Crown Castle
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065

July 30, 2020

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

RE: **Notice of Exempt Modification for AT&T: 876381**
2365 Long Hill Road, Guilford, CT 06437
Latitude: 41° 20′ 47.34″ / Longitude: -72° 43′ 23.15″

Dear Ms. Bachman:

AT&T currently maintains nine (9) total antennas at the 167-foot mount on the existing 176-foot Monopole Tower, located at 2365 Long Hill Road in Guilford, CT. The tower is owned by Crown Castle and the property is owned by The James & Janice Ward Family Trust. AT&T now intends to add three (3) new 700 MHz antennas, for a final antenna inventory of twelve (12) antennas.

The facility was approved by the Connecticut Siting Council in Docket No. 238 on May 3, 2009. This approval included the conditions that:

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of Sprint and other entities, both public and private, but such tower shall not exceed a height of 180 feet above ground level including all appurtenances.
2. The access road shall avoid Wetland 7 and minimize impact to other wetlands.

This modification complies with the aforementioned conditions.

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 Matthew T. Hoey, III, First Selectman for the Town of Guilford, Erin Mannix, Zoning Enforcement Officer, Crown Castle, the tower owner, and The Ward Family Trust, the 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.

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). Please send approval/rejection letter to Attn: Anne Marie Zsamba.

Sincerely,

Anne Marie Zsamba
Site Acquisition Specialist
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065
(201) 236-9224
AnneMarie.Zsamba@crowncastle.com

Attachments

cc:

Matthew T. Hoey, III, First Selectman
Town of Guilford
31 Park Street
Guilford, CT 06437
203-453-8015

Erin Mannix, Zoning Enforcement Officer
Town of Guilford
50 Boston Street
Guilford, CT 06437
203-453-8039

James & Janice Ward Family Trust, Property Owner
(via email only to ward5950@sbcglobal.net)

2365 Long Hill Road
Guilford, CT 06437

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2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

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Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

From: Zsamba, Anne Marie
To: ward5950@sbcglobal.net
Subject: Notice of Exempt Modification - 2365 Long Hill Road, Guilford - AT&T
Date: Thursday, July 30, 2020 5:57:00 AM
Attachments: EM-AT&T-2365 Long Hill Road GUILFORD-876381_notice.pdf

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Dear Ward Family Trust:

Attached please find AT&T's exempt modification application that is being submitted to the Connecticut Siting Council, today July 30, 2020.

In light of the present circumstances with Covid-19, The Council has advised that electronic notification of this filing is acceptable. If you could kindly confirm receipt. Thank you.

Best,
Anne Marie Zsamba

ANNE MARIE ZSAMBA
Site Acquisition Specialist
T: (201) 236-9224
M: (518) 350-3639
F: (724) 416-6112

CROWN CASTLE
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065
CrownCastle.com

Exhibit A

Original Facility Approval

Connecticut Siting Council
Decisions

DOCKET NO. 238 - Sprint Spectrum, L.P. d/b/a Sprint PCS application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a wireless telecommunications facility located at 2381 Long Hill Road, Guilford, Connecticut.	}	Connecticut
	}	Siting
	}	Council
	}	May 6, 2003

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a wireless telecommunications facility including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Sprint Spectrum L. P. (Sprint) for the construction, maintenance and operation of a wireless telecommunications facility at 2381 Long Hill Road, Guilford, Connecticut with the tower relocated approximately 430 feet to the northwest to keep the tower radius within the property boundaries. The Council will not approve the proposed locations of the tower or access road as proposed in the application.

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

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of Sprint and other entities, both public and private, but such tower shall not exceed a height of 180 feet above ground level including all appurtenances.

2. The access road shall avoid Wetland 7 and minimize impacts to other wetlands.

3. The Certificate Holder shall prepare a D&M Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include: a final site plan(s) for site development to include the location of the tower and the access road and specifications for the tower foundation, placement of carrier antennas, tower height, equipment buildings, security fence, access road, and utility line; construction plans for site clearing, tree trimming, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended; landscaping and provisions to protect the existing vegetative buffer that would extend around the facility compound; a tower finish that may include painting; and provisions for the prevention and containment of spills and/or other discharge into surface water and groundwater bodies.

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

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

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

7. If the facility does not initially provide, or permanently ceases to provide wireless services following completion of construction, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

8. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antenna becomes obsolete and ceases to function.

9. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in The Hartford Courant, The New Haven Register, The Guilford Courier, and the Shore Line Times.

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

The parties and intervenors to this proceeding are:

Applicant	**Its Representative**
Sprint Spectrum, L.P. d/b/a Sprint PCS	Thomas J. Regan, Esquire Brown Rudnick Berlack Israels LLP CityPlace I, 38th Floor 185 Asylum Street Hartford, CT 06103-3402
Intervenor	**Its Representative**
AT&T Wireless PCS, LLC d/b/a AT&T Wireless	Daniel F. Leary, Esq. Cuddy & Feder & Worby 90 Maple Avenue White Plains, NY 10601

Content Last Modified on 6/2/2003 11:20:53 AM

Exhibit B

Property Card

All information is for assessment purposes only. Assessments are calculated at 70% of the estimated October 1, 2017 market value which was the date of the last revaluation as completed by eQuality Valuation Services, LLC.

Information on the Property Records for the Municipality of Guilford was last updated on 7/29/2020.

Parcel Information

Location:	2365 LONG HILL RD	Map and Parcel:	101023B	Census Tract:	1903
Zoning:	R-5	Developer's Map:	4837	Developer's Lot:	
Total Acreage:	12.96	Farm, Forest, Open Space Acres:	11.04	Unique ID:	9786

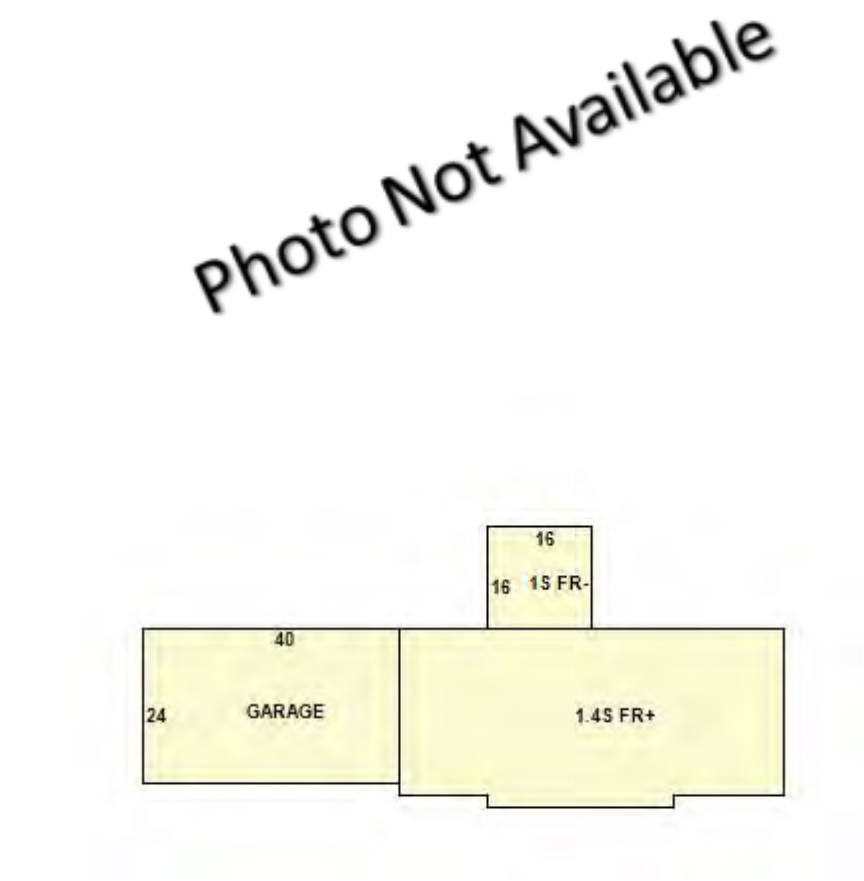
Value Information

	Appraised Value	Assessed Value
Land	1,106,290	712,270
Buildings	231,380	161,970
Detached Outbuildings	18,775	13,140
Total	1,356,445	887,380

Owner's Information

Owner's Data
WARD JAMES J FAMILY & JANICE M FAMILY TRUSTS 2365 LONG HILL RD GUILFORD CT 06437

Building 1



Occupancy:	SINGLE FAMILY	Construction:	WOOD FRAME	Design:	1.4
Story Height:	1.40	Living Area Above Ground:	2,521	Year Built:	2004
Year Remodeled:		Condition:	GOOD	Foundation:	POURED CONC
Exterior Siding:	VINYL	Roofing:	ARCH SHINGLES	Heating:	HWBB

Fuel:	OIL	A/C Percent:	80%	Total Rooms:	5
Total Bedrooms:	1	Kitchens:	1	Full Baths:	2
Half Baths:	0	Extra Fixtures:	2	Basement Finished Area:	0

Special Features

CHIMNEYS	1

Attached Components

Type:	Year Built:	Area:
ATT FRAME GARAGE	2004	960

Detached Outbuildings

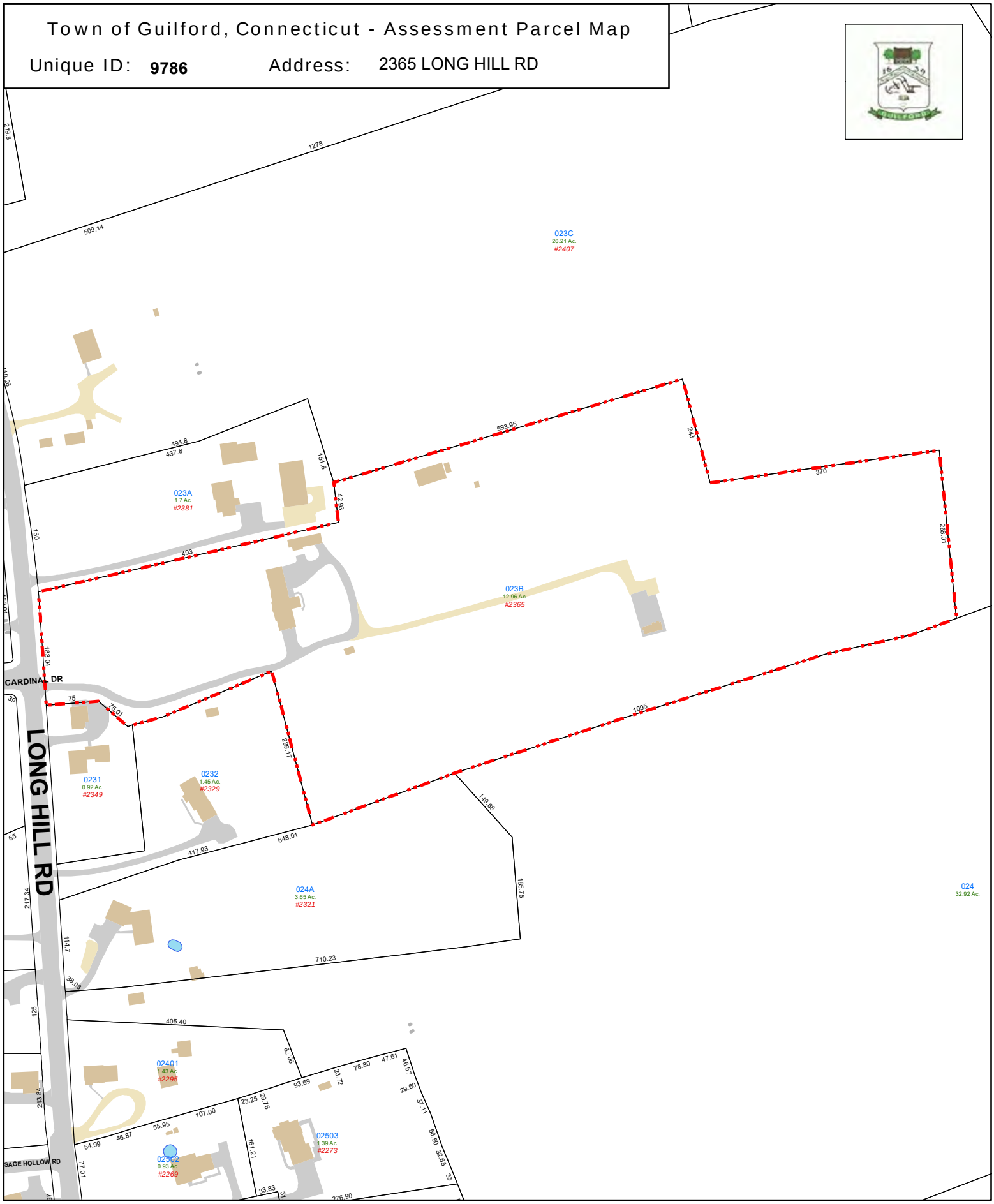
Type:	Year Built:	Length:	Width:	Area:
DET FRAME 1.40 BARN	2004	48	24	1,152
FRAME SHED	2004	22	12	264

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Valid Sale	Sale Price
WARD JAMES J FAMILY & JANICE M FAMILY	0689	933+	03/17/2005	Quit Claim	No	$0
WARD JAMES J & JANICE M	0643	1009	09/19/2003	Quit Claim	No	$0

Town of Guilford, Connecticut - Assessment Parcel Map

Unique ID: **9786** Address: 2365 LONG HILL RD



Approximate Scale: 1 inch = 200 feet

0 130 260 Feet

Map Produced: April 2019

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

Exhibit C

Construction Drawings

AT&T

AT&T SITE NUMBER: CTL05640
AT&T SITE NAME: GUILDFORD
AT&T FA CODE: 10071056
AT&T PACE NUMBER: MRCTB047186

AT&T PTN NUMBER: 2051A0VC9J

BUSINESS UNIT #: 876381
SITE ADDRESS: 2381 LONG HILL RD
GUILFORD, CT 06437

COUNTY: NEW HAVEN
TOWER HEIGHT: 176'-0"
SITE TYPE: MONOPOLE

PROJECT: AT&T LTE 5C

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	WARD
SITE ADDRESS:	2381 LONG HILL RD GUILFORD, CT 06437
COUNTY:	NEW HAVEN
MAP/PARCEL #:	101023B
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.3467389
LONGITUDE:	-72.7222881
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	177'
CURRENT ZONING:	R-5
JURISDICTION:	TOWN OF GUILFORD
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	WARD JAMES J FAMILY & JANICE M FAMILY 2365 LONG HILL RD GUILFORD, CT 06437
TOWER OWNER:	CROWN CASTLE USA 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	AT&T TOWER ASSET GROUP 575 MOROSGO DRIVE ATLANTA, GA 30324-3300
ELECTRIC PROVIDER:	NOT PROVIDED
TELCO PROVIDER:	NOT PROVIDED

PROJECT TEAM

A&E FIRM:	B+T GROUP 1717 S BOULDER AVE, SUITE 300 TULSA, OK 74119 moakes@btgrp.com
CROWN CASTLE USA INC. DISTRICT CONTACTS:	3 CORPORATE PARK DRIVE, SUITE 101 CLIFTON PARK, NY 12065 HEATHER SIMEONE - PROJECT MANAGER HEATHER.SIMEONE@CROWNCASTLE.COM JOE OLSEN - A&E SPECIALIST JOSEPH.OLSEN@CROWNCASTLE.COM

APPLICABLE CODES

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 CTSBC (2015 IBC)
MECHANICAL	2018 CTSBC (2015 IMC)
ELECTRICAL	2017 NEC

DRAWING INDEX

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

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 24X36. 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.

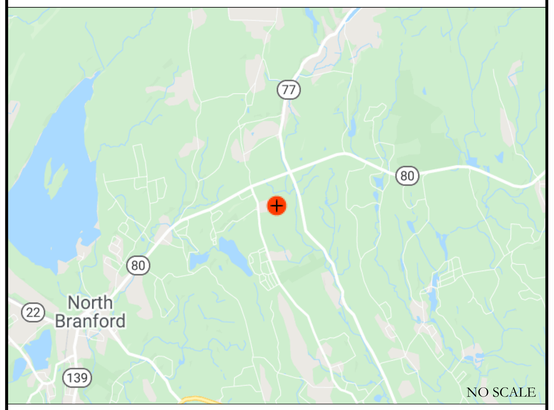
PROJECT DESCRIPTION

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

TOWER SCOPE OF WORK
- INSTALL (3) CCI - OPA65R-BU6DA ANTENNAS
- INSTALL (3) NOKIA - 4478 B14 RRHs
- INSTALL (1) RAYCAP - DC6-48-60-0-8F SURGE SUPPRESSOR
- INSTALL (2) ROSENBERGER LEONI - WR-VG86ST-BRD DC TRUNKS
- ADJUST PIPE MOUNTS AS NECESSARY TO ACHIEVE 3'-0" SIDE-TO-SIDE ANTENNA SPACING

GROUND SCOPE OF WORK
- INSTALL (1) BREAKER PANEL FLEX CABINET
- INSTALL (1) IDLe

LOCATION MAP



DEPART 7900 XERXES AVE S, BLOOMINGTON, MN 55431. HEAD SOUTH TOWARD AMERICAN BLVD W. TURN RIGHT AT THE 1ST CROSS STREET ONTO AMERICAN BLVD W. TURN RIGHT ONTO FRANCE AVE S. TURN RIGHT TO MERGE ONTO I-494 E. KEEP LEFT AT THE FORK TO STAY ON I-494 E. TAKE EXIT 58B TO MERGE ONTO I-94 E TOWARD MADISON. ENTERING WISCONSIN. KEEP LEFT TO CONTINUE ON I-90 E/I-94 E. KEEP RIGHT AT THE FORK TO CONTINUE ON I-39 S/I-90 E. ENTERING ILLINOIS. KEEP LEFT AT THE FORK TO CONTINUE ON I-90 E. KEEP LEFT AT THE FORK TO STAY ON I-90 E. KEEP LEFT TO STAY ON I-90 E. KEEP LEFT AT THE FORK TO STAY ON I-90 E. KEEP RIGHT AT THE FORK TO CONTINUE ON I-90 E/I-94 E. KEEP LEFT AT THE FORK TO CONTINUE ON I-90 E, FOLLOW SIGNS FOR INTERSTATE 90 SKYWAY E/INDIANA TOLL RD. PASSING THROUGH INDIANA. ENTERING OHIO. KEEP LEFT AT THE FORK TO CONTINUE ON I-80 E. TAKE EXIT 218 FOR I-80 E. KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR MAHONING AVE/OH-18. KEEP LEFT, FOLLOW SIGNS FOR YOUNGSTOWN AND MERGE ONTO I-80 E. KEEP LEFT AT THE FORK TO STAY ON I-80 E, FOLLOW SIGNS FOR INTERSTATE 80 E/OH-11 N/NEW YORK CITY. PASSING THROUGH PENNSYLVANIA. ENTERING NEW JERSEY. KEEP RIGHT TO STAY ON I-80 E, FOLLOW SIGNS FOR INTERSTATE 80 E/PATERSON/NEW YORK. KEEP LEFT AT THE FORK TO CONTINUE ON I-80 EXPRESS E. TAKE THE I-95 N EXIT ON THE LEFT TOWARD NEW YORK. MERGE ONTO I-95 EXPRESS N. CONTINUE ONTO INTERSTATE 95 UPPER LEVEL N/NJ TPKE N. CONTINUE ONTO U.S. 9 N/INTERSTATE 95 UPPER LEVEL N. ENTERING NEW YORK. CONTINUE ONTO INTERSTATE 95 UPPER LEVEL N/US-1 UPPER LEVEL N. CONTINUE ONTO I-95 N. KEEP LEFT AT THE FORK TO STAY ON I-95 N, FOLLOW SIGNS FOR INTERSTATE 95 N/NEW HAVEN. KEEP LEFT TO STAY ON I-95 N. ENTERING CONNECTICUT. TAKE EXIT 56 FOR LEETES ISLAND RD TOWARD STONY CREEK. TURN LEFT ONTO LEETES ISLAND RD. CONTINUE ONTO SCHOOL GROUND RD. TURN RIGHT ONTO CT-139 N. TURN RIGHT ONTO CT-22 E/CT-80 E. CONTINUE TO FOLLOW CT-80 E. TURN RIGHT ONTO LONG HILL RD. TURN LEFT AT CARDINAL DR. ARRIVE AT GUILDFORD.

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

SITE PHOTO

REFERENCE DOCUMENTS

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	BY OTHERS
DATED:	6/16/20
MOUNT ANALYSIS:	BY OTHERS
DATED:	6/11/20
RFDS REVISION:	1.00
DATED:	3/19/20
ORDER ID:	517086
REVISION:	0

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

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:
CTL05640

BU #: **876381**
WARD

2381 LONG HILL RD
GUILFORD, CT 06437

EXISTING
176'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	7/12/20	RMC	PRELIMINARY REVIEW	MJP
B	7/18/20	GEH	PRELIMINARY REVIEW	RCM
0	7/22/20	RCM	CONSTRUCTION	RCM

STATE OF CONNECTICUT
7/22/20
31627
LICENSED
PROFESSIONAL ENGINEER

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

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" 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
CLIFTON PARK, NY 12065

B+T GRP
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SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
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AT&T SITE NUMBER:
CTL05640

BU #: **876381**
WARD

2381 LONG HILL RD
GUILFORD, CT 06437

EXISTING
176'-0" MONOPOLE

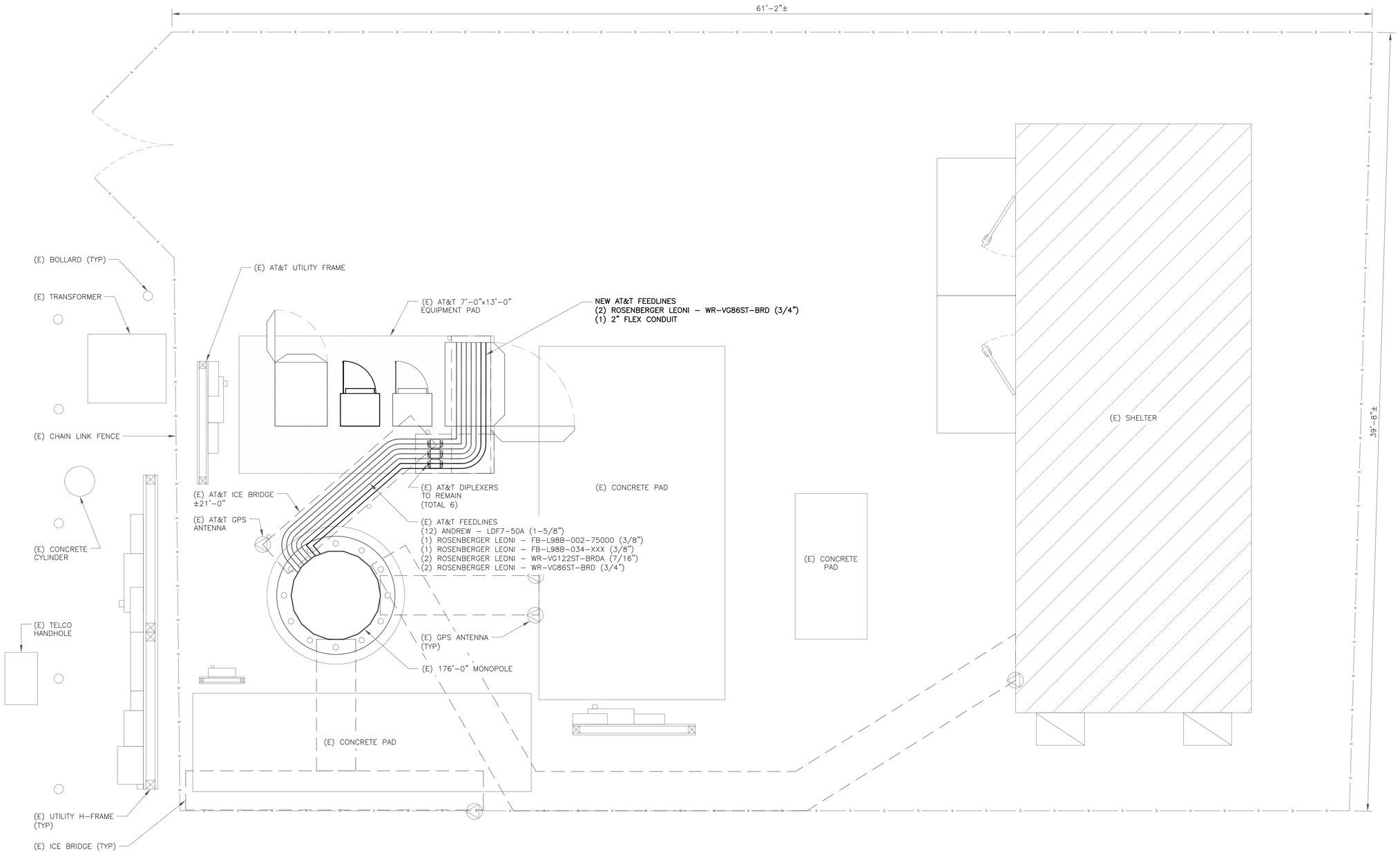
ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	7/12/20	RMC	PRELIMINARY REVIEW	MJP
B	7/18/20	GEH	PRELIMINARY REVIEW	RCM
0	7/22/20	RCM	CONSTRUCTION	RCM

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

SHEET NUMBER: **T-2**
REVISION: **0**

85638_003_Ward.dwg – Sheet:T-2 – User: rmcclure – Jul 22, 2020 – 4:25pm



1 SITE PLAN
SCALE: 2' 1' 0 2' 3/8"=1'-0" (FULL SIZE) 3/16"=1'-0" (11x17)

N

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

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

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

AT&T SITE NUMBER:
CTL05640

BU #: **876381**
WARD

2381 LONG HILL RD
GUILFORD, CT 06437

EXISTING
176'-0" MONOPOLE

ISSUED FOR:

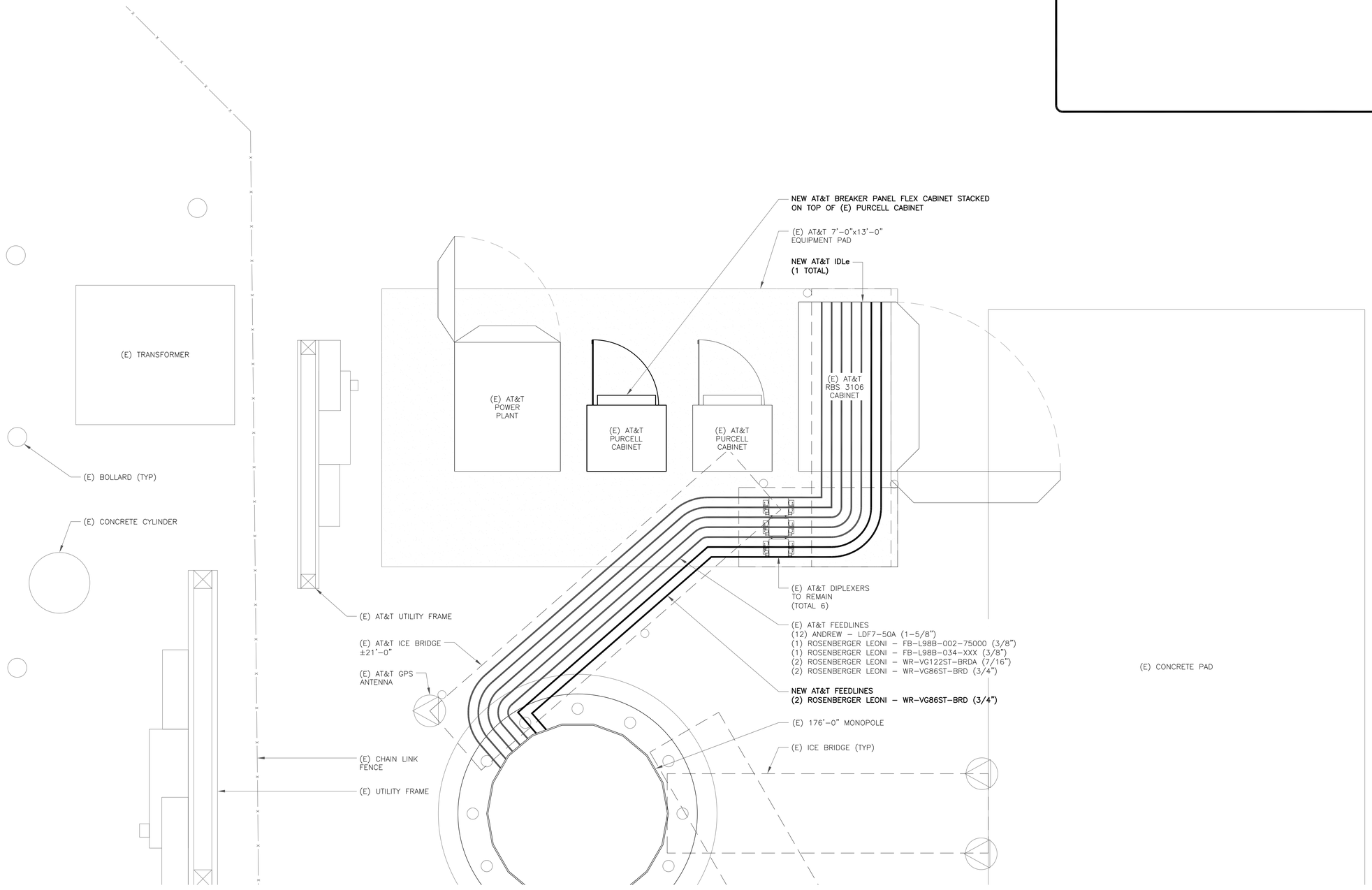
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	7/12/20	RMC	PRELIMINARY REVIEW	MJP
B	7/18/20	GEH	PRELIMINARY REVIEW	RCM
0	7/22/20	RCM	CONSTRUCTION	RCM

STATE OF CONNECTICUT
MICHAEL J. PERRONE
31627
LICENSED PROFESSIONAL ENGINEER
7/22/20

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

SHEET NUMBER: C-1.1
REVISION: 0

GROUND SCOPE OF WORK:
- INSTALL (1) BREAKER PANEL FLEX CABINET
- INSTALL (1) IDLe



1 FINAL EQUIPMENT PLAN

SCALE: 1' 6" 0 1' — 3/4"=1'-0" (FULL SIZE) 3/8"=1'-0" (11x17)

N

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

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

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STATE OF CONNECTICUT — 31627 LICENSED PROFESSIONAL ENGINEER — 7/22/20

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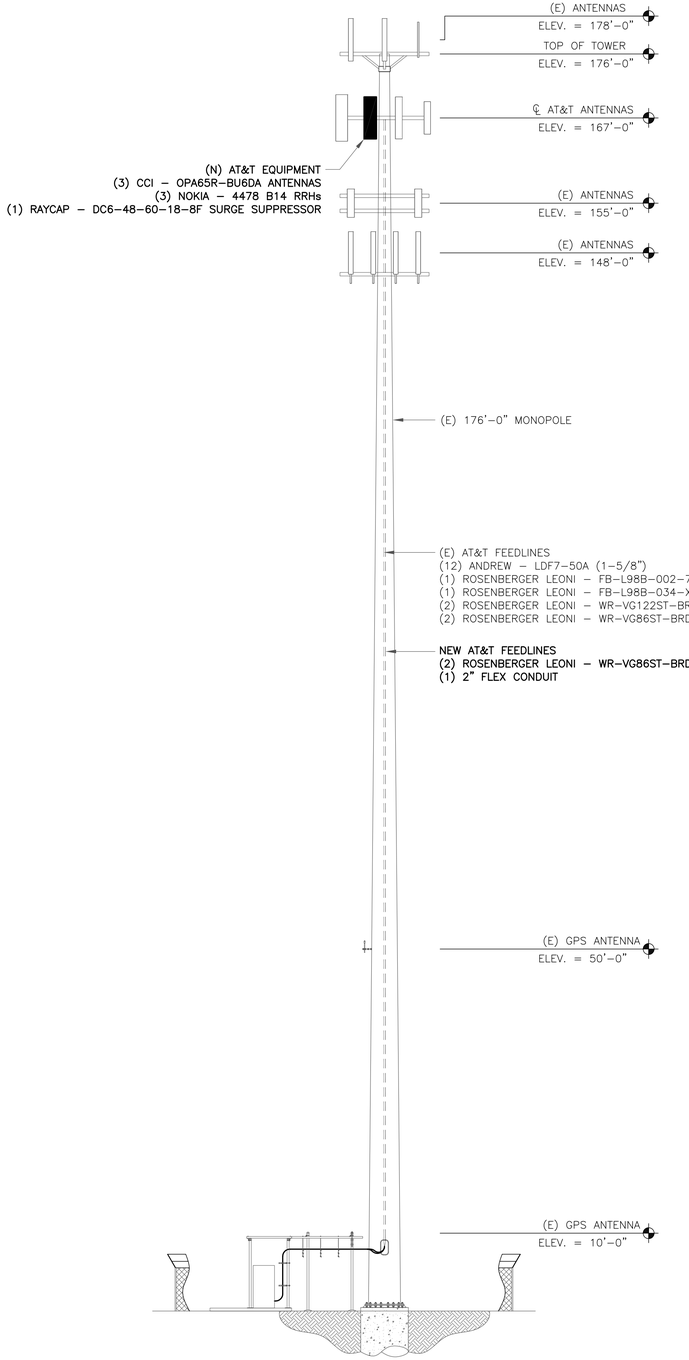
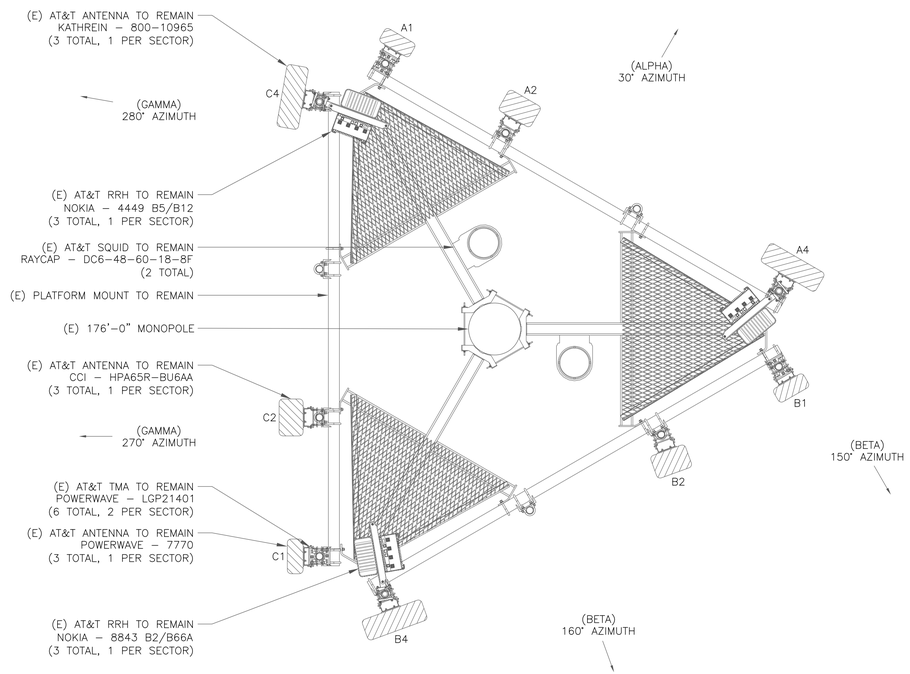
SHEET NUMBER: C-1.2

REVISION: 0

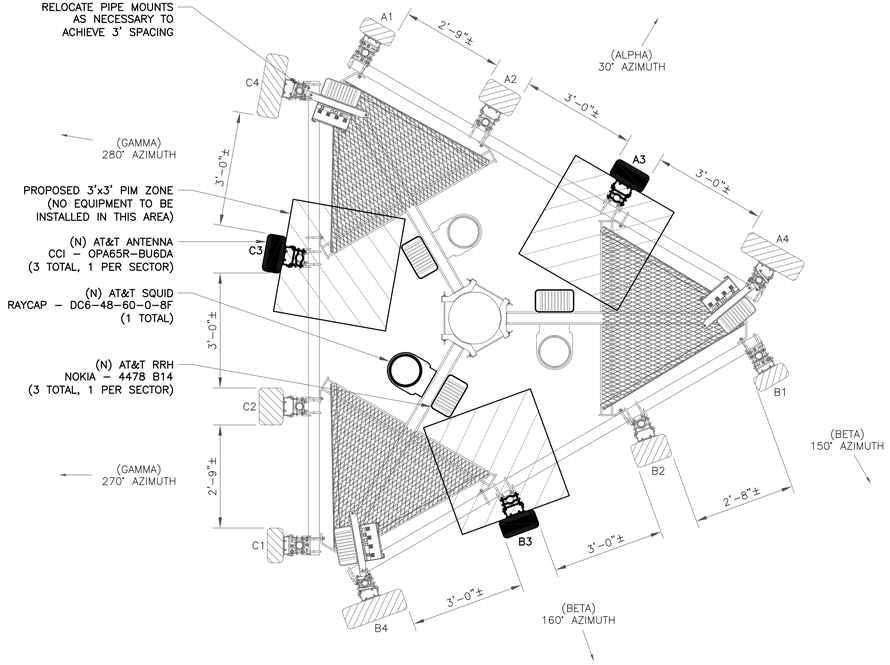


1 FINAL ELEVATION
SCALE: NOT TO SCALE



2 EXISTING ANTENNA PLAN
SCALE: NOT TO SCALE

N



3 FINAL ANTENNA PLAN
SCALE: NOT TO SCALE

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.

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.

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REVISION: 0

FINAL ANTENNA AND COAXIAL CABLE SCHEDULE

POS.	TECH	STATUS	AZIMUTH	ANTENNA TYPE	ANTENNA RAD CENTER	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	MAIN COAX SIZE	MAIN COAX LENGTH	COAX QTY	TMA QTY AND MODEL	SURGE PROTECTION	DC/FIBER CABLES	RRHs QTY & MODEL	LOCATION	DIPLEXER ON TOWER	DIPLEXER ON GROUND	RET CABLE
ALPHA SECTOR																		
A1	UMTS	EXISTING	30°	POWERWAVE 7770	167'-0"	0°	8°	1 5/8"	217'-0"	2	(2) LGP21401	DC6-48-60-18-8F	(1) 3/8" FIBER (2) 3/4" DC LINES	–	–	N	2	Y
A2	LTE	EXISTING	30°	CCI HPA-65R-BU6AA	167'-0"	0°	6°/6°	1 5/8"	217'-0"	2	–			–	–	N	N	Y
A3	**LTE**	**NEW**	**30°**	**CCI OPA65R-BU6DA**	**167'-0"**	**0°**	**8°**	**–**	**–**	**–**	**–**			**(1) 4478 B14**	**TOWER**	**N**	**N**	**Y**
A4	LTE/5G	EXISTING	30°	KATHREIN 800-10965	167'-0"	0°	8°/8°/6°/8°	–	–	–	–			(1) 4449 B5/B12 (1) 8843 B2/B66A	TOWER	N	N	Y
BETA SECTOR																		
B1	UMTS	EXISTING	150°	POWERWAVE 7770	167'-0"	0°	8°	1 5/8"	217'-0"	2	(2) LGP21401	DC6-48-60-18-8F	(1) 3/8" FIBER (2) DC LINES (7/16")	–	–	N	2	Y
B2	LTE	EXISTING	160°	CCI HPA-65R-BU6AA	167'-0"	0°	6°/6°	1 5/8"	217'-0"	2	–			–	–	N	N	Y
B3	**LTE**	**NEW**	**160°**	**CCI OPA65R-BU6DA**	**167'-0"**	**0°**	**8°**	**–**	**–**	**–**	**–**			**(1) 4478 B14**	**TOWER**	**N**	**N**	**Y**
B4	LTE/5G	EXISTING	160°	KATHREIN 800-10965	167'-0"	0°	8°/8°/6°/8°	–	–	–	–			(1) 4449 B5/B12 (1) 8843 B2/B66A	TOWER	N	N	Y
GAMMA SECTOR																		
C1	UMTS	EXISTING	270°	POWERWAVE 7770	167'-0"	0°	8°	1 5/8"	217'-0"	2	(2) LGP21401	DC6-48-60-0-8F	(2) 3/4" DC LINES	–	–	N	2	Y
C2	LTE	EXISTING	270°	CCI HPA-65R-BU6AA	167'-0"	0°	6°/6°	1 5/8"	217'-0"	2	–			–	–	N	N	Y
C3	**LTE**	**NEW**	**280°**	**CCI OPA65R-BU6DA**	**167'-0"**	**0°**	**8°**	**–**	**–**	**–**	**–**			**(1) 4478 B14**	**TOWER**	**N**	**N**	**Y**
C4	LTE/5G	EXISTING	280°	KATHREIN 800-10965	167'-0"	0°	8°/8°/6°/8°	–	–	–	–			(1) 4449 B5/B12 (1) 8843 B2/B66A	TOWER	N	N	Y

NOTE: BOLD DENOTES NEW EQUIPMENT

1 FINAL ANTENNA AND COAXIAL CABLE SCHEDULE
SCALE: NOT TO SCALE

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STATE OF CONNECTICUT
MATTHEW J. PERRY
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7/22/20

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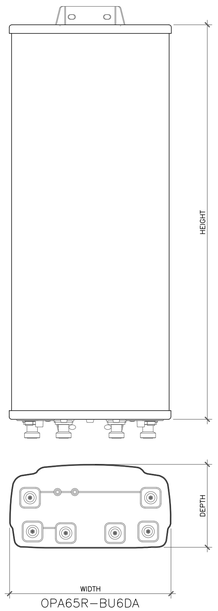
SHEET NUMBER: C-3

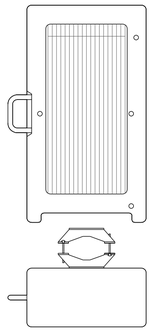
REVISION: 0



OPA65R–BU6DA

ANTENNA DIMENSIONS (INCHES)				
MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
OPA65R–BU6DA	71.2"	21"	7.8"	63.5 lbs

1 NOT USED
SCALE: NOT TO SCALE

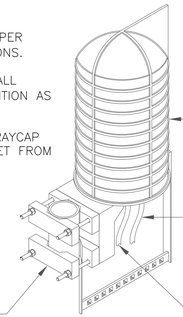


NOKIA – 4478 B14
WEIGHT (FULLY EQUIPPED): 59.9 LBS
SIZE (HxWxD): 16.5x13.4x7.7 IN.
CONNECTOR TYPE: 4.3–10 FEMALE (4 TOTAL PORTS)

2 NOKIA – 4478 B14
SCALE: NOT TO SCALE

NOTES:

1. UNIT SHALL BE MOUNTED AS PER MANUFACTURER'S RECOMMENDATIONS.
2. CONTRACTOR SHALL TIGHTEN ALL BOLTS TO A "SNUG TIGHT" CONDITION AS DEFINED BY AISC.
3. CONTRACTOR SHALL INSTALL RAYCAP DISTRIBUTION UNIT WITHIN 15 FEET FROM ALL RRHS.



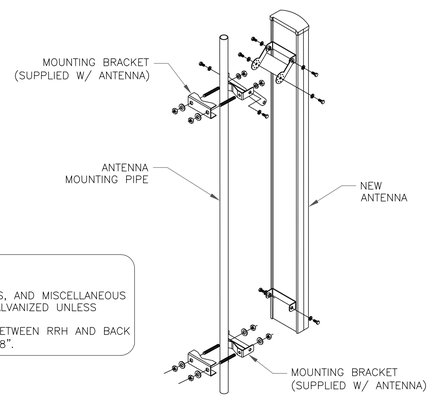
PROPOSED RAYCAP FIBER AND DC DISTRIBUTION UNIT W/ INTEGRATED SURGE PROTECTOR MOUNTED TO ANTENNA MOUNT ARM (PART# DC6–48–60–18–8F) (SEE NOTE 3) (TYP. OF 1)

PROPOSED DC CABLE ROUTED FROM EQUIPMENT PAD. (2) 3/4" ROSENBERGER DUAL PAIR POWER CABLES PART# WR–VG86ST–BRD

RAYCAP MOUNT BRACKET MOUNT TO TOWER LEGS (PROVIDED BY MANUFACTURER)

PROPOSED DC CABLE ROUTED TO PROPOSED RRU UNITS. (2) ROSENBERGER DUAL PAIR POWER CABLES PART# WR–VG86ST–BRD (TYP. PER RRU)

3 RAYCAP – DC6–48–60–18–8F
SCALE: NOT TO SCALE



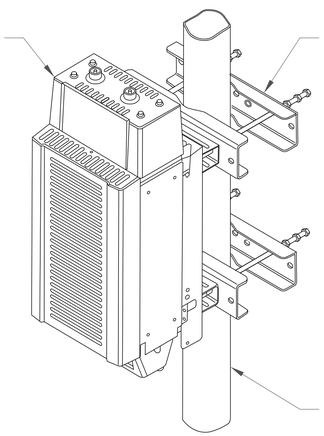
INSTALLER NOTE:

1. ALL PIPES, BRACKETS, AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE.
2. MINIMUM DISTANCE BETWEEN RRH AND BACK OF ANTENNA TO BE 8".

4 ANTENNA MOUNTING DETAIL
SCALE: NOT TO SCALE

NOTES:

1. ERICSSON VIA AT&T SUPPLIES RRH, RRH POLE–MOUNTING BRACKET. SUBCONTRACTOR SHALL SUPPLY POLE/PIPE AND INSTALL ALL MOUNTING HARDWARE INCLUDING ERICSSON RRH POLE–MOUNTING BRACKET. ERICSSON INSTALLS RRH AND MAKES CABLE TERMINATIONS.
2. FOR POLE DIAMETERS FROM 6" TO 15", ERICSSON CAN SUPPLY A PAIR OF POLE MOUNTING METAL BANDS WITH BOLTING WELDMENT.
3. NO PAINTING OF THE RRH OR SOLAR SHIELD IS ALLOWED



5 RRH MOUNTING DETAIL
SCALE: NOT TO SCALE

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B&T ENGINEERING, INC.
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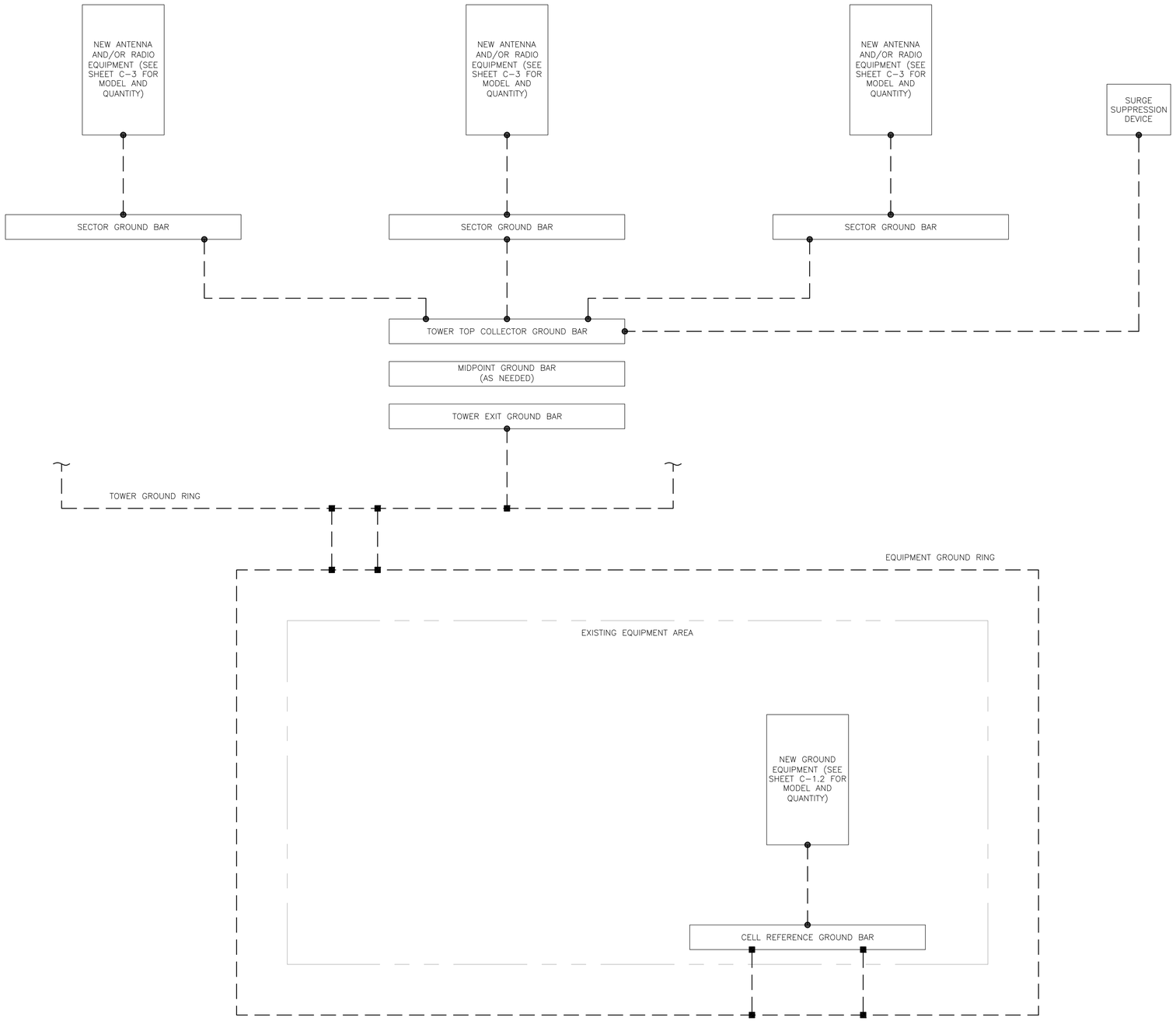
SHEET NUMBER: C-4

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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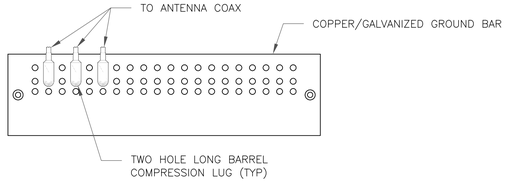
SHEET NUMBER: G-1

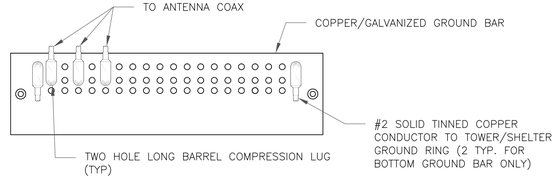
REVISION: 0



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 TOWER STEEL.

1 ANTENNA GROUND BAR DETAIL
SCALE: NOT TO SCALE

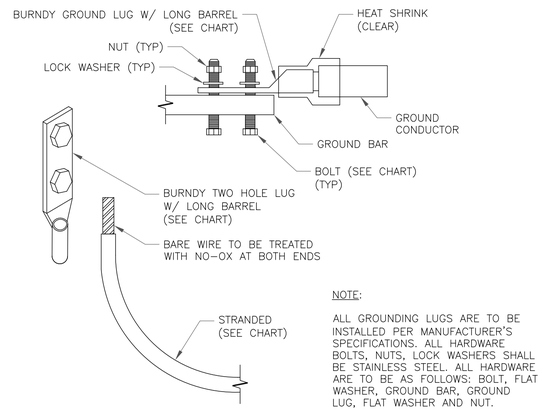


NOTES:

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

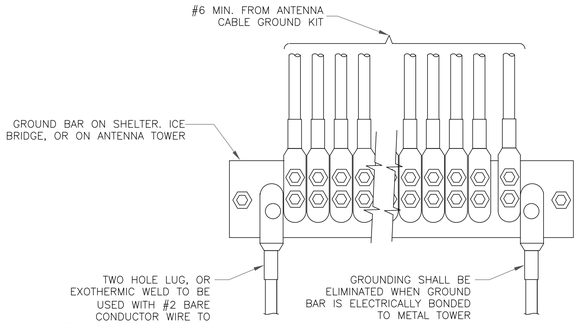
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 SOLID TINNED	YA3C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 STRANDED	YA2C-2TC38	3/8" - 16 NC SS 2 BOLT
#2/0 STRANDED	YA26-2TC38	3/8" - 16 NC SS 2 BOLT
#4/0 STRANDED	YA28-2N	1/2" - 16 NC SS 2 BOLT



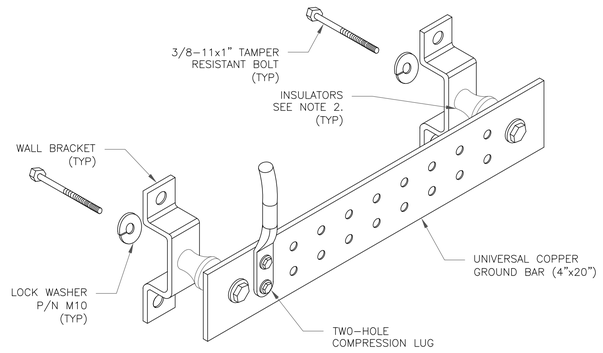
NOTE:

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

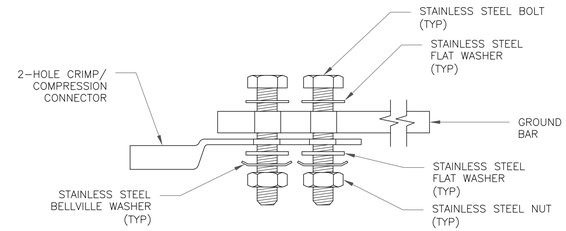


NOTES:

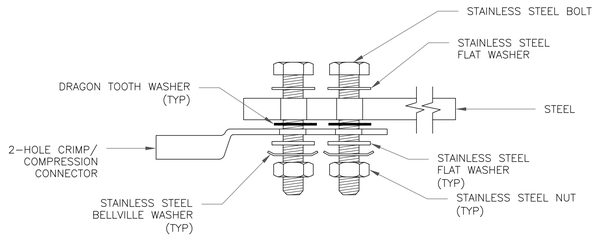
1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.

