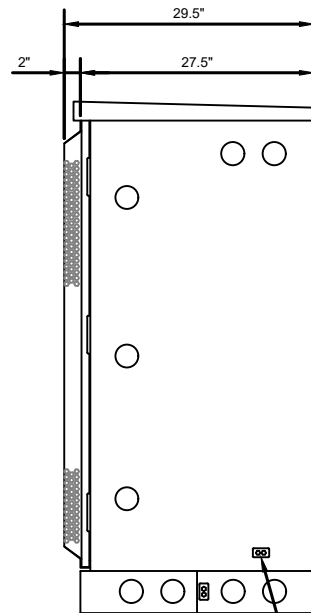


CABINET GROUND POINT

LEFT VIEW

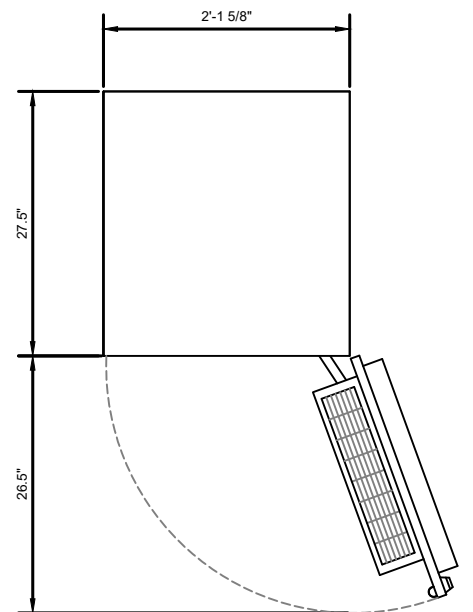


FRONT VIEW



CABINET GROUND POINT

RIGHT VIEW

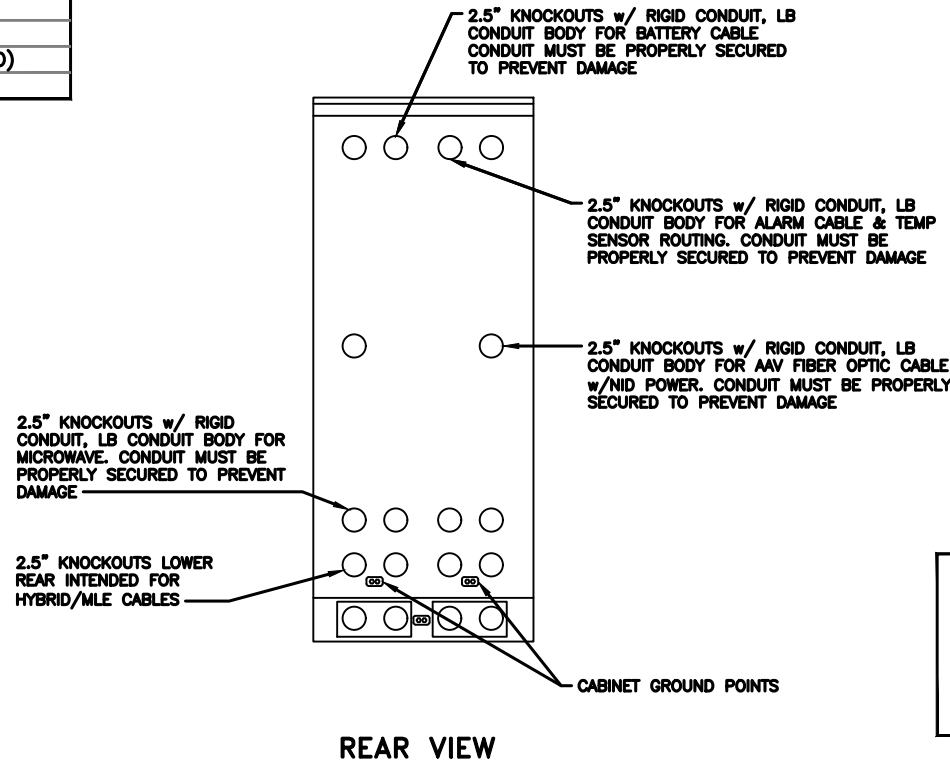
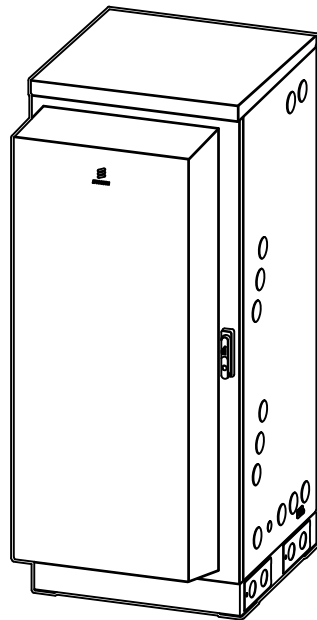


PLAN VIEW

B160 ERICSSON SITE SUPPORT BATTERY CABINET

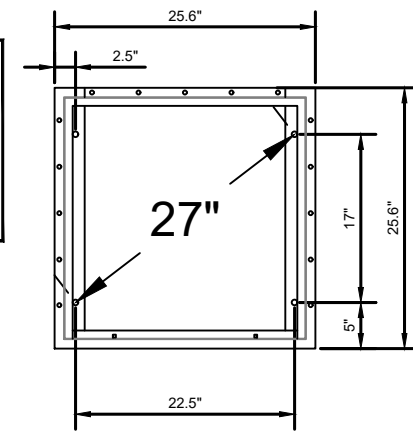
SUPPLEMENTAL	
SHEET NUMBER: R-603	REVISION: 1

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



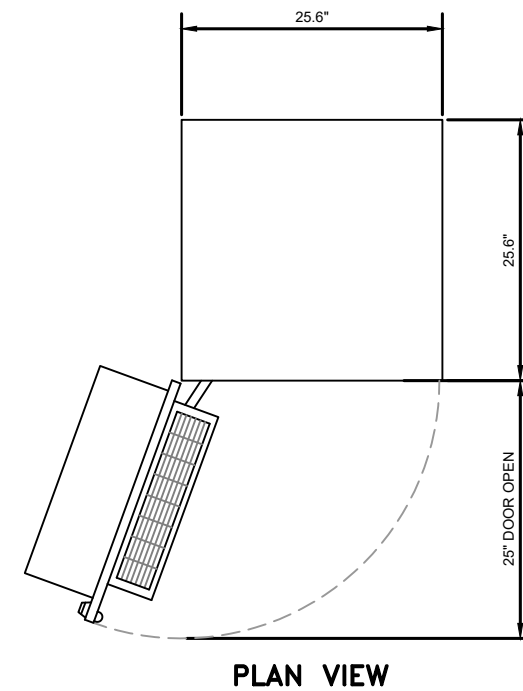
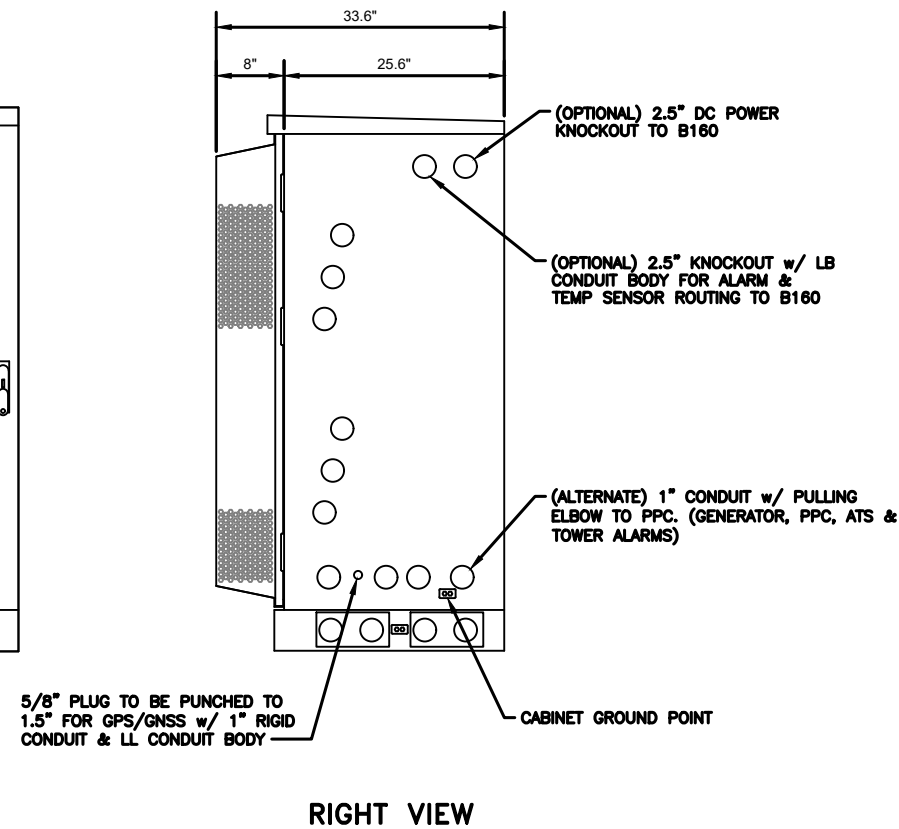
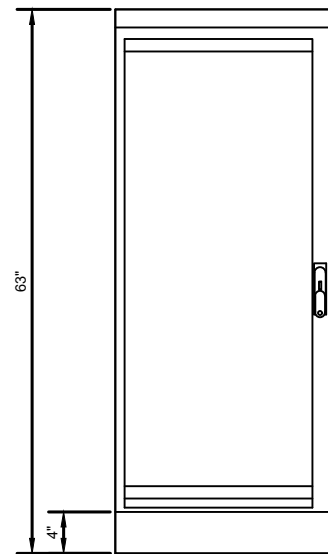
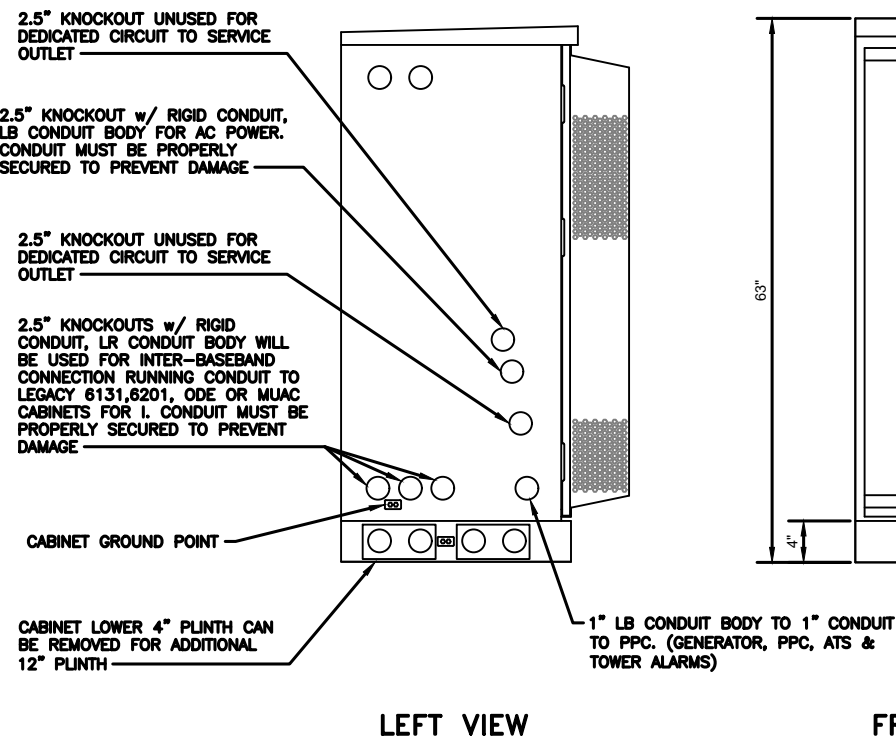
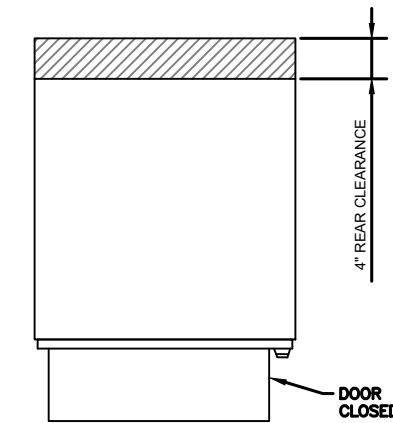
NOTE:

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



GROUNDING NOTE:

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



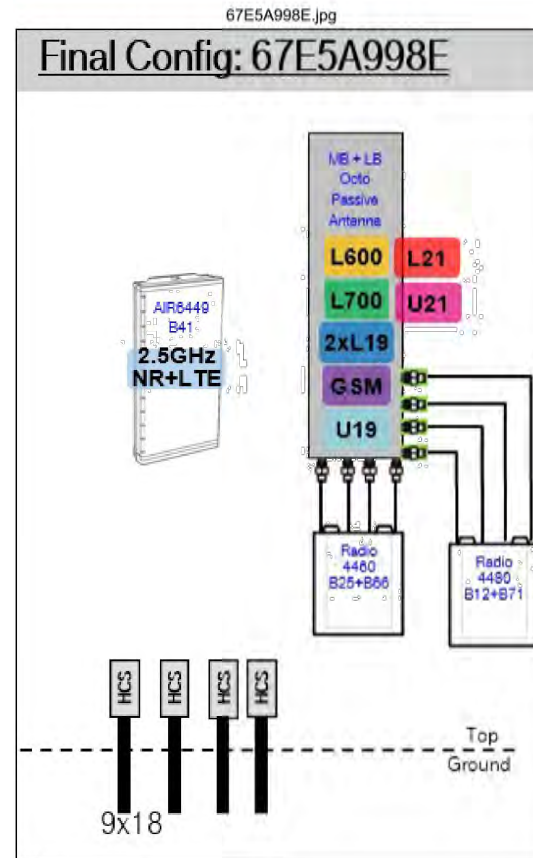
RAN Template: 67E5A998E 6160 A&L Template: 67E5998E_1xAIR+10P

Section 1 - Site Information

Site ID: CTNL145A Status: Draft Version: 1 Project Type: Coverage Strategy Approved: Not Approved Approved By: Not Approved Last Modified: 4/14/2022 2:32:45 PM Last Modified By: Michael.Low1@T-Mobile.com	Site Name: CTNL145_Underserved_ATC_SST Site Class: Self Support Tower Site Type: Structure Non Building Plan Year: 2021 Market: CONNECTICUT CT Vendor: Ericsson Landlord: Not Specified	Latitude: 41.84786000 Longitude: -72.12161000 Address: 353 Pumpkin Hill Road City, State: Ashford, CT Region: NORTHEAST
RAN Template: 67E5A998E 6160		AL Template: 67E5998E_1xAIR+10P
Sector Count: 3	Antenna Count: 6	Coax Line Count: 0
TMA Count: 0	RRU Count: 6	

Proposed RAN Equipment

Enclosure	1	2
Enclosure Type	Enclosure 6160 AC V1	B160
Baseband	BB 6648 L2500 N2500 BB 6648 L700 L600 N600 L2100 L1900	
Hybrid Cable System	PSU 4813 vR4A (Kit) (x 2)	
Transport System	CSR IXRe V2 (Gen2)	
Functionality Groups	Ericsson Hybrid Trunk 6/24 4AWG *Select Length* (x 3)	
RAN Scope of Work:		



Notes:

SUPPLEMENTAL

SHEET NUMBER:
R-605

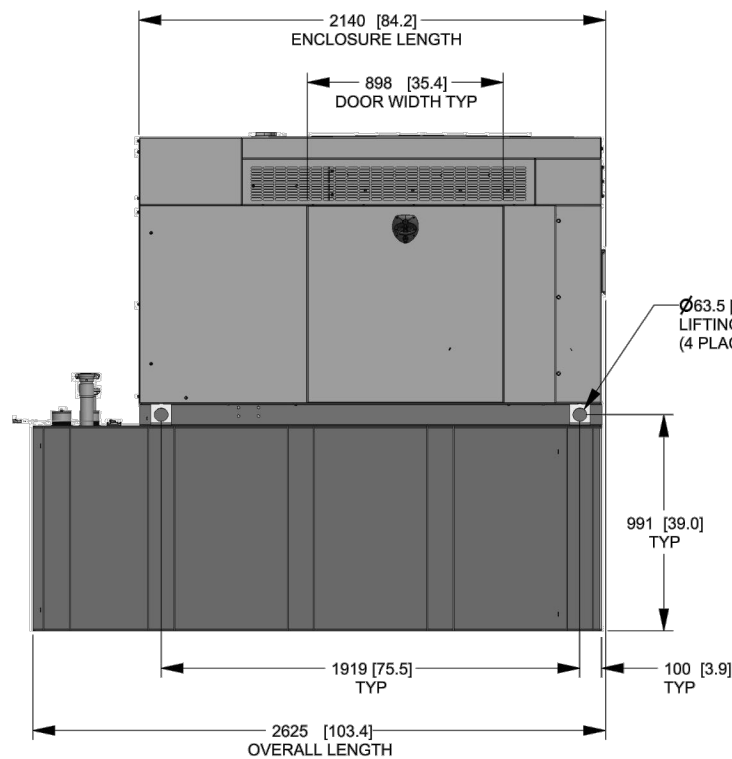
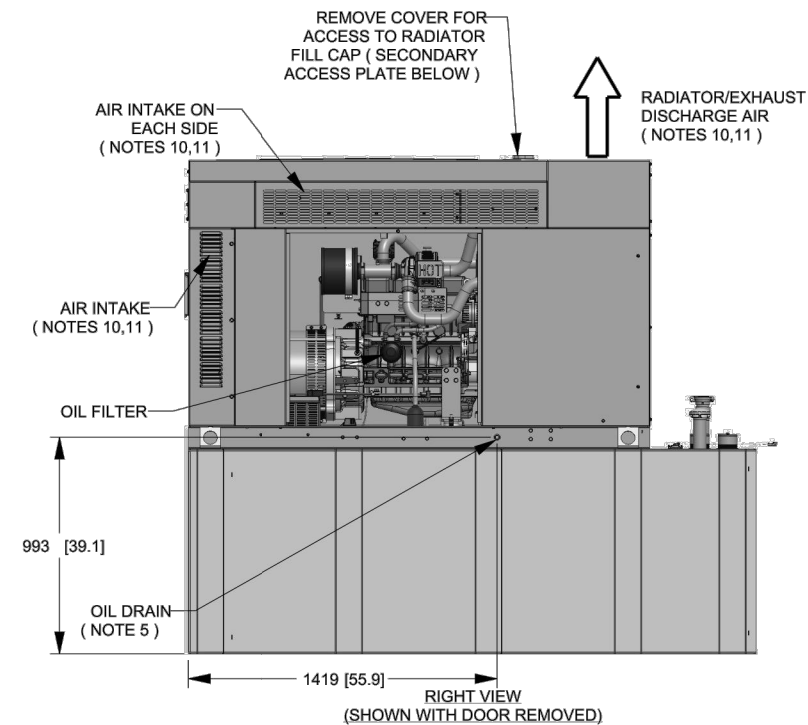
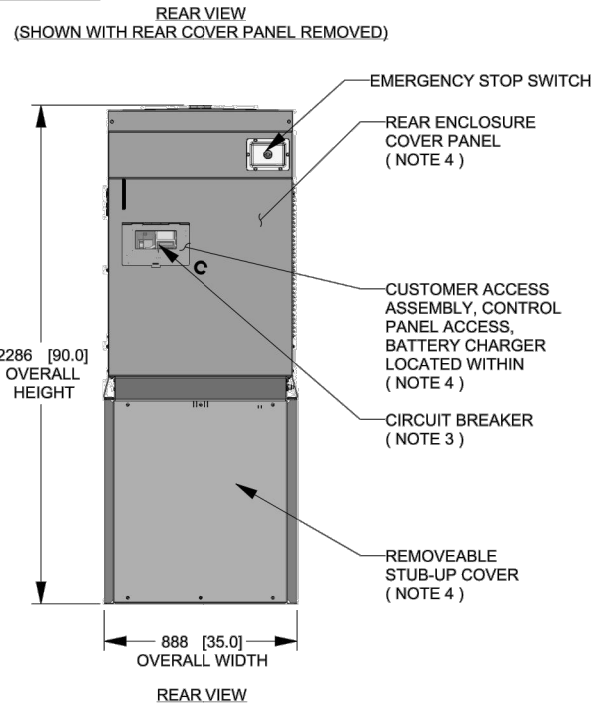
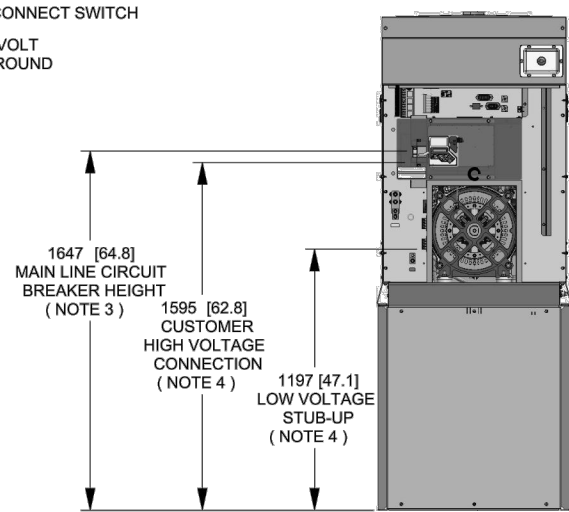
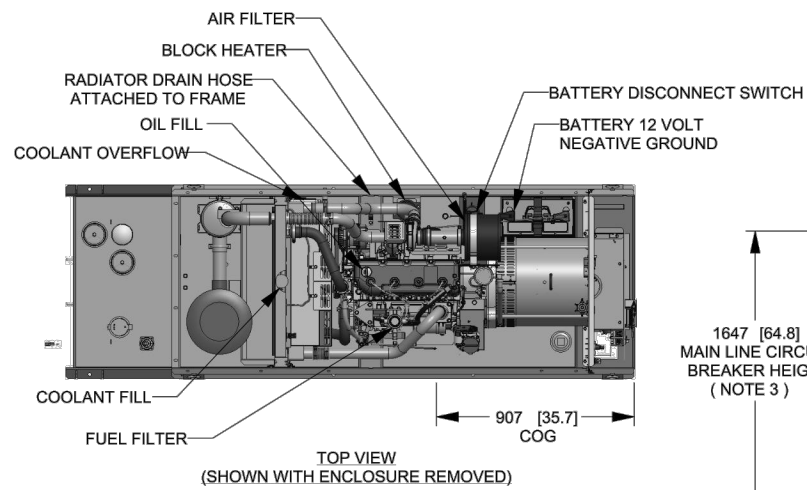
REVISION:
1

WEIGHT DATA WITH EMPTY BASKETANK (SEE NOTE 6)	
GENERATOR AS SHOWN	1,322 [2,915]
WITH WOODEN SHIPPING SKID	1,340 [2,954]

WEIGHT: KG [LBS]
DIMENSIONS: MM [INCH]

NOTES:

- THIS UNIT MUST BE INSTALLED IN ACCORDANCE WITH CURRENT APPLICABLE NFPA 37 AND NFPA 70 STANDARDS AS WELL AS ANY OTHER FEDERAL, STATE, AND LOCAL CODES.
- BATTERY (12 VOLT NEGATIVE GROUND SYSTEM).
- CONTROL PANEL / CIRCUIT BREAKER INFORMATION:
 - MAIN LINE CIRCUIT BREAKER 200 AMPS.
 - SEE SPECIFICATION SHEET OR OWNERS MANUAL.
 - ACCESSIBLE THROUGH CUSTOMER ACCESS ASSEMBLY DOOR ON REAR OF GENERATOR.
 - CONTROL PANEL INCLUDES INTEGRATED BATTERY CHARGER.
- REMOVE THE REAR STUB-UP AND REAR ENCLOSURE COVER PANEL TO ACCESS THE STUB-UP AREAS AS FOLLOWS:
 - HIGH VOLTAGE CONNECTION INCLUDING AC LOAD LEAD CONDUIT CONNECTION, NEUTRAL CONNECTION, AND BATTERY CHARGER 120 VOLT AC (0.5 AMP MAX) CONNECTION.
 - LOW VOLTAGE CONNECTION INCLUDING TRANSFER SWITCH CONTROL WIRES.
- ENGINE SERVICE CONNECTIONS:
 - OIL DRAIN = 1/2" NPT
 - RADIATOR DRAIN = HOSE CLAMPED TO FRAME
- CENTER OF GRAVITY AND WEIGHT MAY CHANGE DUE TO UNIT OPTIONS.
- BOTTOM OF GENERATOR SET MUST BE ENCLOSED TO PREVENT PEST INTRUSION AND RECIRCULATION OF DISCHARGE AIR AND/OR IMPROPER COOLING AIR FLOW.
- REFERENCE OWNERS MANUAL FOR LIFTING WARNINGS.
- MOUNTING BOLTS OR STUDS TO MOUNTING SURFACE SHALL BE 5/8-11 GRADE 5 (USE STANDARD SAE TORQUE SPECS)
- MUST ALLOW FREE FLOW OF INTAKE AIR, DISCHARGE AIR AND EXHAUST. SEE SPEC SHEET FOR MINIMUM AIR FLOW AND MAXIMUM RESTRICTION REQUIREMENTS.
- GENERATOR MUST BE INSTALLED SUCH THAT FRESH COOLING AIR IS AVAILABLE AND THAT DISCHARGE AIR FROM RADIATOR IS NOT RECIRCULATED. RECOMMENDED MINIMUM PERIMETER (3FT) AND VERTICAL OVER EXHAUST (5FT) CLEARANCE FOR SITE LOCATION.
- GENERATOR MUST BE GROUNDED.



DRAWING CREATED FROM PRO/ENGINEER 3D FILE. ECO MODIFICATION TO BE APPLIED TO SOLID MODEL ONLY.

INSTALLATION DRAWING

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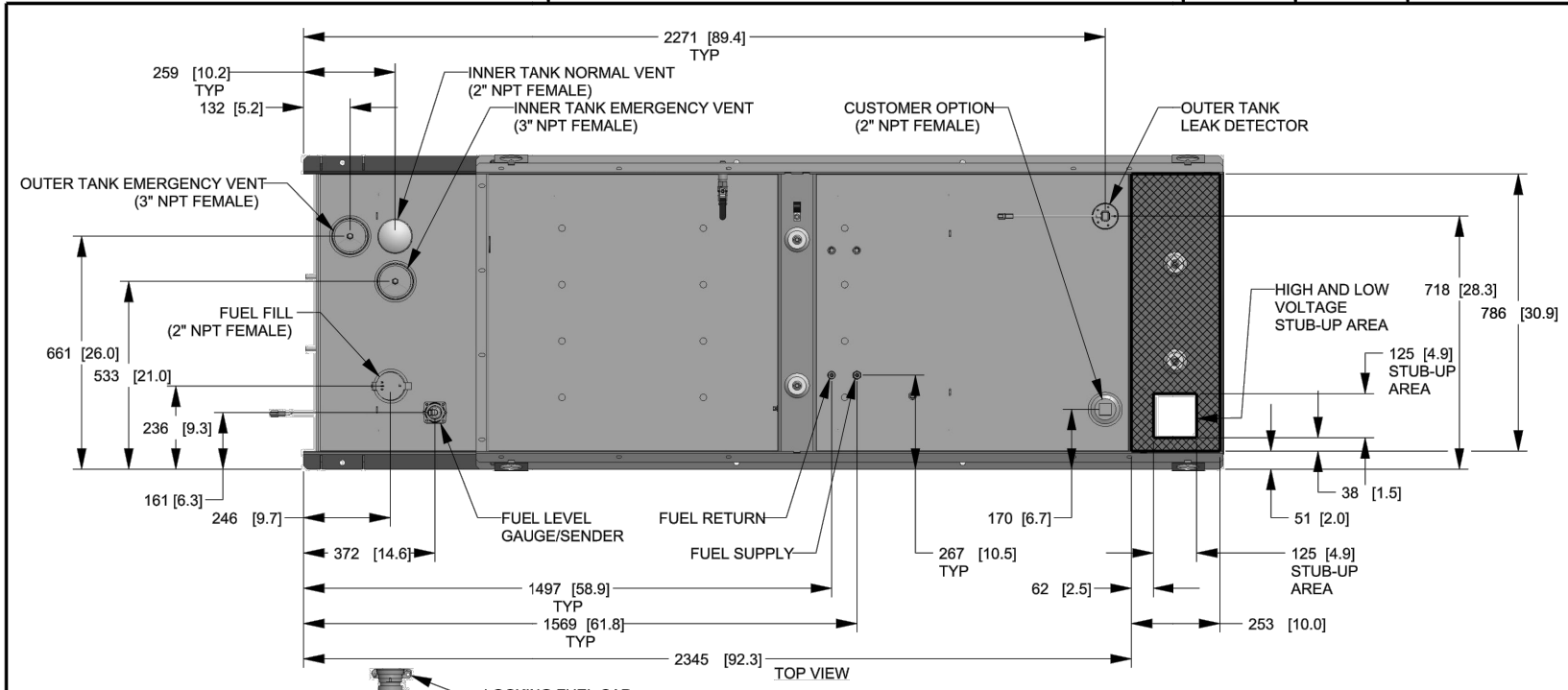
ELECTRONICALLY APPROVED INSIDE WINDCHILL



TITLE			
INSTALL D3.4L G16 48KW Y06 EXT			
ISSUE DATE: 8/8/18			
SIZE	CAGE NO	DWG NO	REV
B	N/A	10000041950	A
SCALE	WT-KG	SEE ABOVE	SHEET
0.035			1 of 2

SUPPLEMENTAL

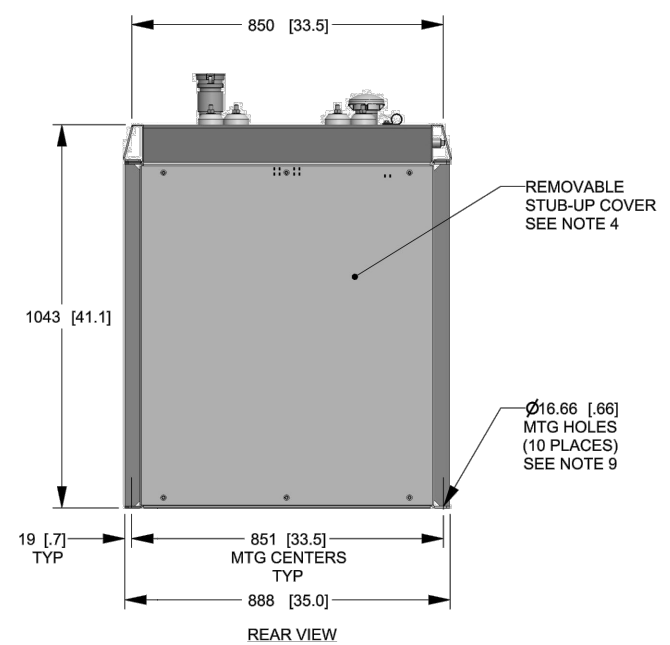
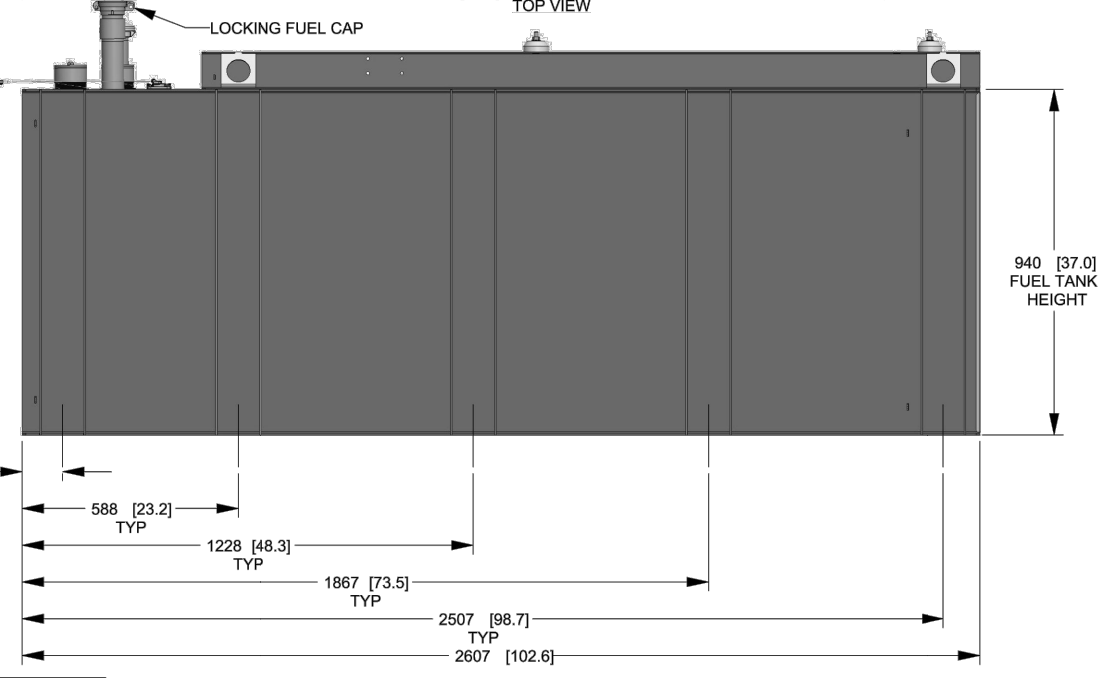
SHEET NUMBER: R-606
REVISION: 1



FUEL TANK	
TOTAL CAPACITY	908 [240]
USABLE CAPACITY	867 [229]

CAPACITY: LITER [GALLON]
 DIMENSIONS: MM [INCH]
 TANK IS LISTED TO UL142 AND ULC5601

NOTE: STUB-UP AREA FOR HIGH AND LOW VOLTAGE CONNECTIONS, CIRCUIT BREAKER, NEUTRAL AND CUSTOMER CONNECTION OPENING.



