CROWN CASTLE

1 Cityplace Dr, Suite 490

Creve Coeur, MO 63141

Phone: (314) 513-0147

www.crowncastle.com

July 22, 2022

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

RE: **Notice of Exempt Modification for AT&T**
Crown Site ID: #881535; AT&T Site ID: #CTL02093
425 Indian Ledge Park Road, Trumbull, CT 06611
Latitude: 41.273281 / Longitude: -73.213106

Dear Ms. Bachman:

AT&T currently maintains (9) antennas at the 187-foot mount on the existing 195-foot Monopole Tower located at **425 Indian Ledge Park Road.** The property is owned by the Town of Trumbull and the Tower by Crown Castle. AT&T now intends to relocate three (3) antennas, remove three (3) antennas, and add nine (9) new antennas. This modification/proposal includes hardware that is both 4G (LTE) and 5G capable through remote software configuration and either or both services may be turned on or off at various times.

Planned Modifications:

Tower:

REMOVE AND RELOCATE:
(3) AT&T RRHs- Ericsson – RRUS-32 B30 **(RELOCATE)**
(3) AT&T Antennas- Kathrein – 800-10965 **(RELOCATE)**
(3) AT&T RRHs- Ericsson – RRUS 4449 B5/B12 **(RELOCATE)**
(2) AT&T Squid- Raycap – DC6-48-60-18-8F **(RELOCATE)**
(3) AT&T Antennas- CCI – HPA-65R-BUU-H6 **(REMOVE)**
(3) AT&T RRHs- Ericsson – RRUS-12 B2 + PRUS-A2 B25 **(REMOVE)**
(6) AT&T TMAs- PowerWave Tech – LGP21401 **(REMOVE)**
(3) AT&T Antennas- PowerWave – 7770 **(REMOVE)**
(1) Platform Mount **(REMOVE)**
(6) AT&T Feedlines- Coax Cables (1-5/8") **(REMOVE)**

INSTALL:
(3) AT&T Antennas- CCI – DMP65R-BU6EA-K
(3) AT&T RRHs- Ericsson – 8843 B2/B66A
(3) AT&T RRHs- Ericsson – RRUS 4478 B14
(6) AT&T Antennas- Ericsson – AIR6449 B77D (below) + AIR6419 B77G (above)
(6) AT&T Dual Radio Mount
(3) 2-1/2" SCH 40 (2-7/8" O.D.) X 6'-0" Long Galv. Pipe w/ Crossover Hardware

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(1) AT&T Squid- Raycap – DC6-48-60-18-8F Squid
(2) AT&T Feedlines- 6AWG DC Cables (7/8")
(1) AT&T Feedline- 18-Pair Fiber Cable (3/8")
(1) Mount Modifications per Mount Analysis by Kimley Horn dated May 2, 2022

Ground:

REMOVE:

AT&T Batteries from Battery Rack **(REMOVE)**
(3) AT&T Equipment- UMTS Radio & DUW **(REMOVE)**
(6) AT&T Diplexers- PowerWave Tech – LGP21901 **(REMOVE)**

INSTALL:

(5) AT&T 48V Strings of 170AH Batteries
(4) AT&T Equipment in DC Power Plant- Vertiv 48V DC Rectifiers
(1) AT&T Equipment in LTE Rack- 6601 w/ XMU w/ IDLe
(1) AT&T Equipment in LTE Rack- 6648 w/ XCEDE

Per email from the Town of Trumbull, there is no zoning approval on file. Please see attached Exhibit A for a copy of the email.

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 Vicki A. Tesoro, First Selectman for the Town of Trumbull, Rob Librandi, Town of Trumbull Land Use Planner/Interim Zoning Enforcement Officer, and the Town of Trumbull as the recorded property owner.

1. The proposed modifications will not result in an increase in the height of the existing tower.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modification 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 Communication 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.

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

Sincerely,

Ersilia Davis

Ersilia Davis
Crown Castle, Agent for AT&T
edavis@nbcllc.com
(551) 804-0667

cc:

Vicki A. Tesoro, First Selectman
5866 Main Street
Trumbull, CT 06611
(203) 452-5005
(Via FedEx)

Rob Librandi, Land Use Planner/Interim Zoning Enforcement Officer
5866 Main Street, 2nd Floor
Trumbull, CT 06611
(203) 452-5044
(Via FedEx)

Town of Trumbull, Owner
5866 Main Street
Trumbull, CT 06611
(Via FedEx)

Exhibit A

Original Facility Approval

Hanlon, Dashanna

From: Myl, Kimberly
Sent: Friday, March 11, 2016 9:34 AM
To: siting.council@ct.gov
Subject: Existing Telecommunications Tower - 425 Indian Ledge Park Road, Trumbull (Crown: 881535 / T-Mobile CT11961A)

Good Morning,
Please be advised per the below email from the Town of Trumbull and on behalf of Crown Castle the Tower Owner, neither party have the original zoning approval on file. Please use this email notification to replace that requirement. Please let me know if you have any questions or need additional information. Thank you in advance.

KIMBERLY MYL
Real Estate Specialist
T: (201) 236-9069 | M: (201) 993-3697

CROWN CASTLE
1200 MacArthur Blvd, Suite 200
Mahwah, NJ 07430

From: Gail Andreyka [mailto:gandreyka@trumbull-ct.gov]
Sent: Tuesday, March 08, 2016 9:48 AM
To: Myl, Kimberly
Cc: Douglas Wenz
Subject: RE: Zoning Approval - Telecommunications Tower 425 Indian Ledge Park Road

Hi Kim,

We cannot locate the zoning approval. They never came to Planning & Zoning with an application as far as we know. If you have any further questions, please contact Doug Wenz 203-452-5052.

Thank you,

Gail Andreyka

From: Myl, Kimberly [mailto:Kimberly.Myl@crowncastle.com]
Sent: Monday, February 29, 2016 12:45 PM
To: Gail Andreyka
Subject: Zoning Approval - Telecommunications Tower 425 Indian Ledge Park Road

Good Afternoon Gail,
I have another existing telecommunications facility that I will need a copy of the original zoning resolution to submit into the CSC. Can you kindly forward this over to me so I can submit on behalf of T-Mobile, one of our tenants. If you do not have this document, kindly reply stating that the township does not have this on record and I can use your email in place of this requirement. Please call or email me if you have any questions or need additional information. Thank you in advance.

KIMBERLY MYL
Real Estate Specialist
T: (201) 236-9069 | M: (201) 993-3697

Exhibit B

Property Card

425 INDIAN LEDGE PARK ROAD

Location	425 INDIAN LEDGE PARK ROAD	**Mblu**	F/05 / 00096/ 000/
Acct#		**Owner**	TRUMBULL TOWN OF
Assessment	$1,354,640	**Appraisal**	$1,935,200
PID	12730	**Building Count**	1
Fire District	T		

Current Value

Appraisal	
Valuation Year	**Total**
2021	$1,935,200
Assessment	
Valuation Year	**Total**
2021	$1,354,640

Owner of Record

Owner	TRUMBULL TOWN OF	**Sale Price**	$0
Co-Owner		**Book & Page**	1/ 466
Address	5866 MAIN STREET TRUMBULL, CT 06611	**Sale Date**	06/15/1989
		Instrument	

Ownership History

Ownership History				
Owner	**Sale Price**	**Book & Page**	**Instrument**	**Sale Date**
TRUMBULL TOWN OF	$0	1/ 466		06/15/1989

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0

Building Attributes	
Field	**Description**
Style	Outbuildings
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	

Roof Cover	
Interior Wall 1	
Interior Wall 2	
Floor Covering	
Alt. Floor Cover	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Total Kitchens	
Total Elec Meters	

Building Photo

F05-96 05/04/2015

(https://images.vgsi.com/photos2/TrumbullCTPhotos/\00\02\19/51.JPG)

Building Layout

Building Layout

(https://images.vgsi.com/photos2/TrumbullCTPhotos//Sketches/12730_127

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

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	921
Description	Mun Lnd Res
Zone	AA
Neighborhood	320
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	46.5
Frontage	
Depth	

Outbuildings

Outbuildings					Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Bldg #**
BHS1	Comm Bth Hse	CB	CindBk/Frame	200 S.F.	1

Valuation History

Appraisal	
Valuation Year	**Total**
2020	$1,886,600
2019	$1,886,600
2018	$1,886,600

Assessment

Valuation Year	Total
2020	$1,320,620
2019	$1,320,620
2018	$1,320,620

Exhibit C

Construction Drawings

AT&T

AT&T SITE NUMBER: CTL02093
AT&T SITE NAME: TRUMBULL INDIAN LEDGE
AT&T FA CODE: 10035413
AT&T PACE NUMBER: MRCTB054245, MRCTB056094, MRCTB056085, MRCTB054439, MRCTB055368
AT&T PROJECT: LTE 5C, 5G NR 1SR CBAND, 5G NR SOFTWARE UPGRADE, 5G NR 1DR-1

BUSINESS UNIT #: 881535
SITE ADDRESS: 425 INDIAN LEDGE PARK RD TRUMBULL , CT 06611
COUNTY: FAIRFIELD
SITE TYPE: MONOPOLE
TOWER HEIGHT: 195'-0"

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	TRUMBULL TOWER
SITE ADDRESS:	425 INDIAN LEDGE PARK RD TRUMBULL , CT 06611
COUNTY:	FAIRFIELD
MAP/PARCEL #:	F04-66
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.273281
LONGITUDE:	-73.213106
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	324'
CURRENT ZONING:	AA
JURISDICTION:	CONNECTICUT SITING COUNCIL
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	HOPKINS GERARD M & HOPKINS MARY JO 122 PUTTING GREEN RD TRUMBULL, CT 06611
TOWER OWNER:	CROWN CASTLE USA INC 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	AT&T TOWER ASSET GROUP 575 MOROSGO DRIVE ATLANTA, GA 30324-3300
ELECTRIC PROVIDER:	UNITED ILLUMINATING CO 800-722-5584
TELCO PROVIDER:	VERIZON 800-483-2000

PROJECT TEAM

A&E FIRM:	B+T GROUP 1717 S. BOULDER AVE. TULSA, OK 74119 MARVIN PHILLIPS marvin.phillips@btgrp.com
CROWN CASTLE USA INC. DISTRICT CONTACTS:	3530 TORINGDON WAY, SUITE 300 CHARLOTTE, NC 28277
	VERONICA CHAPMAN - PROJECT MANAGER VERONICA.CHAPMAN@CROWNCASTLE.COM
	JASON D'AMICO - CONSTRUCTION MANAGER JASON.DAMICO@CROWNCASTLE.COM

NOTE:
PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN NOC AT (800) 788-7011 & CROWN CONSTRUCTION MANAGER.

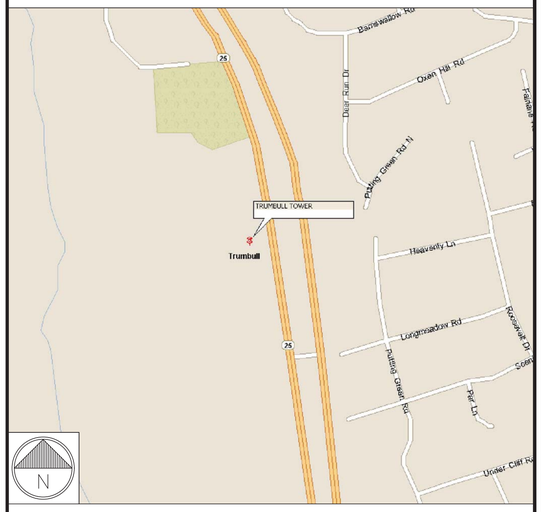
DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1.1	SITE PLAN
C-1.2	EQUIPMENT PLANS
C-2	TOWER ELEVATION & ANTENNA PLANS
C-3	ANTENNA SCHEDULE
C-4	EQUIPMENT DETAILS
C-5	EQUIPMENT SPECS.
G-1	GROUNDING DETAILS
G-2	GROUNDING DETAILS
ATTACHED	PLUMBING DIAGRAM

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR FULL SIZE. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

CALL CONNECTICUT ONE CALL
(800) 922-4455 CBYD.COM
CALL 2 WORKING DAYS
BEFORE YOU DIG!

LOCATION MAP



NO SCALE

SITE PHOTO

PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.

TOWER SCOPE OF WORK:
- REMOVE (3) POWERWAVE - 7770 ANTENNAS
- REMOVE (3) CCI - HPA-65R-BUU-H6 ANTENNAS
- REMOVE (3) ERICSSON RRUS-12 B2 + A2 RRHs
- REMOVE (6) POWERWAVE - LGP21401 TMAs
- REMOVE (6) COAX CABLES (1-5/8")
- RELOCATE (3) KATHREIN - 800-10965 ANTENNAS
- RELOCATE (3) ERICSSON - RRUS 4449 B5/B12 RRHs
- RELOCATE (3) ERICSSON RRUS-32 B30 RRHs
- INSTALL MOUNT MODIFICATIONS PER MOUNT ANALYSIS BY KIMLEY HORN DATED MAY 2, 2022
- INSTALL (6) ERICSSON - AIR6449 B77D (BELOW) + AIR6419 B77G (ABOVE) STACKED ANTENNAS
- INSTALL (3) CCI - DMP65R-BU6EA-K ANTENNAS
- INSTALL (6) DUAL RADIO MOUNTS
- INSTALL (3) ERICSSON - RRUS 4478 B14 RRHs
- INSTALL (3) ERICSSON - 8843 B2/B66A RRHs
- INSTALL (1) RAYCAP - DC6-48-60-18-8F SQUID
- INSTALL (2) 6AWG DC CABLES (7/8") & (1) 18-PAIR FIBER CABLE (3/8")
- INSTALL (6) Y-CABLES FOR DUAL BAND RADIOS

GROUND SCOPE OF WORK:
- REMOVE EXISTING BATTERIES
- REMOVE (6) POWERWAVE - LGP21901 DIPLEXERS
- REMOVE (3) UMTS RADIOS & DUW
- INSTALL (4) VERTIV 48V DC RECTIFIERS
- INSTALL (5) 48V STRINGS OF 170AH BATTERIES
- INSTALL (1) 6601 W/ IDLe & (1) 6648 W/ XCEDE

NOTE:
THE POWER DESIGN FOR ANY AC ELECTRICAL POWER CHANGES IS TO BE PERFORMED BY OTHERS AND IS SHOWN HERE FOR REFERENCE PURPOSES ONLY. AT&T IS SOLELY RESPONSIBLE FOR THE ELECTRICAL POWER DESIGN.

APPLICABLE CODES & REFERENCE DOCUMENTS

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

CODE TYPE	CODE
BUILDING	2018 CONNECTICUT SBC/2015 IBC
MECHANICAL	2018 CONNECTICUT SBC/2015 IMC
ELECTRICAL	2018 CONNECTICUT SBC/2017 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	BLACK & VEATCH
DATED:	3/30/22
MOUNT ANALYSIS:	KIMLEY HORN
DATED:	5/2/22
RFDS REVISION:	FINAL
DATED:	5/6/22
ORDER ID:	586252
REVISION:	0
AC ELECTRICAL POWER DESIGN:	BY OTHERS
DATED:	

AT&T
575 MOROSGO DRIVE
ATLANTA, GA 30324-3300

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

AT&T SITE NUMBER: **CTL02093**

BU #: **881535**
TRUMBULL TOWER

425 INDIAN LEDGE PARK RD
TRUMBULL , CT 06611

EXISTING
195'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	4/13/22	TDG	PRELIMINARY REVIEW	MTJ
0	5/17/22	TDG	CONSTRUCTION	MTJ

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

SHEET NUMBER: T-1
REVISION: 0

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED– NO WORK SHALL COMMENCE PRIOR TO CROWN CASTLE USA INC. WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN CASTLE USA INC. NOC AT 800–788–7011 & THE CROWN CASTLE USA INC. CONSTRUCTION MANAGER.
2. "LOOK UP" – CROWN CASTLE USA INC. SAFETY CLIMB REQUIREMENT:
   THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR CROWN CASTLE USA INC. POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.
3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND CROWN CASTLE USA INC. STANDARD CED–STD–10253, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA–322 (LATEST EDITION).
5. ALL SITE WORK TO COMPLY WITH QAS–STD–10068 "INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON CROWN CASTLE USA INC. TOWER SITE," CED–STD–10294 "STANDARD FOR INSTALLATION OF MOUNTS AND APPURTENANCES," AND LATEST VERSION OF ANSI/TIA–1019–A–2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY CROWN CASTLE USA INC. PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, TOWER OWNER, CROWN CASTLE USA INC., AND/OR LOCAL UTILITIES.
14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.
16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR: GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
   CARRIER: AT&T
   TOWER OWNER: CROWN CASTLE USA INC.
2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CROWN CASTLE.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND CROWN CASTLE PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION AND IS TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF CROWN CASTLE USA INC.
13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST–IN–PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.
4. CONCRETE EXPOSED TO FREEZE–THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER–TO–CEMENT RATIO (W/C) OF 0.45.
5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
   #4 BARS AND SMALLER.......40 ksi
   #5 BARS AND LARGER.......60 ksi
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
   CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.......3"
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 BARS AND LARGER.......2"
   #5 BARS AND SMALLER.......1–1/2"
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
   SLAB AND WALLS.......3/4"
   BEAMS AND COLUMNS.......1–1/2"
7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

GREENFIELD GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL–OF–POTENTAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.
7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON–ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON–METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON–METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD–WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY).

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
   4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
   4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERYIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).
7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
8. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI–CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI–CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP–STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
16. ELECTRICAL METALLIC TUBING (EMT) OR METAL–CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID–TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION–TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON–PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER–ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY–COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3R (OR BETTER) FOR EXTERIOR LOCATIONS.
25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY–COATED OR NON–CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR CROWN CASTLE USA INC. BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "AT&T".
30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

CONDUCTOR COLOR CODE		
SYSTEM	CONDUCTOR	COLOR
120/240V, 1Ø	A PHASE	BLACK
	B PHASE	RED
	NEUTRAL	WHITE
	GROUND	GREEN
120/208V, 3Ø	A PHASE	BLACK
	B PHASE	RED
	C PHASE	BLUE
	NEUTRAL	WHITE
	GROUND	GREEN
277/480V, 3Ø	A PHASE	BROWN
	B PHASE	ORANGE OR PURPLE
	C PHASE	YELLOW
	NEUTRAL	GREY
	GROUND	GREEN
DC VOLTAGE	POS (+)	RED**
	NEG (−)	BLACK**

* SEE NEC 210.5(C)(1) AND (2)
** POLARITY MARKED AT TERMINATION

APWA UNIFORM COLOR CODE:

WHITE	PROPOSED EXCAVATION
PINK	TEMPORARY SURVEY MARKINGS
RED	ELECTRIC POWER LINES, CABLES, CONDUIT, AND LIGHTING CABLES
YELLOW	GAS, OIL, STEAM, PETROLEUM, OR GASEOUS MATERIALS
ORANGE	COMMUNICATION, ALARM OR SIGNAL LINES, CABLES, OR CONDUIT AND TRAFFIC LOOPS
BLUE	POTABLE WATER
PURPLE	RECLAIMED WATER, IRRIGATION, AND SLURRY LINES
GREEN	SEWERS AND DRAIN LINES

ABBREVIATIONS:

ANT	ANTENNA
(E)	EXISTING
FIF	FACILITY INTERFACE FRAME
GEN	GENERATOR
GPS	GLOBAL POSITIONING SYSTEM
GSM	GLOBAL SYSTEM FOR MOBILE
LTE	LONG TERM EVOLUTION
MGB	MASTER GROUND BAR
MW	MICROWAVE
(N)	NEW
NEC	NATIONAL ELECTRIC CODE
(P)	PROPOSED
PP	POWER PLANT
QTY	QUANTITY
RECT	RECTIFIER
RBS	RADIO BASE STATION
RET	REMOTE ELECTRIC TILT
RFDS	RADIO FREQUENCY DATA SHEET
RRH	REMOTE RADIO HEAD
RRU	REMOTE RADIO UNIT
SIAD	SMART INTEGRATED DEVICE
TMA	TOWER MOUNTED AMPLIFIER
TYP	TYPICAL
UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
W.P.	WORK POINT

AT&T
575 MOROSGO DRIVE
ATLANTA, GA 30324-3300

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
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B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
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AT&T SITE NUMBER: **CTL02093**

BU #: **881535**
TRUMBULL TOWER

425 INDIAN LEDGE PARK RD
TRUMBULL , CT 06611

EXISTING
195'-0" MONOPOLE

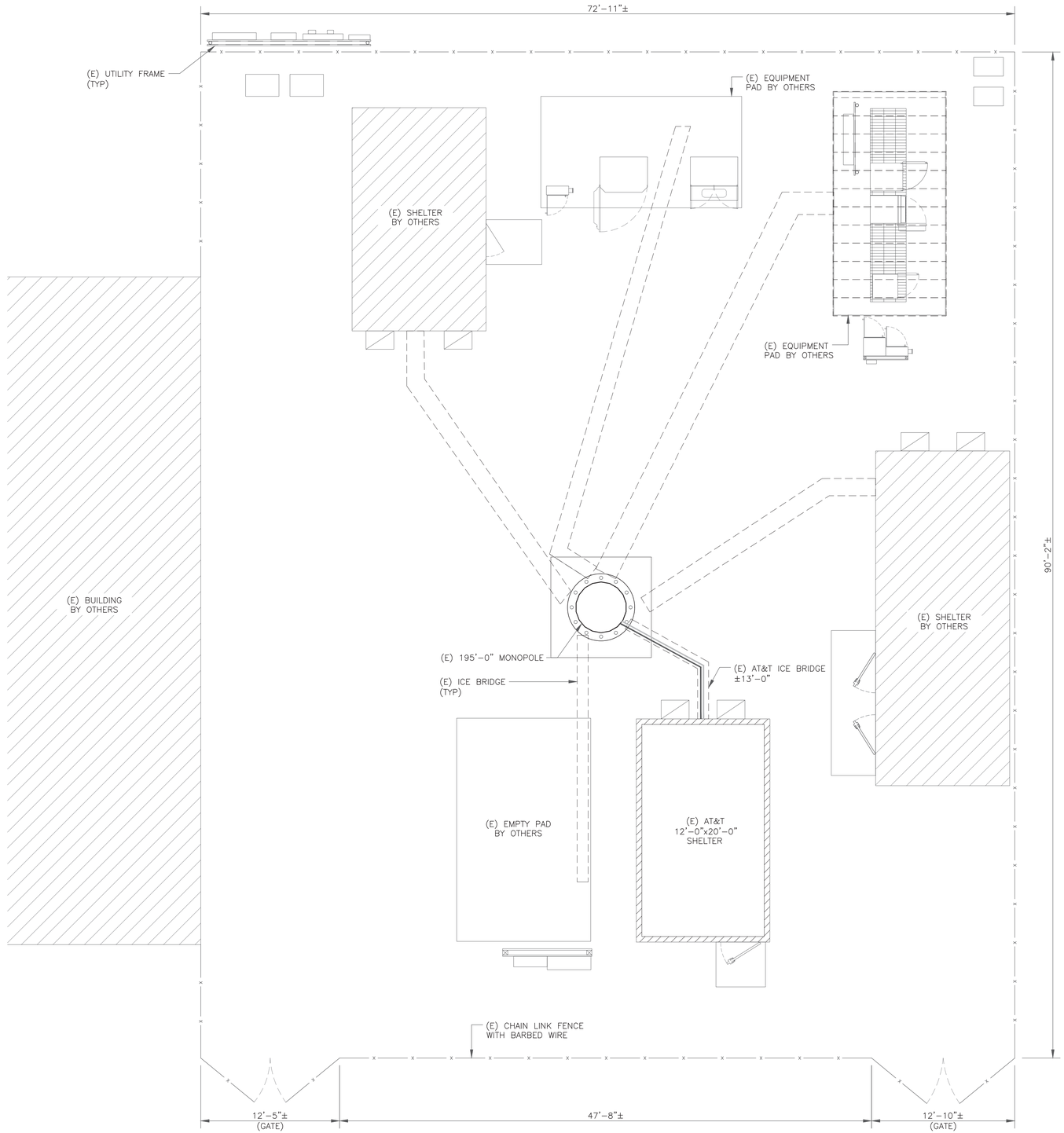
ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	4/13/22	TDG	PRELIMINARY REVIEW	MTJ
0	5/17/22	TDG	CONSTRUCTION	MTJ

STATE OF CONNECTICUT
No. 23924
LICENSED PROFESSIONAL ENGINEER
5/17/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

SHEET NUMBER:	REVISION:
T-2	0



1 SITE PLAN

SCALE: 4' 2' 0 4' 3/16"=1'-0" (FULL SIZE) 3/32"=1'-0" (11x17)

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ATLANTA, GA 30324-3300

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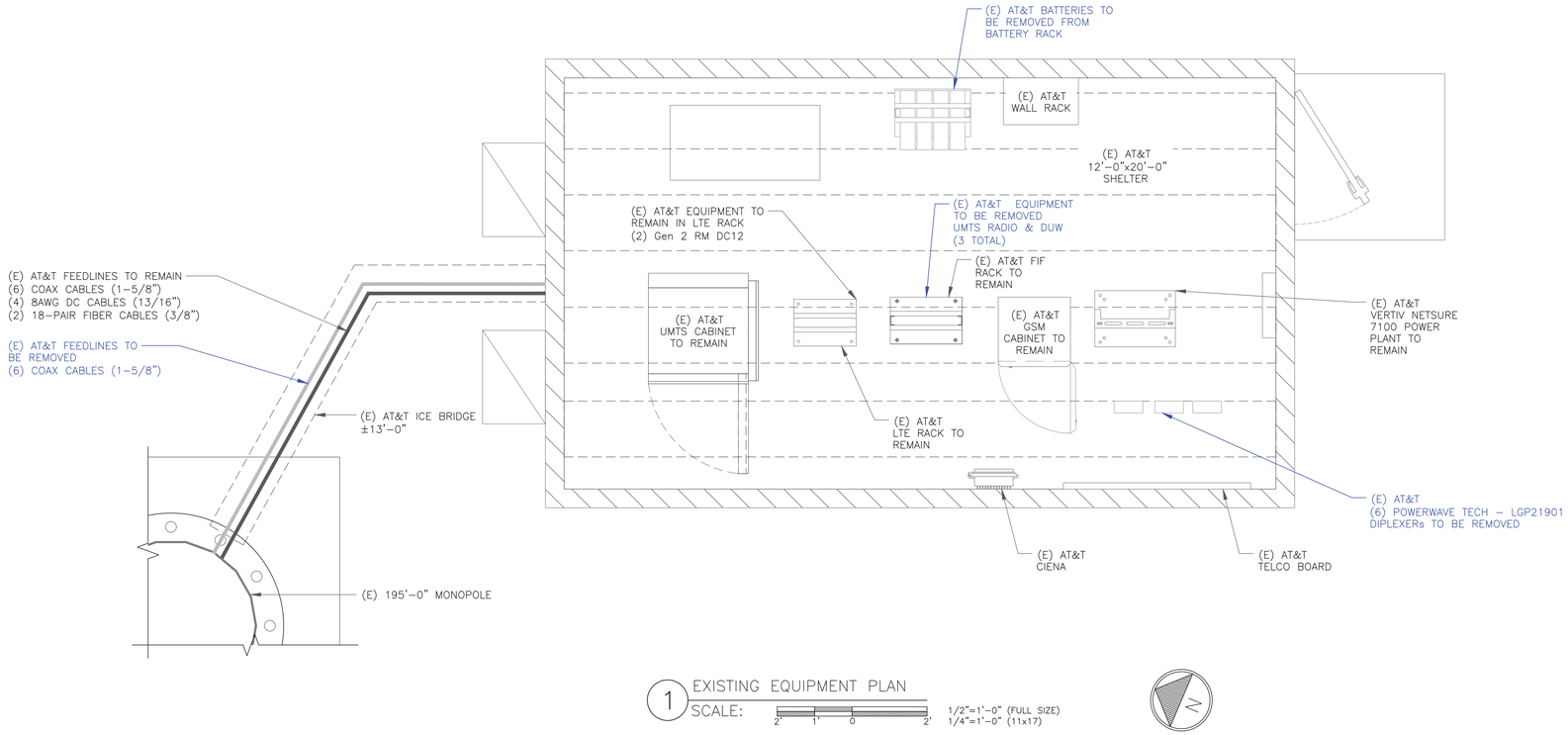
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

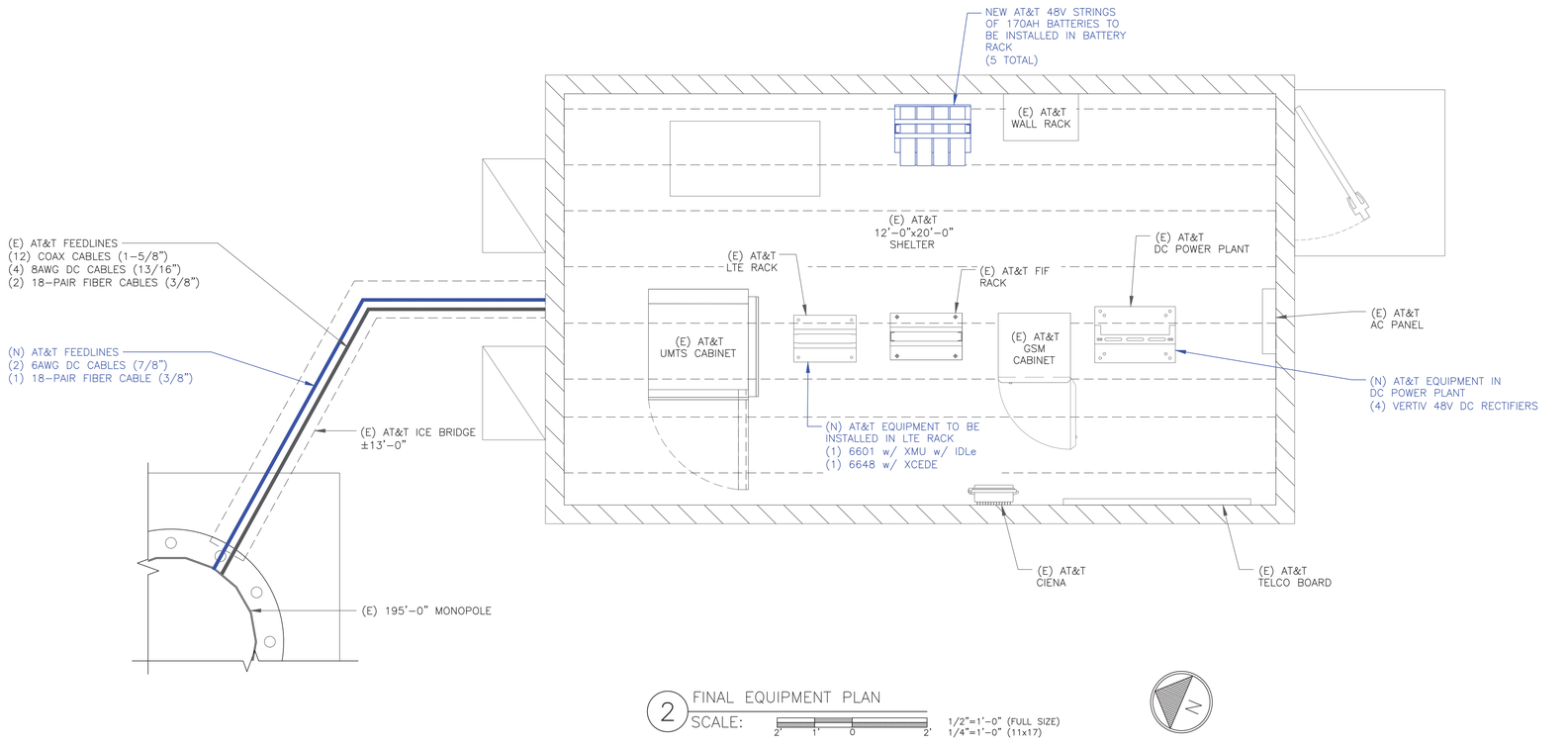
SHEET NUMBER: C-1.1

REVISION: 0



1 EXISTING EQUIPMENT PLAN

SCALE: 2' 1' 0 2' — 1/2"=1'-0" (FULL SIZE) 1/4"=1'-0" (11x17)



2 FINAL EQUIPMENT PLAN

SCALE: 2' 1' 0 2' — 1/2"=1'-0" (FULL SIZE) 1/4"=1'-0" (11x17)

GROUND SCOPE OF WORK:

- REMOVE EXISTING BATTERIES
- REMOVE (6) POWERWAVE – LGP21901 DIPLEXERS
- REMOVE (3) UMTS RADIOS & DUW
- INSTALL (4) VERTIV 48V DC RECTIFIERS
- INSTALL (5) 48V STRINGS OF 170AH BATTERIES
- INSTALL (1) 6601 W/ IDLe
- INSTALL (1) 6648 W/ XCEDE

NOTE:

THE POWER DESIGN FOR ANY AC ELECTRICAL POWER CHANGES IS TO BE PERFORMED BY OTHERS AND IS SHOWN HERE FOR REFERENCE PURPOSES ONLY. AT&T IS SOLELY RESPONSIBLE FOR THE ELECTRICAL POWER DESIGN.

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EXISTING
195'-0" MONOPOLE

ISSUED FOR:

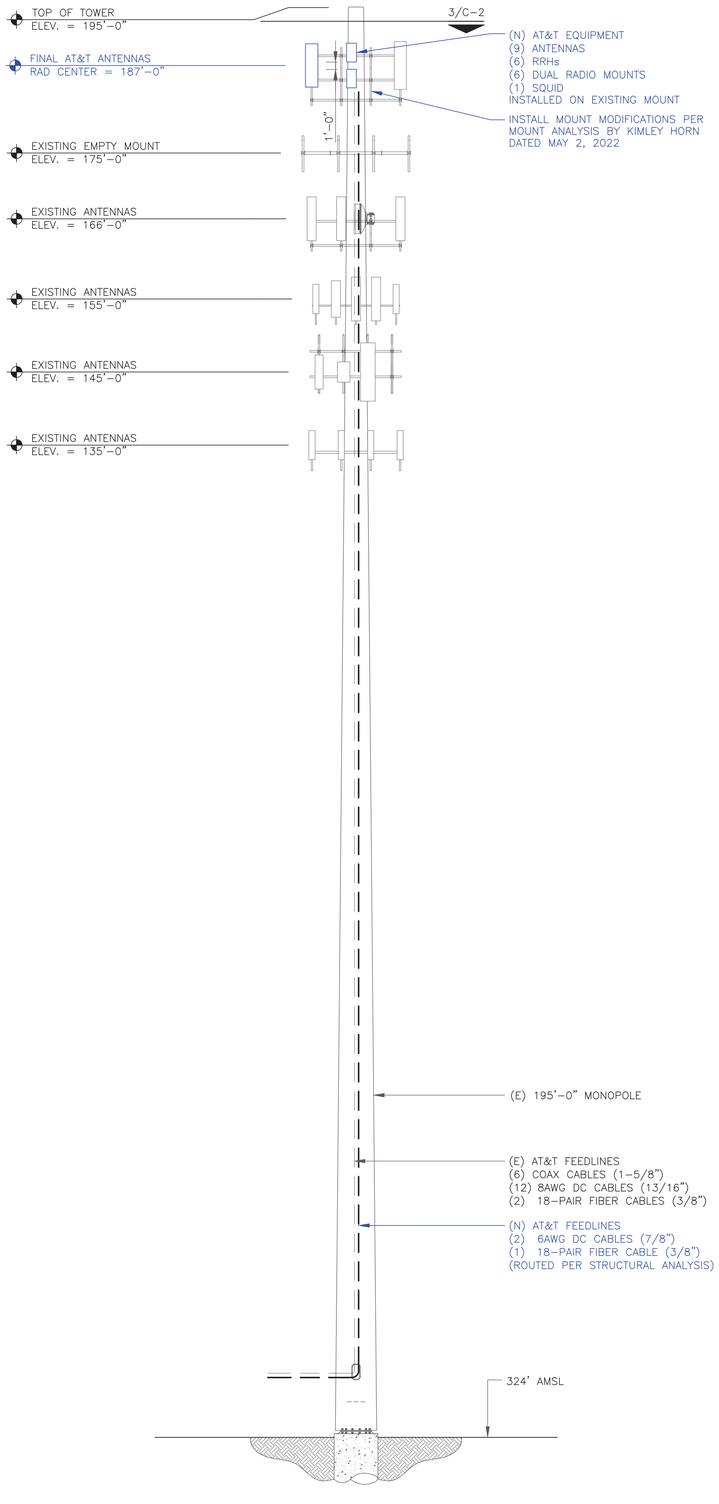
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	4/13/22	TDG	PRELIMINARY REVIEW	MTJ
0	5/17/22	TDG	CONSTRUCTION	MTJ

5/17/22

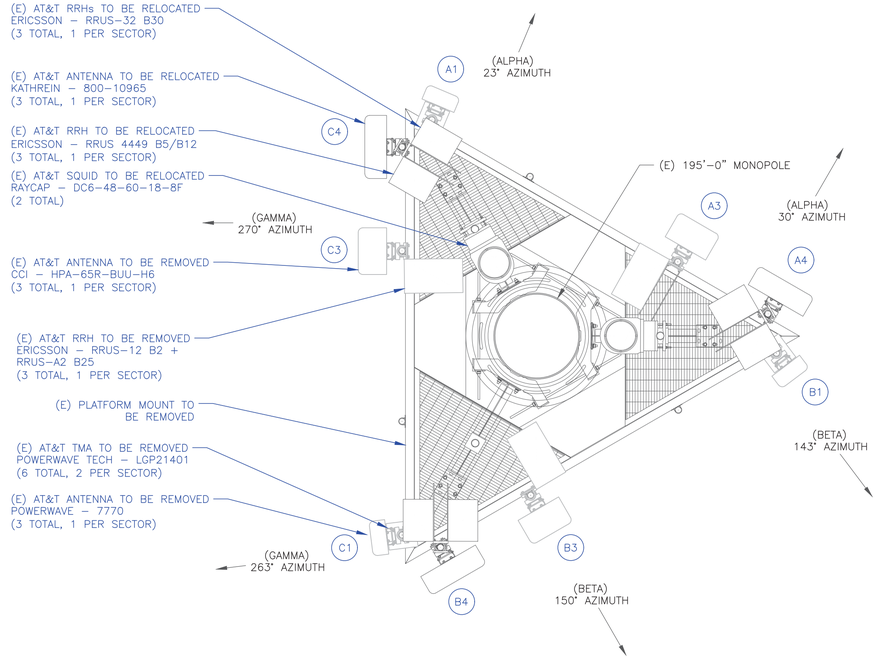
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

SHEET NUMBER: C-1.2

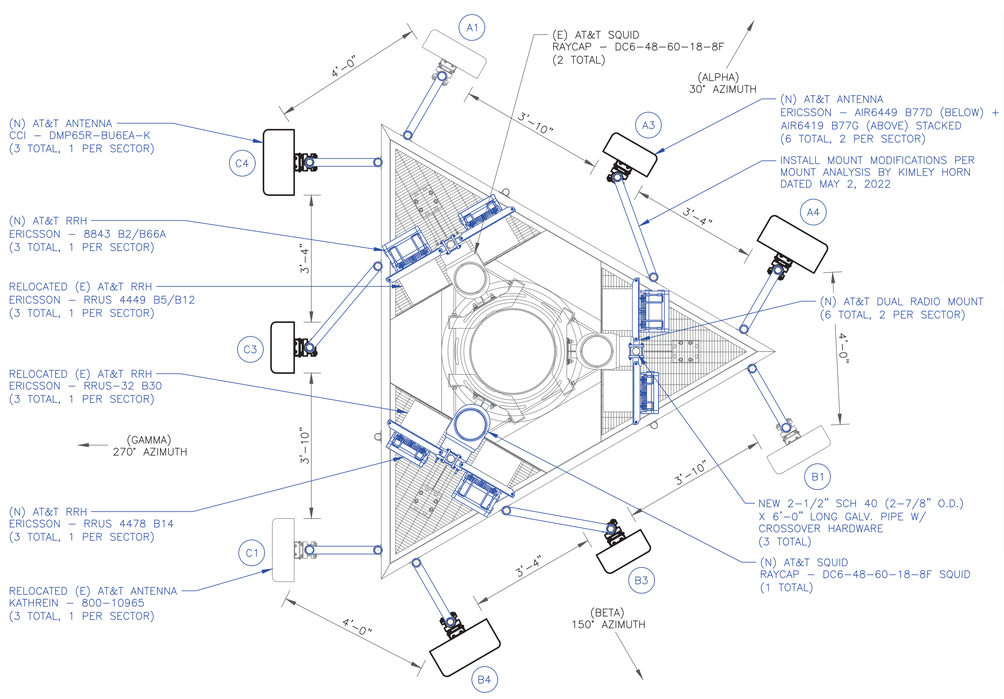
REVISION: 0



1 FINAL ELEVATION
SCALE: NOT TO SCALE



2 EXISTING ANTENNA PLAN
SCALE: 1/2"=1'-0" (FULL SIZE) 1/4"=1'-0" (11x17)
2' 1' 0 2'
N



3 FINAL ANTENNA PLAN
SCALE: 1/2"=1'-0" (FULL SIZE) 1/4"=1'-0" (11x17)
2' 1' 0 2'
N

"LOOK UP" - CROWN CASTLE USA INC.
SAFETY CLIMB REQUIREMENT:

THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR CROWN CASTLE USA INC. POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.

INSTALLER NOTES:

1. REFERENCE C-3 FOR FINAL EQUIPMENT SCHEDULE.
2. REFERENCE C-4 FOR NEW EQUIPMENT SPECIFICATIONS.
3. CONTRACTOR TO VERIFY ALL ANTENNA TIP HEIGHTS DO NOT EXCEED BEACON BASE HEIGHT.
4. 3'-0" MINIMUM DISTANCE REQUIRED BETWEEN LTE ANTENNAS ON SAME SECTOR.
5. 6'-0" MINIMUM DISTANCE REQUIRED BETWEEN 700BC & 700DE ANTENNAS ON SAME SECTOR.
6. 4'-0" MINIMUM DISTANCE REQUIRED BETWEEN LTE 700 ANTENNAS ON OPPOSING SECTORS.
7. ALL ANTENNA MEASUREMENT DISTANCES MUST BE EDGE TO EDGE (RELOCATE ANTENNAS AS NEEDED).
8. 8" MINIMUM DISTANCE REQUIRED BETWEEN ANTENNA & RADIO. SEE GENERIC EXAMPLE DETAIL ON SHEET C-4.

AT&T
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ATLANTA, GA 30324-3300

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1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

AT&T SITE NUMBER: **CTL02093**

BU #: **881535**
TRUMBULL TOWER

425 INDIAN LEDGE PARK RD
TRUMBULL , CT 06611

EXISTING
195'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	4/13/22	TDG	PRELIMINARY REVIEW	MTJ
0	5/17/22	TDG	CONSTRUCTION	MTJ

STATE OF CONNECTICUT
MICHAEL T. JOUT
No. 23824
LICENSED
PROFESSIONAL ENGINEER
5/17/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

SHEET NUMBER: C-2

REVISION: 0

FINAL EQUIPMENT SCHEDULE
(VERIFY WITH CURRENT RFDS)

ALPHA

POSITION	ANTENNA				RADIO			DIPLEXER			TMA			SURGE PROTECTION		CABLES			
	TECH.	STATUS/MANUFACTURER MODEL	AZIMUTH	RAD CENTER	QTY.	STATUS/MODEL	LOCATION	QTY.	STATUS	LOCATION	QTY.	STATUS/MANUFACTURER MODEL	QTY.	STATUS/MODEL	QTY.	STATUS/TYPE	SIZE	LENGTH
A1	LTE	(E) KATHREIN – 800–10965	30°	187'–0"	1	(N) ERICSSON – RRUS 4478 B14	TOWER	–	–	–	–	–	–	–	–	–	–	–
					1	(E) ERICSSON – RRUS–32 B30	TOWER											
A2	–	–	–	–	1	–	–	–	–	–	–	–	1	(E) DC6–48–60–18–8F SQUID	2	(E) 8AWG DC	13/16"	–
															1	(E) 18–PAIR FIBER	3/8"	–
A3	5G CBAND	(N) ERICSSON – AIR6449 B77D (BELOW) + AIR6419 B77G (ABOVE) STACKED	30°	185'–3" 188'–9"	1	INTEGRATED WITHIN	–	–	–	–	–	–	–	–	–	–	–	–
A4	LTE/5G	(N) CCI – DMP65R–BU6EA–K	30°	187'–0"	1	(E) ERICSSON – RRUS 4449 B5/B12	TOWER	–	–	–	–	–	–	–	2	(N) Y–CABLE	–	–
					1	(N) ERICSSON – 8843 B2/B66A	TOWER											

BETA

B1	LTE	(E) KATHREIN – 800–10965	150°	187'–0"	1	(N) ERICSSON – RRUS 4478 B14	TOWER	–	–	–	–	–	–	–	–	–	–	–
					1	(E) ERICSSON – RRUS–32 B30	TOWER											
B2	–	–	–	–	1	–	–	–	–	–	–	–	1	(E) DC6–48–60–18–8F SQUID	2	(E) 8AWG DC	13/16"	–
															1	(E) 18–PAIR FIBER	3/8"	–
B3	5G CBAND	(N) ERICSSON – AIR6449 B77D (BELOW) + AIR6419 B77G (ABOVE) STACKED	150°	185'–3" 188'–9"	1	INTEGRATED WITHIN	–	–	–	–	–	–	–	–	–	–	–	–
B4	LTE/5G	(N) CCI – DMP65R–BU6EA–K	150°	187'–0"	1	(E) ERICSSON – RRUS 4449 B5/B12	TOWER	–	–	–	–	–	–	–	2	(N) Y–CABLE	–	–
					1	(N) ERICSSON – 8843 B2/B66A	TOWER											

GAMMA

C1	LTE	(E) KATHREIN – 800–10965	270°	187'–0"	1	(N) ERICSSON – RRUS 4478 B14	TOWER	–	–	–	–	–	–	–	–	–	–	–
					1	(E) ERICSSON – RRUS–32 B30	TOWER											
C2	–	–	–	–	1	–	–	–	–	–	–	–	1	(N) DC6–48–60–18–8F SQUID	2	(N) 6AWG DC	7/8"	–
															1	(N) 18–PAIR FIBER	3/8"	–
C3	5G CBAND	(N) ERICSSON – AIR6449 B77D (BELOW) + AIR6419 B77G (ABOVE) STACKED	270°	185'–3" 188'–9"	1	INTEGRATED WITHIN	–	–	–	–	–	–	–	–	–	–	–	–
C4	LTE/5G	(N) CCI – DMP65R–BU6EA–K	270°	187'–0"	1	(E) ERICSSON – RRUS 4449 B5/B12	TOWER	–	–	–	–	–	–	–	2	(N) Y–CABLE	–	–
					1	(N) ERICSSON – 8843 B2/B66A	TOWER											
														UNUSED FEEDLINES	6	COAX	1–5/8"	237'–0"

1 FINAL ANTENNA AND FEEDLINE SCHEDULE
SCALE: NOT TO SCALE

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AT&T SITE NUMBER: **CTL02093**

BU #: **881535**
TRUMBULL TOWER

425 INDIAN LEDGE PARK RD
TRUMBULL , CT 06611

EXISTING
195'-0" MONOPOLE

ISSUED FOR:

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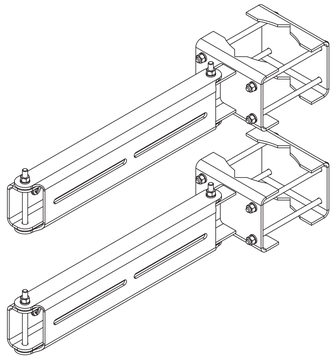
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

SHEET NUMBER: C-3

REVISION: 0

1 NOT USED
SCALE: NOT TO SCALE

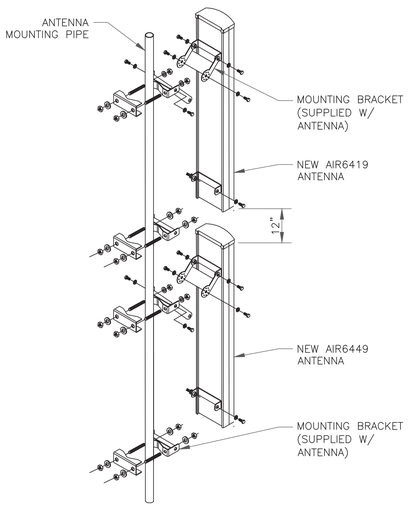


2 DUAL RADIO MOUNT
SCALE: NOT TO SCALE

3 NOT USED
SCALE: NOT TO SCALE

INSTALLER NOTES:

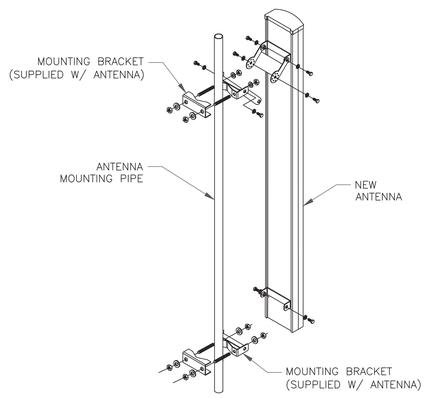
1. COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRHs RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING.
2. DO NOT OPEN RRH PACKAGES IN THE RAIN.
3. ALL PIPES, BRACKETS, AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE.