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

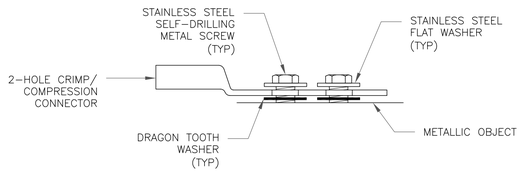
5 GROUND BAR DETAIL
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS

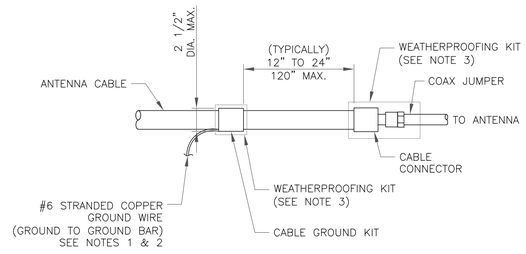


SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

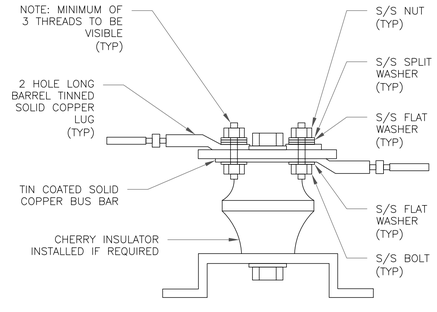
8 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



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

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:
CTL05640

BU #: **876381**
WARD

2381 LONG HILL RD
GUILFORD, CT 06437

EXISTING
176'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	7/12/20	RMC	PRELIMINARY REVIEW	MJP
B	7/18/20	GEH	PRELIMINARY REVIEW	RCM
0	7/22/20	RCM	CONSTRUCTION	RCM

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

SHEET NUMBER: G-2

REVISION: 0

Diagram - Sector	A	Diagram File Name - CT5640_A_B_C_LTE5C_700B14_Rev1.vsd					
Atoll Site Name -	CTL05640	Location Name -	GUILDFORD	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND
Comments: Important Note: For detailed radio to antenna wiring refer to the latest field notice - Antenna_Radio Connection Drawings Playbook v6.0_Ericsson							

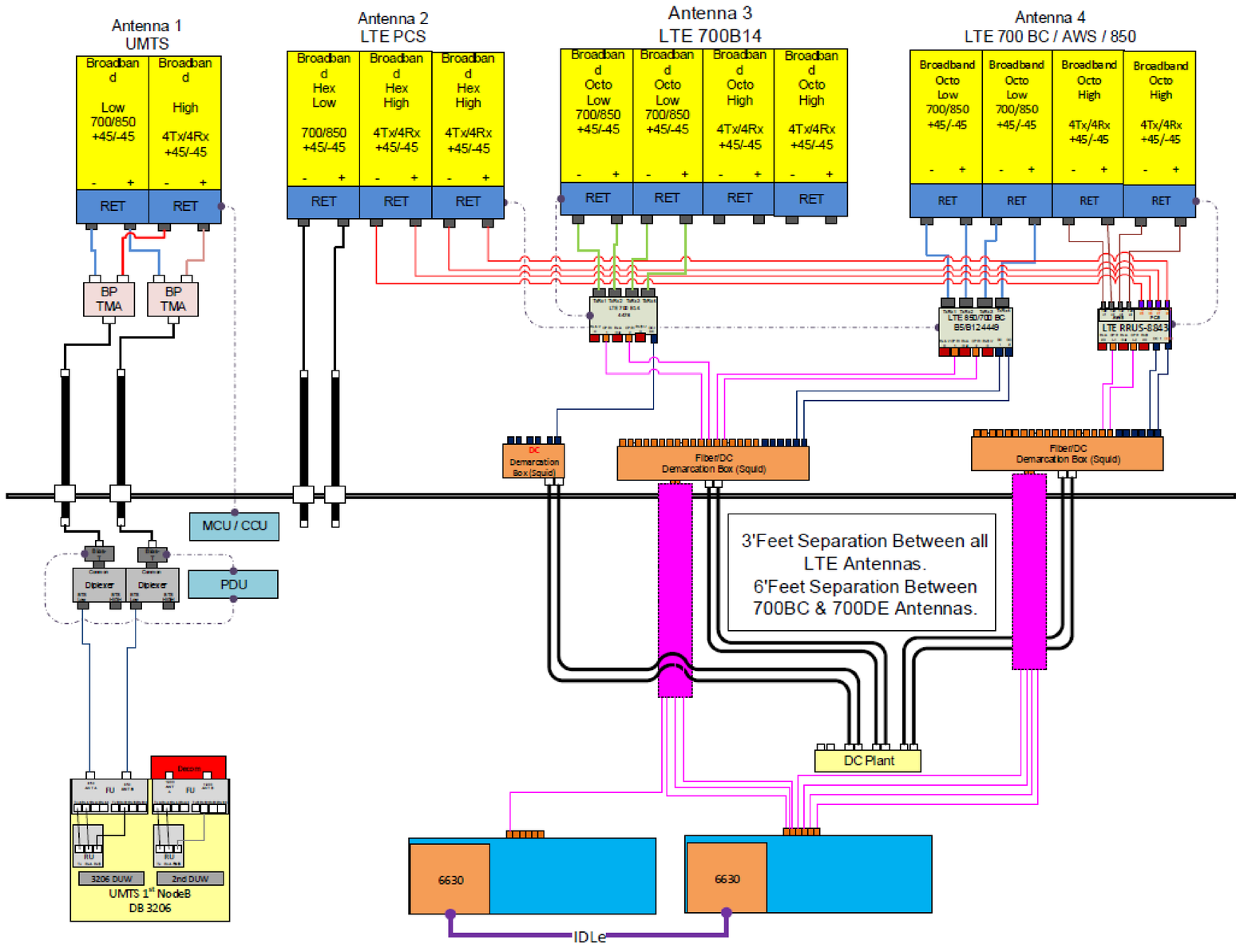


Diagram - Sector	B	Diagram File Name - CT5640_A_B_C_LTE5C_700B14_Rev1.vsd					
Atoll Site Name -	CTL05640	Location Name -	GUILDFORD	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND
Comments: Important Note: For detailed radio to antenna wiring refer to the latest field notice - Antenna_Radio Connection Drawings Playbook v6.0_Ericsson							

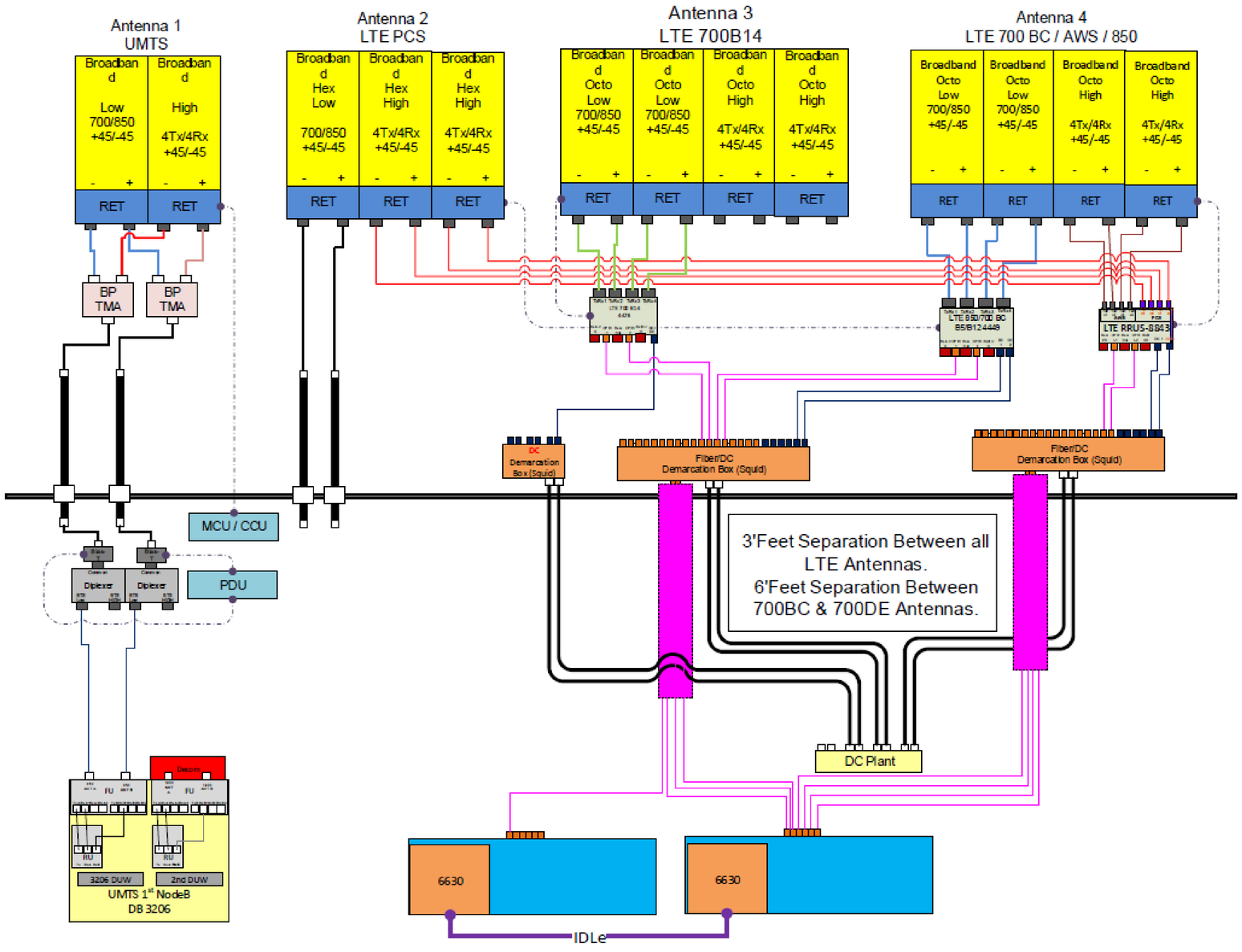


Diagram - Sector	C	Diagram File Name - CT5640_A_B_C_LTE5C_700B14_Rev1.vsd					
Atoll Site Name -	CTL05640	Location Name -	GUILDFORD	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND
Comments: Important Note: For detailed radio to antenna wiring refer to the latest field notice - Antenna_Radio Connection Drawings Playbook v6.0_Ericsson							

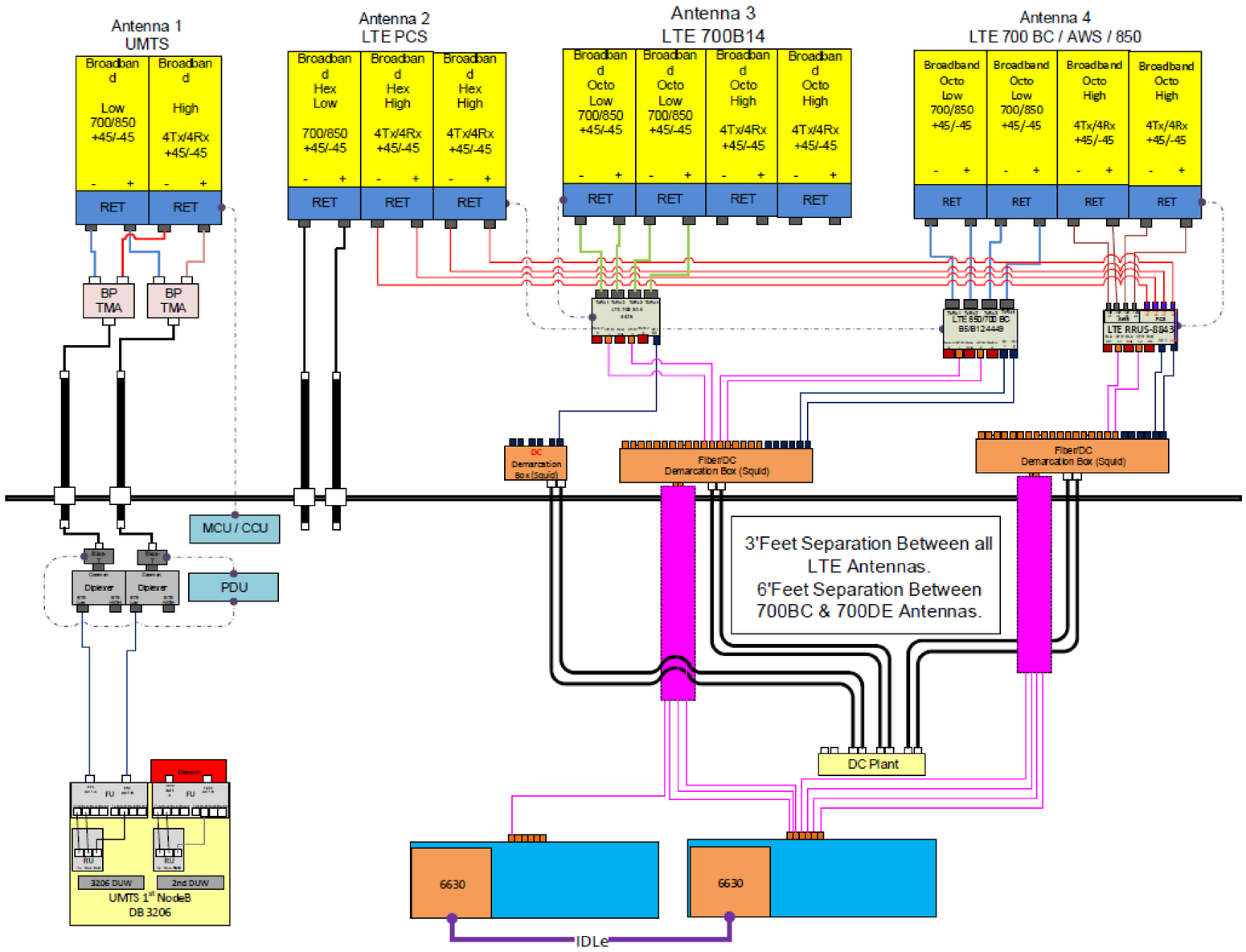


Exhibit D

Structural Analysis Report

Date: **June 16, 2020**

Onnesta Gillis
Crown Castle
8000 Avalon Blvd., Suite 700
Alpharetta, GA 30009

Tower Engineering Professionals
326 Tryon Road
Raleigh, NC 27603
(919) 661-6351

Subject: Structural Analysis Report

Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	CTL05640
	Carrier Site Name:	Guildford
Crown Castle Designation:	**Crown Castle BU Number:**	876381
	Crown Castle Site Name:	Ward
	Crown Castle JDE Job Number:	605417
	Crown Castle Work Order Number:	1858738
	Crown Castle Order Number:	517086 Rev. 0
Engineering Firm Designation:	**TEP Project Number:**	51819.424352
Site Data:	**2381 Long Hill Rd., Guilford, New Haven County, CT 06437** **Latitude *41° 20' 47.34"*, Longitude *-72° 43' 23.15"*** **176 Foot - Monopole Tower**	

Dear Onnesta Gillis,

Tower Engineering Professionals 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 - 91.7%**

This analysis utilizes an ultimate 3-second gust wind speed of 130 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Anqi Wang / DAR

Respectfully submitted by:

Aaron T. Rucker, P.E.

Electronic Copy

06/16/2020

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5) APPENDIX A
tnxTower Output

6) APPENDIX B
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7) APPENDIX C
Additional Calculations

1) INTRODUCTION

This tower is a 176-ft monopole tower designed by Engineered Endeavors, Inc. The tower has been modified multiple times in the past to accommodate additional loading.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	130 mph
Exposure Category:	B
Topographic Factor:	1.0
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

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)
167.0	167.0	3	CCI Antennas	HPA65R-BU6A w/ Mount Pipe	12 4 2 2	1-5/8 3/4 7/16 3/8
		3	CCI Antennas	OPA65R-BU6D w/ Mount Pipe		
		3	Kathrein	80010965 w/ Mount Pipe		
		3	Powerwave Technologies	7770.00 w/ Mount Pipe		
		3	Ericsson	RRUS 4449 B5/B12		
		3	Ericsson	RRUS 4478 B14		
		3	Ericsson	RRUS 8843 B2/B66A		
		6	Powerwave Technologies	LGP21401		
		3	Raycap	DC6-48-60-18-8F		
		1	Tower Mounts	Platform Mount [LP 303-1]		

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)
176.0	178.0	3	Commscope	DT465B-2XR w/ Mount Pipe	3 1	1/2 1-1/4
		3	RFS Celwave	APXVTM14-C-120 w/ Mount Pipe		
		3	Alcatel Lucent	RRH2X50-800		
	176.0	3	Alcatel Lucent	TD-RRH8x20-25		
		9	RFS Celwave	ACU-A20-N		
		1	Tower Mounts	Side Arm Mount [SO 701-3]		
		1	Tower Mounts	Platform Mount [LP 712-1]		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
174.0	176.0	3	Alcatel Lucent	800 External Notch Filter	-	-
	175.0	3	Alcatel Lucent	800MHZ RRH		
	174.0	1	Tower Mounts	Side Arm Mount [SO 102-3]		
	173.0	3	Alcatel Lucent	PCS 1900MHz 4x45W-65MHz		
169.0	169.0	1	Tower Mounts	Side Arm Mount [SO 102-3]	-	-
		1	Tower Mounts	Side Arm Mount [SO 701-3]		
155.0	155.0	3	Ericsson	AIR 21 B2A B4P	13	1-5/8
		3	RFS Celwave	APXVAARR24_43-U-NA20		
		3	Ericsson	AIR -32 B2A/B66AA		
		3	Ericsson	Radio 4449 B12/B71		
		3	Ericsson	KRY 112 144/1		
		1	Tower Mounts	Platform Mount [LP 301-1]		
145.0	148.0	6	Amphenol	BXA-171063-12CF-EDIN-X w/ Mount Pipe	2	1-1/4
		6	Amphenol	BXA-70063-6CF-EDIN-X w/ Mount Pipe		
	145.0	3	Alcatel Lucent	RRH2X40-07-U		
		3	Alcatel Lucent	RRH2X40-AWS		
		1	RFS Celwave	DB-B1-6C-8AB-0Z		
		1	Tower Mounts	Platform Mount [LP 303-1]		
50.0	51.0	1	Lucent	KS24019-L112A	1	1/2
	50.0	1	Tower Mounts	Side Arm Mount [SO 701-1]		
10.0	12.0	1	Kathrein	OG-860/1920/GPS-A	1	1/4
	10.0	1	Tower Mounts	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
Geotechnical Report	Jaworski Geotech, Inc.	1532993	CCISites
Tower Foundation Drawings	Engineered Endeavors, Inc.	1614617	CCISites
Tower Manufacturer Drawings	Engineered Endeavors, Inc.	1613550	CCISites
Tower Design Calculations	Engineered Endeavors, Inc.	1614660	CCISites
Tower Reinforcement Drawings	Tower Engineering Professionals	4318894	CCISites
Post-Modification Inspection	Tower Engineering Professionals	5163807	CCISites
Tower Reinforcement Drawings	Tower Engineering Professionals	5650483	CCISites
Post-Modification Inspection	FDH Velocitel, Inc.	5885207	CCISites

3.1) Analysis Method

tnxTower (version 8.0.5.0), 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.

tnxTower was used to determine the loads on the modified structure. Additional calculations were performed to determine the stresses in the pole and in the reinforcing elements. These calculations are presented in Appendix C.

3.2) Assumptions

1) The 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. Tower Engineering Professionals should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)[1,2]

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
176 - 171	Pole	TP17.626x16.5x0.1875	Pole	9.8%	Pass
171 - 166	Pole	TP18.752x17.626x0.1875	Pole	19.9%	Pass
166 - 161	Pole	TP19.878x18.752x0.1875	Pole	34.2%	Pass
161 - 156	Pole	TP21.004x19.878x0.1875	Pole	46.3%	Pass
156 - 151	Pole	TP22.13x21.004x0.1875	Pole	60.9%	Pass
151 - 147.75	Pole	TP23.65x22.13x0.1875	Pole	69.6%	Pass
147.75 - 142.75	Pole	TP23.601x22.487x0.3125	Pole	49.3%	Pass
142.75 - 137.75	Pole	TP24.714x23.601x0.3125	Pole	56.5%	Pass
137.75 - 132.75	Pole	TP25.828x24.714x0.3125	Pole	62.4%	Pass
132.75 - 127.75	Pole	TP26.942x25.828x0.3125	Pole	67.3%	Pass
127.75 - 127.5	Pole	TP26.998x26.942x0.3125	Pole	67.5%	Pass
127.5 - 122.5	Pole	TP28.111x26.998x0.3125	Pole	71.6%	Pass
122.5 - 120.75	Pole	TP28.501x28.111x0.3125	Pole	72.9%	Pass
120.75 - 120.5	Pole	TP28.557x28.501x0.3125	Pole	73.0%	Pass
120.5 - 117.25	Pole	TP29.281x28.557x0.3125	Pole	75.3%	Pass
117.25 - 117	Pole + Reinf.	TP29.337x29.281x0.5375	Reinf. 4 Tension Rupture	71.1%	Pass
117 - 112	Pole + Reinf.	TP30.45x29.337x0.525	Reinf. 4 Tension Rupture	75.1%	Pass
112 - 107	Pole + Reinf.	TP31.564x30.45x0.525	Reinf. 4 Tension Rupture	78.8%	Pass
107 - 102	Pole + Reinf.	TP32.678x31.564x0.5125	Reinf. 4 Tension Rupture	82.2%	Pass
102 - 99.42	Pole + Reinf.	TP34.33x32.678x0.5125	Reinf. 4 Tension Rupture	83.9%	Pass
99.42 - 94.42	Pole	TP33.741x32.628x0.375	Pole	75.3%	Pass
94.42 - 89.42	Pole	TP34.853x33.741x0.375	Pole	76.7%	Pass
89.42 - 87.25	Pole	TP35.335x34.853x0.375	Pole	77.2%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
87.25 - 87	Pole	TP35.391x35.335x0.375	Pole	77.3%	Pass
87 - 82	Pole	TP36.503x35.391x0.375	Pole	78.7%	Pass
82 - 77	Pole	TP37.616x36.503x0.375	Pole	80.3%	Pass
77 - 72	Pole	TP38.728x37.616x0.375	Pole	81.9%	Pass
72 - 67	Pole	TP39.841x38.728x0.375	Pole	83.3%	Pass
67 - 62	Pole	TP40.953x39.841x0.375	Pole	84.6%	Pass
62 - 61.5	Pole	TP41.064x40.953x0.375	Pole	84.7%	Pass
61.5 - 61.25	Pole + Reinf.	TP41.12x41.064x0.5875	Reinf. 2 Tension Rupture	82.3%	Pass
61.25 - 56.25	Pole + Reinf.	TP42.232x41.12x0.575	Reinf. 2 Tension Rupture	83.7%	Pass
56.25 - 53.04	Pole + Reinf.	TP44.3x42.232x0.575	Reinf. 2 Tension Rupture	84.5%	Pass
53.04 - 45.96	Pole + Reinf.	TP43.773x42.197x0.575	Reinf. 2 Tension Rupture	88.8%	Pass
45.96 - 40.96	Pole + Reinf.	TP44.886x43.773x0.5625	Reinf. 2 Tension Rupture	89.9%	Pass
40.96 - 35.96	Pole + Reinf.	TP45.998x44.886x0.5625	Reinf. 2 Tension Rupture	90.9%	Pass
35.96 - 32.25	Pole + Reinf.	TP46.823x45.998x0.5625	Reinf. 2 Tension Rupture	91.7%	Pass
32.25 - 32	Pole + Reinf.	TP46.879x46.823x0.775	Reinf. 2 Tension Rupture	66.3%	Pass
32 - 31.75	Pole + Reinf.	TP46.934x46.879x0.6125	Reinf. 1 Tension Rupture	82.6%	Pass
31.75 - 26.75	Pole + Reinf.	TP48.047x46.934x0.6125	Reinf. 1 Tension Rupture	83.6%	Pass
26.75 - 21.75	Pole + Reinf.	TP49.16x48.047x0.6125	Reinf. 1 Tension Rupture	84.5%	Pass
21.75 - 16.75	Pole + Reinf.	TP50.272x49.16x0.6	Reinf. 1 Tension Rupture	85.3%	Pass
16.75 - 11.75	Pole + Reinf.	TP51.385x50.272x0.6	Reinf. 1 Tension Rupture	86.1%	Pass
11.75 - 6.75	Pole + Reinf.	TP52.498x51.385x0.5875	Reinf. 1 Tension Rupture	86.9%	Pass
6.75 - 1.75	Pole + Reinf.	TP53.611x52.498x0.5875	Reinf. 1 Tension Rupture	87.6%	Pass
1.75 - 0	Pole + Reinf.	TP54x53.611x0.5875	Reinf. 1 Tension Rupture	87.8%	Pass
				Summary	
			Pole	84.7%	Pass
			Reinforcement	91.7%	Pass
			Overall	**91.7%**	**Pass**

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Anchor Rods	-	81.9	Pass
1,2	Base Plate	-	70.3	Pass
1,2	Base Foundation Soil Interaction	-	38.3	Pass
1,2	Base Foundation Structural	-	79.1	Pass

Structure Rating (max from all components) =	91.7%

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

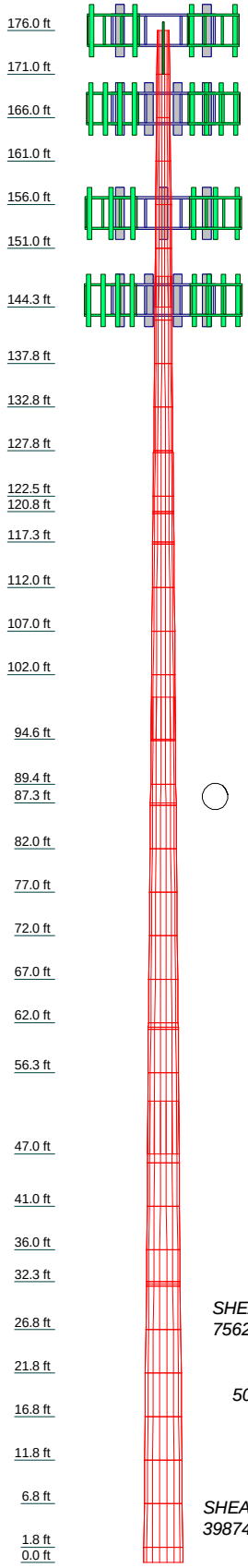
4.1) Recommendations

1) 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	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (lb)
1	5.00	18	0.188		16.500	17.626		170.9
2	5.00	18	0.188		17.626	18.752		182.3
3	5.00	18	0.188		18.752	19.878		193.7
4	5.00	18	0.188		19.878	21.004		205.1
5	5.00	18	0.188		21.004	22.130		216.5
6	5.00	18	0.188	3.50	22.130	23.650		310.3
7	5.00	18	0.313		23.650	24.714		402.4
8	5.00	18	0.313		24.714	25.828		421.2
9	5.00	18	0.313		25.828	26.942		440.0
10	5.00	18	0.313		26.942	28.056		458.8
11	5.00	18	0.313		28.056	29.170		477.6
12	5.00	18	0.313		29.170	30.284		496.4
13	5.00	18	0.313		30.284	31.398		515.2
14	5.00	18	0.313		31.398	32.512		534.0
15	5.00	18	0.313		32.512	33.626		552.8
16	5.00	18	0.313		33.626	34.740		571.6
17	5.00	18	0.525		34.740	36.303		799.3
18	5.00	18	0.525		36.303	37.866		818.7
19	5.00	18	0.512		37.866	39.429		837.7
20	5.00	18	0.512	4.83	39.429	40.992		1288.7
21	5.00	18	0.750		40.992	42.678		1314.4
22	5.00	18	0.375		42.678	43.741		686.6
23	5.00	18	0.375		43.741	44.804		704.7
24	5.00	18	0.375		44.804	45.867		722.8
25	5.00	18	0.375		45.867	46.930		720.4
26	5.00	18	0.375		46.930	47.993		742.9
27	5.00	18	0.375		47.993	49.056		765.4
28	5.00	18	0.375		49.056	50.119		787.9
29	5.00	18	0.375		50.119	51.182		810.5
30	5.00	18	0.375		51.182	52.245		833.0
32	5.00	18	0.563		52.245	53.308		1245.6
33	7.09	18	0.575	6.08	53.308	54.371		2391.1
34	5.00	18	0.575		54.371	55.434		1699.1
35	5.00	18	0.563		55.434	56.497		1299.1
36	5.00	18	0.563		56.497	57.560		1322.2
37	5.00	18	0.563		57.560	58.623		1345.3
38	5.00	18	0.563		58.623	59.686		1368.4
40	5.00	18	0.625		59.686	60.749		1500.8
41	5.00	18	0.613		60.749	61.812		1523.2
42	5.00	18	0.600		61.812	62.875		1545.9
43	5.00	18	0.600		62.875	63.938		1568.6
44	5.00	18	0.588		63.938	65.001		1591.3
45	5.00	18	0.588		65.001	66.064		1613.9
46	1.75	18	0.588		66.064	67.127	A572-65	571.5
								32497.5



ALL REACTIONS ARE FACTORED

AXIAL 99774 lb

SHEAR 7562 lb *MOMENT 1046662 lb-ft*

TORQUE 124 lb-ft
50 mph WIND - 1.500 in ICE

AXIAL 63444 lb

SHEAR 39874 lb *MOMENT 4765335 lb-ft*

TORQUE 460 lb-ft
REACTIONS - 130 mph WIND

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 130 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 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. Equivalent Thickness Model
9. TOWER RATING: 91.7%

Tower Engineering Professionals

Tower Engineering Professionals
326 Tryon Road
Raleigh, NC 27603
Phone: (919) 661-6351
FAX: (919) 661-6350

Job: **Ward (BU 876381)**			
Project: **TEP No. 51819.424352**			
Client: Crown Castle	Drawn by: DAR	App'd:	
Code: TIA-222-H	Date: 06/16/20	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 New Haven County, Connecticut.
Tower base elevation above sea level: 181.00 ft.
Basic wind speed of 130 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 1.500 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.
Equivalent Thickness Model.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.05.
Tower analysis based on target reliabilities in accordance with Annex S.
Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
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	176.00-171.00	5.00	0.000	18	16.500	17.626	0.188	0.750	A572-65 (65 ksi)
L2	171.00-166.00	5.00	0.000	18	17.626	18.752	0.188	0.750	A572-65 (65 ksi)
L3	166.00-161.00	5.00	0.000	18	18.752	19.878	0.188	0.750	A572-65 (65 ksi)
L4	161.00-156.00	5.00	0.000	18	19.878	21.004	0.188	0.750	A572-65 (65 ksi)
L5	156.00-151.00	5.00	0.000	18	21.004	22.130	0.188	0.750	A572-65 (65 ksi)
L6	151.00-144.25	6.75	3.500	18	22.130	23.650	0.188	0.750	A572-65 (65 ksi)
L7	144.25-142.75	5.00	0.000	18	22.487	23.601	0.313	1.250	A572-65 (65 ksi)
L8	142.75-137.75	5.00	0.000	18	23.601	24.714	0.313	1.250	A572-65 (65 ksi)
L9	137.75-132.75	5.00	0.000	18	24.714	25.828	0.313	1.250	A572-65 (65 ksi)
L10	132.75-127.75	5.00	0.000	18	25.828	26.942	0.313	1.250	A572-65 (65 ksi)
L11	127.75-127.50	0.25	0.000	18	26.942	26.998	0.313	1.250	A572-65 (65 ksi)
L12	127.50-122.50	5.00	0.000	18	26.998	28.111	0.313	1.250	A572-65 (65 ksi)
L13	122.50-120.75	1.75	0.000	18	28.111	28.501	0.313	1.250	A572-65 (65 ksi)
L14	120.75-120.50	0.25	0.000	18	28.501	28.557	0.313	1.250	A572-65 (65 ksi)
L15	120.50-117.25	3.25	0.000	18	28.557	29.281	0.313	1.250	A572-65 (65 ksi)
L16	117.25-117.00	0.25	0.000	18	29.281	29.337	0.537	2.150	A572-65 (65 ksi)
L17	117.00-112.00	5.00	0.000	18	29.337	30.450	0.525	2.100	A572-65 (65 ksi)
L18	112.00-107.00	5.00	0.000	18	30.450	31.564	0.525	2.100	A572-65 (65 ksi)
L19	107.00-102.00	5.00	0.000	18	31.564	32.678	0.512	2.050	A572-65 (65 ksi)
L20	102.00-94.58	7.42	4.833	18	32.678	34.330	0.512	2.050	A572-65 (65 ksi)
L21	94.58-94.42	5.00	0.000	18	32.628	33.741	0.375	1.500	A572-65 (65 ksi)
L22	94.42-89.42	5.00	0.000	18	33.741	34.853	0.375	1.500	A572-65 (65 ksi)
L23	89.42-87.25	2.17	0.000	18	34.853	35.335	0.375	1.500	A572-65 (65 ksi)
L24	87.25-87.00	0.25	0.000	18	35.335	35.391	0.375	1.500	A572-65 (65 ksi)
L25	87.00-82.00	5.00	0.000	18	35.391	36.503	0.375	1.500	A572-65 (65 ksi)
L26	82.00-77.00	5.00	0.000	18	36.503	37.616	0.375	1.500	A572-65 (65 ksi)
L27	77.00-72.00	5.00	0.000	18	37.616	38.728	0.375	1.500	A572-65 (65 ksi)
L28	72.00-67.00	5.00	0.000	18	38.728	39.841	0.375	1.500	A572-65 (65 ksi)
L29	67.00-62.00	5.00	0.000	18	39.841	40.953	0.375	1.500	A572-65 (65 ksi)

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
L30	62.00-61.50	0.50	0.000	18	40.953	41.064	0.375	1.500	A572-65 (65 ksi)
L31	61.50-61.25	0.25	0.000	18	41.064	41.120	0.588	2.350	A572-65 (65 ksi)
L32	61.25-56.25	5.00	0.000	18	41.120	42.232	0.575	2.300	A572-65 (65 ksi)
L33	56.25-46.96	9.29	6.083	18	42.232	44.300	0.575	2.300	A572-65 (65 ksi)
L34	46.96-45.96	7.08	0.000	18	42.197	43.773	0.575	2.300	A572-65 (65 ksi)
L35	45.96-40.96	5.00	0.000	18	43.773	44.886	0.563	2.250	A572-65 (65 ksi)
L36	40.96-35.96	5.00	0.000	18	44.886	45.998	0.563	2.250	A572-65 (65 ksi)
L37	35.96-32.25	3.71	0.000	18	45.998	46.823	0.563	2.250	A572-65 (65 ksi)
L38	32.25-32.00	0.25	0.000	18	46.823	46.879	0.775	3.100	A572-65 (65 ksi)
L39	32.00-31.75	0.25	0.000	18	46.879	46.934	0.613	2.450	A572-65 (65 ksi)
L40	31.75-26.75	5.00	0.000	18	46.934	48.047	0.613	2.450	A572-65 (65 ksi)
L41	26.75-21.75	5.00	0.000	18	48.047	49.160	0.613	2.450	A572-65 (65 ksi)
L42	21.75-16.75	5.00	0.000	18	49.160	50.272	0.600	2.400	A572-65 (65 ksi)
L43	16.75-11.75	5.00	0.000	18	50.272	51.385	0.600	2.400	A572-65 (65 ksi)
L44	11.75-6.75	5.00	0.000	18	51.385	52.498	0.588	2.350	A572-65 (65 ksi)
L45	6.75-1.75	5.00	0.000	18	52.498	53.611	0.588	2.350	A572-65 (65 ksi)
L46	1.75-0.00	1.75		18	53.611	54.000	0.588	2.350	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	16.726	9.708	326.368	5.791	8.382	38.937	653.165	4.855	2.574	13.728
	17.869	10.378	398.724	6.191	8.954	44.530	797.972	5.190	2.772	14.785
L2	17.869	10.378	398.724	6.191	8.954	44.530	797.972	5.190	2.772	14.785
	19.012	11.048	481.053	6.590	9.526	50.499	962.740	5.525	2.970	15.842
L3	19.012	11.048	481.053	6.590	9.526	50.499	962.740	5.525	2.970	15.842
	20.156	11.718	574.001	6.990	10.098	56.843	1148.758	5.860	3.169	16.899
L4	20.156	11.718	574.001	6.990	10.098	56.843	1148.758	5.860	3.169	16.899
	21.299	12.388	678.211	7.390	10.670	63.562	1357.314	6.195	3.367	17.956
L5	21.299	12.388	678.211	7.390	10.670	63.562	1357.314	6.195	3.367	17.956
	22.442	13.058	794.327	7.790	11.242	70.657	1589.699	6.530	3.565	19.013
L6	22.442	13.058	794.327	7.790	11.242	70.657	1589.699	6.530	3.565	19.013
	23.986	13.963	971.110	8.329	12.014	80.830	1943.498	6.983	3.832	20.439
L7	23.577	21.994	1366.296	7.872	11.423	119.606	2734.390	10.999	3.408	10.905
	23.916	23.099	1582.691	8.267	11.989	132.011	3167.464	11.552	3.604	11.532
L8	23.916	23.099	1582.691	8.267	11.989	132.011	3167.464	11.552	3.604	11.532
	25.047	24.204	1820.806	8.663	12.555	145.028	3644.008	12.104	3.800	12.159
L9	25.047	24.204	1820.806	8.663	12.555	145.028	3644.008	12.104	3.800	12.159

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
	26.178	25.308	2081.681	9.058	13.121	158.656	4166.102	12.657	3.996	12.786
L10	26.178	25.308	2081.681	9.058	13.121	158.656	4166.102	12.657	3.996	12.786
	27.309	26.413	2366.355	9.453	13.687	172.897	4735.824	13.209	4.192	13.414
L11	27.309	26.413	2366.355	9.453	13.687	172.897	4735.824	13.209	4.192	13.414
	27.366	26.468	2381.232	9.473	13.715	173.625	4765.598	13.237	4.202	13.445
L12	27.366	26.468	2381.232	9.473	13.715	173.625	4765.598	13.237	4.202	13.445
	28.497	27.573	2692.013	9.869	14.281	188.509	5387.568	13.789	4.398	14.072
L13	28.497	27.573	2692.013	9.869	14.281	188.509	5387.568	13.789	4.398	14.072
	28.893	27.960	2806.858	10.007	14.479	193.862	5617.410	13.983	4.466	14.292
L14	28.893	27.960	2806.858	10.007	14.479	193.862	5617.410	13.983	4.466	14.292
	28.949	28.015	2823.527	10.027	14.507	194.633	5650.769	14.010	4.476	14.323
L15	28.949	28.015	2823.527	10.027	14.507	194.633	5650.769	14.010	4.476	14.323
	29.684	28.733	3046.256	10.284	14.875	204.795	6096.520	14.369	4.603	14.731
L16	29.650	49.037	5118.418	10.204	14.875	344.103	10243.570	24.523	4.207	7.828
	29.706	49.132	5148.225	10.224	14.903	345.450	10303.225	24.571	4.217	7.846
L17	29.708	48.010	5035.050	10.228	14.903	337.855	10076.725	24.010	4.239	8.075
	30.839	49.866	5641.839	10.623	15.469	364.725	11291.103	24.938	4.435	8.448
L18	30.839	49.866	5641.839	10.623	15.469	364.725	11291.103	24.938	4.435	8.448
	31.970	51.722	6295.520	11.019	16.035	392.622	12599.324	25.866	4.631	8.821
L19	31.972	50.511	6153.055	11.023	16.035	383.737	12314.206	25.260	4.653	9.08
	33.103	52.323	6839.193	11.419	16.600	411.990	13687.385	26.166	4.849	9.462
L20	33.103	52.323	6839.193	11.419	16.600	411.990	13687.385	26.166	4.849	9.462
	34.781	55.010	7948.089	12.005	17.440	455.748	15906.637	27.510	5.140	10.029
L21	34.166	38.390	5045.451	11.450	16.575	304.398	10097.541	19.198	5.083	13.554
	34.203	39.714	5585.724	11.845	17.140	325.882	11178.798	19.861	5.278	14.076
L22	34.203	39.714	5585.724	11.845	17.140	325.882	11178.798	19.861	5.278	14.076
	35.333	41.038	6163.252	12.240	17.705	348.099	12334.613	20.523	5.474	14.598
L23	35.333	41.038	6163.252	12.240	17.705	348.099	12334.613	20.523	5.474	14.598
	35.823	41.611	6425.396	12.411	17.950	357.954	12859.247	20.810	5.559	14.824
L24	35.823	41.611	6425.396	12.411	17.950	357.954	12859.247	20.810	5.559	14.824
	35.879	41.678	6456.113	12.431	17.979	359.100	12920.722	20.843	5.569	14.85
L25	35.879	41.678	6456.113	12.431	17.979	359.100	12920.722	20.843	5.569	14.85
	37.009	43.002	7091.189	12.826	18.544	382.404	14191.709	21.505	5.765	15.372
L26	37.009	43.002	7091.189	12.826	18.544	382.404	14191.709	21.505	5.765	15.372
	38.138	44.326	7766.604	13.220	19.109	406.441	15543.427	22.167	5.960	15.894
L27	38.138	44.326	7766.604	13.220	19.109	406.441	15543.427	22.167	5.960	15.894
	39.268	45.650	8483.599	13.615	19.674	431.210	16978.361	22.829	6.156	16.416
L28	39.268	45.650	8483.599	13.615	19.674	431.210	16978.361	22.829	6.156	16.416
	40.397	46.974	9243.418	14.010	20.239	456.712	18498.998	23.491	6.352	16.939
L29	40.397	46.974	9243.418	14.010	20.239	456.712	18498.998	23.491	6.352	16.939
	41.527	48.298	10047.301	14.405	20.804	482.947	20107.823	24.154	6.548	17.461
L30	41.527	48.298	10047.301	14.405	20.804	482.947	20107.823	24.154	6.548	17.461
	41.640	48.430	10130.161	14.445	20.861	485.611	20273.651	24.220	6.567	17.513
L31	41.607	75.478	15623.229	14.369	20.861	748.932	31267.015	37.746	6.193	10.542
	41.664	75.582	15687.724	14.389	20.889	751.007	31396.090	37.798	6.203	10.558
L32	41.666	73.997	15368.152	14.393	20.889	735.708	30756.526	37.005	6.225	10.826
	42.795	76.027	16668.148	14.788	21.454	776.924	33358.228	38.021	6.421	11.167
L33	42.795	76.027	16668.148	14.788	21.454	776.924	33358.228	38.021	6.421	11.167
	44.895	79.800	19275.323	15.522	22.504	856.514	38576.010	39.908	6.785	11.8
L34	44.133	75.961	16625.190	14.776	21.436	775.579	33272.256	37.988	6.415	11.156
	44.359	78.838	18586.550	15.335	22.237	835.854	37197.558	39.427	6.692	11.638
L35	44.361	77.147	18198.284	15.340	22.237	818.393	36420.513	38.581	6.714	11.936
	45.491	79.133	19640.648	15.735	22.802	861.362	39307.141	39.574	6.910	12.284
L36	45.491	79.133	19640.648	15.735	22.802	861.362	39307.141	39.574	6.910	12.284
	46.621	81.120	21157.281	16.130	23.367	905.430	42342.401	40.568	7.106	12.632
L37	46.621	81.120	21157.281	16.130	23.367	905.430	42342.401	40.568	7.106	12.632
	47.459	82.593	22330.647	16.423	23.786	938.809	44690.676	41.304	7.251	12.89
L38	47.426	113.271	30344.629	16.347	23.786	1275.727	60729.187	56.646	6.877	8.873
	47.482	113.408	30454.748	16.367	23.814	1278.837	60949.570	56.715	6.887	8.886
L39	47.507	89.945	24324.479	16.425	23.814	1021.419	48680.965	44.981	7.173	11.71
	47.564	90.053	24412.335	16.444	23.843	1023.893	48856.792	45.035	7.182	11.726
L40	47.564	90.053	24412.335	16.444	23.843	1023.893	48856.792	45.035	7.182	11.726

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
	48.694	92.216	26214.151	16.839	24.408	1074.002	52462.795	46.117	7.378	12.046
L41	48.694	92.216	26214.151	16.839	24.408	1074.002	52462.795	46.117	7.378	12.046
	49.824	94.380	28102.514	17.234	24.973	1125.308	56242.005	47.199	7.574	12.366
L42	49.826	92.477	27550.263	17.239	24.973	1103.195	55136.777	46.247	7.596	12.66
	50.955	94.596	29487.843	17.634	25.538	1154.646	59014.486	47.307	7.792	12.987
L43	50.955	94.596	29487.843	17.634	25.538	1154.646	59014.486	47.307	7.792	12.987
	52.085	96.715	31514.202	18.029	26.104	1207.271	63069.871	48.367	7.988	13.313
L44	52.087	94.724	30880.447	18.033	26.104	1182.993	61801.528	47.371	8.010	13.634
	53.217	96.799	32954.478	18.428	26.669	1235.689	65952.318	48.408	8.206	13.967
L45	53.217	96.799	32954.478	18.428	26.669	1235.689	65952.318	48.408	8.206	13.967
	54.347	98.873	35119.355	18.823	27.234	1289.533	70284.921	49.446	8.401	14.3
L46	54.347	98.873	35119.355	18.823	27.234	1289.533	70284.921	49.446	8.401	14.3
	54.742	99.600	35898.885	18.961	27.432	1308.650	71845.007	49.809	8.470	14.417

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 176.00-171.00				1	1	1			
L2 171.00-166.00				1	1	1			
L3 166.00-161.00				1	1	1			
L4 161.00-156.00				1	1	1			
L5 156.00-151.00				1	1	1			
L6 151.00-144.25				1	1	1			
L7 144.25-142.75				1	1	1			
L8 142.75-137.75				1	1	1			
L9 137.75-132.75				1	1	1			
L10 132.75-127.75				1	1	1			
L11 127.75-127.50				1	1	1			
L12 127.50-122.50				1	1	1			
L13 122.50-120.75				1	1	1			
L14 120.75-120.50				1	1	1			
L15 120.50-117.25				1	1	1			
L16 117.25-117.00				1	1	0.952312			
L17 117.00-112.00				1	1	0.960445			
L18 112.00-107.00				1	1	0.94734			
L19 107.00-102.00				1	1	0.957579			
L20 102.00-94.58				1	1	0.951466			
L21 94.58-94.42				1	1	1			

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
L22 94.42-89.42				1	1	1			
L23 89.42-87.25				1	1	1			
L24 87.25-87.00				1	1	1			
L25 87.00-82.00				1	1	1			
L26 82.00-77.00				1	1	1			
L27 77.00-72.00				1	1	1			
L28 72.00-67.00				1	1	1			
L29 67.00-62.00				1	1	1			
L30 62.00-61.50				1	1	1			
L31 61.50-61.25				1	1	0.964154			
L32 61.25-56.25				1	1	0.975927			
L33 56.25-46.96				1	1	0.97047			
L34 46.96-45.96				1	1	0.964382			
L35 45.96-40.96				1	1	0.977523			
L36 40.96-35.96				1	1	0.96991			
L37 35.96-32.25				1	1	0.964503			
L38 32.25-32.00				1	1	0.989594			
L39 32.00-31.75				1	1	0.976295			
L40 31.75-26.75				1	1	0.967755			
L41 26.75-21.75				1	1	0.959607			
L42 21.75-16.75				1	1	0.971409			
L43 16.75-11.75				1	1	0.963819			
L44 11.75-6.75				1	1	0.976672			
L45 6.75-1.75				1	1	0.969571			
L46 1.75-0.00				1	1	0.967156			

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	A	No	Surface Ar	176.00 -	1	1	-0.250	0.375		0.220

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
			(CaAa)	0.00			-0.250			
167										
155										
HCS 6X12 4AWG(1-5/8)	C	No	Surface Ar (CaAa)	155.00 - 0.00	3	3	0.250 0.250	1.660		2.400
50										
LDF4P-50A(1/2")	C	No	Surface Ar (CaAa)	50.00 - 0.00	1	1	-0.250 -0.250	0.630		0.150
***Mods**										
(Area) CCI-65FP-065125 (H)	A	No	Surface Af (CaAa)	35.00 - 0.00	1	1	-0.417 -0.417	6.500	15.500	0.000
(Area) CCI-65FP-065125 (H)	A	No	Surface Af (CaAa)	35.00 - 0.00	1	1	0.417 0.417	6.500	15.500	0.000
(Area) CCI-65FP-065125 (H)	B	No	Surface Af (CaAa)	35.00 - 0.00	1	1	0.083 0.083	6.500	15.500	0.000
(Area) CCI-65FP-065125 (H)	C	No	Surface Af (CaAa)	35.00 - 0.00	1	1	-0.083 -0.083	6.500	15.500	0.000
*****										
(Area) CCI-65FP-065125 (H)	A	No	Surface Af (CaAa)	64.25 - 29.25	1	1	-0.250 -0.250	6.500	15.500	0.000
(Area) CCI-65FP-065125 (H)	B	No	Surface Af (CaAa)	64.25 - 29.25	1	1	-0.250 -0.250	6.500	15.500	0.000
(Area) CCI-65FP-065125 (H)	C	No	Surface Af (CaAa)	64.25 - 29.25	1	1	-0.250 -0.250	6.500	15.500	0.000
*****										
CCI-65FP-060100	A	No	Surface Af (CaAa)	89.25 - 64.25	1	1	-0.250 -0.250	6.000	14.000	20.417
CCI-65FP-060100	B	No	Surface Af (CaAa)	89.25 - 64.25	1	1	-0.250 -0.250	6.000	14.000	20.417
CCI-65FP-060100	C	No	Surface Af (CaAa)	89.25 - 64.25	1	1	-0.250 -0.250	6.000	14.000	20.417
*****										
(Area) CCI-65FP-060100 (H)	A	No	Surface Af (CaAa)	94.41 - 89.25	1	1	-0.250 -0.250	6.000	14.000	0.000
(Area) CCI-65FP-060100 (H)	B	No	Surface Af (CaAa)	94.41 - 89.25	1	1	-0.250 -0.250	6.000	14.000	0.000
(Area) CCI-65FP-060100 (H)	C	No	Surface Af (CaAa)	94.41 - 89.25	1	1	-0.250 -0.250	6.000	14.000	0.000
CCI-65FP-060100	A	No	Surface Af (CaAa)	119.25 - 94.41	1	1	-0.250 -0.250	6.000	14.000	20.417
CCI-65FP-060100	B	No	Surface Af (CaAa)	119.25 - 94.41	1	1	-0.250 -0.250	6.000	14.000	20.417
CCI-65FP-060100	C	No	Surface Af (CaAa)	119.25 - 94.41	1	1	-0.250 -0.250	6.000	14.000	20.417
*****										
CCI-65FP-045100	A	No	Surface Af (CaAa)	129.25 - 119.25	1	1	-0.250 -0.250	4.500	11.000	15.313
CCI-65FP-045100	B	No	Surface Af (CaAa)	129.25 - 119.25	1	1	-0.250 -0.250	4.500	11.000	15.313
CCI-65FP-045100	C	No	Surface Af (CaAa)	129.25 - 119.25	1	1	-0.250 -0.250	4.500	11.000	15.313
***										

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
176									
HB114-21U3M12-XXXF(1-1/4)	C	No	No	Inside Pole	176.00 - 0.00	1	No Ice	0.00	1.220
							1/2" Ice	0.00	1.220
							1" Ice	0.00	1.220
							2" Ice	0.00	1.220
HYBRIFLEX RRH 1-SECTOR(1/2)	C	No	No	Inside Pole	176.00 - 0.00	3	No Ice	0.00	0.150
							1/2" Ice	0.00	0.150
							1" Ice	0.00	0.150
							2" Ice	0.00	0.150
***									
WR-VG86ST-BRD(3/4)	B	No	No	Inside Pole	167.00 - 0.00	4	No Ice	0.00	0.584
							1/2" Ice	0.00	0.584
							1" Ice	0.00	0.584
							2" Ice	0.00	0.584
LDF7-50A(1-5/8")	B	No	No	Inside Pole	167.00 - 0.00	12	No Ice	0.00	0.820
							1/2" Ice	0.00	0.820
							1" Ice	0.00	0.820
							2" Ice	0.00	0.820
FB-L98B-002-75000 (3/8")	B	No	No	Inside Pole	167.00 - 0.00	1	No Ice	0.00	0.059
							1/2" Ice	0.00	0.059
							1" Ice	0.00	0.059
							2" Ice	0.00	0.059
FB-L98B-034-XXX(3/8")	B	No	No	Inside Pole	167.00 - 0.00	1	No Ice	0.00	0.057
							1/2" Ice	0.00	0.057
							1" Ice	0.00	0.057
							2" Ice	0.00	0.057
WR-VG122ST-BRD A(7/16)	B	No	No	Inside Pole	167.00 - 0.00	2	No Ice	0.00	0.141
							1/2" Ice	0.00	0.141
							1" Ice	0.00	0.141
							2" Ice	0.00	0.141
2" Flexible Conduit	B	No	No	Inside Pole	167.00 - 0.00	1	No Ice	0.00	0.340
							1/2" Ice	0.00	0.340
							1" Ice	0.00	0.340
							2" Ice	0.00	0.340
MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	C	No	No	Inside Pole	155.00 - 0.00	1	No Ice	0.00	1.070
							1/2" Ice	0.00	1.070
							1" Ice	0.00	1.070
							2" Ice	0.00	1.070
LDF7-50A(1-5/8")	C	No	No	Inside Pole	155.00 - 0.00	9	No Ice	0.00	0.820
							1/2" Ice	0.00	0.820
							1" Ice	0.00	0.820
							2" Ice	0.00	0.820
145									
MLE Hybrid 3Power/6Fiber RL 2(1 1/4")	C	No	No	Inside Pole	145.00 - 0.00	2	No Ice	0.00	0.680
							1/2" Ice	0.00	0.680
							1" Ice	0.00	0.680
							2" Ice	0.00	0.680
10									
LDF1-50A(1/4)	C	No	No	Inside Pole	10.00 - 0.00	1	No Ice	0.00	0.060
							1/2" Ice	0.00	0.060
							1" Ice	0.00	0.060
							2" Ice	0.00	0.060
***									

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 lb
L1	176.00-171.00	A	0.000	0.000	0.188	0.000	1.10
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	8.35
L2	171.00-166.00	A	0.000	0.000	0.188	0.000	1.10
		B	0.000	0.000	0.000	0.000	12.91
		C	0.000	0.000	0.000	0.000	8.35
L3	166.00-161.00	A	0.000	0.000	0.188	0.000	1.10
		B	0.000	0.000	0.000	0.000	64.57
		C	0.000	0.000	0.000	0.000	8.35
L4	161.00-156.00	A	0.000	0.000	0.188	0.000	1.10
		B	0.000	0.000	0.000	0.000	64.57
		C	0.000	0.000	0.000	0.000	8.35
L5	156.00-151.00	A	0.000	0.000	0.188	0.000	1.10
		B	0.000	0.000	0.000	0.000	64.57
		C	0.000	0.000	1.992	0.000	70.95
L6	151.00-144.25	A	0.000	0.000	0.253	0.000	1.49
		B	0.000	0.000	0.000	0.000	87.17
		C	0.000	0.000	3.361	0.000	117.93
L7	144.25-142.75	A	0.000	0.000	0.056	0.000	0.33
		B	0.000	0.000	0.000	0.000	19.37
		C	0.000	0.000	0.747	0.000	28.02
L8	142.75-137.75	A	0.000	0.000	0.188	0.000	1.10
		B	0.000	0.000	0.000	0.000	64.57
		C	0.000	0.000	2.490	0.000	93.40
L9	137.75-132.75	A	0.000	0.000	0.188	0.000	1.10
		B	0.000	0.000	0.000	0.000	64.57
		C	0.000	0.000	2.490	0.000	93.40
L10	132.75-127.75	A	0.000	0.000	1.313	0.000	24.07
		B	0.000	0.000	1.125	0.000	87.54
		C	0.000	0.000	3.615	0.000	116.37
L11	127.75-127.50	A	0.000	0.000	0.197	0.000	3.88
		B	0.000	0.000	0.188	0.000	7.06
		C	0.000	0.000	0.312	0.000	8.50
L12	127.50-122.50	A	0.000	0.000	3.938	0.000	77.66
		B	0.000	0.000	3.750	0.000	141.13
		C	0.000	0.000	6.240	0.000	169.96
L13	122.50-120.75	A	0.000	0.000	1.378	0.000	27.18
		B	0.000	0.000	1.313	0.000	49.40
		C	0.000	0.000	2.184	0.000	59.49
L14	120.75-120.50	A	0.000	0.000	0.197	0.000	3.88
		B	0.000	0.000	0.188	0.000	7.06
		C	0.000	0.000	0.312	0.000	8.50
L15	120.50-117.25	A	0.000	0.000	3.059	0.000	60.69
		B	0.000	0.000	2.938	0.000	101.94
		C	0.000	0.000	4.556	0.000	120.68
L16	117.25-117.00	A	0.000	0.000	0.259	0.000	5.16
		B	0.000	0.000	0.250	0.000	8.33
		C	0.000	0.000	0.375	0.000	9.77
L17	117.00-112.00	A	0.000	0.000	5.188	0.000	103.18
		B	0.000	0.000	5.000	0.000	166.65
		C	0.000	0.000	7.490	0.000	195.48
L18	112.00-107.00	A	0.000	0.000	5.188	0.000	103.18
		B	0.000	0.000	5.000	0.000	166.65
		C	0.000	0.000	7.490	0.000	195.48
L19	107.00-102.00	A	0.000	0.000	5.188	0.000	103.18
		B	0.000	0.000	5.000	0.000	166.65
		C	0.000	0.000	7.490	0.000	195.48
L20	102.00-94.58	A	0.000	0.000	7.695	0.000	153.06

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 lb
		B	0.000	0.000	7.417	0.000	247.20
		C	0.000	0.000	11.110	0.000	289.97
L21	94.58-94.42	A	0.000	0.000	0.173	0.000	3.44
		B	0.000	0.000	0.167	0.000	5.56
		C	0.000	0.000	0.250	0.000	6.52
L22	94.42-89.42	A	0.000	0.000	3.954	0.000	1.17
		B	0.000	0.000	3.766	0.000	64.64
		C	0.000	0.000	6.256	0.000	93.47
L23	89.42-87.25	A	0.000	0.000	2.207	0.000	41.31
		B	0.000	0.000	2.126	0.000	68.81
		C	0.000	0.000	3.205	0.000	81.31
L24	87.25-87.00	A	0.000	0.000	0.259	0.000	5.16
		B	0.000	0.000	0.250	0.000	8.33
		C	0.000	0.000	0.375	0.000	9.77
L25	87.00-82.00	A	0.000	0.000	5.188	0.000	103.18
		B	0.000	0.000	5.000	0.000	166.65
		C	0.000	0.000	7.490	0.000	195.48
L26	82.00-77.00	A	0.000	0.000	5.188	0.000	103.18
		B	0.000	0.000	5.000	0.000	166.65
		C	0.000	0.000	7.490	0.000	195.48
L27	77.00-72.00	A	0.000	0.000	5.188	0.000	103.18
		B	0.000	0.000	5.000	0.000	166.65
		C	0.000	0.000	7.490	0.000	195.48
L28	72.00-67.00	A	0.000	0.000	5.188	0.000	103.18
		B	0.000	0.000	5.000	0.000	166.65
		C	0.000	0.000	7.490	0.000	195.48
L29	67.00-62.00	A	0.000	0.000	5.375	0.000	57.25
		B	0.000	0.000	5.188	0.000	120.71
		C	0.000	0.000	7.677	0.000	149.55
L30	62.00-61.50	A	0.000	0.000	0.560	0.000	0.11
		B	0.000	0.000	0.542	0.000	6.46
		C	0.000	0.000	0.791	0.000	9.34
L31	61.50-61.25	A	0.000	0.000	0.280	0.000	0.06
		B	0.000	0.000	0.271	0.000	3.23
		C	0.000	0.000	0.395	0.000	4.67
L32	61.25-56.25	A	0.000	0.000	5.604	0.000	1.10
		B	0.000	0.000	5.417	0.000	64.57
		C	0.000	0.000	7.907	0.000	93.40
L33	56.25-46.96	A	0.000	0.000	10.416	0.000	2.04
		B	0.000	0.000	10.068	0.000	120.01
		C	0.000	0.000	14.888	0.000	174.06
L34	46.96-45.96	A	0.000	0.000	1.121	0.000	0.22
		B	0.000	0.000	1.083	0.000	12.91
		C	0.000	0.000	1.644	0.000	18.83
L35	45.96-40.96	A	0.000	0.000	5.604	0.000	1.10
		B	0.000	0.000	5.417	0.000	64.57
		C	0.000	0.000	8.222	0.000	94.15
L36	40.96-35.96	A	0.000	0.000	5.604	0.000	1.10
		B	0.000	0.000	5.417	0.000	64.57
		C	0.000	0.000	8.222	0.000	94.15
L37	35.96-32.25	A	0.000	0.000	10.113	0.000	0.82
		B	0.000	0.000	6.995	0.000	47.87
		C	0.000	0.000	9.074	0.000	69.80
L38	32.25-32.00	A	0.000	0.000	0.822	0.000	0.06
		B	0.000	0.000	0.542	0.000	3.23
		C	0.000	0.000	0.682	0.000	4.71
L39	32.00-31.75	A	0.000	0.000	0.822	0.000	0.06
		B	0.000	0.000	0.542	0.000	3.23
		C	0.000	0.000	0.682	0.000	4.71
L40	31.75-26.75	A	0.000	0.000	13.729	0.000	1.10
		B	0.000	0.000	8.125	0.000	64.57

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 lb
		C	0.000	0.000	10.930	0.000	94.15
L41	26.75-21.75	A	0.000	0.000	11.021	0.000	1.10
		B	0.000	0.000	5.417	0.000	64.57
		C	0.000	0.000	8.222	0.000	94.15
L42	21.75-16.75	A	0.000	0.000	11.021	0.000	1.10
		B	0.000	0.000	5.417	0.000	64.57
		C	0.000	0.000	8.222	0.000	94.15
L43	16.75-11.75	A	0.000	0.000	11.021	0.000	1.10
		B	0.000	0.000	5.417	0.000	64.57
		C	0.000	0.000	8.222	0.000	94.15
L44	11.75-6.75	A	0.000	0.000	11.021	0.000	1.10
		B	0.000	0.000	5.417	0.000	64.57
		C	0.000	0.000	8.222	0.000	94.35
L45	6.75-1.75	A	0.000	0.000	11.021	0.000	1.10
		B	0.000	0.000	5.417	0.000	64.57
		C	0.000	0.000	8.222	0.000	94.45
L46	1.75-0.00	A	0.000	0.000	3.857	0.000	0.39
		B	0.000	0.000	1.896	0.000	22.60
		C	0.000	0.000	2.878	0.000	33.06