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INSTALLATION DRAWING

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ELECTRONICALLY APPROVED
INSIDE WINDCHILL



TITLE
**INSTALL D3.4L G16
 48KW Y06 EXT**

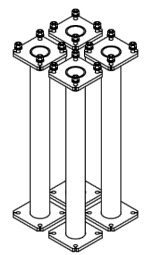
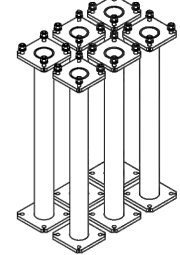
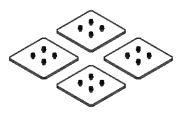
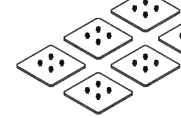
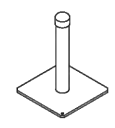
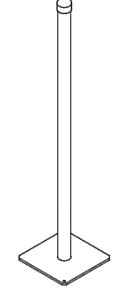
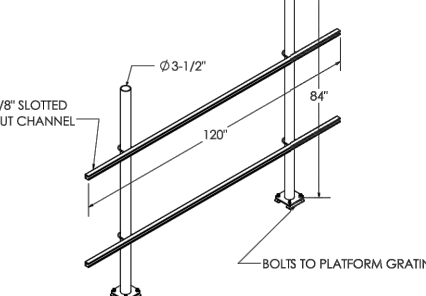
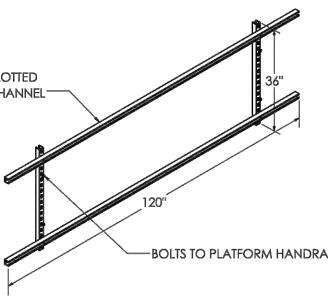
ISSUE DATE:		8/8/18	
SIZE	CAGE NO	DWG NO	REV
B	N/A	10000041950	A
SCALE	0.060	WT-KG	SEE ABOVE SHEET 2 of 2

SUPPLEMENTAL

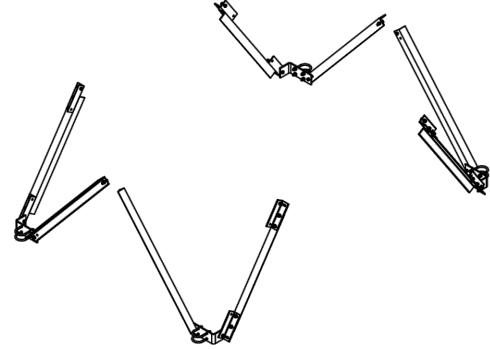
SHEET NUMBER:
R-607

REVISION:
1

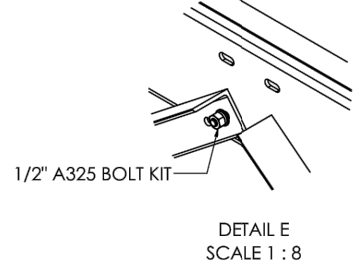
ADDITIONAL ACCESSORIES

<p>LEG EXTENSION KITS:</p>  <p>PV-WC-EXT4 4 POST EXTENSION KIT WEIGHT: 160 LBS</p>  <p>PV-WC-EXT6 6 POST EXTENSION KIT WEIGHT: 160 LBS</p>	<p>BEARING FOOT PLATES:</p>  <p>PV-WC-FOOT4 4 POST FOOT PLATES WEIGHT: 236 LBS</p>  <p>PV-WC-FOOT6 6 POST FOOT PLATES WEIGHT: 355 LBS</p>	<p>EQUIPMENT PLATFORM LEGS:</p>  <p>PV-EQ-POST2 2' PLATFORM POST WEIGHT: 70 LBS</p>  <p>PV-EQ-POST7 7' PLATFORM POST WEIGHT: 110 LBS</p>
<p>INTERIOR H-FRAME:</p>  <p>PV-EQ-HFRAME EQUIPMENT PLATFORM INTERIOR H-FRAME WEIGHT: 165 LBS</p>	<p>HANDRAIL H-FRAME:</p>  <p>PV-EQ-HFRAME-HR EQUIPMENT PLATFORM HANDRAIL H-FRAME WEIGHT: 60 LBS</p>	

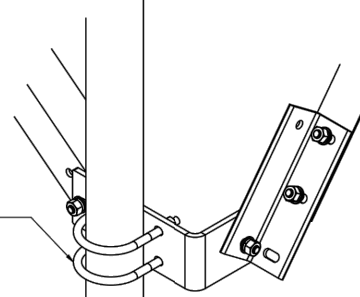
CANOPY CORNER BRACE



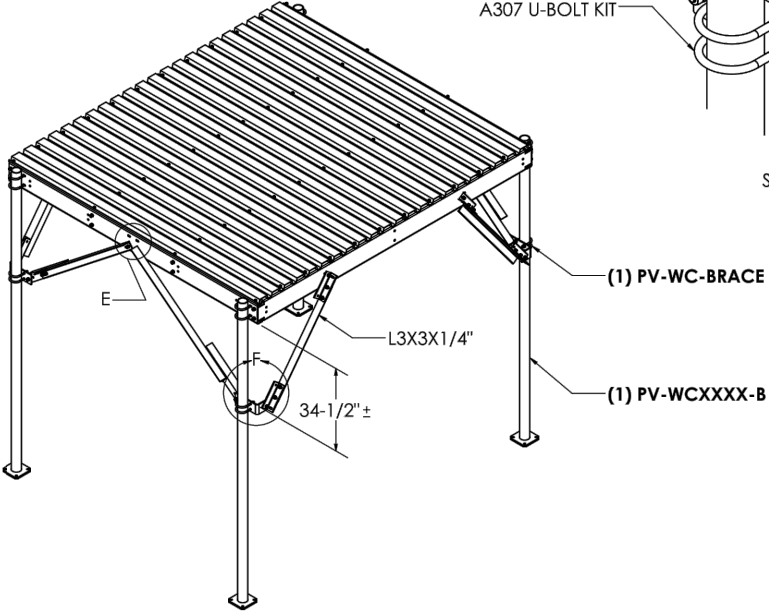
PV-WC-BRACE
CANOPY BRACE KIT
WEIGHT: 250 LBS



1/2" A325 BOLT KIT
DETAIL E
SCALE 1 : 8

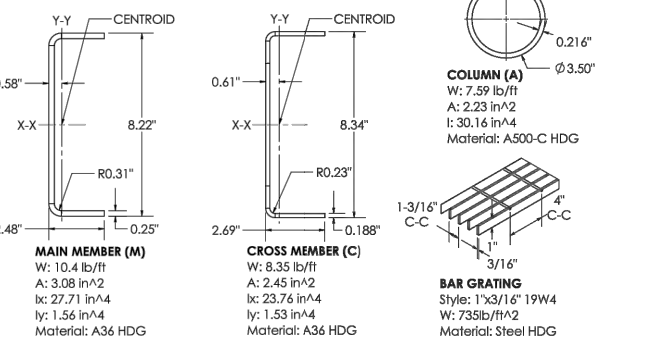


1/2" X 3-9/16"
A307 U-BOLT KIT
DETAIL F
SCALE 1 : 8



(1) PV-WC-BRACE
(1) PV-WCXXXX-B
L3X3X1/4"
34-1/2" ±

SECTION PROPERTIES AND FRAMING PLAN



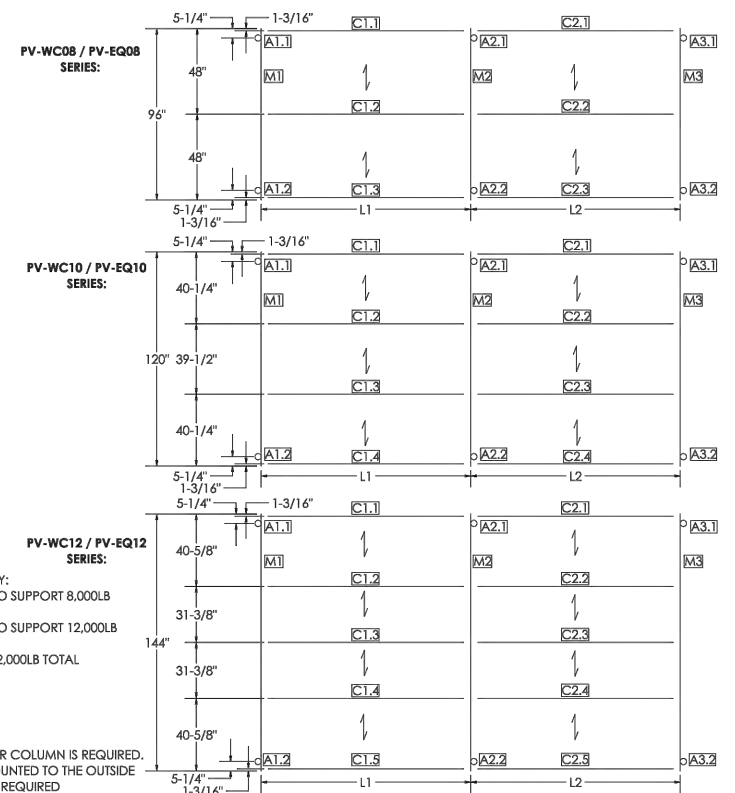
COLUMN (A)
W: 7.59 lb/ft
A: 2.23 in²
I: 30.16 in⁴
Material: A500-C HDG

MAIN MEMBER (M)
W: 10.4 lb/ft
A: 3.08 in²
I: 27.71 in⁴
Iy: 1.56 in⁴
Material: A36 HDG

CROSS MEMBER (C)
W: 8.35 lb/ft
A: 2.45 in²
I: 23.76 in⁴
Iy: 1.53 in⁴
Material: A36 HDG

BAR GRATING
Style: 1"x3/16" 19W4
W: 735lb/ft²
Material: Steel HDG

1.5B18 ROOF DECKING
W: 2.82 lb/ft²
I: 0.292 in⁴/ft
Sp: 0.318 in³/ft
Sn: 0.327 in³/ft
Fy: 33ksi
Finish: G60



- STANDARD POST PLATFORM CAPACITY:**
- 4 POST PLATFORMS DESIGNED TO SUPPORT 8,000LB TOTAL EQUIPMENT LOAD.
 - 6 POST PLATFORMS DESIGNED TO SUPPORT 12,000LB TOTAL EQUIPMENT LOAD.
 - EACH ADDITIONAL POST ADDS 2,000LB TOTAL DISTRIBUTED LOAD CAPACITY.
- PV-EQ-JACK-S:**
- CAPACITY
 - 3000LB LIFT
 - 5000LB STATIC
 - IF JACKS ARE TO BE USED, (1) PER COLUMN IS REQUIRED. ADDITIONAL JACKS MAY BE MOUNTED TO THE OUTSIDE OF THE PLATFORM FRAMING AS REQUIRED

Canopy	L1	L2	Canopy	L1	L2	Canopy	L1	L2
PV-WC0807-B	6'	-	PV-WC1007-B	6'	-	PV-WC1207-B	6'	-
PV-WC0808-B	7'	-	PV-WC1008-B	7'	-	PV-WC1208-B	7'	-
PV-WC0809-B	8'	-	PV-WC1009-B	8'	-	PV-WC1209-B	8'	-
PV-WC0810-B	9'	-	PV-WC1010-B	9'	-	PV-WC1210-B	9'	-
PV-WC0811-B	10'	-	PV-WC1011-B	10'	-	PV-WC1211-B	10'	-
PV-WC0812-B	11'	-	PV-WC1012-B	11'	-	PV-WC1212-B	11'	-
PV-WC0813-B	6'	6'	PV-WC1013-B	6'	6'	PV-WC1213-B	6'	6'
PV-WC0814-B	7'	6'	PV-WC1014-B	7'	6'	PV-WC1214-B	7'	6'
PV-WC0815-B	7'	7'	PV-WC1015-B	7'	7'	PV-WC1215-B	7'	7'
PV-WC0816-B	8'	7'	PV-WC1016-B	8'	7'	PV-WC1216-B	8'	7'
PV-WC0817-B	8'	8'	PV-WC1017-B	8'	8'	PV-WC1217-B	8'	8'
PV-WC0818-B	9'	8'	PV-WC1018-B	9'	8'	PV-WC1218-B	9'	8'
PV-WC0819-B	9'	9'	PV-WC1019-B	9'	9'	PV-WC1219-B	9'	9'
PV-WC0820-B	10'	9'	PV-WC1020-B	10'	9'	PV-WC1220-B	10'	9'
PV-WC0821-B	10'	10'	PV-WC1021-B	10'	10'	PV-WC1221-B	10'	10'
PV-WC0822-B	11'	10'	PV-WC1022-B	11'	10'	PV-WC1222-B	11'	10'
PV-WC0823-B	11'	11'	PV-WC1023-B	11'	11'	PV-WC1223-B	11'	11'

SHEET 11 OF 12	THIRD ANGLE PROJECTION	CATEGORY 07 Equipment Platforms & Canopies	6	ADDED DECK HEIGHT RANGE TABLE INFO	11/18/19
11/25/2019	SCALE NTS	SERIES 01 Equipment Platforms & Canopies	5	UPDATED MEMBER LAYOUT ADDED PLATFORM SERIAL ADDED JACK LEGS	2/15/18
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16" -1/32" ANGULAR: PROFILE ±1/4", BEND ±2" ALL OTHERS: ±1/16"		TYPE PV-WC / PV-EQ Series	4	EQ USABLE AREA TABLE	3/20/17
APPROVED		BY DJN	3	ADDED PV-EQ-BTP	1/25/17
REV		CHECKED SJS	2	UPDATED PV-WC BRACE	9/18/14
DATE		STATUS APPROVED	REV	EQUIPMENT PLATFORM AND CANOPY ACCESSORY PARTS	REV
DESCRIPTION		REV	DESCRIPTION	DATE	REV

PERFECT VISION
WCEQ-ENG-01-R6 6

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SUPPLEMENTAL

SHEET NUMBER: **R-609**
REVISION: **1**

Exhibit E

Structural Analysis Report



AMERICAN TOWER®
CORPORATION

This report was prepared for American Tower Corporation by



Structural Analysis Report

Structure : 240 ft Self Support Tower
ATC Site Name : ASHFORD CT,CT
ATC Site Number : 411217
Engineering Number : 14101206_C3_03
Proposed Carrier : T-MOBILE
Carrier Site Name : CTNL145_Underserved_ATC_SST
Carrier Site Number : CTNL145A
Site Location : 353 Pumpkin Hill Rd.
Ashford, CT 06278-1711
41.8478, -72.1216
County : Windham
Date : April 25, 2022
Max Usage : 67%
Result : Pass

Prepared By:

Shahad Haji
POD

Reviewed By:





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Foundations5
Deflection, Twist and Sway*5
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CalculationsAttached

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 240 ft Guyed tower to reflect the change in loading by T-MOBILE.

Supporting Documents

Tower Drawings	Sabre Job #128805, dated September 21, 2015
Foundation Drawing	Sabre Job #128805, dated September 21, 2015
Geotechnical Report	Terracon Project #J2155118, dated February 23, 2015
Mount Analysis	ATC Engineering #14101206_C8_01, dated April 21, 2022

Analysis

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

Basic Wind Speed:	120 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:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Spectral Response:	S _s = 0.18, S _i = 0.06
Site Class:	D - Stiff Soil - Default

Conclusion

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

If you have any questions or require additional information, please contact POD Group via email at bsmith@podgrp.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
240.0	3	Samsung B5/B13 RRH-BR04C	Sector Frame	(2) 1 5/8" (1.63"-41.3mm) Fiber (12) 1 5/8" Coax (1) 1/2" Coax	VERIZON WIRELESS
	3	Samsung B2/B66A RRH-BR049			
	2	Raycap RRFDC-3315-PF-48			
	3	Samsung MT6407-77A			
	3	Andrew LNX-6514DS-VTM (72.7" height)			
	1	VZW Unused Reserve (7582.89 sqin)			
	6	JMA Wireless MX06FRO660-03			
	3	Andrew LNX-6514DS-VTM (72.7" height)			
205.0	1	Raycap DC6-48-60-18-8C	Sector Frame	(1) 0.39" (10mm) Fiber Trunk (2) 0.78" (19.7mm) 8 AWG 6 (12) 2 1/4" Coax (3) 3/8" (0.38"-9.5mm) RET Control Cable	AT&T MOBILITY
	6	Powerwave Allgon 7770.00			
	3	CCI HPA-65R-BUU-H8			
	6	Powerwave Allgon LGP21901			
	6	Ericsson RRUS 11 B4			
	6	Powerwave Allgon LGP21401			
	6	Powerwave Allgon 7020.00 Dual Band RET			
184.7	1	Generic 18' Omni	Side Arm	(2) 7/8" Coax	SBC COMMUNICATIONS INC
179.9	1	Generic 12' Dipole			

Equipment to be Removed

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
No loading was considered as removed as part of this analysis.					

Proposed Equipment

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
214.0	3	Ericsson 4460 BAND 2/25	Site Pro VFA12-HD	(3) 1.99" (50.7mm) Hybrid	T-MOBILE
	3	Ericsson 4480 BAND 71			
	3	Ericsson AIR 6419 B41			
	3	RFS APXVAALL24 43-U-NA20			

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

Install proposed lines on the tower face with the least amount of existing lines.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	67%	Pass
Diagonals	61%	Pass
Horizontals	21%	Pass
Anchor Bolts	46%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Uplift (Kips)	329.8	42%
Axial (kips)	388.2	21%
Total Shear (Kips)	58.0	30%

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, Twist and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Twist (°)	Sway (Rotation) (°)
214.0	Ericsson 4460 BAND 2/25	T-MOBILE	0.455	0.018	0.330
	Ericsson 4480 BAND 71				
	Ericsson AIR 6419 B41				
	RFS APXVAALL24 43-U-NA20				

*Deflection, Twist 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 POD Group 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 POD Group

It is the responsibility of the client to ensure that the information provided to POD Group and used in the performance of our engineering services is correct and complete.

POD Group assumes that all structures were constructed in accordance with the drawings and specifications.

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

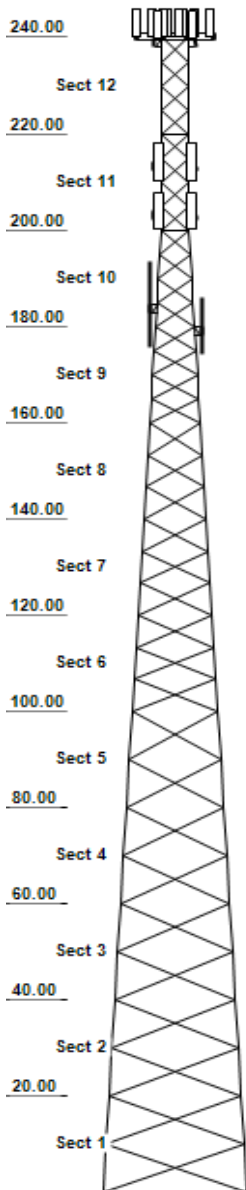
Unless explicitly agreed by both the client and POD Group, all services will be performed in accordance with the current revision of ANSI/TIA-222.

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

Asset: 411217, ASHFORD CT
 Client: T-MOBILE
 Code: ANSI/TIA-222-H

Height : 240 ft
 Base Width : 25 ft
 Shape : Triangle

Quadrant 1



SITE PARAMETERS

Nominal Wind : 120 mph wind with no ice Exposure : B Site Class : D
 Ice Wind: 50 mph wind with 1.5" radi Topo Method: Method 1 Risk Cat : II
 Service Wind : 60 mph Serviceability Topo Feature : S₃ : 0.182 S₁ : 0.055

SECTION PROPERTIES

Section	Leg Members	Diagonal Members	Horizontal Members
1 - 2	PX 50 ksi 10" DIA PIP	SAE 36 ksi 4X4X0.3125	
3	PX 50 ksi 10" DIA PIP	SAE 36 ksi 4X4X0.25	
4	PX 50 ksi 8" DIA PIPE	SAU 36 ksi 3.5X4X0.25	
5	PX 50 ksi 8" DIA PIPE	SAE 36 ksi 3.5x3.5x0.25	
6	PX 50 ksi 8" DIA PIPE	SAE 36 ksi 3X3X0.25	
7	PST 50 ksi 8" DIA PIP	SAE 36 ksi 3X3X0.1875	
8	PSP 50 ksi 5.563" OD	SAE 36 ksi 2.5X2.5X0.25	
9	PX 50 ksi 5" DIA PIPE	SAE 36 ksi 2.5X2.5X0.25	
10	PX 50 ksi 4" DIA PIPE	SAE 36 ksi 2X2X0.25	SAE 36 ksi 2X2X0.25
11	PX 50 ksi 3" DIA PIPE	SAE 36 ksi 2X2X0.3125	SAE 36 ksi 2X2X0.3125
12	PST 50 ksi 2.375" x 0	SAE 36 ksi 2X2X0.125	SAE 36 ksi 2X2X0.125

REDUNDANT SECONDARY BRACING

Section	Sub Diag 1	Sub Horiz 1	Sub Diag 2	Sub Horiz 2	Sub Diag 3	Sub Horiz 3
1 - 12	-	-	-	-	-	-

DISCRETE APPURTENANCE

Elev (ft)	Type	Qty	Description
240.00	BOB/SSB	2	Raycap RRFDC-3315-PF-48
240.00	Other	1	VZW Unused Reserve (7582.89 sq
240.00	PANEL	3	Andrew LNX-6514DS-VTM (72.7" h
240.00	PANEL	3	Samsung MT6407-77A
240.00	PANEL	6	JMA Wireless MX06FRO660-03
240.00	RRU/RRH	3	Samsung B5/B13 RRH-BR04C
240.00	RRU/RRH	3	Samsung B2/B66A RRH-BR049
240.00	Sector Frame	3	Generic Round Sector Frame
239.80	PANEL	3	Andrew LNX-6514DS-VTM (72.7" h
214.00	Other	3	Site Pro VFA12-HD
214.00	PANEL	3	Ericsson AIR 6419 B41
214.00	PANEL	3	RFS APXVAALL24 43-U-NA20
214.00	Radio/ODU	3	Ericsson 4460 BAND 2/25
214.00	Radio/ODU	3	Ericsson 4480 BAND 71
208.10	BOB/SSB	1	Raycap DC6-48-60-18-8C
204.20	PANEL	6	Powerwave Allgon 7770.00
203.80	PANEL	3	CCI HPA-65R-BUU-H8
203.70	DIPLEXER/DUAL COUPLER	6	Powerwave Allgon LGP21901
203.60	RRU/RRH	6	Ericsson RRUS 11 B4
203.40	TTA	6	Powerwave Allgon LGP21401
196.00	RET/RCU	6	Powerwave Allgon 7020.00 Dual
196.00	Sector Frame	3	Generic Round Sector Frame
184.70	OMNI	1	Generic 18' Omni
183.00	Side Arm	1	Generic Round Side Arm
180.00	Side Arm	1	Generic Round Side Arm
179.90	DIPOLE	1	Generic 12' Dipole

Asset: 411217, ASHFORD CT
 Client: T-MOBILE
 Code: ANSI/TIA-222-H

Height : 240 ft
 Base Width : 25 ft
 Shape : Triangle

LINEAR APPURTENANCE

Elev (ft)		Qty	Description
From	To		
0.00	240.00	1	Waveguide
0.00	240.00	1	1/2" Coax
0.00	240.00	12	1 5/8" Coax
0.00	240.00	2	1 5/8" (1.63"-41.3mm) Fiber
0.00	214.00	1	Waveguide
0.00	214.00	3	1.99" (50.7mm) Hybrid
0.00	208.00	2	0.78" (19.7mm) 8 AWG 6
0.00	208.00	1	0.39" (10mm) Fiber Trunk
0.00	204.00	12	2 1/4" Coax
0.00	196.00	1	Waveguide
0.00	196.00	3	3/8" (0.38"- 9.5mm) RET Control Cable
0.00	184.00	1	7/8" Coax
0.00	179.00	1	7/8" Coax

GLOBAL BASE FOUNDATION DESIGN LOADS

Load Case	Moment (k-ft)	Vertical (kip)	Horizontal (kip)
DL+WL	7868.15	72.4	57.95
DL+WL+IL	2500.25	171.1	18.4

INDIVIDUAL BASE FOUNDATION DESIGN LOADS

Vertical (kip)	Uplift (kip)	Horizontal (kip)
387.55	329.13	36.59

Asset: 411217, ASHFORD CT
Client: T-MOBILE
Code: ANSI/TIA-222-H

Height : 240 ft
Base Width : 25 ft
Shape : Triangle



ANALYSIS PARAMETERS

Location:	Windham County, CT	Height:	240 ft
Type and Shape:	Guyed, Triangle	Base Elevation:	0.00 ft
Manufacturer:	Sabre	Bottom Face Width:	25.00 ft
Kd	0.85	Top Face Width:	5.00 ft
Ke:	0.97		

ICE & WIND PARAMETERS

Exposure Category:	B	Design Wind Speed Without Ice:	120 mph
Risk Category:	II	Design Wind Speed with Ice:	50 mph
Topographic Factor Procedure:	Method 1	Operational Windspeed:	60 mph
Topographic Category:	Flat	Design Ice Thickness:	1.50 in
Crest Height:	0 ft	HMSL:	762 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method		
Site Class:	D - Stiff Soil	Period Based on Rayleigh Method (sec):	1.17
T_L (sec):	6	P:	1.3
S_s:	0.182	S₁:	0.055
F_a:	1.600	F_v:	2.400
S_{ds}:	0.194	S_{d1}:	0.088
		C_s:	0.030
		C_{s, Max}:	0.030
		C_{s, Min}:	0.030

LOAD CASES

1.2D + 1.0W Normal	120 mph wind with no ice
1.2D + 1.0W 60°	120 mph wind with no ice
1.2D + 1.0W 90°	120 mph wind with no ice
1.2D + 1.0W 120°	120 mph wind with no ice
1.2D + 1.0W 180°	120 mph wind with no ice
1.2D + 1.0W 210°	120 mph wind with no ice
1.2D + 1.0W 240°	120 mph wind with no ice
1.2D + 1.0W 300°	120 mph wind with no ice
1.2D + 1.0W 330°	120 mph wind with no ice
0.9D + 1.0W Normal	120 mph wind with no ice
0.9D + 1.0W 60°	120 mph wind with no ice
0.9D + 1.0W 90°	120 mph wind with no ice
0.9D + 1.0W 120°	120 mph wind with no ice
0.9D + 1.0W 180°	120 mph wind with no ice
0.9D + 1.0W 210°	120 mph wind with no ice
0.9D + 1.0W 240°	120 mph wind with no ice
0.9D + 1.0W 300°	120 mph wind with no ice
0.9D + 1.0W 330°	120 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Normal	50 mph wind with 1.5" radial ice
1.2D + 1.0Di + 1.0Wi 60°	50 mph wind with 1.5" radial ice
1.2D + 1.0Di + 1.0Wi 90°	50 mph wind with 1.5" radial ice
1.2D + 1.0Di + 1.0Wi 120°	50 mph wind with 1.5" radial ice
1.2D + 1.0Di + 1.0Wi 180°	50 mph wind with 1.5" radial ice
1.2D + 1.0Di + 1.0Wi 210°	50 mph wind with 1.5" radial ice
1.2D + 1.0Di + 1.0Wi 240°	50 mph wind with 1.5" radial ice
1.2D + 1.0Di + 1.0Wi 300°	50 mph wind with 1.5" radial ice
1.2D + 1.0Di + 1.0Wi 330°	50 mph wind with 1.5" radial ice
1.2D + 1.0Ev + 1.0Eh Normal	Seismic
1.2D + 1.0Ev + 1.0Eh 60°	Seismic
1.2D + 1.0Ev + 1.0Eh 90°	Seismic
1.2D + 1.0Ev + 1.0Eh 120°	Seismic
1.2D + 1.0Ev + 1.0Eh 180°	Seismic
1.2D + 1.0Ev + 1.0Eh 210°	Seismic
1.2D + 1.0Ev + 1.0Eh 240°	Seismic

LOAD CASES

1.2D + 1.0Ev + 1.0Eh 300°	Seismic
1.2D + 1.0Ev + 1.0Eh 330°	Seismic
0.9D - 1.0Ev + 1.0Eh Normal	Seismic (Reduced DL)
0.9D - 1.0Ev + 1.0Eh 60°	Seismic (Reduced DL)
0.9D - 1.0Ev + 1.0Eh 90°	Seismic (Reduced DL)
0.9D - 1.0Ev + 1.0Eh 120°	Seismic (Reduced DL)
0.9D - 1.0Ev + 1.0Eh 180°	Seismic (Reduced DL)
0.9D - 1.0Ev + 1.0Eh 210°	Seismic (Reduced DL)
0.9D - 1.0Ev + 1.0Eh 240°	Seismic (Reduced DL)
0.9D - 1.0Ev + 1.0Eh 300°	Seismic (Reduced DL)
0.9D - 1.0Ev + 1.0Eh 330°	Seismic (Reduced DL)
1.0D + 1.0W Service Normal	60 mph Wind with No Ice
1.0D + 1.0W Service 60°	60 mph Wind with No Ice
1.0D + 1.0W Service 90°	60 mph Wind with No Ice
1.0D + 1.0W Service 120°	60 mph Wind with No Ice
1.0D + 1.0W Service 180°	60 mph Wind with No Ice
1.0D + 1.0W Service 210°	60 mph Wind with No Ice
1.0D + 1.0W Service 240°	60 mph Wind with No Ice
1.0D + 1.0W Service 300°	60 mph Wind with No Ice
1.0D + 1.0W Service 330°	60 mph Wind with No Ice

TOWER LOADING

Discrete Appurtenance Properties 1.2D + 1.0W

Elev (ft)	Description	Qty	Wt. (lb)	EPA Length (sf)	Width (in)	Depth (in)	K _a	Orient Factor	Vert Ecc (ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)	
240.0	Samsung B5/B13 RRH-BR04C	3	70	1.9	1.3	15.0	8.1	0.80	0.50	0.0	0.00	38.68	74	253
240.0	Samsung B2/B66A RRH-BR049	3	84	1.9	1.3	15.0	10.0	0.80	0.50	0.0	0.00	38.68	74	304
240.0	Raycap RRFDC-3315-PF-48	2	27	2.5	1.6	15.7	10.3	0.80	0.67	0.0	0.00	38.68	89	65
240.0	Samsung MT6407-77A	3	82	4.7	2.9	16.1	5.5	0.80	0.61	0.0	0.00	38.68	227	294
240.0	Andrew LNX-6514DS-VTM (72.7" h	3	39	8.2	6.1	11.9	7.1	0.80	0.69	1.0	445.56	38.73	446	140
240.0	JMA Wireless MX06FRO660-03	6	60	9.9	5.9	15.4	10.7	0.80	0.71	0.0	0.00	38.68	1106	432
240.0	Generic Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.00	38.68	799	1080
240.0	VZW Unused Reserve (7582.89 sq	1	562	52.7	0.0	0.0	0.0	0.80	0.90	0.0	0.00	38.68	1247	674
239.8	Andrew LNX-6514DS-VTM (72.7" h	3	39	8.2	6.1	11.9	7.1	0.80	0.69	1.0	445.46	38.72	445	140
214.0	Ericsson 4460 BAND 2/25	3	109	2.6	1.6	15.7	12.1	0.80	0.50	0.0	0.00	37.44	98	392
214.0	Ericsson 4480 BAND 71	3	81	2.9	1.8	15.7	7.5	0.80	0.50	0.0	0.00	37.44	110	292
214.0	Ericsson AIR 6419 B41	3	83	6.3	3.0	20.9	9.0	0.80	0.63	0.0	0.00	37.44	304	300
214.0	Site Pro VFA12-HD	3	959	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.00	37.44	859	3451
214.0	RFS APXVAALL24 43-U-NA20	3	123	20.2	8.0	24.0	8.5	0.80	0.63	0.0	0.00	37.44	974	442
208.1	Raycap DC6-48-60-18-8C	1	16	2.0	1.7	18.2	6.4	0.80	1.00	0.0	0.00	37.14	51	19
204.2	Powerwave Allgon 7770.00	6	35	5.5	4.6	11.0	5.0	0.80	0.65	0.0	0.00	36.94	540	252
203.8	CCI HPA-65R-BUU-H8	3	68	13.0	7.7	14.8	7.4	0.80	0.67	0.0	0.00	36.92	655	245
203.7	Powerwave Allgon LGP21901	6	6	0.2	0.3	6.0	3.0	0.80	0.50	0.0	0.00	36.91	15	40
203.6	Ericsson RRUS 11 B4	6	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.00	36.91	210	365
203.4	Powerwave Allgon LGP21401	6	14	1.1	1.2	9.2	2.6	0.80	0.50	0.0	0.00	36.90	83	102
196.0	Powerwave Allgon 7020.00 Dual	6	2	0.3	0.4	8.3	2.4	0.80	0.50	0.0	0.00	36.51	25	16
196.0	Generic Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.00	36.51	754	1080
184.7	Generic 18' Omni	1	55	5.4	18.0	3.0	3.0	1.00	1.00	0.0	0.00	35.90	165	66
183.0	Generic Round Side Arm	1	188	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	35.80	158	225
180.0	Generic Round Side Arm	1	188	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	35.63	157	225
179.9	Generic 12' Dipole	1	40	4.5	12.0	3.0	3.0	1.00	1.00	0.0	0.00	35.63	137	48
Totals		83	9,117	548.4								9,801	10,940	

TOWER LOADING

Discrete Appurtenance Properties 0.9D + 1.0W

Elev (ft)	Description	Qty	Wt. (lb)	EPA Length (sf)	Width (in)	Depth (in)	K _a	Orient Factor	Vert Ecc (ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)	
240.0	Samsung B5/B13 RRH-BR04C	3	70	1.9	1.3	15.0	8.1	0.80	0.50	0.0	0.00	38.68	74	190
240.0	Samsung B2/B66A RRH-BR049	3	84	1.9	1.3	15.0	10.0	0.80	0.50	0.0	0.00	38.68	74	228
240.0	Raycap RRFDC-3315-PF-48	2	27	2.5	1.6	15.7	10.3	0.80	0.67	0.0	0.00	38.68	89	48
240.0	Samsung MT6407-77A	3	82	4.7	2.9	16.1	5.5	0.80	0.61	0.0	0.00	38.68	227	220
240.0	Andrew LNX-6514DS-VTM (72.7" h	3	39	8.2	6.1	11.9	7.1	0.80	0.69	1.0	445.56	38.73	446	105
240.0	JMA Wireless MX06FRO660-03	6	60	9.9	5.9	15.4	10.7	0.80	0.71	0.0	0.00	38.68	1106	324
240.0	Generic Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.00	38.68	799	810
240.0	VZW Unused Reserve (7582.89 sq	1	562	52.7	0.0	0.0	0.0	0.80	0.90	0.0	0.00	38.68	1247	506
239.8	Andrew LNX-6514DS-VTM (72.7" h	3	39	8.2	6.1	11.9	7.1	0.80	0.69	1.0	445.46	38.72	445	105
214.0	Ericsson 4460 BAND 2/25	3	109	2.6	1.6	15.7	12.1	0.80	0.50	0.0	0.00	37.44	98	294
214.0	Ericsson 4480 BAND 71	3	81	2.9	1.8	15.7	7.5	0.80	0.50	0.0	0.00	37.44	110	219
214.0	Ericsson AIR 6419 B41	3	83	6.3	3.0	20.9	9.0	0.80	0.63	0.0	0.00	37.44	304	225
214.0	Site Pro VFA12-HD	3	959	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.00	37.44	859	2588
214.0	RFS APXVAALL24 43-U-NA20	3	123	20.2	8.0	24.0	8.5	0.80	0.63	0.0	0.00	37.44	974	332
208.1	Raycap DC6-48-60-18-8C	1	16	2.0	1.7	18.2	6.4	0.80	1.00	0.0	0.00	37.14	51	14
204.2	Powerwave Allgon 7770.00	6	35	5.5	4.6	11.0	5.0	0.80	0.65	0.0	0.00	36.94	540	189
203.8	CCI HPA-65R-BUU-H8	3	68	13.0	7.7	14.8	7.4	0.80	0.67	0.0	0.00	36.92	655	184
203.7	Powerwave Allgon LGP21901	6	6	0.2	0.3	6.0	3.0	0.80	0.50	0.0	0.00	36.91	15	30
203.6	Ericsson RRUS 11 B4	6	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.00	36.91	210	274
203.4	Powerwave Allgon LGP21401	6	14	1.1	1.2	9.2	2.6	0.80	0.50	0.0	0.00	36.90	83	76
196.0	Powerwave Allgon 7020.00 Dual	6	2	0.3	0.4	8.3	2.4	0.80	0.50	0.0	0.00	36.51	25	12
196.0	Generic Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.00	36.51	754	810
184.7	Generic 18' Omni	1	55	5.4	18.0	3.0	3.0	1.00	1.00	0.0	0.00	35.90	165	50
183.0	Generic Round Side Arm	1	188	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	35.80	158	169
180.0	Generic Round Side Arm	1	188	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	35.63	157	169
179.9	Generic 12' Dipole	1	40	4.5	12.0	3.0	3.0	1.00	1.00	0.0	0.00	35.63	137	36
Totals		83	9,117	548.4								9,801	8,205	

TOWER LOADING

Discrete Appurtenance Properties 1.2D + 1.0Di + 1.0Wi

Elev (ft)	Description	Qty	Ice Wt (lb)	Ice EPA (sf)	Length (ft)	Width (in)	Depth (in)	K _a	Orient Factor	Vert Ecc (ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)
240.0	Samsung B5/B13 RRH-BR04C	3	130	2.8	1.3	15.0	8.1	0.80	0.50	0.0	0.00	6.72	19	433
240.0	Samsung B2/B66A RRH-BR049	3	151	2.8	1.3	15.0	10.0	0.80	0.50	0.0	0.00	6.72	19	504
240.0	Raycap RRFDC-3315-PF-48	2	110	3.6	1.6	15.7	10.3	0.80	0.67	0.0	0.00	6.72	22	231
240.0	Samsung MT6407-77A	3	188	6.3	2.9	16.1	5.5	0.80	0.61	0.0	0.00	6.72	53	614
240.0	Andrew LNX-6514DS-VTM (72.7" h	3	223	11.1	6.1	11.9	7.1	0.80	0.69	1.0	105.25	6.72	105	692
240.0	JMA Wireless MX06FRO660-03	6	311	12.7	5.9	15.4	10.7	0.80	0.71	0.0	0.00	6.72	248	1936
240.0	Generic Round Sector Frame	3	685	31.7	0.0	0.0	0.0	0.75	0.75	0.0	0.00	6.72	305	2234
240.0	VZW Unused Reserve (7582.89 sq	1	971	91.0	0.0	0.0	0.0	0.80	0.90	0.0	0.00	6.72	374	1084
239.8	Andrew LNX-6514DS-VTM (72.7" h	3	223	11.1	6.1	11.9	7.1	0.80	0.69	1.0	105.23	6.72	105	692
214.0	Ericsson 4460 BAND 2/25	3	201	3.7	1.6	15.7	12.1	0.80	0.50	0.0	0.00	6.50	24	667
214.0	Ericsson 4480 BAND 71	3	160	4.0	1.8	15.7	7.5	0.80	0.50	0.0	0.00	6.50	27	528
214.0	Ericsson AIR 6419 B41	3	240	8.1	3.0	20.9	9.0	0.80	0.63	0.0	0.00	6.50	67	770
214.0	Site Pro VFA12-HD	3	1651	30.8	0.0	0.0	0.0	0.75	0.67	0.0	0.00	6.50	257	5527
214.0	RFS APXVAALL24 43-U-NA20	3	526	24.1	8.0	24.0	8.5	0.80	0.63	0.0	0.00	6.50	201	1653
208.1	Raycap DC6-48-60-18-8C	1	76	2.8	1.7	18.2	6.4	0.80	1.00	0.0	0.00	6.45	12	80
204.2	Powerwave Allgon 7770.00	6	153	7.7	4.6	11.0	5.0	0.80	0.65	0.0	0.00	6.41	131	959
203.8	CCI HPA-65R-BUU-H8	3	334	16.7	7.7	14.8	7.4	0.80	0.67	0.0	0.00	6.41	146	1044
203.7	Powerwave Allgon LGP21901	6	13	0.5	0.3	6.0	3.0	0.80	0.50	0.0	0.00	6.41	7	87
203.6	Ericsson RRUS 11 B4	6	126	3.9	1.6	17.0	7.2	0.80	0.50	0.0	0.00	6.41	51	815
203.4	Powerwave Allgon LGP21401	6	40	1.8	1.2	9.2	2.6	0.80	0.50	0.0	0.00	6.41	24	257
196.0	Powerwave Allgon 7020.00 Dual	6	13	0.8	0.4	8.3	2.4	0.80	0.50	0.0	0.00	6.34	10	79
196.0	Generic Round Sector Frame	3	677	31.4	0.0	0.0	0.0	0.75	0.75	0.0	0.00	6.34	285	2212
184.7	Generic 18' Omni	1	194	12.0	18.0	3.0	3.0	1.00	1.00	0.0	0.00	6.23	63	205
183.0	Generic Round Side Arm	1	281	8.0	0.0	0.0	0.0	1.00	1.00	0.0	0.00	6.22	42	319
180.0	Generic Round Side Arm	1	280	8.0	0.0	0.0	0.0	1.00	1.00	0.0	0.00	6.19	42	318
179.9	Generic 12' Dipole	1	175	11.8	12.0	3.0	3.0	1.00	1.00	0.0	0.00	6.19	62	183
Totals		83	22,299	859.7									2704	24,122