4 ANTENNA MOUNTING DETAIL
SCALE: NOT TO SCALE

INSTALLER NOTE:

1. ALL PIPES, BRACKETS, AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE.

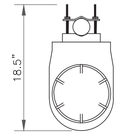


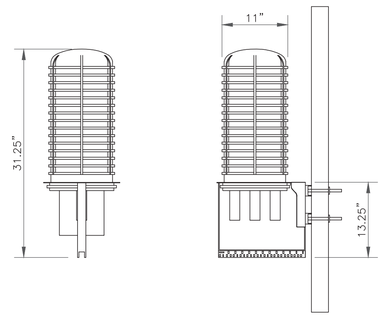
5 ANTENNA MOUNTING DETAIL
SCALE: NOT TO SCALE

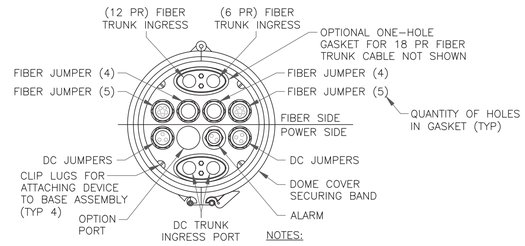
RAYCAP
DC6-48-60-18-8F

RAYCAP – DC6-48-60-18-8F
SIZE: 11x31.25 IN.
WEIGHT: 32.8 LBS
NOMINAL OPERATING VOLTAGE: 48 VDC
VOLTAGE PROTECTION RATING: 400 V
WIND LOADING: 150 MPH SUSTAINED (105.7 LBS)
WIND LOADING: 195 MPH GUST (213.6 LBS)

CONTRACTOR TO USE "THREAD LUBRICANT" ON MOUNTING BOLTS DURING INSTALLATION







NOTES:

1. REMOVE CABLE SEALING GLAND AND INSTALL M32x1.5 METRIC-TO-1" NPT ADAPTER (COOPER CROUSE-HINES P/N CAP 740 994 OR EQUIVALENT MFR) WHEN CONNECTING CONDUIT TO OVP.

6 SQUID MOUNTING DETAIL
SCALE: NOT TO SCALE

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BU #: **881535**
TRUMBULL TOWER

425 INDIAN LEDGE PARK RD
TRUMBULL , CT 06611

EXISTING
195'-0" MONOPOLE

ISSUED FOR:

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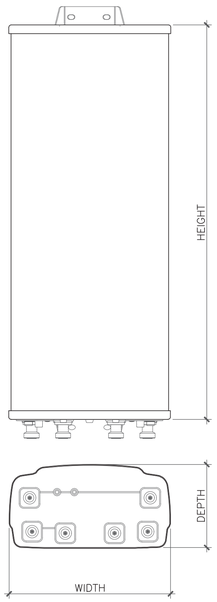
PEC.0001564
Expires 2/10/23

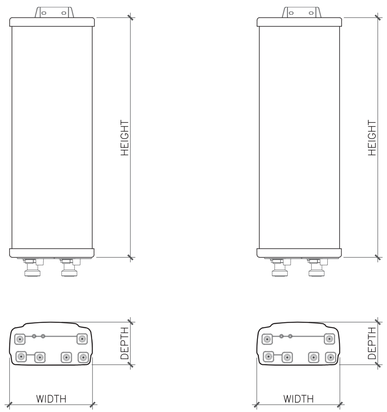
SHEET NUMBER: C-4

REVISION: 0



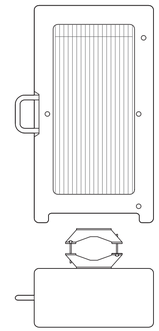
ANTENNA DIMENSIONS (INCHES)				
MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
DMP65R-BU6EA-K	71.20"	20.70"	9.70"	103.80lbs

1 ANTENNA DETAIL
SCALE: NOT TO SCALE



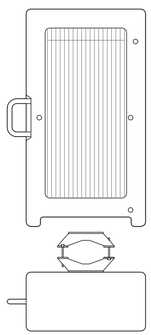
ANTENNA DIMENSIONS (INCHES)				
MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
6419 B77G	31.10"	16.10"	7.30"	44.00 lbs
6449 B77D	30.39"	15.87"	8.07"	81.60 lbs

2 ANTENNA DETAIL
SCALE: NOT TO SCALE



ERICSSON – RRUS 4478 B14
WEIGHT (FULLY EQUIPPED): 59.40 LBS
SIZE (HxWxD): 18.10x13.40x8.26 IN.
CONNECTOR TYPE: 4.3-10 FEMALE (4 TOTAL PORTS)

3 ERICSSON – RRUS 4478 B14
SCALE: NOT TO SCALE



ERICSSON – 8843 B2/B66A
WEIGHT (FULLY EQUIPPED): 75.00 LBS
SIZE (HxWxD): 18.00x13.20x11.30 IN.
CONNECTOR TYPE: 4.3-10 FEMALE (4 TOTAL PORTS)

4 ERICSSON – 8843 B2/B66A
SCALE: NOT TO SCALE

5 NOT USED
SCALE: NOT TO SCALE

6 NOT USED
SCALE: NOT TO SCALE

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BU #: **881535**
TRUMBULL TOWER

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EXISTING
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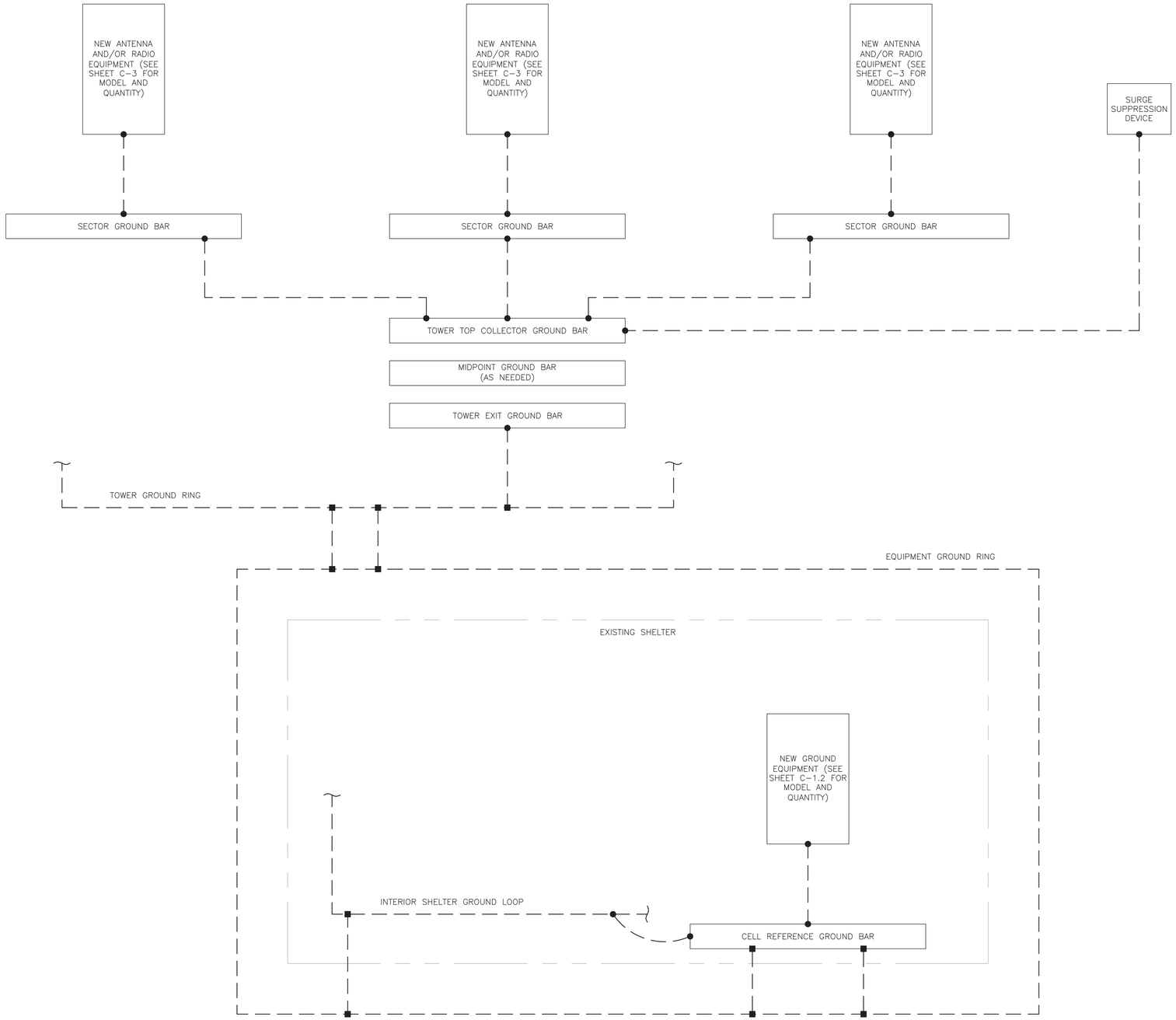
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

SHEET NUMBER: C-5

REVISION: 0



1 GROUNDING SCHEMATIC
SCALE: NOT TO SCALE

GROUNDING PLAN LEGEND:

--- GROUND WIRE
■ EXOTHERMIC WELD
● MECHANICAL CONNECTION
COPPER GROUND ROD
GROUND ROD W/ TEST WELL

CELL REFERENCE GROUND BAR: POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUITS (ATT-TP-76416 7.6.7).

HATCH PLATE GROUND BAR: BOND TO THE INTERIOR GROUND RING WITH (2) #2 STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CELL SITE REFERENCE GROUND BAR MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) #2 STRANDED GREEN INSULATED COPPER CONDUCTORS.

EXTERIOR CABLE ENTRY PORT GROUND BARS: LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE (ATT-TP-76416 7.6.7.2).

DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICES CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR PER TP76300 SECTION H 6 AND TP76416 FIGURE 7-11 REQUIREMENTS.

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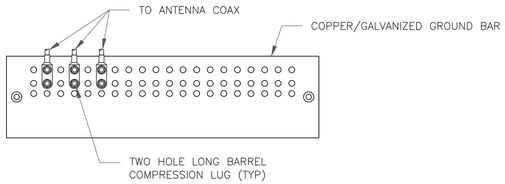
STATE OF CONNECTICUT
MICHAEL T. JANSEN
No. 23824
LICENSED PROFESSIONAL ENGINEER
5/17/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

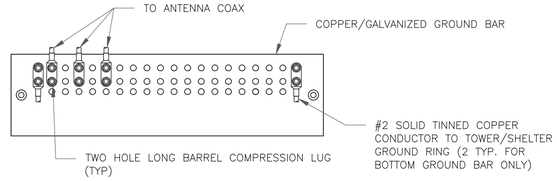
SHEET NUMBER: G-1
REVISION: 0



NOTES:

1. DOUBLING UP "OR STACKING" OF CONNECTIONS IS NOT PERMITTED.
2. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
3. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO ANTENNA MOUNT STEEL.

1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE

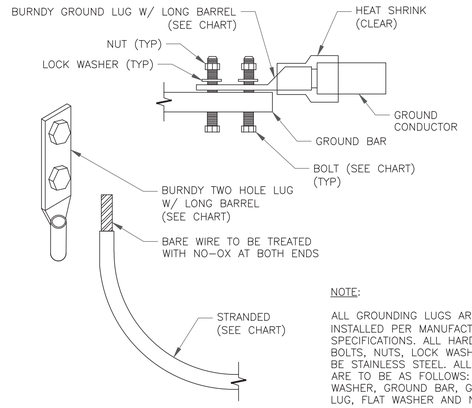


NOTES:

1. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
2. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL (TOWER ONLY).
3. GROUND BAR SHALL BE ISOLATED FROM BUILDING OR SHELTER.

2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE

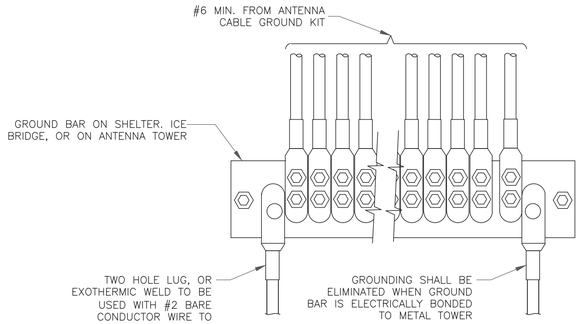
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 SOLID TINNED	YA3C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 STRANDED	YA2C-2TC38	3/8" - 16 NC SS 2 BOLT
#2/0 STRANDED	YA26-2TC38	3/8" - 16 NC SS 2 BOLT
#4/0 STRANDED	YA28-2N	1/2" - 16 NC SS 2 BOLT



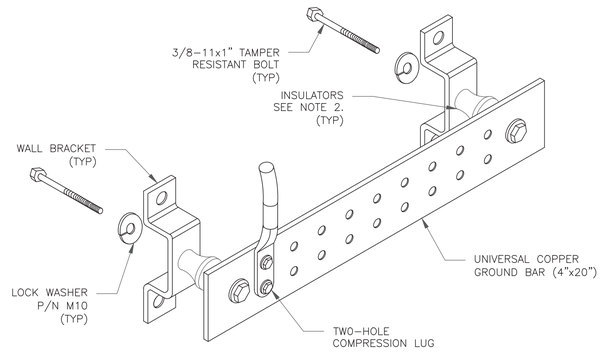
NOTE:

ALL GROUNDING LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL HARDWARE BOLTS, NUTS, LOCK WASHERS SHALL BE STAINLESS STEEL. ALL HARDWARE ARE TO BE AS FOLLOWS: BOLT, FLAT WASHER, GROUND BAR, GROUND LUG, FLAT WASHER AND NUT.

3 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



4 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE

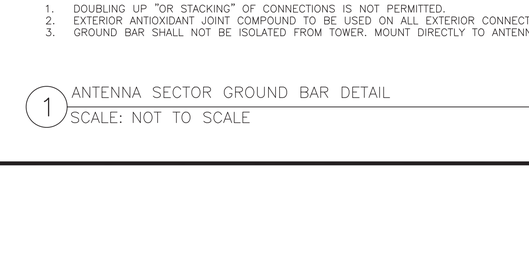


NOTES:

1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.

2. OMIT INSULATOR WHEN MOUNTING TO TOWER STEEL OR PLATFORM STEEL USE INSULATORS WHEN ATTACHING TO BUILDING OR SHELTERS.

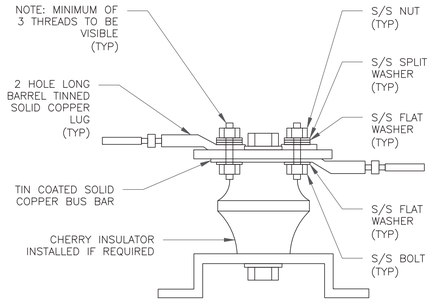
5 GROUND BAR DETAIL
SCALE: NOT TO SCALE



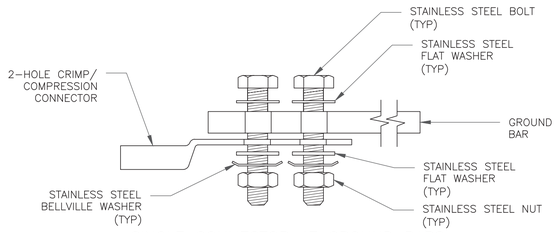
NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
3. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.

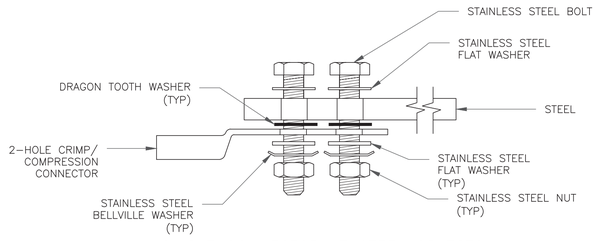
6 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



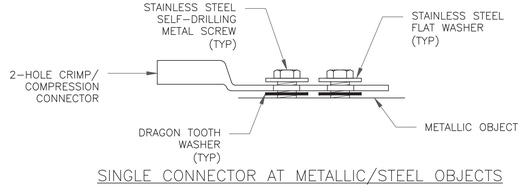
7 LUG DETAIL
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS



SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

8 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE

AT&T
575 MOROSGO DRIVE
ATLANTA, GA 30324-3300

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

AT&T SITE NUMBER: **CTL02093**

BU #: **881535**
TRUMBULL TOWER

425 INDIAN LEDGE PARK RD
TRUMBULL , CT 06611

EXISTING
195'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	4/13/22	TDG	PRELIMINARY REVIEW	MTJ
0	5/17/22	TDG	CONSTRUCTION	MTJ

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

SHEET NUMBER: G-2

REVISION: 0

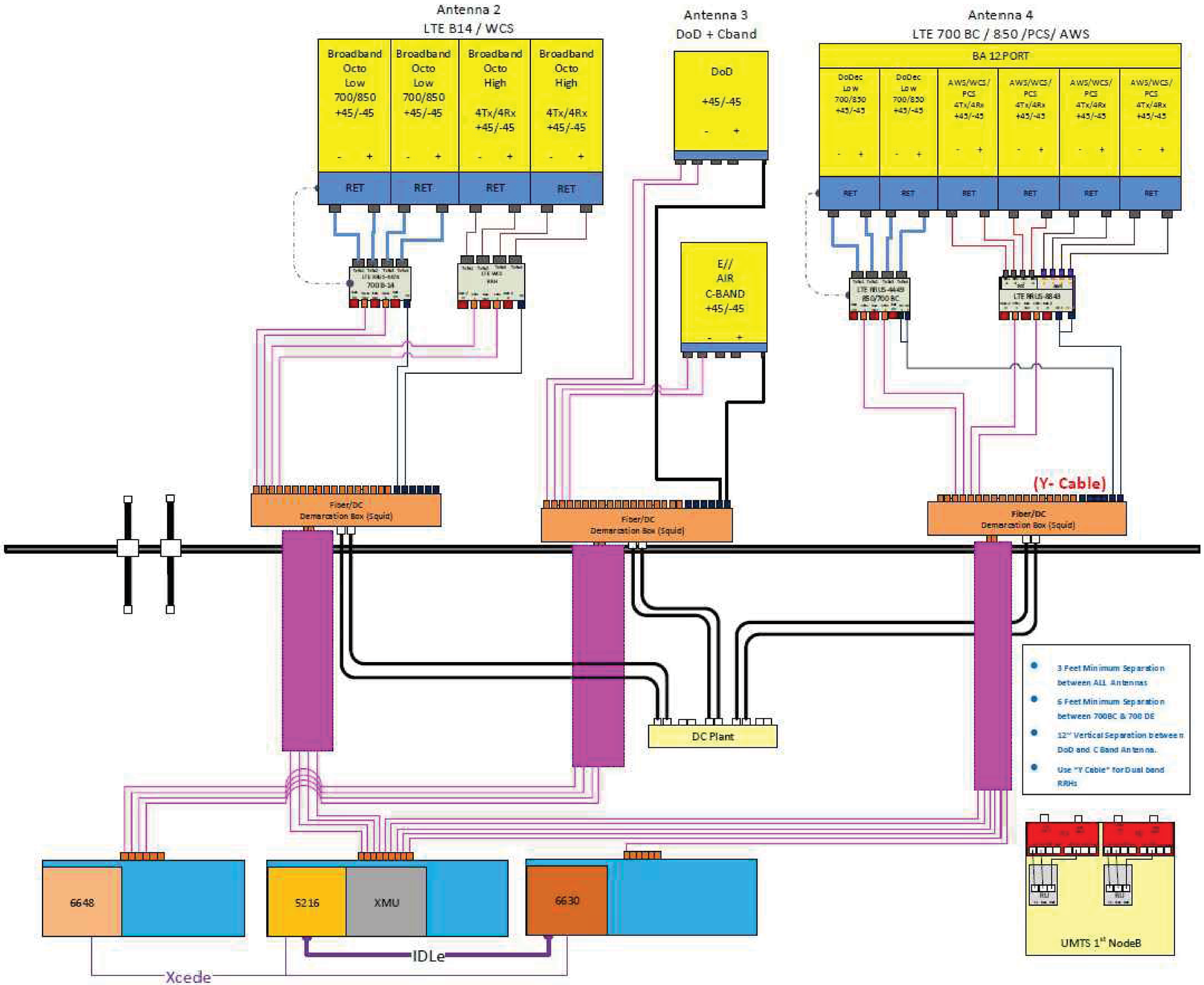

Antenna 2
LTE B14 / WCS
Broadband Octo Low 700/850 +45/-45
Broadband Octo Low 700/850 +45/-45
Broadband Octo High 4Tx/4Rx +45/-45
Broadband Octo High 4Tx/4Rx +45/-45
RET
Antenna 3
DoD + Cband
DoD +45/-45
E// AIR C-BAND +45/-45
Antenna 4
LTE 700 BC / 850 /PCS/ AWS
BA 12PORT
DoDec Low 700/850 +45/-45
AWS/WCS/ PCS 4Tx/4Rx +45/-45
(Y- Cable)
Fiber/DC Demarcation Box (Squid)
DC Plant
3 Feet Minimum Separation between ALL Antennas
5 Feet Minimum Separation between 700BC & 700 DE
12" Vertical Separation between DoD and C Band Antenna.
Use "Y Cable" for Dual band RRHs
6648
5216
XMU
6630
IDLe
Xcede
UMTS 1st NodeB

Exhibit D

Structural Analysis Report

Date: **March 31, 2022**

Black & Veatch Corp.
11401 Lamar Avenue
Overland Park, KS 66211
(913) 458-6909

Subject:	**Structural Analysis Report**	
Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Site Number:	CT2093
	Site Name:	TRUMBULL INDIAN LEDGE
	FA Number:	10035413
Crown Castle Designation:	**BU Number:**	881535
	Site Name:	TRUMBULL TOWER
	JDE Job Number:	686302
	Work Order Number:	2092752
	Order Number:	586252 Rev. 0
Engineering Firm Designation:	**Black & Veatch Corp. Project Number:**	406642
Site Data:	**425 Indian Ledge Park Rd, Trumbull, Fairfield County, CT**	
	Latitude *41° 16' 23.81"*, Longitude *-73° 12' 47.18"*	
	194.792 Foot - Monopole Tower	

Black & Veatch Corp. is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above-mentioned tower.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration **Sufficient Capacity - 60.6%**

This analysis utilizes an ultimate 3-second gust wind speed of 118 mph as permitted by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Jumpon Uea-areevorakul

Respectfully submitted by:

Ping Jiang, P.E.
Professional Engineer

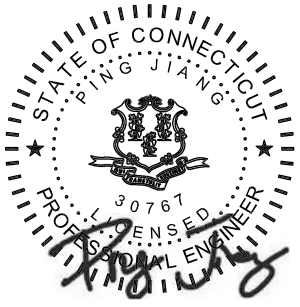


TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 194.792 ft Monopole tower designed by Engineered Endeavors, Inc.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	118 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	1.0 in
Wind Speed with Ice:	50 mph
Seismic Ss:	0.211
Seismic S1:	0.055
Service Wind Speed:	60 mph
Seismic Loading:	Does not control per engineering judgment

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
185.0	189.0	3	ericsson	AIR 6419 B77G_CCIV3	3 4 2 12 15	3/8 13/16 7/8 1-5/8 Conduit
	187.0	3	cci antennas	DMP65R-BU6e w/ Mount Pipe		
		3	ericsson	RRUS 4449 B5/B12		
		3	ericsson	RRUS 4478 B14_CCIV2		
		3	ericsson	RRUS 8843 B2/B66A_CCIV2		
		3	ericsson	RRUS-32 B30		
		3	kathrein	80010965 w/ Mount Pipe		
		1	raycap	DC6-48-60-18-8F_CCIV2		
	185.0	1	cci tower mounts (v2.1)	Miscellaneous [NA 507-1]		
		1	cci tower mounts (v2.1)	Platform Mount [LP 602-1_KCKR]		
		3	ericsson	AIR 6449 B77D_CCVI2		
		2	raycap	DC6-48-60-18-8F		
		6	site pro 1	SFS-V-L 70" Vertical Angle Stabilizer Kit		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
175.0	175.0	3	fujitsu	TA08025-B604	1	1-3/4
		3	fujitsu	TA08025-B605		
		3	jma wireless	MX08FRO665-21 w/ Mount Pipe		
		1	raycap	RDIDC-9181-PF-48		
		1	tower mounts	Commscope MC-PK8-DSH		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
164.0	166.0	3	dragonwave	A-ANT-23G-2-C	6 4 2 1	5/16 1-1/4 Elliptical Conduit
		3	alcatel lucent	1900MHz RRH (65MHz)		
		3	alcatel lucent	800 EXTERNAL NOTCH FILTER		
		3	alcatel lucent	800MHZ RRH		
		3	alcatel lucent	TD-RRH8x20-25		
		3	argus technologies	LLPX310R w/ Mount Pipe		
		9	rfs celwave	ACU-A20-N		
		3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe		
		3	rfs celwave	APXVTM14-ALU-I20 w/ Mount Pipe		
		3	samsung telecommunications	FDD_R6_RRH		
	164.0	1	cci tower mounts (v2.1)	Platform Mount [LP 602-1]		
154.0	155.0	2	antel	LPA-4016 w/ Mount Pipe	20	1-5/8
		3	commscope	CBC78T-DS-43-2X		
		6	commscope	JAHH-65B-R3B		
		4	decibel	DB844G65ZAXY w/ Mount Pipe		
		2	rfs celwave	DB-B1-6C-8AB-0Z		
		3	samsung telecommunications	RFV01U-D1A		
		3	samsung telecommunications	RFV01U-D2A		
		3	vzw	Sub6 Antenna - VZS01 w/ Mount Pipe		
	154.0	1	cci tower mounts (v2.1)	Platform Mount [LP 601-1]		
146.0	146.0	1	cci tower mounts (v2.1)	Platform Mount [LP 602-1]	3	1-5/8
	145.0	3	ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe		
		3	ericsson	RADIO 4449 B71 B85A_T-MOBILE		
		3	ericsson	RADIO 4460 B2/B25 B66_TMO		
		3	rfs celwave	APX16DWV-16DWV-S-E-A20 w/ Mount Pipe		
		3	rfs celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
134.0	135.0	12	decibel	DB844H90E-XY w/ Mount Pipe	9 6	1-1/4 1-5/8
	134.0	1	cci tower mounts (v2.1)	Platform Mount [LP 303-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	1406210	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	1405798	CCISITES
4-TOWER MANUFACTURER DRAWINGS	1405789	CCISITES

3.1) Analysis Method

tnxTower (version 8.1.1.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 standard.

3.2) Assumptions

1) Tower and structures were maintained in accordance with the TIA-222 Standard.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

This analysis may be affected if any assumptions are not valid or have been made in error. Black & Veatch Corp. should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary) (Monopole Tower)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	194.792 - 157.424	Pole	TP33.875x25x0.25	1	-14.59	1584.10	22.4	Pass
L2	157.424 - 116.862	Pole	TP42.9063x32.2505x0.3125	2	-31.93	2511.01	52.7	Pass
L3	116.862 - 80.8723	Pole	TP50.75x40.9017x0.375	3	-43.56	3565.23	59.3	Pass
L4	80.8723 - 39.8177	Pole	TP59.6563x48.3896x0.5	4	-62.35	5584.34	49.5	Pass
L5	39.8177 - 0	Pole	TP68x56.7861x0.5	5	-88.44	6580.00	56.2	Pass
							Summary	
						Pole (L3)	59.3	Pass
						Rating =	59.3	Pass

Table 5 - Tower Component Stresses vs. Capacity (Monopole Tower) - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	57.0	Pass
	Base Plate		50.6	Pass
1	Base Foundation (Structure)	0	60.6	Pass
	Base Foundation (Soil Interaction)		57.6	Pass

Structure Rating (max from all components) =	60.6%

Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity. Rating per TIA-222-H Section 15.5.

4.1) Recommendations

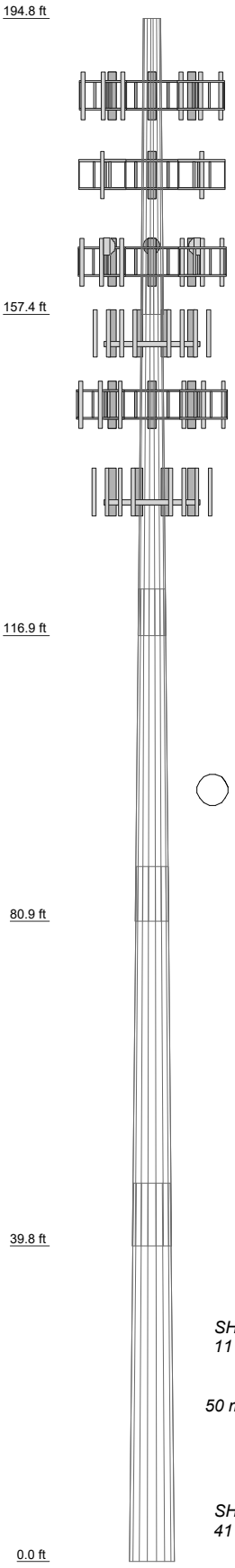
The tower and its foundation have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

APPENDIX A

TNXTOWER OUTPUT

Section	1	2	3	4	5
Length (ft)	37.37	45.30	41.85	47.90	47.77
Number of Sides	18	18	18	18	18
Thickness (in)	0.2500	0.3125	0.3750	0.5000	0.5000
Socket Length (ft)	4.73	5.86	6.84	7.95	
Top Dia (in)	25.0000	32.2505	40.9017	48.3896	56.7861
Bot Dia (in)	33.8750	42.9063	50.7500	59.6563	68.0000
Grade	A572-65				
Weight (K)	2.9	5.7	7.7	13.8	16.0

46.2



MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 118 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 59.3%

BLACK & VEATCH
Building a world of difference.

Black & Veatch Corp.
11401 Lamar Avenue
Overland Park, KS 66211
Phone: (913) 458-6909
FAX:

Job:	***TRUMBULL TOWER (BU# 881535)***		
Project:	***406642 (881535.2092752)***		
Client: Crown Castle	Drawn by: Jumpon Uea-areevoraku	App'd:	
Code: TIA-222-H	Date: 03/31/22	Scale: NTS	
Path:		Dwg No. E-1	

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

- Tower is located in Fairfield County, Connecticut.
- Tower base elevation above sea level: 323.00 ft.
- Basic wind speed of 118 mph.
- Risk Category II.
- Exposure Category B.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.00 ft.
- Nominal ice thickness of 1.0000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 60 mph.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- Maximum demand-capacity ratio is: 1.05.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned		Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression
√	Use Code Stress Ratios		Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice	√	Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-H Bracing Resist. Exemption
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-H Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
	Secondary Horizontal Braces Leg		Sort Capacity Reports By Component	√	Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric		Ignore KL/ry For 60 Deg. Angle Legs		Pole Without Linear Attachments
					Pole With Shroud Or No Appurtenances
					Outside and Inside Corner Radii Are Known

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	194.79-157.42	37.37	4.73	18	25.0000	33.8750	0.2500	1.0000	A572-65 (65 ksi)
L2	157.42-116.86	45.30	5.86	18	32.2505	42.9063	0.3125	1.2500	A572-65 (65 ksi)
L3	116.86-80.87	41.85	6.84	18	40.9017	50.7500	0.3750	1.5000	A572-65 (65 ksi)
L4	80.87-39.82	47.90	7.95	18	48.3896	59.6563	0.5000	2.0000	A572-65 (65 ksi)
L5	39.82-0.00	47.77		18	56.7861	68.0000	0.5000	2.0000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	25.3471	19.6391	1519.8824	8.7863	12.7000	119.6758	3041.7647	9.8214	3.9600	15.84
	34.3590	26.6814	3811.2835	11.9369	17.2085	221.4768	7627.5821	13.3433	5.5220	22.088
L2	33.8308	31.6785	4082.4352	11.3380	16.3833	249.1831	8170.2421	15.8423	5.1261	16.404
	43.5199	42.2477	9683.4926	15.1208	21.7964	444.2708	19379.7271	21.1279	7.0015	22.405
L3	42.8760	48.2368	10009.1651	14.3870	20.7780	481.7185	20031.5006	24.1230	6.5387	17.437
	51.4751	59.9588	19222.9846	17.8831	25.7810	745.6260	38471.2633	29.9851	8.2720	22.059
L4	50.6936	76.0009	22021.1112	17.0008	24.5819	895.8248	44071.1983	38.0077	7.6366	15.273
	60.4994	93.8810	41506.5163	21.0005	30.3054	1369.6091	83067.6479	46.9494	9.6195	19.239
L5	59.4802	89.3261	35753.5234	19.9816	28.8474	1239.4036	71554.0921	44.6715	9.1144	18.229
	68.9719	107.1225	61663.1484	23.9625	34.5440	1785.0610	123407.4348	53.5714	11.0880	22.176

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 194.79-157.42				1	1	1			
L2 157.42-116.86				1	1	1			
L3 116.86-80.87				1	1	1			
L4 80.87-39.82				1	1	1			
L5 39.82-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
Safety Line 3/8 ** 175 **	A	No	Surface Ar (CaAa)	134.00 - 11.00	1	1	-0.004 -0.004	0.3750		0.22

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
CU12PSM6P4XXX(1-3/4)	C	No	Surface Ar (CaAa)	175.00 - 0.00	1	1	-0.450 -0.416	1.7500		2.72
HJ7-50A(1-5/8)	B	No	Surface Ar (CaAa)	154.00 - 4.00	6	6	-0.230 -0.006	1.9800		1.04

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
** 185 **									
PWRT-608-S(13/16)	B	No	No	Inside Pole	185.00 - 0.00	4	No Ice	0.00	0.62
							1/2" Ice	0.00	0.62
							1" Ice	0.00	0.62
LDF7-50A(1-5/8)	B	No	No	Inside Pole	185.00 - 0.00	12	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
FB-L98B-034-XXX(3/8)	B	No	No	Inside Pole	185.00 - 0.00	1	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
PWRT-606-S(7/8)	B	No	No	Inside Pole	185.00 - 0.00	2	No Ice	0.00	0.89
							1/2" Ice	0.00	0.89
							1" Ice	0.00	0.89
FB-L98B-002-75000(3/8)	B	No	No	Inside Pole	185.00 - 0.00	2	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
2" innerduct conduit	B	No	No	Inside Pole	185.00 - 9.00	15	No Ice	0.00	0.20
							1/2" Ice	0.00	0.20
							1" Ice	0.00	0.20
** 164 **									
7983A(ELLIPTICAL)	B	No	No	Inside Pole	164.00 - 9.00	2	No Ice	0.00	0.08
							1/2" Ice	0.00	0.08
							1" Ice	0.00	0.08
9207(5/16)	B	No	No	Inside Pole	164.00 - 9.00	6	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
2" innerduct conduit	B	No	No	Inside Pole	164.00 - 9.00	1	No Ice	0.00	0.20
							1/2" Ice	0.00	0.20
							1" Ice	0.00	0.20
HB114-1-0813U4-M5J(1-1/4)	B	No	No	Inside Pole	164.00 - 9.00	3	No Ice	0.00	1.20
							1/2" Ice	0.00	1.20
							1" Ice	0.00	1.20
HB114-21U3M12-XXXF(1-1/4)	B	No	No	Inside Pole	164.00 - 9.00	1	No Ice	0.00	1.22
							1/2" Ice	0.00	1.22
							1" Ice	0.00	1.22
** 154 **									
AL7-50(1-5/8)	B	No	No	Inside Pole	154.00 - 4.00	6	No Ice	0.00	0.52
							1/2" Ice	0.00	0.52
							1" Ice	0.00	0.52
HB158-1-08U8-S8J18(1-5/8)	B	No	No	Inside Pole	154.00 - 4.00	2	No Ice	0.00	1.30
							1/2" Ice	0.00	1.30
							1" Ice	0.00	1.30
HJ7-50A(1-5/8)	B	No	No	Inside Pole	154.00 - 4.00	6	No Ice	0.00	1.04
							1/2" Ice	0.00	1.04
							1" Ice	0.00	1.04
** 146 **									
HCS 6X12 4AWG(1-5/8)	A	No	No	Inside Pole	146.00 - 4.00	1	No Ice	0.00	2.40
							1/2" Ice	0.00	2.40
							1" Ice	0.00	2.40
HB158-21U6S24-xxM_TMO(1-5/8)	A	No	No	Inside Pole	146.00 - 4.00	2	No Ice	0.00	2.50
							1/2" Ice	0.00	2.50
							1" Ice	0.00	2.50
** 134 **									
LDF6-50A(1-1/4)	A	No	No	Inside Pole	134.00 - 15.00	9	No Ice	0.00	0.60

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
LDF7-50A(1-5/8)	A	No	No	Inside Pole	134.00 - 15.00	6	1/2" Ice	0.00	0.60
							1" Ice	0.00	0.60
							No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	194.79-157.42	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.51
		C	0.000	0.000	3.076	0.000	0.05
L2	157.42-116.86	A	0.000	0.000	0.643	0.000	0.40
		B	0.000	0.000	44.120	0.000	1.60
		C	0.000	0.000	7.098	0.000	0.11
L3	116.86-80.87	A	0.000	0.000	1.350	0.000	0.65
		B	0.000	0.000	42.756	0.000	1.48
		C	0.000	0.000	6.298	0.000	0.10
L4	80.87-39.82	A	0.000	0.000	1.540	0.000	0.74
		B	0.000	0.000	48.773	0.000	1.68
		C	0.000	0.000	7.185	0.000	0.11
L5	39.82-0.00	A	0.000	0.000	1.081	0.000	0.53
		B	0.000	0.000	42.551	0.000	1.48
		C	0.000	0.000	6.968	0.000	0.11

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	194.79-157.42	A	1.004	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.51
		C		0.000	0.000	6.607	0.000	0.11
L2	157.42-116.86	A	0.980	0.000	0.000	4.086	0.000	0.43
		B		0.000	0.000	64.476	0.000	2.09
		C		0.000	0.000	15.247	0.000	0.25
L3	116.86-80.87	A	0.948	0.000	0.000	8.401	0.000	0.70
		B		0.000	0.000	62.259	0.000	1.93
		C		0.000	0.000	13.350	0.000	0.22
L4	80.87-39.82	A	0.903	0.000	0.000	9.326	0.000	0.80
		B		0.000	0.000	70.699	0.000	2.19
		C		0.000	0.000	14.971	0.000	0.24
L5	39.82-0.00	A	0.806	0.000	0.000	6.284	0.000	0.57
		B		0.000	0.000	61.273	0.000	1.91
		C		0.000	0.000	14.157	0.000	0.22

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	194.79-157.42	0.5726	0.4480	0.6943	0.5432
L2	157.42-116.86	5.0320	-3.6798	4.1297	-2.8607

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L3	116.86-80.87	5.4392	-4.1917	4.1872	-3.4146
L4	80.87-39.82	5.6886	-4.3843	4.4225	-3.6088
L5	39.82-0.00	5.5238	-4.0643	4.4823	-3.3168

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	11	CU12PSM6P4XXX(1-3/4)	157.42 - 175.00	1.0000	1.0000
L2	1	Safety Line 3/8	116.86 - 134.00	1.0000	1.0000
L2	11	CU12PSM6P4XXX(1-3/4)	116.86 - 157.42	1.0000	1.0000
L2	22	HJ7-50A(1-5/8)	116.86 - 154.00	1.0000	1.0000
L3	1	Safety Line 3/8	80.87 - 116.86	1.0000	1.0000
L3	11	CU12PSM6P4XXX(1-3/4)	80.87 - 116.86	1.0000	1.0000
L3	22	HJ7-50A(1-5/8)	80.87 - 116.86	1.0000	1.0000
L4	1	Safety Line 3/8	39.82 - 80.87	1.0000	1.0000
L4	11	CU12PSM6P4XXX(1-3/4)	39.82 - 80.87	1.0000	1.0000
L4	22	HJ7-50A(1-5/8)	39.82 - 80.87	1.0000	1.0000
L5	1	Safety Line 3/8	11.00 - 39.82	1.0000	1.0000
L5	11	CU12PSM6P4XXX(1-3/4)	0.00 - 39.82	1.0000	1.0000
L5	22	HJ7-50A(1-5/8)	4.00 - 39.82	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
185										
80010965 w/ Mount Pipe	A	From Leg	4.00	0.00	0.00	185.00	No Ice	12.26	5.79	0.14
			0.00				1/2" Ice	13.03	6.47	0.23
			2.00				1" Ice	13.80	7.17	0.33
80010965 w/ Mount Pipe	B	From Leg	4.00	0.00	0.00	185.00	No Ice	12.26	5.79	0.14
			0.00				1/2" Ice	13.03	6.47	0.23
			2.00				1" Ice	13.80	7.17	0.33
80010965 w/ Mount Pipe	C	From Leg	4.00	0.00	0.00	185.00	No Ice	12.26	5.79	0.14

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1/2" Ice	13.03	6.47	0.23
			2.00			1" Ice	13.80	7.17	0.33
AIR 6419 B77G_CCIV3	A	From Leg	4.00	0.00	185.00	No Ice	4.17	2.02	0.04
			0.00			1/2" Ice	4.44	2.23	0.07
			4.00			1" Ice	4.71	2.44	0.11
AIR 6419 B77G_CCIV3	B	From Leg	4.00	0.00	185.00	No Ice	4.17	2.02	0.04
			0.00			1/2" Ice	4.44	2.23	0.07
			4.00			1" Ice	4.71	2.44	0.11
AIR 6419 B77G_CCIV3	C	From Leg	4.00	0.00	185.00	No Ice	4.17	2.02	0.04
			0.00			1/2" Ice	4.44	2.23	0.07
			4.00			1" Ice	4.71	2.44	0.11
AIR 6449 B77D_CCVI2	A	From Leg	4.00	0.00	185.00	No Ice	4.02	2.14	0.08
			0.00			1/2" Ice	4.28	2.35	0.11
			0.00			1" Ice	4.55	2.57	0.14
AIR 6449 B77D_CCVI2	B	From Leg	4.00	0.00	185.00	No Ice	4.02	2.14	0.08
			0.00			1/2" Ice	4.28	2.35	0.11
			0.00			1" Ice	4.55	2.57	0.14
AIR 6449 B77D_CCVI2	C	From Leg	4.00	0.00	185.00	No Ice	4.02	2.14	0.08
			0.00			1/2" Ice	4.28	2.35	0.11
			0.00			1" Ice	4.55	2.57	0.14
DMP65R-BU6e w/ Mount Pipe	A	From Leg	4.00	0.00	185.00	No Ice	12.52	7.41	0.13
			0.00			1/2" Ice	13.29	8.12	0.22
			2.00			1" Ice	14.09	8.84	0.33
DMP65R-BU6e w/ Mount Pipe	B	From Leg	4.00	0.00	185.00	No Ice	12.52	7.41	0.13
			0.00			1/2" Ice	13.29	8.12	0.22
			2.00			1" Ice	14.09	8.84	0.33
DMP65R-BU6e w/ Mount Pipe	C	From Leg	4.00	0.00	185.00	No Ice	12.52	7.41	0.13
			0.00			1/2" Ice	13.29	8.12	0.22
			2.00			1" Ice	14.09	8.84	0.33
RRUS-32 B30	A	From Leg	4.00	0.00	185.00	No Ice	3.31	2.42	0.08
			0.00			1/2" Ice	3.56	2.64	0.10
			2.00			1" Ice	3.81	2.86	0.14
RRUS-32 B30	B	From Leg	4.00	0.00	185.00	No Ice	3.31	2.42	0.08
			0.00			1/2" Ice	3.56	2.64	0.10
			2.00			1" Ice	3.81	2.86	0.14
RRUS-32 B30	C	From Leg	4.00	0.00	185.00	No Ice	3.31	2.42	0.08
			0.00			1/2" Ice	3.56	2.64	0.10
			2.00			1" Ice	3.81	2.86	0.14
RRUS 4478 B14_CCIV2	A	From Leg	4.00	0.00	185.00	No Ice	2.02	1.25	0.06
			0.00			1/2" Ice	2.20	1.40	0.08
			2.00			1" Ice	2.39	1.55	0.10
RRUS 4478 B14_CCIV2	B	From Leg	4.00	0.00	185.00	No Ice	2.02	1.25	0.06
			0.00			1/2" Ice	2.20	1.40	0.08
			2.00			1" Ice	2.39	1.55	0.10
RRUS 4478 B14_CCIV2	C	From Leg	4.00	0.00	185.00	No Ice	2.02	1.25	0.06
			0.00			1/2" Ice	2.20	1.40	0.08
			2.00			1" Ice	2.39	1.55	0.10
RRUS 4449 B5/B12	A	From Leg	4.00	0.00	185.00	No Ice	1.97	1.41	0.07
			0.00			1/2" Ice	2.14	1.56	0.09