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 lb
L1	176.00-171.00	A	1.505	0.000	0.000	1.693	0.000	18.39
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	8.35
L2	171.00-166.00	A	1.501	0.000	0.000	1.688	0.000	18.30
		B		0.000	0.000	0.000	0.000	12.91
		C		0.000	0.000	0.000	0.000	8.35
L3	166.00-161.00	A	1.496	0.000	0.000	1.684	0.000	18.20
		B		0.000	0.000	0.000	0.000	64.57
		C		0.000	0.000	0.000	0.000	8.35
L4	161.00-156.00	A	1.492	0.000	0.000	1.679	0.000	18.11
		B		0.000	0.000	0.000	0.000	64.57
		C		0.000	0.000	0.000	0.000	8.35
L5	156.00-151.00	A	1.487	0.000	0.000	1.674	0.000	18.01
		B		0.000	0.000	0.000	0.000	64.57
		C		0.000	0.000	3.977	0.000	111.01
L6	151.00-144.25	A	1.481	0.000	0.000	2.253	0.000	24.15
		B		0.000	0.000	0.000	0.000	87.17
		C		0.000	0.000	6.701	0.000	185.21
L7	144.25-142.75	A	1.477	0.000	0.000	0.501	0.000	5.37
		B		0.000	0.000	0.000	0.000	19.37
		C		0.000	0.000	1.489	0.000	42.97
L8	142.75-137.75	A	1.473	0.000	0.000	1.661	0.000	17.74
		B		0.000	0.000	0.000	0.000	64.57
		C		0.000	0.000	4.954	0.000	142.93
L9	137.75-132.75	A	1.468	0.000	0.000	1.656	0.000	17.63
		B		0.000	0.000	0.000	0.000	64.57
		C		0.000	0.000	4.948	0.000	142.71
L10	132.75-127.75	A	1.463	0.000	0.000	3.023	0.000	54.60
		B		0.000	0.000	1.373	0.000	101.65
		C		0.000	0.000	6.314	0.000	179.56
L11	127.75-127.50	A	1.460	0.000	0.000	0.311	0.000	7.05
		B		0.000	0.000	0.229	0.000	9.40
		C		0.000	0.000	0.476	0.000	13.29

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 lb
L12	127.50-122.50	A	1.457	0.000	0.000	6.218	0.000	140.73
		B		0.000	0.000	4.574	0.000	187.90
		C		0.000	0.000	9.507	0.000	265.57
L13	122.50-120.75	A	1.453	0.000	0.000	2.174	0.000	49.17
		B		0.000	0.000	1.600	0.000	65.71
		C		0.000	0.000	3.325	0.000	92.83
L14	120.75-120.50	A	1.451	0.000	0.000	0.311	0.000	7.02
		B		0.000	0.000	0.229	0.000	9.38
		C		0.000	0.000	0.475	0.000	13.26
L15	120.50-117.25	A	1.449	0.000	0.000	4.786	0.000	104.77
		B		0.000	0.000	3.722	0.000	135.52
		C		0.000	0.000	6.923	0.000	185.82
L16	117.25-117.00	A	1.447	0.000	0.000	0.404	0.000	8.71
		B		0.000	0.000	0.322	0.000	11.07
		C		0.000	0.000	0.568	0.000	14.94
L17	117.00-112.00	A	1.444	0.000	0.000	8.075	0.000	173.88
		B		0.000	0.000	6.444	0.000	221.30
		C		0.000	0.000	11.361	0.000	298.45
L18	112.00-107.00	A	1.437	0.000	0.000	8.062	0.000	173.44
		B		0.000	0.000	6.437	0.000	220.99
		C		0.000	0.000	11.347	0.000	297.88
L19	107.00-102.00	A	1.431	0.000	0.000	8.049	0.000	172.98
		B		0.000	0.000	6.431	0.000	220.67
		C		0.000	0.000	11.332	0.000	297.28
L20	102.00-94.58	A	1.422	0.000	0.000	11.913	0.000	255.71
		B		0.000	0.000	9.526	0.000	326.70
		C		0.000	0.000	16.779	0.000	439.82
L21	94.58-94.42	A	1.416	0.000	0.000	0.268	0.000	5.75
		B		0.000	0.000	0.214	0.000	7.34
		C		0.000	0.000	0.377	0.000	9.88
L22	94.42-89.42	A	1.413	0.000	0.000	6.135	0.000	69.74
		B		0.000	0.000	4.535	0.000	117.78
		C		0.000	0.000	9.413	0.000	193.66
L23	89.42-87.25	A	1.407	0.000	0.000	3.405	0.000	70.86
		B		0.000	0.000	2.714	0.000	91.72
		C		0.000	0.000	4.825	0.000	124.51
L24	87.25-87.00	A	1.405	0.000	0.000	0.400	0.000	8.56
		B		0.000	0.000	0.320	0.000	10.97
		C		0.000	0.000	0.564	0.000	14.75
L25	87.00-82.00	A	1.401	0.000	0.000	7.989	0.000	170.95
		B		0.000	0.000	6.401	0.000	219.22
		C		0.000	0.000	11.264	0.000	294.63
L26	82.00-77.00	A	1.392	0.000	0.000	7.972	0.000	170.37
		B		0.000	0.000	6.392	0.000	218.81
		C		0.000	0.000	11.245	0.000	293.88
L27	77.00-72.00	A	1.383	0.000	0.000	7.954	0.000	169.77
		B		0.000	0.000	6.383	0.000	218.39
		C		0.000	0.000	11.225	0.000	293.09
L28	72.00-67.00	A	1.374	0.000	0.000	7.935	0.000	169.13
		B		0.000	0.000	6.374	0.000	217.93
		C		0.000	0.000	11.203	0.000	292.25
L29	67.00-62.00	A	1.363	0.000	0.000	8.102	0.000	124.31
		B		0.000	0.000	6.551	0.000	173.30
		C		0.000	0.000	11.368	0.000	247.21
L30	62.00-61.50	A	1.357	0.000	0.000	0.832	0.000	6.99
		B		0.000	0.000	0.677	0.000	11.90
		C		0.000	0.000	1.158	0.000	19.27
L31	61.50-61.25	A	1.357	0.000	0.000	0.416	0.000	3.49
		B		0.000	0.000	0.339	0.000	5.95
		C		0.000	0.000	0.579	0.000	9.63
L32	61.25-56.25	A	1.351	0.000	0.000	8.306	0.000	69.47

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 lb
		B		0.000	0.000	6.767	0.000	118.70
		C		0.000	0.000	11.568	0.000	192.11
L33	56.25-46.96	A	1.333	0.000	0.000	15.372	0.000	126.90
		B		0.000	0.000	12.546	0.000	219.01
		C		0.000	0.000	22.432	0.000	364.36
L34	46.96-45.96	A	1.319	0.000	0.000	1.654	0.000	13.66
		B		0.000	0.000	1.350	0.000	23.57
		C		0.000	0.000	2.635	0.000	41.46
L35	45.96-40.96	A	1.311	0.000	0.000	8.225	0.000	66.73
		B		0.000	0.000	6.727	0.000	116.71
		C		0.000	0.000	13.103	0.000	204.83
L36	40.96-35.96	A	1.295	0.000	0.000	8.193	0.000	65.66
		B		0.000	0.000	6.711	0.000	115.92
		C		0.000	0.000	13.052	0.000	203.11
L37	35.96-32.25	A	1.279	0.000	0.000	13.417	0.000	103.56
		B		0.000	0.000	8.647	0.000	113.20
		C		0.000	0.000	13.321	0.000	177.17
L38	32.25-32.00	A	1.272	0.000	0.000	1.076	0.000	8.23
		B		0.000	0.000	0.669	0.000	8.25
		C		0.000	0.000	0.983	0.000	12.54
L39	32.00-31.75	A	1.271	0.000	0.000	1.076	0.000	8.22
		B		0.000	0.000	0.669	0.000	8.25
		C		0.000	0.000	0.983	0.000	12.54
L40	31.75-26.75	A	1.260	0.000	0.000	18.138	0.000	137.79
		B		0.000	0.000	10.015	0.000	139.03
		C		0.000	0.000	16.276	0.000	224.19
L41	26.75-21.75	A	1.236	0.000	0.000	14.730	0.000	110.29
		B		0.000	0.000	6.653	0.000	113.08
		C		0.000	0.000	12.862	0.000	196.89
L42	21.75-16.75	A	1.208	0.000	0.000	14.645	0.000	107.08
		B		0.000	0.000	6.625	0.000	111.72
		C		0.000	0.000	12.770	0.000	193.93
L43	16.75-11.75	A	1.172	0.000	0.000	14.538	0.000	103.07
		B		0.000	0.000	6.589	0.000	110.01
		C		0.000	0.000	12.654	0.000	190.21
L44	11.75-6.75	A	1.123	0.000	0.000	14.389	0.000	97.59
		B		0.000	0.000	6.539	0.000	107.68
		C		0.000	0.000	12.493	0.000	185.35
L45	6.75-1.75	A	1.039	0.000	0.000	14.136	0.000	88.54
		B		0.000	0.000	6.455	0.000	103.81
		C		0.000	0.000	12.219	0.000	177.10
L46	1.75-0.00	A	0.887	0.000	0.000	4.788	0.000	25.54
		B		0.000	0.000	2.206	0.000	33.98
		C		0.000	0.000	4.104	0.000	56.95

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	176.00-171.00	-0.300	0.000	-1.246	0.000
L2	171.00-166.00	-0.300	0.000	-1.263	0.000
L3	166.00-161.00	-0.300	0.000	-1.278	0.000
L4	161.00-156.00	-0.301	0.000	-1.291	0.000
L5	156.00-151.00	-1.549	2.279	-2.039	1.971
L6	151.00-144.25	-1.793	2.718	-2.206	2.334
L7	144.25-142.75	-1.803	2.733	-2.230	2.358

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L8	142.75-137.75	-1.815	2.750	-2.256	2.386
L9	137.75-132.75	-1.831	2.774	-2.296	2.429
L10	132.75-127.75	-1.407	2.131	-1.996	2.112
L11	127.75-127.50	-0.917	1.388	-1.511	1.598
L12	127.50-122.50	-0.928	1.405	-1.529	1.618
L13	122.50-120.75	-0.942	1.426	-1.552	1.642
L14	120.75-120.50	-0.946	1.432	-1.559	1.650
L15	120.50-117.25	-0.866	1.311	-1.443	1.527
L16	117.25-117.00	-0.678	1.027	-1.385	1.465
L17	117.00-112.00	-0.836	1.265	-1.401	1.483
L18	112.00-107.00	-0.855	1.294	-1.431	1.516
L19	107.00-102.00	-0.873	1.321	-1.461	1.547
L20	102.00-94.58	-0.895	1.354	-1.496	1.585
L21	94.58-94.42	-0.898	1.359	-1.501	1.591
L22	94.42-89.42	-1.044	1.579	-1.717	1.822
L23	89.42-87.25	-0.929	1.405	-1.546	1.641
L24	87.25-87.00	-0.924	1.397	-1.538	1.633
L25	87.00-82.00	-0.932	1.410	-1.551	1.648
L26	82.00-77.00	-0.949	1.434	-1.576	1.675
L27	77.00-72.00	-0.965	1.458	-1.600	1.702
L28	72.00-67.00	-0.980	1.482	-1.622	1.728
L29	67.00-62.00	-0.977	1.477	-1.625	1.733
L30	62.00-61.50	-0.964	1.457	-1.615	1.723
L31	61.50-61.25	-0.965	1.459	-1.617	1.726
L32	61.25-56.25	-0.973	1.471	-1.627	1.738
L33	56.25-46.96	-0.955	1.558	-1.524	1.949
L34	46.96-45.96	-0.882	1.679	-1.276	2.307
L35	45.96-40.96	-0.890	1.693	-1.281	2.316
L36	40.96-35.96	-0.902	1.716	-1.295	2.341
L37	35.96-32.25	1.561	2.169	1.065	2.873
L38	32.25-32.00	2.078	2.357	1.615	3.000
L39	32.00-31.75	2.079	2.358	1.616	3.001
L40	31.75-26.75	2.409	2.732	1.868	3.459
L41	26.75-21.75	2.868	3.250	2.220	4.088
L42	21.75-16.75	2.903	3.289	2.260	4.132
L43	16.75-11.75	2.937	3.327	2.302	4.171
L44	11.75-6.75	2.971	3.364	2.348	4.202
L45	6.75-1.75	3.004	3.400	2.403	4.212
L46	1.75-0.00	3.026	3.424	2.468	4.165

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	2	Safety Line 3/8	171.00 - 176.00	1.0000	1.0000
L2	2	Safety Line 3/8	166.00 - 171.00	1.0000	1.0000
L3	2	Safety Line 3/8	161.00 - 166.00	1.0000	1.0000
L4	2	Safety Line 3/8	156.00 - 161.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L5	2	Safety Line 3/8	151.00 - 156.00	1.0000	1.0000
L5	18	HCS 6X12 4AWG(1-5/8)	151.00 - 155.00	1.0000	1.0000
L6	2	Safety Line 3/8	144.25 - 151.00	1.0000	1.0000
L6	18	HCS 6X12 4AWG(1-5/8)	144.25 - 151.00	1.0000	1.0000
L8	2	Safety Line 3/8	137.75 - 142.75	1.0000	1.0000
L8	18	HCS 6X12 4AWG(1-5/8)	137.75 - 142.75	1.0000	1.0000
L9	2	Safety Line 3/8	132.75 - 137.75	1.0000	1.0000
L9	18	HCS 6X12 4AWG(1-5/8)	132.75 - 137.75	1.0000	1.0000
L10	2	Safety Line 3/8	127.75 - 132.75	1.0000	1.0000
L10	18	HCS 6X12 4AWG(1-5/8)	127.75 - 132.75	1.0000	1.0000
L10	48	CCI-65FP-045100	127.75 - 129.25	1.0000	1.0000
L10	49	CCI-65FP-045100	127.75 - 129.25	1.0000	1.0000
L10	50	CCI-65FP-045100	127.75 - 129.25	1.0000	1.0000
L11	2	Safety Line 3/8	127.50 - 127.75	1.0000	1.0000
L11	18	HCS 6X12 4AWG(1-5/8)	127.50 - 127.75	1.0000	1.0000
L11	48	CCI-65FP-045100	127.50 - 127.75	1.0000	1.0000
L11	49	CCI-65FP-045100	127.50 - 127.75	1.0000	1.0000
L11	50	CCI-65FP-045100	127.50 - 127.75	1.0000	1.0000
L12	2	Safety Line 3/8	122.50 - 127.50	1.0000	1.0000
L12	18	HCS 6X12 4AWG(1-5/8)	122.50 - 127.50	1.0000	1.0000
L12	48	CCI-65FP-045100	122.50 - 127.50	1.0000	1.0000
L12	49	CCI-65FP-045100	122.50 - 127.50	1.0000	1.0000
L12	50	CCI-65FP-045100	122.50 - 127.50	1.0000	1.0000
L13	2	Safety Line 3/8	120.75 - 122.50	1.0000	1.0000
L13	18	HCS 6X12 4AWG(1-5/8)	120.75 - 122.50	1.0000	1.0000
L13	48	CCI-65FP-045100	120.75 - 122.50	1.0000	1.0000
L13	49	CCI-65FP-045100	120.75 - 122.50	1.0000	1.0000
L13	50	CCI-65FP-045100	120.75 - 122.50	1.0000	1.0000
L14	2	Safety Line 3/8	120.50 - 120.75	1.0000	1.0000
L14	18	HCS 6X12 4AWG(1-5/8)	120.50 - 120.75	1.0000	1.0000
L14	48	CCI-65FP-045100	120.50 - 120.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L14	49	CCI-65FP-045100	120.50 - 120.75	1.0000	1.0000
L14	50	CCI-65FP-045100	120.50 - 120.75	1.0000	1.0000
L15	2	Safety Line 3/8	117.25 - 120.50	1.0000	1.0000
L15	18	HCS 6X12 4AWG(1-5/8)	117.25 - 120.50	1.0000	1.0000
L15	44	CCI-65FP-060100	117.25 - 119.25	1.0000	1.0000
L15	45	CCI-65FP-060100	117.25 - 119.25	1.0000	1.0000
L15	46	CCI-65FP-060100	117.25 - 119.25	1.0000	1.0000
L15	48	CCI-65FP-045100	119.25 - 120.50	1.0000	1.0000
L15	49	CCI-65FP-045100	119.25 - 120.50	1.0000	1.0000
L15	50	CCI-65FP-045100	119.25 - 120.50	1.0000	1.0000
L16	2	Safety Line 3/8	117.00 - 117.25	1.0000	1.0000
L16	18	HCS 6X12 4AWG(1-5/8)	117.00 - 117.25	1.0000	1.0000
L16	44	CCI-65FP-060100	117.00 - 117.25	1.0000	1.0000
L16	45	CCI-65FP-060100	117.00 - 117.25	1.0000	1.0000
L16	46	CCI-65FP-060100	117.00 - 117.25	1.0000	1.0000
L17	2	Safety Line 3/8	112.00 - 117.00	1.0000	1.0000
L17	18	HCS 6X12 4AWG(1-5/8)	112.00 - 117.00	1.0000	1.0000
L17	44	CCI-65FP-060100	112.00 - 117.00	1.0000	1.0000
L17	45	CCI-65FP-060100	112.00 - 117.00	1.0000	1.0000
L17	46	CCI-65FP-060100	112.00 - 117.00	1.0000	1.0000
L18	2	Safety Line 3/8	107.00 - 112.00	1.0000	1.0000
L18	18	HCS 6X12 4AWG(1-5/8)	107.00 - 112.00	1.0000	1.0000
L18	44	CCI-65FP-060100	107.00 - 112.00	1.0000	1.0000
L18	45	CCI-65FP-060100	107.00 - 112.00	1.0000	1.0000
L18	46	CCI-65FP-060100	107.00 - 112.00	1.0000	1.0000
L19	2	Safety Line 3/8	102.00 - 107.00	1.0000	1.0000
L19	18	HCS 6X12 4AWG(1-5/8)	102.00 - 107.00	1.0000	1.0000
L19	44	CCI-65FP-060100	102.00 - 107.00	1.0000	1.0000
L19	45	CCI-65FP-060100	102.00 - 107.00	1.0000	1.0000
L19	46	CCI-65FP-060100	102.00 - 107.00	1.0000	1.0000
L20	2	Safety Line 3/8	94.58 - 102.00	1.0000	1.0000
L20	18	HCS 6X12 4AWG(1-5/8)	94.58 - 102.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L20	44	CCI-65FP-060100	94.58 - 102.00	1.0000	1.0000
L20	45	CCI-65FP-060100	94.58 - 102.00	1.0000	1.0000
L20	46	CCI-65FP-060100	94.58 - 102.00	1.0000	1.0000
L22	2	Safety Line 3/8	89.42 - 94.42	1.0000	1.0000
L22	18	HCS 6X12 4AWG(1-5/8)	89.42 - 94.42	1.0000	1.0000
L22	41	(Area) CCI-65FP-060100 (H)	89.42 - 94.41	1.0000	1.0000
L22	42	(Area) CCI-65FP-060100 (H)	89.42 - 94.41	1.0000	1.0000
L22	43	(Area) CCI-65FP-060100 (H)	89.42 - 94.41	1.0000	1.0000
L22	44	CCI-65FP-060100	94.41 - 94.42	1.0000	1.0000
L22	45	CCI-65FP-060100	94.41 - 94.42	1.0000	1.0000
L22	46	CCI-65FP-060100	94.41 - 94.42	1.0000	1.0000
L23	2	Safety Line 3/8	87.25 - 89.42	1.0000	1.0000
L23	18	HCS 6X12 4AWG(1-5/8)	87.25 - 89.42	1.0000	1.0000
L23	37	CCI-65FP-060100	87.25 - 89.25	1.0000	1.0000
L23	38	CCI-65FP-060100	87.25 - 89.25	1.0000	1.0000
L23	39	CCI-65FP-060100	87.25 - 89.25	1.0000	1.0000
L23	41	(Area) CCI-65FP-060100 (H)	89.25 - 89.42	1.0000	1.0000
L23	42	(Area) CCI-65FP-060100 (H)	89.25 - 89.42	1.0000	1.0000
L23	43	(Area) CCI-65FP-060100 (H)	89.25 - 89.42	1.0000	1.0000
L24	2	Safety Line 3/8	87.00 - 87.25	1.0000	1.0000
L24	18	HCS 6X12 4AWG(1-5/8)	87.00 - 87.25	1.0000	1.0000
L24	37	CCI-65FP-060100	87.00 - 87.25	1.0000	1.0000
L24	38	CCI-65FP-060100	87.00 - 87.25	1.0000	1.0000
L24	39	CCI-65FP-060100	87.00 - 87.25	1.0000	1.0000
L25	2	Safety Line 3/8	82.00 - 87.00	1.0000	1.0000
L25	18	HCS 6X12 4AWG(1-5/8)	82.00 - 87.00	1.0000	1.0000
L25	37	CCI-65FP-060100	82.00 - 87.00	1.0000	1.0000
L25	38	CCI-65FP-060100	82.00 - 87.00	1.0000	1.0000
L25	39	CCI-65FP-060100	82.00 - 87.00	1.0000	1.0000
L26	2	Safety Line 3/8	77.00 - 82.00	1.0000	1.0000
L26	18	HCS 6X12 4AWG(1-5/8)	77.00 - 82.00	1.0000	1.0000
L26	37	CCI-65FP-060100	77.00 - 82.00	1.0000	1.0000
L26	38	CCI-65FP-060100	77.00 - 82.00	1.0000	1.0000
L26	39	CCI-65FP-060100	77.00 - 82.00	1.0000	1.0000
L27	2	Safety Line 3/8	72.00 - 77.00	1.0000	1.0000
L27	18	HCS 6X12 4AWG(1-5/8)	72.00 - 77.00	1.0000	1.0000
L27	37	CCI-65FP-060100	72.00 - 77.00	1.0000	1.0000
L27	38	CCI-65FP-060100	72.00 - 77.00	1.0000	1.0000
L27	39	CCI-65FP-060100	72.00 - 77.00	1.0000	1.0000
L28	2	Safety Line 3/8	67.00 - 72.00	1.0000	1.0000
L28	18	HCS 6X12 4AWG(1-5/8)	67.00 - 72.00	1.0000	1.0000
L28	37	CCI-65FP-060100	67.00 - 72.00	1.0000	1.0000
L28	38	CCI-65FP-060100	67.00 - 72.00	1.0000	1.0000
L28	39	CCI-65FP-060100	67.00 - 72.00	1.0000	1.0000
L29	2	Safety Line 3/8	62.00 - 67.00	1.0000	1.0000
L29	18	HCS 6X12 4AWG(1-5/8)	62.00 - 67.00	1.0000	1.0000
L29	33	(Area) CCI-65FP-065125 (H)	62.00 - 64.25	1.0000	1.0000
L29	34	(Area) CCI-65FP-065125 (H)	62.00 - 64.25	1.0000	1.0000
L29	35	(Area) CCI-65FP-065125 (H)	62.00 - 64.25	1.0000	1.0000
L29	37	CCI-65FP-060100	64.25 - 67.00	1.0000	1.0000
L29	38	CCI-65FP-060100	64.25 - 67.00	1.0000	1.0000
L29	39	CCI-65FP-060100	64.25 - 67.00	1.0000	1.0000
L30	2	Safety Line 3/8	61.50 - 62.00	1.0000	1.0000
L30	18	HCS 6X12 4AWG(1-5/8)	61.50 - 62.00	1.0000	1.0000
L30	33	(Area) CCI-65FP-065125 (H)	61.50 - 62.00	1.0000	1.0000
L30	34	(Area) CCI-65FP-065125 (H)	61.50 - 62.00	1.0000	1.0000
L30	35	(Area) CCI-65FP-065125 (H)	61.50 - 62.00	1.0000	1.0000
L31	2	Safety Line 3/8	61.25 - 61.50	1.0000	1.0000
L31	18	HCS 6X12 4AWG(1-5/8)	61.25 - 61.50	1.0000	1.0000
L31	33	(Area) CCI-65FP-065125 (H)	61.25 - 61.50	1.0000	1.0000
L31	34	(Area) CCI-65FP-065125 (H)	61.25 - 61.50	1.0000	1.0000
L31	35	(Area) CCI-65FP-065125 (H)	61.25 - 61.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L32	2	Safety Line 3/8	56.25 - 61.25	1.0000	1.0000
L32	18	HCS 6X12 4AWG(1-5/8)	56.25 - 61.25	1.0000	1.0000
L32	33	(Area) CCI-65FP-065125 (H)	56.25 - 61.25	1.0000	1.0000
L32	34	(Area) CCI-65FP-065125 (H)	56.25 - 61.25	1.0000	1.0000
L32	35	(Area) CCI-65FP-065125 (H)	56.25 - 61.25	1.0000	1.0000
L33	2	Safety Line 3/8	46.96 - 56.25	1.0000	1.0000
L33	18	HCS 6X12 4AWG(1-5/8)	46.96 - 56.25	1.0000	1.0000
L33	24	LDF4P-50A(1/2")	46.96 - 50.00	1.0000	1.0000
L33	33	(Area) CCI-65FP-065125 (H)	46.96 - 56.25	1.0000	1.0000
L33	34	(Area) CCI-65FP-065125 (H)	46.96 - 56.25	1.0000	1.0000
L33	35	(Area) CCI-65FP-065125 (H)	46.96 - 56.25	1.0000	1.0000
L35	2	Safety Line 3/8	40.96 - 45.96	1.0000	1.0000
L35	18	HCS 6X12 4AWG(1-5/8)	40.96 - 45.96	1.0000	1.0000
L35	24	LDF4P-50A(1/2")	40.96 - 45.96	1.0000	1.0000
L35	33	(Area) CCI-65FP-065125 (H)	40.96 - 45.96	1.0000	1.0000
L35	34	(Area) CCI-65FP-065125 (H)	40.96 - 45.96	1.0000	1.0000
L35	35	(Area) CCI-65FP-065125 (H)	40.96 - 45.96	1.0000	1.0000
L36	2	Safety Line 3/8	35.96 - 40.96	1.0000	1.0000
L36	18	HCS 6X12 4AWG(1-5/8)	35.96 - 40.96	1.0000	1.0000
L36	24	LDF4P-50A(1/2")	35.96 - 40.96	1.0000	1.0000
L36	33	(Area) CCI-65FP-065125 (H)	35.96 - 40.96	1.0000	1.0000
L36	34	(Area) CCI-65FP-065125 (H)	35.96 - 40.96	1.0000	1.0000
L36	35	(Area) CCI-65FP-065125 (H)	35.96 - 40.96	1.0000	1.0000
L37	2	Safety Line 3/8	32.25 - 35.96	1.0000	1.0000
L37	18	HCS 6X12 4AWG(1-5/8)	32.25 - 35.96	1.0000	1.0000
L37	24	LDF4P-50A(1/2")	32.25 - 35.96	1.0000	1.0000
L37	28	(Area) CCI-65FP-065125 (H)	32.25 - 35.00	1.0000	1.0000
L37	29	(Area) CCI-65FP-065125 (H)	32.25 - 35.00	1.0000	1.0000
L37	30	(Area) CCI-65FP-065125 (H)	32.25 - 35.00	1.0000	1.0000
L37	31	(Area) CCI-65FP-065125 (H)	32.25 - 35.00	1.0000	1.0000
L37	33	(Area) CCI-65FP-065125 (H)	32.25 - 35.96	1.0000	1.0000
L37	34	(Area) CCI-65FP-065125 (H)	32.25 - 35.96	1.0000	1.0000
L37	35	(Area) CCI-65FP-065125 (H)	32.25 - 35.96	1.0000	1.0000
L38	2	Safety Line 3/8	32.00 - 32.25	1.0000	1.0000
L38	18	HCS 6X12 4AWG(1-5/8)	32.00 - 32.25	1.0000	1.0000
L38	24	LDF4P-50A(1/2")	32.00 - 32.25	1.0000	1.0000
L38	28	(Area) CCI-65FP-065125 (H)	32.00 - 32.25	1.0000	1.0000
L38	29	(Area) CCI-65FP-065125 (H)	32.00 - 32.25	1.0000	1.0000
L38	30	(Area) CCI-65FP-065125 (H)	32.00 - 32.25	1.0000	1.0000
L38	31	(Area) CCI-65FP-065125 (H)	32.00 - 32.25	1.0000	1.0000
L38	33	(Area) CCI-65FP-065125 (H)	32.00 - 32.25	1.0000	1.0000
L38	34	(Area) CCI-65FP-065125 (H)	32.00 - 32.25	1.0000	1.0000
L38	35	(Area) CCI-65FP-065125 (H)	32.00 - 32.25	1.0000	1.0000
L39	2	Safety Line 3/8	31.75 - 32.00	1.0000	1.0000
L39	18	HCS 6X12 4AWG(1-5/8)	31.75 - 32.00	1.0000	1.0000
L39	24	LDF4P-50A(1/2")	31.75 - 32.00	1.0000	1.0000
L39	28	(Area) CCI-65FP-065125 (H)	31.75 - 32.00	1.0000	1.0000
L39	29	(Area) CCI-65FP-065125 (H)	31.75 - 32.00	1.0000	1.0000
L39	30	(Area) CCI-65FP-065125 (H)	31.75 - 32.00	1.0000	1.0000
L39	31	(Area) CCI-65FP-065125 (H)	31.75 - 32.00	1.0000	1.0000
L39	33	(Area) CCI-65FP-065125 (H)	31.75 - 32.00	1.0000	1.0000
L39	34	(Area) CCI-65FP-065125 (H)	31.75 - 32.00	1.0000	1.0000
L39	35	(Area) CCI-65FP-065125 (H)	31.75 - 32.00	1.0000	1.0000
L40	2	Safety Line 3/8	26.75 - 31.75	1.0000	1.0000
L40	18	HCS 6X12 4AWG(1-5/8)	26.75 - 31.75	1.0000	1.0000
L40	24	LDF4P-50A(1/2")	26.75 - 31.75	1.0000	1.0000
L40	28	(Area) CCI-65FP-065125 (H)	26.75 - 31.75	1.0000	1.0000
L40	29	(Area) CCI-65FP-065125 (H)	26.75 - 31.75	1.0000	1.0000
L40	30	(Area) CCI-65FP-065125 (H)	26.75 - 31.75	1.0000	1.0000
L40	31	(Area) CCI-65FP-065125 (H)	26.75 - 31.75	1.0000	1.0000
L40	33	(Area) CCI-65FP-065125 (H)	29.25 - 31.75	1.0000	1.0000
L40	34	(Area) CCI-65FP-065125 (H)	29.25 - 31.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L40	35	(Area) CCI-65FP-065125 (H)	29.25 - 31.75	1.0000	1.0000
L41	2	Safety Line 3/8	21.75 - 26.75	1.0000	1.0000
L41	18	HCS 6X12 4AWG(1-5/8)	21.75 - 26.75	1.0000	1.0000
L41	24	LDF4P-50A(1/2")	21.75 - 26.75	1.0000	1.0000
L41	28	(Area) CCI-65FP-065125 (H)	21.75 - 26.75	1.0000	1.0000
L41	29	(Area) CCI-65FP-065125 (H)	21.75 - 26.75	1.0000	1.0000
L41	30	(Area) CCI-65FP-065125 (H)	21.75 - 26.75	1.0000	1.0000
L41	31	(Area) CCI-65FP-065125 (H)	21.75 - 26.75	1.0000	1.0000
L42	2	Safety Line 3/8	16.75 - 21.75	1.0000	1.0000
L42	18	HCS 6X12 4AWG(1-5/8)	16.75 - 21.75	1.0000	1.0000
L42	24	LDF4P-50A(1/2")	16.75 - 21.75	1.0000	1.0000
L42	28	(Area) CCI-65FP-065125 (H)	16.75 - 21.75	1.0000	1.0000
L42	29	(Area) CCI-65FP-065125 (H)	16.75 - 21.75	1.0000	1.0000
L42	30	(Area) CCI-65FP-065125 (H)	16.75 - 21.75	1.0000	1.0000
L42	31	(Area) CCI-65FP-065125 (H)	16.75 - 21.75	1.0000	1.0000
L43	2	Safety Line 3/8	11.75 - 16.75	1.0000	1.0000
L43	18	HCS 6X12 4AWG(1-5/8)	11.75 - 16.75	1.0000	1.0000
L43	24	LDF4P-50A(1/2")	11.75 - 16.75	1.0000	1.0000
L43	28	(Area) CCI-65FP-065125 (H)	11.75 - 16.75	1.0000	1.0000
L43	29	(Area) CCI-65FP-065125 (H)	11.75 - 16.75	1.0000	1.0000
L43	30	(Area) CCI-65FP-065125 (H)	11.75 - 16.75	1.0000	1.0000
L43	31	(Area) CCI-65FP-065125 (H)	11.75 - 16.75	1.0000	1.0000
L44	2	Safety Line 3/8	6.75 - 11.75	1.0000	1.0000
L44	18	HCS 6X12 4AWG(1-5/8)	6.75 - 11.75	1.0000	1.0000
L44	24	LDF4P-50A(1/2")	6.75 - 11.75	1.0000	1.0000
L44	28	(Area) CCI-65FP-065125 (H)	6.75 - 11.75	1.0000	1.0000
L44	29	(Area) CCI-65FP-065125 (H)	6.75 - 11.75	1.0000	1.0000
L44	30	(Area) CCI-65FP-065125 (H)	6.75 - 11.75	1.0000	1.0000
L44	31	(Area) CCI-65FP-065125 (H)	6.75 - 11.75	1.0000	1.0000
L45	2	Safety Line 3/8	1.75 - 6.75	1.0000	1.0000
L45	18	HCS 6X12 4AWG(1-5/8)	1.75 - 6.75	1.0000	1.0000
L45	24	LDF4P-50A(1/2")	1.75 - 6.75	1.0000	1.0000
L45	28	(Area) CCI-65FP-065125 (H)	1.75 - 6.75	1.0000	1.0000
L45	29	(Area) CCI-65FP-065125 (H)	1.75 - 6.75	1.0000	1.0000
L45	30	(Area) CCI-65FP-065125 (H)	1.75 - 6.75	1.0000	1.0000
L45	31	(Area) CCI-65FP-065125 (H)	1.75 - 6.75	1.0000	1.0000
L46	2	Safety Line 3/8	0.00 - 1.75	1.0000	1.0000
L46	18	HCS 6X12 4AWG(1-5/8)	0.00 - 1.75	1.0000	1.0000
L46	24	LDF4P-50A(1/2")	0.00 - 1.75	1.0000	1.0000
L46	28	(Area) CCI-65FP-065125 (H)	0.00 - 1.75	1.0000	1.0000
L46	29	(Area) CCI-65FP-065125 (H)	0.00 - 1.75	1.0000	1.0000
L46	30	(Area) CCI-65FP-065125 (H)	0.00 - 1.75	1.0000	1.0000
L46	31	(Area) CCI-65FP-065125 (H)	0.00 - 1.75	1.0000	1.0000

Discrete Tower Loads

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 lb
176									
DT465B-2XR w/ Mount Pipe	A	From	4.00	0.000	176.00	No Ice	5.50	4.38	90.76

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 lb
		Centroid-Leg	0.000 2.000			1/2" Ice 1" Ice 2" Ice	5.97 6.45 7.44	4.84 5.30 6.26	163.89 248.03 450.73
DT465B-2XR w/ Mount Pipe	B	From Centroid-Leg	4.00 0.000 2.000	0.000	176.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.50 5.97 6.45 7.44	4.38 4.84 5.30 6.26	90.76 163.89 248.03 450.73
DT465B-2XR w/ Mount Pipe	C	From Centroid-Leg	4.00 0.000 2.000	0.000	176.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.50 5.97 6.45 7.44	4.38 4.84 5.30 6.26	90.76 163.89 248.03 450.73
APXVTM14-C-120 w/ Mount Pipe	A	From Centroid-Leg	4.00 0.000 2.000	0.000	176.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.09 4.48 4.88 5.71	2.86 3.23 3.61 4.40	77.03 126.70 185.31 330.73
APXVTM14-C-120 w/ Mount Pipe	B	From Centroid-Leg	4.00 0.000 2.000	0.000	176.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.09 4.48 4.88 5.71	2.86 3.23 3.61 4.40	77.03 126.70 185.31 330.73
APXVTM14-C-120 w/ Mount Pipe	C	From Centroid-Leg	4.00 0.000 2.000	0.000	176.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.09 4.48 4.88 5.71	2.86 3.23 3.61 4.40	77.03 126.70 185.31 330.73
RRH2X50-800	A	From Centroid-Leg	4.00 0.000 2.000	0.000	176.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.70 1.86 2.03 2.40	1.28 1.43 1.58 1.91	52.90 69.91 89.61 137.85
RRH2X50-800	B	From Centroid-Leg	4.00 0.000 2.000	0.000	176.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.70 1.86 2.03 2.40	1.28 1.43 1.58 1.91	52.90 69.91 89.61 137.85
RRH2X50-800	C	From Centroid-Leg	4.00 0.000 2.000	0.000	176.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.70 1.86 2.03 2.40	1.28 1.43 1.58 1.91	52.90 69.91 89.61 137.85
TD-RRH8x20-25	A	From Centroid-Leg	4.00 0.000 0.000	0.000	176.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.70 3.95 4.20 4.72	1.29 1.46 1.64 2.02	66.00 89.94 117.22 182.59
TD-RRH8x20-25	B	From Centroid-Leg	4.00 0.000 0.000	0.000	176.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.70 3.95 4.20 4.72	1.29 1.46 1.64 2.02	66.00 89.94 117.22 182.59
TD-RRH8x20-25	C	From Centroid-Leg	4.00 0.000 0.000	0.000	176.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.70 3.95 4.20 4.72	1.29 1.46 1.64 2.02	66.00 89.94 117.22 182.59
(6) ACU-A20-N	B	From Centroid-Leg	4.00 0.000 0.000	0.000	176.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.07 0.10 0.15 0.26	0.12 0.16 0.21 0.34	1.04 2.32 4.41 11.80
(3) ACU-A20-N	C	From Centroid-Leg	4.00 0.000 0.000	0.000	176.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.07 0.10 0.15 0.26	0.12 0.16 0.21 0.34	1.04 2.32 4.41 11.80
(2) 2.4" Dia x 6-ft Pipe	A	From Centroid-Le	4.00 0.000	0.000	176.00	No Ice 1/2" Ice	1.44 1.93	1.44 1.93	21.96 32.88

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 lb
		g	0.000			1" Ice	2.30	2.30	47.87
						2" Ice	3.07	3.07	90.64
(2) 2.4" Dia x 6-ft Pipe	B	From Centroid-Le g	4.00 0.000 0.000	0.000	176.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.44 1.93 2.30 3.07	1.44 1.93 2.30 3.07	21.96 32.88 47.87 90.64
(2) 2.4" Dia x 6-ft Pipe	C	From Centroid-Le g	4.00 0.000 0.000	0.000	176.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.44 1.93 2.30 3.07	1.44 1.93 2.30 3.07	21.96 32.88 47.87 90.64
Side Arm Mount [SO 701-3]	C	None		0.000	176.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.02 4.18 5.33 7.63	3.02 4.18 5.33 7.63	195.00 237.00 279.00 363.00
Platform Mount [LP 712-1]	C	None		0.000	176.00	No Ice 1/2" Ice 1" Ice 2" Ice	24.56 27.92 31.27 37.98	24.56 27.92 31.27 37.98	1335.00 1914.83 2547.66 3971.41
174									
800MHZ RRH	A	From Leg	1.50 0.000 1.000	0.000	174.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.13 2.32 2.51 2.92	1.77 1.95 2.13 2.51	53.00 74.19 98.39 156.61
800MHZ RRH	B	From Leg	1.50 0.000 1.000	0.000	174.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.13 2.32 2.51 2.92	1.77 1.95 2.13 2.51	53.00 74.19 98.39 156.61
800MHZ RRH	C	From Leg	1.50 0.000 1.000	0.000	174.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.13 2.32 2.51 2.92	1.77 1.95 2.13 2.51	53.00 74.19 98.39 156.61
PCS 1900MHz 4x45W-65MHz	A	From Leg	1.50 0.000 -1.000	0.000	174.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.31 2.52 2.73 3.17	2.23 2.43 2.64 3.08	60.00 83.06 109.35 172.38
PCS 1900MHz 4x45W-65MHz	B	From Leg	1.50 0.000 -1.000	0.000	174.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.31 2.52 2.73 3.17	2.23 2.43 2.64 3.08	60.00 83.06 109.35 172.38
PCS 1900MHz 4x45W-65MHz	C	From Leg	1.50 0.000 -1.000	0.000	174.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.31 2.52 2.73 3.17	2.23 2.43 2.64 3.08	60.00 83.06 109.35 172.38
800 EXTERNAL NOTCH FILTER	A	From Leg	1.50 0.000 2.000	0.000	174.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.66 0.76 0.87 1.11	0.29 0.36 0.45 0.63	11.00 16.55 23.71 43.59
800 EXTERNAL NOTCH FILTER	B	From Leg	1.50 0.000 2.000	0.000	174.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.66 0.76 0.87 1.11	0.29 0.36 0.45 0.63	11.00 16.55 23.71 43.59
800 EXTERNAL NOTCH FILTER	C	From Leg	1.50 0.000 2.000	0.000	174.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.66 0.76 0.87 1.11	0.29 0.36 0.45 0.63	11.00 16.55 23.71 43.59
2.4" Dia x 6-ft Pipe	A	From Leg	1.50 0.000	0.000	174.00	No Ice 1/2" Ice	1.44 1.93	1.44 1.93	21.96 32.88

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 lb
			0.000			1" Ice	2.30	2.30	47.87
						2" Ice	3.07	3.07	90.64
2.4" Dia x 6-ft Pipe	B	From Leg	1.50	0.000	174.00	No Ice	1.44	1.44	21.96
			0.000			1/2" Ice	1.93	1.93	32.88
			0.000			1" Ice	2.30	2.30	47.87
						2" Ice	3.07	3.07	90.64
2.4" Dia x 6-ft Pipe	C	From Leg	1.50	0.000	174.00	No Ice	1.44	1.44	21.96
			0.000			1/2" Ice	1.93	1.93	32.88
			0.000			1" Ice	2.30	2.30	47.87
						2" Ice	3.07	3.07	90.64
Side Arm Mount [SO 102-3]	C	None		0.000	174.00	No Ice	3.60	3.60	75.00
						1/2" Ice	4.18	4.18	105.00
						1" Ice	4.75	4.75	135.00
						2" Ice	5.90	5.90	195.00
169									
Side Arm Mount [SO 102-3]	C	None		0.000	169.00	No Ice	3.60	3.60	75.00
						1/2" Ice	4.18	4.18	105.00
						1" Ice	4.75	4.75	135.00
						2" Ice	5.90	5.90	195.00
Side Arm Mount [SO 701-3]	C	None		0.000	169.00	No Ice	3.02	3.02	195.00
						1/2" Ice	4.18	4.18	237.00
						1" Ice	5.33	5.33	279.00
						2" Ice	7.63	7.63	363.00
167									
HPA65R-BU6A w/ Mount Pipe	A	From Centroid-Leg	4.00 0.000 0.000	0.000	167.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.83 6.40 6.99 8.19	5.00 5.56 6.13 7.32	79.82 142.44 215.74 395.77
HPA65R-BU6A w/ Mount Pipe	B	From Centroid-Leg	4.00 0.000 0.000	0.000	167.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.83 6.40 6.99 8.19	5.00 5.56 6.13 7.32	79.82 142.44 215.74 395.77
HPA65R-BU6A w/ Mount Pipe	C	From Centroid-Leg	4.00 0.000 0.000	0.000	167.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.83 6.40 6.99 8.19	5.00 5.56 6.13 7.32	79.82 142.44 215.74 395.77
OPA65R-BU6D w/ Mount Pipe	A	From Centroid-Leg	4.00 0.000 0.000	0.000	167.00	No Ice 1/2" Ice 1" Ice 2" Ice	12.25 13.00 13.76 15.34	6.05 6.71 7.39 8.79	88.85 176.21 274.87 507.51
OPA65R-BU6D w/ Mount Pipe	B	From Centroid-Leg	4.00 0.000 0.000	0.000	167.00	No Ice 1/2" Ice 1" Ice 2" Ice	12.25 13.00 13.76 15.34	6.05 6.71 7.39 8.79	88.85 176.21 274.87 507.51
OPA65R-BU6D w/ Mount Pipe	C	From Centroid-Leg	4.00 0.000 0.000	0.000	167.00	No Ice 1/2" Ice 1" Ice 2" Ice	12.25 13.00 13.76 15.34	6.05 6.71 7.39 8.79	88.85 176.21 274.87 507.51
80010965 w/ Mount Pipe	A	From Centroid-Leg	4.00 0.000 0.000	0.000	167.00	No Ice 1/2" Ice 1" Ice 2" Ice	12.26 13.03 13.80 15.41	5.79 6.47 7.17 8.60	136.24 226.19 328.20 569.75
80010965 w/ Mount Pipe	B	From Centroid-Leg	4.00 0.000 0.000	0.000	167.00	No Ice 1/2" Ice 1" Ice 2" Ice	12.26 13.03 13.80 15.41	5.79 6.47 7.17 8.60	136.24 226.19 328.20 569.75
80010965 w/ Mount Pipe	C	From	4.00	0.000	167.00	No Ice	12.26	5.79	136.24

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 lb
		Centroid-Leg	0.000 0.000			1/2" Ice 1" Ice 2" Ice	13.03 13.80 15.41	6.47 7.17 8.60	226.19 328.20 569.75
7770.00 w/ Mount Pipe	A	From Centroid-Leg	4.00 0.000 0.000	0.000	167.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.75 6.18 6.61 7.49	4.25 5.01 5.71 7.16	55.38 102.81 156.64 286.58
7770.00 w/ Mount Pipe	B	From Centroid-Leg	4.00 0.000 0.000	0.000	167.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.75 6.18 6.61 7.49	4.25 5.01 5.71 7.16	55.38 102.81 156.64 286.58
7770.00 w/ Mount Pipe	C	From Centroid-Leg	4.00 0.000 0.000	0.000	167.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.75 6.18 6.61 7.49	4.25 5.01 5.71 7.16	55.38 102.81 156.64 286.58
RRUS 4449 B5/B12	A	From Centroid-Leg	4.00 0.000 0.000	0.000	167.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.97 2.14 2.33 2.72	1.41 1.56 1.73 2.07	71.00 89.51 110.84 162.74
RRUS 4449 B5/B12	B	From Centroid-Leg	4.00 0.000 0.000	0.000	167.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.97 2.14 2.33 2.72	1.41 1.56 1.73 2.07	71.00 89.51 110.84 162.74
RRUS 4449 B5/B12	C	From Centroid-Leg	4.00 0.000 0.000	0.000	167.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.97 2.14 2.33 2.72	1.41 1.56 1.73 2.07	71.00 89.51 110.84 162.74
RRUS 4478 B14	A	From Centroid-Leg	4.00 0.000 0.000	0.000	167.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.84 2.01 2.19 2.57	1.06 1.20 1.34 1.66	59.90 75.78 94.29 139.98
RRUS 4478 B14	B	From Centroid-Leg	4.00 0.000 0.000	0.000	167.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.84 2.01 2.19 2.57	1.06 1.20 1.34 1.66	59.90 75.78 94.29 139.98
RRUS 4478 B14	C	From Centroid-Leg	4.00 0.000 0.000	0.000	167.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.84 2.01 2.19 2.57	1.06 1.20 1.34 1.66	59.90 75.78 94.29 139.98
RRUS 8843 B2/B66A	B	From Centroid-Leg	4.00 0.000 0.000	0.000	167.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.64 1.80 1.97 2.32	1.35 1.50 1.65 1.99	72.00 89.60 109.91 159.50
(2) RRUS 8843 B2/B66A	C	From Centroid-Leg	4.00 0.000 0.000	0.000	167.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.64 1.80 1.97 2.32	1.35 1.50 1.65 1.99	72.00 89.60 109.91 159.50
(2) LGP21401	A	From Centroid-Leg	4.00 0.000 0.000	0.000	167.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.10 1.24 1.38 1.69	0.35 0.44 0.54 0.77	14.10 21.26 30.32 54.89
(2) LGP21401	B	From Centroid-Leg	4.00 0.000 0.000	0.000	167.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.10 1.24 1.38 1.69	0.35 0.44 0.54 0.77	14.10 21.26 30.32 54.89
(2) LGP21401	C	From Centroid-Leg	4.00 0.000	0.000	167.00	No Ice 1/2" Ice	1.10 1.24	0.35 0.44	14.10 21.26

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 lb
		g	0.000			1" Ice	1.38	0.54	30.32
						2" Ice	1.69	0.77	54.89
DC6-48-60-18-8F	A	From	4.00	0.000	167.00	No Ice	1.21	1.21	32.80
		Centroid-Le	0.000			1/2" Ice	1.89	1.89	54.76
		g	0.000			1" Ice	2.11	2.11	79.58
						2" Ice	2.57	2.57	138.43
(2) DC6-48-60-18-8F	B	From	4.00	0.000	167.00	No Ice	1.21	1.21	32.80
		Centroid-Le	0.000			1/2" Ice	1.89	1.89	54.76
		g	0.000			1" Ice	2.11	2.11	79.58
						2" Ice	2.57	2.57	138.43
Platform Mount [LP 303-1]	C	None		0.000	167.00	No Ice	14.69	14.69	1250.00
						1/2" Ice	18.01	18.01	1568.94
						1" Ice	21.34	21.34	1942.01
						2" Ice	28.08	28.08	2852.17
155									
ERICSSON AIR 21 B2A B4P	A	From	4.00	0.000	155.00	No Ice	6.09	4.30	91.50
		Centroid-Le	0.000			1/2" Ice	6.46	4.65	133.32
		g	0.000			1" Ice	6.84	5.00	180.26
						2" Ice	7.61	5.74	290.28
ERICSSON AIR 21 B2A B4P	B	From	4.00	0.000	155.00	No Ice	6.09	4.30	91.50
		Centroid-Le	0.000			1/2" Ice	6.46	4.65	133.32
		g	0.000			1" Ice	6.84	5.00	180.26
						2" Ice	7.61	5.74	290.28
ERICSSON AIR 21 B2A B4P	C	From	4.00	0.000	155.00	No Ice	6.09	4.30	91.50
		Centroid-Le	0.000			1/2" Ice	6.46	4.65	133.32
		g	0.000			1" Ice	6.84	5.00	180.26
						2" Ice	7.61	5.74	290.28
APXVAARR24_43-U-NA20	A	From	4.00	0.000	155.00	No Ice	14.67	5.32	153.30
		Centroid-Le	0.000			1/2" Ice	15.43	5.99	265.89
		g	0.000			1" Ice	16.21	6.68	387.02
						2" Ice	17.81	8.08	655.63
APXVAARR24_43-U-NA20	B	From	4.00	0.000	155.00	No Ice	14.67	5.32	153.30
		Centroid-Le	0.000			1/2" Ice	15.43	5.99	265.89
		g	0.000			1" Ice	16.21	6.68	387.02
						2" Ice	17.81	8.08	655.63
APXVAARR24_43-U-NA20	C	From	4.00	0.000	155.00	No Ice	14.67	5.32	153.30
		Centroid-Le	0.000			1/2" Ice	15.43	5.99	265.89
		g	0.000			1" Ice	16.21	6.68	387.02
						2" Ice	17.81	8.08	655.63
AIR -32 B2A/B66AA	A	From	4.00	0.000	155.00	No Ice	6.51	4.71	132.20
		Centroid-Le	0.000			1/2" Ice	6.89	5.07	178.02
		g	0.000			1" Ice	7.27	5.43	229.11
						2" Ice	8.06	6.18	347.85
AIR -32 B2A/B66AA	B	From	4.00	0.000	155.00	No Ice	6.51	4.71	132.20
		Centroid-Le	0.000			1/2" Ice	6.89	5.07	178.02
		g	0.000			1" Ice	7.27	5.43	229.11
						2" Ice	8.06	6.18	347.85
AIR -32 B2A/B66AA	C	From	4.00	0.000	155.00	No Ice	6.51	4.71	132.20
		Centroid-Le	0.000			1/2" Ice	6.89	5.07	178.02
		g	0.000			1" Ice	7.27	5.43	229.11
						2" Ice	8.06	6.18	347.85
RADIO 4449 B12/B71	A	From	4.00	0.000	155.00	No Ice	1.64	1.15	75.00
		Centroid-Le	0.000			1/2" Ice	1.80	1.29	91.07
		g	0.000			1" Ice	1.97	1.44	109.76
						2" Ice	2.33	1.75	155.77
RADIO 4449 B12/B71	B	From	4.00	0.000	155.00	No Ice	1.64	1.15	75.00
		Centroid-Le	0.000			1/2" Ice	1.80	1.29	91.07

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 lb
		g	0.000			1" Ice	1.97	1.44	109.76
						2" Ice	2.33	1.75	155.77
RADIO 4449 B12/B71	C	From Centroid-Le g	4.00 0.000 0.000	0.000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.64 1.80 1.97 2.33	1.15 1.29 1.44 1.75	75.00 91.07 109.76 155.77
KRY 112 144/1	A	From Centroid-Le g	4.00 0.000 0.000	0.000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.35 0.43 0.51 0.70	0.17 0.23 0.30 0.46	11.00 14.18 18.58 31.87
KRY 112 144/1	B	From Centroid-Le g	4.00 0.000 0.000	0.000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.35 0.43 0.51 0.70	0.17 0.23 0.30 0.46	11.00 14.18 18.58 31.87
KRY 112 144/1	C	From Centroid-Le g	4.00 0.000 0.000	0.000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.35 0.43 0.51 0.70	0.17 0.23 0.30 0.46	11.00 14.18 18.58 31.87
Platform Mount [LP 301-1]	C	None		0.000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice	23.81 30.24 36.33 48.05	23.81 30.24 36.33 48.05	1588.50 2099.17 2728.32 4339.43
145									
(2) BXA-171063-12CF-EDIN-X w/ Mount Pipe	A	From Centroid-Le g	4.00 0.000 3.000	0.000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.03 5.58 6.10 7.17	5.29 6.46 7.35 9.15	40.67 86.70 140.17 273.05
(2) BXA-171063-12CF-EDIN-X w/ Mount Pipe	B	From Centroid-Le g	4.00 0.000 3.000	0.000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.03 5.58 6.10 7.17	5.29 6.46 7.35 9.15	40.67 86.70 140.17 273.05
(2) BXA-171063-12CF-EDIN-X w/ Mount Pipe	C	From Centroid-Le g	4.00 0.000 3.000	0.000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.03 5.58 6.10 7.17	5.29 6.46 7.35 9.15	40.67 86.70 140.17 273.05
(2) BXA-70063-6CF-EDIN-X w/ Mount Pipe	A	From Centroid-Le g	4.00 0.000 3.000	0.000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	7.40 8.14 8.90 10.46	5.39 6.10 6.83 8.34	58.29 113.07 178.33 341.68
(2) BXA-70063-6CF-EDIN-X w/ Mount Pipe	B	From Centroid-Le g	4.00 0.000 3.000	0.000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	7.40 8.14 8.90 10.46	5.39 6.10 6.83 8.34	58.29 113.07 178.33 341.68
(2) BXA-70063-6CF-EDIN-X w/ Mount Pipe	C	From Centroid-Le g	4.00 0.000 3.000	0.000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	7.40 8.14 8.90 10.46	5.39 6.10 6.83 8.34	58.29 113.07 178.33 341.68
RRH2X40-07-U	A	From Centroid-Le g	4.00 0.000 0.000	0.000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.93 2.10 2.28 2.66	1.05 1.19 1.33 1.64	50.00 66.85 86.39 134.35
RRH2X40-07-U	B	From Centroid-Le g	4.00 0.000 0.000	0.000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.93 2.10 2.28 2.66	1.05 1.19 1.33 1.64	50.00 66.85 86.39 134.35
RRH2X40-07-U	C	From Centroid-Le	4.00 0.000	0.000	145.00	No Ice 1/2" Ice	1.93 2.10	1.05 1.19	50.00 66.85

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 lb
		g	0.000			1" Ice	2.28	1.33	86.39
						2" Ice	2.66	1.64	134.35
RRH2X40-AWS	A	From Centroid-Le g	4.00 0.000 0.000	0.000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.16 2.36 2.57 3.00	1.42 1.59 1.77 2.14	44.00 61.40 81.69 131.76
RRH2X40-AWS	B	From Centroid-Le g	4.00 0.000 0.000	0.000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.16 2.36 2.57 3.00	1.42 1.59 1.77 2.14	44.00 61.40 81.69 131.76
RRH2X40-AWS	C	From Centroid-Le g	4.00 0.000 0.000	0.000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.16 2.36 2.57 3.00	1.42 1.59 1.77 2.14	44.00 61.40 81.69 131.76
DB-B1-6C-8AB-0Z	A	From Centroid-Le g	4.00 0.000 0.000	0.000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.80 5.07 5.35 5.93	2.00 2.19 2.39 2.81	44.00 80.13 120.22 213.04
Platform Mount [LP 303-1]	C	None		0.000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 18.01 21.34 28.08	14.69 18.01 21.34 28.08	1250.00 1568.94 1942.01 2852.17
50									
KS24019-L112A	A	From Leg	3.00 0.000 1.000	0.000	50.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.08 0.13 0.19 0.35	0.08 0.13 0.19 0.35	5.00 6.25 8.26 15.18
3' x 2" Pipe Mount	A	From Leg	3.00 0.000 0.000	0.000	50.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.58 0.77 0.97 1.42	0.58 0.77 0.97 1.42	10.00 16.51 24.29 47.16
Side Arm Mount [SO 701-1]	A	From Leg	1.50 0.000 0.000	0.000	50.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.85 1.14 1.43 2.01	1.67 2.34 3.01 4.35	65.00 79.00 93.00 121.00
10									
OG-860/1920/GPS-A	A	From Leg	3.00 0.000 2.000	0.000	10.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.14 0.22 0.30 0.50	0.14 0.22 0.30 0.50	1.65 3.53 6.44 15.90
3' x 2" Pipe Mount	A	From Leg	3.00 0.000 0.000	0.000	10.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.58 0.77 0.97 1.42	0.58 0.77 0.97 1.42	10.00 16.51 24.29 47.16
Side Arm Mount [SO 701-1]	A	From Leg	1.50 0.000 0.000	0.000	10.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.85 1.14 1.43 2.01	1.67 2.34 3.01 4.35	65.00 79.00 93.00 121.00
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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
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 lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
L1	176 - 171	Pole	Max Tension	26	0.00	0.02	0.27
			Max. Compression	26	-9005.02	-78.52	-159.20
			Max. Mx	20	-2972.74	27150.57	-26.81
			Max. My	14	-2998.72	11.35	-27163.94
			Max. Vy	20	-5373.37	27150.57	-26.81
			Max. Vx	14	5367.84	11.35	-27163.94
			Max. Torque	6			-111.32
L2	171 - 166	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-18860.80	-354.30	-1066.56
			Max. Mx	20	-6277.86	61433.69	-510.20
			Max. My	14	-6338.60	81.96	-61871.84
			Max. Vy	20	-11560.52	61433.69	-510.20
			Max. Vx	14	11521.35	81.96	-61871.84
			Max. Torque	6			-526.49
L3	166 - 161	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-19391.31	-347.01	-1089.15
			Max. Mx	20	-6592.11	120007.24	-561.66
			Max. My	14	-6654.65	121.76	-120243.58
			Max. Vy	20	-11874.37	120007.24	-561.66
			Max. Vx	14	11833.45	121.76	-120243.58
			Max. Torque	6			-526.45
L4	161 - 156	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-19945.14	-337.73	-1107.57
			Max. Mx	20	-6941.57	180146.91	-611.11
			Max. My	14	-7005.77	162.18	-180172.28
			Max. Vy	20	-12189.92	180146.91	-611.11
			Max. Vx	14	12147.13	162.18	-180172.28
			Max. Torque	6			-526.18
L5	156 - 151	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-28337.57	-327.66	-1201.74
			Max. Mx	20	-10345.55	258831.23	-695.51
			Max. My	14	-10433.27	203.51	-258606.98
			Max. Vy	20	-16746.79	258831.23	-695.51
			Max. Vx	14	16686.30	203.51	-258606.98
			Max. Torque	6			-525.81
L6	151 - 144.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-28821.22	-320.07	-1276.02
			Max. Mx	20	-10695.37	313552.62	-756.52
			Max. My	14	-10783.98	230.72	-313155.99
			Max. Vy	20	-16945.79	313552.62	-756.52
			Max. Vx	14	16883.54	230.72	-313155.99
			Max. Torque	6			-525.36
L7	144.25 - 142.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-36500.83	-307.96	-698.07
			Max. Mx	20	-13579.49	416272.50	-684.79
			Max. My	14	-13676.33	272.45	-415601.75
			Max. Vy	20	-21446.22	416272.50	-684.79
			Max. Vx	14	21473.03	272.45	-415601.75
			Max. Torque	6			-291.24
L8	142.75 - 137.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-37473.84	-294.94	-819.87
			Max. Mx	20	-14350.66	524294.28	-782.56
			Max. My	14	-14449.73	315.01	-523792.16
			Max. Vy	20	-21785.63	524294.28	-782.56
			Max. Vx	14	21808.68	315.01	-523792.16
			Max. Torque	18			268.11
L9	137.75 - 132.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38478.28	-280.60	-943.70