TOWER LOADING

Discrete Appurtenance Properties 1.0D + 1.0W Service

Elev (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K _a	Orient Factor	Vert Ecc (ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)
240.0	Samsung B5/B13 RRH-BR04C	3	70	1.9	1.3	15.0	8.1	0.80	0.50	0.0	0.00	9.67	18	211
240.0	Samsung B2/B66A RRH-BR049	3	84	1.9	1.3	15.0	10.0	0.80	0.50	0.0	0.00	9.67	18	253
240.0	Raycap RRFDC-3315-PF-48	2	27	2.5	1.6	15.7	10.3	0.80	0.67	0.0	0.00	9.67	22	54
240.0	Samsung MT6407-77A	3	82	4.7	2.9	16.1	5.5	0.80	0.61	0.0	0.00	9.67	57	245
240.0	Andrew LNX-6514DS-VTM (72.7" h	3	39	8.2	6.1	11.9	7.1	0.80	0.69	1.0	111.39	9.68	111	116
240.0	JMA Wireless MX06FRO660-03	6	60	9.9	5.9	15.4	10.7	0.80	0.71	0.0	0.00	9.67	277	360
240.0	Generic Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.00	9.67	200	900
240.0	VZW Unused Reserve (7582.89 sq	1	562	52.7	0.0	0.0	0.0	0.80	0.90	0.0	0.00	9.67	312	562
239.8	Andrew LNX-6514DS-VTM (72.7" h	3	39	8.2	6.1	11.9	7.1	0.80	0.69	1.0	111.36	9.68	111	116
214.0	Ericsson 4460 BAND 2/25	3	109	2.6	1.6	15.7	12.1	0.80	0.50	0.0	0.00	9.36	24	327
214.0	Ericsson 4480 BAND 71	3	81	2.9	1.8	15.7	7.5	0.80	0.50	0.0	0.00	9.36	27	243
214.0	Ericsson AIR 6419 B41	3	83	6.3	3.0	20.9	9.0	0.80	0.63	0.0	0.00	9.36	76	250
214.0	Site Pro VFA12-HD	3	959	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.00	9.36	215	2876
214.0	RFS APXVAALL24 43-U-NA20	3	123	20.2	8.0	24.0	8.5	0.80	0.63	0.0	0.00	9.36	243	368
208.1	Raycap DC6-48-60-18-8C	1	16	2.0	1.7	18.2	6.4	0.80	1.00	0.0	0.00	9.28	13	16
204.2	Powerwave Allgon 7770.00	6	35	5.5	4.6	11.0	5.0	0.80	0.65	0.0	0.00	9.23	135	210
203.8	CCI HPA-65R-BUU-H8	3	68	13.0	7.7	14.8	7.4	0.80	0.67	0.0	0.00	9.23	164	204
203.7	Powerwave Allgon LGP21901	6	6	0.2	0.3	6.0	3.0	0.80	0.50	0.0	0.00	9.23	4	33
203.6	Ericsson RRUS 11 B4	6	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.00	9.23	53	304
203.4	Powerwave Allgon LGP21401	6	14	1.1	1.2	9.2	2.6	0.80	0.50	0.0	0.00	9.22	21	85
196.0	Powerwave Allgon 7020.00 Dual	6	2	0.3	0.4	8.3	2.4	0.80	0.50	0.0	0.00	9.13	6	13
196.0	Generic Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.00	9.13	189	900
184.7	Generic 18' Omni	1	55	5.4	18.0	3.0	3.0	1.00	1.00	0.0	0.00	8.97	41	55
183.0	Generic Round Side Arm	1	188	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	8.95	40	188
180.0	Generic Round Side Arm	1	188	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	8.91	39	188
179.9	Generic 12' Dipole	1	40	4.5	12.0	3.0	3.0	1.00	1.00	0.0	0.00	8.91	34	40
Totals		83	9,117	548.4									2,450	9,117

TOWER LOADING

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	% In Wind	Spread On Faces	Bundling	Cluster Dia (in)	Out of Zone	Spacing (in)	Orient Factor	K _a Override
0.0	240.0	1/2" Coax	1	0.63	0.15	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	240.0	1 5/8" (1.63"-41.3mm) Fiber	2	1.63	1.61	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	240.0	1 5/8" Coax	12	1.98	0.82	83	3	Block	0.00	N	1.00	1.00	0.00
0.0	240.0	Waveguide	1	2.00	6.00	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	214.0	1.99" (50.7mm) Hybrid	3	1.99	1.90	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	214.0	Waveguide	1	2.00	6.00	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.0	208.0	0.39" (10mm) Fiber Trunk	1	0.39	0.06	100	2	Individual	0.00	N	1.00	1.00	0.00
0.0	208.0	0.78" (19.7mm) 8 AWG 6	2	0.78	0.59	100	2	Individual	0.00	N	1.00	1.00	0.00
0.0	204.0	2 1/4" Coax	12	2.38	1.22	50	2	Block	0.00	N	1.00	1.00	0.00
0.0	196.0	3/8" (0.38"- 9.5mm) RET Contro	3	0.38	0.23	100	2	Individual	0.00	N	1.00	1.00	0.00
0.0	196.0	Waveguide	1	2.00	6.00	100	2	Individual	0.00	N	1.00	1.00	0.00
0.0	184.0	7/8" Coax	1	1.09	0.33	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	179.0	7/8" Coax	1	1.09	0.33	100	1	Individual	0.00	N	1.00	1.00	0.00

SECTION FORCES

1.2D + 1.0W Normal
120 mph wind with no ice

Gust Response Factor (Gh): 0.85
Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	38.22	9.949	7.917	0.00	0.172	2.69	1.00	1.00	0.0	14.46	38.94	0.00	1188	0	1265	1156	2421
11	210	37.24	9.810	11.667	0.00	0.203	2.59	1.00	1.00	0.0	16.52	42.72	0.00	2347	0	1352	1586	2938
10	190	36.19	10.682	15.025	0.00	0.202	2.59	1.00	1.00	0.0	18.86	48.86	0.00	3109	0	1503	2500	4003
9	170	35.05	14.960	18.574	0.00	0.198	2.60	1.00	1.00	0.0	24.42	63.54	0.00	3912	0	1893	2512	4406
8	150	33.82	14.397	18.574	0.00	0.158	2.74	1.00	1.00	0.0	23.68	64.96	0.00	4314	0	1868	2426	4294
7	130	32.47	19.519	28.798	0.00	0.190	2.63	1.00	1.00	0.0	32.19	84.66	0.00	4459	0	2337	2329	4665
6	110	30.95	22.186	28.798	0.00	0.173	2.69	1.00	1.00	0.0	34.59	92.99	0.00	6070	0	2447	2220	4667
5	90	29.23	21.179	28.798	0.00	0.150	2.77	1.00	1.00	0.0	33.23	92.16	0.00	6005	0	2290	2097	4386
4	70	27.20	23.137	28.798	0.00	0.139	2.81	1.00	1.00	0.0	35.07	98.67	0.00	6267	0	2282	1951	4233
3	50	24.71	28.624	35.893	0.00	0.154	2.76	1.00	1.00	0.0	43.73	120.50	0.00	7373	0	2531	1773	4304
2	30	21.36	31.030	35.893	0.00	0.146	2.79	1.00	1.00	0.0	45.99	128.11	0.00	8101	0	2326	1532	3857
1	10	21.34	33.475	35.893	0.00	0.139	2.81	1.00	1.00	0.0	48.31	135.81	0.00	8318	0	2463	1531	3994
														61,463	0			48,168

1.2D + 1.0W 60°
120 mph wind with no ice

Gust Response Factor (Gh): 0.85
Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	38.22	9.949	7.917	0.00	0.172	2.69	0.80	1.00	0.0	12.47	33.58	0.00	1188	0	1091	1156	2247
11	210	37.24	9.810	11.667	0.00	0.203	2.59	0.80	1.00	0.0	14.56	37.65	0.00	2347	0	1192	1586	2778
10	190	36.19	10.682	15.025	0.00	0.202	2.59	0.80	1.00	0.0	16.73	43.33	0.00	3109	0	1333	2500	3833
9	170	35.05	14.960	18.574	0.00	0.198	2.60	0.80	1.00	0.0	21.42	55.75	0.00	3912	0	1661	2512	4174
8	150	33.82	14.397	18.574	0.00	0.158	2.74	0.80	1.00	0.0	20.80	57.06	0.00	4314	0	1641	2426	4067
7	130	32.47	19.519	28.798	0.00	0.190	2.63	0.80	1.00	0.0	28.29	74.40	0.00	4459	0	2053	2329	4382
6	110	30.95	22.186	28.798	0.00	0.173	2.69	0.80	1.00	0.0	30.16	81.06	0.00	6070	0	2133	2220	4353
5	90	29.23	21.179	28.798	0.00	0.150	2.77	0.80	1.00	0.0	28.99	80.41	0.00	6005	0	1998	2097	4094
4	70	27.20	23.137	28.798	0.00	0.139	2.81	0.80	1.00	0.0	30.44	85.65	0.00	6267	0	1981	1951	3932
3	50	24.71	28.624	35.893	0.00	0.154	2.76	0.80	1.00	0.0	38.01	104.73	0.00	7373	0	2200	1773	3972
2	30	21.36	31.030	35.893	0.00	0.146	2.79	0.80	1.00	0.0	39.78	110.82	0.00	8101	0	2012	1532	3543
1	10	21.34	33.475	35.893	0.00	0.139	2.81	0.80	1.00	0.0	41.62	116.99	0.00	8318	0	2122	1531	3652
														61,463	0			45,027

1.2D + 1.0W 90°
120 mph wind with no ice

Gust Response Factor (Gh): 0.85
Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	38.22	9.949	7.917	0.00	0.172	2.69	0.85	1.00	0.0	12.97	34.92	0.00	1188	0	1134	1156	2290
11	210	37.24	9.810	11.667	0.00	0.203	2.59	0.85	1.00	0.0	15.05	38.91	0.00	2347	0	1232	1586	2818
10	190	36.19	10.682	15.025	0.00	0.202	2.59	0.85	1.00	0.0	17.26	44.71	0.00	3109	0	1375	2500	3875
9	170	35.05	14.960	18.574	0.00	0.198	2.60	0.85	1.00	0.0	22.17	57.70	0.00	3912	0	1719	2512	4232
8	150	33.82	14.397	18.574	0.00	0.158	2.74	0.85	1.00	0.0	21.52	59.04	0.00	4314	0	1697	2426	4123
7	130	32.47	19.519	28.798	0.00	0.190	2.63	0.85	1.00	0.0	29.26	76.96	0.00	4459	0	2124	2329	4453
6	110	30.95	22.186	28.798	0.00	0.173	2.69	0.85	1.00	0.0	31.27	84.04	0.00	6070	0	2211	2220	4432
5	90	29.23	21.179	28.798	0.00	0.150	2.77	0.85	1.00	0.0	30.05	83.35	0.00	6005	0	2071	2097	4167
4	70	27.20	23.137	28.798	0.00	0.139	2.81	0.85	1.00	0.0	31.60	88.91	0.00	6267	0	2056	1951	4007
3	50	24.71	28.624	35.893	0.00	0.154	2.76	0.85	1.00	0.0	39.44	108.67	0.00	7373	0	2283	1773	4055
2	30	21.36	31.030	35.893	0.00	0.146	2.79	0.85	1.00	0.0	41.33	115.15	0.00	8101	0	2090	1532	3622
1	10	21.34	33.475	35.893	0.00	0.139	2.81	0.85	1.00	0.0	43.29	121.70	0.00	8318	0	2207	1531	3738
														61,463	0			45,813

1.2D + 1.0W 120°

Gust Response Factor (Gh): 0.85

SECTION FORCES

120 mph wind with no ice Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Qz (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	38.22	9.949	7.917	0.00	0.172	2.69	1.00	1.00	0.0	14.46	38.94	0.00	1188	0	1265	1156	2421
11	210	37.24	9.810	11.667	0.00	0.203	2.59	1.00	1.00	0.0	16.52	42.72	0.00	2347	0	1352	1586	2938
10	190	36.19	10.682	15.025	0.00	0.202	2.59	1.00	1.00	0.0	18.86	48.86	0.00	3109	0	1503	2500	4003
9	170	35.05	14.960	18.574	0.00	0.198	2.60	1.00	1.00	0.0	24.42	63.54	0.00	3912	0	1893	2512	4406
8	150	33.82	14.397	18.574	0.00	0.158	2.74	1.00	1.00	0.0	23.68	64.96	0.00	4314	0	1868	2426	4294
7	130	32.47	19.519	28.798	0.00	0.190	2.63	1.00	1.00	0.0	32.19	84.66	0.00	4459	0	2337	2329	4665
6	110	30.95	22.186	28.798	0.00	0.173	2.69	1.00	1.00	0.0	34.59	92.99	0.00	6070	0	2447	2220	4667
5	90	29.23	21.179	28.798	0.00	0.150	2.77	1.00	1.00	0.0	33.23	92.16	0.00	6005	0	2290	2097	4386
4	70	27.20	23.137	28.798	0.00	0.139	2.81	1.00	1.00	0.0	35.07	98.67	0.00	6267	0	2282	1951	4233
3	50	24.71	28.624	35.893	0.00	0.154	2.76	1.00	1.00	0.0	43.73	120.50	0.00	7373	0	2531	1773	4304
2	30	21.36	31.030	35.893	0.00	0.146	2.79	1.00	1.00	0.0	45.99	128.11	0.00	8101	0	2326	1532	3857
1	10	21.34	33.475	35.893	0.00	0.139	2.81	1.00	1.00	0.0	48.31	135.81	0.00	8318	0	2463	1531	3994
														61,463	0			48,168

1.2D + 1.0W 180° Gust Response Factor (Gh): 0.85
 120 mph wind with no ice Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Qz (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	38.22	9.949	7.917	0.00	0.172	2.69	0.80	1.00	0.0	12.47	33.58	0.00	1188	0	1091	1156	2247
11	210	37.24	9.810	11.667	0.00	0.203	2.59	0.80	1.00	0.0	14.56	37.65	0.00	2347	0	1192	1586	2778
10	190	36.19	10.682	15.025	0.00	0.202	2.59	0.80	1.00	0.0	16.73	43.33	0.00	3109	0	1333	2500	3833
9	170	35.05	14.960	18.574	0.00	0.198	2.60	0.80	1.00	0.0	21.42	55.75	0.00	3912	0	1661	2512	4174
8	150	33.82	14.397	18.574	0.00	0.158	2.74	0.80	1.00	0.0	20.80	57.06	0.00	4314	0	1641	2426	4067
7	130	32.47	19.519	28.798	0.00	0.190	2.63	0.80	1.00	0.0	28.29	74.40	0.00	4459	0	2053	2329	4382
6	110	30.95	22.186	28.798	0.00	0.173	2.69	0.80	1.00	0.0	30.16	81.06	0.00	6070	0	2133	2220	4353
5	90	29.23	21.179	28.798	0.00	0.150	2.77	0.80	1.00	0.0	28.99	80.41	0.00	6005	0	1998	2097	4094
4	70	27.20	23.137	28.798	0.00	0.139	2.81	0.80	1.00	0.0	30.44	85.65	0.00	6267	0	1981	1951	3932
3	50	24.71	28.624	35.893	0.00	0.154	2.76	0.80	1.00	0.0	38.01	104.73	0.00	7373	0	2200	1773	3972
2	30	21.36	31.030	35.893	0.00	0.146	2.79	0.80	1.00	0.0	39.78	110.82	0.00	8101	0	2012	1532	3543
1	10	21.34	33.475	35.893	0.00	0.139	2.81	0.80	1.00	0.0	41.62	116.99	0.00	8318	0	2122	1531	3652
														61,463	0			45,027

1.2D + 1.0W 210° Gust Response Factor (Gh): 0.85
 120 mph wind with no ice Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Qz (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	38.22	9.949	7.917	0.00	0.172	2.69	0.85	1.00	0.0	12.97	34.92	0.00	1188	0	1134	1156	2290
11	210	37.24	9.810	11.667	0.00	0.203	2.59	0.85	1.00	0.0	15.05	38.91	0.00	2347	0	1232	1586	2818
10	190	36.19	10.682	15.025	0.00	0.202	2.59	0.85	1.00	0.0	17.26	44.71	0.00	3109	0	1375	2500	3875
9	170	35.05	14.960	18.574	0.00	0.198	2.60	0.85	1.00	0.0	22.17	57.70	0.00	3912	0	1719	2512	4232
8	150	33.82	14.397	18.574	0.00	0.158	2.74	0.85	1.00	0.0	21.52	59.04	0.00	4314	0	1697	2426	4123
7	130	32.47	19.519	28.798	0.00	0.190	2.63	0.85	1.00	0.0	29.26	76.96	0.00	4459	0	2124	2329	4453
6	110	30.95	22.186	28.798	0.00	0.173	2.69	0.85	1.00	0.0	31.27	84.04	0.00	6070	0	2211	2220	4432
5	90	29.23	21.179	28.798	0.00	0.150	2.77	0.85	1.00	0.0	30.05	83.35	0.00	6005	0	2071	2097	4167
4	70	27.20	23.137	28.798	0.00	0.139	2.81	0.85	1.00	0.0	31.60	88.91	0.00	6267	0	2056	1951	4007
3	50	24.71	28.624	35.893	0.00	0.154	2.76	0.85	1.00	0.0	39.44	108.67	0.00	7373	0	2283	1773	4055
2	30	21.36	31.030	35.893	0.00	0.146	2.79	0.85	1.00	0.0	41.33	115.15	0.00	8101	0	2090	1532	3622
1	10	21.34	33.475	35.893	0.00	0.139	2.81	0.85	1.00	0.0	43.29	121.70	0.00	8318	0	2207	1531	3738
														61,463	0			45,813

1.2D + 1.0W 240° Gust Response Factor (Gh): 0.85
 120 mph wind with no ice Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Qz (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
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SECTION FORCES

#	(ft)	(psf)	(sf)	(sf)	(sf)	(in)	(sf)	(sf)	(sf)	(lb)	(lb)	(lb)	(lb)					
12	230	38.22	9.949	7.917	0.00	0.172	2.69	1.00	1.00	0.0	14.46	38.94	0.00	1188	0	1265	1156	2421
11	210	37.24	9.810	11.667	0.00	0.203	2.59	1.00	1.00	0.0	16.52	42.72	0.00	2347	0	1352	1586	2938
10	190	36.19	10.682	15.025	0.00	0.202	2.59	1.00	1.00	0.0	18.86	48.86	0.00	3109	0	1503	2500	4003
9	170	35.05	14.960	18.574	0.00	0.198	2.60	1.00	1.00	0.0	24.42	63.54	0.00	3912	0	1893	2512	4406
8	150	33.82	14.397	18.574	0.00	0.158	2.74	1.00	1.00	0.0	23.68	64.96	0.00	4314	0	1868	2426	4294
7	130	32.47	19.519	28.798	0.00	0.190	2.63	1.00	1.00	0.0	32.19	84.66	0.00	4459	0	2337	2329	4665
6	110	30.95	22.186	28.798	0.00	0.173	2.69	1.00	1.00	0.0	34.59	92.99	0.00	6070	0	2447	2220	4667
5	90	29.23	21.179	28.798	0.00	0.150	2.77	1.00	1.00	0.0	33.23	92.16	0.00	6005	0	2290	2097	4386
4	70	27.20	23.137	28.798	0.00	0.139	2.81	1.00	1.00	0.0	35.07	98.67	0.00	6267	0	2282	1951	4233
3	50	24.71	28.624	35.893	0.00	0.154	2.76	1.00	1.00	0.0	43.73	120.50	0.00	7373	0	2531	1773	4304
2	30	21.36	31.030	35.893	0.00	0.146	2.79	1.00	1.00	0.0	45.99	128.11	0.00	8101	0	2326	1532	3857
1	10	21.34	33.475	35.893	0.00	0.139	2.81	1.00	1.00	0.0	48.31	135.81	0.00	8318	0	2463	1531	3994
														61,463	0	48,168		

1.2D + 1.0W 300° Gust Response Factor (Gh): 0.85
 120 mph wind with no ice Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Qz (psf)	Af (sf)	Ar (sf)	Ice Ar (sf)	e	Cf	Df	Dr	Tiz (in)	Ae (sf)	EPAa (sf)	EPAAi (sf)	Wt. (lb)	Ice Wt (lb)	Fst (lb)	Fa (lb)	Force (lb)
12	230	38.22	9.949	7.917	0.00	0.172	2.69	0.80	1.00	0.0	12.47	33.58	0.00	1188	0	1091	1156	2247
11	210	37.24	9.810	11.667	0.00	0.203	2.59	0.80	1.00	0.0	14.56	37.65	0.00	2347	0	1192	1586	2778
10	190	36.19	10.682	15.025	0.00	0.202	2.59	0.80	1.00	0.0	16.73	43.33	0.00	3109	0	1333	2500	3833
9	170	35.05	14.960	18.574	0.00	0.198	2.60	0.80	1.00	0.0	21.42	55.75	0.00	3912	0	1661	2512	4174
8	150	33.82	14.397	18.574	0.00	0.158	2.74	0.80	1.00	0.0	20.80	57.06	0.00	4314	0	1641	2426	4067
7	130	32.47	19.519	28.798	0.00	0.190	2.63	0.80	1.00	0.0	28.29	74.40	0.00	4459	0	2053	2329	4382
6	110	30.95	22.186	28.798	0.00	0.173	2.69	0.80	1.00	0.0	30.16	81.06	0.00	6070	0	2133	2220	4353
5	90	29.23	21.179	28.798	0.00	0.150	2.77	0.80	1.00	0.0	28.99	80.41	0.00	6005	0	1998	2097	4094
4	70	27.20	23.137	28.798	0.00	0.139	2.81	0.80	1.00	0.0	30.44	85.65	0.00	6267	0	1981	1951	3932
3	50	24.71	28.624	35.893	0.00	0.154	2.76	0.80	1.00	0.0	38.01	104.73	0.00	7373	0	2200	1773	3972
2	30	21.36	31.030	35.893	0.00	0.146	2.79	0.80	1.00	0.0	39.78	110.82	0.00	8101	0	2012	1532	3543
1	10	21.34	33.475	35.893	0.00	0.139	2.81	0.80	1.00	0.0	41.62	116.99	0.00	8318	0	2122	1531	3652
														61,463	0	45,027		

1.2D + 1.0W 330° Gust Response Factor (Gh): 0.85
 120 mph wind with no ice Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Qz (psf)	Af (sf)	Ar (sf)	Ice Ar (sf)	e	Cf	Df	Dr	Tiz (in)	Ae (sf)	EPAa (sf)	EPAAi (sf)	Wt. (lb)	Ice Wt (lb)	Fst (lb)	Fa (lb)	Force (lb)
12	230	38.22	9.949	7.917	0.00	0.172	2.69	0.85	1.00	0.0	12.97	34.92	0.00	1188	0	1134	1156	2290
11	210	37.24	9.810	11.667	0.00	0.203	2.59	0.85	1.00	0.0	15.05	38.91	0.00	2347	0	1232	1586	2818
10	190	36.19	10.682	15.025	0.00	0.202	2.59	0.85	1.00	0.0	17.26	44.71	0.00	3109	0	1375	2500	3875
9	170	35.05	14.960	18.574	0.00	0.198	2.60	0.85	1.00	0.0	22.17	57.70	0.00	3912	0	1719	2512	4232
8	150	33.82	14.397	18.574	0.00	0.158	2.74	0.85	1.00	0.0	21.52	59.04	0.00	4314	0	1697	2426	4123
7	130	32.47	19.519	28.798	0.00	0.190	2.63	0.85	1.00	0.0	29.26	76.96	0.00	4459	0	2124	2329	4453
6	110	30.95	22.186	28.798	0.00	0.173	2.69	0.85	1.00	0.0	31.27	84.04	0.00	6070	0	2211	2220	4432
5	90	29.23	21.179	28.798	0.00	0.150	2.77	0.85	1.00	0.0	30.05	83.35	0.00	6005	0	2071	2097	4167
4	70	27.20	23.137	28.798	0.00	0.139	2.81	0.85	1.00	0.0	31.60	88.91	0.00	6267	0	2056	1951	4007
3	50	24.71	28.624	35.893	0.00	0.154	2.76	0.85	1.00	0.0	39.44	108.67	0.00	7373	0	2283	1773	4055
2	30	21.36	31.030	35.893	0.00	0.146	2.79	0.85	1.00	0.0	41.33	115.15	0.00	8101	0	2090	1532	3622
1	10	21.34	33.475	35.893	0.00	0.139	2.81	0.85	1.00	0.0	43.29	121.70	0.00	8318	0	2207	1531	3738
														61,463	0	45,813		

0.9D + 1.0W Normal Gust Response Factor (Gh): 0.85
 120 mph wind with no ice Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Qz (psf)	Af (sf)	Ar (sf)	Ice Ar (sf)	e	Cf	Df	Dr	Tiz (in)	Ae (sf)	EPAa (sf)	EPAAi (sf)	Wt. (lb)	Ice Wt (lb)	Fst (lb)	Fa (lb)	Force (lb)
12	230	38.22	9.949	7.917	0.00	0.172	2.69	1.00	1.00	0.0	14.46	38.94	0.00	891	0	1265	1156	2421
11	210	37.24	9.810	11.667	0.00	0.203	2.59	1.00	1.00	0.0	16.52	42.72	0.00	1760	0	1352	1586	2938
10	190	36.19	10.682	15.025	0.00	0.202	2.59	1.00	1.00	0.0	18.86	48.86	0.00	2332	0	1503	2500	4003

SECTION FORCES

Sect #	Elev (ft)	Q _Z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
9	170	35.05	14.960	18.574	0.00	0.198	2.60	1.00	1.00	0.0	24.42	63.54	0.00	2934	0	1893	2512	4406
8	150	33.82	14.397	18.574	0.00	0.158	2.74	1.00	1.00	0.0	23.68	64.96	0.00	3236	0	1868	2426	4294
7	130	32.47	19.519	28.798	0.00	0.190	2.63	1.00	1.00	0.0	32.19	84.66	0.00	3344	0	2337	2329	4665
6	110	30.95	22.186	28.798	0.00	0.173	2.69	1.00	1.00	0.0	34.59	92.99	0.00	4553	0	2447	2220	4667
5	90	29.23	21.179	28.798	0.00	0.150	2.77	1.00	1.00	0.0	33.23	92.16	0.00	4504	0	2290	2097	4386
4	70	27.20	23.137	28.798	0.00	0.139	2.81	1.00	1.00	0.0	35.07	98.67	0.00	4701	0	2282	1951	4233
3	50	24.71	28.624	35.893	0.00	0.154	2.76	1.00	1.00	0.0	43.73	120.50	0.00	5529	0	2531	1773	4304
2	30	21.36	31.030	35.893	0.00	0.146	2.79	1.00	1.00	0.0	45.99	128.11	0.00	6076	0	2326	1532	3857
1	10	21.34	33.475	35.893	0.00	0.139	2.81	1.00	1.00	0.0	48.31	135.81	0.00	6238	0	2463	1531	3994
														46,097	0			48,168

0.9D + 1.0W 60°
120 mph wind with no ice

Gust Response Factor (G_h): 0.85
Wind Importance Factor (I_w): 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	38.22	9.949	7.917	0.00	0.172	2.69	0.80	1.00	0.0	12.47	33.58	0.00	891	0	1091	1156	2247
11	210	37.24	9.810	11.667	0.00	0.203	2.59	0.80	1.00	0.0	14.56	37.65	0.00	1760	0	1192	1586	2778
10	190	36.19	10.682	15.025	0.00	0.202	2.59	0.80	1.00	0.0	16.73	43.33	0.00	2332	0	1333	2500	3833
9	170	35.05	14.960	18.574	0.00	0.198	2.60	0.80	1.00	0.0	21.42	55.75	0.00	2934	0	1661	2512	4174
8	150	33.82	14.397	18.574	0.00	0.158	2.74	0.80	1.00	0.0	20.80	57.06	0.00	3236	0	1641	2426	4067
7	130	32.47	19.519	28.798	0.00	0.190	2.63	0.80	1.00	0.0	28.29	74.40	0.00	3344	0	2053	2329	4382
6	110	30.95	22.186	28.798	0.00	0.173	2.69	0.80	1.00	0.0	30.16	81.06	0.00	4553	0	2133	2220	4353
5	90	29.23	21.179	28.798	0.00	0.150	2.77	0.80	1.00	0.0	28.99	80.41	0.00	4504	0	1998	2097	4094
4	70	27.20	23.137	28.798	0.00	0.139	2.81	0.80	1.00	0.0	30.44	85.65	0.00	4701	0	1981	1951	3932
3	50	24.71	28.624	35.893	0.00	0.154	2.76	0.80	1.00	0.0	38.01	104.73	0.00	5529	0	2200	1773	3972
2	30	21.36	31.030	35.893	0.00	0.146	2.79	0.80	1.00	0.0	39.78	110.82	0.00	6076	0	2012	1532	3543
1	10	21.34	33.475	35.893	0.00	0.139	2.81	0.80	1.00	0.0	41.62	116.99	0.00	6238	0	2122	1531	3652
														46,097	0			45,027

0.9D + 1.0W 90°
120 mph wind with no ice

Gust Response Factor (G_h): 0.85
Wind Importance Factor (I_w): 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	38.22	9.949	7.917	0.00	0.172	2.69	0.85	1.00	0.0	12.97	34.92	0.00	891	0	1134	1156	2290
11	210	37.24	9.810	11.667	0.00	0.203	2.59	0.85	1.00	0.0	15.05	38.91	0.00	1760	0	1232	1586	2818
10	190	36.19	10.682	15.025	0.00	0.202	2.59	0.85	1.00	0.0	17.26	44.71	0.00	2332	0	1375	2500	3875
9	170	35.05	14.960	18.574	0.00	0.198	2.60	0.85	1.00	0.0	22.17	57.70	0.00	2934	0	1719	2512	4232
8	150	33.82	14.397	18.574	0.00	0.158	2.74	0.85	1.00	0.0	21.52	59.04	0.00	3236	0	1697	2426	4123
7	130	32.47	19.519	28.798	0.00	0.190	2.63	0.85	1.00	0.0	29.26	76.96	0.00	3344	0	2124	2329	4453
6	110	30.95	22.186	28.798	0.00	0.173	2.69	0.85	1.00	0.0	31.27	84.04	0.00	4553	0	2211	2220	4432
5	90	29.23	21.179	28.798	0.00	0.150	2.77	0.85	1.00	0.0	30.05	83.35	0.00	4504	0	2071	2097	4167
4	70	27.20	23.137	28.798	0.00	0.139	2.81	0.85	1.00	0.0	31.60	88.91	0.00	4701	0	2056	1951	4007
3	50	24.71	28.624	35.893	0.00	0.154	2.76	0.85	1.00	0.0	39.44	108.67	0.00	5529	0	2283	1773	4055
2	30	21.36	31.030	35.893	0.00	0.146	2.79	0.85	1.00	0.0	41.33	115.15	0.00	6076	0	2090	1532	3622
1	10	21.34	33.475	35.893	0.00	0.139	2.81	0.85	1.00	0.0	43.29	121.70	0.00	6238	0	2207	1531	3738
														46,097	0			45,813

0.9D + 1.0W 120°
120 mph wind with no ice

Gust Response Factor (G_h): 0.85
Wind Importance Factor (I_w): 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	38.22	9.949	7.917	0.00	0.172	2.69	1.00	1.00	0.0	14.46	38.94	0.00	891	0	1265	1156	2421
11	210	37.24	9.810	11.667	0.00	0.203	2.59	1.00	1.00	0.0	16.52	42.72	0.00	1760	0	1352	1586	2938
10	190	36.19	10.682	15.025	0.00	0.202	2.59	1.00	1.00	0.0	18.86	48.86	0.00	2332	0	1503	2500	4003
9	170	35.05	14.960	18.574	0.00	0.198	2.60	1.00	1.00	0.0	24.42	63.54	0.00	2934	0	1893	2512	4406
8	150	33.82	14.397	18.574	0.00	0.158	2.74	1.00	1.00	0.0	23.68	64.96	0.00	3236	0	1868	2426	4294

SECTION FORCES

Sect #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
7	130	32.47	19.519	28.798	0.00	0.190	2.63	1.00	1.00	0.0	32.19	84.66	0.00	3344	0	2337	2329	4665
6	110	30.95	22.186	28.798	0.00	0.173	2.69	1.00	1.00	0.0	34.59	92.99	0.00	4553	0	2447	2220	4667
5	90	29.23	21.179	28.798	0.00	0.150	2.77	1.00	1.00	0.0	33.23	92.16	0.00	4504	0	2290	2097	4386
4	70	27.20	23.137	28.798	0.00	0.139	2.81	1.00	1.00	0.0	35.07	98.67	0.00	4701	0	2282	1951	4233
3	50	24.71	28.624	35.893	0.00	0.154	2.76	1.00	1.00	0.0	43.73	120.50	0.00	5529	0	2531	1773	4304
2	30	21.36	31.030	35.893	0.00	0.146	2.79	1.00	1.00	0.0	45.99	128.11	0.00	6076	0	2326	1532	3857
1	10	21.34	33.475	35.893	0.00	0.139	2.81	1.00	1.00	0.0	48.31	135.81	0.00	6238	0	2463	1531	3994
														46,097	0			48,168

0.9D + 1.0W 180°
120 mph wind with no ice

Gust Response Factor (Gh): 0.85
Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	38.22	9.949	7.917	0.00	0.172	2.69	0.80	1.00	0.0	12.47	33.58	0.00	891	0	1091	1156	2247
11	210	37.24	9.810	11.667	0.00	0.203	2.59	0.80	1.00	0.0	14.56	37.65	0.00	1760	0	1192	1586	2778
10	190	36.19	10.682	15.025	0.00	0.202	2.59	0.80	1.00	0.0	16.73	43.33	0.00	2332	0	1333	2500	3833
9	170	35.05	14.960	18.574	0.00	0.198	2.60	0.80	1.00	0.0	21.42	55.75	0.00	2934	0	1661	2512	4174
8	150	33.82	14.397	18.574	0.00	0.158	2.74	0.80	1.00	0.0	20.80	57.06	0.00	3236	0	1641	2426	4067
7	130	32.47	19.519	28.798	0.00	0.190	2.63	0.80	1.00	0.0	28.29	74.40	0.00	3344	0	2053	2329	4382
6	110	30.95	22.186	28.798	0.00	0.173	2.69	0.80	1.00	0.0	30.16	81.06	0.00	4553	0	2133	2220	4353
5	90	29.23	21.179	28.798	0.00	0.150	2.77	0.80	1.00	0.0	28.99	80.41	0.00	4504	0	1998	2097	4094
4	70	27.20	23.137	28.798	0.00	0.139	2.81	0.80	1.00	0.0	30.44	85.65	0.00	4701	0	1981	1951	3932
3	50	24.71	28.624	35.893	0.00	0.154	2.76	0.80	1.00	0.0	38.01	104.73	0.00	5529	0	2200	1773	3972
2	30	21.36	31.030	35.893	0.00	0.146	2.79	0.80	1.00	0.0	39.78	110.82	0.00	6076	0	2012	1532	3543
1	10	21.34	33.475	35.893	0.00	0.139	2.81	0.80	1.00	0.0	41.62	116.99	0.00	6238	0	2122	1531	3652
														46,097	0			45,027

0.9D + 1.0W 210°
120 mph wind with no ice

Gust Response Factor (Gh): 0.85
Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	38.22	9.949	7.917	0.00	0.172	2.69	0.85	1.00	0.0	12.97	34.92	0.00	891	0	1134	1156	2290
11	210	37.24	9.810	11.667	0.00	0.203	2.59	0.85	1.00	0.0	15.05	38.91	0.00	1760	0	1232	1586	2818
10	190	36.19	10.682	15.025	0.00	0.202	2.59	0.85	1.00	0.0	17.26	44.71	0.00	2332	0	1375	2500	3875
9	170	35.05	14.960	18.574	0.00	0.198	2.60	0.85	1.00	0.0	22.17	57.70	0.00	2934	0	1719	2512	4232
8	150	33.82	14.397	18.574	0.00	0.158	2.74	0.85	1.00	0.0	21.52	59.04	0.00	3236	0	1697	2426	4123
7	130	32.47	19.519	28.798	0.00	0.190	2.63	0.85	1.00	0.0	29.26	76.96	0.00	3344	0	2124	2329	4453
6	110	30.95	22.186	28.798	0.00	0.173	2.69	0.85	1.00	0.0	31.27	84.04	0.00	4553	0	2211	2220	4432
5	90	29.23	21.179	28.798	0.00	0.150	2.77	0.85	1.00	0.0	30.05	83.35	0.00	4504	0	2071	2097	4167
4	70	27.20	23.137	28.798	0.00	0.139	2.81	0.85	1.00	0.0	31.60	88.91	0.00	4701	0	2056	1951	4007
3	50	24.71	28.624	35.893	0.00	0.154	2.76	0.85	1.00	0.0	39.44	108.67	0.00	5529	0	2283	1773	4055
2	30	21.36	31.030	35.893	0.00	0.146	2.79	0.85	1.00	0.0	41.33	115.15	0.00	6076	0	2090	1532	3622
1	10	21.34	33.475	35.893	0.00	0.139	2.81	0.85	1.00	0.0	43.29	121.70	0.00	6238	0	2207	1531	3738
														46,097	0			45,813

0.9D + 1.0W 240°
120 mph wind with no ice

Gust Response Factor (Gh): 0.85
Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	38.22	9.949	7.917	0.00	0.172	2.69	1.00	1.00	0.0	14.46	38.94	0.00	891	0	1265	1156	2421
11	210	37.24	9.810	11.667	0.00	0.203	2.59	1.00	1.00	0.0	16.52	42.72	0.00	1760	0	1352	1586	2938
10	190	36.19	10.682	15.025	0.00	0.202	2.59	1.00	1.00	0.0	18.86	48.86	0.00	2332	0	1503	2500	4003
9	170	35.05	14.960	18.574	0.00	0.198	2.60	1.00	1.00	0.0	24.42	63.54	0.00	2934	0	1893	2512	4406
8	150	33.82	14.397	18.574	0.00	0.158	2.74	1.00	1.00	0.0	23.68	64.96	0.00	3236	0	1868	2426	4294
7	130	32.47	19.519	28.798	0.00	0.190	2.63	1.00	1.00	0.0	32.19	84.66	0.00	3344	0	2337	2329	4665
6	110	30.95	22.186	28.798	0.00	0.173	2.69	1.00	1.00	0.0	34.59	92.99	0.00	4553	0	2447	2220	4667

