

10 INDUSTRIAL AVE,
SUITE 3
MAHWAH NJ 07430
PHONE: 201.684.0055
FAX: 201.684.0066



September 2, 2021

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

RE: Notice of Exempt Modification
10 (AKA 119) Tanner Marsh Road, Guilford, CT
Latitude: 41.288776
Longitude: -72.658378
T-Mobile Site#: CT11028A – Anchor

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 177-foot level of the existing 190-foot self-supported tower at 10 (AKA 119) Tanner Marsh Road, Guilford, CT. The 190-foot self-support tower is owned and operated by American Tower Corporation. The property is owned by the Town of Guilford. T-Mobile now intends to remove six (6) existing antennas and add three (3) new L2500/N2500 MHz antennas. The new antennas will be installed at the same 177'-foot level of the tower.

Planned Modifications:

Tower:

Remove

- (3) AIR21 B4A B2P Antennas
- (3) AIR21 B2A B4P Antennas
- (3) KRY112 114/1 TMAs
- (6) 1-5/8" Coax Cables
- (1) 1 1/4" Hybrid Cables
- (1) 1 1/4" Fiber Cables

Install New:

- (3) AIR6449 B41 Antennas
- (3) Radio 4460 B25+B66
- (3) 6 x 24 HCS Cables

Existing to Remain:

(3) RFS APRXVAALL24 43-U-NA20 Antennas

(3) Radio 4449 B71 B85

Ground:

Install New:

(1) Enclosure 6160 and (1) B160

This tower was originally approved by the Connecticut Siting Council in Docket #44 dated July 24, 1984. T-Mobile has been approved for subsequent modifications at their facility. This proposed modification complies with the original approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to First Selectman - Mathew Hoey III, Elected Official, and George Kral, Town Planner, as well as the tower and property owner.

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

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, T-Mobile respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Eric Breun

Transcend Wireless

Cell: 201-658-7728

Email: ebreun@transcendwireless.com

Attachments

cc: Matthew T. Hoey III – First Selectman of the Town of Guilford

George Kral – Town Planner

American Tower Corporation – Tower Owner

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
TOWN PLANNER
GEORGE KRAL
50 BOSTON STREET
GUILFORD CT 06437



CT 065 2-03



UPS GROUND

TRACKING #: 1Z V25 742 03 9479 2300



BILLING: P/P

Reference #1: CT11028A

XOL 21.07.05 NV45 35.0A 08/2021*



TM

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
FIRST SELECTMAN
MATTHEW HOEY III
31 PARK STREET
GUILFORD CT 06437



CT 065 2-03



UPS GROUND

TRACKING #: 1Z V25 742 03 9167 0296



BILLING: P/P

Reference #1: CT11028A

XOL 21.07.05 NV45 35.0A 08/2021*



TM

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
AMERICAN TOWER CORPORATION
10 PRESIDENTIAL WAY
WOBURN MA 01801



MA 018 9-04



UPS GROUND

TRACKING #: 1Z V25 742 03 9966 5304



BILLING: P/P

Reference #1: CT11028A



XOL 21.07.05 NV45 35.0A 08/2021*

TM

Property Summary Information

Parcel Data And Values

Sales

Parcel Information

Location:	10 TANNER MARSH RD	Map and Parcel:	049029A	Census Tract:	1901
Zoning:	I-1	Developer's Map:		Developer's Lot:	
Total Acreage:	.29	Farm, Forest, Open Space Acres:		Unique ID:	8721

Value Information

	Appraised Value	Assessed Value
Land	75,000	52,500
Buildings	0	0
Detached Outbuildings	0	0
Total	75,000	52,500

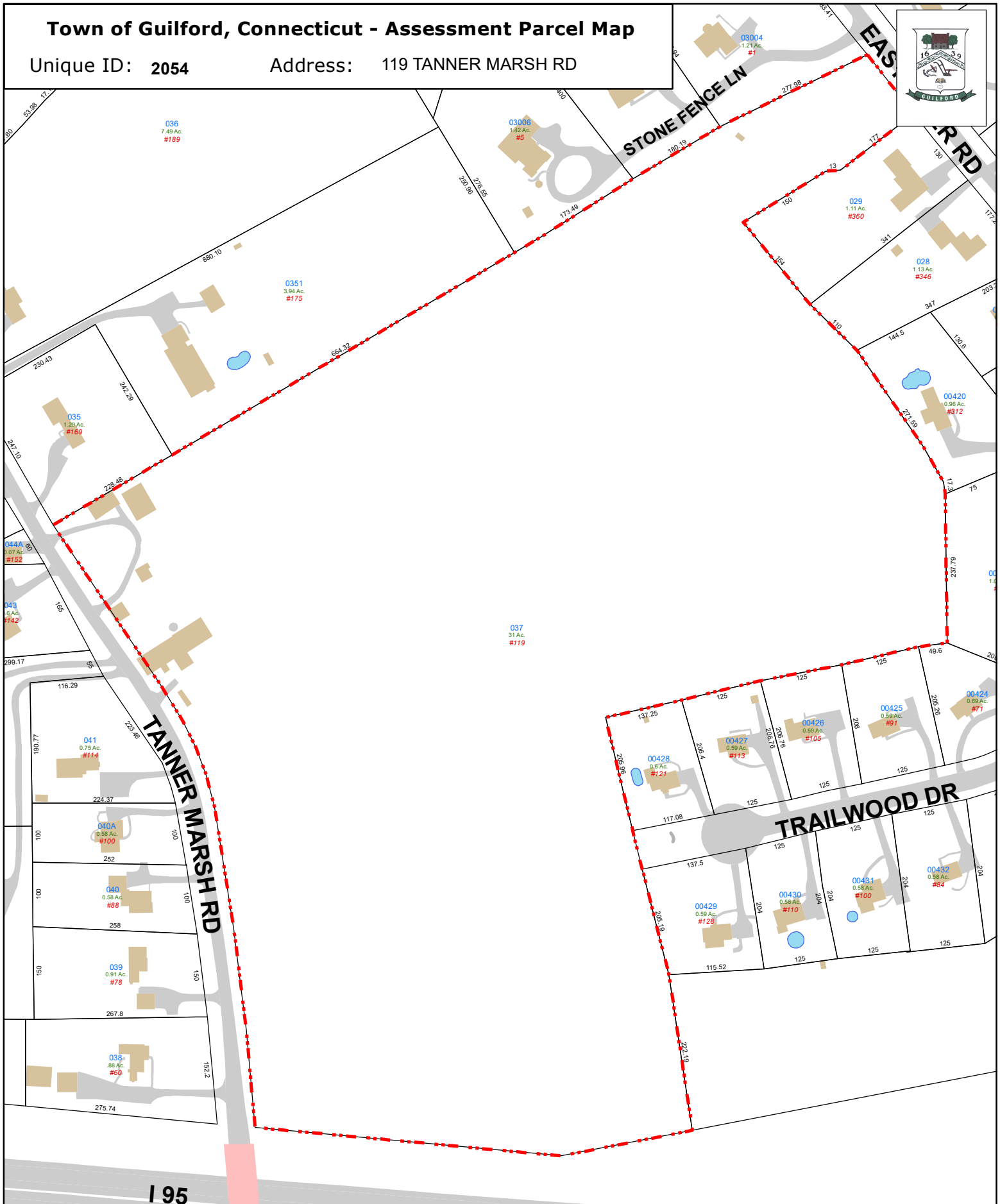
Owner's Information

Owner's Data
TOWN OF GUILFORD 31 PARK ST GUILFORD, CT 06437

Town of Guilford, Connecticut - Assessment Parcel Map

Unique ID: 2054

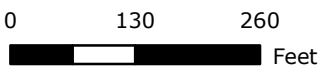
Address: 119 TANNER MARSH RD



I 95



Approximate Scale: 1 inch = 200 feet



Map Produced:
September 2020

Disclaimer:
This map is for informational purposes only.
All information is subject to verification by any user.
The Town of Guilford and its mapping contractors
assume no legal responsibility
for the information contained herein.

DOCKET NO. 44

AN APPLICATION SUBMITTED BY THE SOUTHERN : CONNECTICUT SITING
NEW ENGLAND TELEPHONE COMPANY FOR A :
CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY : COUNCIL
AND PUBLIC NEED FOR THE CONSTRUCTION,
MAINTENANCE AND OPERATION OF FACILITIES TO
PROVIDE CELLULAR SERVICE IN NEW HAVEN COUNTY : July 24, 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, revisions of 1958, revised to 1983, as amended, be issued to the Southern New England Telephone Company for the construction, operation, and maintenance of a telecommunications tower and associated equipment to provide cellular service at each of the following sites:

Jasudowich tract, Brushy Plain Road, Branford, Connecticut;
Town of Guilford tract, Tanner Marsh Road, Guilford, Connecticut;
Bridgeport Avenue, Milford, Connecticut;
Quagliaro tract, Farmdale Drive, Waterbury, Connecticut;
Pease Road, Woodbridge, Connecticut; and
Dwight Street, North Haven, 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 including antennas shall be no taller than necessary to provide the proposed service and in no event shall exceed
 - a) 167' at the Branford site,
 - b) 167' at the Guilford site,
 - c) 117' at the Milford site,
 - d) 167' at the Waterbury site,
 - e) 167' at the Woodbridge site,
 - f) 167' at the North Haven site;
2. A fence not lower than eight feet shall surround each tower and its associated equipment;

3. The applicant or its successor shall notify the Council if and when directional antennas or any other equipment is added to any of these facilities;
4. The applicant or its successor shall permit, in accordance with representations made by it during the proceeding, public or private entities to share space on the facilities, for due consideration received, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing;
5. Unless necessary to comply with condition number six, below, no lights shall be installed on any of these towers;
6. The facilities shall be constructed in accordance with all applicable federal, state, and municipal laws and regulations;
7. The applicant shall submit a development and management plan (D&M) for the Branford, Milford, Woodbridge, and North Haven sites pursuant to sections 16-50j-85 through 16-50j-87 of the regulations of state agencies, except that irrelevant items in section 16-50j-86 need only be identified as such. The D&M plans shall include appropriate evergreen screening of the sites, erosion control measures, reseeding plans, and tree removal plans. The applicant shall comply with the reporting requirements of section 16-50j-87 for all sites;
8. Construction activities shall take place during daylight working hours;
9. This decision and order shall be void and the towers and associated equipment approved herein shall be dismantled and removed, or reapplication for any new use shall be made to the Connecticut

Siting Council before any such new use is made, if the towers do not provide or permanently cease to provide cellular service following completion of construction;

10. 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, New Haven Register, and the Waterbury Republican.

The parties to this proceeding are

The Southern New England Telephone Company Room 314 227 Church Street New Haven, Connecticut 06506	(Applicant)
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ATTENTION: Mr. Peter J. Tyrrell Senior Attorney	(its attorney)
--	----------------

Town of Hamden Peter F. Villano, Mayor Shirley Gonzales, Town Planner	represented by: Mr. Hugh Manke, Esquire Office of the Town Attorney Memorial Town Hall 2372 Whitney Avenue Hamden, Connecticut 06518
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Inland Wetlands Agency Town of Woodbridge	represented by: Robert J. Klancko Chairman Town Hall 11 Meeting House Lane Woodbridge, Connecticut 06525
--	---

Town Plan and Zoning
Commission
Town of Woodbridge

represented by:

Norman Fineberg
Chairman
Town Hall
11 Meeting House Lane
Woodbridge, Connecticut 06525

The Honorable Peter M. Lerner
State Representative
State of Connecticut
House of Representatives
State Capitol
Hartford, Connecticut 06115

John Menta
Felicia Tencza

represented by:

Ms. Felicia Tencza
580 Gaylord Mountain Road
Hamden, Connecticut 06518

Ms. Renee Robinson
265 Blue Trail
Hamden, Connecticut 06518

(service waived)

Irene L. Wong
Edson H. Mount
Dr. & Mrs. H.M. Fiskio
Dr. & Mrs. Alexander Gottschalk

represented by:

Dr. & Mrs. Alexander Gottschalk
230 Six Rod Highway
Hamden, Connecticut 06518

The Sleeping Giant Park Association

represented by:

Mr. Dag Pfeiffer
President
Box 14
Quinnipiac College
Hamden, Connecticut 06518

West Rock Ridge Park Association

represented by:

Mr. William L. Dohney, Jr., D.D.S.
President
220 Mountain Road
Hamden, Connecticut 06514

Sierra Club

represented by:

Ms. M. Kim Yanoshick
Executive Director
Hartford Chapter
118 Oak Street
Hartford, Connecticut 06106

Quinnipiac College

represented by:

Mr. Richard A. Terry
President
Hamden, Connecticut 06518

Guilford Conservation Commission

represented by:

Ms. Carolyn K. Evans
Chairman
Town Hall
Park Street
Guilford, Connecticut 06437

Mrs. Barbara R. Peterson
Mary & Phil Faust
Anita L. & Richard M. Sullivan

represented by:

Anita L. & Richard M. Sullivan
315 Chestnut Lane
Hamden, Connecticut 06518

Mrs. Pauline H. Hoff

represented by:

Herbert L. Emanuelson, Jr.
Emanuelson and Wynne
205 Church Street
New Haven, Connecticut 06510

Hamden League of Women Voters

represented by:

Mrs. Sherrill Zoller
605 West Woods Road
Hamden, Connecticut 06518
(service waived)

Joan Rosenberg
230 Ridewood Avenue
Hamden, Connecticut 06517

Mr. & Mrs. Richard Sykes
110 Blue Trail
Hamden, Connecticut 06518

Thomas & Claudia Sullivan, Jr.
100 Blue Trail
Hamden, Connecticut 06518

Mr. William N. Pantalone
27 Pease Road
Woodbridge, Connecticut 06525

(service waived)

INTERVENORS

Metromedia TeleCommunications
Nutmeg Telecommunications, Inc.
CSI of New Haven
CSI of Stamford
Cellular Communications, Inc.
LIN Cellular Corp.
Cellular Mobile Services
Maxcell TeleCommunications, Inc.
Mobile Cellular Telephone, Inc.
Cellular Dynamics
Connecticut Corridor Cellular
Chase/Post Cellular

represented by:

Dwight A. Johnson
Murtha, Cullina, Richter
and Pinney
101 Pearl Street
P.O. Box 3197
Hartford, Connecticut 06103-0197

C E R T I F I C A T I O N

The undersigned members of the Connecticut Siting Council hereby certify that they have heard this case or read the record thereof, and that we voted as follows:

Dated at New Britain, Connecticut, this 24th day of July, 1984.

<u>Council Members</u>	<u>Vote Cast</u>
_____) Gloria Dibble Pond Chairperson	Absent
_____) Commissioner John Downey Designee: Commissioner Peter G. Boucher	Absent
_____) <i>Brian Emerick</i> Commissioner Stanley Pac Designee: Brian Emerick	Yes Absent Abstain
_____) <i>Owen L. Clark</i> Owen L. Clark	Yes
_____) <i>Fred J. Doocy</i> Fred J. Doocy	Yes
_____) <i>Mortimer A. Gelston</i> Mortimer A. Gelston	Yes
_____) <i>James G. Horsfall</i> James G. Horsfall	Yes
_____) Janet Sitty	Absent
_____) <i>Colin C. Tait</i> Colin C. Tait Acting Chairperson	Yes

STATE OF CONNECTICUT

)

:

COUNTY OF HARTFORD

)

ss. New Britain, July 24, 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

GENERAL CONSTRUCTION NOTES:

1.

OWNER FURNISHED MATERIALS, T-MOBILE "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL

A.

BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)

B.

AC/TELCO INTERFACE BOX (PPC)

C.

ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)

D.

TOWERS, MONOPOLES

E.

TOWER LIGHTING

F.

GENERATORS & LIQUID PROPANE TANK

G.

ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING

H.

ANTENNAS (INSTALLED BY OTHERS)

I.

TRANSMISSION LINE

J.

TRANSMISSION LINE JUMPERS

K.

TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS

L.

TRANSMISSION LINE GROUND KITS

M.

HANGERS

N.

HOISTING GRIPS

O.

BTS EQUIPMENT

2.

THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF T-MOBILE TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.

3.

ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS.

4.

CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.

5.

CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.

6.

ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.

7.

DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.

8.

DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.

9.

THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

10.

CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.

11.

CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.

12.

INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE T-MOBILE REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE T-MOBILE REP PRIOR TO PROCEEDING.

13.

EACH CONTRACTOR SHALL COOPERATE WITH THE T-MOBILE REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.

14.

CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE T-MOBILE CONSTRUCTION MANAGER.

15.

ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.

16.

WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE T-MOBILE REP AND ENGINEER OF RECORD IMMEDIATELY.

17.

CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.

18.

CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.

19.

CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AMERICAN TOWER CORPORATION (ATC) AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.

20.

CONTRACTOR SHALL FURNISH T-MOBILE AND AMERICAN TOWER CORPORATION (ATC) WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.

21.

PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.
22.

PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY T-MOBILE MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.

23.

CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH T-MOBILE SPECIFICATIONS AND REQUIREMENTS.

24.

CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO T-MOBILE FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.

25.

ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO T-MOBILE SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.

26.

THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

27.

CONTRACTOR SHALL NOTIFY T-MOBILE REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.

28.

CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.

29.

THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.

30.

ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE T-MOBILE REP. ANY WORK FOUND BY THE T-MOBILE REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.

31.

IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.

32.

T-MOBILE FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE T-MOBILE WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP.

33.

T-MOBILE OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OWN OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO T-MOBILE OR THEIR ARCHITECT/ENGINEER.

2.

ALL EXTERIOR #6 GREED GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPlice WEATHERPROOFING KIT #221213 OR EQUAL.
- 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.
- SPECIAL CONSTRUCTION
- ANTENNA INSTALLATION NOTES:
1.

WORK INCLUDED:

A.

ANTENNA AND COAXIAL CABLES ARE FURNISHED BY T-MOBILE UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OD COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL AND

B.

INSTALL ANTENNA AS INDICATE ON DRAWINGS AND T-MOBILE SPECIFICATIONS.

C.

INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS

D.

INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE AND PROVIDE PRINTOUT OF THAT TEST.

E.

CONTRACTOR SHALL PROVIDE FOUR (4) SETS OF SWEEP TESTS USING ANRITZU-PACKARD 8713B RF SCALAR NETWORK ANALYZER. SUBMIT FREQUENCY DOMAIN REFLECTOMETER(FDR) TESTS RESULTS TO THE PROJECT MANAGER. SWEEP TESTS SHALL BE AS PER ATTACHED RFS "MINIMUM FIELD TESTING RECOMMENDED FOR ANTENNA AND HELIAX COAXIAL CABLE SYSTEMS" DATED 10/5/93. TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.

F.

INSTALL COAXIAL CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTIONS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.

G.

ANTENNA AND COAXIAL CABLE GROUNDING:
- 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.
-
- Colliers

Engineering & Design

www.colliersengineering.com

Doing Business as

MASER CONSULTING

MADISON

135 New Road

Madison, CT 06443

Phone: 860.395.0055

COLLIERS ENGINEERING & DESIGN CT, P.C.

DOING BUSINESS AS MASER CONSULTING

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- | REV. | DESCRIPTION | BY | DATE |
|------|------------------|-----|----------|
| A | PRELIM | MPT | 08/12/21 |
| B | FOR CONSTRUCTION | RMD | 08/30/21 |
| | | | |
| | | | |
| | | | |
- ATC SITE NUMBER:
311305

ATC SITE NAME:
GLFD-GUILFORD REBUILD CT

T-MOBILE SITE NAME:
GUILFORD SNET MOBILIT_1

SITE ADDRESS:
10 TANNER MARSH ROAD
GUILFORD, CT 06437
- Seal

TEOF CONN
ALEC S. NORRIS
32588
PROFESSIONAL ENGINEER

Digitally signed by Alec Norris
Date: 2021.08.30 14:28:30-04'00'

Alec S. Norris
CONNECTICUT LICENSED PROFESSIONAL ENGINEER
LICENSE NUMBER: 32588
COLLIERS ENGINEERING & DESIGN CT, P.C.
C.T.JPC.0000131
-
- | | |
|--------------|-------------------------|
| DATE DRAWN: | 08/12/21 |
| ATC JOB NO: | 13711909_G3 |
| CUSTOMER ID: | GUILFORD SNET MOBILIT_1 |
| CUSTOMER #: | CT11028A |
- GENERAL NOTES
- | | |
|------------------------|----------------|
| SHEET NUMBER:
G-002 | REVISION:
0 |
|------------------------|----------------|
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SITE PLAN NOTES:

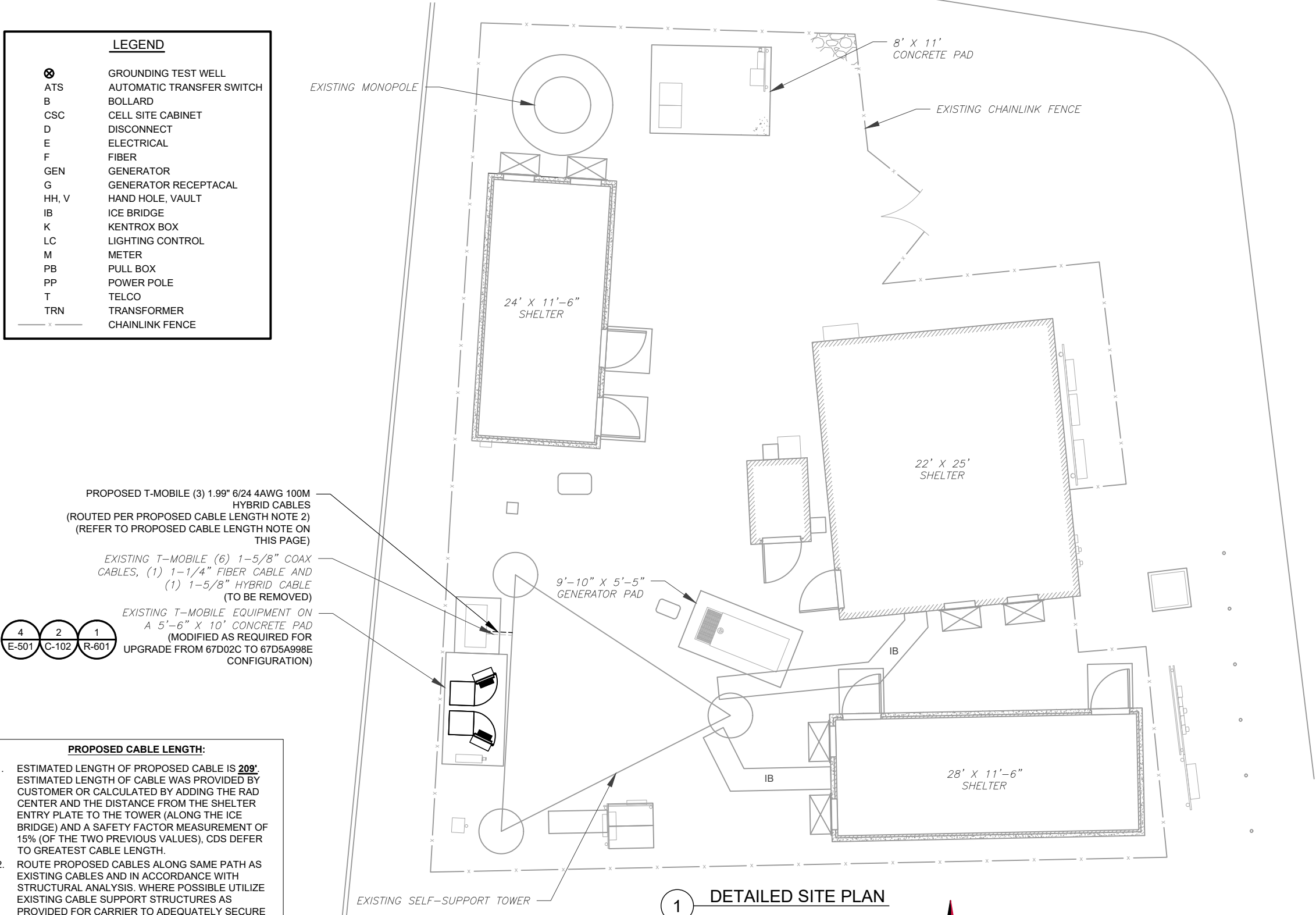
1.

THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2.

ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.
3.

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

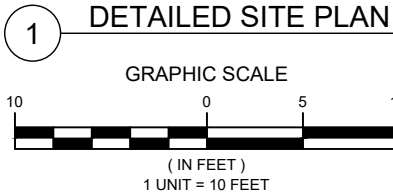
LEGEND	
⊗	GROUNDING TEST WELL
ATS	AUTOMATIC TRANSFER SWITCH
B	BOLLARD
CSC	CELL SITE CABINET
D	DISCONNECT
E	ELECTRICAL
F	FIBER
GEN	GENERATOR
G	GENERATOR RECEPTACAL
HH, V	HAND HOLE, VAULT
IB	ICE BRIDGE
K	KENTROX BOX
LC	LIGHTING CONTROL
M	METER
PB	PULL BOX
PP	POWER POLE
T	TELCO
TRN	TRANSFORMER
— x —	CHAINLINK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



- PROPOSED CABLE LENGTH:**
1.

ESTIMATED LENGTH OF PROPOSED CABLE IS **209'**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES). CDS DEFER TO GREATEST CABLE LENGTH.
2.

ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. WHERE POSSIBLE UTILIZE EXISTING CABLE SUPPORT STRUCTURES AS PROVIDED FOR CARRIER TO ADEQUATELY SECURE CABLES, USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER. OTHERWISE, ATTACH CABLES TO HORIZONTAL OR DIAGONAL TOWER MEMBERS USING PROPOSED STAINLESS STEEL ADAPTERS (DO NOT ATTACH TO TOWER LEG).



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REV.	DESCRIPTION	BY	DATE
A	PRELIM	MPT	08/12/21
0	FOR CONSTRUCTION	RMD	08/30/21

ATC SITE NUMBER:
311305

ATC SITE NAME:
GLFD-GUILFORD REBUILD CT

T-MOBILE SITE NAME:
GUILFORD SNET MOBILIT_1

SITE ADDRESS:
**10 TANNER MARSH ROAD
GUILFORD, CT 06437**

SEAL:
Digitally signed by Alec Norris
Date: 2021.08.30 14:28:32-04'00'

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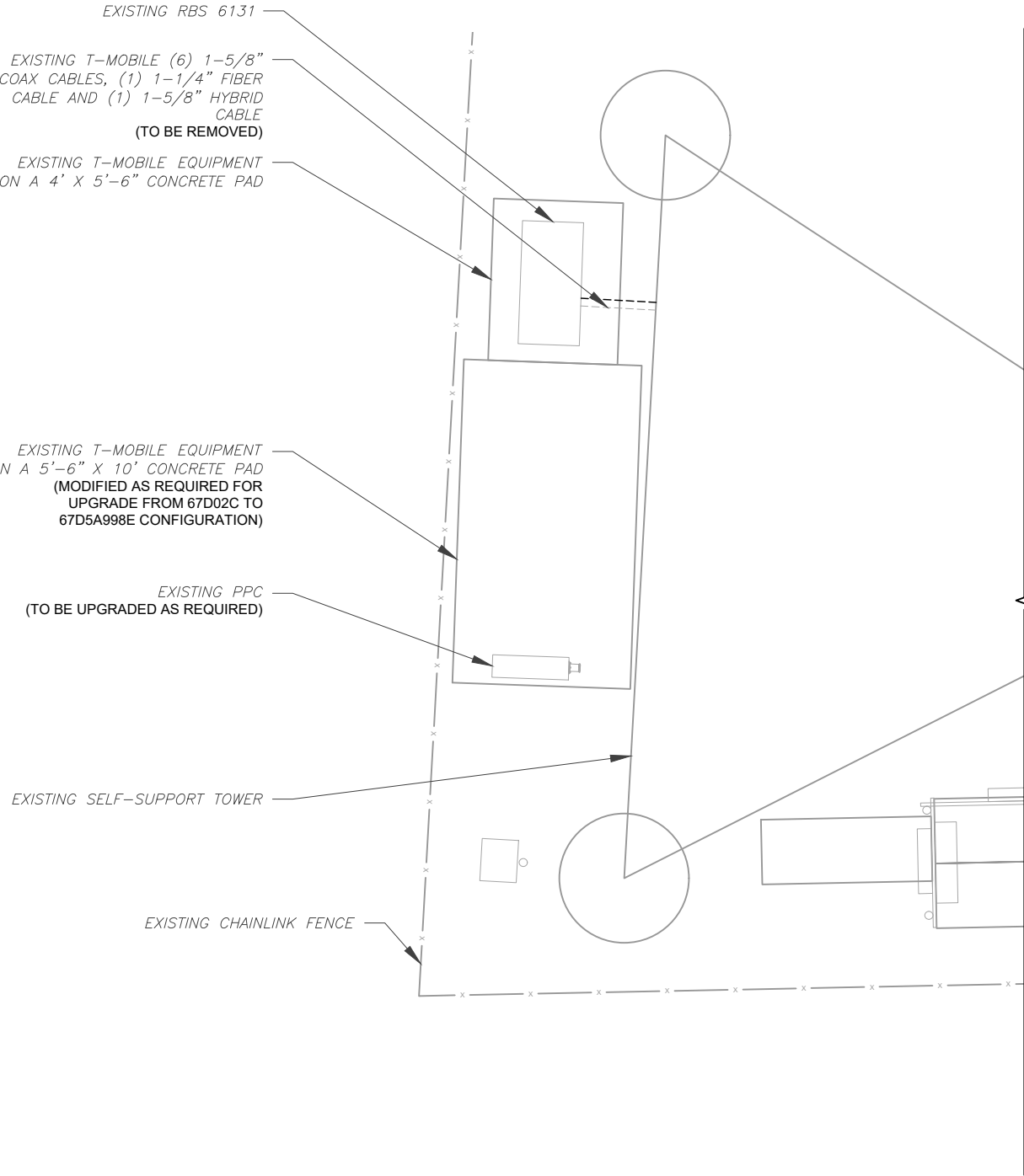
DATE DRAWN:	08/12/21
ATC JOB NO:	13711909_G3
CUSTOMER ID:	GUILFORD SNET MOBILIT_1
CUSTOMER #:	CT11028A

DETAILED SITE PLAN

SHEET NUMBER:	REVISION:
C-101	0

SITE PLAN NOTES:

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



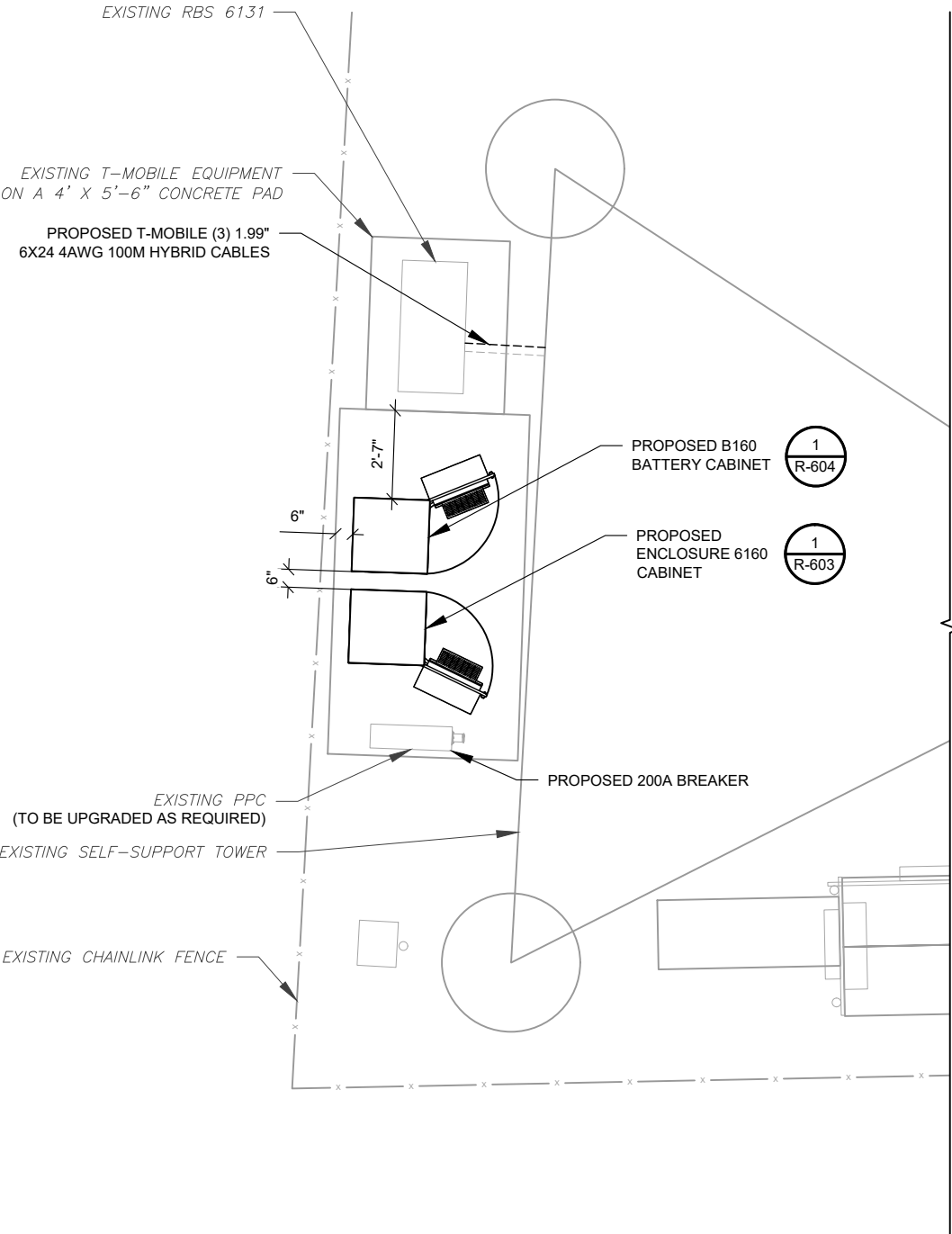
1 EXISTING GROUND EQUIPMENT LAYOUT

0 5' 10'

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



T-MOBILE CM APPROVAL REQUIRED
BEFORE INSTALLING CABINETS



2 PROPOSED GROUND EQUIPMENT LAYOUT

0 5' 10'

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



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GUILFORD, CT 06437

SEAL: 

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Date: 2021.08.30 14:28:34-04'00'

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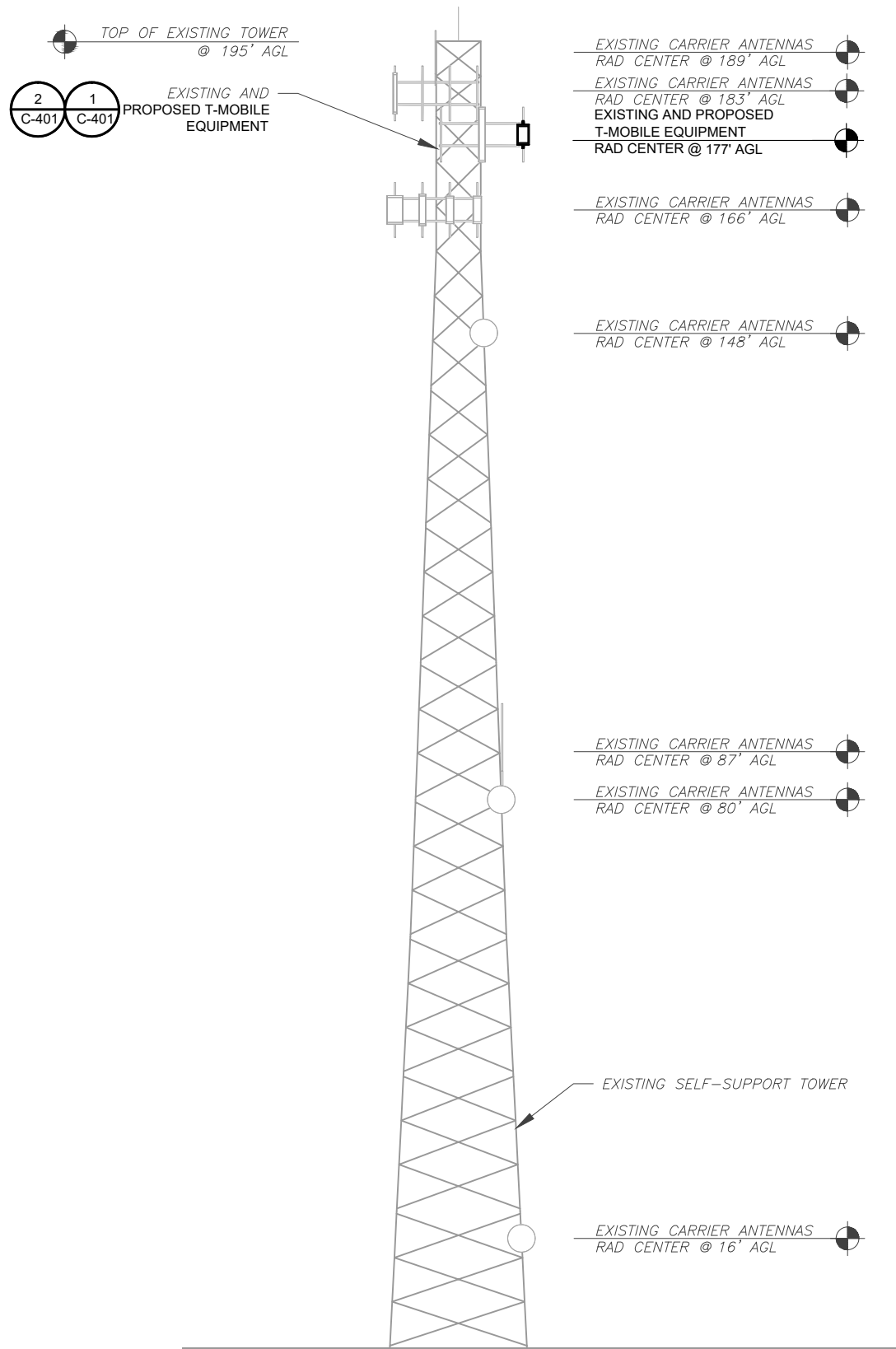
T-Mobile

DATE DRAWN:	08/12/21
ATC JOB NO:	13711909_G3
CUSTOMER ID:	GUILFORD SNET MOBILIT_1
CUSTOMER #:	CT11028A

DETAILED GROUND
PLAN

SHEET NUMBER:
C-102

REVISION:
0



PER MOUNT ANALYSIS COMPLETED BY AMERICAN TOWER CORPORATION, DATED 08/10/21, THE EXISTING MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.

- 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. 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).
 - TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)

1 TOWER ELEVATION
SCALE: N.T.S.



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T-MOBILE SITE NAME:
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SITE ADDRESS:
10 TANNER MARSH ROAD
GUILFORD, CT 06437

SEAL: Digitally signed by Alec Norris
Date: 2021.08.30 14:28:36-04'00'

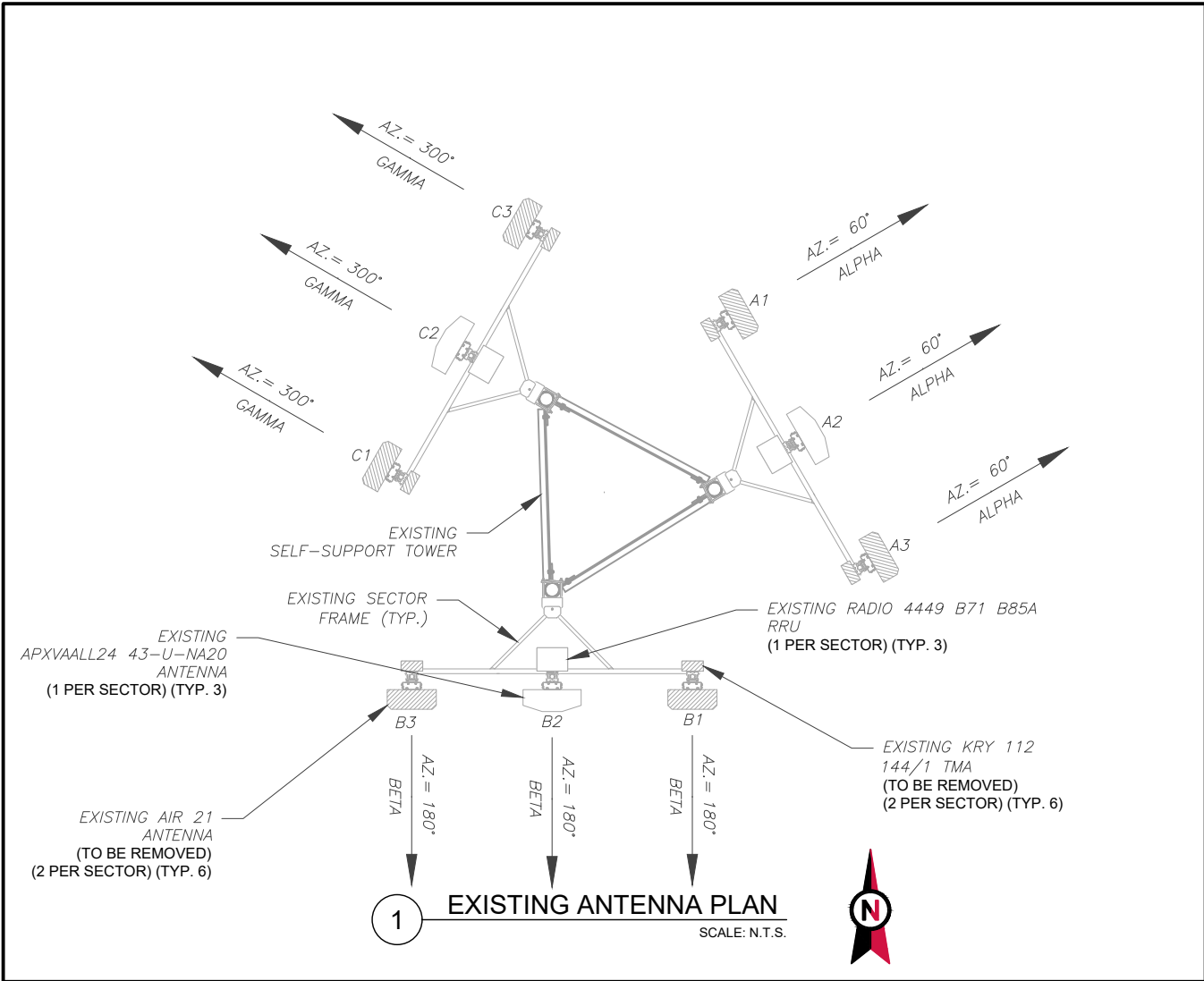
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T-Mobile

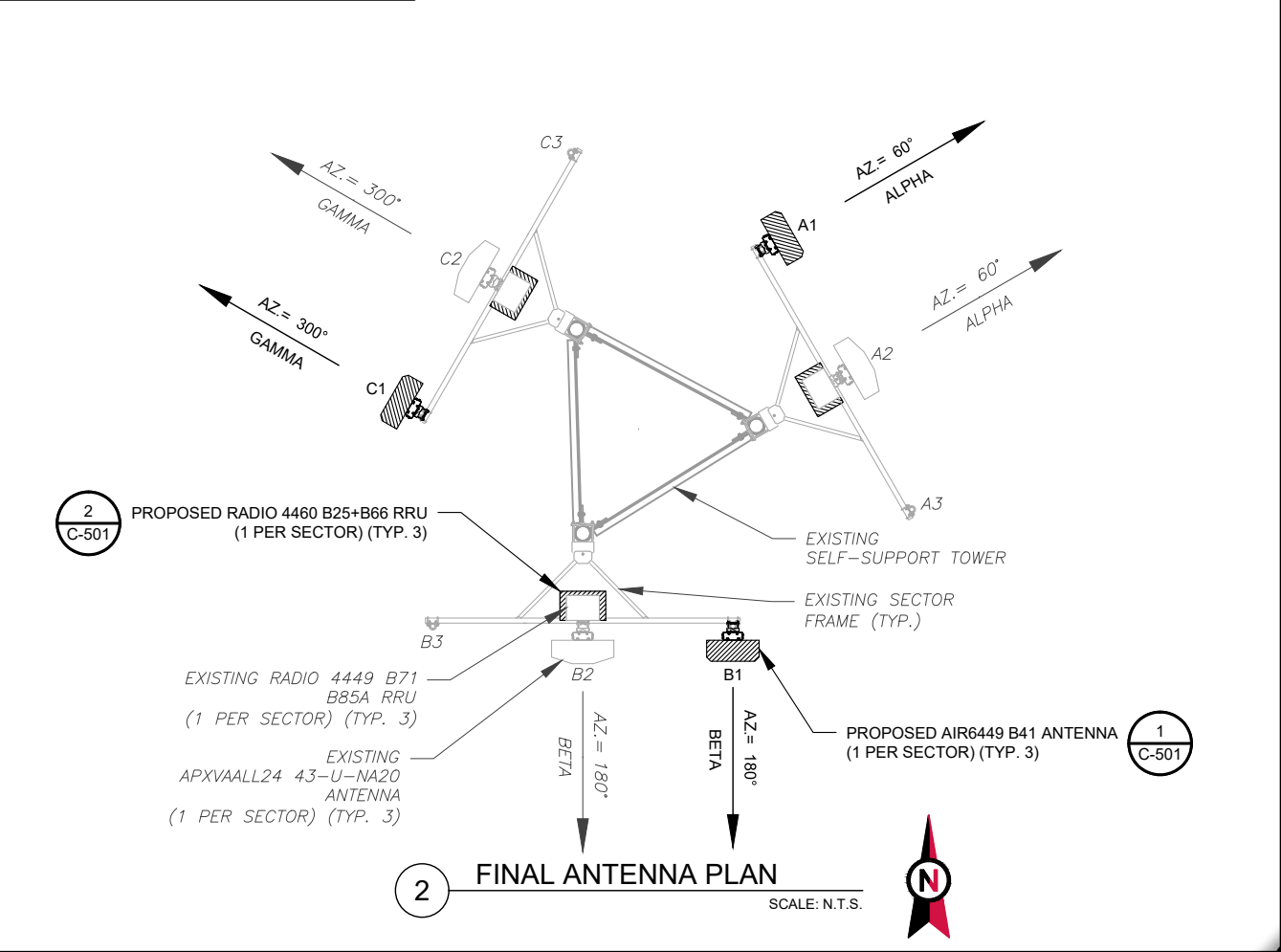
DATE DRAWN:	08/12/21
ATC JOB NO:	13711909_G3
CUSTOMER ID:	GUILFORD SNET MOBILIT_1
CUSTOMER #:	CT11028A

TOWER ELEVATION

SHEET NUMBER: **C-201**
REVISION: **0**



PER MOUNT ANALYSIS COMPLETED BY AMERICAN TOWER CORPORATION, DATED 08/10/21, THE EXISTING MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.



EXISTING ANTENNA SCHEDULE								
LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT
ALPHA	177'	60°	A1	AIR 21 B4A B2P	L2100	0/2	RMV	KRY 112 144/1
			A2	APXVAALL24 43-U-NA20	N600/L600/L700	0/2	RMN	RADIO 4449 B71 B85A
			A3	AIR 21 B2A B4P	G1900/L1900/U2100	0/2/2	RMV	KRY 112 144/1
BETA	177'	180°	B1	AIR 21 B4A B2P	L2100	0/2	RMV	KRY 112 144/1
			B2	APXVAALL24 43-U-NA20	N600, L600, L700	0/2	RMN	RADIO 4449 B71 B85A
			B3	AIR 21 B4A B2P	G1900, L1900, U2100	0/2/2	RMV	KRY 112 144/1
GAMMA	177'	300°	C1	AIR 21 B4A B2P	L2100	0/2	RMV	KRY 112 144/1
			C2	APXVAALL24 43-U-NA20	N600, L600, L700	0/2	RMN	RADIO 4449 B71 B85A
			C3	AIR 21 B4A B2P	G1900, L1900, U2100	0/2/2	RMV	KRY 112 144/1

- NOTES
1. CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
 2. CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.

STATUS ABBREVIATIONS

RMV: TO BE REMOVED
RMN: TO REMAIN
REL: TO BE RELOCATED
ADD: TO BE ADDED

CABLE LENGTHS FOR JUMPERS

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

FINAL ANTENNA SCHEDULE								
LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT
ALPHA	177'	60°	A1	AIR6449 B41	L2500/N2500	0/2/2	ADD	-
				APXVAALL24 43-U-NA20	N600/L600/L700/L2100/L1900/G1900/U2100	0/2/2/2/2	RMN	RADIO 4449 B71 B85A RADIO 4460 B25+B66
			A2	-	-	-	-	-
BETA	177'	180°	B1	AIR6449 B41	L2500/N2500	0/2/2	ADD	-
				APXVAALL24 43-U-NA20	N600/L600/L700/L2100/L1900/G1900/U2100	0/2/2/2/2	RMN	RADIO 4449 B71 B85A RADIO 4460 B25+B66
			B2	-	-	-	-	-
GAMMA	177'	300°	C1	AIR6449 B41	L2500/N2500	0/2/2	ADD	-
				APXVAALL24 43-U-NA20	N600/L600/L700/L2100/L1900/G1900/U2100	0/2/2/2/2	RMN	RADIO 4449 B71 B85A RADIO 4460 B25+B66
			C2	-	-	-	-	-

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

EQUIPMENT SCHEDULES

FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	-	(3) 1.99" 6/24 4AWG 100M	ADD



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ATC SITE NUMBER: 311305

ATC SITE NAME: GLFD-GUILFORD REBUILD CT

T-MOBILE SITE NAME: GUILFORD SNET MOBILIT_1

SITE ADDRESS: 10 TANNER MARSH ROAD, GUILFORD, CT 06437

SEAL: [Professional Engineer Seal]

Digitally signed by Alec Norris
Date: 2021.08.30 14:28:39-04'00'

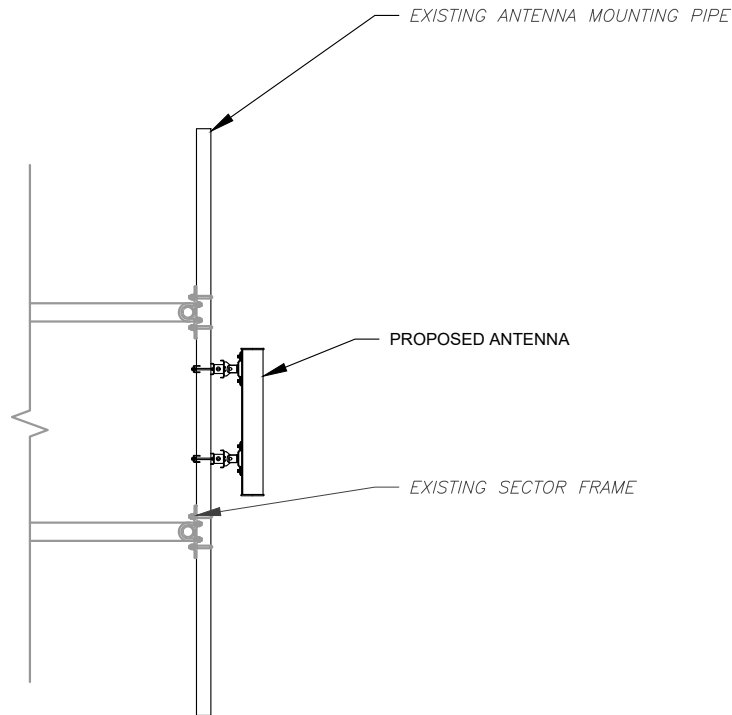
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CONNECTICUT LICENSED PROFESSIONAL ENGINEER
LICENSE NUMBER: 32588
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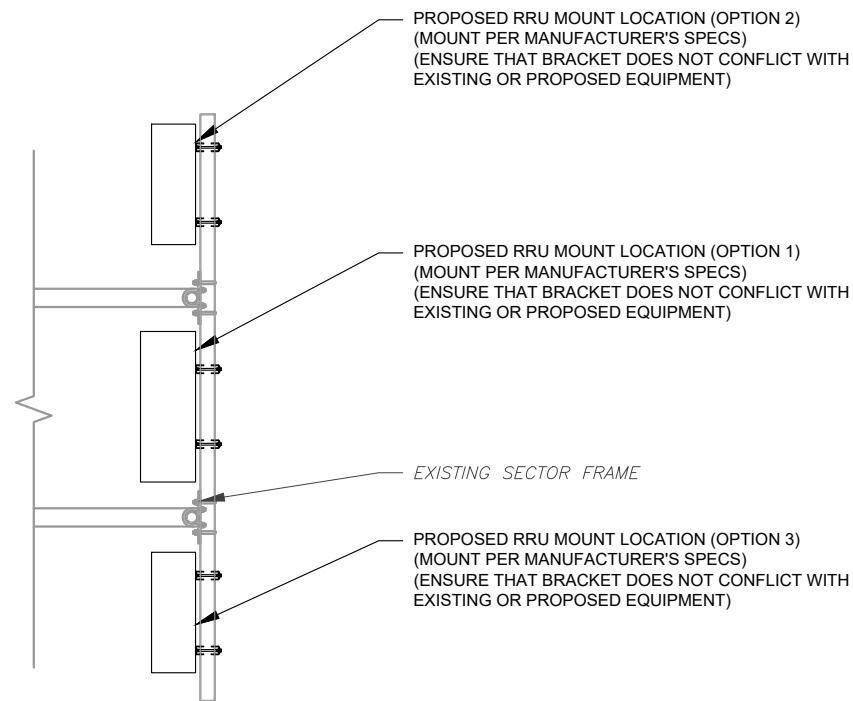
DATE DRAWN:	08/12/21
ATC JOB NO:	13711909_G3
CUSTOMER ID:	GUILFORD SNET MOBILIT_1
CUSTOMER #:	CT11028A

ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER: C-401	REVISION: 0
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1 PROPOSED 5G ANTENNA MOUNTING DETAIL - TYPICAL
SCALE: N.T.S.