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			2.00			Ice	2.33	1.73	0.11
						1" Ice			
RRUS 4449 B5/B12	B	From Leg	4.00	0.00	185.00	No Ice	1.97	1.41	0.07
			0.00			1/2"	2.14	1.56	0.09
			2.00			Ice	2.33	1.73	0.11
						1" Ice			
RRUS 4449 B5/B12	C	From Leg	4.00	0.00	185.00	No Ice	1.97	1.41	0.07
			0.00			1/2"	2.14	1.56	0.09
			2.00			Ice	2.33	1.73	0.11
						1" Ice			
RRUS 8843 B2/B66A_CCIV2	A	From Leg	4.00	0.00	185.00	No Ice	1.98	1.70	0.08
			0.00			1/2"	2.16	1.86	0.10
			2.00			Ice	2.34	2.04	0.12
						1" Ice			
RRUS 8843 B2/B66A_CCIV2	B	From Leg	4.00	0.00	185.00	No Ice	1.98	1.70	0.08
			0.00			1/2"	2.16	1.86	0.10
			2.00			Ice	2.34	2.04	0.12
						1" Ice			
RRUS 8843 B2/B66A_CCIV2	C	From Leg	4.00	0.00	185.00	No Ice	1.98	1.70	0.08
			0.00			1/2"	2.16	1.86	0.10
			2.00			Ice	2.34	2.04	0.12
						1" Ice			
DC6-48-60-18-8F	A	From Leg	4.00	0.00	185.00	No Ice	0.92	0.92	0.02
			0.00			1/2"	1.46	1.46	0.04
			0.00			Ice	1.64	1.64	0.06
						1" Ice			
DC6-48-60-18-8F	B	From Leg	4.00	0.00	185.00	No Ice	0.92	0.92	0.02
			0.00			1/2"	1.46	1.46	0.04
			0.00			Ice	1.64	1.64	0.06
						1" Ice			
DC6-48-60-18-8F_CCIV2	C	From Leg	4.00	0.00	185.00	No Ice	2.90	4.82	0.03
			0.00			1/2"	3.13	5.10	0.07
			2.00			Ice	3.37	5.39	0.11
						1" Ice			
(2) 8'x2" Mount Pipe	A	From Leg	4.00	0.00	185.00	No Ice	1.90	1.90	0.03
			0.00			1/2"	2.73	2.73	0.04
			0.00			Ice	3.40	3.40	0.06
						1" Ice			
(2) 8'x2" Mount Pipe	B	From Leg	4.00	0.00	185.00	No Ice	1.90	1.90	0.03
			0.00			1/2"	2.73	2.73	0.04
			0.00			Ice	3.40	3.40	0.06
						1" Ice			
(2) 8'x2" Mount Pipe	C	From Leg	4.00	0.00	185.00	No Ice	1.90	1.90	0.03
			0.00			1/2"	2.73	2.73	0.04
			0.00			Ice	3.40	3.40	0.06
						1" Ice			
(2) site pro 1 SFS-V-L 70" Vertical Angle Stabilizer Kit	A	From Leg	2.00	0.00	185.00	No Ice	4.24	3.96	0.08
			0.00			1/2"	4.78	4.46	0.10
			0.00			Ice	5.44	5.06	0.14
						1" Ice			
(2) site pro 1 SFS-V-L 70" Vertical Angle Stabilizer Kit	B	From Leg	2.00	0.00	185.00	No Ice	4.24	3.96	0.08
			0.00			1/2"	4.78	4.46	0.10
			0.00			Ice	5.44	5.06	0.14
						1" Ice			
(2) site pro 1 SFS-V-L 70" Vertical Angle Stabilizer Kit	C	From Leg	2.00	0.00	185.00	No Ice	4.24	3.96	0.08
			0.00			1/2"	4.78	4.46	0.10
			0.00			Ice	5.44	5.06	0.14
						1" Ice			
Miscellaneous [NA 507-1]	C	None		0.00	185.00	No Ice	4.56	4.56	0.25
						1/2"	6.39	6.39	0.31
						Ice	8.18	8.18	0.40
						1" Ice			
Platform Mount [LP 602-1_KCKR]	C	None		0.00	185.00	No Ice	42.30	42.30	1.62
						1/2"	49.04	49.04	2.38
						Ice	55.87	55.87	3.27

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice			
** 175 **									
MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.00	175.00	No Ice 1/2" Ice 1" Ice	8.01 8.52 9.04	4.23 4.69 5.16	0.11 0.19 0.29
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.00	175.00	No Ice 1/2" Ice 1" Ice	8.01 8.52 9.04	4.23 4.69 5.16	0.11 0.19 0.29
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.00	175.00	No Ice 1/2" Ice 1" Ice	8.01 8.52 9.04	4.23 4.69 5.16	0.11 0.19 0.29
TA08025-B604	A	From Leg	4.00 0.00 0.00	0.00	175.00	No Ice 1/2" Ice 1" Ice	1.96 2.14 2.32	0.98 1.11 1.25	0.06 0.08 0.10
TA08025-B604	B	From Leg	4.00 0.00 0.00	0.00	175.00	No Ice 1/2" Ice 1" Ice	1.96 2.14 2.32	0.98 1.11 1.25	0.06 0.08 0.10
TA08025-B604	C	From Leg	4.00 0.00 0.00	0.00	175.00	No Ice 1/2" Ice 1" Ice	1.96 2.14 2.32	0.98 1.11 1.25	0.06 0.08 0.10
TA08025-B605	A	From Leg	4.00 0.00 0.00	0.00	175.00	No Ice 1/2" Ice 1" Ice	1.96 2.14 2.32	1.13 1.27 1.41	0.08 0.09 0.11
TA08025-B605	B	From Leg	4.00 0.00 0.00	0.00	175.00	No Ice 1/2" Ice 1" Ice	1.96 2.14 2.32	1.13 1.27 1.41	0.08 0.09 0.11
TA08025-B605	C	From Leg	4.00 0.00 0.00	0.00	175.00	No Ice 1/2" Ice 1" Ice	1.96 2.14 2.32	1.13 1.27 1.41	0.08 0.09 0.11
RDIDC-9181-PF-48	B	From Leg	4.00 0.00 0.00	0.00	175.00	No Ice 1/2" Ice 1" Ice	2.01 2.19 2.37	1.17 1.31 1.46	0.02 0.04 0.06
(2) 8'x2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.00	175.00	No Ice 1/2" Ice 1" Ice	1.90 2.73 3.40	1.90 2.73 3.40	0.03 0.04 0.06
(2) 8'x2" Mount Pipe	B	From Leg	4.00 0.00 0.00	0.00	175.00	No Ice 1/2" Ice 1" Ice	1.90 2.73 3.40	1.90 2.73 3.40	0.03 0.04 0.06
(2) 8'x2" Mount Pipe	C	From Leg	4.00 0.00 0.00	0.00	175.00	No Ice 1/2" Ice 1" Ice	1.90 2.73 3.40	1.90 2.73 3.40	0.03 0.04 0.06
Commscope MC-PK8-DSH	C	None		0.00	175.00	No Ice 1/2" Ice 1" Ice	34.24 62.95 91.66	34.24 62.95 91.66	1.75 2.10 2.45
****									
164									
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	4.60 5.05 5.50	4.01 4.45 4.89	0.10 0.16 0.23
APXVSPP18-C-A20 w/	B	From Leg	4.00	0.00	164.00	No Ice	4.60	4.01	0.10

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Mount Pipe			0.00			1/2" Ice	5.05	4.45	0.16
			2.00			1" Ice	5.50	4.89	0.23
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	4.60 5.05 5.50	4.01 4.45 4.89	0.10 0.16 0.23
APXVTM14-ALU-I20 w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	4.09 4.48 4.88	2.86 3.23 3.61	0.08 0.13 0.19
APXVTM14-ALU-I20 w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	4.09 4.48 4.88	2.86 3.23 3.61	0.08 0.13 0.19
APXVTM14-ALU-I20 w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	4.09 4.48 4.88	2.86 3.23 3.61	0.08 0.13 0.19
LLPX310R w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	4.54 4.89 5.25	2.98 3.53 4.09	0.05 0.08 0.13
LLPX310R w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	4.54 4.89 5.25	2.98 3.53 4.09	0.05 0.08 0.13
LLPX310R w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	4.54 4.89 5.25	2.98 3.53 4.09	0.05 0.08 0.13
1900MHz RRH (65MHz)	A	From Leg	4.00 0.00 2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	2.32 2.53 2.74	2.24 2.44 2.65	0.06 0.08 0.11
1900MHz RRH (65MHz)	B	From Leg	4.00 0.00 2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	2.32 2.53 2.74	2.24 2.44 2.65	0.06 0.08 0.11
1900MHz RRH (65MHz)	C	From Leg	4.00 0.00 2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	2.32 2.53 2.74	2.24 2.44 2.65	0.06 0.08 0.11
800MHZ RRH	A	From Leg	4.00 0.00 2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	2.13 2.32 2.51	1.77 1.95 2.13	0.05 0.07 0.10
800MHZ RRH	B	From Leg	4.00 0.00 2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	2.13 2.32 2.51	1.77 1.95 2.13	0.05 0.07 0.10
800MHZ RRH	C	From Leg	4.00 0.00 2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	2.13 2.32 2.51	1.77 1.95 2.13	0.05 0.07 0.10
800 EXTERNAL NOTCH FILTER	A	From Leg	4.00 0.00 2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	0.66 0.76 0.87	0.32 0.40 0.48	0.01 0.02 0.02
800 EXTERNAL NOTCH FILTER	B	From Leg	4.00 0.00 2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	0.66 0.76 0.87	0.32 0.40 0.48	0.01 0.02 0.02
800 EXTERNAL NOTCH FILTER	C	From Leg	4.00 0.00	0.00	164.00	No Ice 1/2"	0.66 0.76	0.32 0.40	0.01 0.02

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			2.00			Ice 1" Ice	0.87	0.48	0.02
(3) ACU-A20-N	A	From Leg	4.00 0.00 2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	0.07 0.10 0.15	0.12 0.16 0.21	0.00 0.00 0.00
(3) ACU-A20-N	B	From Leg	4.00 0.00 2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	0.07 0.10 0.15	0.12 0.16 0.21	0.00 0.00 0.00
(3) ACU-A20-N	C	From Leg	4.00 0.00 2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	0.07 0.10 0.15	0.12 0.16 0.21	0.00 0.00 0.00
TD-RRH8x20-25	B	From Leg	4.00 0.00 2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	4.05 4.30 4.56	1.53 1.71 1.90	0.07 0.10 0.13
TD-RRH8x20-25	B	From Leg	4.00 0.00 2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	4.05 4.30 4.56	1.53 1.71 1.90	0.07 0.10 0.13
TD-RRH8x20-25	C	From Leg	4.00 0.00 2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	4.05 4.30 4.56	1.53 1.71 1.90	0.07 0.10 0.13
FDD_R6_RRH	A	From Leg	4.00 0.00 2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	1.53 1.69 1.85	0.68 0.80 0.92	0.03 0.04 0.06
FDD_R6_RRH	B	From Leg	4.00 0.00 2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	1.53 1.69 1.85	0.68 0.80 0.92	0.03 0.04 0.06
FDD_R6_RRH	C	From Leg	4.00 0.00 2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	1.53 1.69 1.85	0.68 0.80 0.92	0.03 0.04 0.06
(2) 8'x2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	1.90 2.73 3.40	1.90 2.73 3.40	0.03 0.04 0.06
(2) 8'x2" Mount Pipe	B	From Leg	4.00 0.00 0.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	1.90 2.73 3.40	1.90 2.73 3.40	0.03 0.04 0.06
(2) 8'x2" Mount Pipe	C	From Leg	4.00 0.00 0.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	1.90 2.73 3.40	1.90 2.73 3.40	0.03 0.04 0.06
8' Ladder	A	From Leg	2.00 0.00 -2.00	0.00	164.00	No Ice 1/2" Ice 1" Ice	1.53 4.36 7.19	5.33 8.08 10.83	0.10 0.11 0.13
Platform Mount [LP 602-1]	C	None		0.00	164.00	No Ice 1/2" Ice 1" Ice	31.07 34.82 38.48	31.07 34.82 38.48	1.34 1.97 2.67
154									
(2) DB844G65ZAXY w/ Mount Pipe	A	From Leg	4.00 0.00 1.00	0.00	154.00	No Ice 1/2" Ice 1" Ice	4.23 4.71 5.21	4.51 5.00 5.50	0.03 0.08 0.13
(2) DB844G65ZAXY w/ Mount Pipe	C	From Leg	4.00 0.00	0.00	154.00	No Ice 1/2"	4.23 4.71	4.51 5.00	0.03 0.08

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			1.00			Ice	5.21	5.50	0.13
						1" Ice			
(2) LPA-4016 w/ Mount Pipe	B	From Leg	4.00	0.00	154.00	No Ice	5.06	6.03	0.04
			0.00			1/2"	8.44	6.06	0.08
			1.00			Ice	11.82	6.09	0.12
						1" Ice			
(2) JAHH-65B-R3B	A	From Leg	4.00	0.00	154.00	No Ice	5.29	3.05	0.06
			0.00			1/2"	5.75	3.48	0.12
			1.00			Ice	6.22	3.93	0.19
						1" Ice			
(2) JAHH-65B-R3B	B	From Leg	4.00	0.00	154.00	No Ice	5.29	3.05	0.06
			0.00			1/2"	5.75	3.48	0.12
			1.00			Ice	6.22	3.93	0.19
						1" Ice			
(2) JAHH-65B-R3B	C	From Leg	4.00	0.00	154.00	No Ice	5.29	3.05	0.06
			0.00			1/2"	5.75	3.48	0.12
			1.00			Ice	6.22	3.93	0.19
						1" Ice			
Sub6 Antenna - VZS01 w/ Mount Pipe	A	From Leg	4.00	0.00	154.00	No Ice	5.91	3.74	0.12
			0.00			1/2"	6.72	4.79	0.17
			1.00			Ice	7.44	5.70	0.22
						1" Ice			
Sub6 Antenna - VZS01 w/ Mount Pipe	B	From Leg	4.00	0.00	154.00	No Ice	5.91	3.74	0.12
			0.00			1/2"	6.72	4.79	0.17
			1.00			Ice	7.44	5.70	0.22
						1" Ice			
Sub6 Antenna - VZS01 w/ Mount Pipe	C	From Leg	4.00	0.00	154.00	No Ice	5.91	3.74	0.12
			0.00			1/2"	6.72	4.79	0.17
			1.00			Ice	7.44	5.70	0.22
						1" Ice			
(2) DB-B1-6C-8AB-0Z	C	From Leg	4.00	0.00	154.00	No Ice	4.80	2.00	0.04
			0.00			1/2"	5.07	2.19	0.08
			1.00			Ice	5.35	2.39	0.12
						1" Ice			
CBC78T-DS-43-2X	A	From Leg	4.00	0.00	154.00	No Ice	0.37	0.51	0.02
			0.00			1/2"	0.45	0.60	0.03
			1.00			Ice	0.53	0.70	0.04
						1" Ice			
CBC78T-DS-43-2X	B	From Leg	4.00	0.00	154.00	No Ice	0.37	0.51	0.02
			0.00			1/2"	0.45	0.60	0.03
			1.00			Ice	0.53	0.70	0.04
						1" Ice			
CBC78T-DS-43-2X	C	From Leg	4.00	0.00	154.00	No Ice	0.37	0.51	0.02
			0.00			1/2"	0.45	0.60	0.03
			1.00			Ice	0.53	0.70	0.04
						1" Ice			
RFV01U-D1A	A	From Leg	4.00	0.00	154.00	No Ice	1.88	1.25	0.08
			0.00			1/2"	2.05	1.39	0.10
			1.00			Ice	2.22	1.54	0.12
						1" Ice			
RFV01U-D1A	B	From Leg	4.00	0.00	154.00	No Ice	1.88	1.25	0.08
			0.00			1/2"	2.05	1.39	0.10
			1.00			Ice	2.22	1.54	0.12
						1" Ice			
RFV01U-D1A	C	From Leg	4.00	0.00	154.00	No Ice	1.88	1.25	0.08
			0.00			1/2"	2.05	1.39	0.10
			1.00			Ice	2.22	1.54	0.12
						1" Ice			
RFV01U-D2A	A	From Leg	4.00	0.00	154.00	No Ice	1.88	1.01	0.07
			0.00			1/2"	2.05	1.14	0.09
			1.00			Ice	2.22	1.28	0.11
						1" Ice			
RFV01U-D2A	B	From Leg	4.00	0.00	154.00	No Ice	1.88	1.01	0.07
			0.00			1/2"	2.05	1.14	0.09
			1.00			Ice	2.22	1.28	0.11

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice			
RFV01U-D2A	C	From Leg	4.00	0.00	154.00	No Ice	1.88	1.01	0.07
			0.00			1/2" Ice	2.05	1.14	0.09
			1.00			1" Ice	2.22	1.28	0.11
(2) 8'x2" Mount Pipe	A	From Leg	4.00	0.00	154.00	No Ice	1.90	1.90	0.03
			0.00			1/2" Ice	2.73	2.73	0.04
			0.00			1" Ice	3.40	3.40	0.06
(2) 8'x2" Mount Pipe	B	From Leg	4.00	0.00	154.00	No Ice	1.90	1.90	0.03
			0.00			1/2" Ice	2.73	2.73	0.04
			0.00			1" Ice	3.40	3.40	0.06
(2) 8'x2" Mount Pipe	C	From Leg	4.00	0.00	154.00	No Ice	1.90	1.90	0.03
			0.00			1/2" Ice	2.73	2.73	0.04
			0.00			1" Ice	3.40	3.40	0.06
BSAMNT-SBS-2-2 Side By Side Bracket	A	From Leg	4.00	0.00	154.00	No Ice	0.00	0.00	0.07
			0.00			1/2" Ice	0.00	0.00	0.09
			0.00			1" Ice	0.00	0.00	0.11
BSAMNT-SBS-2-2 Side By Side Bracket	B	From Leg	4.00	0.00	154.00	No Ice	0.00	0.00	0.07
			0.00			1/2" Ice	0.00	0.00	0.09
			0.00			1" Ice	0.00	0.00	0.11
BSAMNT-SBS-2-2 Side By Side Bracket	B	From Leg	4.00	0.00	154.00	No Ice	0.00	0.00	0.07
			0.00			1/2" Ice	0.00	0.00	0.09
			0.00			1" Ice	0.00	0.00	0.11
Platform Mount [LP 601-1]	C	None		0.00	154.00	No Ice	28.50	28.50	1.12
						1/2" Ice	31.69	31.69	1.68
						1" Ice	34.87	34.87	2.28
146									
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	A	From Leg	4.00	0.00	146.00	No Ice	6.29	2.76	0.06
			0.00			1/2" Ice	6.86	3.27	0.11
			-1.00			1" Ice	7.45	3.79	0.16
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	B	From Leg	4.00	0.00	146.00	No Ice	6.29	2.76	0.06
			0.00			1/2" Ice	6.86	3.27	0.11
			-1.00			1" Ice	7.45	3.79	0.16
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	C	From Leg	4.00	0.00	146.00	No Ice	6.29	2.76	0.06
			0.00			1/2" Ice	6.86	3.27	0.11
			-1.00			1" Ice	7.45	3.79	0.16
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.00	0.00	146.00	No Ice	14.69	6.87	0.19
			0.00			1/2" Ice	15.46	7.55	0.31
			-1.00			1" Ice	16.23	8.25	0.46
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.00	0.00	146.00	No Ice	14.69	6.87	0.19
			0.00			1/2" Ice	15.46	7.55	0.31
			-1.00			1" Ice	16.23	8.25	0.46
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.00	0.00	146.00	No Ice	14.69	6.87	0.19
			0.00			1/2" Ice	15.46	7.55	0.31
			-1.00			1" Ice	16.23	8.25	0.46
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	4.00	0.00	146.00	No Ice	5.19	2.71	0.13
			0.00			1/2" Ice	5.59	3.04	0.17
			-1.00			1" Ice	6.02	3.38	0.23
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Leg	4.00	0.00	146.00	No Ice	5.19	2.71	0.13
			0.00			1/2" Ice	5.59	3.04	0.17
			-1.00			1" Ice	6.02	3.38	0.23

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice			
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Leg	4.00 0.00 -1.00	0.00	146.00	No Ice 1/2" Ice 1" Ice	5.19 5.59 6.02	2.71 3.04 3.38	0.13 0.17 0.23
RADIO 4449 B71 B85A_T-MOBILE	A	From Leg	4.00 0.00 -1.00	0.00	146.00	No Ice 1/2" Ice 1" Ice	1.97 2.15 2.33	1.59 1.75 1.92	0.07 0.09 0.12
RADIO 4449 B71 B85A_T-MOBILE	B	From Leg	4.00 0.00 -1.00	0.00	146.00	No Ice 1/2" Ice 1" Ice	1.97 2.15 2.33	1.59 1.75 1.92	0.07 0.09 0.12
RADIO 4449 B71 B85A_T-MOBILE	C	From Leg	4.00 0.00 -1.00	0.00	146.00	No Ice 1/2" Ice 1" Ice	1.97 2.15 2.33	1.59 1.75 1.92	0.07 0.09 0.12
RADIO 4460 B2/B25 B66_TMO	A	From Leg	4.00 0.00 -1.00	0.00	146.00	No Ice 1/2" Ice 1" Ice	2.14 2.32 2.51	1.69 1.85 2.02	0.11 0.13 0.16
RADIO 4460 B2/B25 B66_TMO	B	From Leg	4.00 0.00 -1.00	0.00	146.00	No Ice 1/2" Ice 1" Ice	2.14 2.32 2.51	1.69 1.85 2.02	0.11 0.13 0.16
RADIO 4460 B2/B25 B66_TMO	C	From Leg	4.00 0.00 -1.00	0.00	146.00	No Ice 1/2" Ice 1" Ice	2.14 2.32 2.51	1.69 1.85 2.02	0.11 0.13 0.16
6'x2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.00	146.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
6'x2" Mount Pipe	B	From Leg	4.00 0.00 0.00	0.00	146.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
6'x2" Mount Pipe	C	From Leg	4.00 0.00 0.00	0.00	146.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
Platform Mount [LP 602-1]	C	None		0.00	146.00	No Ice 1/2" Ice 1" Ice	31.07 34.82 38.48	31.07 34.82 38.48	1.34 1.97 2.67
134									
(4) DB844H90E-XY w/ Mount Pipe	A	From Leg	4.00 0.00 1.00	0.00	134.00	No Ice 1/2" Ice 1" Ice	3.30 3.67 4.03	4.80 5.42 6.04	0.03 0.07 0.12
(4) DB844H90E-XY w/ Mount Pipe	B	From Leg	4.00 0.00 1.00	0.00	134.00	No Ice 1/2" Ice 1" Ice	3.30 3.67 4.03	4.80 5.42 6.04	0.03 0.07 0.12
(4) DB844H90E-XY w/ Mount Pipe	C	From Leg	4.00 0.00 1.00	0.00	134.00	No Ice 1/2" Ice 1" Ice	3.30 3.67 4.03	4.80 5.42 6.04	0.03 0.07 0.12
Platform Mount [LP 303-1]	C	None		0.00	134.00	No Ice 1/2" Ice 1" Ice	14.69 18.01 21.34	14.69 18.01 21.34	1.25 1.57 1.94

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
164											
A-ANT-23G-2-C	A	Paraboloid w/Shroud (HP)	From Leg	4.00 0.00 2.00	0.00		164.00	2.17	No Ice 1/2" Ice 1" Ice	3.72 4.01 4.30	0.01 0.02 0.03
A-ANT-23G-2-C	B	Paraboloid w/Shroud (HP)	From Leg	4.00 0.00 2.00	40.00		164.00	2.17	No Ice 1/2" Ice 1" Ice	3.72 4.01 4.30	0.01 0.02 0.03
A-ANT-23G-2-C	C	Paraboloid w/Shroud (HP)	From Leg	4.00 0.00 2.00	20.00		164.00	2.17	No Ice 1/2" Ice 1" Ice	3.72 4.01 4.30	0.01 0.02 0.03

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service

Comb. No.	Description
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	194.792 - 157.424	Pole	Max Tension	8	0.00	0.00	0.00
			Max. Compression	26	-26.83	-0.72	-1.13
			Max. Mx	8	-14.58	-260.53	-1.49
			Max. My	14	-14.60	-1.40	-260.74
			Max. Vy	8	17.10	-260.53	-1.49
			Max. Vx	14	16.91	-1.40	-260.74
			Max. Torque	25			0.66
L2	157.424 - 116.862	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-55.51	-1.56	-1.65
			Max. Mx	8	-31.93	-1258.54	-2.24
			Max. My	14	-31.96	-1.80	-1248.70
			Max. Vy	8	30.97	-1258.54	-2.24
			Max. Vx	14	30.71	-1.80	-1248.70
			Max. Torque	18			1.02
L3	116.862 - 80.8723	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-69.45	-2.65	-1.36
			Max. Mx	8	-43.56	-2400.15	-2.01
			Max. My	14	-43.59	-1.32	-2380.81
			Max. Vy	8	34.14	-2400.15	-2.01
			Max. Vx	14	33.88	-1.32	-2380.81
			Max. Torque	18			1.02
L4	80.8723 - 39.8177	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-91.22	-4.10	-0.95
			Max. Mx	8	-62.35	-3838.81	-1.71
			Max. My	14	-62.36	-0.84	-3808.62
			Max. Vy	8	37.71	-3838.81	-1.71
			Max. Vx	14	37.45	-0.84	-3808.62
			Max. Torque	18			1.02
L5	39.8177 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-120.76	-5.89	-0.54
			Max. Mx	8	-88.44	-5723.44	-1.36
			Max. My	14	-88.44	-0.29	-5680.57
			Max. Vy	8	40.98	-5723.44	-1.36
			Max. Vx	14	40.74	-0.29	-5680.57
			Max. Torque	18			1.02

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	30	120.76	-11.18	-0.03
	Max. H_x	20	88.46	40.90	0.05
	Max. H_z	2	88.46	-0.01	40.69
	Max. M_x	2	5679.03	-0.01	40.69
	Max. M_z	8	5723.44	-40.94	0.01

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Max. Torsion	18	1.02	35.39	-20.42
	Min. Vert	25	66.34	20.46	35.24
	Min. H_x	8	88.46	-40.94	0.01
	Min. H_z	14	88.46	0.03	-40.69
	Min. M_x	14	-5680.57	0.03	-40.69
	Min. M_z	20	-5710.38	40.90	0.05
	Min. Torsion	6	-0.95	-35.44	20.38

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	73.71	0.00	0.00	0.51	-2.41	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	88.46	0.01	-40.69	-5679.03	-2.34	0.04
0.9 Dead+1.0 Wind 0 deg - No Ice	66.34	0.01	-40.69	-5607.99	-1.57	0.04
1.2 Dead+1.0 Wind 30 deg - No Ice	88.46	20.46	-35.26	-4921.16	-2860.21	0.81
0.9 Dead+1.0 Wind 30 deg - No Ice	66.34	20.46	-35.26	-4859.60	-2823.57	0.80
1.2 Dead+1.0 Wind 60 deg - No Ice	88.46	35.44	-20.38	-2843.82	-4954.54	0.95
0.9 Dead+1.0 Wind 60 deg - No Ice	66.34	35.44	-20.38	-2808.33	-4891.61	0.94
1.2 Dead+1.0 Wind 90 deg - No Ice	88.46	40.94	-0.01	1.36	-5723.44	0.82
0.9 Dead+1.0 Wind 90 deg - No Ice	66.34	40.94	-0.01	1.15	-5650.89	0.82
1.2 Dead+1.0 Wind 120 deg - No Ice	88.46	35.42	20.39	2849.01	-4952.80	0.80
0.9 Dead+1.0 Wind 120 deg - No Ice	66.34	35.42	20.39	2813.07	-4889.87	0.80
1.2 Dead+1.0 Wind 150 deg - No Ice	88.46	20.47	35.23	4918.07	-2865.14	0.62
0.9 Dead+1.0 Wind 150 deg - No Ice	66.34	20.47	35.23	4856.19	-2828.40	0.62
1.2 Dead+1.0 Wind 180 deg - No Ice	88.46	-0.03	40.69	5680.57	-0.29	0.09
0.9 Dead+1.0 Wind 180 deg - No Ice	66.34	-0.03	40.69	5609.16	0.50	0.09
1.2 Dead+1.0 Wind 210 deg - No Ice	88.46	-20.45	35.27	4922.83	2851.98	-0.62
0.9 Dead+1.0 Wind 210 deg - No Ice	66.34	-20.45	35.27	4860.89	2816.97	-0.62
1.2 Dead+1.0 Wind 240 deg - No Ice	88.46	-35.39	20.42	2851.20	4939.48	-1.02
0.9 Dead+1.0 Wind 240 deg - No Ice	66.34	-35.39	20.42	2815.26	4878.28	-1.01
1.2 Dead+1.0 Wind 270 deg - No Ice	88.46	-40.90	-0.05	-10.63	5710.38	-0.64
0.9 Dead+1.0 Wind 270 deg - No Ice	66.34	-40.90	-0.05	-10.64	5639.53	-0.63
1.2 Dead+1.0 Wind 300 deg - No Ice	88.46	-35.42	-20.38	-2846.28	4945.79	-0.53
0.9 Dead+1.0 Wind 300 deg - No Ice	66.34	-35.42	-20.38	-2810.71	4884.48	-0.53
1.2 Dead+1.0 Wind 330 deg - No Ice	88.46	-20.46	-35.24	-4918.62	2856.68	-0.52
0.9 Dead+1.0 Wind 330 deg - No Ice	66.34	-20.46	-35.24	-4857.07	2821.58	-0.52
1.2 Dead+1.0 Ice+1.0 Temp	120.76	0.00	0.00	0.54	-5.89	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	120.76	-0.03	-11.10	-1555.90	-0.60	-0.03

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	120.76	5.56	-9.60	-1345.24	-786.01	0.08
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	120.76	9.66	-5.53	-773.82	-1362.94	0.07
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	120.76	11.18	0.03	6.34	-1576.65	0.05
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	120.76	9.69	5.59	785.55	-1368.10	0.08
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	120.76	5.62	9.63	1351.14	-796.66	0.10
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	120.76	0.03	11.10	1557.25	-11.23	0.05
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	120.76	-5.56	9.60	1346.63	772.97	-0.04
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	120.76	-9.65	5.54	776.43	1348.43	-0.09
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	120.76	-11.17	-0.04	-7.30	1562.57	-0.01
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	120.76	-9.69	-5.58	-783.94	1355.33	-0.02
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	120.76	-5.62	-9.63	-1350.23	783.57	-0.08
Dead+Wind 0 deg - Service	73.71	0.00	-9.91	-1372.64	-2.36	0.01
Dead+Wind 30 deg - Service	73.71	4.98	-8.59	-1189.40	-693.31	0.20
Dead+Wind 60 deg - Service	73.71	8.63	-4.96	-687.17	-1199.66	0.23
Dead+Wind 90 deg - Service	73.71	9.97	-0.00	0.72	-1385.58	0.20
Dead+Wind 120 deg - Service	73.71	8.63	4.97	689.21	-1199.24	0.19
Dead+Wind 150 deg - Service	73.71	4.99	8.58	1189.44	-694.50	0.15
Dead+Wind 180 deg - Service	73.71	-0.01	9.91	1373.80	-1.86	0.02
Dead+Wind 210 deg - Service	73.71	-4.98	8.59	1190.59	687.73	-0.16
Dead+Wind 240 deg - Service	73.71	-8.62	4.97	689.74	1192.43	-0.25
Dead+Wind 270 deg - Service	73.71	-9.96	-0.01	-2.17	1378.83	-0.15
Dead+Wind 300 deg - Service	73.71	-8.63	-4.96	-687.76	1193.96	-0.13
Dead+Wind 330 deg - Service	73.71	-4.98	-8.58	-1188.79	688.87	-0.12

Solution Summary

Load Comb.	Sum of Applied Forces PX	PY	PZ	Sum of Reactions PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-73.71	0.00	0.00	73.71	0.00	0.000%
2	0.01	-88.46	-40.69	-0.01	88.46	40.69	0.000%
3	0.01	-66.34	-40.69	-0.01	66.34	40.69	0.000%
4	20.46	-88.46	-35.26	-20.46	88.46	35.26	0.000%
5	20.46	-66.34	-35.26	-20.46	66.34	35.26	0.000%
6	35.44	-88.46	-20.38	-35.44	88.46	20.38	0.000%
7	35.44	-66.34	-20.38	-35.44	66.34	20.38	0.000%
8	40.94	-88.46	-0.01	-40.94	88.46	0.01	0.000%
9	40.94	-66.34	-0.01	-40.94	66.34	0.01	0.000%
10	35.42	-88.46	20.39	-35.42	88.46	-20.39	0.000%
11	35.42	-66.34	20.39	-35.42	66.34	-20.39	0.000%
12	20.47	-88.46	35.23	-20.47	88.46	-35.23	0.000%
13	20.47	-66.34	35.23	-20.47	66.34	-35.23	0.000%
14	-0.03	-88.46	40.69	0.03	88.46	-40.69	0.000%
15	-0.03	-66.34	40.69	0.03	66.34	-40.69	0.000%
16	-20.45	-88.46	35.27	20.45	88.46	-35.27	0.000%
17	-20.45	-66.34	35.27	20.45	66.34	-35.27	0.000%
18	-35.39	-88.46	20.42	35.39	88.46	-20.42	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
19	-35.39	-66.34	20.42	35.39	66.34	-20.42	0.000%
20	-40.90	-88.46	-0.05	40.90	88.46	0.05	0.000%
21	-40.90	-66.34	-0.05	40.90	66.34	0.05	0.000%
22	-35.42	-88.46	-20.38	35.42	88.46	20.38	0.000%
23	-35.42	-66.34	-20.38	35.42	66.34	20.38	0.000%
24	-20.46	-88.46	-35.24	20.46	88.46	35.24	0.000%
25	-20.46	-66.34	-35.24	20.46	66.34	35.24	0.000%
26	0.00	-120.76	0.00	-0.00	120.76	-0.00	0.000%
27	-0.03	-120.76	-11.10	0.03	120.76	11.10	0.000%
28	5.56	-120.76	-9.60	-5.56	120.76	9.60	0.000%
29	9.66	-120.76	-5.53	-9.66	120.76	5.53	0.000%
30	11.18	-120.76	0.03	-11.18	120.76	-0.03	0.000%
31	9.69	-120.76	5.59	-9.69	120.76	-5.59	0.000%
32	5.62	-120.76	9.63	-5.62	120.76	-9.63	0.000%
33	0.03	-120.76	11.10	-0.03	120.76	-11.10	0.000%
34	-5.56	-120.76	9.60	5.56	120.76	-9.60	0.000%
35	-9.65	-120.76	5.54	9.65	120.76	-5.54	0.000%
36	-11.17	-120.76	-0.04	11.17	120.76	0.04	0.000%
37	-9.69	-120.76	-5.58	9.69	120.76	5.58	0.000%
38	-5.62	-120.76	-9.63	5.62	120.76	9.63	0.000%
39	0.00	-73.71	-9.91	-0.00	73.71	9.91	0.000%
40	4.98	-73.71	-8.59	-4.98	73.71	8.59	0.000%
41	8.63	-73.71	-4.96	-8.63	73.71	4.96	0.000%
42	9.97	-73.71	-0.00	-9.97	73.71	0.00	0.000%
43	8.63	-73.71	4.97	-8.63	73.71	-4.97	0.000%
44	4.99	-73.71	8.58	-4.99	73.71	-8.58	0.000%
45	-0.01	-73.71	9.91	0.01	73.71	-9.91	0.000%
46	-4.98	-73.71	8.59	4.98	73.71	-8.59	0.000%
47	-8.62	-73.71	4.97	8.62	73.71	-4.97	0.000%
48	-9.96	-73.71	-0.01	9.96	73.71	0.01	0.000%
49	-8.63	-73.71	-4.96	8.63	73.71	4.96	0.000%
50	-4.98	-73.71	-8.58	4.98	73.71	8.58	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00064590
3	Yes	4	0.00000001	0.00028645
4	Yes	6	0.00000001	0.00010552
5	Yes	5	0.00000001	0.00085266
6	Yes	6	0.00000001	0.00010377
7	Yes	5	0.00000001	0.00083779
8	Yes	4	0.00000001	0.00085737
9	Yes	4	0.00000001	0.00047219
10	Yes	6	0.00000001	0.00010629
11	Yes	5	0.00000001	0.00085855
12	Yes	6	0.00000001	0.00010417
13	Yes	5	0.00000001	0.00084119
14	Yes	4	0.00000001	0.00064792
15	Yes	4	0.00000001	0.00029001
16	Yes	6	0.00000001	0.00010362
17	Yes	5	0.00000001	0.00083730
18	Yes	6	0.00000001	0.00010595
19	Yes	5	0.00000001	0.00085627
20	Yes	4	0.00000001	0.00069296
21	Yes	4	0.00000001	0.00033128
22	Yes	6	0.00000001	0.00010419
23	Yes	5	0.00000001	0.00084181
24	Yes	6	0.00000001	0.00010517
25	Yes	5	0.00000001	0.00085038
26	Yes	4	0.00000001	0.00000702
27	Yes	5	0.00000001	0.00048296
28	Yes	5	0.00000001	0.00058419

29	Yes	5	0.00000001	0.00058575
30	Yes	5	0.00000001	0.00049047
31	Yes	5	0.00000001	0.00059516
32	Yes	5	0.00000001	0.00059224
33	Yes	5	0.00000001	0.00048511
34	Yes	5	0.00000001	0.00058108
35	Yes	5	0.00000001	0.00058350
36	Yes	5	0.00000001	0.00048574
37	Yes	5	0.00000001	0.00058700
38	Yes	5	0.00000001	0.00058530
39	Yes	4	0.00000001	0.00010729
40	Yes	4	0.00000001	0.00054099
41	Yes	4	0.00000001	0.00051453
42	Yes	4	0.00000001	0.00011316
43	Yes	4	0.00000001	0.00054734
44	Yes	4	0.00000001	0.00052159
45	Yes	4	0.00000001	0.00010751
46	Yes	4	0.00000001	0.00051406
47	Yes	4	0.00000001	0.00054400
48	Yes	4	0.00000001	0.00011001
49	Yes	4	0.00000001	0.00051738
50	Yes	4	0.00000001	0.00053206

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	194.792 - 157.424	27.3493	42	1.22	0.00
L2	162.159 - 116.862	19.1525	42	1.15	0.00
L3	122.727 - 80.8723	10.6284	42	0.87	0.00
L4	87.7161 - 39.8177	5.2764	42	0.57	0.00
L5	47.7682 - 0	1.5829	42	0.30	0.00

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
185.00	80010965 w/ Mount Pipe	42	24.8451	1.21	0.00	43051
175.00	MX08FRO665-21 w/ Mount Pipe	42	22.3151	1.19	0.00	21298
166.00	A-ANT-23G-2-C	42	20.0853	1.17	0.00	14641
164.00	APXVSPP18-C-A20 w/ Mount Pipe	42	19.5980	1.16	0.00	13698
154.00	(2) DB844G65ZAXY w/ Mount Pipe	42	17.2182	1.11	0.00	10529
146.00	APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	42	15.3950	1.06	0.00	8911
134.00	(4) DB844H90E-XY w/ Mount Pipe	42	12.8257	0.96	0.00	7242

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	194.792 - 157.424	113.0576	8	5.03	0.00
L2	162.159 - 116.862	79.1871	8	4.76	0.00
L3	122.727 - 80.8723	43.9500	8	3.59	0.00
L4	87.7161 - 39.8177	21.8160	8	2.35	0.00
L5	47.7682 - 0	6.5428	8	1.24	0.00

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
185.00	80010965 w/ Mount Pipe	8	102.7103	4.99	0.00	10615
175.00	MX08FRO665-21 w/ Mount Pipe	8	92.2565	4.93	0.00	5250
166.00	A-ANT-23G-2-C	8	83.0420	4.82	0.00	3607
164.00	APXVSPP18-C-A20 w/ Mount Pipe	8	81.0283	4.79	0.00	3374
154.00	(2) DB844G65ZAXY w/ Mount Pipe	8	71.1929	4.59	0.00	2586
146.00	APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	8	63.6566	4.37	0.00	2183
134.00	(4) DB844H90E-XY w/ Mount Pipe	8	53.0349	3.99	0.00	1768

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	194.792 - 157.424 (1)	TP33.875x25x0.25	37.37	0.00	0.0	25.7892	-14.59	1508.67	0.010
L2	157.424 - 116.862 (2)	TP42.9063x32.2505x0.3125	45.30	0.00	0.0	40.8793	-31.93	2391.44	0.013
L3	116.862 - 80.8723 (3)	TP50.75x40.9017x0.375	41.85	0.00	0.0	58.0421	-43.56	3395.46	0.013
L4	80.8723 - 39.8177 (4)	TP59.6563x48.3896x0.5	47.90	0.00	0.0	90.9131	-62.35	5318.42	0.012
L5	39.8177 - 0 (5)	TP68x56.7861x0.5	47.77	0.00	0.0	107.1220	-88.44	6266.67	0.014

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	194.792 - 157.424 (1)	TP33.875x25x0.25	261.73	1168.50	0.224	0.00	1168.50	0.000
L2	157.424 - 116.862 (2)	TP42.9063x32.2505x0.3125	1258.53	2336.93	0.539	0.00	2336.93	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L3	116.862 - 80.8723 (3)	TP50.75x40.9017x0.375	2400.15	3945.55	0.608	0.00	3945.55	0.000
L4	80.8723 - 39.8177 (4)	TP59.6563x48.3896x0.5	3838.82	7560.82	0.508	0.00	7560.82	0.000
L5	39.8177 - 0 (5)	TP68x56.7861x0.5	5723.44	9944.92	0.576	0.00	9944.92	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	194.792 - 157.424 (1)	TP33.875x25x0.25	17.03	452.60	0.038	0.20	1288.21	0.000
L2	157.424 - 116.862 (2)	TP42.9063x32.2505x0.3125	30.97	717.43	0.043	0.83	2589.45	0.000
L3	116.862 - 80.8723 (3)	TP50.75x40.9017x0.375	34.14	1018.64	0.034	0.83	4350.16	0.000
L4	80.8723 - 39.8177 (4)	TP59.6563x48.3896x0.5	37.71	1595.53	0.024	0.82	8004.48	0.000
L5	39.8177 - 0 (5)	TP68x56.7861x0.5	40.98	1880.00	0.022	0.82	11113.25	0.000

Pole Interaction Design Data

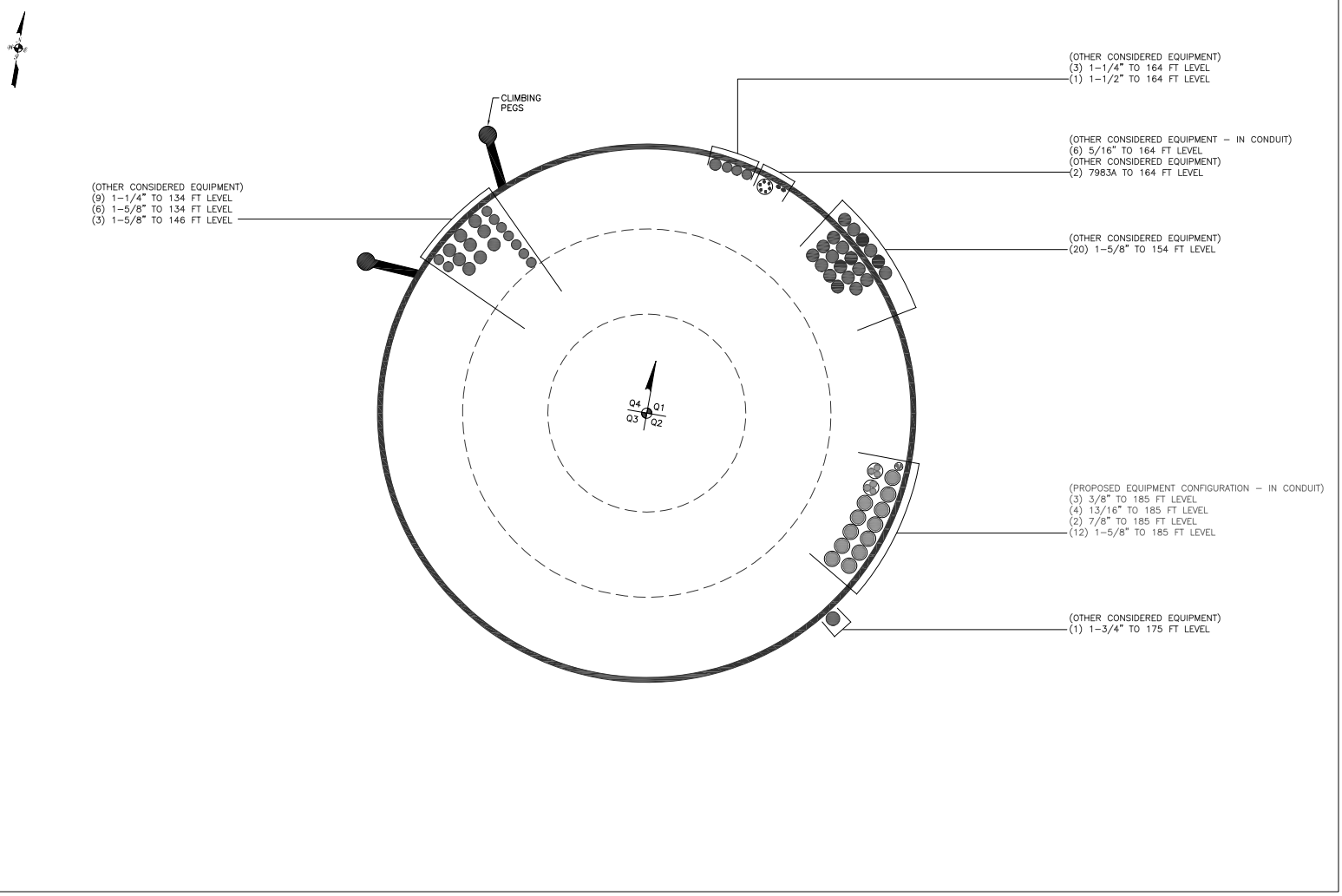
Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	194.792 - 157.424 (1)	0.010	0.224	0.000	0.038	0.000	0.235	1.050	4.8.2
L2	157.424 - 116.862 (2)	0.013	0.539	0.000	0.043	0.000	0.554	1.050	4.8.2
L3	116.862 - 80.8723 (3)	0.013	0.608	0.000	0.034	0.000	0.622	1.050	4.8.2
L4	80.8723 - 39.8177 (4)	0.012	0.508	0.000	0.024	0.000	0.520	1.050	4.8.2
L5	39.8177 - 0 (5)	0.014	0.576	0.000	0.022	0.000	0.590	1.050	4.8.2