SECTION FORCES

Sect #	Elev (ft)	Q _Z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
5	90	29.23	21.179	28.798	0.00	0.150	2.77	1.00	1.00	0.0	33.23	92.16	0.00	4504	0	2290	2097	4386
4	70	27.20	23.137	28.798	0.00	0.139	2.81	1.00	1.00	0.0	35.07	98.67	0.00	4701	0	2282	1951	4233
3	50	24.71	28.624	35.893	0.00	0.154	2.76	1.00	1.00	0.0	43.73	120.50	0.00	5529	0	2531	1773	4304
2	30	21.36	31.030	35.893	0.00	0.146	2.79	1.00	1.00	0.0	45.99	128.11	0.00	6076	0	2326	1532	3857
1	10	21.34	33.475	35.893	0.00	0.139	2.81	1.00	1.00	0.0	48.31	135.81	0.00	6238	0	2463	1531	3994
														46,097	0			48,168

0.9D + 1.0W 300°
120 mph wind with no ice

Gust Response Factor (Gh): 0.85
Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	38.22	9.949	7.917	0.00	0.172	2.69	0.80	1.00	0.0	12.47	33.58	0.00	891	0	1091	1156	2247
11	210	37.24	9.810	11.667	0.00	0.203	2.59	0.80	1.00	0.0	14.56	37.65	0.00	1760	0	1192	1586	2778
10	190	36.19	10.682	15.025	0.00	0.202	2.59	0.80	1.00	0.0	16.73	43.33	0.00	2332	0	1333	2500	3833
9	170	35.05	14.960	18.574	0.00	0.198	2.60	0.80	1.00	0.0	21.42	55.75	0.00	2934	0	1661	2512	4174
8	150	33.82	14.397	18.574	0.00	0.158	2.74	0.80	1.00	0.0	20.80	57.06	0.00	3236	0	1641	2426	4067
7	130	32.47	19.519	28.798	0.00	0.190	2.63	0.80	1.00	0.0	28.29	74.40	0.00	3344	0	2053	2329	4382
6	110	30.95	22.186	28.798	0.00	0.173	2.69	0.80	1.00	0.0	30.16	81.06	0.00	4553	0	2133	2220	4353
5	90	29.23	21.179	28.798	0.00	0.150	2.77	0.80	1.00	0.0	28.99	80.41	0.00	4504	0	1998	2097	4094
4	70	27.20	23.137	28.798	0.00	0.139	2.81	0.80	1.00	0.0	30.44	85.65	0.00	4701	0	1981	1951	3932
3	50	24.71	28.624	35.893	0.00	0.154	2.76	0.80	1.00	0.0	38.01	104.73	0.00	5529	0	2200	1773	3972
2	30	21.36	31.030	35.893	0.00	0.146	2.79	0.80	1.00	0.0	39.78	110.82	0.00	6076	0	2012	1532	3543
1	10	21.34	33.475	35.893	0.00	0.139	2.81	0.80	1.00	0.0	41.62	116.99	0.00	6238	0	2122	1531	3652
														46,097	0			45,027

0.9D + 1.0W 330°
120 mph wind with no ice

Gust Response Factor (Gh): 0.85
Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	38.22	9.949	7.917	0.00	0.172	2.69	0.85	1.00	0.0	12.97	34.92	0.00	891	0	1134	1156	2290
11	210	37.24	9.810	11.667	0.00	0.203	2.59	0.85	1.00	0.0	15.05	38.91	0.00	1760	0	1232	1586	2818
10	190	36.19	10.682	15.025	0.00	0.202	2.59	0.85	1.00	0.0	17.26	44.71	0.00	2332	0	1375	2500	3875
9	170	35.05	14.960	18.574	0.00	0.198	2.60	0.85	1.00	0.0	22.17	57.70	0.00	2934	0	1719	2512	4232
8	150	33.82	14.397	18.574	0.00	0.158	2.74	0.85	1.00	0.0	21.52	59.04	0.00	3236	0	1697	2426	4123
7	130	32.47	19.519	28.798	0.00	0.190	2.63	0.85	1.00	0.0	29.26	76.96	0.00	3344	0	2124	2329	4453
6	110	30.95	22.186	28.798	0.00	0.173	2.69	0.85	1.00	0.0	31.27	84.04	0.00	4553	0	2211	2220	4432
5	90	29.23	21.179	28.798	0.00	0.150	2.77	0.85	1.00	0.0	30.05	83.35	0.00	4504	0	2071	2097	4167
4	70	27.20	23.137	28.798	0.00	0.139	2.81	0.85	1.00	0.0	31.60	88.91	0.00	4701	0	2056	1951	4007
3	50	24.71	28.624	35.893	0.00	0.154	2.76	0.85	1.00	0.0	39.44	108.67	0.00	5529	0	2283	1773	4055
2	30	21.36	31.030	35.893	0.00	0.146	2.79	0.85	1.00	0.0	41.33	115.15	0.00	6076	0	2090	1532	3622
1	10	21.34	33.475	35.893	0.00	0.139	2.81	0.85	1.00	0.0	43.29	121.70	0.00	6238	0	2207	1531	3738
														46,097	0			45,813

1.2D + 1.0Di + 1.0Wi Normal
50 mph wind with 1.5" radial ice

Gust Response Factor (Gh): 0.85
Wind Importance Factor (Iw): 1.00
Ice Importance Factor: 1.00
Ice Dead Load Factor: 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	6.63	9.949	38.750	30.83	0.443	1.99	1.00	1.00	1.8	35.36	70.21	30.83	4990	3801	396	384	780
11	210	6.46	9.810	42.221	30.55	0.465	1.95	1.00	1.00	1.8	37.96	74.01	30.55	7067	4721	407	529	936
10	190	6.28	10.682	47.079	32.05	0.433	2.00	1.00	1.00	1.8	41.33	82.78	32.05	9675	6565	442	865	1307
9	170	6.09	14.960	52.618	34.04	0.386	2.09	1.00	1.00	1.8	48.12	100.71	34.04	11330	7418	521	965	1486
8	150	5.87	14.397	51.213	32.64	0.305	2.28	1.00	1.00	1.7	45.15	103.06	32.64	11531	7217	514	987	1502
7	130	5.64	19.519	63.910	35.11	0.321	2.24	1.00	1.00	1.7	58.23	130.56	35.11	12543	8084	626	930	1556
6	110	5.37	22.186	66.336	37.54	0.295	2.31	1.00	1.00	1.7	61.82	142.74	37.54	14316	8246	652	897	1549
5	90	5.07	21.179	60.735	31.94	0.241	2.46	1.00	1.00	1.7	56.58	139.45	31.94	13824	7820	602	873	1474
4	70	4.72	23.137	61.800	33.00	0.224	2.52	1.00	1.00	1.6	58.92	148.41	33.00	14235	7968	596	812	1408

SECTION FORCES

Sect #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
3	50	4.29	28.624	69.647	33.75	0.232	2.49	1.00	1.00	1.6	69.08	172.13	33.75	15671	8298	628	722	1350
2	30	3.71	31.030	69.754	33.86	0.218	2.54	1.00	1.00	1.5	71.34	181.04	33.86	16158	8057	571	615	1186
1	10	3.70	33.475	67.858	31.97	0.202	2.59	1.00	1.00	1.3	72.48	187.74	31.97	15637	7319	591	592	1183
														146,977	85,514			15,714

1.2D + 1.0Di + 1.0Wi 60° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
 50 mph wind with 1.5" radial ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	6.63	9.949	38.750	30.83	0.443	1.99	0.80	1.00	1.8	33.37	66.26	30.83	4990	3801	374	384	757
11	210	6.46	9.810	42.221	30.55	0.465	1.95	0.80	1.00	1.8	36.00	70.18	30.55	7067	4721	386	529	914
10	190	6.28	10.682	47.079	32.05	0.433	2.00	0.80	1.00	1.8	39.20	78.50	32.05	9675	6565	419	865	1284
9	170	6.09	14.960	52.618	34.04	0.386	2.09	0.80	1.00	1.8	45.13	94.44	34.04	11330	7418	489	965	1453
8	150	5.87	14.397	51.213	32.64	0.305	2.28	0.80	1.00	1.7	42.27	96.49	32.64	11531	7217	482	987	1469
7	130	5.64	19.519	63.910	35.11	0.321	2.24	0.80	1.00	1.7	54.32	121.81	35.11	12543	8084	584	930	1514
6	110	5.37	22.186	66.336	37.54	0.295	2.31	0.80	1.00	1.7	57.38	132.50	37.54	14316	8246	605	897	1502
5	90	5.07	21.179	60.735	31.94	0.241	2.46	0.80	1.00	1.7	52.34	129.01	31.94	13824	7820	556	873	1429
4	70	4.72	23.137	61.800	33.00	0.224	2.52	0.80	1.00	1.6	54.29	136.76	33.00	14235	7968	549	812	1361
3	50	4.29	28.624	69.647	33.75	0.232	2.49	0.80	1.00	1.6	63.35	157.87	33.75	15671	8298	576	722	1298
2	30	3.71	31.030	69.754	33.86	0.218	2.54	0.80	1.00	1.5	65.13	165.29	33.86	16158	8057	521	615	1136
1	10	3.70	33.475	67.858	31.97	0.202	2.59	0.80	1.00	1.3	65.78	170.40	31.97	15637	7319	537	592	1128
														146,977	85,514			15,246

1.2D + 1.0Di + 1.0Wi 90° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
 50 mph wind with 1.5" radial ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	6.63	9.949	38.750	30.83	0.443	1.99	0.85	1.00	1.8	33.86	67.25	30.83	4990	3801	379	384	763
11	210	6.46	9.810	42.221	30.55	0.465	1.95	0.85	1.00	1.8	36.49	71.14	30.55	7067	4721	391	529	920
10	190	6.28	10.682	47.079	32.05	0.433	2.00	0.85	1.00	1.8	39.73	79.57	32.05	9675	6565	425	865	1290
9	170	6.09	14.960	52.618	34.04	0.386	2.09	0.85	1.00	1.8	45.88	96.01	34.04	11330	7418	497	965	1461
8	150	5.87	14.397	51.213	32.64	0.305	2.28	0.85	1.00	1.7	42.99	98.14	32.64	11531	7217	490	987	1477
7	130	5.64	19.519	63.910	35.11	0.321	2.24	0.85	1.00	1.7	55.30	123.99	35.11	12543	8084	594	930	1524
6	110	5.37	22.186	66.336	37.54	0.295	2.31	0.85	1.00	1.7	58.49	135.06	37.54	14316	8246	617	897	1514
5	90	5.07	21.179	60.735	31.94	0.241	2.46	0.85	1.00	1.7	53.40	131.62	31.94	13824	7820	568	873	1440
4	70	4.72	23.137	61.800	33.00	0.224	2.52	0.85	1.00	1.6	55.45	139.67	33.00	14235	7968	561	812	1373
3	50	4.29	28.624	69.647	33.75	0.232	2.49	0.85	1.00	1.6	64.79	161.44	33.75	15671	8298	589	722	1311
2	30	3.71	31.030	69.754	33.86	0.218	2.54	0.85	1.00	1.5	66.68	169.22	33.86	16158	8057	533	615	1149
1	10	3.70	33.475	67.858	31.97	0.202	2.59	0.85	1.00	1.3	67.46	174.73	31.97	15637	7319	550	592	1142
														146,977	85,514			15,363

1.2D + 1.0Di + 1.0Wi 120° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
 50 mph wind with 1.5" radial ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	6.63	9.949	38.750	30.83	0.443	1.99	1.00	1.00	1.8	35.36	70.21	30.83	4990	3801	396	384	780
11	210	6.46	9.810	42.221	30.55	0.465	1.95	1.00	1.00	1.8	37.96	74.01	30.55	7067	4721	407	529	936
10	190	6.28	10.682	47.079	32.05	0.433	2.00	1.00	1.00	1.8	41.33	82.78	32.05	9675	6565	442	865	1307
9	170	6.09	14.960	52.618	34.04	0.386	2.09	1.00	1.00	1.8	48.12	100.71	34.04	11330	7418	521	965	1486
8	150	5.87	14.397	51.213	32.64	0.305	2.28	1.00	1.00	1.7	45.15	103.06	32.64	11531	7217	514	987	1502
7	130	5.64	19.519	63.910	35.11	0.321	2.24	1.00	1.00	1.7	58.23	130.56	35.11	12543	8084	626	930	1556
6	110	5.37	22.186	66.336	37.54	0.295	2.31	1.00	1.00	1.7	61.82	142.74	37.54	14316	8246	652	897	1549
5	90	5.07	21.179	60.735	31.94	0.241	2.46	1.00	1.00	1.7	56.58	139.45	31.94	13824	7820	602	873	1474
4	70	4.72	23.137	61.800	33.00	0.224	2.52	1.00	1.00	1.6	58.92	148.41	33.00	14235	7968	596	812	1408
3	50	4.29	28.624	69.647	33.75	0.232	2.49	1.00	1.00	1.6	69.08	172.13	33.75	15671	8298	628	722	1350
2	30	3.71	31.030	69.754	33.86	0.218	2.54	1.00	1.00	1.5	71.34	181.04	33.86	16158	8057	571	615	1186

SECTION FORCES

Sect #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)	
1	10	3.70	33.475	67.858	31.97	0.202	2.59	1.00	1.00	1.3	72.48	187.74	31.97	15637	7319	591	592	1183	
															146,977	85,514			15,714

1.2D + 1.0Di + 1.0Wi 180° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
 50 mph wind with 1.5" radial ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)	
12	230	6.63	9.949	38.750	30.83	0.443	1.99	0.80	1.00	1.8	33.37	66.26	30.83	4990	3801	374	384	757	
11	210	6.46	9.810	42.221	30.55	0.465	1.95	0.80	1.00	1.8	36.00	70.18	30.55	7067	4721	386	529	914	
10	190	6.28	10.682	47.079	32.05	0.433	2.00	0.80	1.00	1.8	39.20	78.50	32.05	9675	6565	419	865	1284	
9	170	6.09	14.960	52.618	34.04	0.386	2.09	0.80	1.00	1.8	45.13	94.44	34.04	11330	7418	489	965	1453	
8	150	5.87	14.397	51.213	32.64	0.305	2.28	0.80	1.00	1.7	42.27	96.49	32.64	11531	7217	482	987	1469	
7	130	5.64	19.519	63.910	35.11	0.321	2.24	0.80	1.00	1.7	54.32	121.81	35.11	12543	8084	584	930	1514	
6	110	5.37	22.186	66.336	37.54	0.295	2.31	0.80	1.00	1.7	57.38	132.50	37.54	14316	8246	605	897	1502	
5	90	5.07	21.179	60.735	31.94	0.241	2.46	0.80	1.00	1.7	52.34	129.01	31.94	13824	7820	556	873	1429	
4	70	4.72	23.137	61.800	33.00	0.224	2.52	0.80	1.00	1.6	54.29	136.76	33.00	14235	7968	549	812	1361	
3	50	4.29	28.624	69.647	33.75	0.232	2.49	0.80	1.00	1.6	63.35	157.87	33.75	15671	8298	576	722	1298	
2	30	3.71	31.030	69.754	33.86	0.218	2.54	0.80	1.00	1.5	65.13	165.29	33.86	16158	8057	521	615	1136	
1	10	3.70	33.475	67.858	31.97	0.202	2.59	0.80	1.00	1.3	65.78	170.40	31.97	15637	7319	537	592	1128	
															146,977	85,514			15,246

1.2D + 1.0Di + 1.0Wi 210° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
 50 mph wind with 1.5" radial ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)	
12	230	6.63	9.949	38.750	30.83	0.443	1.99	0.85	1.00	1.8	33.86	67.25	30.83	4990	3801	379	384	763	
11	210	6.46	9.810	42.221	30.55	0.465	1.95	0.85	1.00	1.8	36.49	71.14	30.55	7067	4721	391	529	920	
10	190	6.28	10.682	47.079	32.05	0.433	2.00	0.85	1.00	1.8	39.73	79.57	32.05	9675	6565	425	865	1290	
9	170	6.09	14.960	52.618	34.04	0.386	2.09	0.85	1.00	1.8	45.88	96.01	34.04	11330	7418	497	965	1461	
8	150	5.87	14.397	51.213	32.64	0.305	2.28	0.85	1.00	1.7	42.99	98.14	32.64	11531	7217	490	987	1477	
7	130	5.64	19.519	63.910	35.11	0.321	2.24	0.85	1.00	1.7	55.30	123.99	35.11	12543	8084	594	930	1524	
6	110	5.37	22.186	66.336	37.54	0.295	2.31	0.85	1.00	1.7	58.49	135.06	37.54	14316	8246	617	897	1514	
5	90	5.07	21.179	60.735	31.94	0.241	2.46	0.85	1.00	1.7	53.40	131.62	31.94	13824	7820	568	873	1440	
4	70	4.72	23.137	61.800	33.00	0.224	2.52	0.85	1.00	1.6	55.45	139.67	33.00	14235	7968	561	812	1373	
3	50	4.29	28.624	69.647	33.75	0.232	2.49	0.85	1.00	1.6	64.79	161.44	33.75	15671	8298	589	722	1311	
2	30	3.71	31.030	69.754	33.86	0.218	2.54	0.85	1.00	1.5	66.68	169.22	33.86	16158	8057	533	615	1149	
1	10	3.70	33.475	67.858	31.97	0.202	2.59	0.85	1.00	1.3	67.46	174.73	31.97	15637	7319	550	592	1142	
															146,977	85,514			15,363

1.2D + 1.0Di + 1.0Wi 240° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
 50 mph wind with 1.5" radial ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)	
12	230	6.63	9.949	38.750	30.83	0.443	1.99	1.00	1.00	1.8	35.36	70.21	30.83	4990	3801	396	384	780	
11	210	6.46	9.810	42.221	30.55	0.465	1.95	1.00	1.00	1.8	37.96	74.01	30.55	7067	4721	407	529	936	
10	190	6.28	10.682	47.079	32.05	0.433	2.00	1.00	1.00	1.8	41.33	82.78	32.05	9675	6565	442	865	1307	
9	170	6.09	14.960	52.618	34.04	0.386	2.09	1.00	1.00	1.8	48.12	100.71	34.04	11330	7418	521	965	1486	
8	150	5.87	14.397	51.213	32.64	0.305	2.28	1.00	1.00	1.7	45.15	103.06	32.64	11531	7217	514	987	1502	
7	130	5.64	19.519	63.910	35.11	0.321	2.24	1.00	1.00	1.7	58.23	130.56	35.11	12543	8084	626	930	1556	
6	110	5.37	22.186	66.336	37.54	0.295	2.31	1.00	1.00	1.7	61.82	142.74	37.54	14316	8246	652	897	1549	
5	90	5.07	21.179	60.735	31.94	0.241	2.46	1.00	1.00	1.7	56.58	139.45	31.94	13824	7820	602	873	1474	
4	70	4.72	23.137	61.800	33.00	0.224	2.52	1.00	1.00	1.6	58.92	148.41	33.00	14235	7968	596	812	1408	
3	50	4.29	28.624	69.647	33.75	0.232	2.49	1.00	1.00	1.6	69.08	172.13	33.75	15671	8298	628	722	1350	
2	30	3.71	31.030	69.754	33.86	0.218	2.54	1.00	1.00	1.5	71.34	181.04	33.86	16158	8057	571	615	1186	
1	10	3.70	33.475	67.858	31.97	0.202	2.59	1.00	1.00	1.3	72.48	187.74	31.97	15637	7319	591	592	1183	
															146,977	85,514			15,714

SECTION FORCES

1.2D + 1.0Di + 1.0Wi 300° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
 50 mph wind with 1.5" radial ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	6.63	9.949	38.750	30.83	0.443	1.99	0.80	1.00	1.8	33.37	66.26	30.83	4990	3801	374	384	757
11	210	6.46	9.810	42.221	30.55	0.465	1.95	0.80	1.00	1.8	36.00	70.18	30.55	7067	4721	386	529	914
10	190	6.28	10.682	47.079	32.05	0.433	2.00	0.80	1.00	1.8	39.20	78.50	32.05	9675	6565	419	865	1284
9	170	6.09	14.960	52.618	34.04	0.386	2.09	0.80	1.00	1.8	45.13	94.44	34.04	11330	7418	489	965	1453
8	150	5.87	14.397	51.213	32.64	0.305	2.28	0.80	1.00	1.7	42.27	96.49	32.64	11531	7217	482	987	1469
7	130	5.64	19.519	63.910	35.11	0.321	2.24	0.80	1.00	1.7	54.32	121.81	35.11	12543	8084	584	930	1514
6	110	5.37	22.186	66.336	37.54	0.295	2.31	0.80	1.00	1.7	57.38	132.50	37.54	14316	8246	605	897	1502
5	90	5.07	21.179	60.735	31.94	0.241	2.46	0.80	1.00	1.7	52.34	129.01	31.94	13824	7820	556	873	1429
4	70	4.72	23.137	61.800	33.00	0.224	2.52	0.80	1.00	1.6	54.29	136.76	33.00	14235	7968	549	812	1361
3	50	4.29	28.624	69.647	33.75	0.232	2.49	0.80	1.00	1.6	63.35	157.87	33.75	15671	8298	576	722	1298
2	30	3.71	31.030	69.754	33.86	0.218	2.54	0.80	1.00	1.5	65.13	165.29	33.86	16158	8057	521	615	1136
1	10	3.70	33.475	67.858	31.97	0.202	2.59	0.80	1.00	1.3	65.78	170.40	31.97	15637	7319	537	592	1128
														146,977	85,514			15,246

1.2D + 1.0Di + 1.0Wi 330° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
 50 mph wind with 1.5" radial ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	6.63	9.949	38.750	30.83	0.443	1.99	0.85	1.00	1.8	33.86	67.25	30.83	4990	3801	379	384	763
11	210	6.46	9.810	42.221	30.55	0.465	1.95	0.85	1.00	1.8	36.49	71.14	30.55	7067	4721	391	529	920
10	190	6.28	10.682	47.079	32.05	0.433	2.00	0.85	1.00	1.8	39.73	79.57	32.05	9675	6565	425	865	1290
9	170	6.09	14.960	52.618	34.04	0.386	2.09	0.85	1.00	1.8	45.88	96.01	34.04	11330	7418	497	965	1461
8	150	5.87	14.397	51.213	32.64	0.305	2.28	0.85	1.00	1.7	42.99	98.14	32.64	11531	7217	490	987	1477
7	130	5.64	19.519	63.910	35.11	0.321	2.24	0.85	1.00	1.7	55.30	123.99	35.11	12543	8084	594	930	1524
6	110	5.37	22.186	66.336	37.54	0.295	2.31	0.85	1.00	1.7	58.49	135.06	37.54	14316	8246	617	897	1514
5	90	5.07	21.179	60.735	31.94	0.241	2.46	0.85	1.00	1.7	53.40	131.62	31.94	13824	7820	568	873	1440
4	70	4.72	23.137	61.800	33.00	0.224	2.52	0.85	1.00	1.6	55.45	139.67	33.00	14235	7968	561	812	1373
3	50	4.29	28.624	69.647	33.75	0.232	2.49	0.85	1.00	1.6	64.79	161.44	33.75	15671	8298	589	722	1311
2	30	3.71	31.030	69.754	33.86	0.218	2.54	0.85	1.00	1.5	66.68	169.22	33.86	16158	8057	533	615	1149
1	10	3.70	33.475	67.858	31.97	0.202	2.59	0.85	1.00	1.3	67.46	174.73	31.97	15637	7319	550	592	1142
														146,977	85,514			15,363

1.0D + 1.0W Service Normal Gust Response Factor (Gh): 0.85
 60 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	9.55	9.949	7.917	0.00	0.172	2.69	1.00	1.00	0.0	14.46	38.94	0.00	990	0	316	289	605
11	210	9.31	9.810	11.667	0.00	0.203	2.59	1.00	1.00	0.0	16.52	42.72	0.00	1956	0	338	397	735
10	190	9.05	10.682	15.025	0.00	0.202	2.59	1.00	1.00	0.0	19.32	50.05	0.00	2591	0	385	625	1010
9	170	8.76	14.960	18.574	0.00	0.198	2.60	1.00	1.00	0.0	25.62	66.68	0.00	3260	0	497	628	1125
8	150	8.46	14.397	18.574	0.00	0.158	2.74	1.00	1.00	0.0	24.95	68.47	0.00	3595	0	492	607	1099
7	130	8.12	19.519	28.798	0.00	0.190	2.63	1.00	1.00	0.0	35.58	93.57	0.00	3716	0	646	582	1228
6	110	7.74	22.186	28.798	0.00	0.173	2.69	1.00	1.00	0.0	38.28	102.89	0.00	5058	0	677	555	1232
5	90	7.31	21.179	28.798	0.00	0.150	2.77	1.00	1.00	0.0	37.33	103.53	0.00	5004	0	643	524	1167
4	70	6.80	23.137	28.798	0.00	0.139	2.81	1.00	1.00	0.0	39.45	110.99	0.00	5223	0	642	488	1129
3	50	6.18	28.624	35.893	0.00	0.154	2.76	1.00	1.00	0.0	48.20	132.81	0.00	6144	0	697	443	1141
2	30	5.34	31.030	35.893	0.00	0.146	2.79	1.00	1.00	0.0	50.56	140.85	0.00	6751	0	639	383	1022
1	10	5.33	33.475	35.893	0.00	0.139	2.81	1.00	1.00	0.0	51.12	143.70	0.00	6931	0	652	383	1034
														51,219	0			12,526

1.0D + 1.0W Service 60° Gust Response Factor (Gh): 0.85
 60 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

SECTION FORCES

Sect #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	9.55	9.949	7.917	0.00	0.172	2.69	0.80	1.00	0.0	12.47	33.58	0.00	990	0	273	289	562
11	210	9.31	9.810	11.667	0.00	0.203	2.59	0.80	1.00	0.0	14.56	37.65	0.00	1956	0	298	397	694
10	190	9.05	10.682	15.025	0.00	0.202	2.59	0.80	1.00	0.0	17.18	44.51	0.00	2591	0	342	625	967
9	170	8.76	14.960	18.574	0.00	0.198	2.60	0.80	1.00	0.0	22.63	58.90	0.00	3260	0	439	628	1067
8	150	8.46	14.397	18.574	0.00	0.158	2.74	0.80	1.00	0.0	22.07	60.57	0.00	3595	0	435	607	1042
7	130	8.12	19.519	28.798	0.00	0.190	2.63	0.80	1.00	0.0	31.67	83.30	0.00	3716	0	575	582	1157
6	110	7.74	22.186	28.798	0.00	0.173	2.69	0.80	1.00	0.0	33.84	90.96	0.00	5058	0	598	555	1153
5	90	7.31	21.179	28.798	0.00	0.150	2.77	0.80	1.00	0.0	33.09	91.79	0.00	5004	0	570	524	1094
4	70	6.80	23.137	28.798	0.00	0.139	2.81	0.80	1.00	0.0	34.82	97.97	0.00	5223	0	566	488	1054
3	50	6.18	28.624	35.893	0.00	0.154	2.76	0.80	1.00	0.0	42.48	117.04	0.00	6144	0	615	443	1058
2	30	5.34	31.030	35.893	0.00	0.146	2.79	0.80	1.00	0.0	44.36	123.56	0.00	6751	0	561	383	944
1	10	5.33	33.475	35.893	0.00	0.139	2.81	0.80	1.00	0.0	44.42	124.88	0.00	6931	0	566	383	949
														51,219	0			11,741

1.0D + 1.0W Service 90°
60 mph Wind with No Ice

Gust Response Factor (G_h): 0.85
Wind Importance Factor (I_w): 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	9.55	9.949	7.917	0.00	0.172	2.69	0.85	1.00	0.0	12.97	34.92	0.00	990	0	284	289	573
11	210	9.31	9.810	11.667	0.00	0.203	2.59	0.85	1.00	0.0	15.05	38.91	0.00	1956	0	308	397	704
10	190	9.05	10.682	15.025	0.00	0.202	2.59	0.85	1.00	0.0	17.72	45.89	0.00	2591	0	353	625	978
9	170	8.76	14.960	18.574	0.00	0.198	2.60	0.85	1.00	0.0	23.38	60.84	0.00	3260	0	453	628	1081
8	150	8.46	14.397	18.574	0.00	0.158	2.74	0.85	1.00	0.0	22.79	62.55	0.00	3595	0	450	607	1056
7	130	8.12	19.519	28.798	0.00	0.190	2.63	0.85	1.00	0.0	32.65	85.87	0.00	3716	0	592	582	1175
6	110	7.74	22.186	28.798	0.00	0.173	2.69	0.85	1.00	0.0	34.95	93.94	0.00	5058	0	618	555	1173
5	90	7.31	21.179	28.798	0.00	0.150	2.77	0.85	1.00	0.0	34.15	94.72	0.00	5004	0	588	524	1113
4	70	6.80	23.137	28.798	0.00	0.139	2.81	0.85	1.00	0.0	35.98	101.23	0.00	5223	0	585	488	1073
3	50	6.18	28.624	35.893	0.00	0.154	2.76	0.85	1.00	0.0	43.91	120.98	0.00	6144	0	635	443	1078
2	30	5.34	31.030	35.893	0.00	0.146	2.79	0.85	1.00	0.0	45.91	127.88	0.00	6751	0	580	383	963
1	10	5.33	33.475	35.893	0.00	0.139	2.81	0.85	1.00	0.0	46.09	129.58	0.00	6931	0	588	383	970
														51,219	0			11,938

1.0D + 1.0W Service 120°
60 mph Wind with No Ice

Gust Response Factor (G_h): 0.85
Wind Importance Factor (I_w): 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	9.55	9.949	7.917	0.00	0.172	2.69	1.00	1.00	0.0	14.46	38.94	0.00	990	0	316	289	605
11	210	9.31	9.810	11.667	0.00	0.203	2.59	1.00	1.00	0.0	16.52	42.72	0.00	1956	0	338	397	735
10	190	9.05	10.682	15.025	0.00	0.202	2.59	1.00	1.00	0.0	19.32	50.05	0.00	2591	0	385	625	1010
9	170	8.76	14.960	18.574	0.00	0.198	2.60	1.00	1.00	0.0	25.62	66.68	0.00	3260	0	497	628	1125
8	150	8.46	14.397	18.574	0.00	0.158	2.74	1.00	1.00	0.0	24.95	68.47	0.00	3595	0	492	607	1099
7	130	8.12	19.519	28.798	0.00	0.190	2.63	1.00	1.00	0.0	35.58	93.57	0.00	3716	0	646	582	1228
6	110	7.74	22.186	28.798	0.00	0.173	2.69	1.00	1.00	0.0	38.28	102.89	0.00	5058	0	677	555	1232
5	90	7.31	21.179	28.798	0.00	0.150	2.77	1.00	1.00	0.0	37.33	103.53	0.00	5004	0	643	524	1167
4	70	6.80	23.137	28.798	0.00	0.139	2.81	1.00	1.00	0.0	39.45	110.99	0.00	5223	0	642	488	1129
3	50	6.18	28.624	35.893	0.00	0.154	2.76	1.00	1.00	0.0	48.20	132.81	0.00	6144	0	697	443	1141
2	30	5.34	31.030	35.893	0.00	0.146	2.79	1.00	1.00	0.0	50.56	140.85	0.00	6751	0	639	383	1022
1	10	5.33	33.475	35.893	0.00	0.139	2.81	1.00	1.00	0.0	51.12	143.70	0.00	6931	0	652	383	1034
														51,219	0			12,526

1.0D + 1.0W Service 180°
60 mph Wind with No Ice

Gust Response Factor (G_h): 0.85
Wind Importance Factor (I_w): 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	9.55	9.949	7.917	0.00	0.172	2.69	0.80	1.00	0.0	12.47	33.58	0.00	990	0	273	289	562
11	210	9.31	9.810	11.667	0.00	0.203	2.59	0.80	1.00	0.0	14.56	37.65	0.00	1956	0	298	397	694

SECTION FORCES

Sect #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
10	190	9.05	10.682	15.025	0.00	0.202	2.59	0.80	1.00	0.0	17.18	44.51	0.00	2591	0	342	625	967
9	170	8.76	14.960	18.574	0.00	0.198	2.60	0.80	1.00	0.0	22.63	58.90	0.00	3260	0	439	628	1067
8	150	8.46	14.397	18.574	0.00	0.158	2.74	0.80	1.00	0.0	22.07	60.57	0.00	3595	0	435	607	1042
7	130	8.12	19.519	28.798	0.00	0.190	2.63	0.80	1.00	0.0	31.67	83.30	0.00	3716	0	575	582	1157
6	110	7.74	22.186	28.798	0.00	0.173	2.69	0.80	1.00	0.0	33.84	90.96	0.00	5058	0	598	555	1153
5	90	7.31	21.179	28.798	0.00	0.150	2.77	0.80	1.00	0.0	33.09	91.79	0.00	5004	0	570	524	1094
4	70	6.80	23.137	28.798	0.00	0.139	2.81	0.80	1.00	0.0	34.82	97.97	0.00	5223	0	566	488	1054
3	50	6.18	28.624	35.893	0.00	0.154	2.76	0.80	1.00	0.0	42.48	117.04	0.00	6144	0	615	443	1058
2	30	5.34	31.030	35.893	0.00	0.146	2.79	0.80	1.00	0.0	44.36	123.56	0.00	6751	0	561	383	944
1	10	5.33	33.475	35.893	0.00	0.139	2.81	0.80	1.00	0.0	44.42	124.88	0.00	6931	0	566	383	949
														51,219	0			11,741

1.0D + 1.0W Service 210°
60 mph Wind with No Ice

Gust Response Factor (Gh): 0.85
Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	9.55	9.949	7.917	0.00	0.172	2.69	0.85	1.00	0.0	12.97	34.92	0.00	990	0	284	289	573
11	210	9.31	9.810	11.667	0.00	0.203	2.59	0.85	1.00	0.0	15.05	38.91	0.00	1956	0	308	397	704
10	190	9.05	10.682	15.025	0.00	0.202	2.59	0.85	1.00	0.0	17.72	45.89	0.00	2591	0	353	625	978
9	170	8.76	14.960	18.574	0.00	0.198	2.60	0.85	1.00	0.0	23.38	60.84	0.00	3260	0	453	628	1081
8	150	8.46	14.397	18.574	0.00	0.158	2.74	0.85	1.00	0.0	22.79	62.55	0.00	3595	0	450	607	1056
7	130	8.12	19.519	28.798	0.00	0.190	2.63	0.85	1.00	0.0	32.65	85.87	0.00	3716	0	592	582	1175
6	110	7.74	22.186	28.798	0.00	0.173	2.69	0.85	1.00	0.0	34.95	93.94	0.00	5058	0	618	555	1173
5	90	7.31	21.179	28.798	0.00	0.150	2.77	0.85	1.00	0.0	34.15	94.72	0.00	5004	0	588	524	1113
4	70	6.80	23.137	28.798	0.00	0.139	2.81	0.85	1.00	0.0	35.98	101.23	0.00	5223	0	585	488	1073
3	50	6.18	28.624	35.893	0.00	0.154	2.76	0.85	1.00	0.0	43.91	120.98	0.00	6144	0	635	443	1078
2	30	5.34	31.030	35.893	0.00	0.146	2.79	0.85	1.00	0.0	45.91	127.88	0.00	6751	0	580	383	963
1	10	5.33	33.475	35.893	0.00	0.139	2.81	0.85	1.00	0.0	46.09	129.58	0.00	6931	0	588	383	970
														51,219	0			11,938

1.0D + 1.0W Service 240°
60 mph Wind with No Ice

Gust Response Factor (Gh): 0.85
Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	9.55	9.949	7.917	0.00	0.172	2.69	1.00	1.00	0.0	14.46	38.94	0.00	990	0	316	289	605
11	210	9.31	9.810	11.667	0.00	0.203	2.59	1.00	1.00	0.0	16.52	42.72	0.00	1956	0	338	397	735
10	190	9.05	10.682	15.025	0.00	0.202	2.59	1.00	1.00	0.0	19.32	50.05	0.00	2591	0	385	625	1010
9	170	8.76	14.960	18.574	0.00	0.198	2.60	1.00	1.00	0.0	25.62	66.68	0.00	3260	0	497	628	1125
8	150	8.46	14.397	18.574	0.00	0.158	2.74	1.00	1.00	0.0	24.95	68.47	0.00	3595	0	492	607	1099
7	130	8.12	19.519	28.798	0.00	0.190	2.63	1.00	1.00	0.0	35.58	93.57	0.00	3716	0	646	582	1228
6	110	7.74	22.186	28.798	0.00	0.173	2.69	1.00	1.00	0.0	38.28	102.89	0.00	5058	0	677	555	1232
5	90	7.31	21.179	28.798	0.00	0.150	2.77	1.00	1.00	0.0	37.33	103.53	0.00	5004	0	643	524	1167
4	70	6.80	23.137	28.798	0.00	0.139	2.81	1.00	1.00	0.0	39.45	110.99	0.00	5223	0	642	488	1129
3	50	6.18	28.624	35.893	0.00	0.154	2.76	1.00	1.00	0.0	48.20	132.81	0.00	6144	0	697	443	1141
2	30	5.34	31.030	35.893	0.00	0.146	2.79	1.00	1.00	0.0	50.56	140.85	0.00	6751	0	639	383	1022
1	10	5.33	33.475	35.893	0.00	0.139	2.81	1.00	1.00	0.0	51.12	143.70	0.00	6931	0	652	383	1034
														51,219	0			12,526

1.0D + 1.0W Service 300°
60 mph Wind with No Ice

Gust Response Factor (Gh): 0.85
Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	9.55	9.949	7.917	0.00	0.172	2.69	0.80	1.00	0.0	12.47	33.58	0.00	990	0	273	289	562
11	210	9.31	9.810	11.667	0.00	0.203	2.59	0.80	1.00	0.0	14.56	37.65	0.00	1956	0	298	397	694
10	190	9.05	10.682	15.025	0.00	0.202	2.59	0.80	1.00	0.0	17.18	44.51	0.00	2591	0	342	625	967
9	170	8.76	14.960	18.574	0.00	0.198	2.60	0.80	1.00	0.0	22.63	58.90	0.00	3260	0	439	628	1067