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



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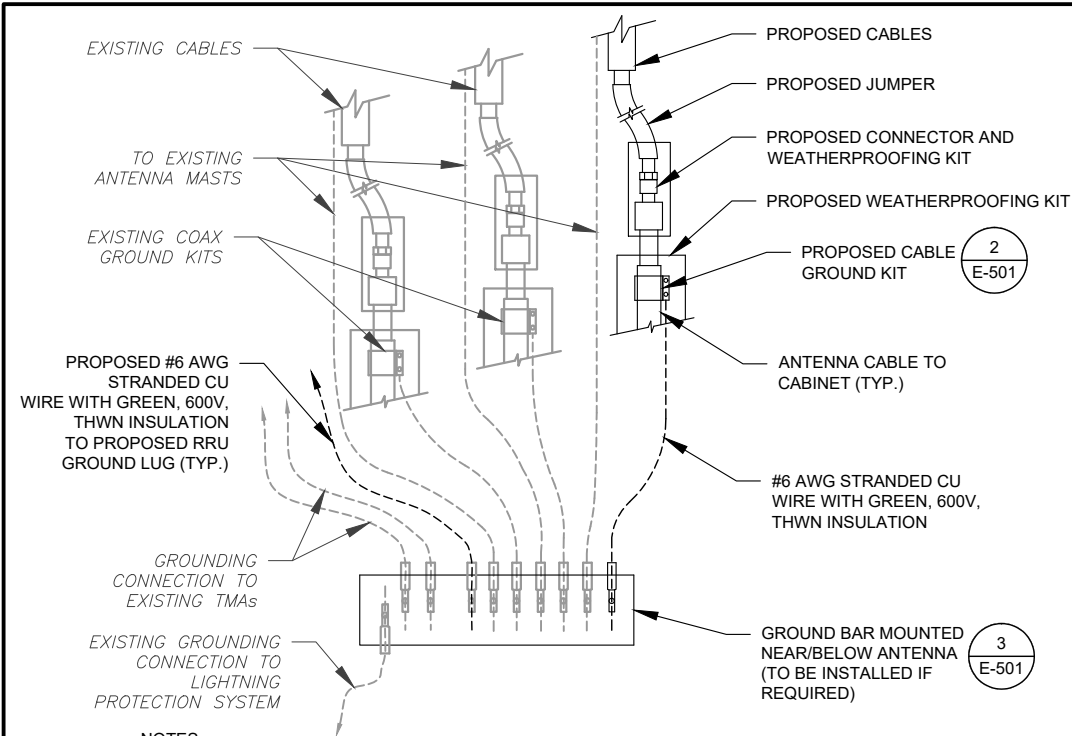
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DATE DRAWN:	08/12/21
ATC JOB NO:	13711909_G3
CUSTOMER ID:	GUILFORD SNET MOBILIT_1
CUSTOMER #:	CT11028A

CONSTRUCTION DETAILS

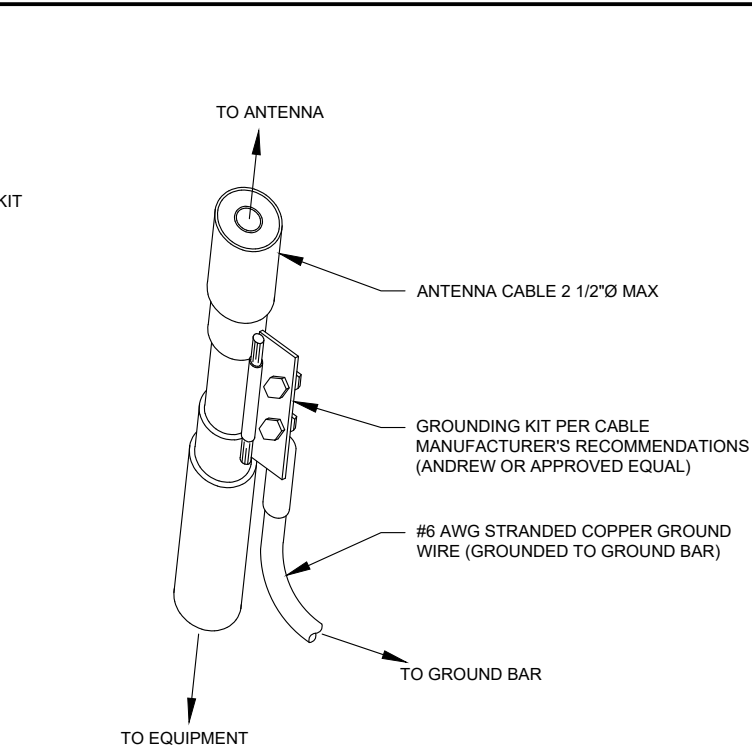
SHEET NUMBER: C-501	REVISION: A
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NOTES:

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

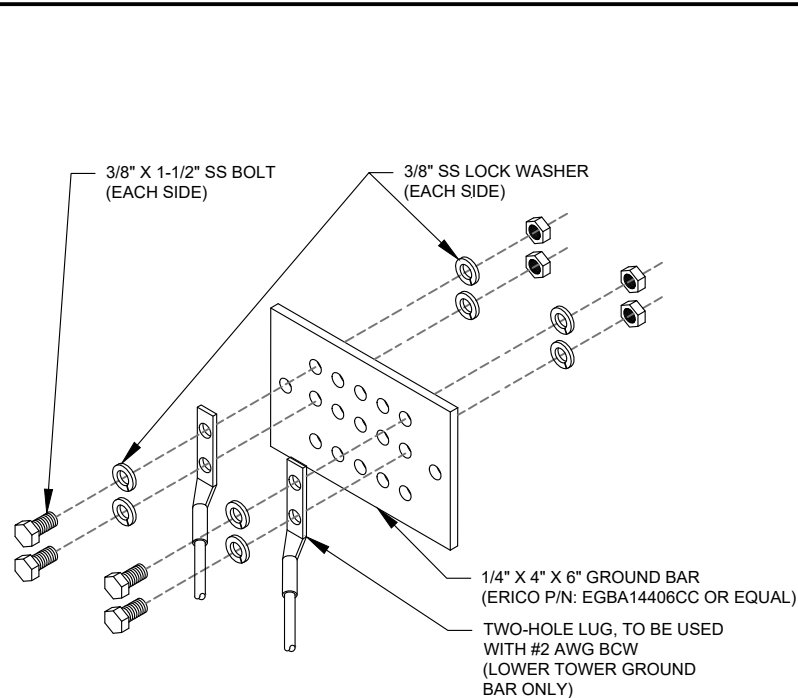
1 TYPICAL ANTENNA GROUNDING DIAGRAM
SCALE: N.T.S.



GROUND KIT NOTES:

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

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



GROUND BAR NOTES:

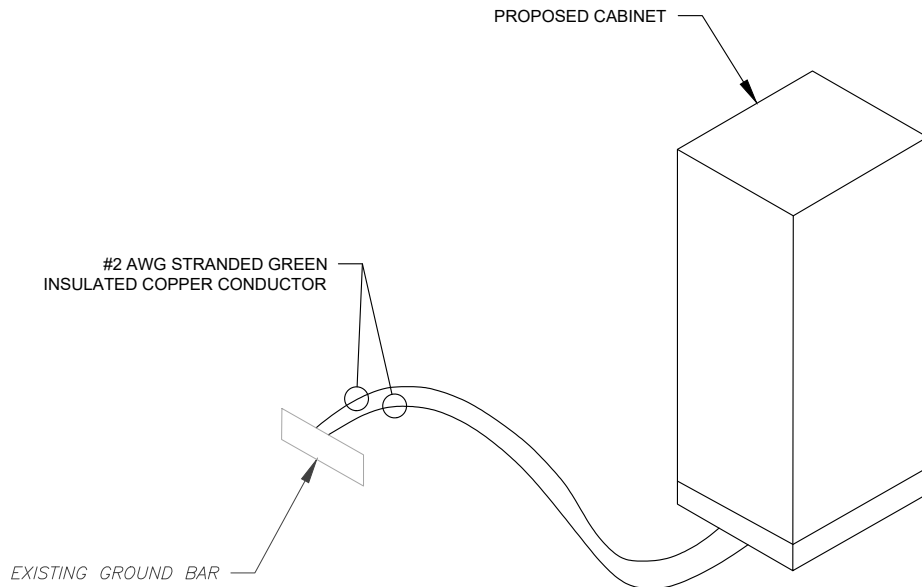
- GROUND BAR KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
- GROUND BAR TO BE BONDED DIRECTLY TO TOWER.

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

ELECTRICAL NOTES:

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

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



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



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C.T.JPC.0000131

T-Mobile

DATE DRAWN:	08/12/21
ATC JOB NO:	13711909_G3
CUSTOMER ID:	GUILFORD SNET MOBILIT_1
CUSTOMER #:	CT11028A

GROUNDING DETAILS

SHEET NUMBER:

E-501

REVISION:

0

Section 5 - RAN Equipment		
Existing RAN Equipment		
Template: 67D02C Outdoor		
Enclosure	1	2
Enclosure Type	RBS 6131	S12000 Outdoor
Baseband	DUW30 DUW30 U1900 DUG20 G1900 BB 6630 L2100 BB 6630 L700 L600 N600	
Hybrid Cable System	Ericsson 9x18 HCS *Select Length* Ericsson 6x12 HCS *Select Length & AWG* (x 3)	
Radio	RU22 (x 6)	

Proposed RAN Equipment			
Template: 67D5A998E Outdoor			
Enclosure	1	2	3
Enclosure Type	RBS 6131	Enclosure 6160	B160
Baseband	DUG20 G1900 BB 6630 L2100 BB 6630 L700 DUW30 U1900 L1900 L600 N600	BB 6648 L2500 N2500	
Hybrid Cable System	Ericsson 6x12 HCS *Select Length & AWG* (x 3)	Ericsson Hybrid Trunk 6/24 4AWG 70m PSU 4813	
Transport System		CSR IXRe V2 (Gen2)	

RAN Scope of Work:

Remove Nortel Cabinet.

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

Add (1) Enclosure 6160.

Add (1) iXRe Router to new Enclosure 6160.

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

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

Add (1) Battery Cabinet B160.

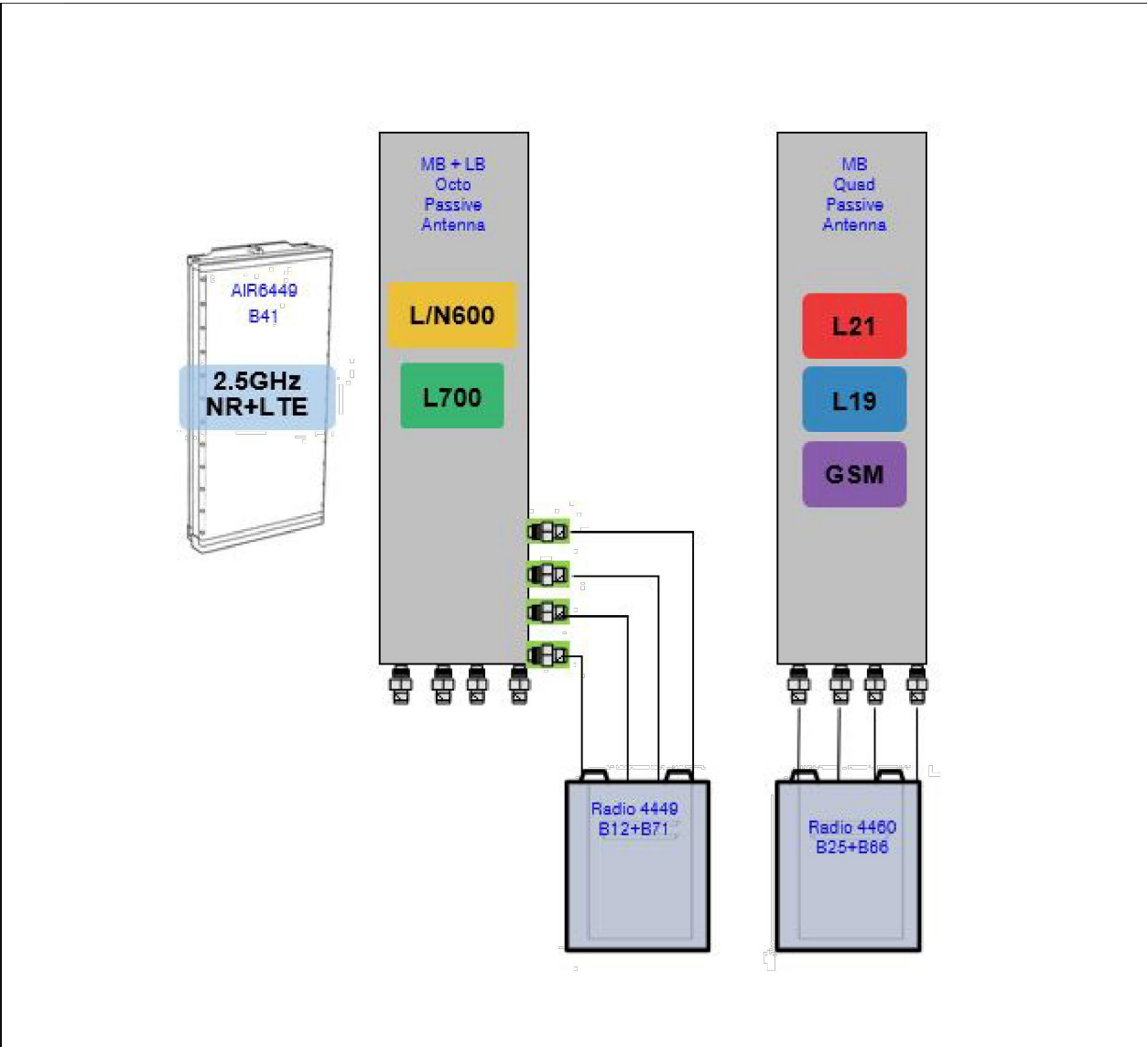
Add (1) 6X24 HCS terminating at the Enclosure 6160. Connect DC for the AIR6449 B41 to the PSU4813 Voltage Booster.

Remove 1 - 9x18

1

CABINET CONFIGURATION

SCALE: NOT TO SCALE



2

ANTENNA CONFIGURATION

SCALE: NOT TO SCALE

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

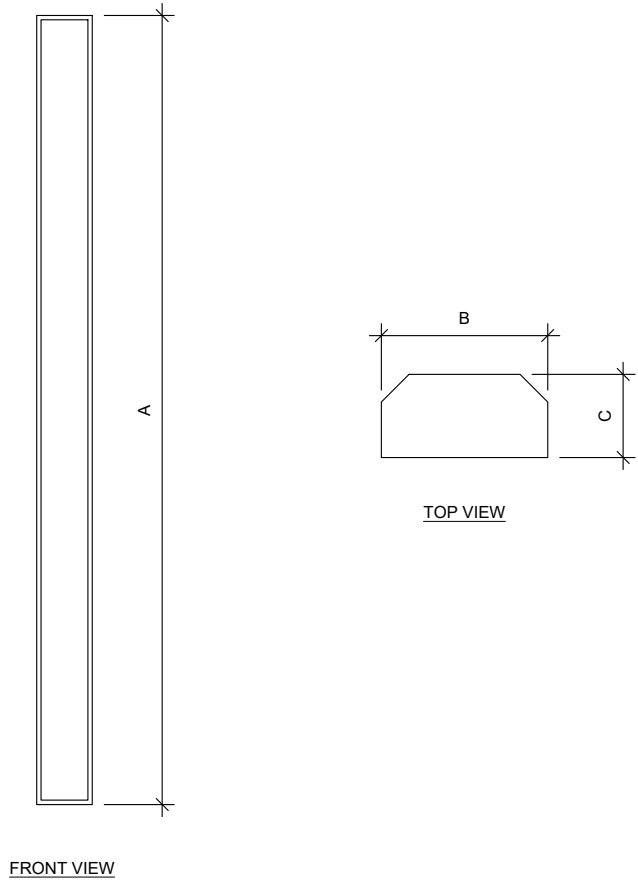
SUPPLEMENTAL

SHEET NUMBER:

R-601

REVISION:

-

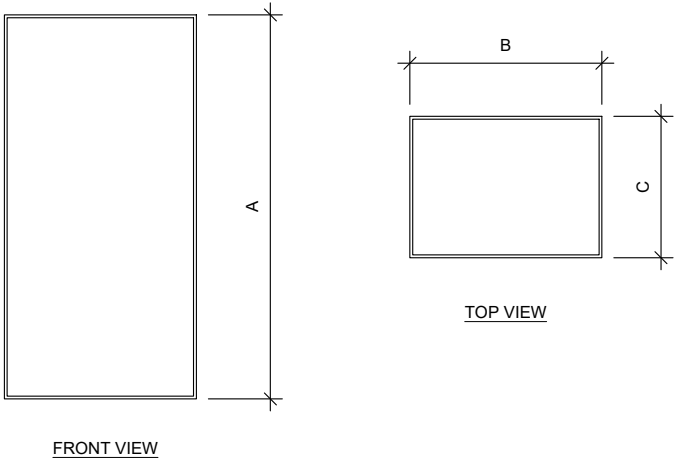


1

ANTENNA SPECIFICATIONS

FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

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



2

RRU SPECIFICATIONS

FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

RRU SPECIFICATIONS				
RRU MODEL	A	B	C	WEIGHT (LBS)
RADIO 4449 B71 B85A	15.0"	13.2"	10.5"	75.0
RADIO 4460 B25+B66	19.6"	15.7"	12.1"	109.0

SUPPLEMENTAL

SHEET NUMBER:

R-602

REVISION:

-



Enclosure 6160 AC

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

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

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

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

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

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



Preliminary technical specification for Enclosure 6160 AC

CAPACITY

Rack space user equipment	19U (19" rack)
Hardware capabilities	Power and CPRI support for multi-standard remote radios (RRU or AIR) ERS Baseband and Transport units Li-Ion batteries 3PP equipment Additional power feed available as option

MECHANICAL SPECIFICATION

Weight	145 kg (excluding active equipment) 320 lbs (excluding active equipment)
Dimension (H x W x D)	1600 x 650 x 650 mm (incl. Base frame) 63 x 26 x 26 in. (incl. Base frame)
Base frame height	150 mm 6 in.
Mounting position	Ground
Enclosure material	Aluminum
Color	Power paint NCS 2002-B
Door	Front access
Rack type	19" (IEC 60297-3-100)
Locking type	Pad lock or Cylinder

POWER SYSTEM

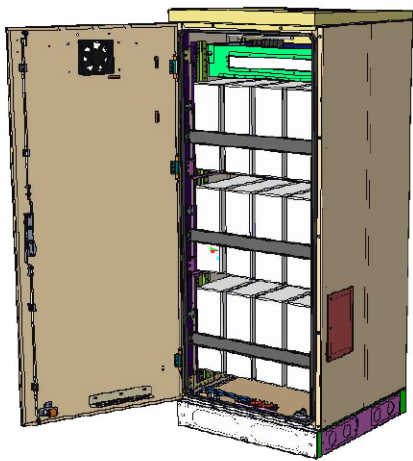
Input voltage	3P+N+PE: 346/200-415/240 VAC 2P+N+PE: 208/120-220/127 VAC 1P+N+PE: 200-250 VAC
Input power	<33kW
Output load (-48VDC)	24kW
Total capacity (-48VDC)	31.5kW
AC SPD	Class 2/Type 2
DC SPD	Class 2/Type 2
PSU Slots	9x
Service outlet	Optional
Priority load	8x Circuit Breaker
LLVD 1	6x Circuit Breaker
LLVD 2	6x Circuit Breaker
CB ratings	3A / 5A / 10A / 15A / 20A / 25A / 30A / 40A / 50A / 60A / 80A / 100A
Battery Interface	2x Circuit Breaker
Battery Circuit Breaker rating	125A 2pol (200A)
PSU capacity	3500W

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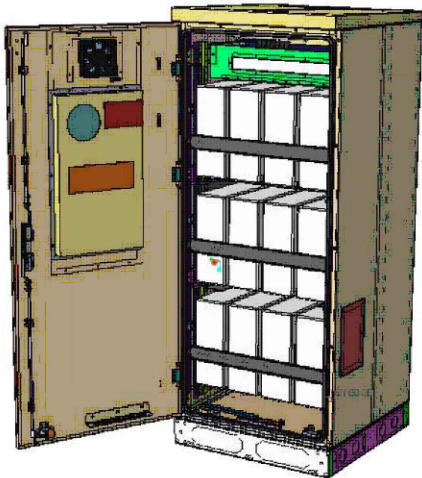
SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-603	-

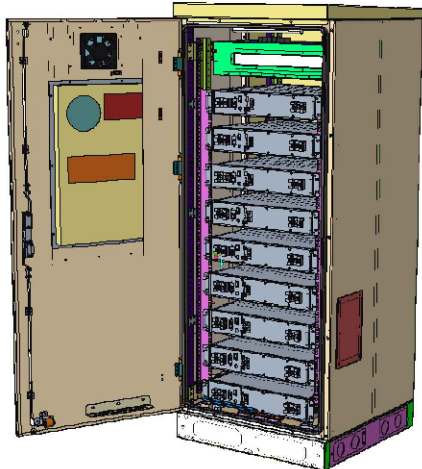
Enclosure B160



Enclosure B160
AirCon + VRLA



Enclosure B160
AirCon + Li-Ion



Enclosure B160
Convection Cooling
+ VRLA

Enclosure B160

- Capacity
- VRLA 12V: 100Ah / 150Ah / 170Ah / 190Ah / 210Ah
 - Li-Ion: 24U 19" / 23"
 - Sodium-Nickel: 3x FIAMM
- Electrical specification
- DC Output: -48VDC/200A
 - Battery breakers: 2x 125/2p
 - Alarms: Door open, Climate failure, MCB Connection
- Mechanical specification
- Weight: 134kg
 - Dimensions: 63 x 26 x 26 in. (incl. Base frame)
 - Base frame height: 6 in.
 - Material: Galvanized steel (180g/m²)
 - Color: Powder paint NCS 2002-B
 - Door: Front access
 - Locking type: Pad lock / cylinder

- Environmental specification
- Ingress protection: VRLA/Sodium IP44
Li-Ion IP55
 - Relative humidity: 15-100%
- Climate system
- Air Conditioner
 - Fan type: DC
 - Cooling capacity: 500W @L35/L35
 - Convection cooling
 - Emergency fan

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

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-604	-



Eng. Number 13711909_C8_03
August 10, 2021
Page 2

Mount Analysis Report

ATC Site Name : GLFD-GUILFORD REBUILD CT, CT
ATC Site Number : 311305
Engineering Number : 13711909_C8_03
Mount Elevation : 174 ft
Carrier : T-Mobile
Carrier Site Name : Guilford SNET Mobilit_1
Carrier Site Number : CT11028A
Site Location : 10 Tanner Marsh Road
Guilford, CT 06437-2942
41.28860833 , -72.65828056

County : New Haven
Date : August 10, 2021
Max Usage : 72%
Result : Pass

Prepared By:
Alan Samboy
Structural Engineer

Alan Samboy

Reviewed By:



COA: PEC.0001553

Application Loading

Mount Centerline (ft)	Equipment Centerline (ft)	Qty	Equipment Manufacturer & Model
174.0	177.0	3	Ericsson Air6449 B41
		3	RFS APXVAALL24 43-U-NA20
		3	Ericsson Radio 4449 B71 B85A
		3	Ericsson Radio 4460 B25+B66

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Horizontals	72%	Pass
Verticals	47%	Pass
Diagonals	16%	Pass
Tie-Backs	6%	Pass
Mount Pipes	38%	Pass

SUPPLEMENTAL

SHEET NUMBER:

R-605

REVISION:

-

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



AMERICAN TOWER®
C O R P O R A T I O N

Mount Analysis Report

ATC Site Name : GLFD-GUILFORD REBUILD CT, CT
ATC Site Number : 311305
Engineering Number : 13711909_C8_03
Mount Elevation : 174 ft
Carrier : T-Mobile
Carrier Site Name : Guilford SNET Mobilit_1
Carrier Site Number : CT11028A
Site Location : 10 Tanner Marsh Road
Guilford, CT 06437-2942
41.28860833 , -72.65828056
County : New Haven
Date : August 10, 2021
Max Usage : 72%
Result : Pass

Prepared By:
Alan Samboy
Structural Engineer

Alan Samboy

Reviewed By:



Authorized by "EOR"
11 Aug 2021 09:39:15

cosign

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 174 ft.

Supporting Documents

Mount Modification	CLS Engineering Project #13617386_C9_03, dated March 31, 2021
Previous Analysis	CLS Engineering Project #13617386_C8_01, dated March 12, 2021
Radio Frequency Data Sheet	RFDS ID #CT11028A, dated July 26, 2021
Reference Photos	Site photos from 2020

Analysis

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

Basic Wind Speed:	123 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1" radial ice concurrent
Codes:	ANSI/TIA-222-H
Exposure Category:	C
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Flat
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.204, S1 = 0.054
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.

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.

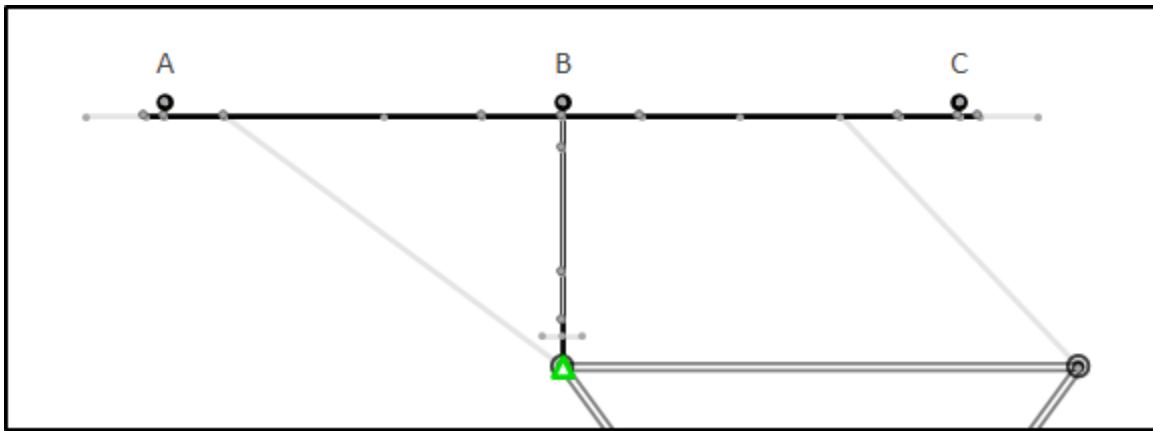
**Application Loading**

Mount Centerline (ft)	Equipment Centerline (ft)	Qty	Equipment Manufacturer & Model
174.0	177.0	3	Ericsson Air6449 B41
		3	RFS APXVAALL24 43-U-NA20
		3	Ericsson Radio 4449 B71 B85A
		3	Ericsson Radio 4460 B25+B66

Structure Usages

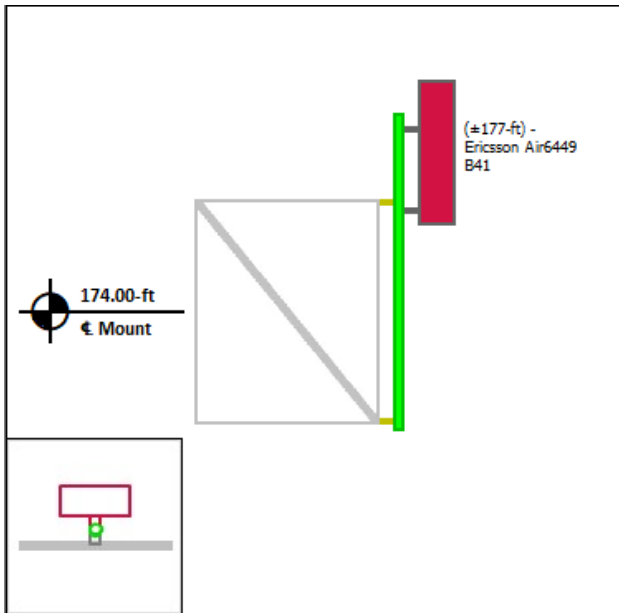
Structural Component	Controlling Usage	Pass/Fail
Horizontals	72%	Pass
Verticals	47%	Pass
Diagonals	16%	Pass
Tie-Backs	6%	Pass
Mount Pipes	38%	Pass

Mount Layout

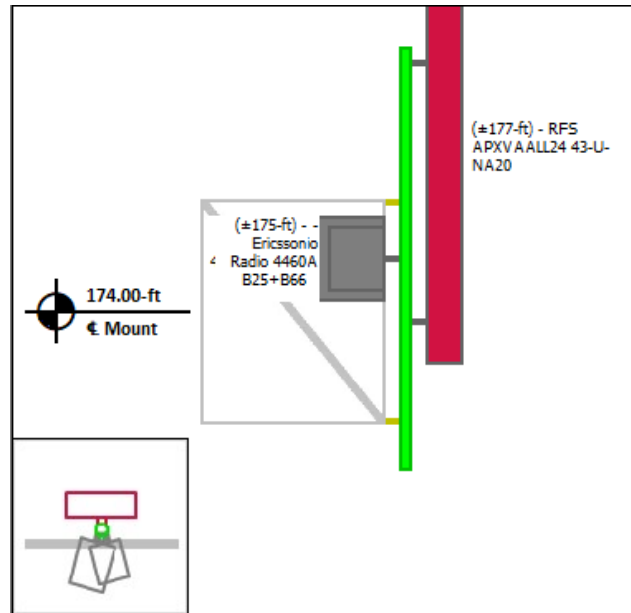


Equipment Layout

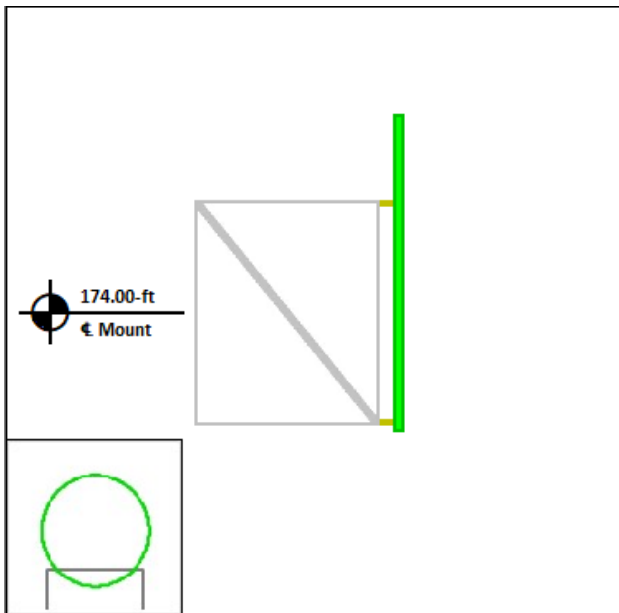
Mount Pipe A



Mount Pipe B



Mount Pipe C





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: 311305
 Project Number: 13711909_C8_03
 Carrier: T-Mobile
 Mount Elevation: 174 ft
 Date: 8/10/2021

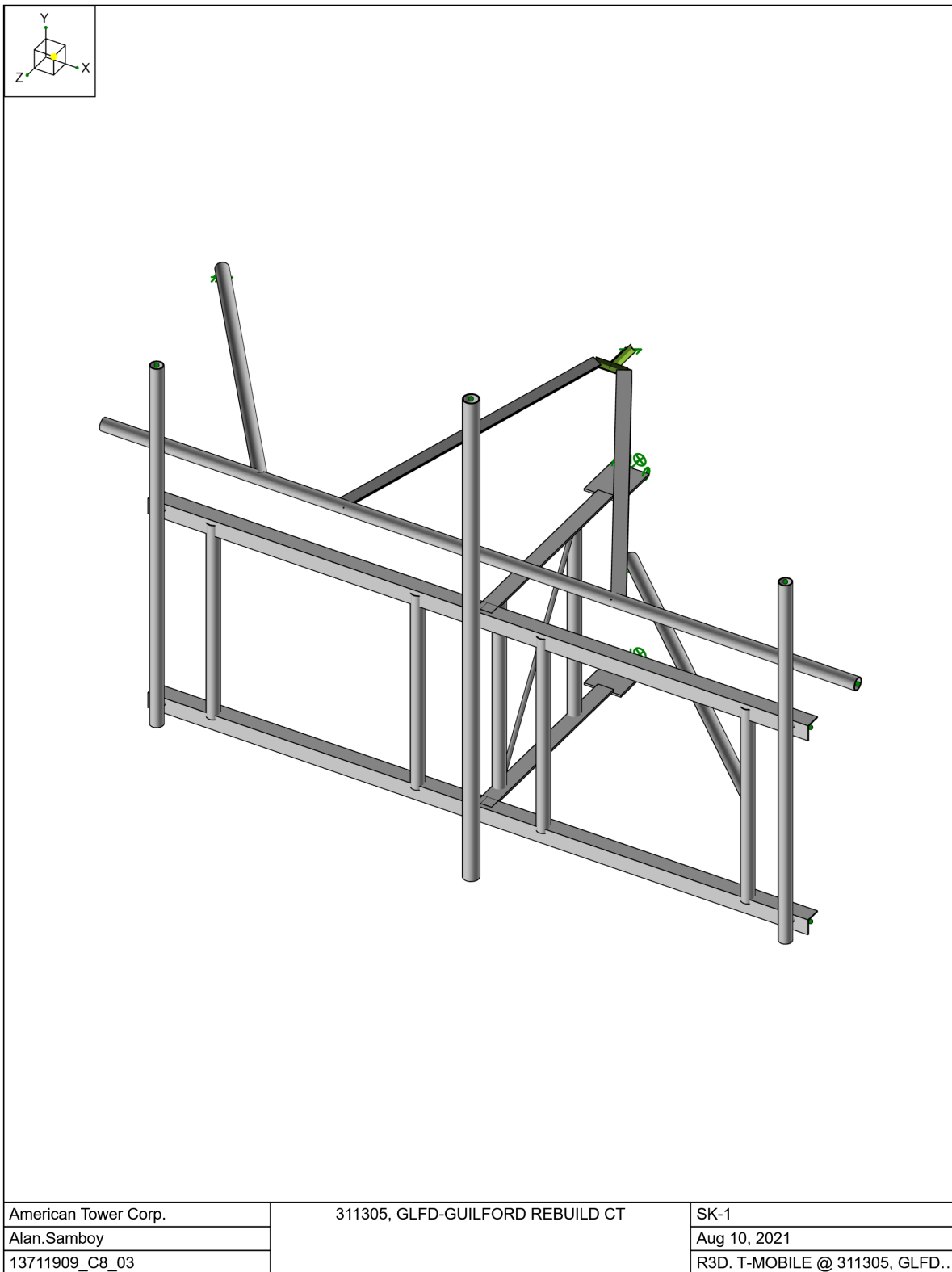
Mount Analysis Force Calculations

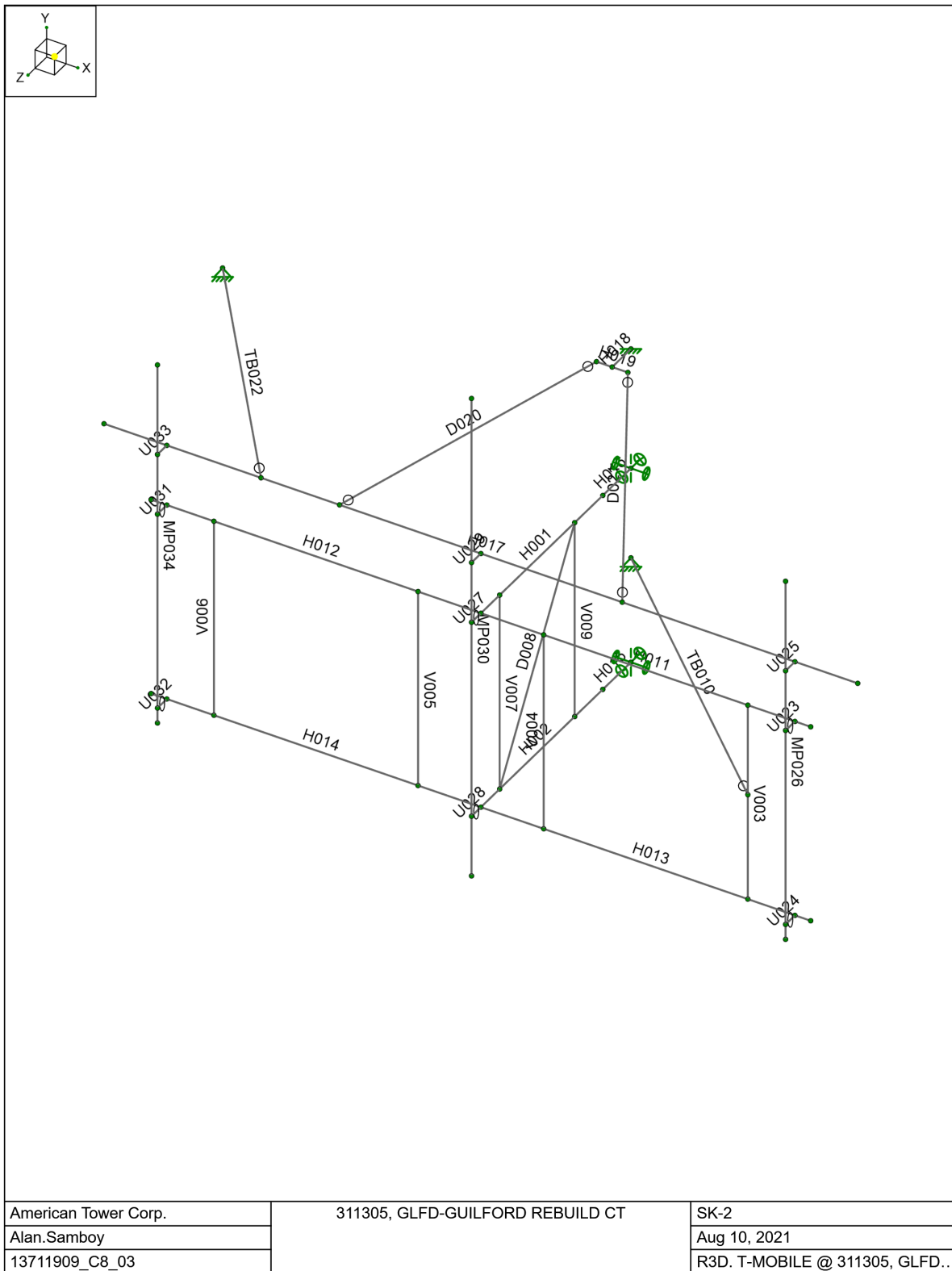
Wind & Ice Load Calculations				
Velocity Pressure Coefficient	K_z	1.42		
Topographic Factor	K_{zt}	1.00		
Rooftop Wind Speed-up Factor	K_s	1.00		
Shielding Factor	K_a	0.90		
Ground Elevation Factor	K_e	1.00		
Wind Direction Probability Factor	K_d	0.95		
Basic Wind Speed	V	123	mph	
Velocity Pressure	q_z	52.2	psf	
Height Escalation Factor	K_{iz}	1.18		
Thickness of Radial Glaze Ice	T_{iz}	1.18	in	

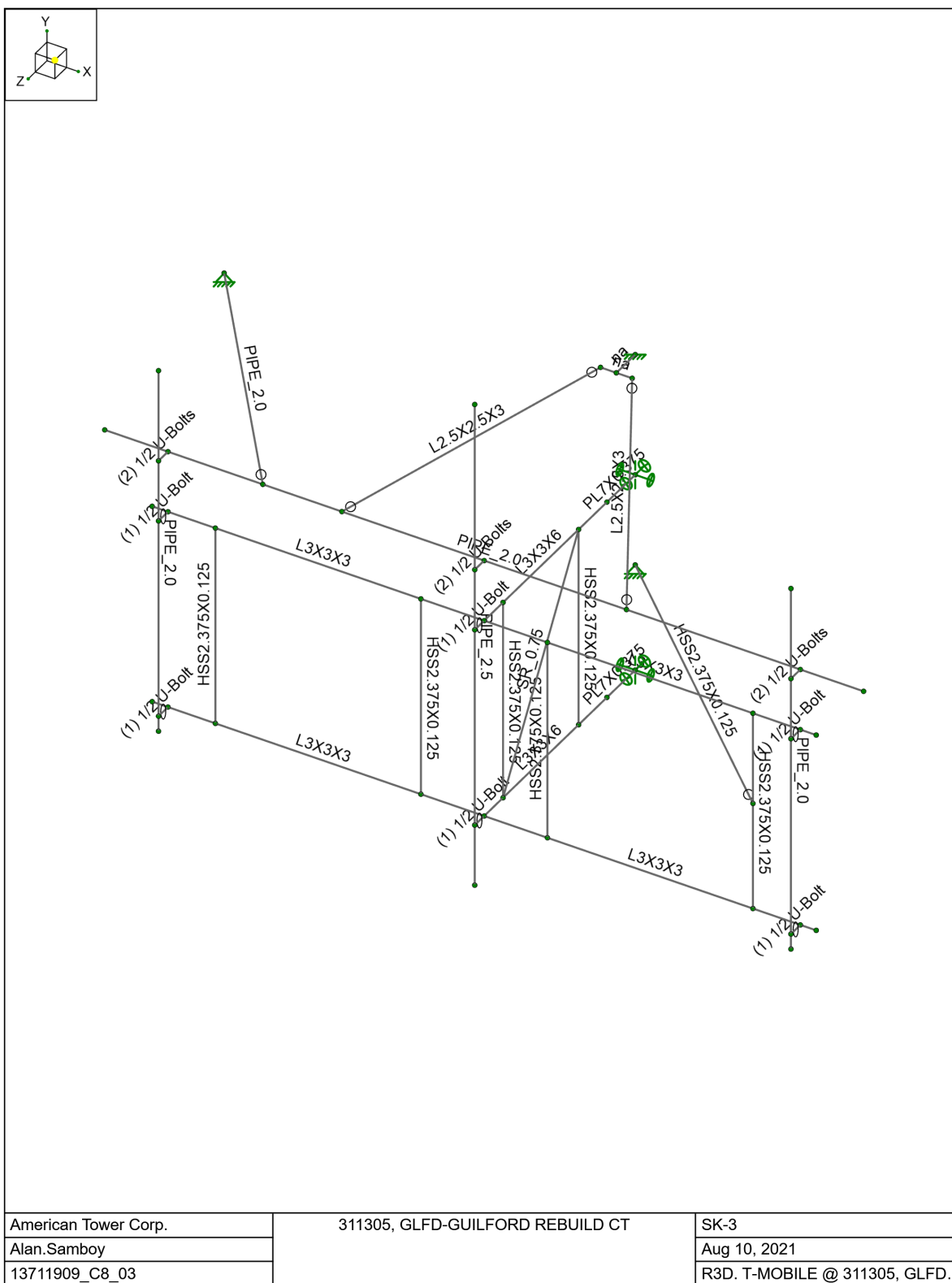
Seismic Load Calculations				
Short Period DSRAP	S_{Ds}	0.218		
1 Second DSRAP	S_{D1}	0.086		
Importance Factor	I	1.0		
Response Modification Coefficient	R	2.0		
Seismic Response Coefficient	C_s	0.109		
Amplification Factor	A	1.0		
Total Weight	W	879.4	lbs	
Total Shear Force	V_s	95.7	lbs	
Horizontal Seismic Load	E_h	95.7	lbs	
Vertical Seismic Load	E_v	38.3	lbs	

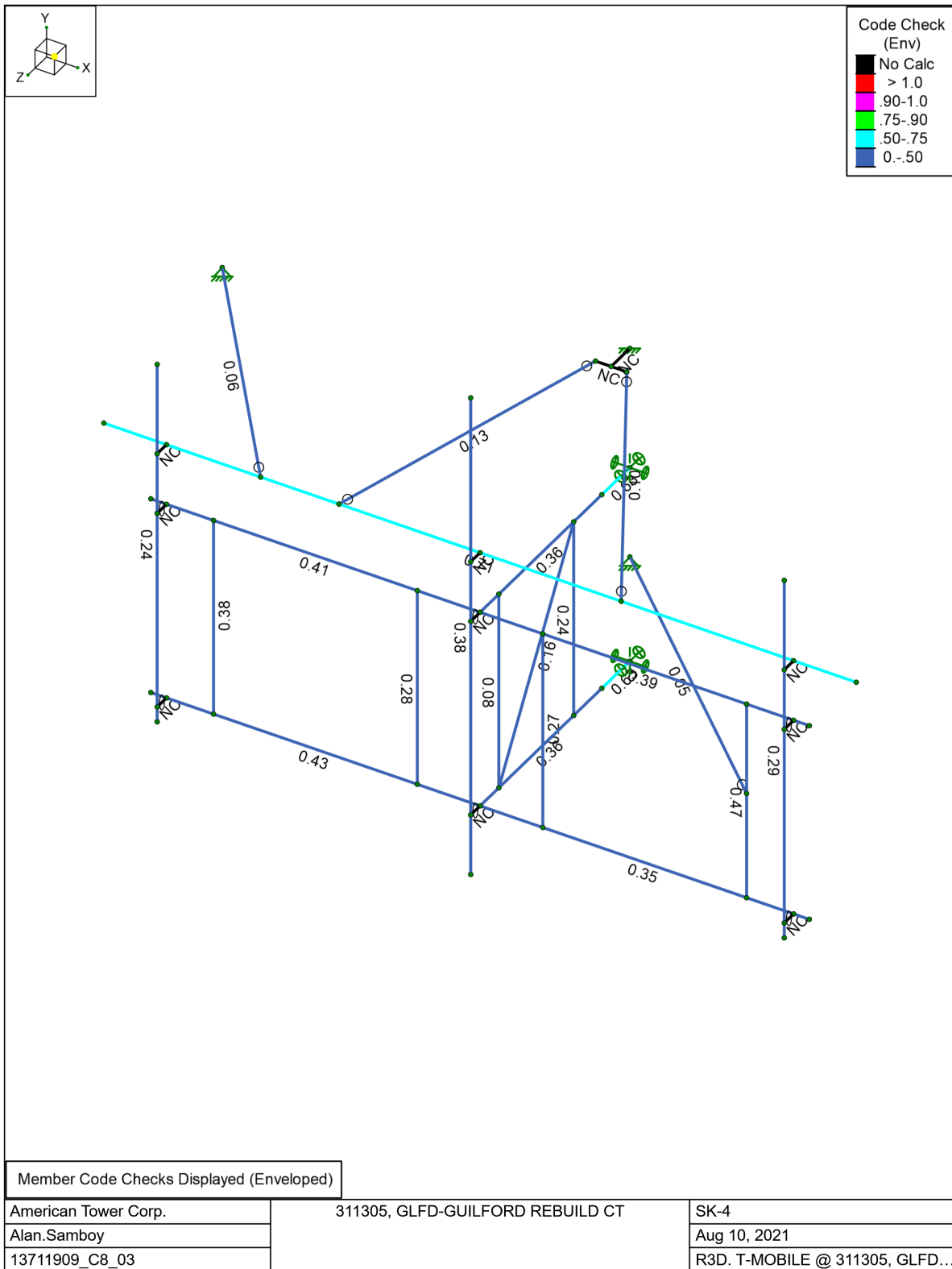
Antenna Calculations (Elevations per Application/RFDS)*								
Equipment	Height	Width	Depth	Weight	EPA_N	EPA_T	EPA_{Ni}	EPA_{Ti}
Model #	in	in	in	lbs	sqft	sqft	sqft	sqft
Ericsson Air6449 B41	33.1	20.6	8.6	104.0	5.68	1.56	6.79	2.13
RFS APXVAALL24 43-U-NA20	95.9	24.0	8.5	122.8	20.24	3.40	22.78	4.45
Ericsson Radio 4449 B71 B85A	15.0	13.2	10.5	75.0	1.65	1.31	2.25	1.86
Ericsson Radio 4460 B25+B66	19.6	15.7	12.1	109.0	2.56	1.98	3.31	2.65

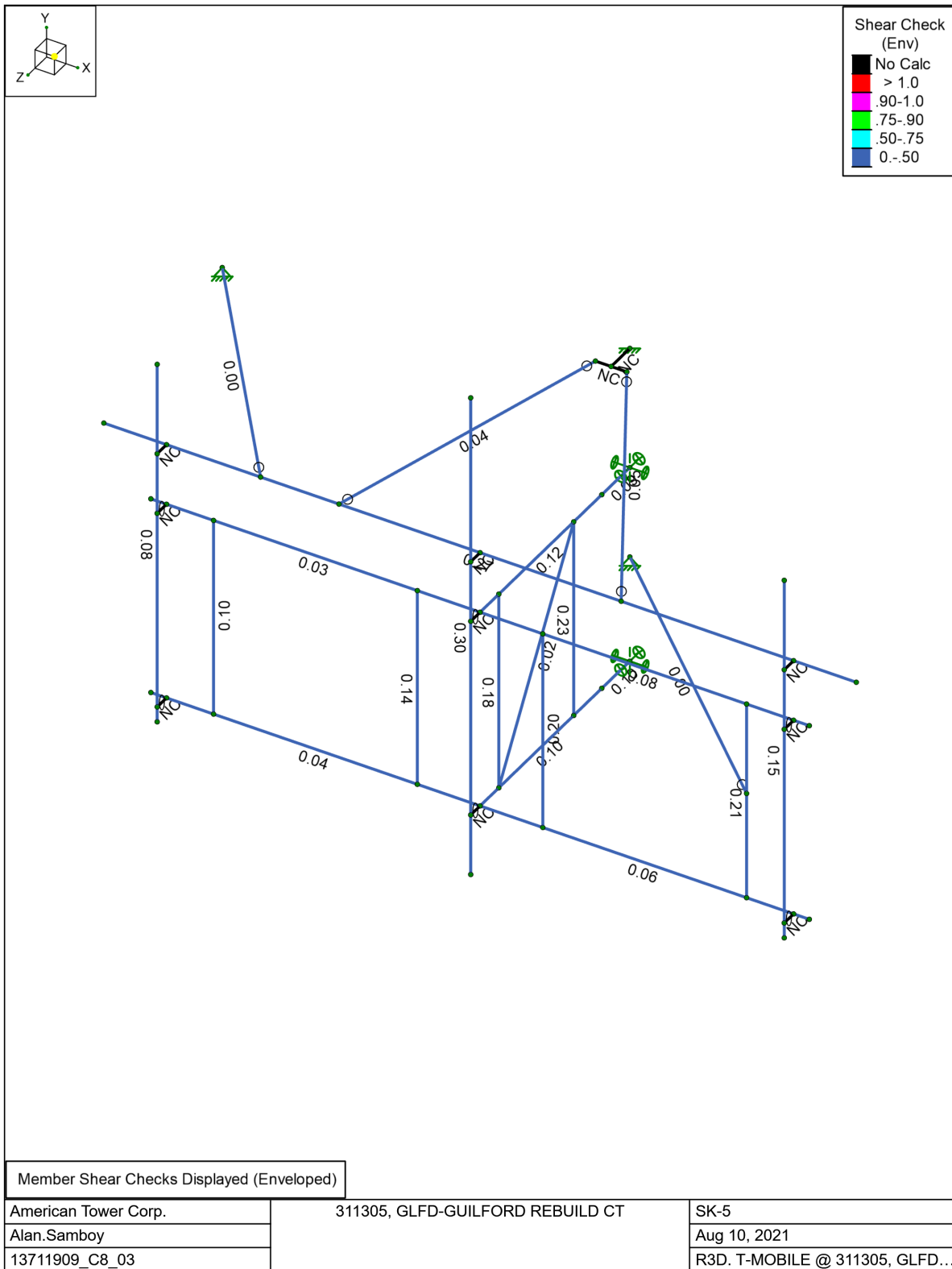
* Equipment with EPA values N/A were not considered in the mount analysis













Company : American Tower Corp.
 Designer : Alan.Sambo
 Job Number : 13711909_C8_03
 Model Name : 311305, GLFD-GUILFORD REBU...