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	194.792 - 157.424	Pole	TP33.875x25x0.25	1	-14.59	1584.10	22.4	Pass
L2	157.424 - 116.862	Pole	TP42.9063x32.2505x0.3125	2	-31.93	2511.01	52.7	Pass
L3	116.862 - 80.8723	Pole	TP50.75x40.9017x0.375	3	-43.56	3565.23	59.3	Pass
L4	80.8723 - 39.8177	Pole	TP59.6563x48.3896x0.5	4	-62.35	5584.34	49.5	Pass
L5	39.8177 - 0	Pole	TP68x56.7861x0.5	5	-88.44	6580.00	56.2	Pass
							Summary	
						Pole (L3)	59.3	Pass
						RATING =	**59.3**	**Pass**

APPENDIX B

BASE LEVEL DRAWING


(OTHER CONSIDERED EQUIPMENT)
(3) 1-1/4" TO 164 FT LEVEL
(1) 1-1/2" TO 164 FT LEVEL
CLIMBING PEGS
(OTHER CONSIDERED EQUIPMENT - IN CONDUIT)
(6) 5/16" TO 164 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(2) 7983A TO 164 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(9) 1-1/4" TO 134 FT LEVEL
(6) 1-5/8" TO 134 FT LEVEL
(3) 1-5/8" TO 146 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(20) 1-5/8" TO 154 FT LEVEL
Q4
Q1
Q3
Q2
(PROPOSED EQUIPMENT CONFIGURATION - IN CONDUIT)
(3) 3/8" TO 185 FT LEVEL
(4) 13/16" TO 185 FT LEVEL
(2) 7/8" TO 185 FT LEVEL
(12) 1-5/8" TO 185 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1-3/4" TO 175 FT LEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

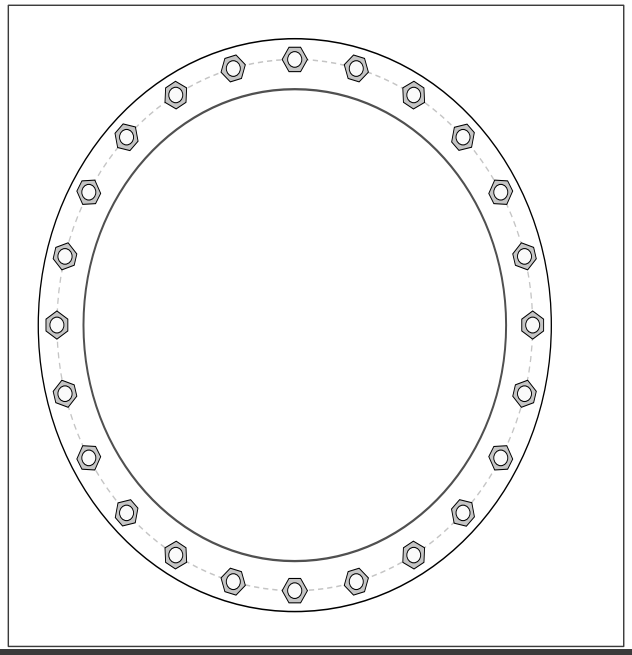
Monopole Base Plate Connection

Site Info	
BU #	881535
Site Name	TRUMBULL TOWER
Order #	586252 Rev. 0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	2.0625

Applied Loads	
Moment (kip-ft)	5723.44
Axial Force (kips)	88.44
Shear Force (kips)	40.98

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

(24) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 76.5" BC

Base Plate Data

82.5" OD x 2.5" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Stiffener Data

N/A

Pole Data

68" x 0.5" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Anchor Rod Summary *(units of kips, kip-in)*

Pu_t = 145.89	ϕPn_t = 243.75	**Stress Rating**
Vu = 1.71	ϕVn = 149.1	**57.0%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	28.71	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	**50.6%**	**Pass**

Pier and Pad Foundation

BU # :	881535
Site Name:	TRUMBULL TOWE
App. Number:	586252 Rev. 0

TIA-222 Revision:	H
Tower Type:	Monopole

Top & Bot. Pad Rein. Different?:	☑
Block Foundation?:	☐
Rectangular Pad?:	☐

Superstructure Analysis Reactions		
Compression, P_{comp}:	88.46	kips
Base Shear, Vu_comp:	40.94	kips
Moment, M_u:	5723.44	ft-kips
Tower Height, **H**:	194.79	ft
BP Dist. Above Fdn, bp_{dist}:	6.75	in

Pier Properties		
Pier Shape:	Square	
Pier Diameter, **dpier**:	9	ft
Ext. Above Grade, **E**:	1	ft
Pier Rebar Size, **Sc**:	8	
Pier Rebar Quantity, **mc**:	54	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	10	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties		
Depth, **D**:	7	ft
Pad Width, W_1:	29	ft
Pad Thickness, **T**:	3	ft
Pad Rebar Size (Top dir.2), Sp_{top2}:	8	
Pad Rebar Quantity (Top dir. 2), mp_{top2}:	30	
Pad Rebar Size (Bottom dir. 2), Sp_2:	8	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	55	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties		
Rebar Grade, **Fy**:	60	ksi
Concrete Compressive Strength, **F'c**:	4	ksi
Dry Concrete Density, δ**c**:	150	pcf

Soil Properties		
Total Soil Unit Weight, γ:	125	pcf
Ultimate Net Bearing, Qnet:	12.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	30	degrees
SPT Blow Count, N_{blows}:	60	
Base Friction, μ:	0.6	
Neglected Depth, **N**:	3.50	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	15	ft

<--Toggle between Gross and Net

Foundation Analysis Checks	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	500.96	40.94	**7.8%**	**Pass**
Bearing Pressure (ksf)	9.66	2.36	**24.5%**	**Pass**
*Overturning (kip*ft)*	10550.25	6073.99	**57.6%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	9316.46	5928.14	**60.6%**	**Pass**
Pier Compression (kip)	51554.88	161.36	**0.3%**	**Pass**
*Pad Flexure (kip*ft)*	5943.63	2001.48	**32.1%**	**Pass**
Pad Shear - 1-way (kips)	1039.95	285.54	**26.1%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.190	0.043	**21.4%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	5714.52	3556.88	**59.3%**	**Pass**

**Rating per TIA-222-H Section 15.5*

Structural Rating*:	**60.6%**
Soil Rating*:	**57.6%**

Version 4.1.1

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see Section 11.4.3)

Elevation: 322.51 ft (NAVD 88)
Latitude: 41.273281
Longitude: -73.213106

Wind

Results:

Wind Speed	118 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	98 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Wed Mar 30 2022

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

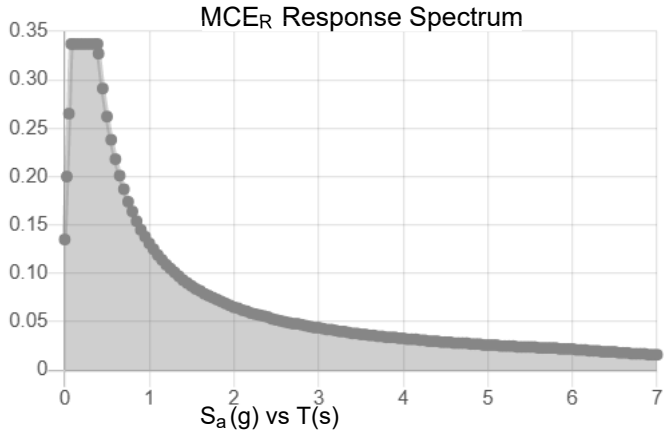
Seismic

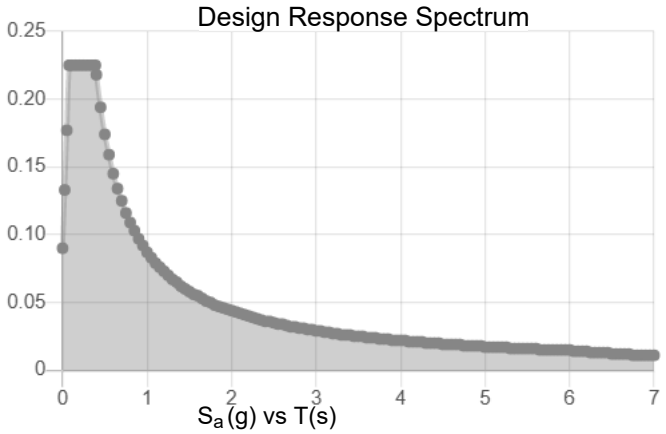
Site Soil Class: D - Default (see Section 11.4.3)

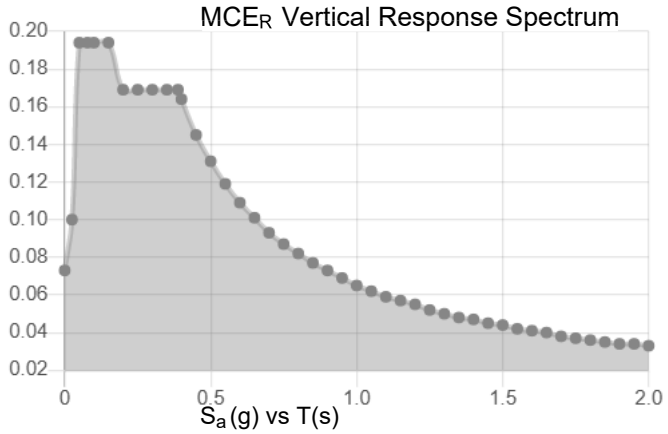
Results:

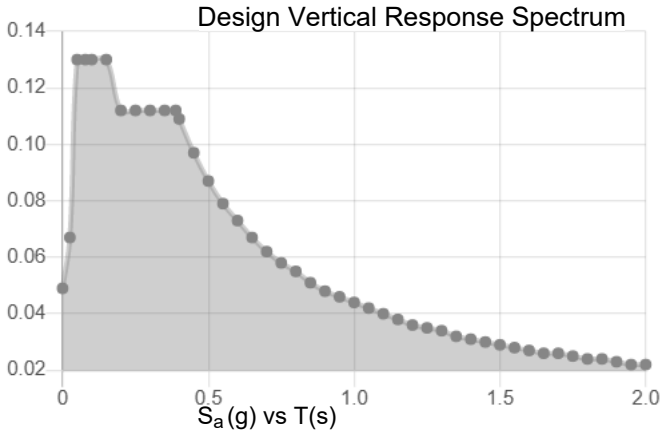
S_S :	0.211	S_{D1} :	0.087
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.12
F_v :	2.4	PGA_M :	0.187
S_{MS} :	0.337	F_{PGA} :	1.561
S_{M1} :	0.131	I_e :	1
S_{DS} :	0.225	C_v :	0.721

Seismic Design Category B









Data Accessed: **Wed Mar 30 2022**

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Wed Mar 30 2022

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Exhibit E

Mount Analysis

Date: **March 25, 2022**

Kimley-Horn and Associates, Inc.
421 Fayetteville Street, Suite 600
Raleigh, NC 27601
(919) 677-2000
CrownMounts@kimley-horn.com

Subject:	**Mount Analysis Report**	
Carrier Designation:	**AT&T Mobility Equipment Change-Out**	
	Carrier Site Number:	CT2093
	Carrier Site Name:	TRUMBULL INDIAN LEDGE
	Carrier FA Number:	10035413
Crown Castle Designation:	**BU Number:**	881535
	Site Name:	TRUMBULL TOWER
	JDE Job Number:	686302
	Order Number:	586252, Rev. 0
Engineering Firm Designation:	**Kimley-Horn Project Number:**	019558058
Site Data:	**425 Indian Ledge Park Rd, Trumbull, Fairfield County, CT 06611** **Latitude 41° 16' 23.81" Longitude -73° 12' 47.18"**	
Structure Information:	**Tower Height & Type:**	**195 ft Monopole**
	Mount Elevation:	**185 ft**
	Mount Type:	**12 ft Pipe Mounts**

Kimley-Horn is pleased to submit this **"Mount Analysis Report"** to determine the structural integrity of AT&T Mobility's antenna mounting system with the proposed appurtenance and equipment addition on the abovementioned supporting tower structure. Analysis of the existing supporting tower structure is to be completed by others and therefore is not part of this analysis. Analysis of the antenna mounting system as a tie-off point for fall protection or rigging is not part of this document.

The purpose of the analysis is to determine acceptability of the mount stress level. Based on our analysis we have determined the mount stress level to be:

Pipe Mounts **Sufficient**

This analysis has been performed in accordance with the 2018 Connecticut State Bulding Code based upon an ultimate 3-second gust wind speed of 118 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Jesse Schnurman, E.I.

STATE OF CONNECTICUT
KYLE JENSEN FREEHART
34906
LICENSED
PROFESSIONAL ENGINEER

Respectfully Submitted by:

Kyle Freehart, P.E.

Lic. #PEN.0034906, Exp. 1/31/2022
Kimley-Horn and Associates, Inc. COA #PEC.0000738

DocuSigned by:
Kyle Freehart
D8BEE252A3804C1...

TABLE OF CONTENTS

1) INTRODUCTION

The mounting configuration consists of an existing 12 ft Pipe Mounts designed by Engineered Endeavors.

The mounting configuration has been modified per reinforcement drawings prepared by Hudson Design Group in January of 2019.

2) ANALYSIS CRITERIA

Building Code:	2018 Connecticut State Building Code
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	118 mph
Exposure Category:	B
Topographic Factor at Base:	1.0
Topographic Factor at Mount:	1.0
Ice Thickness:	1 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.211
Seismic S_1:	0.055
Live Loading Wind Speed:	30 mph
Man Live Load at Mount Pipes:	500 lb

Table 1 – Proposed Equipment Configuration

Elevation (ft)		Antennas			Mount / Modification Details
Mount	Centerline	#	Manufacturer	Model	
185	189	3	Ericsson	AIR 6419 B77G_CCIV3	Existing 12 ft Pipe Mounts designed by Engineered Endeavors
	187	3	Kathrein	80010965	
		1	Raycap	DC6-48-60-18-8F_CCIV2	
		2	Raycap	DC6-48-60-18-8F	
		3	CCI Antennas	DMP65R-BU6e	
		3	Ericsson	RRUS 4449 B5/ B12	
		3	Ericsson	RRUS 8843 B2/ B66A_CCIV2	
		3	Ericsson	RRUS 4478 B14_CCIV2	
		3	Ericsson	RRUS-32 B30	
	185	3	Ericsson	AIR 6449 B77D_CCVI2	

3) ANALYSIS PROCEDURE

Table 2 – Documents Provided

Document	Remarks	Reference	Source
Site Photos	-	-	CCISites
Mount Modification Drawings	Hudson Group	8197788	CCISites
Mount Analysis Report	Hudson Group	8173271	CCISites

3.1) Analysis Method

RISA-3D (v. 17.04.00), a commercially-available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

A proprietary tool internally developed by Kimley-Horn was used to calculate wind loading on all appurtenances, dishes and mount members for various load cases. Selected output from the analysis is included in Appendix B.

This analysis was performed in accordance with Crown Castle's ENG-SOW-10208 *Mount Analysis* (Rev. E).

3.2) Assumptions

1) The antenna mounting system (including any considered modifications) was properly fabricated, installed and maintained in good condition in accordance with its original design and manufacturer specifications.
2) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and the provided reference information.
3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected members unless otherwise specified in this report.
4) The analysis will be required to be revised if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members that could not be verified at this time.
5) Any referenced prior structural modifications to the tower mounting system are assumed to be installed as shown per available data unless noted otherwise.
6) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (Gr. 36)
HSS (Rectangular)	ASTM A36 (Gr. 36)
Pipe	ASTM A53 (Gr. 35)
Connection Bolts	ASTM A325
U-Bolts	ASTM A36 (Gr. 36)
Threaded Rods	ASTM A36 (Gr. 36)

If any assumptions are not valid or have been made in error, Kimley-Horn should be notified to determine the effect on the structural integrity of the antenna mounting system.

4) ANALYSIS RESULTS

Table 3 – Mount Component Stresses vs. Capacity

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1, 2	Platform Base	M39	185	32%	Pass
1, 2	Support Rails	M179A		28%	Pass
1, 2	Face Horizontals	M35		26%	Pass
1, 2	Mount Pipes	M10		12%	Pass
1, 2	Mount Plate	P134		11%	Pass
1, 2	Connections	-		6%	Pass

Structure Rating (max from all components) =	32%

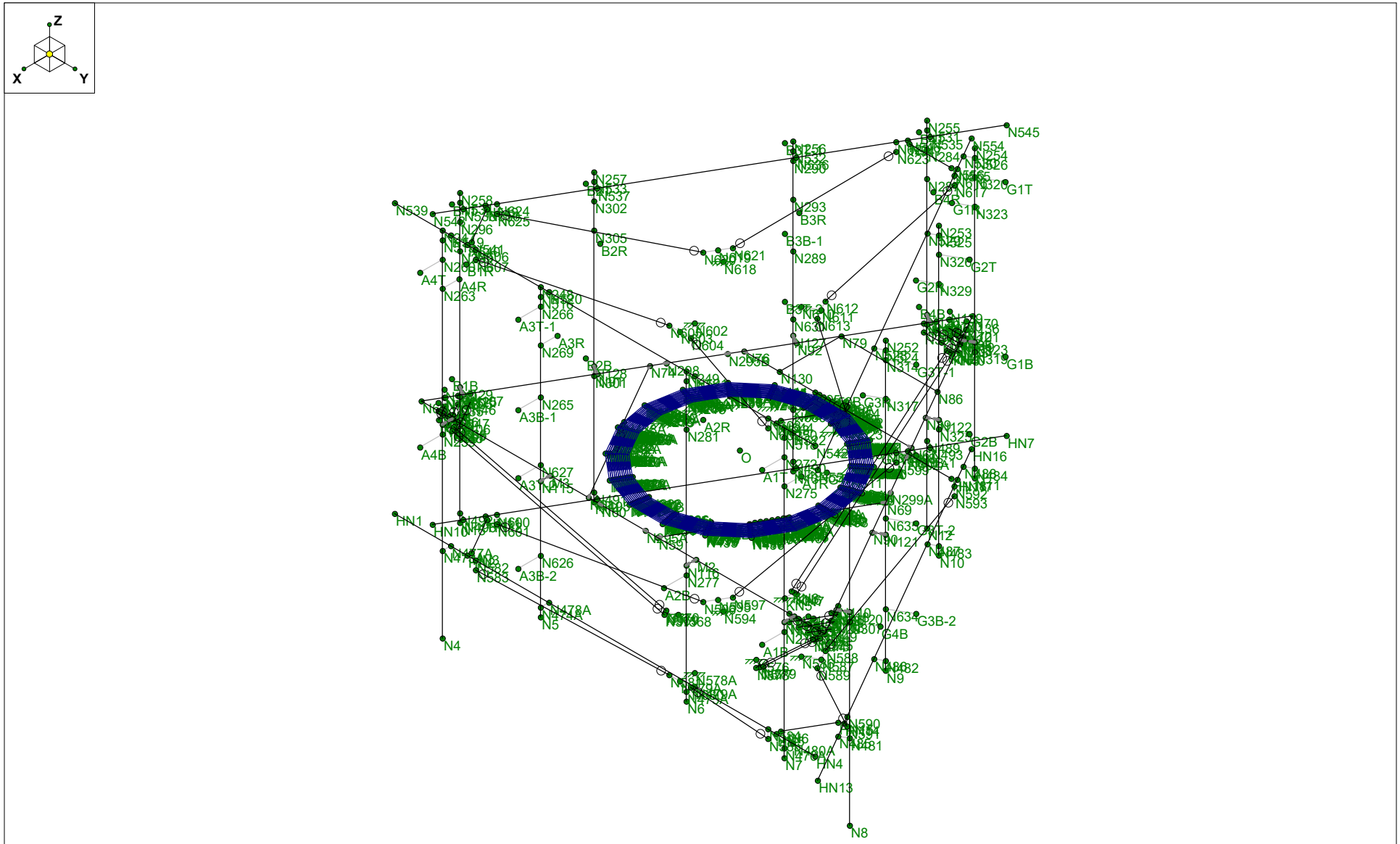
Notes:
1) See additional documentation in Appendix C and Appendix D for calculations supporting the % capacity consumed.
2) A structure rating of 105% or less is within engineering tolerances and considered acceptable.

4.1) Recommendations

The mounting configuration has sufficient capacity to carry the referenced loading. No modifications are required at this time.

APPENDIX A

WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

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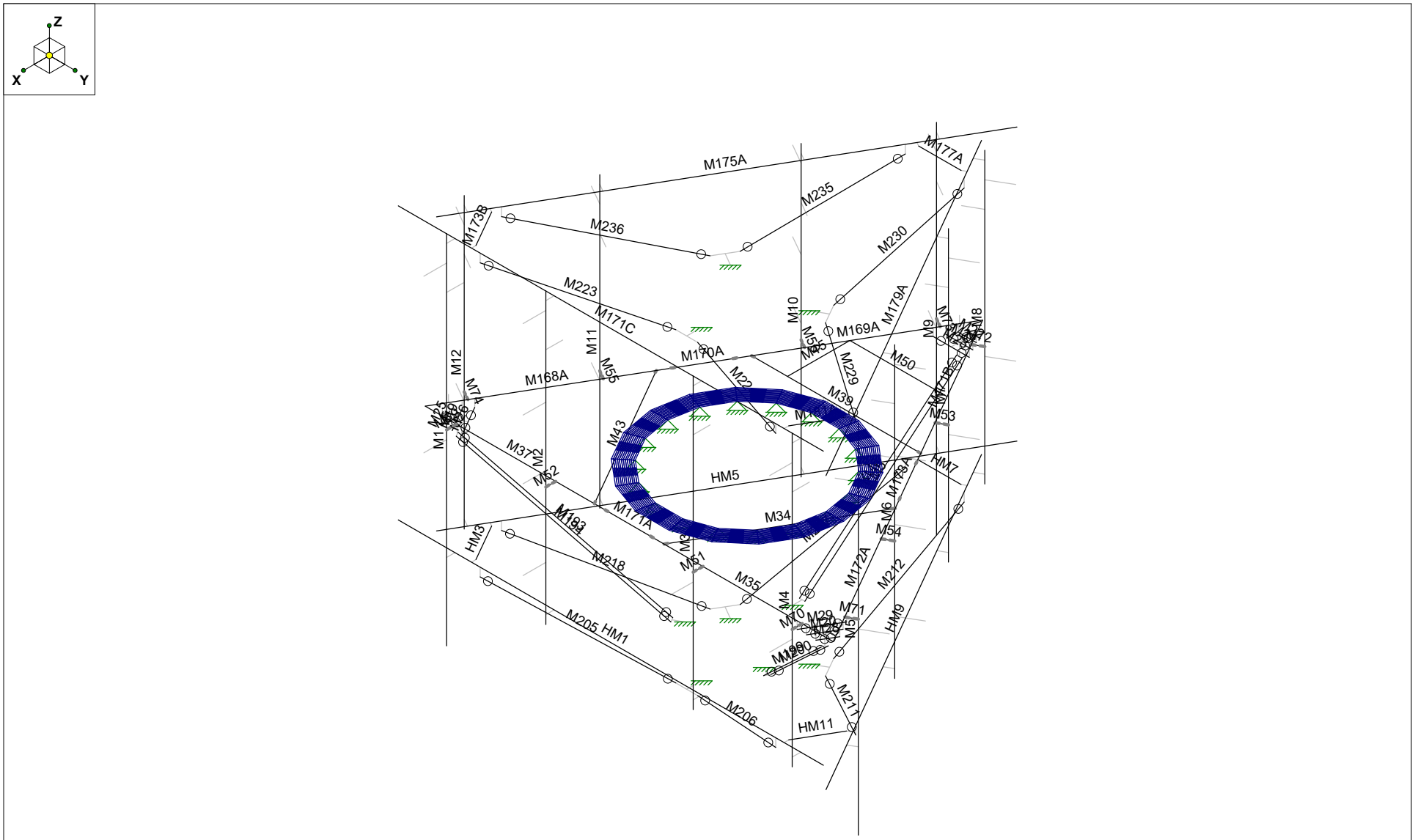

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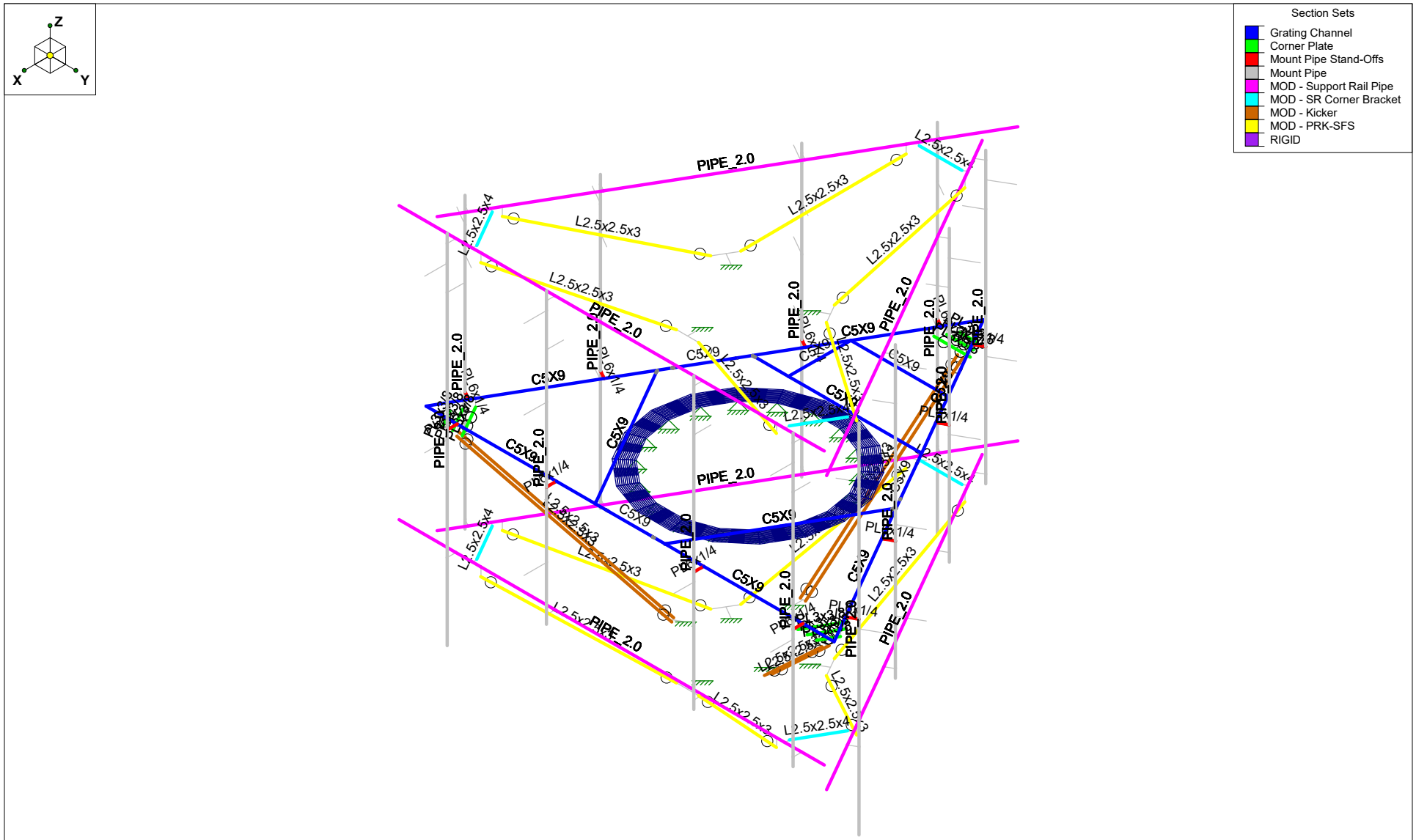

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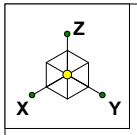

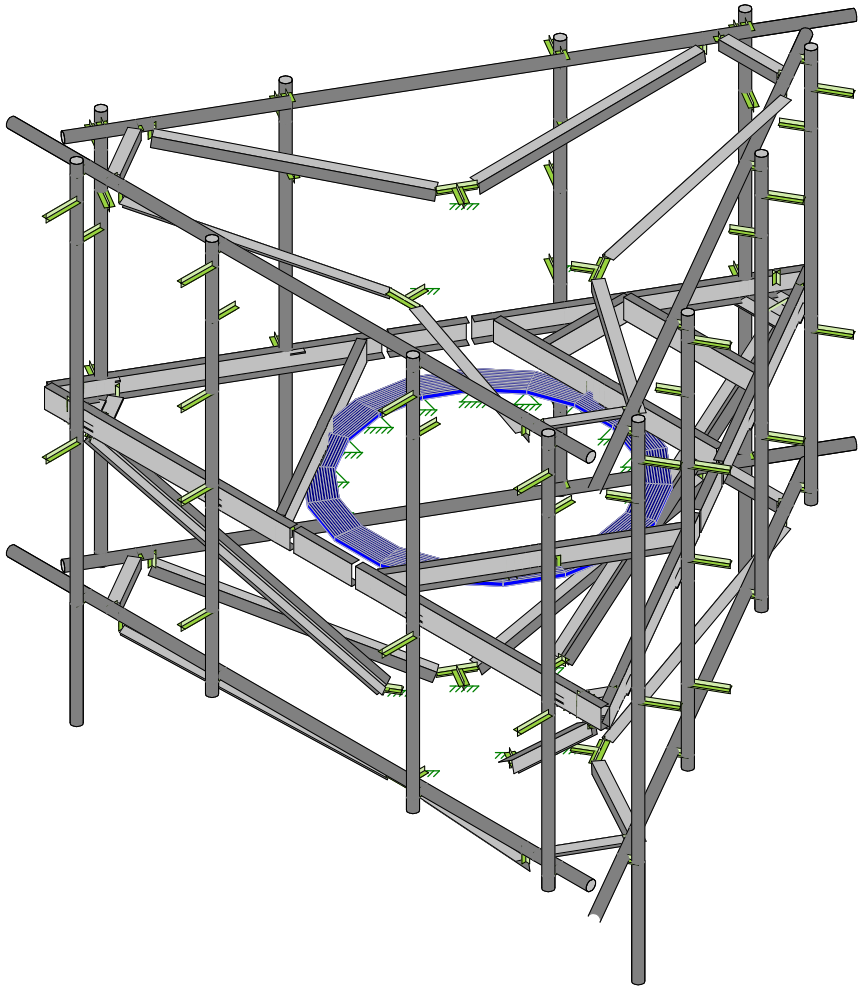

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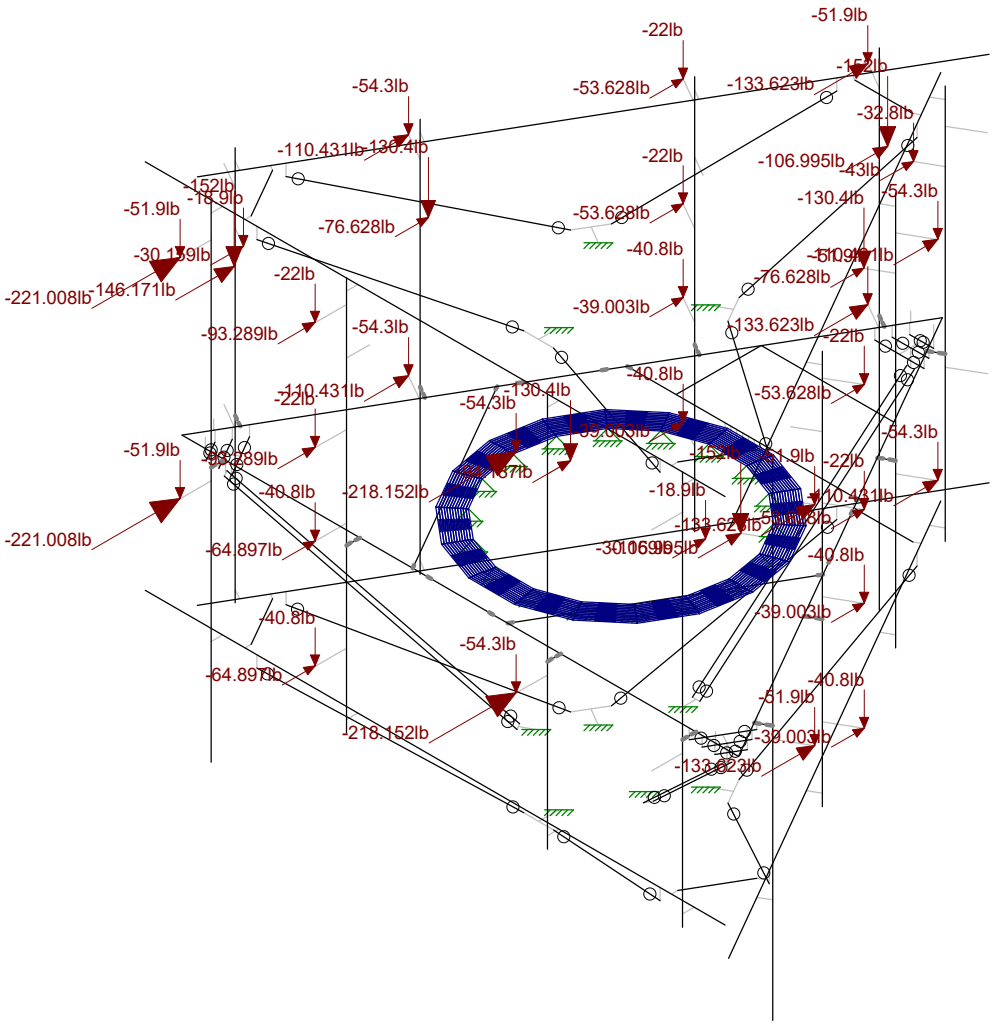

Loads: LC 1, Summary: 1.0D + 1.0W
Envelope Only Solution

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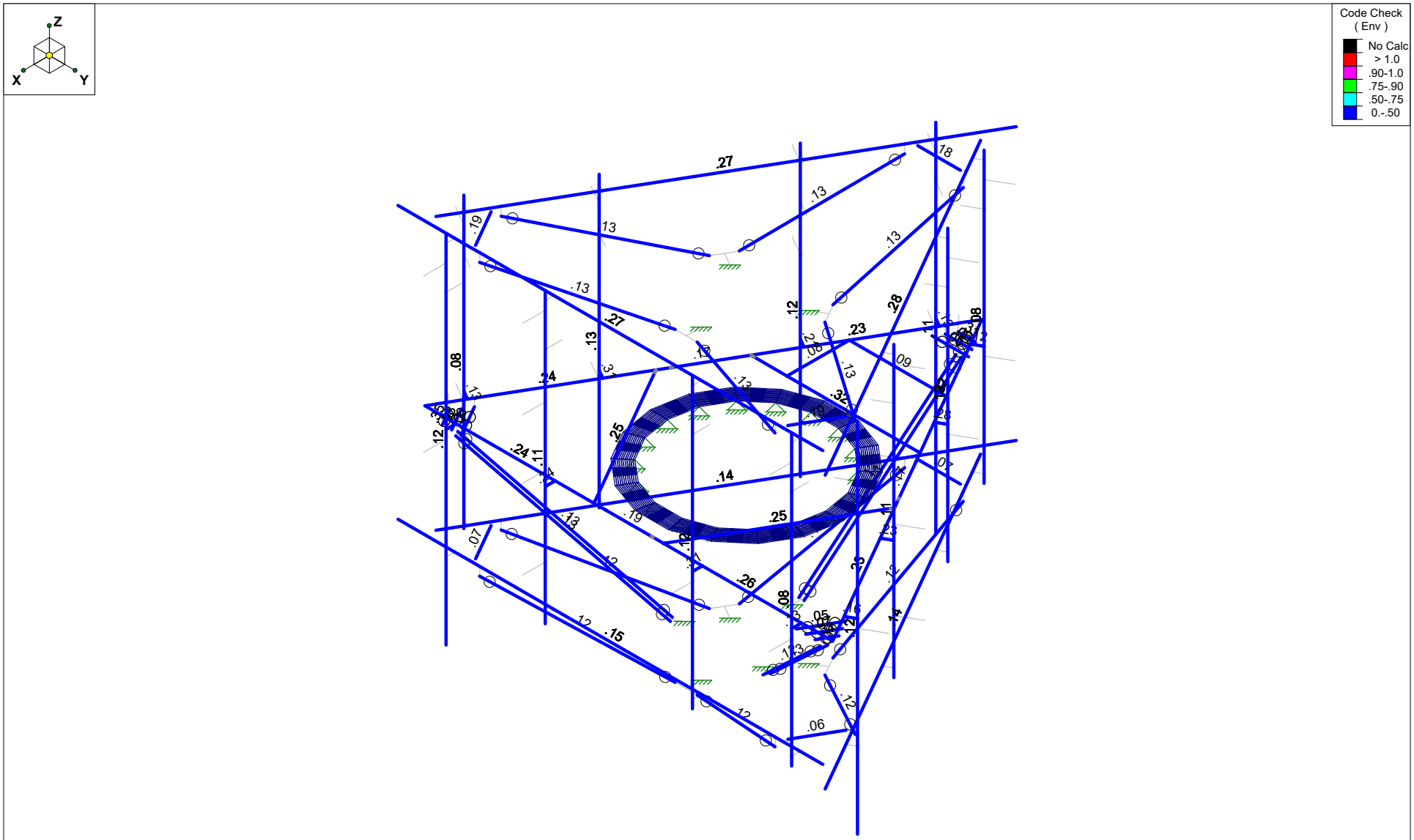

Member Code Checks Displayed (Enveloped)
Envelope Only Solution

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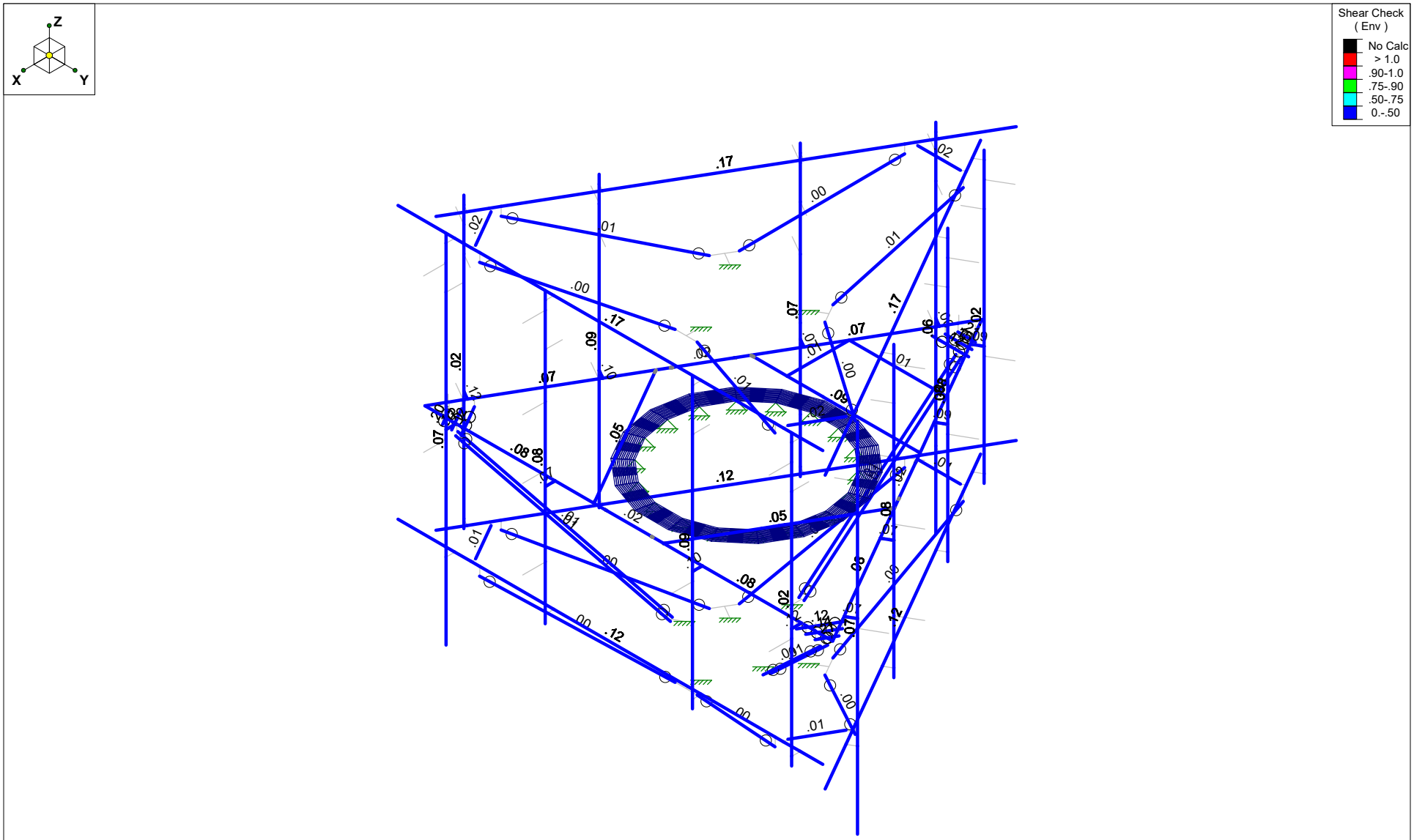

Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

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APPENDIX B

SOFTWARE INPUT CALCULATIONS

General Criteria	
TIA Standard	H
IBC Edition	2018
Structure Class	-
Risk Category	II

Site-Specific Criteria	
Exposure Category	B
Topographic Factor, K_{zt}	1.00
Structure Base Elev. (AMSL), z_s (ft)	323.00
Ground Effect Factor, K_e	0.99

Mount & Structure Criteria	
Mount Elevation (AGL) (ft)	185.00
Structure Height (ft)	195.00
Structure Type	Monopole

Constants	
Wind Direction Probability Factor, K_d	0.95
Gust Effect Factor, G_h	1
Shielding Factor, K_a **(antenna)**	0.9
Shielding Factor, K_a **(mount)**	0.9

Wind Summary	
Basic Wind Speed w/o Ice, **V** (mph)	118.00
Velocity Pressure Coeff., K_z	1.18
Velocity Pressure, q_z **(w/o Ice)** (psf)	39.43

Ice Load Summary	
Basic Wind Speed w/ Ice, V_i (mph)	50.00
Design Ice Thick. (ASCE 7-16) , t_i (in)	1
Velocity Pressure, q_z **(w/ Ice)** (psf)	7.08
Escalated Ice Thick. @ Mount, t_{iz} (in)	1.19

Seismic Load Summary	
Spectral Response (Short Periods), S_s	0.211
Spectral Response (1-Sec. Period), S_1	0.055
Site Class	D
Seismic Design Category	B
Seismic Risk Category	II

Snow Load Summary	
Ground Snow Load, p_g (psf)	-
Snow Load on Flat Roofs, p_f (psf)	-

Kimley»Horn

Date	March 25, 2022
Client	Crown Castle
Site #	881535
Site Name	TRUMBULL TOWER
Project #	19558058

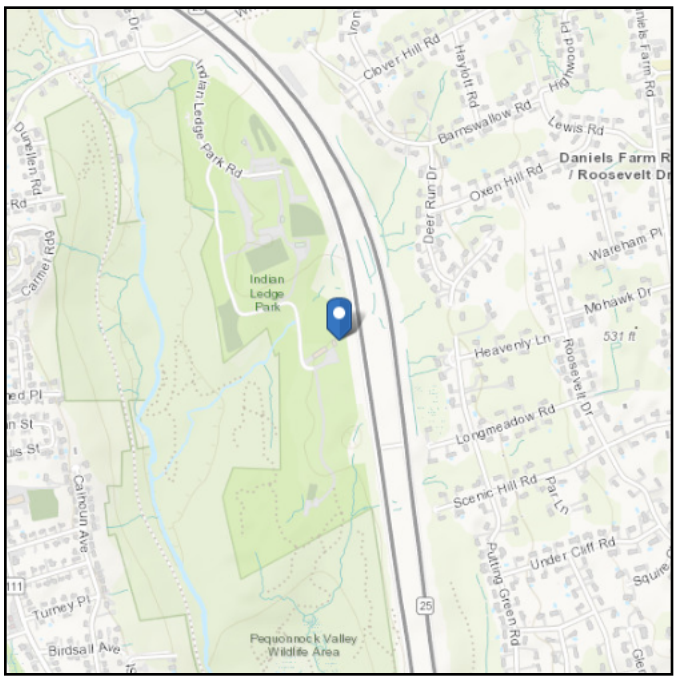
Antenna Name	Qty	Shape	Dimensions (in)			Weight (lb)	Joint Labels								EPA (ft²)		Wind Force, F_A (lb)			
																	No Ice		With Ice	
			H	W	D		Alpha		Beta		Gamma		Delta		Front	Side	Front	Side	Front	Side
DMP65R-BU6e	3	Flat	71.2	20.7	9.7	103.8	A4T	A4B	B4T	B4B	G4T	G4B			12.46	5.89	442.02	208.99	90.6	46.51
AIR 6419 B77G_CCIV3	3	Flat	31.1	16.1	7.3	44	A3T-1	A3B-1	B3T-1	B3B-1	G3T-1	G3B-1			5.26	2.28	186.58	80.82	41.38	20.13
AIR 6449 B77D_CCVI2	3	Flat	30.4	15.9	8.1	81.6	A3T-2	A3B-2	B3T-2	B3B-2	G3T-2	G3B-2			3.66	1.71	129.79	60.74	28.89	14.88
80010965	3	Flat	78.7	20	6.9	108.6	A2T	A2B	B2T	B2B	G2T	G2B			12.29	4.2	436.3	149.05	89.3	34.93
RRUS 4449 B5/ B12	3	Flat	17.9	13.2	9.4	71	A2R		B2R		G2R				1.41	0.98	49.97	34.91	12.72	8.38
RRUS 4478 B14_CCIV2	3	Flat	18.1	13.4	8.3	59.4	A2R		B2R		G2R				1.25	1.01	44.21	35.86	11.56	8.58
RRUS 8843 B2/ B66A_CCIV2	3	Flat	18	13.2	11.3	75	A4R		B4R		G4R				1.7	0.99	60.15	35.13	14.8	8.43
RRUS-32 B30	3	Flat	29.9	13.3	9.5	77	A4R		B4R		G4R				2.42	1.66	86.02	58.8	20.52	13.43
DC6-48-60-18-8F	2	Round	22.3	11	11	18.9	A1R		B1R						0.85	0.85	30.16	30.16	8.27	8.27
DC6-48-60-18-8F_CCIV2	1	Round	31.3	11	11	32.8					G1R				1.21	1.21	43	43	11.3	11.3