SECTION FORCES

Sect #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
8	150	8.46	14.397	18.574	0.00	0.158	2.74	0.80	1.00	0.0	22.07	60.57	0.00	3595	0	435	607	1042
7	130	8.12	19.519	28.798	0.00	0.190	2.63	0.80	1.00	0.0	31.67	83.30	0.00	3716	0	575	582	1157
6	110	7.74	22.186	28.798	0.00	0.173	2.69	0.80	1.00	0.0	33.84	90.96	0.00	5058	0	598	555	1153
5	90	7.31	21.179	28.798	0.00	0.150	2.77	0.80	1.00	0.0	33.09	91.79	0.00	5004	0	570	524	1094
4	70	6.80	23.137	28.798	0.00	0.139	2.81	0.80	1.00	0.0	34.82	97.97	0.00	5223	0	566	488	1054
3	50	6.18	28.624	35.893	0.00	0.154	2.76	0.80	1.00	0.0	42.48	117.04	0.00	6144	0	615	443	1058
2	30	5.34	31.030	35.893	0.00	0.146	2.79	0.80	1.00	0.0	44.36	123.56	0.00	6751	0	561	383	944
1	10	5.33	33.475	35.893	0.00	0.139	2.81	0.80	1.00	0.0	44.42	124.88	0.00	6931	0	566	383	949
														51,219	0			11,741

1.0D + 1.0W Service 330°
60 mph Wind with No Ice

Gust Response Factor (Gh): 0.85
Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	230	9.55	9.949	7.917	0.00	0.172	2.69	0.85	1.00	0.0	12.97	34.92	0.00	990	0	284	289	573
11	210	9.31	9.810	11.667	0.00	0.203	2.59	0.85	1.00	0.0	15.05	38.91	0.00	1956	0	308	397	704
10	190	9.05	10.682	15.025	0.00	0.202	2.59	0.85	1.00	0.0	17.72	45.89	0.00	2591	0	353	625	978
9	170	8.76	14.960	18.574	0.00	0.198	2.60	0.85	1.00	0.0	23.38	60.84	0.00	3260	0	453	628	1081
8	150	8.46	14.397	18.574	0.00	0.158	2.74	0.85	1.00	0.0	22.79	62.55	0.00	3595	0	450	607	1056
7	130	8.12	19.519	28.798	0.00	0.190	2.63	0.85	1.00	0.0	32.65	85.87	0.00	3716	0	592	582	1175
6	110	7.74	22.186	28.798	0.00	0.173	2.69	0.85	1.00	0.0	34.95	93.94	0.00	5058	0	618	555	1173
5	90	7.31	21.179	28.798	0.00	0.150	2.77	0.85	1.00	0.0	34.15	94.72	0.00	5004	0	588	524	1113
4	70	6.80	23.137	28.798	0.00	0.139	2.81	0.85	1.00	0.0	35.98	101.23	0.00	5223	0	585	488	1073
3	50	6.18	28.624	35.893	0.00	0.154	2.76	0.85	1.00	0.0	43.91	120.98	0.00	6144	0	635	443	1078
2	30	5.34	31.030	35.893	0.00	0.146	2.79	0.85	1.00	0.0	45.91	127.88	0.00	6751	0	580	383	963
1	10	5.33	33.475	35.893	0.00	0.139	2.81	0.85	1.00	0.0	46.09	129.58	0.00	6931	0	588	383	970
														51,219	0			11,938

EQUIVALENT LATERAL FORCE METHOD

Spectral Response Acceleration for Short Period (S_S):	0.18
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Long-Period Transition Period (T_L – Seconds):	6
Importance Factor (I_e):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	3.00
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.09
Seismic Response Coefficient (C_s):	0.03
Upper Limit C_s :	0.03
Lower Limit C_s :	0.03
Period based on Rayleigh Method (sec):	1.17
Redundancy Factor (ρ):	1.30
Seismic Force Distribution Exponent (k):	1.33
Total Unfactored Dead Load:	60.34 k
Seismic Base Shear (E):	2.35 k

SEISMIC

Load Case: 0.9D - 1.0Ev + 1.0Eh

Seismic

Section	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
12	230.00	990	1,400,172	0.040	94	853
11	210.00	1,956	2,449,259	0.070	164	1,684
10	190.00	2,591	2,839,584	0.081	190	2,231
9	170.00	3,260	3,080,337	0.088	206	2,808
8	150.00	3,595	2,874,551	0.082	192	3,096
7	130.00	3,716	2,454,539	0.070	164	3,200
6	110.00	5,058	2,674,076	0.076	179	4,356
5	90.00	5,004	2,024,046	0.058	135	4,309
4	70.00	5,223	1,510,800	0.043	101	4,498
3	50.00	6,144	1,134,532	0.032	76	5,291
2	30.00	6,751	630,660	0.018	42	5,814
1	10.00	6,931	149,549	0.004	10	5,969
Samsung B5/B13 RRH-BR04C	240.00	211	315,651	0.009	21	182
Samsung B2/B66A RRH-BR049	240.00	253	378,960	0.011	25	218
Raycap RRFDC-3315-PF-48	240.00	54	80,522	0.002	5	46
Samsung MT6407-77A	240.00	245	366,388	0.010	24	211
Andrew LNX-6514DS-VTM (72.7" height)	240.00	116	174,214	0.005	12	100
JMA Wireless MX06FRO660-03	240.00	360	538,806	0.015	36	310
Generic Round Sector Frame	240.00	900	1,347,015	0.038	90	775
VZW Unused Reserve (7582.89 sqin)	240.00	562	841,136	0.024	56	484
Andrew LNX-6514DS-VTM (72.7" height)	239.80	116	174,020	0.005	12	100
Ericsson 4460 BAND 2/25	214.00	327	420,000	0.012	28	282
Ericsson 4480 BAND 71	214.00	243	312,110	0.009	21	209
Ericsson AIR 6419 B41	214.00	250	320,973	0.009	21	215
Site Pro VFA12-HD	214.00	2,876	3,693,689	0.105	247	2,477
RFS APXVAALL24 43-U-NA20	214.00	368	473,174	0.013	32	317
Raycap DC6-48-60-18-8C	208.10	16	19,798	0.001	1	14
Powerwave Allgon 7770.00	204.20	210	253,375	0.007	17	181
CCI HPA-65R-BUU-H8	203.80	204	245,493	0.007	16	176
Powerwave Allgon LGP21901	203.70	33	39,686	0.001	3	28
Ericsson RRUS 11 B4	203.60	304	365,594	0.010	24	262

Powerwave Allgon LGP21401	203.40	85	101,541	0.003	7	73
Powerwave Allgon 7020.00 Dual Band RET	196.00	13	15,079	0.000	1	11
Generic Round Sector Frame	196.00	900	1,028,118	0.029	69	775
Generic 18' Omni	184.70	55	58,045	0.002	4	47
Generic Round Side Arm	183.00	188	195,453	0.006	13	161
Generic Round Side Arm	180.00	188	191,191	0.005	13	161
Generic 12' Dipole	179.90	40	40,757	0.001	3	34
Totals		60,336	35,212,893	1.000	2,353	51,960

SEISMIC

Load Case: 1.2D + 1.0Ev + 1.0Eh

Seismic

Section	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _v	Horizontal Force (lb)	Vertical Force (lb)
12	230.00	990	1,400,172	0.040	94	1,227
11	210.00	1,956	2,449,259	0.070	164	2,423
10	190.00	2,591	2,839,584	0.081	190	3,210
9	170.00	3,260	3,080,337	0.088	206	4,039
8	150.00	3,595	2,874,551	0.082	192	4,454
7	130.00	3,716	2,454,539	0.070	164	4,603
6	110.00	5,058	2,674,076	0.076	179	6,267
5	90.00	5,004	2,024,046	0.058	135	6,199
4	70.00	5,223	1,510,800	0.043	101	6,470
3	50.00	6,144	1,134,532	0.032	76	7,611
2	30.00	6,751	630,660	0.018	42	8,363
1	10.00	6,931	149,549	0.004	10	8,587
Samsung B5/B13 RRH-BR04C	240.00	211	315,651	0.009	21	261
Samsung B2/B66A RRH-BR049	240.00	253	378,960	0.011	25	314
Raycap RRFDC-3315-PF-48	240.00	54	80,522	0.002	5	67
Samsung MT6407-77A	240.00	245	366,388	0.010	24	303
Andrew LNX-6514DS-VTM (72.7" height)	240.00	116	174,214	0.005	12	144
JMA Wireless MX06FRO660-03	240.00	360	538,806	0.015	36	446
Generic Round Sector Frame	240.00	900	1,347,015	0.038	90	1,115
VZW Unused Reserve (7582.89 sqin)	240.00	562	841,136	0.024	56	696
Andrew LNX-6514DS-VTM (72.7" height)	239.80	116	174,020	0.005	12	144
Ericsson 4460 BAND 2/25	214.00	327	420,000	0.012	28	405
Ericsson 4480 BAND 71	214.00	243	312,110	0.009	21	301
Ericsson AIR 6419 B41	214.00	250	320,973	0.009	21	310
Site Pro VFA12-HD	214.00	2,876	3,693,689	0.105	247	3,563
RFS APXVAALL24 43-U-NA20	214.00	368	473,174	0.013	32	456
Raycap DC6-48-60-18-8C	208.10	16	19,798	0.001	1	20
Powerwave Allgon 7770.00	204.20	210	253,375	0.007	17	260
CCI HPA-65R-BUU-H8	203.80	204	245,493	0.007	16	253
Powerwave Allgon LGP21901	203.70	33	39,686	0.001	3	41
Ericsson RRUS 11 B4	203.60	304	365,594	0.010	24	377
Powerwave Allgon LGP21401	203.40	85	101,541	0.003	7	105
Powerwave Allgon 7020.00 Dual Band RET	196.00	13	15,079	0.000	1	16
Generic Round Sector Frame	196.00	900	1,028,118	0.029	69	1,115
Generic 18' Omni	184.70	55	58,045	0.002	4	68
Generic Round Side Arm	183.00	188	195,453	0.006	13	232
Generic Round Side Arm	180.00	188	191,191	0.005	13	232
Generic 12' Dipole	179.90	40	40,757	0.001	3	50
Totals		60,336	35,212,893	1.000	2,353	74,745

FORCE/STRESS SUMMARY

Section 1 – Base 0.0 (ft) and Height 20.00 (ft)

Max Compression	Pu (kip) Load Case		Len (ft)	Bracing %			KL/R	F _y (ksi)	Φ _c P _n (kip)	Shear		Bear		# Bolt	# Hole	Use %	Controls
				X	Y	Z				Φ _{R_{nv}} (kip)	Φ _{R_n} (kip)						
L PX - 10" DIA PIPE	-380.91	1.2D + 1.0W N	10.017	100	100	100	33.11	50.0	668.68	0.00	0.00	0	0	0	0	56	Member X
D SAE - 4X4X0.3125	-8.60	1.2D + 1.0W 90°	26.464	50	50	50	203.31	36.0	16.62	34.51	43.50	2	1	51	Member Z		

Max Tension Member	Pu (kip) Load Case		F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	Φ _{R_{nv}} (kip)	Φ _{R_n} (kip)	Blk Shear		# Bolt	# Hole	Use %	Controls
								Φ _t P _n (kip)					
L PX - 10" DIA PIPE	319.39	1.2D + 1.0W 60°	50.0	65	724.50	0.00	0.00			0	0	44	Member
D SAE - 4X4X0.3125	8.74	1.2D + 1.0W 90°	36.0	58	71.29	34.51	40.24	31.11		2	1	28	Blk Shear

Max Splice Forces	Pu (kip)	Load Case	Φ _{R_{nt}} (kip)	Use %	Num Bolts	Bolt Type
Top Tension	307.84	0.9D + 1.0W 180°	0.00	0	0	
Bot Tension	331.12	0.9D + 1.0W 180°	790.45	18	6	1.5" F1554-105
Bot Compression	388.06	1.2D + 1.0W N	885.31	46	0	

Section 2 – Base 20.0 (ft) and Height 20.00 (ft)

Max Compression	Pu (kip) Load Case		Len (ft)	Bracing %			KL/R	F _y (ksi)	Φ _c P _n (kip)	Shear		Bear		# Bolt	# Hole	Use %	Controls
				X	Y	Z				Φ _{R_{nv}} (kip)	Φ _{R_n} (kip)						
L PX - 10" DIA PIPE	-354.57	1.2D + 1.0W N	10.017	100	100	100	33.11	50.0	668.68	0.00	0.00	0	0	0	0	53	Member X
D SAE - 4X4X0.3125	-8.87	1.2D + 1.0W 90°	24.624	50	50	50	189.17	36.0	19.20	24.85	26.10	1	1	46	Member Z		

Max Tension Member	Pu (kip) Load Case		F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	Φ _{R_{nv}} (kip)	Φ _{R_n} (kip)	Blk Shear		# Bolt	# Hole	Use %	Controls
								Φ _t P _n (kip)					
L PX - 10" DIA PIPE	298.29	1.2D + 1.0W 60°	50.0	65	724.50	0.00	0.00			0	0	41	Member
D SAE - 4X4X0.3125	8.64	1.2D + 1.0W 90°	36.0	58	70.02	24.85	22.29	22.04		1	1	39	Blk Shear

Max Splice Forces	Pu (kip)	Load Case	Φ _{R_{nt}} (kip)	Use %	Num Bolts	Bolt Type
Top Tension	285.04	0.9D + 1.0W 180°	0.00	0	0	
Bot Tension	307.84	0.9D + 1.0W 180°	0.00	0	0	

Section 3 – Base 40.0 (ft) and Height 20.00 (ft)

Max Compression	Pu (kip) Load Case		Len (ft)	Bracing %			KL/R	F _y (ksi)	Φ _c P _n (kip)	Shear		Bear		# Bolt	# Hole	Use %	Controls
				X	Y	Z				Φ _{R_{nv}} (kip)	Φ _{R_n} (kip)						
L PX - 10" DIA PIPE	-325.48	1.2D + 1.0W N	10.017	100	100	100	33.11	50.0	668.68	0.00	0.00	0	0	0	0	48	Member X
D SAE - 4X4X0.25	-8.43	1.2D + 1.0W 90°	22.811	50	50	50	172.16	35.7	18.73	24.85	20.88	1	1	44	Member Z		

Max Tension Member	Pu (kip) Load Case		F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	Φ _{R_{nv}} (kip)	Φ _{R_n} (kip)	Blk Shear		# Bolt	# Hole	Use %	Controls
								Φ _t P _n (kip)					
L PX - 10" DIA PIPE	276.28	1.2D + 1.0W 60°	50.0	65	724.50	0.00	0.00			0	0	38	Member
D SAE - 4X4X0.25	8.22	1.2D + 1.0W 90°	36.0	58	56.67	24.85	17.84	17.63		1	1	46	Blk Shear

Max Splice Forces	Pu (kip)	Load Case	Φ _{R_{nt}} (kip)	Use %	Num Bolts	Bolt Type
Top Tension	261.97	0.9D + 1.0W 180°	0.00	0	0	
Bot Tension	285.04	0.9D + 1.0W 180°	0.00	0	0	

Section 4 – Base 60.0 (ft) and Height 20.00 (ft)

FORCE/STRESS SUMMARY

	Pu		Len (ft)	Bracing %			F _y (ksi)	Φ _c P _n (kip)	Shear		Bear		# Bolt	# Hole	Use %	Controls
	(kip)	Load Case		X	Y	Z			Φ _{R_{nv}} (kip)	Φ _{R_n} (kip)						
Max Compression																
L PX - 8" DIA PIPE	-296.16	1.2D + 1.0W N	10.017	100	100	100	41.74	50.0	507.12	0.00	0.00	0	0	58	Member X	
D SAU - 3.5X4X0.25	-7.96	1.2D + 1.0W 90°	21.032	50	50	50	171.92	36.0	17.53	24.85	20.88	1	1	45	Member Z	

	Pu		F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	Φ _{R_{nv}} (kip)	Φ _{R_n} (kip)	Blk Shear		# Bolt	# Hole	Use %	Controls
	(kip)	Load Case						Φ _t P _n (kip)					
Max Tension Member													
L PX - 8" DIA PIPE	253.53	1.2D + 1.0W 60°	50.0	65	576.00	0.00	0.00			0	0	44	Member
D SAU - 3.5X4X0.25	7.74	1.2D + 1.0W 90°	36.0	58	52.42	24.85	17.84	17.63		1	1	43	Blk Shear

	Pu		Φ _{R_{nt}} (kip)	Use %	Num Bolts	Bolt Type
	(kip)	Load Case				
Max Splice Forces						
Top Tension	238.00	0.9D + 1.0W 180°	0.00	0	0	
Bot Tension	261.97	0.9D + 1.0W 180°	0.00	0	0	

Section 5 – Base 80.0 (ft) and Height 20.00 (ft)

	Pu		Len (ft)	Bracing %			F _y (ksi)	Φ _c P _n (kip)	Shear		Bear		# Bolt	# Hole	Use %	Controls
	(kip)	Load Case		X	Y	Z			Φ _{R_{nv}} (kip)	Φ _{R_n} (kip)						
Max Compression																
L PX - 8" DIA PIPE	-266.67	1.2D + 1.0W N	10.017	100	100	100	41.74	50.0	507.12	0.00	0.00	0	0	52	Member X	
D SAE - 3.5x3.5x0.25	-7.55	1.2D + 1.0W 90°	19.296	50	50	50	168.28	36.0	17.08	24.85	20.88	1	1	44	Member Z	

	Pu		F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	Φ _{R_{nv}} (kip)	Φ _{R_n} (kip)	Blk Shear		# Bolt	# Hole	Use %	Controls
	(kip)	Load Case						Φ _t P _n (kip)					
Max Tension Member													
L PX - 8" DIA PIPE	232.68	0.9D + 1.0W 60°	50.0	65	576.00	0.00	0.00			0	0	40	Member
D SAE - 3.5x3.5x0.25	7.38	1.2D + 1.0W 90°	36.0	58	48.51	24.85	17.84	17.63		1	1	41	Blk Shear

	Pu		Φ _{R_{nt}} (kip)	Use %	Num Bolts	Bolt Type
	(kip)	Load Case				
Max Splice Forces						
Top Tension	212.92	0.9D + 1.0W 180°	0.00	0	0	
Bot Tension	238.00	0.9D + 1.0W 180°	0.00	0	0	

Section 6 – Base 100.0 (ft) and Height 20.00 (ft)

	Pu		Len (ft)	Bracing %			F _y (ksi)	Φ _c P _n (kip)	Shear		Bear		# Bolt	# Hole	Use %	Controls
	(kip)	Load Case		X	Y	Z			Φ _{R_{nv}} (kip)	Φ _{R_n} (kip)						
Max Compression																
L PX - 8" DIA PIPE	-238.97	1.2D + 1.0W N	6.678	100	100	100	27.82	50.0	544.30	0.00	0.00	0	0	43	Member X	
D SAE - 3X3X0.25	-6.22	1.2D + 1.0W 90°	16.112	50	50	50	163.30	36.0	15.46	24.85	20.88	1	1	40	Member Z	

	Pu		F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	Φ _{R_{nv}} (kip)	Φ _{R_n} (kip)	Blk Shear		# Bolt	# Hole	Use %	Controls
	(kip)	Load Case						Φ _t P _n (kip)					
Max Tension Member													
L PX - 8" DIA PIPE	207.44	1.2D + 1.0W 180°	50.0	65	576.00	0.00	0.00			0	0	36	Member
D SAE - 3X3X0.25	6.14	1.2D + 1.0W 90°	36.0	58	40.35	24.85	17.84	14.91		1	1	41	Blk Shear

	Pu		Φ _{R_{nt}} (kip)	Use %	Num Bolts	Bolt Type
	(kip)	Load Case				
Max Splice Forces						
Top Tension	187.96	0.9D + 1.0W 180°	0.00	0	0	
Bot Tension	212.92	0.9D + 1.0W 180°	0.00	0	0	

Section 7 – Base 120.0 (ft) and Height 20.00 (ft)

	Pu		Len (ft)	Bracing %			F _y (ksi)	Φ _c P _n (kip)	Shear		Bear		# Bolt	# Hole	Use %	Controls
	(kip)	Load Case		X	Y	Z			Φ _{R_{nv}} (kip)	Φ _{R_n} (kip)						
Max Compression																
L PST - 8" DIA PIPE	-208.38	1.2D + 1.0W N	6.678	100	100	100	27.26	50.0	358.02	0.00	0.00	0	0	58	Member X	
D SAE - 3X3X0.1875	-5.71	1.2D + 1.0W 90°	14.315	50	50	50	144.11	36.0	15.02	17.26	13.05	1	1	43	Bolt Bear	

FORCE/STRESS SUMMARY

Max Tension Member	Pu		F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	Shear			Bear		Blk Shear			
	(kip)	Load Case				Φ _{R_{nv}} (kip)	Φ _{R_n} (kip)	Φ _t P _n (kip)	# Bolt	# Hole	% Use	Controls		
L PST - 8" DIA PIPE	182.30	1.2D + 1.0W 60°	50.0	65	378.00	0.00	0.00				0	0	48	Member
D SAE - 3X3X0.1875	5.53	1.2D + 1.0W 90°	36.0	58	31.36	17.26	11.09	10.93			1	1	50	Blk Shear

Max Splice Forces	Pu		Φ _{R_{nt}} (kip)	Use %	Num Bolts	Bolt Type
	(kip)	Load Case				
Top Tension	162.27	0.9D + 1.0W 180°	0.00	0	0	
Bot Tension	187.96	0.9D + 1.0W 180°	0.00	0	0	

Section 8 – Base 140.0 (ft) and Height 20.00 (ft)

Max Compression	Pu		Len (ft)	Bracing %			F' _y (ksi)	Shear			Bear		# Bolt	# Hole	% Use	Controls
	(kip)	Load Case		X	Y	Z		KL/R	Φ _c P _n (kip)	Φ _{R_{nv}} (kip)	Φ _{R_n} (kip)					
L PSP - 5.563" OD x 0.5"	-178.50	1.2D + 1.0W N	6.678	100	100	100	44.54	50.0	309.56	0.00	0.00	0	0	57	Member X	
D SAE - 2.5X2.5X0.25	-5.14	1.2D + 1.0W 90°	12.58	50	50	50	153.73	36.0	14.41	17.26	17.40	1	1	35	Member Z	

Max Tension Member	Pu		F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	Shear			Bear		Blk Shear			
	(kip)	Load Case				Φ _{R_{nv}} (kip)	Φ _{R_n} (kip)	Φ _t P _n (kip)	# Bolt	# Hole	% Use	Controls		
L PSP - 5.563" OD x 0.5"	158.22	0.9D + 1.0W 60°	50.0	65	357.88	0.00	0.00				0	0	44	Member
D SAE - 2.5X2.5X0.25	4.98	1.2D + 1.0W 90°	36.0	58	33.22	17.26	14.79	13.22			1	1	37	Blk Shear

Max Splice Forces	Pu		Φ _{R_{nt}} (kip)	Use %	Num Bolts	Bolt Type
	(kip)	Load Case				
Top Tension	135.01	0.9D + 1.0W 180°	0.00	0	0	
Bot Tension	162.27	0.9D + 1.0W 180°	0.00	0	0	

Section 9 – Base 160.0 (ft) and Height 20.00 (ft)

Max Compression	Pu		Len (ft)	Bracing %			F' _y (ksi)	Shear			Bear		# Bolt	# Hole	% Use	Controls
	(kip)	Load Case		X	Y	Z		KL/R	Φ _c P _n (kip)	Φ _{R_{nv}} (kip)	Φ _{R_n} (kip)					
L PX - 5" DIA PIPE	-148.54	1.2D + 1.0W N	5.008	100	100	100	32.66	50.0	253.90	0.00	0.00	0	0	58	Member X	
D SAE - 2.5X2.5X0.25	-4.38	1.2D + 1.0W 90°	10.079	50	50	50	123.16	36.0	22.41	17.26	17.40	1	1	25	Bolt Shear	

Max Tension Member	Pu		F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	Shear			Bear		Blk Shear			
	(kip)	Load Case				Φ _{R_{nv}} (kip)	Φ _{R_n} (kip)	Φ _t P _n (kip)	# Bolt	# Hole	% Use	Controls		
L PX - 5" DIA PIPE	131.86	0.9D + 1.0W 60°	50.0	65	274.50	0.00	0.00				0	0	48	Member
D SAE - 2.5X2.5X0.25	4.28	1.2D + 1.0W 90°	36.0	58	33.22	17.26	14.79	13.22			1	1	32	Blk Shear

Max Splice Forces	Pu		Φ _{R_{nt}} (kip)	Use %	Num Bolts	Bolt Type
	(kip)	Load Case				
Top Tension	105.62	0.9D + 1.0W 180°	0.00	0	0	
Bot Tension	135.01	0.9D + 1.0W 180°	0.00	0	0	

Section 10 – Base 180.0 (ft) and Height 20.00 (ft)

Max Compression	Pu		Len (ft)	Bracing %			F' _y (ksi)	Shear			Bear		# Bolt	# Hole	% Use	Controls
	(kip)	Load Case		X	Y	Z		KL/R	Φ _c P _n (kip)	Φ _{R_{nv}} (kip)	Φ _{R_n} (kip)					
L PX - 4" DIA PIPE	-115.01	1.2D + 1.0W N	5.008	100	100	100	40.61	50.0	175.91	0.00	0.00	0	0	65	Member X	
H SAE - 2X2X0.25	-0.90	1.2D + 1.0W N	5	100	100	100	153.45	36.0	11.43	17.26	17.40	1	1	7	Member Z	
D SAE - 2X2X0.25	-3.98	1.2D + 1.0W 90°	8.401	50	50	50	128.92	36.0	16.19	17.26	17.40	1	1	24	Member Z	

Max Tension Member	Pu		F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	Shear			Bear		Blk Shear			
	(kip)	Load Case				Φ _{R_{nv}} (kip)	Φ _{R_n} (kip)	Φ _t P _n (kip)	# Bolt	# Hole	% Use	Controls		
L PX - 4" DIA PIPE	101.90	0.9D + 1.0W 60°	50.0	65	198.45	0.00	0.00				0	0	51	Member

FORCE/STRESS SUMMARY

H SAE - 2X2X0.25	0.86	1.2D + 1.0W 60°	36.0	58	25.06	17.26	14.79	10.50	1	1	8	Blk Shear
D SAE - 2X2X0.25	3.84	1.2D + 1.0W 90°	36.0	58	25.06	17.26	14.79	10.50	1	1	36	Blk Shear

Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type
Top Tension	74.14	0.9D + 1.0W 180°	0.00	0	0	
Bot Tension	105.62	0.9D + 1.0W 180°	0.00	0	0	

Section 11 – Base 200.0 (ft) and Height 20.00 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			F _y (ksi)	Φ _c P _n (kip)	ΦR _{nv} (kip)	ΦR _n (kip)	# Bolt	# Hole	Use %	Controls	
L PX - 3" DIA PIPE	-74.42	1.2D + 1.0W N	5	100	100	100	52.63	50.0	110.98	0.00	0.00	0	0	67	Member X
H SAE - 2X2X0.3125	-0.60	1.2D + 1.0W N	5	100	100	100	153.85	36.0	13.91	17.26	21.75	1	1	4	Member Z
D SAE - 2X2X0.3125	-6.67	1.2D + 1.0W N	7.071	50	50	50	111.59	36.0	25.19	17.26	21.75	1	1	38	Bolt Shear

Max Tension Member	Pu (kip)	Load Case	F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	ΦR _{nv} (kip)	ΦR _n (kip)	Φ _t P _n (kip)	# Bolt	# Hole	Use %	Controls
L PX - 3" DIA PIPE	65.33	0.9D + 1.0W 60°	50.0	65	135.90	0.00	0.00		0	0	48	Member
H SAE - 2X2X0.3125	0.53	0.9D + 1.0W 60°	36.0	58	30.51	17.26	18.49	13.12	1	1	4	Blk Shear
D SAE - 2X2X0.3125	6.33	1.2D + 1.0W 90°	36.0	58	30.51	17.26	18.49	13.12	1	1	48	Blk Shear

Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type
Top Tension	26.56	0.9D + 1.0W 180°	0.00	0	0	
Bot Tension	74.14	0.9D + 1.0W 180°	0.00	0	0	

Section 12 – Base 220.0 (ft) and Height 20.00 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			F _y (ksi)	Φ _c P _n (kip)	ΦR _{nv} (kip)	ΦR _n (kip)	# Bolt	# Hole	Use %	Controls	
L PST - 2.375" x 0.218"	-25.56	1.2D + 1.0W N	5	100	100	100	78.33	50.0	42.53	0.00	0.00	0	0	60	Member X
H SAE - 2X2X0.125	-1.11	1.2D + 1.0W 180°	5	100	100	100	150.75	36.0	6.05	17.26	8.70	1	1	18	Member Z
D SAE - 2X2X0.125	-3.28	1.2D + 1.0W 90°	7.071	50	50	50	109.95	36.0	10.71	17.26	8.70	1	1	37	Bolt Bear

Max Tension Member	Pu (kip)	Load Case	F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	ΦR _{nv} (kip)	ΦR _n (kip)	Φ _t P _n (kip)	# Bolt	# Hole	Use %	Controls
L PST - 2.375" x 0.218"	22.29	1.2D + 1.0W 180°	50.0	65	66.60	0.00	0.00		0	0	33	Member
H SAE - 2X2X0.125	1.11	1.2D + 1.0W N	36.0	58	12.86	17.26	7.40	5.25	1	1	21	Blk Shear
D SAE - 2X2X0.125	3.22	1.2D + 1.0W 90°	36.0	58	12.86	17.26	7.40	5.25	1	1	61	Blk Shear

Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type
Bot Tension	26.56	0.9D + 1.0W 180°	0.00	0	0	

DETAILED REACTIONS

Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	*(-) Uplift and (+) Down		
					*Fx (kip)	*Fy (kip)	*Fz (kip)
1.2D + 1.0W Normal	14.43	0.00	0	1	0.00	387.55	-36.59
	14.43	0.00	120	1a	12.32	-157.57	-10.68
	14.43	0.00	240	1b	-12.32	-157.57	-10.68
1.2D + 1.0W 60°	14.43	0.00	0	1	-2.75	198.02	-18.21
	14.43	0.00	120	1a	-17.15	197.96	6.72
	14.43	0.00	240	1b	-27.57	-323.57	-15.91
1.2D + 1.0W 90°	14.43	0.00	0	1	-3.30	24.14	-1.58
	14.43	0.00	120	1a	-27.42	328.62	13.98
	14.43	0.00	240	1b	-24.87	-280.36	-12.40
1.2D + 1.0W 120°	14.43	0.00	0	1	-3.09	-157.57	16.01
	14.43	0.00	120	1a	-31.69	387.49	18.29
	14.43	0.00	240	1b	-15.41	-157.51	-5.33
1.2D + 1.0W 180°	14.43	0.00	0	1	0.00	-323.63	31.83
	14.43	0.00	120	1a	-14.40	198.02	11.49
	14.43	0.00	240	1b	14.40	198.02	11.49
1.2D + 1.0W 210°	14.43	0.00	0	1	1.70	-280.43	27.74
	14.43	0.00	120	1a	0.28	24.17	3.65
	14.43	0.00	240	1b	25.82	328.66	16.76
1.2D + 1.0W 240°	14.43	0.00	0	1	3.09	-157.57	16.01
	14.43	0.00	120	1a	15.41	-157.51	-5.33
	14.43	0.00	240	1b	31.69	387.49	18.29
1.2D + 1.0W 300°	14.43	0.00	0	1	2.75	198.02	-18.21
	14.43	0.00	120	1a	27.57	-323.57	-15.91
	14.43	0.00	240	1b	17.15	197.96	6.72
1.2D + 1.0W 330°	14.43	0.00	0	1	1.60	328.69	-30.74
	14.43	0.00	120	1a	23.17	-280.39	-15.34
	14.43	0.00	240	1b	3.02	24.10	-2.06
0.9D + 1.0W Normal	14.43	0.00	0	1	0.00	380.96	-36.18
	14.43	0.00	120	1a	12.66	-163.33	-10.88
	14.43	0.00	240	1b	-12.66	-163.33	-10.88
0.9D + 1.0W 60°	14.43	0.00	0	1	-2.76	191.72	-17.80
	14.43	0.00	120	1a	-16.80	191.66	6.51
	14.43	0.00	240	1b	-27.91	-329.07	-16.11
0.9D + 1.0W 90°	14.43	0.00	0	1	-3.31	18.11	-1.18
	14.43	0.00	120	1a	-27.07	322.12	13.77
	14.43	0.00	240	1b	-25.21	-285.93	-12.59
0.9D + 1.0W 120°	14.43	0.00	0	1	-3.10	-163.33	16.41
	14.43	0.00	120	1a	-31.33	380.90	18.09
	14.43	0.00	240	1b	-15.76	-163.27	-5.52
0.9D + 1.0W 180°	14.43	0.00	0	1	0.00	-329.13	32.23
	14.43	0.00	120	1a	-14.04	191.72	11.29
	14.43	0.00	240	1b	14.04	191.72	11.29
0.9D + 1.0W 210°	14.43	0.00	0	1	1.70	-286.00	28.13
	14.43	0.00	120	1a	0.63	18.14	3.45
	14.43	0.00	240	1b	25.46	322.16	16.56
0.9D + 1.0W 240°	14.43	0.00	0	1	3.10	-163.33	16.41
	14.43	0.00	120	1a	15.76	-163.27	-5.52
	14.43	0.00	240	1b	31.33	380.90	18.09
0.9D + 1.0W 300°	14.43	0.00	0	1	2.76	191.72	-17.80
	14.43	0.00	120	1a	27.91	-329.07	-16.11
	14.43	0.00	240	1b	16.80	191.66	6.51
0.9D + 1.0W 330°	14.43	0.00	0	1	1.61	322.19	-30.33
	14.43	0.00	120	1a	23.51	-285.96	-15.54
	14.43	0.00	240	1b	2.68	18.07	-2.27
1.2D + 1.0Di + 1.0Wi Normal	14.43	0.00	0	1	0.00	172.51	-9.15
	14.43	0.00	120	1a	6.11	-0.71	-4.62
	14.43	0.00	240	1b	-6.11	-0.71	-4.62
1.2D + 1.0Di + 1.0Wi 60°	14.43	0.00	0	1	-0.90	113.55	-3.43
	14.43	0.00	120	1a	-3.42	113.54	0.93
	14.43	0.00	240	1b	-11.19	-55.99	-6.46
1.2D + 1.0Di + 1.0Wi 90°	14.43	0.00	0	1	-1.06	57.03	2.01
	14.43	0.00	120	1a	-6.74	155.56	3.29
	14.43	0.00	240	1b	-10.25	-41.49	-5.30
1.2D + 1.0Di + 1.0Wi 120°	14.43	0.00	0	1	-0.95	-0.61	7.60
	14.43	0.00	120	1a	-7.91	172.31	4.57
	14.43	0.00	240	1b	-7.05	-0.60	-2.98
1.2D + 1.0Di + 1.0Wi 180°	14.43	0.00	0	1	0.00	-56.19	12.93
	14.43	0.00	120	1a	-2.52	113.65	2.50