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Node Boundary Conditions

	Node Label	X [lb/in]	Y [lb/in]	Z [lb/in]	X Rot [k-in/rad]	Y Rot [k-in/rad]	Z Rot [k-in/rad]
1	N001	Reaction	Reaction	Reaction	Reaction		Reaction
2	N005	Reaction	Reaction	Reaction	Reaction		Reaction
3	N021	Reaction	Reaction	Reaction			
4	N027	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N034	Reaction	Reaction	Reaction			

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	H001	N002	N023	90	L3X3X6	Beam	None	A572-50	Typical
2	H002	N006	N024	90	L3X3X6	Beam	None	A572-50	Typical
3	V003	N009	N016		HSS2.375X0.125	Column	None	A500 Gr. C	Typical
4	V004	N011	N010		HSS2.375X0.125	Column	None	A500 Gr. C	Typical
5	V005	N013	N012		HSS2.375X0.125	Column	None	A500 Gr. C	Typical
6	V006	N014	N015		HSS2.375X0.125	Column	None	A500 Gr. C	Typical
7	V007	N020	N019		HSS2.375X0.125	Column	None	A500 Gr. C	Typical
8	D008	N019	N017		SR 0.75	Column	None	A572-50	Typical
9	V009	N017	N018		HSS2.375X0.125	Column	None	A500 Gr. C	Typical
10	TB010	N022	N021		HSS2.375X0.125	Beam	None	A500 Gr. C	Typical
11	H011	N002	N003	180	L3X3X3	Beam	None	A572-50	Typical
12	H012	N002	N004	90	L3X3X3	Beam	None	A572-50	Typical
13	H013	N006	N007	180	L3X3X3	Beam	None	A572-50	Typical
14	H014	N006	N008	90	L3X3X3	Beam	None	A572-50	Typical
15	H015	N005	N024	90	PL7X0.375	Beam	None	A36	Typical
16	H016	N001	N023	90	PL7X0.375	Beam	None	A36	Typical
17	H017	N025	N026		PIPE 2.0	Beam	None	A53 Gr. B	Typical
18	H018	N027	N028		RIGID	None	None	RIGID	Typical
19	H019	N029	N030		RIGID	None	None	RIGID	Typical
20	D020	N030	N031	180	L2.5X2.5X3	Column	None	A36	Typical
21	D021	N029	N032	90	L2.5X2.5X3	Column	None	A36	Typical
22	TB022	N034	N033		PIPE 2.0	Beam	None	A53 Gr. B	Typical
23	U023	N035	N038		(1) 1/2 U-Bolt	Beam	None	A36	Typical
24	U024	N039	N040		(1) 1/2 U-Bolt	Beam	None	A36	Typical
25	U025	N041	N042		(2) 1/2 U-Bolts	Beam	None	A36	Typical
26	MP026	N043	N044		PIPE 2.0	Column	None	A500 Gr. C	Typical
27	U027	N036	N002		(1) 1/2 U-Bolt	Beam	None	A36	Typical
28	U028	N046	N006		(1) 1/2 U-Bolt	Beam	None	A36	Typical
29	U029	N048	N049		(2) 1/2 U-Bolts	Beam	None	A36	Typical
30	MP030	N050	N051		PIPE 2.5	Column	None	A500 Gr. C	Typical
31	U031	N037	N052		(1) 1/2 U-Bolt	Beam	None	A36	Typical
32	U032	N053	N054		(1) 1/2 U-Bolt	Beam	None	A36	Typical
33	U033	N055	N056		(2) 1/2 U-Bolts	Beam	None	A36	Typical
34	MP034	N057	N058		PIPE 2.0	Column	None	A500 Gr. C	Typical

Member Advanced Data

	Label	I Release	J Release	Physical	Deflection Ratio Options	Activation	Seismic DR
1	H001			Yes	N/A		None
2	H002			Yes	N/A		None
3	V003			Yes	** NA **		None
4	V004			Yes	** NA **		None
5	V005			Yes	** NA **		None
6	V006			Yes	** NA **		None
7	V007			Yes	** NA **		None



Company : American Tower Corp.
 Designer : Alan.Sambo
 Job Number : 13711909_C8_03
 Model Name : 311305, GLFD-GUILFORD REBU...

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Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Activation	Seismic DR
8	D008			Yes	** NA **		None
9	V009			Yes	** NA **		None
10	TB010	BenPIN		Yes	N/A		None
11	H011			Yes	Default		None
12	H012			Yes	Default		None
13	H013			Yes	Default		None
14	H014			Yes	Default		None
15	H015			Yes	N/A		None
16	H016			Yes	N/A		None
17	H017			Yes	N/A		None
18	H018			Yes	** NA **		None
19	H019			Yes	** NA **		None
20	D020	BenPIN	BenPIN	Yes	** NA **		None
21	D021	BenPIN	BenPIN	Yes	** NA **		None
22	TB022		BenPIN	Yes	N/A		None
23	U023	OOOXOO		Yes	Default	Exclude	None
24	U024	OOOXOO		Yes	Default	Exclude	None
25	U025			Yes	Default	Exclude	None
26	MP026			Yes	** NA **		None
27	U027	OOOXOO		Yes	Default	Exclude	None
28	U028	OOOXOO		Yes	Default	Exclude	None
29	U029			Yes	Default	Exclude	None
30	MP030			Yes	** NA **		None
31	U031	OOOXOO		Yes	Default	Exclude	None
32	U032	OOOXOO		Yes	Default	Exclude	None
33	U033			Yes	Default	Exclude	None
34	MP034			Yes	** NA **		None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lcomp top [in]	K y-y	K z-z	Function
1	H001	L3X3X6	39	Lbyy	0.65	0.65	Lateral
2	H002	L3X3X6	39	Lbyy	0.65	0.65	Lateral
3	V003	HSS2.375X0.125	39	Lbyy	0.65	0.65	Lateral
4	V004	HSS2.375X0.125	39	Lbyy	0.65	0.65	Lateral
5	V005	HSS2.375X0.125	39	Lbyy	0.65	0.65	Lateral
6	V006	HSS2.375X0.125	39	Lbyy	0.65	0.65	Lateral
7	V007	HSS2.375X0.125	39	Lbyy	0.65	0.65	Lateral
8	D008	SR 0.75	45.793	Lbyy	0.65	0.65	Lateral
9	V009	HSS2.375X0.125	39	Lbyy	0.65	0.65	Lateral
10	TB010	HSS2.375X0.125	70.036	Lbyy	1	1	Lateral
11	H011	L3X3X3	63	Lbyy	1	1	Lateral
12	H012	L3X3X3	63	Lbyy	1	1	Lateral
13	H013	L3X3X3	63	Lbyy	1	1	Lateral
14	H014	L3X3X3	63	Lbyy	1	1	Lateral
15	H015	PL7X0.375	9	Lbyy	1	1	Lateral
16	H016	PL7X0.375	9	Lbyy	1	1	Lateral
17	H017	PIPE 2.0	144	Lbyy	1	1	Lateral
18	D020	L2.5X2.5X3	49.84	Lbyy	1	1	Lateral
19	D021	L2.5X2.5X3	49.84	Lbyy	1	1	Lateral
20	TB022	PIPE 2.0	60	Lbyy	1	1	Lateral
21	U023	(1) 1/2 U-Bolt	3	Lbyy	0.5	0.5	Lateral
22	U024	(1) 1/2 U-Bolt	3	Lbyy	0.5	0.5	Lateral
23	U025	(2) 1/2 U-Bolts	3	Lbyy	0.5	0.5	Lateral
24	MP026	PIPE 2.0	72	Lbyy	2.1	2.1	Lateral
25	U027	(1) 1/2 U-Bolt	3	Lbyy	0.5	0.5	Lateral



Company : American Tower Corp.
Designer : Alan.Sambo
Job Number : 13711909_C8_03
Model Name : 311305, GLFD-GUILFORD REBU...

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Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lcomp top [in]	K y-y	K z-z	Function
26	U028	(1) 1/2 U-Bolt	3	Lbyy	0.5	0.5	Lateral
27	U029	(2) 1/2 U-Bolts	3	Lbyy	0.5	0.5	Lateral
28	MP030	PIPE 2.5	96	Lbyy	2.1	2.1	Lateral
29	U031	(1) 1/2 U-Bolt	3	Lbyy	0.5	0.5	Lateral
30	U032	(1) 1/2 U-Bolt	3	Lbyy	0.5	0.5	Lateral
31	U033	(2) 1/2 U-Bolts	3	Lbyy	0.5	0.5	Lateral
32	MP034	PIPE 2.0	72	Lbyy	2.1	2.1	Lateral

Hot Rolled Steel Properties

	Label	E [psi]	G [psi]	Nu	Therm. Coeff. [1e ⁶ °F ⁻¹]	Density [lb/ft ³]	Yield [psi]	Ry	Fu [psi]	Rt
1	A572-50	2.9e+07	1.115e+07	0.3	0.65	490	50000	1.1	65000	1.1
2	A500 Gr. C	2.9e+07	1.115e+07	0.3	0.65	490	46000	1.4	62000	1.3
3	A36	2.9e+07	1.115e+07	0.3	0.65	490	36000	1.5	58000	1.2
4	A53 Gr. B	2.9e+07	1.115e+07	0.3	0.65	490	35000	1.6	60000	1.2

Envelope Node Reactions

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N001	max	50.572	99	1021.515	37	614.003	16	33.15	19	0	107	45.46	76
2		min	-52.007	81	-72.402	19	-1752.459	10	-411.391	37	0	1	-40.779	106
3	N005	max	381.27	76	966.52	37	2024.729	106	15.147	19	0	107	44.579	76
4		min	-355.656	106	-15.798	19	-449.646	18	-406.218	37	0	1	-40.045	106
5	N021	max	691.432	74	23.832	34	667.326	74	0	107	0	107	0	107
6		min	-375.626	104	-9.225	74	-343.89	104	0	1	0	1	0	1
7	N027	max	684.334	98	806.009	7	2404.895	25	341.64	25	51.757	18	139.285	79
8		min	-1022.953	80	-680.465	25	-2829.219	7	-403.94	7	-68.19	80	-93.366	98
9	N034	max	893.926	6	385.412	71	1157.093	6	0	107	0	107	0	107
10		min	-912.931	24	8.542	50	-1159.597	24	0	1	0	1	0	1
11	Totals:	max	1897.304	18	2073.287	30	2477.576	2						
12		min	-1897.304	12	719.431	24	-2477.576	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	L3X3X6	0.355	30.062	36	0.122	5.688	z	73	82612.041	94950	3204.719	7392.123	1.5	H2-1	
2	H002	L3X3X6	0.362	30.062	107	0.095	5.688	y	74	82612.041	94950	3204.719	7392.123	1.5	H2-1	
3	V003	HSS2.375X0.125	0.47	0	72	0.214	17.875		74	31847.986	34072.2	2042.4	2042.4	2.15	H1-1b	
4	V004	HSS2.375X0.125	0.266	0	83	0.2	0		74	31847.986	34072.2	2042.4	2042.4	2.26	H1-1b	
5	V005	HSS2.375X0.125	0.285	39	107	0.14	39		76	31847.986	34072.2	2042.4	2042.4	2.262	H1-1b	
6	V006	HSS2.375X0.125	0.384	0	106	0.097	0		106	31847.986	34072.2	2042.4	2042.4	2.271	H1-1b	
7	V007	HSS2.375X0.125	0.077	39	75	0.183	0		76	31847.986	34072.2	2042.4	2042.4	2.171	H1-1b	
8	D008	SR 0.75	0.16	45.793	36	0.018	0		74	3960.314	19880.391	248.505	248.505	1.999	H1-1b*	
9	V009	HSS2.375X0.125	0.236	0	107	0.228	0		76	31847.986	34072.2	2042.4	2042.4	1.987	H1-1b	
10	TB010	HSS2.375X0.125	0.047	70.036	74	0.003	70.036		7	20352.636	34072.2	2042.4	2042.4	1.136	H1-1b*	
11	H011	L3X3X3	0.386	51.188	73	0.08	51.188	y	74	21067.774	49050	1637.69	3213.199	1.5	H2-1	
12	H012	L3X3X3	0.411	0	12	0.033	0	z	104	21067.774	49050	1637.69	3213.199	1.5	H2-1	
13	H013	L3X3X3	0.355	12.469	83	0.063	59.719	y	74	21067.774	49050	1637.69	3213.199	1.5	H2-1	
14	H014	L3X3X3	0.43	0	107	0.037	0	z	106	21067.774	49050	1637.69	3213.199	1.5	H2-1	
15	H015	PL7X0.375	0.628	0	37	0.099	0	y	76	59107.687	85050	664.453	12403.125	1.676	H1-1b	
16	H016	PL7X0.375	0.629	0	37	0.09	9	y	76	59107.687	85050	664.453	12403.125	1.69	H1-1b	
17	H017	PIPE 2.0	0.715	99	19	0.272	45		76	6830.97	32130	1871.625	1871.625	1.482	H1-1a	
18	D020	L2.5X2.5X3	0.126	24.401	13	0.043	49.84	y	106	16627.134	29192.4	872.574	1697.692	1.136	H2-1	
19	D021	L2.5X2.5X3	0.097	24.92	6	0.047	49.84	z	74	16627.134	29192.4	872.574	1697.692	1.136	H2-1	
20	TB022	PIPE 2.0	0.061	0	6	0.003	60		6	23808.54	32130	1871.625	1871.625	1.136	H1-1b*	



Company : American Tower Corp.
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 Model Name : 311305, GLFD-GUILFORD REBU...

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 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
21	MP026	PIPE 2.0	0.294	18	78	0.146	30	73	6195.892	42228	2459.85	2459.85	1.683	H1-1b
22	MP030	PIPE 2.5	0.38	33	13	0.304	45	76	8059.847	66654	4726.5	4726.5	2.424	H1-1b
23	MP034	PIPE 2.0	0.237	18	103	0.082	30	4	6195.892	42228	2459.85	2459.85	1.875	H1-1b



AMERICAN TOWER®
CORPORATION

This report was prepared for American Tower Corporation by



**TOWER
ENGINEERING
PROFESSIONALS**

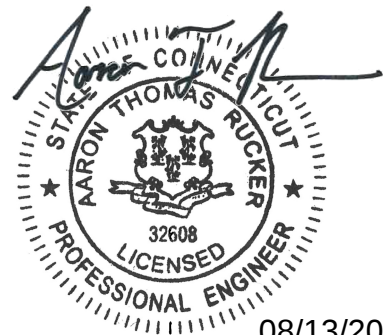
Structural Analysis Report

Structure : 191 ft Self Support Tower
ATC Site Name : GLFD-GUILFORD REBUILD CT,CT
ATC Site Number : 311305
Engineering Number : 13711909_C3_02
Proposed Carrier : T-MOBILE
Carrier Site Name : Guilford SNET Mobilit_1
Carrier Site Number : CT11028A
Site Location : 10 Tanner Marsh Road
Guilford, CT 06437-2942
41.2886, -72.6583
County : New Haven
Date : August 12, 2021
Max Usage : 80%
Result : Pass

Prepared By:

Jack Davis
TEP

Reviewed By:



08/13/2021

COA : PEC.0001553



Table of Contents

Introduction	3
Supporting Documents	3
Analysis	3
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Deflection, Twist and Sway*	5
Standard Conditions	6
Calculations	Attached



Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 191 ft Self Support tower to reflect the change in loading by T-Mobile.

Supporting Documents

Tower Drawings	Nello Job #RFQ34841, dated April 8, 2011 Inspection by A.R. Wireless, dated August 24, 2013
Foundation Drawing	ATC Job #47517572B, dated June 15, 2011
Geotechnical Report	GEOServices Project #21-07254, dated March 11, 2008
Mount Analysis Report	ATC Job #13711909_C8_03, dated August 10, 2021

Analysis

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

Basic Wind Speed:	123 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.00" radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	$S_s = 0.20$, $S_i = 0.05$
Site Class:	D - Stiff Soil - Default

Conclusion

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

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



Existing and Reserved Equipment

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
190.0	3	12' Dipole	Leg	(1) 5/16" (0.31"-7.9mm) Coax (3) 7/8" Coax	TOWN OF GUILFORD CT
189.0	2	6' Omni	Pole Mount	(2) 1/2" Coax	OTHER
183.0	3	RFS APXV18-206517S-C	Side Arms	(6) 1 5/8" Coax (1) 3/8" Coax	METRO PCS INC
	3	RCU (Remote Control Unit)			
177.0	3	Ericsson Radio 4449 B71 B85A	Sector Frames	-	T-MOBILE
	3	RFS APXVAALL24 43-U-NA20			
166.0	4	Ericsson RRUS 4426 B66	Sector Frames	(4) 0.39" (10mm) Fiber Trunk (8) 0.74" (18.7mm) 8 AWG 7 (12) 1 5/8" Coax (1) 1/2" Coax (6) 3/8" (0.38"-9.5mm) RET Control Cable	AT&T MOBILITY
	2	Raycap DC6-48-60-18-8F (23.5" Height)			
	2	Ericsson RRUS 4478 B5			
	4	Ericsson RRUS 32 B30 (60 lbs)			
	4	Ericsson RRUS-11 (19.7")			
	4	Ericsson RRUS E2 B29			
	2	Raycap DC6-48-60-18-8C-EV			
	3	Powerwave Allgon 7770.00			
	2	Commscope SBNHH-1D65A			
	2	CCI OPA-65R-LCUU-H4 (14.4" width)			
	2	CCI HPA-65R-BUU-H4			
	3	CCI BSA-M65R-BUU-H4			
	6	Powerwave Allgon LGP21401			
	2	Kaelus DBC0061F1V51-2			
	6	Powerwave Allgon 7020			
	1	Ericsson RRUS 4478 B14 (15")			
156.0	1	Commscope RDIDC-9181-PF-48	Sector Frames	(1) 1.60" (40.6mm) Hybrid	DISH WIRELESS L.L.C.
	3	Fujitsu TA08025-B604			
	3	Fujitsu TA08025-B605			
	3	JMA Wireless MX08FRO665-21			
148.0	1	4' Dish w/ Radome	Sector Frame	(3) 1 1/4" Coax	TOWN OF GUILFORD CT
144.0	1	10' Dipole	Side Arm	(4) 7/8" Coax	
137.0	2	6' FM antenna	Side Arm	(1) 1 5/8" Coax	MONROE BOARD OF EDUCATION
127.0	1	Harris FML-4E	Side Arm	(1) 7/8" Coax	
108.8	1	Scala PR-950	Leg	(1) 7/8" Coax	
87.0	1	Antel BCD-87010 ____ 4°	Stand-Off	(1) 7/8" Coax	SPOK HOLDINGS, INC.
80.0	2	4' Std. Dish	Leg	(2) 7/8" Coax	TOWN OF GUILFORD CT
60.0	-	-	Empty Side Arms	-	-
16.0	1	Channel Master Type 120	Leg	(3) 0.28" (7mm) RG-6	SPOK HOLDINGS, INC.
4.0	2	Ericsson RRUS 32 B2	Leg	-	AT&T MOBILITY

**Equipment to be Removed**

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
177.0	3	Ericsson AIR 21, 1.3 M, B2A B4P, AWS - 1700/2100	-	(1) 1 1/4" (1.25"-31.8mm) Fiber (6) 1 5/8" Coax (1) 1 5/8" Hybriflex	T-MOBILE
	3	Ericsson KRY 112 144/1			
	3	Ericsson AIR 21 B4A B2P			

Proposed Equipment

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
177.0	3	Ericsson Radio 4460 B25+B66	Sector Frames	(3) 1.99" (50.7mm) Hybrid	T-MOBILE
	3	Ericsson Air6449 B41			

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

Install proposed lines in the place of the existing T-MOBILE lines.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	80%	Pass
Diagonals	69%	Pass
Horizontals	10%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Uplift (Kips)	434.0	585.9	416.6	71%
Download (kips)	488.3	659.2	468.3	71%
Shear (Kips)	49.5	66.8	45.0	67%

* The design reactions are factored by 1.35 per ANSI/TIA-222-H, Sec. 15.6.2

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

Deflection, Twist and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Twist (°)	Sway (Rotation) (°)
177.0	Ericsson Air6449 B41 Ericsson Radio 4460 B25+B66	T-MOBILE	0.464	0.008	0.322
156.0	Commscope RDIDC-9181-PF-48 Fujitsu TA08025-B604 Fujitsu TA08025-B605 JMA Wireless MX08FRO665-21	DISH WIRELESS L.L.C.	0.340	0.008	0.255
148.0	4' Dish w/ Radome	TOWN OF GUILFORD CT	0.311	0.008	0.242
108.8	Scala PR-950	MONROE BOARD OF EDUCATION	0.165	0.007	0.174
80.0	4' Std. Dish	TOWN OF GUILFORD CT	0.094	0.005	0.133
16.0	Channel Master Type 120	SPOK HOLDINGS, INC.	0.008	0.001	0.038

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

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

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

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

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

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

Asset: 311305, GLFD-GUILFORD REBUILD CT
 Client: T-MOBILE
 Code: ANSI/TIA-222-H

Height : 190.6 ft
 Base Width : 20 ft
 Shape : Triangle

Quadrant 1

190.60

Sect 10

180.00

Sect 9

160.00

Sect 8

140.00

Sect 7

120.00

Sect 6

100.00

Sect 5

80.00

Sect 4

60.00

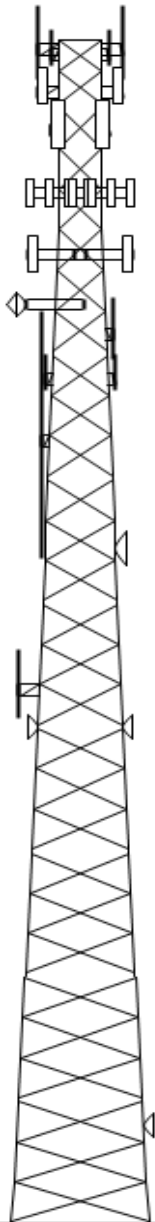
Sect 3

40.00

Sect 2

20.00

Sect 1



SITE PARAMETERS

Nominal Wind : 123 mph wind with no ice Exposure : C Site Class : D
 Ice Wind: 50 mph wind with 1" radial Topo Method: Method 1 Risk Cat : II
 Service Wind : 60 mph Serviceability Topo Feature : S_g : 0.204 S₁ : 0.054

SECTION PROPERTIES

Section	Leg Members	Diagonal Members	Horizontal Members
1	PST 50 ksi 12" DIA PI	SAE 50 ksi 4X4X0.25	
2	PST 50 ksi 10" DIA PI	SAE 50 ksi 3.5x3.5x0.25	
3 - 4	PST 50 ksi 10" DIA PI	SAE 50 ksi 3X3X0.25	
5 - 6	PST 50 ksi 8" DIA PIP	SAE 50 ksi 3X3X0.1875	
7	PST 50 ksi 6" DIA PIP	SAE 50 ksi 3X3X0.1875	
8	PST 50 ksi 5" DIA PIP	SAE 50 ksi 2.5X2.5X0.1875	
9	PST 50 ksi 3" DIA PIP	SAE 50 ksi 2.5X2.5X0.1875	
10	PST 50 ksi 2" DIA PIP	SAE 50 ksi 2X2X0.1875	SAE 36 ksi 1.75X1.75X0.125

REDUNDANT SECONDARY BRACING

Section	Sub Diag 1	Sub Horiz 1	Sub Diag 2	Sub Horiz 2	Sub Diag 3	Sub Horiz 3
1 - 10	-	-	-	-	-	-

DISCRETE APPURTENANCE

Elev (ft)	Type	Qty	Description
190.00	DIPOLE	3	Generic 12' Dipole
190.00	T-Arm	3	Side Arm
189.00	OMNI	2	Generic 6' Omni
183.00	PANEL	3	RFS APXV18-206517S-C
183.00	RET/RCU	3	Generic RCU (Remote Control Un
183.00	T-Arm	3	Round Side Arm
177.00	PANEL	3	Ericsson Air6449 B41
177.00	PANEL	3	RFS APXVAALL24 43-U-NA20
177.00	RRU/RRH	3	Ericsson Radio 4449 B71 B85A
177.00	RRU/RRH	3	Ericsson Radio 4460 B25+B66
175.00	Sector Frame	3	Generic Heavy Sector Frame
166.00	BOB/SSB	2	Raycap DC6-48-60-18-8F (23.5"
166.00	BOB/SSB	2	Raycap DC6-48-60-18-8C-EV
166.00	BTS	6	Powerwave Allgon 7020
166.00	DIPLEXER/DUAL COUPLER	2	Kaelus DBC0061F1V51-2
166.00	PANEL	2	CCI OPA-65R-LCUU-H4 (14.4" wid
166.00	PANEL	2	CCI HPA-65R-BUU-H4
166.00	PANEL	2	Commscope SBNHH-1D65A
166.00	PANEL	3	CCI BSA-M65R-BUU-H4
166.00	PANEL	3	Powerwave Allgon 7770.00
166.00	RRU/RRH	1	Ericsson RRUS 4478 B14 (15")
166.00	RRU/RRH	2	Ericsson RRUS 4478 B5
166.00	RRU/RRH	4	Ericsson RRUS E2 B29
166.00	RRU/RRH	4	Ericsson RRUS 4426 B66
166.00	RRU/RRH	4	Ericsson RRUS-11 (19.7")
166.00	RRU/RRH	4	Ericsson RRUS 32 B30 (60 lbs)
166.00	Sector Frame	3	Flat Light Sector Frame
166.00	TTA	6	Powerwave Allgon LGP21401
156.00	BOB/SSB	1	Commscope RDIDC-9181-PF-48

JOB INFORMATION

Asset: 311305, GLFD-GUILFORD REBUILD CT
 Client: T-MOBILE
 Code: ANSI/TIA-222-H

Height : 190.6 ft
 Base Width : 20 ft
 Shape : Triangle

DISCRETE APPURTENANCE

Elev (ft)	Type	Qty	Description
156.00	PANEL	3	JMA Wireless MX08FRO665-21
156.00	RRU/RRH	3	Fujitsu TA08025-B605
156.00	RRU/RRH	3	Fujitsu TA08025-B604
156.00	Sector Frame	3	Generic Flat Light Sector Fram
148.00	DISH-RADOME	1	Generic 4' Dish w/ Radome
148.00	Sector Frame	1	Generic Flat Light Sector Fram
144.00	DIPOLE	1	Generic 10' Dipole
142.00	T-Arm	2	Round Side Arm
137.00	FM	2	Generic 6' FM antenna
135.00	T-Arm	4	Round Side Arm
130.00	T-Arm	3	Round Side Arm
127.00	FM	1	Harris FML-4E
125.00	T-Arm	2	Round Side Arm
108.80	DISH-GRID	1	Scala PR-950
87.00	OMNI	1	Antel BCD-87010 ____ 4°
87.00	T-Arm	1	Stand-Off
80.00	DISH-STANDARD	2	Generic 4' Std. Dish
60.00	T-Arm	2	Side Arm
16.00	DISH-STANDARD	1	Channel Master Type 120
4.00	RRU/RRH	2	Ericsson RRUS 32 B2

LINEAR APPURTENANCE

Elev (ft)			Qty	Description
From	To			
0.00	190.50	1	Climbing Ladder	
0.00	190.00	3	7/8" Coax	
0.00	190.00	1	5/16" (0.31"-7.9mm) Coax	
0.00	189.00	2	1/2" Coax	
0.00	183.00	1	Waveguide	
0.00	183.00	1	3/8" Coax	
0.00	183.00	6	1 5/8" Coax	
0.00	177.00	3	1.99" (50.7mm) Hybrid	
0.00	175.00	1	Waveguide	
0.00	166.00	1	Waveguide	
0.00	166.00	6	3/8" (0.38"- 9.5mm) RET Control Cable	
0.00	166.00	1	1/2" Coax	
0.00	166.00	12	1 5/8" Coax	
0.00	166.00	8	0.74" (18.7mm) 8 AWG 7	
0.00	166.00	4	0.39" (10mm) Fiber Trunk	
0.00	156.00	1	Waveguide	
0.00	156.00	1	1.60" (40.6mm) Hybrid	
0.00	144.00	3	1 1/4" Coax	
0.00	140.00	4	7/8" Coax	
0.00	137.00	1	1 5/8" Coax	
0.00	127.00	1	7/8" Coax	
0.00	108.80	1	7/8" Coax	
0.00	87.00	1	7/8" Coax	
0.00	80.00	2	7/8" Coax	
0.00	16.00	3	0.28" (7mm) RG-6	

GLOBAL BASE FOUNDATION DESIGN LOADS

Load Case	Moment (k-ft)	Vertical (kip)	Horizontal (kip)
DL+WL	7759.89	60.73	74.3

JOB INFORMATION			
Asset:	311305, GLFD-GUILFORD REBUILD CT	Height :	190.6 ft
Client	T-MOBILE	Base Width :	20 ft
Code:	ANSI/TIA-222-H	Shape :	Triangle

GLOBAL BASE FOUNDATION DESIGN LOADS

Load Case	Moment (k-ft)	Vertical (kip)	Horizontal (kip)
DL+WL+IL	2426.93	123.3	23.58

INDIVIDUAL BASE FOUNDATION DESIGN LOADS

Vertical (kip)	Uplift (kip)	Horizontal (kip)
468.26	416.58	45.00

ANALYSIS PARAMETERS

Location:	New Haven County, CT	Height:	190.6 ft
Type and Shape:	Self Support, Triangle	Base Elevation:	0.00 ft
Manufacturer:	Undetermined	Bottom Face Width:	20.00 ft
Kd	0.85	Top Face Width:	6.50 ft
Ke:	1.00	Anchor Bolt Detail Type:	c

ICE & WIND PARAMETERS

Exposure Category:	C	Design Wind Speed Without Ice:	123 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:	1.00 in
Crest Height:	0 ft	HMSL:	81 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method		
Site Class:	D - Stiff Soil	Period Based on Rayleigh Method (sec):	0.98
T _L (sec):	6	P:	1
S _s :	0.204	S ₁ :	0.054
F _a :	1.600	F _v :	2.400
S _{ds} :	0.218	S _{d1} :	0.086
		C _s :	0.030
		C _s , Max:	0.030
		C _s , Min:	0.030

LOAD CASES

1.2D + 1.0W Normal	123 mph wind with no ice
1.2D + 1.0W 60°	123 mph wind with no ice
1.2D + 1.0W 90°	123 mph wind with no ice
1.2D + 1.0W 120°	123 mph wind with no ice
1.2D + 1.0W 180°	123 mph wind with no ice
1.2D + 1.0W 210°	123 mph wind with no ice
1.2D + 1.0W 240°	123 mph wind with no ice
1.2D + 1.0W 300°	123 mph wind with no ice
1.2D + 1.0W 330°	123 mph wind with no ice
0.9D + 1.0W Normal	123 mph wind with no ice
0.9D + 1.0W 60°	123 mph wind with no ice
0.9D + 1.0W 90°	123 mph wind with no ice
0.9D + 1.0W 120°	123 mph wind with no ice
0.9D + 1.0W 180°	123 mph wind with no ice
0.9D + 1.0W 210°	123 mph wind with no ice
0.9D + 1.0W 240°	123 mph wind with no ice
0.9D + 1.0W 300°	123 mph wind with no ice
0.9D + 1.0W 330°	123 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Normal	50 mph wind with 1" radial ice
1.2D + 1.0Di + 1.0Wi 60°	50 mph wind with 1" radial ice
1.2D + 1.0Di + 1.0Wi 90°	50 mph wind with 1" radial ice
1.2D + 1.0Di + 1.0Wi 120°	50 mph wind with 1" radial ice
1.2D + 1.0Di + 1.0Wi 180°	50 mph wind with 1" radial ice
1.2D + 1.0Di + 1.0Wi 210°	50 mph wind with 1" radial ice
1.2D + 1.0Di + 1.0Wi 240°	50 mph wind with 1" radial ice
1.2D + 1.0Di + 1.0Wi 300°	50 mph wind with 1" radial ice
1.2D + 1.0Di + 1.0Wi 330°	50 mph wind with 1" 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
1.2D + 1.0Ev + 1.0Eh 300°	Seismic
1.2D + 1.0Ev + 1.0Eh 330°	Seismic

ASSET: # 311305, GLFD-GUILFORD REBUILD CT

STANDARD

ANSI/TIA-222-H

CUSTOMER T-MOBILE

ENG NO.:

13711909_C3_02

LOAD CASES

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)
190.0	Generic 12' Dipole	3	40	4.5	12.0	3.0	3.0	1.00	1.00	0.0	0.00	47.55	144
190.0	Side Arm	3	150	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.00	47.55	540
189.0	Generic 6' Omni	2	25	1.8	6.0	3.0	3.0	1.00	1.00	0.0	0.00	47.50	60
183.0	Generic RCU (Remote Control Un	3	1	0.1	0.7	2.0	2.0	0.80	1.00	0.0	0.00	47.18	4
183.0	RFS APXV18-206517S-C	3	26	5.2	6.0	6.8	3.2	0.80	0.68	0.0	0.00	47.18	95
183.0	Round Side Arm	3	150	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.00	47.18	540
177.0	Ericsson Radio 4449 B71 B85A	3	75	1.6	1.3	13.2	10.5	0.80	0.50	0.0	0.00	46.85	270
177.0	Ericsson Radio 4460 B25+B66	3	109	2.6	1.6	15.7	12.1	0.80	0.67	0.0	0.00	46.85	392
177.0	Ericsson Air6449 B41	3	104	5.7	2.8	20.6	8.6	0.80	0.63	0.0	0.00	46.85	374
177.0	RFS APXVAALL24 43-U-NA20	3	123	20.2	8.0	24.0	8.5	0.80	0.63	0.0	0.00	46.85	442
175.0	Generic Heavy Sector Frame	3	500	29.3	0.0	0.0	0.0	0.75	0.67	0.0	0.00	46.74	1800
166.0	Powerwave Allgon 7020	6	2	0.3	0.4	8.3	2.4	0.80	0.50	0.0	0.00	46.22	16
166.0	Kaelus DBC0061F1V51-2	2	26	0.4	0.7	6.5	6.2	0.80	0.50	0.0	0.00	46.22	61
166.0	Powerwave Allgon LGP21401	6	14	1.1	1.2	9.2	2.6	0.80	0.50	0.0	0.00	46.22	102
166.0	Raycap DC6-48-60-18-8F (23.5"	2	20	1.3	2.0	9.7	9.7	0.80	1.00	0.0	0.00	46.22	48
166.0	Ericsson RRUS 4426 B66	4	48	1.6	1.3	13.2	5.8	0.80	0.50	0.0	0.00	46.22	232
166.0	Ericsson RRUS 4478 B14 (15")	1	59	1.6	1.3	13.2	7.3	0.80	1.00	0.0	0.00	46.22	71
166.0	Ericsson RRUS 4478 B5	2	60	1.8	1.4	13.4	7.7	0.80	0.50	0.0	0.00	46.22	144
166.0	Ericsson RRUS 32 B30 (60 lbs)	4	60	2.7	2.2	12.1	6.7	0.80	0.67	0.0	0.00	46.22	288
166.0	Ericsson RRUS-11 (19.7")	4	51	2.8	1.6	17.0	8.0	0.80	0.67	0.0	0.00	46.22	245
166.0	Ericsson RRUS E2 B29	4	60	3.1	1.7	18.5	7.5	0.80	0.62	0.0	0.00	46.22	288
166.0	Raycap DC6-48-60-18-8C-EV	2	16	4.8	2.6	18.3	10.2	0.80	0.75	0.0	0.00	46.22	38
166.0	Powerwave Allgon 7770.00	3	35	5.5	4.6	11.0	5.0	0.80	0.65	0.0	0.00	46.22	126
166.0	Commscope SBNHH-1D65A	2	34	5.9	4.6	11.9	7.1	0.80	0.77	0.0	0.00	46.22	80
166.0	CCI OPA-65R-LCUU-H4 (14.4" wid	2	57	5.9	4.0	14.4	7.3	0.80	0.75	0.0	0.00	46.22	137
166.0	CCI HPA-65R-BUU-H4	2	34	6.1	4.0	14.8	9.0	0.80	0.77	0.0	0.00	46.22	82
166.0	CCI BSA-M65R-BUU-H4	3	75	11.9	4.2	28.5	9.7	0.80	0.61	0.0	0.00	46.22	270
166.0	Flat Light Sector Frame	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.00	46.22	1440
156.0	Commscope RDIDC-9181-PF-48	1	22	1.9	1.3	14.0	8.0	0.80	1.00	0.0	0.00	45.62	26
156.0	Fujitsu TA08025-B604	3	64	2.0	1.3	15.0	7.9	0.80	0.50	0.0	0.00	45.62	230
156.0	Fujitsu TA08025-B605	3	75	2.0	1.3	15.0	9.1	0.80	0.50	0.0	0.00	45.62	270
156.0	JMA Wireless MX08FRO665-21	3	65	12.5	6.0	20.0	8.0	0.80	0.64	0.0	0.00	45.62	232
156.0	Generic Flat Light Sector Fram	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.00	45.62	1440
148.0	Generic 4' Dish w/ Radome	1	120	10.8	4.0	48.0	0.0	1.00	1.00	0.0	0.00	45.12	144
148.0	Generic Flat Light Sector Fram	1	400	17.9	0.0	0.0	0.0	1.00	1.00	0.0	0.00	45.12	480
144.0	Generic 10' Dipole	1	30	3.8	10.0	3.0	3.0	1.00	1.00	0.0	0.00	44.86	36
142.0	Round Side Arm	2	150	5.2	0.0	0.0	0.0	1.00	0.90	0.0	0.00	44.73	360
137.0	Generic 6' FM antenna	2	30	13.4	6.0	0.0	0.0	1.00	1.00	0.0	0.00	44.39	72
135.0	Round Side Arm	4	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	44.25	720
130.0	Round Side Arm	3	150	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.00	43.90	540
127.0	Harris FML-4E	1	227	12.8	40.0	24.0	24.0	1.00	1.00	0.0	0.00	43.69	272
125.0	Round Side Arm	2	150	5.2	0.0	0.0	0.0	1.00	0.90	0.0	0.00	43.54	360
108.8	Scala PR-950	1	38	10.1	5.7	36.0	0.0	1.00	1.00	0.0	0.00	42.29	46
87.0	Stand-Off	1	75	2.5	0.0	0.0	0.0	1.00	1.00	0.0	0.00	40.34	90
87.0	Antel BCD-87010 ____ 4°	1	27	2.9	11.2	2.6	2.6	1.00	1.00	0.0	0.00	40.34	32
80.0	Generic 4' Std. Dish	2	188	20.9	4.0	48.0	0.0	1.00	1.00	0.0	0.00	39.64	451
60.0	Side Arm	2	150	5.2	0.0	0.0	0.0	1.00	0.90	0.0	0.00	37.31	360
16.0	Channel Master Type 120	1	126	20.2	3.9	47.2	0.0	1.00	1.00	0.0	0.00	28.25	151
4.0	Ericsson RRUS 32 B2	2	53	2.7	2.3	12.1	7.0	1.00	0.67	0.0	0.00	27.90	127
Totals		124	12,308	779.8								19,222	14,769

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)
190.0	Generic 12' Dipole	3	40	4.5	12.0	3.0	3.0	1.00	1.00	0.0	0.00	47.55	108
190.0	Side Arm	3	150	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.00	47.55	405
189.0	Generic 6' Omni	2	25	1.8	6.0	3.0	3.0	1.00	1.00	0.0	0.00	47.50	45
183.0	Generic RCU (Remote Control Un	3	1	0.1	0.7	2.0	2.0	0.80	1.00	0.0	0.00	47.18	3
183.0	RFS APXV18-206517S-C	3	26	5.2	6.0	6.8	3.2	0.80	0.68	0.0	0.00	47.18	71
183.0	Round Side Arm	3	150	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.00	47.18	405
177.0	Ericsson Radio 4449 B71 B85A	3	75	1.6	1.3	13.2	10.5	0.80	0.50	0.0	0.00	46.85	202

Elev (ft)	Description	Qty	Wt. (lb)	EPA Length (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)
177.0	Ericsson Radio 4460 B25+B66	3	109	2.6	1.6	15.7	12.1	0.80	0.67	0.0	0.00	46.85	164	294
177.0	Ericsson Air6449 B41	3	104	5.7	2.8	20.6	8.6	0.80	0.63	0.0	0.00	46.85	342	281
177.0	RFS APXVAALL24 43-U-NA20	3	123	20.2	8.0	24.0	8.5	0.80	0.63	0.0	0.00	46.85	1219	332
175.0	Generic Heavy Sector Frame	3	500	29.3	0.0	0.0	0.0	0.75	0.67	0.0	0.00	46.74	1755	1350
166.0	Powerwave Allgon 7020	6	2	0.3	0.4	8.3	2.4	0.80	0.50	0.0	0.00	46.22	32	12
166.0	Kaelus DBC0061F1V51-2	2	26	0.4	0.7	6.5	6.2	0.80	0.50	0.0	0.00	46.22	14	46
166.0	Powerwave Allgon LGP21401	6	14	1.1	1.2	9.2	2.6	0.80	0.50	0.0	0.00	46.22	104	76
166.0	Raycap DC6-48-60-18-8F (23.5"	2	20	1.3	2.0	9.7	9.7	0.80	1.00	0.0	0.00	46.22	79	36
166.0	Ericsson RRUS 4426 B66	4	48	1.6	1.3	13.2	5.8	0.80	0.50	0.0	0.00	46.22	104	174
166.0	Ericsson RRUS 4478 B14 (15")	1	59	1.6	1.3	13.2	7.3	0.80	1.00	0.0	0.00	46.22	52	53
166.0	Ericsson RRUS 4478 B5	2	60	1.8	1.4	13.4	7.7	0.80	0.50	0.0	0.00	46.22	58	108
166.0	Ericsson RRUS 32 B30 (60 lbs)	4	60	2.7	2.2	12.1	6.7	0.80	0.67	0.0	0.00	46.22	227	216
166.0	Ericsson RRUS-11 (19.7")	4	51	2.8	1.6	17.0	8.0	0.80	0.67	0.0	0.00	46.22	235	184
166.0	Ericsson RRUS E2 B29	4	60	3.1	1.7	18.5	7.5	0.80	0.62	0.0	0.00	46.22	245	216
166.0	Raycap DC6-48-60-18-8C-EV	2	16	4.8	2.6	18.3	10.2	0.80	0.75	0.0	0.00	46.22	226	29
166.0	Powerwave Allgon 7770.00	3	35	5.5	4.6	11.0	5.0	0.80	0.65	0.0	0.00	46.22	338	94
166.0	Commscope SBNHH-1D65A	2	34	5.9	4.6	11.9	7.1	0.80	0.77	0.0	0.00	46.22	285	60
166.0	CCI OPA-65R-LCUU-H4 (14.4" wid	2	57	5.9	4.0	14.4	7.3	0.80	0.75	0.0	0.00	46.22	280	103
166.0	CCI HPA-65R-BUU-H4	2	34	6.1	4.0	14.8	9.0	0.80	0.77	0.0	0.00	46.22	294	61
166.0	CCI BSA-M65R-BUU-H4	3	75	11.9	4.2	28.5	9.7	0.80	0.61	0.0	0.00	46.22	682	202
166.0	Flat Light Sector Frame	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.00	46.22	1060	1080
156.0	Commscope RDIDC-9181-PF-48	1	22	1.9	1.3	14.0	8.0	0.80	1.00	0.0	0.00	45.62	58	20
156.0	Fujitsu TA08025-B604	3	64	2.0	1.3	15.0	7.9	0.80	0.50	0.0	0.00	45.62	91	173
156.0	Fujitsu TA08025-B605	3	75	2.0	1.3	15.0	9.1	0.80	0.50	0.0	0.00	45.62	91	202
156.0	JMA Wireless MX08FRO665-21	3	65	12.5	6.0	20.0	8.0	0.80	0.64	0.0	0.00	45.62	744	174
156.0	Generic Flat Light Sector Fram	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.00	45.62	1046	1080
148.0	Generic 4' Dish w/ Radome	1	120	10.8	4.0	48.0	0.0	1.00	1.00	0.0	0.00	45.12	416	108
148.0	Generic Flat Light Sector Fram	1	400	17.9	0.0	0.0	0.0	1.00	1.00	0.0	0.00	45.12	686	360
144.0	Generic 10' Dipole	1	30	3.8	10.0	3.0	3.0	1.00	1.00	0.0	0.00	44.86	143	27
142.0	Round Side Arm	2	150	5.2	0.0	0.0	0.0	1.00	0.90	0.0	0.00	44.73	356	270
137.0	Generic 6' FM antenna	2	30	13.4	6.0	0.0	0.0	1.00	1.00	0.0	0.00	44.39	1015	54
135.0	Round Side Arm	4	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	44.25	782	540
130.0	Round Side Arm	3	150	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.00	43.90	390	405
127.0	Harris FML-4E	1	227	12.8	40.0	24.0	24.0	1.00	1.00	0.0	0.00	43.69	476	204
125.0	Round Side Arm	2	150	5.2	0.0	0.0	0.0	1.00	0.90	0.0	0.00	43.54	346	270
108.8	Scala PR-950	1	38	10.1	5.7	36.0	0.0	1.00	1.00	0.0	0.00	42.29	363	34
87.0	Stand-Off	1	75	2.5	0.0	0.0	0.0	1.00	1.00	0.0	0.00	40.34	86	68
87.0	Antel BCD-87010 ____ 4°	1	27	2.9	11.2	2.6	2.6	1.00	1.00	0.0	0.00	40.34	99	24
80.0	Generic 4' Std. Dish	2	188	20.9	4.0	48.0	0.0	1.00	1.00	0.0	0.00	39.64	1409	338
60.0	Side Arm	2	150	5.2	0.0	0.0	0.0	1.00	0.90	0.0	0.00	37.31	297	270
16.0	Channel Master Type 120	1	126	20.2	3.9	47.2	0.0	1.00	1.00	0.0	0.00	28.25	485	113
4.0	Ericsson RRUS 32 B2	2	53	2.7	2.3	12.1	7.0	1.00	0.67	0.0	0.00	27.90	87	95
Totals		124	12,308	779.8									19,222	11,077

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)
190.0	Generic 12' Dipole	3	131	9.4	12.0	3.0	3.0	1.00	1.00	0.0	0.00	7.86	188	417
190.0	Side Arm	3	200	7.1	0.0	0.0	0.0	1.00	0.67	0.0	0.00	7.86	95	690
189.0	Generic 6' Omni	2	56	2.6	6.0	3.0	3.0	1.00	1.00	0.0	0.00	7.85	35	123
183.0	Generic RCU (Remote Control Un	3	5	0.4	0.7	2.0	2.0	0.80	1.00	0.0	0.00	7.80	6	15
183.0	RFS APXV18-206517S-C	3	90	6.8	6.0	6.8	3.2	0.80	0.68	0.0	0.00	7.80	73	285
183.0	Round Side Arm	3	200	7.1	0.0	0.0	0.0	1.00	0.67	0.0	0.00	7.80	94	690
177.0	Ericsson Radio 4449 B71 B85A	3	116	2.2	1.3	13.2	10.5	0.80	0.50	0.0	0.00	7.74	18	392
177.0	Ericsson Radio 4460 B25+B66	3	169	3.3	1.6	15.7	12.1	0.80	0.67	0.0	0.00	7.74	35	572
177.0	Ericsson Air6449 B41	3	196	6.8	2.8	20.6	8.6	0.80	0.63	0.0	0.00	7.74	67	651
177.0	RFS APXVAALL24 43-U-NA20	3	386	22.8	8.0	24.0	8.5	0.80	0.63	0.0	0.00	7.74	226	1233
175.0	Generic Heavy Sector Frame	3	872	41.0	0.0	0.0	0.0	0.75	0.67	0.0	0.00	7.72	406	2917
166.0	Powerwave Allgon 7020	6	9	0.6	0.4	8.3	2.4	0.80	0.50	0.0	0.00	7.64	10	57
166.0	Kaelus DBC0061F1V51-2	2	38	0.7	0.7	6.5	6.2	0.80	0.50	0.0	0.00	7.64	4	86
166.0	Powerwave Allgon LGP21401	6	31	1.6	1.2	9.2	2.6	0.80	0.50	0.0	0.00	7.64	25	203
166.0	Raycap DC6-48-60-18-8F (23.5"	2	56	1.7	2.0	9.7	9.7	0.80	1.00	0.0	0.00	7.64	18	119
166.0	Ericsson RRUS 4426 B66	4	79	2.2	1.3	13.2	5.8	0.80	0.50	0.0	0.00	7.64	23	353
166.0	Ericsson RRUS 4478 B14 (15")	1	93	2.2	1.3	13.2	7.3	0.80	1.00	0.0	0.00	7.64	12	105
166.0	Ericsson RRUS 4478 B5	2	97	2.4	1.4	13.4	7.7	0.80	0.50	0.0	0.00	7.64	13	219