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 322.51 ft (NAVD 88)
Latitude: 41.273281
Longitude: -73.213106



Wind

Results:

Wind Speed	118 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	98 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Fri Mar 25 2022

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

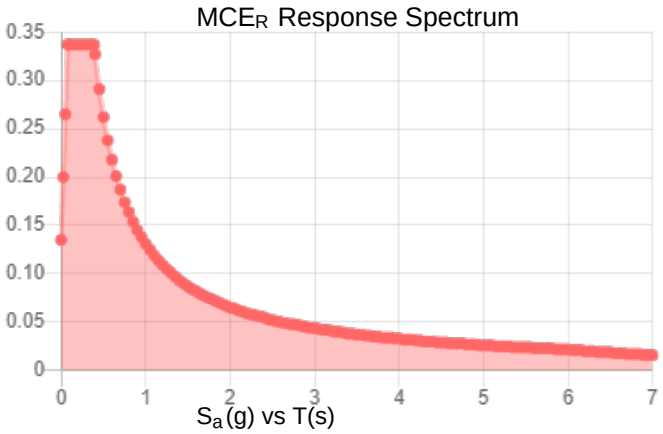
Seismic

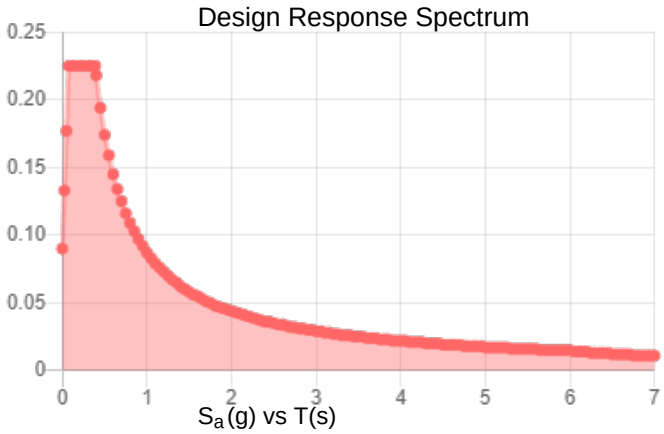
Site Soil Class: D - Stiff Soil

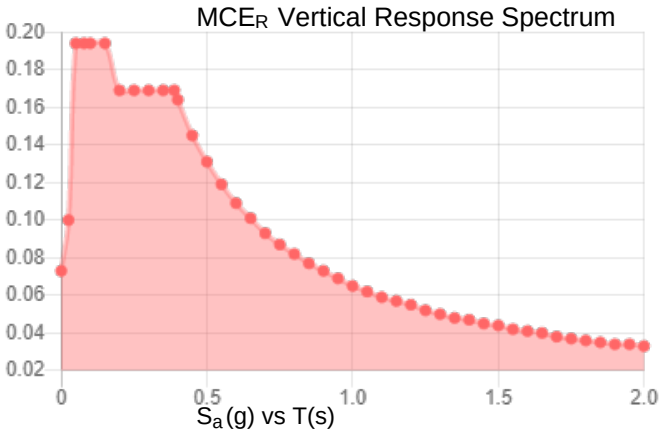
Results:

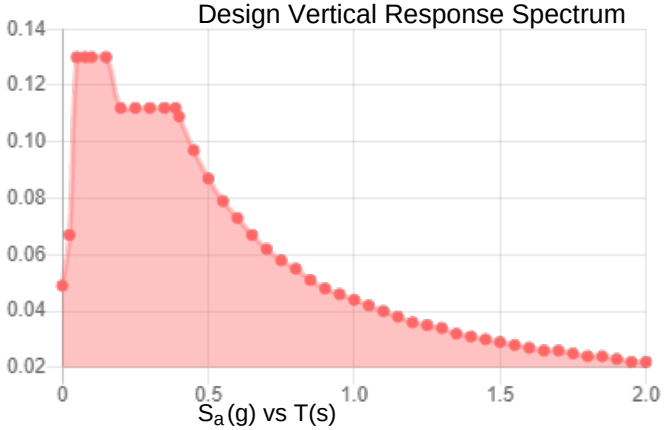
S_S :	0.211	S_{D1} :	0.087
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.12
F_v :	2.4	PGA_M :	0.187
S_{MS} :	0.337	F_{PGA} :	1.561
S_{M1} :	0.131	I_e :	1
S_{DS} :	0.225	C_v :	0.721

Seismic Design Category B









Data Accessed: **Fri Mar 25 2022**

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Fri Mar 25 2022

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1...	Density[k/f...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3
8	Q235	29000	11154	.3	.65	.49	35	1.5	58	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Desig...	A [in2]	Iyy [in...	Izz [i...	J [in4]
1	Grating Channel	C5X9	Beam	None	A36 Gr.36	Typical	2.64	.624	8.89	.109
2	Support Rail	L3X3X5	Beam	None	A36 Gr.36	Typical	1.78	1.5	1.5	.06
3	Corner Plate	PL3x3/8	Beam	None	A36 Gr.36	Typical	1.125	.013	.844	.049
4	Face Bracing	L1.75x1.75x4	Beam	None	A36 Gr.36	Typical	.813	.227	.227	.015
5	Corner Plate 2	PL4x3/8	Beam	None	A36 Gr.36	Typical	1.5	.018	2	.066
6	Mount Pipe Stand-Offs	PL6x1/4	Beam	None	A36 Gr.36	Typical	1.5	.008	4.5	.03
7	Mount Pipe	PIPE_2.0	Column	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
8	MOD - Support Rail Pipe	PIPE_2.0	Beam	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
9	MOD - SR Corner Bracket	L2.5x2.5x4	Beam	None	Q235	Typical	1.19	.692	.692	.026
10	MOD - Kicker	L2.5x2.5x3	Beam	None	Q235	Typical	.901	.535	.535	.011
11	MOD - PRK-SFS	L2.5x2.5x3	Beam	None	Q235	Typical	.901	.535	.535	.011

Joint Coordinates and Temperatures

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
1	N4	45.069221	-61.	-66	0	
2	N5	45.069221	-26.	-42	0	
3	N6	45.069221	26.	-42	0	
4	N7	45.069221	61.	-42	0	
5	N8	30.292939	69.531091	-66	0	
6	N9	-0.01795	52.031091	-42	0	
7	N10	-45.051271	26.031091	-42	0	
8	N11	-75.36216	8.531091	-42	0	
9	N12	-75.36216	-8.531091	-66	0	
10	N13	-45.051271	-26.031091	-42	0	
11	N14	-0.01795	-52.031091	-42	0	
12	N15	30.292939	-69.531091	-42	0	
13	N28	41.569221	-62.5	-2.6875	0	
14	N29	33.341977	67.250002	-2.6875	0	
15	N30	41.569221	62.5	-2.6875	0	
16	N31	37.455599	64.875001	-2.6875	0	
17	N32	-74.911198	-4.750002	-2.6875	0	
18	N33	-74.911198	4.750002	-2.6875	0	
19	N34	-74.911198	-0.	-2.6875	0	
20	N35	33.341977	-67.250002	-2.6875	0	
21	N36	37.455599	-64.875001	-2.6875	0	
22	N37	-77.769082	-3.100002	-2.6875	0	
23	N38	-77.769082	3.100002	-2.6875	0	
24	N39	-72.053315	-6.400002	-2.6875	0	
25	N40	-72.053315	6.400002	-2.6875	0	
26	N41	-72.053315	-0.	-2.6875	0	
27	N42	-77.769082	-0.	-2.6875	0	
28	N43	41.569221	-65.8	-2.6875	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
29	N44	36.199861	-68.900002	-2.6875	0	
30	N45	41.569221	-59.2	-2.6875	0	
31	N46	30.484093	-65.600002	-2.6875	0	
32	N47	36.026657	-62.400001	-2.6875	0	
33	N48	38.884541	-67.350001	-2.6875	0	
34	N49	36.199861	68.900002	-2.6875	0	
35	N50	41.569221	65.8	-2.6875	0	
36	N51	30.484093	65.600002	-2.6875	0	
37	N52	41.569221	59.2	-2.6875	0	
38	N53	36.026657	62.400001	-2.6875	0	
39	N54	38.884541	67.350001	-2.6875	0	
40	O	0	0	0	0	
41	N59	41.56922	12.30256	0	0	
42	N60	41.56922	-8	0	0	
43	N61	41.569219	-12.30256	0	0	
44	N62	41.569219	72	0	0	
45	N63	41.569219	-72.	0	0	
46	N64	41.569219	-66.	0	0	
47	N65	41.56922	66.	0	0	
48	N66	41.569219	-62.5	0	0	
49	N67	-31.438939	29.848721	0	0	
50	N69	-10.130281	42.15128	0	0	
51	N70	-83.138439	-0.	0	0	
52	N71	36.373066	69.000002	0	0	
53	N72	-77.942287	3.000002	0	0	
54	N73	33.34198	67.250002	0	0	
55	N74	-10.130281	-42.15128	0	0	
56	N76	-31.438939	-29.848721	0	0	
57	N77	-77.942287	-3.000002	0	0	
58	N78	36.373066	-69.000002	0	0	
59	N79	-53.438901	-17.147036	0	0	
60	N80	-74.911196	-4.750002	0	0	
61	N82	-31.438939	-0.	0	0	
62	N83	41.56922	62.5	0	0	
63	N84	-74.911196	4.750002	0	0	
64	N85	33.341982	-67.250002	0	0	
65	N86	-53.438901	17.147036	0	0	
66	M2	41.56922	26	0	0	
67	M3	41.569219	-26.	0	0	
68	N89	-43.30127	23.	0	0	
69	N90	1.732051	49.	0	0	
70	N91	1.732051	-49.	0	0	
71	N92	-43.30127	-23.	0	0	
72	N94	-31.438939	4.5	0	0	
73	N95	-31.438939	-4.5	0	0	
74	N100	-77.76908	-3.100002	0	0	
75	N101	-77.76908	3.100002	0	0	
76	N102	-72.053312	-6.400002	0	0	
77	N103	-72.053312	6.400002	0	0	
78	N104	41.569219	-65.8	0	0	
79	N105	36.199866	-68.900002	0	0	
80	N106	41.569219	-59.2	0	0	
81	N107	30.484098	-65.600002	0	0	
82	N108	36.199864	68.900002	0	0	
83	N109	41.56922	65.8	0	0	
84	N110	30.484096	65.600002	0	0	
85	N111	41.56922	59.2	0	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
86	M4	41.569219	-61.	0	0	
87	M1	41.56922	61.	0	0	
88	N114	45.069221	-61.	0	0	
89	N115	45.069221	-26.	0	0	
90	N116	45.069221	26.	0	0	
91	N117	45.069221	61.	0	0	
92	N118	32.04294	66.5	0	0	
93	N119	-73.612159	5.5	0	0	
94	N120	30.292939	69.531091	0	0	
95	N121	-0.01795	52.031091	0	0	
96	N122	-45.051271	26.031091	0	0	
97	N123	-75.36216	8.531091	0	0	
98	N124	-73.612159	-5.5	0	0	
99	N125	32.04294	-66.5	0	0	
100	N126	-75.36216	-8.531091	0	0	
101	N127	-45.051271	-26.031091	0	0	
102	N128	-0.01795	-52.031091	0	0	
103	N129	30.292939	-69.531091	0	0	
104	N130	-31.438939	-17.147036	0	0	
105	N131	41.569221	-66.	2.5	0	
106	N132	41.569221	66.	2.5	0	
107	N135	36.373066	69.000002	2.5	0	
108	N136	-77.942287	3.000002	2.5	0	
109	N139	-77.942287	-3.000002	2.5	0	
110	N140	36.373066	-69.000002	2.5	0	
111	N247	45.069221	-61.	60	0	
112	N248	45.069221	-26.	60	0	
113	N249	45.069221	26.	60	0	
114	N250	45.069221	61.	60	0	
115	N251	30.292939	69.531091	60	0	
116	N252	-0.01795	52.031091	60	0	
117	N253	-45.051271	26.031091	60	0	
118	N254	-75.36216	8.531091	60	0	
119	N255	-75.36216	-8.531091	60	0	
120	N256	-45.051271	-26.031091	60	0	
121	N257	-0.01795	-52.031091	60	0	
122	N258	30.292939	-69.531091	60	0	
123	N259	45.069221	-61.	-3	0	
124	N260	45.069221	-61.	51	0	
125	A4B	53.069221	-61.	-3	0	
126	A4T	53.069221	-61.	51	0	
127	N263	45.069221	-61.	42	0	
128	A4R	39.069221	-61.	42	0	
129	N265	45.069221	-26.	26	0	
130	N266	45.069221	-26.	54	0	
131	A3B-1	53.069221	-26	26	0	
132	A3T-1	53.069221	-26	54	0	
133	N269	45.069221	-26.	42	0	
134	A3R	39.069221	-26.	42	0	
135	N271	45.069221	61.	-3	0	
136	N272	45.069221	61.	51	0	
137	A1B	53.069221	61.	-3	0	
138	A1T	53.069221	61.	51	0	
139	N275	45.069221	61.	42	0	
140	A1R	39.069221	61.	42	0	
141	N277	45.069221	26.	-3	0	
142	N278	45.069221	26.	51	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
143	A2B	53.069221	26.	-3	0	
144	A2T	53.069221	26.	51	0	
145	N281	45.069221	26.	42	0	
146	A2R	39.069221	26.	42	0	
147	N283	-75.36216	-8.531091	-3	0	
148	N284	-75.36216	-8.531091	51	0	
149	B4B	-79.36216	-15.459294	-3	0	
150	B4T	-79.36216	-15.459294	51	0	
151	N287	-75.36216	-8.531091	42	0	
152	B4R	-72.36216	-3.334938	42	0	
153	N289	-45.051271	-26.031091	26	0	
154	N290	-45.051271	-26.031091	54	0	
155	B3B-1	-49.051271	-32.959294	26	0	
156	B3T-1	-49.051271	-32.959294	54	0	
157	N293	-45.051271	-26.031091	42	0	
158	B3R	-42.051271	-20.834938	42	0	
159	N295	30.292939	-69.531091	-3	0	
160	N296	30.292939	-69.531091	51	0	
161	B1B	26.292938	-76.459294	-3	0	
162	B1T	26.292938	-76.459294	51	0	
163	N299	30.292939	-69.531091	42	0	
164	B1R	33.292938	-64.334938	42	0	
165	N301	-0.01795	-52.031091	-3	0	
166	N302	-0.01795	-52.031091	51	0	
167	B2B	-4.01795	-58.959294	-3	0	
168	B2T	-4.01795	-58.959294	51	0	
169	N305	-0.01795	-52.031091	42	0	
170	B2R	2.98205	-46.834938	42	0	
171	N307	30.292939	69.531091	-3	0	
172	N308	30.292939	69.531091	51	0	
173	G4B	26.292938	76.459294	-3	0	
174	G4T	26.292938	76.459294	51	0	
175	N311	30.292939	69.531091	42	0	
176	G4R	33.292938	64.334938	42	0	
177	N313	-0.01795	52.031091	26	0	
178	N314	-0.01795	52.031091	54	0	
179	G3B-1	-4.01795	58.959294	26	0	
180	G3T-1	-4.01795	58.959294	54	0	
181	N317	-0.01795	52.031091	42	0	
182	G3R	2.98205	46.834938	42	0	
183	N319	-75.36216	8.531091	-3	0	
184	N320	-75.36216	8.531091	51	0	
185	G1B	-79.36216	15.459294	-3	0	
186	G1T	-79.36216	15.459294	51	0	
187	N323	-75.36216	8.531091	42	0	
188	G1R	-72.36216	3.334938	42	0	
189	N325	-45.051271	26.031091	-3	0	
190	N326	-45.051271	26.031091	51	0	
191	G2B	-49.051271	32.959294	-3	0	
192	G2T	-49.051271	32.959294	51	0	
193	N329	-45.051271	26.031091	42	0	
194	G2R	-42.051271	20.834938	42	0	
195	N295A	41.56922	8	0	0	
196	N295B	-27.712813	-32.000001	0	0	
197	N298	-13.856407	-40.000001	0	0	
198	N299A	-13.856407	40.000001	0	0	
199	N302A	-27.712813	32.000001	0	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
200	N206	27.574617	4.862149	-3	0	
201	N207	24.248711	14	-3	0	
202	N208	17.998053	21.449244	-3	0	
203	N209	9.576564	26.311393	-3	0	
204	N210	-0.	28	-3	0	
205	N211	-9.576564	26.311393	-3	0	
206	N212	-17.998053	21.449244	-3	0	
207	N213	-24.248711	14	-3	0	
208	N214	-27.574617	4.862149	-3	0	
209	N215	-27.574617	-4.862149	-3	0	
210	N216	-24.248711	-14	-3	0	
211	N217	-17.998053	-21.449244	-3	0	
212	N218	-9.576564	-26.311393	-3	0	
213	N219	0.	-28	-3	0	
214	N220	9.576564	-26.311393	-3	0	
215	N221	17.998053	-21.449244	-3	0	
216	N222	24.248711	-14	-3	0	
217	N223	27.574617	-4.862149	-3	0	
218	N225	28.067021	4.948973	-3	0	
219	N226	24.681724	14.25	-3	0	
220	N227	18.319447	21.832267	-3	0	
221	N228	9.747574	26.78124	-3	0	
222	N229	-0.	28.5	-3	0	
223	N230	-9.747574	26.78124	-3	0	
224	N231	-18.319447	21.832267	-3	0	
225	N232	-24.681724	14.25	-3	0	
226	N233	-28.067021	4.948973	-3	0	
227	N234	-28.067021	-4.948973	-3	0	
228	N235	-24.681724	-14.25	-3	0	
229	N236	-18.319447	-21.832267	-3	0	
230	N237	-9.747574	-26.78124	-3	0	
231	N238	0.	-28.5	-3	0	
232	N239	9.747574	-26.78124	-3	0	
233	N240	18.319447	-21.832267	-3	0	
234	N241	24.681724	-14.25	-3	0	
235	N242	28.067021	-4.948973	-3	0	
236	N244	28.559425	5.035797	-3	0	
237	N245	25.114737	14.5	-3	0	
238	N246	18.640841	22.215289	-3	0	
239	N247A	9.918584	27.251086	-3	0	
240	N248A	-0.	29	-3	0	
241	N249A	-9.918584	27.251086	-3	0	
242	N250A	-18.640841	22.215289	-3	0	
243	N251A	-25.114737	14.5	-3	0	
244	N252A	-28.559425	5.035797	-3	0	
245	N253A	-28.559425	-5.035797	-3	0	
246	N254A	-25.114737	-14.5	-3	0	
247	N255A	-18.640841	-22.215289	-3	0	
248	N256A	-9.918584	-27.251086	-3	0	
249	N257A	0.	-29	-3	0	
250	N258A	9.918584	-27.251086	-3	0	
251	N259A	18.640841	-22.215289	-3	0	
252	N260A	25.114737	-14.5	-3	0	
253	N261	28.559425	-5.035797	-3	0	
254	N263A	29.051829	5.122621	-3	0	
255	N264	25.547749	14.75	-3	0	
256	N265A	18.962234	22.598311	-3	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
257	N266A	10.089594	27.720932	-3	0	
258	N267	-0.	29.5	-3	0	
259	N268	-10.089594	27.720932	-3	0	
260	N269A	-18.962234	22.598311	-3	0	
261	N270	-25.547749	14.75	-3	0	
262	N271A	-29.051829	5.122621	-3	0	
263	N272A	-29.051829	-5.122621	-3	0	
264	N273	-25.547749	-14.75	-3	0	
265	N274	-18.962234	-22.598311	-3	0	
266	N275A	-10.089594	-27.720932	-3	0	
267	N276	0.	-29.5	-3	0	
268	N277A	10.089594	-27.720932	-3	0	
269	N278A	18.962234	-22.598311	-3	0	
270	N279	25.547749	-14.75	-3	0	
271	N280	29.051829	-5.122621	-3	0	
272	N282	29.544233	5.209445	-3	0	
273	N283A	25.980762	15	-3	0	
274	N284A	19.283628	22.981333	-3	0	
275	N285	10.260604	28.190779	-3	0	
276	N286	-0.	30	-3	0	
277	N287A	-10.260604	28.190779	-3	0	
278	N288	-19.283628	22.981333	-3	0	
279	N289A	-25.980762	15	-3	0	
280	N290A	-29.544233	5.209445	-3	0	
281	N291	-29.544233	-5.209445	-3	0	
282	N292	-25.980762	-15	-3	0	
283	N293A	-19.283628	-22.981333	-3	0	
284	N294	-10.260604	-28.190779	-3	0	
285	N295C	0.	-30	-3	0	
286	N296A	10.260604	-28.190779	-3	0	
287	N297	19.283628	-22.981333	-3	0	
288	N298A	25.980762	-15	-3	0	
289	N299B	29.544233	-5.209445	-3	0	
290	N301A	30.036636	5.296269	-3	0	
291	N302B	26.413775	15.25	-3	0	
292	N303	19.605022	23.364356	-3	0	
293	N304	10.431614	28.660625	-3	0	
294	N305A	-0.	30.5	-3	0	
295	N306	-10.431614	28.660625	-3	0	
296	N307A	-19.605022	23.364356	-3	0	
297	N308A	-26.413775	15.25	-3	0	
298	N309	-30.036636	5.296269	-3	0	
299	N310	-30.036636	-5.296269	-3	0	
300	N311A	-26.413775	-15.25	-3	0	
301	N312	-19.605022	-23.364356	-3	0	
302	N313A	-10.431614	-28.660625	-3	0	
303	N314A	0.	-30.5	-3	0	
304	N315	10.431614	-28.660625	-3	0	
305	N316	19.605022	-23.364356	-3	0	
306	N317A	26.413775	-15.25	-3	0	
307	N318	30.036636	-5.296269	-3	0	
308	N320A	30.52904	5.383094	-3	0	
309	N321	26.846788	15.5	-3	0	
310	N322	19.926416	23.747378	-3	0	
311	N323A	10.602624	29.130471	-3	0	
312	N324	-0.	31	-3	0	
313	N325A	-10.602624	29.130471	-3	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
314	N326A	-19.926416	23.747378	-3	0	
315	N327	-26.846788	15.5	-3	0	
316	N328	-30.52904	5.383094	-3	0	
317	N329A	-30.52904	-5.383094	-3	0	
318	N330	-26.846788	-15.5	-3	0	
319	N331	-19.926416	-23.747378	-3	0	
320	N332	-10.602624	-29.130471	-3	0	
321	N333	0.	-31	-3	0	
322	N334	10.602624	-29.130471	-3	0	
323	N335	19.926416	-23.747378	-3	0	
324	N336	26.846788	-15.5	-3	0	
325	N337	30.52904	-5.383094	-3	0	
326	N339	31.021444	5.469918	-3	0	
327	N340	27.2798	15.75	-3	0	
328	N341	20.24781	24.1304	-3	0	
329	N342	10.773635	29.600318	-3	0	
330	N343	-0.	31.5	-3	0	
331	N344	-10.773635	29.600318	-3	0	
332	N345	-20.24781	24.1304	-3	0	
333	N346	-27.2798	15.75	-3	0	
334	N347	-31.021444	5.469918	-3	0	
335	N348	-31.021444	-5.469918	-3	0	
336	N349	-27.2798	-15.75	-3	0	
337	N350	-20.24781	-24.1304	-3	0	
338	N351	-10.773635	-29.600318	-3	0	
339	N352	0.	-31.5	-3	0	
340	N353	10.773635	-29.600318	-3	0	
341	N354	20.24781	-24.1304	-3	0	
342	N355	27.2798	-15.75	-3	0	
343	N356	31.021444	-5.469918	-3	0	
344	N358	31.513848	5.556742	-3	0	
345	N359	27.712813	16	-3	0	
346	N360	20.569204	24.513422	-3	0	
347	N361	10.944645	30.070164	-3	0	
348	N362	-0.	32	-3	0	
349	N363	-10.944645	30.070164	-3	0	
350	N364	-20.569204	24.513422	-3	0	
351	N365	-27.712813	16	-3	0	
352	N366	-31.513848	5.556742	-3	0	
353	N367	-31.513848	-5.556742	-3	0	
354	N368	-27.712813	-16	-3	0	
355	N369	-20.569204	-24.513422	-3	0	
356	N370	-10.944645	-30.070164	-3	0	
357	N371	0.	-32	-3	0	
358	N372	10.944645	-30.070164	-3	0	
359	N373	20.569204	-24.513422	-3	0	
360	N374	27.712813	-16	-3	0	
361	N375	31.513848	-5.556742	-3	0	
362	N377	32.006252	5.643566	-3	0	
363	N378	28.145826	16.25	-3	0	
364	N379	20.890597	24.896444	-3	0	
365	N380	11.115655	30.54001	-3	0	
366	N381	-0.	32.5	-3	0	
367	N382	-11.115655	30.54001	-3	0	
368	N383	-20.890597	24.896444	-3	0	
369	N384	-28.145826	16.25	-3	0	
370	N385	-32.006252	5.643566	-3	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
371	N386	-32.006252	-5.643566	-3	0	
372	N387	-28.145826	-16.25	-3	0	
373	N388	-20.890597	-24.896444	-3	0	
374	N389	-11.115655	-30.54001	-3	0	
375	N390	0.	-32.5	-3	0	
376	N391	11.115655	-30.54001	-3	0	
377	N392	20.890597	-24.896444	-3	0	
378	N393	28.145826	-16.25	-3	0	
379	N394	32.006252	-5.643566	-3	0	
380	N396	32.498656	5.73039	-3	0	
381	N397	28.578838	16.5	-3	0	
382	N398	21.211991	25.279467	-3	0	
383	N399	11.286665	31.009856	-3	0	
384	N400	-0.	33	-3	0	
385	N401	-11.286665	31.009856	-3	0	
386	N402	-21.211991	25.279467	-3	0	
387	N403	-28.578838	16.5	-3	0	
388	N404	-32.498656	5.73039	-3	0	
389	N405	-32.498656	-5.73039	-3	0	
390	N406	-28.578838	-16.5	-3	0	
391	N407	-21.211991	-25.279467	-3	0	
392	N408	-11.286665	-31.009856	-3	0	
393	N409	0.	-33	-3	0	
394	N410	11.286665	-31.009856	-3	0	
395	N411	21.211991	-25.279467	-3	0	
396	N412	28.578838	-16.5	-3	0	
397	N413	32.498656	-5.73039	-3	0	
398	N415	32.99106	5.817214	-3	0	
399	N416	29.011851	16.75	-3	0	
400	N417	21.533385	25.662489	-3	0	
401	N418	11.457675	31.479703	-3	0	
402	N419	-0.	33.5	-3	0	
403	N420	-11.457675	31.479703	-3	0	
404	N421	-21.533385	25.662489	-3	0	
405	N422	-29.011851	16.75	-3	0	
406	N423	-32.99106	5.817214	-3	0	
407	N424	-32.99106	-5.817214	-3	0	
408	N425	-29.011851	-16.75	-3	0	
409	N426	-21.533385	-25.662489	-3	0	
410	N427	-11.457675	-31.479703	-3	0	
411	N428	0.	-33.5	-3	0	
412	N429	11.457675	-31.479703	-3	0	
413	N430	21.533385	-25.662489	-3	0	
414	N431	29.011851	-16.75	-3	0	
415	N432	32.99106	-5.817214	-3	0	
416	N434	33.483464	5.904038	-3	0	
417	N435	29.444864	17	-3	0	
418	N436	21.854779	26.045511	-3	0	
419	N437	11.628685	31.949549	-3	0	
420	N438	-0.	34	-3	0	
421	N439	-11.628685	31.949549	-3	0	
422	N440	-21.854779	26.045511	-3	0	
423	N441	-29.444864	17	-3	0	
424	N442	-33.483464	5.904038	-3	0	
425	N443	-33.483464	-5.904038	-3	0	
426	N444	-29.444864	-17	-3	0	
427	N445	-21.854779	-26.045511	-3	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
428	N446	-11.628685	-31.949549	-3	0	
429	N447	0.	-34	-3	0	
430	N448	11.628685	-31.949549	-3	0	
431	N449	21.854779	-26.045511	-3	0	
432	N450	29.444864	-17	-3	0	
433	N451	33.483464	-5.904038	-3	0	
434	N434A	-31.513848	-0.	-3	0	
435	N435A	-31.513848	4.5	-3	0	
436	N436A	-31.513848	-4.5	-3	0	
437	N437A	15.71947	-27.22692	0	0	
438	N438A	11.822355	-29.476921	0	0	
439	N439A	19.616583	-24.976921	0	0	
440	N442A	15.756924	-27.291793	-3	0	
441	N443A	11.85981	-29.541793	-3	0	
442	N444A	19.654039	-25.041793	-3	0	
443	N445A	15.719469	27.226921	0	0	
444	N446A	19.616584	24.976921	0	0	
445	N447A	11.822355	29.476921	0	0	
446	N450A	15.756924	27.291793	-3	0	
447	N451A	19.654038	25.041793	-3	0	
448	N452	11.85981	29.541793	-3	0	
449	N449A	-31.438939	1.5	0	0	
450	N450B	-31.438939	-3	0	0	
451	N451B	-31.513848	1.5	-3	0	
452	N452A	-31.513848	-3	-3	0	
453	N453	-31.438939	3.	0	0	
454	N454	-31.438939	-1.5	0	0	
455	N455	-31.513848	3.	-3	0	
456	N456	-31.513848	-1.5	-3	0	
457	N461	14.420432	-27.97692	0	0	
458	N462	18.317546	-25.72692	0	0	
459	N463	14.457886	-28.041793	-3	0	
460	N464	18.355	-25.791793	-3	0	
461	N465	13.121393	-28.72692	0	0	
462	N466	17.018508	-26.47692	0	0	
463	N467	13.158848	-28.791793	-3	0	
464	N468	17.055962	-26.541793	-3	0	
465	N473	17.018508	26.47692	0	0	
466	N474	13.121394	28.72692	0	0	
467	N475	17.055962	26.541793	-3	0	
468	N476	13.158848	28.791793	-3	0	
469	N477	18.317546	25.72692	0	0	
470	N478	14.420432	27.97692	0	0	
471	N479	18.355	25.791793	-3	0	
472	N480	14.457886	28.041793	-3	0	
473	N473A	45.069221	-61.	-39	0	
474	N474A	45.069221	-26.	-39	0	
475	N475A	45.069221	26.	-39	0	
476	N476A	45.069221	61.	-39	0	
477	N477A	42.069221	-61.	-39	0	
478	N478A	42.069221	-26.	-39	0	
479	N479A	42.069221	26.	-39	0	
480	N480A	42.069221	61.	-39	0	
481	N481	30.292939	69.531091	-39	0	
482	N482	-0.01795	52.031091	-39	0	
483	N483	-45.051271	26.031091	-39	0	
484	N484	-75.36216	8.531091	-39	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
485	N485	31.792939	66.933014	-39	0	
486	N486	1.48205	49.433014	-39	0	
487	N487	-43.551271	23.433014	-39	0	
488	N488	-73.86216	5.933014	-39	0	
489	N489	-75.36216	-8.531091	-39	0	
490	N490	-45.051271	-26.031091	-39	0	
491	N491	-0.01795	-52.031091	-39	0	
492	N492	30.292939	-69.531091	-39	0	
493	N493	-73.86216	-5.933014	-39	0	
494	N494	-43.551271	-23.433014	-39	0	
495	N495	1.48205	-49.433014	-39	0	
496	N496	31.792939	-66.933014	-39	0	
497	HN1	42.069221	-81	-39	0	
498	HN2	42.069221	-55.159699	-39	0	
499	HN3	40.506721	-55.159699	-39	0	
500	HN4	42.069221	69	-39	0	
501	HN5	42.069221	55.159699	-39	0	
502	HN6	40.506721	55.159699	-39	0	
503	HN7	-91.182668	4.066986	-39	0	
504	HN8	-68.804311	-8.853165	-39	0	
505	HN9	-68.023061	-7.5	-39	0	
506	HN10	38.721142	-70.933014	-39	0	
507	HN11	26.73509	-64.012864	-39	0	
508	HN12	27.51634	-62.659699	-39	0	
509	HN13	49.113447	76.933014	-39	0	
510	HN14	26.73509	64.012864	-39	0	
511	HN15	27.51634	62.659699	-39	0	
512	HN16	-80.790363	1.933014	-39	0	
513	HN17	-68.804311	8.853165	-39	0	
514	HN18	-68.023061	7.5	-39	0	
515	N515	45.069221	-61.	57	0	
516	N516	45.069221	-26.	57	0	
517	N517	45.069221	26.	57	0	
518	N518	45.069221	61.	57	0	
519	N519	42.069221	-61.	57	0	
520	N520	42.069221	-26.	57	0	
521	N521	42.069221	26.	57	0	
522	N522	42.069221	61.	57	0	
523	N523	30.292939	69.531091	57	0	
524	N524	-0.01795	52.031091	57	0	
525	N525	-45.051271	26.031091	57	0	
526	N526	-75.36216	8.531091	57	0	
527	N527	31.792939	66.933014	57	0	
528	N528	1.48205	49.433014	57	0	
529	N529	-43.551271	23.433014	57	0	
530	N530	-73.86216	5.933014	57	0	
531	N531	-75.36216	-8.531091	57	0	
532	N532	-45.051271	-26.031091	57	0	
533	N533	-0.01795	-52.031091	57	0	
534	N534	30.292939	-69.531091	57	0	
535	N535	-73.86216	-5.933014	57	0	
536	N536	-43.551271	-23.433014	57	0	
537	N537	1.48205	-49.433014	57	0	
538	N538	31.792939	-66.933014	57	0	
539	N539	42.069221	-81	57	0	
540	N540	42.069221	-55.159699	57	0	
541	N541	40.506721	-55.159699	57	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
542	N542	42.069221	69	57	0	
543	N543	42.069221	55.159699	57	0	
544	N544	40.506721	55.159699	57	0	
545	N545	-91.182668	4.066986	57	0	
546	N546	-68.804311	-8.853165	57	0	
547	N547	-68.023061	-7.5	57	0	
548	N548	38.721142	-70.933014	57	0	
549	N549	26.73509	-64.012864	57	0	
550	N550	27.51634	-62.659699	57	0	
551	N551	49.113447	76.933014	57	0	
552	N552	26.73509	64.012864	57	0	
553	N553	27.51634	62.659699	57	0	
554	N554	-80.790363	1.933014	57	0	
555	N555	-68.804311	8.853165	57	0	
556	N556	-68.023061	7.5	57	0	
557	KN2	-74.911198	-0.	-7.0625	0	
558	KN3	-74.911198	.937	-7.0625	0	
559	KN4	-74.911198	-.937	-7.0625	0	
560	KN5	-16.0625	0	-53.6875	0	
561	KN6	-19.4375	0	-53.6875	0	
562	KN7	-19.4375	.937	-53.6875	0	
563	KN8	-19.4375	-.937	-53.6875	0	
564	N565	37.455599	-64.875001	-7.0625	0	
565	N566	36.644133	-65.343501	-7.0625	0	
566	N567	38.267065	-64.406501	-7.0625	0	
567	N568	8.03125	-13.910533	-53.6875	0	
568	N569	9.71875	-16.833369	-53.6875	0	
569	N570	8.907284	-17.301869	-53.6875	0	
570	N571	10.530216	-16.364869	-53.6875	0	
571	N573	37.455599	64.875001	-7.0625	0	
572	N574	38.267065	64.406501	-7.0625	0	
573	N575	36.644133	65.343501	-7.0625	0	
574	N576	8.03125	13.910533	-53.6875	0	
575	N577	9.71875	16.833369	-53.6875	0	
576	N578	10.530216	16.364869	-53.6875	0	
577	N579	8.907284	17.301869	-53.6875	0	
578	N578A	16.0625	0.	-60.6875	0	
579	N579A	21.3125	0.	-60.6875	0	
580	N580	21.3125	3.875	-60.6875	0	
581	N581	21.3125	-3.875	-60.6875	0	
582	N582	42.069221	-52.159699	-39	0	
583	N583	42.069221	-52.159699	-42	0	
584	N584	42.069221	52.159699	-39	0	
585	N585	42.069221	52.159699	-42	0	
586	N586	-8.03125	13.910533	-60.6875	0	
587	N587	-10.65625	18.457166	-60.6875	0	
588	N588	-14.012098	16.519666	-60.6875	0	
589	N589	-7.300402	20.394666	-60.6875	0	
590	N590	24.137014	62.512864	-39	0	
591	N591	24.137014	62.512864	-42	0	
592	N592	-66.206235	10.353165	-39	0	
593	N593	-66.206235	10.353165	-42	0	
594	N594	-8.03125	-13.910533	-60.6875	0	
595	N595	-10.65625	-18.457166	-60.6875	0	
596	N596	-7.300402	-20.394666	-60.6875	0	
597	N597	-14.012098	-16.519666	-60.6875	0	
598	N598	-66.206235	-10.353165	-39	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
599	N599	-66.206235	-10.353165	-42	0	
600	N600	24.137014	-62.512864	-39	0	
601	N601	24.137014	-62.512864	-42	0	
602	N602	16.0625	0.	47.3125	0	
603	N603	21.3125	0.	47.3125	0	
604	N604	21.3125	3.875	47.3125	0	
605	N605	21.3125	-3.875	47.3125	0	
606	N606	42.069221	-52.159699	57	0	
607	N607	42.069221	-52.159699	54	0	
608	N608	42.069221	52.159699	57	0	
609	N609	42.069221	52.159699	54	0	
610	N610	-8.03125	13.910533	47.3125	0	
611	N611	-10.65625	18.457166	47.3125	0	
612	N612	-14.012098	16.519666	47.3125	0	
613	N613	-7.300402	20.394666	47.3125	0	
614	N614	24.137014	62.512864	57	0	
615	N615	24.137014	62.512864	54	0	
616	N616	-66.206235	10.353165	57	0	
617	N617	-66.206235	10.353165	54	0	
618	N618	-8.03125	-13.910533	47.3125	0	
619	N619	-10.65625	-18.457166	47.3125	0	
620	N620	-7.300402	-20.394666	47.3125	0	
621	N621	-14.012098	-16.519666	47.3125	0	
622	N622	-66.206235	-10.353165	57	0	
623	N623	-66.206235	-10.353165	54	0	
624	N624	24.137014	-62.512864	57	0	
625	N625	24.137014	-62.512864	54	0	
626	N626	45.069221	-26.	-23	0	
627	N627	45.069221	-26.	5	0	
628	A3B-2	53.069221	-26	-23	0	
629	A3T-2	53.069221	-26	5	0	
630	N630	-45.051271	-26.031091	-23	0	
631	N631	-45.051271	-26.031091	5	0	
632	B3B-2	-49.051271	-32.959294	-23	0	
633	B3T-2	-49.051271	-32.959294	5	0	
634	N634	-0.01795	52.031091	-23	0	
635	N635	-0.01795	52.031091	5	0	
636	G3B-2	-4.01795	58.959294	-23	0	
637	G3T-2	-4.01795	58.959294	5	0	

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	Mount Pipe	126			Lbyy						Lateral
2	M2	Mount Pipe	102			Lbyy						Lateral
3	M3	Mount Pipe	102			Lbyy						Lateral
4	M4	Mount Pipe	102			Lbyy						Lateral
5	M5	Mount Pipe	126			Lbyy						Lateral
6	M6	Mount Pipe	102			Lbyy						Lateral
7	M7	Mount Pipe	102			Lbyy						Lateral
8	M8	Mount Pipe	102			Lbyy						Lateral
9	M9	Mount Pipe	126			Lbyy						Lateral
10	M10	Mount Pipe	102			Lbyy						Lateral
11	M11	Mount Pipe	102			Lbyy						Lateral
12	M12	Mount Pipe	102			Lbyy						Lateral
13	M19	Corner Plate	9.5			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
14	M20	Corner Plate	9.5			Lbyy						Lateral
15	M21	Corner Plate	9.5			Lbyy						Lateral
16	M22	Corner Plate	6.2			Lbyy						Lateral
17	M23	Corner Plate	12.8			Lbyy						Lateral
18	M25	Corner Plate	6.2			Lbyy						Lateral
19	M26	Corner Plate	12.8			Lbyy						Lateral
20	M28	Corner Plate	6.2			Lbyy						Lateral
21	M29	Corner Plate	12.8			Lbyy						Lateral
22	M34	Grating Cha...	59.697			Lbyy						Lateral
23	M35	Grating Cha...	64			Lbyy						Lateral
24	M37	Grating Cha...	64			Lbyy						Lateral
25	M39	Grating Cha...	59.697			Lbyy						Lateral
26	M43	Grating Cha...	59.697			Lbyy						Lateral
27	M45	Grating Cha...	22			Lbyy						Lateral
28	M50	Grating Cha...	34.294			Lbyy						Lateral
29	M51	Mount Pipe ...	3.5									Lateral
30	M52	Mount Pipe ...	3.5									Lateral
31	M53	Mount Pipe ...	3.5									Lateral
32	M54	Mount Pipe ...	3.5									Lateral
33	M55	Mount Pipe ...	3.5									Lateral
34	M56	Mount Pipe ...	3.5									Lateral
35	M69	Mount Pipe ...	3.5									Lateral
36	M70	Mount Pipe ...	3.5									Lateral
37	M71	Mount Pipe ...	3.5									Lateral
38	M72	Mount Pipe ...	3.5									Lateral
39	M73	Mount Pipe ...	3.5									Lateral
40	M74	Mount Pipe ...	3.5									Lateral
41	M171A	Grating Cha...	16			Lbyy						Lateral
42	M168A	Grating Cha...	64			Lbyy						Lateral
43	M169A	Grating Cha...	64			Lbyy						Lateral
44	M170A	Grating Cha...	16			Lbyy						Lateral
45	M171B	Grating Cha...	64			Lbyy						Lateral
46	M172A	Grating Cha...	64			Lbyy						Lateral
47	M173A	Grating Cha...	16			Lbyy						Lateral
48	HM1	MOD - Sup...	150									Lateral
49	HM3	MOD - SR ...	15									Lateral
50	HM5	MOD - Sup...	150									Lateral
51	HM7	MOD - SR ...	15									Lateral
52	HM9	MOD - Sup...	150									Lateral
53	HM11	MOD - SR ...	15									Lateral
54	M171C	MOD - Sup...	150									Lateral
55	M173B	MOD - SR ...	15									Lateral
56	M175A	MOD - Sup...	150									Lateral
57	M177A	MOD - SR ...	15									Lateral
58	M179A	MOD - Sup...	150									Lateral
59	M181A	MOD - SR ...	15									Lateral
60	KM5	MOD - Kicker	72.465									Lateral
61	KM6	MOD - Kicker	72.465									Lateral
62	M193	MOD - Kicker	72.465									Lateral
63	M194	MOD - Kicker	72.465									Lateral
64	M199	MOD - Kicker	72.465									Lateral
65	M200	MOD - Kicker	72.465									Lateral
66	M205	MOD - PRK...	55.781			Lbyy						Lateral
67	M206	MOD - PRK...	55.781			Lbyy						Lateral
68	M211	MOD - PRK...	55.781			Lbyy						Lateral
69	M212	MOD - PRK...	55.781			Lbyy						Lateral
70	M217	MOD - PRK...	55.781			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
71	M218	MOD - PRK...	55.781			Lbyy						Lateral
72	M223	MOD - PRK...	52.981			Lbyy						Lateral
73	M224	MOD - PRK...	52.981			Lbyy						Lateral
74	M229	MOD - PRK...	52.981			Lbyy						Lateral
75	M230	MOD - PRK...	52.981			Lbyy						Lateral
76	M235	MOD - PRK...	52.981			Lbyy						Lateral
77	M236	MOD - PRK...	52.981			Lbyy						Lateral

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribu...	Area(M...	Surface...
1	Dead	DL			-1	39				
2	Dead of Ice	RL				39		77		
4	Structure Wind (0)	None						154		
5	Structure Wind (30)	None						154		
6	Structure Wind (45)	None						154		
7	Structure Wind (60)	None						154		
8	Structure Wind (90)	None						154		
9	Structure Wind (120)	None						154		
10	Structure Wind (135)	None						154		
11	Structure Wind (150)	None						154		
12	Structure Wind w/ Ice (0)	None						154		
13	Structure Wind w/ Ice (30)	None						154		
14	Structure Wind w/ Ice (45)	None						154		
15	Structure Wind w/ Ice (60)	None						154		
16	Structure Wind w/ Ice (90)	None						154		
17	Structure Wind w/ Ice (120)	None						154		
18	Structure Wind w/ Ice (135)	None						154		
19	Structure Wind w/ Ice (150)	None						154		
20	Antenna Wind (0)	None				78				
21	Antenna Wind (30)	None				78				
22	Antenna Wind (45)	None				78				
23	Antenna Wind (60)	None				78				
24	Antenna Wind (90)	None				78				
25	Antenna Wind (120)	None				78				
26	Antenna Wind (135)	None				78				
27	Antenna Wind (150)	None				78				
28	Antenna Wind w/ Ice (0)	None				78				
29	Antenna Wind w/ Ice (30)	None				78				
30	Antenna Wind w/ Ice (45)	None				78				
31	Antenna Wind w/ Ice (60)	None				78				
32	Antenna Wind w/ Ice (90)	None				78				
33	Antenna Wind w/ Ice (120)	None				78				
34	Antenna Wind w/ Ice (135)	None				78				
35	Antenna Wind w/ Ice (150)	None				78				
36	Seismic X	ELX				39		77		
37	Seismic Y	ELY				39		77		
38	Maintenance Live Lm (1)	OL1				1				
39	Maintenance Live Lm (2)	OL2				1				
40	Maintenance Live Lm (3)	OL3				1				
41	Maintenance Live Lm (4)	OL4				1				