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Mx	20	-15152.65	634022.20	-881.70
			Max. My	14	-15254.06	357.82	-633671.34
			Max. Vy	20	-22127.08	634022.20	-881.70
			Max. Vx	14	22146.17	357.82	-633671.34
			Max. Torque	18			267.77
L10	132.75 - 127.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39639.05	-265.05	-1069.86
			Max. Mx	20	-16071.14	745473.53	-982.21
			Max. My	14	-16175.01	400.84	-745254.43
			Max. Vy	20	-22477.23	745473.53	-982.21
			Max. Vx	14	22491.72	400.84	-745254.43
			Max. Torque	18			267.41
L11	127.75 - 127.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39712.47	-264.44	-1080.60
			Max. Mx	20	-16139.08	751093.80	-987.35
			Max. My	14	-16244.74	403.00	-750879.06
			Max. Vy	20	-22500.37	751093.80	-987.35
			Max. Vx	14	22501.27	403.00	-750879.06
			Max. Torque	18			267.08
L12	127.5 - 122.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41196.91	-247.54	-1204.87
			Max. Mx	20	-17238.27	865165.17	-1089.31
			Max. My	14	-17377.88	446.22	-864325.40
			Max. Vy	20	-23147.03	865165.17	-1089.31
			Max. Vx	14	22874.27	446.22	-864325.40
			Max. Torque	18			267.04
L13	122.5 - 120.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41723.62	-241.42	-1249.79
			Max. Mx	20	-17621.00	905844.86	-1125.38
			Max. My	14	-17771.83	461.34	-904460.82
			Max. Vy	20	-23381.47	905844.86	-1125.38
			Max. Vx	14	23011.64	461.34	-904460.82
			Max. Torque	18			266.68
L14	120.75 - 120.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41799.17	-240.76	-1261.72
			Max. Mx	20	-17705.75	911688.28	-1130.59
			Max. My	14	-17857.62	463.54	-910212.59
			Max. Vy	20	-23393.38	911688.28	-1130.59
			Max. Vx	14	23009.47	463.54	-910212.59
			Max. Torque	18			266.61
L15	120.5 - 117.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42835.05	-228.89	-1342.31
			Max. Mx	20	-18476.08	988394.93	-1198.02
			Max. My	14	-18648.04	491.75	-985396.96
			Max. Vy	20	-23831.35	988394.93	-1198.02
			Max. Vx	14	23256.78	491.75	-985396.96
			Max. Torque	18			266.57
L16	117.25 - 117	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42935.87	-228.32	-1357.78
			Max. Mx	20	-18571.25	994353.65	-1203.35
			Max. My	14	-18743.00	493.89	-991214.37
			Max. Vy	20	-23856.55	994353.65	-1203.35
			Max. Vx	14	23279.43	493.89	-991214.37
			Max. Torque	18			266.40
L17	117 - 112	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44961.46	-209.33	-1484.07
			Max. Mx	20	-20116.74	1115527.29	-1308.81
			Max. My	14	-20319.18	537.30	-1108794.03
			Max. Vy	20	-24627.87	1115527.29	-1308.81

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Vx	14	23743.87	537.30	-1108794.03
			Max. Torque	18			266.37
L18	112 - 107	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47017.10	-189.89	-1621.42
			Max. Mx	20	-21700.27	1240527.57	-1416.40
			Max. My	14	-21930.22	580.89	-1228656.98
			Max. Vy	20	-25394.68	1240527.57	-1416.40
			Max. Vx	14	24199.51	580.89	-1228656.98
			Max. Torque	18			266.19
L19	107 - 102	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-49102.45	-169.82	-1747.48
			Max. Mx	20	-23315.27	1369354.06	-1525.95
			Max. My	14	-23569.48	624.65	-1350782.88
			Max. Vy	20	-26159.93	1369354.06	-1525.95
			Max. Vx	14	24649.85	624.65	-1350782.88
			Max. Torque	18			266.02
L20	102 - 94.5833	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-50194.81	-159.10	-1809.27
			Max. Mx	20	-24159.06	1437409.81	-1583.79
			Max. My	14	-24424.66	647.33	-1414759.97
			Max. Vy	20	-26555.40	1437409.81	-1583.79
			Max. Vx	14	24883.06	647.33	-1414759.97
			Max. Torque	18			265.85
L21	94.5833 - 94.4167	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-53394.39	-138.79	-1941.19
			Max. Mx	20	-26551.04	1572333.11	-1696.17
			Max. My	14	-26839.77	691.26	-1540572.16
			Max. Vy	20	-27428.37	1572333.11	-1696.17
			Max. Vx	14	25430.77	691.26	-1540572.16
			Max. Torque	18			265.70
L22	94.4167 - 89.4167	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-54943.08	-117.45	-2053.14
			Max. Mx	20	-27676.84	1711045.11	-1809.45
			Max. My	14	-27976.99	735.53	-1668576.82
			Max. Vy	20	-28083.47	1711045.11	-1809.45
			Max. Vx	14	25771.51	735.53	-1668576.82
			Max. Torque	18			265.68
L23	89.4167 - 87.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-55771.40	-108.22	-2107.36
			Max. Mx	20	-28326.88	1772165.22	-1858.97
			Max. My	14	-28630.09	754.67	-1724567.19
			Max. Vy	20	-28374.96	1772165.22	-1858.97
			Max. Vx	14	25925.56	754.67	-1724567.19
			Max. Torque	18			265.48
L24	87.25 - 87	Pole	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Compression	26	-55868.80	-107.37	-2120.17
			Max. Mx	20	-28420.17	1779258.06	-1864.71
			Max. My	14	-28721.84	756.89	-1731048.98
			Max. Vy	20	-28393.47	1779258.06	-1864.71
			Max. Vx	14	25928.46	756.89	-1731048.98
			Max. Torque	18			265.42
L25	87 - 82	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57833.96	-85.51	-2241.92
			Max. Mx	20	-29963.39	1922857.58	-1979.95
			Max. My	14	-30269.66	801.00	-1861597.15
			Max. Vy	20	-29073.56	1922857.58	-1979.95
			Max. Vx	14	26290.16	801.00	-1861597.15
			Max. Torque	18			265.40
L26	82 - 77	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-59831.95	-63.42	-2373.34
			Max. Mx	20	-31554.74	2069770.13	-2096.47
			Max. My	14	-31859.17	845.00	-1993868.41
			Max. Vy	20	-29733.37	2069770.13	-2096.47
			Max. Vx	14	26631.19	845.00	-1993868.41
			Max. Torque	18			265.24
L27	77 - 72	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-61862.42	-40.92	-2508.06
			Max. Mx	20	-33179.23	2219957.96	-2214.19
			Max. My	14	-33477.11	888.87	-2127823.63
			Max. Vy	20	-30384.97	2219957.96	-2214.19
			Max. Vx	14	26964.07	888.87	-2127823.63
			Max. Torque	18			265.10
L28	72 - 67	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-63925.01	-18.03	-2646.01
			Max. Mx	20	-34836.60	2373376.57	-2333.07
			Max. My	14	-35123.26	932.58	-2263420.47
			Max. Vy	20	-31026.92	2373376.57	-2333.07
			Max. Vx	14	27288.07	932.58	-2263420.47
			Max. Torque	18			265.00
L29	67 - 62	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-65859.29	5.22	-2787.13
			Max. Mx	20	-36361.22	2529961.24	-2453.03
			Max. My	14	-36632.20	976.09	-2400595.03
			Max. Vy	20	-31652.83	2529961.24	-2453.03
			Max. Vx	14	27595.56	976.09	-2400595.03
			Max. Torque	18			264.91
L30	62 - 61.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66034.88	7.51	-2802.89
			Max. Mx	20	-36505.16	2545791.82	-2465.07
			Max. My	14	-36772.62	980.45	-2414396.85
			Max. Vy	20	-31703.08	2545791.82	-2465.07
			Max. Vx	14	27614.34	980.45	-2414396.85

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Torque	18			264.86
L31	61.5 - 61.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66147.64	8.49	-2815.73
			Max. Mx	20	-36600.32	2553719.31	-2471.10
			Max. My	14	-36866.30	982.61	-2421303.94
			Max. Vy	20	-31732.03	2553719.31	-2471.10
			Max. Vx	14	27627.40	982.61	-2421303.94
			Max. Torque	18			264.85
L32	61.25 - 56.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-68413.05	32.32	-2953.99
			Max. Mx	20	-38372.87	2714117.95	-2592.60
			Max. My	14	-38632.28	1025.83	-2560450.27
			Max. Vy	20	-32449.04	2714117.95	-2592.60
			Max. Vx	4	-28194.29	-1357773.29	2357377.45
			Max. Torque	18			264.85
L33	56.25 - 46.9567	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-69889.83	47.73	-3056.15
			Max. Mx	20	-39534.61	2818933.80	-2672.48
			Max. My	14	-39787.14	1053.55	-2650780.26
			Max. Vy	20	-32889.22	2818933.80	-2672.48
			Max. Vx	4	-28575.36	-1410201.64	2448395.01
			Max. Torque	18			264.82
L34	46.9567 - 45.9567	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75657.46	81.75	-2685.68
			Max. Mx	20	-44019.63	3056250.72	-2514.27
			Max. My	14	-44269.94	1114.59	-2853306.73
			Max. Vy	20	-34108.93	3056250.72	-2514.27
			Max. Vx	4	-29607.12	-1528909.88	2654699.45
			Max. Torque	25			-229.53
L35	45.9567 - 40.9567	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-78006.35	105.66	-2867.67
			Max. Mx	20	-45887.76	3228293.66	-2641.60
			Max. My	14	-46119.38	1157.71	-2999062.13
			Max. Vy	20	-34745.85	3228293.66	-2641.60
			Max. Vx	4	-30158.37	-1614963.17	2803946.70
			Max. Torque	25			-229.52
L36	40.9567 - 35.9567	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-80383.13	129.68	-3052.56
			Max. Mx	20	-47786.49	3403469.54	-2770.39
			Max. My	14	-47996.54	1200.67	-3146439.16
			Max. Vy	20	-35363.07	3403469.54	-2770.39
			Max. Vx	4	-30692.55	-1702582.69	2955903.38
			Max. Torque	25			-229.46
L37	35.9567 - 32.25	Pole	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Compression	26	-82274.84	182.05	-3171.11
			Max. Mx	20	-49210.53	3535362.25	-2866.79
			Max. My	14	-49399.54	1232.39	-3257139.00
			Max. Vy	20	-35845.11	3535362.25	-2866.79
			Max. Vx	4	-31109.76	-1768552.30	3070308.63
			Max. Torque	25			-229.41
L38	32.25 - 32	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-82438.84	186.18	-3184.78
			Max. Mx	20	-49353.77	3544322.18	-2873.33
			Max. My	14	-49538.35	1234.54	-3264667.50
			Max. Vy	20	-35861.29	3544322.18	-2873.33
			Max. Vx	4	-31123.25	-1773033.86	3078080.37
			Max. Torque	25			-229.38
L39	32 - 31.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-82578.03	190.57	-3191.02
			Max. Mx	20	-49457.97	3553290.66	-2879.86
			Max. My	14	-49641.35	1236.68	-3272204.25
			Max. Vy	20	-35895.52	3553290.66	-2879.86
			Max. Vx	4	-31152.82	-1777519.64	3085859.54
			Max. Torque	25			-229.38
L40	31.75 - 26.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-85290.68	277.59	-3339.80
			Max. Mx	20	-51554.35	3734300.77	-3011.30
			Max. My	14	-51712.30	1279.29	-3424566.11
			Max. Vy	20	-36532.64	3734300.77	-3011.30
			Max. Vx	4	-31704.79	-1868055.82	3242861.89
			Max. Torque	25			-229.37
L41	26.75 - 21.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-87951.07	364.24	-3494.87
			Max. Mx	20	-53690.21	3918370.62	-3144.17
			Max. My	14	-53820.02	1321.73	-3580008.14
			Max. Vy	20	-37132.52	3918370.62	-3144.17
			Max. Vx	4	-32223.96	-1960121.62	3402510.23
			Max. Torque	25			-229.34
L42	21.75 - 16.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-90630.54	450.14	-3651.49
			Max. Mx	20	-55857.44	4105443.16	-3278.44
			Max. My	14	-55958.51	1363.99	-3738520.07
			Max. Vy	20	-37734.71	4105443.16	-3278.44
			Max. Vx	4	-32745.11	-2053688.50	3564755.12
			Max. Torque	25			-229.31
L43	16.75 - 11.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-93324.33	534.49	-3809.13
			Max. Mx	20	-58054.02	4295537.16	-3414.04
			Max. My	14	-58126.23	1406.04	-3900129.28
			Max. Vy	20	-38342.12	4295537.16	-3414.04
			Max. Vx	4	-33270.76	-2148765.83	3729612.70

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Torque	25			-229.29
L44	11.75 - 6.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-96171.31	615.89	-3372.21
			Max. Mx	20	-60374.02	4488913.26	-3195.74
			Max. My	14	-60416.91	1447.87	-4064667.95
			Max. Vy	20	-39023.45	4488913.26	-3195.74
			Max. Vx	4	-33839.18	-2245484.83	3897596.46
			Max. Torque	23			-460.55
L45	6.75 - 1.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-98856.19	691.03	-3527.59
			Max. Mx	20	-62632.21	4685462.47	-3334.35
			Max. My	14	-62645.45	1489.47	-4232787.42
			Max. Vy	20	-39637.55	4685462.47	-3334.35
			Max. Vx	4	-34370.57	-2343789.29	4067929.98
			Max. Torque	23			-460.50
L46	1.75 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-99774.47	712.86	-3579.35
			Max. Mx	20	-63420.87	4754982.68	-3383.15
			Max. My	14	-63426.03	1503.96	-4292380.56
			Max. Vy	20	-39869.97	4754982.68	-3383.15
			Max. Vx	4	-34571.74	-2378559.78	4128176.15
			Max. Torque	23			-460.48

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Pole	Max. Vert	32	99774.47	-3779.13	-6546.63
	Max. H_x	21	47582.77	39833.64	-7.73
	Max. H_z	4	63443.70	-19923.51	34540.20
	Max. M_x	2	4288477.42	-7.73	34144.98
	Max. M_z	8	4277014.82	-34099.50	7.73
	Max. Torsion	11	458.30	-29527.17	-17065.80
	Min. Vert	23	47582.77	29527.17	17065.80
	Min. H_x	9	47582.77	-34099.50	7.73
	Min. H_z	12	63443.70	-19910.13	-34532.47
	Min. M_x	14	-4292380.56	7.73	-34144.98
	Min. M_z	20	-4754982.68	39833.64	-7.73
	Min. Torsion	23	-460.49	29527.17	17065.80

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead Only	52869.75	-0.00	0.00	1514.77	61.79	-0.00

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
1.2 Dead+1.0 Wind 0 deg - No Ice	63443.70	7.73	-34144.98	-4288477.42	-1331.85	189.46
0.9 Dead+1.0 Wind 0 deg - No Ice	47582.77	7.73	-34144.98	-4215734.75	-1326.51	190.41
1.2 Dead+1.0 Wind 30 deg - No Ice	63443.70	19923.51	-34540.20	-4128176.15	-2378559.78	-33.27
0.9 Dead+1.0 Wind 30 deg - No Ice	47582.77	19923.51	-34540.20	-4061249.42	-2339744.89	-45.53
1.2 Dead+1.0 Wind 60 deg - No Ice	63443.70	29534.89	-17079.18	-2144512.27	-3704678.70	-248.25
0.9 Dead+1.0 Wind 60 deg - No Ice	47582.77	29534.89	-17079.18	-2108378.07	-3641444.20	-269.68
1.2 Dead+1.0 Wind 90 deg - No Ice	63443.70	34099.50	-7.73	548.54	-4277014.82	-394.91
0.9 Dead+1.0 Wind 90 deg - No Ice	47582.77	34099.50	-7.73	50.44	-4204008.54	-420.20
1.2 Dead+1.0 Wind 120 deg - No Ice	63443.70	29527.17	17065.80	2145992.10	-3703265.63	-435.91
0.9 Dead+1.0 Wind 120 deg - No Ice	47582.77	29527.17	17065.80	2108855.37	-3640061.70	-458.30
1.2 Dead+1.0 Wind 150 deg - No Ice	63443.70	19910.13	34532.47	4130685.34	-2376101.95	-358.60
0.9 Dead+1.0 Wind 150 deg - No Ice	47582.77	19910.13	34532.47	4062739.86	-2337339.26	-372.58
1.2 Dead+1.0 Wind 180 deg - No Ice	63443.70	-7.73	34144.98	4292380.56	1503.99	-189.84
0.9 Dead+1.0 Wind 180 deg - No Ice	47582.77	-7.73	34144.98	4218593.66	1452.55	-190.80
1.2 Dead+1.0 Wind 210 deg - No Ice	63443.70	-17056.44	29574.28	3718293.18	2139813.93	32.25
0.9 Dead+1.0 Wind 210 deg - No Ice	47582.77	-17056.44	29574.28	3654307.84	2103258.98	44.06
1.2 Dead+1.0 Wind 240 deg - No Ice	63443.70	-29534.89	17079.18	2148431.56	3704827.24	246.44
0.9 Dead+1.0 Wind 240 deg - No Ice	47582.77	-29534.89	17079.18	2111248.40	3641553.55	267.88
1.2 Dead+1.0 Wind 270 deg - No Ice	63443.70	-39833.64	7.73	3383.22	4754982.68	391.83
0.9 Dead+1.0 Wind 270 deg - No Ice	47582.77	-39833.64	7.73	2828.61	4677331.65	418.09
1.2 Dead+1.0 Wind 300 deg - No Ice	63443.70	-29527.17	-17065.80	-2142060.35	3703439.84	438.12
0.9 Dead+1.0 Wind 300 deg - No Ice	47582.77	-29527.17	-17065.80	-2105976.23	3640189.21	460.49
1.2 Dead+1.0 Wind 330 deg - No Ice	63443.70	-17043.06	-29566.56	-3712982.42	2137381.07	362.70
0.9 Dead+1.0 Wind 330 deg - No Ice	47582.77	-17043.06	-29566.56	-3650070.30	2100870.62	376.18
1.2 Dead+1.0 Ice+1.0 Temp	99774.47	0.00	0.03	3579.35	712.86	-0.04
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	99774.47	1.45	-7470.32	-1032550.48	437.41	91.92
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	99774.47	3781.65	-6548.08	-900795.08	-520678.38	35.27
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	99774.47	6470.69	-3736.42	-514591.53	-895131.43	-30.98
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	99774.47	7470.87	-1.45	3583.74	-1033552.46	-88.81
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	99774.47	6469.23	3733.90	521837.23	-894837.27	-122.86
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	99774.47	3779.13	6546.63	908254.53	-520169.28	-124.02

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	99774.47	-1.45	7470.32	1040302.56	1024.30	-92.06
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	99774.47	-3736.69	6470.21	901594.17	518124.48	-35.40
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	99774.47	-6470.69	3736.42	522343.95	896589.78	30.77
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	99774.47	-7560.79	1.45	4170.61	1043038.68	88.58
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	99774.47	-6469.23	-3733.90	-514082.07	896297.58	122.87
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	99774.47	-3734.17	-6468.76	-893548.35	517617.34	124.04
Dead+Wind 0 deg - Service	52869.75	1.55	-6850.38	-851912.12	-215.99	39.46
Dead+Wind 30 deg - Service	52869.75	3997.18	-6929.67	-820494.10	-473410.08	-6.32
Dead+Wind 60 deg - Service	52869.75	5925.47	-3426.53	-425391.24	-736945.60	-50.86
Dead+Wind 90 deg - Service	52869.75	6841.25	-1.55	1337.69	-850797.66	-81.45
Dead+Wind 120 deg - Service	52869.75	5923.92	3423.85	428141.97	-736663.53	-90.23
Dead+Wind 150 deg - Service	52869.75	3994.49	6928.12	823450.59	-472921.64	-74.54
Dead+Wind 180 deg - Service	52869.75	-1.55	6850.38	855150.09	347.59	-39.48
Dead+Wind 210 deg - Service	52869.75	-3421.97	5933.37	740940.79	425741.55	6.49
Dead+Wind 240 deg - Service	52869.75	-5925.47	3426.53	428629.75	737076.42	50.77
Dead+Wind 270 deg - Service	52869.75	-7991.67	1.55	1901.24	946527.92	80.86
Dead+Wind 300 deg - Service	52869.75	-5923.92	-3423.85	-424903.04	736795.19	90.35
Dead+Wind 330 deg - Service	52869.75	-3419.28	-5931.82	-737420.91	425253.97	74.96

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	lb	lb	lb	lb	lb	lb	
1	0.00	-52869.75	0.00	0.00	52869.75	-0.00	0.000%
2	7.73	-63443.70	-34144.98	-7.73	63443.70	34144.98	0.000%
3	7.73	-47582.77	-34144.98	-7.73	47582.77	34144.98	0.000%
4	19923.51	-63443.70	-34540.20	-19923.51	63443.70	34540.20	0.000%
5	19923.51	-47582.77	-34540.20	-19923.51	47582.77	34540.20	0.000%
6	29534.89	-63443.70	-17079.18	-29534.89	63443.70	17079.18	0.000%
7	29534.89	-47582.77	-17079.18	-29534.89	47582.77	17079.18	0.000%
8	34099.50	-63443.70	-7.73	-34099.50	63443.70	7.73	0.000%
9	34099.50	-47582.77	-7.73	-34099.50	47582.77	7.73	0.000%
10	29527.17	-63443.70	17065.80	-29527.17	63443.70	-17065.80	0.000%
11	29527.17	-47582.77	17065.80	-29527.17	47582.77	-17065.80	0.000%
12	19910.13	-63443.70	34532.47	-19910.13	63443.70	-34532.47	0.000%
13	19910.13	-47582.77	34532.47	-19910.13	47582.77	-34532.47	0.000%
14	-7.73	-63443.70	34144.98	7.73	63443.70	-34144.98	0.000%
15	-7.73	-47582.77	34144.98	7.73	47582.77	-34144.98	0.000%
16	-17056.44	-63443.70	29574.28	17056.44	63443.70	-29574.28	0.000%
17	-17056.44	-47582.77	29574.28	17056.44	47582.77	-29574.28	0.000%
18	-29534.89	-63443.70	17079.18	29534.89	63443.70	-17079.18	0.000%
19	-29534.89	-47582.77	17079.18	29534.89	47582.77	-17079.18	0.000%
20	-39833.64	-63443.70	7.73	39833.64	63443.70	-7.73	0.000%
21	-39833.64	-47582.77	7.73	39833.64	47582.77	-7.73	0.000%
22	-29527.17	-63443.70	-17065.80	29527.17	63443.70	17065.80	0.000%
23	-29527.17	-47582.77	-17065.80	29527.17	47582.77	17065.80	0.000%
24	-17043.06	-63443.70	-29566.56	17043.06	63443.70	29566.56	0.000%
25	-17043.06	-47582.77	-29566.56	17043.06	47582.77	29566.56	0.000%
26	0.00	-99774.47	0.00	-0.00	99774.47	-0.03	0.000%
27	1.45	-99774.47	-7470.31	-1.45	99774.47	7470.32	0.000%
28	3781.65	-99774.47	-6548.08	-3781.65	99774.47	6548.08	0.000%

Load Comb.	Sum of Applied Forces PX lb	PY lb	PZ lb	Sum of Reactions PX lb	PY lb	PZ lb	% Error
29	6470.68	-99774.47	-3736.41	-6470.69	99774.47	3736.42	0.000%
30	7470.86	-99774.47	-1.45	-7470.87	99774.47	1.45	0.000%
31	6469.23	-99774.47	3733.90	-6469.23	99774.47	-3733.90	0.000%
32	3779.13	-99774.47	6546.62	-3779.13	99774.47	-6546.63	0.000%
33	-1.45	-99774.47	7470.31	1.45	99774.47	-7470.32	0.000%
34	-3736.69	-99774.47	6470.20	3736.69	99774.47	-6470.21	0.000%
35	-6470.68	-99774.47	3736.41	6470.69	99774.47	-3736.42	0.000%
36	-7560.78	-99774.47	1.45	7560.79	99774.47	-1.45	0.000%
37	-6469.23	-99774.47	-3733.90	6469.23	99774.47	3733.90	0.000%
38	-3734.17	-99774.47	-6468.75	3734.17	99774.47	6468.76	0.000%
39	1.55	-52869.75	-6850.38	-1.55	52869.75	6850.38	0.000%
40	3997.18	-52869.75	-6929.67	-3997.18	52869.75	6929.67	0.000%
41	5925.47	-52869.75	-3426.53	-5925.47	52869.75	3426.53	0.000%
42	6841.25	-52869.75	-1.55	-6841.25	52869.75	1.55	0.000%
43	5923.92	-52869.75	3423.85	-5923.92	52869.75	-3423.85	0.000%
44	3994.49	-52869.75	6928.12	-3994.49	52869.75	-6928.12	0.000%
45	-1.55	-52869.75	6850.38	1.55	52869.75	-6850.38	0.000%
46	-3421.97	-52869.75	5933.37	3421.97	52869.75	-5933.37	0.000%
47	-5925.47	-52869.75	3426.53	5925.47	52869.75	-3426.53	0.000%
48	-7991.67	-52869.75	1.55	7991.67	52869.75	-1.55	0.000%
49	-5923.92	-52869.75	-3423.85	5923.92	52869.75	3423.85	0.000%
50	-3419.28	-52869.75	-5931.82	3419.28	52869.75	5931.82	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	6	0.00000001	0.00009687
3	Yes	5	0.00000001	0.00045997
4	Yes	7	0.00000001	0.00087767
5	Yes	7	0.00000001	0.00018432
6	Yes	7	0.00000001	0.00081808
7	Yes	7	0.00000001	0.00017754
8	Yes	6	0.00000001	0.00009031
9	Yes	5	0.00000001	0.00039246
10	Yes	7	0.00000001	0.00082081
11	Yes	7	0.00000001	0.00017812
12	Yes	7	0.00000001	0.00087716
13	Yes	7	0.00000001	0.00018420
14	Yes	6	0.00000001	0.00008877
15	Yes	5	0.00000001	0.00040118
16	Yes	7	0.00000001	0.00081945
17	Yes	7	0.00000001	0.00017763
18	Yes	7	0.00000001	0.00082341
19	Yes	7	0.00000001	0.00017869
20	Yes	6	0.00000001	0.00009755
21	Yes	5	0.00000001	0.00042971
22	Yes	7	0.00000001	0.00081936
23	Yes	7	0.00000001	0.00017802
24	Yes	7	0.00000001	0.00081871
25	Yes	7	0.00000001	0.00017770
26	Yes	4	0.00000001	0.00072437
27	Yes	8	0.00000001	0.00020900
28	Yes	8	0.00000001	0.00030008
29	Yes	8	0.00000001	0.00029669

30	Yes	8	0.00000001	0.00020975
31	Yes	8	0.00000001	0.00030084
32	Yes	8	0.00000001	0.00030294
33	Yes	8	0.00000001	0.00021125
34	Yes	8	0.00000001	0.00030039
35	Yes	8	0.00000001	0.00030141
36	Yes	8	0.00000001	0.00021033
37	Yes	8	0.00000001	0.00029657
38	Yes	8	0.00000001	0.00029686
39	Yes	5	0.00000001	0.00020686
40	Yes	6	0.00000001	0.00013452
41	Yes	6	0.00000001	0.00011440
42	Yes	5	0.00000001	0.00020652
43	Yes	6	0.00000001	0.00011622
44	Yes	6	0.00000001	0.00013510
45	Yes	5	0.00000001	0.00020782
46	Yes	6	0.00000001	0.00011576
47	Yes	6	0.00000001	0.00011724
48	Yes	5	0.00000001	0.00021669
49	Yes	6	0.00000001	0.00011488
50	Yes	6	0.00000001	0.00011472

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	176 - 171	34.507	44	2.027	0.002
L2	171 - 166	32.389	44	2.016	0.002
L3	166 - 161	30.292	44	1.989	0.001
L4	161 - 156	28.233	44	1.940	0.001
L5	156 - 151	26.237	44	1.871	0.001
L6	151 - 144.25	24.321	44	1.787	0.001
L7	147.75 - 142.75	23.126	44	1.723	0.000
L8	142.75 - 137.75	21.345	44	1.672	0.000
L9	137.75 - 132.75	19.634	44	1.594	0.000
L10	132.75 - 127.75	18.009	44	1.510	0.000
L11	127.75 - 127.5	16.475	44	1.422	0.000
L12	127.5 - 122.5	16.400	44	1.417	0.000
L13	122.5 - 120.75	14.964	44	1.327	0.000
L14	120.75 - 120.5	14.483	44	1.295	0.000
L15	120.5 - 117.25	14.416	44	1.291	0.000
L16	117.25 - 117	13.557	44	1.231	0.000
L17	117 - 112	13.493	44	1.228	0.000
L18	112 - 107	12.236	44	1.172	0.000
L19	107 - 102	11.038	44	1.116	0.000
L20	102 - 94.5833	9.900	44	1.059	0.000
L21	99.4167 - 94.4167	9.334	44	1.030	0.000
L22	94.4167 - 89.4167	8.273	44	0.995	0.000
L23	89.4167 - 87.25	7.273	44	0.916	0.000
L24	87.25 - 87	6.865	44	0.882	0.000
L25	87 - 82	6.819	44	0.878	0.000
L26	82 - 77	5.940	44	0.801	0.000
L27	77 - 72	5.142	44	0.724	0.000
L28	72 - 67	4.423	44	0.649	0.000
L29	67 - 62	3.781	44	0.576	0.000
L30	62 - 61.5	3.216	44	0.504	0.000
L31	61.5 - 61.25	3.163	44	0.497	0.000
L32	61.25 - 56.25	3.137	44	0.494	0.000
L33	56.25 - 46.9567	2.644	44	0.448	0.000

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L34	53.04 - 45.9567	2.353	44	0.418	0.000
L35	45.9567 - 40.9567	1.757	44	0.381	0.000
L36	40.9567 - 35.9567	1.383	44	0.334	0.000
L37	35.9567 - 32.25	1.058	44	0.288	0.000
L38	32.25 - 32	0.847	44	0.254	0.000
L39	32 - 31.75	0.834	44	0.252	0.000
L40	31.75 - 26.75	0.821	44	0.250	0.000
L41	26.75 - 21.75	0.580	44	0.210	0.000
L42	21.75 - 16.75	0.382	44	0.170	0.000
L43	16.75 - 11.75	0.225	44	0.130	0.000
L44	11.75 - 6.75	0.110	44	0.090	0.000
L45	6.75 - 1.75	0.036	44	0.051	0.000
L46	1.75 - 0	0.002	44	0.013	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
176.00	DT465B-2XR w/ Mount Pipe	44	34.507	2.027	0.002	15061
174.00	800MHZ RRH	44	33.659	2.024	0.002	15061
169.00	Side Arm Mount [SO 102-3]	44	31.547	2.008	0.002	10967
167.00	HPA65R-BU6A w/ Mount Pipe	44	30.709	1.996	0.001	8534
155.00	ERICSSON AIR 21 B2A B4P	44	25.847	1.856	0.001	3567
145.00	(2) BXA-171063-12CF-EDIN-X w/ Mount Pipe	44	22.138	1.693	0.000	4487
50.00	KS24019-L112A	44	2.089	0.402	0.000	9308
10.00	OG-860/1920/GPS-A	44	0.080	0.077	0.000	7404

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	176 - 171	172.600	12	10.174	0.008
L2	171 - 166	162.063	12	10.119	0.008
L3	166 - 161	151.623	12	9.984	0.007
L4	161 - 156	141.374	12	9.740	0.005
L5	156 - 151	131.426	12	9.399	0.004
L6	151 - 144.25	121.868	12	8.978	0.003
L7	147.75 - 142.75	115.904	12	8.661	0.002
L8	142.75 - 137.75	107.006	12	8.405	0.002
L9	137.75 - 132.75	98.458	12	8.012	0.002
L10	132.75 - 127.75	90.331	12	7.589	0.001
L11	127.75 - 127.5	82.651	12	7.147	0.001
L12	127.5 - 122.5	82.279	12	7.124	0.001
L13	122.5 - 120.75	75.086	12	6.670	0.001
L14	120.75 - 120.5	72.680	12	6.512	0.001
L15	120.5 - 117.25	72.341	12	6.489	0.001
L16	117.25 - 117	68.041	12	6.189	0.001
L17	117 - 112	67.718	12	6.176	0.001
L18	112 - 107	61.419	12	5.894	0.001

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L19	107 - 102	55.412	12	5.612	0.001
L20	102 - 94.5833	49.700	12	5.326	0.001
L21	99.4167 - 94.4167	46.866	12	5.178	0.001
L22	94.4167 - 89.4167	41.541	12	5.004	0.001
L23	89.4167 - 87.25	36.520	12	4.605	0.000
L24	87.25 - 87	34.473	12	4.434	0.000
L25	87 - 82	34.242	12	4.415	0.000
L26	82 - 77	29.831	12	4.025	0.000
L27	77 - 72	25.822	12	3.641	0.000
L28	72 - 67	22.211	12	3.265	0.000
L29	67 - 62	18.989	12	2.895	0.000
L30	62 - 61.5	16.150	12	2.532	0.000
L31	61.5 - 61.25	15.887	12	2.496	0.000
L32	61.25 - 56.25	15.757	12	2.485	0.000
L33	56.25 - 46.9567	13.279	12	2.250	0.000
L34	53.04 - 45.9567	11.817	12	2.102	0.000
L35	45.9567 - 40.9567	8.823	12	1.914	0.000
L36	40.9567 - 35.9567	6.944	12	1.677	0.000
L37	35.9567 - 32.25	5.311	12	1.445	0.000
L38	32.25 - 32	4.255	12	1.276	0.000
L39	32 - 31.75	4.188	12	1.268	0.000
L40	31.75 - 26.75	4.122	12	1.257	0.000
L41	26.75 - 21.75	2.913	12	1.052	0.000
L42	21.75 - 16.75	1.917	12	0.851	0.000
L43	16.75 - 11.75	1.131	12	0.650	0.000
L44	11.75 - 6.75	0.553	12	0.454	0.000
L45	6.75 - 1.75	0.181	12	0.258	0.000
L46	1.75 - 0	0.012	12	0.066	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
176.00	DT465B-2XR w/ Mount Pipe	12	172.600	10.174	0.009	3186
174.00	800MHZ RRH	12	168.379	10.157	0.009	3186
169.00	Side Arm Mount [SO 102-3]	12	157.870	10.077	0.008	2332
167.00	HPA65R-BU6A w/ Mount Pipe	12	153.699	10.020	0.008	1823
155.00	ERICSSON AIR 21 B2A B4P	12	129.480	9.324	0.004	750
145.00	(2) BXA-171063-12CF-EDIN-X w/ Mount Pipe	12	110.970	8.509	0.002	933
50.00	KS24019-L112A	12	10.492	2.018	0.000	1856
10.00	OG-860/1920/GPS-A	12	0.400	0.385	0.000	1475

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
L1	176 - 171 (1)	TP17.626x16.5x0.188	5.00	0.00	0.0	10.378	-2969.55	607118.00	0.005
L2	171 - 166 (2)	TP18.752x17.626x0.188	5.00	0.00	0.0	11.048	-6275.00	646319.00	0.010
L3	166 - 161 (3)	TP19.878x18.752x0.188	5.00	0.00	0.0	11.718	-6589.34	685519.00	0.010
L4	161 - 156 (4)	TP21.004x19.878x0.188	5.00	0.00	0.0	12.388	-6938.82	724720.00	0.010
L5	156 - 151 (5)	TP22.13x21.004x0.188	5.00	0.00	0.0	13.059	-10341.20	763921.00	0.014
L6	151 - 144.25 (6)	TP23.65x22.13x0.188	6.75	0.00	0.0	13.494	-10691.00	789402.00	0.014
L7	144.25 - 142.75 (7)	TP23.601x22.487x0.313	5.00	0.00	0.0	23.099	-13561.90	1351280.00	0.010
L8	142.75 - 137.75 (8)	TP24.714x23.601x0.313	5.00	0.00	0.0	24.204	-14333.60	1415910.00	0.010
L9	137.75 - 132.75 (9)	TP25.828x24.714x0.313	5.00	0.00	0.0	25.308	-15136.30	1480540.00	0.010
L10	132.75 - 127.75 (10)	TP26.942x25.828x0.313	5.00	0.00	0.0	26.413	-16055.50	1545160.00	0.010
L11	127.75 - 127.5 (11)	TP26.998x26.942x0.313	0.25	0.00	0.0	26.468	-16123.50	1548400.00	0.010
L12	127.5 - 122.5 (12)	TP28.111x26.998x0.313	5.00	0.00	0.0	27.573	-17223.40	1613020.00	0.011
L13	122.5 - 120.75 (13)	TP28.501x28.111x0.313	1.75	0.00	0.0	27.960	-17606.30	1635640.00	0.011
L14	120.75 - 120.5 (14)	TP28.557x28.501x0.313	0.25	0.00	0.0	28.015	-17691.20	1638870.00	0.011
L15	120.5 - 117.25 (15)	TP29.281x28.557x0.313	3.25	0.00	0.0	28.733	-18462.00	1680880.00	0.011
L16	117.25 - 117 (16)	TP29.337x29.281x0.538	0.25	0.00	0.0	49.132	-18557.30	2874220.00	0.006
L17	117 - 112 (17)	TP30.45x29.337x0.525	5.00	0.00	0.0	49.866	-20103.10	2917170.00	0.007
L18	112 - 107 (18)	TP31.564x30.45x0.525	5.00	0.00	0.0	51.722	-21687.10	3025740.00	0.007
L19	107 - 102 (19)	TP32.678x31.564x0.513	5.00	0.00	0.0	52.323	-23302.60	3060870.00	0.008
L20	102 - 94.5833 (20)	TP34.33x32.678x0.513	7.42	0.00	0.0	53.259	-24146.60	3115640.00	0.008
L21	94.5833 - 94.4167 (21)	TP33.741x32.628x0.375	5.00	0.00	0.0	39.714	-26538.90	2323250.00	0.011
L22	94.4167 - 89.4167 (22)	TP34.853x33.741x0.375	5.00	0.00	0.0	41.038	-27665.50	2400710.00	0.012
L23	89.4167 - 87.25 (23)	TP35.335x34.853x0.375	2.17	0.00	0.0	41.611	-28315.90	2434270.00	0.012
L24	87.25 - 87 (24)	TP35.391x35.335x0.375	0.25	0.00	0.0	41.678	-28409.30	2438140.00	0.012
L25	87 - 82 (25)	TP36.503x35.391x0.375	5.00	0.00	0.0	43.002	-29953.30	2515600.00	0.012
L26	82 - 77 (26)	TP37.616x36.503x0.375	5.00	0.00	0.0	44.326	-31545.50	2593060.00	0.012
L27	77 - 72 (27)	TP38.728x37.616x0.375	5.00	0.00	0.0	45.650	-33170.90	2670520.00	0.012
L28	72 - 67 (28)	TP39.841x38.728x0.375	5.00	0.00	0.0	46.974	-34829.10	2747980.00	0.013
L29	67 - 62 (29)	TP40.953x39.841x0.375	5.00	0.00	0.0	48.298	-36354.70	2825440.00	0.013
L30	62 - 61.5 (30)	TP41.064x40.953x0.375	0.50	0.00	0.0	48.430	-36498.80	2833180.00	0.013
L31	61.5 - 61.25 (31)	TP41.12x41.064x0.588	0.25	0.00	0.0	75.582	-36594.00	4421540.00	0.008
L32	61.25 - 56.25 (32)	TP42.232x41.12x0.575	5.00	0.00	0.0	76.027	-38367.00	4447570.00	0.009
L33	56.25 - 46.9567 (33)	TP44.3x42.232x0.575	9.29	0.00	0.0	77.330	-39529.10	4523820.00	0.009
L34	46.9567 - 45.9567 (34)	TP43.773x42.197x0.575	7.08	0.00	0.0	78.838	-44015.30	4612040.00	0.010
L35	45.9567 - 40.9567 (35)	TP44.886x43.773x0.563	5.00	0.00	0.0	79.133	-45883.90	4629300.00	0.010
L36	40.9567 - 35.9567 (36)	TP45.998x44.886x0.563	5.00	0.00	0.0	81.120	-47783.20	4745510.00	0.010
L37	35.9567 - 32.25 (37)	TP46.823x45.998x0.563	3.71	0.00	0.0	82.593	-49207.60	4831660.00	0.010
L38	32.25 - 32 (38)	TP46.879x46.823x0.775	0.25	0.00	0.0	113.408	-49350.90	6634390.00	0.007

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
L39	32 - 31.75 (39)	TP46.934x46.879x0.613	0.25	0.00	0.0	90.053	-49455.10	5268110.00	0.009
L40	31.75 - 26.75 (40)	TP48.047x46.934x0.613	5.00	0.00	0.0	92.216	-51551.90	5394660.00	0.010
L41	26.75 - 21.75 (41)	TP49.16x48.047x0.613	5.00	0.00	0.0	94.380	-53688.20	5521200.00	0.010
L42	21.75 - 16.75 (42)	TP50.272x49.16x0.6	5.00	0.00	0.0	94.596	-55855.90	5533880.00	0.010
L43	16.75 - 11.75 (43)	TP51.385x50.272x0.6	5.00	0.00	0.0	96.715	-58052.90	5657840.00	0.010
L44	11.75 - 6.75 (44)	TP52.498x51.385x0.588	5.00	0.00	0.0	96.799	-60373.50	5662720.00	0.011
L45	6.75 - 1.75 (45)	TP53.611x52.498x0.588	5.00	0.00	0.0	98.873	-62632.00	5784100.00	0.011
L46	1.75 - 0 (46)	TP54x53.611x0.588	1.75	0.00	0.0	99.600	-63420.80	5826580.00	0.011

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} lb-ft	ϕM_{nx} lb-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} lb-ft	ϕM_{ny} lb-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	176 - 171 (1)	TP17.626x16.5x0.188	27218.50	275697.50	0.099	0.00	275697.50	0.000
L2	171 - 166 (2)	TP18.752x17.626x0.188	61926.17	309555.83	0.200	0.00	309555.83	0.000
L3	166 - 161 (3)	TP19.878x18.752x0.188	120453.33	343145.00	0.351	0.00	343145.00	0.000
L4	161 - 156 (4)	TP21.004x19.878x0.188	180545.83	377782.50	0.478	0.00	377782.50	0.000
L5	156 - 151 (5)	TP22.13x21.004x0.188	259216.67	413361.67	0.627	0.00	413361.67	0.000
L6	151 - 144.25 (6)	TP23.65x22.13x0.188	313936.67	436944.17	0.718	0.00	436944.17	0.000
L7	144.25 - 142.75 (7)	TP23.601x22.487x0.313	416650.00	817311.67	0.510	0.00	817311.67	0.000
L8	142.75 - 137.75 (8)	TP24.714x23.601x0.313	525066.67	897900.00	0.585	0.00	897900.00	0.000
L9	137.75 - 132.75 (9)	TP25.828x24.714x0.313	635191.67	982283.33	0.647	0.00	982283.33	0.000
L10	132.75 - 127.75 (10)	TP26.942x25.828x0.313	747042.50	1070450.00	0.698	0.00	1070450.00	0.000
L11	127.75 - 127.5 (11)	TP26.998x26.942x0.313	752683.33	1074958.33	0.700	0.00	1074958.33	0.000
L12	127.5 - 122.5 (12)	TP28.111x26.998x0.313	867158.33	1167100.00	0.743	0.00	1167100.00	0.000
L13	122.5 - 120.75 (13)	TP28.501x28.111x0.313	907975.00	1200250.00	0.756	0.00	1200250.00	0.000
L14	120.75 - 120.5 (14)	TP28.557x28.501x0.313	913841.67	1205025.00	0.758	0.00	1205025.00	0.000
L15	120.5 - 117.25 (15)	TP29.281x28.557x0.313	990808.33	1267933.33	0.781	0.00	1267933.33	0.000
L16	117.25 - 117 (16)	TP29.337x29.281x0.538	996791.67	2138766.67	0.466	0.00	2138766.67	0.000
L17	117 - 112 (17)	TP30.45x29.337x0.525	1118366.67	2258100.00	0.495	0.00	2258100.00	0.000
L18	112 - 107 (18)	TP31.564x30.45x0.525	1243775.00	2430816.67	0.512	0.00	2430816.67	0.000
L19	107 - 102 (19)	TP32.678x31.564x0.513	1373016.67	2550733.33	0.538	0.00	2550733.33	0.000
L20	102 - 94.5833 (20)	TP34.33x32.678x0.513	1441283.33	2643550.00	0.545	0.00	2643550.00	0.000
L21	94.5833 - 94.4167 (21)	TP33.741x32.628x0.375	1576625.00	2017616.67	0.781	0.00	2017616.67	0.000
L22	94.4167 - 89.4167 (22)	TP34.853x33.741x0.375	1715750.00	2155175.00	0.796	0.00	2155175.00	0.000
L23	89.4167 -	TP35.335x34.853x0.375	1777058.33	2216183.33	0.802	0.00	2216183.33	0.000

Section No.	Elevation ft	Size	M_{ux} lb-ft	ϕM_{nx} lb-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} lb-ft	ϕM_{ny} lb-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	87.25 (23)							
L24	87.25 - 87 (24)	TP35.391x35.335x0.375	1784166.67	2223283.33	0.802	0.00	2223283.33	0.000
L25	87 - 82 (25)	TP36.503x35.391x0.375	1928183.33	2359958.33	0.817	0.00	2359958.33	0.000
L26	82 - 77 (26)	TP37.616x36.503x0.375	2075516.67	2489583.33	0.834	0.00	2489583.33	0.000
L27	77 - 72 (27)	TP38.728x37.616x0.375	2226125.00	2621441.67	0.849	0.00	2621441.67	0.000
L28	72 - 67 (28)	TP39.841x38.728x0.375	2379958.33	2755441.67	0.864	0.00	2755441.67	0.000
L29	67 - 62 (29)	TP40.953x39.841x0.375	2536958.33	2891475.00	0.877	0.00	2891475.00	0.000
L30	62 - 61.5 (30)	TP41.064x40.953x0.375	2552833.33	2905191.67	0.879	0.00	2905191.67	0.000
L31	61.5 - 61.25 (31)	TP41.12x41.064x0.588	2560783.33	4649675.00	0.551	0.00	4649675.00	0.000
L32	61.25 - 56.25 (32)	TP42.232x41.12x0.575	2721600.00	4810125.00	0.566	0.00	4810125.00	0.000
L33	56.25 - 46.9567 (33)	TP44.3x42.232x0.575	2826683.33	4977616.67	0.568	0.00	4977616.67	0.000
L34	46.9567 - 45.9567 (34)	TP43.773x42.197x0.575	3064208.33	5174975.00	0.592	0.00	5174975.00	0.000
L35	45.9567 - 40.9567 (35)	TP44.886x43.773x0.563	3236566.67	5332908.33	0.607	0.00	5332908.33	0.000
L36	40.9567 - 35.9567 (36)	TP45.998x44.886x0.563	3412058.33	5605741.33	0.609	0.00	5605741.33	0.000
L37	35.9567 - 32.25 (37)	TP46.823x45.998x0.563	3544183.33	5812400.00	0.610	0.00	5812400.00	0.000
L38	32.25 - 32 (38)	TP46.879x46.823x0.775	3553158.33	7917600.00	0.449	0.00	7917600.00	0.000
L39	32 - 31.75 (39)	TP46.934x46.879x0.613	3562141.67	6339174.67	0.562	0.00	6339174.67	0.000
L40	31.75 - 26.75 (40)	TP48.047x46.934x0.613	3743466.67	6649416.67	0.563	0.00	6649416.67	0.000
L41	26.75 - 21.75 (41)	TP49.16x48.047x0.613	3927850.00	6967066.67	0.564	0.00	6967066.67	0.000
L42	21.75 - 16.75 (42)	TP50.272x49.16x0.6	4115241.67	7148708.00	0.576	0.00	7148708.00	0.000
L43	16.75 - 11.75 (43)	TP51.385x50.272x0.6	4305650.00	7474516.67	0.576	0.00	7474516.67	0.000
L44	11.75 - 6.75 (44)	TP52.498x51.385x0.588	4498966.67	7650458.00	0.588	0.00	7650458.00	0.000
L45	6.75 - 1.75 (45)	TP53.611x52.498x0.588	4695741.67	7983824.67	0.588	0.00	7983824.67	0.000
L46	1.75 - 0 (46)	TP54x53.611x0.588	4765333.33	8102174.67	0.588	0.00	8102174.67	0.000

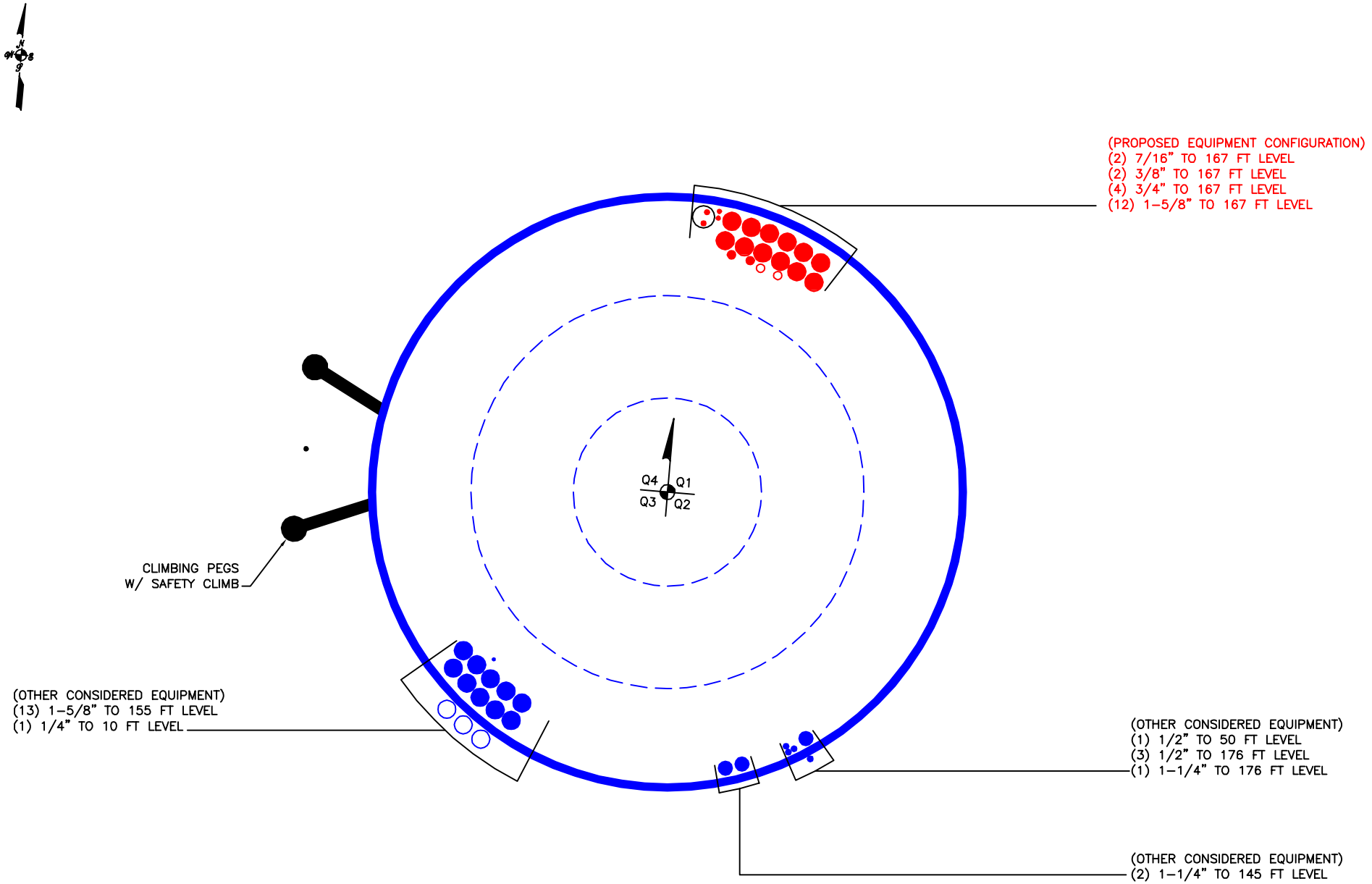
Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u lb	ϕV_n lb	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u lb-ft	ϕT_n lb-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	176 - 171 (1)	TP17.626x16.5x0.188	5379.88	182135.00	0.030	1.04	278152.50	0.000
L2	171 - 166 (2)	TP18.752x17.626x0.188	11552.00	193896.00	0.060	80.61	315231.67	0.000
L3	166 - 161 (3)	TP19.878x18.752x0.188	11865.80	205656.00	0.058	80.60	354630.83	0.000
L4	161 - 156 (4)	TP21.004x19.878x0.188	12181.40	217416.00	0.056	80.56	396349.17	0.000
L5	156 - 151 (5)	TP22.13x21.004x0.188	16739.50	229176.00	0.073	80.52	440386.67	0.000
L6	151 - 144.25 (6)	TP23.65x22.13x0.188	16938.40	236821.00	0.072	80.48	470255.00	0.000
L7	144.25 - 142.75 (7)	TP23.601x22.487x0.313	21517.80	405385.00	0.053	65.73	826764.17	0.000
L8	142.75 - 137.75 (8)	TP24.714x23.601x0.313	21857.80	424773.00	0.051	65.67	907741.67	0.000
L9	137.75 - 132.75 (9)	TP25.828x24.714x0.313	22199.40	444161.00	0.050	65.59	992491.67	0.000
L10	132.75 - 127.75 (10)	TP26.942x25.828x0.313	22549.60	463549.00	0.049	65.50	1081033.33	0.000
L11	127.75 - 127.5 (11)	TP26.998x26.942x0.313	22582.00	464519.00	0.049	65.49	1085558.33	0.000
L12	127.5 - 122.5 (12)	TP28.111x26.998x0.313	23219.50	483907.00	0.048	65.38	1178066.67	0.000
L13	122.5 - 120.75 (13)	TP28.501x28.111x0.313	23453.60	490693.00	0.048	65.35	1211333.33	0.000
L14	120.75 - 120.5 (14)	TP28.557x28.501x0.313	23474.00	491662.00	0.048	65.33	1216125.00	0.000
L15	120.5 - 117.25 (15)	TP29.281x28.557x0.313	23903.80	504264.00	0.047	65.26	1279266.67	0.000
L16	117.25 - 117 (16)	TP29.337x29.281x0.538	23942.60	862265.00	0.028	65.25	2174700.00	0.000
L17	117 - 112 (17)	TP30.45x29.337x0.525	24700.90	875150.00	0.028	65.18	2293516.67	0.000
L18	112 - 107 (18)	TP31.564x30.45x0.525	25467.90	907722.00	0.028	65.10	2467416.67	0.000
L19	107 - 102 (19)	TP32.678x31.564x0.513	26233.20	918262.00	0.029	65.01	2586641.67	0.000
L20	102 - 94.5833 (20)	TP34.33x32.678x0.513	26628.40	934691.00	0.028	64.97	2680016.67	0.000
L21	94.5833 - 94.4167 (21)	TP33.741x32.628x0.375	27517.80	696974.00	0.039	64.91	2036566.67	0.000
L22	94.4167 - 89.4167 (22)	TP34.853x33.741x0.375	28156.60	720212.00	0.039	64.80	2174625.00	0.000
L23	89.4167 - 87.25 (23)	TP35.335x34.853x0.375	28447.90	730281.00	0.039	64.75	2235858.33	0.000
L24	87.25 - 87 (24)	TP35.391x35.335x0.375	28471.60	731443.00	0.039	64.73	2242983.33	0.000
L25	87 - 82 (25)	TP36.503x35.391x0.375	29146.30	754681.00	0.039	64.62	2387758.33	0.000
L26	82 - 77 (26)	TP37.616x36.503x0.375	29805.80	777918.00	0.038	64.51	2537066.67	0.000
L27	77 - 72 (27)	TP38.728x37.616x0.375	30457.00	801156.00	0.038	64.40	2690908.33	0.000
L28	72 - 67 (28)	TP39.841x38.728x0.375	31098.50	824393.00	0.038	64.29	2849266.67	0.000
L29	67 - 62 (29)	TP40.953x39.841x0.375	31724.00	847631.00	0.037	64.20	3012158.33	0.000
L30	62 - 61.5 (30)	TP41.064x40.953x0.375	31774.30	849954.00	0.037	64.18	3028700.00	0.000
L31	61.5 - 61.25 (31)	TP41.12x41.064x0.588	31804.60	1326460.00	0.024	64.18	4708441.67	0.000
L32	61.25 - 56.25 (32)	TP42.232x41.12x0.575	32519.90	1334270.00	0.024	64.12	4867608.33	0.000
L33	56.25 - 46.9567 (33)	TP44.3x42.232x0.575	32959.90	1357140.00	0.024	64.08	5035941.67	0.000
L34	46.9567 - 45.9567 (34)	TP43.773x42.197x0.575	34158.30	1383610.00	0.025	212.06	5234275.00	0.000
L35	45.9567 - 40.9567 (35)	TP44.886x43.773x0.563	34794.90	1388790.00	0.025	211.99	5390708.33	0.000
L36	40.9567 -	TP45.998x44.886x0.563	35411.80	1423650.00	0.025	211.93	5664766.67	0.000

Section No.	Elevation ft	Size	Actual V_u lb	ϕV_n lb	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u lb-ft	ϕT_n lb-ft	Ratio $\frac{T_u}{\phi T_n}$
L37	35.9567 (36) 35.9567 - 32.25 (37)	TP46.823x45.998x0.563	35893.50	1449500.00	0.025	211.89	5872316.67	0.000
L38	32.25 - 32 (38)	TP46.879x46.823x0.775	35909.40	1990320.00	0.018	211.88	8035974.67	0.000
L39	32 - 31.75 (39)	TP46.934x46.879x0.613	35943.50	1580430.00	0.023	211.88	6411250.00	0.000
L40	31.75 - 26.75 (40)	TP48.047x46.934x0.613	36580.70	1618400.00	0.023	211.84	6722958.00	0.000
L41	26.75 - 21.75 (41)	TP49.16x48.047x0.613	37180.20	1656360.00	0.022	211.80	7042066.67	0.000
L42	21.75 - 16.75 (42)	TP50.272x49.16x0.6	37782.00	1660160.00	0.023	211.77	7221824.67	0.000
L43	16.75 - 11.75 (43)	TP51.385x50.272x0.6	38389.00	1697350.00	0.023	211.75	7548991.33	0.000
L44	11.75 - 6.75 (44)	TP52.498x51.385x0.588	39051.50	1698810.00	0.023	358.61	7722891.33	0.000
L45	6.75 - 1.75 (45)	TP53.611x52.498x0.588	39665.20	1735230.00	0.023	358.60	8057524.67	0.000
L46	1.75 - 0 (46)	TP54x53.611x0.588	39897.50	1747970.00	0.023	358.61	8176316.67	0.000

APPENDIX B

BASE LEVEL DRAWING


(PROPOSED EQUIPMENT CONFIGURATION)
(2) 7/16" TO 167 FT LEVEL
(2) 3/8" TO 167 FT LEVEL
(4) 3/4" TO 167 FT LEVEL
(12) 1-5/8" TO 167 FT LEVEL
Q4
Q1
Q3
Q2
CLIMBING PEGS
W/ SAFETY CLIMB
(OTHER CONSIDERED EQUIPMENT)
(13) 1-5/8" TO 155 FT LEVEL
(1) 1/4" TO 10 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1/2" TO 50 FT LEVEL
(3) 1/2" TO 176 FT LEVEL
(1) 1-1/4" TO 176 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(2) 1-1/4" TO 145 FT LEVEL

APPENDIX C

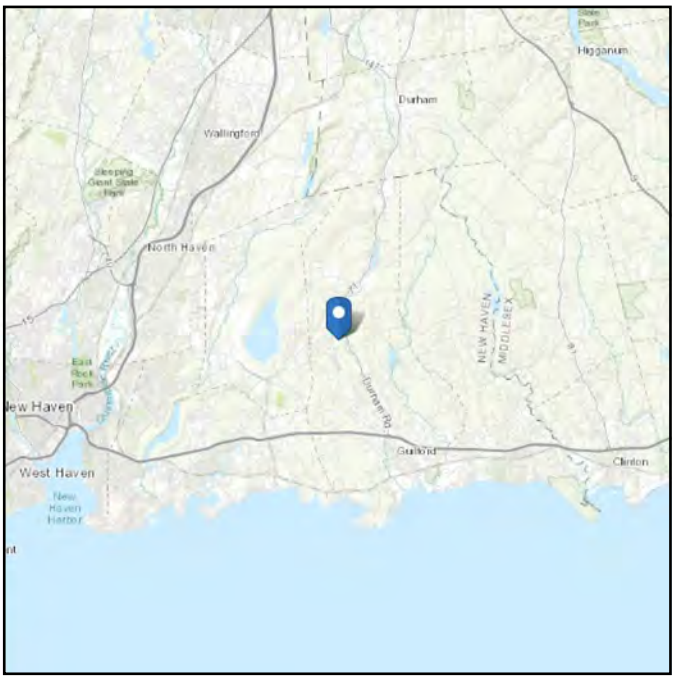
ADDITIONAL CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 181.21 ft (NAVD 88)
Latitude: 41.346483
Longitude: -72.723097



Wind

Results:

Wind Speed:	127 Vmph	130 Vmph per local jurisdictionary requirement
10-year MRI	78 Vmph	
25-year MRI	88 Vmph	
50-year MRI	95 Vmph	
100-year MRI	104 Vmph	

Data Source: ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, incorporating errata of March 12, 2014

Date Accessed: Mon Jun 15 2020

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 7-10 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 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.