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)
166.0	Ericsson RRUS 32 B30 (60 lbs)	4	108	3.5	2.2	12.1	6.7	0.80	0.67	0.0	0.00	7.64	48	480
166.0	Ericsson RRUS-11 (19.7")	4	102	3.5	1.6	17.0	8.0	0.80	0.67	0.0	0.00	7.64	49	451
166.0	Ericsson RRUS E2 B29	4	115	3.9	1.7	18.5	7.5	0.80	0.62	0.0	0.00	7.64	51	507
166.0	Raycap DC6-48-60-18-8C-EV	2	103	5.8	2.6	18.3	10.2	0.80	0.75	0.0	0.00	7.64	45	213
166.0	Powerwave Allgon 7770.00	3	120	6.2	4.6	11.0	5.0	0.80	0.65	0.0	0.00	7.64	63	380
166.0	Commscope SBNHH-1D65A	2	125	7.3	4.6	11.9	7.1	0.80	0.77	0.0	0.00	7.64	59	264
166.0	CCI OPA-65R-LCUU-H4 (14.4" wid	2	150	7.2	4.0	14.4	7.3	0.80	0.75	0.0	0.00	7.64	56	323
166.0	CCI HPA-65R-BUU-H4	2	137	7.4	4.0	14.8	9.0	0.80	0.77	0.0	0.00	7.64	59	288
166.0	CCI BSA-M65R-BUU-H4	3	248	13.4	4.2	28.5	9.7	0.80	0.61	0.0	0.00	7.64	127	790
166.0	Flat Light Sector Frame	3	604	28.1	0.0	0.0	0.0	0.75	0.67	0.0	0.00	7.64	275	2051
156.0	Commscope RDIDC-9181-PF-48	1	60	2.5	1.3	14.0	8.0	0.80	1.00	0.0	0.00	7.54	13	64
156.0	Fujitsu TA08025-B604	3	103	2.6	1.3	15.0	7.9	0.80	0.50	0.0	0.00	7.54	20	347
156.0	Fujitsu TA08025-B605	3	117	2.6	1.3	15.0	9.1	0.80	0.50	0.0	0.00	7.54	20	396
156.0	JMA Wireless MX08FRO665-21	3	236	14.4	6.0	20.0	8.0	0.80	0.64	0.0	0.00	7.54	141	747
156.0	Generic Flat Light Sector Fram	3	601	28.0	0.0	0.0	0.0	0.75	0.67	0.0	0.00	7.54	270	2043
148.0	Generic 4' Dish w/ Radome	1	333	11.9	4.0	48.0	0.0	1.00	1.00	0.0	0.00	7.46	76	357
148.0	Generic Flat Light Sector Fram	1	601	28.0	0.0	0.0	0.0	1.00	1.00	0.0	0.00	7.46	177	681
144.0	Generic 10' Dipole	1	104	7.8	10.0	3.0	3.0	1.00	1.00	0.0	0.00	7.41	49	110
142.0	Round Side Arm	2	199	7.0	0.0	0.0	0.0	1.00	0.90	0.0	0.00	7.39	79	458
137.0	Generic 6' FM antenna	2	478	16.5	6.0	0.0	0.0	1.00	1.00	0.0	0.00	7.34	205	969
135.0	Round Side Arm	4	198	7.0	0.0	0.0	0.0	1.00	1.00	0.0	0.00	7.31	174	913
130.0	Round Side Arm	3	198	7.0	0.0	0.0	0.0	1.00	0.67	0.0	0.00	7.25	87	685
127.0	Harris FML-4E	1	460	29.9	40.0	24.0	24.0	1.00	1.00	0.0	0.00	7.22	184	506
125.0	Round Side Arm	2	198	7.0	0.0	0.0	0.0	1.00	0.90	0.0	0.00	7.20	77	456
108.8	Scala PR-950	1	243	53.9	5.7	36.0	0.0	1.00	1.00	0.0	0.00	6.99	320	251
87.0	Stand-Off	1	108	3.6	0.0	0.0	0.0	1.00	1.00	0.0	0.00	6.67	20	123
87.0	Antel BCD-87010 ____ 4°	1	99	5.5	11.2	2.6	2.6	1.00	1.00	0.0	0.00	6.67	31	105
80.0	Generic 4' Std. Dish	2	320	22.8	4.0	48.0	0.0	1.00	1.00	0.0	0.00	6.55	254	715
60.0	Side Arm	2	194	6.8	0.0	0.0	0.0	1.00	0.90	0.0	0.00	6.16	64	448
16.0	Channel Master Type 120	1	231	21.7	3.9	47.2	0.0	1.00	1.00	0.0	0.00	4.67	86	256
4.0	Ericsson RRUS 32 B2	2	90	3.3	2.3	12.1	7.0	1.00	0.67	0.0	0.00	4.61	18	202
Totals		124	23,240	1084.8									4543	25,702

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)
190.0	Generic 12' Dipole	3	40	4.5	12.0	3.0	3.0	1.00	1.00	0.0	0.00	11.32	130	120
190.0	Side Arm	3	150	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.00	11.32	101	450
189.0	Generic 6' Omni	2	25	1.8	6.0	3.0	3.0	1.00	1.00	0.0	0.00	11.30	34	50
183.0	Generic RCU (Remote Control Un	3	1	0.1	0.7	2.0	2.0	0.80	1.00	0.0	0.00	11.23	3	3
183.0	RFS APXV18-206517S-C	3	26	5.2	6.0	6.8	3.2	0.80	0.68	0.0	0.00	11.23	80	79
183.0	Round Side Arm	3	150	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.00	11.23	100	450
177.0	Ericsson Radio 4449 B71 B85A	3	75	1.6	1.3	13.2	10.5	0.80	0.50	0.0	0.00	11.15	19	225
177.0	Ericsson Radio 4460 B25+B66	3	109	2.6	1.6	15.7	12.1	0.80	0.67	0.0	0.00	11.15	39	327
177.0	Ericsson Air6449 B41	3	104	5.7	2.8	20.6	8.6	0.80	0.63	0.0	0.00	11.15	81	312
177.0	RFS APXVAALL24 43-U-NA20	3	123	20.2	8.0	24.0	8.5	0.80	0.63	0.0	0.00	11.15	290	368
175.0	Generic Heavy Sector Frame	3	500	29.3	0.0	0.0	0.0	0.75	0.67	0.0	0.00	11.12	418	1500
166.0	Powerwave Allgon 7020	6	2	0.3	0.4	8.3	2.4	0.80	0.50	0.0	0.00	11.00	8	13
166.0	Kaelus DBC0061F1V51-2	2	26	0.4	0.7	6.5	6.2	0.80	0.50	0.0	0.00	11.00	3	51
166.0	Powerwave Allgon LGP21401	6	14	1.1	1.2	9.2	2.6	0.80	0.50	0.0	0.00	11.00	25	85
166.0	Raycap DC6-48-60-18-8F (23.5"	2	20	1.3	2.0	9.7	9.7	0.80	1.00	0.0	0.00	11.00	19	40
166.0	Ericsson RRUS 4426 B66	4	48	1.6	1.3	13.2	5.8	0.80	0.50	0.0	0.00	11.00	25	194
166.0	Ericsson RRUS 4478 B14 (15")	1	59	1.6	1.3	13.2	7.3	0.80	1.00	0.0	0.00	11.00	12	59
166.0	Ericsson RRUS 4478 B5	2	60	1.8	1.4	13.4	7.7	0.80	0.50	0.0	0.00	11.00	14	120
166.0	Ericsson RRUS 32 B30 (60 lbs)	4	60	2.7	2.2	12.1	6.7	0.80	0.67	0.0	0.00	11.00	54	240
166.0	Ericsson RRUS-11 (19.7")	4	51	2.8	1.6	17.0	8.0	0.80	0.67	0.0	0.00	11.00	56	204
166.0	Ericsson RRUS E2 B29	4	60	3.1	1.7	18.5	7.5	0.80	0.62	0.0	0.00	11.00	58	240
166.0	Raycap DC6-48-60-18-8C-EV	2	16	4.8	2.6	18.3	10.2	0.80	0.75	0.0	0.00	11.00	54	32
166.0	Powerwave Allgon 7770.00	3	35	5.5	4.6	11.0	5.0	0.80	0.65	0.0	0.00	11.00	80	105
166.0	Commscope SBNHH-1D65A	2	34	5.9	4.6	11.9	7.1	0.80	0.77	0.0	0.00	11.00	68	67
166.0	CCI OPA-65R-LCUU-H4 (14.4" wid	2	57	5.9	4.0	14.4	7.3	0.80	0.75	0.0	0.00	11.00	67	114
166.0	CCI HPA-65R-BUU-H4	2	34	6.1	4.0	14.8	9.0	0.80	0.77	0.0	0.00	11.00	70	68
166.0	CCI BSA-M65R-BUU-H4	3	75	11.9	4.2	28.5	9.7	0.80	0.61	0.0	0.00	11.00	162	225
166.0	Flat Light Sector Frame	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.00	11.00	252	1200

Elev (ft)	Description	Qty	Wt. (lb)	EPA Length (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)
156.0	Commscope RDIDC-9181-PF-48	1	22	1.9	1.3	14.0	8.0	0.80	1.00	0.0	0.00	10.86	14	22
156.0	Fujitsu TA08025-B604	3	64	2.0	1.3	15.0	7.9	0.80	0.50	0.0	0.00	10.86	22	192
156.0	Fujitsu TA08025-B605	3	75	2.0	1.3	15.0	9.1	0.80	0.50	0.0	0.00	10.86	22	225
156.0	JMA Wireless MX08FRO665-21	3	65	12.5	6.0	20.0	8.0	0.80	0.64	0.0	0.00	10.86	177	194
156.0	Generic Flat Light Sector Fram	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.00	10.86	249	1200
148.0	Generic 4' Dish w/ Radome	1	120	10.8	4.0	48.0	0.0	1.00	1.00	0.0	0.00	10.74	99	120
148.0	Generic Flat Light Sector Fram	1	400	17.9	0.0	0.0	0.0	1.00	1.00	0.0	0.00	10.74	163	400
144.0	Generic 10' Dipole	1	30	3.8	10.0	3.0	3.0	1.00	1.00	0.0	0.00	10.67	34	30
142.0	Round Side Arm	2	150	5.2	0.0	0.0	0.0	1.00	0.90	0.0	0.00	10.64	85	300
137.0	Generic 6' FM antenna	2	30	13.4	6.0	0.0	0.0	1.00	1.00	0.0	0.00	10.56	242	60
135.0	Round Side Arm	4	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	10.53	186	600
130.0	Round Side Arm	3	150	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.00	10.45	93	450
127.0	Harris FML-4E	1	227	12.8	40.0	24.0	24.0	1.00	1.00	0.0	0.00	10.40	113	227
125.0	Round Side Arm	2	150	5.2	0.0	0.0	0.0	1.00	0.90	0.0	0.00	10.36	82	300
108.8	Scala PR-950	1	38	10.1	5.7	36.0	0.0	1.00	1.00	0.0	0.00	10.06	86	38
87.0	Stand-Off	1	75	2.5	0.0	0.0	0.0	1.00	1.00	0.0	0.00	9.60	20	75
87.0	Antel BCD-87010 ____ 4°	1	27	2.9	11.2	2.6	2.6	1.00	1.00	0.0	0.00	9.60	24	26
80.0	Generic 4' Std. Dish	2	188	20.9	4.0	48.0	0.0	1.00	1.00	0.0	0.00	9.43	335	376
60.0	Side Arm	2	150	5.2	0.0	0.0	0.0	1.00	0.90	0.0	0.00	8.88	71	300
16.0	Channel Master Type 120	1	126	20.2	3.9	47.2	0.0	1.00	1.00	0.0	0.00	6.72	115	126
4.0	Ericsson RRUS 32 B2	2	53	2.7	2.3	12.1	7.0	1.00	0.67	0.0	0.00	6.64	21	106
Totals		124	12,308	779.8									4,574	12,308

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	190.5	Climbing Ladder	1	2.00	6.90	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	190.0	5/16" (0.31"-7.9mm) Coax	1	0.31	0.05	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	190.0	7/8" Coax	3	1.09	0.33	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	189.0	1/2" Coax	2	0.63	0.15	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	183.0	3/8" Coax	1	0.44	0.08	100	2	Individual	0.00	N	1.00	1.00	0.00
0.0	183.0	Waveguide	1	2.00	6.00	100	2	Individual	0.00	N	1.00	1.00	0.00
0.0	183.0	1 5/8" Coax	6	1.98	0.82	100	2	Individual	0.00	N	1.00	1.00	0.00
0.0	177.0	1.99" (50.7mm) Hybrid	3	1.99	1.90	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	175.0	Waveguide	1	2.00	6.00	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	166.0	0.74" (18.7mm) 8 AWG 7	8	0.74	0.49	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	166.0	1/2" Coax	1	0.63	0.15	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	166.0	1 5/8" Coax	12	1.98	0.82	50	3	Block	0.00	N	1.00	1.00	0.00
0.0	166.0	0.39" (10mm) Fiber Trunk	4	0.39	0.06	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	166.0	Waveguide	1	2.00	6.00	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	166.0	3/8" (0.38"- 9.5mm) RET Contro	6	0.38	0.23	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	156.0	1.60" (40.6mm) Hybrid	1	1.60	2.34	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	156.0	Waveguide	1	2.00	6.00	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	144.0	1 1/4" Coax	3	1.55	0.63	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	140.0	7/8" Coax	4	1.09	0.33	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	137.0	1 5/8" Coax	1	1.98	0.82	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	127.0	7/8" Coax	1	1.09	0.33	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	108.8	7/8" Coax	1	1.09	0.33	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	87.0	7/8" Coax	1	1.09	0.33	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	80.0	7/8" Coax	2	1.09	0.33	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	16.0	0.28" (7mm) RG-6	3	0.28	0.03	100	3	Individual	0.00	N	1.00	1.00	0.01

SECTION FORCES

1.2D + 1.0W Normal
123 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)
10	185	47.30	6.300	4.195	0.00	0.148	2.78	1.00	1.00	0.0	8.68	24.13	0.00	606	0	970	311	1282
9	170	46.45	11.127	11.667	0.00	0.168	2.71	1.00	1.00	0.0	17.64	47.75	0.00	1998	0	1886	1983	3868
8	150	45.24	11.620	18.561	0.00	0.196	2.61	1.00	1.00	0.0	20.60	53.77	0.00	3129	0	2068	3361	5429
7	130	43.90	15.453	22.104	0.00	0.202	2.59	1.00	1.00	0.0	25.39	65.75	0.00	3793	0	2454	3760	6214
6	110	42.39	17.065	28.777	0.00	0.209	2.57	1.00	1.00	0.0	30.04	77.10	0.00	4594	0	2778	3694	6472
5	90	40.63	19.007	28.777	0.00	0.192	2.62	1.00	1.00	0.0	31.70	83.18	0.00	4705	0	2873	3582	6455
4	70	38.54	20.742	35.867	0.00	0.200	2.60	1.00	1.00	0.0	36.73	95.34	0.00	6071	0	3123	3511	6635
3	50	35.90	23.132	35.893	0.00	0.186	2.64	1.00	1.00	0.0	38.84	102.72	0.00	6242	0	3135	3271	6406
2	30	32.24	30.234	35.893	0.00	0.185	2.65	1.00	1.00	0.0	45.93	121.60	0.00	6792	0	3332	2938	6270
1	10	27.90	37.987	42.571	0.00	0.201	2.59	1.00	1.00	0.0	56.98	147.78	0.00	8031	0	3505	2542	6047
															45,963	0		55,077

1.2D + 1.0W 60°
123 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)
10	185	47.30	6.300	4.195	0.00	0.148	2.78	0.80	1.00	0.0	7.42	20.62	0.00	606	0	829	311	1141
9	170	46.45	11.127	11.667	0.00	0.168	2.71	0.80	1.00	0.0	15.41	41.73	0.00	1998	0	1648	1983	3631
8	150	45.24	11.620	18.561	0.00	0.196	2.61	0.80	1.00	0.0	18.27	47.70	0.00	3129	0	1834	3361	5196
7	130	43.90	15.453	22.104	0.00	0.202	2.59	0.80	1.00	0.0	22.30	57.75	0.00	3793	0	2155	3760	5915
6	110	42.39	17.065	28.777	0.00	0.209	2.57	0.80	1.00	0.0	26.63	68.34	0.00	4594	0	2462	3694	6156
5	90	40.63	19.007	28.777	0.00	0.192	2.62	0.80	1.00	0.0	27.90	73.21	0.00	4705	0	2528	3582	6111
4	70	38.54	20.742	35.867	0.00	0.200	2.60	0.80	1.00	0.0	32.58	84.58	0.00	6071	0	2770	3511	6282
3	50	35.90	23.132	35.893	0.00	0.186	2.64	0.80	1.00	0.0	34.22	90.49	0.00	6242	0	2761	3271	6033
2	30	32.24	30.234	35.893	0.00	0.185	2.65	0.80	1.00	0.0	39.88	105.59	0.00	6792	0	2894	2938	5831
1	10	27.90	37.987	42.571	0.00	0.201	2.59	0.80	1.00	0.0	49.38	128.08	0.00	8031	0	3037	2542	5580
															45,963	0		51,874

1.2D + 1.0W 90°
123 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)
10	185	47.30	6.300	4.195	0.00	0.148	2.78	0.85	1.00	0.0	7.74	21.50	0.00	606	0	864	311	1176
9	170	46.45	11.127	11.667	0.00	0.168	2.71	0.85	1.00	0.0	15.97	43.23	0.00	1998	0	1707	1983	3690
8	150	45.24	11.620	18.561	0.00	0.196	2.61	0.85	1.00	0.0	18.85	49.22	0.00	3129	0	1893	3361	5254
7	130	43.90	15.453	22.104	0.00	0.202	2.59	0.85	1.00	0.0	23.07	59.75	0.00	3793	0	2230	3760	5990
6	110	42.39	17.065	28.777	0.00	0.209	2.57	0.85	1.00	0.0	27.48	70.53	0.00	4594	0	2541	3694	6235
5	90	40.63	19.007	28.777	0.00	0.192	2.62	0.85	1.00	0.0	28.85	75.70	0.00	4705	0	2614	3582	6197
4	70	38.54	20.742	35.867	0.00	0.200	2.60	0.85	1.00	0.0	33.62	87.27	0.00	6071	0	2859	3511	6370
3	50	35.90	23.132	35.893	0.00	0.186	2.64	0.85	1.00	0.0	35.37	93.54	0.00	6242	0	2855	3271	6126
2	30	32.24	30.234	35.893	0.00	0.185	2.65	0.85	1.00	0.0	41.39	109.59	0.00	6792	0	3003	2938	5941
1	10	27.90	37.987	42.571	0.00	0.201	2.59	0.85	1.00	0.0	51.28	133.00	0.00	8031	0	3154	2542	5697
															45,963	0		52,675

1.2D + 1.0W 120°
123 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)
10	185	47.30	6.300	4.195	0.00	0.148	2.78	1.00	1.00	0.0	8.68	24.13	0.00	606	0	970	311	1282
9	170	46.45	11.127	11.667	0.00	0.168	2.71	1.00	1.00	0.0	17.64	47.75	0.00	1998	0	1886	1983	3868

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)
8	150	45.24	11.620	18.561	0.00	0.196	2.61	1.00	1.00	0.0	20.60	53.77	0.00	3129	0	2068	3361	5429
7	130	43.90	15.453	22.104	0.00	0.202	2.59	1.00	1.00	0.0	25.39	65.75	0.00	3793	0	2454	3760	6214
6	110	42.39	17.065	28.777	0.00	0.209	2.57	1.00	1.00	0.0	30.04	77.10	0.00	4594	0	2778	3694	6472
5	90	40.63	19.007	28.777	0.00	0.192	2.62	1.00	1.00	0.0	31.70	83.18	0.00	4705	0	2873	3582	6455
4	70	38.54	20.742	35.867	0.00	0.200	2.60	1.00	1.00	0.0	36.73	95.34	0.00	6071	0	3123	3511	6635
3	50	35.90	23.132	35.893	0.00	0.186	2.64	1.00	1.00	0.0	38.84	102.72	0.00	6242	0	3135	3271	6406
2	30	32.24	30.234	35.893	0.00	0.185	2.65	1.00	1.00	0.0	45.93	121.60	0.00	6792	0	3332	2938	6270
1	10	27.90	37.987	42.571	0.00	0.201	2.59	1.00	1.00	0.0	56.98	147.78	0.00	8031	0	3505	2542	6047
															45,963	0		55,077

1.2D + 1.0W 180°

Gust Response Factor (G_h):

0.85

123 mph wind with no ice

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)
10	185	47.30	6.300	4.195	0.00	0.148	2.78	0.80	1.00	0.0	7.42	20.62	0.00	606	0	829	311	1141
9	170	46.45	11.127	11.667	0.00	0.168	2.71	0.80	1.00	0.0	15.41	41.73	0.00	1998	0	1648	1983	3631
8	150	45.24	11.620	18.561	0.00	0.196	2.61	0.80	1.00	0.0	18.27	47.70	0.00	3129	0	1834	3361	5196
7	130	43.90	15.453	22.104	0.00	0.202	2.59	0.80	1.00	0.0	22.30	57.75	0.00	3793	0	2155	3760	5915
6	110	42.39	17.065	28.777	0.00	0.209	2.57	0.80	1.00	0.0	26.63	68.34	0.00	4594	0	2462	3694	6156
5	90	40.63	19.007	28.777	0.00	0.192	2.62	0.80	1.00	0.0	27.90	73.21	0.00	4705	0	2528	3582	6111
4	70	38.54	20.742	35.867	0.00	0.200	2.60	0.80	1.00	0.0	32.58	84.58	0.00	6071	0	2770	3511	6282
3	50	35.90	23.132	35.893	0.00	0.186	2.64	0.80	1.00	0.0	34.22	90.49	0.00	6242	0	2761	3271	6033
2	30	32.24	30.234	35.893	0.00	0.185	2.65	0.80	1.00	0.0	39.88	105.59	0.00	6792	0	2894	2938	5831
1	10	27.90	37.987	42.571	0.00	0.201	2.59	0.80	1.00	0.0	49.38	128.08	0.00	8031	0	3037	2542	5580
															45,963	0		51,874

1.2D + 1.0W 210°

Gust Response Factor (G_h):

0.85

123 mph wind with no ice

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)
10	185	47.30	6.300	4.195	0.00	0.148	2.78	0.85	1.00	0.0	7.74	21.50	0.00	606	0	864	311	1176
9	170	46.45	11.127	11.667	0.00	0.168	2.71	0.85	1.00	0.0	15.97	43.23	0.00	1998	0	1707	1983	3690
8	150	45.24	11.620	18.561	0.00	0.196	2.61	0.85	1.00	0.0	18.85	49.22	0.00	3129	0	1893	3361	5254
7	130	43.90	15.453	22.104	0.00	0.202	2.59	0.85	1.00	0.0	23.07	59.75	0.00	3793	0	2230	3760	5990
6	110	42.39	17.065	28.777	0.00	0.209	2.57	0.85	1.00	0.0	27.48	70.53	0.00	4594	0	2541	3694	6235
5	90	40.63	19.007	28.777	0.00	0.192	2.62	0.85	1.00	0.0	28.85	75.70	0.00	4705	0	2614	3582	6197
4	70	38.54	20.742	35.867	0.00	0.200	2.60	0.85	1.00	0.0	33.62	87.27	0.00	6071	0	2859	3511	6370
3	50	35.90	23.132	35.893	0.00	0.186	2.64	0.85	1.00	0.0	35.37	93.54	0.00	6242	0	2855	3271	6126
2	30	32.24	30.234	35.893	0.00	0.185	2.65	0.85	1.00	0.0	41.39	109.59	0.00	6792	0	3003	2938	5941
1	10	27.90	37.987	42.571	0.00	0.201	2.59	0.85	1.00	0.0	51.28	133.00	0.00	8031	0	3154	2542	5697
															45,963	0		52,675

1.2D + 1.0W 240°

Gust Response Factor (G_h):

0.85

123 mph wind with no ice

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)
10	185	47.30	6.300	4.195	0.00	0.148	2.78	1.00	1.00	0.0	8.68	24.13	0.00	606	0	970	311	1282
9	170	46.45	11.127	11.667	0.00	0.168	2.71	1.00	1.00	0.0	17.64	47.75	0.00	1998	0	1886	1983	3868
8	150	45.24	11.620	18.561	0.00	0.196	2.61	1.00	1.00	0.0	20.60	53.77	0.00	3129	0	2068	3361	5429
7	130	43.90	15.453	22.104	0.00	0.202	2.59	1.00	1.00	0.0	25.39	65.75	0.00	3793	0	2454	3760	6214
6	110	42.39	17.065	28.777	0.00	0.209	2.57	1.00	1.00	0.0	30.04	77.10	0.00	4594	0	2778	3694	6472
5	90	40.63	19.007	28.777	0.00	0.192	2.62	1.00	1.00	0.0	31.70	83.18	0.00	4705	0	2873	3582	6455
4	70	38.54	20.742	35.867	0.00	0.200	2.60	1.00	1.00	0.0	36.73	95.34	0.00	6071	0	3123	3511	6635
3	50	35.90	23.132	35.893	0.00	0.186	2.64	1.00	1.00	0.0	38.84	102.72	0.00	6242	0	3135	3271	6406
2	30	32.24	30.234	35.893	0.00	0.185	2.65	1.00	1.00	0.0	45.93	121.60	0.00	6792	0	3332	2938	6270
1	10	27.90	37.987	42.571	0.00	0.201	2.59	1.00	1.00	0.0	56.98	147.78	0.00	8031	0	3505	2542	6047

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)
															45,963	0		55,077

1.2D + 1.0W 300°

Gust Response Factor (Gh):

0.85

123 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)
10	185	47.30	6.300	4.195	0.00	0.148	2.78	0.80	1.00	0.0	7.42	20.62	0.00	606	0	829	311	1141
9	170	46.45	11.127	11.667	0.00	0.168	2.71	0.80	1.00	0.0	15.41	41.73	0.00	1998	0	1648	1983	3631
8	150	45.24	11.620	18.561	0.00	0.196	2.61	0.80	1.00	0.0	18.27	47.70	0.00	3129	0	1834	3361	5196
7	130	43.90	15.453	22.104	0.00	0.202	2.59	0.80	1.00	0.0	22.30	57.75	0.00	3793	0	2155	3760	5915
6	110	42.39	17.065	28.777	0.00	0.209	2.57	0.80	1.00	0.0	26.63	68.34	0.00	4594	0	2462	3694	6156
5	90	40.63	19.007	28.777	0.00	0.192	2.62	0.80	1.00	0.0	27.90	73.21	0.00	4705	0	2528	3582	6111
4	70	38.54	20.742	35.867	0.00	0.200	2.60	0.80	1.00	0.0	32.58	84.58	0.00	6071	0	2770	3511	6282
3	50	35.90	23.132	35.893	0.00	0.186	2.64	0.80	1.00	0.0	34.22	90.49	0.00	6242	0	2761	3271	6033
2	30	32.24	30.234	35.893	0.00	0.185	2.65	0.80	1.00	0.0	39.88	105.59	0.00	6792	0	2894	2938	5831
1	10	27.90	37.987	42.571	0.00	0.201	2.59	0.80	1.00	0.0	49.38	128.08	0.00	8031	0	3037	2542	5580
															45,963	0		51,874

1.2D + 1.0W 330°

Gust Response Factor (Gh):

0.85

123 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)
10	185	47.30	6.300	4.195	0.00	0.148	2.78	0.85	1.00	0.0	7.74	21.50	0.00	606	0	864	311	1176
9	170	46.45	11.127	11.667	0.00	0.168	2.71	0.85	1.00	0.0	15.97	43.23	0.00	1998	0	1707	1983	3690
8	150	45.24	11.620	18.561	0.00	0.196	2.61	0.85	1.00	0.0	18.85	49.22	0.00	3129	0	1893	3361	5254
7	130	43.90	15.453	22.104	0.00	0.202	2.59	0.85	1.00	0.0	23.07	59.75	0.00	3793	0	2230	3760	5990
6	110	42.39	17.065	28.777	0.00	0.209	2.57	0.85	1.00	0.0	27.48	70.53	0.00	4594	0	2541	3694	6235
5	90	40.63	19.007	28.777	0.00	0.192	2.62	0.85	1.00	0.0	28.85	75.70	0.00	4705	0	2614	3582	6197
4	70	38.54	20.742	35.867	0.00	0.200	2.60	0.85	1.00	0.0	33.62	87.27	0.00	6071	0	2859	3511	6370
3	50	35.90	23.132	35.893	0.00	0.186	2.64	0.85	1.00	0.0	35.37	93.54	0.00	6242	0	2855	3271	6126
2	30	32.24	30.234	35.893	0.00	0.185	2.65	0.85	1.00	0.0	41.39	109.59	0.00	6792	0	3003	2938	5941
1	10	27.90	37.987	42.571	0.00	0.201	2.59	0.85	1.00	0.0	51.28	133.00	0.00	8031	0	3154	2542	5697
															45,963	0		52,675

0.9D + 1.0W Normal

Gust Response Factor (Gh):

0.85

123 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)
10	185	47.30	6.300	4.195	0.00	0.148	2.78	1.00	1.00	0.0	8.68	24.13	0.00	455	0	970	311	1282
9	170	46.45	11.127	11.667	0.00	0.168	2.71	1.00	1.00	0.0	17.64	47.75	0.00	1499	0	1886	1983	3868
8	150	45.24	11.620	18.561	0.00	0.196	2.61	1.00	1.00	0.0	20.60	53.77	0.00	2347	0	2068	3361	5429
7	130	43.90	15.453	22.104	0.00	0.202	2.59	1.00	1.00	0.0	25.39	65.75	0.00	2845	0	2454	3760	6214
6	110	42.39	17.065	28.777	0.00	0.209	2.57	1.00	1.00	0.0	30.04	77.10	0.00	3446	0	2778	3694	6472
5	90	40.63	19.007	28.777	0.00	0.192	2.62	1.00	1.00	0.0	31.70	83.18	0.00	3529	0	2873	3582	6455
4	70	38.54	20.742	35.867	0.00	0.200	2.60	1.00	1.00	0.0	36.73	95.34	0.00	4554	0	3123	3511	6635
3	50	35.90	23.132	35.893	0.00	0.186	2.64	1.00	1.00	0.0	38.84	102.72	0.00	4682	0	3135	3271	6406
2	30	32.24	30.234	35.893	0.00	0.185	2.65	1.00	1.00	0.0	45.93	121.60	0.00	5094	0	3332	2938	6270
1	10	27.90	37.987	42.571	0.00	0.201	2.59	1.00	1.00	0.0	56.98	147.78	0.00	6023	0	3505	2542	6047
															34,472	0		55,077

0.9D + 1.0W 60°

Gust Response Factor (Gh):

0.85

123 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)
10	185	47.30	6.300	4.195	0.00	0.148	2.78	0.80	1.00	0.0	7.42	20.62	0.00	455	0	829	311	1141

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	46.45	11.127	11.667	0.00	0.168	2.71	0.80	1.00	0.0	15.41	41.73	0.00	1499	0	1648	1983	3631
8	150	45.24	11.620	18.561	0.00	0.196	2.61	0.80	1.00	0.0	18.27	47.70	0.00	2347	0	1834	3361	5196
7	130	43.90	15.453	22.104	0.00	0.202	2.59	0.80	1.00	0.0	22.30	57.75	0.00	2845	0	2155	3760	5915
6	110	42.39	17.065	28.777	0.00	0.209	2.57	0.80	1.00	0.0	26.63	68.34	0.00	3446	0	2462	3694	6156
5	90	40.63	19.007	28.777	0.00	0.192	2.62	0.80	1.00	0.0	27.90	73.21	0.00	3529	0	2528	3582	6111
4	70	38.54	20.742	35.867	0.00	0.200	2.60	0.80	1.00	0.0	32.58	84.58	0.00	4554	0	2770	3511	6282
3	50	35.90	23.132	35.893	0.00	0.186	2.64	0.80	1.00	0.0	34.22	90.49	0.00	4682	0	2761	3271	6033
2	30	32.24	30.234	35.893	0.00	0.185	2.65	0.80	1.00	0.0	39.88	105.59	0.00	5094	0	2894	2938	5831
1	10	27.90	37.987	42.571	0.00	0.201	2.59	0.80	1.00	0.0	49.38	128.08	0.00	6023	0	3037	2542	5580
														34,472	0			51,874

0.9D + 1.0W 90°

Gust Response Factor (G_h):

0.85

123 mph wind with no ice

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)
10	185	47.30	6.300	4.195	0.00	0.148	2.78	0.85	1.00	0.0	7.74	21.50	0.00	455	0	864	311	1176
9	170	46.45	11.127	11.667	0.00	0.168	2.71	0.85	1.00	0.0	15.97	43.23	0.00	1499	0	1707	1983	3690
8	150	45.24	11.620	18.561	0.00	0.196	2.61	0.85	1.00	0.0	18.85	49.22	0.00	2347	0	1893	3361	5254
7	130	43.90	15.453	22.104	0.00	0.202	2.59	0.85	1.00	0.0	23.07	59.75	0.00	2845	0	2230	3760	5990
6	110	42.39	17.065	28.777	0.00	0.209	2.57	0.85	1.00	0.0	27.48	70.53	0.00	3446	0	2541	3694	6235
5	90	40.63	19.007	28.777	0.00	0.192	2.62	0.85	1.00	0.0	28.85	75.70	0.00	3529	0	2614	3582	6197
4	70	38.54	20.742	35.867	0.00	0.200	2.60	0.85	1.00	0.0	33.62	87.27	0.00	4554	0	2859	3511	6370
3	50	35.90	23.132	35.893	0.00	0.186	2.64	0.85	1.00	0.0	35.37	93.54	0.00	4682	0	2855	3271	6126
2	30	32.24	30.234	35.893	0.00	0.185	2.65	0.85	1.00	0.0	41.39	109.59	0.00	5094	0	3003	2938	5941
1	10	27.90	37.987	42.571	0.00	0.201	2.59	0.85	1.00	0.0	51.28	133.00	0.00	6023	0	3154	2542	5697
														34,472	0			52,675

0.9D + 1.0W 120°

Gust Response Factor (G_h):

0.85

123 mph wind with no ice

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)
10	185	47.30	6.300	4.195	0.00	0.148	2.78	1.00	1.00	0.0	8.68	24.13	0.00	455	0	970	311	1282
9	170	46.45	11.127	11.667	0.00	0.168	2.71	1.00	1.00	0.0	17.64	47.75	0.00	1499	0	1886	1983	3868
8	150	45.24	11.620	18.561	0.00	0.196	2.61	1.00	1.00	0.0	20.60	53.77	0.00	2347	0	2068	3361	5429
7	130	43.90	15.453	22.104	0.00	0.202	2.59	1.00	1.00	0.0	25.39	65.75	0.00	2845	0	2454	3760	6214
6	110	42.39	17.065	28.777	0.00	0.209	2.57	1.00	1.00	0.0	30.04	77.10	0.00	3446	0	2778	3694	6472
5	90	40.63	19.007	28.777	0.00	0.192	2.62	1.00	1.00	0.0	31.70	83.18	0.00	3529	0	2873	3582	6455
4	70	38.54	20.742	35.867	0.00	0.200	2.60	1.00	1.00	0.0	36.73	95.34	0.00	4554	0	3123	3511	6635
3	50	35.90	23.132	35.893	0.00	0.186	2.64	1.00	1.00	0.0	38.84	102.72	0.00	4682	0	3135	3271	6406
2	30	32.24	30.234	35.893	0.00	0.185	2.65	1.00	1.00	0.0	45.93	121.60	0.00	5094	0	3332	2938	6270
1	10	27.90	37.987	42.571	0.00	0.201	2.59	1.00	1.00	0.0	56.98	147.78	0.00	6023	0	3505	2542	6047
														34,472	0			55,077

0.9D + 1.0W 180°

Gust Response Factor (G_h):

0.85

123 mph wind with no ice

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)
10	185	47.30	6.300	4.195	0.00	0.148	2.78	0.80	1.00	0.0	7.42	20.62	0.00	455	0	829	311	1141
9	170	46.45	11.127	11.667	0.00	0.168	2.71	0.80	1.00	0.0	15.41	41.73	0.00	1499	0	1648	1983	3631
8	150	45.24	11.620	18.561	0.00	0.196	2.61	0.80	1.00	0.0	18.27	47.70	0.00	2347	0	1834	3361	5196
7	130	43.90	15.453	22.104	0.00	0.202	2.59	0.80	1.00	0.0	22.30	57.75	0.00	2845	0	2155	3760	5915
6	110	42.39	17.065	28.777	0.00	0.209	2.57	0.80	1.00	0.0	26.63	68.34	0.00	3446	0	2462	3694	6156
5	90	40.63	19.007	28.777	0.00	0.192	2.62	0.80	1.00	0.0	27.90	73.21	0.00	3529	0	2528	3582	6111
4	70	38.54	20.742	35.867	0.00	0.200	2.60	0.80	1.00	0.0	32.58	84.58	0.00	4554	0	2770	3511	6282
3	50	35.90	23.132	35.893	0.00	0.186	2.64	0.80	1.00	0.0	34.22	90.49	0.00	4682	0	2761	3271	6033
2	30	32.24	30.234	35.893	0.00	0.185	2.65	0.80	1.00	0.0	39.88	105.59	0.00	5094	0	2894	2938	5831

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)
1	10	27.90	37.987	42.571	0.00	0.201	2.59	0.80	1.00	0.0	49.38	128.08	0.00	6023	0	3037	2542	5580
															34,472	0		51,874

0.9D + 1.0W 210°

Gust Response Factor (G_h):

0.85

123 mph wind with no ice

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)
10	185	47.30	6.300	4.195	0.00	0.148	2.78	0.85	1.00	0.0	7.74	21.50	0.00	455	0	864	311	1176
9	170	46.45	11.127	11.667	0.00	0.168	2.71	0.85	1.00	0.0	15.97	43.23	0.00	1499	0	1707	1983	3690
8	150	45.24	11.620	18.561	0.00	0.196	2.61	0.85	1.00	0.0	18.85	49.22	0.00	2347	0	1893	3361	5254
7	130	43.90	15.453	22.104	0.00	0.202	2.59	0.85	1.00	0.0	23.07	59.75	0.00	2845	0	2230	3760	5990
6	110	42.39	17.065	28.777	0.00	0.209	2.57	0.85	1.00	0.0	27.48	70.53	0.00	3446	0	2541	3694	6235
5	90	40.63	19.007	28.777	0.00	0.192	2.62	0.85	1.00	0.0	28.85	75.70	0.00	3529	0	2614	3582	6197
4	70	38.54	20.742	35.867	0.00	0.200	2.60	0.85	1.00	0.0	33.62	87.27	0.00	4554	0	2859	3511	6370
3	50	35.90	23.132	35.893	0.00	0.186	2.64	0.85	1.00	0.0	35.37	93.54	0.00	4682	0	2855	3271	6126
2	30	32.24	30.234	35.893	0.00	0.185	2.65	0.85	1.00	0.0	41.39	109.59	0.00	5094	0	3003	2938	5941
1	10	27.90	37.987	42.571	0.00	0.201	2.59	0.85	1.00	0.0	51.28	133.00	0.00	6023	0	3154	2542	5697
															34,472	0		52,675

0.9D + 1.0W 240°

Gust Response Factor (G_h):

0.85

123 mph wind with no ice

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)
10	185	47.30	6.300	4.195	0.00	0.148	2.78	1.00	1.00	0.0	8.68	24.13	0.00	455	0	970	311	1282
9	170	46.45	11.127	11.667	0.00	0.168	2.71	1.00	1.00	0.0	17.64	47.75	0.00	1499	0	1886	1983	3868
8	150	45.24	11.620	18.561	0.00	0.196	2.61	1.00	1.00	0.0	20.60	53.77	0.00	2347	0	2068	3361	5429
7	130	43.90	15.453	22.104	0.00	0.202	2.59	1.00	1.00	0.0	25.39	65.75	0.00	2845	0	2454	3760	6214
6	110	42.39	17.065	28.777	0.00	0.209	2.57	1.00	1.00	0.0	30.04	77.10	0.00	3446	0	2778	3694	6472
5	90	40.63	19.007	28.777	0.00	0.192	2.62	1.00	1.00	0.0	31.70	83.18	0.00	3529	0	2873	3582	6455
4	70	38.54	20.742	35.867	0.00	0.200	2.60	1.00	1.00	0.0	36.73	95.34	0.00	4554	0	3123	3511	6635
3	50	35.90	23.132	35.893	0.00	0.186	2.64	1.00	1.00	0.0	38.84	102.72	0.00	4682	0	3135	3271	6406
2	30	32.24	30.234	35.893	0.00	0.185	2.65	1.00	1.00	0.0	45.93	121.60	0.00	5094	0	3332	2938	6270
1	10	27.90	37.987	42.571	0.00	0.201	2.59	1.00	1.00	0.0	56.98	147.78	0.00	6023	0	3505	2542	6047
															34,472	0		55,077

0.9D + 1.0W 300°

Gust Response Factor (G_h):

0.85

123 mph wind with no ice

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)
10	185	47.30	6.300	4.195	0.00	0.148	2.78	0.80	1.00	0.0	7.42	20.62	0.00	455	0	829	311	1141
9	170	46.45	11.127	11.667	0.00	0.168	2.71	0.80	1.00	0.0	15.41	41.73	0.00	1499	0	1648	1983	3631
8	150	45.24	11.620	18.561	0.00	0.196	2.61	0.80	1.00	0.0	18.27	47.70	0.00	2347	0	1834	3361	5196
7	130	43.90	15.453	22.104	0.00	0.202	2.59	0.80	1.00	0.0	22.30	57.75	0.00	2845	0	2155	3760	5915
6	110	42.39	17.065	28.777	0.00	0.209	2.57	0.80	1.00	0.0	26.63	68.34	0.00	3446	0	2462	3694	6156
5	90	40.63	19.007	28.777	0.00	0.192	2.62	0.80	1.00	0.0	27.90	73.21	0.00	3529	0	2528	3582	6111
4	70	38.54	20.742	35.867	0.00	0.200	2.60	0.80	1.00	0.0	32.58	84.58	0.00	4554	0	2770	3511	6282
3	50	35.90	23.132	35.893	0.00	0.186	2.64	0.80	1.00	0.0	34.22	90.49	0.00	4682	0	2761	3271	6033
2	30	32.24	30.234	35.893	0.00	0.185	2.65	0.80	1.00	0.0	39.88	105.59	0.00	5094	0	2894	2938	5831
1	10	27.90	37.987	42.571	0.00	0.201	2.59	0.80	1.00	0.0	49.38	128.08	0.00	6023	0	3037	2542	5580
															34,472	0		51,874

0.9D + 1.0W 330°

Gust Response Factor (G_h):

0.85

123 mph wind with no ice

Wind Importance Factor (I_w):

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)
10	185	47.30	6.300	4.195	0.00	0.148	2.78	0.85	1.00	0.0	7.74	21.50	0.00	455	0	864	311	1176
9	170	46.45	11.127	11.667	0.00	0.168	2.71	0.85	1.00	0.0	15.97	43.23	0.00	1499	0	1707	1983	3690
8	150	45.24	11.620	18.561	0.00	0.196	2.61	0.85	1.00	0.0	18.85	49.22	0.00	2347	0	1893	3361	5254
7	130	43.90	15.453	22.104	0.00	0.202	2.59	0.85	1.00	0.0	23.07	59.75	0.00	2845	0	2230	3760	5990
6	110	42.39	17.065	28.777	0.00	0.209	2.57	0.85	1.00	0.0	27.48	70.53	0.00	3446	0	2541	3694	6235
5	90	40.63	19.007	28.777	0.00	0.192	2.62	0.85	1.00	0.0	28.85	75.70	0.00	3529	0	2614	3582	6197
4	70	38.54	20.742	35.867	0.00	0.200	2.60	0.85	1.00	0.0	33.62	87.27	0.00	4554	0	2859	3511	6370
3	50	35.90	23.132	35.893	0.00	0.186	2.64	0.85	1.00	0.0	35.37	93.54	0.00	4682	0	2855	3271	6126
2	30	32.24	30.234	35.893	0.00	0.185	2.65	0.85	1.00	0.0	41.39	109.59	0.00	5094	0	3003	2938	5941
1	10	27.90	37.987	42.571	0.00	0.201	2.59	0.85	1.00	0.0	51.28	133.00	0.00	6023	0	3154	2542	5697
															34,472	0		52,675

1.2D + 1.0Di + 1.0Wi Normal
50 mph wind with 1" radial iceGust Response Factor (G_h):

0.85

Ice Importance Factor:

1.00

Wind Importance Factor (I_w):

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 _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)
10	185	7.82	6.300	16.232	12.04	0.308	2.27	1.00	1.00	1.2	16.06	36.53	12.04	1652	1046	243	164	407
9	170	7.68	11.127	30.386	18.72	0.297	2.30	1.00	1.00	1.2	29.30	67.50	18.72	5269	3271	440	922	1362
8	150	7.48	11.620	37.679	19.12	0.312	2.27	1.00	1.00	1.2	34.33	77.76	19.12	7987	4857	494	1501	1995
7	130	7.25	15.453	42.206	20.10	0.304	2.29	1.00	1.00	1.1	40.78	93.23	20.10	9494	5701	575	1710	2284
6	110	7.00	17.065	49.947	21.17	0.300	2.30	1.00	1.00	1.1	46.98	107.84	21.17	10558	5964	642	1675	2317
5	90	6.71	19.007	50.957	22.18	0.276	2.36	1.00	1.00	1.1	49.17	116.07	22.18	10715	6009	662	1652	2314
4	70	6.37	20.742	58.934	23.07	0.278	2.36	1.00	1.00	1.1	55.66	131.12	23.07	12353	6282	710	1608	2318
3	50	5.93	23.132	59.864	23.97	0.258	2.41	1.00	1.00	1.0	58.28	140.62	23.97	12428	6186	709	1499	2209
2	30	5.33	30.234	60.508	24.61	0.251	2.43	1.00	1.00	1.0	65.65	159.78	24.61	13028	6236	724	1316	2040
1	10	4.61	37.987	66.296	23.72	0.258	2.41	1.00	1.00	0.9	76.90	185.62	23.72	14114	6083	727	1064	1791
															97,598	51,635		19,038

1.2D + 1.0Di + 1.0Wi 60°
50 mph wind with 1" radial iceGust Response Factor (G_h):

0.85

Ice Importance Factor:

1.00

Wind Importance Factor (I_w):

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 _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)
10	185	7.82	6.300	16.232	12.04	0.308	2.27	0.80	1.00	1.2	14.80	33.67	12.04	1652	1046	224	164	388
9	170	7.68	11.127	30.386	18.72	0.297	2.30	0.80	1.00	1.2	27.07	62.37	18.72	5269	3271	407	922	1329
8	150	7.48	11.620	37.679	19.12	0.312	2.27	0.80	1.00	1.2	32.00	72.50	19.12	7987	4857	461	1501	1961
7	130	7.25	15.453	42.206	20.10	0.304	2.29	0.80	1.00	1.1	37.69	86.17	20.10	9494	5701	531	1710	2241
6	110	7.00	17.065	49.947	21.17	0.300	2.30	0.80	1.00	1.1	43.57	100.00	21.17	10558	5964	595	1675	2271
5	90	6.71	19.007	50.957	22.18	0.276	2.36	0.80	1.00	1.1	45.37	107.09	22.18	10715	6009	611	1652	2263
4	70	6.37	20.742	58.934	23.07	0.278	2.36	0.80	1.00	1.1	51.51	121.35	23.07	12353	6282	657	1608	2265
3	50	5.93	23.132	59.864	23.97	0.258	2.41	0.80	1.00	1.0	53.65	129.46	23.97	12428	6186	653	1499	2152
2	30	5.33	30.234	60.508	24.61	0.251	2.43	0.80	1.00	1.0	59.60	145.06	24.61	13028	6236	657	1316	1973
1	10	4.61	37.987	66.296	23.72	0.258	2.41	0.80	1.00	0.9	69.31	167.28	23.72	14114	6083	656	1064	1719
															97,598	51,635		18,563

1.2D + 1.0Di + 1.0Wi 90°
50 mph wind with 1" radial iceGust Response Factor (G_h):

0.85

Ice Importance Factor:

1.00

Wind Importance Factor (I_w):

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 _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)
10	185	7.82	6.300	16.232	12.04	0.308	2.27	0.85	1.00	1.2	15.12	34.38	12.04	1652	1046	228	164	393
9	170	7.68	11.127	30.386	18.72	0.297	2.30	0.85	1.00	1.2	27.63	63.65	18.72	5269	3271	415	922	1337
8	150	7.48	11.620	37.679	19.12	0.312	2.27	0.85	1.00	1.2	32.58	73.81	19.12	7987	4857	469	1501	1970
7	130	7.25	15.453	42.206	20.10	0.304	2.29	0.85	1.00	1.1	38.46	87.93	20.10	9494	5701	542	1710	2252
6	110	7.00	17.065	49.947	21.17	0.300	2.30	0.85	1.00	1.1	44.42	101.96	21.17	10558	5964	607	1675	2282
5	90	6.71	19.007	50.957	22.18	0.276	2.36	0.85	1.00	1.1	46.32	109.34	22.18	10715	6009	624	1652	2276
4	70	6.37	20.742	58.934	23.07	0.278	2.36	0.85	1.00	1.1	52.54	123.79	23.07	12353	6282	670	1608	2278
3	50	5.93	23.132	59.864	23.97	0.258	2.41	0.85	1.00	1.0	54.81	132.25	23.97	12428	6186	667	1499	2166

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)
2	30	5.33	30.234	60.508	24.61	0.251	2.43	0.85	1.00	1.0	61.11	148.74	24.61	13028	6236	674	1316	1990
1	10	4.61	37.987	66.296	23.72	0.258	2.41	0.85	1.00	0.9	71.20	171.87	23.72	14114	6083	674	1064	1737
															97,598	51,635		18,682

1.2D + 1.0Di + 1.0Wi 120°

Gust Response Factor (Gh):

0.85

Ice Importance Factor:

1.00

50 mph wind with 1" 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)
10	185	7.82	6.300	16.232	12.04	0.308	2.27	1.00	1.00	1.2	16.06	36.53	12.04	1652	1046	243	164	407
9	170	7.68	11.127	30.386	18.72	0.297	2.30	1.00	1.00	1.2	29.30	67.50	18.72	5269	3271	440	922	1362
8	150	7.48	11.620	37.679	19.12	0.312	2.27	1.00	1.00	1.2	34.33	77.76	19.12	7987	4857	494	1501	1995
7	130	7.25	15.453	42.206	20.10	0.304	2.29	1.00	1.00	1.1	40.78	93.23	20.10	9494	5701	575	1710	2284
6	110	7.00	17.065	49.947	21.17	0.300	2.30	1.00	1.00	1.1	46.98	107.84	21.17	10558	5964	642	1675	2317
5	90	6.71	19.007	50.957	22.18	0.276	2.36	1.00	1.00	1.1	49.17	116.07	22.18	10715	6009	662	1652	2314
4	70	6.37	20.742	58.934	23.07	0.278	2.36	1.00	1.00	1.1	55.66	131.12	23.07	12353	6282	710	1608	2318
3	50	5.93	23.132	59.864	23.97	0.258	2.41	1.00	1.00	1.0	58.28	140.62	23.97	12428	6186	709	1499	2209
2	30	5.33	30.234	60.508	24.61	0.251	2.43	1.00	1.00	1.0	65.65	159.78	24.61	13028	6236	724	1316	2040
1	10	4.61	37.987	66.296	23.72	0.258	2.41	1.00	1.00	0.9	76.90	185.62	23.72	14114	6083	727	1064	1791
															97,598	51,635		19,038

1.2D + 1.0Di + 1.0Wi 180°

Gust Response Factor (Gh):

0.85

Ice Importance Factor:

1.00

50 mph wind with 1" 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)
10	185	7.82	6.300	16.232	12.04	0.308	2.27	0.80	1.00	1.2	14.80	33.67	12.04	1652	1046	224	164	388
9	170	7.68	11.127	30.386	18.72	0.297	2.30	0.80	1.00	1.2	27.07	62.37	18.72	5269	3271	407	922	1329
8	150	7.48	11.620	37.679	19.12	0.312	2.27	0.80	1.00	1.2	32.00	72.50	19.12	7987	4857	461	1501	1961
7	130	7.25	15.453	42.206	20.10	0.304	2.29	0.80	1.00	1.1	37.69	86.17	20.10	9494	5701	531	1710	2241
6	110	7.00	17.065	49.947	21.17	0.300	2.30	0.80	1.00	1.1	43.57	100.00	21.17	10558	5964	595	1675	2271
5	90	6.71	19.007	50.957	22.18	0.276	2.36	0.80	1.00	1.1	45.37	107.09	22.18	10715	6009	611	1652	2263
4	70	6.37	20.742	58.934	23.07	0.278	2.36	0.80	1.00	1.1	51.51	121.35	23.07	12353	6282	657	1608	2265
3	50	5.93	23.132	59.864	23.97	0.258	2.41	0.80	1.00	1.0	53.65	129.46	23.97	12428	6186	653	1499	2152
2	30	5.33	30.234	60.508	24.61	0.251	2.43	0.80	1.00	1.0	59.60	145.06	24.61	13028	6236	657	1316	1973
1	10	4.61	37.987	66.296	23.72	0.258	2.41	0.80	1.00	0.9	69.31	167.28	23.72	14114	6083	656	1064	1719
															97,598	51,635		18,563