Load Combinations

	Description	Sol..	PDe..	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	Summary: 1.0D + 1.0W	Yes	Y		DL	1	20	1																
2	1.4D	Yes	Y		DL	1.4																		
3	1.2D + 1.0W(0)	Yes	Y		DL	1.2	4	1	20	1														
4	1.2D + 1.0W(30)	Yes	Y		DL	1.2	5	1	21	1														
5	1.2D + 1.0W(45)	Yes	Y		DL	1.2	6	1	22	1														
6	1.2D + 1.0W(60)	Yes	Y		DL	1.2	7	1	23	1														
7	1.2D + 1.0W(90)	Yes	Y		DL	1.2	8	1	24	1														
8	1.2D + 1.0W(120)	Yes	Y		DL	1.2	9	1	25	1														
9	1.2D + 1.0W(135)	Yes	Y		DL	1.2	10	1	26	1														
10	1.2D + 1.0W(150)	Yes	Y		DL	1.2	11	1	27	1														
11	1.2D + 1.0W(180)	Yes	Y		DL	1.2	4	-1	20	-1														
12	1.2D + 1.0W(210)	Yes	Y		DL	1.2	5	-1	21	-1														
13	1.2D + 1.0W(225)	Yes	Y		DL	1.2	6	-1	22	-1														
14	1.2D + 1.0W(240)	Yes	Y		DL	1.2	7	-1	23	-1														
15	1.2D + 1.0W(270)	Yes	Y		DL	1.2	8	-1	24	-1														
16	1.2D + 1.0W(300)	Yes	Y		DL	1.2	9	-1	25	-1														
17	1.2D + 1.0W(315)	Yes	Y		DL	1.2	10	-1	26	-1														
18	1.2D + 1.0W(330)	Yes	Y		DL	1.2	11	-1	27	-1														
19	1.2D + 1.0Di + 1.0Wi(0)	Yes	Y		DL	1.2	RL	1	12	1	28	1												
20	1.2D + 1.0Di + 1.0Wi(30)	Yes	Y		DL	1.2	RL	1	13	1	29	1												
21	1.2D + 1.0Di + 1.0Wi(45)	Yes	Y		DL	1.2	RL	1	14	1	30	1												
22	1.2D + 1.0Di + 1.0Wi(60)	Yes	Y		DL	1.2	RL	1	15	1	31	1												
23	1.2D + 1.0Di + 1.0Wi(90)	Yes	Y		DL	1.2	RL	1	16	1	32	1												
24	1.2D + 1.0Di + 1.0Wi(120)	Yes	Y		DL	1.2	RL	1	17	1	33	1												
25	1.2D + 1.0Di + 1.0Wi(135)	Yes	Y		DL	1.2	RL	1	18	1	34	1												
26	1.2D + 1.0Di + 1.0Wi(150)	Yes	Y		DL	1.2	RL	1	19	1	35	1												
27	1.2D + 1.0Di + 1.0Wi(180)	Yes	Y		DL	1.2	RL	1	12	-1	28	-1												
28	1.2D + 1.0Di + 1.0Wi(210)	Yes	Y		DL	1.2	RL	1	13	-1	39	-1												
29	1.2D + 1.0Di + 1.0Wi(225)	Yes	Y		DL	1.2	RL	1	14	-1	30	-1												
30	1.2D + 1.0Di + 1.0Wi(240)	Yes	Y		DL	1.2	RL	1	15	-1	31	-1												
31	1.2D + 1.0Di + 1.0Wi(270)	Yes	Y		DL	1.2	RL	1	16	-1	32	-1												
32	1.2D + 1.0Di + 1.0Wi(300)	Yes	Y		DL	1.2	RL	1	17	-1	33	-1												
33	1.2D + 1.0Di + 1.0Wi(315)	Yes	Y		DL	1.2	RL	1	18	-1	34	-1												
34	1.2D + 1.0Di + 1.0Wi(330)	Yes	Y		DL	1.2	RL	1	19	-1	35	-1												
35	1.2D + 1.0E(0)	Yes	Y		DL	1.2	E...	-1	E...															
36	1.2D + 1.0E(30)	Yes	Y		DL	1.2	E...	-.8...	E...	.5														
37	1.2D + 1.0E(45)	Yes	Y		DL	1.2	E...	-.7...	E...	.707														
38	1.2D + 1.0E(60)	Yes	Y		DL	1.2	E...	-.5	E...	.866														
39	1.2D + 1.0E(90)	Yes	Y		DL	1.2	E...	-2....	E...	1														
40	1.2D + 1.0E(120)	Yes	Y		DL	1.2	E...	.5	E...	.866														
41	1.2D + 1.0E(135)	Yes	Y		DL	1.2	E...	.707	E...	.707														
42	1.2D + 1.0E(150)	Yes	Y		DL	1.2	E...	.866	E...	.5														
43	1.2D + 1.0E(180)	Yes	Y		DL	1.2	E...	1	E...	4.5...														
44	1.2D + 1.0E(210)	Yes	Y		DL	1.2	E...	.866	E...	-.5														
45	1.2D + 1.0E(225)	Yes	Y		DL	1.2	E...	.707	E...	-.7...														
46	1.2D + 1.0E(240)	Yes	Y		DL	1.2	E...	.5	E...	-.8...														
47	1.2D + 1.0E(270)	Yes	Y		DL	1.2	E...	6.8...	E...	-1														
48	1.2D + 1.0E(300)	Yes	Y		DL	1.2	E...	-.5	E...	-.8...														
49	1.2D + 1.0E(315)	Yes	Y		DL	1.2	E...	-.7...	E...	-.7...														
50	1.2D + 1.0E(330)	Yes	Y		DL	1.2	E...	-.8...	E...	-.5														
51	0.9D + 1.0E(0)	Yes	Y		DL	.9	E...	-1	E...															
52	0.9D + 1.0E(30)	Yes	Y		DL	.9	E...	-.8...	E...	.5														
53	0.9D + 1.0E(45)	Yes	Y		DL	.9	E...	-.7...	E...	.707														
54	0.9D + 1.0E(60)	Yes	Y		DL	.9	E...	-.5	E...	.866														
55	0.9D + 1.0E(90)	Yes	Y		DL	.9	E...	-2....	E...	1														
56	0.9D + 1.0E(120)	Yes	Y		DL	.9	E...	.5	E...	.866														

Load Combinations (Continued)

	Description	Sol..	PDe..	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
57	0.9D + 1.0E(135)	Yes	Y		DL	.9	E...	.707	E...	.707																
58	0.9D + 1.0E(150)	Yes	Y		DL	.9	E...	.866	E...	.5																
59	0.9D + 1.0E(180)	Yes	Y		DL	.9	E...	1	E...	4.5...																
60	0.9D + 1.0E(210)	Yes	Y		DL	.9	E...	.866	E...	-.5																
61	0.9D + 1.0E(225)	Yes	Y		DL	.9	E...	.707	E...	-.7...																
62	0.9D + 1.0E(240)	Yes	Y		DL	.9	E...	.5	E...	-.8...																
63	0.9D + 1.0E(270)	Yes	Y		DL	.9	E...	6.8...	E...	-1																
64	0.9D + 1.0E(300)	Yes	Y		DL	.9	E...	-.5	E...	-.8...																
65	0.9D + 1.0E(315)	Yes	Y		DL	.9	E...	-.7...	E...	-.7...																
66	0.9D + 1.0E(330)	Yes	Y		DL	.9	E...	-.8...	E...	-.5																
67	1.2D + 1.5Lm(1) + 1.0Wm(0)	Yes	Y		DL	1.2	4	.065	20	.065	O...	1.5														
68	1.2D + 1.5Lm(1) + 1.0Wm(30)	Yes	Y		DL	1.2	5	.065	21	.065	O...	1.5														
69	1.2D + 1.5Lm(1) + 1.0Wm(45)	Yes	Y		DL	1.2	6	.065	22	.065	O...	1.5														
70	1.2D + 1.5Lm(1) + 1.0Wm(60)	Yes	Y		DL	1.2	7	.065	23	.065	O...	1.5														
71	1.2D + 1.5Lm(1) + 1.0Wm(90)	Yes	Y		DL	1.2	8	.065	24	.065	O...	1.5														
72	1.2D + 1.5Lm(1) + 1.0Wm(120)	Yes	Y		DL	1.2	9	.065	25	.065	O...	1.5														
73	1.2D + 1.5Lm(1) + 1.0Wm(135)	Yes	Y		DL	1.2	10	.065	26	.065	O...	1.5														
74	1.2D + 1.5Lm(1) + 1.0Wm(150)	Yes	Y		DL	1.2	11	.065	27	.065	O...	1.5														
75	1.2D + 1.5Lm(1) + 1.0Wm(180)	Yes	Y		DL	1.2	4	-.0...	20	-.0...	O...	1.5														
76	1.2D + 1.5Lm(1) + 1.0Wm(210)	Yes	Y		DL	1.2	5	-.0...	21	-.0...	O...	1.5														
77	1.2D + 1.5Lm(1) + 1.0Wm(225)	Yes	Y		DL	1.2	6	-.0...	22	-.0...	O...	1.5														
78	1.2D + 1.5Lm(1) + 1.0Wm(240)	Yes	Y		DL	1.2	7	-.0...	23	-.0...	O...	1.5														
79	1.2D + 1.5Lm(1) + 1.0Wm(270)	Yes	Y		DL	1.2	8	-.0...	24	-.0...	O...	1.5														
80	1.2D + 1.5Lm(1) + 1.0Wm(300)	Yes	Y		DL	1.2	9	-.0...	25	-.0...	O...	1.5														
81	1.2D + 1.5Lm(1) + 1.0Wm(315)	Yes	Y		DL	1.2	10	-.0...	26	-.0...	O...	1.5														
82	1.2D + 1.5Lm(1) + 1.0Wm(330)	Yes	Y		DL	1.2	11	-.0...	27	-.0...	O...	1.5														
83	1.2D + 1.5Lm(2) + 1.0Wm(0)	Yes	Y		DL	1.2	4	.065	20	.065	O...	1.5														
84	1.2D + 1.5Lm(2) + 1.0Wm(30)	Yes	Y		DL	1.2	5	.065	21	.065	O...	1.5														
85	1.2D + 1.5Lm(2) + 1.0Wm(45)	Yes	Y		DL	1.2	6	.065	22	.065	O...	1.5														
86	1.2D + 1.5Lm(2) + 1.0Wm(60)	Yes	Y		DL	1.2	7	.065	23	.065	O...	1.5														
87	1.2D + 1.5Lm(2) + 1.0Wm(90)	Yes	Y		DL	1.2	8	.065	24	.065	O...	1.5														
88	1.2D + 1.5Lm(2) + 1.0Wm(120)	Yes	Y		DL	1.2	9	.065	25	.065	O...	1.5														
89	1.2D + 1.5Lm(2) + 1.0Wm(135)	Yes	Y		DL	1.2	10	.065	26	.065	O...	1.5														
90	1.2D + 1.5Lm(2) + 1.0Wm(150)	Yes	Y		DL	1.2	11	.065	27	.065	O...	1.5														
91	1.2D + 1.5Lm(2) + 1.0Wm(180)	Yes	Y		DL	1.2	4	-.0...	20	-.0...	O...	1.5														
92	1.2D + 1.5Lm(2) + 1.0Wm(210)	Yes	Y		DL	1.2	5	-.0...	21	-.0...	O...	1.5														
93	1.2D + 1.5Lm(2) + 1.0Wm(225)	Yes	Y		DL	1.2	6	-.0...	22	-.0...	O...	1.5														
94	1.2D + 1.5Lm(2) + 1.0Wm(240)	Yes	Y		DL	1.2	7	-.0...	23	-.0...	O...	1.5														
95	1.2D + 1.5Lm(2) + 1.0Wm(270)	Yes	Y		DL	1.2	8	-.0...	24	-.0...	O...	1.5														
96	1.2D + 1.5Lm(2) + 1.0Wm(300)	Yes	Y		DL	1.2	9	-.0...	25	-.0...	O...	1.5														
97	1.2D + 1.5Lm(2) + 1.0Wm(315)	Yes	Y		DL	1.2	10	-.0...	26	-.0...	O...	1.5														
98	1.2D + 1.5Lm(2) + 1.0Wm(330)	Yes	Y		DL	1.2	11	-.0...	27	-.0...	O...	1.5														
99	1.2D + 1.5Lm(3) + 1.0Wm(0)	Yes	Y		DL	1.2	4	.065	20	.065	O...	1.5														
100	1.2D + 1.5Lm(3) + 1.0Wm(30)	Yes	Y		DL	1.2	5	.065	21	.065	O...	1.5														
101	1.2D + 1.5Lm(3) + 1.0Wm(45)	Yes	Y		DL	1.2	6	.065	22	.065	O...	1.5														
102	1.2D + 1.5Lm(3) + 1.0Wm(60)	Yes	Y		DL	1.2	7	.065	23	.065	O...	1.5														
103	1.2D + 1.5Lm(3) + 1.0Wm(90)	Yes	Y		DL	1.2	8	.065	24	.065	O...	1.5														
104	1.2D + 1.5Lm(3) + 1.0Wm(120)	Yes	Y		DL	1.2	9	.065	25	.065	O...	1.5														
105	1.2D + 1.5Lm(3) + 1.0Wm(135)	Yes	Y		DL	1.2	10	.065	26	.065	O...	1.5														
106	1.2D + 1.5Lm(3) + 1.0Wm(150)	Yes	Y		DL	1.2	11	.065	27	.065	O...	1.5														
107	1.2D + 1.5Lm(3) + 1.0Wm(180)	Yes	Y		DL	1.2	4	-.0...	20	-.0...	O...	1.5														
108	1.2D + 1.5Lm(3) + 1.0Wm(210)	Yes	Y		DL	1.2	5	-.0...	21	-.0...	O...	1.5														
109	1.2D + 1.5Lm(3) + 1.0Wm(225)	Yes	Y		DL	1.2	6	-.0...	22	-.0...	O...	1.5														
110	1.2D + 1.5Lm(3) + 1.0Wm(240)	Yes	Y		DL	1.2	7	-.0...	23	-.0...	O...	1.5														
111	1.2D + 1.5Lm(3) + 1.0Wm(270)	Yes	Y		DL	1.2	8	-.0...	24	-.0...	O...	1.5														
112	1.2D + 1.5Lm(3) + 1.0Wm(300)	Yes	Y		DL	1.2	9	-.0...	25	-.0...	O...	1.5														
113	1.2D + 1.5Lm(3) + 1.0Wm(315)	Yes	Y		DL	1.2	10	-.0...	26	-.0...	O...	1.5														

Load Combinations (Continued)

	Description	Sol..	PDe..	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
114	1.2D + 1.5Lm(3) + 1.0Wm(330)	Yes	Y		DL	1.2	11	-.0...	27	-.0...	O...	1.5												
115	1.2D + 1.5Lm(4) + 1.0Wm(0)	Yes	Y		DL	1.2	4	.065	20	.065	O...	1.5												
116	1.2D + 1.5Lm(4) + 1.0Wm(30)	Yes	Y		DL	1.2	5	.065	21	.065	O...	1.5												
117	1.2D + 1.5Lm(4) + 1.0Wm(45)	Yes	Y		DL	1.2	6	.065	22	.065	O...	1.5												
118	1.2D + 1.5Lm(4) + 1.0Wm(60)	Yes	Y		DL	1.2	7	.065	23	.065	O...	1.5												
119	1.2D + 1.5Lm(4) + 1.0Wm(90)	Yes	Y		DL	1.2	8	.065	24	.065	O...	1.5												
120	1.2D + 1.5Lm(4) + 1.0Wm(120)	Yes	Y		DL	1.2	9	.065	25	.065	O...	1.5												
121	1.2D + 1.5Lm(4) + 1.0Wm(135)	Yes	Y		DL	1.2	10	.065	26	.065	O...	1.5												
122	1.2D + 1.5Lm(4) + 1.0Wm(150)	Yes	Y		DL	1.2	11	.065	27	.065	O...	1.5												
123	1.2D + 1.5Lm(4) + 1.0Wm(180)	Yes	Y		DL	1.2	4	-.0...	20	-.0...	O...	1.5												
124	1.2D + 1.5Lm(4) + 1.0Wm(210)	Yes	Y		DL	1.2	5	-.0...	21	-.0...	O...	1.5												
125	1.2D + 1.5Lm(4) + 1.0Wm(225)	Yes	Y		DL	1.2	6	-.0...	22	-.0...	O...	1.5												
126	1.2D + 1.5Lm(4) + 1.0Wm(240)	Yes	Y		DL	1.2	7	-.0...	23	-.0...	O...	1.5												
127	1.2D + 1.5Lm(4) + 1.0Wm(270)	Yes	Y		DL	1.2	8	-.0...	24	-.0...	O...	1.5												
128	1.2D + 1.5Lm(4) + 1.0Wm(300)	Yes	Y		DL	1.2	9	-.0...	25	-.0...	O...	1.5												
129	1.2D + 1.5Lm(4) + 1.0Wm(315)	Yes	Y		DL	1.2	10	-.0...	26	-.0...	O...	1.5												
130	1.2D + 1.5Lm(4) + 1.0Wm(330)	Yes	Y		DL	1.2	11	-.0...	27	-.0...	O...	1.5												

Joint Loads and Enforced Displacements (BLC 1 : Dead)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	A4T	L	Z	-51.9
2	A4B	L	Z	-51.9
3	B4T	L	Z	-51.9
4	B4B	L	Z	-51.9
5	G4T	L	Z	-51.9
6	G4B	L	Z	-51.9
7	A3T-1	L	Z	-22
8	A3B-1	L	Z	-22
9	B3T-1	L	Z	-22
10	B3B-1	L	Z	-22
11	G3T-1	L	Z	-22
12	G3B-1	L	Z	-22
13	A3T-2	L	Z	-40.8
14	A3B-2	L	Z	-40.8
15	B3T-2	L	Z	-40.8
16	B3B-2	L	Z	-40.8
17	G3T-2	L	Z	-40.8
18	G3B-2	L	Z	-40.8
19	A2T	L	Z	-54.3
20	A2B	L	Z	-54.3
21	B2T	L	Z	-54.3
22	B2B	L	Z	-54.3
23	G2T	L	Z	-54.3
24	G2B	L	Z	-54.3
25	A2R	L	Z	-71
26	B2R	L	Z	-71
27	G2R	L	Z	-71
28	A2R	L	Z	-59.4
29	B2R	L	Z	-59.4
30	G2R	L	Z	-59.4
31	A4R	L	Z	-75
32	B4R	L	Z	-75
33	G4R	L	Z	-75
34	A4R	L	Z	-77
35	B4R	L	Z	-77

Joint Loads and Enforced Displacements (BLC 1 : Dead) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
36	G4R	L	Z	-77
37	A1R	L	Z	-18.9
38	B1R	L	Z	-18.9
39	G1R	L	Z	-32.8

Joint Loads and Enforced Displacements (BLC 2 : Dead of Ice)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	A4T	L	Z	-98.374
2	A4B	L	Z	-98.374
3	B4T	L	Z	-98.374
4	B4B	L	Z	-98.374
5	G4T	L	Z	-98.374
6	G4B	L	Z	-98.374
7	A3T-1	L	Z	-36.463
8	A3B-1	L	Z	-36.463
9	B3T-1	L	Z	-36.463
10	B3B-1	L	Z	-36.463
11	G3T-1	L	Z	-36.463
12	G3B-1	L	Z	-36.463
13	A3T-2	L	Z	-36.849
14	A3B-2	L	Z	-36.849
15	B3T-2	L	Z	-36.849
16	B3B-2	L	Z	-36.849
17	G3T-2	L	Z	-36.849
18	G3B-2	L	Z	-36.849
19	A2T	L	Z	-94.417
20	A2B	L	Z	-94.417
21	B2T	L	Z	-94.417
22	B2B	L	Z	-94.417
23	G2T	L	Z	-94.417
24	G2B	L	Z	-94.417
25	A2R	L	Z	-46.608
26	B2R	L	Z	-46.608
27	G2R	L	Z	-46.608
28	A2R	L	Z	-44.429
29	B2R	L	Z	-44.429
30	G2R	L	Z	-44.429
31	A4R	L	Z	-51.556
32	B4R	L	Z	-51.556
33	G4R	L	Z	-51.556
34	A4R	L	Z	-69.803
35	B4R	L	Z	-69.803
36	G4R	L	Z	-69.803
37	A1R	L	Z	-40.985
38	B1R	L	Z	-40.985
39	G1R	L	Z	-54.254

Joint Loads and Enforced Displacements (BLC 20 : Antenna Wind (0))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	A4T	L	X	-221.008
2	A4T	L	Y	0
3	A4B	L	X	-221.008
4	A4B	L	Y	0
5	B4T	L	X	-133.623
6	B4T	L	Y	0
7	B4B	L	X	-133.623

Joint Loads and Enforced Displacements (BLC 20 : Antenna Wind (0)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
8	B4B	L	Y	0
9	G4T	L	X	-133.623
10	G4T	L	Y	0
11	G4B	L	X	-133.623
12	G4B	L	Y	0
13	A3T-1	L	X	-93.289
14	A3T-1	L	Y	0
15	A3B-1	L	X	-93.289
16	A3B-1	L	Y	0
17	B3T-1	L	X	-53.628
18	B3T-1	L	Y	0
19	B3B-1	L	X	-53.628
20	B3B-1	L	Y	0
21	G3T-1	L	X	-53.628
22	G3T-1	L	Y	0
23	G3B-1	L	X	-53.628
24	G3B-1	L	Y	0
25	A3T-2	L	X	-64.897
26	A3T-2	L	Y	0
27	A3B-2	L	X	-64.897
28	A3B-2	L	Y	0
29	B3T-2	L	X	-39.003
30	B3T-2	L	Y	0
31	B3B-2	L	X	-39.003
32	B3B-2	L	Y	0
33	G3T-2	L	X	-39.003
34	G3T-2	L	Y	0
35	G3B-2	L	X	-39.003
36	G3B-2	L	Y	0
37	A2T	L	X	-218.152
38	A2T	L	Y	0
39	A2B	L	X	-218.152
40	A2B	L	Y	0
41	B2T	L	X	-110.431
42	B2T	L	Y	0
43	B2B	L	X	-110.431
44	B2B	L	Y	0
45	G2T	L	X	-110.431
46	G2T	L	Y	0
47	G2B	L	X	-110.431
48	G2B	L	Y	0
49	A2R	L	X	-49.972
50	A2R	L	Y	0
51	B2R	L	X	-38.677
52	B2R	L	Y	0
53	G2R	L	X	-38.677
54	G2R	L	Y	0
55	A2R	L	X	-44.214
56	A2R	L	Y	0
57	B2R	L	X	-37.951
58	B2R	L	Y	0
59	G2R	L	X	-37.952
60	G2R	L	Y	0
61	A4R	L	X	-60.153
62	A4R	L	Y	0
63	B4R	L	X	-41.388
64	B4R	L	Y	0

Joint Loads and Enforced Displacements (BLC 20 : Antenna Wind (0)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
65	G4R	L	X	-41.388
66	G4R	L	Y	0
67	A4R	L	X	-86.018
68	A4R	L	Y	0
69	B4R	L	X	-65.606
70	B4R	L	Y	0
71	G4R	L	X	-65.606
72	G4R	L	Y	0
73	A1R	L	X	-30.159
74	A1R	L	Y	0
75	B1R	L	X	-30.159
76	B1R	L	Y	0
77	G1R	L	X	-43
78	G1R	L	Y	0

Joint Loads and Enforced Displacements (BLC 21 : Antenna Wind (30))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	A4T	L	X	-166.172
2	A4T	L	Y	95.94
3	A4B	L	X	-166.172
4	A4B	L	Y	95.94
5	B4T	L	X	-90.495
6	B4T	L	Y	52.248
7	B4B	L	X	-90.495
8	B4B	L	Y	52.248
9	G4T	L	X	-166.173
10	G4T	L	Y	95.94
11	G4B	L	X	-166.173
12	G4B	L	Y	95.94
13	A3T-1	L	X	-69.342
14	A3T-1	L	Y	40.034
15	A3B-1	L	X	-69.342
16	A3B-1	L	Y	40.034
17	B3T-1	L	X	-34.994
18	B3T-1	L	Y	20.204
19	B3B-1	L	X	-34.994
20	B3B-1	L	Y	20.204
21	G3T-1	L	X	-69.342
22	G3T-1	L	Y	40.034
23	G3B-1	L	X	-69.342
24	G3B-1	L	Y	40.034
25	A3T-2	L	X	-48.727
26	A3T-2	L	Y	28.133
27	A3B-2	L	X	-48.727
28	A3B-2	L	Y	28.133
29	B3T-2	L	X	-26.302
30	B3T-2	L	Y	15.186
31	B3B-2	L	X	-26.302
32	B3B-2	L	Y	15.186
33	G3T-2	L	X	-48.727
34	G3T-2	L	Y	28.133
35	G3B-2	L	X	-48.727
36	G3B-2	L	Y	28.133
37	A2T	L	X	-157.829
38	A2T	L	Y	91.122
39	A2B	L	X	-157.829

Joint Loads and Enforced Displacements (BLC 21 : Antenna Wind (30)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
40	A2B	L	Y	91.122
41	B2T	L	X	-64.54
42	B2T	L	Y	37.262
43	B2B	L	X	-64.54
44	B2B	L	Y	37.262
45	G2T	L	X	-157.829
46	G2T	L	Y	91.122
47	G2B	L	X	-157.829
48	G2B	L	Y	91.122
49	A2R	L	X	-40.017
50	A2R	L	Y	23.104
51	B2R	L	X	-30.234
52	B2R	L	Y	17.456
53	G2R	L	X	-40.017
54	G2R	L	Y	23.104
55	A2R	L	X	-36.483
56	A2R	L	Y	21.063
57	B2R	L	X	-31.059
58	B2R	L	Y	17.932
59	G2R	L	X	-36.483
60	G2R	L	Y	21.063
61	A4R	L	X	-46.677
62	A4R	L	Y	26.949
63	B4R	L	X	-30.426
64	B4R	L	Y	17.567
65	G4R	L	X	-46.677
66	G4R	L	Y	26.949
67	A4R	L	X	-68.601
68	A4R	L	Y	39.607
69	B4R	L	X	-50.925
70	B4R	L	Y	29.401
71	G4R	L	X	-68.601
72	G4R	L	Y	39.607
73	A1R	L	X	-26.118
74	A1R	L	Y	15.079
75	B1R	L	X	-26.118
76	B1R	L	Y	15.079
77	G1R	L	X	-37.239
78	G1R	L	Y	21.5

Joint Loads and Enforced Displacements (BLC 22 : Antenna Wind (45))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	A4T	L	X	-115.083
2	A4T	L	Y	115.083
3	A4B	L	X	-115.083
4	A4B	L	Y	115.083
5	B4T	L	X	-79.408
6	B4T	L	Y	79.408
7	B4B	L	X	-79.408
8	B4B	L	Y	79.408
9	G4T	L	X	-150.757
10	G4T	L	Y	150.757
11	G4B	L	X	-150.757
12	G4B	L	Y	150.757
13	A3T-1	L	X	-47.269
14	A3T-1	L	Y	47.269

Joint Loads and Enforced Displacements (BLC 22 : Antenna Wind (45)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
15	A3B-1	L	X	-47.269
16	A3B-1	L	Y	47.269
17	B3T-1	L	X	-31.077
18	B3T-1	L	Y	31.077
19	B3B-1	L	X	-31.077
20	B3B-1	L	Y	31.077
21	G3T-1	L	X	-63.461
22	G3T-1	L	Y	63.461
23	G3B-1	L	X	-63.461
24	G3B-1	L	Y	63.461
25	A3T-2	L	X	-33.682
26	A3T-2	L	Y	33.682
27	A3B-2	L	X	-33.682
28	A3B-2	L	Y	33.682
29	B3T-2	L	X	-23.111
30	B3T-2	L	Y	23.111
31	B3B-2	L	X	-23.111
32	B3B-2	L	Y	23.111
33	G3T-2	L	X	-44.254
34	G3T-2	L	Y	44.254
35	G3B-2	L	X	-44.254
36	G3B-2	L	Y	44.254
37	A2T	L	X	-103.477
38	A2T	L	Y	103.477
39	A2B	L	X	-103.477
40	A2B	L	Y	103.477
41	B2T	L	X	-59.5
42	B2T	L	Y	59.5
43	B2B	L	X	-59.5
44	B2B	L	Y	59.5
45	G2T	L	X	-147.453
46	G2T	L	Y	147.453
47	G2B	L	X	-147.453
48	G2B	L	Y	147.453
49	A2R	L	X	-30.011
50	A2R	L	Y	30.011
51	B2R	L	X	-25.4
52	B2R	L	Y	25.4
53	G2R	L	X	-34.622
54	G2R	L	Y	34.622
55	A2R	L	X	-28.312
56	A2R	L	Y	28.312
57	B2R	L	X	-25.755
58	B2R	L	Y	25.755
59	G2R	L	X	-30.869
60	G2R	L	Y	30.869
61	A4R	L	X	-33.689
62	A4R	L	Y	33.689
63	B4R	L	X	-26.028
64	B4R	L	Y	26.028
65	G4R	L	X	-41.349
66	G4R	L	Y	41.349
67	A4R	L	X	-51.202
68	A4R	L	Y	51.202
69	B4R	L	X	-42.869
70	B4R	L	Y	42.869
71	G4R	L	X	-59.535

Joint Loads and Enforced Displacements (BLC 22 : Antenna Wind (45)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
72	G4R	L	Y	59.535
73	A1R	L	X	-21.326
74	A1R	L	Y	21.326
75	B1R	L	X	-21.326
76	B1R	L	Y	21.326
77	G1R	L	X	-30.405
78	G1R	L	Y	30.405

Joint Loads and Enforced Displacements (BLC 23 : Antenna Wind (60))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	A4T	L	X	-66.812
2	A4T	L	Y	115.721
3	A4B	L	X	-66.812
4	A4B	L	Y	115.721
5	B4T	L	X	-66.812
6	B4T	L	Y	115.721
7	B4B	L	X	-66.812
8	B4B	L	Y	115.721
9	G4T	L	X	-110.504
10	G4T	L	Y	191.398
11	G4B	L	X	-110.504
12	G4B	L	Y	191.398
13	A3T-1	L	X	-26.814
14	A3T-1	L	Y	46.443
15	A3B-1	L	X	-26.814
16	A3B-1	L	Y	46.443
17	B3T-1	L	X	-26.814
18	B3T-1	L	Y	46.443
19	B3B-1	L	X	-26.814
20	B3B-1	L	Y	46.443
21	G3T-1	L	X	-46.645
22	G3T-1	L	Y	80.791
23	G3B-1	L	X	-46.645
24	G3B-1	L	Y	80.791
25	A3T-2	L	X	-19.501
26	A3T-2	L	Y	33.777
27	A3B-2	L	X	-19.501
28	A3B-2	L	Y	33.777
29	B3T-2	L	X	-19.501
30	B3T-2	L	Y	33.777
31	B3B-2	L	X	-19.501
32	B3B-2	L	Y	33.777
33	G3T-2	L	X	-32.448
34	G3T-2	L	Y	56.202
35	G3B-2	L	X	-32.448
36	G3B-2	L	Y	56.202
37	A2T	L	X	-55.216
38	A2T	L	Y	95.636
39	A2B	L	X	-55.216
40	A2B	L	Y	95.636
41	B2T	L	X	-55.216
42	B2T	L	Y	95.636
43	B2B	L	X	-55.216
44	B2B	L	Y	95.636
45	G2T	L	X	-109.076
46	G2T	L	Y	188.925

Joint Loads and Enforced Displacements (BLC 23 : Antenna Wind (60)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
47	G2B	L	X	-109.076
48	G2B	L	Y	188.925
49	A2R	L	X	-19.338
50	A2R	L	Y	33.495
51	B2R	L	X	-19.338
52	B2R	L	Y	33.495
53	G2R	L	X	-24.986
54	G2R	L	Y	43.277
55	A2R	L	X	-18.976
56	A2R	L	Y	32.867
57	B2R	L	X	-18.976
58	B2R	L	Y	32.867
59	G2R	L	X	-22.107
60	G2R	L	Y	38.291
61	A4R	L	X	-20.694
62	A4R	L	Y	35.843
63	B4R	L	X	-20.694
64	B4R	L	Y	35.843
65	G4R	L	X	-30.076
66	G4R	L	Y	52.094
67	A4R	L	X	-32.803
68	A4R	L	Y	56.817
69	B4R	L	X	-32.803
70	B4R	L	Y	56.817
71	G4R	L	X	-43.009
72	G4R	L	Y	74.494
73	A1R	L	X	-15.079
74	A1R	L	Y	26.118
75	B1R	L	X	-15.079
76	B1R	L	Y	26.118
77	G1R	L	X	-21.5
78	G1R	L	Y	37.239

Joint Loads and Enforced Displacements (BLC 24 : Antenna Wind (90))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	A4T	L	X	-2.37e-5
2	A4T	L	Y	104.495
3	A4B	L	X	-2.37e-5
4	A4B	L	Y	104.495
5	B4T	L	X	-4.352e-5
6	B4T	L	Y	191.879
7	B4B	L	X	-4.352e-5
8	B4B	L	Y	191.879
9	G4T	L	X	-4.352e-5
10	G4T	L	Y	191.879
11	G4B	L	X	-4.352e-5
12	G4B	L	Y	191.879
13	A3T-1	L	X	-9.164e-6
14	A3T-1	L	Y	40.408
15	A3B-1	L	X	-9.164e-6
16	A3B-1	L	Y	40.408
17	B3T-1	L	X	-1.816e-5
18	B3T-1	L	Y	80.069
19	B3B-1	L	X	-1.816e-5
20	B3B-1	L	Y	80.069
21	G3T-1	L	X	-1.816e-5

Joint Loads and Enforced Displacements (BLC 24 : Antenna Wind (90)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
22	G3T-1	L	Y	80.069
23	G3B-1	L	X	-1.816e-5
24	G3B-1	L	Y	80.069
25	A3T-2	L	X	-6.888e-6
26	A3T-2	L	Y	30.371
27	A3B-2	L	X	-6.888e-6
28	A3B-2	L	Y	30.371
29	B3T-2	L	X	-1.276e-5
30	B3T-2	L	Y	56.265
31	B3B-2	L	X	-1.276e-5
32	B3B-2	L	Y	56.265
33	G3T-2	L	X	-1.276e-5
34	G3T-2	L	Y	56.265
35	G3B-2	L	X	-1.276e-5
36	G3B-2	L	Y	56.265
37	A2T	L	X	-1.69e-5
38	A2T	L	Y	74.525
39	A2B	L	X	-1.69e-5
40	A2B	L	Y	74.525
41	B2T	L	X	-4.133e-5
42	B2T	L	Y	182.245
43	B2B	L	X	-4.133e-5
44	B2B	L	Y	182.245
45	G2T	L	X	-4.133e-5
46	G2T	L	Y	182.245
47	G2B	L	X	-4.133e-5
48	G2B	L	Y	182.245
49	A2R	L	X	-7.918e-6
50	A2R	L	Y	34.912
51	B2R	L	X	-1.048e-5
52	B2R	L	Y	46.207
53	G2R	L	X	-1.048e-5
54	G2R	L	Y	46.207
55	A2R	L	X	-8.134e-6
56	A2R	L	Y	35.864
57	B2R	L	X	-9.554e-6
58	B2R	L	Y	42.127
59	G2R	L	X	-9.554e-6
60	G2R	L	Y	42.127
61	A4R	L	X	-7.968e-6
62	A4R	L	Y	35.133
63	B4R	L	X	-1.222e-5
64	B4R	L	Y	53.898
65	G4R	L	X	-1.222e-5
66	G4R	L	Y	53.898
67	A4R	L	X	-1.334e-5
68	A4R	L	Y	58.803
69	B4R	L	X	-1.797e-5
70	B4R	L	Y	79.214
71	G4R	L	X	-1.797e-5
72	G4R	L	Y	79.214
73	A1R	L	X	-6.84e-6
74	A1R	L	Y	30.159
75	B1R	L	X	-6.84e-6
76	B1R	L	Y	30.159
77	G1R	L	X	-9.752e-6
78	G1R	L	Y	43

Joint Loads and Enforced Displacements (BLC 25 : Antenna Wind (120))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	A4T	L	X	66.812
2	A4T	L	Y	115.721
3	A4B	L	X	66.812
4	A4B	L	Y	115.721
5	B4T	L	X	110.504
6	B4T	L	Y	191.398
7	B4B	L	X	110.504
8	B4B	L	Y	191.398
9	G4T	L	X	66.812
10	G4T	L	Y	115.721
11	G4B	L	X	66.812
12	G4B	L	Y	115.721
13	A3T-1	L	X	26.814
14	A3T-1	L	Y	46.443
15	A3B-1	L	X	26.814
16	A3B-1	L	Y	46.443
17	B3T-1	L	X	46.645
18	B3T-1	L	Y	80.791
19	B3B-1	L	X	46.645
20	B3B-1	L	Y	80.791
21	G3T-1	L	X	26.814
22	G3T-1	L	Y	46.443
23	G3B-1	L	X	26.814
24	G3B-1	L	Y	46.443
25	A3T-2	L	X	19.501
26	A3T-2	L	Y	33.777
27	A3B-2	L	X	19.501
28	A3B-2	L	Y	33.777
29	B3T-2	L	X	32.448
30	B3T-2	L	Y	56.202
31	B3B-2	L	X	32.448
32	B3B-2	L	Y	56.202
33	G3T-2	L	X	19.501
34	G3T-2	L	Y	33.777
35	G3B-2	L	X	19.501
36	G3B-2	L	Y	33.777
37	A2T	L	X	55.216
38	A2T	L	Y	95.636
39	A2B	L	X	55.216
40	A2B	L	Y	95.636
41	B2T	L	X	109.076
42	B2T	L	Y	188.925
43	B2B	L	X	109.076
44	B2B	L	Y	188.925
45	G2T	L	X	55.216
46	G2T	L	Y	95.636
47	G2B	L	X	55.216
48	G2B	L	Y	95.636
49	A2R	L	X	19.338
50	A2R	L	Y	33.495
51	B2R	L	X	24.986
52	B2R	L	Y	43.277
53	G2R	L	X	19.338
54	G2R	L	Y	33.495
55	A2R	L	X	18.976
56	A2R	L	Y	32.867
57	B2R	L	X	22.107

Joint Loads and Enforced Displacements (BLC 25 : Antenna Wind (120)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
58	B2R	L	Y	38.291
59	G2R	L	X	18.976
60	G2R	L	Y	32.867
61	A4R	L	X	20.694
62	A4R	L	Y	35.843
63	B4R	L	X	30.076
64	B4R	L	Y	52.094
65	G4R	L	X	20.694
66	G4R	L	Y	35.843
67	A4R	L	X	32.803
68	A4R	L	Y	56.817
69	B4R	L	X	43.009
70	B4R	L	Y	74.494
71	G4R	L	X	32.803
72	G4R	L	Y	56.817
73	A1R	L	X	15.079
74	A1R	L	Y	26.118
75	B1R	L	X	15.079
76	B1R	L	Y	26.118
77	G1R	L	X	21.5
78	G1R	L	Y	37.239

Joint Loads and Enforced Displacements (BLC 26 : Antenna Wind (135))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	A4T	L	X	115.082
2	A4T	L	Y	115.083
3	A4B	L	X	115.082
4	A4B	L	Y	115.083
5	B4T	L	X	150.757
6	B4T	L	Y	150.757
7	B4B	L	X	150.757
8	B4B	L	Y	150.757
9	G4T	L	X	79.408
10	G4T	L	Y	79.408
11	G4B	L	X	79.408
12	G4B	L	Y	79.408
13	A3T-1	L	X	47.269
14	A3T-1	L	Y	47.269
15	A3B-1	L	X	47.269
16	A3B-1	L	Y	47.269
17	B3T-1	L	X	63.461
18	B3T-1	L	Y	63.461
19	B3B-1	L	X	63.461
20	B3B-1	L	Y	63.461
21	G3T-1	L	X	31.077
22	G3T-1	L	Y	31.077
23	G3B-1	L	X	31.077
24	G3B-1	L	Y	31.077
25	A3T-2	L	X	33.682
26	A3T-2	L	Y	33.682
27	A3B-2	L	X	33.682
28	A3B-2	L	Y	33.682
29	B3T-2	L	X	44.254
30	B3T-2	L	Y	44.254
31	B3B-2	L	X	44.254
32	B3B-2	L	Y	44.254

Joint Loads and Enforced Displacements (BLC 26 : Antenna Wind (135)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
33	G3T-2	L	X	23.111
34	G3T-2	L	Y	23.111
35	G3B-2	L	X	23.111
36	G3B-2	L	Y	23.111
37	A2T	L	X	103.477
38	A2T	L	Y	103.477
39	A2B	L	X	103.477
40	A2B	L	Y	103.477
41	B2T	L	X	147.453
42	B2T	L	Y	147.453
43	B2B	L	X	147.453
44	B2B	L	Y	147.453
45	G2T	L	X	59.5
46	G2T	L	Y	59.5
47	G2B	L	X	59.5
48	G2B	L	Y	59.5
49	A2R	L	X	30.011
50	A2R	L	Y	30.011
51	B2R	L	X	34.622
52	B2R	L	Y	34.622
53	G2R	L	X	25.4
54	G2R	L	Y	25.4
55	A2R	L	X	28.312
56	A2R	L	Y	28.312
57	B2R	L	X	30.869
58	B2R	L	Y	30.869
59	G2R	L	X	25.755
60	G2R	L	Y	25.755
61	A4R	L	X	33.689
62	A4R	L	Y	33.689
63	B4R	L	X	41.349
64	B4R	L	Y	41.349
65	G4R	L	X	26.028
66	G4R	L	Y	26.028
67	A4R	L	X	51.202
68	A4R	L	Y	51.202
69	B4R	L	X	59.535
70	B4R	L	Y	59.535
71	G4R	L	X	42.869
72	G4R	L	Y	42.869
73	A1R	L	X	21.326
74	A1R	L	Y	21.326
75	B1R	L	X	21.326
76	B1R	L	Y	21.326
77	G1R	L	X	30.405
78	G1R	L	Y	30.405

Joint Loads and Enforced Displacements (BLC 27 : Antenna Wind (150))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	A4T	L	X	166.172
2	A4T	L	Y	95.94
3	A4B	L	X	166.172
4	A4B	L	Y	95.94
5	B4T	L	X	166.172
6	B4T	L	Y	95.94
7	B4B	L	X	166.172

Joint Loads and Enforced Displacements (BLC 27 : Antenna Wind (150)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
8	B4B	L	Y	95.94
9	G4T	L	X	90.495
10	G4T	L	Y	52.248
11	G4B	L	X	90.495
12	G4B	L	Y	52.248
13	A3T-1	L	X	69.342
14	A3T-1	L	Y	40.034
15	A3B-1	L	X	69.342
16	A3B-1	L	Y	40.034
17	B3T-1	L	X	69.342
18	B3T-1	L	Y	40.034
19	B3B-1	L	X	69.342
20	B3B-1	L	Y	40.034
21	G3T-1	L	X	34.994
22	G3T-1	L	Y	20.204
23	G3B-1	L	X	34.994
24	G3B-1	L	Y	20.204
25	A3T-2	L	X	48.727
26	A3T-2	L	Y	28.133
27	A3B-2	L	X	48.727
28	A3B-2	L	Y	28.133
29	B3T-2	L	X	48.727
30	B3T-2	L	Y	28.133
31	B3B-2	L	X	48.727
32	B3B-2	L	Y	28.133
33	G3T-2	L	X	26.302
34	G3T-2	L	Y	15.186
35	G3B-2	L	X	26.302
36	G3B-2	L	Y	15.186
37	A2T	L	X	157.829
38	A2T	L	Y	91.122
39	A2B	L	X	157.829
40	A2B	L	Y	91.122
41	B2T	L	X	157.829
42	B2T	L	Y	91.122
43	B2B	L	X	157.829
44	B2B	L	Y	91.122
45	G2T	L	X	64.54
46	G2T	L	Y	37.262
47	G2B	L	X	64.54
48	G2B	L	Y	37.262
49	A2R	L	X	40.017
50	A2R	L	Y	23.104
51	B2R	L	X	40.017
52	B2R	L	Y	23.104
53	G2R	L	X	30.234
54	G2R	L	Y	17.456
55	A2R	L	X	36.483
56	A2R	L	Y	21.063
57	B2R	L	X	36.483
58	B2R	L	Y	21.063
59	G2R	L	X	31.059
60	G2R	L	Y	17.932
61	A4R	L	X	46.677
62	A4R	L	Y	26.949
63	B4R	L	X	46.677
64	B4R	L	Y	26.949

Joint Loads and Enforced Displacements (BLC 27 : Antenna Wind (150)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
65	G4R	L	X	30.426
66	G4R	L	Y	17.567
67	A4R	L	X	68.601
68	A4R	L	Y	39.607
69	B4R	L	X	68.601
70	B4R	L	Y	39.607
71	G4R	L	X	50.925
72	G4R	L	Y	29.401
73	A1R	L	X	26.118
74	A1R	L	Y	15.079
75	B1R	L	X	26.118
76	B1R	L	Y	15.079
77	G1R	L	X	37.239
78	G1R	L	Y	21.5

Joint Loads and Enforced Displacements (BLC 28 : Antenna Wind w/ Ice (0))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	A4T	L	X	-45.302
2	A4T	L	Y	0
3	A4B	L	X	-45.302
4	A4B	L	Y	0
5	B4T	L	X	-28.766
6	B4T	L	Y	0
7	B4B	L	X	-28.766
8	B4B	L	Y	0
9	G4T	L	X	-28.766
10	G4T	L	Y	0
11	G4B	L	X	-28.766
12	G4B	L	Y	0
13	A3T-1	L	X	-20.691
14	A3T-1	L	Y	0
15	A3B-1	L	X	-20.691
16	A3B-1	L	Y	0
17	B3T-1	L	X	-12.72
18	B3T-1	L	Y	0
19	B3B-1	L	X	-12.72
20	B3B-1	L	Y	0
21	G3T-1	L	X	-12.72
22	G3T-1	L	Y	0
23	G3B-1	L	X	-12.72
24	G3B-1	L	Y	0
25	A3T-2	L	X	-14.444
26	A3T-2	L	Y	0
27	A3B-2	L	X	-14.444
28	A3B-2	L	Y	0
29	B3T-2	L	X	-9.192
30	B3T-2	L	Y	0
31	B3B-2	L	X	-9.192
32	B3B-2	L	Y	0
33	G3T-2	L	X	-9.192
34	G3T-2	L	Y	0
35	G3B-2	L	X	-9.192
36	G3B-2	L	Y	0
37	A2T	L	X	-44.65
38	A2T	L	Y	0
39	A2B	L	X	-44.65

Joint Loads and Enforced Displacements (BLC 28 : Antenna Wind w/ Ice (0)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
40	A2B	L	Y	0
41	B2T	L	X	-24.263
42	B2T	L	Y	0
43	B2B	L	X	-24.263
44	B2B	L	Y	0
45	G2T	L	X	-24.263
46	G2T	L	Y	0
47	G2B	L	X	-24.263
48	G2B	L	Y	0
49	A2R	L	X	-12.722
50	A2R	L	Y	0
51	B2R	L	X	-9.465
52	B2R	L	Y	0
53	G2R	L	X	-9.465
54	G2R	L	Y	0
55	A2R	L	X	-11.564
56	A2R	L	Y	0
57	B2R	L	X	-9.323
58	B2R	L	Y	0
59	G2R	L	X	-9.323
60	G2R	L	Y	0
61	A4R	L	X	-14.797
62	A4R	L	Y	0
63	B4R	L	X	-10.019
64	B4R	L	Y	0
65	G4R	L	X	-10.019
66	G4R	L	Y	0
67	A4R	L	X	-20.518
68	A4R	L	Y	0
69	B4R	L	X	-15.204
70	B4R	L	Y	0
71	G4R	L	X	-15.204
72	G4R	L	Y	0
73	A1R	L	X	-8.274
74	A1R	L	Y	0
75	B1R	L	X	-8.274
76	B1R	L	Y	0
77	G1R	L	X	-11.304
78	G1R	L	Y	0