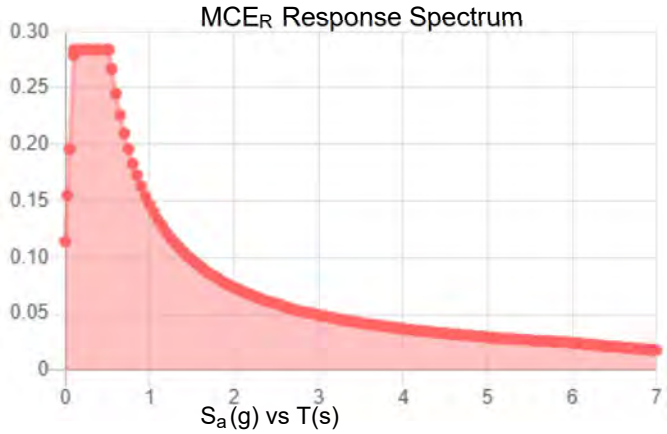
Seismic

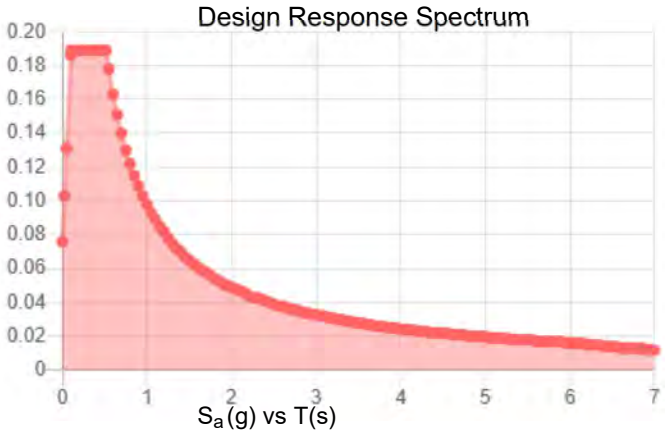
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.178	S_{DS} :	0.189
S_1 :	0.061	S_{D1} :	0.098
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.091
S_{MS} :	0.284	PGA_M :	0.145
S_{M1} :	0.147	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Mon Jun 15 2020

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Mon Jun 15 2020

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 50-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.

CCIpole

per TIA-222- H

Site BU: 876381

Work Order: 1858738

Pole Geometry

	Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1	176	31.75	3.5	18	16.5	23.65	0.1875	Auto	A572-65
2	147.75	53.166667	4.833333	18	22.49	34.33	0.3125	Auto	A572-65
3	99.416666	52.46	6.083334	18	32.63	44.3	0.375	Auto	A572-65
4	53.04	53.04	0	18	42.20	54	0.375	Auto	A572-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	0	32.25	plate	CCI-WSFP-065125	4		x				x					x				x			
2	32	61.5	plate	CCI-SFP-065125	3	x						x						x					
3	61.5	87.25	plate	CCI-SFP-060100	3	x						x						x					
4	87.25	117.25	plate	CCI-SFP-060100	3	x						x						x					
5	120.75	127.75	plate	CCI-SFP-045100	3	x						x						x					
6																							
7																							
8																							
9																							
10																							

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Length (in)	Top Termination Length (in)	L_u (in)	Net Area (in^2)	Bolt Hole Size (in)	Reinforcement Material
1	6.5	1.25	8.125	0.625	n/a	33.000	19.000	6.563	1.1875	A572-65
2	6.5	1.25	8.125	0.625	33.000	33.000	19.000	6.563	1.1875	A572-65
3	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
4	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
5	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65

TNX Geometry Input

Increment (ft): 5 Export to TNX

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	176 - 171	5		18	16.500	17.626	0.1875	A572-65	1.000
2	171 - 166	5		18	17.626	18.752	0.1875	A572-65	1.000
3	166 - 161	5		18	18.752	19.878	0.1875	A572-65	1.000
4	161 - 156	5		18	19.878	21.004	0.1875	A572-65	1.000
5	156 - 151	5		18	21.004	22.130	0.1875	A572-65	1.000
6	151 - 147.75	6.75	3.5	18	22.130	23.650	0.1875	A572-65	1.000
7	147.75 - 142.75	5		18	22.487	23.601	0.3125	A572-65	1.000
8	142.75 - 137.75	5		18	23.601	24.714	0.3125	A572-65	1.000
9	137.75 - 132.75	5		18	24.714	25.828	0.3125	A572-65	1.000
10	132.75 - 127.75	5		18	25.828	26.942	0.3125	A572-65	1.000
11	127.75 - 127.5	0.25		18	26.942	26.998	0.3125	A572-65	1.000
12	127.5 - 122.5	5		18	26.998	28.111	0.3125	A572-65	1.000
13	122.5 - 120.75	1.75		18	28.111	28.501	0.3125	A572-65	1.000
14	120.75 - 120.5	0.25		18	28.501	28.557	0.3125	A572-65	1.000
15	120.5 - 117.25	3.25		18	28.557	29.281	0.3125	A572-65	1.000
16	117.25 - 117	0.25		18	29.281	29.337	0.5375	A572-65	0.952
17	117 - 112	5		18	29.337	30.450	0.525	A572-65	0.960
18	112 - 107	5		18	30.450	31.564	0.525	A572-65	0.947
19	107 - 102	5		18	31.564	32.678	0.5125	A572-65	0.958
20	102 - 99.41667	7.416667	4.833333	18	32.678	34.330	0.5125	A572-65	0.951
21	99.41667 - 94.41667	5		18	32.628	33.741	0.375	A572-65	1.000
22	94.41667 - 89.41667	5		18	33.741	34.853	0.375	A572-65	1.000
23	89.41667 - 87.25	2.166666		18	34.853	35.335	0.375	A572-65	1.000
24	87.25 - 87	0.25		18	35.335	35.391	0.375	A572-65	1.000
25	87 - 82	5		18	35.391	36.503	0.375	A572-65	1.000
26	82 - 77	5		18	36.503	37.616	0.375	A572-65	1.000
27	77 - 72	5		18	37.616	38.728	0.375	A572-65	1.000
28	72 - 67	5		18	38.728	39.841	0.375	A572-65	1.000
29	67 - 62	5		18	39.841	40.953	0.375	A572-65	1.000
30	62 - 61.5	0.5		18	40.953	41.064	0.375	A572-65	1.000
31	61.5 - 61.25	0.25		18	41.064	41.120	0.5875	A572-65	0.964
32	61.25 - 56.25	5		18	41.120	42.232	0.575	A572-65	0.976
33	56.25 - 53.04	9.293334	6.083334	18	42.232	44.300	0.575	A572-65	0.970
34	53.04 - 45.95667	7.083334		18	42.197	43.773	0.575	A572-65	0.964
35	45.95667 - 40.95667	5		18	43.773	44.886	0.5625	A572-65	0.978
36	40.95667 - 35.95667	5		18	44.886	45.998	0.5625	A572-65	0.970
37	35.95667 - 32.25	3.706666		18	45.998	46.823	0.5625	A572-65	0.965
38	32.25 - 32	0.25		18	46.823	46.879	0.775	A572-65	0.990
39	32 - 31.75	0.25		18	46.879	46.934	0.6125	A572-65	0.976
40	31.75 - 26.75	5		18	46.934	48.047	0.6125	A572-65	0.968
41	26.75 - 21.75	5		18	48.047	49.160	0.6125	A572-65	0.960
42	21.75 - 16.75	5		18	49.160	50.272	0.6	A572-65	0.971
43	16.75 - 11.75	5		18	50.272	51.385	0.6	A572-65	0.964
44	11.75 - 6.75	5		18	51.385	52.498	0.5875	A572-65	0.977
45	6.75 - 1.75	5		18	52.498	53.611	0.5875	A572-65	0.970
46	1.75 - 0	1.75		18	53.611	54.000	0.5875	A572-65	0.967

TNX Section Forces

Increment (ft): 5

	Section Height (ft)	TNX Output		
		P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	176 - 171	2.97	27.22	5.38
2	171 - 166	6.28	61.93	11.55
3	166 - 161	6.59	120.45	11.87
4	161 - 156	6.94	180.55	12.18
5	156 - 151	10.34	259.22	16.74
6	151 - 147.75	10.69	313.94	16.94
7	147.75 - 142.75	13.56	416.65	21.52
8	142.75 - 137.75	14.33	525.07	21.86
9	137.75 - 132.75	15.14	635.19	22.20
10	132.75 - 127.75	16.06	747.04	22.55
11	127.75 - 127.5	16.12	752.68	22.58
12	127.5 - 122.5	17.22	867.16	23.22
13	122.5 - 120.75	17.61	907.98	23.45
14	120.75 - 120.5	17.69	913.84	23.47
15	120.5 - 117.25	18.46	990.81	23.90
16	117.25 - 117	18.56	996.79	23.94
17	117 - 112	20.10	1118.37	24.70
18	112 - 107	21.69	1243.78	25.47
19	107 - 102	23.30	1373.02	26.23
20	102 - 99.4167	24.15	1441.29	26.63
21	99.4167 - 94.4167	26.54	1576.63	27.52
22	94.4167 - 89.4167	27.67	1715.75	28.16
23	89.4167 - 87.25	28.32	1777.05	28.45
24	87.25 - 87	28.41	1784.17	28.47
25	87 - 82	29.95	1928.19	29.15
26	82 - 77	31.55	2075.52	29.81
27	77 - 72	33.17	2226.12	30.46
28	72 - 67	34.83	2379.96	31.10
29	67 - 62	36.35	2536.96	31.72
30	62 - 61.5	36.50	2552.83	31.77
31	61.5 - 61.25	36.59	2560.78	31.80
32	61.25 - 56.25	38.37	2721.60	32.52
33	56.25 - 53.04	39.53	2826.68	32.96
34	53.04 - 45.9567	44.02	3064.21	34.16
35	45.9567 - 40.9567	45.88	3236.57	34.79
36	40.9567 - 35.9567	47.78	3412.06	35.41
37	35.9567 - 32.25	49.21	3544.18	35.89
38	32.25 - 32	49.35	3553.16	35.91
39	32 - 31.75	49.46	3562.14	35.94
40	31.75 - 26.75	51.55	3743.47	36.58
41	26.75 - 21.75	53.69	3927.85	37.18
42	21.75 - 16.75	55.86	4115.24	37.78
43	16.75 - 11.75	58.05	4305.65	38.39
44	11.75 - 6.75	60.37	4498.97	39.05
45	6.75 - 1.75	62.63	4695.74	39.67
46	1.75 - 0	63.42	4765.34	39.90

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
176 - 171	Pole	TP17.626x16.5x0.1875	Pole	9.8%	Pass
171 - 166	Pole	TP18.752x17.626x0.1875	Pole	19.9%	Pass
166 - 161	Pole	TP19.878x18.752x0.1875	Pole	34.2%	Pass
161 - 156	Pole	TP21.004x19.878x0.1875	Pole	46.3%	Pass
156 - 151	Pole	TP22.13x21.004x0.1875	Pole	60.9%	Pass
151 - 147.75	Pole	TP23.65x22.13x0.1875	Pole	69.6%	Pass
147.75 - 142.75	Pole	TP23.601x22.487x0.3125	Pole	49.3%	Pass
142.75 - 137.75	Pole	TP24.714x23.601x0.3125	Pole	56.5%	Pass
137.75 - 132.75	Pole	TP25.828x24.714x0.3125	Pole	62.4%	Pass
132.75 - 127.75	Pole	TP26.942x25.828x0.3125	Pole	67.3%	Pass
127.75 - 127.5	Pole	TP26.998x26.942x0.3125	Pole	67.5%	Pass
127.5 - 122.5	Pole	TP28.111x26.998x0.3125	Pole	71.6%	Pass
122.5 - 120.75	Pole	TP28.501x28.111x0.3125	Pole	72.9%	Pass
120.75 - 120.5	Pole	TP28.557x28.501x0.3125	Pole	73.0%	Pass
120.5 - 117.25	Pole	TP29.281x28.557x0.3125	Pole	75.3%	Pass
117.25 - 117	Pole + Reinf.	TP29.337x29.281x0.5375	Reinf. 4 Tension Rupture	71.1%	Pass
117 - 112	Pole + Reinf.	TP30.45x29.337x0.525	Reinf. 4 Tension Rupture	75.1%	Pass
112 - 107	Pole + Reinf.	TP31.564x30.45x0.525	Reinf. 4 Tension Rupture	78.8%	Pass
107 - 102	Pole + Reinf.	TP32.678x31.564x0.5125	Reinf. 4 Tension Rupture	82.2%	Pass
102 - 99.42	Pole + Reinf.	TP34.33x32.678x0.5125	Reinf. 4 Tension Rupture	83.9%	Pass
99.42 - 94.42	Pole	TP33.741x32.628x0.375	Pole	75.3%	Pass
94.42 - 89.42	Pole	TP34.853x33.741x0.375	Pole	76.7%	Pass
89.42 - 87.25	Pole	TP35.335x34.853x0.375	Pole	77.2%	Pass
87.25 - 87	Pole	TP35.391x35.335x0.375	Pole	77.3%	Pass
87 - 82	Pole	TP36.503x35.391x0.375	Pole	78.7%	Pass
82 - 77	Pole	TP37.616x36.503x0.375	Pole	80.3%	Pass
77 - 72	Pole	TP38.728x37.616x0.375	Pole	81.9%	Pass
72 - 67	Pole	TP39.841x38.728x0.375	Pole	83.3%	Pass
67 - 62	Pole	TP40.953x39.841x0.375	Pole	84.6%	Pass
62 - 61.5	Pole	TP41.064x40.953x0.375	Pole	84.7%	Pass
61.5 - 61.25	Pole + Reinf.	TP41.12x41.064x0.5875	Reinf. 2 Tension Rupture	82.3%	Pass
61.25 - 56.25	Pole + Reinf.	TP42.232x41.12x0.575	Reinf. 2 Tension Rupture	83.7%	Pass
56.25 - 53.04	Pole + Reinf.	TP44.3x42.232x0.575	Reinf. 2 Tension Rupture	84.5%	Pass
53.04 - 45.96	Pole + Reinf.	TP43.773x42.197x0.575	Reinf. 2 Tension Rupture	88.8%	Pass
45.96 - 40.96	Pole + Reinf.	TP44.886x43.773x0.5625	Reinf. 2 Tension Rupture	89.9%	Pass
40.96 - 35.96	Pole + Reinf.	TP45.998x44.886x0.5625	Reinf. 2 Tension Rupture	90.9%	Pass
35.96 - 32.25	Pole + Reinf.	TP46.823x45.998x0.5625	Reinf. 2 Tension Rupture	91.7%	Pass
32.25 - 32	Pole + Reinf.	TP46.879x46.823x0.775	Reinf. 2 Tension Rupture	66.3%	Pass
32 - 31.75	Pole + Reinf.	TP46.934x46.879x0.6125	Reinf. 1 Tension Rupture	82.6%	Pass
31.75 - 26.75	Pole + Reinf.	TP48.047x46.934x0.6125	Reinf. 1 Tension Rupture	83.6%	Pass
26.75 - 21.75	Pole + Reinf.	TP49.16x48.047x0.6125	Reinf. 1 Tension Rupture	84.5%	Pass
21.75 - 16.75	Pole + Reinf.	TP50.272x49.16x0.6	Reinf. 1 Tension Rupture	85.3%	Pass
16.75 - 11.75	Pole + Reinf.	TP51.385x50.272x0.6	Reinf. 1 Tension Rupture	86.1%	Pass
11.75 - 6.75	Pole + Reinf.	TP52.498x51.385x0.5875	Reinf. 1 Tension Rupture	86.9%	Pass
6.75 - 1.75	Pole + Reinf.	TP53.611x52.498x0.5875	Reinf. 1 Tension Rupture	87.6%	Pass
1.75 - 0	Pole + Reinf.	TP54x53.611x0.5875	Reinf. 1 Tension Rupture	87.8%	Pass
				Summary	
			Pole	84.7%	Pass
			Reinforcement	91.7%	Pass
			Overall	91.7%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity*					
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5
176 - 171	399	n/a	399	10.38	n/a	10.38	9.8%					
171 - 166	481	n/a	481	11.05	n/a	11.05	19.9%					
166 - 161	574	n/a	574	11.72	n/a	11.72	34.2%					
161 - 156	678	n/a	678	12.39	n/a	12.39	46.3%					
156 - 151	794	n/a	794	13.06	n/a	13.06	60.9%					
151 - 147.75	876	n/a	876	13.49	n/a	13.49	69.6%					
147.75 - 142.75	1582	n/a	1582	23.10	n/a	23.10	49.3%					
142.75 - 137.75	1820	n/a	1820	24.20	n/a	24.20	56.5%					
137.75 - 132.75	2081	n/a	2081	25.31	n/a	25.31	62.4%					
132.75 - 127.75	2366	n/a	2366	26.41	n/a	26.41	67.3%					
127.75 - 127.5	2380	n/a	2380	26.47	n/a	26.47	67.5%					
127.5 - 122.5	2691	n/a	2691	27.57	n/a	27.57	71.6%					
122.5 - 120.75	2806	n/a	2806	27.96	n/a	27.96	72.9%					
120.75 - 120.5	2823	n/a	2823	28.01	n/a	28.01	73.0%					
120.5 - 117.25	3045	n/a	3045	28.73	n/a	28.73	75.3%					
117.25 - 117	3063	2098	5161	28.79	18.00	46.79	44.2%				71.1%	
117 - 112	3429	2253	5682	29.89	18.00	47.89	46.9%				75.1%	
112 - 107	3823	2414	6237	31.00	18.00	49.00	49.7%				78.8%	
107 - 102	4247	2580	6827	32.10	18.00	50.10	52.4%				82.2%	
102 - 99.42	4478	2668	7145	32.67	18.00	50.67	53.7%				83.9%	
99.42 - 94.42	5584	n/a	5584	39.71	n/a	39.71	75.3%					
94.42 - 89.42	6161	n/a	6161	41.04	n/a	41.04	76.7%					
89.42 - 87.25	6423	n/a	6423	41.61	n/a	41.61	77.2%					
87.25 - 87	6454	n/a	6454	41.68	n/a	41.68	77.3%					
87 - 82	7089	n/a	7089	43.00	n/a	43.00	78.7%					
82 - 77	7764	n/a	7764	44.32	n/a	44.32	80.3%					
77 - 72	8481	n/a	8481	45.65	n/a	45.65	81.9%					
72 - 67	9240	n/a	9240	46.97	n/a	46.97	83.3%					
67 - 62	10044	n/a	10044	48.30	n/a	48.30	84.6%					
62 - 61.5	10127	n/a	10127	48.43	n/a	48.43	84.7%					
61.5 - 61.25	10168	5514	15682	48.49	24.38	72.87	54.3%		82.3%			
61.25 - 56.25	11024	5805	16829	49.82	24.38	74.19	55.6%		83.7%			
56.25 - 53.04	11598	5996	17594	50.67	24.38	75.04	56.5%		84.5%			
53.04 - 45.96	12286	6221	18507	51.65	24.38	76.03	59.7%		88.8%			
45.96 - 40.96	13256	6530	19786	52.98	24.38	77.35	61.0%		89.9%			
40.96 - 35.96	14275	6846	21121	54.30	24.38	78.68	62.2%		90.9%			
35.96 - 32.25	15063	7086	22149	55.28	24.38	79.66	63.1%		91.7%			
32.25 - 32	15118	15528	30645	55.35	56.88	112.22	46.3%	64.1%	66.3%			
32 - 31.75	15172	9209	24381	55.42	32.50	87.92	58.7%	82.6%				
31.75 - 26.75	16286	9932	26218	56.74	32.50	89.24	59.0%	83.6%				
26.75 - 21.75	17453	10383	27836	58.06	32.50	90.56	60.1%	84.5%				
21.75 - 16.75	18675	10844	29518	59.39	32.50	91.89	61.3%	85.3%				
16.75 - 11.75	19952	11314	31266	60.71	32.50	93.21	62.4%	86.1%				
11.75 - 6.75	21286	11795	33082	62.04	32.50	94.54	63.5%	86.9%				
6.75 - 1.75	22679	12286	34965	63.36	32.50	95.86	64.6%	87.6%				
1.75 - 0	23180	12460	35641	63.82	32.50	96.32	65.0%	87.8%				

Note: Section capacity checked in 5 degree increments.
Rating per TIA-222-H Section 15.5.

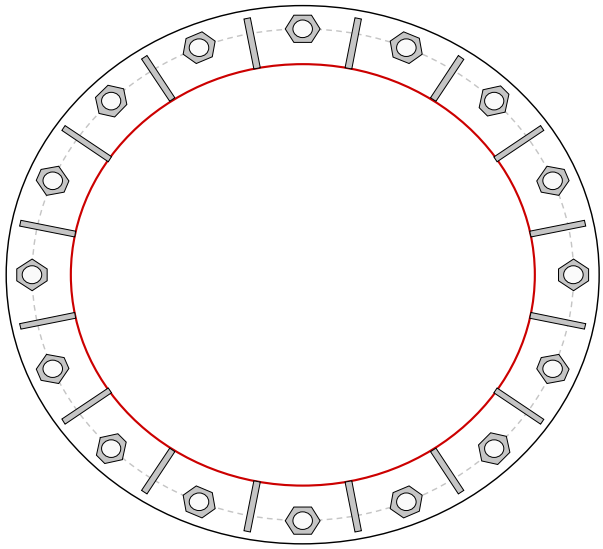
Monopole Base Plate Connection

Site Info	
BU #	876381
Site Name	Ward
Order #	517086 Rev. 0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	1

Applied Loads	
Moment (kip-ft)	4765.34
Axial Force (kips)	63.44
Shear Force (kips)	39.87

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

(16) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 63" BC

Base Plate Data

69" OD x 2" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Stiffener Data

(16) 15"H x 6.5"W x 0.75"T, Notch: 0.75"
plate: Fy= 65 ksi ; weld: Fy= 80 ksi
horiz. weld: 0.375" groove, 45° dbl bevel, 0.3125" fillet
vert. weld: 0.3125" fillet

Pole Data

54" x 0.375" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Anchor Rod Summary		*(units of kips, kip-in)*
Pu_c = 230.77	ϕPn_c = 268.39	**Stress Rating**
Vu = 2.49	ϕVn = 120.77	**81.9%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary		
Max Stress (ksi):	37.84	(Roark's Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	**66.7%**	**Pass**

Stiffener Summary		
Horizontal Weld:	**61.8%**	**Pass**
Vertical Weld:	**70.3%**	**Pass**
Plate Flexure+Shear:	**24.9%**	**Pass**
Plate Tension+Shear:	**60.4%**	**Pass**
Plate Compression:	**70.3%**	**Pass**
Pole Summary		
Punching Shear:	**21.7%**	**Pass**

Drilled Pier Foundation

BU # :	876381
Site Name:	Ward
Order Number:	517086 Rev. 0

TIA-222 Revison:	H
Tower Type:	Monopole

Applied Loads	Comp.	Uplift
Moment (kip-ft)	4765.335	
Axial Force (kips)	63.444	
Shear Force (kips)	39.874	

Material Properties		
Concrete Strength, f'c:	4	ksi
Rebar Strength, Fy:	60	ksi

Pier Design Data		
Depth	29	ft
Ext. Above Grade	1	ft
Pier Section 1		
From 1' above grade to 29' below grade		
Pier Diameter	7	ft
Rebar Quantity	24	
Rebar Size	11	
Rebar Cage Diameter	73	in
Tie Size	5	

Rebar & Pier Options

Embedded Pole Inputs

Belled Pier Inputs

Analysis Results		
Soil Lateral Check	***Compression***	***Uplift***
$D_{v=0}$ (ft from TOC)	7.20	-
Soil Safety Factor	3.30	-
Max Moment (kip-ft)	5014.46	-
Rating*	***38.3%***	**-**
Soil Vertical Check	***Compression***	***Uplift***
Skin Friction (kips)	841.16	-
End Bearing (kips)	650.06	-
Weight of Concrete (kips)	150.18	-
Total Capacity (kips)	1491.22	-
Axial (kips)	213.63	-
Rating*	***13.6%***	**-**
Reinforced Concrete Check	***Compression***	***Uplift***
Critical Depth (ft from TOC)	7.16	-
Critical Moment (kip-ft)	5014.45	-
Critical Moment Capacity	6035.51	-
Rating*	***79.1%***	**-**

Soil Interaction Rating*	**38.3%**
Structural Foundation Rating*	**79.1%**

*Rating per TIA-222-H Section 15.5

Check Limitation	
Apply TIA-222-H Section 15.5:	☑
N/A	☐

Soil Profile

Groundwater Depth	9	# of Layers	3

Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	3.5	3.5	130	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	3.5	9	5.5	130	150	0	35	0.000	0.000	2.00	2.00			Cohesionless
3	9	29	20	67.6	87.6	0	35	0.000	0.000	2.00	2.00	22.522		Cohesionless

Exhibit E

Mount Analysis

Date: **June 11, 2020**

Kevin Morrow
Crown Castle
2055 S. Stearman Drive
Chandler, AZ 85286
704-405-6619

Infinigy Engineering, PLLC
1033 Watervliet Shaker Road
Albany, NY 12205
518-690-0790
structural@infinigy.com

Subject:	**Mount Modification Report**	
Carrier Designation:	**AT&T Mobility LTE 5C**	
	Carrier Site Number:	CTL05640
	Carrier Site Name:	GUILDFORD
	Carrier FA Number:	10071056
Crown Castle Designation:	**Crown Castle BU Number:**	876381
	Crown Castle Site Name:	WARD
	Crown Castle JDE Job Number:	605417
	Crown Castle Order Number:	517086 Rev. 0
Engineering Firm Designation:	**Infinigy Engineering, PLLC Report Designation:** 1039-Z0001-B	
Site Data:	**2381 Long Hill Rd, Guilford, New Haven, CT, 06437** **Latitude 41°20'47.34" Longitude -72°43'23.15"**	
Structure Information:	**Tower Height & Type:**	**176.0 ft Monopole**
	Mount Elevation:	**167.0 ft**
	Mount Type:	**12.5 ft Platform**

Dear Kevin Morrow,

Infinigy Engineering, PLLC 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:

Platform **Sufficient**

This analysis has been performed in accordance with the 2018 International Building Code based upon an ultimate 3-second gust wind speed of 121 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Jacques S. Grimaldi

Respectfully Submitted by:
John Stevens, P.E.
518-690-0790
structural@infinigy.com
CT PE License No. PEN.0024705

06/11/2020

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1) INTRODUCTION

This is an existing 3 sector 12.5 ft Platform, designed by Commscope.

2) ANALYSIS CRITERIA

Building Code:	2018 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	121 mph
Exposure Category:	B
Topographic Factor at Base:	1.0
Topographic Factor at Mount:	1.0
Ice Thickness:	1.0 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.206
Seismic S_1:	0.054
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb
Man Live Load at Mount Pipes:	500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
167.0	167.0	3	CCI ANTENNAS	HPA65R-BU6A	12.5 ft Platform
		3	CCI ANTENNAS	OPA65R-BU6D	
		3	KATHREIN	80010965	
		3	POWERWAVE TECHNOLOGIES	7770.00	
		3	ERICSSON	RRUS 4449 B5/B12	
		3	ERICSSON	RRUS 4478 B14	
		3	ERICSSON	RRUS 8843 B2/B66A	
		6	POWERWAVE TECHNOLOGIES	LGP21401	
		3	RAYCAP	DC6-48-60-18-8F	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	AT&T Mobility Application	517086 Rev.0	CCI Sites
Mount Manufacturer Drawings	Commscope	MT-196	Infinigy

3.1) Analysis Method

RISA-3D (Version 17.0.4), 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.

Infinigy Mount Analysis Tool 2.0.4, a tool internally developed by Infinigy, was used to calculate wind loading on all appurtenances, dishes and mount members for various loading cases. Selected output from the analysis is included in Appendix B “Software Input Calculations”.

This analysis was performed in accordance with Crown Castle’s ENG-SOW-10208 *Tower Mount Analysis* (Revision B).

3.2) Assumptions

1) The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design and manufacturer's specifications.
2) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and the referenced drawings.
3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member 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.
5) Prior structural modifications to the tower mounting system are assumed to be installed as shown per available data.
6) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM A500 (GR B-46)
Pipe	ASTM A53 (GR 35) / A500 (GR C-42)
Connection Bolts	ASTM A325

This analysis may be affected if any assumptions are not valid or have been made in error. Infinigy Engineering, PLLC 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 (Platform, All Sectors)

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1,2	Mount Pipe(s)	MP3	167.0	39.5	Pass
	Horizontal(s)	H16		31.2	Pass
	Standoff(s)	S5		54.9	Pass
	Bracing(s)	D9		57.7	Pass
	Corner Plate(s)	M48		41.6	Pass
	Mount Connection(s)	--		34.5	Pass

Structure Rating (max from all components) =	57.7%

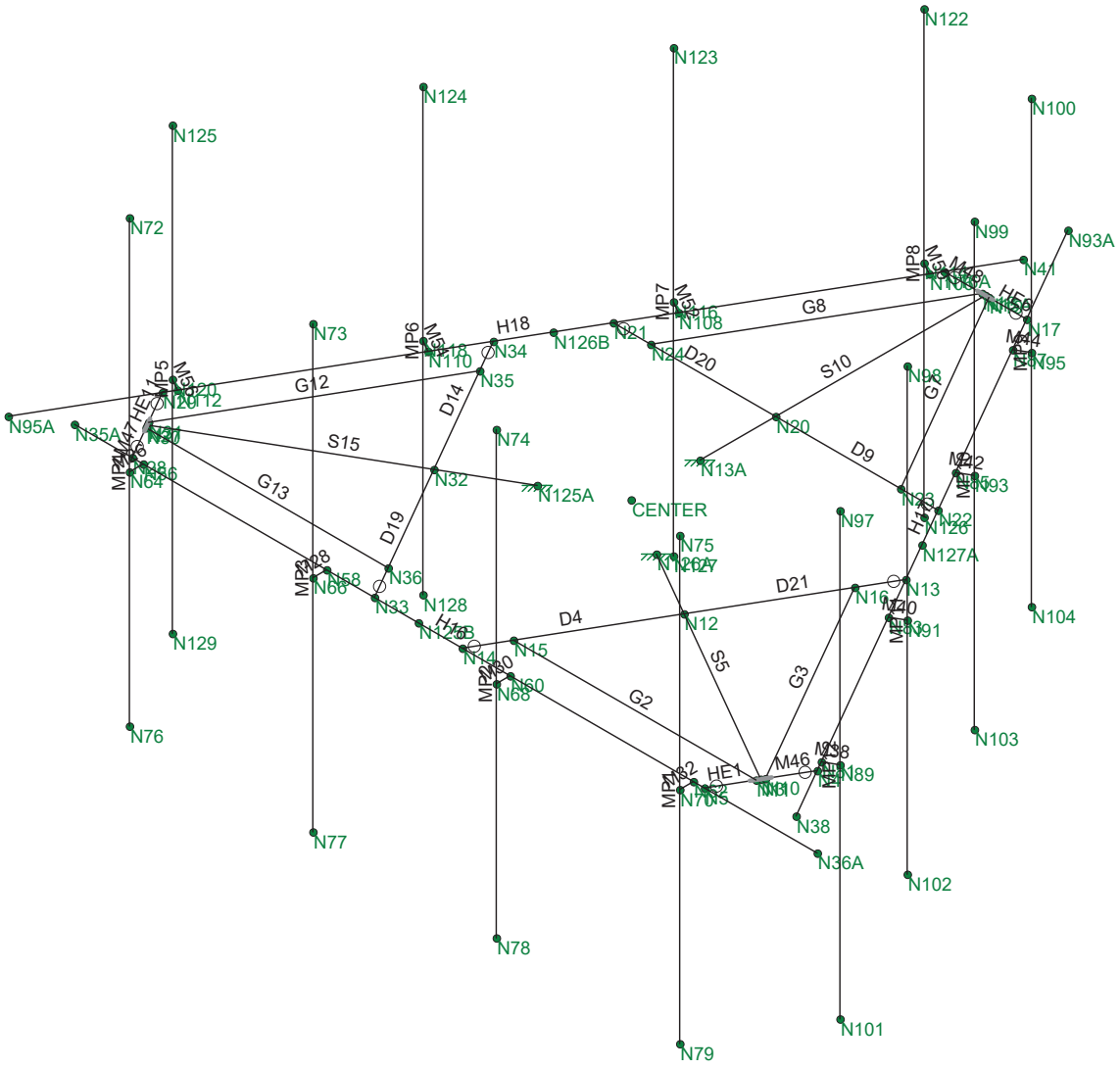
Notes:
1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
2) All sectors are typical

4.1) Recommendations

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

APPENDIX A

WIRE FRAME AND RENDERED MODELS



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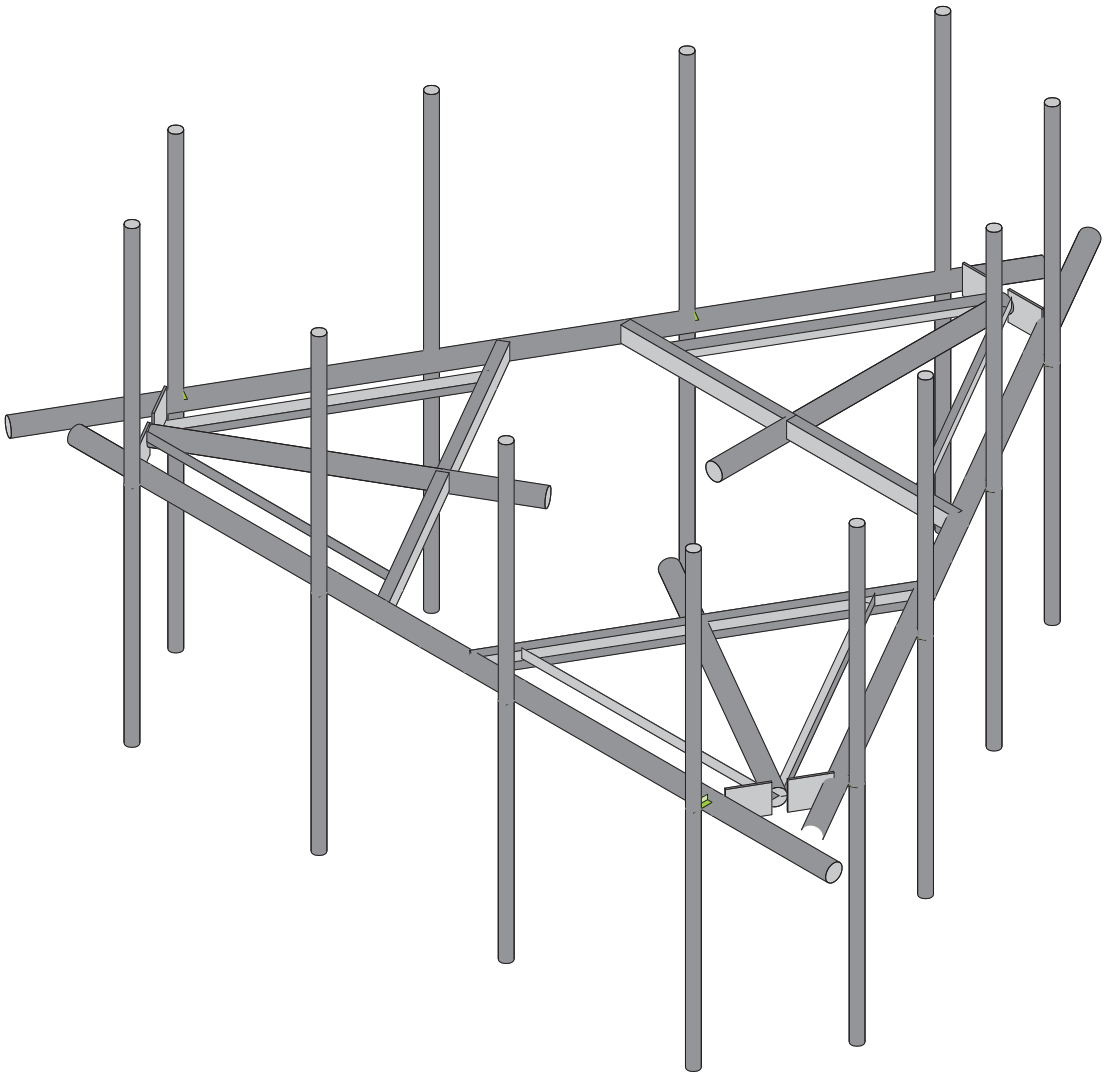

Infinigy Engineering, PLLC	878819	Render
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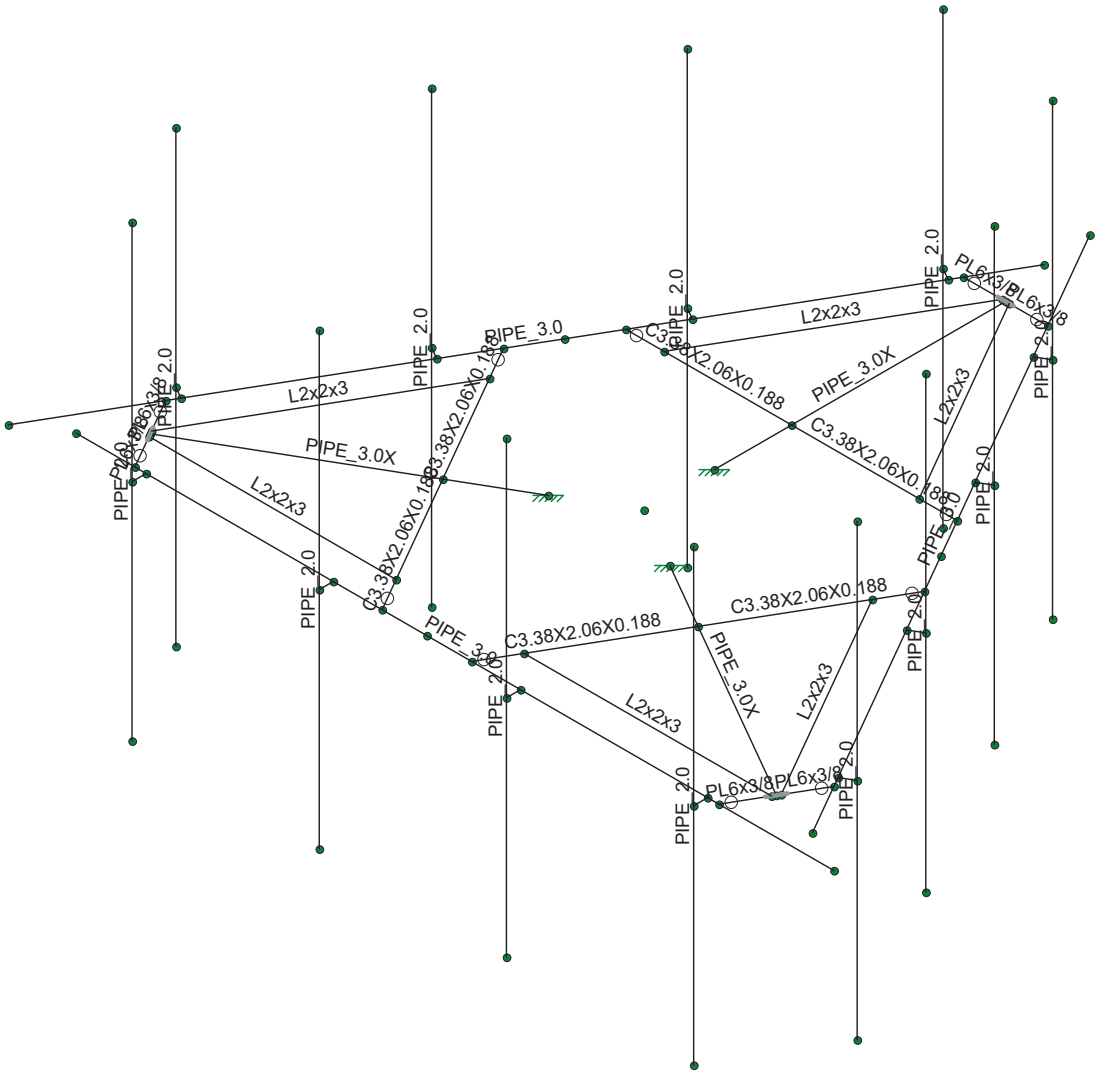

Infinigy Engineering, PLLC	878819	Shape
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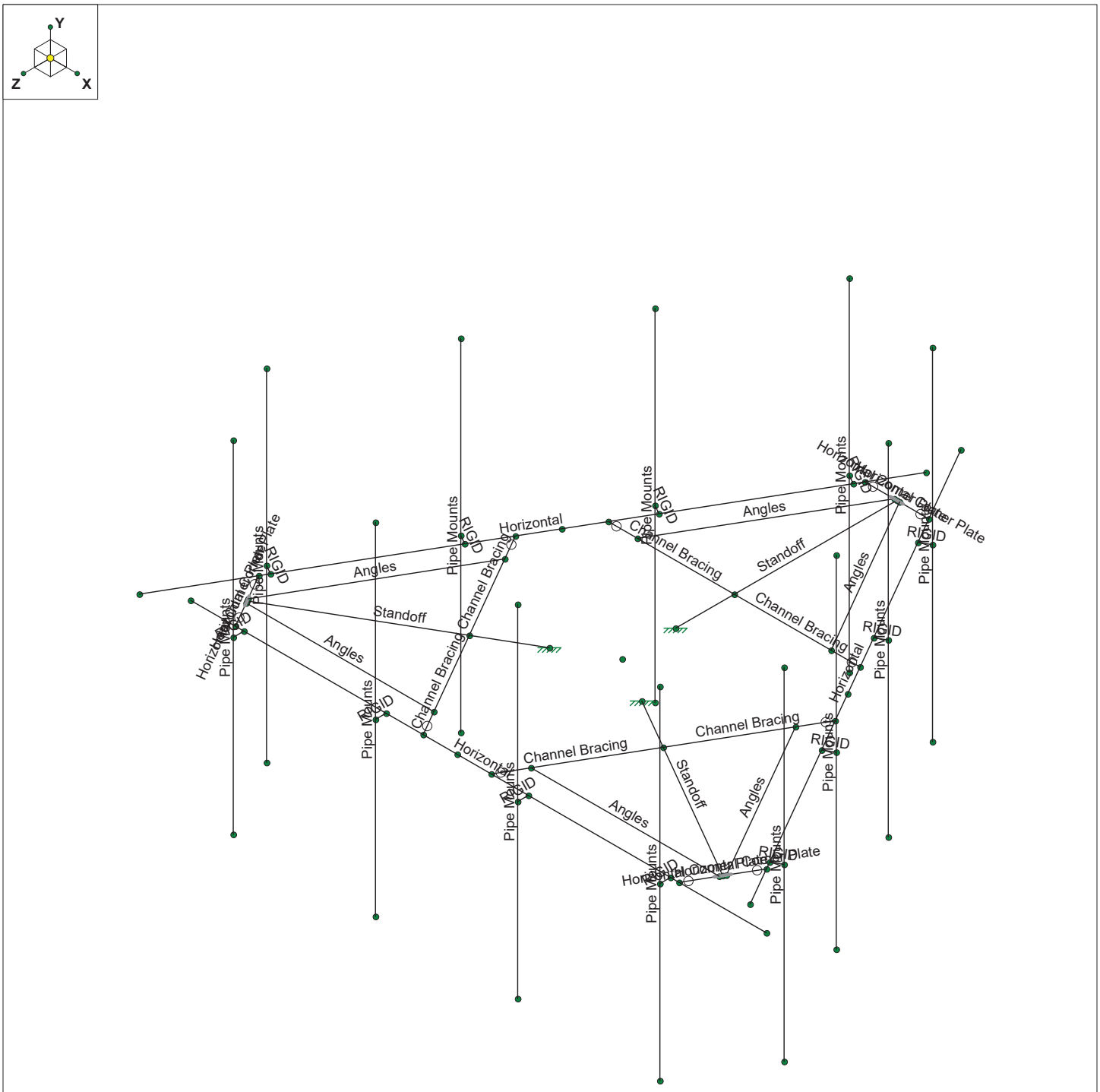

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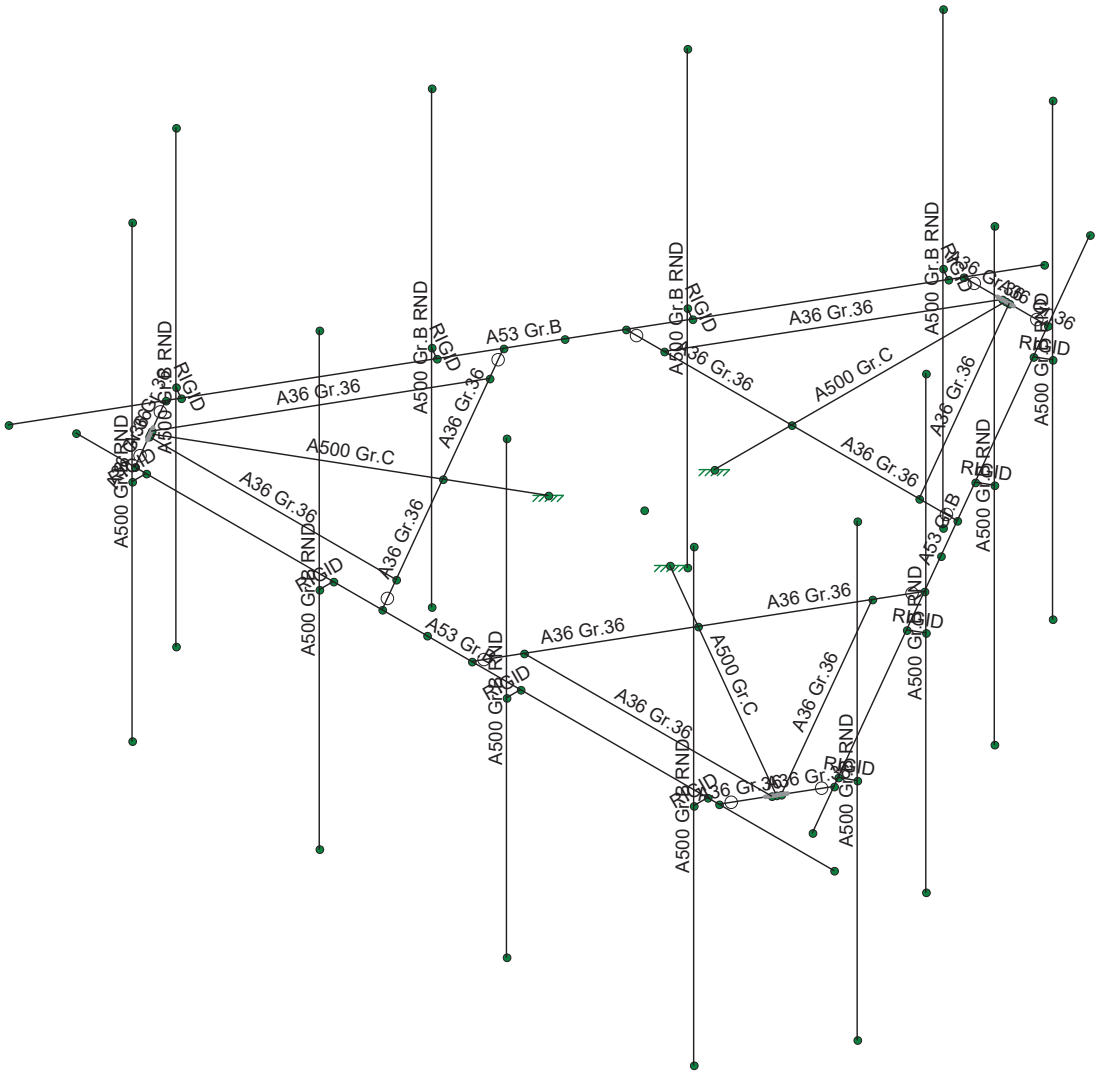

Infinigy Engineering, PLLC	878819	Grade
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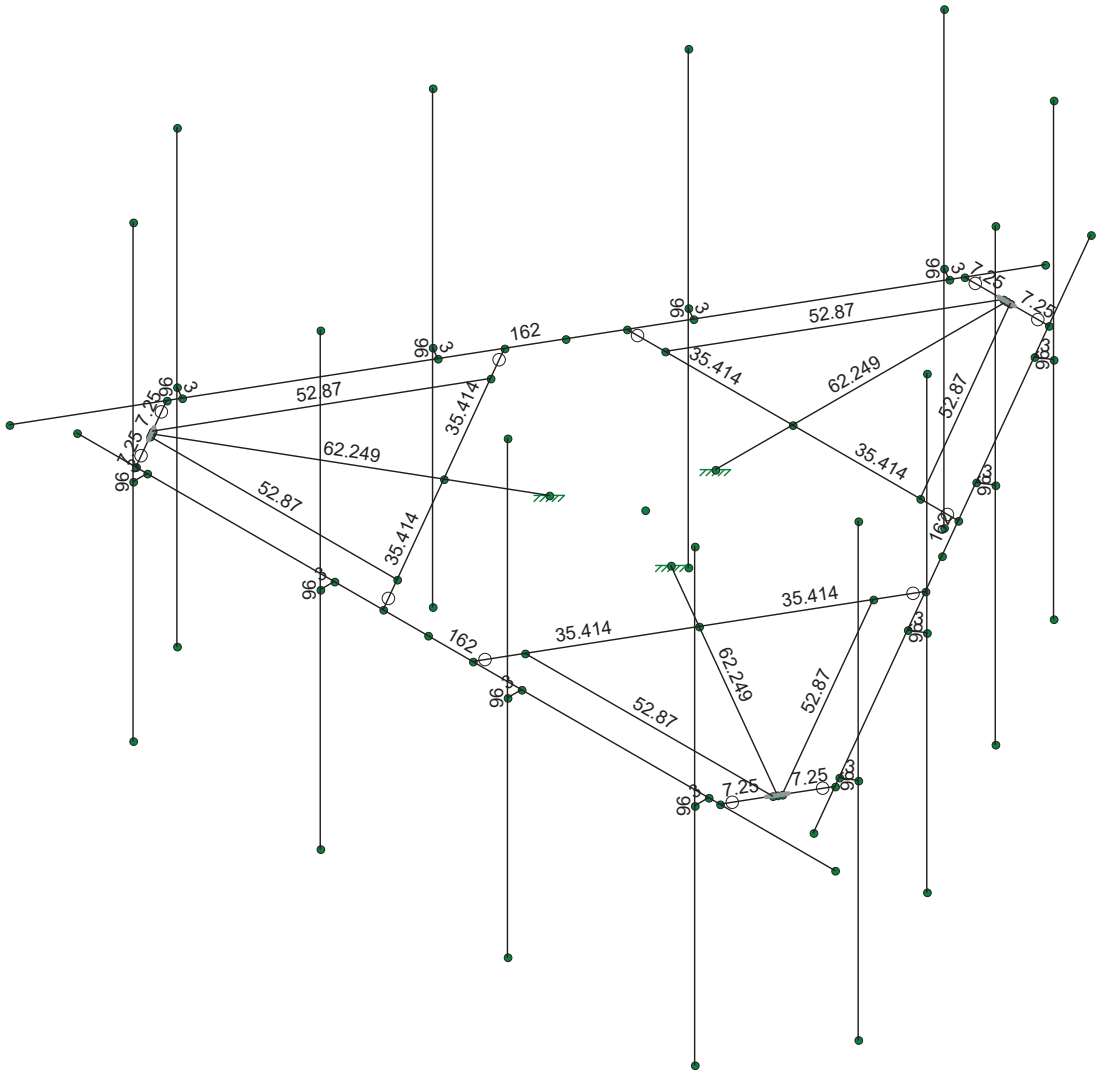