1.2D + 1.0Di + 1.0Wi 210°

Gust Response Factor (Gh):

0.85

Ice Importance Factor:

1.00

50 mph wind with 1" 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)
10	185	7.82	6.300	16.232	12.04	0.308	2.27	0.85	1.00	1.2	15.12	34.38	12.04	1652	1046	228	164	393
9	170	7.68	11.127	30.386	18.72	0.297	2.30	0.85	1.00	1.2	27.63	63.65	18.72	5269	3271	415	922	1337
8	150	7.48	11.620	37.679	19.12	0.312	2.27	0.85	1.00	1.2	32.58	73.81	19.12	7987	4857	469	1501	1970
7	130	7.25	15.453	42.206	20.10	0.304	2.29	0.85	1.00	1.1	38.46	87.93	20.10	9494	5701	542	1710	2252
6	110	7.00	17.065	49.947	21.17	0.300	2.30	0.85	1.00	1.1	44.42	101.96	21.17	10558	5964	607	1675	2282
5	90	6.71	19.007	50.957	22.18	0.276	2.36	0.85	1.00	1.1	46.32	109.34	22.18	10715	6009	624	1652	2276
4	70	6.37	20.742	58.934	23.07	0.278	2.36	0.85	1.00	1.1	52.54	123.79	23.07	12353	6282	670	1608	2278
3	50	5.93	23.132	59.864	23.97	0.258	2.41	0.85	1.00	1.0	54.81	132.25	23.97	12428	6186	667	1499	2166
2	30	5.33	30.234	60.508	24.61	0.251	2.43	0.85	1.00	1.0	61.11	148.74	24.61	13028	6236	674	1316	1990
1	10	4.61	37.987	66.296	23.72	0.258	2.41	0.85	1.00	0.9	71.20	171.87	23.72	14114	6083	674	1064	1737
															97,598	51,635		18,682

1.2D + 1.0Di + 1.0Wi 240°

Gust Response Factor (Gh):

0.85

Ice Importance Factor:

1.00

50 mph wind with 1" 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)
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SECTION FORCES

#	(ft)	(psf)	(sf)	(sf)	(sf)						(in)	(sf)	(sf)	(sf)	(lb)	(lb)	(lb)	(lb)
10	185	7.82	6.300	16.232	12.04	0.308	2.27	1.00	1.00	1.2	16.06	36.53	12.04	1652	1046	243	164	407
9	170	7.68	11.127	30.386	18.72	0.297	2.30	1.00	1.00	1.2	29.30	67.50	18.72	5269	3271	440	922	1362
8	150	7.48	11.620	37.679	19.12	0.312	2.27	1.00	1.00	1.2	34.33	77.76	19.12	7987	4857	494	1501	1995
7	130	7.25	15.453	42.206	20.10	0.304	2.29	1.00	1.00	1.1	40.78	93.23	20.10	9494	5701	575	1710	2284
6	110	7.00	17.065	49.947	21.17	0.300	2.30	1.00	1.00	1.1	46.98	107.84	21.17	10558	5964	642	1675	2317
5	90	6.71	19.007	50.957	22.18	0.276	2.36	1.00	1.00	1.1	49.17	116.07	22.18	10715	6009	662	1652	2314
4	70	6.37	20.742	58.934	23.07	0.278	2.36	1.00	1.00	1.1	55.66	131.12	23.07	12353	6282	710	1608	2318
3	50	5.93	23.132	59.864	23.97	0.258	2.41	1.00	1.00	1.0	58.28	140.62	23.97	12428	6186	709	1499	2209
2	30	5.33	30.234	60.508	24.61	0.251	2.43	1.00	1.00	1.0	65.65	159.78	24.61	13028	6236	724	1316	2040
1	10	4.61	37.987	66.296	23.72	0.258	2.41	1.00	1.00	0.9	76.90	185.62	23.72	14114	6083	727	1064	1791
														97,598	51,635	19,038		

1.2D + 1.0Di + 1.0Wi 300°
50 mph wind with 1" radial iceGust Response Factor (Gh):
Wind Importance Factor (Iw):0.85
1.00Ice Importance Factor:
Ice Dead Load Factor:1.00
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)
10	185	7.82	6.300	16.232	12.04	0.308	2.27	0.80	1.00	1.2	14.80	33.67	12.04	1652	1046	224	164	388
9	170	7.68	11.127	30.386	18.72	0.297	2.30	0.80	1.00	1.2	27.07	62.37	18.72	5269	3271	407	922	1329
8	150	7.48	11.620	37.679	19.12	0.312	2.27	0.80	1.00	1.2	32.00	72.50	19.12	7987	4857	461	1501	1961
7	130	7.25	15.453	42.206	20.10	0.304	2.29	0.80	1.00	1.1	37.69	86.17	20.10	9494	5701	531	1710	2241
6	110	7.00	17.065	49.947	21.17	0.300	2.30	0.80	1.00	1.1	43.57	100.00	21.17	10558	5964	595	1675	2271
5	90	6.71	19.007	50.957	22.18	0.276	2.36	0.80	1.00	1.1	45.37	107.09	22.18	10715	6009	611	1652	2263
4	70	6.37	20.742	58.934	23.07	0.278	2.36	0.80	1.00	1.1	51.51	121.35	23.07	12353	6282	657	1608	2265
3	50	5.93	23.132	59.864	23.97	0.258	2.41	0.80	1.00	1.0	53.65	129.46	23.97	12428	6186	653	1499	2152
2	30	5.33	30.234	60.508	24.61	0.251	2.43	0.80	1.00	1.0	59.60	145.06	24.61	13028	6236	657	1316	1973
1	10	4.61	37.987	66.296	23.72	0.258	2.41	0.80	1.00	0.9	69.31	167.28	23.72	14114	6083	656	1064	1719
														97,598	51,635	18,563		

1.2D + 1.0Di + 1.0Wi 330°
50 mph wind with 1" radial iceGust Response Factor (Gh):
Wind Importance Factor (Iw):0.85
1.00Ice Importance Factor:
Ice Dead Load Factor:1.00
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)
10	185	7.82	6.300	16.232	12.04	0.308	2.27	0.85	1.00	1.2	15.12	34.38	12.04	1652	1046	228	164	393
9	170	7.68	11.127	30.386	18.72	0.297	2.30	0.85	1.00	1.2	27.63	63.65	18.72	5269	3271	415	922	1337
8	150	7.48	11.620	37.679	19.12	0.312	2.27	0.85	1.00	1.2	32.58	73.81	19.12	7987	4857	469	1501	1970
7	130	7.25	15.453	42.206	20.10	0.304	2.29	0.85	1.00	1.1	38.46	87.93	20.10	9494	5701	542	1710	2252
6	110	7.00	17.065	49.947	21.17	0.300	2.30	0.85	1.00	1.1	44.42	101.96	21.17	10558	5964	607	1675	2282
5	90	6.71	19.007	50.957	22.18	0.276	2.36	0.85	1.00	1.1	46.32	109.34	22.18	10715	6009	624	1652	2276
4	70	6.37	20.742	58.934	23.07	0.278	2.36	0.85	1.00	1.1	52.54	123.79	23.07	12353	6282	670	1608	2278
3	50	5.93	23.132	59.864	23.97	0.258	2.41	0.85	1.00	1.0	54.81	132.25	23.97	12428	6186	667	1499	2166
2	30	5.33	30.234	60.508	24.61	0.251	2.43	0.85	1.00	1.0	61.11	148.74	24.61	13028	6236	674	1316	1990
1	10	4.61	37.987	66.296	23.72	0.258	2.41	0.85	1.00	0.9	71.20	171.87	23.72	14114	6083	674	1064	1737
														97,598	51,635	18,682		

1.0D + 1.0W Service Normal
60 mph Wind with No IceGust Response Factor (Gh):
Wind Importance Factor (Iw):0.85
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)
10	185	11.26	6.300	4.195	0.00	0.148	2.78	1.00	1.00	0.0	8.68	24.13	0.00	505	0	231	74	305
9	170	11.05	11.127	11.667	0.00	0.168	2.71	1.00	1.00	0.0	17.77	48.11	0.00	1665	0	452	472	924
8	150	10.77	11.620	18.561	0.00	0.196	2.61	1.00	1.00	0.0	22.27	58.14	0.00	2608	0	532	800	1332
7	130	10.45	15.453	22.104	0.00	0.202	2.59	1.00	1.00	0.0	28.16	72.92	0.00	3161	0	648	895	1542
6	110	10.09	17.065	28.777	0.00	0.209	2.57	1.00	1.00	0.0	32.81	84.21	0.00	3829	0	722	879	1601
5	90	9.67	19.007	28.777	0.00	0.192	2.62	1.00	1.00	0.0	34.74	91.18	0.00	3921	0	749	852	1602
4	70	9.17	20.742	35.867	0.00	0.200	2.60	1.00	1.00	0.0	39.31	102.04	0.00	5059	0	795	836	1631
3	50	8.54	23.132	35.893	0.00	0.186	2.64	1.00	1.00	0.0	41.90	110.81	0.00	5202	0	805	778	1583
2	30	7.67	30.234	35.893	0.00	0.185	2.65	1.00	1.00	0.0	49.45	130.94	0.00	5660	0	854	699	1553

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)
1	10	6.64	37.987	42.571	0.00	0.201	2.59	1.00	1.00	0.0	59.68	154.77	0.00	6692	0	873	605	1478
															38,302	0		13,551

1.0D + 1.0W Service 60°
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 _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)
10	185	11.26	6.300	4.195	0.00	0.148	2.78	0.80	1.00	0.0	7.42	20.62	0.00	505	0	197	74	271
9	170	11.05	11.127	11.667	0.00	0.168	2.71	0.80	1.00	0.0	15.55	42.09	0.00	1665	0	395	472	867
8	150	10.77	11.620	18.561	0.00	0.196	2.61	0.80	1.00	0.0	19.94	52.07	0.00	2608	0	476	800	1276
7	130	10.45	15.453	22.104	0.00	0.202	2.59	0.80	1.00	0.0	25.07	64.92	0.00	3161	0	576	895	1471
6	110	10.09	17.065	28.777	0.00	0.209	2.57	0.80	1.00	0.0	29.40	75.45	0.00	3829	0	647	879	1526
5	90	9.67	19.007	28.777	0.00	0.192	2.62	0.80	1.00	0.0	30.94	81.20	0.00	3921	0	667	852	1520
4	70	9.17	20.742	35.867	0.00	0.200	2.60	0.80	1.00	0.0	35.16	91.27	0.00	5059	0	711	836	1547
3	50	8.54	23.132	35.893	0.00	0.186	2.64	0.80	1.00	0.0	37.27	98.58	0.00	5202	0	716	778	1494
2	30	7.67	30.234	35.893	0.00	0.185	2.65	0.80	1.00	0.0	43.41	114.93	0.00	5660	0	749	699	1449
1	10	6.64	37.987	42.571	0.00	0.201	2.59	0.80	1.00	0.0	52.08	135.06	0.00	6692	0	762	605	1367
															38,302	0		12,789

1.0D + 1.0W Service 90°
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 _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)
10	185	11.26	6.300	4.195	0.00	0.148	2.78	0.85	1.00	0.0	7.74	21.50	0.00	505	0	206	74	280
9	170	11.05	11.127	11.667	0.00	0.168	2.71	0.85	1.00	0.0	16.10	43.59	0.00	1665	0	410	472	881
8	150	10.77	11.620	18.561	0.00	0.196	2.61	0.85	1.00	0.0	20.53	53.59	0.00	2608	0	490	800	1290
7	130	10.45	15.453	22.104	0.00	0.202	2.59	0.85	1.00	0.0	25.84	66.92	0.00	3161	0	594	895	1489
6	110	10.09	17.065	28.777	0.00	0.209	2.57	0.85	1.00	0.0	30.25	77.64	0.00	3829	0	666	879	1545
5	90	9.67	19.007	28.777	0.00	0.192	2.62	0.85	1.00	0.0	31.89	83.70	0.00	3921	0	688	852	1540
4	70	9.17	20.742	35.867	0.00	0.200	2.60	0.85	1.00	0.0	36.20	93.96	0.00	5059	0	732	836	1568
3	50	8.54	23.132	35.893	0.00	0.186	2.64	0.85	1.00	0.0	38.43	101.64	0.00	5202	0	738	778	1516
2	30	7.67	30.234	35.893	0.00	0.185	2.65	0.85	1.00	0.0	44.92	118.93	0.00	5660	0	776	699	1475
1	10	6.64	37.987	42.571	0.00	0.201	2.59	0.85	1.00	0.0	53.98	139.99	0.00	6692	0	790	605	1395
															38,302	0		12,979

1.0D + 1.0W Service 120°
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 _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)
10	185	11.26	6.300	4.195	0.00	0.148	2.78	1.00	1.00	0.0	8.68	24.13	0.00	505	0	231	74	305
9	170	11.05	11.127	11.667	0.00	0.168	2.71	1.00	1.00	0.0	17.77	48.11	0.00	1665	0	452	472	924
8	150	10.77	11.620	18.561	0.00	0.196	2.61	1.00	1.00	0.0	22.27	58.14	0.00	2608	0	532	800	1332
7	130	10.45	15.453	22.104	0.00	0.202	2.59	1.00	1.00	0.0	28.16	72.92	0.00	3161	0	648	895	1542
6	110	10.09	17.065	28.777	0.00	0.209	2.57	1.00	1.00	0.0	32.81	84.21	0.00	3829	0	722	879	1601
5	90	9.67	19.007	28.777	0.00	0.192	2.62	1.00	1.00	0.0	34.74	91.18	0.00	3921	0	749	852	1602
4	70	9.17	20.742	35.867	0.00	0.200	2.60	1.00	1.00	0.0	39.31	102.04	0.00	5059	0	795	836	1631
3	50	8.54	23.132	35.893	0.00	0.186	2.64	1.00	1.00	0.0	41.90	110.81	0.00	5202	0	805	778	1583
2	30	7.67	30.234	35.893	0.00	0.185	2.65	1.00	1.00	0.0	49.45	130.94	0.00	5660	0	854	699	1553
1	10	6.64	37.987	42.571	0.00	0.201	2.59	1.00	1.00	0.0	59.68	154.77	0.00	6692	0	873	605	1478
															38,302	0		13,551

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

Gust Response Factor (Gh): 0.85
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)
10	185	11.26	6.300	4.195	0.00	0.148	2.78	0.80	1.00	0.0	7.42	20.62	0.00	505	0	197	74	271
9	170	11.05	11.127	11.667	0.00	0.168	2.71	0.80	1.00	0.0	15.55	42.09	0.00	1665	0	395	472	867
8	150	10.77	11.620	18.561	0.00	0.196	2.61	0.80	1.00	0.0	19.94	52.07	0.00	2608	0	476	800	1276
7	130	10.45	15.453	22.104	0.00	0.202	2.59	0.80	1.00	0.0	25.07	64.92	0.00	3161	0	576	895	1471
6	110	10.09	17.065	28.777	0.00	0.209	2.57	0.80	1.00	0.0	29.40	75.45	0.00	3829	0	647	879	1526
5	90	9.67	19.007	28.777	0.00	0.192	2.62	0.80	1.00	0.0	30.94	81.20	0.00	3921	0	667	852	1520
4	70	9.17	20.742	35.867	0.00	0.200	2.60	0.80	1.00	0.0	35.16	91.27	0.00	5059	0	711	836	1547
3	50	8.54	23.132	35.893	0.00	0.186	2.64	0.80	1.00	0.0	37.27	98.58	0.00	5202	0	716	778	1494
2	30	7.67	30.234	35.893	0.00	0.185	2.65	0.80	1.00	0.0	43.41	114.93	0.00	5660	0	749	699	1449
1	10	6.64	37.987	42.571	0.00	0.201	2.59	0.80	1.00	0.0	52.08	135.06	0.00	6692	0	762	605	1367
															38,302	0		12,789

1.0D + 1.0W Service 210°
60 mph Wind with No IceGust 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)
10	185	11.26	6.300	4.195	0.00	0.148	2.78	0.85	1.00	0.0	7.74	21.50	0.00	505	0	206	74	280
9	170	11.05	11.127	11.667	0.00	0.168	2.71	0.85	1.00	0.0	16.10	43.59	0.00	1665	0	410	472	881
8	150	10.77	11.620	18.561	0.00	0.196	2.61	0.85	1.00	0.0	20.53	53.59	0.00	2608	0	490	800	1290
7	130	10.45	15.453	22.104	0.00	0.202	2.59	0.85	1.00	0.0	25.84	66.92	0.00	3161	0	594	895	1489
6	110	10.09	17.065	28.777	0.00	0.209	2.57	0.85	1.00	0.0	30.25	77.64	0.00	3829	0	666	879	1545
5	90	9.67	19.007	28.777	0.00	0.192	2.62	0.85	1.00	0.0	31.89	83.70	0.00	3921	0	688	852	1540
4	70	9.17	20.742	35.867	0.00	0.200	2.60	0.85	1.00	0.0	36.20	93.96	0.00	5059	0	732	836	1568
3	50	8.54	23.132	35.893	0.00	0.186	2.64	0.85	1.00	0.0	38.43	101.64	0.00	5202	0	738	778	1516
2	30	7.67	30.234	35.893	0.00	0.185	2.65	0.85	1.00	0.0	44.92	118.93	0.00	5660	0	776	699	1475
1	10	6.64	37.987	42.571	0.00	0.201	2.59	0.85	1.00	0.0	53.98	139.99	0.00	6692	0	790	605	1395
															38,302	0		12,979

1.0D + 1.0W Service 240°
60 mph Wind with No IceGust 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)
10	185	11.26	6.300	4.195	0.00	0.148	2.78	1.00	1.00	0.0	8.68	24.13	0.00	505	0	231	74	305
9	170	11.05	11.127	11.667	0.00	0.168	2.71	1.00	1.00	0.0	17.77	48.11	0.00	1665	0	452	472	924
8	150	10.77	11.620	18.561	0.00	0.196	2.61	1.00	1.00	0.0	22.27	58.14	0.00	2608	0	532	800	1332
7	130	10.45	15.453	22.104	0.00	0.202	2.59	1.00	1.00	0.0	28.16	72.92	0.00	3161	0	648	895	1542
6	110	10.09	17.065	28.777	0.00	0.209	2.57	1.00	1.00	0.0	32.81	84.21	0.00	3829	0	722	879	1601
5	90	9.67	19.007	28.777	0.00	0.192	2.62	1.00	1.00	0.0	34.74	91.18	0.00	3921	0	749	852	1602
4	70	9.17	20.742	35.867	0.00	0.200	2.60	1.00	1.00	0.0	39.31	102.04	0.00	5059	0	795	836	1631
3	50	8.54	23.132	35.893	0.00	0.186	2.64	1.00	1.00	0.0	41.90	110.81	0.00	5202	0	805	778	1583
2	30	7.67	30.234	35.893	0.00	0.185	2.65	1.00	1.00	0.0	49.45	130.94	0.00	5660	0	854	699	1553
1	10	6.64	37.987	42.571	0.00	0.201	2.59	1.00	1.00	0.0	59.68	154.77	0.00	6692	0	873	605	1478
															38,302	0		13,551

1.0D + 1.0W Service 300°
60 mph Wind with No IceGust 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)
10	185	11.26	6.300	4.195	0.00	0.148	2.78	0.80	1.00	0.0	7.42	20.62	0.00	505	0	197	74	271
9	170	11.05	11.127	11.667	0.00	0.168	2.71	0.80	1.00	0.0	15.55	42.09	0.00	1665	0	395	472	867
8	150	10.77	11.620	18.561	0.00	0.196	2.61	0.80	1.00	0.0	19.94	52.07	0.00	2608	0	476	800	1276
7	130	10.45	15.453	22.104	0.00	0.202	2.59	0.80	1.00	0.0	25.07	64.92	0.00	3161	0	576	895	1471
6	110	10.09	17.065	28.777	0.00	0.209	2.57	0.80	1.00	0.0	29.40	75.45	0.00	3829	0	647	879	1526
5	90	9.67	19.007	28.777	0.00	0.192	2.62	0.80	1.00	0.0	30.94	81.20	0.00	3921	0	667	852	1520
4	70	9.17	20.742	35.867	0.00	0.200	2.60	0.80	1.00	0.0	35.16	91.27	0.00	5059	0	711	836	1547
3	50	8.54	23.132	35.893	0.00	0.186	2.64	0.80	1.00	0.0	37.27	98.58	0.00	5202	0	716	778	1494

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)
2	30	7.67	30.234	35.893	0.00	0.185	2.65	0.80	1.00	0.0	43.41	114.93	0.00	5660	0	749	699	1449
1	10	6.64	37.987	42.571	0.00	0.201	2.59	0.80	1.00	0.0	52.08	135.06	0.00	6692	0	762	605	1367
															38,302	0		12,789

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 _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)
10	185	11.26	6.300	4.195	0.00	0.148	2.78	0.85	1.00	0.0	7.74	21.50	0.00	505	0	206	74	280
9	170	11.05	11.127	11.667	0.00	0.168	2.71	0.85	1.00	0.0	16.10	43.59	0.00	1665	0	410	472	881
8	150	10.77	11.620	18.561	0.00	0.196	2.61	0.85	1.00	0.0	20.53	53.59	0.00	2608	0	490	800	1290
7	130	10.45	15.453	22.104	0.00	0.202	2.59	0.85	1.00	0.0	25.84	66.92	0.00	3161	0	594	895	1489
6	110	10.09	17.065	28.777	0.00	0.209	2.57	0.85	1.00	0.0	30.25	77.64	0.00	3829	0	666	879	1545
5	90	9.67	19.007	28.777	0.00	0.192	2.62	0.85	1.00	0.0	31.89	83.70	0.00	3921	0	688	852	1540
4	70	9.17	20.742	35.867	0.00	0.200	2.60	0.85	1.00	0.0	36.20	93.96	0.00	5059	0	732	836	1568
3	50	8.54	23.132	35.893	0.00	0.186	2.64	0.85	1.00	0.0	38.43	101.64	0.00	5202	0	738	778	1516
2	30	7.67	30.234	35.893	0.00	0.185	2.65	0.85	1.00	0.0	44.92	118.93	0.00	5660	0	776	699	1475
1	10	6.64	37.987	42.571	0.00	0.201	2.59	0.85	1.00	0.0	53.98	139.99	0.00	6692	0	790	605	1395
															38,302	0		12,979

EQUIVALENT LATERAL FORCE METHOD

Spectral Response Acceleration for Short Period (S_S):	0.20
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.05
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}):	0.22
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):	0.98
Redundancy Factor (ρ):	1.00
Seismic Force Distribution Exponent (k):	1.24
Total Unfactored Dead Load:	50.61 k
Seismic Base Shear (E):	1.52 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)
10	185.30	505	329,166	0.022	34	433
9	170.00	1,665	975,132	0.066	100	1,426
8	150.00	2,608	1,307,341	0.088	134	2,233
7	130.00	3,161	1,326,790	0.089	136	2,707
6	110.00	3,829	1,306,280	0.088	134	3,279
5	90.00	3,921	1,042,946	0.070	107	3,358
4	70.00	5,059	985,221	0.066	101	4,333
3	50.00	5,202	667,211	0.045	68	4,455
2	30.00	5,660	385,160	0.026	39	4,848
1	10.00	6,692	116,520	0.008	12	5,732
Generic 12' Dipole	190.00	120	80,667	0.005	8	103
Side Arm	190.00	450	302,500	0.020	31	385
Generic 6' Omni	189.00	50	33,392	0.002	3	43
Generic RCU (Remote Control Unit)	183.00	3	1,925	0.000	0	3
RFS APXV18-206517S-C	183.00	79	50,817	0.003	5	68
Round Side Arm	183.00	450	288,733	0.019	30	385
Ericsson Radio 4449 B71 B85A	177.00	225	138,517	0.009	14	193
Ericsson Radio 4460 B25+B66	177.00	327	201,311	0.014	21	280
Ericsson Air6449 B41	177.00	312	192,077	0.013	20	267
RFS APXVAALL24 43-U-NA20	177.00	368	226,798	0.015	23	316
Generic Heavy Sector Frame	175.00	1,500	910,516	0.061	93	1,285
Powerwave Allgon 7020	166.00	13	7,504	0.000	1	11
Kaelus DBC0061F1V51-2	166.00	51	28,994	0.002	3	44
Powerwave Allgon LGP21401	166.00	85	48,097	0.003	5	72
Raycap DC6-48-60-18-8F (23.5" Height)	166.00	40	22,741	0.002	2	34
Ericsson RRUS 4426 B66	166.00	194	110,065	0.007	11	166
Ericsson RRUS 4478 B14 (15")	166.00	59	33,770	0.002	3	51
Ericsson RRUS 4478 B5	166.00	120	68,108	0.005	7	103
Ericsson RRUS 32 B30 (60 lbs)	166.00	240	136,444	0.009	14	206
Ericsson RRUS-11 (19.7")	166.00	204	115,978	0.008	12	175
Ericsson RRUS E2 B29	166.00	240	136,444	0.009	14	206
Raycap DC6-48-60-18-8C-EV	166.00	32	18,193	0.001	2	27

Powerwave Allgon 7770.00	166.00	105	59,694	0.004	6	90
Commscope SBNHH-1D65A	166.00	67	38,091	0.003	4	57
CCI OPA-65R-LCUU-H4 (14.4" width)	166.00	114	64,811	0.004	7	98
CCI HPA-65R-BUU-H4	166.00	68	38,659	0.003	4	58
CCI BSA-M65R-BUU-H4	166.00	225	127,917	0.009	13	193
Flat Light Sector Frame	166.00	1,200	682,222	0.046	70	1,028
Commscope RDIDC-9181-PF-48	156.00	22	11,527	0.001	1	19
Fujitsu TA08025-B604	156.00	192	100,899	0.007	10	164
Fujitsu TA08025-B605	156.00	225	118,426	0.008	12	193
JMA Wireless MX08FRO665-21	156.00	194	101,846	0.007	10	166
Generic Flat Light Sector Frame	156.00	1,200	631,603	0.042	65	1,028
Generic 4' Dish w/ Radome	148.00	120	59,166	0.004	6	103
Generic Flat Light Sector Frame	148.00	400	197,221	0.013	20	343
Generic 10' Dipole	144.00	30	14,297	0.001	1	26
Round Side Arm	142.00	300	140,512	0.010	14	257
Generic 6' FM antenna	137.00	60	26,880	0.002	3	51
Round Side Arm	135.00	600	263,938	0.018	27	514
Round Side Arm	130.00	450	188,897	0.013	19	385
Harris FML-4E	127.00	227	92,567	0.006	9	194
Round Side Arm	125.00	300	119,950	0.008	12	257
Scala PR-950	108.80	38	12,790	0.001	1	33
Stand-Off	87.00	75	19,127	0.001	2	64
Antel BCD-87010 ____ 4°	87.00	26	6,758	0.000	1	23
Generic 4' Std. Dish	80.00	376	86,411	0.006	9	322
Side Arm	60.00	300	48,248	0.003	5	257
Channel Master Type 120	16.00	126	3,931	0.000	0	108
Ericsson RRUS 32 B2	4.00	106	592	0.000	0	91
Totals		50,610	14,852,337	1.000	1,518	43,346

SEISMIC

Load Case: 1.2D + 1.0Ev + 1.0Eh

Seismic

Section	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
10	185.30	505	329,166	0.022	34	628
9	170.00	1,665	975,132	0.066	100	2,071
8	150.00	2,608	1,307,341	0.088	134	3,243
7	130.00	3,161	1,326,790	0.089	136	3,930
6	110.00	3,829	1,306,280	0.088	134	4,761
5	90.00	3,921	1,042,946	0.070	107	4,876
4	70.00	5,059	985,221	0.066	101	6,292
3	50.00	5,202	667,211	0.045	68	6,469
2	30.00	5,660	385,160	0.026	39	7,038
1	10.00	6,692	116,520	0.008	12	8,322
Generic 12' Dipole	190.00	120	80,667	0.005	8	149
Side Arm	190.00	450	302,500	0.020	31	560
Generic 6' Omni	189.00	50	33,392	0.002	3	62
Generic RCU (Remote Control Unit)	183.00	3	1,925	0.000	0	4
RFS APXV18-206517S-C	183.00	79	50,817	0.003	5	98
Round Side Arm	183.00	450	288,733	0.019	30	560
Ericsson Radio 4449 B71 B85A	177.00	225	138,517	0.009	14	280
Ericsson Radio 4460 B25+B66	177.00	327	201,311	0.014	21	407
Ericsson Air6449 B41	177.00	312	192,077	0.013	20	388
RFS APXVAALL24 43-U-NA20	177.00	368	226,798	0.015	23	458
Generic Heavy Sector Frame	175.00	1,500	910,516	0.061	93	1,865
Powerwave Allgon 7020	166.00	13	7,504	0.000	1	16
Kaelus DBC0061F1V51-2	166.00	51	28,994	0.002	3	63
Powerwave Allgon LGP21401	166.00	85	48,097	0.003	5	105
Raycap DC6-48-60-18-8F (23.5" Height)	166.00	40	22,741	0.002	2	50
Ericsson RRUS 4426 B66	166.00	194	110,065	0.007	11	241
Ericsson RRUS 4478 B14 (15")	166.00	59	33,770	0.002	3	74
Ericsson RRUS 4478 B5	166.00	120	68,108	0.005	7	149
Ericsson RRUS 32 B30 (60 lbs)	166.00	240	136,444	0.009	14	298
Ericsson RRUS-11 (19.7")	166.00	204	115,978	0.008	12	254
Ericsson RRUS E2 B29	166.00	240	136,444	0.009	14	298
Raycap DC6-48-60-18-8C-EV	166.00	32	18,193	0.001	2	40
Powerwave Allgon 7770.00	166.00	105	59,694	0.004	6	131
Commscope SBNHH-1D65A	166.00	67	38,091	0.003	4	83
CCI OPA-65R-LCUU-H4 (14.4" width)	166.00	114	64,811	0.004	7	142
CCI HPA-65R-BUU-H4	166.00	68	38,659	0.003	4	85

ASSET: # 311305, GLFD-GUILFORD REBUILD CT

STANDARD

ANSI/TIA-222-H

CUSTOMER T-MOBILE

ENG NO.:

13711909_C3_02

CCI BSA-M65R-BUU-H4	166.00	225	127,917	0.009	13	280
Flat Light Sector Frame	166.00	1,200	682,222	0.046	70	1,492
Commscope RDIDC-9181-PF-48	156.00	22	11,527	0.001	1	27
Fujitsu TA08025-B604	156.00	192	100,899	0.007	10	238
Fujitsu TA08025-B605	156.00	225	118,426	0.008	12	280
JMA Wireless MX08FRO665-21	156.00	194	101,846	0.007	10	241
Generic Flat Light Sector Frame	156.00	1,200	631,603	0.042	65	1,492
Generic 4' Dish w/ Radome	148.00	120	59,166	0.004	6	149
Generic Flat Light Sector Frame	148.00	400	197,221	0.013	20	497
Generic 10' Dipole	144.00	30	14,297	0.001	1	37
Round Side Arm	142.00	300	140,512	0.010	14	373
Generic 6' FM antenna	137.00	60	26,880	0.002	3	75
Round Side Arm	135.00	600	263,938	0.018	27	746
Round Side Arm	130.00	450	188,897	0.013	19	560
Harris FML-4E	127.00	227	92,567	0.006	9	282
Round Side Arm	125.00	300	119,950	0.008	12	373
Scala PR-950	108.80	38	12,790	0.001	1	47
Stand-Off	87.00	75	19,127	0.001	2	93
Antel BCD-87010 ____ 4°	87.00	26	6,758	0.000	1	33
Generic 4' Std. Dish	80.00	376	86,411	0.006	9	468
Side Arm	60.00	300	48,248	0.003	5	373
Channel Master Type 120	16.00	126	3,931	0.000	0	157
Ericsson RRUS 32 B2	4.00	106	592	0.000	0	132
Totals		50,610	14,852,337	1.000	1,518	62,935

FORCE/STRESS SUMMARY

Section 1 – Bolt Elevation 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 ΦR _n (kip)	# Bolt	# Hole	Use %	Controls
				X	Y	Z				ΦR _{nv} (kip)	ΦR _n (kip)					
L PST - 12" DIA PIPE	-462.45	1.2D + 1.0W N	6.427	100	100	100	17.61	50.0	642.27	0.00	0.00		0	0	72	Member X
D SAE - 4X4X0.25	-11.58	1.2D + 1.0W 90°	20.055	48	48	48	145.30	43.5	26.30	0.00	0.00		0	0	44	Member Z

Max Tension Member	Pu	Load Case	Fy	Fu	ΦcPn	Shear	Bear	Blk Shear	#	#	Use	Controls
	(kip)		(ksi)	(ksi)	(kip)	ΦRnv	ΦRn	Φt Pn	Bolt	Hole	%	
L PST - 12" DIA PIPE	414.26	1.2D + 1.0W 60°	50.0	65	657.00	0.00	0.00		0	0	63	Member
D SAE - 4X4X0.25	11.36	1.2D + 1.0W 90°	50.0	65	87.30	0.00	0.00	0.00	0	0	13	Member

Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type
Top Tension	383.33	0.9D + 1.0W 180°	0.00	0	0	
Bot Tension	418.63	0.9D + 1.0W 60°	0.00	0	0	
Bot Compression	469.64	1.2D + 1.0W 120°	0.00	0	0	

Section 2 – Bolt Elevation 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 ΦR _n (kip)	# Bolt	# Hole	Use %	Controls
				X	Y	Z				ΦR _{nv} (kip)	ΦR _n (kip)					
L PST - 10" DIA PIPE	-428.52	1.2D + 1.0W N	0.376	100	100	100	1.23	50.0	535.44	0.00	0.00		0	0	80	Member X
D SAE - 3.5x3.5x0.25	-11.49	1.2D + 1.0W 90°	18.773	48	48	48	157.17	50.0	19.58	0.00	0.00		0	0	58	Member Z

						Shear	Bear	Blk Shear			Use	
Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	ΦcPn (kip)	ΦRnv (kip)	ΦRn (kip)	Φt Pn (kip)	# Bolt	# Hole	%	Controls
L PST - 10" DIA PIPE	383.62	0.9D + 1.0W 60°	50.0	65	535.50	0.00	0.00		0	0	71	Member
D SAE - 3.5x3.5x0.25	11.54	1.2D + 1.0W 90°	50.0	65	76.05	0.00	0.00	0.00	0	0	15	Member

Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type
Top Tension	344.05	0.9D + 1.0W 180°	0.00	0	0	
Bot Tension	383.33	0.9D + 1.0W 180°	0.00	0	0	

Section 3 – Bolt Elevation 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 ΦR _n (kip)	# Bolt	# Hole	Use %	Controls
				X	Y	Z				ΦR _{nv} (kip)	ΦR _n (kip)					
L PST - 10" DIA PIPE	-374.38	1.2D + 1.0W N	6.427	100	100	100	21.02	50.0	518.48	0.00	0.00		0	0	72	Member X
D SAE - 3X3X0.25	-11.01	1.2D + 1.0W 90°	16.908	47	47	47	161.08	50.0	15.88	0.00	0.00		0	0	69	Member Z

						Shear	Bear	Blk Shear				
	Pu		Fy	Fu	ΦcPn	ΦRnv	ΦRn	Φt Pn	#	#	Use	
Max Tension Member	(kip)	Load Case	(ksi)	(ksi)	(kip)	(kip)	(kip)	(kip)	Bolt	Hole	%	Controls
L PST - 10" DIA PIPE	344.34	0.9D + 1.0W 60°	50.0	65	535.50	0.00	0.00		0	0	64	Member
D SAE - 3X3X0.25	10.77	1.2D + 1.0W 90°	50.0	65	64.80	0.00	0.00	0.00	0	0	16	Member

Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type
Top Tension	302.18	0.9D + 1.0W 180°	0.00	0	0	
Bot Tension	344.05	0.9D + 1.0W 180°	0.00	0	0	

Section 4 – Bolt Elevation 60.0 (ft) and Height 20.00 (ft)

FORCE/STRESS SUMMARY

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F'y (ksi)	Φc Pn (kip)	Shear	Bear	# Bolt	# Hole	Use %	Controls
				X	Y	Z				ΦRnv	ΦRn				
										(kip)	(kip)				
L PST - 10" DIA PIPE	-335.39	1.2D + 1.0W N	0.375	100	100	100	1.23	50.0	535.44	0.00	0.00	0	0	62	Member X
D SAE - 3X3X0.25	-12.86	1.2D + 1.0W 90°	15.157	48	48	48	147.48	50.0	18.95	0.00	0.00	0	0	67	Member Z

Max Tension Member	Pu (kip)	Load Case	F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	Shear	Bear	Blk Shear	# Bolt	# Hole	Use %	Controls
						ΦR _{nv} (kip)	ΦR _n (kip)	Φ _t P _n (kip)				
L PST - 10" DIA PIPE	302.32	0.9D + 1.0W 60°	50.0	65	535.50	0.00	0.00		0	0	56	Member
D SAE - 3X3X0.25	12.56	1.2D + 1.0W 90°	50.0	65	64.80	0.00	0.00	0.00	0	0	19	Member

Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type
Top Tension	247.52	0.9D + 1.0W 60°	0.00	0	0	
Bot Tension	302.18	0.9D + 1.0W 180°	0.00	0	0	

Section 5 – Bolt Elevation 80.0 (ft) and Height 20.00 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing %				F'y (ksi)	Φc Pn (kip)	Shear	Bear	# Bolt	# Hole	Use %	Controls
				X	Y	Z	KL/R			ΦRnv	ΦRn				
										(kip)	(kip)				
L PST - 8" DIA PIPE	-264.49	1.2D + 1.0W N	6.423	100	100	100	26.22	50.0	359.48	0.00	0.00	0	0	73	Member X
D SAE - 3X3X0.1875	-11.25	1.2D + 1.0W 90°	13.813	48	48	48	133.49	44.0	17.51	0.00	0.00	0	0	64	Member Z

Max Tension Member	Pu (kip)	Load Case	F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	Shear	Bear	Blk Shear	# Bolt	# Hole	Use %	Controls
						ΦR _{nv} (kip)	ΦR _n (kip)	Φ _t P _n (kip)				
L PST - 8" DIA PIPE	245.84	1.2D + 1.0W 60°	50.0	65	378.00	0.00	0.00		0	0	65	Member
D SAE - 3X3X0.1875	11.31	1.2D + 1.0W 90°	50.0	65	49.05	0.00	0.00	0.00	0	0	23	Member

Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type
Top Tension	194.48	0.9D + 1.0W 60°	0.00	0	0	
Bot Tension	247.52	0.9D + 1.0W 60°	0.00	0	0	

Section 6 – Bolt Elevation 100.0 (ft) and Height 20.00 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F'y (ksi)	Φc Pn (kip)	Shear		Bear		# Bolt	# Hole	Use %	Controls
				X	Y	Z				ΦRnv (kip)	ΦRn (kip)						
L PST - 8" DIA PIPE	-216.87	1.2D + 1.0W N	0.375	100	100	100	1.53	50.0	377.94	0.00	0.00	0	0	57	Member X		
D SAE - 3X3X0.1875	-10.80	1.2D + 1.0W 90°	12.504	48	48	48	120.84	44.0	21.36	0.00	0.00	0	0	50	Member Z		

Max Tension Member	Pu	Load Case	Fy	Fu	ΦcPn	Shear	Bear	Blk Shear	# Bolt	# Hole	Use %	Controls
	(kip)		(ksi)	(ksi)	(kip)	ΦRnv (kip)	ΦRn (kip)	Φt Pn (kip)				
L PST - 8" DIA PIPE	192.96	1.2D + 1.0W 60°	50.0	65	378.00	0.00	0.00		0	0	51	Member
D SAE - 3X3X0.1875	10.68	1.2D + 1.0W 90°	50.0	65	49.05	0.00	0.00	0.00	0	0	21	Member

Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type
Top Tension	138.73	0.9D + 1.0W 180°	0.00	0	0	
Bot Tension	194.48	0.9D + 1.0W 60°	0.00	0	0	

Section 7 – Bolt Elevation 120.0 (ft) and Height 20.00 (ft)

Max Compression								Shear			Bear				
	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	
				X	Y	Z									KL/R
L PST - 6" DIA PIPE	-145.57	1.2D + 1.0W N	6.423	100	100	100	34.25	50.0	230.45	0.00	0.00	0	0	63	Member X
D SAE - 3X3X0.1875	-9.77	1.2D + 1.0W 90°	11.243	48	48	48	111.49	44.0	25.05	0.00	0.00	0	0	39	Member Z

FORCE/STRESS SUMMARY

Max Tension Member	Pu (kip)	Load Case	F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	Shear	Bear	Blk Shear	# Bolt	# Hole	Use %	Controls
						ΦR _{nv} (kip)	ΦR _n (kip)	Φ _t P _n (kip)				
L PST - 6" DIA PIPE	138.95	0.9D + 1.0W 60°	50.0	65	251.10	0.00	0.00		0	0	55	Member
D SAE - 3X3X0.1875	9.63	1.2D + 1.0W 90°	50.0	65	49.05	0.00	0.00	0.00	0	0	19	Member

Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type
Top Tension	83.53	0.9D + 1.0W 60°	0.00	0	0	
Bot Tension	138.73	0.9D + 1.0W 180°	0.00	0	0	

Section 8 – Bolt Elevation 140.0 (ft) and Height 20.00 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing %				F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear	# Bolt	# Hole	Use %	Controls
				X	Y	Z	KL/R			ΦR _{nv} (kip)	ΦR _n (kip)				
L PST - 5" DIA PIPE	-86.31	1.2D + 1.0W N	6.548	100	100	100	41.79	50.0	170.30	0.00	0.00	0	0	50	Member X
D SAE - 2.5X2.5X0.1875	-7.87	1.2D + 1.0W 90°	10.125	48	48	48	118.36	50.0	18.43	0.00	0.00	0	0	42	Member Z

Max Tension Member	Pu (kip)	Load Case	F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	Shear	Bear	Blk Shear	# Bolt	# Hole	Use %	Controls
						ΦR _{nv} (kip)	ΦR _n (kip)	Φ _t P _n (kip)				
L PST - 5" DIA PIPE	83.70	0.9D + 1.0W 60°	50.0	65	193.50	0.00	0.00		0	0	43	Member
D SAE - 2.5X2.5X0.1875	7.77	1.2D + 1.0W 90°	50.0	65	40.59	0.00	0.00	0.00	0	0	19	Member

Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type
Top Tension	36.88	0.9D + 1.0W 180°	0.00	0	0	
Bot Tension	83.53	0.9D + 1.0W 60°	0.00	0	0	

Section 9 – Bolt Elevation 160.0 (ft) and Height 20.00 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing %				F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear	# Bolt	# Hole	Use %	Controls
				X	Y	Z	KL/R			ΦR _{nv} (kip)	ΦR _n (kip)				
L PST - 3" DIA PIPE	-35.16	1.2D + 1.0W N	6.542	100	100	100	67.67	50.0	71.80	0.00	0.00	0	0	48	Member X
D SAE - 2.5X2.5X0.1875	-7.06	1.2D + 1.0W 90°	9.222	48	48	48	110.48	50.0	21.15	0.00	0.00	0	0	33	Member Z

Max Tension Member	Pu (kip)	Load Case	F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	Shear	Bear	Blk Shear	# Bolt	# Hole	Use %	Controls
						ΦR _{nv} (kip)	ΦR _n (kip)	Φ _t P _n (kip)				
L PST - 3" DIA PIPE	27.26	1.2D + 1.0W 60°	50.0	65	100.35	0.00	0.00		0	0	27	Member
D SAE - 2.5X2.5X0.1875	6.53	1.2D + 1.0W 60°	50.0	65	40.59	0.00	0.00	0.00	0	0	16	Member

Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type
Top Tension	3.32	0.9D + 1.0W 60°	0.00	0	0	
Bot Tension	36.88	0.9D + 1.0W 180°	0.00	0	0	

Section 10 – Bolt Elevation 180.0 (ft) and Height 10.60 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing %				F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear	# Bolt	# Hole	Use %	Controls
				X	Y	Z	KL/R			ΦR _{nv} (kip)	ΦR _n (kip)				
L PST - 2" DIA PIPE	-3.17	1.2D + 1.0W N	5.112	100	100	100	77.94	50.0	30.88	0.00	0.00	0	0	10	Member X
H SAE - 1.75X1.75X0.125	-0.25	1.2D + 1.0W 60°	6.5	100	100	100	224.78	36.0	2.38	0.00	0.00	0	0	10	Member Z
D SAE - 2X2X0.1875	-1.19	1.2D + 1.0W N	8.269	48	48	48	120.89	50.0	14.00	0.00	0.00	0	0	8	Member Z

Max Tension Member	Pu (kip)	Load Case	F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	Shear	Bear	Blk Shear	# Bolt	# Hole	Use %	Controls
						ΦR _{nv} (kip)	ΦR _n (kip)	Φ _t P _n (kip)				
L PST - 2" DIA PIPE	3.44	0.9D + 1.0W 60°	50.0	65	48.15	0.00	0.00		0	0	7	Member
H SAE - 1.75X1.75X0.125	0.30	1.2D + 1.0W N	36.0	58	13.61	0.00	0.00	0.00	0	0	2	Member

FORCE/STRESS SUMMARY											
D SAE - 2X2X0.1875	0.98	1.2D + 1.0W N	50.0	65	32.18	0.00	0.00	0.00	0	0	3 Member
	Pu		ΦR _{nt}	Use	Num						
Max Splice Forces	(kip)	Load Case	(kip)	%	Bolts	Bolt Type					
Bot Tension	3.32	0.9D + 1.0W 60°	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	11.55	0.00	0	1	0.00	468.26	-45.00
	11.55	0.00	120	1a	15.50	-203.76	-14.65
	11.55	0.00	240	1b	-15.50	-203.76	-14.65
1.2D + 1.0W 60°	11.55	0.00	0	1	-4.37	236.43	-22.35
	11.55	0.00	120	1a	-21.55	236.44	7.39
	11.55	0.00	240	1b	-35.65	-412.14	-20.58
1.2D + 1.0W 90°	11.55	0.00	0	1	-5.29	20.25	-1.34
	11.55	0.00	120	1a	-34.19	398.07	16.85
	11.55	0.00	240	1b	-32.42	-357.60	-15.51
1.2D + 1.0W 120°	11.55	0.00	0	1	-4.94	-203.76	20.75
	11.55	0.00	120	1a	-38.97	468.26	22.50
	11.55	0.00	240	1b	-20.44	-203.77	-6.10
1.2D + 1.0W 180°	11.55	0.00	0	1	0.00	-412.14	41.16
	11.55	0.00	120	1a	-17.17	236.43	14.97
	11.55	0.00	240	1b	17.17	236.43	14.97
1.2D + 1.0W 210°	11.55	0.00	0	1	2.78	-357.60	35.83
	11.55	0.00	120	1a	1.49	20.25	5.25
	11.55	0.00	240	1b	31.68	398.07	21.19
1.2D + 1.0W 240°	11.55	0.00	0	1	4.94	-203.76	20.75
	11.55	0.00	120	1a	20.44	-203.77	-6.10
	11.55	0.00	240	1b	38.97	468.26	22.50
1.2D + 1.0W 300°	11.55	0.00	0	1	4.37	236.43	-22.35
	11.55	0.00	120	1a	35.65	-412.14	-20.58
	11.55	0.00	240	1b	21.55	236.44	7.39
1.2D + 1.0W 330°	11.55	0.00	0	1	2.51	398.07	-38.03
	11.55	0.00	120	1a	29.64	-357.60	-20.33
	11.55	0.00	240	1b	3.80	20.26	-3.91
0.9D + 1.0W Normal	11.55	0.00	0	1	0.00	462.56	-44.65
	11.55	0.00	120	1a	15.78	-208.50	-14.83
	11.55	0.00	240	1b	-15.78	-208.50	-14.83
0.9D + 1.0W 60°	11.55	0.00	0	1	-4.39	231.06	-22.01
	11.55	0.00	120	1a	-21.26	231.07	7.21
	11.55	0.00	240	1b	-35.93	-416.58	-20.74
0.9D + 1.0W 90°	11.55	0.00	0	1	-5.30	15.19	-1.00
	11.55	0.00	120	1a	-33.89	392.47	16.66
	11.55	0.00	240	1b	-32.71	-362.12	-15.66
0.9D + 1.0W 120°	11.55	0.00	0	1	-4.95	-208.50	21.08
	11.55	0.00	120	1a	-38.67	462.56	22.33
	11.55	0.00	240	1b	-20.73	-208.51	-6.25
0.9D + 1.0W 180°	11.55	0.00	0	1	0.00	-416.58	41.49
	11.55	0.00	120	1a	-16.87	231.06	14.81
	11.55	0.00	240	1b	16.87	231.06	14.81
0.9D + 1.0W 210°	11.55	0.00	0	1	2.79	-362.11	36.15
	11.55	0.00	120	1a	1.79	15.19	5.09
	11.55	0.00	240	1b	31.37	392.47	21.02
0.9D + 1.0W 240°	11.55	0.00	0	1	4.95	-208.50	21.08
	11.55	0.00	120	1a	20.73	-208.51	-6.25
	11.55	0.00	240	1b	38.67	462.56	22.33
0.9D + 1.0W 300°	11.55	0.00	0	1	4.39	231.06	-22.01
	11.55	0.00	120	1a	35.93	-416.58	-20.74
	11.55	0.00	240	1b	21.26	231.07	7.21
0.9D + 1.0W 330°	11.55	0.00	0	1	2.51	392.47	-37.68
	11.55	0.00	120	1a	29.92	-362.12	-20.49
	11.55	0.00	240	1b	3.52	15.19	-4.09
1.2D + 1.0Di + 1.0Wi Normal	11.55	0.00	0	1	0.00	181.22	-7.55
	11.55	0.00	120	1a	10.77	-28.96	-8.01
	11.55	0.00	240	1b	-10.77	-28.96	-8.01
1.2D + 1.0Di + 1.0Wi 60°	11.55	0.00	0	1	-1.48	109.98	-0.47
	11.55	0.00	120	1a	-1.15	109.98	-1.05
	11.55	0.00	240	1b	-17.37	-96.67	-10.03
1.2D + 1.0Di + 1.0Wi 90°	11.55	0.00	0	1	-1.74	41.10	6.36
	11.55	0.00	120	1a	-5.20	160.96	2.02
	11.55	0.00	240	1b	-16.27	-78.76	-8.37
1.2D + 1.0Di + 1.0Wi 120°	11.55	0.00	0	1	-1.55	-28.96	13.34
	11.55	0.00	120	1a	-6.54	181.22	3.77
	11.55	0.00	240	1b	-12.33	-28.96	-5.32
1.2D + 1.0Di + 1.0Wi 180°	11.55	0.00	0	1	0.00	-96.73	20.06
	11.55	0.00	120	1a	0.34	110.02	1.52