Joint Loads and Enforced Displacements (BLC 29 : Antenna Wind w/ Ice (30))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	A4T	L	X	-34.459
2	A4T	L	Y	19.895
3	A4B	L	X	-34.459
4	A4B	L	Y	19.895
5	B4T	L	X	-20.138
6	B4T	L	Y	11.627
7	B4B	L	X	-20.138
8	B4B	L	Y	11.627
9	G4T	L	X	-34.459
10	G4T	L	Y	19.895
11	G4B	L	X	-34.459
12	G4B	L	Y	19.895
13	A3T-1	L	X	-15.618
14	A3T-1	L	Y	9.017

Joint Loads and Enforced Displacements (BLC 29 : Antenna Wind w/ Ice (30)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
15	A3B-1	L	X	-15.618
16	A3B-1	L	Y	9.017
17	B3T-1	L	X	-8.715
18	B3T-1	L	Y	5.032
19	B3B-1	L	X	-8.715
20	B3B-1	L	Y	5.032
21	G3T-1	L	X	-15.618
22	G3T-1	L	Y	9.017
23	G3B-1	L	X	-15.618
24	G3B-1	L	Y	9.017
25	A3T-2	L	X	-10.993
26	A3T-2	L	Y	6.347
27	A3B-2	L	X	-10.993
28	A3B-2	L	Y	6.347
29	B3T-2	L	X	-6.444
30	B3T-2	L	Y	3.721
31	B3B-2	L	X	-6.444
32	B3B-2	L	Y	3.721
33	G3T-2	L	X	-10.993
34	G3T-2	L	Y	6.347
35	G3B-2	L	X	-10.993
36	G3B-2	L	Y	6.347
37	A2T	L	X	-32.783
38	A2T	L	Y	18.927
39	A2B	L	X	-32.783
40	A2B	L	Y	18.927
41	B2T	L	X	-15.127
42	B2T	L	Y	8.734
43	B2B	L	X	-15.127
44	B2B	L	Y	8.734
45	G2T	L	X	-32.783
46	G2T	L	Y	18.927
47	G2B	L	X	-32.783
48	G2B	L	Y	18.927
49	A2R	L	X	-10.077
50	A2R	L	Y	5.818
51	B2R	L	X	-7.257
52	B2R	L	Y	4.19
53	G2R	L	X	-10.077
54	G2R	L	Y	5.818
55	A2R	L	X	-9.368
56	A2R	L	Y	5.409
57	B2R	L	X	-7.427
58	B2R	L	Y	4.288
59	G2R	L	X	-9.368
60	G2R	L	Y	5.409
61	A4R	L	X	-11.435
62	A4R	L	Y	6.602
63	B4R	L	X	-7.297
64	B4R	L	Y	4.213
65	G4R	L	X	-11.435
66	G4R	L	Y	6.602
67	A4R	L	X	-16.235
68	A4R	L	Y	9.373
69	B4R	L	X	-11.633
70	B4R	L	Y	6.717
71	G4R	L	X	-16.235

Joint Loads and Enforced Displacements (BLC 29 : Antenna Wind w/ Ice (30)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
72	G4R	L	Y	9.373
73	A1R	L	X	-7.166
74	A1R	L	Y	4.137
75	B1R	L	X	-7.166
76	B1R	L	Y	4.137
77	G1R	L	X	-9.79
78	G1R	L	Y	5.652

Joint Loads and Enforced Displacements (BLC 30 : Antenna Wind w/ Ice (45))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	A4T	L	X	-24.238
2	A4T	L	Y	24.238
3	A4B	L	X	-24.238
4	A4B	L	Y	24.238
5	B4T	L	X	-17.487
6	B4T	L	Y	17.487
7	B4B	L	X	-17.487
8	B4B	L	Y	17.487
9	G4T	L	X	-30.989
10	G4T	L	Y	30.989
11	G4B	L	X	-30.989
12	G4B	L	Y	30.989
13	A3T-1	L	X	-10.873
14	A3T-1	L	Y	10.873
15	A3B-1	L	X	-10.873
16	A3B-1	L	Y	10.873
17	B3T-1	L	X	-7.619
18	B3T-1	L	Y	7.619
19	B3B-1	L	X	-7.619
20	B3B-1	L	Y	7.619
21	G3T-1	L	X	-14.127
22	G3T-1	L	Y	14.127
23	G3B-1	L	X	-14.127
24	G3B-1	L	Y	14.127
25	A3T-2	L	X	-7.738
26	A3T-2	L	Y	7.738
27	A3B-2	L	X	-7.738
28	A3B-2	L	Y	7.738
29	B3T-2	L	X	-5.594
30	B3T-2	L	Y	5.594
31	B3B-2	L	X	-5.594
32	B3B-2	L	Y	5.594
33	G3T-2	L	X	-9.882
34	G3T-2	L	Y	9.882
35	G3B-2	L	X	-9.882
36	G3B-2	L	Y	9.882
37	A2T	L	X	-21.962
38	A2T	L	Y	21.962
39	A2B	L	X	-21.962
40	A2B	L	Y	21.962
41	B2T	L	X	-13.639
42	B2T	L	Y	13.639
43	B2B	L	X	-13.639
44	B2B	L	Y	13.639
45	G2T	L	X	-30.285
46	G2T	L	Y	30.285

Joint Loads and Enforced Displacements (BLC 30 : Antenna Wind w/ Ice (45)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
47	G2B	L	X	-30.285
48	G2B	L	Y	30.285
49	A2R	L	X	-7.46
50	A2R	L	Y	7.46
51	B2R	L	X	-6.131
52	B2R	L	Y	6.131
53	G2R	L	X	-8.79
54	G2R	L	Y	8.79
55	A2R	L	X	-7.121
56	A2R	L	Y	7.121
57	B2R	L	X	-6.206
58	B2R	L	Y	6.206
59	G2R	L	X	-8.036
60	G2R	L	Y	8.036
61	A4R	L	X	-8.211
62	A4R	L	Y	8.211
63	B4R	L	X	-6.26
64	B4R	L	Y	6.26
65	G4R	L	X	-10.161
66	G4R	L	Y	10.161
67	A4R	L	X	-12.003
68	A4R	L	Y	12.003
69	B4R	L	X	-9.834
70	B4R	L	Y	9.834
71	G4R	L	X	-14.173
72	G4R	L	Y	14.173
73	A1R	L	X	-5.851
74	A1R	L	Y	5.851
75	B1R	L	X	-5.851
76	B1R	L	Y	5.851
77	G1R	L	X	-7.993
78	G1R	L	Y	7.993

Joint Loads and Enforced Displacements (BLC 31 : Antenna Wind w/ Ice (60))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	A4T	L	X	-14.383
2	A4T	L	Y	24.912
3	A4B	L	X	-14.383
4	A4B	L	Y	24.912
5	B4T	L	X	-14.383
6	B4T	L	Y	24.912
7	B4B	L	X	-14.383
8	B4B	L	Y	24.912
9	G4T	L	X	-22.651
10	G4T	L	Y	39.232
11	G4B	L	X	-22.651
12	G4B	L	Y	39.232
13	A3T-1	L	X	-6.36
14	A3T-1	L	Y	11.016
15	A3B-1	L	X	-6.36
16	A3B-1	L	Y	11.016
17	B3T-1	L	X	-6.36
18	B3T-1	L	Y	11.016
19	B3B-1	L	X	-6.36
20	B3B-1	L	Y	11.016
21	G3T-1	L	X	-10.345

Joint Loads and Enforced Displacements (BLC 31 : Antenna Wind w/ Ice (60)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
22	G3T-1	L	Y	17.919
23	G3B-1	L	X	-10.345
24	G3B-1	L	Y	17.919
25	A3T-2	L	X	-4.596
26	A3T-2	L	Y	7.961
27	A3B-2	L	X	-4.596
28	A3B-2	L	Y	7.961
29	B3T-2	L	X	-4.596
30	B3T-2	L	Y	7.961
31	B3B-2	L	X	-4.596
32	B3B-2	L	Y	7.961
33	G3T-2	L	X	-7.222
34	G3T-2	L	Y	12.509
35	G3B-2	L	X	-7.222
36	G3B-2	L	Y	12.509
37	A2T	L	X	-12.132
38	A2T	L	Y	21.012
39	A2B	L	X	-12.132
40	A2B	L	Y	21.012
41	B2T	L	X	-12.132
42	B2T	L	Y	21.012
43	B2B	L	X	-12.132
44	B2B	L	Y	21.012
45	G2T	L	X	-22.325
46	G2T	L	Y	38.668
47	G2B	L	X	-22.325
48	G2B	L	Y	38.668
49	A2R	L	X	-4.733
50	A2R	L	Y	8.197
51	B2R	L	X	-4.733
52	B2R	L	Y	8.197
53	G2R	L	X	-6.361
54	G2R	L	Y	11.017
55	A2R	L	X	-4.662
56	A2R	L	Y	8.074
57	B2R	L	X	-4.662
58	B2R	L	Y	8.074
59	G2R	L	X	-5.782
60	G2R	L	Y	10.015
61	A4R	L	X	-5.009
62	A4R	L	Y	8.677
63	B4R	L	X	-5.009
64	B4R	L	Y	8.677
65	G4R	L	X	-7.398
66	G4R	L	Y	12.815
67	A4R	L	X	-7.602
68	A4R	L	Y	13.167
69	B4R	L	X	-7.602
70	B4R	L	Y	13.167
71	G4R	L	X	-10.259
72	G4R	L	Y	17.769
73	A1R	L	X	-4.137
74	A1R	L	Y	7.166
75	B1R	L	X	-4.137
76	B1R	L	Y	7.166
77	G1R	L	X	-5.652
78	G1R	L	Y	9.79

Joint Loads and Enforced Displacements (BLC 32 : Antenna Wind w/ Ice (90))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	A4T	L	X	-5.274e-6
2	A4T	L	Y	23.254
3	A4B	L	X	-5.274e-6
4	A4B	L	Y	23.254
5	B4T	L	X	-9.024e-6
6	B4T	L	Y	39.79
7	B4B	L	X	-9.024e-6
8	B4B	L	Y	39.79
9	G4T	L	X	-9.024e-6
10	G4T	L	Y	39.79
11	G4B	L	X	-9.024e-6
12	G4B	L	Y	39.79
13	A3T-1	L	X	-2.282e-6
14	A3T-1	L	Y	10.063
15	A3B-1	L	X	-2.282e-6
16	A3B-1	L	Y	10.063
17	B3T-1	L	X	-4.09e-6
18	B3T-1	L	Y	18.034
19	B3B-1	L	X	-4.09e-6
20	B3B-1	L	Y	18.034
21	G3T-1	L	X	-4.09e-6
22	G3T-1	L	Y	18.034
23	G3B-1	L	X	-4.09e-6
24	G3B-1	L	Y	18.034
25	A3T-2	L	X	-1.688e-6
26	A3T-2	L	Y	7.441
27	A3B-2	L	X	-1.688e-6
28	A3B-2	L	Y	7.441
29	B3T-2	L	X	-2.879e-6
30	B3T-2	L	Y	12.693
31	B3B-2	L	X	-2.879e-6
32	B3B-2	L	Y	12.693
33	G3T-2	L	X	-2.879e-6
34	G3T-2	L	Y	12.693
35	G3B-2	L	X	-2.879e-6
36	G3B-2	L	Y	12.693
37	A2T	L	X	-3.962e-6
38	A2T	L	Y	17.467
39	A2B	L	X	-3.962e-6
40	A2B	L	Y	17.467
41	B2T	L	X	-8.585e-6
42	B2T	L	Y	37.855
43	B2B	L	X	-8.585e-6
44	B2B	L	Y	37.855
45	G2T	L	X	-8.585e-6
46	G2T	L	Y	37.855
47	G2B	L	X	-8.585e-6
48	G2B	L	Y	37.855
49	A2R	L	X	-1.9e-6
50	A2R	L	Y	8.38
51	B2R	L	X	-2.639e-6
52	B2R	L	Y	11.636
53	G2R	L	X	-2.639e-6
54	G2R	L	Y	11.636
55	A2R	L	X	-1.945e-6
56	A2R	L	Y	8.576
57	B2R	L	X	-2.453e-6

Joint Loads and Enforced Displacements (BLC 32 : Antenna Wind w/ Ice (90)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
58	B2R	L	Y	10.817
59	G2R	L	X	-2.453e-6
60	G2R	L	Y	10.817
61	A4R	L	X	-1.911e-6
62	A4R	L	Y	8.426
63	B4R	L	X	-2.995e-6
64	B4R	L	Y	13.204
65	G4R	L	X	-2.995e-6
66	G4R	L	Y	13.204
67	A4R	L	X	-3.047e-6
68	A4R	L	Y	13.433
69	B4R	L	X	-4.252e-6
70	B4R	L	Y	18.747
71	G4R	L	X	-4.252e-6
72	G4R	L	Y	18.747
73	A1R	L	X	-1.877e-6
74	A1R	L	Y	8.274
75	B1R	L	X	-1.877e-6
76	B1R	L	Y	8.274
77	G1R	L	X	-2.564e-6
78	G1R	L	Y	11.304

Joint Loads and Enforced Displacements (BLC 33 : Antenna Wind w/ Ice (120))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	A4T	L	X	14.383
2	A4T	L	Y	24.912
3	A4B	L	X	14.383
4	A4B	L	Y	24.912
5	B4T	L	X	22.651
6	B4T	L	Y	39.232
7	B4B	L	X	22.651
8	B4B	L	Y	39.232
9	G4T	L	X	14.383
10	G4T	L	Y	24.912
11	G4B	L	X	14.383
12	G4B	L	Y	24.912
13	A3T-1	L	X	6.36
14	A3T-1	L	Y	11.016
15	A3B-1	L	X	6.36
16	A3B-1	L	Y	11.016
17	B3T-1	L	X	10.345
18	B3T-1	L	Y	17.919
19	B3B-1	L	X	10.345
20	B3B-1	L	Y	17.919
21	G3T-1	L	X	6.36
22	G3T-1	L	Y	11.016
23	G3B-1	L	X	6.36
24	G3B-1	L	Y	11.016
25	A3T-2	L	X	4.596
26	A3T-2	L	Y	7.961
27	A3B-2	L	X	4.596
28	A3B-2	L	Y	7.961
29	B3T-2	L	X	7.222
30	B3T-2	L	Y	12.509
31	B3B-2	L	X	7.222
32	B3B-2	L	Y	12.509

Joint Loads and Enforced Displacements (BLC 33 : Antenna Wind w/ Ice (120)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
33	G3T-2	L	X	4.596
34	G3T-2	L	Y	7.961
35	G3B-2	L	X	4.596
36	G3B-2	L	Y	7.961
37	A2T	L	X	12.132
38	A2T	L	Y	21.012
39	A2B	L	X	12.132
40	A2B	L	Y	21.012
41	B2T	L	X	22.325
42	B2T	L	Y	38.668
43	B2B	L	X	22.325
44	B2B	L	Y	38.668
45	G2T	L	X	12.132
46	G2T	L	Y	21.012
47	G2B	L	X	12.132
48	G2B	L	Y	21.012
49	A2R	L	X	4.733
50	A2R	L	Y	8.197
51	B2R	L	X	6.361
52	B2R	L	Y	11.017
53	G2R	L	X	4.733
54	G2R	L	Y	8.197
55	A2R	L	X	4.662
56	A2R	L	Y	8.074
57	B2R	L	X	5.782
58	B2R	L	Y	10.015
59	G2R	L	X	4.662
60	G2R	L	Y	8.074
61	A4R	L	X	5.009
62	A4R	L	Y	8.677
63	B4R	L	X	7.398
64	B4R	L	Y	12.815
65	G4R	L	X	5.009
66	G4R	L	Y	8.677
67	A4R	L	X	7.602
68	A4R	L	Y	13.167
69	B4R	L	X	10.259
70	B4R	L	Y	17.769
71	G4R	L	X	7.602
72	G4R	L	Y	13.167
73	A1R	L	X	4.137
74	A1R	L	Y	7.166
75	B1R	L	X	4.137
76	B1R	L	Y	7.166
77	G1R	L	X	5.652
78	G1R	L	Y	9.79

Joint Loads and Enforced Displacements (BLC 34 : Antenna Wind w/ Ice (135))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	A4T	L	X	24.238
2	A4T	L	Y	24.238
3	A4B	L	X	24.238
4	A4B	L	Y	24.238
5	B4T	L	X	30.989
6	B4T	L	Y	30.989
7	B4B	L	X	30.989

Joint Loads and Enforced Displacements (BLC 34 : Antenna Wind w/ Ice (135)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
8	B4B	L	Y	30.989
9	G4T	L	X	17.487
10	G4T	L	Y	17.487
11	G4B	L	X	17.487
12	G4B	L	Y	17.487
13	A3T-1	L	X	10.873
14	A3T-1	L	Y	10.873
15	A3B-1	L	X	10.873
16	A3B-1	L	Y	10.873
17	B3T-1	L	X	14.127
18	B3T-1	L	Y	14.127
19	B3B-1	L	X	14.127
20	B3B-1	L	Y	14.127
21	G3T-1	L	X	7.619
22	G3T-1	L	Y	7.619
23	G3B-1	L	X	7.619
24	G3B-1	L	Y	7.619
25	A3T-2	L	X	7.738
26	A3T-2	L	Y	7.738
27	A3B-2	L	X	7.738
28	A3B-2	L	Y	7.738
29	B3T-2	L	X	9.882
30	B3T-2	L	Y	9.882
31	B3B-2	L	X	9.882
32	B3B-2	L	Y	9.882
33	G3T-2	L	X	5.594
34	G3T-2	L	Y	5.594
35	G3B-2	L	X	5.594
36	G3B-2	L	Y	5.594
37	A2T	L	X	21.962
38	A2T	L	Y	21.962
39	A2B	L	X	21.962
40	A2B	L	Y	21.962
41	B2T	L	X	30.285
42	B2T	L	Y	30.285
43	B2B	L	X	30.285
44	B2B	L	Y	30.285
45	G2T	L	X	13.639
46	G2T	L	Y	13.639
47	G2B	L	X	13.639
48	G2B	L	Y	13.639
49	A2R	L	X	7.46
50	A2R	L	Y	7.46
51	B2R	L	X	8.79
52	B2R	L	Y	8.79
53	G2R	L	X	6.131
54	G2R	L	Y	6.131
55	A2R	L	X	7.121
56	A2R	L	Y	7.121
57	B2R	L	X	8.036
58	B2R	L	Y	8.036
59	G2R	L	X	6.206
60	G2R	L	Y	6.206
61	A4R	L	X	8.211
62	A4R	L	Y	8.211
63	B4R	L	X	10.161
64	B4R	L	Y	10.161

Joint Loads and Enforced Displacements (BLC 34 : Antenna Wind w/ Ice (135)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
65	G4R	L	X	6.26
66	G4R	L	Y	6.26
67	A4R	L	X	12.003
68	A4R	L	Y	12.003
69	B4R	L	X	14.173
70	B4R	L	Y	14.173
71	G4R	L	X	9.834
72	G4R	L	Y	9.834
73	A1R	L	X	5.851
74	A1R	L	Y	5.851
75	B1R	L	X	5.851
76	B1R	L	Y	5.851
77	G1R	L	X	7.993
78	G1R	L	Y	7.993

Joint Loads and Enforced Displacements (BLC 35 : Antenna Wind w/ Ice (150))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	A4T	L	X	34.459
2	A4T	L	Y	19.895
3	A4B	L	X	34.459
4	A4B	L	Y	19.895
5	B4T	L	X	34.459
6	B4T	L	Y	19.895
7	B4B	L	X	34.459
8	B4B	L	Y	19.895
9	G4T	L	X	20.138
10	G4T	L	Y	11.627
11	G4B	L	X	20.138
12	G4B	L	Y	11.627
13	A3T-1	L	X	15.618
14	A3T-1	L	Y	9.017
15	A3B-1	L	X	15.618
16	A3B-1	L	Y	9.017
17	B3T-1	L	X	15.618
18	B3T-1	L	Y	9.017
19	B3B-1	L	X	15.618
20	B3B-1	L	Y	9.017
21	G3T-1	L	X	8.715
22	G3T-1	L	Y	5.032
23	G3B-1	L	X	8.715
24	G3B-1	L	Y	5.032
25	A3T-2	L	X	10.993
26	A3T-2	L	Y	6.347
27	A3B-2	L	X	10.993
28	A3B-2	L	Y	6.347
29	B3T-2	L	X	10.993
30	B3T-2	L	Y	6.347
31	B3B-2	L	X	10.993
32	B3B-2	L	Y	6.347
33	G3T-2	L	X	6.444
34	G3T-2	L	Y	3.721
35	G3B-2	L	X	6.444
36	G3B-2	L	Y	3.721
37	A2T	L	X	32.783
38	A2T	L	Y	18.927
39	A2B	L	X	32.783

Joint Loads and Enforced Displacements (BLC 35 : Antenna Wind w/ Ice (150)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
40	A2B	L	Y	18.927
41	B2T	L	X	32.783
42	B2T	L	Y	18.927
43	B2B	L	X	32.783
44	B2B	L	Y	18.927
45	G2T	L	X	15.127
46	G2T	L	Y	8.734
47	G2B	L	X	15.127
48	G2B	L	Y	8.734
49	A2R	L	X	10.077
50	A2R	L	Y	5.818
51	B2R	L	X	10.077
52	B2R	L	Y	5.818
53	G2R	L	X	7.257
54	G2R	L	Y	4.19
55	A2R	L	X	9.368
56	A2R	L	Y	5.409
57	B2R	L	X	9.368
58	B2R	L	Y	5.409
59	G2R	L	X	7.427
60	G2R	L	Y	4.288
61	A4R	L	X	11.435
62	A4R	L	Y	6.602
63	B4R	L	X	11.435
64	B4R	L	Y	6.602
65	G4R	L	X	7.297
66	G4R	L	Y	4.213
67	A4R	L	X	16.235
68	A4R	L	Y	9.373
69	B4R	L	X	16.235
70	B4R	L	Y	9.373
71	G4R	L	X	11.633
72	G4R	L	Y	6.717
73	A1R	L	X	7.166
74	A1R	L	Y	4.137
75	B1R	L	X	7.166
76	B1R	L	Y	4.137
77	G1R	L	X	9.79
78	G1R	L	Y	5.652

Joint Loads and Enforced Displacements (BLC 36 : Seismic X)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	A4T	L	X	5.84
2	A4B	L	X	5.84
3	B4T	L	X	5.84
4	B4B	L	X	5.84
5	G4T	L	X	5.84
6	G4B	L	X	5.84
7	A3T-1	L	X	2.476
8	A3B-1	L	X	2.476
9	B3T-1	L	X	2.476
10	B3B-1	L	X	2.476
11	G3T-1	L	X	2.476
12	G3B-1	L	X	2.476
13	A3T-2	L	X	4.591
14	A3B-2	L	X	4.591

Joint Loads and Enforced Displacements (BLC 36 : Seismic X) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
15	B3T-2	L	X	4.591
16	B3B-2	L	X	4.591
17	G3T-2	L	X	4.591
18	G3B-2	L	X	4.591
19	A2T	L	X	6.111
20	A2B	L	X	6.111
21	B2T	L	X	6.111
22	B2B	L	X	6.111
23	G2T	L	X	6.111
24	G2B	L	X	6.111
25	A2R	L	X	7.99
26	B2R	L	X	7.99
27	G2R	L	X	7.99
28	A2R	L	X	6.684
29	B2R	L	X	6.684
30	G2R	L	X	6.684
31	A4R	L	X	8.44
32	B4R	L	X	8.44
33	G4R	L	X	8.44
34	A4R	L	X	8.665
35	B4R	L	X	8.665
36	G4R	L	X	8.665
37	A1R	L	X	2.127
38	B1R	L	X	2.127
39	G1R	L	X	3.691

Joint Loads and Enforced Displacements (BLC 37 : Seismic Y)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	A4T	L	Y	5.84
2	A4B	L	Y	5.84
3	B4T	L	Y	5.84
4	B4B	L	Y	5.84
5	G4T	L	Y	5.84
6	G4B	L	Y	5.84
7	A3T-1	L	Y	2.476
8	A3B-1	L	Y	2.476
9	B3T-1	L	Y	2.476
10	B3B-1	L	Y	2.476
11	G3T-1	L	Y	2.476
12	G3B-1	L	Y	2.476
13	A3T-2	L	Y	4.591
14	A3B-2	L	Y	4.591
15	B3T-2	L	Y	4.591
16	B3B-2	L	Y	4.591
17	G3T-2	L	Y	4.591
18	G3B-2	L	Y	4.591
19	A2T	L	Y	6.111
20	A2B	L	Y	6.111
21	B2T	L	Y	6.111
22	B2B	L	Y	6.111
23	G2T	L	Y	6.111
24	G2B	L	Y	6.111
25	A2R	L	Y	7.99
26	B2R	L	Y	7.99
27	G2R	L	Y	7.99
28	A2R	L	Y	6.684

Joint Loads and Enforced Displacements (BLC 37 : Seismic Y) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
29	B2R	L	Y	6.684
30	G2R	L	Y	6.684
31	A4R	L	Y	8.44
32	B4R	L	Y	8.44
33	G4R	L	Y	8.44
34	A4R	L	Y	8.665
35	B4R	L	Y	8.665
36	G4R	L	Y	8.665
37	A1R	L	Y	2.127
38	B1R	L	Y	2.127
39	G1R	L	Y	3.691

Joint Loads and Enforced Displacements (BLC 38 : Maintenance Live Lm (1))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	M1	L	Z	-500

Joint Loads and Enforced Displacements (BLC 39 : Maintenance Live Lm (2))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	M2	L	Z	-500

Joint Loads and Enforced Displacements (BLC 40 : Maintenance Live Lm (3))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	M3	L	Z	-500

Joint Loads and Enforced Displacements (BLC 41 : Maintenance Live Lm (4))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	M4	L	Z	-500

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N82						
2	N94						
3	N95						
4	N434A						
5	N435A						
6	N436A						
7	N437A						
8	N438A						
9	N439A						
10	N442A						
11	N443A						
12	N444A						
13	N445A						
14	N446A						
15	N447A						
16	N450A						
17	N451A						
18	N452						
19	N213	Reaction	Reaction	Reaction			
20	N206	Reaction	Reaction	Reaction			
21	N207	Reaction	Reaction	Reaction			
22	N208	Reaction	Reaction	Reaction			
23	N209	Reaction	Reaction	Reaction			

Joint Boundary Conditions (Continued)

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
24	N210	Reaction	Reaction	Reaction			
25	N211	Reaction	Reaction	Reaction			
26	N212	Reaction	Reaction	Reaction			
27	N214	Reaction	Reaction	Reaction			
28	N215	Reaction	Reaction	Reaction			
29	N216	Reaction	Reaction	Reaction			
30	N217	Reaction	Reaction	Reaction			
31	N218	Reaction	Reaction	Reaction			
32	N219	Reaction	Reaction	Reaction			
33	N220	Reaction	Reaction	Reaction			
34	N221	Reaction	Reaction	Reaction			
35	N222	Reaction	Reaction	Reaction			
36	N223	Reaction	Reaction	Reaction			
37	N449A						
38	N450B						
39	N451B						
40	N452A						
41	N453						
42	N454						
43	N455						
44	N456						
45	N461						
46	N462						
47	N463						
48	N464						
49	N465						
50	N466						
51	N467						
52	N468						
53	N473						
54	N474						
55	N475						
56	N476						
57	N477						
58	N478						
59	N479						
60	N480						
61	KN5	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
62	N568	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
63	N576	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
64	N578A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
65	N579A						
66	N580						
67	N581						
68	N586	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
69	N587						
70	N588						
71	N589						
72	N594	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
73	N595						
74	N596						
75	N597						
76	N602	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
77	N603						
78	N604						
79	N605						
80	N610	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Joint Boundary Conditions (Continued)

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
81	N611						
82	N612						
83	N613						
84	N618	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
85	N619						
86	N620						
87	N621						

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N213	max	262.482	15	199.582	15	69.061	10	0	130	0	130	0	130
2		min	-253.206	7	-197.878	7	-400.963	18	0	1	0	1	0	1
3	N206	max	11.161	10	35.296	12	177.037	7	0	130	0	130	0	130
4		min	-12.008	18	-37.911	4	-69.093	15	0	1	0	1	0	1
5	N207	max	39.94	4	312.834	12	23.023	14	0	130	0	130	0	130
6		min	-39.601	12	-318.457	4	-379.379	28	0	1	0	1	0	1
7	N208	max	362.199	3	713.197	13	1450.123	91	0	130	0	130	0	130
8		min	-323.055	11	-681.452	5	130.808	3	0	1	0	1	0	1
9	N209	max	769.449	4	383.372	15	1074.632	28	0	130	0	130	0	130
10		min	-692.609	12	-289.737	7	77.194	14	0	1	0	1	0	1
11	N210	max	307.175	4	130.249	4	7.21	18	0	130	0	130	0	130
12		min	-279.645	12	-116.9	12	-501.507	90	0	1	0	1	0	1
13	N211	max	29.737	4	22.63	6	207.303	90	0	130	0	130	0	130
14		min	-29.937	12	-24.898	14	-75.062	18	0	1	0	1	0	1
15	N212	max	35.412	15	16.48	15	195.202	17	0	130	0	130	0	130
16		min	-36.099	7	-14.899	7	-88.079	9	0	1	0	1	0	1
17	N214	max	406.47	15	637.456	15	1022.284	22	0	130	0	130	0	130
18		min	-445.33	7	-663.975	7	123.747	14	0	1	0	1	0	1
19	N215	max	564.616	3	637.634	15	1103.752	32	0	130	0	130	0	130
20		min	-825.957	11	-662.786	7	143.089	8	0	1	0	1	0	1
21	N216	max	220.464	7	202.508	15	60.184	12	0	130	0	130	0	130
22		min	-266.816	15	-175.851	7	-366.772	4	0	1	0	1	0	1
23	N217	max	46.156	8	16.131	15	181.104	4	0	130	0	130	0	130
24		min	-37.299	16	-15.156	7	-84.521	12	0	1	0	1	0	1
25	N218	max	30.461	18	22.138	8	209.534	108	0	130	0	130	0	130
26		min	-29.816	10	-22.225	16	-70.292	3	0	1	0	1	0	1
27	N219	max	289.871	18	102.77	10	13.752	4	0	130	0	130	0	130
28		min	-250.5	10	-120.953	18	-501.169	108	0	1	0	1	0	1
29	N220	max	730.241	18	301.007	15	1042.171	28	0	130	0	130	0	130
30		min	-620.591	10	-398.96	7	73.205	8	0	1	0	1	0	1
31	N221	max	381.62	3	624.129	18	1443.126	107	0	130	0	130	0	130
32		min	-322.352	11	-637.94	10	117.214	3	0	1	0	1	0	1
33	N222	max	39.778	18	306.017	18	38.318	8	0	130	0	130	0	130
34		min	-37.765	10	-289.591	10	-359.235	16	0	1	0	1	0	1
35	N223	max	12.101	12	37.568	18	177.952	15	0	130	0	130	0	130
36		min	-13.305	4	-32.954	10	-73.221	7	0	1	0	1	0	1
37	KN5	max	-124.666	11	89.028	15	758.745	19	5.128	13	213.397	19	17.726	7
38		min	-828.132	19	-89.008	7	95.987	11	-7.51	5	26.996	11	-20.471	15
39	N568	max	447.032	127	-107.81	6	774.818	126	-18.734	5	-16.594	7	8.345	12
40		min	60.515	7	-774.272	126	95.849	6	-185.388	125	-115.044	127	-14.97	1
41	N576	max	443.291	72	767.881	72	768.626	72	185.738	73	-3.089	15	6.629	7
42		min	61.023	16	105.691	16	93.791	16	26.431	17	-110.891	71	-13.335	15
43	N578A	max	918.081	19	256.06	13	865.388	19	28.705	13	-102.416	11	85.189	13
44		min	182.346	11	-239.523	5	233.972	11	-26.717	5	-378.498	19	-80.308	5
45	N586	max	30.988	4	809.695	31	871.649	30	330.127	31	194.826	29	80.41	7

Envelope Joint Reactions (Continued)

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
46		min	-506.79	27	76.113	7	244.949	6	84.419	7	42.295	4	-75.83	15
47	N594	max	52.617	18	-130.936	15	856.182	25	-98.535	15	186.733	26	73.09	7
48		min	-454.714	26	-817.092	23	258.295	17	-326.746	24	39.11	18	-63.847	15
49	N602	max	1228.075	3	631.84	13	394.743	3	26.779	13	133.808	11	197.555	13
50		min	-1062.991	11	-672.27	5	-306.357	11	-29.266	5	-172.486	3	-208.794	5
51	N610	max	828.426	4	1248.693	15	395.71	14	150.699	14	91.484	13	180.128	7
52		min	-872.882	12	-1072.989	7	-304.233	6	-114.945	6	-73.128	5	-192.765	15
53	N618	max	921.246	18	950.305	15	388.419	8	114.8	16	97.658	10	169.708	18
54		min	-1025.609	10	-1077.021	7	-301.224	16	-147.226	8	-77.086	18	-176.457	10
55	Totals:	max	6248.276	3	6217.997	15	8947.559	22						
56		min	-6248.278	11	-6217.999	7	3351.426	62						

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

	Member	Shape	Cod...	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pnc ...	phi*Pnt ...	phi*Mn y-y ...	phi*Mn z-z [lb...	Cb	Eqn
1	M25	PL3x3/8	.353	3.1	126	.202	3.1	y	28	30594.4...	36450	283.5	2278.8	1.405	H1-1b
2	M28	PL3x3/8	.343	3.1	73	.212	0	y	71	30594.4...	36450	283.5	2278.8	1.371	H1-1b
3	M39	C5X9	.321	33.404	11	.092	33.404	y	19	40751.0...	85536	1909.122	11853	2.172	H1-1b
4	M51	PL6x1/4	.312	1.188	19	.097	0	y	15	47912.2...	48600	253.125	6075	1.028	H1-1b
5	M22	PL3x3/8	.309	3.1	19	.207	3.1	y	34	30594.4...	36450	283.5	2278.8	1.377	H1-1b
6	M55	PL6x1/4	.307	1.188	24	.097	0	y	5	47912.2...	48600	253.125	6075	1.018	H1-1b
7	M53	PL6x1/4	.282	1.188	30	.086	0	y	11	47912.2...	48600	253.125	6075	1.022	H1-1b
8	M179A	PIPE_2.0	.278	132.6...	5	.174	25.263		6	6295.422	32130	1871.625	1871.625	3.509	H1-1b
9	M171C	PIPE_2.0	.270	132.6...	11	.171	25.263		3	6295.422	32130	1871.625	1871.625	3.213	H1-1b
10	M175A	PIPE_2.0	.266	132.6...	16	.174	25.263		17	6295.422	32130	1871.625	1871.625	3.234	H1-1b
11	M35	C5X9	.265	3.676	13	.077	4.011	y	28	34842.8...	85536	1909.122	11853	1.467	H1-1b
12	M34	C5X9	.247	33.404	16	.054	24.294	y	24	40751.0...	85536	1909.122	11853	2.041	H1-1b
13	M43	C5X9	.246	33.404	6	.054	33.404	y	30	40751.0...	85536	1909.122	11853	2.035	H1-1b
14	M168A	C5X9	.243	3.676	3	.075	4.011	y	29	34842.8...	85536	1909.122	11853	1.431	H1-1b
15	M37	C5X9	.239	59.824	9	.077	10.695	y	28	34842.8...	85536	1909.122	11853	1.376	H1-1b
16	M52	PL6x1/4	.236	1.188	19	.075	0	y	15	47912.2...	48600	253.125	6012.04	1.002	H1-1b
17	M54	PL6x1/4	.234	1.188	29	.073	0	y	10	47912.2...	48600	253.125	6075	1.037	H1-1b
18	M172A	C5X9	.231	59.824	4	.075	10.695	y	23	34842.8...	85536	1909.122	11853	1.465	H1-1b
19	M169A	C5X9	.227	59.824	7	.068	10.695	y	34	34842.8...	85536	1909.122	11853	1.367	H1-1b
20	M171B	C5X9	.221	3.676	8	.079	20.721	y	29	34842.8...	85536	1909.122	11853	2.443	H1-1b
21	M56	PL6x1/4	.206	1.188	24	.072	0	y	4	47912.2...	48600	253.125	6075	1.018	H1-1b
22	M171A	C5X9	.186	15	13	.023	15	z	6	81355.13	85536	1909.122	11853	1.086	H1-1b
23	M173B	L2.5x2.5x4	.185	0	16	.019	0	y	8	35672.2...	37485	1082.622	2466.905	1.34	H2-1
24	M181A	L2.5x2.5x4	.185	0	11	.019	0	y	3	35672.2...	37485	1082.622	2466.905	1.371	H2-1
25	M177A	L2.5x2.5x4	.183	0	5	.020	0	y	13	35672.2...	37485	1082.622	2466.905	1.444	H2-1
26	M173A	C5X9	.168	0	4	.022	15	z	16	81355.13	85536	1909.122	11853	1.014	H1-1b
27	M170A	C5X9	.167	15	3	.022	0	z	6	81355.13	85536	1909.122	11853	1.088	H1-1b
28	M69	PL6x1/4	.161	1.188	12	.101	0	y	114	47912.2...	48600	253.125	6075	1.129	H1-1b
29	M71	PL6x1/4	.158	1.188	7	.074	0	y	13	47912.2...	48600	253.125	6075	1.114	H1-1b
30	HM1	PIPE_2.0	.147	133.4...	34	.122	28.421		21	6295.422	32130	1871.625	1871.625	3.234	H1-1b
31	HM5	PIPE_2.0	.144	133.4...	23	.121	28.421		27	6295.422	32130	1871.625	1871.625	3.329	H1-1b
32	HM9	PIPE_2.0	.144	133.4...	29	.123	28.421		32	6295.422	32130	1871.625	1871.625	3.285	H1-1b
33	M73	PL6x1/4	.133	1.188	18	.062	0	y	7	47912.2...	48600	253.125	6075	1.071	H1-1b
34	M229	L2.5x2.5x3	.132	26.769	14	.004	52.981	y	5	15292.2...	28381.5	848.336	1637.197	1.136	H2-1
35	M223	L2.5x2.5x3	.132	26.769	3	.004	0	y	10	15292.2...	28381.5	848.336	1637.197	1.136	H2-1
36	M194	L2.5x2.5x3	.130	36.233	18	.006	72.465	y	10	9005.303	28381.5	848.336	1498.766	1.136	H2-1
37	M224	L2.5x2.5x3	.129	26.212	3	.006	52.981	y	4	15292.2...	28381.5	848.336	1637.197	1.136	H2-1
38	M230	L2.5x2.5x3	.129	26.212	14	.005	52.981	y	15	15292.2...	28381.5	848.336	1637.197	1.136	H2-1
39	M236	L2.5x2.5x3	.129	26.212	8	.006	0	y	9	15292.2...	28381.5	848.336	1637.197	1.136	H2-1
40	M200	L2.5x2.5x3	.129	36.233	12	.006	0	y	4	9005.303	28381.5	848.336	1498.766	1.136	H2-1
41	M70	PL6x1/4	.129	1.188	18	.124	0	y	96	47912.2...	48600	253.125	6071.33	1.012	H1-1b

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

	Member	Shape	Cod...	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pnc ...	phi*Pnt ...	phi*Mn y-y ...	phi*Mn z-z [lb...	Cb	Eqn
42	M235	L2.5x2.5x3	.129	26.769	8	.004	0	y	7	15292.2...	28381.5	848.336	1637.197	1.136	H2-1
43	M74	PL6x1/4	.127	1.188	7	.116	1.188	y	21	47912.2...	48600	253.125	6075	2.112	H1-1b
44	M193	L2.5x2.5x3	.126	36.233	10	.006	0	z	10	9005.303	28381.5	848.336	1498.766	1.136	H2-1
45	M11	PIPE_2.0	.125	42.411	9	.091	98.779		17	13511.2...	32130	1871.625	1871.625	2.248	H1-1b
46	M7	PIPE_2.0	.125	42.411	15	.079	98.779		7	13511.2...	32130	1871.625	1871.625	2.198	H1-1b
47	M72	PL6x1/4	.125	1.188	13	.089	0	y	27	47912.2...	48600	253.125	6075	1.014	H1-1b
48	M3	PIPE_2.0	.123	42.411	4	.089	98.779		12	13511.2...	32130	1871.625	1871.625	2.787	H1-1b
49	M199	L2.5x2.5x3	.122	36.233	4	.006	72.465	z	4	9005.303	28381.5	848.336	1498.766	1.136	H2-1
50	M212	L2.5x2.5x3	.118	27.597	27	.005	55.781	y	15	14300.07	28381.5	848.336	1615.897	1.136	H2-1
51	M206	L2.5x2.5x3	.118	27.597	34	.005	55.781	y	4	14300.07	28381.5	848.336	1615.897	1.136	H2-1
52	M218	L2.5x2.5x3	.118	27.597	23	.005	0	y	10	14300.07	28381.5	848.336	1615.897	1.136	H2-1
53	M10	PIPE_2.0	.118	41.874	16	.068	98.779		15	13511.2...	32130	1871.625	1871.625	2.395	H1-1b
54	M211	L2.5x2.5x3	.118	28.184	31	.004	0	y	5	14300.07	28381.5	848.336	1615.897	1.136	H2-1
55	M205	L2.5x2.5x3	.117	28.184	21	.004	55.781	y	10	14300.07	28381.5	848.336	1615.897	1.136	H2-1
56	KM6	L2.5x2.5x3	.117	36.233	7	.005	0	y	7	9005.303	28381.5	848.336	1498.766	1.136	H2-1
57	M5	PIPE_2.0	.117	122.6...	7	.065	122....		15	8922.084	32130	1871.625	1871.625	2.944	H1-1b
58	M1	PIPE_2.0	.116	122.6...	4	.066	65.653		9	8922.084	32130	1871.625	1871.625	2.909	H1-1b
59	M217	L2.5x2.5x3	.115	28.184	26	.004	55.781	y	15	14300.07	28381.5	848.336	1615.897	1.136	H2-1
60	M6	PIPE_2.0	.114	41.874	5	.076	42.411		7	13511.2...	32130	1871.625	1871.625	2.326	H1-1b
61	KM5	L2.5x2.5x3	.113	36.233	15	.005	0	z	7	9005.303	28381.5	848.336	1498.766	1.136	H2-1
62	M9	PIPE_2.0	.110	122.6...	18	.058	65.653		14	8922.084	32130	1871.625	1871.625	2.168	H1-1b
63	M2	PIPE_2.0	.110	41.874	11	.076	42.411		4	13511.2...	32130	1871.625	1871.625	2.1	H1-1b
64	M50	C5X9	.087	34.294	15	.008	19.854	y	19	65824.5...	85536	1909.122	11853	1.682	H1-1b
65	M45	C5X9	.084	22	10	.014	11.811	y	19	76794.89	85536	1909.122	11853	1.623	H1-1b
66	M8	PIPE_2.0	.081	98.779	13	.024	42.411		7	13511.2...	32130	1871.625	1871.625	2.512	H1-1b
67	M12	PIPE_2.0	.081	98.779	7	.019	98.779		8	13511.2...	32130	1871.625	1871.625	2.535	H1-1b
68	M4	PIPE_2.0	.081	98.779	18	.021	98.779		3	13511.2...	32130	1871.625	1871.625	2.786	H1-1b
69	M19	PL3x3/8	.079	4.75	126	.146	0	y	28	24162.0...	36450	283.5	2278.8	1.397	H1-1b
70	M20	PL3x3/8	.074	4.75	72	.143	4.75	y	71	24162.0...	36450	283.5	2278.8	1.349	H1-1b
71	HM7	L2.5x2.5x4	.069	15	7	.011	0	y	23	35672.2...	37485	1082.622	2466.905	2.126	H2-1
72	HM3	L2.5x2.5x4	.065	15	17	.011	15	y	28	35672.2...	37485	1082.622	2466.905	1.755	H2-1
73	M21	PL3x3/8	.064	4.75	19	.145	0	y	34	24162.0...	36450	283.5	2278.8	1.382	H1-1b
74	HM11	L2.5x2.5x4	.063	15	12	.010	0	z	20	35672.2...	37485	1082.622	2466.905	2.127	H2-1
75	M26	PL3x3/8	.057	6.4	126	.121	0	y	28	17279.5...	36450	283.5	2278.8	1.464	H1-1b
76	M23	PL3x3/8	.053	6.4	19	.116	0	y	34	17279.5...	36450	283.5	2278.8	1.427	H1-1b
77	M29	PL3x3/8	.051	6.4	74	.118	0	y	23	17279.5...	36450	283.5	2278.8	1.401	H1-1b

Envelope Plate/Shell Principal Stresses

	Plate		Sur...	Sigma1 [k...	LC	Sigma2 [k...	LC	Tau Max [...	LC	Angle [rad]	LC	Von Mises [ksi]	LC
1	P134	max	T	3.079	18	.012	14	1.93	19	.482	11	3.506	19
2		min		.295	10	-.926	8	.267	12	-.501	15	.482	12
3		max	B	.914	7	-.302	11	1.931	19	2.066	11	3.507	19
4		min		-.044	14	-3.045	18	.25	12	1.069	15	.453	12
5	P136	max	T	2.99	3	-.017	8	1.932	19	.489	7	3.48	19
6		min		.233	11	-1.017	32	.26	9	-.491	11	.476	10
7		max	B	1.005	32	-.269	11	1.931	19	2.067	7	3.482	19
8		min		-.05	8	-2.918	3	.209	9	1.093	11	.406	10
9	P130	max	T	3.178	89	.048	14	1.882	24	.52	12	3.426	24
10		min		.467	16	-1.087	28	.334	15	-.249	17	.634	15
11		max	B	1.078	28	-.489	16	1.886	24	2.094	12	3.433	24
12		min		-.085	14	-3.187	89	.308	15	1.338	17	.601	15
13	P128	max	T	2.906	23	0	3	1.885	24	.236	15	3.413	24
14		min		.452	15	-1.561	92	.365	18	-.502	5	.658	17
15		max	B	1.561	92	-.466	16	1.881	24	1.793	16	3.407	24
16		min		-.035	3	-2.89	23	.34	18	1.069	5	.636	17

Envelope Plate/Shell Principal Stresses (Continued)

	Plate		Sur..	Sigma1 [k...	LC	Sigma2 [k...	LC	Tau Max [...	LC	Angle [rad]	LC	Von Mises [ksi]	LC
17	P142	max	T	2.897	31	.01	3	1.88	30	.496	18	3.407	31
18		min		.376	6	-1.555	107	.333	4	-.309	7	.598	5
19		max	B	1.556	107	-.393	6	1.87	30	2.067	18	3.384	30
20		min		-.048	3	-2.873	31	.307	4	1.274	6	.572	5
21	P140	max	T	3.151	109	.046	8	1.87	30	.302	6	3.404	30
22		min		.395	6	-.98	28	.264	7	-.529	10	.492	7
23		max	B	.973	28	-.41	6	1.88	30	1.867	6	3.425	30
24		min		-.086	8	-3.166	109	.242	7	1.035	10	.467	7
25	P116	max	T	2.844	18	.034	14	1.743	19	.504	11	3.195	19
26		min		.307	11	-.812	8	.265	12	-.481	15	.474	12
27		max	B	.774	9	-.315	11	1.744	19	2.085	11	3.196	19
28		min		-.065	14	-2.809	18	.257	12	1.094	16	.459	12
29	P118	max	T	2.796	3	-.005	8	1.75	19	.471	6	3.181	19
30		min		.251	11	-.827	32	.241	9	-.505	11	.447	9
31		max	B	.815	32	-.283	11	1.749	19	2.038	6	3.182	19
32		min		-.064	8	-2.728	3	.194	9	1.074	11	.387	9
33	P112	max	T	2.821	89	.099	94	1.697	24	.5	12	3.118	24
34		min		.468	16	-.896	28	.312	15	-.29	17	.587	15
35		max	B	.888	28	-.487	16	1.7	24	2.065	12	3.125	24
36		min		-.108	14	-2.829	89	.288	15	1.297	16	.558	15

APPENDIX D

ADDITIONAL CALCULATIONS

CONNECTION SLIP RESISTANCE

Kimley»Horn

DESIGN LOADS	
Factored Axial, P_u (lb)	0
Factored Moment, M_u (lb-ft)	128

☐ ***Normalize usages per TIA-222-H Sec. 15.5***

BOLT PROPERTIES	
Bolt Type	U-Bolt
# of U-Bolts	2
Hole Type	Standard
Bolt Grade	A36
Bolt Diameter, d (in)	0.625
Leg Width, W_{leg} (in)	2.375
Bolt Torque Override, T (lb-ft)	
Bolt Pretension Stress Override (ksi)	
Bolt Ultimate Strength, F_u (ksi)	58
Specified Torque, T (lb-ft)	97.31
Clamping Force per Bolt, P_u (lb)	9341.94
Bolt Pretension Stress (ksi)	30.45
Tensile Strength per Bolt, ϕP_n (lb)	10009.22
Axial Slip Resistance per Bolt, ϕP_n (lb)	3166.92
Total Axial Slip Resistance, ϕP_n (lb)	12667.67
Rotational Slip Resistance per Bolt, ϕM_n (lb-ft	626.79
Total Rotational Slip Resistance, ϕM_n (lb-ft)	2507.14
Axial Slip Usage, P_u / ϕPn	**0.0%**
Rotational Slip Usage, M_u / ϕMn	**5.1%**

Using Turn-of-Nut!