DETAILED REACTIONS

Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	*(-) Uplift and (+) Down		
					*Fx (kip)	*Fy (kip)	*Fz (kip)
1.2D + 1.0Di + 1.0Wi 210°	14.43	0.00	240	1b	2.52	113.65	2.50
	14.43	0.00	0	1	0.53	-41.35	11.51
	14.43	0.00	120	1a	2.27	57.04	-0.09
1.2D + 1.0Di + 1.0Wi 240°	14.43	0.00	240	1b	6.21	155.40	4.19
	14.43	0.00	0	1	0.95	-0.61	7.60
	14.43	0.00	120	1a	7.05	-0.60	-2.98
1.2D + 1.0Di + 1.0Wi 300°	14.43	0.00	240	1b	7.91	172.31	4.57
	14.43	0.00	0	1	0.90	113.55	-3.43
	14.43	0.00	120	1a	11.19	-55.99	-6.46
1.2D + 1.0Di + 1.0Wi 330°	14.43	0.00	240	1b	3.42	113.54	0.93
	14.43	0.00	0	1	0.52	155.41	-7.47
	14.43	0.00	120	1a	9.70	-41.34	-6.22
1.2D + 1.0Ev + 1.0Eh Normal	14.43	0.00	240	1b	-1.21	57.02	-1.92
	14.43	0.00	0	1	0.00	42.29	-3.15
	14.43	0.00	120	1a	-0.82	14.80	0.42
1.2D + 1.0Ev + 1.0Eh 60°	14.43	0.00	240	1b	0.82	14.80	0.42
	14.43	0.00	0	1	-0.05	33.13	-2.41
	14.43	0.00	120	1a	-2.11	33.13	1.16
1.2D + 1.0Ev + 1.0Eh 90°	14.43	0.00	240	1b	0.15	5.63	0.09
	14.43	0.00	0	1	-0.06	23.96	-1.66
	14.43	0.00	120	1a	-2.57	39.84	1.45
1.2D + 1.0Ev + 1.0Eh 120°	14.43	0.00	240	1b	0.31	8.09	0.21
	14.43	0.00	0	1	-0.05	14.80	-0.92
	14.43	0.00	120	1a	-2.73	42.29	1.58
1.2D + 1.0Ev + 1.0Eh 180°	14.43	0.00	240	1b	0.77	14.80	0.50
	14.43	0.00	0	1	0.00	5.63	-0.17
	14.43	0.00	120	1a	-2.06	33.13	1.25
1.2D + 1.0Ev + 1.0Eh 210°	14.43	0.00	240	1b	2.06	33.13	1.25
	14.43	0.00	0	1	0.03	8.09	-0.37
	14.43	0.00	120	1a	-1.41	23.96	0.88
1.2D + 1.0Ev + 1.0Eh 240°	14.43	0.00	240	1b	2.54	39.84	1.50
	14.43	0.00	0	1	0.05	14.80	-0.92
	14.43	0.00	120	1a	-0.77	14.80	0.50
1.2D + 1.0Ev + 1.0Eh 300°	14.43	0.00	240	1b	2.73	42.29	1.58
	14.43	0.00	0	1	0.05	33.13	-2.41
	14.43	0.00	120	1a	-0.15	5.63	0.09
1.2D + 1.0Ev + 1.0Eh 330°	14.43	0.00	240	1b	2.11	33.13	1.16
	14.43	0.00	0	1	0.03	39.84	-2.95
	14.43	0.00	120	1a	-0.34	8.09	0.16
0.9D - 1.0Ev + 1.0Eh Normal	14.43	0.00	240	1b	1.47	23.96	0.78
	14.43	0.00	0	1	0.00	34.95	-2.65
	14.43	0.00	120	1a	-0.38	7.51	0.16
0.9D - 1.0Ev + 1.0Eh 60°	14.43	0.00	240	1b	0.38	7.51	0.16
	14.43	0.00	0	1	-0.05	25.80	-1.90
	14.43	0.00	120	1a	-1.67	25.80	0.91
0.9D - 1.0Ev + 1.0Eh 90°	14.43	0.00	240	1b	-0.29	-1.64	-0.17
	14.43	0.00	0	1	-0.06	16.66	-1.16
	14.43	0.00	120	1a	-2.13	32.50	1.20
0.9D - 1.0Ev + 1.0Eh 120°	14.43	0.00	240	1b	-0.13	0.81	-0.04
	14.43	0.00	0	1	-0.05	7.51	-0.41
	14.43	0.00	120	1a	-2.29	34.95	1.32
0.9D - 1.0Ev + 1.0Eh 180°	14.43	0.00	240	1b	0.33	7.51	0.25
	14.43	0.00	0	1	0.00	-1.64	0.33
	14.43	0.00	120	1a	-1.62	25.80	1.00
0.9D - 1.0Ev + 1.0Eh 210°	14.43	0.00	240	1b	1.62	25.80	1.00
	14.43	0.00	0	1	0.03	0.81	0.13
	14.43	0.00	120	1a	-0.97	16.66	0.63
0.9D - 1.0Ev + 1.0Eh 240°	14.43	0.00	240	1b	2.10	32.50	1.25
	14.43	0.00	0	1	0.05	7.51	-0.41
	14.43	0.00	120	1a	-0.33	7.51	0.25
0.9D - 1.0Ev + 1.0Eh 300°	14.43	0.00	240	1b	2.29	34.95	1.32
	14.43	0.00	0	1	0.05	25.80	-1.90
	14.43	0.00	120	1a	0.29	-1.64	-0.17
0.9D - 1.0Ev + 1.0Eh 330°	14.43	0.00	240	1b	1.67	25.80	0.91
	14.43	0.00	0	1	0.03	32.50	-2.45
	14.43	0.00	120	1a	0.10	0.81	-0.09
1.0D + 1.0W Service Normal	14.43	0.00	240	1b	1.03	16.66	0.53
	14.43	0.00	0	1	0.00	112.66	-10.37

DETAILED REACTIONS

Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	*(-) Uplift and (+) Down		
					*Fx (kip)	*Fy (kip)	*Fz (kip)
1.0D + 1.0W Service 60°	14.43	0.00	120	1a	2.35	-26.16	-2.29
	14.43	0.00	240	1b	-2.35	-26.16	-2.29
	14.43	0.00	0	1	-0.74	64.43	-5.63
	14.43	0.00	120	1a	-5.25	64.42	2.17
1.0D + 1.0W Service 90°	14.43	0.00	240	1b	-6.28	-68.52	-3.62
	14.43	0.00	0	1	-0.88	20.11	-1.34
	14.43	0.00	120	1a	-7.90	97.71	4.06
	14.43	0.00	240	1b	-5.59	-57.48	-2.72
1.0D + 1.0W Service 120°	14.43	0.00	0	1	-0.81	-26.16	3.18
	14.43	0.00	120	1a	-8.98	112.64	5.19
	14.43	0.00	240	1b	-3.16	-26.15	-0.89
	14.43	0.00	0	1	0.00	-68.53	7.25
1.0D + 1.0W Service 180°	14.43	0.00	120	1a	-4.51	64.43	3.46
	14.43	0.00	240	1b	4.51	64.43	3.46
	14.43	0.00	0	1	0.44	-57.50	6.20
	14.43	0.00	120	1a	-0.72	20.12	1.43
1.0D + 1.0W Service 240°	14.43	0.00	240	1b	7.46	97.72	4.81
	14.43	0.00	0	1	0.81	-26.16	3.18
	14.43	0.00	120	1a	3.16	-26.15	-0.89
	14.43	0.00	240	1b	8.98	112.64	5.19
1.0D + 1.0W Service 300°	14.43	0.00	0	1	0.74	64.43	-5.63
	14.43	0.00	120	1a	6.28	-68.52	-3.62
	14.43	0.00	240	1b	5.25	64.42	2.17
	14.43	0.00	0	1	0.43	97.72	-8.87
1.0D + 1.0W Service 330°	14.43	0.00	120	1a	5.14	-57.49	-3.48
	14.43	0.00	240	1b	1.60	20.10	-0.09

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.2D + 1.0W Normal 120 mph wind with no ice	180.00	1.1305	0.0466	0.8731	0.8731
1.2D + 1.0W Normal 120 mph wind with no ice	185.00	1.21	0.0510	0.9391	0.9405
1.2D + 1.0W Normal 120 mph wind with no ice	195.00	1.3847	0.0586	1.0635	1.0651
1.2D + 1.0W Normal 120 mph wind with no ice	205.00	1.5821	0.0616	1.2138	1.2138
1.2D + 1.0W Normal 120 mph wind with no ice	210.00	1.6896	0.0615	1.2770	1.2785
1.2D + 1.0W Normal 120 mph wind with no ice	215.00	1.8024	0.0611	1.3162	1.3162
1.2D + 1.0W Normal 120 mph wind with no ice	240.00	2.4231	0.0589	1.6379	1.639
1.2D + 1.0W 60° 120 mph wind with no ice	180.00	1.0901	0.0517	0.8449	0.8449
1.2D + 1.0W 60° 120 mph wind with no ice	185.00	1.1671	0.0571	0.9099	0.911
1.2D + 1.0W 60° 120 mph wind with no ice	195.00	1.3364	0.0668	1.0311	1.0323
1.2D + 1.0W 60° 120 mph wind with no ice	205.00	1.5279	0.0740	1.1760	1.1761
1.2D + 1.0W 60° 120 mph wind with no ice	210.00	1.6323	0.0762	1.2387	1.241
1.2D + 1.0W 60° 120 mph wind with no ice	215.00	1.7421	0.0790	1.2774	1.2781
1.2D + 1.0W 60° 120 mph wind with no ice	240.00	2.3434	0.1287	1.3847	1.3906
1.2D + 1.0W 90° 120 mph wind with no ice	180.00	1.0996	-0.0528	0.8498	0.8502
1.2D + 1.0W 90° 120 mph wind with no ice	185.00	1.177	-0.0578	0.9170	0.9188
1.2D + 1.0W 90° 120 mph wind with no ice	195.00	1.3475	-0.0664	1.0402	1.0424
1.2D + 1.0W 90° 120 mph wind with no ice	205.00	1.54	-0.0700	1.1825	1.1831
1.2D + 1.0W 90° 120 mph wind with no ice	210.00	1.6457	-0.0697	1.2513	1.2533
1.2D + 1.0W 90° 120 mph wind with no ice	215.00	1.7559	-0.0694	1.2849	1.2854
1.2D + 1.0W 90° 120 mph wind with no ice	240.00	2.3611	-0.0661	1.3178	1.3194
1.2D + 1.0W 120° 120 mph wind with no ice	180.00	1.1301	-0.0525	0.8724	0.8724
1.2D + 1.0W 120° 120 mph wind with no ice	185.00	1.2095	-0.0579	0.9387	0.9397
1.2D + 1.0W 120° 120 mph wind with no ice	195.00	1.3841	-0.0678	1.0630	1.0641
1.2D + 1.0W 120° 120 mph wind with no ice	205.00	1.5812	-0.0747	1.2121	1.2121
1.2D + 1.0W 120° 120 mph wind with no ice	210.00	1.6885	-0.0775	1.2749	1.2772
1.2D + 1.0W 120° 120 mph wind with no ice	215.00	1.8011	-0.0799	1.3139	1.3144
1.2D + 1.0W 120° 120 mph wind with no ice	240.00	2.42	-0.1312	1.4250	1.4268
1.2D + 1.0W 180° 120 mph wind with no ice	180.00	1.0905	0.0459	0.8455	0.8455
1.2D + 1.0W 180° 120 mph wind with no ice	185.00	1.1676	0.0502	0.9103	0.9117
1.2D + 1.0W 180° 120 mph wind with no ice	195.00	1.3371	0.0577	1.0318	1.0334
1.2D + 1.0W 180° 120 mph wind with no ice	205.00	1.5288	0.0610	1.1777	1.1777
1.2D + 1.0W 180° 120 mph wind with no ice	210.00	1.6334	0.0604	1.2408	1.2423
1.2D + 1.0W 180° 120 mph wind with no ice	215.00	1.7433	0.0602	1.2798	1.2798
1.2D + 1.0W 180° 120 mph wind with no ice	240.00	2.3464	0.0563	1.5967	1.5977
1.2D + 1.0W 210° 120 mph wind with no ice	180.00	1.1	-0.0470	0.8503	0.8509
1.2D + 1.0W 210° 120 mph wind with no ice	185.00	1.1775	-0.0509	0.9182	0.9196
1.2D + 1.0W 210° 120 mph wind with no ice	195.00	1.3481	-0.0574	1.0419	1.0435
1.2D + 1.0W 210° 120 mph wind with no ice	205.00	1.5409	-0.0571	1.1843	1.1853
1.2D + 1.0W 210° 120 mph wind with no ice	210.00	1.6468	-0.0538	1.2534	1.2545
1.2D + 1.0W 210° 120 mph wind with no ice	215.00	1.7572	0.0537	1.2872	1.2884
1.2D + 1.0W 210° 120 mph wind with no ice	240.00	2.3642	0.1043	1.5461	1.5461
1.2D + 1.0W 240° 120 mph wind with no ice	180.00	1.1301	0.0525	0.8724	0.8724
1.2D + 1.0W 240° 120 mph wind with no ice	185.00	1.2095	0.0579	0.9387	0.9397
1.2D + 1.0W 240° 120 mph wind with no ice	195.00	1.3841	0.0678	1.0630	1.0641
1.2D + 1.0W 240° 120 mph wind with no ice	205.00	1.5812	0.0747	1.2121	1.2121
1.2D + 1.0W 240° 120 mph wind with no ice	210.00	1.6885	0.0775	1.2749	1.2772
1.2D + 1.0W 240° 120 mph wind with no ice	215.00	1.8011	0.0799	1.3139	1.3144
1.2D + 1.0W 240° 120 mph wind with no ice	240.00	2.42	0.1312	1.4250	1.4268
1.2D + 1.0W 300° 120 mph wind with no ice	180.00	1.0901	-0.0517	0.8449	0.8449
1.2D + 1.0W 300° 120 mph wind with no ice	185.00	1.1671	-0.0571	0.9099	0.911
1.2D + 1.0W 300° 120 mph wind with no ice	195.00	1.3364	-0.0668	1.0311	1.0323
1.2D + 1.0W 300° 120 mph wind with no ice	205.00	1.5279	-0.0740	1.1760	1.1761
1.2D + 1.0W 300° 120 mph wind with no ice	210.00	1.6323	-0.0762	1.2387	1.241
1.2D + 1.0W 300° 120 mph wind with no ice	215.00	1.7421	-0.0790	1.2774	1.2781
1.2D + 1.0W 300° 120 mph wind with no ice	240.00	2.3434	-0.1287	1.3847	1.3906
1.2D + 1.0W 330° 120 mph wind with no ice	180.00	1.1	-0.0588	0.8506	0.8509
1.2D + 1.0W 330° 120 mph wind with no ice	185.00	1.1775	-0.0649	0.9173	0.9196
1.2D + 1.0W 330° 120 mph wind with no ice	195.00	1.3481	-0.0758	1.0408	1.0436
1.2D + 1.0W 330° 120 mph wind with no ice	205.00	1.5409	-0.0833	1.1842	1.1844
1.2D + 1.0W 330° 120 mph wind with no ice	210.00	1.6468	-0.0858	1.2533	1.2563
1.2D + 1.0W 330° 120 mph wind with no ice	215.00	1.7572	-0.0884	1.2872	1.2885
1.2D + 1.0W 330° 120 mph wind with no ice	240.00	2.3642	-0.1383	1.5467	1.5529
0.9D + 1.0W Normal 120 mph wind with no ice	180.00	1.1279	0.0464	0.8703	0.8703

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
0.9D + 1.0W Normal 120 mph wind with no ice	185.00	1.2071	0.0508	0.9361	0.9375
0.9D + 1.0W Normal 120 mph wind with no ice	195.00	1.3812	0.0584	1.0599	1.0615
0.9D + 1.0W Normal 120 mph wind with no ice	205.00	1.5779	0.0614	1.2094	1.2094
0.9D + 1.0W Normal 120 mph wind with no ice	210.00	1.6851	0.0613	1.2723	1.2738
0.9D + 1.0W Normal 120 mph wind with no ice	215.00	1.7975	0.0609	1.3115	1.3115
0.9D + 1.0W Normal 120 mph wind with no ice	240.00	2.416	0.0587	1.6321	1.6331
0.9D + 1.0W 60° 120 mph wind with no ice	180.00	1.0876	0.0515	0.8424	0.8424
0.9D + 1.0W 60° 120 mph wind with no ice	185.00	1.1643	0.0569	0.9071	0.9082
0.9D + 1.0W 60° 120 mph wind with no ice	195.00	1.3331	0.0665	1.0278	1.029
0.9D + 1.0W 60° 120 mph wind with no ice	205.00	1.524	0.0737	1.1721	1.1722
0.9D + 1.0W 60° 120 mph wind with no ice	210.00	1.628	0.0759	1.2344	1.2367
0.9D + 1.0W 60° 120 mph wind with no ice	215.00	1.7373	0.0787	1.2729	1.2736
0.9D + 1.0W 60° 120 mph wind with no ice	240.00	2.3365	0.1283	1.3797	1.3857
0.9D + 1.0W 90° 120 mph wind with no ice	180.00	1.0971	-0.0526	0.8472	0.8476
0.9D + 1.0W 90° 120 mph wind with no ice	185.00	1.1742	-0.0576	0.9141	0.9159
0.9D + 1.0W 90° 120 mph wind with no ice	195.00	1.3442	-0.0662	1.0368	1.0389
0.9D + 1.0W 90° 120 mph wind with no ice	205.00	1.5361	-0.0698	1.1782	1.1788
0.9D + 1.0W 90° 120 mph wind with no ice	210.00	1.6413	-0.0694	1.2469	1.2488
0.9D + 1.0W 90° 120 mph wind with no ice	215.00	1.7512	-0.0691	1.2804	1.2808
0.9D + 1.0W 90° 120 mph wind with no ice	240.00	2.3542	-0.0658	1.3124	1.3141
0.9D + 1.0W 120° 120 mph wind with no ice	180.00	1.1275	-0.0523	0.8697	0.8697
0.9D + 1.0W 120° 120 mph wind with no ice	185.00	1.2066	-0.0577	0.9357	0.9367
0.9D + 1.0W 120° 120 mph wind with no ice	195.00	1.3806	-0.0675	1.0594	1.0605
0.9D + 1.0W 120° 120 mph wind with no ice	205.00	1.5771	-0.0744	1.2076	1.2077
0.9D + 1.0W 120° 120 mph wind with no ice	210.00	1.6841	-0.0772	1.2702	1.2725
0.9D + 1.0W 120° 120 mph wind with no ice	215.00	1.7962	-0.0796	1.3092	1.3098
0.9D + 1.0W 120° 120 mph wind with no ice	240.00	2.4129	-0.1307	1.4192	1.4208
0.9D + 1.0W 180° 120 mph wind with no ice	180.00	1.088	0.0457	0.8430	0.843
0.9D + 1.0W 180° 120 mph wind with no ice	185.00	1.1648	0.0500	0.9075	0.9089
0.9D + 1.0W 180° 120 mph wind with no ice	195.00	1.3338	0.0575	1.0284	1.03
0.9D + 1.0W 180° 120 mph wind with no ice	205.00	1.5249	0.0607	1.1739	1.1739
0.9D + 1.0W 180° 120 mph wind with no ice	210.00	1.629	0.0602	1.2365	1.238
0.9D + 1.0W 180° 120 mph wind with no ice	215.00	1.7386	0.0600	1.2752	1.2752
0.9D + 1.0W 180° 120 mph wind with no ice	240.00	2.3395	0.0562	1.5918	1.5928
0.9D + 1.0W 210° 120 mph wind with no ice	180.00	1.0975	-0.0468	0.8476	0.8482
0.9D + 1.0W 210° 120 mph wind with no ice	185.00	1.1747	-0.0507	0.9153	0.9167
0.9D + 1.0W 210° 120 mph wind with no ice	195.00	1.3448	-0.0572	1.0385	1.0401
0.9D + 1.0W 210° 120 mph wind with no ice	205.00	1.537	-0.0568	1.1800	1.181
0.9D + 1.0W 210° 120 mph wind with no ice	210.00	1.6424	-0.0536	1.2489	1.2501
0.9D + 1.0W 210° 120 mph wind with no ice	215.00	1.7525	0.0536	1.2826	1.2838
0.9D + 1.0W 210° 120 mph wind with no ice	240.00	2.3572	0.1039	1.5408	1.5408
0.9D + 1.0W 240° 120 mph wind with no ice	180.00	1.1275	0.0523	0.8697	0.8697
0.9D + 1.0W 240° 120 mph wind with no ice	185.00	1.2066	0.0577	0.9357	0.9367
0.9D + 1.0W 240° 120 mph wind with no ice	195.00	1.3806	0.0675	1.0594	1.0605
0.9D + 1.0W 240° 120 mph wind with no ice	205.00	1.5771	0.0744	1.2076	1.2077
0.9D + 1.0W 240° 120 mph wind with no ice	210.00	1.6841	0.0772	1.2702	1.2725
0.9D + 1.0W 240° 120 mph wind with no ice	215.00	1.7962	0.0796	1.3092	1.3098
0.9D + 1.0W 240° 120 mph wind with no ice	240.00	2.4129	0.1307	1.4192	1.4208
0.9D + 1.0W 300° 120 mph wind with no ice	180.00	1.0876	-0.0515	0.8424	0.8424
0.9D + 1.0W 300° 120 mph wind with no ice	185.00	1.1643	-0.0569	0.9071	0.9082
0.9D + 1.0W 300° 120 mph wind with no ice	195.00	1.3331	-0.0665	1.0278	1.029
0.9D + 1.0W 300° 120 mph wind with no ice	205.00	1.524	-0.0737	1.1721	1.1722
0.9D + 1.0W 300° 120 mph wind with no ice	210.00	1.628	-0.0759	1.2344	1.2367
0.9D + 1.0W 300° 120 mph wind with no ice	215.00	1.7373	-0.0787	1.2729	1.2736
0.9D + 1.0W 300° 120 mph wind with no ice	240.00	2.3365	-0.1283	1.3797	1.3857
0.9D + 1.0W 330° 120 mph wind with no ice	180.00	1.0975	-0.0586	0.8480	0.8482
0.9D + 1.0W 330° 120 mph wind with no ice	185.00	1.1747	-0.0647	0.9145	0.9167
0.9D + 1.0W 330° 120 mph wind with no ice	195.00	1.3448	-0.0755	1.0373	1.0401
0.9D + 1.0W 330° 120 mph wind with no ice	205.00	1.537	-0.0830	1.1799	1.1801
0.9D + 1.0W 330° 120 mph wind with no ice	210.00	1.6424	-0.0855	1.2489	1.2518
0.9D + 1.0W 330° 120 mph wind with no ice	215.00	1.7524	-0.0880	1.2827	1.284
0.9D + 1.0W 330° 120 mph wind with no ice	240.00	2.3572	-0.1378	1.5413	1.5474
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1.5" radial ice	180.00	0.3556	0.0144	0.2711	0.2711
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1.5" radial ice	185.00	0.38	0.0157	0.2906	0.291
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1.5" radial ice	195.00	0.4338	0.0179	0.3278	0.3283
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1.5" radial ice	205.00	0.4946	0.0187	0.3733	0.3733
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1.5" radial ice	210.00	0.5275	0.0186	0.3916	0.3921
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1.5" radial ice	215.00	0.5618	0.0185	0.4030	0.403

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1.5" radial ice	240.00	0.7513	0.0171	0.4928	0.4931
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1.5" radial ice	180.00	0.3497	0.0144	0.2650	0.265
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1.5" radial ice	185.00	0.3737	0.0157	0.2859	0.2859
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1.5" radial ice	195.00	0.4264	0.0180	0.3213	0.3213
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1.5" radial ice	205.00	0.4857	0.0190	0.3639	0.3644
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1.5" radial ice	210.00	0.5185	0.0189	0.3829	0.3834
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1.5" radial ice	215.00	0.5523	0.0190	0.3955	0.3959
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1.5" radial ice	240.00	0.7384	0.0206	0.4342	0.4342
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1.5" radial ice	180.00	0.3516	-0.0164	0.2674	0.2675
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1.5" radial ice	185.00	0.3757	-0.0179	0.2874	0.2876
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1.5" radial ice	195.00	0.4287	-0.0205	0.3240	0.3246
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1.5" radial ice	205.00	0.4883	-0.0215	0.3681	0.3682
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1.5" radial ice	210.00	0.5214	-0.0213	0.3874	0.388
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1.5" radial ice	215.00	0.5553	-0.0212	0.3982	0.3983
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1.5" radial ice	240.00	0.7424	-0.0196	0.4189	0.419
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1.5" radial ice	180.00	0.3548	-0.0145	0.2704	0.2704
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1.5" radial ice	185.00	0.3791	-0.0158	0.2898	0.2902
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1.5" radial ice	195.00	0.4328	-0.0181	0.3268	0.3272
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1.5" radial ice	205.00	0.4934	-0.0191	0.3720	0.372
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1.5" radial ice	210.00	0.5262	-0.0191	0.3902	0.3907
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1.5" radial ice	215.00	0.5603	-0.0191	0.4015	0.4015
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1.5" radial ice	240.00	0.749	-0.0209	0.4405	0.4409
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1.5" radial ice	180.00	0.3505	0.0142	0.2658	0.2658
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1.5" radial ice	185.00	0.3745	0.0155	0.2867	0.2867
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1.5" radial ice	195.00	0.4274	0.0177	0.3224	0.3224
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1.5" radial ice	205.00	0.487	0.0186	0.3651	0.3656
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1.5" radial ice	210.00	0.5199	0.0184	0.3844	0.3848
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1.5" radial ice	215.00	0.5538	0.0183	0.3970	0.3974
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1.5" radial ice	240.00	0.7408	0.0168	0.4854	0.4854
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1.5" radial ice	180.00	0.351	-0.0158	0.2669	0.2671
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1.5" radial ice	185.00	0.375	-0.0172	0.2870	0.2871
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1.5" radial ice	195.00	0.428	-0.0195	0.3235	0.3241
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1.5" radial ice	205.00	0.4875	-0.0201	0.3676	0.3678
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1.5" radial ice	210.00	0.5206	-0.0197	0.3870	0.3875
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1.5" radial ice	215.00	0.5544	-0.0193	0.3978	0.3979
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1.5" radial ice	240.00	0.7415	0.0140	0.4701	0.4703
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1.5" radial ice	180.00	0.3548	0.0145	0.2704	0.2704
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1.5" radial ice	185.00	0.3791	0.0158	0.2898	0.2902
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1.5" radial ice	195.00	0.4328	0.0181	0.3268	0.3272
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1.5" radial ice	205.00	0.4934	0.0191	0.3720	0.372
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1.5" radial ice	210.00	0.5262	0.0191	0.3902	0.3907
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1.5" radial ice	215.00	0.5603	0.0191	0.4015	0.4015
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1.5" radial ice	240.00	0.749	0.0209	0.4405	0.4409
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1.5" radial ice	180.00	0.3497	-0.0144	0.2650	0.265
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1.5" radial ice	185.00	0.3737	-0.0157	0.2859	0.2859
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1.5" radial ice	195.00	0.4264	-0.0180	0.3213	0.3213
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1.5" radial ice	205.00	0.4857	-0.0190	0.3639	0.3644
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1.5" radial ice	210.00	0.5185	-0.0189	0.3829	0.3834
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1.5" radial ice	215.00	0.5523	-0.0190	0.3955	0.3959
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1.5" radial ice	240.00	0.7384	-0.0206	0.4342	0.4342
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1.5" radial ice	180.00	0.351	-0.0166	0.2670	0.2671
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1.5" radial ice	185.00	0.375	-0.0180	0.2870	0.2871
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1.5" radial ice	195.00	0.428	-0.0207	0.3235	0.3241
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1.5" radial ice	205.00	0.4875	-0.0218	0.3676	0.3677
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1.5" radial ice	210.00	0.5206	-0.0217	0.3870	0.3876
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1.5" radial ice	215.00	0.5544	-0.0217	0.3978	0.3979
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1.5" radial ice	240.00	0.7415	-0.0231	0.4707	0.4707
1.2D + 1.0Ev + 1.0Eh Normal Seismic	180.00	0.0628	0.0027	0.0514	0.0514
1.2D + 1.0Ev + 1.0Eh Normal Seismic	185.00	0.0675	0.0029	0.0554	0.0555
1.2D + 1.0Ev + 1.0Eh Normal Seismic	195.00	0.0778	0.0034	0.0629	0.063
1.2D + 1.0Ev + 1.0Eh Normal Seismic	205.00	0.0895	0.0035	0.0715	0.0715
1.2D + 1.0Ev + 1.0Eh Normal Seismic	210.00	0.0955	0.0034	0.0746	0.0747
1.2D + 1.0Ev + 1.0Eh Normal Seismic	215.00	0.1022	0.0033	0.0764	0.0764
1.2D + 1.0Ev + 1.0Eh Normal Seismic	240.00	0.1365	0.0027	0.0813	0.0813
1.2D + 1.0Ev + 1.0Eh 60° Seismic	180.00	0.0627	0.0027	0.0509	0.0509
1.2D + 1.0Ev + 1.0Eh 60° Seismic	185.00	0.0673	0.0029	0.0555	0.0555
1.2D + 1.0Ev + 1.0Eh 60° Seismic	195.00	0.0776	0.0034	0.0628	0.0628
1.2D + 1.0Ev + 1.0Eh 60° Seismic	205.00	0.0892	0.0035	0.0708	0.0709

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.2D + 1.0Ev + 1.0Eh 60° Seismic	210.00	0.0955	0.0034	0.0743	0.0743
1.2D + 1.0Ev + 1.0Eh 60° Seismic	215.00	0.102	0.0033	0.0758	0.0759
1.2D + 1.0Ev + 1.0Eh 60° Seismic	240.00	0.1365	0.0027	0.0818	0.0818
1.2D + 1.0Ev + 1.0Eh 90° Seismic	180.00	0.0627	-0.0031	0.0512	0.0513
1.2D + 1.0Ev + 1.0Eh 90° Seismic	185.00	0.0674	-0.0034	0.0555	0.0555
1.2D + 1.0Ev + 1.0Eh 90° Seismic	195.00	0.0777	-0.0039	0.0628	0.0629
1.2D + 1.0Ev + 1.0Eh 90° Seismic	205.00	0.0894	-0.0040	0.0713	0.0713
1.2D + 1.0Ev + 1.0Eh 90° Seismic	210.00	0.0955	-0.0039	0.0745	0.0745
1.2D + 1.0Ev + 1.0Eh 90° Seismic	215.00	0.1021	-0.0039	0.0762	0.0762
1.2D + 1.0Ev + 1.0Eh 90° Seismic	240.00	0.1365	-0.0031	0.0817	0.0817
1.2D + 1.0Ev + 1.0Eh 120° Seismic	180.00	0.0628	0.0027	0.0514	0.0514
1.2D + 1.0Ev + 1.0Eh 120° Seismic	185.00	0.0675	0.0029	0.0554	0.0555
1.2D + 1.0Ev + 1.0Eh 120° Seismic	195.00	0.0778	0.0034	0.0629	0.063
1.2D + 1.0Ev + 1.0Eh 120° Seismic	205.00	0.0895	0.0035	0.0715	0.0715
1.2D + 1.0Ev + 1.0Eh 120° Seismic	210.00	0.0955	0.0034	0.0746	0.0747
1.2D + 1.0Ev + 1.0Eh 120° Seismic	215.00	0.1022	0.0033	0.0764	0.0764
1.2D + 1.0Ev + 1.0Eh 120° Seismic	240.00	0.1365	0.0027	0.0813	0.0813
1.2D + 1.0Ev + 1.0Eh 180° Seismic	180.00	0.0627	0.0027	0.0509	0.0509
1.2D + 1.0Ev + 1.0Eh 180° Seismic	185.00	0.0673	0.0029	0.0555	0.0555
1.2D + 1.0Ev + 1.0Eh 180° Seismic	195.00	0.0776	0.0034	0.0628	0.0628
1.2D + 1.0Ev + 1.0Eh 180° Seismic	205.00	0.0892	0.0035	0.0708	0.0709
1.2D + 1.0Ev + 1.0Eh 180° Seismic	210.00	0.0955	0.0034	0.0743	0.0743
1.2D + 1.0Ev + 1.0Eh 180° Seismic	215.00	0.102	0.0033	0.0758	0.0759
1.2D + 1.0Ev + 1.0Eh 180° Seismic	240.00	0.1365	0.0027	0.0818	0.0818
1.2D + 1.0Ev + 1.0Eh 210° Seismic	180.00	0.0627	-0.0031	0.0512	0.0512
1.2D + 1.0Ev + 1.0Eh 210° Seismic	185.00	0.0674	-0.0034	0.0555	0.0555
1.2D + 1.0Ev + 1.0Eh 210° Seismic	195.00	0.0777	-0.0039	0.0628	0.0629
1.2D + 1.0Ev + 1.0Eh 210° Seismic	205.00	0.0894	-0.0040	0.0713	0.0713
1.2D + 1.0Ev + 1.0Eh 210° Seismic	210.00	0.0955	-0.0039	0.0745	0.0745
1.2D + 1.0Ev + 1.0Eh 210° Seismic	215.00	0.1021	-0.0039	0.0762	0.0762
1.2D + 1.0Ev + 1.0Eh 210° Seismic	240.00	0.1365	-0.0031	0.0817	0.0817
1.2D + 1.0Ev + 1.0Eh 240° Seismic	180.00	0.0628	0.0027	0.0514	0.0514
1.2D + 1.0Ev + 1.0Eh 240° Seismic	185.00	0.0675	0.0029	0.0554	0.0555
1.2D + 1.0Ev + 1.0Eh 240° Seismic	195.00	0.0778	0.0034	0.0629	0.063
1.2D + 1.0Ev + 1.0Eh 240° Seismic	205.00	0.0895	0.0035	0.0715	0.0715
1.2D + 1.0Ev + 1.0Eh 240° Seismic	210.00	0.0955	0.0034	0.0746	0.0747
1.2D + 1.0Ev + 1.0Eh 240° Seismic	215.00	0.1022	0.0033	0.0764	0.0764
1.2D + 1.0Ev + 1.0Eh 240° Seismic	240.00	0.1365	0.0027	0.0813	0.0813
1.2D + 1.0Ev + 1.0Eh 300° Seismic	180.00	0.0627	0.0027	0.0509	0.0509
1.2D + 1.0Ev + 1.0Eh 300° Seismic	185.00	0.0673	0.0029	0.0555	0.0555
1.2D + 1.0Ev + 1.0Eh 300° Seismic	195.00	0.0776	0.0034	0.0628	0.0628
1.2D + 1.0Ev + 1.0Eh 300° Seismic	205.00	0.0892	0.0035	0.0708	0.0709
1.2D + 1.0Ev + 1.0Eh 300° Seismic	210.00	0.0955	0.0034	0.0743	0.0743
1.2D + 1.0Ev + 1.0Eh 300° Seismic	215.00	0.102	0.0033	0.0758	0.0759
1.2D + 1.0Ev + 1.0Eh 300° Seismic	240.00	0.1365	0.0027	0.0818	0.0818
1.2D + 1.0Ev + 1.0Eh 330° Seismic	180.00	0.0627	-0.0031	0.0512	0.0513
1.2D + 1.0Ev + 1.0Eh 330° Seismic	185.00	0.0674	-0.0034	0.0555	0.0555
1.2D + 1.0Ev + 1.0Eh 330° Seismic	195.00	0.0777	-0.0039	0.0628	0.0629
1.2D + 1.0Ev + 1.0Eh 330° Seismic	205.00	0.0894	-0.0040	0.0713	0.0713
1.2D + 1.0Ev + 1.0Eh 330° Seismic	210.00	0.0955	-0.0039	0.0745	0.0745
1.2D + 1.0Ev + 1.0Eh 330° Seismic	215.00	0.1021	-0.0039	0.0762	0.0762
1.2D + 1.0Ev + 1.0Eh 330° Seismic	240.00	0.1365	-0.0031	0.0817	0.0817
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	180.00	0.0626	0.0027	0.0511	0.0511
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	185.00	0.0673	0.0029	0.0551	0.0552
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	195.00	0.0775	0.0033	0.0625	0.0626
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	205.00	0.0891	0.0035	0.0710	0.071
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	210.00	0.0952	0.0034	0.0742	0.0743
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	215.00	0.1018	0.0033	0.0759	0.0759
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	240.00	0.1361	0.0027	0.0807	0.0807
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	180.00	0.0625	0.0027	0.0506	0.0507
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	185.00	0.0671	0.0029	0.0552	0.0552
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	195.00	0.0773	0.0034	0.0624	0.0624
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	205.00	0.0889	0.0035	0.0704	0.0705
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	210.00	0.0952	0.0034	0.0737	0.0737
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	215.00	0.1017	0.0033	0.0754	0.0755
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	240.00	0.1361	0.0027	0.0810	0.081
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	180.00	0.0625	-0.0031	0.0510	0.051
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	185.00	0.0672	-0.0034	0.0552	0.0552

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	195.00	0.0775	-0.0039	0.0624	0.0626
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	205.00	0.089	-0.0040	0.0708	0.0708
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	210.00	0.0952	-0.0039	0.0741	0.0742
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	215.00	0.1018	-0.0038	0.0758	0.0758
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	240.00	0.1361	-0.0031	0.0809	0.0809
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	180.00	0.0626	0.0027	0.0511	0.0511
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	185.00	0.0673	0.0029	0.0551	0.0552
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	195.00	0.0775	0.0033	0.0625	0.0626
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	205.00	0.0891	0.0035	0.0710	0.071
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	210.00	0.0952	0.0034	0.0742	0.0743
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	215.00	0.1018	0.0033	0.0759	0.0759
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	240.00	0.1361	0.0027	0.0807	0.0807
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	180.00	0.0625	0.0027	0.0506	0.0507
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	185.00	0.0671	0.0029	0.0552	0.0552
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	195.00	0.0773	0.0033	0.0624	0.0624
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	205.00	0.0889	0.0035	0.0704	0.0705
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	210.00	0.0952	0.0034	0.0737	0.0737
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	215.00	0.1017	0.0033	0.0754	0.0755
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	240.00	0.1361	0.0027	0.0810	0.081
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	180.00	0.0625	-0.0031	0.0510	0.051
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	185.00	0.0672	-0.0034	0.0552	0.0552
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	195.00	0.0775	-0.0039	0.0624	0.0626
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	205.00	0.089	-0.0040	0.0708	0.0708
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	210.00	0.0952	-0.0039	0.0741	0.0742
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	215.00	0.1018	-0.0038	0.0758	0.0758
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	240.00	0.1361	-0.0031	0.0809	0.0809
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	180.00	0.0626	0.0027	0.0511	0.0511
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	185.00	0.0673	0.0029	0.0551	0.0552
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	195.00	0.0775	0.0033	0.0625	0.0626
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	205.00	0.0891	0.0035	0.0710	0.071
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	210.00	0.0952	0.0034	0.0742	0.0743
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	215.00	0.1018	0.0033	0.0759	0.0759
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	240.00	0.1361	0.0027	0.0807	0.0807
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	180.00	0.0625	0.0027	0.0506	0.0507
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	185.00	0.0671	0.0029	0.0552	0.0552
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	195.00	0.0773	-0.0034	0.0624	0.0624
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	205.00	0.0889	0.0035	0.0704	0.0705
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	210.00	0.0952	0.0034	0.0737	0.0737
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	215.00	0.1017	0.0033	0.0754	0.0755
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	240.00	0.1361	0.0027	0.0810	0.081
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	180.00	0.0625	-0.0031	0.0510	0.051
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	185.00	0.0672	-0.0034	0.0552	0.0552
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	195.00	0.0775	-0.0039	0.0624	0.0626
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	205.00	0.089	-0.0040	0.0708	0.0708
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	210.00	0.0952	-0.0039	0.0741	0.0742
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	215.00	0.1018	-0.0038	0.0758	0.0758
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	240.00	0.1361	-0.0031	0.0809	0.0809
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	180.00	0.2855	0.0114	0.2191	0.2191
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	185.00	0.3055	0.0125	0.2355	0.2358
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	195.00	0.3492	0.0143	0.2665	0.2669
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	205.00	0.3987	0.0150	0.3042	0.3042
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	210.00	0.4254	0.0148	0.3197	0.32
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	215.00	0.4538	0.0146	0.3292	0.3292
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	240.00	0.6086	0.0131	0.4103	0.4105
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	180.00	0.2751	0.0114	0.2116	0.2116
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	185.00	0.2943	0.0125	0.2278	0.2281
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	195.00	0.3367	0.0144	0.2578	0.2582
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	205.00	0.3845	0.0153	0.2935	0.2935
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	210.00	0.4107	0.0153	0.3093	0.3097
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	215.00	0.4381	0.0153	0.3192	0.3192
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	240.00	0.5884	0.0169	0.3447	0.3452
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	180.00	0.2775	-0.0129	0.2133	0.2134
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	185.00	0.297	-0.0141	0.2298	0.2302
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	195.00	0.3397	-0.0161	0.2604	0.2609
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	205.00	0.3879	-0.0169	0.2962	0.2963
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	210.00	0.4142	-0.0167	0.3128	0.3133
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	215.00	0.4418	-0.0165	0.3213	0.3214
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	240.00	0.593	-0.0148	0.3292	0.3295