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°	11.55	0.00	240	1b	-0.34	110.02	1.52
	11.55	0.00	0	1	0.88	-78.76	18.28
	11.55	0.00	120	1a	6.38	41.10	-1.67
1.2D + 1.0Di + 1.0Wi 240°	11.55	0.00	240	1b	4.35	160.96	3.50
	11.55	0.00	0	1	1.55	-28.96	13.34
	11.55	0.00	120	1a	12.33	-28.96	-5.32
1.2D + 1.0Di + 1.0Wi 300°	11.55	0.00	240	1b	6.54	181.22	3.77
	11.55	0.00	0	1	1.48	109.98	-0.47
	11.55	0.00	120	1a	17.37	-96.67	-10.03
1.2D + 1.0Di + 1.0Wi 330°	11.55	0.00	240	1b	1.15	109.98	-1.05
	11.55	0.00	0	1	0.86	160.96	-5.52
	11.55	0.00	120	1a	15.39	-78.76	-9.91
1.2D + 1.0Ev + 1.0Eh Normal	11.55	0.00	240	1b	-4.64	41.10	-4.69
	11.55	0.00	0	1	0.00	32.17	17.18
	11.55	0.00	120	1a	16.09	14.67	-9.34
1.2D + 1.0Ev + 1.0Eh 60°	11.55	0.00	240	1b	-16.09	14.67	-9.34
	11.55	0.00	0	1	-0.04	26.33	17.65
	11.55	0.00	120	1a	15.27	26.33	-8.86
1.2D + 1.0Ev + 1.0Eh 90°	11.55	0.00	240	1b	-16.52	8.83	-9.54
	11.55	0.00	0	1	-0.05	20.50	18.13
	11.55	0.00	120	1a	14.98	30.60	-8.67
1.2D + 1.0Ev + 1.0Eh 120°	11.55	0.00	240	1b	-16.42	10.39	-9.46
	11.55	0.00	0	1	-0.04	14.67	18.60
	11.55	0.00	120	1a	14.88	32.17	-8.59
1.2D + 1.0Ev + 1.0Eh 180°	11.55	0.00	240	1b	-16.13	14.67	-9.27
	11.55	0.00	0	1	0.00	8.83	19.08
	11.55	0.00	120	1a	15.31	26.33	-8.79
1.2D + 1.0Ev + 1.0Eh 210°	11.55	0.00	240	1b	-15.31	26.33	-8.79
	11.55	0.00	0	1	0.02	10.40	18.95
	11.55	0.00	120	1a	15.72	20.50	-9.03
1.2D + 1.0Ev + 1.0Eh 240°	11.55	0.00	240	1b	-15.00	30.60	-8.63
	11.55	0.00	0	1	0.04	14.67	18.60
	11.55	0.00	120	1a	16.13	14.67	-9.27
1.2D + 1.0Ev + 1.0Eh 300°	11.55	0.00	240	1b	-14.88	32.17	-8.59
	11.55	0.00	0	1	0.04	26.33	17.65
	11.55	0.00	120	1a	16.52	8.83	-9.54
1.2D + 1.0Ev + 1.0Eh 330°	11.55	0.00	240	1b	-15.27	26.33	-8.86
	11.55	0.00	0	1	0.02	30.60	17.31
	11.55	0.00	120	1a	16.40	10.40	-9.49
0.9D - 1.0Ev + 1.0Eh Normal	11.55	0.00	240	1b	-15.68	20.50	-9.10
	11.55	0.00	0	1	0.00	25.77	17.62
	11.55	0.00	120	1a	16.47	8.30	-9.56
0.9D - 1.0Ev + 1.0Eh 60°	11.55	0.00	240	1b	-16.47	8.30	-9.56
	11.55	0.00	0	1	-0.04	19.94	18.09
	11.55	0.00	120	1a	15.65	19.94	-9.08
0.9D - 1.0Ev + 1.0Eh 90°	11.55	0.00	240	1b	-16.90	2.47	-9.76
	11.55	0.00	0	1	-0.05	14.12	18.57
	11.55	0.00	120	1a	15.36	24.21	-8.89
0.9D - 1.0Ev + 1.0Eh 120°	11.55	0.00	240	1b	-16.80	4.03	-9.67
	11.55	0.00	0	1	-0.04	8.30	19.04
	11.55	0.00	120	1a	15.26	25.77	-8.81
0.9D - 1.0Ev + 1.0Eh 180°	11.55	0.00	240	1b	-16.51	8.30	-9.49
	11.55	0.00	0	1	0.00	2.47	19.52
	11.55	0.00	120	1a	15.69	19.94	-9.01
0.9D - 1.0Ev + 1.0Eh 210°	11.55	0.00	240	1b	-15.69	19.94	-9.01
	11.55	0.00	0	1	0.02	4.03	19.39
	11.55	0.00	120	1a	16.10	14.12	-9.24
0.9D - 1.0Ev + 1.0Eh 240°	11.55	0.00	240	1b	-15.38	24.20	-8.85
	11.55	0.00	0	1	0.04	8.30	19.04
	11.55	0.00	120	1a	16.51	8.30	-9.49
0.9D - 1.0Ev + 1.0Eh 300°	11.55	0.00	240	1b	-15.26	25.77	-8.81
	11.55	0.00	0	1	0.04	19.94	18.09
	11.55	0.00	120	1a	16.90	2.47	-9.76
0.9D - 1.0Ev + 1.0Eh 330°	11.55	0.00	240	1b	-15.65	19.94	-9.08
	11.55	0.00	0	1	0.02	24.20	17.75
	11.55	0.00	120	1a	16.78	4.03	-9.71
1.0D + 1.0W Service Normal	11.55	0.00	240	1b	-16.06	14.12	-9.32
	11.55	0.00	0	1	0.00	125.28	7.69
	11.55	0.00	120	1a	20.00	-37.34	-12.90

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°	11.55	0.00	240	1b	-20.00	-37.34	-12.90
	11.55	0.00	0	1	-1.08	69.22	13.26
	11.55	0.00	120	1a	10.94	69.22	-7.57
1.0D + 1.0W Service 90°	11.55	0.00	240	1b	-24.87	-87.83	-14.36
	11.55	0.00	0	1	-1.28	16.87	18.40
	11.55	0.00	120	1a	7.83	108.34	-5.25
1.0D + 1.0W Service 120°	11.55	0.00	240	1b	-24.08	-74.60	-13.15
	11.55	0.00	0	1	-1.17	-37.34	23.77
	11.55	0.00	120	1a	6.66	125.28	-3.85
1.0D + 1.0W Service 180°	11.55	0.00	240	1b	-21.17	-37.34	-10.88
	11.55	0.00	0	1	0.00	-87.83	28.72
	11.55	0.00	120	1a	12.02	69.22	-5.69
1.0D + 1.0W Service 210°	11.55	0.00	240	1b	-12.02	69.22	-5.69
	11.55	0.00	0	1	0.65	-74.70	27.44
	11.55	0.00	120	1a	16.58	16.87	-8.09
1.0D + 1.0W Service 240°	11.55	0.00	240	1b	-8.45	108.44	-4.15
	11.55	0.00	0	1	1.17	-37.34	23.77
	11.55	0.00	120	1a	21.17	-37.34	-10.88
1.0D + 1.0W Service 300°	11.55	0.00	240	1b	-6.66	125.28	-3.85
	11.55	0.00	0	1	1.08	69.22	13.26
	11.55	0.00	120	1a	24.87	-87.83	-14.36
1.0D + 1.0W Service 330°	11.55	0.00	240	1b	-10.94	69.22	-7.57
	11.55	0.00	0	1	0.63	108.44	9.40
	11.55	0.00	120	1a	23.44	-74.70	-14.28
	11.55	0.00	240	1b	-15.30	16.87	-10.31

Max Uplift: 416.58 (kip) Moment Ice: 2426.93 (kip-ft) Moment: 7759.89 (kip-ft)

Max Down: 468.26 (kip) Total Down Ice: 123.3 (kip) Total Down: 60.73 (kip)

Max Shear: 45 (kip) Total Shear Ice: 23.58 (kip) Total Shear: 74.3(kip)

1.2D + 1.0W Normal

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.2D + 1.0W Normal 123 mph wind with no ice	6.79	0.006	0.0033	0.0775	0.0775
1.2D + 1.0W Normal 123 mph wind with no ice	13.21	0.017	0.0049	0.1077	0.1078
1.2D + 1.0W Normal 123 mph wind with no ice	60.00	0.221	0.0157	0.4204	0.4204
1.2D + 1.0W Normal 123 mph wind with no ice	80.00	0.383	0.0198	0.5508	0.5508
1.2D + 1.0W Normal 123 mph wind with no ice	86.79	0.449	0.0213	0.5770	0.5774
1.2D + 1.0W Normal 123 mph wind with no ice	106.79	0.679	0.0256	0.7207	0.7212
1.2D + 1.0W Normal 123 mph wind with no ice	126.79	0.957	0.0290	0.8593	0.8598
1.2D + 1.0W Normal 123 mph wind with no ice	133.21	1.057	0.0302	0.9100	0.9105
1.2D + 1.0W Normal 123 mph wind with no ice	139.63	1.162	0.0318	1.0451	1.0451
1.2D + 1.0W Normal 123 mph wind with no ice	140.38	1.176	0.0317	1.0566	1.0566
1.2D + 1.0W Normal 123 mph wind with no ice	146.92	1.290	0.0309	1.0081	1.0085
1.2D + 1.0W Normal 123 mph wind with no ice	153.46	1.408	0.0306	1.0638	1.0638
1.2D + 1.0W Normal 123 mph wind with no ice	166.54	1.659	0.0292	1.1554	1.1554
1.2D + 1.0W Normal 123 mph wind with no ice	173.08	1.790	0.0295	1.1357	1.1360
1.2D + 1.0W Normal 123 mph wind with no ice	179.63	1.924	0.0281	1.3519	1.3519
1.2D + 1.0W Normal 123 mph wind with no ice	185.49	2.045	0.0292	1.1338	1.1342
1.2D + 1.0W Normal 123 mph wind with no ice	190.60	2.150	0.0288	1.1962	1.1962
1.2D + 1.0W 60° 123 mph wind with no ice	6.79	0.006	0.0031	0.0739	0.0739
1.2D + 1.0W 60° 123 mph wind with no ice	13.21	0.016	0.0045	0.1033	0.1034
1.2D + 1.0W 60° 123 mph wind with no ice	60.00	0.214	0.0148	0.4063	0.4063
1.2D + 1.0W 60° 123 mph wind with no ice	80.00	0.371	0.0188	0.5327	0.5327
1.2D + 1.0W 60° 123 mph wind with no ice	86.79	0.435	-0.0200	0.5591	0.5595
1.2D + 1.0W 60° 123 mph wind with no ice	106.79	0.658	-0.0240	0.6990	0.6994
1.2D + 1.0W 60° 123 mph wind with no ice	126.79	0.928	-0.0271	0.8340	0.8344
1.2D + 1.0W 60° 123 mph wind with no ice	133.21	1.024	-0.0279	0.8834	0.8838
1.2D + 1.0W 60° 123 mph wind with no ice	139.63	1.127	-0.0303	1.0126	1.0126
1.2D + 1.0W 60° 123 mph wind with no ice	140.38	1.140	-0.0303	1.0237	1.0237
1.2D + 1.0W 60° 123 mph wind with no ice	146.92	1.251	-0.0283	0.9792	0.9796
1.2D + 1.0W 60° 123 mph wind with no ice	153.46	1.365	-0.0283	1.0342	1.0342
1.2D + 1.0W 60° 123 mph wind with no ice	166.54	1.609	-0.0269	1.1219	1.1219
1.2D + 1.0W 60° 123 mph wind with no ice	173.08	1.737	0.0265	1.1021	1.1024
1.2D + 1.0W 60° 123 mph wind with no ice	179.63	1.866	-0.0278	1.3128	1.3128
1.2D + 1.0W 60° 123 mph wind with no ice	185.49	1.984	-0.0267	1.1010	1.1014
1.2D + 1.0W 60° 123 mph wind with no ice	190.60	2.085	-0.0271	1.1604	1.1604
1.2D + 1.0W 90° 123 mph wind with no ice	6.79	0.006	-0.0036	0.0737	0.0738
1.2D + 1.0W 90° 123 mph wind with no ice	13.21	0.016	-0.0053	0.1069	0.1071
1.2D + 1.0W 90° 123 mph wind with no ice	60.00	0.215	-0.0173	0.4072	0.4073
1.2D + 1.0W 90° 123 mph wind with no ice	80.00	0.373	-0.0218	0.5330	0.5331
1.2D + 1.0W 90° 123 mph wind with no ice	86.79	0.438	-0.0233	0.5637	0.5642
1.2D + 1.0W 90° 123 mph wind with no ice	106.79	0.663	-0.0280	0.7056	0.7062
1.2D + 1.0W 90° 123 mph wind with no ice	126.79	0.934	-0.0316	0.8410	0.8416
1.2D + 1.0W 90° 123 mph wind with no ice	133.21	1.032	-0.0328	0.8946	0.8952
1.2D + 1.0W 90° 123 mph wind with no ice	139.63	1.135	-0.0350	1.0104	1.0106
1.2D + 1.0W 90° 123 mph wind with no ice	140.38	1.149	-0.0350	1.0199	1.0200
1.2D + 1.0W 90° 123 mph wind with no ice	146.92	1.260	-0.0333	0.9913	0.9919
1.2D + 1.0W 90° 123 mph wind with no ice	153.46	1.376	-0.0331	1.0410	1.0411
1.2D + 1.0W 90° 123 mph wind with no ice	166.54	1.621	-0.0315	1.1289	1.1290
1.2D + 1.0W 90° 123 mph wind with no ice	173.08	1.750	-0.0315	1.1197	1.1201
1.2D + 1.0W 90° 123 mph wind with no ice	179.63	1.881	-0.0314	1.3001	1.3001
1.2D + 1.0W 90° 123 mph wind with no ice	185.49	1.999	-0.0315	1.1172	1.1177
1.2D + 1.0W 90° 123 mph wind with no ice	190.60	2.101	-0.0314	1.1670	1.1671
1.2D + 1.0W 120° 123 mph wind with no ice	6.79	0.006	0.0033	0.0775	0.0775
1.2D + 1.0W 120° 123 mph wind with no ice	13.21	0.017	0.0048	0.1077	0.1078
1.2D + 1.0W 120° 123 mph wind with no ice	60.00	0.221	0.0154	0.4203	0.4203
1.2D + 1.0W 120° 123 mph wind with no ice	80.00	0.383	0.0194	0.5508	0.5508
1.2D + 1.0W 120° 123 mph wind with no ice	86.79	0.449	0.0207	0.5770	0.5774
1.2D + 1.0W 120° 123 mph wind with no ice	106.79	0.679	-0.0249	0.7207	0.7212
1.2D + 1.0W 120° 123 mph wind with no ice	126.79	0.957	-0.0282	0.8593	0.8598
1.2D + 1.0W 120° 123 mph wind with no ice	133.21	1.057	-0.0293	0.9101	0.9106
1.2D + 1.0W 120° 123 mph wind with no ice	139.63	1.162	-0.0308	1.0450	1.0450
1.2D + 1.0W 120° 123 mph wind with no ice	140.38	1.176	-0.0308	1.0565	1.0565
1.2D + 1.0W 120° 123 mph wind with no ice	146.92	1.290	-0.0299	1.0081	1.0086
1.2D + 1.0W 120° 123 mph wind with no ice	153.46	1.408	-0.0296	1.0638	1.0638
1.2D + 1.0W 120° 123 mph wind with no ice	166.54	1.659	-0.0282	1.1553	1.1553

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.2D + 1.0W 120° 123 mph wind with no ice	173.08	1.790	-0.0286	1.1356	1.1360
1.2D + 1.0W 120° 123 mph wind with no ice	179.63	1.924	-0.0272	1.3519	1.3519
1.2D + 1.0W 120° 123 mph wind with no ice	185.49	2.045	-0.0283	1.1338	1.1341
1.2D + 1.0W 120° 123 mph wind with no ice	190.60	2.150	-0.0279	1.1961	1.1961
1.2D + 1.0W 180° 123 mph wind with no ice	6.79	0.006	0.0031	0.0739	0.0739
1.2D + 1.0W 180° 123 mph wind with no ice	13.21	0.016	0.0046	0.1033	0.1034
1.2D + 1.0W 180° 123 mph wind with no ice	60.00	0.214	0.0152	0.4063	0.4063
1.2D + 1.0W 180° 123 mph wind with no ice	80.00	0.371	0.0193	0.5328	0.5328
1.2D + 1.0W 180° 123 mph wind with no ice	86.79	0.435	0.0205	0.5591	0.5595
1.2D + 1.0W 180° 123 mph wind with no ice	106.79	0.658	0.0247	0.6990	0.6994
1.2D + 1.0W 180° 123 mph wind with no ice	126.79	0.928	0.0279	0.8340	0.8344
1.2D + 1.0W 180° 123 mph wind with no ice	133.21	1.024	0.0288	0.8833	0.8838
1.2D + 1.0W 180° 123 mph wind with no ice	139.63	1.127	0.0312	1.0127	1.0127
1.2D + 1.0W 180° 123 mph wind with no ice	140.38	1.140	0.0313	1.0238	1.0238
1.2D + 1.0W 180° 123 mph wind with no ice	146.92	1.251	0.0293	0.9792	0.9796
1.2D + 1.0W 180° 123 mph wind with no ice	153.46	1.365	0.0293	1.0342	1.0342
1.2D + 1.0W 180° 123 mph wind with no ice	166.54	1.609	0.0278	1.1219	1.1219
1.2D + 1.0W 180° 123 mph wind with no ice	173.08	1.737	0.0275	1.1021	1.1024
1.2D + 1.0W 180° 123 mph wind with no ice	179.63	1.866	0.0287	1.3128	1.3128
1.2D + 1.0W 180° 123 mph wind with no ice	185.49	1.984	0.0277	1.1011	1.1014
1.2D + 1.0W 180° 123 mph wind with no ice	190.60	2.085	0.0280	1.1605	1.1605
1.2D + 1.0W 210° 123 mph wind with no ice	6.79	0.006	-0.0036	0.0737	0.0737
1.2D + 1.0W 210° 123 mph wind with no ice	13.21	0.016	-0.0054	0.1069	0.1071
1.2D + 1.0W 210° 123 mph wind with no ice	60.00	0.215	-0.0175	0.4072	0.4073
1.2D + 1.0W 210° 123 mph wind with no ice	80.00	0.373	-0.0221	0.5330	0.5331
1.2D + 1.0W 210° 123 mph wind with no ice	86.79	0.438	-0.0236	0.5637	0.5642
1.2D + 1.0W 210° 123 mph wind with no ice	106.79	0.663	-0.0283	0.7056	0.7062
1.2D + 1.0W 210° 123 mph wind with no ice	126.79	0.934	-0.0321	0.8410	0.8416
1.2D + 1.0W 210° 123 mph wind with no ice	133.21	1.032	-0.0332	0.8946	0.8952
1.2D + 1.0W 210° 123 mph wind with no ice	139.63	1.135	-0.0355	1.0105	1.0107
1.2D + 1.0W 210° 123 mph wind with no ice	140.38	1.149	-0.0355	1.0199	1.0201
1.2D + 1.0W 210° 123 mph wind with no ice	146.92	1.260	-0.0338	0.9912	0.9918
1.2D + 1.0W 210° 123 mph wind with no ice	153.46	1.376	-0.0336	1.0409	1.0411
1.2D + 1.0W 210° 123 mph wind with no ice	166.54	1.621	-0.0320	1.1288	1.1289
1.2D + 1.0W 210° 123 mph wind with no ice	173.08	1.750	-0.0320	1.1197	1.1201
1.2D + 1.0W 210° 123 mph wind with no ice	179.63	1.881	-0.0319	1.3000	1.3001
1.2D + 1.0W 210° 123 mph wind with no ice	185.49	1.999	-0.0319	1.1172	1.1176
1.2D + 1.0W 210° 123 mph wind with no ice	190.60	2.101	-0.0319	1.1670	1.1671
1.2D + 1.0W 240° 123 mph wind with no ice	6.79	0.006	0.0033	0.0775	0.0775
1.2D + 1.0W 240° 123 mph wind with no ice	13.21	0.017	0.0048	0.1077	0.1078
1.2D + 1.0W 240° 123 mph wind with no ice	60.00	0.221	-0.0154	0.4203	0.4203
1.2D + 1.0W 240° 123 mph wind with no ice	80.00	0.383	0.0194	0.5508	0.5508
1.2D + 1.0W 240° 123 mph wind with no ice	86.79	0.449	0.0207	0.5770	0.5774
1.2D + 1.0W 240° 123 mph wind with no ice	106.79	0.679	0.0249	0.7207	0.7212
1.2D + 1.0W 240° 123 mph wind with no ice	126.79	0.957	0.0282	0.8593	0.8598
1.2D + 1.0W 240° 123 mph wind with no ice	133.21	1.057	0.0293	0.9101	0.9106
1.2D + 1.0W 240° 123 mph wind with no ice	139.63	1.162	0.0308	1.0450	1.0450
1.2D + 1.0W 240° 123 mph wind with no ice	140.38	1.176	0.0308	1.0565	1.0565
1.2D + 1.0W 240° 123 mph wind with no ice	146.92	1.290	0.0299	1.0081	1.0086
1.2D + 1.0W 240° 123 mph wind with no ice	153.46	1.408	0.0296	1.0638	1.0638
1.2D + 1.0W 240° 123 mph wind with no ice	166.54	1.659	0.0282	1.1553	1.1553
1.2D + 1.0W 240° 123 mph wind with no ice	173.08	1.790	0.0286	1.1356	1.1360
1.2D + 1.0W 240° 123 mph wind with no ice	179.63	1.924	0.0272	1.3519	1.3519
1.2D + 1.0W 240° 123 mph wind with no ice	185.49	2.045	0.0283	1.1338	1.1341
1.2D + 1.0W 240° 123 mph wind with no ice	190.60	2.150	0.0279	1.1961	1.1961
1.2D + 1.0W 300° 123 mph wind with no ice	6.79	0.006	0.0031	0.0739	0.0739
1.2D + 1.0W 300° 123 mph wind with no ice	13.21	0.016	0.0045	0.1033	0.1034
1.2D + 1.0W 300° 123 mph wind with no ice	60.00	0.214	0.0148	0.4063	0.4063
1.2D + 1.0W 300° 123 mph wind with no ice	80.00	0.371	0.0188	0.5327	0.5327
1.2D + 1.0W 300° 123 mph wind with no ice	86.79	0.435	0.0200	0.5591	0.5595
1.2D + 1.0W 300° 123 mph wind with no ice	106.79	0.658	0.0240	0.6990	0.6994
1.2D + 1.0W 300° 123 mph wind with no ice	126.79	0.928	0.0271	0.8340	0.8344
1.2D + 1.0W 300° 123 mph wind with no ice	133.21	1.024	0.0279	0.8834	0.8838
1.2D + 1.0W 300° 123 mph wind with no ice	139.63	1.127	0.0303	1.0126	1.0126
1.2D + 1.0W 300° 123 mph wind with no ice	140.38	1.140	0.0303	1.0237	1.0237
1.2D + 1.0W 300° 123 mph wind with no ice	146.92	1.251	0.0283	0.9792	0.9796
1.2D + 1.0W 300° 123 mph wind with no ice	153.46	1.365	0.0283	1.0342	1.0342
1.2D + 1.0W 300° 123 mph wind with no ice	166.54	1.609	0.0269	1.1219	1.1219

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.2D + 1.0W 300° 123 mph wind with no ice	173.08	1.737	0.0265	1.1021	1.1024
1.2D + 1.0W 300° 123 mph wind with no ice	179.63	1.866	0.0278	1.3128	1.3128
1.2D + 1.0W 300° 123 mph wind with no ice	185.49	1.984	0.0267	1.1010	1.1014
1.2D + 1.0W 300° 123 mph wind with no ice	190.60	2.085	0.0271	1.1604	1.1604
1.2D + 1.0W 330° 123 mph wind with no ice	6.79	0.006	-0.0036	0.0737	0.0737
1.2D + 1.0W 330° 123 mph wind with no ice	13.21	0.016	-0.0054	0.1069	0.1071
1.2D + 1.0W 330° 123 mph wind with no ice	60.00	0.215	-0.0175	0.4072	0.4073
1.2D + 1.0W 330° 123 mph wind with no ice	80.00	0.373	-0.0221	0.5331	0.5332
1.2D + 1.0W 330° 123 mph wind with no ice	86.79	0.438	-0.0236	0.5637	0.5642
1.2D + 1.0W 330° 123 mph wind with no ice	106.79	0.663	-0.0283	0.7056	0.7062
1.2D + 1.0W 330° 123 mph wind with no ice	126.79	0.934	-0.0321	0.8410	0.8416
1.2D + 1.0W 330° 123 mph wind with no ice	133.21	1.032	-0.0332	0.8946	0.8952
1.2D + 1.0W 330° 123 mph wind with no ice	139.63	1.135	-0.0355	1.0105	1.0107
1.2D + 1.0W 330° 123 mph wind with no ice	140.38	1.149	-0.0355	1.0200	1.0202
1.2D + 1.0W 330° 123 mph wind with no ice	146.92	1.260	-0.0338	0.9912	0.9918
1.2D + 1.0W 330° 123 mph wind with no ice	153.46	1.376	-0.0336	1.0409	1.0411
1.2D + 1.0W 330° 123 mph wind with no ice	166.54	1.621	-0.0320	1.1288	1.1290
1.2D + 1.0W 330° 123 mph wind with no ice	173.08	1.750	-0.0320	1.1197	1.1201
1.2D + 1.0W 330° 123 mph wind with no ice	179.63	1.881	-0.0319	1.3000	1.3001
1.2D + 1.0W 330° 123 mph wind with no ice	185.49	1.999	-0.0319	1.1172	1.1176
1.2D + 1.0W 330° 123 mph wind with no ice	190.60	2.101	-0.0319	1.1670	1.1671
0.9D + 1.0W Normal 123 mph wind with no ice	6.79	0.006	0.0033	0.0775	0.0775
0.9D + 1.0W Normal 123 mph wind with no ice	13.21	0.016	0.0049	0.1076	0.1077
0.9D + 1.0W Normal 123 mph wind with no ice	60.00	0.221	0.0157	0.4197	0.4197
0.9D + 1.0W Normal 123 mph wind with no ice	80.00	0.382	0.0198	0.5498	0.5498
0.9D + 1.0W Normal 123 mph wind with no ice	86.79	0.449	0.0212	0.5759	0.5763
0.9D + 1.0W Normal 123 mph wind with no ice	106.79	0.678	0.0256	0.7191	0.7196
0.9D + 1.0W Normal 123 mph wind with no ice	126.79	0.955	0.0290	0.8573	0.8577
0.9D + 1.0W Normal 123 mph wind with no ice	133.21	1.054	0.0302	0.9078	0.9083
0.9D + 1.0W Normal 123 mph wind with no ice	139.63	1.160	0.0317	1.0425	1.0425
0.9D + 1.0W Normal 123 mph wind with no ice	140.38	1.173	0.0317	1.0539	1.0539
0.9D + 1.0W Normal 123 mph wind with no ice	146.92	1.287	0.0308	1.0055	1.0060
0.9D + 1.0W Normal 123 mph wind with no ice	153.46	1.405	0.0305	1.0613	1.0613
0.9D + 1.0W Normal 123 mph wind with no ice	166.54	1.656	0.0291	1.1524	1.1524
0.9D + 1.0W Normal 123 mph wind with no ice	173.08	1.786	0.0295	1.1326	1.1330
0.9D + 1.0W Normal 123 mph wind with no ice	179.63	1.920	0.0281	1.3488	1.3488
0.9D + 1.0W Normal 123 mph wind with no ice	185.49	2.041	0.0292	1.1309	1.1313
0.9D + 1.0W Normal 123 mph wind with no ice	190.60	2.145	0.0288	1.1930	1.1930
0.9D + 1.0W 60° 123 mph wind with no ice	6.79	0.006	0.0031	0.0739	0.0739
0.9D + 1.0W 60° 123 mph wind with no ice	13.21	0.016	0.0045	0.1033	0.1034
0.9D + 1.0W 60° 123 mph wind with no ice	60.00	0.213	0.0148	0.4055	0.4055
0.9D + 1.0W 60° 123 mph wind with no ice	80.00	0.370	0.0188	0.5317	0.5317
0.9D + 1.0W 60° 123 mph wind with no ice	86.79	0.434	0.0199	0.5580	0.5583
0.9D + 1.0W 60° 123 mph wind with no ice	106.79	0.657	-0.0239	0.6975	0.6979
0.9D + 1.0W 60° 123 mph wind with no ice	126.79	0.926	-0.0270	0.8321	0.8325
0.9D + 1.0W 60° 123 mph wind with no ice	133.21	1.022	-0.0279	0.8813	0.8817
0.9D + 1.0W 60° 123 mph wind with no ice	139.63	1.124	-0.0303	1.0101	1.0101
0.9D + 1.0W 60° 123 mph wind with no ice	140.38	1.138	-0.0303	1.0212	1.0212
0.9D + 1.0W 60° 123 mph wind with no ice	146.92	1.248	-0.0283	0.9768	0.9772
0.9D + 1.0W 60° 123 mph wind with no ice	153.46	1.363	-0.0283	1.0314	1.0314
0.9D + 1.0W 60° 123 mph wind with no ice	166.54	1.606	-0.0269	1.1189	1.1189
0.9D + 1.0W 60° 123 mph wind with no ice	173.08	1.733	-0.0265	1.0992	1.0996
0.9D + 1.0W 60° 123 mph wind with no ice	179.63	1.862	-0.0277	1.3085	1.3085
0.9D + 1.0W 60° 123 mph wind with no ice	185.49	1.980	-0.0267	1.0981	1.0985
0.9D + 1.0W 60° 123 mph wind with no ice	190.60	2.080	-0.0271	1.1573	1.1573
0.9D + 1.0W 90° 123 mph wind with no ice	6.79	0.006	-0.0036	0.0737	0.0737
0.9D + 1.0W 90° 123 mph wind with no ice	13.21	0.016	-0.0053	0.1069	0.1070
0.9D + 1.0W 90° 123 mph wind with no ice	60.00	0.215	-0.0172	0.4065	0.4066
0.9D + 1.0W 90° 123 mph wind with no ice	80.00	0.373	-0.0218	0.5320	0.5321
0.9D + 1.0W 90° 123 mph wind with no ice	86.79	0.437	-0.0232	0.5626	0.5631
0.9D + 1.0W 90° 123 mph wind with no ice	106.79	0.662	-0.0279	0.7041	0.7046
0.9D + 1.0W 90° 123 mph wind with no ice	126.79	0.933	-0.0316	0.8391	0.8397
0.9D + 1.0W 90° 123 mph wind with no ice	133.21	1.030	-0.0327	0.8925	0.8931
0.9D + 1.0W 90° 123 mph wind with no ice	139.63	1.133	-0.0349	1.0079	1.0080
0.9D + 1.0W 90° 123 mph wind with no ice	140.38	1.146	-0.0349	1.0173	1.0174
0.9D + 1.0W 90° 123 mph wind with no ice	146.92	1.257	-0.0333	0.9888	0.9894
0.9D + 1.0W 90° 123 mph wind with no ice	153.46	1.373	-0.0331	1.0382	1.0383
0.9D + 1.0W 90° 123 mph wind with no ice	166.54	1.618	-0.0315	1.1258	1.1259

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
0.9D + 1.0W 90° 123 mph wind with no ice	173.08	1.746	-0.0315	1.1168	1.1172
0.9D + 1.0W 90° 123 mph wind with no ice	179.63	1.876	-0.0314	1.2959	1.2960
0.9D + 1.0W 90° 123 mph wind with no ice	185.49	1.994	-0.0314	1.1143	1.1147
0.9D + 1.0W 90° 123 mph wind with no ice	190.60	2.096	-0.0314	1.1639	1.1640
0.9D + 1.0W 120° 123 mph wind with no ice	6.79	0.006	0.0033	0.0775	0.0775
0.9D + 1.0W 120° 123 mph wind with no ice	13.21	0.016	0.0048	0.1076	0.1077
0.9D + 1.0W 120° 123 mph wind with no ice	60.00	0.221	0.0153	0.4196	0.4196
0.9D + 1.0W 120° 123 mph wind with no ice	80.00	0.382	0.0193	0.5497	0.5497
0.9D + 1.0W 120° 123 mph wind with no ice	86.79	0.449	0.0207	0.5759	0.5763
0.9D + 1.0W 120° 123 mph wind with no ice	106.79	0.678	-0.0249	0.7191	0.7196
0.9D + 1.0W 120° 123 mph wind with no ice	126.79	0.955	-0.0282	0.8573	0.8577
0.9D + 1.0W 120° 123 mph wind with no ice	133.21	1.054	-0.0293	0.9079	0.9083
0.9D + 1.0W 120° 123 mph wind with no ice	139.63	1.160	-0.0308	1.0423	1.0423
0.9D + 1.0W 120° 123 mph wind with no ice	140.38	1.173	-0.0307	1.0537	1.0537
0.9D + 1.0W 120° 123 mph wind with no ice	146.92	1.287	-0.0299	1.0056	1.0060
0.9D + 1.0W 120° 123 mph wind with no ice	153.46	1.405	-0.0296	1.0612	1.0612
0.9D + 1.0W 120° 123 mph wind with no ice	166.54	1.656	-0.0282	1.1524	1.1524
0.9D + 1.0W 120° 123 mph wind with no ice	173.08	1.786	-0.0285	1.1326	1.1330
0.9D + 1.0W 120° 123 mph wind with no ice	179.63	1.920	0.0271	1.3487	1.3487
0.9D + 1.0W 120° 123 mph wind with no ice	185.49	2.041	-0.0283	1.1309	1.1312
0.9D + 1.0W 120° 123 mph wind with no ice	190.60	2.145	-0.0279	1.1930	1.1930
0.9D + 1.0W 180° 123 mph wind with no ice	6.79	0.006	0.0031	0.0739	0.0739
0.9D + 1.0W 180° 123 mph wind with no ice	13.21	0.016	0.0046	0.1033	0.1034
0.9D + 1.0W 180° 123 mph wind with no ice	60.00	0.213	0.0152	0.4056	0.4056
0.9D + 1.0W 180° 123 mph wind with no ice	80.00	0.370	0.0192	0.5318	0.5318
0.9D + 1.0W 180° 123 mph wind with no ice	86.79	0.434	0.0204	0.5580	0.5584
0.9D + 1.0W 180° 123 mph wind with no ice	106.79	0.657	0.0246	0.6974	0.6979
0.9D + 1.0W 180° 123 mph wind with no ice	126.79	0.926	0.0278	0.8320	0.8325
0.9D + 1.0W 180° 123 mph wind with no ice	133.21	1.022	0.0287	0.8812	0.8817
0.9D + 1.0W 180° 123 mph wind with no ice	139.63	1.124	0.0312	1.0102	1.0102
0.9D + 1.0W 180° 123 mph wind with no ice	140.38	1.138	0.0312	1.0213	1.0213
0.9D + 1.0W 180° 123 mph wind with no ice	146.92	1.248	0.0292	0.9767	0.9771
0.9D + 1.0W 180° 123 mph wind with no ice	153.46	1.363	0.0292	1.0314	1.0314
0.9D + 1.0W 180° 123 mph wind with no ice	166.54	1.606	0.0278	1.1189	1.1189
0.9D + 1.0W 180° 123 mph wind with no ice	173.08	1.733	0.0275	1.0993	1.0996
0.9D + 1.0W 180° 123 mph wind with no ice	179.63	1.862	0.0287	1.3086	1.3086
0.9D + 1.0W 180° 123 mph wind with no ice	185.49	1.980	0.0276	1.0982	1.0985
0.9D + 1.0W 180° 123 mph wind with no ice	190.60	2.080	0.0280	1.1573	1.1573
0.9D + 1.0W 210° 123 mph wind with no ice	6.79	0.006	-0.0036	0.0737	0.0737
0.9D + 1.0W 210° 123 mph wind with no ice	13.21	0.016	-0.0054	0.1069	0.1070
0.9D + 1.0W 210° 123 mph wind with no ice	60.00	0.215	-0.0175	0.4065	0.4066
0.9D + 1.0W 210° 123 mph wind with no ice	80.00	0.373	-0.0221	0.5320	0.5321
0.9D + 1.0W 210° 123 mph wind with no ice	86.79	0.437	-0.0235	0.5626	0.5631
0.9D + 1.0W 210° 123 mph wind with no ice	106.79	0.662	-0.0283	0.7040	0.7046
0.9D + 1.0W 210° 123 mph wind with no ice	126.79	0.933	-0.0320	0.8390	0.8397
0.9D + 1.0W 210° 123 mph wind with no ice	133.21	1.030	-0.0332	0.8924	0.8930
0.9D + 1.0W 210° 123 mph wind with no ice	139.63	1.133	-0.0354	1.0079	1.0081
0.9D + 1.0W 210° 123 mph wind with no ice	140.38	1.146	-0.0354	1.0173	1.0175
0.9D + 1.0W 210° 123 mph wind with no ice	146.92	1.257	-0.0338	0.9887	0.9893
0.9D + 1.0W 210° 123 mph wind with no ice	153.46	1.373	-0.0336	1.0381	1.0383
0.9D + 1.0W 210° 123 mph wind with no ice	166.54	1.618	-0.0320	1.1258	1.1259
0.9D + 1.0W 210° 123 mph wind with no ice	173.08	1.746	-0.0320	1.1167	1.1172
0.9D + 1.0W 210° 123 mph wind with no ice	179.63	1.876	-0.0319	1.2959	1.2960
0.9D + 1.0W 210° 123 mph wind with no ice	185.49	1.995	-0.0319	1.1143	1.1147
0.9D + 1.0W 210° 123 mph wind with no ice	190.60	2.096	-0.0319	1.1639	1.1640
0.9D + 1.0W 240° 123 mph wind with no ice	6.79	0.006	0.0033	0.0775	0.0775
0.9D + 1.0W 240° 123 mph wind with no ice	13.21	0.016	0.0048	0.1076	0.1077
0.9D + 1.0W 240° 123 mph wind with no ice	60.00	0.221	0.0153	0.4196	0.4196
0.9D + 1.0W 240° 123 mph wind with no ice	80.00	0.382	0.0193	0.5497	0.5497
0.9D + 1.0W 240° 123 mph wind with no ice	86.79	0.449	0.0207	0.5759	0.5763
0.9D + 1.0W 240° 123 mph wind with no ice	106.79	0.678	0.0249	0.7191	0.7196
0.9D + 1.0W 240° 123 mph wind with no ice	126.79	0.955	0.0282	0.8573	0.8577
0.9D + 1.0W 240° 123 mph wind with no ice	133.21	1.054	0.0293	0.9079	0.9083
0.9D + 1.0W 240° 123 mph wind with no ice	139.63	1.160	0.0308	1.0423	1.0423
0.9D + 1.0W 240° 123 mph wind with no ice	140.38	1.173	0.0307	1.0537	1.0537
0.9D + 1.0W 240° 123 mph wind with no ice	146.92	1.287	0.0299	1.0056	1.0060
0.9D + 1.0W 240° 123 mph wind with no ice	153.46	1.405	0.0296	1.0612	1.0612
0.9D + 1.0W 240° 123 mph wind with no ice	166.54	1.656	0.0282	1.1524	1.1524

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
0.9D + 1.0W 240° 123 mph wind with no ice	173.08	1.786	0.0285	1.1326	1.1330
0.9D + 1.0W 240° 123 mph wind with no ice	179.63	1.920	0.0271	1.3487	1.3487
0.9D + 1.0W 240° 123 mph wind with no ice	185.49	2.041	0.0283	1.1309	1.1312
0.9D + 1.0W 240° 123 mph wind with no ice	190.60	2.145	0.0279	1.1930	1.1930
0.9D + 1.0W 300° 123 mph wind with no ice	6.79	0.006	0.0031	0.0739	0.0739
0.9D + 1.0W 300° 123 mph wind with no ice	13.21	0.016	0.0045	0.1033	0.1034
0.9D + 1.0W 300° 123 mph wind with no ice	60.00	0.213	0.0148	0.4055	0.4055
0.9D + 1.0W 300° 123 mph wind with no ice	80.00	0.370	0.0188	0.5317	0.5317
0.9D + 1.0W 300° 123 mph wind with no ice	86.79	0.434	0.0199	0.5580	0.5583
0.9D + 1.0W 300° 123 mph wind with no ice	106.79	0.657	0.0239	0.6975	0.6979
0.9D + 1.0W 300° 123 mph wind with no ice	126.79	0.926	0.0270	0.8321	0.8325
0.9D + 1.0W 300° 123 mph wind with no ice	133.21	1.022	0.0279	0.8813	0.8817
0.9D + 1.0W 300° 123 mph wind with no ice	139.63	1.124	0.0303	1.0101	1.0101
0.9D + 1.0W 300° 123 mph wind with no ice	140.38	1.138	0.0303	1.0212	1.0212
0.9D + 1.0W 300° 123 mph wind with no ice	146.92	1.248	0.0283	0.9768	0.9772
0.9D + 1.0W 300° 123 mph wind with no ice	153.46	1.363	0.0283	1.0314	1.0314
0.9D + 1.0W 300° 123 mph wind with no ice	166.54	1.606	0.0269	1.1189	1.1189
0.9D + 1.0W 300° 123 mph wind with no ice	173.08	1.733	0.0265	1.0992	1.0996
0.9D + 1.0W 300° 123 mph wind with no ice	179.63	1.862	0.0277	1.3085	1.3085
0.9D + 1.0W 300° 123 mph wind with no ice	185.49	1.980	0.0267	1.0981	1.0985
0.9D + 1.0W 300° 123 mph wind with no ice	190.60	2.080	0.0271	1.1573	1.1573
0.9D + 1.0W 330° 123 mph wind with no ice	6.79	0.006	-0.0036	0.0737	0.0737
0.9D + 1.0W 330° 123 mph wind with no ice	13.21	0.016	-0.0054	0.1069	0.1070
0.9D + 1.0W 330° 123 mph wind with no ice	60.00	0.215	-0.0175	0.4066	0.4067
0.9D + 1.0W 330° 123 mph wind with no ice	80.00	0.373	-0.0221	0.5320	0.5321
0.9D + 1.0W 330° 123 mph wind with no ice	86.79	0.437	-0.0235	0.5626	0.5631
0.9D + 1.0W 330° 123 mph wind with no ice	106.79	0.662	-0.0283	0.7040	0.7046
0.9D + 1.0W 330° 123 mph wind with no ice	126.79	0.933	-0.0320	0.8390	0.8397
0.9D + 1.0W 330° 123 mph wind with no ice	133.21	1.030	-0.0332	0.8924	0.8930
0.9D + 1.0W 330° 123 mph wind with no ice	139.63	1.133	-0.0354	1.0080	1.0081
0.9D + 1.0W 330° 123 mph wind with no ice	140.38	1.146	-0.0354	1.0174	1.0176
0.9D + 1.0W 330° 123 mph wind with no ice	146.92	1.257	-0.0338	0.9887	0.9893
0.9D + 1.0W 330° 123 mph wind with no ice	153.46	1.373	-0.0336	1.0381	1.0383
0.9D + 1.0W 330° 123 mph wind with no ice	166.54	1.618	-0.0320	1.1258	1.1259
0.9D + 1.0W 330° 123 mph wind with no ice	173.08	1.746	-0.0319	1.1167	1.1172
0.9D + 1.0W 330° 123 mph wind with no ice	179.63	1.876	-0.0319	1.2959	1.2960
0.9D + 1.0W 330° 123 mph wind with no ice	185.49	1.995	-0.0319	1.1143	1.1147
0.9D + 1.0W 330° 123 mph wind with no ice	190.60	2.096	-0.0319	1.1639	1.1640
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1" radial ice	6.79	0.004	0.0011	0.0333	0.0333
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1" radial ice	13.21	0.006	0.0016	0.0373	0.0373
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1" radial ice	60.00	0.070	0.0051	0.1310	0.1310
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1" radial ice	80.00	0.120	0.0064	0.1710	0.1710
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1" radial ice	86.79	0.140	0.0068	0.1779	0.1781
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1" radial ice	106.79	0.211	0.0081	0.2194	0.2196
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1" radial ice	126.79	0.295	0.0091	0.2583	0.2585
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1" radial ice	133.21	0.325	0.0095	0.2731	0.2732
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1" radial ice	139.63	0.356	0.0100	0.3115	0.3115
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1" radial ice	140.38	0.360	0.0100	0.3147	0.3147
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1" radial ice	146.92	0.394	0.0097	0.2992	0.2994
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1" radial ice	153.46	0.429	0.0097	0.3156	0.3157
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1" radial ice	166.54	0.503	0.0093	0.3403	0.3403
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1" radial ice	173.08	0.542	0.0093	0.3354	0.3356
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1" radial ice	179.63	0.582	0.0091	0.3931	0.3931
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1" radial ice	185.49	0.618	0.0092	0.3343	0.3344
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1" radial ice	190.60	0.648	0.0091	0.3526	0.3526
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1" radial ice	6.79	0.004	0.0010	0.0384	0.0384
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1" radial ice	13.21	0.007	0.0015	0.0366	0.0366
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1" radial ice	60.00	0.070	0.0049	0.1294	0.1294
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1" radial ice	80.00	0.119	0.0061	0.1679	0.1679
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1" radial ice	86.79	0.139	0.0065	0.1752	0.1754
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1" radial ice	106.79	0.208	0.0077	0.2160	0.2162
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1" radial ice	126.79	0.291	-0.0087	0.2543	0.2545
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1" radial ice	133.21	0.320	-0.0090	0.2686	0.2687
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1" radial ice	139.63	0.351	0.0096	0.3062	0.3062
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1" radial ice	140.38	0.356	0.0096	0.3094	0.3094
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1" radial ice	146.92	0.389	-0.0092	0.2950	0.2951
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1" radial ice	153.46	0.423	0.0092	0.3119	0.3119
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1" radial ice	166.54	0.496	0.0088	0.3364	0.3364

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1" radial ice	173.08	0.535	0.0087	0.3298	0.3299
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1" radial ice	179.63	0.573	0.0087	0.3974	0.3974
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1" radial ice	185.49	0.609	0.0085	0.3299	0.3300
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1" radial ice	190.60	0.639	0.0085	0.3476	0.3476
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1" radial ice	6.79	0.004	-0.0012	0.0371	0.0371
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1" radial ice	13.21	0.007	-0.0018	0.0370	0.0370
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1" radial ice	60.00	0.070	-0.0057	0.1290	0.1291
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1" radial ice	80.00	0.119	-0.0071	0.1675	0.1676
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1" radial ice	86.79	0.139	-0.0076	0.1761	0.1762
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1" radial ice	106.79	0.209	-0.0090	0.2174	0.2176
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1" radial ice	126.79	0.292	-0.0101	0.2556	0.2558
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1" radial ice	133.21	0.322	-0.0105	0.2713	0.2715
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1" radial ice	139.63	0.353	-0.0112	0.3048	0.3049
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1" radial ice	140.38	0.357	-0.0112	0.3074	0.3075
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1" radial ice	146.92	0.390	-0.0107	0.2975	0.2977
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1" radial ice	153.46	0.425	-0.0108	0.3129	0.3130
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1" radial ice	166.54	0.498	-0.0103	0.3372	0.3373
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1" radial ice	173.08	0.537	-0.0103	0.3343	0.3344
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1" radial ice	179.63	0.575	-0.0102	0.3920	0.3921
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1" radial ice	185.49	0.611	-0.0101	0.3333	0.3335
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1" radial ice	190.60	0.642	-0.0101	0.3485	0.3485
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1" radial ice	6.79	0.004	0.0011	0.0333	0.0333
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1" radial ice	13.21	0.006	0.0016	0.0374	0.0374
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1" radial ice	60.00	0.070	0.0050	0.1310	0.1310
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1" radial ice	80.00	0.120	0.0062	0.1709	0.1709
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1" radial ice	86.79	0.140	0.0066	0.1779	0.1781
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1" radial ice	106.79	0.211	0.0079	0.2195	0.2196
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1" radial ice	126.79	0.295	0.0088	0.2583	0.2585
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1" radial ice	133.21	0.325	0.0092	0.2731	0.2732
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1" radial ice	139.63	0.356	-0.0098	0.3115	0.3115
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1" radial ice	140.38	0.360	0.0097	0.3147	0.3147
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1" radial ice	146.92	0.394	0.0094	0.2992	0.2994
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1" radial ice	153.46	0.429	0.0094	0.3156	0.3157
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1" radial ice	166.54	0.503	-0.0091	0.3403	0.3403
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1" radial ice	173.08	0.542	0.0090	0.3354	0.3356
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1" radial ice	179.63	0.582	-0.0089	0.3931	0.3931
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1" radial ice	185.49	0.618	0.0089	0.3343	0.3344
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1" radial ice	190.60	0.648	0.0088	0.3526	0.3526
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1" radial ice	6.79	0.004	0.0010	0.0384	0.0384
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1" radial ice	13.21	0.007	0.0016	0.0366	0.0366
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1" radial ice	60.00	0.070	0.0050	0.1295	0.1295
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1" radial ice	80.00	0.119	0.0063	0.1680	0.1680
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1" radial ice	86.79	0.139	0.0067	0.1753	0.1755
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1" radial ice	106.79	0.208	0.0080	0.2161	0.2163
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1" radial ice	126.79	0.291	0.0090	0.2544	0.2546
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1" radial ice	133.21	0.321	0.0093	0.2687	0.2689
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1" radial ice	139.63	0.352	0.0100	0.3064	0.3064
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1" radial ice	140.38	0.356	0.0100	0.3096	0.3096
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1" radial ice	146.92	0.389	0.0095	0.2952	0.2953
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1" radial ice	153.46	0.424	0.0096	0.3121	0.3121
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1" radial ice	166.54	0.496	0.0092	0.3366	0.3366
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1" radial ice	173.08	0.535	0.0091	0.3301	0.3302
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1" radial ice	179.63	0.573	0.0091	0.3977	0.3977
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1" radial ice	185.49	0.609	0.0090	0.3301	0.3302
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1" radial ice	190.60	0.639	0.0090	0.3479	0.3479
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1" radial ice	6.79	0.004	-0.0012	0.0371	0.0371
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1" radial ice	13.21	0.007	-0.0018	0.0370	0.0370
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1" radial ice	60.00	0.070	-0.0057	0.1291	0.1291
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1" radial ice	80.00	0.119	-0.0072	0.1675	0.1676
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1" radial ice	86.79	0.139	-0.0076	0.1761	0.1762
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1" radial ice	106.79	0.209	-0.0091	0.2174	0.2176
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1" radial ice	126.79	0.292	-0.0102	0.2556	0.2558
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1" radial ice	133.21	0.322	-0.0106	0.2713	0.2715
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1" radial ice	139.63	0.353	-0.0113	0.3048	0.3049
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1" radial ice	140.38	0.357	-0.0113	0.3075	0.3075
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1" radial ice	146.92	0.390	-0.0109	0.2974	0.2976
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1" radial ice	153.46	0.425	-0.0109	0.3129	0.3130
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1" radial ice	166.54	0.498	-0.0105	0.3372	0.3373