FACTORS		
Nut Factor, K	0.20	**Rule-of-thumb estimate**
$\Phi_{(BOLT\ TENSION)}$	0.75	**AISC 15th, J3.6**
$\Phi_{(SLIP\text{-}CRITICAL)}$	1.00	**AISC 15th, J3.8**
Mean Slip Coefficient, μ	0.30	**AISC 15th, J3.8**
Installed Pretension Ratio, D_u	1.13	**AISC 15th, J3.8**
Turn-of-Nut Pretension Factor	0.70	**AISC 15th, Table J3.1[a]**

DocuSign

Certificate Of Completion

Envelope Id: 30FC2FFAA9DE4C93AAD8A095F8F6F95B
Status: Completed
Subject: Please DocuSign: 881535_586252_Rev.0_MountAnalysis_PASS_AT&T_185ft_MM.DD.2022 _Sealed.pdf
Source Envelope:
Document Pages: 69
Signatures: 1
Certificate Pages: 1
Initials: 0
AutoNav: Enabled
EnvelopeId Stamping: Enabled
Time Zone: (UTC-05:00) Eastern Time (US & Canada)

Envelope Originator:
Tariq Salameh
401 Fayetteville St.
Suite 600
Raleigh, NC 27601
Tariq.Salameh@kimley-horn.com
IP Address: 208.127.231.172

Record Tracking

Status: Original
3/28/2022 12:09:29 PM
Holder: Tariq Salameh
Tariq.Salameh@kimley-horn.com
Location: DocuSign

Signer Events	Signature	Timestamp
Kyle Freehart kyle.freehart@kimley-horn.com Kimley-Horn Security Level: Email, Account Authentication (None)	DocuSigned by: Kyle Freehart D8BEE252A3804C1... Signature Adoption: Pre-selected Style Using IP Address: 208.127.245.199	Sent: 3/28/2022 12:11:08 PM Viewed: 3/28/2022 12:16:27 PM Signed: 3/28/2022 12:16:35 PM

Electronic Record and Signature Disclosure:
Not Offered via DocuSign

In Person Signer Events	Signature	Timestamp

Editor Delivery Events	Status	Timestamp

Agent Delivery Events	Status	Timestamp

Intermediary Delivery Events	Status	Timestamp

Certified Delivery Events	Status	Timestamp

Carbon Copy Events	Status	Timestamp

Witness Events	Signature	Timestamp

Notary Events	Signature	Timestamp

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	3/28/2022 12:11:08 PM
Certified Delivered	Security Checked	3/28/2022 12:16:27 PM
Signing Complete	Security Checked	3/28/2022 12:16:35 PM
Completed	Security Checked	3/28/2022 12:16:35 PM

Payment Events	Status	Timestamps

Exhibit F

Power Density/RF Emissions Report

Radio Frequency Safety Survey Report Predictive (RFSSRP) Prepared For AT&T

Site Name:	TRUMBULL INDIAN LEDGE
FA#	10035413
USID:	60382
Site ID:	CTL02093
Address:	425 INDIAN LEDGE PARK RD TRUMBULL, CT 06611
County:	FAIRFIELD
Latitude:	41.2732981
Longitude:	- 73.2131100
Structure Type:	MONOPOLE
Property Owner:	HOPKINS GERARD M & HOPKINS MARY JO
Pace Job:	MRCTB054245
RFDS Technology:	5G NR 1SR CBAND

Report Information

Report Writer: Sunita Sati

Report Generated Date: 07-11-2022

Compliance Statement

AT&T Mobility Compliance Statement: Based on the information collected, AT&T Mobility will be Compliant when the remediation recommended in section 5 or appropriate remediation determined by AT&T is implemented

Table of Contents

1. Executive Summary

1.1 Site Summary

Max Predictive Spatial Average MPE% & Location on Site (General Public)	375162% on Antennas Centerline Level & at AT&T Sec-A antenna no. #A3-2
Max Predictive Spatial Average MPE% at Ground Level (General Public)	0.5%
AT&T Mobility Site Compliance	AT&T Mobility will be Compliant by implementing remediation recommended as per section 5 in this report.

TABLE 1: Site Summary

1.2 Signage Summary (Proposed)

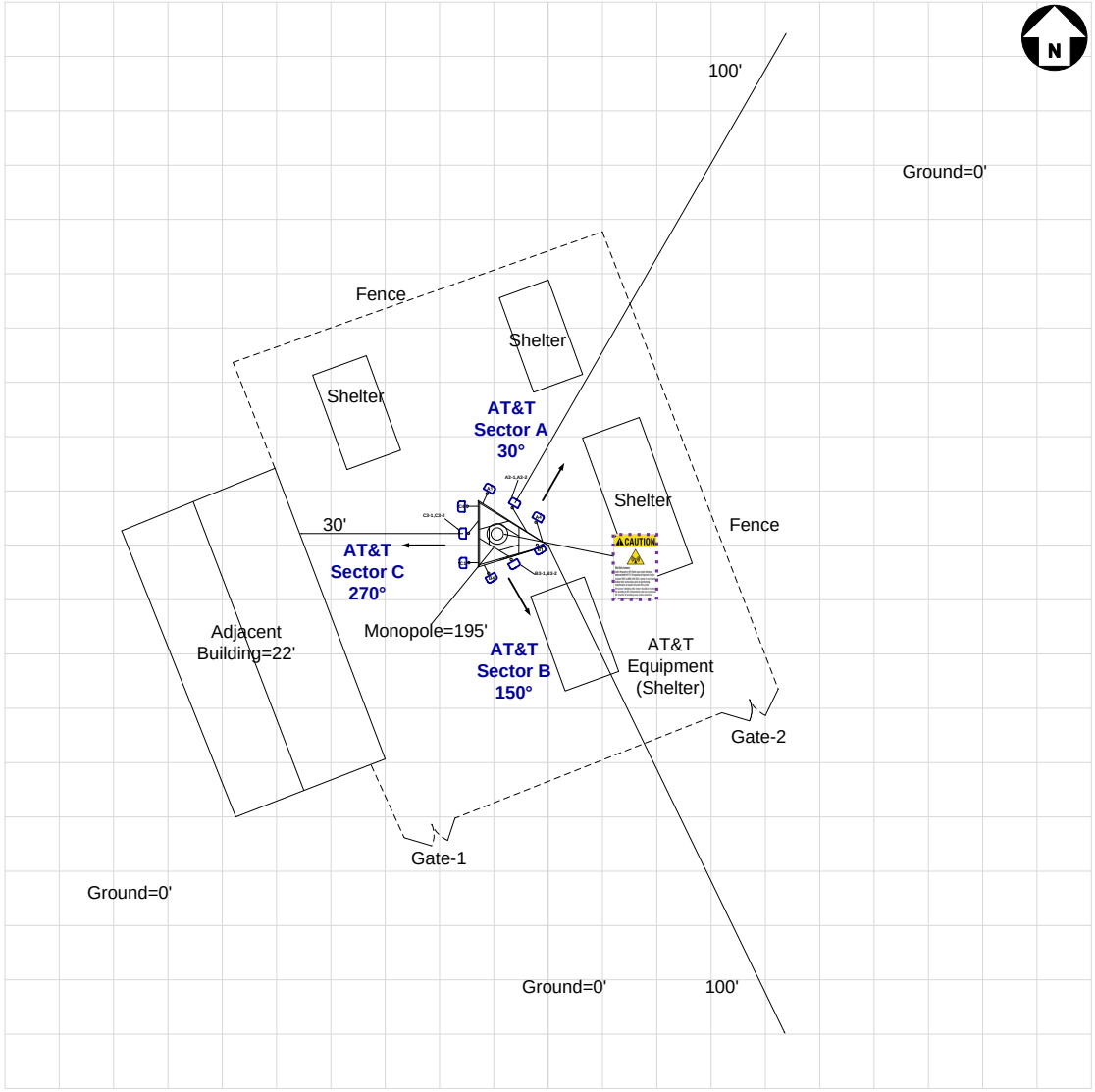
AT&T Signage Locations	Sign Type									
	Safety Instructions	Notice Sign 2	Caution Sign 2	Caution Sign 2B	Caution Sign 2C	Caution 7"x7"	Warning Sign 1B	RF Exposure Map	Lock	Barriers
Access Point(s)				1						
Alpha										
Beta										
Gamma										

TABLE 2: Signage Summary (Proposed)

1.3 List of Documents used to prepare this Report

- *881535 CD*
- *881535_586252 RFDS*

2. Site Scale Map



AT&T Antenna	Proposed	Proposed Signage									
Panel	Barrier	Safety Instructions	Notice 2	Caution 2	Caution 2B	Caution 2C	Caution 7"x7"	Warning 1B	RF Exposure Map	Lock	***Map Scale = 10 ft***
OMNI	Posts										

3. Antenna Inventory

Ant ID	Operator	Antenna Mfg	Antenna Model	Antenna Type	FREQ. (MHz)	TECH.	AZ. (0)	HBW (0)	Antenna Gain (dBd)	Antenna Aperture (ft)	Transmitter Power (Watts)	Total Loss (dB)	Total ERP (Watts)	Total EIRP (Watts)
A1	AT&T	Kathrein	80010965	Panel	700	LTE(FN)	30	62	12.65	6.5	120.00	0.5	1968.71	3229.84
A1	AT&T	Kathrein	80010965	Panel	2300	LTE	30	56	15.95	6.5	75.00	0.5	2630.64	4315.80
A3-1	AT&T	Ericsson	AIR 6419 B77G^	Panel	3450	5G	30	11	23.5	2.55	108.44*	0	24277.05*	39828.68*
A3-2	AT&T	Ericsson	AIR 6449 B77D^	Panel	3840	5G	30	11	23.5	2.55	108.44*	0	24277.05*	39828.68*
A4	AT&T	CCI	DMP65R-BU6EA-K	Panel	700	LTE(B12)	30	73	11.95	6	120.00	0.5	1675.64	2749.04
A4	AT&T	CCI	DMP65R-BU6EA-K	Panel	850	5G	30	62	12.45	6	120.00	0.5	1880.10	3084.47
A4	AT&T	CCI	DMP65R-BU6EA-K	Panel	1900	LTE/5G	30	71	15.75	6	120.00	0.5	4019.59	6594.49
A4	AT&T	CCI	DMP65R-BU6EA-K	Panel	2100	LTE/5G	30	71	15.95	6	120.00	0.5	4209.02	6905.28
B1	AT&T	Kathrein	80010965	Panel	700	LTE(FN)	150	62	12.65	6.5	120.00	0.5	1968.71	3229.84
B1	AT&T	Kathrein	80010965	Panel	2300	LTE	150	56	15.95	6.5	75.00	0.5	2630.64	4315.80
B3-1	AT&T	Ericsson	AIR 6419 B77G^	Panel	3450	5G	150	11	23.5	2.55	108.44*	0	24277.05*	39828.68*
B3-2	AT&T	Ericsson	AIR 6449 B77D^	Panel	3840	5G	150	11	23.5	2.55	108.44*	0	24277.05*	39828.68*
B4	AT&T	CCI	DMP65R-BU6EA-K	Panel	700	LTE(B12)	150	73	11.95	6	120.00	0.5	1675.64	2749.04
B4	AT&T	CCI	DMP65R-BU6EA-K	Panel	850	5G	150	62	12.45	6	120.00	0.5	1880.10	3084.47
B4	AT&T	CCI	DMP65R-BU6EA-K	Panel	1900	LTE/5G	150	71	15.75	6	120.00	0.5	4019.59	6594.49
B4	AT&T	CCI	DMP65R-BU6EA-K	Panel	2100	LTE/5G	150	71	15.95	6	120.00	0.5	4209.02	6905.28
C1	AT&T	Kathrein	80010965	Panel	700	LTE(FN)	270	62	12.65	6.5	120.00	0.5	1968.71	3229.84
C1	AT&T	Kathrein	80010965	Panel	2300	LTE	270	56	15.95	6.5	75.00	0.5	2630.64	4315.80
C3-1	AT&T	Ericsson	AIR 6419 B77G^	Panel	3450	5G	270	11	23.5	2.55	108.44*	0	24277.05*	39828.68*
C3-2	AT&T	Ericsson	AIR 6449 B77D^	Panel	3840	5G	270	11	23.5	2.55	108.44*	0	24277.05*	39828.68*
C4	AT&T	CCI	DMP65R-BU6EA-K	Panel	700	LTE(B12)	270	73	11.95	6	120.00	0.5	1675.64	2749.04
C4	AT&T	CCI	DMP65R-BU6EA-K	Panel	850	5G	270	62	12.45	6	120.00	0.5	1880.10	3084.47
C4	AT&T	CCI	DMP65R-BU6EA-K	Panel	1900	LTE/5G	270	71	15.75	6	120.00	0.5	4019.59	6594.49
C4	AT&T	CCI	DMP65R-BU6EA-K	Panel	2100	LTE/5G	270	71	15.95	6	120.00	0.5	4209.02	6905.28

Table 3.1: Antenna Inventory Table

Note: **^ Mechanical Tilt value of "0°" MUST be retained for C-BAND and/or DoD AAS antenna(s) at all times to ensure that "EME (Predictive) Study" shall remain valid.**

* 75% TDD duty Cycle, 1.5dB Power Tolerance & 0.32 Power Reduction factor[1] are used to calculate Transmitter Power & ERP/EiRP

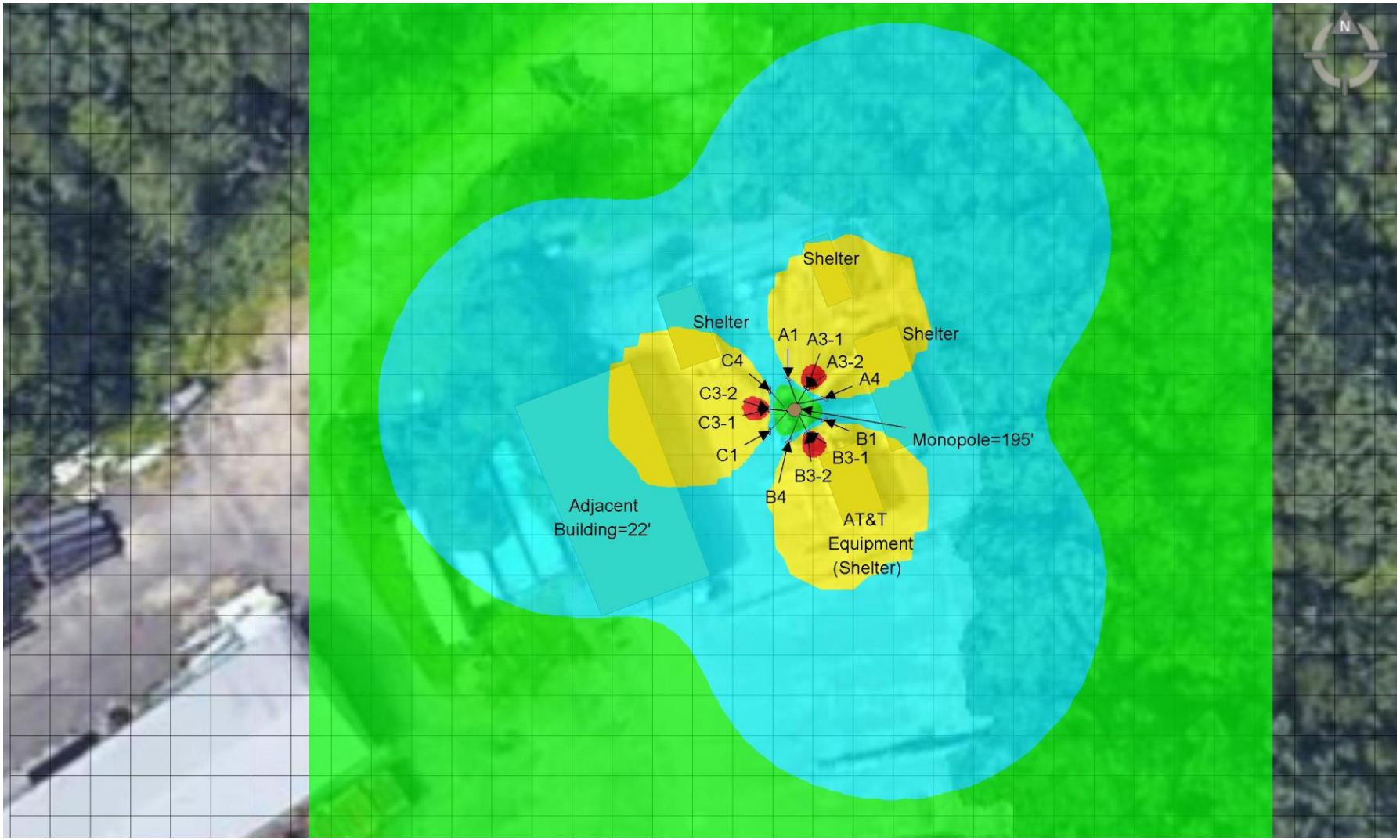
Antenna Heights (Z)

Ant ID	Operator	Antenna Radiation Centerline	Z-Height from Adj. Bldg	Z-Height from Ground
A1	AT&T	187.00	161.75	183.75
A3-1	AT&T	188.75	165.48	187.48
A3-2	AT&T	185.25	161.98	183.98
A4	AT&T	187.00	162.00	184.00
B1	AT&T	187.00	161.75	183.75
B3-1	AT&T	188.75	165.48	187.48
B3-2	AT&T	185.25	161.98	183.98
B4	AT&T	187.00	162.00	184.00
C1	AT&T	187.00	161.75	183.75
C3-1	AT&T	188.75	165.48	187.48
C3-2	AT&T	185.25	161.98	183.98
C4	AT&T	187.00	162.00	184.00

Table 3.2: Antenna Height(s) Summary Table

4. Predicted Emission

4.1 Predictive Cumulative MPE Contribution from All Sources at Antennas Centerline Level (185.25 ft.)



Max. Predictive Spatial Average MPE% = **375162.0%**

Proposed Barrier
Proposed Posts

% of FCC General Public Exposure Limit (Predictive Spatial Average)

Non-Simulated	0-1	1-100	100-500	500-5000	>5000

Map Scale = 10 ft

4.2 Predictive Cumulative MPE Contribution from All Sources at Adjacent Building Level (22 ft.)

Max. Predictive Spatial Average MPE% = **0.4%**

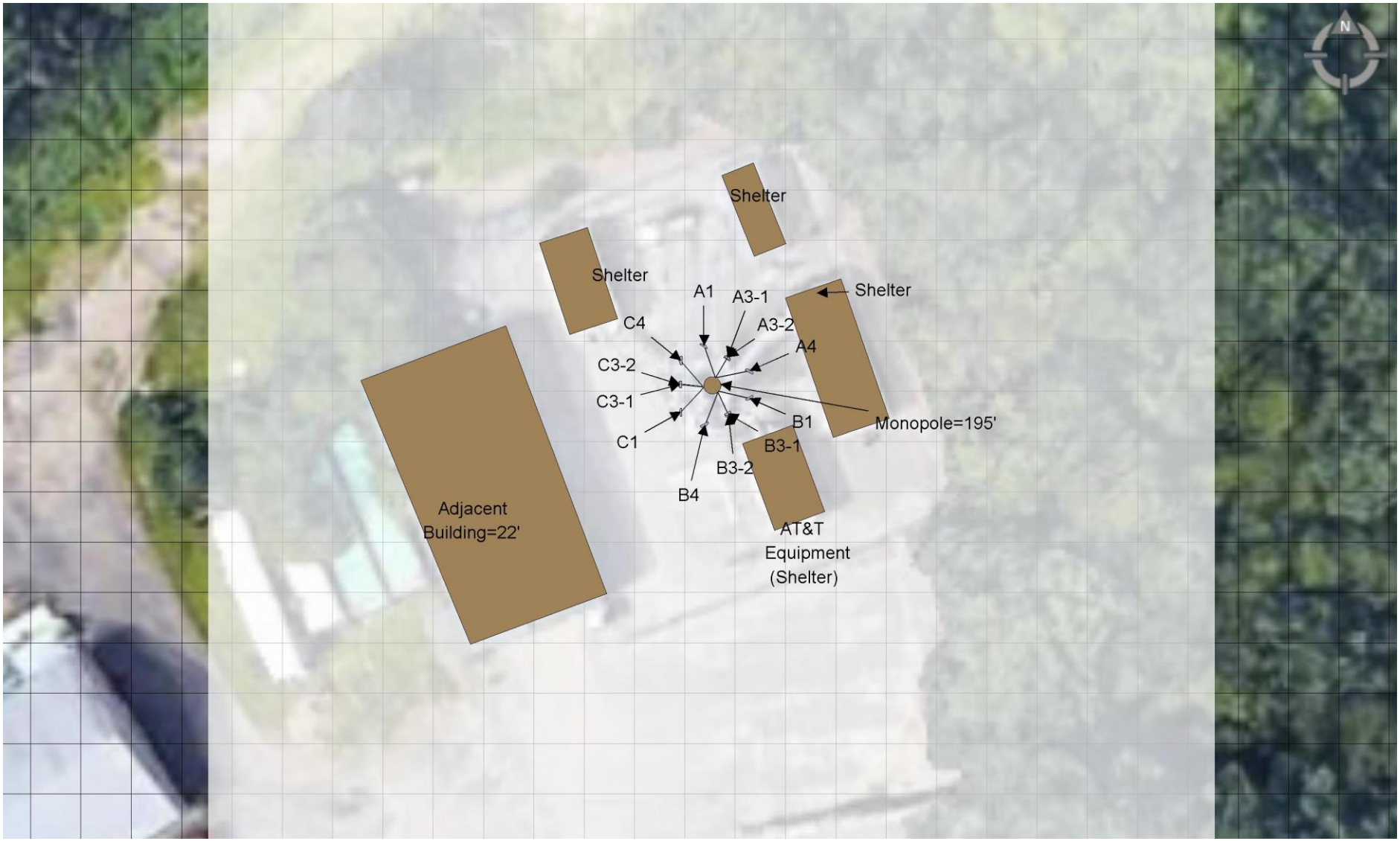
Proposed Barrier
Proposed Posts

% of FCC General Public Exposure Limit (Predictive Spatial Average)

Non-Simulated	0-1	1-100	100-500	500-5000	>5000

Map Scale = 10 ft

4.3 Predictive Cumulative MPE Contribution from All Sources at Ground Level (0 ft.)



Max. Predictive Spatial Average MPE% = **0.5%**

Proposed Barrier
Proposed Posts

% of FCC General Public Exposure Limit (Predictive Spatial Average)

Non-Simulated	0-1	1-100	100-500	500-5000	>5000

Map Scale = 10 ft

5. Statement of Compliance

5.1 Statement of AT&T Mobility Compliance

At the time of our Analysis, AT&T Mobility is required to take action to fulfill their Obligations to comply with the FCC's mandate as defined in OET-65

Recommendations

AT&T Alpha Sector:

- No Action Required

AT&T Beta Sector:

- No Action Required

AT&T Gamma Sector:

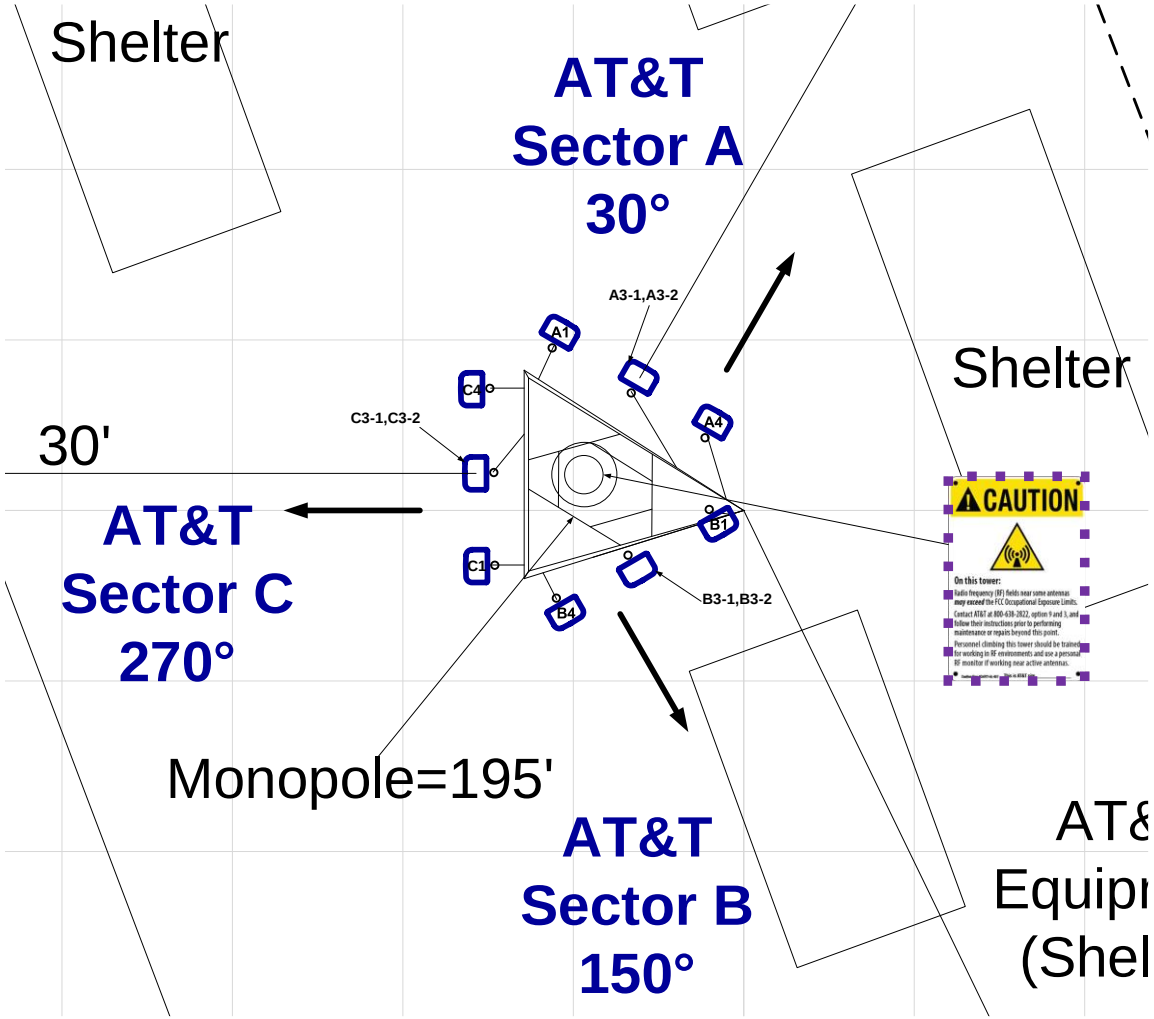
- No Action Required

Monopole:

- One Caution 2B Sign to be posted on the Monopole at climbing access, facing outwards so approaching people can see as shown in "Recommendations Map – Detailed View" on page 11. (1 Total Sign)

Recommendations Map – Detailed View

AT&T Alpha, Beta & Gamma Sectors



AT&T Antenna	Proposed	Proposed Signage									
Panel	Barrier	Safety Instructions	Notice 2	Caution 2	Caution 2B	Caution 2C	Caution 7"x7"	Warning 1B	RF Exposure Map	Lock	***Map Scale = 10 ft***
OMNI	Posts										

Appendix A – Statement of Limiting Conditions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at full power at all times. AT&T has further recommended to assume a 75% duty cycle of maximum radiated power for all LTE & 5G carriers (& consider 100% duty cycle for all UMTS carriers).

In this site compliance report, it is assumed that Mechanical Tilt value of "0°" MUST be retained for C-BAND and/or DoD AAS^ antenna(s) at all times to ensure that "EME (Predictive) Study" shall remain valid.

AT&T recommended to consider - For C-BAND and/or DoD AAS^ antenna(s) 75% TDD duty Cycle, 1.5dB Power Tolerance & 0.32 Power Reduction factor[1] are used to calculate Transmitter Power & ERP/EiRP.

AT&T recommended to use worst-case tilts for the simulations.

*[1] **Power Reduction Factor**: IEC Standard 62232: 2017 allows for a statistically conservative power density model to more realistically define the RF exposure area. AT&T recommends a "0.32" factor to calculate the "Actual Maximum" (time averaged) power value, which accounts for "Beam Scanning," "Scheduling," and "RBS Utilization" This recommended value is a conservative figure modelled and supported by other vendors and through measurements published in scientific articles and white papers by IEEE and others. Those publication are listed below:*

1. IEEE Access, Time-Averaged Realistic Maximum Power Levels for the Assessment of RF Exposure for 5G Radio Base Stations Using Massive MIMO (Published Sept. 18, 2017 / BJÖRN THORS, ANDERS FURUSKÄR, DAVIDE COLOMBI, AND CHRISTER TÖRNEVIK)
2. IEEE Explore, A Statistical Approach for RF Exposure Compliance Boundary Assessment in Massive MIMO Systems (Published Jan. 25, 2018 / Paolo Baracca, Andreas Weber, Thorsten Wild, Christophe Grangeat)
3. IEEE Access, In-situ Measurement Methodology for the Assessment of 5G NR Massive MIMO Base Station Exposure at Sub-6 GHz Frequencies (Published Dec. 20, 2019 / SAM AERTS, LEEN VERLOOCK, MATTHIAS VAN DEN BOSSCHE, DAVIDE COLOMBI, LUC MARTENS, CHRISTER TÖRNEVIK AND WOUT JOSEPH)
4. Applied Sciences, Analysis of the Actual Power and EMF Exposure from Base Stations in a Commercial 5G Network (Published July 30, 2020 / Davide Colombi, Paramananda Joshi, Bo Xu, Fatemeh Ghasemifard, Vignesh Narasaraju and Christer Törnevik)
5. Ofcom Technical Report, Electromagnetic Field (EMF) measurements near 5G mobile phone base stations (Published Feb. 21, 2020 / Davide Colombi, Paramananda Joshi, Bo Xu, Fatemeh Ghasemifard, Vignesh Narasaraju and Christer Törnevik)

MobileComm believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor). Thus, at any time, if power density measurements were made, we believe the real time measurements would indicate levels below those depicted in the RF emission diagram(s) in this report. By modelling in this way, MobileComm has conservatively shown exclusion areas – areas that should not be entered without the use of a personal monitor, carriers reducing power, or performing real-time measurements to indicate real-time exposure levels.

Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model, or "Other Carrier" for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained while on site. In the event of unknown information, MobileComm will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. Information about similar facilities is used when the service is identified and associated with a particular antenna. If no information is available regarding the transmitting service associated with an unidentified antenna, using the antenna manufacturer's published data regarding the antenna's physical characteristics makes more conservative assumptions.

Where the frequency is unknown, MobileComm uses the closest frequency in the antenna's range that corresponds to the highest Maximum Exposure Limit (MPE), resulting in a conservative analysis.

Appendix B – FCC Guidelines and Emissions Threshold Limits

All power density values used in this report were analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (µW/cm2).The number of µW/cm2 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 public 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 public 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 (µW/cm2). The general population exposure limit for the 700 and 800 MHz Bands is approximately 467 µW/cm2 and 567 µW/cm2 respectively, and the general population exposure limit for the 1900 MHz PCS and 2100 MHz AWS bands is 1000 µW/cm2. 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, have been properly trained in RF safety 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, have been trained in RF safety and can exercise control over his or her exposure by leaving the area or by some other appropriate means. The Occupational/Controlled exposure limits all utilized frequency bands is five (5) times the FCC's General Public / Uncontrolled exposure limit.

Additional details can be found in FCC OET 65.

Table 1: Limits for Maximum Permissible Exposure (MPE)				
(A) Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/cm^2)**	**Averaging Time $[E]^2$, $[H]^2$, or S (minutes)**
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-I,500	--	--	f/300	6
1,500-100,000	--	--	5	6
(B) Limits for General Public/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/cm^2)**	**Averaging Time $[E]^2$, $[H]^2$, or S (minutes)**
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-I,500	--	--	f/1,500	30
1,500-100,000	--	--	1.0	30

Appendix C – Rules & Regulations

Explanation of Applicable Rules and Regulations

FCC has set forth guidelines in OET Bulletin 65 for human exposure to radio frequency electromagnetic fields. Currently, there are two different levels of MPE - General Public MPE and Occupational MPE. An individual classified as Occupational can be defined as an individual who has received appropriate RF training and meets the conditions outlined below. General Public is defined as anyone who does not meet the conditions of being Occupational. FCC Rules and Regulations define compliance in terms of total exposure to total RF energy, regardless of location of or proximity to the sources of energy.

It is the responsibility of all licensees to ensure these guidelines are maintained at all times. It is the ongoing responsibility of all licensees composing the site to maintain ongoing compliance with FCC rules and regulations.

A building owner or site manager can use this report as part of an overall RF Health and Safety Policy. It is important for building owners/site managers to identify areas in excess of the General Population MPE and ensure that only persons qualified as Occupational are granted access to those areas.

Occupational Environment Explained

The FCC definition of Occupational exposure limits apply to persons who:

- *are exposed to RF energy as a consequence of their employment;*
- *have been made aware of the possibility of exposure; and*
- *can exercise control over their exposure.*

FCC guidelines go further to state that persons must complete RF Safety Awareness training and must be trained in the use of appropriate personal protective equipment.

In order to consider this site an Occupational Environment, the site must be controlled to prevent access by any individuals classified as the General Public. Compliance is also maintained when any non-occupational individuals (the General Public) are prevented from accessing areas indicated as Red or Yellow in the attached RF Emissions diagram. In addition, a person must be aware of the RF environment into which they are entering. This can be accomplished by an RF Safety Awareness class, and by appropriate written documentation such as this Site Compliance Report.

Appendix D – General Safety Recommendations

The following are general recommendations appropriate for any site with accessible areas in excess of 100% General Public MPE. These recommendations are not specific to this site. These are safety recommendations appropriate for typical site management, building management, and other tenant operations.

1. All individuals needing access to the main site should be instructed to read and obey all posted placards and signs.

2. The site should be routinely inspected and this or similar report updated with the addition of any antennas or upon any changes to the RF environment including:

- *adding new antennas that may have been located on the site*
- *removing of any existing antennas*
- *changes in the radiating power or number of RF emitters*

3. Post the appropriate SAFETY INSTRUCTIONS, NOTICE, CAUTION & WARNING sign at the main site access point(s) and other locations as required. Note: Please refer to RF Exposure Diagrams in the report section above, to inform everyone who has access to this site that beyond posted signs there may be levels in excess of the limits prescribed by the FCC. The signs below are examples of signs meeting FCC guidelines.

4. Ensure that the site door remains locked (or appropriately controlled) to deny access to the general public if deemed as policy by the building/site owner.

5. For a General Public environment the five color levels identified in measured RF emission diagram can be interpreted in the following manner:

- *White represents areas predicted to be greater than or equal to 0% and less than 1% of the MPE general public limits*
- *Green represents areas predicted to be greater than or equal to 1% and less than 100% of the MPE general public limits*
- *Blue represents areas predicted to be greater than or equal to 100% and lesser than 500% of the MPE general public limits.*
- *Yellow represents areas predicted to be greater than or equal to 500% and lesser than 5000% of the MPE general public limits.*
- *Red areas indicates predicted levels greater than or equal to 5000% of the MPE general public limits.*

Appendix E – References

1 - FCC Definition

FCC defines an Occupational or Controlled environment as one where persons are exposed to RF fields as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Typical criteria for an Occupational or Controlled environment is restricted access (i.e. locked doors, gates, etc.) to areas where antennas are located coupled with proper RF warning signage.

FCC defines a site as a General Public or Uncontrolled environment when human exposure to RF fields occurs to the general public or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over the exposure. Typical criteria for a General Public or Uncontrolled environment are unrestricted access (i.e. unlocked or no restrictions) to areas where antennas are located without proper RF warning signage being posted.

2 - Physical Testing measurement procedure and Tools

The Narda Broadband Field Meter NBM-550 can make rapid conformance measurements with evaluation in the time domain when used in conjunction EA5091 probe. This probe is a so-called Shaped Probe, i.e. it is frequency weighted so that it automatically takes account of the FCC Occupational limit values. To collect data, the probe is pointed towards the potential source(s) of EME radiation and moved slowly from ground level up to slightly above head height (approx. 6 ft).

Spatial Average Measurement A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy an average sized human body will absorb while present in an electromagnetic field of energy.

3 - Site Safety Procedures

The following items are general safety recommendations that should be administered on a site by site basis as needed by the carrier.

General Maintenance Work: *Any maintenance personnel required to work immediately in front of antennas and / or in areas indicated as above 100% of the Occupational MPE limits should coordinate with the wireless operators to disable transmitters during their work activities.*

Training and Qualification Verification: *All personnel accessing areas indicated as exceeding the General Population MPE limits should have a basic understanding of EME awareness and RF Safety procedures when working around transmitting antennas. Awareness training increases a workers understanding to potential RF exposure scenarios. Awareness can be achieved in a number of ways (e.g. videos, formal classroom lecture or internet based courses).*

Physical Access Control: *Access restrictions to transmitting antennas locations is the primary element in a site safety plan. Examples of access restrictions are as follows:*

- *Locked door or gate*
- *Alarmed door*
- *Locked ladder access*
- *Restrictive Barrier at antenna locations (e.g. Chain link with posted RF Sign)*

RF Signage: *Everyone should obey all posted signs at all times. RF signs play an important role in properly warning a worker prior to entering into a potential RF Exposure area.*

Assume all antennas are active: *Due to the nature of telecommunications transmissions, an antenna transmits intermittently. Always assume an antenna is transmitting. Never stop in front of an antenna. If you have to pass by an antenna, move through as quickly and safely as possible thereby reducing any exposure to a minimum.*

Maintain a 3 foot clearance from all antennas: *There is a direct correlation between the strength of an EME field and the distance from the transmitting antenna. The further away from an antenna, the lower the corresponding EME field is.*

Rooftop RF Emissions Diagram: *Section 4 of this report contains an RF Emissions Diagram that outlines various theoretical Maximum Permissible Exposure (MPE) areas on the rooftop. This analysis is all theoretical and assumes a duty cycle of 75% for each transmitting antenna at full power. This analysis is a worst case scenario. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.*

4 - Definitions

Compliance- *The determination of whether a site is safe or not with regards to Human Exposure to Radio Frequency Radiation from transmitting antennas.*

Decibel (dB) – *A unit for measuring power or strength of a signal.*

Duty Cycle – *The percent of pulse duration to the pulse period of a periodic pulse train. Also, may be a measure of the temporal transmission characteristic of an intermittently transmitting RF source such as a paging antenna by dividing average transmission duration by the average period for transmission. A duty cycle of 75% corresponds to continuous operation.*

Effective (or Equivalent) Isotropic Radiated Power (EIRP) – *The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna, this product is divided by the cable losses*

Effective Radiated Power (ERP) – *In a given direction, the relative gain of a transmitting antenna with respect to the maximum directivity of a half wave dipole multiplied by the net power accepted by the antenna from the connecting transmitter.*

Gain (of an antenna in dbd) – *The ratio of the maximum intensity in a given direction to the maximum radiation in the same direction from a reference dipole. Gain is a measure of the relative efficiency of a directional antennas as compared to a reference dipole.*

General Population/Uncontrolled Environment – *Defined by the FCC, as an area where RFR exposure may occur to persons who are unaware of the potential for exposure and who have no control of their exposure. General Population is also referenced as General Public.*

Generic Antenna – *For the purposes of this report, the use of "Generic" as an antenna model means the antenna information was not provided and could not be obtained while on site. In the event of unknown information, MobileComm will use our industry specific knowledge of antenna models to select a worst case scenario antenna to model the site.*

Isotropic Antenna – *An antenna that is completely non-directional. In other words, an antenna that radiates energy equally in all directions.*

Maximum Measurement – *This measurement represents the single largest measurement recorded when performing a spatial average measurement.*

Maximum Exposure Limit (MPE) – *The RMS and peak electric and magnetic field strength, their squares, or the plane-wave equivalent power densities associated with these fields to which a person may be exposed without harmful effect and with acceptable safety factor.*

Occupational/Controlled Environment – *Defined by the FCC, as an area where Radio Frequency Radiation (RFR) exposure may occur to persons who are aware of the potential for exposure as a condition of employment or specific activity and can exercise control over their exposure.*

Radio Frequency Radiation – *Electromagnetic waves that are propagated from antennas through space.*

Spatial Average Measurement – *A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy an average sized human body will absorb while present in an electromagnetic field of energy.*

Transmitter Power Output (TPO) – *The radio frequency output power of a transmitter's final radio frequency stage as measured at the output terminal while connected to a load.*

Appendix F – Proprietary Statement

This report was prepared for the use of AT&T Mobility, LLC to meet requirements specified in AT&T's corporate RF safety guidelines. It was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same locale under like circumstances. The conclusions provided by MobileComm are based solely on the information provided by AT&T Mobility and all observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided to MobileComm so that our conclusions may be revised and modified, if necessary. This report has been prepared in accordance with Standard Conditions for Engagement and authorized proposal, both of which are integral parts of this report. No other warranty, expressed or implied, is made.

July 26, 2022

Dear Customer,

The following is the proof-of-delivery for tracking number: 777451774172

Delivery Information:

Status:	Delivered	**Delivered To:**	Receptionist/Front Desk
Signed for by:	L.DUNLAP	**Delivery Location:**	5866 MAIN ST
Service type:	FedEx 2Day		
Special Handling:	Deliver Weekday		TRUMBULL, CT, 06611
		Delivery date:	Jul 25, 2022 09:39

Shipping Information:

Tracking number:	777451774172	**Ship Date:**	Jul 21, 2022
		Weight:	1.0 LB/0.45 KG

Recipient:
Rob Librandi,
5866 Main Street
TRUMBULL, CT, US, 06611

Shipper:
Ersilia Davis, Crown Castle
1777 Sentry Parkway W
VEVA 17, Suite 400
BLUE BELL, PA, US, 19422

Reference 100788

Thank you for choosing FedEx

July 26, 2022

Dear Customer,

The following is the proof-of-delivery for tracking number: 777451671939

Delivery Information:

Status:	Delivered	**Delivered To:**	Receptionist/Front Desk
Signed for by:	L.DUNLAP	**Delivery Location:**	5866 MAIN ST
Service type:	FedEx 2Day		
Special Handling:	Deliver Weekday		TRUMBULL, CT, 06611
		Delivery date:	Jul 25, 2022 09:39

Shipping Information:

Tracking number:	777451671939	**Ship Date:**	Jul 21, 2022
		Weight:	1.0 LB/0.45 KG

Recipient:
Town of Trumbull,
5866 Main Street
TRUMBULL, CT, US, 06611

Shipper:
Ersilia Davis, Crown Castle
1777 Sentry Parkway W
VEVA 17, Suite 400
BLUE BELL, PA, US, 19422

Reference 100788

Thank you for choosing FedEx

July 26, 2022

Dear Customer,

The following is the proof-of-delivery for tracking number: 777451721915

Delivery Information:

Status:	Delivered	**Delivered To:**	Receptionist/Front Desk
Signed for by:		**Delivery Location:**	5866 MAIN ST
Service type:	FedEx 2Day		
Special Handling:	Deliver Weekday		TRUMBULL, CT, 06611
		Delivery date:	Jul 25, 2022 09:39

Shipping Information:

Tracking number:	777451721915	**Ship Date:**	Jul 21, 2022
		Weight:	1.0 LB/0.45 KG

Recipient:
Vicki A. Tesoro, Town of Trumbull
5866 Main Street
TRUMBULL, CT, US, 06611

Shipper:
Ersilia Davis, Crown Castle
1777 Sentry Parkway W
VEVA 17, Suite 400
BLUE BELL, PA, US, 19422

Thank you for choosing FedEx