Member Length (in) Displayed

Infinigy Engineering, PLLC	878819	Length
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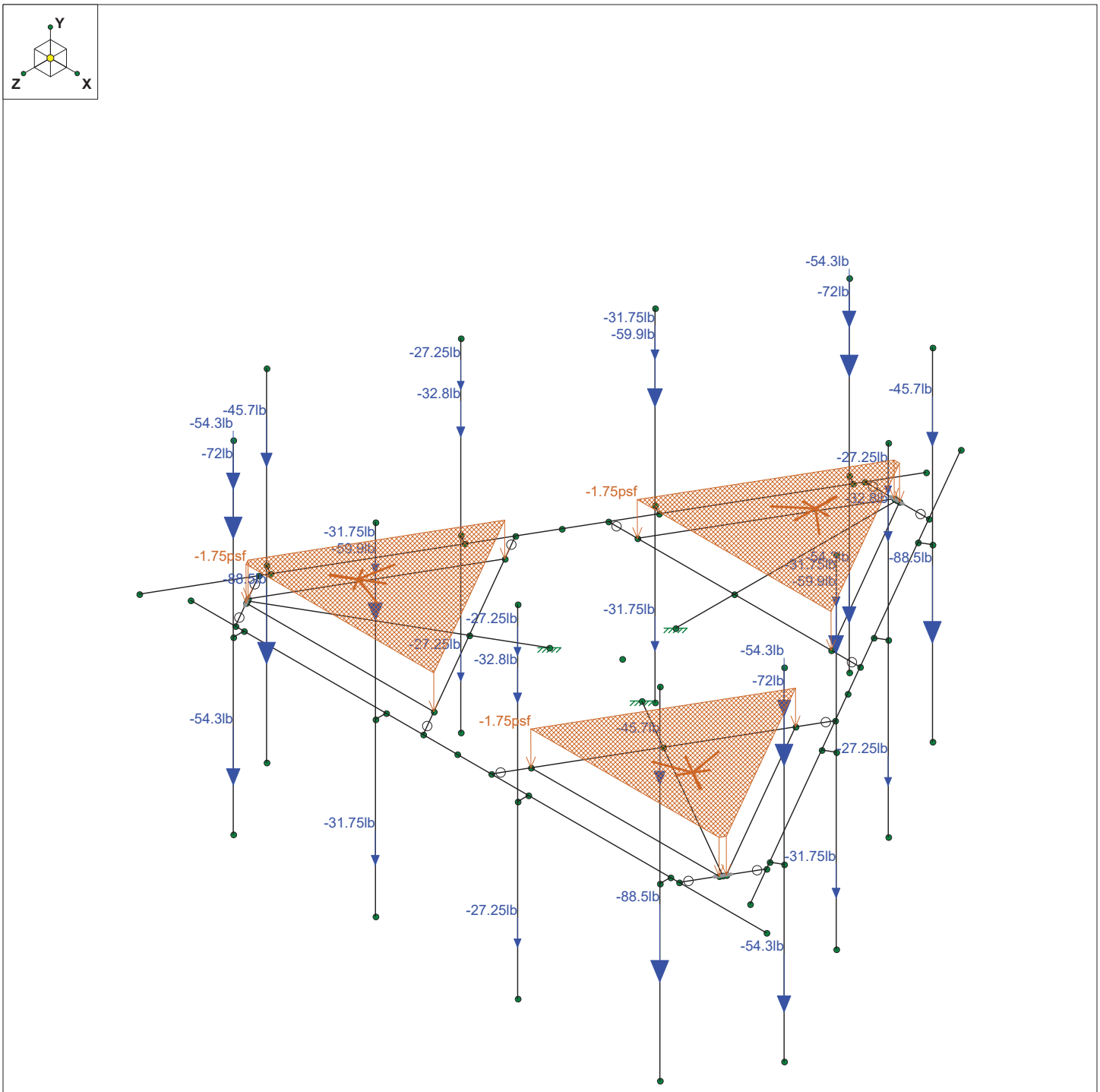

Loads: BLC 1, Self Weight

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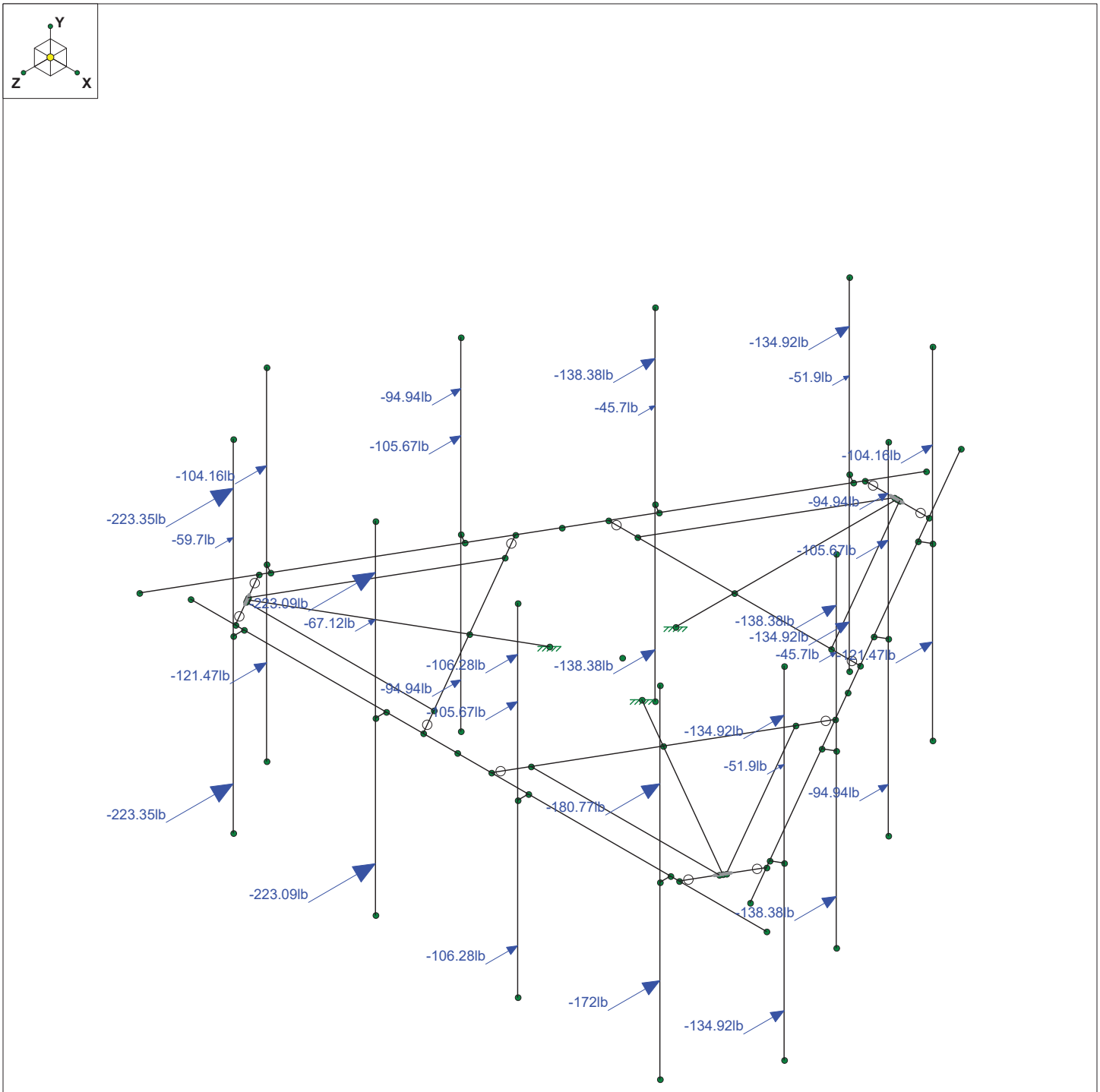

Loads: BLC 2, Wind Load AZI 0

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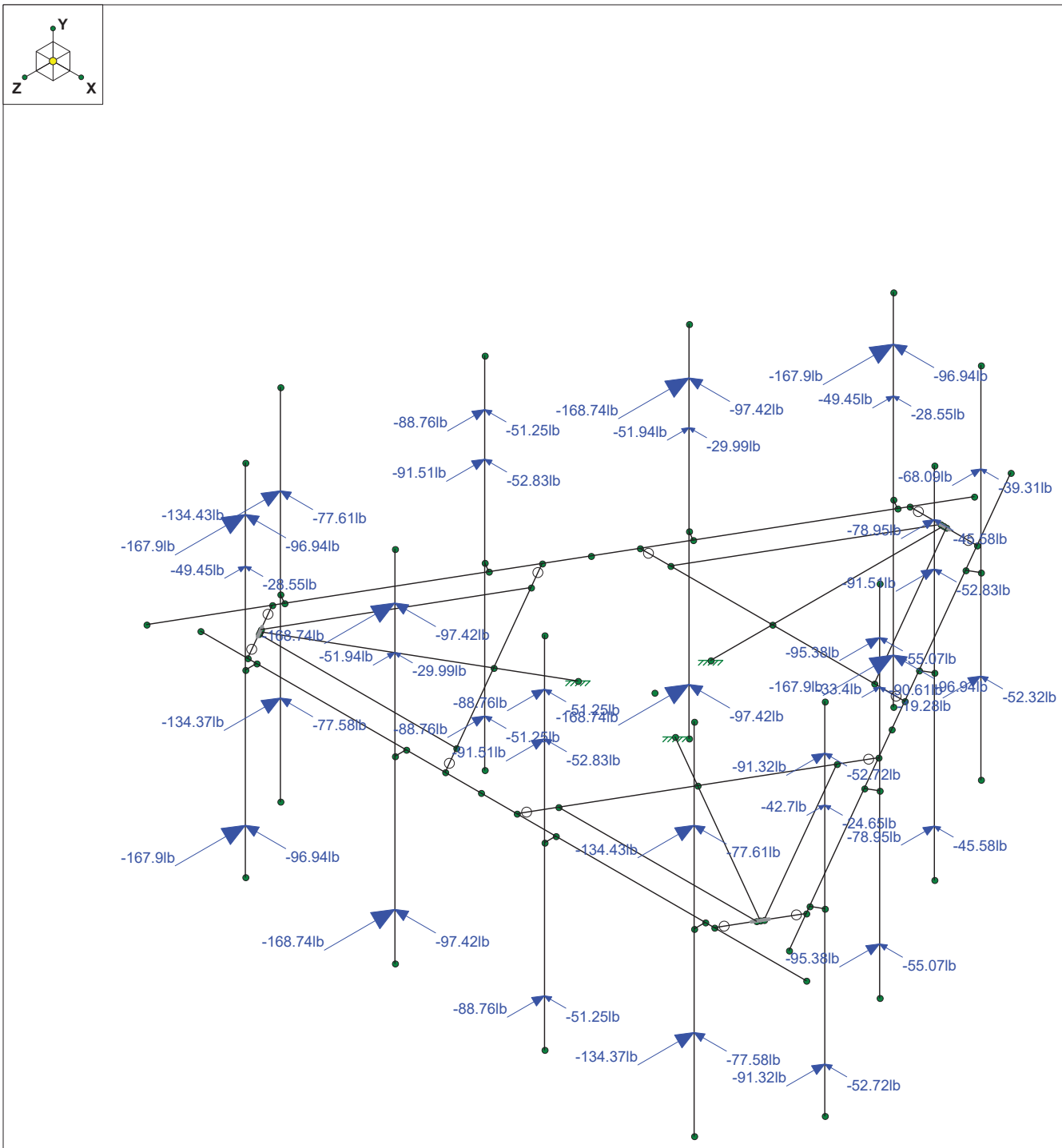

Loads: BLC 3, Wind Load AZI 30

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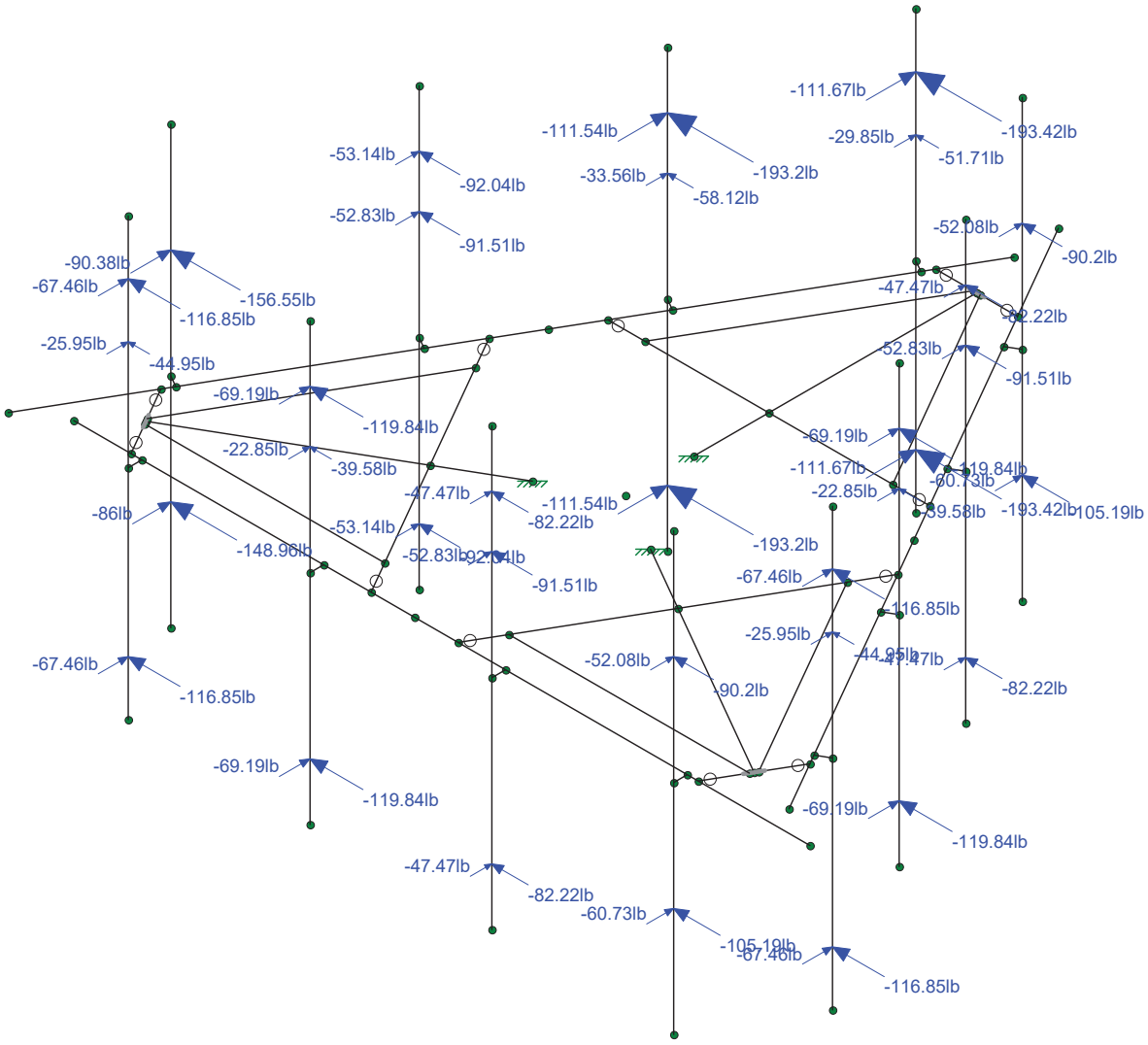

Loads: BLC 4, Wind Load AZI 60

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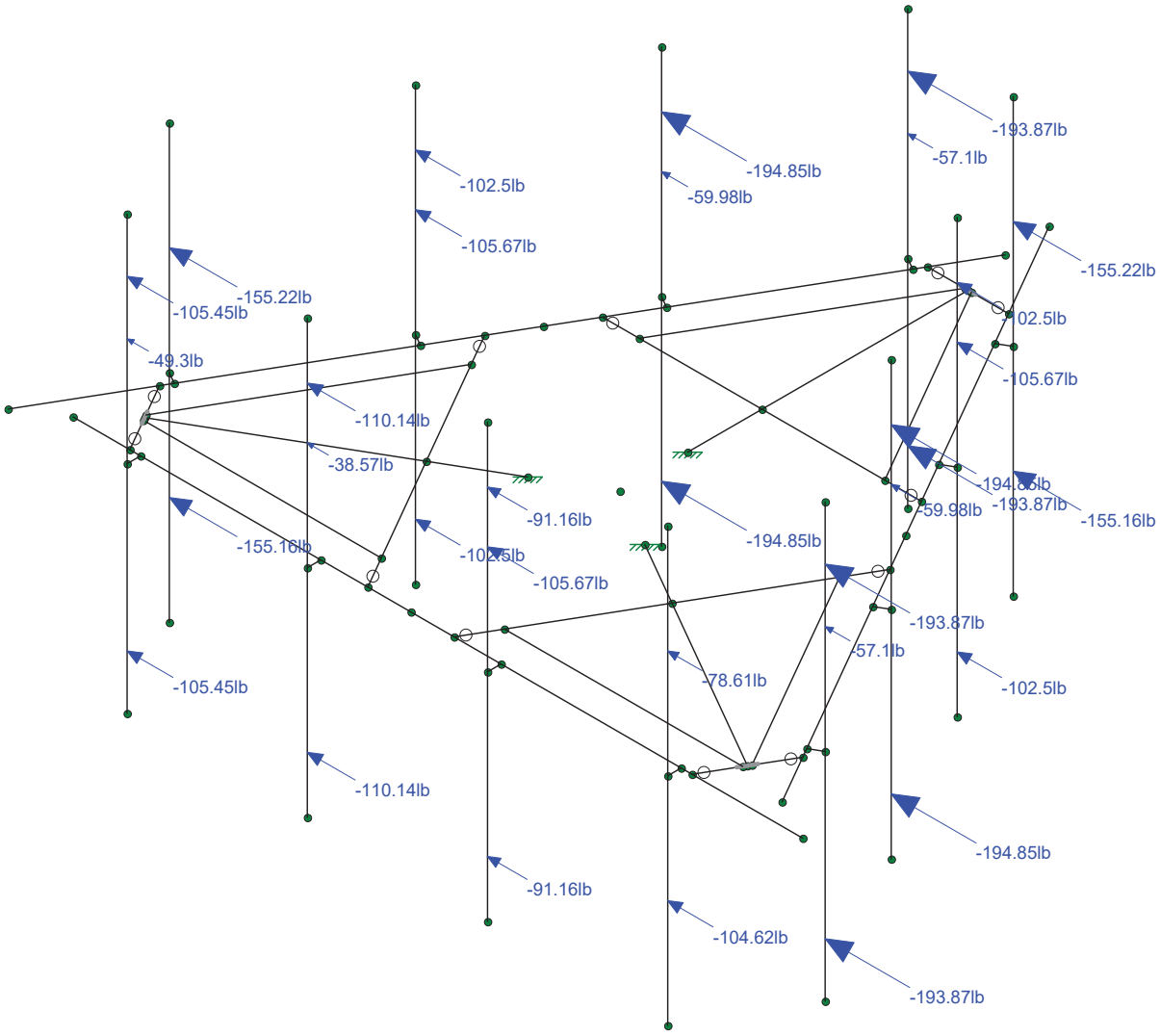

Loads: BLC 5, Wind Load AZI 90

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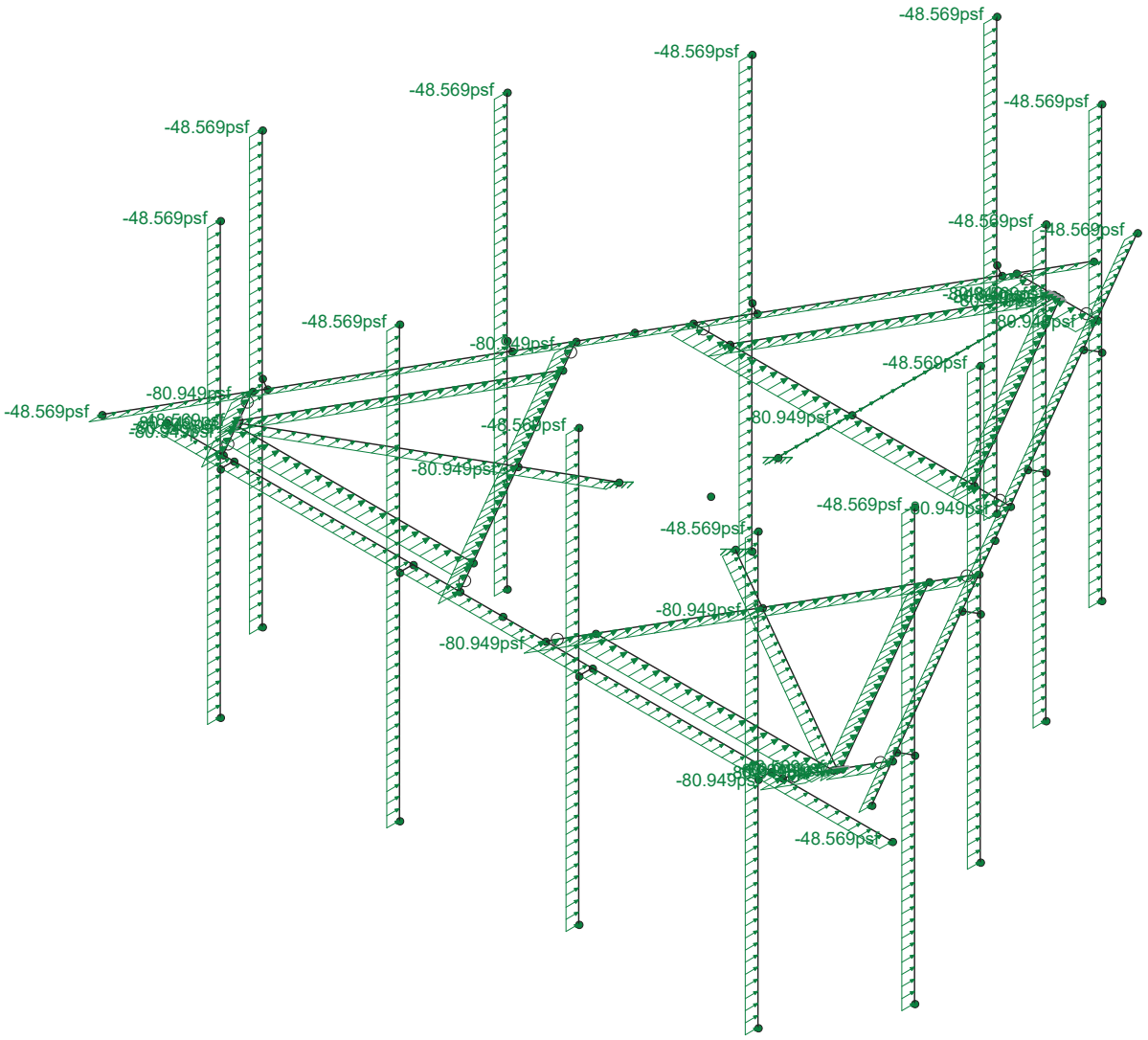

Loads: BLC 14, Distr. Wind Load Z

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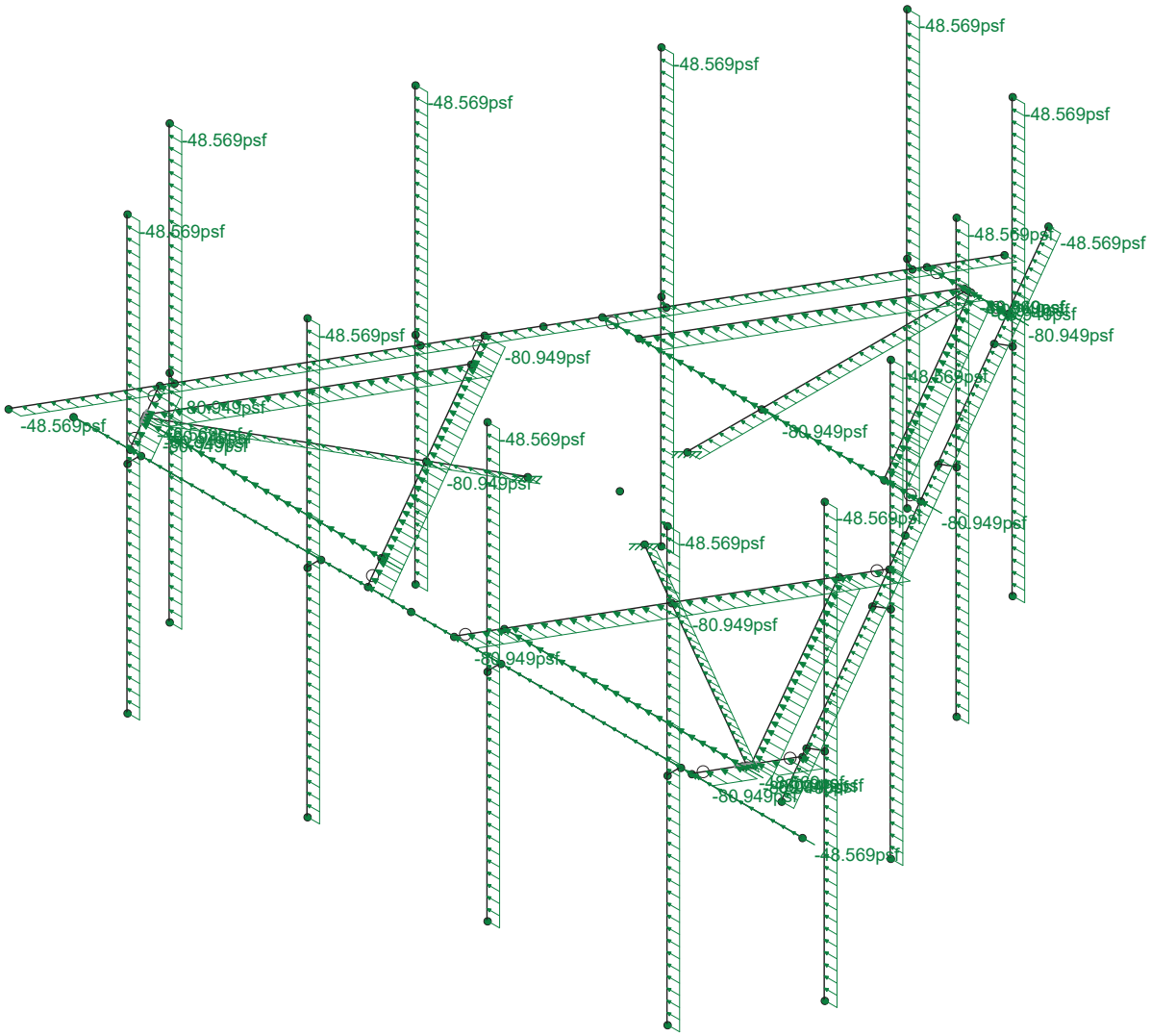

Loads: BLC 15, Distr. Wind Load X

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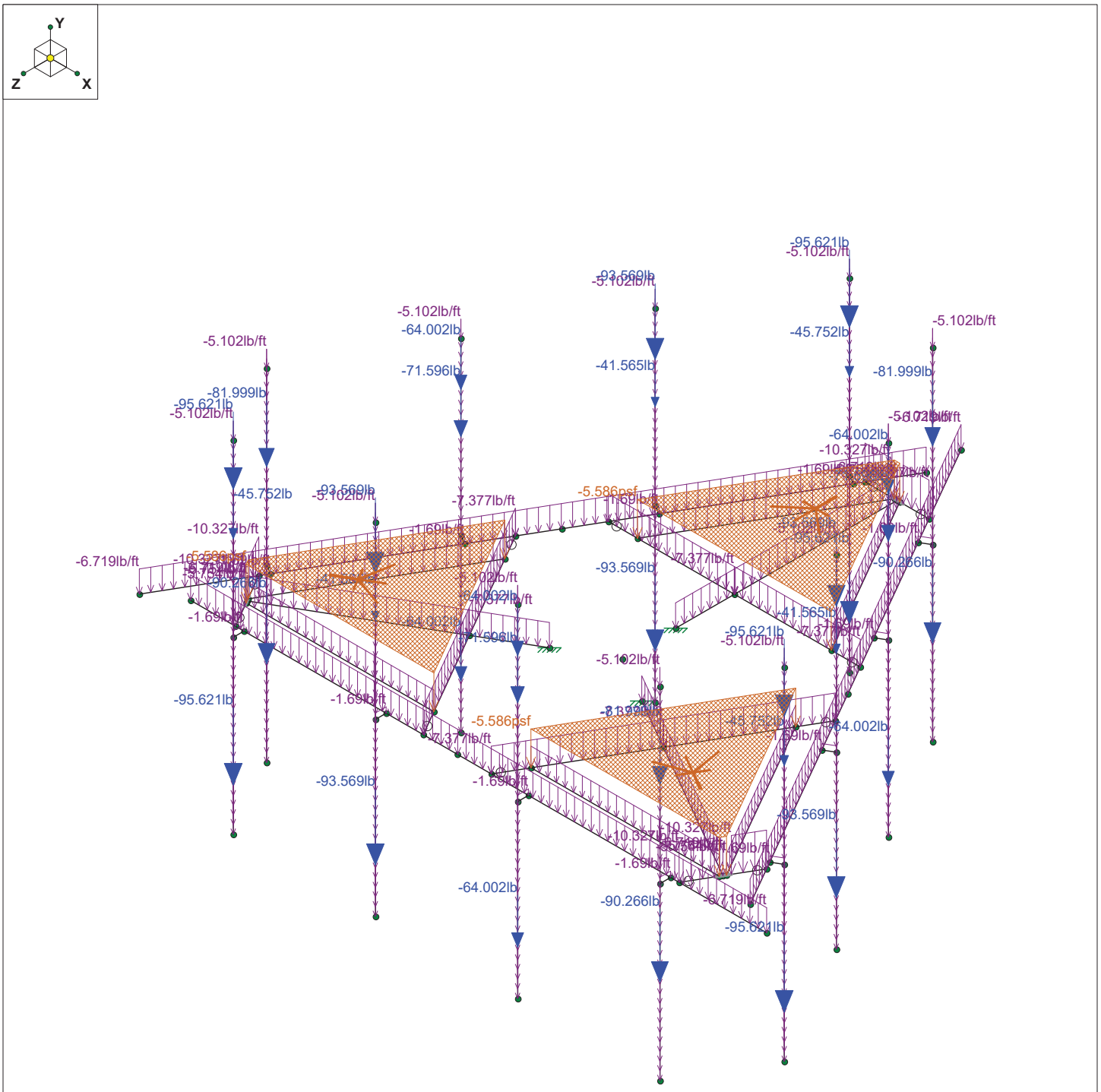

Loads: BLC 16, Ice Weight

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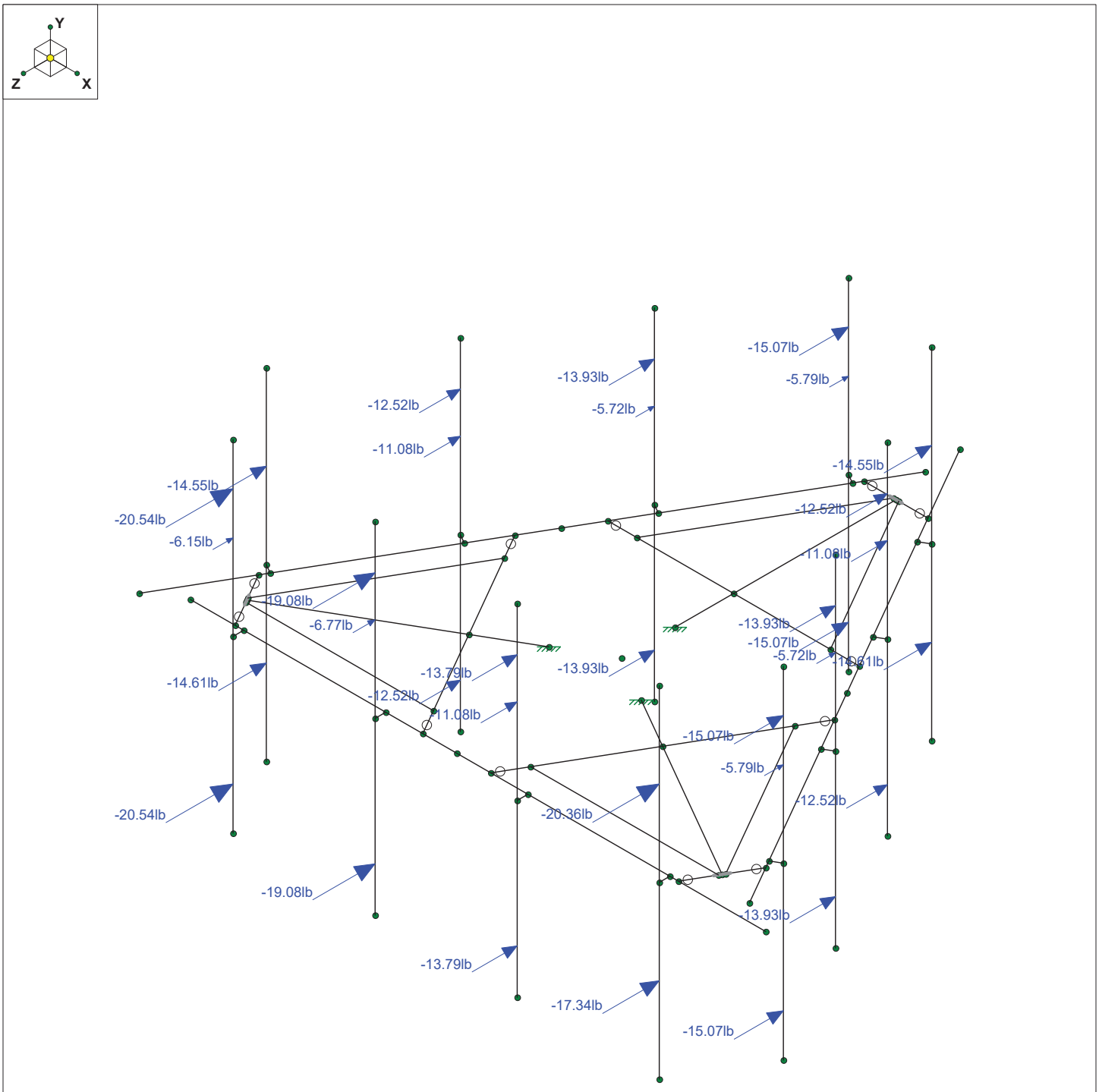
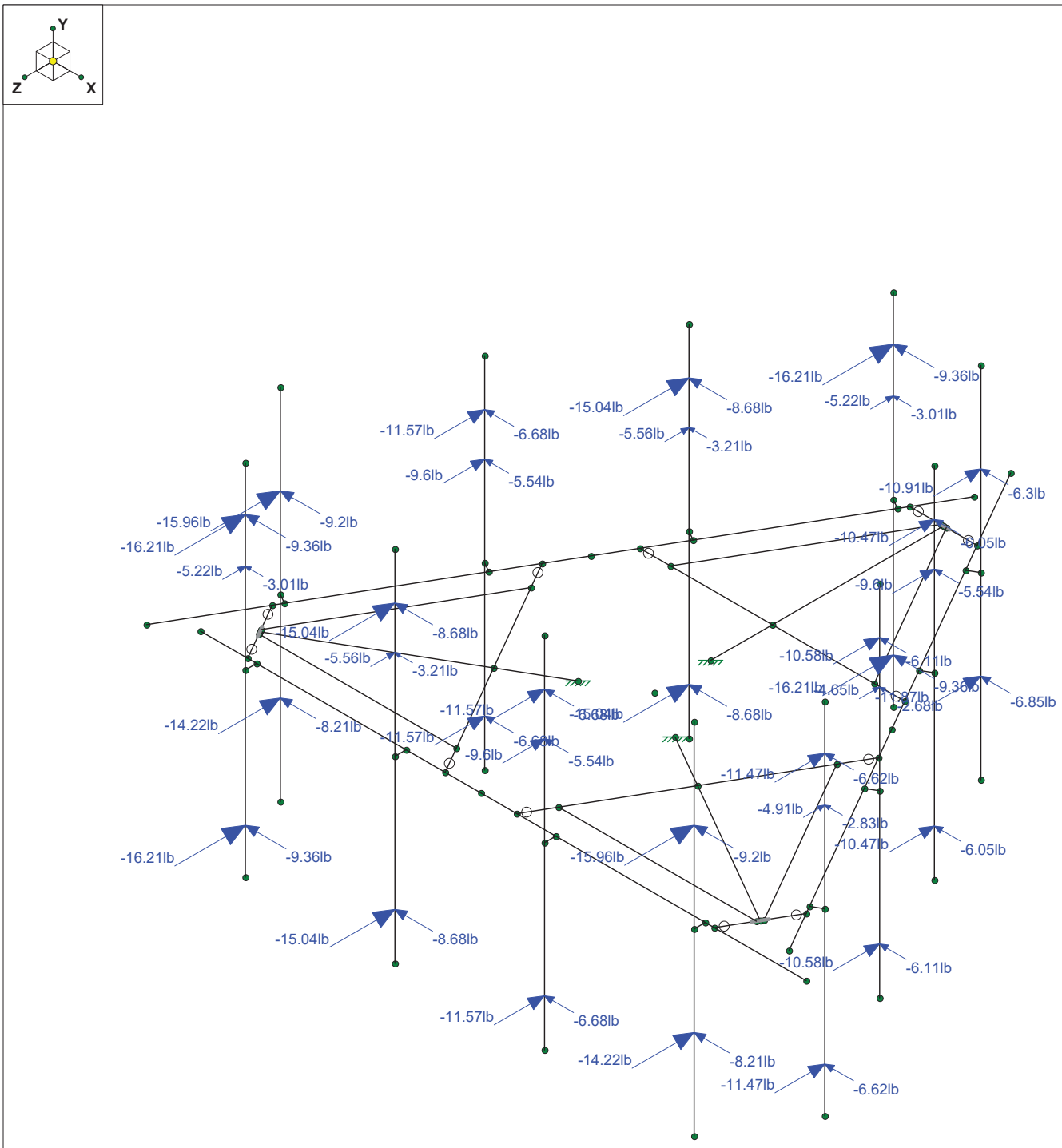


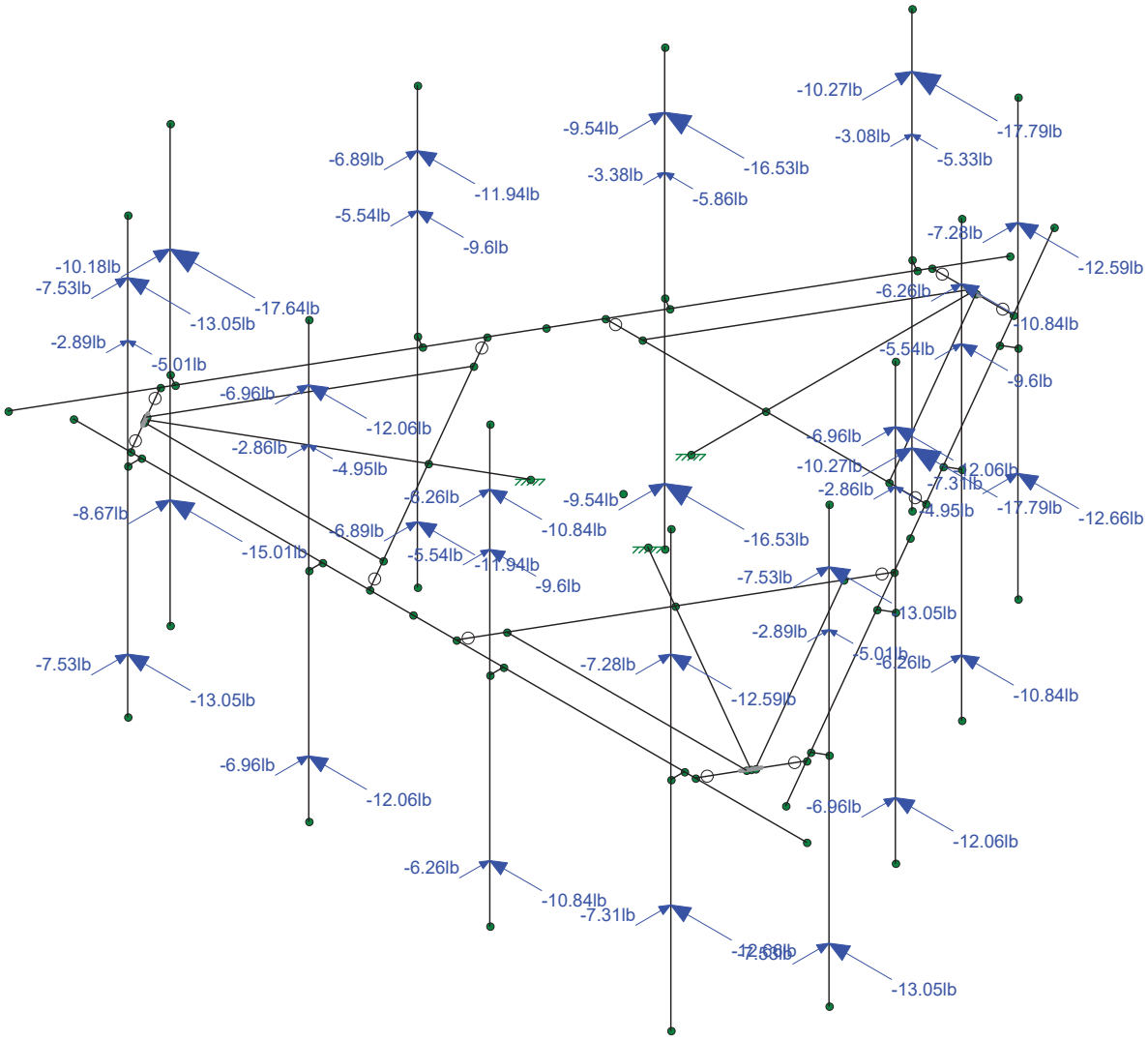
Loads: BLC 17, Ice Wind Load AZI 0

Infinigy Engineering, PLLC	878819	Ice Wind Loading 0
JG		June 10, 2020 at 12:14 PM
1039-Z0001-B		876381_loaded.r3d



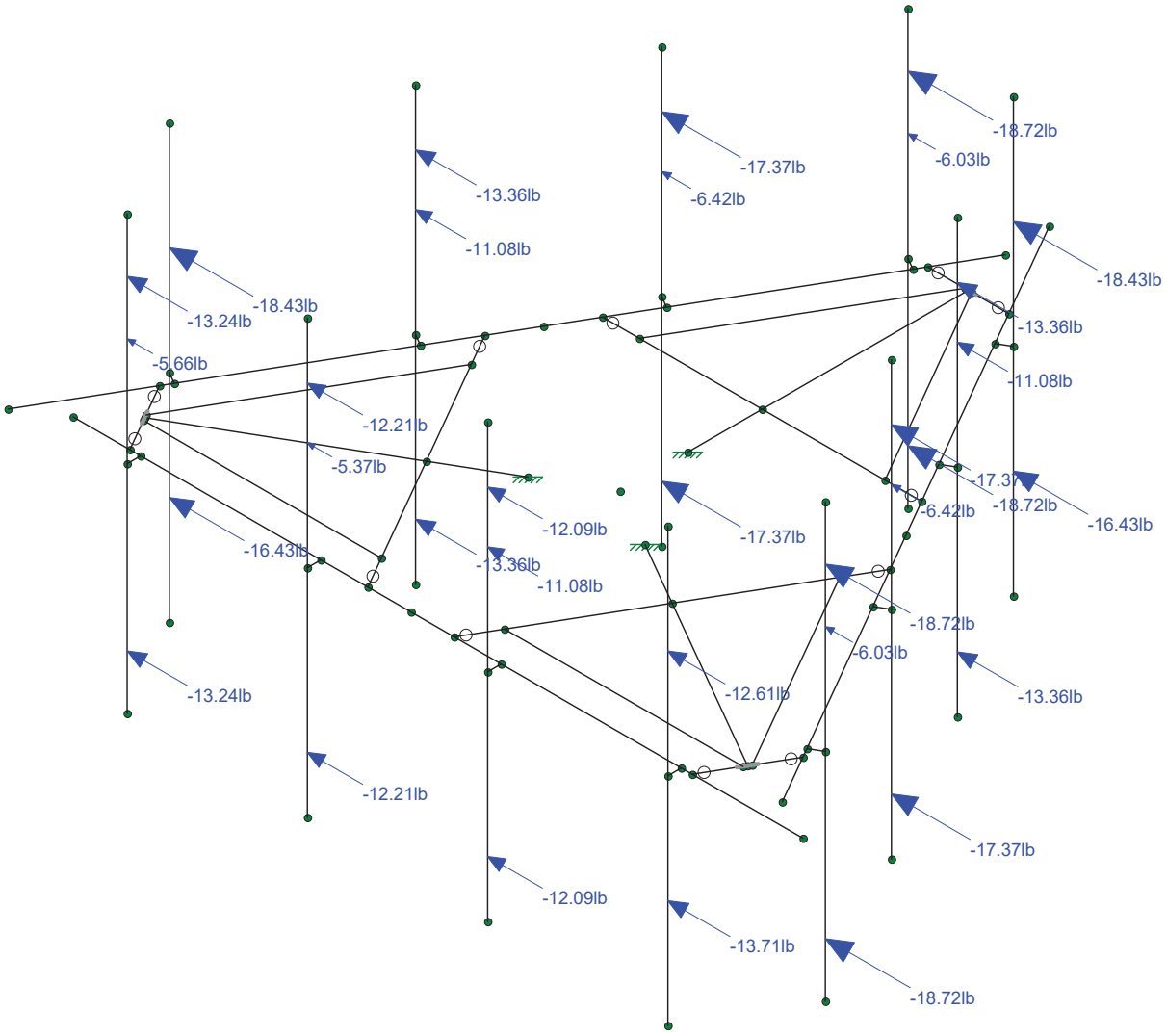
Loads: BLC 18, Ice Wind Load AZI 30

Infinigy Engineering, PLLC	878819	Ice Wind Loading 30
JG		June 10, 2020 at 12:15 PM
1039-Z0001-B		876381_loaded.r3d



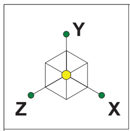
Loads: BLC 19, Ice Wind Load AZI 60

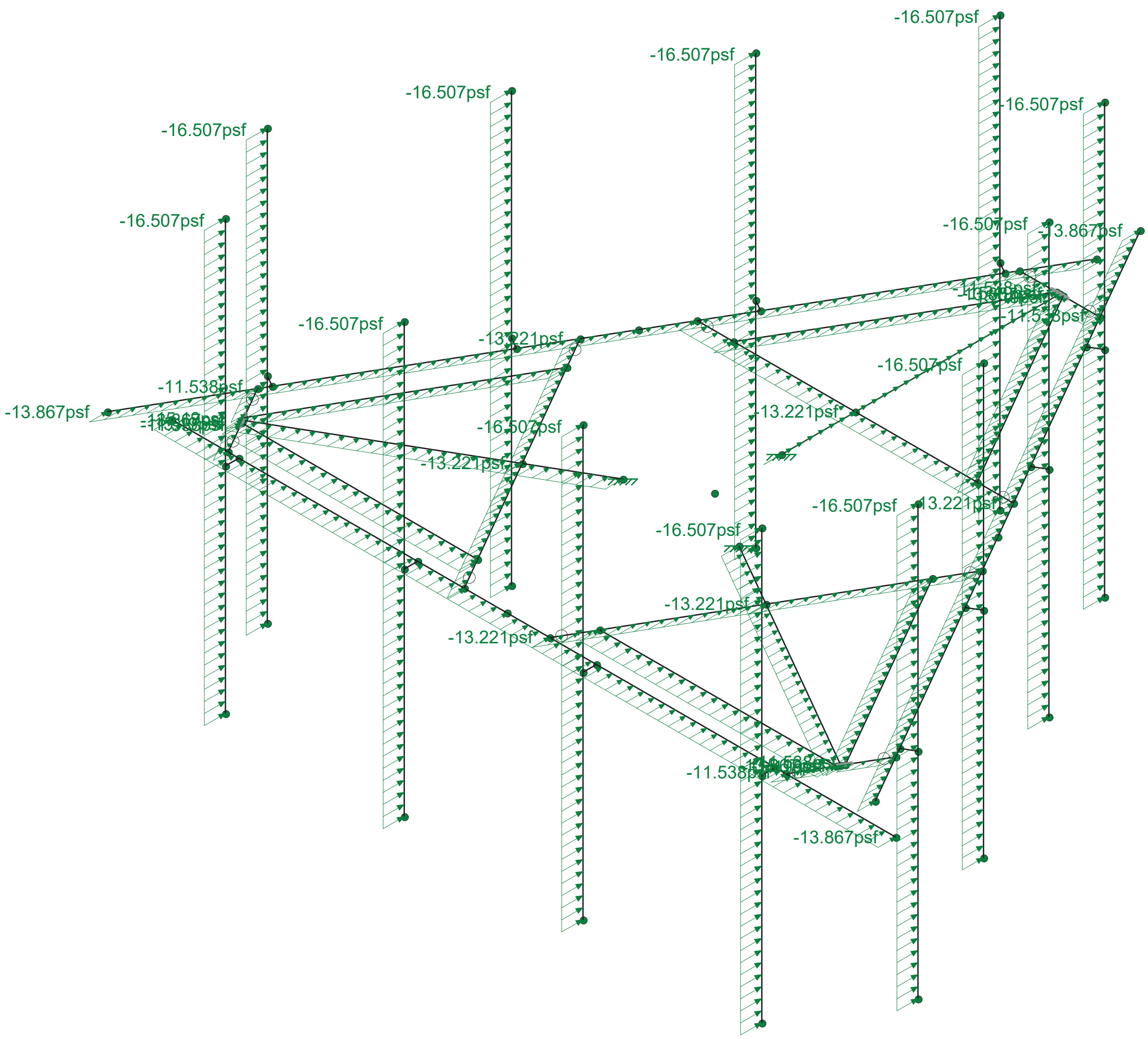
Infinigy Engineering, PLLC	878819	Ice Wind Loading 60
JG		June 10, 2020 at 12:15 PM
1039-Z0001-B		876381_loaded.r3d



Loads: BLC 20, Ice Wind Load AZI 90

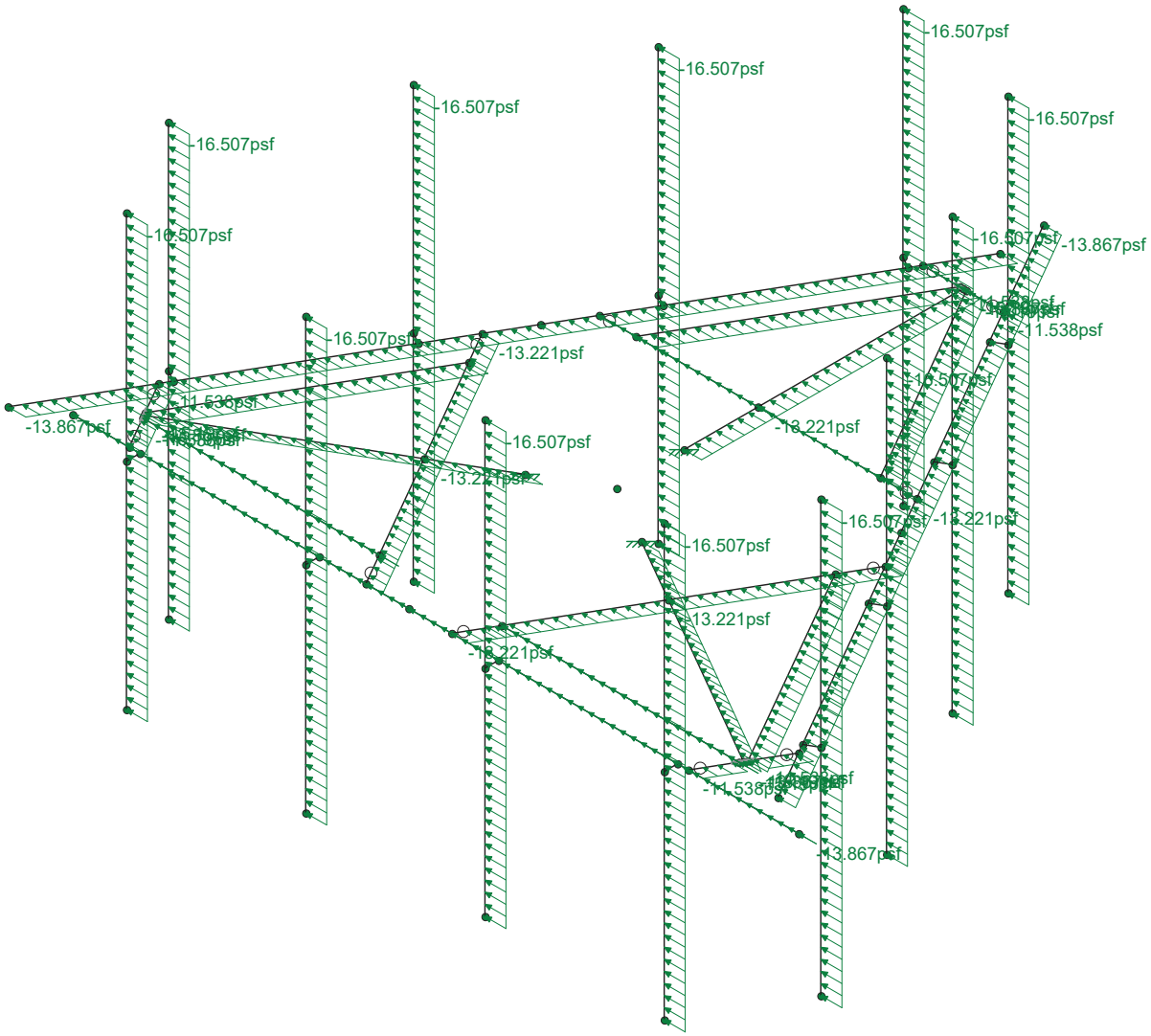
Infinigy Engineering, PLLC	878819	Ice Wind Loading 90
JG		June 10, 2020 at 12:15 PM
1039-Z0001-B		876381_loaded.r3d





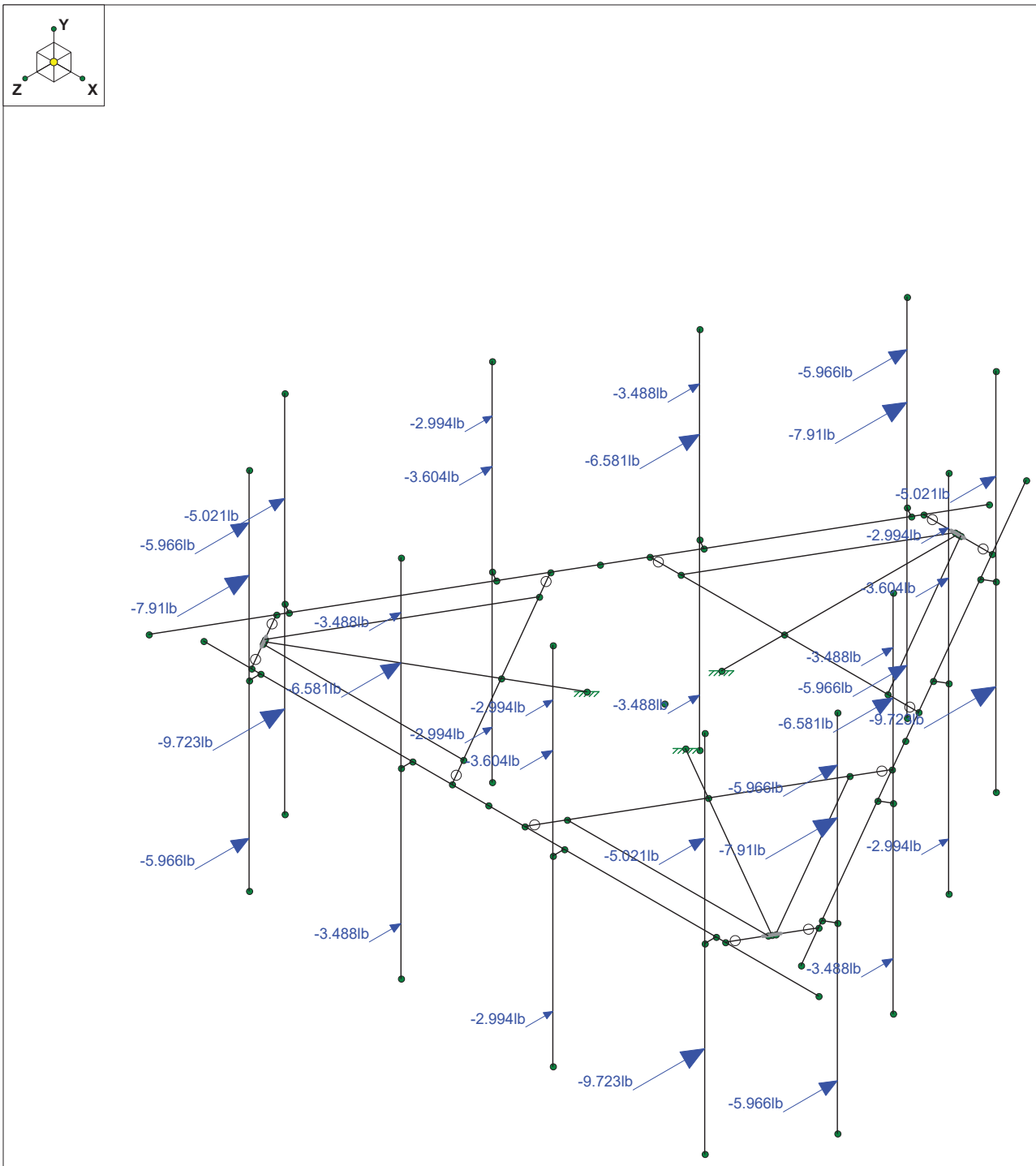
Loads: BLC 29, Distr. Ice Wind Load Z

Infinigy Engineering, PLLC		Dist. Ice Wind Loading 0
JG	878819	June 10, 2020 at 12:15 PM
1039-Z0001-B		876381_loaded.r3d