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1" radial ice	173.08	0.537	-0.0104	0.3343	0.3345
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1" radial ice	179.63	0.575	-0.0103	0.3920	0.3921
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1" radial ice	185.49	0.611	-0.0103	0.3333	0.3335
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1" radial ice	190.60	0.642	-0.0102	0.3485	0.3485
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1" radial ice	6.79	0.004	0.0011	0.0333	0.0333
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1" radial ice	13.21	0.006	0.0016	0.0374	0.0374
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1" radial ice	60.00	0.070	0.0050	0.1310	0.1310
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1" radial ice	80.00	0.120	0.0062	0.1709	0.1709
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1" radial ice	86.79	0.140	0.0066	0.1779	0.1781
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1" radial ice	106.79	0.211	0.0079	0.2195	0.2196
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1" radial ice	126.79	0.295	0.0088	0.2583	0.2585
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1" radial ice	133.21	0.325	0.0092	0.2731	0.2732
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1" radial ice	139.63	0.356	0.0098	0.3115	0.3115
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1" radial ice	140.38	0.360	0.0097	0.3147	0.3147
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1" radial ice	146.92	0.394	0.0094	0.2992	0.2994
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1" radial ice	153.46	0.429	0.0094	0.3156	0.3157
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1" radial ice	166.54	0.503	0.0091	0.3403	0.3403
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1" radial ice	173.08	0.542	0.0090	0.3354	0.3356
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1" radial ice	179.63	0.582	0.0089	0.3931	0.3931
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1" radial ice	185.49	0.618	0.0089	0.3343	0.3344
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1" radial ice	190.60	0.648	0.0088	0.3526	0.3526
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1" radial ice	6.79	0.004	0.0010	0.0384	0.0384
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1" radial ice	13.21	0.007	0.0015	0.0366	0.0366
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1" radial ice	60.00	0.070	0.0049	0.1294	0.1294
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1" radial ice	80.00	0.119	0.0061	0.1679	0.1679
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1" radial ice	86.79	0.139	0.0065	0.1752	0.1754
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1" radial ice	106.79	0.208	0.0077	0.2160	0.2162
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1" radial ice	126.79	0.291	0.0087	0.2543	0.2545
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1" radial ice	133.21	0.320	0.0090	0.2686	0.2687
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1" radial ice	139.63	0.351	0.0096	0.3062	0.3062
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1" radial ice	140.38	0.356	0.0096	0.3094	0.3094
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1" radial ice	146.92	0.389	0.0092	0.2950	0.2951
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1" radial ice	153.46	0.423	0.0092	0.3119	0.3119
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1" radial ice	166.54	0.496	0.0088	0.3364	0.3364
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1" radial ice	173.08	0.535	0.0087	0.3298	0.3299
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1" radial ice	179.63	0.573	0.0087	0.3974	0.3974
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1" radial ice	185.49	0.609	0.0085	0.3299	0.3300
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1" radial ice	190.60	0.639	0.0085	0.3476	0.3476
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1" radial ice	6.79	0.004	-0.0012	0.0371	0.0371
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1" radial ice	13.21	0.007	-0.0018	0.0370	0.0370
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1" radial ice	60.00	0.070	-0.0057	0.1290	0.1291
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1" radial ice	80.00	0.119	-0.0072	0.1675	0.1676
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1" radial ice	86.79	0.139	-0.0076	0.1761	0.1762
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1" radial ice	106.79	0.209	-0.0091	0.2174	0.2176
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1" radial ice	126.79	0.292	-0.0102	0.2556	0.2558
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1" radial ice	133.21	0.322	-0.0106	0.2713	0.2715
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1" radial ice	139.63	0.353	-0.0113	0.3049	0.3049
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1" radial ice	140.38	0.357	-0.0113	0.3075	0.3075
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1" radial ice	146.92	0.390	-0.0109	0.2975	0.2977
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1" radial ice	153.46	0.425	-0.0109	0.3129	0.3130
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1" radial ice	166.54	0.498	-0.0105	0.3372	0.3373
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1" radial ice	173.08	0.537	-0.0104	0.3343	0.3345
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1" radial ice	179.63	0.575	-0.0103	0.3920	0.3921
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1" radial ice	185.49	0.611	-0.0103	0.3333	0.3335
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1" radial ice	190.60	0.642	-0.0102	0.3485	0.3485
1.2D + 1.0Ev + 1.0Eh Normal Seismic	6.79	0.005	0.0001	0.0320	0.0320
1.2D + 1.0Ev + 1.0Eh Normal Seismic	13.21	0.005	0.0001	0.0157	0.0157
1.2D + 1.0Ev + 1.0Eh Normal Seismic	60.00	0.008	0.0004	0.0113	0.0113
1.2D + 1.0Ev + 1.0Eh Normal Seismic	80.00	0.012	0.0005	0.0156	0.0156
1.2D + 1.0Ev + 1.0Eh Normal Seismic	86.79	0.014	0.0006	0.0167	0.0167
1.2D + 1.0Ev + 1.0Eh Normal Seismic	106.79	0.020	0.0007	0.0215	0.0215
1.2D + 1.0Ev + 1.0Eh Normal Seismic	126.79	0.028	0.0009	0.0264	0.0264
1.2D + 1.0Ev + 1.0Eh Normal Seismic	133.21	0.031	0.0009	0.0283	0.0283
1.2D + 1.0Ev + 1.0Eh Normal Seismic	139.63	0.034	0.0010	0.0330	0.0330
1.2D + 1.0Ev + 1.0Eh Normal Seismic	140.38	0.035	0.0010	0.0333	0.0333
1.2D + 1.0Ev + 1.0Eh Normal Seismic	146.92	0.038	0.0010	0.0318	0.0318
1.2D + 1.0Ev + 1.0Eh Normal Seismic	153.46	0.042	0.0010	0.0344	0.0344
1.2D + 1.0Ev + 1.0Eh Normal Seismic	166.54	0.050	0.0009	0.0383	0.0383

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.2D + 1.0Ev + 1.0Eh Normal Seismic	173.08	0.054	0.0009	0.0376	0.0376
1.2D + 1.0Ev + 1.0Eh Normal Seismic	179.63	0.059	0.0008	0.0457	0.0457
1.2D + 1.0Ev + 1.0Eh Normal Seismic	185.49	0.063	0.0008	0.0364	0.0365
1.2D + 1.0Ev + 1.0Eh Normal Seismic	190.60	0.066	0.0007	0.0393	0.0393
1.2D + 1.0Ev + 1.0Eh 60° Seismic	6.79	0.005	0.0001	0.0327	0.0327
1.2D + 1.0Ev + 1.0Eh 60° Seismic	13.21	0.005	0.0001	0.0147	0.0147
1.2D + 1.0Ev + 1.0Eh 60° Seismic	60.00	0.009	0.0004	0.0115	0.0115
1.2D + 1.0Ev + 1.0Eh 60° Seismic	80.00	0.013	0.0005	0.0154	0.0154
1.2D + 1.0Ev + 1.0Eh 60° Seismic	86.79	0.015	0.0006	0.0167	0.0167
1.2D + 1.0Ev + 1.0Eh 60° Seismic	106.79	0.021	0.0007	0.0214	0.0215
1.2D + 1.0Ev + 1.0Eh 60° Seismic	126.79	0.029	0.0008	0.0264	0.0264
1.2D + 1.0Ev + 1.0Eh 60° Seismic	133.21	0.032	0.0009	0.0281	0.0281
1.2D + 1.0Ev + 1.0Eh 60° Seismic	139.63	0.035	0.0010	0.0327	0.0327
1.2D + 1.0Ev + 1.0Eh 60° Seismic	140.38	0.036	0.0010	0.0331	0.0331
1.2D + 1.0Ev + 1.0Eh 60° Seismic	146.92	0.039	0.0009	0.0320	0.0320
1.2D + 1.0Ev + 1.0Eh 60° Seismic	153.46	0.043	-0.0010	0.0347	0.0347
1.2D + 1.0Ev + 1.0Eh 60° Seismic	166.54	0.051	0.0009	0.0379	0.0379
1.2D + 1.0Ev + 1.0Eh 60° Seismic	173.08	0.055	0.0008	0.0373	0.0373
1.2D + 1.0Ev + 1.0Eh 60° Seismic	179.63	0.060	0.0008	0.0500	0.0500
1.2D + 1.0Ev + 1.0Eh 60° Seismic	185.49	0.064	0.0008	0.0369	0.0369
1.2D + 1.0Ev + 1.0Eh 60° Seismic	190.60	0.067	0.0007	0.0393	0.0393
1.2D + 1.0Ev + 1.0Eh 90° Seismic	6.79	0.005	-0.0001	0.0325	0.0325
1.2D + 1.0Ev + 1.0Eh 90° Seismic	13.21	0.005	0.0001	0.0155	0.0155
1.2D + 1.0Ev + 1.0Eh 90° Seismic	60.00	0.008	-0.0004	0.0115	0.0115
1.2D + 1.0Ev + 1.0Eh 90° Seismic	80.00	0.013	-0.0006	0.0154	0.0154
1.2D + 1.0Ev + 1.0Eh 90° Seismic	86.79	0.014	-0.0007	0.0167	0.0167
1.2D + 1.0Ev + 1.0Eh 90° Seismic	106.79	0.021	-0.0008	0.0215	0.0215
1.2D + 1.0Ev + 1.0Eh 90° Seismic	126.79	0.029	-0.0010	0.0264	0.0264
1.2D + 1.0Ev + 1.0Eh 90° Seismic	133.21	0.032	-0.0010	0.0283	0.0284
1.2D + 1.0Ev + 1.0Eh 90° Seismic	139.63	0.035	-0.0011	0.0325	0.0325
1.2D + 1.0Ev + 1.0Eh 90° Seismic	140.38	0.035	-0.0011	0.0328	0.0328
1.2D + 1.0Ev + 1.0Eh 90° Seismic	146.92	0.039	-0.0011	0.0320	0.0320
1.2D + 1.0Ev + 1.0Eh 90° Seismic	153.46	0.043	-0.0011	0.0346	0.0346
1.2D + 1.0Ev + 1.0Eh 90° Seismic	166.54	0.050	-0.0010	0.0382	0.0382
1.2D + 1.0Ev + 1.0Eh 90° Seismic	173.08	0.055	-0.0010	0.0379	0.0379
1.2D + 1.0Ev + 1.0Eh 90° Seismic	179.63	0.059	-0.0009	0.0487	0.0487
1.2D + 1.0Ev + 1.0Eh 90° Seismic	185.49	0.064	-0.0009	0.0369	0.0369
1.2D + 1.0Ev + 1.0Eh 90° Seismic	190.60	0.067	-0.0008	0.0393	0.0393
1.2D + 1.0Ev + 1.0Eh 120° Seismic	6.79	0.005	0.0001	0.0320	0.0320
1.2D + 1.0Ev + 1.0Eh 120° Seismic	13.21	0.005	0.0001	0.0157	0.0157
1.2D + 1.0Ev + 1.0Eh 120° Seismic	60.00	0.008	0.0004	0.0113	0.0113
1.2D + 1.0Ev + 1.0Eh 120° Seismic	80.00	0.012	0.0005	0.0156	0.0156
1.2D + 1.0Ev + 1.0Eh 120° Seismic	86.79	0.014	0.0006	0.0167	0.0167
1.2D + 1.0Ev + 1.0Eh 120° Seismic	106.79	0.020	0.0007	0.0215	0.0215
1.2D + 1.0Ev + 1.0Eh 120° Seismic	126.79	0.028	0.0008	0.0264	0.0264
1.2D + 1.0Ev + 1.0Eh 120° Seismic	133.21	0.031	0.0009	0.0283	0.0283
1.2D + 1.0Ev + 1.0Eh 120° Seismic	139.63	0.034	0.0010	0.0329	0.0329
1.2D + 1.0Ev + 1.0Eh 120° Seismic	140.38	0.035	0.0010	0.0333	0.0333
1.2D + 1.0Ev + 1.0Eh 120° Seismic	146.92	0.038	0.0009	0.0318	0.0318
1.2D + 1.0Ev + 1.0Eh 120° Seismic	153.46	0.042	0.0010	0.0344	0.0344
1.2D + 1.0Ev + 1.0Eh 120° Seismic	166.54	0.050	0.0009	0.0383	0.0383
1.2D + 1.0Ev + 1.0Eh 120° Seismic	173.08	0.054	0.0009	0.0376	0.0376
1.2D + 1.0Ev + 1.0Eh 120° Seismic	179.63	0.059	0.0008	0.0457	0.0457
1.2D + 1.0Ev + 1.0Eh 120° Seismic	185.49	0.063	0.0008	0.0364	0.0365
1.2D + 1.0Ev + 1.0Eh 120° Seismic	190.60	0.066	0.0007	0.0393	0.0393
1.2D + 1.0Ev + 1.0Eh 180° Seismic	6.79	0.005	0.0001	0.0327	0.0327
1.2D + 1.0Ev + 1.0Eh 180° Seismic	13.21	0.005	0.0001	0.0147	0.0147
1.2D + 1.0Ev + 1.0Eh 180° Seismic	60.00	0.009	0.0004	0.0115	0.0115
1.2D + 1.0Ev + 1.0Eh 180° Seismic	80.00	0.013	0.0005	0.0154	0.0154
1.2D + 1.0Ev + 1.0Eh 180° Seismic	86.79	0.015	0.0006	0.0167	0.0167
1.2D + 1.0Ev + 1.0Eh 180° Seismic	106.79	0.021	0.0007	0.0214	0.0215
1.2D + 1.0Ev + 1.0Eh 180° Seismic	126.79	0.029	0.0009	0.0264	0.0264
1.2D + 1.0Ev + 1.0Eh 180° Seismic	133.21	0.032	0.0009	0.0281	0.0281
1.2D + 1.0Ev + 1.0Eh 180° Seismic	139.63	0.035	0.0010	0.0327	0.0327
1.2D + 1.0Ev + 1.0Eh 180° Seismic	140.38	0.036	0.0010	0.0331	0.0331
1.2D + 1.0Ev + 1.0Eh 180° Seismic	146.92	0.039	0.0010	0.0320	0.0320
1.2D + 1.0Ev + 1.0Eh 180° Seismic	153.46	0.043	0.0010	0.0347	0.0347
1.2D + 1.0Ev + 1.0Eh 180° Seismic	166.54	0.051	0.0009	0.0379	0.0379

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.2D + 1.0Ev + 1.0Eh 180° Seismic	173.08	0.055	0.0009	0.0373	0.0373
1.2D + 1.0Ev + 1.0Eh 180° Seismic	179.63	0.060	0.0008	0.0500	0.0500
1.2D + 1.0Ev + 1.0Eh 180° Seismic	185.49	0.064	0.0008	0.0369	0.0369
1.2D + 1.0Ev + 1.0Eh 180° Seismic	190.60	0.067	0.0007	0.0393	0.0393
1.2D + 1.0Ev + 1.0Eh 210° Seismic	6.79	0.005	-0.0001	0.0325	0.0325
1.2D + 1.0Ev + 1.0Eh 210° Seismic	13.21	0.005	0.0001	0.0155	0.0155
1.2D + 1.0Ev + 1.0Eh 210° Seismic	60.00	0.008	-0.0005	0.0115	0.0115
1.2D + 1.0Ev + 1.0Eh 210° Seismic	80.00	0.013	-0.0006	0.0154	0.0154
1.2D + 1.0Ev + 1.0Eh 210° Seismic	86.79	0.014	-0.0007	0.0167	0.0167
1.2D + 1.0Ev + 1.0Eh 210° Seismic	106.79	0.021	-0.0008	0.0215	0.0215
1.2D + 1.0Ev + 1.0Eh 210° Seismic	126.79	0.029	-0.0010	0.0264	0.0264
1.2D + 1.0Ev + 1.0Eh 210° Seismic	133.21	0.032	-0.0010	0.0283	0.0284
1.2D + 1.0Ev + 1.0Eh 210° Seismic	139.63	0.035	-0.0011	0.0325	0.0326
1.2D + 1.0Ev + 1.0Eh 210° Seismic	140.38	0.035	-0.0011	0.0328	0.0328
1.2D + 1.0Ev + 1.0Eh 210° Seismic	146.92	0.039	-0.0011	0.0320	0.0320
1.2D + 1.0Ev + 1.0Eh 210° Seismic	153.46	0.043	-0.0011	0.0346	0.0346
1.2D + 1.0Ev + 1.0Eh 210° Seismic	166.54	0.050	-0.0010	0.0382	0.0382
1.2D + 1.0Ev + 1.0Eh 210° Seismic	173.08	0.055	-0.0010	0.0379	0.0379
1.2D + 1.0Ev + 1.0Eh 210° Seismic	179.63	0.059	-0.0010	0.0487	0.0487
1.2D + 1.0Ev + 1.0Eh 210° Seismic	185.49	0.064	-0.0009	0.0369	0.0369
1.2D + 1.0Ev + 1.0Eh 210° Seismic	190.60	0.067	-0.0009	0.0393	0.0393
1.2D + 1.0Ev + 1.0Eh 240° Seismic	6.79	0.005	0.0001	0.0320	0.0320
1.2D + 1.0Ev + 1.0Eh 240° Seismic	13.21	0.005	0.0001	0.0157	0.0157
1.2D + 1.0Ev + 1.0Eh 240° Seismic	60.00	0.008	0.0004	0.0113	0.0113
1.2D + 1.0Ev + 1.0Eh 240° Seismic	80.00	0.012	0.0005	0.0156	0.0156
1.2D + 1.0Ev + 1.0Eh 240° Seismic	86.79	0.014	0.0006	0.0167	0.0167
1.2D + 1.0Ev + 1.0Eh 240° Seismic	106.79	0.020	0.0007	0.0215	0.0215
1.2D + 1.0Ev + 1.0Eh 240° Seismic	126.79	0.028	0.0008	0.0264	0.0264
1.2D + 1.0Ev + 1.0Eh 240° Seismic	133.21	0.031	0.0009	0.0283	0.0283
1.2D + 1.0Ev + 1.0Eh 240° Seismic	139.63	0.034	0.0010	0.0329	0.0329
1.2D + 1.0Ev + 1.0Eh 240° Seismic	140.38	0.035	0.0010	0.0333	0.0333
1.2D + 1.0Ev + 1.0Eh 240° Seismic	146.92	0.038	0.0009	0.0318	0.0318
1.2D + 1.0Ev + 1.0Eh 240° Seismic	153.46	0.042	0.0010	0.0344	0.0344
1.2D + 1.0Ev + 1.0Eh 240° Seismic	166.54	0.050	0.0009	0.0383	0.0383
1.2D + 1.0Ev + 1.0Eh 240° Seismic	173.08	0.054	0.0009	0.0376	0.0376
1.2D + 1.0Ev + 1.0Eh 240° Seismic	179.63	0.059	0.0008	0.0457	0.0457
1.2D + 1.0Ev + 1.0Eh 240° Seismic	185.49	0.063	0.0008	0.0364	0.0365
1.2D + 1.0Ev + 1.0Eh 240° Seismic	190.60	0.066	0.0007	0.0393	0.0393
1.2D + 1.0Ev + 1.0Eh 300° Seismic	6.79	0.005	0.0001	0.0327	0.0327
1.2D + 1.0Ev + 1.0Eh 300° Seismic	13.21	0.005	0.0001	0.0147	0.0147
1.2D + 1.0Ev + 1.0Eh 300° Seismic	60.00	0.009	0.0004	0.0115	0.0115
1.2D + 1.0Ev + 1.0Eh 300° Seismic	80.00	0.013	0.0005	0.0154	0.0154
1.2D + 1.0Ev + 1.0Eh 300° Seismic	86.79	0.015	0.0006	0.0167	0.0167
1.2D + 1.0Ev + 1.0Eh 300° Seismic	106.79	0.021	0.0007	0.0214	0.0215
1.2D + 1.0Ev + 1.0Eh 300° Seismic	126.79	0.029	0.0008	0.0264	0.0264
1.2D + 1.0Ev + 1.0Eh 300° Seismic	133.21	0.032	0.0009	0.0281	0.0281
1.2D + 1.0Ev + 1.0Eh 300° Seismic	139.63	0.035	0.0010	0.0327	0.0327
1.2D + 1.0Ev + 1.0Eh 300° Seismic	140.38	0.036	0.0010	0.0331	0.0331
1.2D + 1.0Ev + 1.0Eh 300° Seismic	146.92	0.039	0.0009	0.0320	0.0320
1.2D + 1.0Ev + 1.0Eh 300° Seismic	153.46	0.043	0.0010	0.0347	0.0347
1.2D + 1.0Ev + 1.0Eh 300° Seismic	166.54	0.051	0.0009	0.0379	0.0379
1.2D + 1.0Ev + 1.0Eh 300° Seismic	173.08	0.055	0.0008	0.0373	0.0373
1.2D + 1.0Ev + 1.0Eh 300° Seismic	179.63	0.060	0.0008	0.0500	0.0500
1.2D + 1.0Ev + 1.0Eh 300° Seismic	185.49	0.064	0.0008	0.0369	0.0369
1.2D + 1.0Ev + 1.0Eh 300° Seismic	190.60	0.067	0.0007	0.0393	0.0393
1.2D + 1.0Ev + 1.0Eh 330° Seismic	6.79	0.005	-0.0001	0.0325	0.0325
1.2D + 1.0Ev + 1.0Eh 330° Seismic	13.21	0.005	0.0001	0.0155	0.0155
1.2D + 1.0Ev + 1.0Eh 330° Seismic	60.00	0.008	-0.0004	0.0115	0.0115
1.2D + 1.0Ev + 1.0Eh 330° Seismic	80.00	0.013	-0.0006	0.0154	0.0154
1.2D + 1.0Ev + 1.0Eh 330° Seismic	86.79	0.014	-0.0007	0.0167	0.0167
1.2D + 1.0Ev + 1.0Eh 330° Seismic	106.79	0.021	-0.0008	0.0215	0.0215
1.2D + 1.0Ev + 1.0Eh 330° Seismic	126.79	0.029	-0.0010	0.0264	0.0264
1.2D + 1.0Ev + 1.0Eh 330° Seismic	133.21	0.032	-0.0010	0.0283	0.0284
1.2D + 1.0Ev + 1.0Eh 330° Seismic	139.63	0.035	-0.0011	0.0326	0.0326
1.2D + 1.0Ev + 1.0Eh 330° Seismic	140.38	0.035	-0.0011	0.0328	0.0328
1.2D + 1.0Ev + 1.0Eh 330° Seismic	146.92	0.039	-0.0011	0.0320	0.0320
1.2D + 1.0Ev + 1.0Eh 330° Seismic	153.46	0.043	-0.0011	0.0346	0.0346
1.2D + 1.0Ev + 1.0Eh 330° Seismic	166.54	0.050	-0.0010	0.0382	0.0382

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.2D + 1.0Ev + 1.0Eh 330° Seismic	173.08	0.055	-0.0010	0.0379	0.0379
1.2D + 1.0Ev + 1.0Eh 330° Seismic	179.63	0.059	-0.0009	0.0487	0.0487
1.2D + 1.0Ev + 1.0Eh 330° Seismic	185.49	0.064	-0.0009	0.0369	0.0369
1.2D + 1.0Ev + 1.0Eh 330° Seismic	190.60	0.067	-0.0008	0.0393	0.0393
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	6.79	0.005	0.0001	0.0320	0.0320
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	13.21	0.005	0.0001	0.0158	0.0158
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	60.00	0.008	0.0004	0.0113	0.0113
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	80.00	0.012	0.0005	0.0155	0.0155
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	86.79	0.014	0.0006	0.0166	0.0166
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	106.79	0.020	0.0007	0.0214	0.0214
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	126.79	0.028	0.0009	0.0263	0.0263
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	133.21	0.031	0.0009	0.0282	0.0282
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	139.63	0.034	0.0010	0.0328	0.0328
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	140.38	0.035	0.0010	0.0332	0.0332
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	146.92	0.038	0.0009	0.0317	0.0317
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	153.46	0.042	0.0010	0.0342	0.0342
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	166.54	0.050	0.0009	0.0381	0.0381
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	173.08	0.054	0.0009	0.0374	0.0374
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	179.63	0.059	0.0008	0.0449	0.0450
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	185.49	0.063	0.0008	0.0364	0.0364
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	190.60	0.066	0.0007	0.0392	0.0392
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	6.79	0.005	0.0001	0.0328	0.0328
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	13.21	0.005	0.0001	0.0148	0.0148
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	60.00	0.009	0.0004	0.0115	0.0115
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	80.00	0.013	0.0005	0.0154	0.0154
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	86.79	0.015	0.0006	0.0166	0.0166
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	106.79	0.021	0.0007	0.0214	0.0214
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	126.79	0.029	0.0008	0.0263	0.0263
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	133.21	0.032	0.0009	0.0280	0.0280
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	139.63	0.035	-0.0010	0.0326	0.0326
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	140.38	0.036	0.0010	0.0330	0.0330
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	146.92	0.039	0.0009	0.0318	0.0319
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	153.46	0.043	0.0009	0.0344	0.0344
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	166.54	0.051	0.0009	0.0378	0.0378
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	173.08	0.055	0.0008	0.0372	0.0372
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	179.63	0.059	0.0008	0.0487	0.0487
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	185.49	0.064	-0.0008	0.0367	0.0367
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	190.60	0.067	0.0007	0.0392	0.0392
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	6.79	0.005	-0.0001	0.0326	0.0326
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	13.21	0.005	0.0001	0.0156	0.0156
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	60.00	0.008	-0.0004	0.0114	0.0114
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	80.00	0.013	-0.0006	0.0154	0.0154
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	86.79	0.014	-0.0006	0.0166	0.0167
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	106.79	0.021	-0.0008	0.0215	0.0215
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	126.79	0.029	-0.0010	0.0263	0.0263
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	133.21	0.032	-0.0010	0.0283	0.0283
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	139.63	0.035	-0.0011	0.0324	0.0324
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	140.38	0.035	-0.0011	0.0327	0.0327
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	146.92	0.039	-0.0011	0.0319	0.0319
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	153.46	0.042	-0.0011	0.0343	0.0343
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	166.54	0.050	-0.0010	0.0380	0.0380
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	173.08	0.055	-0.0010	0.0378	0.0378
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	179.63	0.059	-0.0009	0.0476	0.0476
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	185.49	0.063	-0.0009	0.0368	0.0368
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	190.60	0.067	-0.0008	0.0392	0.0392
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	6.79	0.005	0.0001	0.0320	0.0320
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	13.21	0.005	0.0001	0.0158	0.0158
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	60.00	0.008	0.0004	0.0113	0.0113
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	80.00	0.012	0.0005	0.0155	0.0155
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	86.79	0.014	0.0006	0.0166	0.0166
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	106.79	0.020	0.0007	0.0214	0.0214
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	126.79	0.028	0.0008	0.0263	0.0263
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	133.21	0.031	0.0009	0.0282	0.0282
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	139.63	0.034	0.0010	0.0328	0.0328
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	140.38	0.035	0.0010	0.0331	0.0331
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	146.92	0.038	0.0009	0.0317	0.0317
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	153.46	0.042	0.0009	0.0342	0.0342
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	166.54	0.050	0.0009	0.0381	0.0381

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	173.08	0.054	0.0009	0.0374	0.0374
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	179.63	0.059	0.0008	0.0449	0.0449
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	185.49	0.063	0.0008	0.0364	0.0364
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	190.60	0.066	0.0007	0.0392	0.0392
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	6.79	0.005	0.0001	0.0328	0.0328
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	13.21	0.005	0.0001	0.0148	0.0148
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	60.00	0.009	0.0004	0.0115	0.0115
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	80.00	0.013	0.0005	0.0154	0.0154
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	86.79	0.015	0.0006	0.0166	0.0166
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	106.79	0.021	0.0007	0.0214	0.0214
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	126.79	0.029	0.0009	0.0263	0.0263
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	133.21	0.032	0.0009	0.0280	0.0280
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	139.63	0.035	0.0010	0.0326	0.0326
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	140.38	0.036	0.0010	0.0330	0.0330
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	146.92	0.039	0.0010	0.0318	0.0318
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	153.46	0.043	0.0010	0.0344	0.0344
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	166.54	0.051	0.0009	0.0378	0.0378
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	173.08	0.055	0.0009	0.0372	0.0373
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	179.63	0.059	0.0008	0.0487	0.0487
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	185.49	0.064	0.0008	0.0367	0.0367
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	190.60	0.067	0.0007	0.0392	0.0392
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	6.79	0.005	-0.0001	0.0326	0.0326
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	13.21	0.005	0.0001	0.0156	0.0156
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	60.00	0.008	-0.0005	0.0114	0.0114
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	80.00	0.013	-0.0006	0.0154	0.0154
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	86.79	0.014	-0.0007	0.0166	0.0167
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	106.79	0.021	-0.0008	0.0215	0.0215
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	126.79	0.029	-0.0010	0.0263	0.0263
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	133.21	0.032	-0.0010	0.0283	0.0283
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	139.63	0.035	-0.0011	0.0324	0.0324
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	140.38	0.035	-0.0011	0.0327	0.0327
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	146.92	0.039	-0.0011	0.0319	0.0319
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	153.46	0.042	-0.0011	0.0343	0.0343
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	166.54	0.050	-0.0010	0.0380	0.0380
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	173.08	0.055	-0.0010	0.0378	0.0378
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	179.63	0.059	-0.0010	0.0476	0.0476
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	185.49	0.063	-0.0009	0.0368	0.0368
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	190.60	0.067	-0.0008	0.0392	0.0392
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	6.79	0.005	0.0001	0.0320	0.0320
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	13.21	0.005	0.0001	0.0158	0.0158
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	60.00	0.008	0.0004	0.0113	0.0113
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	80.00	0.012	0.0005	0.0155	0.0155
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	86.79	0.014	0.0006	0.0166	0.0166
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	106.79	0.020	0.0007	0.0214	0.0214
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	126.79	0.028	0.0008	0.0263	0.0263
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	133.21	0.031	0.0009	0.0282	0.0282
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	139.63	0.034	0.0010	0.0328	0.0328
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	140.38	0.035	0.0010	0.0331	0.0331
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	146.92	0.038	0.0009	0.0317	0.0317
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	153.46	0.042	0.0009	0.0342	0.0342
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	166.54	0.050	0.0009	0.0381	0.0381
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	173.08	0.054	-0.0009	0.0374	0.0374
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	179.63	0.059	0.0008	0.0449	0.0449
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	185.49	0.063	0.0008	0.0364	0.0364
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	190.60	0.066	0.0007	0.0392	0.0392
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	6.79	0.005	0.0001	0.0328	0.0328
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	13.21	0.005	0.0001	0.0148	0.0148
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	60.00	0.009	0.0004	0.0115	0.0115
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	80.00	0.013	0.0005	0.0154	0.0154
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	86.79	0.015	0.0006	0.0166	0.0166
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	106.79	0.021	0.0007	0.0214	0.0214
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	126.79	0.029	0.0008	0.0263	0.0263
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	133.21	0.032	0.0009	0.0280	0.0280
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	139.63	0.035	0.0010	0.0326	0.0326
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	140.38	0.036	0.0010	0.0330	0.0330
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	146.92	0.039	0.0009	0.0318	0.0319
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	153.46	0.043	0.0009	0.0344	0.0344
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	166.54	0.051	0.0009	0.0378	0.0378

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	173.08	0.055	0.0008	0.0372	0.0372
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	179.63	0.059	0.0008	0.0487	0.0487
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	185.49	0.064	0.0008	0.0367	0.0367
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	190.60	0.067	0.0007	0.0392	0.0392
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	6.79	0.005	-0.0001	0.0326	0.0326
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	13.21	0.005	0.0001	0.0156	0.0156
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	60.00	0.008	-0.0004	0.0114	0.0114
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	80.00	0.013	-0.0006	0.0154	0.0154
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	86.79	0.014	-0.0007	0.0166	0.0167
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	106.79	0.021	-0.0008	0.0215	0.0215
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	126.79	0.029	-0.0010	0.0263	0.0263
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	133.21	0.032	-0.0010	0.0283	0.0283
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	139.63	0.035	-0.0011	0.0324	0.0324
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	140.38	0.035	-0.0011	0.0327	0.0327
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	146.92	0.039	-0.0011	0.0319	0.0319
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	153.46	0.042	-0.0011	0.0343	0.0343
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	166.54	0.050	-0.0010	0.0380	0.0380
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	173.08	0.055	-0.0010	0.0378	0.0378
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	179.63	0.059	-0.0009	0.0476	0.0476
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	185.49	0.063	-0.0009	0.0368	0.0368
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	190.60	0.067	-0.0008	0.0392	0.0392
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	6.79	0.006	0.0008	0.0434	0.0434
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	13.21	0.007	0.0012	0.0377	0.0377
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	60.00	0.055	0.0038	0.1015	0.1015
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	80.00	0.094	0.0048	0.1331	0.1331
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	86.79	0.110	0.0051	0.1392	0.1393
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	106.79	0.165	0.0062	0.1736	0.1737
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	126.79	0.232	0.0070	0.2067	0.2068
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	133.21	0.256	0.0072	0.2188	0.2190
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	139.63	0.281	0.0077	0.2509	0.2509
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	140.38	0.284	0.0076	0.2536	0.2536
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	146.92	0.311	0.0073	0.2420	0.2421
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	153.46	0.340	0.0072	0.2552	0.2553
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	166.54	0.400	0.0068	0.2767	0.2767
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	173.08	0.431	0.0067	0.2723	0.2724
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	179.63	0.464	0.0066	0.3216	0.3216
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	185.49	0.493	0.0065	0.2717	0.2718
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	190.60	0.518	0.0064	0.2863	0.2863
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	6.79	0.006	0.0008	0.0492	0.0492
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	13.21	0.008	0.0011	0.0336	0.0336
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	60.00	0.055	0.0036	0.0984	0.0984
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	80.00	0.092	0.0045	0.1287	0.1287
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	86.79	0.108	0.0048	0.1349	0.1350
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	106.79	0.161	0.0058	0.1684	0.1685
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	126.79	0.226	0.0065	0.2005	0.2006
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	133.21	0.249	0.0067	0.2123	0.2124
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	139.63	0.273	0.0072	0.2432	0.2432
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	140.38	0.276	0.0072	0.2459	0.2459
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	146.92	0.303	0.0068	0.2350	0.2351
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	153.46	0.330	-0.0068	0.2485	0.2485
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	166.54	0.388	0.0063	0.2690	0.2690
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	173.08	0.419	0.0062	0.2640	0.2641
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	179.63	0.450	0.0062	0.3155	0.3155
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	185.49	0.478	0.0060	0.2640	0.2641
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	190.60	0.503	-0.0060	0.2780	0.2780
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	6.79	0.006	-0.0009	0.0477	0.0477
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	13.21	0.008	-0.0013	0.0363	0.0363
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	60.00	0.055	-0.0042	0.0986	0.0986
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	80.00	0.093	-0.0053	0.1288	0.1288
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	86.79	0.108	-0.0056	0.1361	0.1362
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	106.79	0.162	-0.0068	0.1700	0.1701
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	126.79	0.227	-0.0076	0.2023	0.2024
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	133.21	0.250	-0.0079	0.2151	0.2152
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	139.63	0.275	-0.0084	0.2427	0.2427
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	140.38	0.278	-0.0084	0.2449	0.2449
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	146.92	0.305	-0.0080	0.2379	0.2381
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	153.46	0.333	-0.0079	0.2501	0.2501
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	166.54	0.391	-0.0074	0.2707	0.2707

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	173.08	0.422	-0.0073	0.2684	0.2685
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	179.63	0.453	-0.0072	0.3123	0.3124
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	185.49	0.482	-0.0070	0.2678	0.2679
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	190.60	0.506	-0.0069	0.2796	0.2796
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	6.79	0.006	0.0008	0.0434	0.0434
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	13.21	0.007	0.0012	0.0377	0.0377
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	60.00	0.055	0.0037	0.1015	0.1015
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	80.00	0.094	0.0047	0.1330	0.1330
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	86.79	0.110	0.0050	0.1392	0.1393
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	106.79	0.165	0.0060	0.1736	0.1737
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	126.79	0.232	-0.0068	0.2067	0.2068
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	133.21	0.256	0.0070	0.2189	0.2190
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	139.63	0.281	0.0074	0.2509	0.2509
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	140.38	0.284	0.0074	0.2536	0.2536
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	146.92	0.311	0.0071	0.2420	0.2421
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	153.46	0.340	0.0070	0.2552	0.2553
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	166.54	0.400	0.0066	0.2767	0.2767
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	173.08	0.431	0.0065	0.2723	0.2724
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	179.63	0.464	0.0063	0.3216	0.3216
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	185.49	0.493	0.0063	0.2717	0.2718
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	190.60	0.518	0.0062	0.2863	0.2863
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	6.79	0.006	0.0008	0.0492	0.0492
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	13.21	0.008	0.0012	0.0336	0.0336
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	60.00	0.055	0.0037	0.0984	0.0984
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	80.00	0.092	0.0047	0.1287	0.1287
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	86.79	0.108	0.0050	0.1349	0.1350
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	106.79	0.161	0.0060	0.1684	0.1685
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	126.79	0.226	0.0067	0.2005	0.2006
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	133.21	0.249	0.0069	0.2122	0.2124
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	139.63	0.273	0.0074	0.2432	0.2432
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	140.38	0.276	0.0074	0.2459	0.2459
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	146.92	0.303	0.0070	0.2350	0.2351
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	153.46	0.330	0.0070	0.2485	0.2485
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	166.54	0.388	0.0065	0.2690	0.2690
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	173.08	0.419	0.0064	0.2640	0.2641
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	179.63	0.450	0.0064	0.3155	0.3155
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	185.49	0.478	0.0062	0.2640	0.2641
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	190.60	0.503	0.0062	0.2780	0.2780
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	6.79	0.006	-0.0009	0.0478	0.0478
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	13.21	0.008	-0.0013	0.0363	0.0363
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	60.00	0.055	-0.0043	0.0987	0.0987
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	80.00	0.093	-0.0054	0.1289	0.1290
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	86.79	0.108	-0.0057	0.1362	0.1363
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	106.79	0.162	-0.0069	0.1702	0.1703
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	126.79	0.227	-0.0077	0.2025	0.2027
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	133.21	0.251	-0.0080	0.2153	0.2155
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	139.63	0.276	-0.0086	0.2430	0.2430
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	140.38	0.279	-0.0085	0.2452	0.2453
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	146.92	0.305	-0.0081	0.2382	0.2384
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	153.46	0.333	-0.0081	0.2504	0.2505
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	166.54	0.392	-0.0076	0.2711	0.2711
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	173.08	0.423	-0.0075	0.2688	0.2689
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	179.63	0.454	-0.0075	0.3129	0.3129
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	185.49	0.483	-0.0074	0.2682	0.2683
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	190.60	0.507	-0.0073	0.2800	0.2800
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	6.79	0.006	0.0008	0.0434	0.0434
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	13.21	0.007	0.0012	0.0377	0.0377
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	60.00	0.055	0.0037	0.1015	0.1015
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	80.00	0.094	0.0047	0.1330	0.1330
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	86.79	0.110	0.0050	0.1392	0.1393
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	106.79	0.165	0.0060	0.1736	0.1737
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	126.79	0.232	0.0068	0.2067	0.2068
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	133.21	0.256	0.0070	0.2189	0.2190
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	139.63	0.281	0.0074	0.2509	0.2509
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	140.38	0.284	0.0074	0.2536	0.2536
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	146.92	0.311	0.0071	0.2420	0.2421
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	153.46	0.340	0.0070	0.2552	0.2553
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	166.54	0.400	0.0066	0.2767	0.2767

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	173.08	0.431	0.0065	0.2723	0.2724
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	179.63	0.464	0.0063	0.3216	0.3216
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	185.49	0.493	0.0063	0.2717	0.2718
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	190.60	0.518	0.0062	0.2863	0.2863
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	6.79	0.006	0.0008	0.0492	0.0492
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	13.21	0.008	0.0011	0.0336	0.0336
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	60.00	0.055	0.0036	0.0984	0.0984
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	80.00	0.092	0.0045	0.1287	0.1287
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	86.79	0.108	0.0048	0.1349	0.1350
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	106.79	0.161	0.0058	0.1684	0.1685
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	126.79	0.226	0.0065	0.2005	0.2006
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	133.21	0.249	0.0067	0.2123	0.2124
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	139.63	0.273	0.0072	0.2432	0.2432
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	140.38	0.276	0.0072	0.2459	0.2459
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	146.92	0.303	0.0068	0.2350	0.2351
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	153.46	0.330	0.0068	0.2485	0.2485
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	166.54	0.388	0.0063	0.2690	0.2690
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	173.08	0.419	0.0062	0.2640	0.2641
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	179.63	0.450	0.0062	0.3155	0.3155
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	185.49	0.478	0.0060	0.2640	0.2641
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	190.60	0.503	0.0060	0.2780	0.2780
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	6.79	0.006	-0.0009	0.0478	0.0478
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	13.21	0.008	-0.0013	0.0363	0.0363
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	60.00	0.055	-0.0043	0.0987	0.0987
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	80.00	0.093	-0.0054	0.1289	0.1290
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	86.79	0.108	-0.0057	0.1362	0.1363
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	106.79	0.162	-0.0069	0.1702	0.1703
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	126.79	0.227	-0.0077	0.2025	0.2027
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	133.21	0.251	-0.0080	0.2153	0.2155
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	139.63	0.276	-0.0085	0.2430	0.2430
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	140.38	0.279	-0.0085	0.2452	0.2453
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	146.92	0.305	-0.0081	0.2382	0.2384
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	153.46	0.333	-0.0081	0.2504	0.2505
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	166.54	0.392	-0.0076	0.2711	0.2711
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	173.08	0.423	-0.0075	0.2688	0.2689
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	179.63	0.454	-0.0075	0.3129	0.3129
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	185.49	0.483	-0.0074	0.2682	0.2683
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	190.60	0.507	-0.0073	0.2800	0.2800



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C O R P O R A T I O N

Mount Analysis Report

ATC Site Name : GLFD-GUILFORD REBUILD CT, CT
ATC Site Number : 311305
Engineering Number : 13711909_C8_03
Mount Elevation : 174 ft
Carrier : T-Mobile
Carrier Site Name : Guilford SNET Mobilit_1
Carrier Site Number : CT11028A
Site Location : 10 Tanner Marsh Road
Guilford, CT 06437-2942
41.28860833 , -72.65828056
County : New Haven
Date : August 10, 2021
Max Usage : 72%
Result : Pass

Prepared By:
Alan Samboy
Structural Engineer

Alan Samboy

Reviewed By:



COA: PEC.0001553



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Introduction

The purpose of this report is to summarize results of the mount analysis performed for T-Mobile at 174 ft.

Supporting Documents

Mount Modification	CLS Engineering Project #13617386_C9_03, dated March 31, 2021
Previous Analysis	CLS Engineering Project #13617386_C8_01, dated March 12, 2021
Radio Frequency Data Sheet	RFDS ID #CT11028A, dated July 26, 2021
Reference Photos	Site photos from 2020

Analysis

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

Basic Wind Speed:	123 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1" radial ice concurrent
Codes:	ANSI/TIA-222-H
Exposure Category:	C
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Flat
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.204, S1 = 0.054
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.

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.

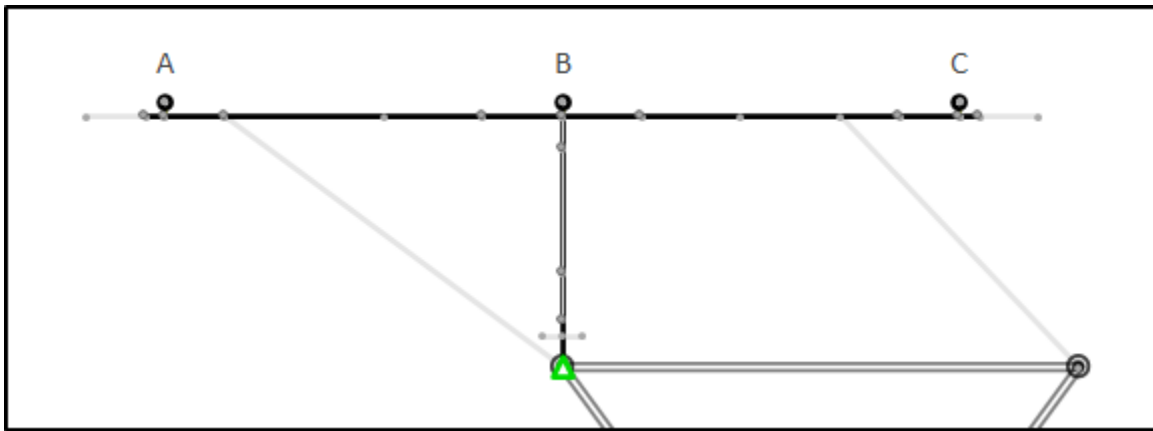
**Application Loading**

Mount Centerline (ft)	Equipment Centerline (ft)	Qty	Equipment Manufacturer & Model
174.0	177.0	3	Ericsson Air6449 B41
		3	RFS APXVAALL24 43-U-NA20
		3	Ericsson Radio 4449 B71 B85A
		3	Ericsson Radio 4460 B25+B66

Structure Usages

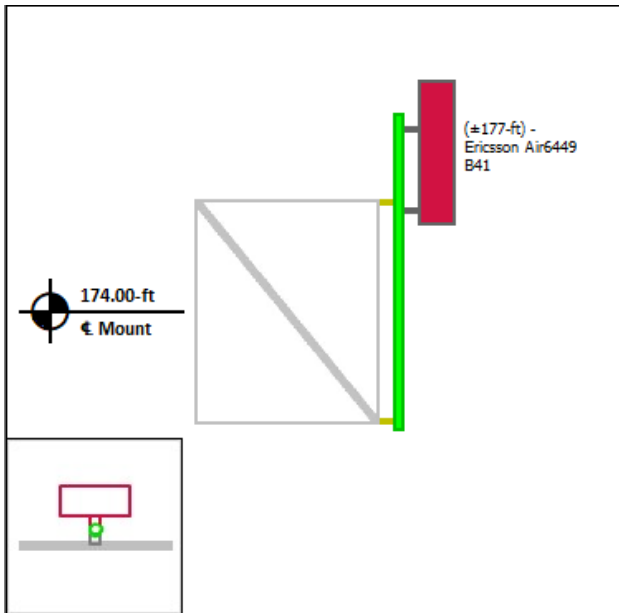
Structural Component	Controlling Usage	Pass/Fail
Horizontals	72%	Pass
Verticals	47%	Pass
Diagonals	16%	Pass
Tie-Backs	6%	Pass
Mount Pipes	38%	Pass

Mount Layout

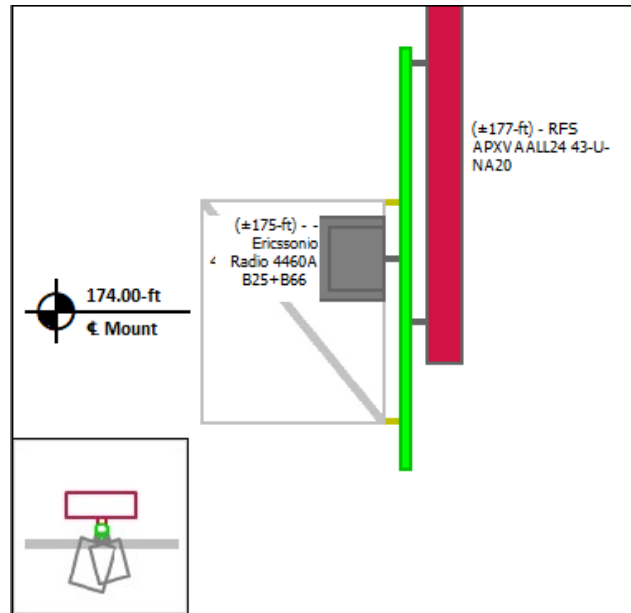


Equipment Layout

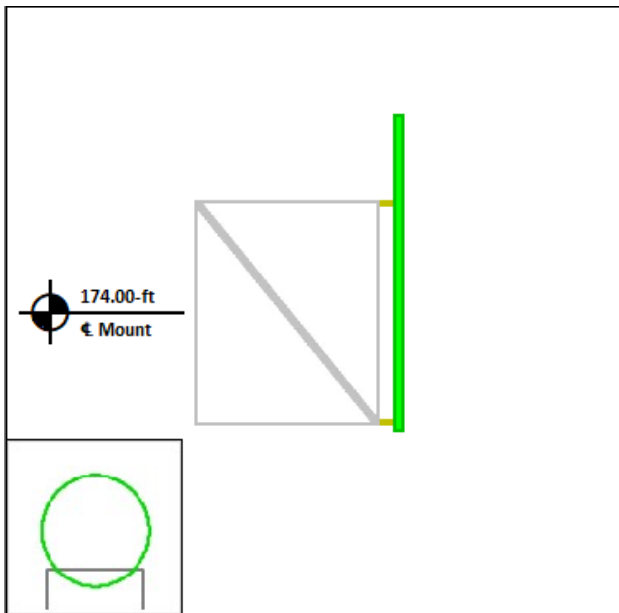
Mount Pipe A



Mount Pipe B



Mount Pipe C





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: 311305
 Project Number: 13711909_C8_03
 Carrier: T-Mobile
 Mount Elevation: 174 ft
 Date: 8/10/2021