DEFLECTIONS AND ROTATIONS

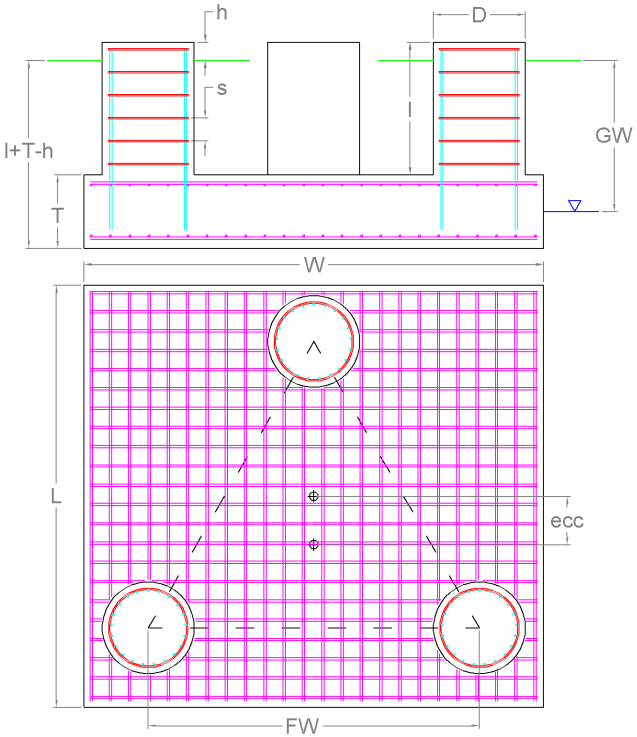
Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	180.00	0.2854	-0.0117	0.2190	0.219
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	185.00	0.3053	-0.0128	0.2353	0.2357
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	195.00	0.3491	-0.0148	0.2663	0.2666
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	205.00	0.3985	-0.0156	0.3037	0.3037
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	210.00	0.4252	-0.0156	0.3191	0.3195
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	215.00	0.4535	-0.0156	0.3286	0.3286
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	240.00	0.6079	-0.0173	0.3568	0.3569
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	180.00	0.2752	0.0111	0.2118	0.2118
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	185.00	0.2944	0.0122	0.2280	0.2283
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	195.00	0.3368	0.0139	0.2581	0.2584
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	205.00	0.3847	0.0146	0.2939	0.2939
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	210.00	0.411	0.0144	0.3098	0.3101
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	215.00	0.4384	0.0143	0.3197	0.3198
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	240.00	0.5891	0.0127	0.3978	0.398
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	180.00	0.2777	-0.0126	0.2134	0.2135
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	185.00	0.2971	-0.0137	0.2300	0.2304
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	195.00	0.3399	-0.0157	0.2608	0.2612
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	205.00	0.3882	-0.0162	0.2966	0.2968
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	210.00	0.4145	-0.0158	0.3134	0.3138
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	215.00	0.4421	-0.0155	0.3219	0.322
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	240.00	0.5938	0.0115	0.3860	0.3861
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	180.00	0.2854	0.0117	0.2190	0.219
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	185.00	0.3053	0.0128	0.2353	0.2357
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	195.00	0.3491	0.0148	0.2663	0.2666
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	205.00	0.3985	0.0156	0.3037	0.3037
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	210.00	0.4252	0.0156	0.3191	0.3195
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	215.00	0.4535	0.0156	0.3286	0.3286
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	240.00	0.6079	0.0173	0.3568	0.3569
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	180.00	0.2751	-0.0114	0.2116	0.2116
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	185.00	0.2943	-0.0125	0.2278	0.2281
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	195.00	0.3367	-0.0144	0.2578	0.2582
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	205.00	0.3845	-0.0153	0.2935	0.2935
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	210.00	0.4107	-0.0153	0.3093	0.3097
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	215.00	0.4381	-0.0153	0.3192	0.3192
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	240.00	0.5884	-0.0169	0.3447	0.3452
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	180.00	0.2777	-0.0132	0.2135	0.2135
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	185.00	0.2971	-0.0145	0.2300	0.2304
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	195.00	0.3399	-0.0167	0.2607	0.2612
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	205.00	0.3882	-0.0176	0.2966	0.2967
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	210.00	0.4145	-0.0176	0.3134	0.3139
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	215.00	0.4421	-0.0176	0.3218	0.3219
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	240.00	0.5938	-0.0190	0.3864	0.3869

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

Foundation & Tower Parameters			
Ignore Mat Rebar?		N	
Ignore Pier Rebar?		N	
Foundation has Pier(s)?		Y	
Pier Shape		Round	
Pier Diameter	<i>D</i>	3.5	ft
Pier Height Above Ground	<i>h</i>	0.5	ft
Pier Length	<i>l</i>	4.75	ft
Mat Base Depth	<i>l+T-h</i>	6	ft
Mat Length	<i>L</i>	37	ft
Mat Width	<i>W</i>	37	ft
Mat Thickness	<i>T</i>	1.75	ft
Unit Weight of Concrete		150	pcf
Tower Eccentricity	ecc	2	ft
Tower Face Width	FW	25	ft
Tower Leg Count		3	

Reactions			
Moment, M_u		7,882.87	k-ft
Shear, V_u		58.02	k
Axial, P_u		388.23	k
Uplift, T_u		329.81	k
Tower Weight		60.34	k
Tower Dead Load Factor		0.9	
Shear/Leg in Compression, v_{cu}		58	k
Shear/Leg in Tension, v_{tu}		58	k

Soil Parameters			
Water Table Depth [BGL]	<i>GW</i>	7	ft
Unit Weight of Soil		125	pcf
Unit Weight of Soil [Submerged]		62.6	pcf
Shear Friction Coefficient		0.5	
Ultimate Bearing Pressure		10,000	psf
Bearing Pressure Type		Net	
Conical Failure Angle		30	°
Capacity Increase (Transient Loads)		1.00	
Soil Strength Reduction Factor, ϕ_s		0.6	
Dead Load Factor		1.2	



Soil Capacities			
Design Moment, M_u		8,260	k-ft
Nominal Moment Capacity, $\phi_m M_n$		19,450.59	k-ft
$M_u / \phi_s M_n$		42.5%	
Net Bearing Pressure		1,362	k
Nominal Bearing Capacity, $\phi_b P_n$		6,450	k
Bearing Pressure Controlling Load Direction		Diagonal to Pad Edge	
$P_u / \phi_s P_n$		21.1%	
Ultimate Friction Resistance		571.08	k
Ultimate Passive Pressure Resistance		41.48	k
Nominal Shear Capacity, $\phi_s V_n$		367.54	k
$V_u / \phi_s V_n$		16.0%	



Mat Reinforcement Parameters

Concrete Compressive Strength, f'_c	4,500	psi
Mat Rebar Quantity [Lower]	70	
Mat Rebar Size # [Lower]	10	
Mat Single Rebar Area [Lower]	1.27	in ²
Mat Rebar Quantity [Upper]	70	
Mat Rebar Size # [Upper]	10	
Mat Single Rebar Area [Upper]	1.27	in ²
Mat Rebar Yield Strength, F_y	60	ksi
Mat Clear Cover	3	in
Bending Reduction Factor, ϕ_B	0.9	
Shear Reduction Factor, ϕ_V	0.75	
Compression Reduction Factor, ϕ_C	0.65	
Steel Elastic Modulus	29,000	ksi

Mat Reinforcement Capacities

Compression Zone Factor, β_1	0.825	
Lower Reinforcement Spacing	6.34	in
Upper Reinforcement Spacing	6.34	in
One Way Design Shear, V_u	190.62	k
One Way Shear Capacity, ϕV_c	748.33	k
One Way Shear Controlling Load Direction	Parallel to Pad Edge	
$V_u / \phi V_c$	25.5%	
Punching Design Shear Stress, v_u	131.96	psi
Punching Shear Capacity, $\phi_c V_n$	201.25	psi
$v_u / \phi_c V_n$	65.6%	
Moment Transfer Effective Flexural Width, f	8.75	in
Neutral Axis Depth	3.33	In
Moment Transfer Flexural Capacity, $\phi M_{sc,f}$	18,470.77	k-in
$\gamma_f M_{sc} / \phi M_{sc,f}$	10.7%	
Flexure Due to Soil Pressure, M_u	2,622.5	k-ft
Lower Steel Mat Moment Capacity, ϕM_n	6,166.84	k-ft
Flexural Steel Controlling Load Direction	Parallel to Pad Edge	
$M_u / \phi M_n$	42.5%	
Flexure Due to Uplift, M_u	1,953.21	k-ft
Upper Steel Mat Moment Capacity, ϕM_n	6,166.84	k-ft
$M_u / \phi M_n$	31.7%	

Pier Reinforcement Parameters

Concrete Compressive Strength (f'_c)	4,500	psi
Pier Rebar Quantity	18	
Pier Rebar Size #	9	
Pier Single Rebar Area	1	in ²
Pier Rebar Yield Strength (F_y)	60	ksi
Tie Rebar Size #	4	
Tie Rebar Area (Single)	0.2	in ²
Tie Rebar Spacing	11	in
Tie Rebar Yield Strength (F_y)	60	ksi
Rebar Cage Diameter	33.88	in

Pier Reinforcement Capacities

Design Moment (M_u)	275.6	k-ft
Nominal Moment Capacity ($\phi_B M_n$)	1,343.08	k-ft
$M_u / \phi_B M_n$	20.5%	
Design Shear (V_u)	38.68	k
Nominal Shear Capacity ($\phi_V V_n$)	128.02	k
$V_u / \phi_V V_n$	30.2%	
Design Tension (T_u)	329.81	k
Nominal Tension Capacity ($\phi_T T_n$)	972	k
$T_u / \phi_T T_n$	33.9%	
Design Compression (P_u)	388.23	k
Nominal Compression Capacity ($\phi_P P_n$)	2,751.04	k
$P_u / \phi_P P_n$	14.1%	
Pier Reinforcement Ratio	0.001	-
$M_u / \phi_B M_n + T_u / \phi_T T_n$	54.5%	



Exhibit F

Mount Analysis Report



AMERICAN TOWER®
CORPORATION

Mount Analysis Report

ATC Site Name : ASHFORD CT, CT
ATC Site Number : 411217
Engineering Number : 14101206_C8_01
Mount Elevation : 214 ft
Carrier : T-Mobile
Carrier Site Name : CTNL145_Underserved_ATC_SST
Carrier Site Number : CTNL145A
Site Location : 353 Pumpkin Hill Rd.
Ashford, CT 06278-1711
41.84782969 , -72.1215992
County : Windham
Date : April 21, 2022
Max Usage : 64%
Result : Pass

Prepared By:
Charles Faulkner
Structural Engineer

Reviewed By:



COA: PEC.0001553



Table of Contents

Introduction 1

Supporting Documents 1

Analysis 1

Conclusion 1

Application Loading 2

Structure Usages 2

Mount Layout 3

Equipment Layout 4

Standard Conditions 5

Calculations Attached



Introduction

The purpose of this report is to summarize results of the mount analysis performed for T-Mobile at 214 ft.

Supporting Documents

Specifications Sheet	Site Pro 1 VFA12-HD, dated June 29, 2018
Radio Frequency Data Sheet	RFDS ID #CTNL145A, dated April 14, 2022
Reference Photos	Site photos from 2019

Analysis

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

Basic Wind Speed:	120 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.50" radial ice concurrent
Codes:	ANSI/TIA-222-H
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Flat
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.182, S1 = 0.055
Site Class:	D - Stiff Soil
Live Loads:	Lm = 500 lbs, Lv = 250 lbs

Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above. The mount can support the equipment as described in this report.

- Analysis is based on new Site Pro 1 VFA12-HD sector frames or approved equivalent.

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



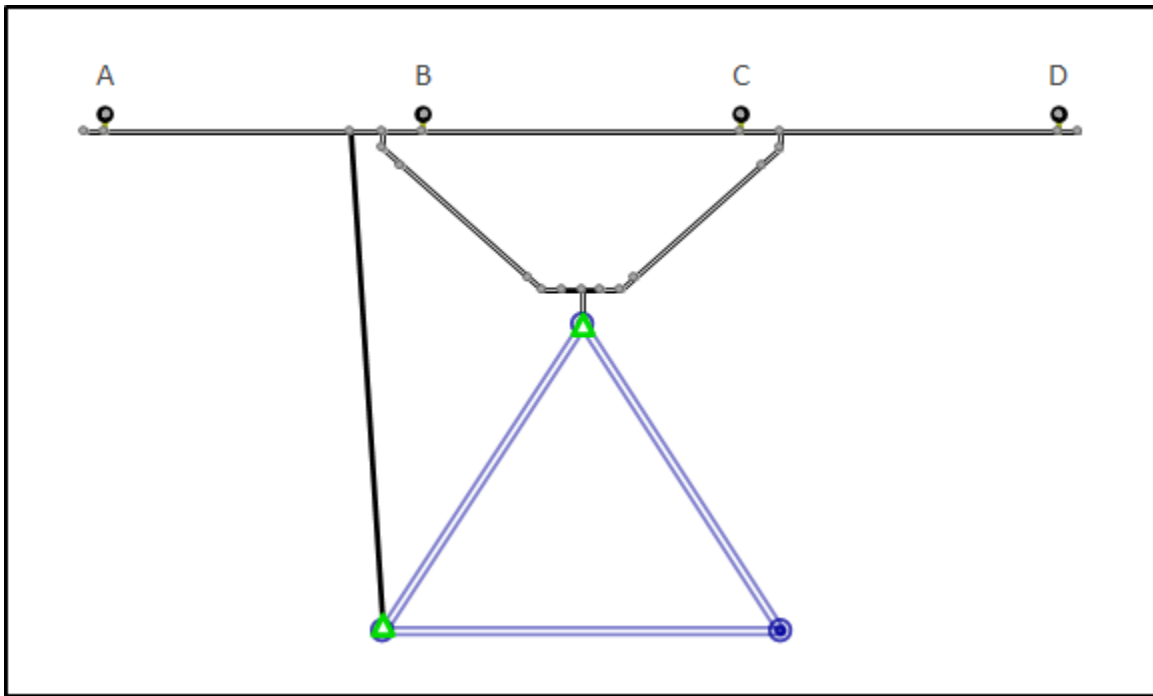
Application Loading

Mount Centerline (ft)	Equipment Centerline (ft)	Qty	Equipment Manufacturer & Model
214.0	214.0	3	Ericsson AIR 6419 B41
		3	RFS APXVAALL24 43-U-NA20
		3	Ericsson 4480 BAND 71
		3	Ericsson 4460 BAND 2/25

Structure Usages

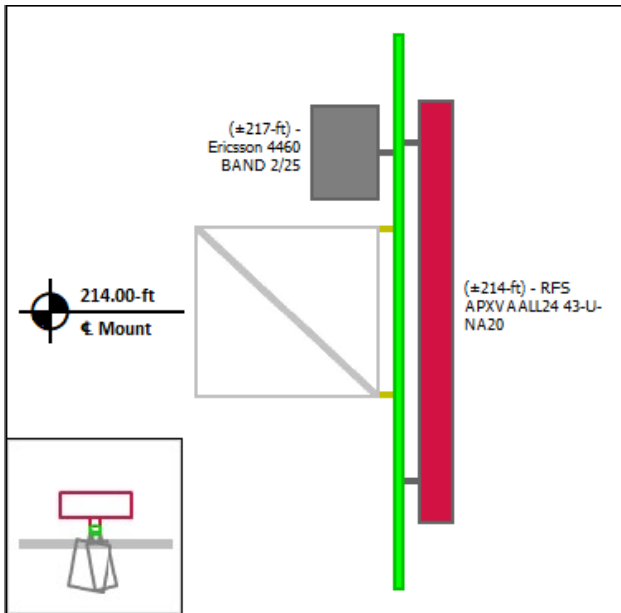
Structural Component	Controlling Usage	Pass/Fail
Horizontals	54%	Pass
Verticals	64%	Pass
Diagonals	24%	Pass
Tie-Backs	9%	Pass
Mount Pipes	51%	Pass

Mount Layout

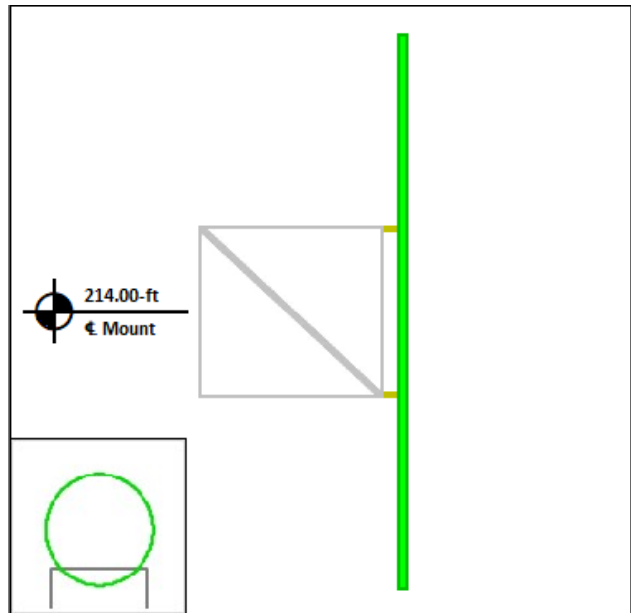


Equipment Layout

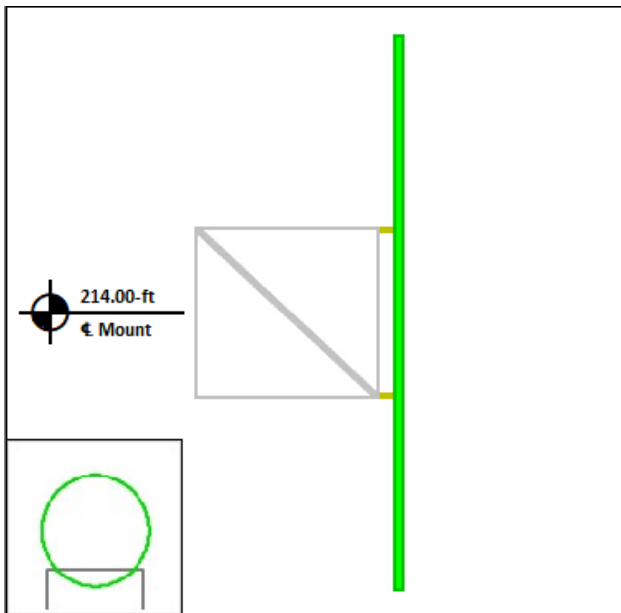
Mount Pipe A



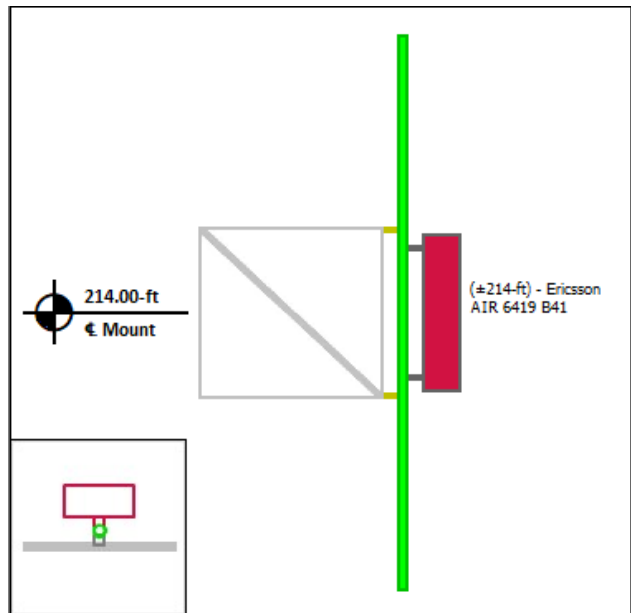
Mount Pipe B



Mount Pipe C



Mount Pipe D





Standard Conditions

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

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

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

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

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

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

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

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



Site Number: 411217
Project Number: 14101206_C8_01
Carrier: T-Mobile
Mount Elevation: 214 ft
Date: 4/21/2022

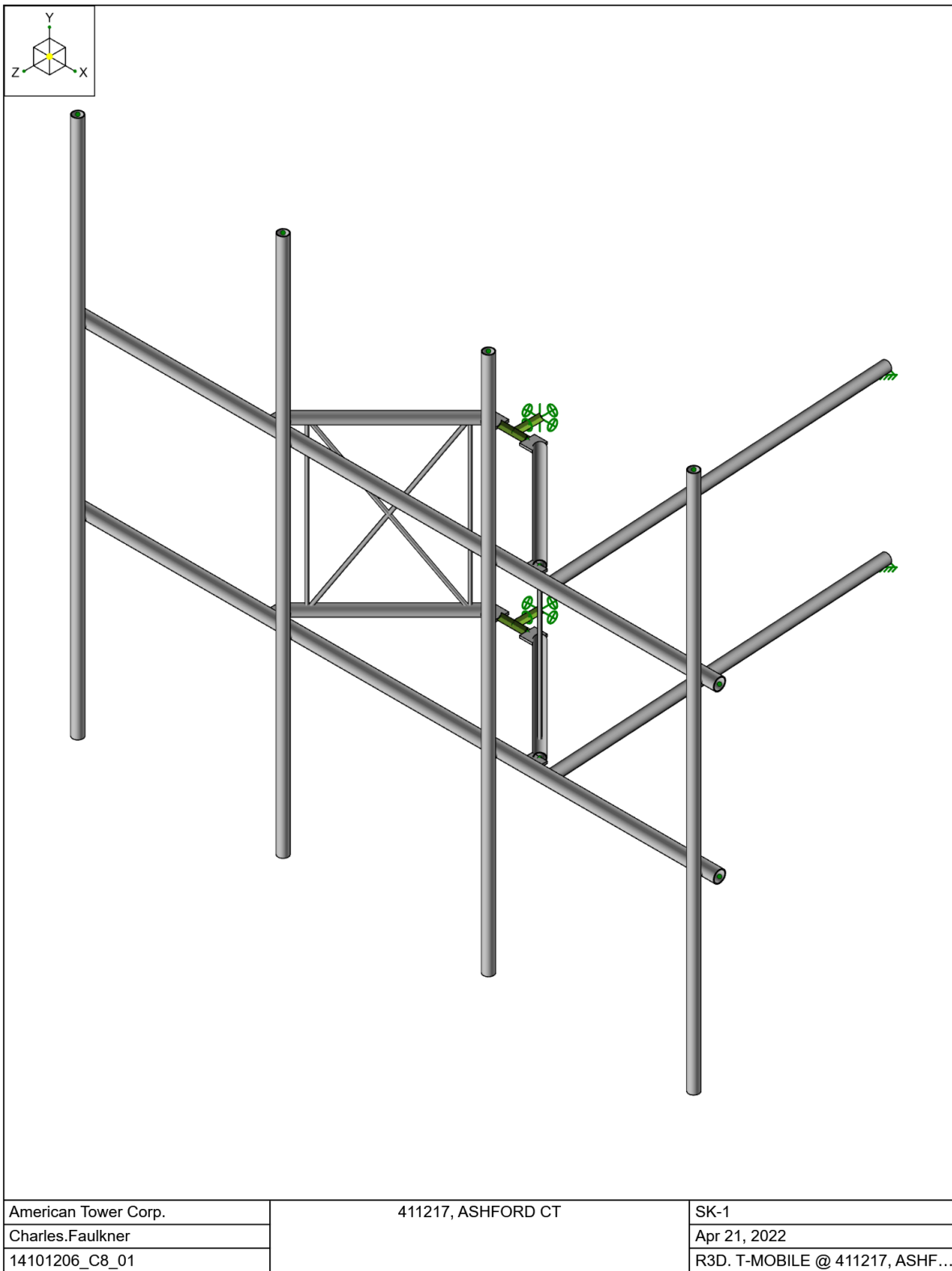
Mount Analysis Force Calculations

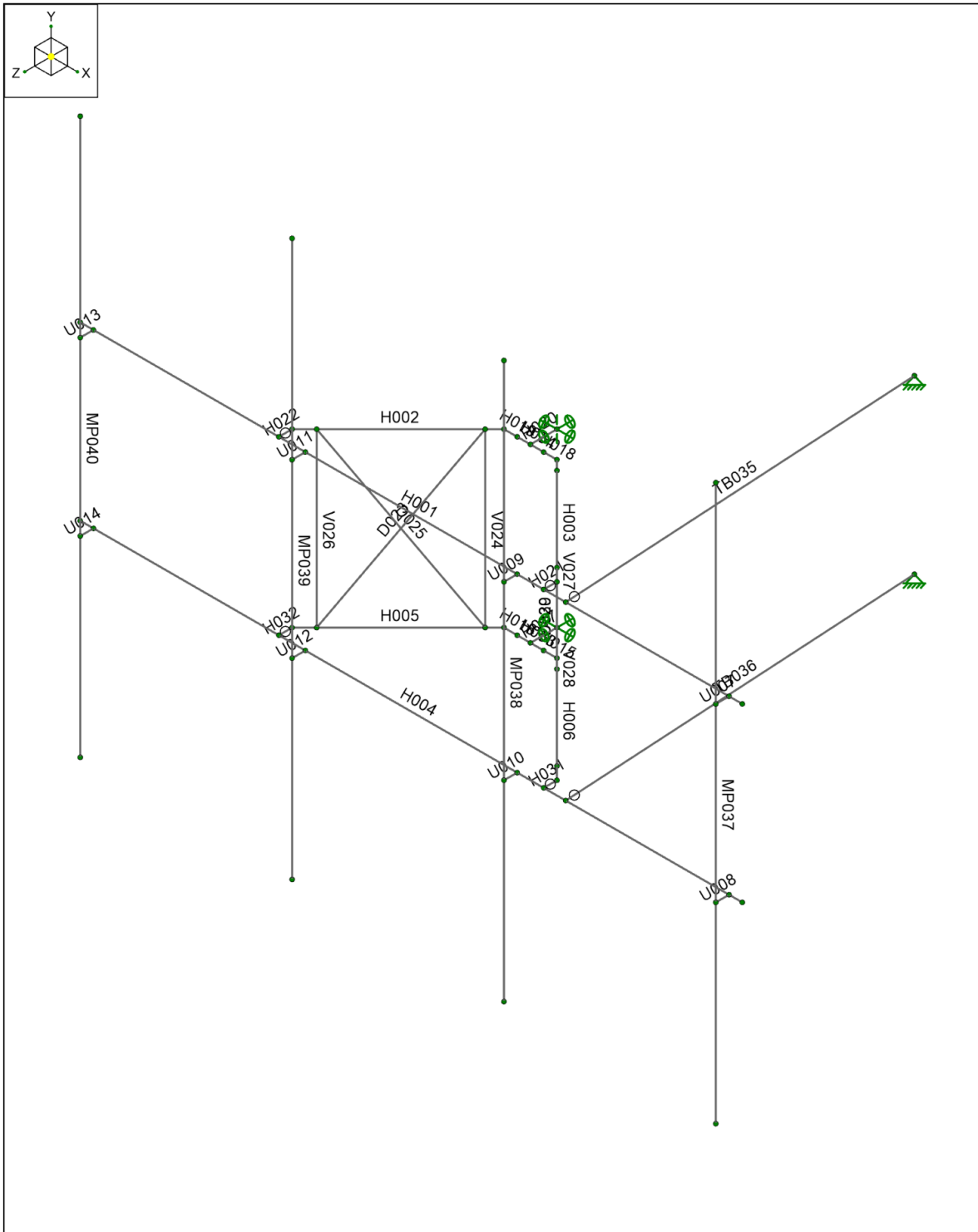
Wind & Ice Load Calculations			
Velocity Pressure Coefficient	K_z	1.23	
Topographic Factor	K_{zt}	1.00	
Rooftop Wind Speed-up Factor	K_s	1.00	
Shielding Factor	K_a	0.90	
Ground Elevation Factor	K_e	0.97	
Wind Direction Probability Factor	K_d	0.95	
Basic Wind Speed	V	120	mph
Velocity Pressure	q_z	41.8	psf
Height Escalation Factor	K_{iz}	1.21	
Thickness of Radial Glaze Ice	T_{iz}	1.81	in

Seismic Load Calculations			
Short Period DSRAP	S_{Ds}	0.194	
1 Second DSRAP	S_{D1}	0.088	
Importance Factor	I	1.0	
Response Modification Coefficient	R	2.0	
Seismic Response Coefficient	C_s	0.097	
Amplification Factor	A	1.0	
Total Weight	W	958.6	lbs
Total Shear Force	V_s	93.0	lbs
Horizontal Seismic Load	E_h	93.0	lbs
Vertical Seismic Load	E_v	37.2	lbs

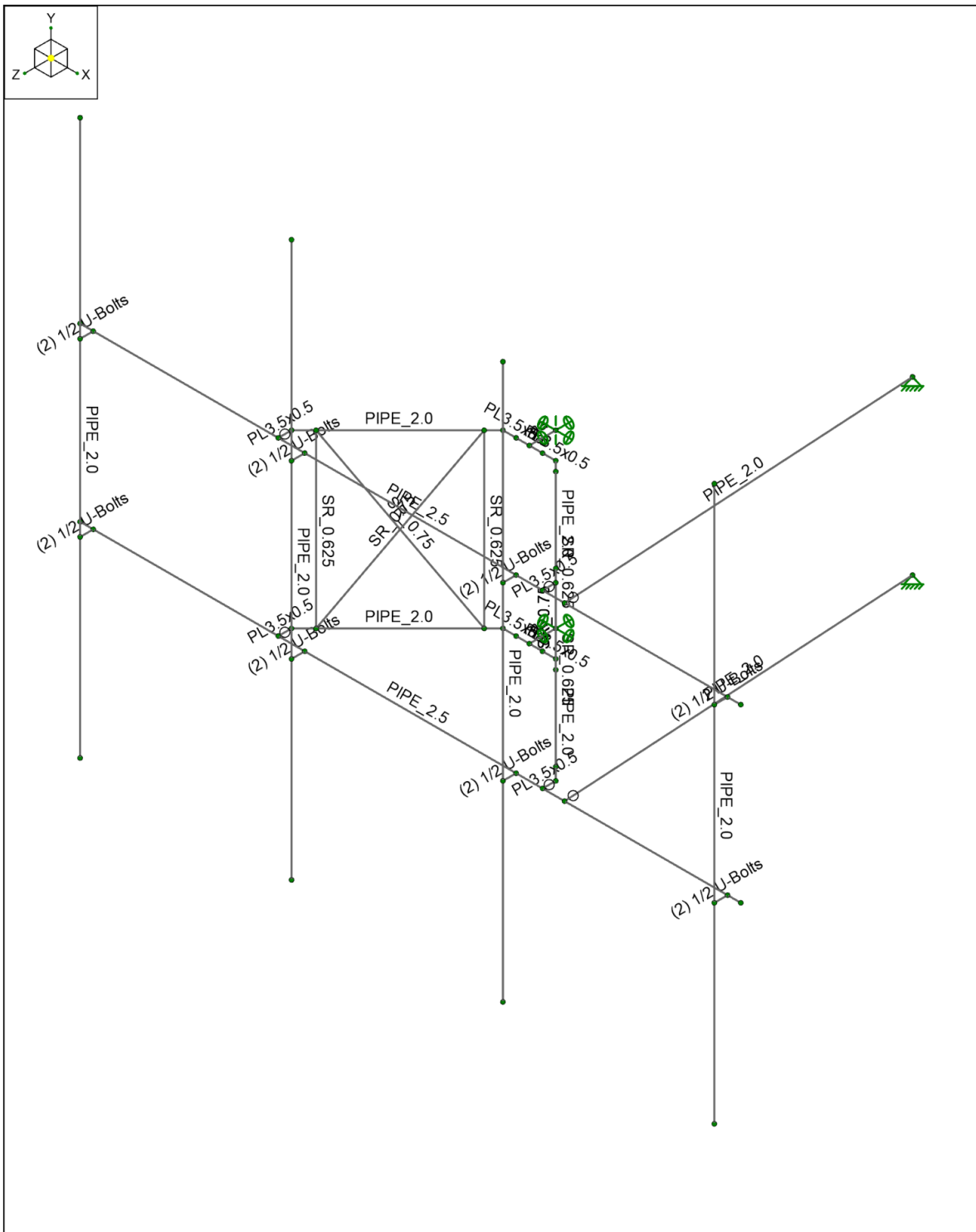
Antenna Calculations (Elevations per Application/RFDS)*								
Equipment	Height	Width	Depth	Weight	EPA_N	EPA_T	EPA_{Ni}	EPA_{Ti}
Model #	in	in	in	lbs	sqft	sqft	sqft	sqft
Ericsson AIR 6419 B41	36.3	20.9	9.0	83.3	6.32	1.82	8.16	2.81
RFS APXVAALL24 43-U-NA20	95.9	24.0	8.5	122.8	20.24	3.40	24.17	5.02
Ericsson 4480 BAND 71	22.0	15.7	7.5	81.0	2.88	1.40	4.12	2.41
Ericsson 4460 BAND 2/25	19.6	15.7	12.1	109.0	2.56	1.98	3.74	3.04

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

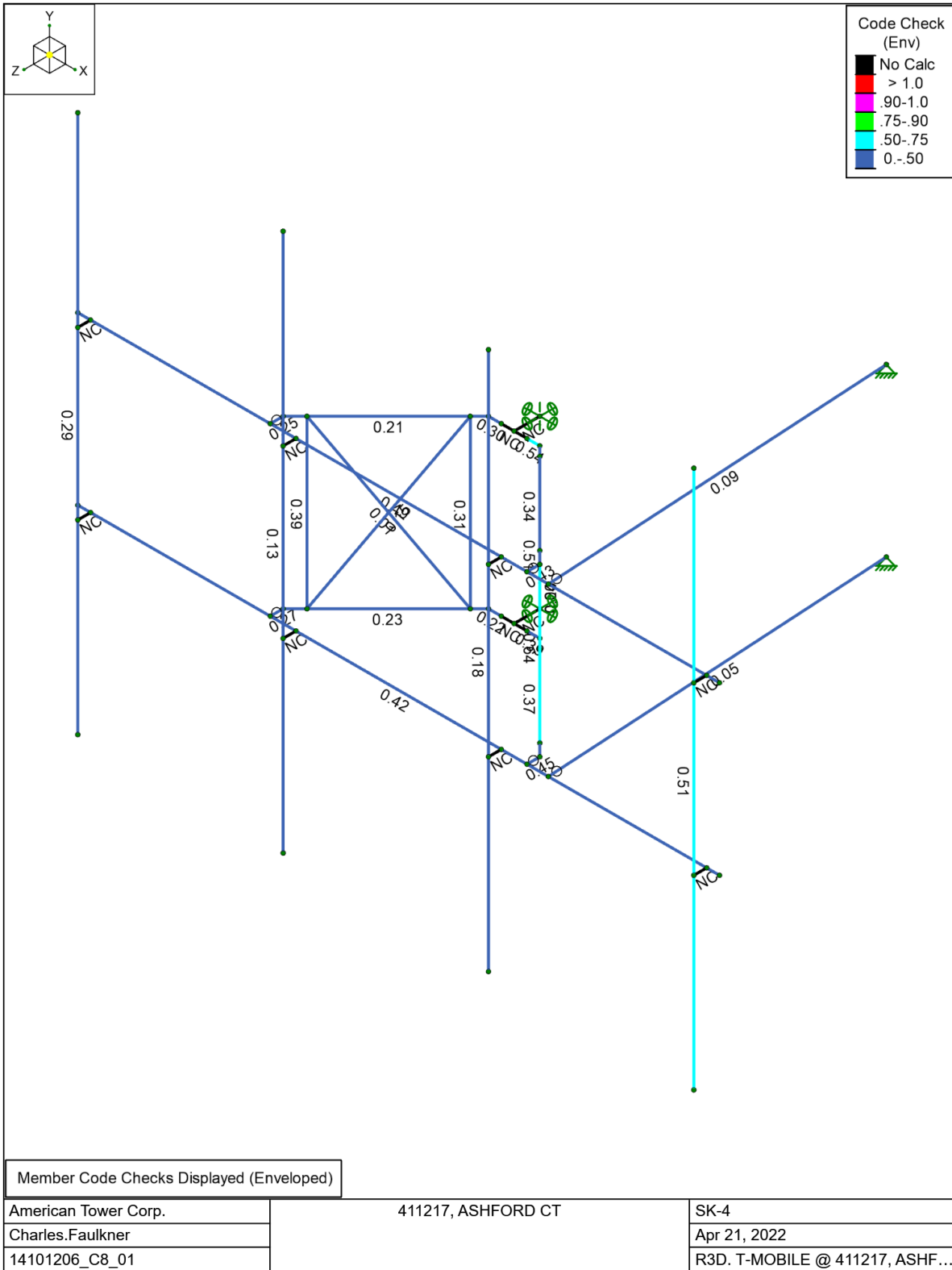


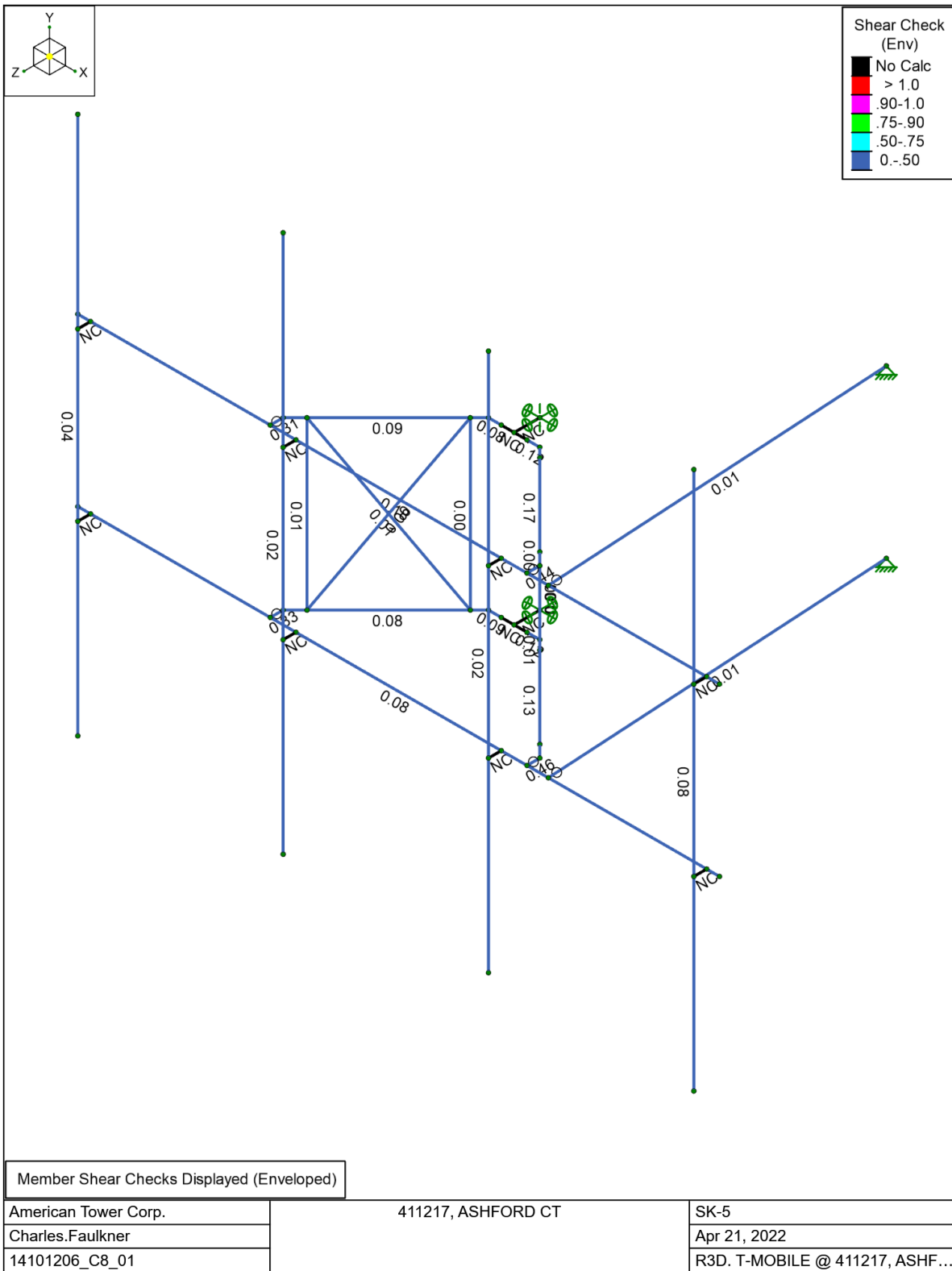


American Tower Corp.	411217, ASHFORD CT	SK-2
Charles.Faulkner		Apr 21, 2022
14101206_C8_01		R3D. T-MOBILE @ 411217, ASHF...