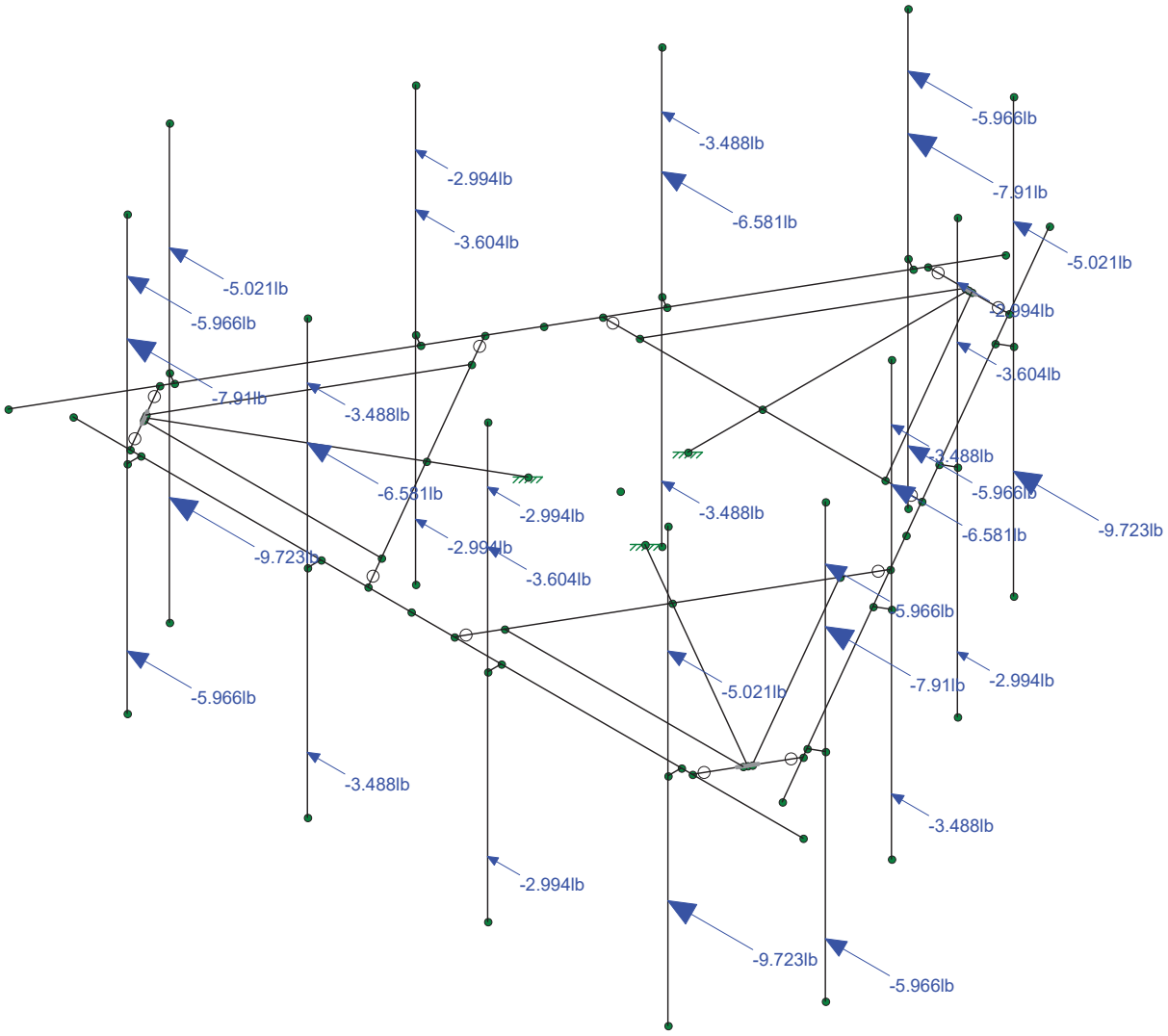
Loads: BLC 30, Distr. Ice Wind Load X

Infinigy Engineering, PLLC	878819	Dist. Ice Wind Loading 90
JG		June 10, 2020 at 12:15 PM
1039-Z0001-B		876381_loaded.r3d



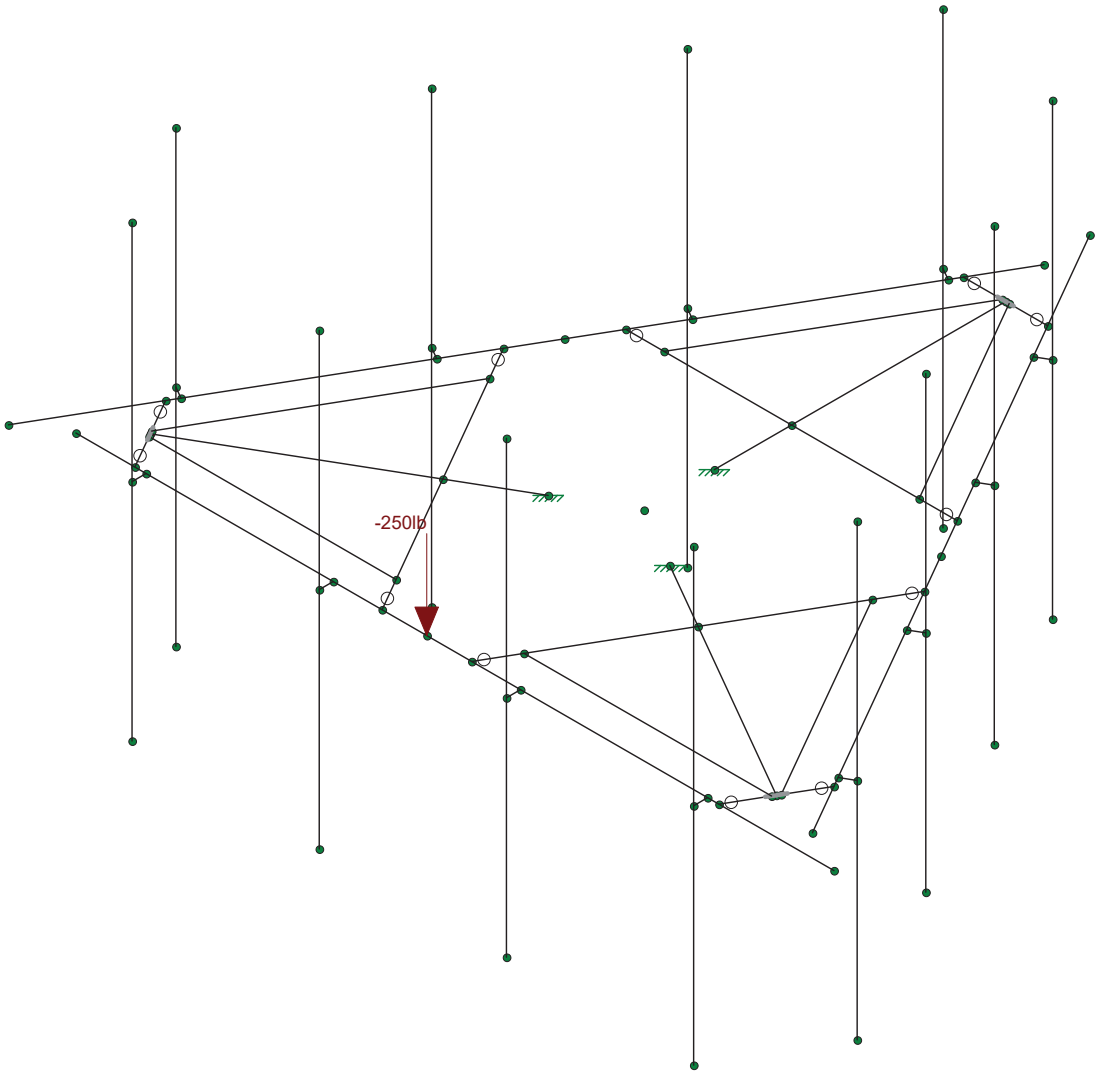
Loads: BLC 31, Seismic Load Z

Infinigy Engineering, PLLC	878819	Seismic Loading 0
JG		June 10, 2020 at 12:15 PM
1039-Z0001-B		876381_loaded.r3d



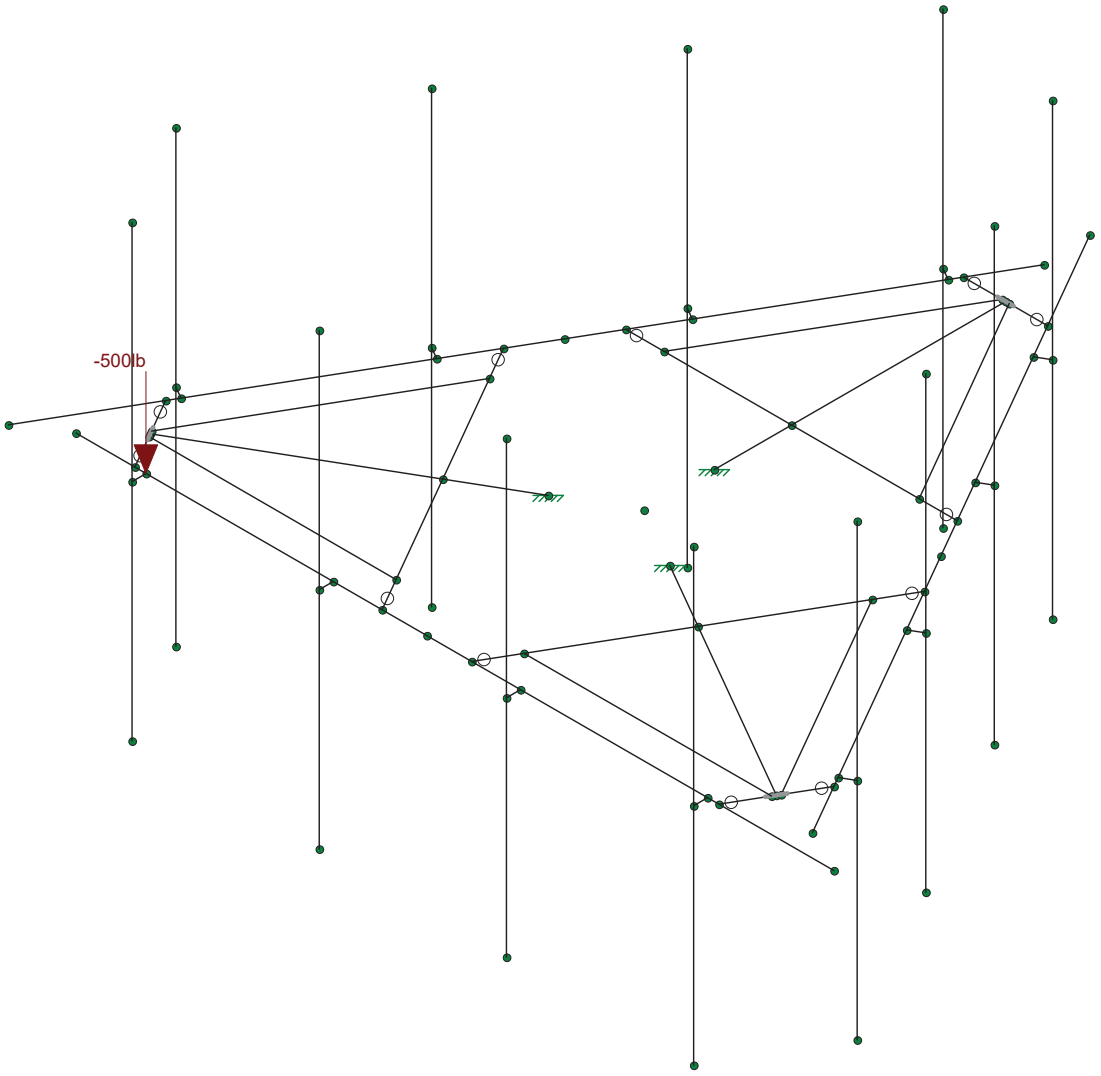
Loads: BLC 32, Seismic Load X

Infinigy Engineering, PLLC	878819	Seismic Loading 90
JG		June 10, 2020 at 12:15 PM
1039-Z0001-B		876381_loaded.r3d



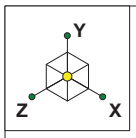
Loads: BLC 33, Service Live Loads

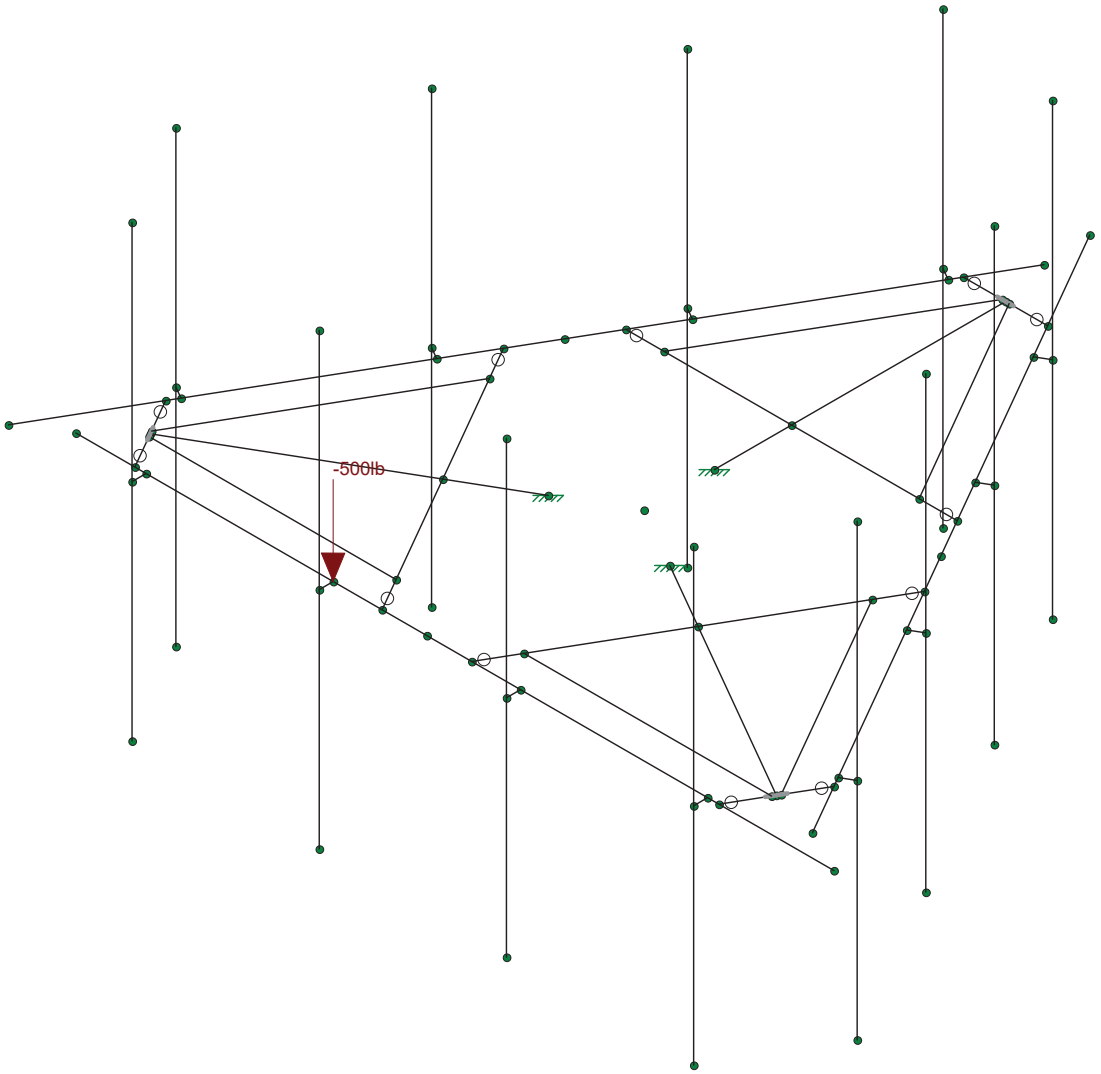
Infinigy Engineering, PLLC	878819	Service
JG		June 10, 2020 at 12:16 PM
1039-Z0001-B		876381_loaded.r3d



Loads: BLC 34, Maintenance Load 1

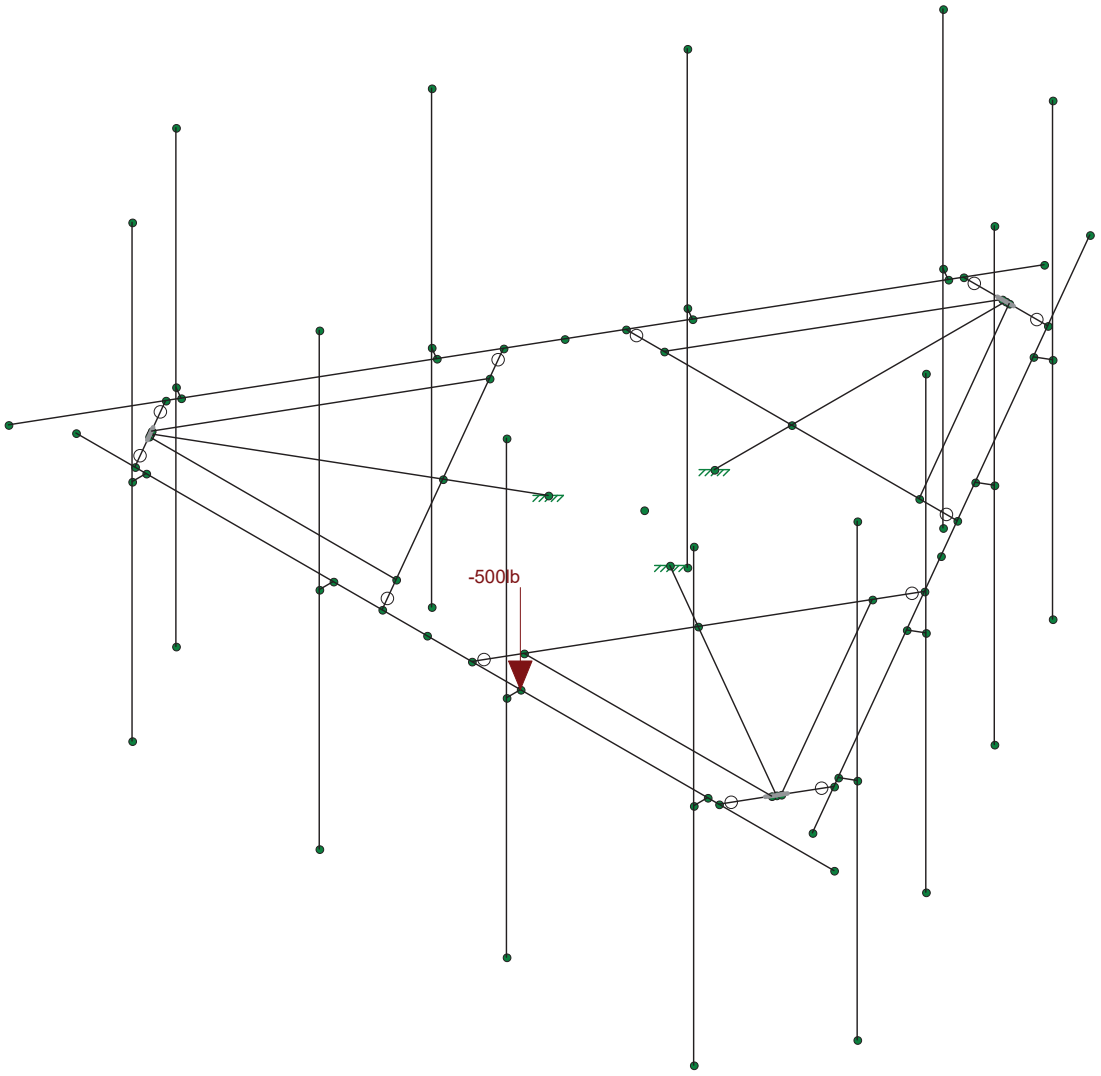
Infinigy Engineering, PLLC	878819	Maintenance Load 1
JG		June 10, 2020 at 12:16 PM
1039-Z0001-B		876381_loaded.r3d





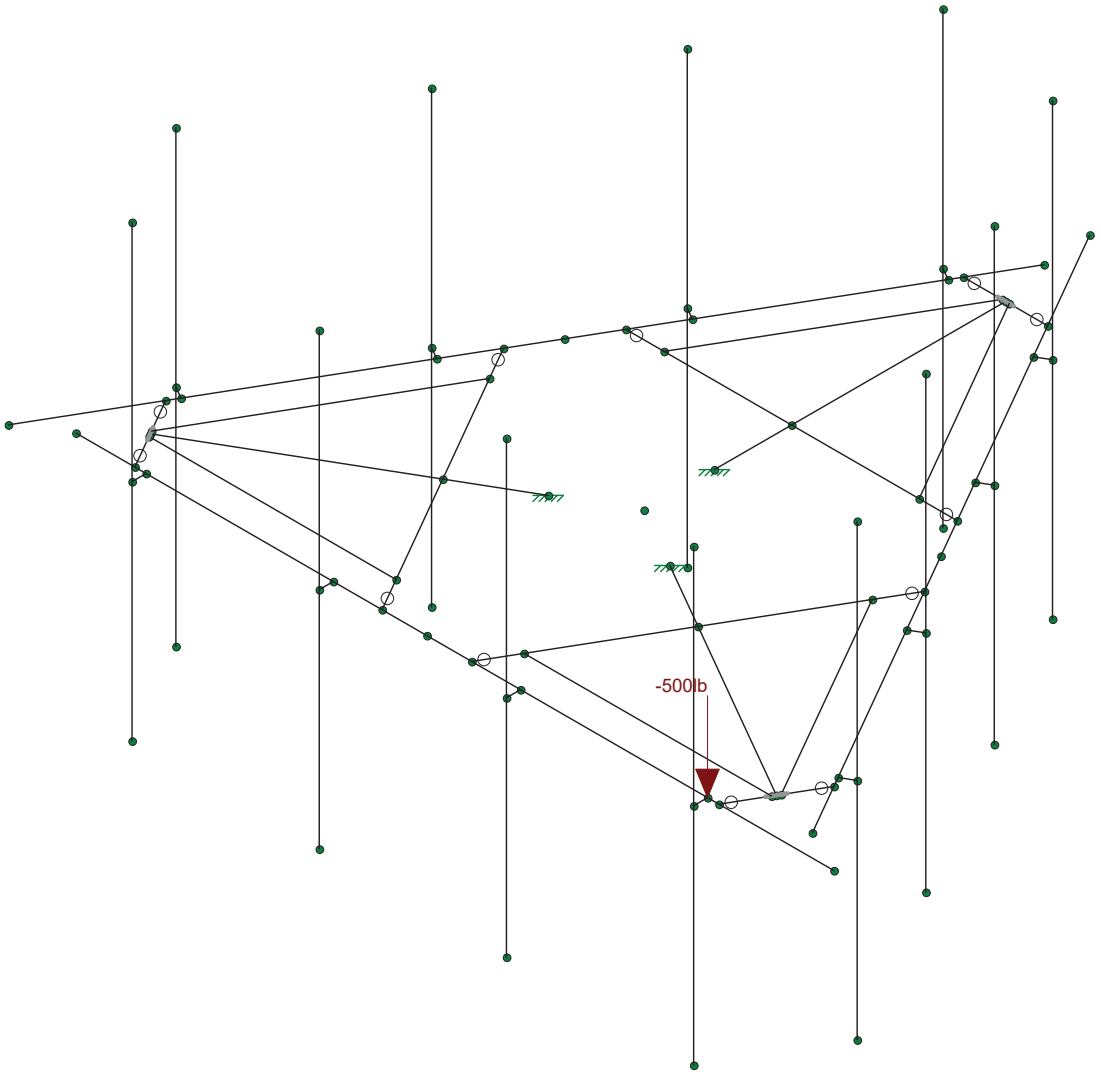
Loads: BLC 35, Maintenance Load 2

Infinigy Engineering, PLLC	878819	Maintenance Load 2
JG		June 10, 2020 at 12:16 PM
1039-Z0001-B		876381_loaded.r3d



Loads: BLC 36, Maintenance Load 3

Infinigy Engineering, PLLC	878819	Maintenance Load 3
JG		June 10, 2020 at 12:16 PM
1039-Z0001-B		876381_loaded.r3d



Loads: BLC 37, Maintenance Load 4

Infinigy Engineering, PLLC	878819	Maintenance Load 4
JG		June 10, 2020 at 12:16 PM
1039-Z0001-B		876381_loaded.r3d

APPENDIX B

SOFTWARE INPUT CALCULATIONS

Program Inputs

PROJECT INFORMATION	
Client:	Crown Castle
Carrier:	AT&T Mobility
Engineer:	Jacques Grimaldi

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	B	
Topo Factor Procedure:	Method 1, Category 1	
Site Class:	D - Stiff Soil	
Ground Elevation:	181	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Platform	
Num Sectors:	3	
Centerline AGL:	167.0	ft
Tower Height AGL:	176.0	ft

TOPOGRAPHIC DATA		
Topo Feature:	N/A	
Slope Distance:	N/A	ft
Crest Distance:	N/A	ft
Crest Height:	N/A	ft

FACTORS		
Directionality Fact. (K_d):	0.95	
Ground Ele. Factor (K_e):	0.99	*Rev H Only
Rooftop Speed-Up (K_s):	1.00	*Rev H Only
Topographic Factor (K_{zt}):	1.00	
Gust Effect Factor (G_h):	1.0	

CODE STANDARDS		
Building Code:	2018 IBC	
TIA Standard:	TIA-222-H	
ASCE Standard:	ASCE 7-16	

WIND AND ICE DATA		
Ultimate Wind (V_{ult}):	121	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	1	in
Flat Pressure:	80.95	psf
Round Pressure:	48.57	psf
Ice Wind Pressure:	8.29	psf

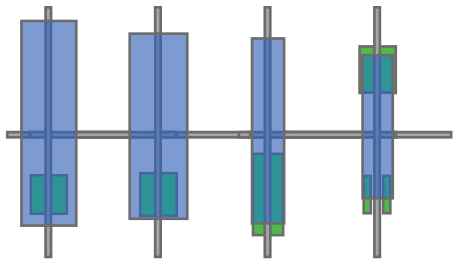
SEISMIC DATA		
Short-Period Accel. (S_s):	0.21	g
1-Second Accel. (S_1):	0.05	g
Short-Period Design (S_{DS}):	0.22	
1-Second Design (S_{D1}):	0.09	
Short-Period Coeff. (F_a):	1.60	
1-Second Coeff. (F_v):	2.40	
Amplification Factor (a_p):	1.00	
Response Mod. (R_p):	2.50	
Overstrength (Ω_o):	1.00	

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

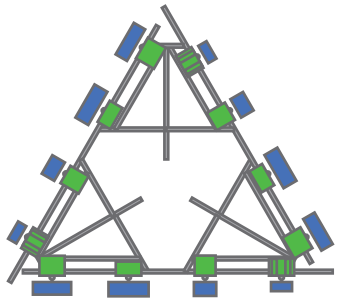
Infinigy Load Calculator V2.1.4

Program Inputs

ELEVATION VIEW



PLAN VIEW



INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

Infinigy Load Calculator V2.1.4

APPURTENANCE INFORMATION

Appurtenance Name	Elevation	Qty.	K_a	q_z (psf)	EPA_N (ft^2)	EPA_T (ft^2)	Wind F_z (lbs)	Wind F_x (lbs)	Weight (lbs)	Seismic F (lbs)	Member (α sector)
CCI ANTENNAS HPA65R-BU6A	167.0	3	0.90	40.47	5.83	5.00	212.55	182.32	54.50	5.99	MP2
CCI ANTENNAS OPA65R-BU6D	167.0	3	0.90	40.47	12.25	6.05	446.17	220.28	63.50	6.98	MP3
KATHREIN 80010965	167.0	3	0.90	40.47	12.26	5.79	446.69	210.89	108.60	11.93	MP4
POWERWAVE TECHNOLOGIES 7770.00	167.0	3	0.90	40.47	5.51	2.93	200.66	106.67	35.00	3.85	MP1
ERICSSON RRUS 4449 B5/B12	167.0	3	0.90	40.47	1.97	1.41	71.67	51.29	71.00	7.80	MP1
ERICSSON RRUS 4478 B14	167.0	3	0.90	40.47	1.84	1.06	67.12	38.57	59.90	6.58	MP3
ERICSSON RRUS 8843 B2/B66A	167.0	3	0.90	40.47	1.64	1.35	59.70	49.30	72.00	7.91	MP4
POWERWAVE TECHNOLOGIES LGP2140:	167.0	3	0.90	40.47	1.10	0.35	40.22	12.64	14.10	1.55	MP1
POWERWAVE TECHNOLOGIES LGP2140:	167.0	3	0.90	40.47	1.10	0.35	40.22	12.64	14.10	1.55	MP1
RAYCAP DC6-48-60-18-8F	167.0	3	0.90	40.47	2.90	2.90	105.67	105.67	32.80	3.60	MP2

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	HE1	N5	N3			Horizontal Cor...	Beam	None	A36 Gr.36	Typical
2	G2	N11	N15			Angles	Beam	None	A36 Gr.36	Typical
3	G3	N10	N16		270	Angles	Beam	None	A36 Gr.36	Typical
4	D4	N14	N12			Channel Braci...	Beam	None	A36 Gr.36	Typical
5	S5	N3	N126A			Standoff	Beam	None	A500 Gr.C	Typical
6	HE6	N17	N15A			Horizontal Cor...	Beam	None	A36 Gr.36	Typical
7	G7	N19	N23			Angles	Beam	None	A36 Gr.36	Typical
8	G8	N18	N24		270	Angles	Beam	None	A36 Gr.36	Typical
9	D9	N22	N20			Channel Braci...	Beam	None	A36 Gr.36	Typical
10	S10	N15A	N13A			Standoff	Beam	None	A500 Gr.C	Typical
11	HE11	N29	N27			Horizontal Cor...	Beam	None	A36 Gr.36	Typical
12	G12	N31	N35			Angles	Beam	None	A36 Gr.36	Typical
13	G13	N30	N36		270	Angles	Beam	None	A36 Gr.36	Typical
14	D14	N34	N32			Channel Braci...	Beam	None	A36 Gr.36	Typical
15	S15	N27	N125A			Standoff	Beam	None	A500 Gr.C	Typical
16	H16	N36A	N35A			Horizontal	Beam	Pipe	A53 Gr.B	Typical
17	H17	N93A	N38			Horizontal	Beam	Pipe	A53 Gr.B	Typical
18	H18	N95A	N41			Horizontal	Beam	Pipe	A53 Gr.B	Typical
19	D19	N32	N33			Channel Braci...	Beam	None	A36 Gr.36	Typical
20	D20	N20	N21			Channel Braci...	Beam	None	A36 Gr.36	Typical
21	D21	N12	N13			Channel Braci...	Beam	None	A36 Gr.36	Typical
22	M26	N56	N64			RIGID	None	None	RIGID	Typical
23	M28	N58	N66			RIGID	None	None	RIGID	Typical
24	M30	N60	N68			RIGID	None	None	RIGID	Typical
25	M32	N62	N70			RIGID	None	None	RIGID	Typical
26	MP4	N72	N76			Pipe Mounts	Column	Pipe	A500 Gr.B...	Typical
27	MP3	N73	N77			Pipe Mounts	Column	Pipe	A500 Gr.B...	Typical
28	MP2	N74	N78			Pipe Mounts	Column	Pipe	A500 Gr.B...	Typical
29	MP1	N75	N79			Pipe Mounts	Column	Pipe	A500 Gr.B...	Typical
30	M38	N81	N89			RIGID	None	None	RIGID	Typical
31	M40	N83	N91			RIGID	None	None	RIGID	Typical
32	M42	N85	N93			RIGID	None	None	RIGID	Typical
33	M44	N87	N95			RIGID	None	None	RIGID	Typical
34	MP12	N97	N101			Pipe Mounts	Column	Pipe	A500 Gr.B...	Typical
35	MP11	N98	N102			Pipe Mounts	Column	Pipe	A500 Gr.B...	Typical
36	MP10	N99	N103			Pipe Mounts	Column	Pipe	A500 Gr.B...	Typical
37	MP9	N100	N104			Pipe Mounts	Column	Pipe	A500 Gr.B...	Typical
38	M50	N106	N114			RIGID	None	None	RIGID	Typical
39	M52	N108	N116			RIGID	None	None	RIGID	Typical
40	M54	N110	N118			RIGID	None	None	RIGID	Typical
41	M56	N112	N120			RIGID	None	None	RIGID	Typical
42	MP8	N122	N126			Pipe Mounts	Column	Pipe	A500 Gr.B...	Typical
43	MP7	N123	N127			Pipe Mounts	Column	Pipe	A500 Gr.B...	Typical
44	MP6	N124	N128			Pipe Mounts	Column	Pipe	A500 Gr.B...	Typical
45	MP5	N125	N129			Pipe Mounts	Column	Pipe	A500 Gr.B...	Typical
46	M46	N3	N4			Horizontal Cor...	Beam	None	A36 Gr.36	Typical
47	M47	N27	N28			Horizontal Cor...	Beam	None	A36 Gr.36	Typical
48	M48	N15A	N16A			Horizontal Cor...	Beam	None	A36 Gr.36	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		12	36	0
3	Total General		12	36	0

Material Takeoff (Continued)

	Material	Size	Pieces	Length[in]	Weight[LB]
4					
5	Hot Rolled Steel				
6	A36 Gr.36	C3.38X2.06X0.188	6	212.5	80.697
7	A36 Gr.36	L2x2x3	6	317.2	64.946
8	A36 Gr.36	PL6x3/8	6	43.5	27.754
9	A500 Gr.B RND	PIPE_2.0	12	1152	358.36
10	A500 Gr.C	PIPE_3.0X	3	186.7	161.192
11	A53 Gr.B	PIPE_3.0	3	486	285.272
12	Total HR Steel		36	2398	978.22

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(M...	Surface(Plate/Wall)
1	Self Weight	DL		-1			42		3	
2	Wind Load AZI 0	WLZ					84			
3	Wind Load AZI 30	None					84			
4	Wind Load AZI 60	None					84			
5	Wind Load AZI 90	WLX					84			
6	Wind Load AZI 1...	None					84			
7	Wind Load AZI 1...	None					84			
8	Wind Load AZI 1...	None					84			
9	Wind Load AZI 2...	None					84			
10	Wind Load AZI 2...	None					84			
11	Wind Load AZI 2...	None					84			
12	Wind Load AZI 3...	None					84			
13	Wind Load AZI 3...	None					84			
14	Distr. Wind Load Z	WLZ						48		
15	Distr. Wind Load X	WLX						48		
16	Ice Weight	OL1					42	48	3	
17	Ice Wind Load AZ...	OL2					84			
18	Ice Wind Load AZ...	None					84			
19	Ice Wind Load AZ...	None					84			
20	Ice Wind Load AZ...	OL3					84			
21	Ice Wind Load AZ...	None					84			
22	Ice Wind Load AZ...	None					84			
23	Ice Wind Load AZ...	None					84			
24	Ice Wind Load AZ...	None					84			
25	Ice Wind Load AZ...	None					84			
26	Ice Wind Load AZ...	None					84			
27	Ice Wind Load AZ...	None					84			
28	Ice Wind Load AZ...	None					84			
29	Distr. Ice Wind Lo...	OL2						48		
30	Distr. Ice Wind Lo...	OL3						48		
31	Seismic Load Z	ELZ			-.11		42			
32	Seismic Load X	ELX	-.11				42			
33	Service Live Loads	LL				1				
34	Maintenance Loa...	LL				1				
35	Maintenance Loa...	LL				1				
36	Maintenance Loa...	LL				1				
37	Maintenance Loa...	LL				1				
38	Maintenance Loa...	LL				1				
39	Maintenance Loa...	LL				1				
40	Maintenance Loa...	LL				1				
41	Maintenance Loa...	LL				1				
42	Maintenance Loa...	LL				1				
43	Maintenance Loa...	LL				1				

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(M...	Surface(Plate/Wall)
44	Maintenance Loa...	LL				1				
45	Maintenance Loa...	LL				1				
46	BLC 1 Transient ...	None						57		
47	BLC 16 Transient...	None						57		

Load Combinations

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4DL	Yes	Y		1	1.4																		
2	1.2DL + 1WL AZI 0	Yes	Y		1	1.2	2	1	14	1	15													
3	1.2DL + 1WL AZI 30	Yes	Y		1	1.2	3	1	14	.866	15	.5												
4	1.2DL + 1WL AZI 60	Yes	Y		1	1.2	4	1	14	.5	15	.866												
5	1.2DL + 1WL AZI 90	Yes	Y		1	1.2	5	1	14		15	1												
6	1.2DL + 1WL AZI 120	Yes	Y		1	1.2	6	1	14	-.5	15	.866												
7	1.2DL + 1WL AZI 150	Yes	Y		1	1.2	7	1	14	-.8...	15	.5												
8	1.2DL + 1WL AZI 180	Yes	Y		1	1.2	8	1	14	-1	15													
9	1.2DL + 1WL AZI 210	Yes	Y		1	1.2	9	1	14	-.8...	15	-.5												
10	1.2DL + 1WL AZI 240	Yes	Y		1	1.2	10	1	14	-.5	15	-.8...												
11	1.2DL + 1WL AZI 270	Yes	Y		1	1.2	11	1	14		15	-1												
12	1.2DL + 1WL AZI 300	Yes	Y		1	1.2	12	1	14	.5	15	-.8...												
13	1.2DL + 1WL AZI 330	Yes	Y		1	1.2	13	1	14	.866	15	-.5												
14	0.9DL + 1WL AZI 0	Yes	Y		1	.9	2	1	14	1	15													
15	0.9DL + 1WL AZI 30	Yes	Y		1	.9	3	1	14	.866	15	.5												
16	0.9DL + 1WL AZI 60	Yes	Y		1	.9	4	1	14	.5	15	.866												
17	0.9DL + 1WL AZI 90	Yes	Y		1	.9	5	1	14		15	1												
18	0.9DL + 1WL AZI 120	Yes	Y		1	.9	6	1	14	-.5	15	.866												
19	0.9DL + 1WL AZI 150	Yes	Y		1	.9	7	1	14	-.8...	15	.5												
20	0.9DL + 1WL AZI 180	Yes	Y		1	.9	8	1	14	-1	15													
21	0.9DL + 1WL AZI 210	Yes	Y		1	.9	9	1	14	-.8...	15	-.5												
22	0.9DL + 1WL AZI 240	Yes	Y		1	.9	10	1	14	-.5	15	-.8...												
23	0.9DL + 1WL AZI 270	Yes	Y		1	.9	11	1	14		15	-1												
24	0.9DL + 1WL AZI 300	Yes	Y		1	.9	12	1	14	.5	15	-.8...												
25	0.9DL + 1WL AZI 330	Yes	Y		1	.9	13	1	14	.866	15	-.5												
26	1.2D + 1.0Di	Yes	Y		1	1.2	16	1																
27	1.2D + 1.0Di +1.0Wi AZI 0	Yes	Y		1	1.2	16	1	17	1	29	1	30											
28	1.2D + 1.0Di +1.0Wi AZI 30	Yes	Y		1	1.2	16	1	18	1	29	.866	30	.5										
29	1.2D + 1.0Di +1.0Wi AZI 60	Yes	Y		1	1.2	16	1	19	1	29	.5	30	.866										
30	1.2D + 1.0Di +1.0Wi AZI 90	Yes	Y		1	1.2	16	1	20	1	29		30	1										
31	1.2D + 1.0Di +1.0Wi AZI 120	Yes	Y		1	1.2	16	1	21	1	29	-.5	30	.866										
32	1.2D + 1.0Di +1.0Wi AZI 150	Yes	Y		1	1.2	16	1	22	1	29	-.8...	30	.5										
33	1.2D + 1.0Di +1.0Wi AZI 180	Yes	Y		1	1.2	16	1	23	1	29	-1	30											
34	1.2D + 1.0Di +1.0Wi AZI 210	Yes	Y		1	1.2	16	1	24	1	29	-.8...	30	-.5										
35	1.2D + 1.0Di +1.0Wi AZI 240	Yes	Y		1	1.2	16	1	25	1	29	-.5	30	-.8...										
36	1.2D + 1.0Di +1.0Wi AZI 270	Yes	Y		1	1.2	16	1	26	1	29		30	-1										
37	1.2D + 1.0Di +1.0Wi AZI 300	Yes	Y		1	1.2	16	1	27	1	29	.5	30	-.8...										
38	1.2D + 1.0Di +1.0Wi AZI 330	Yes	Y		1	1.2	16	1	28	1	29	.866	30	-.5										
39	(1.2 + 0.2Sds)DL + 1.0E AZI 0	Yes	Y		1	1.2...	31	1	32															
40	(1.2 + 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	1.2...	31	.866	32	.5														
41	(1.2 + 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	1.2...	31	.5	32	.866														
42	(1.2 + 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	1.2...	31		32	1														
43	(1.2 + 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	1.2...	31	-.5	32	.866														
44	(1.2 + 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	1.2...	31	-.8...	32	.5														
45	(1.2 + 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	1.2...	31	-1	32															
46	(1.2 + 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	1.2...	31	-.8...	32	-.5														
47	(1.2 + 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	1.2...	31	-.5	32	-.8...														
48	(1.2 + 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	1.2...	31		32	-1														

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
49	(1.2 + 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	1.2...	31	.5	32	-.8...														
50	(1.2 + 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	1.2...	31	.866	32	-.5														
51	(0.9 - 0.2Sds)DL + 1.0E AZI 0	Yes	Y		1	.856	31	1	32															
52	(0.9 - 0.2Sds)DL + 1.0E AZI 30	Yes	Y		1	.856	31	.866	32	.5														
53	(0.9 - 0.2Sds)DL + 1.0E AZI 60	Yes	Y		1	.856	31	.5	32	.866														
54	(0.9 - 0.2Sds)DL + 1.0E AZI 90	Yes	Y		1	.856	31		32	1														
55	(0.9 - 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	.856	31	-.5	32	.866														
56	(0.9 - 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	.856	31	-.8...	32	.5														
57	(0.9 - 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	.856	31	-1	32															
58	(0.9 - 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	.856	31	-.8...	32	-.5														
59	(0.9 - 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	.856	31	-.5	32	-.8...														
60	(0.9 - 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	.856	31		32	-1														
61	(0.9 - 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	.856	31	.5	32	-.8...														
62	(0.9 - 0.2Sds)DL + 1.0E AZI ...	Yes	Y		1	.856	31	.866	32	-.5														
63	1.0DL + 1.5LL + 1.0SWL (60 ...	Yes	Y		1	1	2	.246	14	.246	15		33	1.5										
64	1.0DL + 1.5LL + 1.0SWL (60 ...	Yes	Y		1	1	3	.246	14	.213	15	.123	33	1.5										
65	1.0DL + 1.5LL + 1.0SWL (60 ...	Yes	Y		1	1	4	.246	14	.123	15	.213	33	1.5										
66	1.0DL + 1.5LL + 1.0SWL (60 ...	Yes	Y		1	1	5	.246	14		15	.246	33	1.5										
67	1.0DL + 1.5LL + 1.0SWL (60 ...	Yes	Y		1	1	6	.246	14	-.1...	15	.213	33	1.5										
68	1.0DL + 1.5LL + 1.0SWL (60 ...	Yes	Y		1	1	7	.246	14	-.2...	15	.123	33	1.5										
69	1.0DL + 1.5LL + 1.0SWL (60 ...	Yes	Y		1	1	8	.246	14	-.2...	15		33	1.5										
70	1.0DL + 1.5LL + 1.0SWL (60 ...	Yes	Y		1	1	9	.246	14	-.2...	15	-.1...	33	1.5										
71	1.0DL + 1.5LL + 1.0SWL (60 ...	Yes	Y		1	1	10	.246	14	-.1...	15	-.2...	33	1.5										
72	1.0DL + 1.5LL + 1.0SWL (60 ...	Yes	Y		1	1	11	.246	14		15	-.2...	33	1.5										
73	1.0DL + 1.5LL + 1.0SWL (60 ...	Yes	Y		1	1	12	.246	14	.123	15	-.2...	33	1.5										
74	1.0DL + 1.5LL + 1.0SWL (60 ...	Yes	Y		1	1	13	.246	14	.213	15	-.1...	33	1.5										
75	1.2DL + 1.5LL	Yes	Y		1	1.2	33	1.5																
76	1.2DL + 1.5LM-MP1 + 1SWL...	Yes	Y		1	1.2	34	1.5	2	.061	14	.061	15											
77	1.2DL + 1.5LM-MP1 + 1SWL...	Yes	Y		1	1.2	34	1.5	3	.061	14	.053	15	.031										
78	1.2DL + 1.5LM-MP1 + 1SWL...	Yes	Y		1	1.2	34	1.5	4	.061	14	.031	15	.053										
79	1.2DL + 1.5LM-MP1 + 1SWL...	Yes	Y		1	1.2	34	1.5	5	.061	14		15	.061										
80	1.2DL + 1.5LM-MP1 + 1SWL...	Yes	Y		1	1.2	34	1.5	6	.061	14	-.0...	15	.053										
81	1.2DL + 1.5LM-MP1 + 1SWL...	Yes	Y		1	1.2	34	1.5	7	.061	14	-.0...	15	.031										
82	1.2DL + 1.5LM-MP1 + 1SWL...	Yes	Y		1	1.2	34	1.5	8	.061	14	-.0...	15											
83	1.2DL + 1.5LM-MP1 + 1SWL...	Yes	Y		1	1.2	34	1.5	9	.061	14	-.0...	15	-.0...										
84	1.2DL + 1.5LM-MP1 + 1SWL...	Yes	Y		1	1.2	34	1.5	10	.061	14	-.0...	15	-.0...										
85	1.2DL + 1.5LM-MP1 + 1SWL...	Yes	Y		1	1.2	34	1.5	11	.061	14		15	-.0...										
86	1.2DL + 1.5LM-MP1 + 1SWL...	Yes	Y		1	1.2	34	1.5	12	.061	14	.031	15	-.0...										
87	1.2DL + 1.5LM-MP1 + 1SWL...	Yes	Y		1	1.2	34	1.5	13	.061	14	.053	15	-.0...										
88	1.2DL + 1.5LM-MP2 + 1SWL...	Yes	Y		1	1.2	35	1.5	2	.061	14	.061	15											
89	1.2DL + 1.5LM-MP2 + 1SWL...	Yes	Y		1	1.2	35	1.5	3	.061	14	.053	15	.031										
90	1.2DL + 1.5LM-MP2 + 1SWL...	Yes	Y		1	1.2	35	1.5	4	.061	14	.031	15	.053										
91	1.2DL + 1.5LM-MP2 + 1SWL...	Yes	Y		1	1.2	35	1.5	5	.061	14		15	.061										
92	1.2DL + 1.5LM-MP2 + 1SWL...	Yes	Y		1	1.2	35	1.5	6	.061	14	-.0...	15	.053										
93	1.2DL + 1.5LM-MP2 + 1SWL...	Yes	Y		1	1.2	35	1.5	7	.061	14	-.0...	15	.031										
94	1.2DL + 1.5LM-MP2 + 1SWL...	Yes	Y		1	1.2	35	1.5	8	.061	14	-.0...	15											
95	1.2DL + 1.5LM-MP2 + 1SWL...	Yes	Y		1	1.2	35	1.5	9	.061	14	-.0...	15	-.0...										
96	1.2DL + 1.5LM-MP2 + 1SWL...	Yes	Y		1	1.2	35	1.5	10	.061	14	-.0...	15	-.0...										
97	1.2DL + 1.5LM-MP2 + 1SWL...	Yes	Y		1	1.2	35	1.5	11	.061	14		15	-.0...										
98	1.2DL + 1.5LM-MP2 + 1SWL...	Yes	Y		1	1.2	35	1.5	12	.061	14	.031	15	-.0...										
99	1.2DL + 1.5LM-MP2 + 1SWL...	Yes	Y		1	1.2	35	1.5	13	.061	14	.053	15	-.0...										
100	1.2DL + 1.5LM-MP3 + 1SWL...	Yes	Y		1	1.2	36	1.5	2	.061	14	.061	15											
101	1.2DL + 1.5LM-MP3 + 1SWL...	Yes	Y		1	1.2	36	1.5	3	.061	14	.053	15	.031										
102	1.2DL + 1.5LM-MP3 + 1SWL...	Yes	Y		1	1.2	36	1.5	4	.061	14	.031	15	.053										
103	1.2DL + 1.5LM-MP3 + 1SWL...	Yes	Y		1	1.2	36	1.5	5	.061	14		15	.061										
104	1.2DL + 1.5LM-MP3 + 1SWL...	Yes	Y		1	1.2	36	1.5	6	.061	14	-.0...	15	.053										
105	1.2DL + 1.5LM-MP3 + 1SWL...	Yes	Y		1	1.2	36	1.5	7	.061	14	-.0...	15	.031										

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
106	1.2DL + 1.5LM-MP3 + 1SWL...	Yes	Y		1	1.2	36	1.5	8	.061	14	-.0...	15											
107	1.2DL + 1.5LM-MP3 + 1SWL...	Yes	Y		1	1.2	36	1.5	9	.061	14	-.0...	15	-.0...										
108	1.2DL + 1.5LM-MP3 + 1SWL...	Yes	Y		1	1.2	36	1.5	10	.061	14	-.0...	15	-.0...										
109	1.2DL + 1.5LM-MP3 + 1SWL...	Yes	Y		1	1.2	36	1.5	11	.061	14		15	-.0...										
110	1.2DL + 1.5LM-MP3 + 1SWL...	Yes	Y		1	1.2	36	1.5	12	.061	14	.031	15	-.0...										
111	1.2DL + 1.5LM-MP3 + 1SWL...	Yes	Y		1	1.2	36	1.5	13	.061	14	.053	15	-.0...										
112	1.2DL + 1.5LM-MP4 + 1SWL...	Yes	Y		1	1.2	37	1.5	2	.061	14	.061	15											
113	1.2DL + 1.5LM-MP4 + 1SWL...	Yes	Y		1	1.2	37	1.5	3	.061	14	.053	15	.031										
114	1.2DL + 1.5LM-MP4 + 1SWL...	Yes	Y		1	1.2	37	1.5	4	.061	14	.031	15	.053										
115	1.2DL + 1.5LM-MP4 + 1SWL...	Yes	Y		1	1.2	37	1.5	5	.061	14		15	.061										
116	1.2DL + 1.5LM-MP4 + 1SWL...	Yes	Y		1	1.2	37	1.5	6	.061	14	-.0...	15	.053										
117	1.2DL + 1.5LM-MP4 + 1SWL...	Yes	Y		1	1.2	37	1.5	7	.061	14	-.0...	15	.031										
118	1.2DL + 1.5LM-MP4 + 1SWL...	Yes	Y		1	1.2	37	1.5	8	.061	14	-.0...	15											
119	1.2DL + 1.5LM-MP4 + 1SWL...	Yes	Y		1	1.2	37	1.5	9	.061	14	-.0...	15	-.0...										
120	1.2DL + 1.5LM-MP4 + 1SWL...	Yes	Y		1	1.2	37	1.5	10	.061	14	-.0...	15	-.0...										
121	1.2DL + 1.5LM-MP4 + 1SWL...	Yes	Y		1	1.2	37	1.5	11	.061	14		15	-.0...										
122	1.2DL + 1.5LM-MP4 + 1SWL...	Yes	Y		1	1.2	37	1.5	12	.061	14	.031	15	-.0...										
123	1.2DL + 1.5LM-MP4 + 1SWL...	Yes	Y		1	1.2	37	1.5	13	.061	14	.053	15	-.0...										
124	1.2DL + 1.5LM-MP5 + 1SWL...	Yes	Y		1	1.2	38	1.5	2	.061	14	.061	15											
125	1.2DL + 1.5LM-MP5 + 1SWL...	Yes	Y		1	1.2	38	1.5	3	.061	14	.053	15	.031										
126	1.2DL + 1.5LM-MP5 + 1SWL...	Yes	Y		1	1.2	38	1.5	4	.061	14	.031	15	.053										
127	1.2DL + 1.5LM-MP5 + 1SWL...	Yes	Y		1	1.2	38	1.5	5	.061	14		15	.061										
128	1.2DL + 1.5LM-MP5 + 1SWL...	Yes	Y		1	1.2	38	1.5	6	.061	14	-.0...	15	.053										
129	1.2DL + 1.5LM-MP5 + 1SWL...	Yes	Y		1	1.2	38	1.5	7	.061	14	-.0...	15	.031										
130	1.2DL + 1.5LM-MP5 + 1SWL...	Yes	Y		1	1.2	38	1.5	8	.061	14	-.0...	15											
131	1.2DL + 1.5LM-MP5 + 1SWL...	Yes	Y		1	1.2	38	1.5	9	.061	14	-.0...	15	-.0...										
132	1.2DL + 1.5LM-MP5 + 1SWL...	Yes	Y		1	1.2	38	1.5	10	.061	14	-.0...	15	-.0...										
133	1.2DL + 1.5LM-MP5 + 1SWL...	Yes	Y		1	1.2	38	1.5	11	.061	14		15	-.0...										
134	1.2DL + 1.5LM-MP5 + 1SWL...	Yes	Y		1	1.2	38	1.5	12	.061	14	.031	15	-.0...										
135	1.2DL + 1.5LM-MP5 + 1SWL...	Yes	Y		1	1.2	38	1.5	13	.061	14	.053	15	-.0...										
136	1.2DL + 1.5LM-MP6 + 1SWL...	Yes	Y		1	1.2	39	1.5	2	.061	14	.061	15											
137	1.2DL + 1.5LM-MP6 + 1SWL...	Yes	Y		1	1.2	39	1.5	3	.061	14	.053	15	.031										
138	1.2DL + 1.5LM-MP6 + 1SWL...	Yes	Y		1	1.2	39	1.5	4	.061	14	.031	15	.053										
139	1.2DL + 1.5LM-MP6 + 1SWL...	Yes	Y		1	1.2	39	1.5	5	.061	14		15	.061										
140	1.2DL + 1.5LM-MP6 + 1SWL...	Yes	Y		1	1.2	39	1.5	6	.061	14	-.0...	15	.053										
141	1.2DL + 1.5LM-MP6 + 1SWL...	Yes	Y		1	1.2	39	1.5	7	.061	14	-.0...	15	.031										
142	1.2DL + 1.5LM-MP6 + 1SWL...	Yes	Y		1	1.2	39	1.5	8	.061	14	-.0...	15											
143	1.2DL + 1.5LM-MP6 + 1SWL...	Yes	Y		1	1.2	39	1.5	9	.061	14	-.0...	15	-.0...										
144	1.2DL + 1.5LM-MP6 + 1SWL...	Yes	Y		1	1.2	39	1.5	10	.061	14	-.0...	15	-.0...										
145	1.2DL + 1.5LM-MP6 + 1SWL...	Yes	Y		1	1.2	39	1.5	11	.061	14		15	-.0...										
146	1.2DL + 1.5LM-MP6 + 1SWL...	Yes	Y		1	1.2	39	1.5	12	.061	14	.031	15	-.0...										
147	1.2DL + 1.5LM-MP6 + 1SWL...	Yes	Y		1	1.2	39	1.5	13	.061	14	.053	15	-.0...										
148	1.2DL + 1.5LM-MP7 + 1SWL...	Yes	Y		1	1.2	40	1.5	2	.061	14	.061	15											
149	1.2DL + 1.5LM-MP7 + 1SWL...	Yes	Y		1	1.2	40	1.5	3	.061	14	.053	15	.031										
150	1.2DL + 1.5LM-MP7 + 1SWL...	Yes	Y		1	1.2	40	1.5	4	.061	14	.031	15	.053										
151	1.2DL + 1.5LM-MP7 + 1SWL...	Yes	Y		1	1.2	40	1.5	5	.061	14		15	.061										
152	1.2DL + 1.5LM-MP7 + 1SWL...	Yes	Y		1	1.2	40	1.5	6	.061	14	-.0...	15	.053										
153	1.2DL + 1.5LM-MP7 + 1SWL...	Yes	Y		1	1.2	40	1.5	7	.061	14	-.0...	15	.031										
154	1.2DL + 1.5LM-MP7 + 1SWL...	Yes	Y		1	1.2	40	1.5	8	.061	14	-.0...	15											
155	1.2DL + 1.5LM-MP7 + 1SWL...	Yes	Y		1	1.2	40	1.5	9	.061	14	-.0...	15	-.0...										
156	1.2DL + 1.5LM-MP7 + 1SWL...	Yes	Y		1	1.2	40	1.5	10	.061	14	-.0...	15	-.0...										
157	1.2DL + 1.5LM-MP7 + 1SWL...	Yes	Y		1	1.2	40	1.5	11	.061	14		15	-.0...										
158	1.2DL + 1.5LM-MP7 + 1SWL...	Yes	Y		1	1.2	40	1.5	12	.061	14	.031	15	-.0...										
159	1.2DL + 1.5LM-MP7 + 1SWL...	Yes	Y		1	1.2	40	1.5	13	.061	14	.053	15	-.0...										
160	1.2DL + 1.5LM-MP8 + 1SWL...	Yes	Y		1	1.2	41	1.5	2	.061	14	.061	15											
161	1.2DL + 1.5LM-MP8 + 1SWL...	Yes	Y		1	1.2	41	1.5	3	.061	14	.053	15	.031										
162	1.2DL + 1.5LM-MP8 + 1SWL...	Yes	Y		1	1.2	41	1.5	4	.061	14	.031	15	.053										

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
163	1.2DL + 1.5LM-MP8 + 1SWL...	Yes	Y		1	1.2	41	1.5	5	.061	14		15	.061										
164	1.2DL + 1.5LM-MP8 + 1SWL...	Yes	Y		1	1.2	41	1.5	6	.061	14	-.0...	15	.053										
165	1.2DL + 1.5LM-MP8 + 1SWL...	Yes	Y		1	1.2	41	1.5	7	.061	14	-.0...	15	.031										
166	1.2DL + 1.5LM-MP8 + 1SWL...	Yes	Y		1	1.2	41	1.5	8	.061	14	-.0...	15											
167	1.2DL + 1.5LM-MP8 + 1SWL...	Yes	Y		1	1.2	41	1.5	9	.061	14	-.0...	15	-.0...										
168	1.2DL + 1.5LM-MP8 + 1SWL...	Yes	Y		1	1.2	41	1.5	10	.061	14	-.0...	15	-.0...										
169	1.2DL + 1.5LM-MP8 + 1SWL...	Yes	Y		1	1.2	41	1.5	11	.061	14		15	-.0...										
170	1.2DL + 1.5LM-MP8 + 1SWL...	Yes	Y		1	1.2	41	1.5	12	.061	14	.031	15	-.0...										
171	1.2DL + 1.5LM-MP8 + 1SWL...	Yes	Y		1	1.2	41	1.5	13	.061	14	.053	15	-.0...										
172	1.2DL + 1.5LM-MP9 + 1SWL...	Yes	Y		1	1.2	42	1.5	2	.061	14	.061	15											
173	1.2DL + 1.5LM-MP9 + 1SWL...	Yes	Y		1	1.2	42	1.5	3	.061	14	.053	15	.031										
174	1.2DL + 1.5LM-MP9 + 1SWL...	Yes	Y		1	1.2	42	1.5	4	.061	14	.031	15	.053										
175	1.2DL + 1.5LM-MP9 + 1SWL...	Yes	Y		1	1.2	42	1.5	5	.061	14		15	.061										
176	1.2DL + 1.5LM-MP9 + 1SWL...	Yes	Y		1	1.2	42	1.5	6	.061	14	-.0...	15	.053										
177	1.2DL + 1.5LM-MP9 + 1SWL...	Yes	Y		1	1.2	42	1.5	7	.061	14	-.0...	15	.031										
178	1.2DL + 1.5LM-MP9 + 1SWL...	Yes	Y		1	1.2	42	1.5	8	.061	14	-.0...	15											
179	1.2DL + 1.5LM-MP9 + 1SWL...	Yes	Y		1	1.2	42	1.5	9	.061	14	-.0...	15	-.0...										
180	1.2DL + 1.5LM-MP9 + 1SWL...	Yes	Y		1	1.2	42	1.5	10	.061	14	-.0...	15	-.0...										
181	1.2DL + 1.5LM-MP9 + 1SWL...	Yes	Y		1	1.2	42	1.5	11	.061	14		15	-.0...										
182	1.2DL + 1.5LM-MP9 + 1SWL...	Yes	Y		1	1.2	42	1.5	12	.061	14	.031	15	-.0...										
183	1.2DL + 1.5LM-MP9 + 1SWL...	Yes	Y		1	1.2	42	1.5	13	.061	14	.053	15	-.0...										
184	1.2DL + 1.5LM-MP10 + 1SW...	Yes	Y		1	1.2	43	1.5	2	.061	14	.061	15											
185	1.2DL + 1.5LM-MP10 + 1SW...	Yes	Y		1	1.2	43	1.5	3	.061	14	.053	15	.031										
186	1.2DL + 1.5LM-MP10 + 1SW...	Yes	Y		1	1.2	43	1.5	4	.061	14	.031	15	.053										
187	1.2DL + 1.5LM-MP10 + 1SW...	Yes	Y		1	1.2	43	1.5	5	.061	14		15	.061										
188	1.2DL + 1.5LM-MP10 + 1SW...	Yes	Y		1	1.2	43	1.5	6	.061	14	-.0...	15	.053										
189	1.2DL + 1.5LM-MP10 + 1SW...	Yes	Y		1	1.2	43	1.5	7	.061	14	-.0...	15	.031										
190	1.2DL + 1.5LM-MP10 + 1SW...	Yes	Y		1	1.2	43	1.5	8	.061	14	-.0...	15											
191	1.2DL + 1.5LM-MP10 + 1SW...	Yes	Y		1	1.2	43	1.5	9	.061	14	-.0...	15	-.0...										
192	1.2DL + 1.5LM-MP10 + 1SW...	Yes	Y		1	1.2	43	1.5	10	.061	14	-.0...	15	-.0...										
193	1.2DL + 1.5LM-MP10 + 1SW...	Yes	Y		1	1.2	43	1.5	11	.061	14		15	-.0...										
194	1.2DL + 1.5LM-MP10 + 1SW...	Yes	Y		1	1.2	43	1.5	12	.061	14	.031	15	-.0...										
195	1.2DL + 1.5LM-MP10 + 1SW...	Yes	Y		1	1.2	43	1.5	13	.061	14	.053	15	-.0...										
196	1.2DL + 1.5LM-MP11 + 1SW...	Yes	Y		1	1.2	44	1.5	2	.061	14	.061	15											
197	1.2DL + 1.5LM-MP11 + 1SW...	Yes	Y		1	1.2	44	1.5	3	.061	14	.053	15	.031										
198	1.2DL + 1.5LM-MP11 + 1SW...	Yes	Y		1	1.2	44	1.5	4	.061	14	.031	15	.053										
199	1.2DL + 1.5LM-MP11 + 1SW...	Yes	Y		1	1.2	44	1.5	5	.061	14		15	.061										
200	1.2DL + 1.5LM-MP11 + 1SW...	Yes	Y		1	1.2	44	1.5	6	.061	14	-.0...	15	.053										
201	1.2DL + 1.5LM-MP11 + 1SW...	Yes	Y		1	1.2	44	1.5	7	.061	14	-.0...	15	.031										
202	1.2DL + 1.5LM-MP11 + 1SW...	Yes	Y		1	1.2	44	1.5	8	.061	14	-.0...	15											
203	1.2DL + 1.5LM-MP11 + 1SW...	Yes	Y		1	1.2	44	1.5	9	.061	14	-.0...	15	-.0...										
204	1.2DL + 1.5LM-MP11 + 1SW...	Yes	Y		1	1.2	44	1.5	10	.061	14	-.0...	15	-.0...										
205	1.2DL + 1.5LM-MP11 + 1SW...	Yes	Y		1	1.2	44	1.5	11	.061	14		15	-.0...										
206	1.2DL + 1.5LM-MP11 + 1SW...	Yes	Y		1	1.2	44	1.5	12	.061	14	.031	15	-.0...										
207	1.2DL + 1.5LM-MP11 + 1SW...	Yes	Y		1	1.2	44	1.5	13	.061	14	.053	15	-.0...										
208	1.2DL + 1.5LM-MP12 + 1SW...	Yes	Y		1	1.2	45	1.5	2	.061	14	.061	15											
209	1.2DL + 1.5LM-MP12 + 1SW...	Yes	Y		1	1.2	45	1.5	3	.061	14	.053	15	.031										
210	1.2DL + 1.5LM-MP12 + 1SW...	Yes	Y		1	1.2	45	1.5	4	.061	14	.031	15	.053										
211	1.2DL + 1.5LM-MP12 + 1SW...	Yes	Y		1	1.2	45	1.5	5	.061	14		15	.061										
212	1.2DL + 1.5LM-MP12 + 1SW...	Yes	Y		1	1.2	45	1.5	6	.061	14	-.0...	15	.053										
213	1.2DL + 1.5LM-MP12 + 1SW...	Yes	Y		1	1.2	45	1.5	7	.061	14	-.0...	15	.031										
214	1.2DL + 1.5LM-MP12 + 1SW...	Yes	Y		1	1.2	45	1.5	8	.061	14	-.0...	15											
215	1.2DL + 1.5LM-MP12 + 1SW...	Yes	Y		1	1.2	45	1.5	9	.061	14	-.0...	15	-.0...										
216	1.2DL + 1.5LM-MP12 + 1SW...	Yes	Y		1	1.2	45	1.5	10	.061	14	-.0...	15	-.0...										
217	1.2DL + 1.5LM-MP12 + 1SW...	Yes	Y		1	1.2	45	1.5	11	.061	14		15	-.0...										
218	1.2DL + 1.5LM-MP12 + 1SW...	Yes	Y		1	1.2	45	1.5	12	.061	14	.031	15	-.0...										