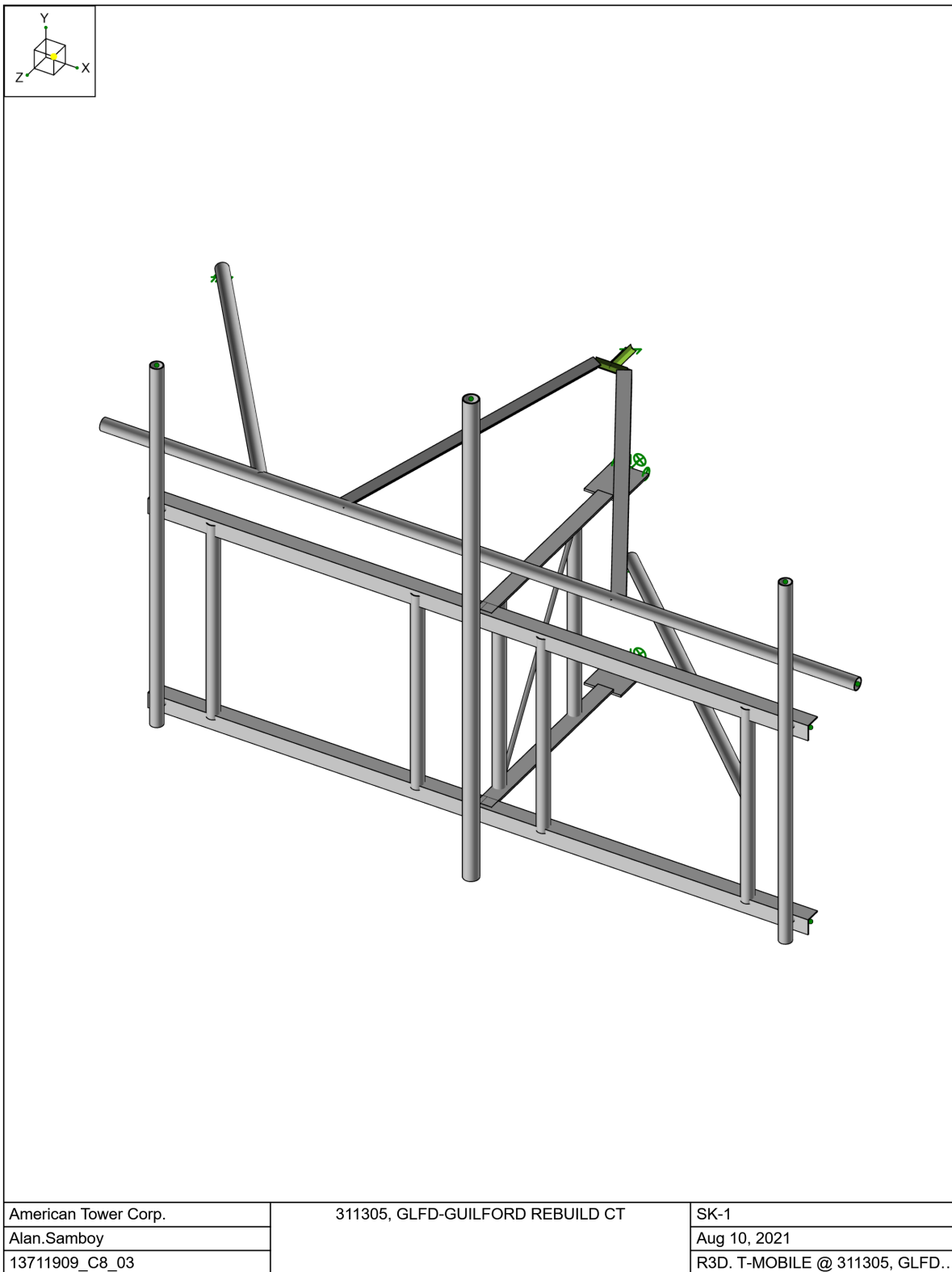
Mount Analysis Force Calculations

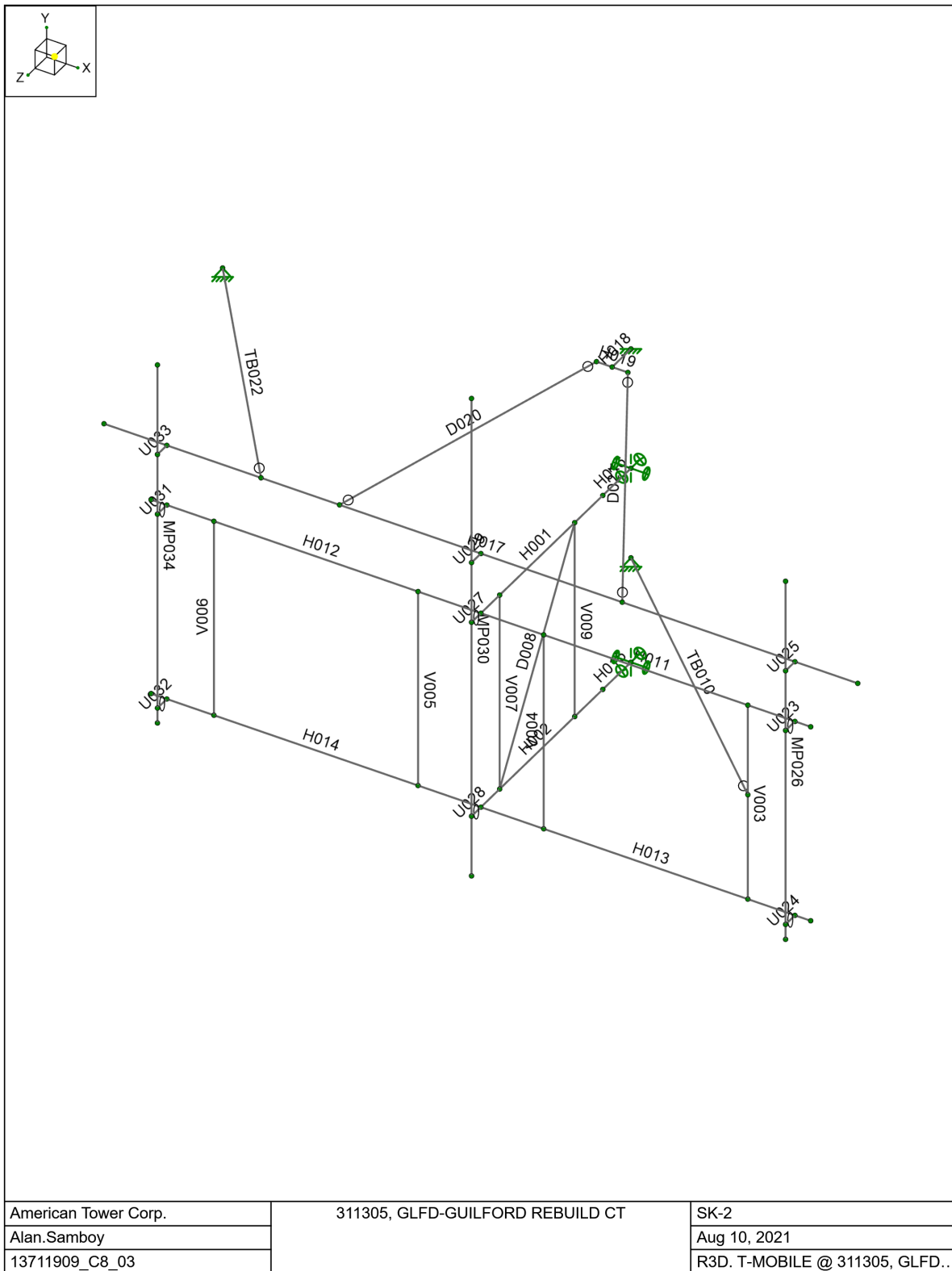
Wind & Ice Load Calculations				
Velocity Pressure Coefficient	K_z	1.42		
Topographic Factor	K_{zt}	1.00		
Rooftop Wind Speed-up Factor	K_s	1.00		
Shielding Factor	K_a	0.90		
Ground Elevation Factor	K_e	1.00		
Wind Direction Probability Factor	K_d	0.95		
Basic Wind Speed	V	123	mph	
Velocity Pressure	q_z	52.2	psf	
Height Escalation Factor	K_{iz}	1.18		
Thickness of Radial Glaze Ice	T_{iz}	1.18	in	

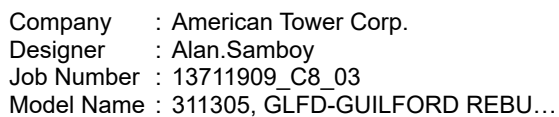
Seismic Load Calculations				
Short Period DSRAP	S_{Ds}	0.218		
1 Second DSRAP	S_{D1}	0.086		
Importance Factor	I	1.0		
Response Modification Coefficient	R	2.0		
Seismic Response Coefficient	C_s	0.109		
Amplification Factor	A	1.0		
Total Weight	W	879.4	lbs	
Total Shear Force	V_s	95.7	lbs	
Horizontal Seismic Load	E_h	95.7	lbs	
Vertical Seismic Load	E_v	38.3	lbs	

Antenna Calculations (Elevations per Application/RFDS)*								
Equipment	Height	Width	Depth	Weight	EPA_N	EPA_T	EPA_{Ni}	EPA_{Ti}
Model #	in	in	in	lbs	sqft	sqft	sqft	sqft
Ericsson Air6449 B41	33.1	20.6	8.6	104.0	5.68	1.56	6.79	2.13
RFS APXVAALL24 43-U-NA20	95.9	24.0	8.5	122.8	20.24	3.40	22.78	4.45
Ericsson Radio 4449 B71 B85A	15.0	13.2	10.5	75.0	1.65	1.31	2.25	1.86
Ericsson Radio 4460 B25+B66	19.6	15.7	12.1	109.0	2.56	1.98	3.31	2.65

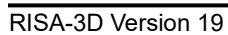
* Equipment with EPA values N/A were not considered in the mount analysis

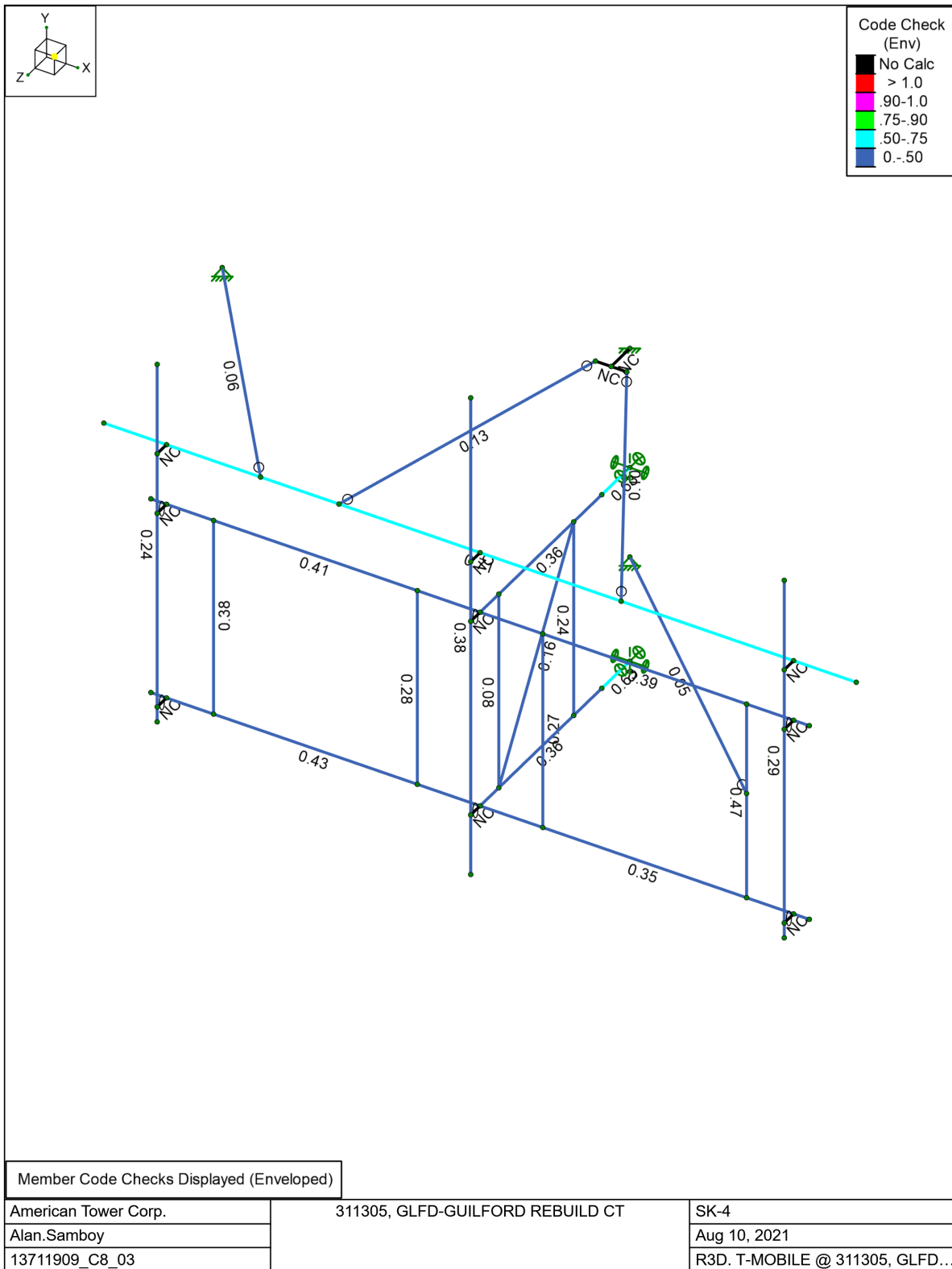


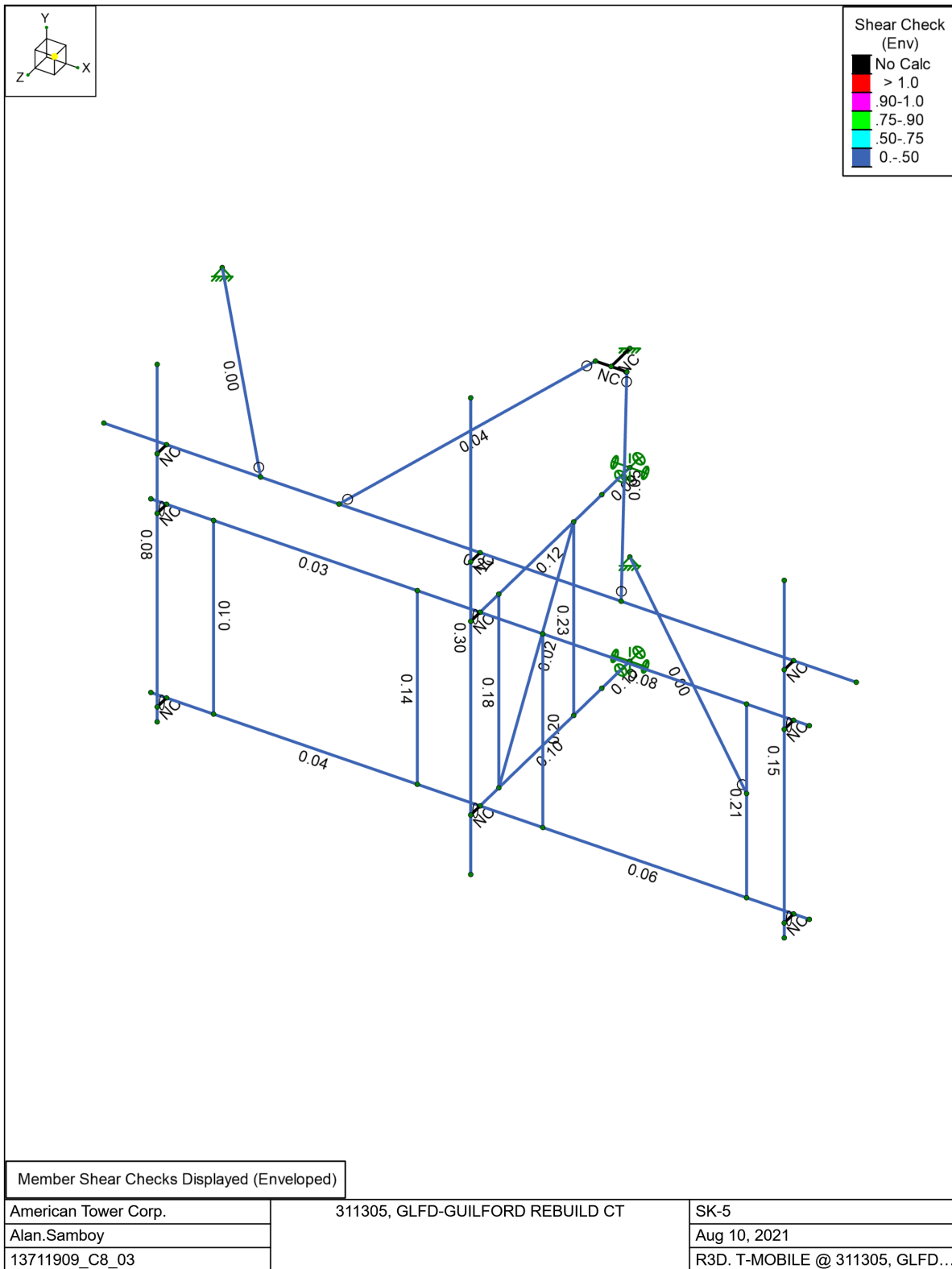




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Company : American Tower Corp.
 Designer : Alan.Sambo
 Job Number : 13711909_C8_03
 Model Name : 311305, GLFD-GUILFORD REBU...

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Node Boundary Conditions

	Node Label	X [lb/in]	Y [lb/in]	Z [lb/in]	X Rot [k-in/rad]	Y Rot [k-in/rad]	Z Rot [k-in/rad]
1	N001	Reaction	Reaction	Reaction	Reaction		Reaction
2	N005	Reaction	Reaction	Reaction	Reaction		Reaction
3	N021	Reaction	Reaction	Reaction			
4	N027	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N034	Reaction	Reaction	Reaction			

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	H001	N002	N023	90	L3X3X6	Beam	None	A572-50	Typical
2	H002	N006	N024	90	L3X3X6	Beam	None	A572-50	Typical
3	V003	N009	N016		HSS2.375X0.125	Column	None	A500 Gr. C	Typical
4	V004	N011	N010		HSS2.375X0.125	Column	None	A500 Gr. C	Typical
5	V005	N013	N012		HSS2.375X0.125	Column	None	A500 Gr. C	Typical
6	V006	N014	N015		HSS2.375X0.125	Column	None	A500 Gr. C	Typical
7	V007	N020	N019		HSS2.375X0.125	Column	None	A500 Gr. C	Typical
8	D008	N019	N017		SR 0.75	Column	None	A572-50	Typical
9	V009	N017	N018		HSS2.375X0.125	Column	None	A500 Gr. C	Typical
10	TB010	N022	N021		HSS2.375X0.125	Beam	None	A500 Gr. C	Typical
11	H011	N002	N003	180	L3X3X3	Beam	None	A572-50	Typical
12	H012	N002	N004	90	L3X3X3	Beam	None	A572-50	Typical
13	H013	N006	N007	180	L3X3X3	Beam	None	A572-50	Typical
14	H014	N006	N008	90	L3X3X3	Beam	None	A572-50	Typical
15	H015	N005	N024	90	PL7X0.375	Beam	None	A36	Typical
16	H016	N001	N023	90	PL7X0.375	Beam	None	A36	Typical
17	H017	N025	N026		PIPE 2.0	Beam	None	A53 Gr. B	Typical
18	H018	N027	N028		RIGID	None	None	RIGID	Typical
19	H019	N029	N030		RIGID	None	None	RIGID	Typical
20	D020	N030	N031	180	L2.5X2.5X3	Column	None	A36	Typical
21	D021	N029	N032	90	L2.5X2.5X3	Column	None	A36	Typical
22	TB022	N034	N033		PIPE 2.0	Beam	None	A53 Gr. B	Typical
23	U023	N035	N038		(1) 1/2 U-Bolt	Beam	None	A36	Typical
24	U024	N039	N040		(1) 1/2 U-Bolt	Beam	None	A36	Typical
25	U025	N041	N042		(2) 1/2 U-Bolts	Beam	None	A36	Typical
26	MP026	N043	N044		PIPE 2.0	Column	None	A500 Gr. C	Typical
27	U027	N036	N002		(1) 1/2 U-Bolt	Beam	None	A36	Typical
28	U028	N046	N006		(1) 1/2 U-Bolt	Beam	None	A36	Typical
29	U029	N048	N049		(2) 1/2 U-Bolts	Beam	None	A36	Typical
30	MP030	N050	N051		PIPE 2.5	Column	None	A500 Gr. C	Typical
31	U031	N037	N052		(1) 1/2 U-Bolt	Beam	None	A36	Typical
32	U032	N053	N054		(1) 1/2 U-Bolt	Beam	None	A36	Typical
33	U033	N055	N056		(2) 1/2 U-Bolts	Beam	None	A36	Typical
34	MP034	N057	N058		PIPE 2.0	Column	None	A500 Gr. C	Typical

Member Advanced Data

	Label	I Release	J Release	Physical	Deflection Ratio Options	Activation	Seismic DR
1	H001			Yes	N/A		None
2	H002			Yes	N/A		None
3	V003			Yes	** NA **		None
4	V004			Yes	** NA **		None
5	V005			Yes	** NA **		None
6	V006			Yes	** NA **		None
7	V007			Yes	** NA **		None



Company : American Tower Corp.
 Designer : Alan.Sambo
 Job Number : 13711909_C8_03
 Model Name : 311305, GLFD-GUILFORD REBU...

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Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Activation	Seismic DR
8	D008			Yes	** NA **		None
9	V009			Yes	** NA **		None
10	TB010	BenPIN		Yes	N/A		None
11	H011			Yes	Default		None
12	H012			Yes	Default		None
13	H013			Yes	Default		None
14	H014			Yes	Default		None
15	H015			Yes	N/A		None
16	H016			Yes	N/A		None
17	H017			Yes	N/A		None
18	H018			Yes	** NA **		None
19	H019			Yes	** NA **		None
20	D020	BenPIN	BenPIN	Yes	** NA **		None
21	D021	BenPIN	BenPIN	Yes	** NA **		None
22	TB022		BenPIN	Yes	N/A		None
23	U023	OOOXOO		Yes	Default	Exclude	None
24	U024	OOOXOO		Yes	Default	Exclude	None
25	U025			Yes	Default	Exclude	None
26	MP026			Yes	** NA **		None
27	U027	OOOXOO		Yes	Default	Exclude	None
28	U028	OOOXOO		Yes	Default	Exclude	None
29	U029			Yes	Default	Exclude	None
30	MP030			Yes	** NA **		None
31	U031	OOOXOO		Yes	Default	Exclude	None
32	U032	OOOXOO		Yes	Default	Exclude	None
33	U033			Yes	Default	Exclude	None
34	MP034			Yes	** NA **		None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lcomp top [in]	K y-y	K z-z	Function
1	H001	L3X3X6	39	Lbyy	0.65	0.65	Lateral
2	H002	L3X3X6	39	Lbyy	0.65	0.65	Lateral
3	V003	HSS2.375X0.125	39	Lbyy	0.65	0.65	Lateral
4	V004	HSS2.375X0.125	39	Lbyy	0.65	0.65	Lateral
5	V005	HSS2.375X0.125	39	Lbyy	0.65	0.65	Lateral
6	V006	HSS2.375X0.125	39	Lbyy	0.65	0.65	Lateral
7	V007	HSS2.375X0.125	39	Lbyy	0.65	0.65	Lateral
8	D008	SR 0.75	45.793	Lbyy	0.65	0.65	Lateral
9	V009	HSS2.375X0.125	39	Lbyy	0.65	0.65	Lateral
10	TB010	HSS2.375X0.125	70.036	Lbyy	1	1	Lateral
11	H011	L3X3X3	63	Lbyy	1	1	Lateral
12	H012	L3X3X3	63	Lbyy	1	1	Lateral
13	H013	L3X3X3	63	Lbyy	1	1	Lateral
14	H014	L3X3X3	63	Lbyy	1	1	Lateral
15	H015	PL7X0.375	9	Lbyy	1	1	Lateral
16	H016	PL7X0.375	9	Lbyy	1	1	Lateral
17	H017	PIPE 2.0	144	Lbyy	1	1	Lateral
18	D020	L2.5X2.5X3	49.84	Lbyy	1	1	Lateral
19	D021	L2.5X2.5X3	49.84	Lbyy	1	1	Lateral
20	TB022	PIPE 2.0	60	Lbyy	1	1	Lateral
21	U023	(1) 1/2 U-Bolt	3	Lbyy	0.5	0.5	Lateral
22	U024	(1) 1/2 U-Bolt	3	Lbyy	0.5	0.5	Lateral
23	U025	(2) 1/2 U-Bolts	3	Lbyy	0.5	0.5	Lateral
24	MP026	PIPE 2.0	72	Lbyy	2.1	2.1	Lateral
25	U027	(1) 1/2 U-Bolt	3	Lbyy	0.5	0.5	Lateral



Company : American Tower Corp.
Designer : Alan.Sambo
Job Number : 13711909_C8_03
Model Name : 311305, GLFD-GUILFORD REBU...

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Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lcomp top [in]	K y-y	K z-z	Function
26	U028	(1) 1/2 U-Bolt	3	Lbyy	0.5	0.5	Lateral
27	U029	(2) 1/2 U-Bolts	3	Lbyy	0.5	0.5	Lateral
28	MP030	PIPE 2.5	96	Lbyy	2.1	2.1	Lateral
29	U031	(1) 1/2 U-Bolt	3	Lbyy	0.5	0.5	Lateral
30	U032	(1) 1/2 U-Bolt	3	Lbyy	0.5	0.5	Lateral
31	U033	(2) 1/2 U-Bolts	3	Lbyy	0.5	0.5	Lateral
32	MP034	PIPE 2.0	72	Lbyy	2.1	2.1	Lateral

Hot Rolled Steel Properties

	Label	E [psi]	G [psi]	Nu	Therm. Coeff. [1e ⁶ °F ⁻¹]	Density [lb/ft ³]	Yield [psi]	Ry	Fu [psi]	Rt
1	A572-50	2.9e+07	1.115e+07	0.3	0.65	490	50000	1.1	65000	1.1
2	A500 Gr. C	2.9e+07	1.115e+07	0.3	0.65	490	46000	1.4	62000	1.3
3	A36	2.9e+07	1.115e+07	0.3	0.65	490	36000	1.5	58000	1.2
4	A53 Gr. B	2.9e+07	1.115e+07	0.3	0.65	490	35000	1.6	60000	1.2

Envelope Node Reactions

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N001	max	50.572	99	1021.515	37	614.003	16	33.15	19	0	107	45.46	76
2		min	-52.007	81	-72.402	19	-1752.459	10	-411.391	37	0	1	-40.779	106
3	N005	max	381.27	76	966.52	37	2024.729	106	15.147	19	0	107	44.579	76
4		min	-355.656	106	-15.798	19	-449.646	18	-406.218	37	0	1	-40.045	106
5	N021	max	691.432	74	23.832	34	667.326	74	0	107	0	107	0	107
6		min	-375.626	104	-9.225	74	-343.89	104	0	1	0	1	0	1
7	N027	max	684.334	98	806.009	7	2404.895	25	341.64	25	51.757	18	139.285	79
8		min	-1022.953	80	-680.465	25	-2829.219	7	-403.94	7	-68.19	80	-93.366	98
9	N034	max	893.926	6	385.412	71	1157.093	6	0	107	0	107	0	107
10		min	-912.931	24	8.542	50	-1159.597	24	0	1	0	1	0	1
11	Totals:	max	1897.304	18	2073.287	30	2477.576	2						
12		min	-1897.304	12	719.431	24	-2477.576	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	L3X3X6	0.355	30.062	36	0.122	5.688	z	73	82612.041	94950	3204.719	7392.123	1.5	H2-1
2	H002	L3X3X6	0.362	30.062	107	0.095	5.688	y	74	82612.041	94950	3204.719	7392.123	1.5	H2-1
3	V003	HSS2.375X0.125	0.47	0	72	0.214	17.875		74	31847.986	34072.2	2042.4	2042.4	2.15	H1-1b
4	V004	HSS2.375X0.125	0.266	0	83	0.2	0		74	31847.986	34072.2	2042.4	2042.4	2.26	H1-1b
5	V005	HSS2.375X0.125	0.285	39	107	0.14	39		76	31847.986	34072.2	2042.4	2042.4	2.262	H1-1b
6	V006	HSS2.375X0.125	0.384	0	106	0.097	0		106	31847.986	34072.2	2042.4	2042.4	2.271	H1-1b
7	V007	HSS2.375X0.125	0.077	39	75	0.183	0		76	31847.986	34072.2	2042.4	2042.4	2.171	H1-1b
8	D008	SR 0.75	0.16	45.793	36	0.018	0		74	3960.314	19880.391	248.505	248.505	1.999	H1-1b*
9	V009	HSS2.375X0.125	0.236	0	107	0.228	0		76	31847.986	34072.2	2042.4	2042.4	1.987	H1-1b
10	TB010	HSS2.375X0.125	0.047	70.036	74	0.003	70.036		7	20352.636	34072.2	2042.4	2042.4	1.136	H1-1b*
11	H011	L3X3X3	0.386	51.188	73	0.08	51.188	y	74	21067.774	49050	1637.69	3213.199	1.5	H2-1
12	H012	L3X3X3	0.411	0	12	0.033	0	z	104	21067.774	49050	1637.69	3213.199	1.5	H2-1
13	H013	L3X3X3	0.355	12.469	83	0.063	59.719	y	74	21067.774	49050	1637.69	3213.199	1.5	H2-1
14	H014	L3X3X3	0.43	0	107	0.037	0	z	106	21067.774	49050	1637.69	3213.199	1.5	H2-1
15	H015	PL7X0.375	0.628	0	37	0.099	0	y	76	59107.687	85050	664.453	12403.125	1.676	H1-1b
16	H016	PL7X0.375	0.629	0	37	0.09	9	y	76	59107.687	85050	664.453	12403.125	1.69	H1-1b
17	H017	PIPE 2.0	0.715	99	19	0.272	45		76	6830.97	32130	1871.625	1871.625	1.482	H1-1a
18	D020	L2.5X2.5X3	0.126	24.401	13	0.043	49.84	y	106	16627.134	29192.4	872.574	1697.692	1.136	H2-1
19	D021	L2.5X2.5X3	0.097	24.92	6	0.047	49.84	z	74	16627.134	29192.4	872.574	1697.692	1.136	H2-1
20	TB022	PIPE 2.0	0.061	0	6	0.003	60		6	23808.54	32130	1871.625	1871.625	1.136	H1-1b*



Company : American Tower Corp.
 Designer : Alan.Sambo
 Job Number : 13711909_C8_03
 Model Name : 311305, GLFD-GUILFORD REBU...

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

Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
21	MP026	PIPE 2.0	0.294	18	78	0.146	30	73	6195.892	42228	2459.85	2459.85	1.683	H1-1b
22	MP030	PIPE 2.5	0.38	33	13	0.304	45	76	8059.847	66654	4726.5	4726.5	2.424	H1-1b
23	MP034	PIPE 2.0	0.237	18	103	0.082	30	4	6195.892	42228	2459.85	2459.85	1.875	H1-1b

RAN Template: 67D5A998E Outdoor	A&L Template: 67D5998E_1xAIR+1OP+1QP
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CT11028A_Anchor_7_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: Anchor_Phase 3
 Radio Upgrade_CMP4 AIR32

Section 1 - Site Information

Site ID: CT11028A
Status: Draft
Version: 7
Project Type: Anchor
Approved: Not Approved
Approved By: Not Approved
Last Modified: 7/8/2021 12:8:46 PM
Last Modified By: Hansraj.Rana4@T-Mobile.com

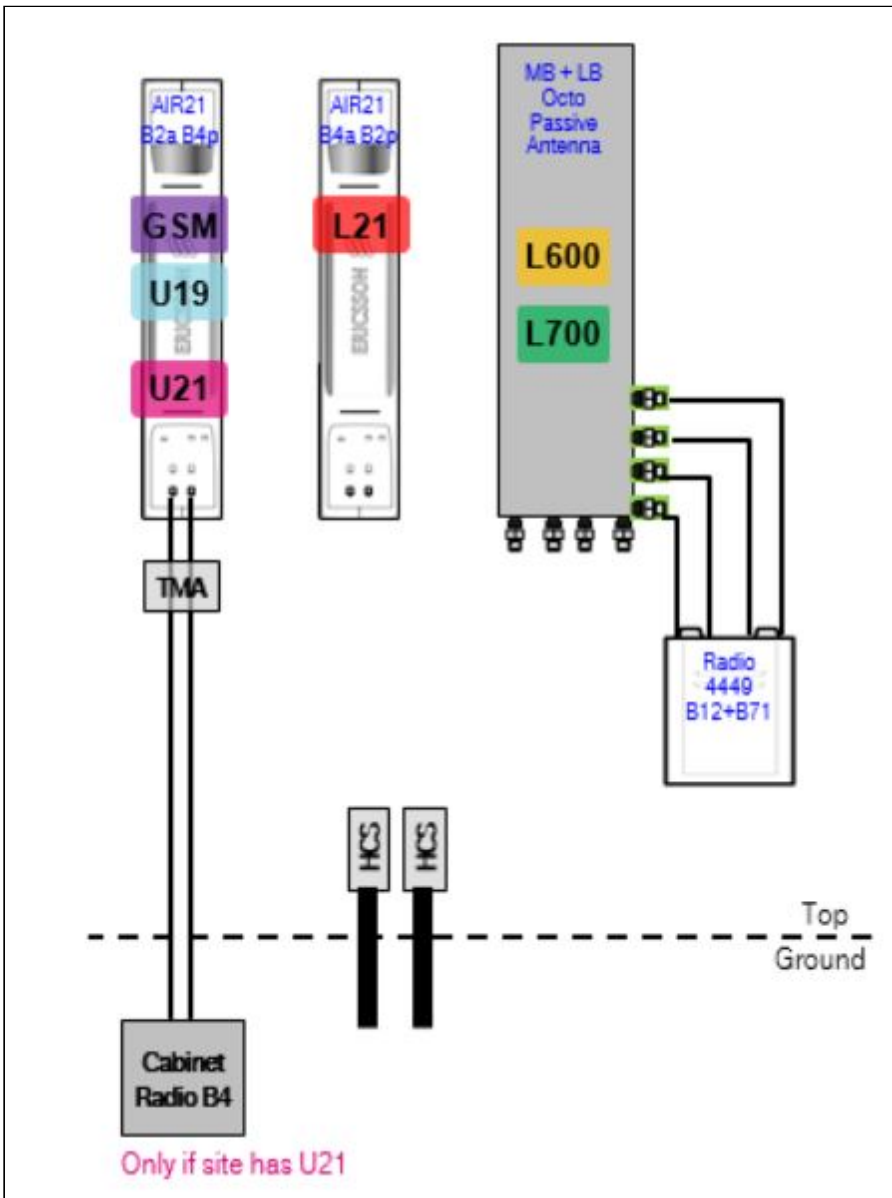
Site Name: Guilford SNET Mobilit_1
Site Class: Monopole
Site Type: Structure Non Building
Plan Year: 2021
Market: CONNECTICUT CT
Vendor: Ericsson
Landlord: SNET Mobility

Latitude: 41.28877600
Longitude: -72.65837800
Address: 119 Tanner Marsh Road.
City, State: Guilford, CT
Region: NORTHEAST

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

Section 2 - Existing Template Images

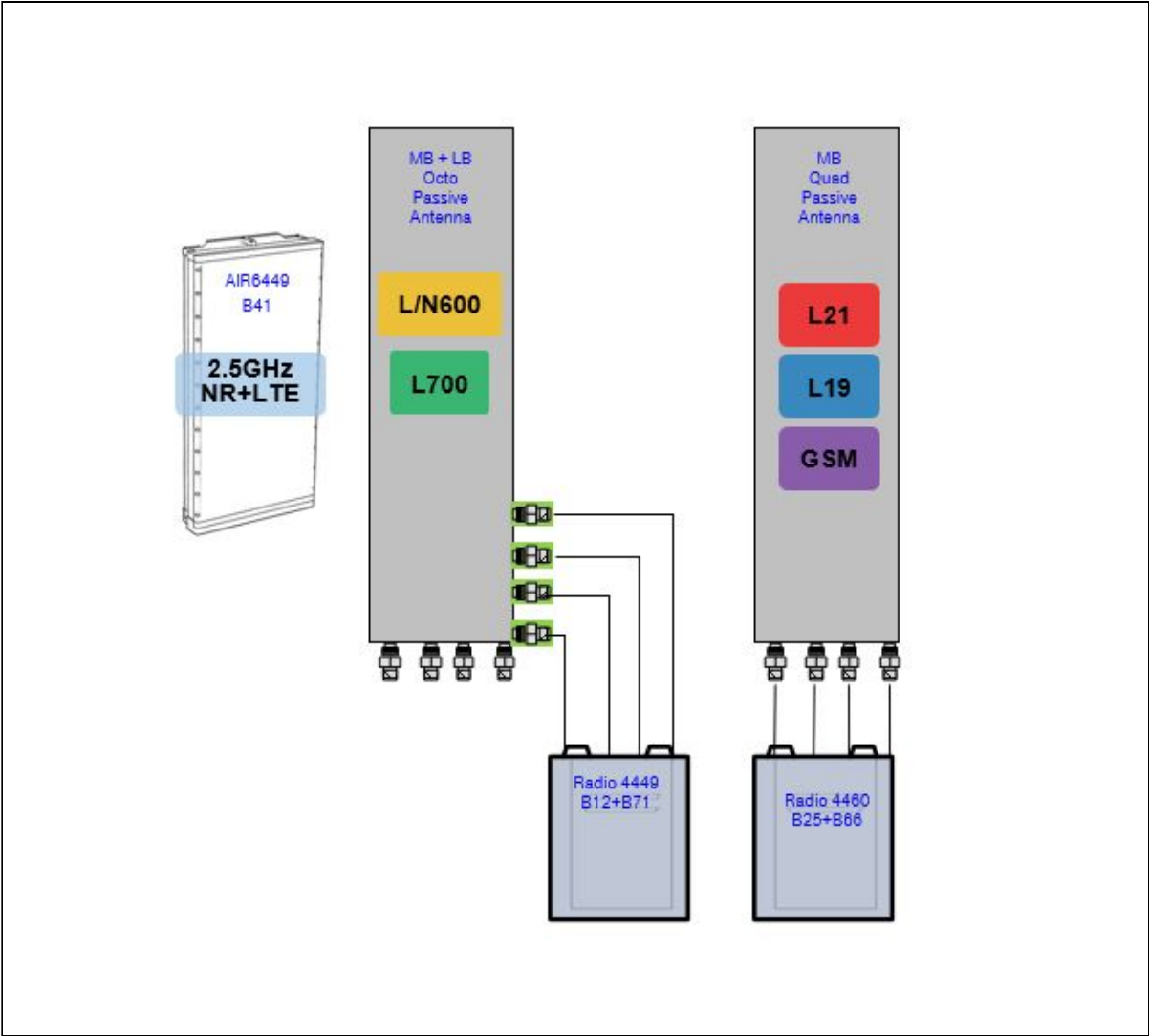
67D02C.JPG



Notes:

Section 3 - Proposed Template Images

67D5998E_1xAIR+1OP+1QP.JPG



Notes:

Section 4 - Siteplan Images

----- This section is intentionally blank. -----

RAN Template: 67D5A998E Outdoor	A&L Template: 67D5998E_1xAIR+1OP+1QP
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CT11028A_Anchor_7_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: Anchor_Phase 3
 Radio Upgrade_CMP4 AIR32

Section 5 - RAN Equipment

Existing RAN Equipment

Template: 67D92C Outdoor

Enclosure	1	2
Enclosure Type	RBS 6131	S8000 Outdoor
Baseband	DUW30 U2100 DUG20 G1900 BB 6630 L2100 L1900 BB 6648 N600 L600 L700	
Hybrid Cable System	Ericsson Hybrid Trunk 6/24 4AWG 100m (x 2)	
Radio	RU22 (x 6) U2100	

Proposed RAN Equipment

Template: 67D5A998E Outdoor

Enclosure	1	2	3
Enclosure Type	RBS 6131	Enclosure 6160	B160
Baseband	DUG20 G1900 BB 6630 L2100 L1900 BB 6648 L700 L600 N600 DUW30 U2100	BB 6648 L2500 N2500	
Hybrid Cable System	Ericsson Hybrid Trunk 6/24 4AWG 100m (x 2)	PSU 4813 Ericsson Hybrid Trunk 6/24 4AWG 100m	
Transport System		CSR IXRe V2 (Gen2)	

RAN Scope of Work:

Remove Nortel Cabinet.

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

Add (1) Enclosure 6160.

Add (1) iXRe Router to new Enclosure 6160.

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

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

Add (1) Battery Cabinet B160.

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

Section 6 - A&L Equipment

Existing Template: 67D92C_2xAIR+1OP
Proposed Template: 67D5998E_1xAIR+1OP+1QP

Sector 1 (Existing) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2				3	
Antenna Model	Ericsson - AIR21 KRC118023-1_B2P_B4A (Quad)		RFS - APXVAALL24_43-U-NA20 (Octo)				Ericsson - AIR21 KRC118023-1_B2A_B4P (Quad)	
Azimuth	60		60				60	
M. Tilt	0		0				0	
Height	177		177				177	
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	L2100		N600 L600 L700	N600 L600 L700			G1900 L1900	U2100
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt	2		2				2	2
Cables	Fiber Jumper - 15 ft. (x2)		Fiber Jumper - 15 ft.				Fiber Jumper - 15 ft. (x2) 1-5/8" LMU Coax - 180 ft. (x2)	1-5/8" Coax - 180 ft. (x2)
TMA's								Generic Twin Style 1B - AWS (AtAntenna)
Diplexers / Combiners								
Radio			Radio 4449 B71+B8 5 (At Antenna)	SHARED Radio 4449 B71+B8 5 (At Antenna)				
Sector Equipment								

Unconnected Equipment:

Scope of Work:

*** Existing: 3 mounts per sector. B4A is in Position 1 ***
Replace LB Dual in Position 2 with (1) LB/MB Octo.
Replace RRUS11 B12 with (1) Radio 4449 B71+B12 for L600 and L700 in Position 2 at antenna.

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

Sector 1 (Proposed) view from behind						
Coverage Type	A - Outdoor Macro					
Antenna	1			2		
Antenna Model	Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)			RFS - APXVAALL24_43-U-NA20 (Octo)		
Azimuth	60			60		
M. Tilt	0			0		
Height	177			177		
Ports	P1	P2	P3	P4	P5	P6
Active Tech.	L2500 N2500	L2500 N2500	L700 L600 N600	L700 L600 N600	L2100 L1900 G1900 U2100	L2100 L1900 G1900 U2100
Dark Tech.						
Restricted Tech.						
Decomm. Tech.						
E. Tilt	2	2	2	2	2	2
Cables	Fiber Jumper (x2)	Fiber Jumper (x2)	Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper
TMA's						
Diplexers / Combiners						
Radio			Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)
Sector Equipment						
Unconnected Equipment:						
Scope of Work:						
There will be two antennae per sector. Remove all TMA's. Remove all Coaxial Lines. Remove AIR21 B2P/B4A from Position 1. Install (1) Antenna AIR6449 B41 for L2500 and N2500 in Position 1. Add (1) Radio 4460 B25+B66 for L2100, L1900, U2100, and GSM to Position 2 at antenna with Octo Port. Remove AIR21 B2A/B4P from Position 3. Ensure RET control is enabled for all technology layers according to the Design Documents.						
*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.						

RAN Template:
67D5A998E Outdoor

A&L Template:
67D5998E_1xAIR+10P+1QP

CT11028A_Anchor_7_draft

Print Name: Preliminary (RFDS_for_Scoping)

PORs: Anchor_Phase 3
Radio Upgrade_CMP4 AIR32

Sector 2 (Existing) view from behind								
Coverage Type	A - Outdoor Macro							
Antenna	1		2				3	
Antenna Model	Ericsson - AIR21 KRC118023-1_B2P_B4A (Quad)		RFS - APXVAALL24_43-U-NA20 (Octo)				Ericsson - AIR21 KRC118023-1_B2A_B4P (Quad)	
Azimuth	(180)		(180)				(180)	
M. Tilt	(0)		(0)				(0)	
Height	(177)		(177)				(177)	
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	L2100		N600 L600 L700	N600 L600 L700			G1900 L1900	U2100
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt	(2)		(2)				(2)	(2)
Cables	Fiber Jumper - 15 ft. (x2)		Fiber Jumper - 15 ft.				Fiber Jumper - 15 ft. (x2) 1-5/8" LMU Coax - 180 ft. (x2)	1-5/8" Coax - 180 ft. (x2)
TMA's								Generic Twin Style 1B - AWS (AtAntenna)
Diplexers / Combiners								
Radio			Radio 4449 B71+B8 5 (At Antenna)	SHARED Radio 4449 B71+B8 5 (At Antenna)				
Sector Equipment								

Unconnected Equipment:

Scope of Work:

*** Existing: 3 mounts per sector. B4A is in Position 1 ***

Replace LB Dual in Position 2 with (1) LB/MB Octo.
Replace RRUS11 B12 with (1) Radio 4449 B71+B12 for L600 and L700 in Position 2 at antenna.

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

Sector 2 (Proposed) view from behind						
Coverage Type	A - Outdoor Macro					
Antenna	1			2		
Antenna Model	Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)			RFS - APXVAALL24_43-U-NA20 (Octo)		
Azimuth	180			180		
M. Tilt	0			0		
Height	177			177		
Ports	P1	P2	P3	P4	P5	P6
Active Tech.	L2500 N2500	L2500 N2500	L700 L600 N600	L700 L600 N600	L2100 L1900 G1900 U2100	L2100 L1900 G1900 U2100
Dark Tech.						
Restricted Tech.						
Decomm. Tech.						
E. Tilt	2	2	2	2	2	2
Cables	Fiber Jumper (x2)	Fiber Jumper (x2)	Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper
TMA's						
Diplexers / Combiners						
Radio			Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)
Sector Equipment						
Unconnected Equipment:						
Scope of Work:						
There will be two antennae per sector. Remove all TMA's. Remove all Coaxial Lines. Remove AIR21 B2P/B4A from Position 1. Install (1) Antenna AIR6449 B41 for L2500 and N2500 in Position 1. Add (1) Radio 4460 B25+B66 for L2100, L1900, U2100, and GSM to Position 2 at antenna with Octo Port. Remove AIR21 B2A/B4P from Position 3. Ensure RET control is enabled for all technology layers according to the Design Documents.						
*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.						

RAN Template: 67D5A998E Outdoor	A&L Template: 67D5998E_1xAIR+10P+1QP
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CT11028A_Anchor_7_draft

Print Name: Preliminary (RFDS_for_Scoping)
PORs: Anchor_Phase 3
 Radio Upgrade_CMP4 AIR32

Sector 3 (Existing) view from behind										
Coverage Type	A - Outdoor Macro									
Antenna	1			2			3			
Antenna Model	Ericsson - AIR21 KRC118023-1_B2P_B4A (Quad)			RFS - APXVAALL24_43-U-NA20 (Octo)			Ericsson - AIR21 KRC118023-1_B2A_B4P (Quad)			
Azimuth	300			300			300			
M. Tilt	0			0			0			
Height	177			177			177			
Ports	P1		P2		P3	P4	P5	P6	P7 P8	
Active Tech.	L2100				N600 L600 L700	N600 L600 L700			G1900 L1900 U2100	
Dark Tech.										
Restricted Tech.										
Decomm. Tech.										
E. Tilt	2				2				2 2	
Cables	Fiber Jumper - 15 ft. (x2)				Fiber Jumper - 15 ft.				Fiber Jumper - 15 ft. (x2) 1-5/8" LMU Coax - 180 ft. (x2)	
TMA's									Generic Twin Style 1B - AWS (AtAntenna)	
Diplexers / Combiners										
Radio					Radio 4449 B71+B8 5 (At Antenna)	SHARED Radio 4449 B71+B8 5 (At Antenna)				
Sector Equipment										

Unconnected Equipment:**Scope of Work:**

*** Existing: 3 mounts per sector. B4A is in Position 1 ***

Replace LB Dual in Position 2 with (1) LB/MB Octo.
 Replace RRUS11 B12 with (1) Radio 4449 B71+B12 for L600 and L700 in Position 2 at antenna.

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

Sector 3 (Proposed) view from behind						
Coverage Type	A - Outdoor Macro					
Antenna	1			2		
Antenna Model	Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)			RFS - APXVAALL24_43-U-NA20 (Octo)		
Azimuth	300			300		
M. Tilt	0			0		
Height	177			177		
Ports	P1	P2	P3	P4	P5	P6
Active Tech.	L2500 N2500	L2500 N2500	L700 L600 N600	L700 L600 N600	L2100 L1900 G1900 U2100	L2100 L1900 G1900 U2100
Dark Tech.						
Restricted Tech.						
Decomm. Tech.						
E. Tilt	2	2	2	2	2	2
Cables	Fiber Jumper (x2)	Fiber Jumper (x2)	Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper
TMA's						
Diplexers / Combiners						
Radio			Radio 4449 B71+B85 (At Antenna)	SHARED Radio 4449 B71+B85 (At Antenna)	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)
Sector Equipment						

Unconnected Equipment:

Scope of Work:

There will be two antennae per sector.

Remove all TMA's.

Remove all Coaxial Lines.

Remove AIR21 B2P/B4A from Position 1.

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

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

Remove AIR21 B2A/B4P from Position 3.

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

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

Section 7 - Power Systems Equipment	
Existing Power Systems Equipment	
----- This section is intentionally blank. -----	
Proposed Power Systems Equipment	
Enclosure	1
Enclosure Type	Enclosure 6160

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

T-Mobile Existing Facility

Site ID: CT11028A

**Guilford SNET Mobilit_I
119 Tanner Marsh Road
Guilford, Connecticut 06437**

September 8, 2021

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	72.20%



September 8, 2021

T-Mobile

Attn: Jason Overbey, RF Manager

35 Griffin Road South

Bloomfield, Connecticut 06002

Emissions Analysis for Site: CT11028A - Guilford SNET Mobilit_I

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **119 Tanner Marsh Road in Guilford, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

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



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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 119 Tanner Marsh Road in Guilford, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower. For power density calculations, the broadcast footprint of the AIR6449 antenna has been considered. Due to the beamforming nature of this antenna, the actual beam locations vary depending on demand and are narrow in nature. Using the broadcast footprint accounts for the potential location of beams at any given time.

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

- 1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.
- 3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 4) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 5) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.



- 6) 2 UMTS channels (AWS Band - 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 7) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 8) 1 LTE Traffic channel (LTE IC and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 60 Watts.
- 9) 1 LTE Broadcast channel (LTE IC and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 20 Watts.
- 10) 1 NR Traffic channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.
- 11) 1 NR Broadcast channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts.
- 12) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 13) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 14) The antennas used in this modeling are the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz channel(s) in Sector A, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz channel(s) in Sector B, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz channel(s)



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

- 15) The antenna mounting height centerline of the proposed antennas is 177 feet above ground level (AGL).
- 16) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 17) All calculations were done with respect to uncontrolled / general population threshold limits.



T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd
Height (AGL):	177 feet	Height (AGL):	177 feet	Height (AGL):	177 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	36,356.09	ERP (W):	36,356.09	ERP (W):	36,356.09
Antenna A1 MPE %:	4.47%	Antenna B1 MPE %:	4.47%	Antenna C1 MPE %:	4.47%
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd / 16.45 dBd
Height (AGL):	177 feet	Height (AGL):	177 feet	Height (AGL):	177 feet
Channel Count:	15	Channel Count:	15	Channel Count:	15
Total TX Power (W):	620 Watts	Total TX Power (W):	620 Watts	Total TX Power (W):	620 Watts
ERP (W):	20,518.14	ERP (W):	20,518.14	ERP (W):	20,518.14
Antenna A2 MPE %:	3.23%	Antenna B2 MPE %:	3.23%	Antenna C2 MPE %:	3.23%

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	7.70%
AT&T	3.12%
Metro PCS	0.26%
Various Others	61.12%
Site Total MPE % :	72.20%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	7.70%
T-Mobile Sector B Total:	7.70%
T-Mobile Sector C Total:	7.70%
Site Total MPE % :	72.20%

T-Mobile Maximum MPE Power Values (Sector A)							
T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile 2500 MHz LTE IC & 2C Traffic	1	11044.63	177.0	13.58	2500 MHz LTE IC & 2C Traffic	1000	1.36%
T-Mobile 2500 MHz LTE IC & 2C Broadcast	1	1074.06	177.0	1.32	2500 MHz LTE IC & 2C Broadcast	1000	0.13%
T-Mobile 2500 MHz NR Traffic	1	22089.26	177.0	27.16	2500 MHz NR Traffic	1000	2.72%
T-Mobile 2500 MHz NR Broadcast	1	2148.13	177.0	2.64	2500 MHz NR Broadcast	1000	0.26%
T-Mobile 600 MHz LTE	2	591.73	177.0	1.46	600 MHz LTE	400	0.36%
T-Mobile 600 MHz NR	1	1577.94	177.0	1.94	600 MHz NR	400	0.49%
T-Mobile 700 MHz LTE	2	695.22	177.0	1.71	700 MHz LTE	467	0.37%
T-Mobile 1900 MHz GSM	4	1052.26	177.0	5.17	1900 MHz GSM	1000	0.52%
T-Mobile 1900 MHz LTE	2	2104.51	177.0	5.17	1900 MHz LTE	1000	0.52%
T-Mobile 2100 MHz UMTS	2	1324.71	177.0	3.26	2100 MHz UMTS	1000	0.33%
T-Mobile 2100 MHz LTE	2	2649.42	177.0	6.51	2100 MHz LTE	1000	0.65%
						Total:	7.70%

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

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	7.70%
Sector B:	7.70%
Sector C:	7.70%
T-Mobile Maximum MPE % (Sector A):	7.70%
Site Total:	72.20%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **72.20%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

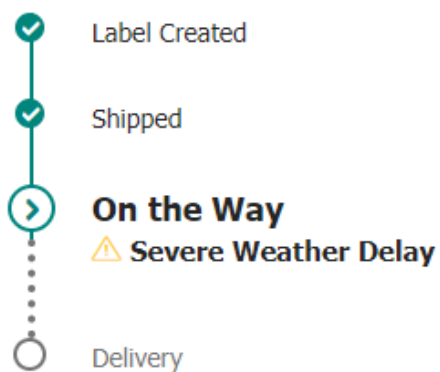
FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100%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

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Your shipment
1ZV257420399665304

Estimated delivery

Check back tomorrow for an updated delivery date.



Ship To
WOBURN, MA US

Hello, your package has been delivered.

Delivery Date: Thursday, 09/09/2021

Delivery Time: 10:18 AM

Left At: FRONT DESK

Signed by: QUERCIA

TRANSCEND WIRELESS

Tracking Number: [1ZV257420391670296](#)

Ship To: MATTHEW HOEY III
31 PARK STREET
GUILFORD, CT 06437
US

Number of Packages: 1

UPS Service: UPS Ground

Package Weight: 1.0 LBS

Reference Number: [CT11028A](#)

Hello, your package has been delivered.

Delivery Date: Thursday, 09/09/2021

Delivery Time: 10:21 AM

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Signed by: SAM

TRANSCEND WIRELESS

Tracking Number: [1ZV257420394792300](#)

Ship To: GEORGE KRAL
50 BOSTON STREET
GUILFORD, CT 06437
US

Number of Packages: 1

UPS Service: UPS Ground

Package Weight: 1.0 LBS

Reference Number: [CT11028A](#)