American Tower Corp.	411217, ASHFORD CT	SK-3
Charles.Faulkner		Apr 21, 2022
14101206_C8_01		R3D. T-MOBILE @ 411217, ASHF...







Company : American Tower Corp.
 Designer : Charles.Faulkner
 Job Number : 14101206_C8_01
 Model Name : 411217, ASHFORD CT

4/21/2022
 1:52:52 PM
 Checked By : -

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed
1	D	DL	-1		6	
2	Di	IL			6	28
3	W 0	WL			6	38
4	W 30	WL			12	74
5	W 60	WL			12	74
6	W 90	WL			6	38
7	W 120	WL			12	74
8	W 150	WL			12	74
9	W 180	WL			6	38
10	W 210	WL			12	74
11	W 240	WL			12	74
12	W 270	WL			6	38
13	W 300	WL			12	74
14	W 330	WL			12	74
15	Wi 0	WL			6	38
16	Wi 30	WL			12	74
17	Wi 60	WL			12	74
18	Wi 90	WL			6	38
19	Wi 120	WL			12	74
20	Wi 150	WL			12	74
21	Wi 180	WL			6	38
22	Wi 210	WL			12	74
23	Wi 240	WL			12	74
24	Wi 270	WL			6	38
25	Wi 300	WL			12	74
26	Wi 330	WL			12	74
27	Ws 0	WL			6	38
28	Ws 30	WL			12	74
29	Ws 60	WL			12	74
30	Ws 90	WL			6	38
31	Ws 120	WL			12	74
32	Ws 150	WL			12	74
33	Ws 180	WL			6	38
34	Ws 210	WL			12	74
35	Ws 240	WL			12	74
36	Ws 270	WL			6	38
37	Ws 300	WL			12	74
38	Ws 330	WL			12	74
39	Ev -Y	ELY				28
40	Eh -Z	ELZ				28
41	Eh -X	ELX				28
42	Lv (1)	LL			1	
43	Lv (2)	LL			1	
44	Lv (3)	LL			1	
45	Lv (4)	LL			1	
46	Lv (5)	LL			1	
47	Lv (6)	LL			1	
48	Lv (7)	LL		1		
49	Lv (8)	LL		1		
50	Lm (1)	LL		1		
51	Lm (2)	LL		1		
52	Lm (3)	LL		1		
53	Lm (4)	LL		1		



Node Boundary Conditions

	Node Label	X [lb/in]	Y [lb/in]	Z [lb/in]	X Rot [k-in/rad]	Z Rot [k-in/rad]
1	N001	Reaction	Reaction	Reaction	Reaction	Reaction
2	N006	Reaction	Reaction	Reaction	Reaction	Reaction
3	N050	Reaction	Reaction	Reaction		
4	N051	Reaction	Reaction	Reaction		

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	H001	N003	N002		PIPE 2.5	Beam	None	A53 Gr. B	Typical
2	H002	N032	N004		PIPE 2.0	Beam	None	A53 Gr. B	Typical
3	H003	N031	N005		PIPE 2.0	Beam	None	A53 Gr. B	Typical
4	H004	N008	N007		PIPE 2.5	Beam	None	A53 Gr. B	Typical
5	H005	N029	N009		PIPE 2.0	Beam	None	A53 Gr. B	Typical
6	H006	N028	N010		PIPE 2.0	Beam	None	A53 Gr. B	Typical
7	U007	N011	N015		(2) 1/2 U-Bolts	Beam	None	SAE J429 Gr. 2	Typical
8	U008	N016	N017		(2) 1/2 U-Bolts	Beam	None	SAE J429 Gr. 2	Typical
9	U009	N012	N018		(2) 1/2 U-Bolts	Beam	None	SAE J429 Gr. 2	Typical
10	U010	N019	N020		(2) 1/2 U-Bolts	Beam	None	SAE J429 Gr. 2	Typical
11	U011	N013	N021		(2) 1/2 U-Bolts	Beam	None	SAE J429 Gr. 2	Typical
12	U012	N022	N023		(2) 1/2 U-Bolts	Beam	None	SAE J429 Gr. 2	Typical
13	U013	N014	N024		(2) 1/2 U-Bolts	Beam	None	SAE J429 Gr. 2	Typical
14	U014	N025	N026		(2) 1/2 U-Bolts	Beam	None	SAE J429 Gr. 2	Typical
15	H015	N047	N028	90	PL3.5x0.5	Beam	None	A36	Typical
16	H016	N048	N029	90	PL3.5x0.5	Beam	None	A36	Typical
17	H017	N006	N027		RIGID	None	None	RIGID	Typical
18	H018	N045	N031	90	PL3.5x0.5	Beam	None	A36	Typical
19	H019	N046	N032	90	PL3.5x0.5	Beam	None	A36	Typical
20	H020	N001	N030		RIGID	None	None	RIGID	Typical
21	H021	N005	N034	90	PL3.5x0.5	Beam	None	A36	Typical
22	H022	N004	N033	90	PL3.5x0.5	Beam	None	A36	Typical
23	D023	N038	N035		SR 0.75	Column	None	A36	Typical
24	V024	N035	N036		SR 0.625	Column	None	A36	Typical
25	D025	N036	N037		SR 0.75	Column	None	A36	Typical
26	V026	N037	N038		SR 0.625	Column	None	A36	Typical
27	V027	N039	N040		SR 0.625	Column	None	A36	Typical
28	V028	N041	N042		SR 0.625	Column	None	A36	Typical
29	D029	N042	N039		SR 0.75	Column	None	A36	Typical
30	D030	N040	N041		SR 0.75	Column	None	A36	Typical
31	H031	N010	N044	90	PL3.5x0.5	Beam	None	A36	Typical
32	H032	N009	N043	90	PL3.5x0.5	Beam	None	A36	Typical
33	H033	N047	N048		RIGID	None	None	RIGID	Typical
34	H034	N045	N046		RIGID	None	None	RIGID	Typical
35	TB035	N050	N049		PIPE 2.0	Beam	None	A53 Gr. B	Typical
36	TB036	N051	N052		PIPE 2.0	Beam	None	A53 Gr. B	Typical
37	MP037	N053	N054		PIPE 2.0	Column	None	A53 Gr. B	Typical
38	MP038	N055	N056		PIPE 2.0	Column	None	A53 Gr. B	Typical
39	MP039	N057	N058		PIPE 2.0	Column	None	A53 Gr. B	Typical
40	MP040	N059	N060		PIPE 2.0	Column	None	A53 Gr. B	Typical

Member Advanced Data

	Label	J Release	T/C Only	Physical	Deflection Ratio Options	Activation	Seismic DR
1	H001			Yes	N/A		None
2	H002			Yes	N/A		None



Member Advanced Data (Continued)

	Label	J Release	T/C Only	Physical	Deflection Ratio Options	Activation	Seismic DR
3	H003			Yes	N/A		None
4	H004			Yes	N/A		None
5	H005			Yes	N/A		None
6	H006			Yes	N/A		None
7	U007			Yes	N/A	Exclude	None
8	U008			Yes	N/A	Exclude	None
9	U009			Yes	N/A	Exclude	None
10	U010			Yes	N/A	Exclude	None
11	U011			Yes	N/A	Exclude	None
12	U012			Yes	N/A	Exclude	None
13	U013			Yes	N/A	Exclude	None
14	U014			Yes	N/A	Exclude	None
15	H015			Yes	N/A		None
16	H016			Yes	N/A		None
17	H017			Yes	** NA **		None
18	H018			Yes	N/A		None
19	H019			Yes	N/A		None
20	H020			Yes	** NA **		None
21	H021	BenPIN		Yes	N/A		None
22	H022	BenPIN		Yes	N/A		None
23	D023		Tension Only	Yes	** NA **		None
24	V024			Yes	** NA **		None
25	D025		Tension Only	Yes	** NA **		None
26	V026			Yes	** NA **		None
27	V027			Yes	** NA **		None
28	V028			Yes	** NA **		None
29	D029		Tension Only	Yes	** NA **		None
30	D030		Tension Only	Yes	** NA **		None
31	H031	BenPIN		Yes	N/A		None
32	H032	BenPIN		Yes	N/A		None
33	H033			Yes	** NA **		None
34	H034			Yes	** NA **		None
35	TB035	BenPIN		Yes	N/A		None
36	TB036	BenPIN		Yes	N/A		None
37	MP037			Yes	** NA **		None
38	MP038			Yes	** NA **		None
39	MP039			Yes	** NA **		None
40	MP040			Yes	** NA **		None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function
1	H001	PIPE 2.5	150				Lbyy	1	1	Lateral
2	H002	PIPE 2.0	33.941				Lbyy	0.8	1	Lateral
3	H003	PIPE 2.0	33.941				Lbyy	0.8	1	Lateral
4	H004	PIPE 2.5	150				Lbyy	1	1	Lateral
5	H005	PIPE 2.0	33.941				Lbyy	0.8	1	Lateral
6	H006	PIPE 2.0	33.941				Lbyy	0.8	1	Lateral
7	U007	(2) 1/2 U-Bolts	3				Lbyy	0.5	0.5	Lateral
8	U008	(2) 1/2 U-Bolts	3				Lbyy	0.5	0.5	Lateral
9	U009	(2) 1/2 U-Bolts	3				Lbyy	0.5	0.5	Lateral
10	U010	(2) 1/2 U-Bolts	3				Lbyy	0.5	0.5	Lateral
11	U011	(2) 1/2 U-Bolts	3				Lbyy	0.5	0.5	Lateral
12	U012	(2) 1/2 U-Bolts	3				Lbyy	0.5	0.5	Lateral
13	U013	(2) 1/2 U-Bolts	3				Lbyy	0.5	0.5	Lateral
14	U014	(2) 1/2 U-Bolts	3				Lbyy	0.5	0.5	Lateral



Hot Rolled Steel Design Parameters (Continued)

Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function	
15	H015	PL3.5x0.5	3			Lbyy	2.1	2.1	Lateral	
16	H016	PL3.5x0.5	3			Lbyy	2.1	2.1	Lateral	
17	H018	PL3.5x0.5	3			Lbyy	2.1	2.1	Lateral	
18	H019	PL3.5x0.5	3			Lbyy	2.1	2.1	Lateral	
19	H021	PL3.5x0.5	3			Lbyy	2.1	2.1	Lateral	
20	H022	PL3.5x0.5	3			Lbyy	2.1	2.1	Lateral	
21	D023	SR 0.75	47.434			Lbyy	0.65	0.65	Lateral	
22	V024	SR 0.625	39			Lbyy	0.65	0.65	Lateral	
23	D025	SR 0.75	47.434			Lbyy	0.65	0.65	Lateral	
24	V026	SR 0.625	39			Lbyy	0.65	0.65	Lateral	
25	V027	SR 0.625	39			Lbyy	0.65	0.65	Lateral	
26	V028	SR 0.625	39			Lbyy	0.65	0.65	Lateral	
27	D029	SR 0.75	47.434			Lbyy	0.65	0.65	Lateral	
28	D030	SR 0.75	47.434			Lbyy	0.65	0.65	Lateral	
29	H031	PL3.5x0.5	3			Lbyy	2.1	2.1	Lateral	
30	H032	PL3.5x0.5	3			Lbyy	2.1	2.1	Lateral	
31	TB035	PIPE 2.0	84.149			Lbyy	1	1	Lateral	
32	TB036	PIPE 2.0	84.149			Lbyy	1	1	Lateral	
33	MP037	PIPE 2.0	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
34	MP038	PIPE 2.0	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
35	MP039	PIPE 2.0	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
36	MP040	PIPE 2.0	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral

Hot Rolled Steel Properties

Label	E [psi]	G [psi]	Nu	Therm. Coeff. [1e ⁵ F ⁻¹]	Density [lb/ft ³]	Yield [psi]	Ry	Fu [psi]	Rt	
1	A53 Gr. B	2.9e+07	1.115e+07	0.3	0.65	490	35000	1.6	60000	1.2
2	SAE J429 Gr. 2	2.9e+07	1.115e+07	0.3	0.65	490	57000	1.1	74000	1.1
3	A36	2.9e+07	1.115e+07	0.3	0.65	490	36000	1.5	58000	1.2

Envelope Node Reactions

Node Label	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC		
1	N001	max	819.624	110	1684.927	26	368.132	16	-123.711	20	0	117	458.661	81
2		min	-1766.583	80	302.381	20	-2475.997	34	-834.285	26	0	1	-200.014	111
3	N006	max	1741.048	74	1172.721	32	2418.479	27	-59.839	14	0	117	304.395	77
4		min	-794.895	116	169.693	14	-110.224	22	-583.829	32	0	1	-129.014	107
5	N050	max	83.695	13	47.227	30	1576.722	13	0	117	0	117	0	117
6		min	-77.128	19	10.171	25	-1440.789	19	0	1	0	1	0	1
7	N051	max	35.463	25	47.709	30	760.762	25	0	117	0	117	0	117
8		min	-45.652	7	10.678	25	-918.393	7	0	1	0	1	0	1
9	Totals:	max	1438.71	18	2875.609	32	1852.261	14						
10		min	-1438.71	24	739.195	24	-1852.261	20						

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

Member	Shape	Code Check	Loc[in]	LC	Shear	Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
1	H001	PIPE 2.5	0.488	40.625	8	0.182	40.625	7	14558.792	50715	3596.25	3596.25	1.717	H1-1b	
2	H002	PIPE 2.0	0.208	30.052	107	0.09	0	107	29191.323	32130	1871.625	1871.625	1.967	H1-1b	
3	H003	PIPE 2.0	0.336	30.052	37	0.166	0	37	29191.323	32130	1871.625	1871.625	1.98	H1-1b	
4	H004	PIPE 2.5	0.419	43.75	26	0.079	39.062	2	14558.792	50715	3596.25	3596.25	1.763	H1-1b	
5	H005	PIPE 2.0	0.231	29.698	112	0.077	30.052	99	29191.323	32130	1871.625	1871.625	1.988	H1-1b	
6	H006	PIPE 2.0	0.369	29.698	31	0.133	30.052	33	29191.323	32130	1871.625	1871.625	2	H1-1b	
7	H015	PL3.5x0.5	0.392	0	28	0.123	3	y	86	51289.202	56700	590.625	4134.375	1.62	H1-1b
8	H016	PL3.5x0.5	0.217	0	107	0.088	3	y	101	51289.202	56700	590.625	4134.375	1.732	H1-1b



Company : American Tower Corp.
 Designer : Charles.Faulkner
 Job Number : 14101206_C8_01
 Model Name : 411217, ASHFORD CT

4/21/2022
 1:52:52 PM
 Checked By : -

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

Member	Shape	Code	Check	Loc[in]	LC	Shear	Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
9	H018	PL3.5x0.5	0.54	0	34	0.116	3	y	92	51289.202	56700	590.625	4134.375	1.627	H1-1b	
10	H019	PL3.5x0.5	0.304	0	113	0.085	3	y	95	51289.202	56700	590.625	4134.375	1.745	H1-1b	
11	H021	PL3.5x0.5	0.432	0	37	0.438	0	y	36	51289.202	56700	590.625	4134.375	1.667	H1-1b	
12	H022	PL3.5x0.5	0.253	0	107	0.309	0	y	108	51289.202	56700	590.625	4134.375	1.667	H1-1b	
13	D023	SR_0.75	0.148	47.434	108	0.004	0		26	3691.013	14313.882	178.924	178.924	2.526	H1-1b*	
14	V024	SR_0.625	0.312	0	110	0.003	39		35	2633.14	9940.196	103.544	103.544	2.29	H1-1a	
15	D025	SR_0.75	0.008	47.434	78	0.005	0		78	3691.013	14313.882	178.924	178.924	2.441	H1-1b*	
16	V026	SR_0.625	0.386	39	106	0.007	39		78	2633.14	9940.196	103.544	103.544	2.265	H1-1a	
17	V027	SR_0.625	0.515	0	34	0.003	0		35	2633.14	9940.196	103.544	103.544	2.667	H1-1a	
18	V028	SR_0.625	0.645	39	26	0.01	0		78	2633.14	9940.196	103.544	103.544	2.268	H1-1a	
19	D029	SR_0.75	0.239	47.434	35	0.012	0		30	3691.013	14313.882	178.924	178.924	2.777	H1-1a*	
20	D030	SR_0.75	0	47.434	117	0	47.434		117	3691.013	14313.882	178.924	178.924	1	H1-1a	
21	H031	PL3.5x0.5	0.452	0	31	0.463	0	y	30	51289.202	56700	590.625	4134.375	1.667	H1-1b	
22	H032	PL3.5x0.5	0.266	0	112	0.33	0	y	114	51289.202	56700	590.625	4134.375	1.667	H1-1b	
23	TB035	PIPE 2.0	0.089	0	13	0.005	84.149		35	17817.957	32130	1871.625	1871.625	1.136	H1-1b*	
24	TB036	PIPE 2.0	0.052	42.074	30	0.005	84.149		29	17817.957	32130	1871.625	1871.625	1.136	H1-1b	
25	MP037	PIPE 2.0	0.511	43.312	13	0.082	44.625		13	16038.266	32130	1871.625	1871.625	2.173	H1-1b	
26	MP038	PIPE 2.0	0.183	44.625	8	0.025	44.625		33	18380.609	32130	1871.625	1871.625	3	H1-1b	
27	MP039	PIPE 2.0	0.126	44.625	111	0.024	81.375		33	18380.609	32130	1871.625	1871.625	2.271	H1-1b	
28	MP040	PIPE 2.0	0.291	81.375	116	0.037	81.375		116	18380.609	32130	1871.625	1871.625	3	H1-1b	

Exhibit G

Power Density/RF Emissions Report



Radio Frequency Exposure Analysis Report

May 4, 2022

Centerline on behalf of T-Mobile
Centerline Communications Project Number: N/A

T-Mobile Site Name: CTNL145_Underserved_ATC_SST
Site Number: CTNL145A

Site Address: 353 Pumpkin Hill Road, Ashford, CT 06378

Site Compliance Summary

T-Mobile Compliance Status:	Compliant
Cumulative Calculated Power Density (Ground Level):	17.40087 $\mu\text{W}/\text{cm}^2$
Cumulative General Population % MPE (Ground Level):	1.74011%



May 4, 2022

Centerline
Attn: Ryan Clark, Site Acquisition Consultant
750 W Center St, Suite 301
West Bridgewater, MA 02379

RF Exposure Analysis for Site: **CTNL145_Underserved_ATC_SST**

Centerline Communications, LLC ("Centerline") was contracted to analyze the proposed T-Mobile facility at **353 Pumpkin Hill Road, Ashford, CT 06378** for the purpose of determining whether the predictive exposure from the proposed facility is within specified federal limits.

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

All results were compared to the FCC radio frequency exposure rules as detailed in 47 CFR § 1.1307(b) to determine compliance with the MPE limits for General Population/Uncontrolled environments as defined below.

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

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits, as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means. Additional details can be found in FCC OET 65.



Calculation Methodology

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

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



Data & Results

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

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

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



Maximum Calculated Cumulative Power Density (Location: approximately 615' southwest of site)

Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/Channel (watts)	ERP (watts)	Calculated Power Density ($\mu\text{W}/\text{cm}^2$)	General Population MPE Limit ($\mu\text{W}/\text{cm}^2$)	General Population % MPE
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	700	13.65	214.00	2.00	40.00	1853.92	0.00000	466.67	0.00000
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	600	12.95	214.00	4.00	60.00	4733.81	0.00000	400.00	0.00000
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	600	12.95	214.00	2.00	40.00	1577.94	0.00000	400.00	0.00000
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	1900	15.45	214.00	2.00	140.00	9821.05	0.00000	1000.00	0.00000
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	2100	16.45	214.00	2.00	140.00	12363.97	0.00000	1000.00	0.00000
T-Mobile A 2	ERICSSON AIR6419 LTE*	2500	22.35	214.00	2.00	80.00	27486.53	0.11755	1000.00	0.01176
T-Mobile A 2	ERICSSON AIR6419 NR*	2500	22.35	214.00	2.00	80.00	27486.53	0.11755	1000.00	0.01176
T-Mobile B 3	RFS APXVAALL24 43-U-NA20	700	13.65	214.00	2.00	40.00	1853.92	0.00000	466.67	0.00000
T-Mobile B 3	RFS APXVAALL24 43-U-NA20	600	12.95	214.00	4.00	60.00	4733.81	0.00000	400.00	0.00000
T-Mobile B 3	RFS APXVAALL24 43-U-NA20	600	12.95	214.00	2.00	40.00	1577.94	0.00000	400.00	0.00000
T-Mobile B 3	RFS APXVAALL24 43-U-NA20	1900	15.45	214.00	2.00	140.00	9821.05	0.00000	1000.00	0.00000
T-Mobile B 3	RFS APXVAALL24 43-U-NA20	2100	16.45	214.00	2.00	140.00	12363.97	0.00000	1000.00	0.00000
T-Mobile B 4	ERICSSON AIR6419 LTE*	2500	22.35	214.00	2.00	80.00	27486.53	0.12566	1000.00	0.01257
T-Mobile B 4	ERICSSON AIR6419 NR*	2500	22.35	214.00	2.00	80.00	27486.53	0.12566	1000.00	0.01257
T-Mobile C 5	RFS APXVAALL24 43-U-NA20	700	13.65	214.00	2.00	40.00	1853.92	0.00001	466.67	0.00000
T-Mobile C 5	RFS APXVAALL24 43-U-NA20	600	12.95	214.00	4.00	60.00	4733.81	0.00003	400.00	0.00001
T-Mobile C 5	RFS APXVAALL24 43-U-NA20	600	12.95	214.00	2.00	40.00	1577.94	0.00001	400.00	0.00000
T-Mobile C 5	RFS APXVAALL24 43-U-NA20	1900	15.45	214.00	2.00	140.00	9821.05	0.00003	1000.00	0.00000
T-Mobile C 5	RFS APXVAALL24 43-U-NA20	2100	16.45	214.00	2.00	140.00	12363.97	0.00004	1000.00	0.00000
T-Mobile C 6	ERICSSON AIR6419 LTE*	2500	22.35	214.00	2.00	80.00	27486.53	8.45686	1000.00	0.84569
T-Mobile C 6	ERICSSON AIR6419 NR*	2500	22.35	214.00	2.00	80.00	27486.53	8.45686	1000.00	0.84569
Verizon A 7	COMMSCOPE LNX-6514DS-VTM	850	13.85	240.00	7.00	20.00	3396.47	0.00000	566.67	0.00000
Verizon A 8	JMA MX06FRO660-03	700	12.05	240.00	2.00	40.00	1282.60	0.00000	466.67	0.00000
Verizon A 8	JMA MX06FRO660-03	850	12.05	240.00	2.00	40.00	1282.60	0.00000	566.67	0.00000
Verizon A 8	JMA MX06FRO660-03	1900	15.75	240.00	4.00	40.00	6013.40	0.00000	1000.00	0.00000
Verizon A 9	JMA MX06FRO660-03	700	12.05	240.00	2.00	40.00	1282.60	0.00000	466.67	0.00000
Verizon A 9	JMA MX06FRO660-03	850	12.05	240.00	2.00	40.00	1282.60	0.00000	566.67	0.00000
Verizon A 9	JMA MX06FRO660-03	2100	16.05	240.00	4.00	40.00	6443.47	0.00000	1000.00	0.00000
Verizon A 10	SAMSUNG MT6407	3700	23.34	240.00	4.00	50.00	43154.89	0.00001	1000.00	0.00000
Verizon A 11	COMMSCOPE LNX-6514DS-VTM	850	13.85	240.00	7.00	20.00	3396.47	0.00000	566.67	0.00000
Verizon B 12	COMMSCOPE LNX-6514DS-VTM	850	13.85	240.00	7.00	20.00	3396.47	0.00000	566.67	0.00000



Verizon B 13	JMA MX06FRO660-03	700	12.05	240.00	2.00	40.00	1282.60	0.00000	466.67	0.00000
Verizon B 13	JMA MX06FRO660-03	850	12.05	240.00	2.00	40.00	1282.60	0.00000	566.67	0.00000
Verizon B 13	JMA MX06FRO660-03	1900	15.75	240.00	4.00	40.00	6013.40	0.00000	1000.00	0.00000
Verizon B 14	JMA MX06FRO660-03	700	12.05	240.00	2.00	40.00	1282.60	0.00000	466.67	0.00000
Verizon B 14	JMA MX06FRO660-03	850	12.05	240.00	2.00	40.00	1282.60	0.00000	566.67	0.00000
Verizon B 14	JMA MX06FRO660-03	2100	16.05	240.00	4.00	40.00	6443.47	0.00000	1000.00	0.00000
Verizon B 15	SAMSUNG MT6407	3700	23.34	240.00	4.00	50.00	43154.89	0.00001	1000.00	0.00000
Verizon B 16	COMMSCOPE LNX-6514DS-VTM	850	13.85	240.00	7.00	20.00	3396.47	0.00000	566.67	0.00000
Verizon C 17	COMMSCOPE LNX-6514DS-VTM	850	13.85	240.00	7.00	20.00	3396.47	0.00001	566.67	0.00000
Verizon C 18	JMA MX06FRO660-03	700	12.05	240.00	2.00	40.00	1282.60	0.00001	466.67	0.00000
Verizon C 18	JMA MX06FRO660-03	850	12.05	240.00	2.00	40.00	1282.60	0.00002	566.67	0.00000
Verizon C 18	JMA MX06FRO660-03	1900	15.75	240.00	4.00	40.00	6013.40	0.00002	1000.00	0.00000
Verizon C 19	JMA MX06FRO660-03	700	12.05	240.00	2.00	40.00	1282.60	0.00001	466.67	0.00000
Verizon C 19	JMA MX06FRO660-03	850	12.05	240.00	2.00	40.00	1282.60	0.00002	566.67	0.00000
Verizon C 19	JMA MX06FRO660-03	2100	16.05	240.00	4.00	40.00	6443.47	0.00003	1000.00	0.00000
Verizon C 20	SAMSUNG MT6407	3700	23.34	240.00	4.00	50.00	43154.89	0.00036	1000.00	0.00004
Verizon C 21	COMMSCOPE LNX-6514DS-VTM	850	13.85	240.00	7.00	20.00	3396.47	0.00001	566.67	0.00000
AT&T A 22	POWERWAVE 7770 00	850	11.35	205.00	1.00	40.00	545.83	0.00000	566.67	0.00000
AT&T A 23	POWERWAVE 7770 00	850	11.35	205.00	1.00	40.00	545.83	0.00000	566.67	0.00000
AT&T A 24	CCI HPA-65R-BUU-H8	700	13.35	205.00	4.00	40.00	3460.35	0.00000	466.67	0.00000
AT&T A 24	CCI HPA-65R-BUU-H8-	1900	14.75	205.00	4.00	40.00	4776.61	0.00000	1000.00	0.00000
AT&T A 24	CCI HPA-65R-BUU-H8-	2100	15.25	205.00	4.00	40.00	5359.45	0.00000	1000.00	0.00000
AT&T A 24	CCI HPA-65R-BUU-H8-	2300	14.95	205.00	4.00	25.00	3126.08	0.00000	1000.00	0.00000
AT&T B 25	POWERWAVE 7770 00	850	11.35	205.00	1.00	40.00	545.83	0.00000	566.67	0.00000
AT&T B 26	POWERWAVE 7770 00	850	11.35	205.00	1.00	40.00	545.83	0.00000	566.67	0.00000
AT&T B 27	CCI HPA-65R-BUU-H8	700	13.35	205.00	4.00	40.00	3460.35	0.00000	466.67	0.00000
AT&T B 27	CCI HPA-65R-BUU-H8-	1900	14.75	205.00	4.00	40.00	4776.61	0.00000	1000.00	0.00000
AT&T B 27	CCI HPA-65R-BUU-H8-	2100	15.25	205.00	4.00	40.00	5359.45	0.00000	1000.00	0.00000
AT&T B 27	CCI HPA-65R-BUU-H8-	2300	14.95	205.00	4.00	25.00	3126.08	0.00000	1000.00	0.00000
AT&T C 28	POWERWAVE 7770 00	850	11.35	205.00	1.00	40.00	545.83	0.00000	566.67	0.00000
AT&T C 29	POWERWAVE 7770 00	850	11.35	205.00	1.00	40.00	545.83	0.00000	566.67	0.00000
AT&T C 30	CCI HPA-65R-BUU-H8	700	13.35	205.00	4.00	40.00	3460.35	0.00003	466.67	0.00001
AT&T C 30	CCI HPA-65R-BUU-H8-	1900	14.75	205.00	4.00	40.00	4776.61	0.00002	1000.00	0.00000
AT&T C 30	CCI HPA-65R-BUU-H8-	2100	15.25	205.00	4.00	40.00	5359.45	0.00002	1000.00	0.00000



AT&T C 30	CCI HPA-65R-BUU-H8-	2300	14.95	205.00	4.00	25.00	3126.08	0.00001	1000.00	0.00000
Unknown A 31	GENERIC OMNI 12FT	850	8.96	184.70	1.00	12.70	99.95	0.00000	566.67	0.00000
Unknown A 32	GENERIC OMNI 12FT	850	8.96	179.90	1.00	12.00	94.45	0.00000	566.67	0.00000
							Cumulative Power Density:	17.40087 $\mu\text{W}/\text{cm}^2$	Cumulative % MPE:	1.74011%

** Antenna patterns for the Ericsson AIR 6419 were not available. The Ericsson AIR 6449 was used as a substitute.*



Summary

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

Katrina Styx
RF EME Technical Writer
Centerline Communications, LLC

A handwritten signature in black ink, appearing to read "Katrina Styx", is positioned below the typed name and title.

Exhibit H

Mailing Receipts/Proof of Notice



< Back to Shipping History



Your shipment from
CENTERLINE SITE ACQUISITION

Estimated delivery

Monday, June 20 **between** 9:45 A.M. - 11:45 A.M.



Label Created



On the Way

Out for Delivery

Delivery

Ship To

AMERICAN TOWER CORPORATION
LAND MANAGEMENT
10 PRESIDENTIAL WAY
WOBURN, MA 018011053 US

Get Updates >

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Your shipment from
CENTERLINE SITE ACQUISITION

Estimated delivery

Monday, June 20 **between** 9:00 A.M. - 12:00 P.M.



Label Created



On the Way

Out for Delivery

Delivery

Ship To

FIRST SELECTWOMAN
CATHRYN SILVER
5 TOWN HALL ROAD
ASHFORD, CT 062781530 US

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Your shipment from
CENTERLINE SITE ACQUISITION

Estimated delivery

Monday, June 20 **between** 9:00 A.M. - 12:00 P.M.



Label Created



On the Way

Out for Delivery

Delivery

Ship To

TOWN OF ASHFORD
PLANNING & ZONING
5 TOWN HALL RD
ASHFORD, CT 062781530 US

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Your shipment from
CENTERLINE SITE ACQUISITION

Estimated delivery
Thursday, June 23 by 7:00 P.M.



Label Created



On the Way

Out for Delivery

Delivery

Ship To

THE ESTATE OF IRENE BUNTE
P.O. BOX 2549
ADDISON, TX 750012574 US

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Ask UPS

UPS CampusShip: View/Print Label

1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.
2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

3. GETTING YOUR SHIPMENT TO UPS

Customers with a Daily Pickup

Your driver will pickup your shipment(s) as usual.

Customers without a Daily Pickup

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

Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages.




Hand the package to any UPS driver in your area.

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 146 SOUTH ST
 DANBURY ,CT 06810

UPS Access Point™
 TIENDA ECUADOR
 72 LAKE AVE
 DANBURY ,CT 06810

UPS Access Point™
 THE UPS STORE
 42 LAKE AVENUE EXT
 DANBURY ,CT 06811

FOLD HERE

<p>RYAN CLARK CENTERLINE COMMUNICATIONS, LLC 117 CAROL STREET DANBURY CT 06810-8312</p> <p>SHIP TO: LAND MANAGEMENT 7814287250 AMERICAN TOWER CORPORATION 10 PRESIDENTIAL WAY WOBURN MA 01801-1053</p>	<p>1 LBS 1 OF 1 DWT: 14.12.1</p> <p>MA 018 9-04</p> 	<p>UPS GROUND</p> <p>TRACKING #: 1Z 9Y4 503 03 3347 9383</p> 	<p>BILLING: P/P</p>  <p>CS 22.9.00. WNTNV50 25-DA 06/2022*</p>
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<p>1 LBS 1 OF 1 DWT: 14,14,1</p> <p>RYAN CLARK CENTERLINE COMMUNICATIONS, LLC 117 CAROL STREET DANBURY CT 06810-8312</p> <p>SHIP TO: CATHRYN SILVER FIRST SELECTWOMAN 5 TOWN HALL ROAD ASHFORD CT 06278-1530</p>	<p>CT 063 0-01</p> 	<p>UPS GROUND</p> <p>TRACKING #: 1Z 9Y4 503 03 3759 9602</p> 	<p>BILLING: P/P</p>  <p>CS 22.9.00. WNTNV50 25-DA 06/2022*</p>
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- 1. Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.
- 2. Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.
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<p>RYAN CLARK CENTERLINE COMMUNICATIONS, LLC 117 CAROL STREET DANBURY CT 06810-8312</p> <p>SHIP TO: PLANNING & ZONING TOWN OF ASHFORD 5 TOWN HALL RD ASHFORD CT 06278-1530</p>	<p>1 LBS DWT: 14,14,1</p> <p>1 OF 1</p>	<p>CT 063 0-01</p> 	<p>UPS GROUND TRACKING #: 1Z 9Y4 503 03 3709 9214</p> 	<p>BILLING: P/P</p>  <p>CS 22.9.00. WNTNV50 25-DA 06/2022*</p>
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- 2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

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<p>RYAN CLARK CENTERLINE COMMUNICATIONS, LLC 117 CAROL STREET DANBURY CT 06810-8312</p> <p>SHIP TO: THE ESTATE OF IRENE BUNTE P.O. BOX 2549 ADDISON TX 75001-2574</p>	<p>1 LBS 1 OF 1 DWT: 14.12.1</p> <p>TX 752 9-53</p> 	<p>UPS GROUND TRACKING #: 1Z 9Y4 503 03 1067 8791</p> 	<p>BILLING: P/P</p>  <p>CS 22.9.00. WNTNV50 25-DA 06/2022*</p>
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