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	N13A	max	2142.386	17	2320.689	27	2222.021	2	5335.569	173	2487.919	23	607.534	156
2		min	-2146.917	11	650.089	20	-2221.983	20	1416.264	21	-2494.549	5	-828.802	186
3	N125A	max	1829.538	6	2334.793	31	2126.092	2	-590.831	14	2398.826	15	-1303.69	24
4		min	-1826.869	24	654.82	24	-2122.244	20	-3151.144	82	-2404.624	9	-4811.005	212
5	N126A	max	2046.691	5	2360.472	35	1732.475	25	-685.696	14	2437.126	19	4956.374	133
6		min	-2044.519	23	664.2	16	-1737.267	7	-2918.796	117	-2443.32	13	1206.808	17
7	Totals:	max	5946.322	17	6975.083	31	6058.775	2						
8		min	-5946.322	11	2226.937	60	-6058.775	20						

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

	Member	Shape	Code Check	Loc[in]	LC	Shea...	Loc[in]	Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn
1	D9	C3.38X2.06X0.188	.577	35.414	27	.146	8.116	z	6	37339...	43393...	1703.2...	4482.8...	1	H1-1b
2	D4	C3.38X2.06X0.188	.570	35.414	35	.152	8.116	z	2	37339...	43393...	1703.2...	4482.8...	1	H1-1b
3	D14	C3.38X2.06X0.188	.562	35.414	31	.150	8.116	z	10	37339...	43393...	1703.2...	4482.8...	1	H1-1b
4	S5	PIPE_3.0X	.549	62.249	36	.146	62.249		146	10520...	117162	10039.5	10039.5	1	H1-1b
5	S15	PIPE_3.0X	.547	62.249	32	.144	62.249		94	10520...	117162	10039.5	10039.5	1	H1-1b
6	S10	PIPE_3.0X	.532	62.249	173	.142	62.249		186	10520...	117162	10039.5	10039.5	1	H1-1b
7	D21	C3.38X2.06X0.188	.493	0	29	.131	27.298	z	6	37339...	43393...	1693.8...	4482.8...	1	H1-1b
8	D19	C3.38X2.06X0.188	.482	0	38	.133	27.298	z	2	37339...	43393...	1693.8...	4482.8...	1	H1-1b
9	D20	C3.38X2.06X0.188	.482	0	33	.131	27.298	z	10	37339...	43393...	1693.8...	4482.8...	1	H1-1b
10	M48	PL6x3/8	.416	0	3	.113	0	y	4	57567...	72900	569.531	9112.5	1...	H1-1b
11	M47	PL6x3/8	.412	0	7	.116	0	y	208	57567...	72900	569.531	9112.5	1...	H1-1b
12	M46	PL6x3/8	.408	0	11	.117	0	y	116	57567...	72900	569.531	9112.5	1...	H1-1b
13	G2	L2x2x3	.403	52.87	9	.027	0	y	37	8829.8...	23392.8	557.717	1188.2...	1...	H2-1
14	MP3	PIPE_2.0	.395	48	8	.029	48		8	15352...	38556	2245.95	2245.95	1...	H1-1b
15	MP11	PIPE_2.0	.395	48	12	.029	48		12	15352...	38556	2245.95	2245.95	1...	H1-1b
16	MP7	PIPE_2.0	.395	48	4	.029	48		4	15352...	38556	2245.95	2245.95	1...	H1-1b
17	MP12	PIPE_2.0	.394	48	12	.028	48		12	15352...	38556	2245.95	2245.95	1...	H1-1b
18	MP4	PIPE_2.0	.394	48	8	.028	48		8	15352...	38556	2245.95	2245.95	1...	H1-1b
19	MP8	PIPE_2.0	.394	48	4	.028	48		4	15352...	38556	2245.95	2245.95	1...	H1-1b
20	G12	L2x2x3	.390	52.87	5	.026	0	y	33	8829.8...	23392.8	557.717	1191.1...	2...	H2-1
21	G7	L2x2x3	.383	52.87	13	.027	0	y	29	8829.8...	23392.8	557.717	1195.6...	2...	H2-1
22	G13	L2x2x3	.343	52.87	8	.017	52.87	y	2	8829.8...	23392.8	557.717	1239.29	2...	H2-1
23	G3	L2x2x3	.329	52.87	11	.016	52.87	y	6	8829.8...	23392.8	557.717	1234.0...	2...	H2-1
24	G8	L2x2x3	.327	52.87	3	.016	52.87	y	10	8829.8...	23392.8	557.717	1226.0...	2...	H2-1
25	H16	PIPE_3.0	.312	77.625	34	.155	148.5		8	58785...	65205	5748.75	5748.75	1	H1-1b
26	H18	PIPE_3.0	.305	77.625	30	.154	148.5		4	58785...	65205	5748.75	5748.75	1	H1-1b
27	H17	PIPE_3.0	.301	77.625	38	.155	148.5		12	58785...	65205	5748.75	5748.75	1	H1-1b
28	MP2	PIPE_2.0	.273	48	8	.022	48		8	15352...	38556	2245.95	2245.95	1...	H1-1b
29	MP10	PIPE_2.0	.273	48	12	.022	48		12	15352...	38556	2245.95	2245.95	1...	H1-1b
30	MP6	PIPE_2.0	.273	48	4	.022	48		4	15352...	38556	2245.95	2245.95	1...	H1-1b
31	HE1	PL6x3/8	.252	7.25	9	.153	7.25	y	8	57567...	72900	569.531	9112.5	1...	H1-1b
32	HE11	PL6x3/8	.249	7.25	5	.152	7.25	y	4	57567...	72900	569.531	9112.5	1...	H1-1b
33	HE6	PL6x3/8	.249	7.25	13	.149	0	y	134	57567...	72900	569.531	9112.5	1...	H1-1b
34	MP1	PIPE_2.0	.198	48	8	.019	48		8	15352...	38556	2245.95	2245.95	1...	H1-1b
35	MP9	PIPE_2.0	.198	48	12	.019	48		12	15352...	38556	2245.95	2245.95	1...	H1-1b
36	MP5	PIPE_2.0	.198	48	4	.019	48		4	15352...	38556	2245.95	2245.95	1...	H1-1b

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	N13A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N125A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N126A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	HE1	BenPIN			1.75		Yes				None
2	G2						Yes				None
3	G3						Yes				None
4	D4	BenPIN					Yes				None
5	S5						Yes				None
6	HE6	BenPIN			1.75		Yes				None
7	G7						Yes				None
8	G8						Yes				None
9	D9	BenPIN					Yes				None
10	S10						Yes				None
11	HE11	BenPIN			1.75		Yes				None
12	G12						Yes				None
13	G13						Yes				None
14	D14	BenPIN					Yes				None
15	S15						Yes	Default			None
16	H16						Yes				None
17	H17						Yes				None
18	H18						Yes				None
19	D19		BenPIN				Yes				None
20	D20		BenPIN				Yes				None
21	D21		BenPIN				Yes				None
22	M26						Yes	** NA **			None
23	M28						Yes	** NA **			None
24	M30						Yes	** NA **			None
25	M32						Yes	** NA **			None
26	MP4						Yes	** NA **			None
27	MP3						Yes	** NA **			None
28	MP2						Yes	** NA **			None
29	MP1						Yes	** NA **			None
30	M38						Yes	** NA **			None
31	M40						Yes	** NA **			None
32	M42						Yes	** NA **			None
33	M44						Yes	** NA **			None
34	MP12						Yes	** NA **			None
35	MP11						Yes	** NA **			None
36	MP10						Yes	** NA **			None
37	MP9						Yes	** NA **			None
38	M50						Yes	** NA **			None
39	M52						Yes	** NA **			None
40	M54						Yes	** NA **			None
41	M56						Yes	** NA **			None
42	MP8						Yes	** NA **			None
43	MP7						Yes	** NA **			None
44	MP6						Yes	** NA **			None
45	MP5						Yes	** NA **			None
46	M46		BenPIN	1.75			Yes				None
47	M47		BenPIN	1.75			Yes				None
48	M48		BenPIN	1.75			Yes				None

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	Y	-27.25	12.5
2	MP2	Y	-27.25	83.5
3	MP3	Y	-31.75	12.5

Member Point Loads (BLC 1 : Self Weight) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
4	MP3	Y	-31.75	83.5
5	MP4	Y	-54.3	12
6	MP4	Y	-54.3	84
7	MP1	Y	-17.5	24
8	MP1	Y	-17.5	72
9	MP1	Y	-71	%75
10	MP3	Y	-59.9	%25
11	MP4	Y	-72	%25
12	MP1	Y	-14.1	%25
13	MP1	Y	-14.1	%25
14	MP2	Y	-32.8	%25
15	MP6	Y	-27.25	12.5
16	MP6	Y	-27.25	83.5
17	MP7	Y	-31.75	12.5
18	MP7	Y	-31.75	83.5
19	MP8	Y	-54.3	12
20	MP8	Y	-54.3	84
21	MP5	Y	-17.5	24
22	MP5	Y	-17.5	72
23	MP5	Y	-71	%75
24	MP7	Y	-59.9	%25
25	MP8	Y	-72	%25
26	MP5	Y	-14.1	%25
27	MP5	Y	-14.1	%25
28	MP6	Y	-32.8	%25
29	MP10	Y	-27.25	12.5
30	MP10	Y	-27.25	83.5
31	MP11	Y	-31.75	12.5
32	MP11	Y	-31.75	83.5
33	MP12	Y	-54.3	12
34	MP12	Y	-54.3	84
35	MP9	Y	-17.5	24
36	MP9	Y	-17.5	72
37	MP9	Y	-71	%75
38	MP11	Y	-59.9	%25
39	MP12	Y	-72	%25
40	MP9	Y	-14.1	%25
41	MP9	Y	-14.1	%25
42	MP10	Y	-32.8	%25

Member Point Loads (BLC 2 : Wind Load AZI 0)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	0	12.5
2	MP2	Z	-106.28	12.5
3	MP2	X	0	83.5
4	MP2	Z	-106.28	83.5
5	MP3	X	0	12.5
6	MP3	Z	-223.09	12.5
7	MP3	X	0	83.5
8	MP3	Z	-223.09	83.5
9	MP4	X	0	12
10	MP4	Z	-223.35	12
11	MP4	X	0	84
12	MP4	Z	-223.35	84
13	MP1	X	0	24
14	MP1	Z	-100.33	24

Member Point Loads (BLC 2 : Wind Load AZI 0) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
15	MP1	X	0	72
16	MP1	Z	-100.33	72
17	MP1	X	0	%75
18	MP1	Z	-71.67	%75
19	MP3	X	0	%25
20	MP3	Z	-67.12	%25
21	MP4	X	0	%25
22	MP4	Z	-59.7	%25
23	MP1	X	0	%25
24	MP1	Z	-40.22	%25
25	MP1	X	0	%25
26	MP1	Z	-40.22	%25
27	MP2	X	0	%25
28	MP2	Z	-105.67	%25
29	MP6	X	0	12.5
30	MP6	Z	-94.94	12.5
31	MP6	X	0	83.5
32	MP6	Z	-94.94	83.5
33	MP7	X	0	12.5
34	MP7	Z	-138.38	12.5
35	MP7	X	0	83.5
36	MP7	Z	-138.38	83.5
37	MP8	X	0	12
38	MP8	Z	-134.92	12
39	MP8	X	0	84
40	MP8	Z	-134.92	84
41	MP5	X	0	24
42	MP5	Z	-65.08	24
43	MP5	X	0	72
44	MP5	Z	-65.08	72
45	MP5	X	0	%75
46	MP5	Z	-56.39	%75
47	MP7	X	0	%25
48	MP7	Z	-45.7	%25
49	MP8	X	0	%25
50	MP8	Z	-51.9	%25
51	MP5	X	0	%25
52	MP5	Z	-19.54	%25
53	MP5	X	0	%25
54	MP5	Z	-19.54	%25
55	MP6	X	0	%25
56	MP6	Z	-105.67	%25
57	MP10	X	0	12.5
58	MP10	Z	-94.94	12.5
59	MP10	X	0	83.5
60	MP10	Z	-94.94	83.5
61	MP11	X	0	12.5
62	MP11	Z	-138.38	12.5
63	MP11	X	0	83.5
64	MP11	Z	-138.38	83.5
65	MP12	X	0	12
66	MP12	Z	-134.92	12
67	MP12	X	0	84
68	MP12	Z	-134.92	84
69	MP9	X	0	24
70	MP9	Z	-65.08	24
71	MP9	X	0	72

Member Point Loads (BLC 2 : Wind Load AZI 0) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
72	MP9	Z	-65.08	72
73	MP9	X	0	%75
74	MP9	Z	-56.39	%75
75	MP11	X	0	%25
76	MP11	Z	-45.7	%25
77	MP12	X	0	%25
78	MP12	Z	-51.9	%25
79	MP9	X	0	%25
80	MP9	Z	-19.54	%25
81	MP9	X	0	%25
82	MP9	Z	-19.54	%25
83	MP10	X	0	%25
84	MP10	Z	-105.67	%25

Member Point Loads (BLC 3 : Wind Load AZI 30)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-51.25	12.5
2	MP2	Z	-88.76	12.5
3	MP2	X	-51.25	83.5
4	MP2	Z	-88.76	83.5
5	MP3	X	-97.42	12.5
6	MP3	Z	-168.74	12.5
7	MP3	X	-97.42	83.5
8	MP3	Z	-168.74	83.5
9	MP4	X	-96.94	12
10	MP4	Z	-167.9	12
11	MP4	X	-96.94	84
12	MP4	Z	-167.9	84
13	MP1	X	-44.29	24
14	MP1	Z	-76.71	24
15	MP1	X	-44.29	72
16	MP1	Z	-76.71	72
17	MP1	X	-33.29	%75
18	MP1	Z	-57.66	%75
19	MP3	X	-29.99	%25
20	MP3	Z	-51.94	%25
21	MP4	X	-28.55	%25
22	MP4	Z	-49.45	%25
23	MP1	X	-16.66	%25
24	MP1	Z	-28.86	%25
25	MP1	X	-16.66	%25
26	MP1	Z	-28.86	%25
27	MP2	X	-52.83	%25
28	MP2	Z	-91.51	%25
29	MP6	X	-51.25	12.5
30	MP6	Z	-88.76	12.5
31	MP6	X	-51.25	83.5
32	MP6	Z	-88.76	83.5
33	MP7	X	-97.42	12.5
34	MP7	Z	-168.74	12.5
35	MP7	X	-97.42	83.5
36	MP7	Z	-168.74	83.5
37	MP8	X	-96.94	12
38	MP8	Z	-167.9	12
39	MP8	X	-96.94	84
40	MP8	Z	-167.9	84

Member Point Loads (BLC 3 : Wind Load AZI 30) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
41	MP5	X	-44.29	24
42	MP5	Z	-76.71	24
43	MP5	X	-44.29	72
44	MP5	Z	-76.71	72
45	MP5	X	-33.29	%75
46	MP5	Z	-57.66	%75
47	MP7	X	-29.99	%25
48	MP7	Z	-51.94	%25
49	MP8	X	-28.55	%25
50	MP8	Z	-49.45	%25
51	MP5	X	-16.66	%25
52	MP5	Z	-28.86	%25
53	MP5	X	-16.66	%25
54	MP5	Z	-28.86	%25
55	MP6	X	-52.83	%25
56	MP6	Z	-91.51	%25
57	MP10	X	-45.58	12.5
58	MP10	Z	-78.95	12.5
59	MP10	X	-45.58	83.5
60	MP10	Z	-78.95	83.5
61	MP11	X	-55.07	12.5
62	MP11	Z	-95.38	12.5
63	MP11	X	-55.07	83.5
64	MP11	Z	-95.38	83.5
65	MP12	X	-52.72	12
66	MP12	Z	-91.32	12
67	MP12	X	-52.72	84
68	MP12	Z	-91.32	84
69	MP9	X	-26.67	24
70	MP9	Z	-46.19	24
71	MP9	X	-26.67	72
72	MP9	Z	-46.19	72
73	MP9	X	-25.65	%75
74	MP9	Z	-44.42	%75
75	MP11	X	-19.28	%25
76	MP11	Z	-33.4	%25
77	MP12	X	-24.65	%25
78	MP12	Z	-42.7	%25
79	MP9	X	-6.32	%25
80	MP9	Z	-10.95	%25
81	MP9	X	-6.32	%25
82	MP9	Z	-10.95	%25
83	MP10	X	-52.83	%25
84	MP10	Z	-91.51	%25

Member Point Loads (BLC 4 : Wind Load AZI 60)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-82.22	12.5
2	MP2	Z	-47.47	12.5
3	MP2	X	-82.22	83.5
4	MP2	Z	-47.47	83.5
5	MP3	X	-119.84	12.5
6	MP3	Z	-69.19	12.5
7	MP3	X	-119.84	83.5
8	MP3	Z	-69.19	83.5
9	MP4	X	-116.85	12

Member Point Loads (BLC 4 : Wind Load AZI 60) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
10	MP4	Z	-67.46	12
11	MP4	X	-116.85	84
12	MP4	Z	-67.46	84
13	MP1	X	-56.36	24
14	MP1	Z	-32.54	24
15	MP1	X	-56.36	72
16	MP1	Z	-32.54	72
17	MP1	X	-48.83	%75
18	MP1	Z	-28.19	%75
19	MP3	X	-39.58	%25
20	MP3	Z	-22.85	%25
21	MP4	X	-44.95	%25
22	MP4	Z	-25.95	%25
23	MP1	X	-16.92	%25
24	MP1	Z	-9.77	%25
25	MP1	X	-16.92	%25
26	MP1	Z	-9.77	%25
27	MP2	X	-91.51	%25
28	MP2	Z	-52.83	%25
29	MP6	X	-92.04	12.5
30	MP6	Z	-53.14	12.5
31	MP6	X	-92.04	83.5
32	MP6	Z	-53.14	83.5
33	MP7	X	-193.2	12.5
34	MP7	Z	-111.54	12.5
35	MP7	X	-193.2	83.5
36	MP7	Z	-111.54	83.5
37	MP8	X	-193.42	12
38	MP8	Z	-111.67	12
39	MP8	X	-193.42	84
40	MP8	Z	-111.67	84
41	MP5	X	-86.89	24
42	MP5	Z	-50.16	24
43	MP5	X	-86.89	72
44	MP5	Z	-50.16	72
45	MP5	X	-62.07	%75
46	MP5	Z	-35.84	%75
47	MP7	X	-58.12	%25
48	MP7	Z	-33.56	%25
49	MP8	X	-51.71	%25
50	MP8	Z	-29.85	%25
51	MP5	X	-34.83	%25
52	MP5	Z	-20.11	%25
53	MP5	X	-34.83	%25
54	MP5	Z	-20.11	%25
55	MP6	X	-91.51	%25
56	MP6	Z	-52.83	%25
57	MP10	X	-82.22	12.5
58	MP10	Z	-47.47	12.5
59	MP10	X	-82.22	83.5
60	MP10	Z	-47.47	83.5
61	MP11	X	-119.84	12.5
62	MP11	Z	-69.19	12.5
63	MP11	X	-119.84	83.5
64	MP11	Z	-69.19	83.5
65	MP12	X	-116.85	12
66	MP12	Z	-67.46	12

Member Point Loads (BLC 4 : Wind Load AZI 60) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
67	MP12	X	-116.85	84
68	MP12	Z	-67.46	84
69	MP9	X	-56.36	24
70	MP9	Z	-32.54	24
71	MP9	X	-56.36	72
72	MP9	Z	-32.54	72
73	MP9	X	-48.83	%75
74	MP9	Z	-28.19	%75
75	MP11	X	-39.58	%25
76	MP11	Z	-22.85	%25
77	MP12	X	-44.95	%25
78	MP12	Z	-25.95	%25
79	MP9	X	-16.92	%25
80	MP9	Z	-9.77	%25
81	MP9	X	-16.92	%25
82	MP9	Z	-9.77	%25
83	MP10	X	-91.51	%25
84	MP10	Z	-52.83	%25

Member Point Loads (BLC 5 : Wind Load AZI 90)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-91.16	12.5
2	MP2	Z	0	12.5
3	MP2	X	-91.16	83.5
4	MP2	Z	0	83.5
5	MP3	X	-110.14	12.5
6	MP3	Z	0	12.5
7	MP3	X	-110.14	83.5
8	MP3	Z	0	83.5
9	MP4	X	-105.45	12
10	MP4	Z	0	12
11	MP4	X	-105.45	84
12	MP4	Z	0	84
13	MP1	X	-53.33	24
14	MP1	Z	0	24
15	MP1	X	-53.33	72
16	MP1	Z	0	72
17	MP1	X	-51.29	%75
18	MP1	Z	0	%75
19	MP3	X	-38.57	%25
20	MP3	Z	0	%25
21	MP4	X	-49.3	%25
22	MP4	Z	0	%25
23	MP1	X	-12.64	%25
24	MP1	Z	0	%25
25	MP1	X	-12.64	%25
26	MP1	Z	0	%25
27	MP2	X	-105.67	%25
28	MP2	Z	0	%25
29	MP6	X	-102.5	12.5
30	MP6	Z	0	12.5
31	MP6	X	-102.5	83.5
32	MP6	Z	0	83.5
33	MP7	X	-194.85	12.5
34	MP7	Z	0	12.5
35	MP7	X	-194.85	83.5

Member Point Loads (BLC 5 : Wind Load AZI 90) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
36	MP7	Z	0	83.5
37	MP8	X	-193.87	12
38	MP8	Z	0	12
39	MP8	X	-193.87	84
40	MP8	Z	0	84
41	MP5	X	-88.58	24
42	MP5	Z	0	24
43	MP5	X	-88.58	72
44	MP5	Z	0	72
45	MP5	X	-66.58	%75
46	MP5	Z	0	%75
47	MP7	X	-59.98	%25
48	MP7	Z	0	%25
49	MP8	X	-57.1	%25
50	MP8	Z	0	%25
51	MP5	X	-33.32	%25
52	MP5	Z	0	%25
53	MP5	X	-33.32	%25
54	MP5	Z	0	%25
55	MP6	X	-105.67	%25
56	MP6	Z	0	%25
57	MP10	X	-102.5	12.5
58	MP10	Z	0	12.5
59	MP10	X	-102.5	83.5
60	MP10	Z	0	83.5
61	MP11	X	-194.85	12.5
62	MP11	Z	0	12.5
63	MP11	X	-194.85	83.5
64	MP11	Z	0	83.5
65	MP12	X	-193.87	12
66	MP12	Z	0	12
67	MP12	X	-193.87	84
68	MP12	Z	0	84
69	MP9	X	-88.58	24
70	MP9	Z	0	24
71	MP9	X	-88.58	72
72	MP9	Z	0	72
73	MP9	X	-66.58	%75
74	MP9	Z	0	%75
75	MP11	X	-59.98	%25
76	MP11	Z	0	%25
77	MP12	X	-57.1	%25
78	MP12	Z	0	%25
79	MP9	X	-33.32	%25
80	MP9	Z	0	%25
81	MP9	X	-33.32	%25
82	MP9	Z	0	%25
83	MP10	X	-105.67	%25
84	MP10	Z	0	%25

Member Point Loads (BLC 6 : Wind Load AZI 120)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-82.22	12.5
2	MP2	Z	47.47	12.5
3	MP2	X	-82.22	83.5
4	MP2	Z	47.47	83.5

Member Point Loads (BLC 6 : Wind Load AZI 120) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
5	MP3	X	-119.84	12.5
6	MP3	Z	69.19	12.5
7	MP3	X	-119.84	83.5
8	MP3	Z	69.19	83.5
9	MP4	X	-116.85	12
10	MP4	Z	67.46	12
11	MP4	X	-116.85	84
12	MP4	Z	67.46	84
13	MP1	X	-56.36	24
14	MP1	Z	32.54	24
15	MP1	X	-56.36	72
16	MP1	Z	32.54	72
17	MP1	X	-48.83	%75
18	MP1	Z	28.19	%75
19	MP3	X	-39.58	%25
20	MP3	Z	22.85	%25
21	MP4	X	-44.95	%25
22	MP4	Z	25.95	%25
23	MP1	X	-16.92	%25
24	MP1	Z	9.77	%25
25	MP1	X	-16.92	%25
26	MP1	Z	9.77	%25
27	MP2	X	-91.51	%25
28	MP2	Z	52.83	%25
29	MP6	X	-82.22	12.5
30	MP6	Z	47.47	12.5
31	MP6	X	-82.22	83.5
32	MP6	Z	47.47	83.5
33	MP7	X	-119.84	12.5
34	MP7	Z	69.19	12.5
35	MP7	X	-119.84	83.5
36	MP7	Z	69.19	83.5
37	MP8	X	-116.85	12
38	MP8	Z	67.46	12
39	MP8	X	-116.85	84
40	MP8	Z	67.46	84
41	MP5	X	-56.36	24
42	MP5	Z	32.54	24
43	MP5	X	-56.36	72
44	MP5	Z	32.54	72
45	MP5	X	-48.83	%75
46	MP5	Z	28.19	%75
47	MP7	X	-39.58	%25
48	MP7	Z	22.85	%25
49	MP8	X	-44.95	%25
50	MP8	Z	25.95	%25
51	MP5	X	-16.92	%25
52	MP5	Z	9.77	%25
53	MP5	X	-16.92	%25
54	MP5	Z	9.77	%25
55	MP6	X	-91.51	%25
56	MP6	Z	52.83	%25
57	MP10	X	-92.04	12.5
58	MP10	Z	53.14	12.5
59	MP10	X	-92.04	83.5
60	MP10	Z	53.14	83.5
61	MP11	X	-193.2	12.5

Member Point Loads (BLC 6 : Wind Load AZI 120) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
62	MP11	Z	111.54	12.5
63	MP11	X	-193.2	83.5
64	MP11	Z	111.54	83.5
65	MP12	X	-193.42	12
66	MP12	Z	111.67	12
67	MP12	X	-193.42	84
68	MP12	Z	111.67	84
69	MP9	X	-86.89	24
70	MP9	Z	50.16	24
71	MP9	X	-86.89	72
72	MP9	Z	50.16	72
73	MP9	X	-62.07	%75
74	MP9	Z	35.84	%75
75	MP11	X	-58.12	%25
76	MP11	Z	33.56	%25
77	MP12	X	-51.71	%25
78	MP12	Z	29.85	%25
79	MP9	X	-34.83	%25
80	MP9	Z	20.11	%25
81	MP9	X	-34.83	%25
82	MP9	Z	20.11	%25
83	MP10	X	-91.51	%25
84	MP10	Z	52.83	%25

Member Point Loads (BLC 7 : Wind Load AZI 150)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-51.25	12.5
2	MP2	Z	88.76	12.5
3	MP2	X	-51.25	83.5
4	MP2	Z	88.76	83.5
5	MP3	X	-97.42	12.5
6	MP3	Z	168.74	12.5
7	MP3	X	-97.42	83.5
8	MP3	Z	168.74	83.5
9	MP4	X	-96.94	12
10	MP4	Z	167.9	12
11	MP4	X	-96.94	84
12	MP4	Z	167.9	84
13	MP1	X	-44.29	24
14	MP1	Z	76.71	24
15	MP1	X	-44.29	72
16	MP1	Z	76.71	72
17	MP1	X	-33.29	%75
18	MP1	Z	57.66	%75
19	MP3	X	-29.99	%25
20	MP3	Z	51.94	%25
21	MP4	X	-28.55	%25
22	MP4	Z	49.45	%25
23	MP1	X	-16.66	%25
24	MP1	Z	28.86	%25
25	MP1	X	-16.66	%25
26	MP1	Z	28.86	%25
27	MP2	X	-52.83	%25
28	MP2	Z	91.51	%25
29	MP6	X	-45.58	12.5
30	MP6	Z	78.95	12.5

Member Point Loads (BLC 7 : Wind Load AZI 150) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
31	MP6	X	-45.58	83.5
32	MP6	Z	78.95	83.5
33	MP7	X	-55.07	12.5
34	MP7	Z	95.38	12.5
35	MP7	X	-55.07	83.5
36	MP7	Z	95.38	83.5
37	MP8	X	-52.72	12
38	MP8	Z	91.32	12
39	MP8	X	-52.72	84
40	MP8	Z	91.32	84
41	MP5	X	-26.67	24
42	MP5	Z	46.19	24
43	MP5	X	-26.67	72
44	MP5	Z	46.19	72
45	MP5	X	-25.65	%75
46	MP5	Z	44.42	%75
47	MP7	X	-19.28	%25
48	MP7	Z	33.4	%25
49	MP8	X	-24.65	%25
50	MP8	Z	42.7	%25
51	MP5	X	-6.32	%25
52	MP5	Z	10.95	%25
53	MP5	X	-6.32	%25
54	MP5	Z	10.95	%25
55	MP6	X	-52.83	%25
56	MP6	Z	91.51	%25
57	MP10	X	-51.25	12.5
58	MP10	Z	88.76	12.5
59	MP10	X	-51.25	83.5
60	MP10	Z	88.76	83.5
61	MP11	X	-97.42	12.5
62	MP11	Z	168.74	12.5
63	MP11	X	-97.42	83.5
64	MP11	Z	168.74	83.5
65	MP12	X	-96.94	12
66	MP12	Z	167.9	12
67	MP12	X	-96.94	84
68	MP12	Z	167.9	84
69	MP9	X	-44.29	24
70	MP9	Z	76.71	24
71	MP9	X	-44.29	72
72	MP9	Z	76.71	72
73	MP9	X	-33.29	%75
74	MP9	Z	57.66	%75
75	MP11	X	-29.99	%25
76	MP11	Z	51.94	%25
77	MP12	X	-28.55	%25
78	MP12	Z	49.45	%25
79	MP9	X	-16.66	%25
80	MP9	Z	28.86	%25
81	MP9	X	-16.66	%25
82	MP9	Z	28.86	%25
83	MP10	X	-52.83	%25
84	MP10	Z	91.51	%25

Member Point Loads (BLC 8 : Wind Load AZI 180)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]

Member Point Loads (BLC 8 : Wind Load AZI 180) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	0	12.5
2	MP2	Z	106.28	12.5
3	MP2	X	0	83.5
4	MP2	Z	106.28	83.5
5	MP3	X	0	12.5
6	MP3	Z	223.09	12.5
7	MP3	X	0	83.5
8	MP3	Z	223.09	83.5
9	MP4	X	0	12
10	MP4	Z	223.35	12
11	MP4	X	0	84
12	MP4	Z	223.35	84
13	MP1	X	0	24
14	MP1	Z	100.33	24
15	MP1	X	0	72
16	MP1	Z	100.33	72
17	MP1	X	0	%75
18	MP1	Z	71.67	%75
19	MP3	X	0	%25
20	MP3	Z	67.12	%25
21	MP4	X	0	%25
22	MP4	Z	59.7	%25
23	MP1	X	0	%25
24	MP1	Z	40.22	%25
25	MP1	X	0	%25
26	MP1	Z	40.22	%25
27	MP2	X	0	%25
28	MP2	Z	105.67	%25
29	MP6	X	0	12.5
30	MP6	Z	94.94	12.5
31	MP6	X	0	83.5
32	MP6	Z	94.94	83.5
33	MP7	X	0	12.5
34	MP7	Z	138.38	12.5
35	MP7	X	0	83.5
36	MP7	Z	138.38	83.5
37	MP8	X	0	12
38	MP8	Z	134.92	12
39	MP8	X	0	84
40	MP8	Z	134.92	84
41	MP5	X	0	24
42	MP5	Z	65.08	24
43	MP5	X	0	72
44	MP5	Z	65.08	72
45	MP5	X	0	%75
46	MP5	Z	56.39	%75
47	MP7	X	0	%25
48	MP7	Z	45.7	%25
49	MP8	X	0	%25
50	MP8	Z	51.9	%25
51	MP5	X	0	%25
52	MP5	Z	19.54	%25
53	MP5	X	0	%25
54	MP5	Z	19.54	%25
55	MP6	X	0	%25
56	MP6	Z	105.67	%25
57	MP10	X	0	12.5

Member Point Loads (BLC 8 : Wind Load AZI 180) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
58	MP10	Z	94.94	12.5
59	MP10	X	0	83.5
60	MP10	Z	94.94	83.5
61	MP11	X	0	12.5
62	MP11	Z	138.38	12.5
63	MP11	X	0	83.5
64	MP11	Z	138.38	83.5
65	MP12	X	0	12
66	MP12	Z	134.92	12
67	MP12	X	0	84
68	MP12	Z	134.92	84
69	MP9	X	0	24
70	MP9	Z	65.08	24
71	MP9	X	0	72
72	MP9	Z	65.08	72
73	MP9	X	0	%75
74	MP9	Z	56.39	%75
75	MP11	X	0	%25
76	MP11	Z	45.7	%25
77	MP12	X	0	%25
78	MP12	Z	51.9	%25
79	MP9	X	0	%25
80	MP9	Z	19.54	%25
81	MP9	X	0	%25
82	MP9	Z	19.54	%25
83	MP10	X	0	%25
84	MP10	Z	105.67	%25

Member Point Loads (BLC 9 : Wind Load AZI 210)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	51.25	12.5
2	MP2	Z	88.76	12.5
3	MP2	X	51.25	83.5
4	MP2	Z	88.76	83.5
5	MP3	X	97.42	12.5
6	MP3	Z	168.74	12.5
7	MP3	X	97.42	83.5
8	MP3	Z	168.74	83.5
9	MP4	X	96.94	12
10	MP4	Z	167.9	12
11	MP4	X	96.94	84
12	MP4	Z	167.9	84
13	MP1	X	44.29	24
14	MP1	Z	76.71	24
15	MP1	X	44.29	72
16	MP1	Z	76.71	72
17	MP1	X	33.29	%75
18	MP1	Z	57.66	%75
19	MP3	X	29.99	%25
20	MP3	Z	51.94	%25
21	MP4	X	28.55	%25
22	MP4	Z	49.45	%25
23	MP1	X	16.66	%25
24	MP1	Z	28.86	%25
25	MP1	X	16.66	%25
26	MP1	Z	28.86	%25

Member Point Loads (BLC 9 : Wind Load AZI 210) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
27	MP2	X	52.83	%25
28	MP2	Z	91.51	%25
29	MP6	X	51.25	12.5
30	MP6	Z	88.76	12.5
31	MP6	X	51.25	83.5
32	MP6	Z	88.76	83.5
33	MP7	X	97.42	12.5
34	MP7	Z	168.74	12.5
35	MP7	X	97.42	83.5
36	MP7	Z	168.74	83.5
37	MP8	X	96.94	12
38	MP8	Z	167.9	12
39	MP8	X	96.94	84
40	MP8	Z	167.9	84
41	MP5	X	44.29	24
42	MP5	Z	76.71	24
43	MP5	X	44.29	72
44	MP5	Z	76.71	72
45	MP5	X	33.29	%75
46	MP5	Z	57.66	%75
47	MP7	X	29.99	%25
48	MP7	Z	51.94	%25
49	MP8	X	28.55	%25
50	MP8	Z	49.45	%25
51	MP5	X	16.66	%25
52	MP5	Z	28.86	%25
53	MP5	X	16.66	%25
54	MP5	Z	28.86	%25
55	MP6	X	52.83	%25
56	MP6	Z	91.51	%25
57	MP10	X	45.58	12.5
58	MP10	Z	78.95	12.5
59	MP10	X	45.58	83.5
60	MP10	Z	78.95	83.5
61	MP11	X	55.07	12.5
62	MP11	Z	95.38	12.5
63	MP11	X	55.07	83.5
64	MP11	Z	95.38	83.5
65	MP12	X	52.72	12
66	MP12	Z	91.32	12
67	MP12	X	52.72	84
68	MP12	Z	91.32	84
69	MP9	X	26.67	24
70	MP9	Z	46.19	24
71	MP9	X	26.67	72
72	MP9	Z	46.19	72
73	MP9	X	25.65	%75
74	MP9	Z	44.42	%75
75	MP11	X	19.28	%25
76	MP11	Z	33.4	%25
77	MP12	X	24.65	%25
78	MP12	Z	42.7	%25
79	MP9	X	6.32	%25
80	MP9	Z	10.95	%25
81	MP9	X	6.32	%25
82	MP9	Z	10.95	%25
83	MP10	X	52.83	%25

Member Point Loads (BLC 9 : Wind Load AZI 210) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
84	MP10	Z	91.51	%25

Member Point Loads (BLC 10 : Wind Load AZI 240)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	82.22	12.5
2	MP2	Z	47.47	12.5
3	MP2	X	82.22	83.5
4	MP2	Z	47.47	83.5
5	MP3	X	119.84	12.5
6	MP3	Z	69.19	12.5
7	MP3	X	119.84	83.5
8	MP3	Z	69.19	83.5
9	MP4	X	116.85	12
10	MP4	Z	67.46	12
11	MP4	X	116.85	84
12	MP4	Z	67.46	84
13	MP1	X	56.36	24
14	MP1	Z	32.54	24
15	MP1	X	56.36	72
16	MP1	Z	32.54	72
17	MP1	X	48.83	%75
18	MP1	Z	28.19	%75
19	MP3	X	39.58	%25
20	MP3	Z	22.85	%25
21	MP4	X	44.95	%25
22	MP4	Z	25.95	%25
23	MP1	X	16.92	%25
24	MP1	Z	9.77	%25
25	MP1	X	16.92	%25
26	MP1	Z	9.77	%25
27	MP2	X	91.51	%25
28	MP2	Z	52.83	%25
29	MP6	X	92.04	12.5
30	MP6	Z	53.14	12.5
31	MP6	X	92.04	83.5
32	MP6	Z	53.14	83.5
33	MP7	X	193.2	12.5
34	MP7	Z	111.54	12.5
35	MP7	X	193.2	83.5
36	MP7	Z	111.54	83.5
37	MP8	X	193.42	12
38	MP8	Z	111.67	12
39	MP8	X	193.42	84
40	MP8	Z	111.67	84
41	MP5	X	86.89	24
42	MP5	Z	50.16	24
43	MP5	X	86.89	72
44	MP5	Z	50.16	72
45	MP5	X	62.07	%75
46	MP5	Z	35.84	%75
47	MP7	X	58.12	%25
48	MP7	Z	33.56	%25
49	MP8	X	51.71	%25
50	MP8	Z	29.85	%25
51	MP5	X	34.83	%25
52	MP5	Z	20.11	%25

Member Point Loads (BLC 10 : Wind Load AZI 240) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	34.83	%25
54	MP5	Z	20.11	%25
55	MP6	X	91.51	%25
56	MP6	Z	52.83	%25
57	MP10	X	82.22	12.5
58	MP10	Z	47.47	12.5
59	MP10	X	82.22	83.5
60	MP10	Z	47.47	83.5
61	MP11	X	119.84	12.5
62	MP11	Z	69.19	12.5
63	MP11	X	119.84	83.5
64	MP11	Z	69.19	83.5
65	MP12	X	116.85	12
66	MP12	Z	67.46	12
67	MP12	X	116.85	84
68	MP12	Z	67.46	84
69	MP9	X	56.36	24
70	MP9	Z	32.54	24
71	MP9	X	56.36	72
72	MP9	Z	32.54	72
73	MP9	X	48.83	%75
74	MP9	Z	28.19	%75
75	MP11	X	39.58	%25
76	MP11	Z	22.85	%25
77	MP12	X	44.95	%25
78	MP12	Z	25.95	%25
79	MP9	X	16.92	%25
80	MP9	Z	9.77	%25
81	MP9	X	16.92	%25
82	MP9	Z	9.77	%25
83	MP10	X	91.51	%25
84	MP10	Z	52.83	%25

Member Point Loads (BLC 11 : Wind Load AZI 270)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	91.16	12.5
2	MP2	Z	0	12.5
3	MP2	X	91.16	83.5
4	MP2	Z	0	83.5
5	MP3	X	110.14	12.5
6	MP3	Z	0	12.5
7	MP3	X	110.14	83.5
8	MP3	Z	0	83.5
9	MP4	X	105.45	12
10	MP4	Z	0	12
11	MP4	X	105.45	84
12	MP4	Z	0	84
13	MP1	X	53.33	24
14	MP1	Z	0	24
15	MP1	X	53.33	72
16	MP1	Z	0	72
17	MP1	X	51.29	%75
18	MP1	Z	0	%75
19	MP3	X	38.57	%25
20	MP3	Z	0	%25
21	MP4	X	49.3	%25

Member Point Loads (BLC 11 : Wind Load AZI 270) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
22	MP4	Z	0	%25
23	MP1	X	12.64	%25
24	MP1	Z	0	%25
25	MP1	X	12.64	%25
26	MP1	Z	0	%25
27	MP2	X	105.67	%25
28	MP2	Z	0	%25
29	MP6	X	102.5	12.5
30	MP6	Z	0	12.5
31	MP6	X	102.5	83.5
32	MP6	Z	0	83.5
33	MP7	X	194.85	12.5
34	MP7	Z	0	12.5
35	MP7	X	194.85	83.5
36	MP7	Z	0	83.5
37	MP8	X	193.87	12
38	MP8	Z	0	12
39	MP8	X	193.87	84
40	MP8	Z	0	84
41	MP5	X	88.58	24
42	MP5	Z	0	24
43	MP5	X	88.58	72
44	MP5	Z	0	72
45	MP5	X	66.58	%75
46	MP5	Z	0	%75
47	MP7	X	59.98	%25
48	MP7	Z	0	%25
49	MP8	X	57.1	%25
50	MP8	Z	0	%25
51	MP5	X	33.32	%25
52	MP5	Z	0	%25
53	MP5	X	33.32	%25
54	MP5	Z	0	%25
55	MP6	X	105.67	%25
56	MP6	Z	0	%25
57	MP10	X	102.5	12.5
58	MP10	Z	0	12.5
59	MP10	X	102.5	83.5
60	MP10	Z	0	83.5
61	MP11	X	194.85	12.5
62	MP11	Z	0	12.5
63	MP11	X	194.85	83.5
64	MP11	Z	0	83.5
65	MP12	X	193.87	12
66	MP12	Z	0	12
67	MP12	X	193.87	84
68	MP12	Z	0	84
69	MP9	X	88.58	24
70	MP9	Z	0	24
71	MP9	X	88.58	72
72	MP9	Z	0	72
73	MP9	X	66.58	%75
74	MP9	Z	0	%75
75	MP11	X	59.98	%25
76	MP11	Z	0	%25
77	MP12	X	57.1	%25
78	MP12	Z	0	%25

Member Point Loads (BLC 11 : Wind Load AZI 270) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
79	MP9	X	33.32	%25
80	MP9	Z	0	%25
81	MP9	X	33.32	%25
82	MP9	Z	0	%25
83	MP10	X	105.67	%25
84	MP10	Z	0	%25

Member Point Loads (BLC 12 : Wind Load AZI 300)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	82.22	12.5
2	MP2	Z	-47.47	12.5
3	MP2	X	82.22	83.5
4	MP2	Z	-47.47	83.5
5	MP3	X	119.84	12.5
6	MP3	Z	-69.19	12.5
7	MP3	X	119.84	83.5
8	MP3	Z	-69.19	83.5
9	MP4	X	116.85	12
10	MP4	Z	-67.46	12
11	MP4	X	116.85	84
12	MP4	Z	-67.46	84
13	MP1	X	56.36	24
14	MP1	Z	-32.54	24
15	MP1	X	56.36	72
16	MP1	Z	-32.54	72
17	MP1	X	48.83	%75
18	MP1	Z	-28.19	%75
19	MP3	X	39.58	%25
20	MP3	Z	-22.85	%25
21	MP4	X	44.95	%25
22	MP4	Z	-25.95	%25
23	MP1	X	16.92	%25
24	MP1	Z	-9.77	%25
25	MP1	X	16.92	%25
26	MP1	Z	-9.77	%25
27	MP2	X	91.51	%25
28	MP2	Z	-52.83	%25
29	MP6	X	82.22	12.5
30	MP6	Z	-47.47	12.5
31	MP6	X	82.22	83.5
32	MP6	Z	-47.47	83.5
33	MP7	X	119.84	12.5
34	MP7	Z	-69.19	12.5
35	MP7	X	119.84	83.5
36	MP7	Z	-69.19	83.5
37	MP8	X	116.85	12
38	MP8	Z	-67.46	12
39	MP8	X	116.85	84
40	MP8	Z	-67.46	84
41	MP5	X	56.36	24
42	MP5	Z	-32.54	24
43	MP5	X	56.36	72
44	MP5	Z	-32.54	72
45	MP5	X	48.83	%75
46	MP5	Z	-28.19	%75
47	MP7	X	39.58	%25

Member Point Loads (BLC 12 : Wind Load AZI 300) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
48	MP7	Z	-22.85	%25
49	MP8	X	44.95	%25
50	MP8	Z	-25.95	%25
51	MP5	X	16.92	%25
52	MP5	Z	-9.77	%25
53	MP5	X	16.92	%25
54	MP5	Z	-9.77	%25
55	MP6	X	91.51	%25
56	MP6	Z	-52.83	%25
57	MP10	X	92.04	12.5
58	MP10	Z	-53.14	12.5
59	MP10	X	92.04	83.5
60	MP10	Z	-53.14	83.5
61	MP11	X	193.2	12.5
62	MP11	Z	-111.54	12.5
63	MP11	X	193.2	83.5
64	MP11	Z	-111.54	83.5
65	MP12	X	193.42	12
66	MP12	Z	-111.67	12
67	MP12	X	193.42	84
68	MP12	Z	-111.67	84
69	MP9	X	86.89	24
70	MP9	Z	-50.16	24
71	MP9	X	86.89	72
72	MP9	Z	-50.16	72
73	MP9	X	62.07	%75
74	MP9	Z	-35.84	%75
75	MP11	X	58.12	%25
76	MP11	Z	-33.56	%25
77	MP12	X	51.71	%25
78	MP12	Z	-29.85	%25
79	MP9	X	34.83	%25
80	MP9	Z	-20.11	%25
81	MP9	X	34.83	%25
82	MP9	Z	-20.11	%25
83	MP10	X	91.51	%25
84	MP10	Z	-52.83	%25

Member Point Loads (BLC 13 : Wind Load AZI 330)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	51.25	12.5
2	MP2	Z	-88.76	12.5
3	MP2	X	51.25	83.5
4	MP2	Z	-88.76	83.5
5	MP3	X	97.42	12.5
6	MP3	Z	-168.74	12.5
7	MP3	X	97.42	83.5
8	MP3	Z	-168.74	83.5
9	MP4	X	96.94	12
10	MP4	Z	-167.9	12
11	MP4	X	96.94	84
12	MP4	Z	-167.9	84
13	MP1	X	44.29	24
14	MP1	Z	-76.71	24
15	MP1	X	44.29	72
16	MP1	Z	-76.71	72

Member Point Loads (BLC 13 : Wind Load AZI 330) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
17	MP1	X	33.29	%75
18	MP1	Z	-57.66	%75
19	MP3	X	29.99	%25
20	MP3	Z	-51.94	%25
21	MP4	X	28.55	%25
22	MP4	Z	-49.45	%25
23	MP1	X	16.66	%25
24	MP1	Z	-28.86	%25
25	MP1	X	16.66	%25
26	MP1	Z	-28.86	%25
27	MP2	X	52.83	%25
28	MP2	Z	-91.51	%25
29	MP6	X	45.58	12.5
30	MP6	Z	-78.95	12.5
31	MP6	X	45.58	83.5
32	MP6	Z	-78.95	83.5
33	MP7	X	55.07	12.5
34	MP7	Z	-95.38	12.5
35	MP7	X	55.07	83.5
36	MP7	Z	-95.38	83.5
37	MP8	X	52.72	12
38	MP8	Z	-91.32	12
39	MP8	X	52.72	84
40	MP8	Z	-91.32	84
41	MP5	X	26.67	24
42	MP5	Z	-46.19	24
43	MP5	X	26.67	72
44	MP5	Z	-46.19	72
45	MP5	X	25.65	%75
46	MP5	Z	-44.42	%75
47	MP7	X	19.28	%25
48	MP7	Z	-33.4	%25
49	MP8	X	24.65	%25
50	MP8	Z	-42.7	%25
51	MP5	X	6.32	%25
52	MP5	Z	-10.95	%25
53	MP5	X	6.32	%25
54	MP5	Z	-10.95	%25
55	MP6	X	52.83	%25
56	MP6	Z	-91.51	%25
57	MP10	X	51.25	12.5
58	MP10	Z	-88.76	12.5
59	MP10	X	51.25	83.5
60	MP10	Z	-88.76	83.5
61	MP11	X	97.42	12.5
62	MP11	Z	-168.74	12.5
63	MP11	X	97.42	83.5
64	MP11	Z	-168.74	83.5
65	MP12	X	96.94	12
66	MP12	Z	-167.9	12
67	MP12	X	96.94	84
68	MP12	Z	-167.9	84
69	MP9	X	44.29	24
70	MP9	Z	-76.71	24
71	MP9	X	44.29	72
72	MP9	Z	-76.71	72
73	MP9	X	33.29	%75

Member Point Loads (BLC 13 : Wind Load AZI 330) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
74	MP9	Z	-57.66	%75
75	MP11	X	29.99	%25
76	MP11	Z	-51.94	%25
77	MP12	X	28.55	%25
78	MP12	Z	-49.45	%25
79	MP9	X	16.66	%25
80	MP9	Z	-28.86	%25
81	MP9	X	16.66	%25
82	MP9	Z	-28.86	%25
83	MP10	X	52.83	%25
84	MP10	Z	-91.51	%25

Member Point Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	Y	-64.002	12.5
2	MP2	Y	-64.002	83.5
3	MP3	Y	-93.569	12.5
4	MP3	Y	-93.569	83.5
5	MP4	Y	-95.621	12
6	MP4	Y	-95.621	84
7	MP1	Y	-42.21	24
8	MP1	Y	-42.21	72
9	MP1	Y	-48.056	%75
10	MP3	Y	-41.565	%25
11	MP4	Y	-45.752	%25
12	MP1	Y	-19.894	%25
13	MP1	Y	-19.894	%25
14	MP2	Y	-71.596	%25
15	MP6	Y	-64.002	12.5
16	MP6	Y	-64.002	83.5
17	MP7	Y	-93.569	12.5
18	MP7	Y	-93.569	83.5
19	MP8	Y	-95.621	12
20	MP8	Y	-95.621	84
21	MP5	Y	-42.21	24
22	MP5	Y	-42.21	72
23	MP5	Y	-48.056	%75
24	MP7	Y	-41.565	%25
25	MP8	Y	-45.752	%25
26	MP5	Y	-19.894	%25
27	MP5	Y	-19.894	%25
28	MP6	Y	-71.596	%25
29	MP10	Y	-64.002	12.5
30	MP10	Y	-64.002	83.5
31	MP11	Y	-93.569	12.5
32	MP11	Y	-93.569	83.5
33	MP12	Y	-95.621	12
34	MP12	Y	-95.621	84
35	MP9	Y	-42.21	24
36	MP9	Y	-42.21	72
37	MP9	Y	-48.056	%75
38	MP11	Y	-41.565	%25
39	MP12	Y	-45.752	%25
40	MP9	Y	-19.894	%25
41	MP9	Y	-19.894	%25
42	MP10	Y	-71.596	%25

Member Point Loads (BLC 17 : Ice Wind Load AZI 0)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	0	12.5
2	MP2	Z	-13.79	12.5
3	MP2	X	0	83.5
4	MP2	Z	-13.79	83.5
5	MP3	X	0	12.5
6	MP3	Z	-19.08	12.5
7	MP3	X	0	83.5
8	MP3	Z	-19.08	83.5
9	MP4	X	0	12
10	MP4	Z	-20.54	12
11	MP4	X	0	84
12	MP4	Z	-20.54	84
13	MP1	X	0	24
14	MP1	Z	-10.12	24
15	MP1	X	0	72
16	MP1	Z	-10.12	72
17	MP1	X	0	%75
18	MP1	Z	-7.22	%75
19	MP3	X	0	%25
20	MP3	Z	-6.77	%25
21	MP4	X	0	%25
22	MP4	Z	-6.15	%25
23	MP1	X	0	%25
24	MP1	Z	-5.12	%25
25	MP1	X	0	%25
26	MP1	Z	-5.12	%25
27	MP2	X	0	%25
28	MP2	Z	-11.08	%25
29	MP6	X	0	12.5
30	MP6	Z	-12.52	12.5
31	MP6	X	0	83.5
32	MP6	Z	-12.52	83.5
33	MP7	X	0	12.5
34	MP7	Z	-13.93	12.5
35	MP7	X	0	83.5
36	MP7	Z	-13.93	83.5
37	MP8	X	0	12
38	MP8	Z	-15.07	12
39	MP8	X	0	84
40	MP8	Z	-15.07	84
41	MP5	X	0	24
42	MP5	Z	-8.11	24
43	MP5	X	0	72
44	MP5	Z	-8.11	72
45	MP5	X	0	%75
46	MP5	Z	-6.5	%75
47	MP7	X	0	%25
48	MP7	Z	-5.72	%25
49	MP8	X	0	%25
50	MP8	Z	-5.79	%25
51	MP5	X	0	%25
52	MP5	Z	-3.22	%25
53	MP5	X	0	%25
54	MP5	Z	-3.22	%25
55	MP6	X	0	%25
56	MP6	Z	-11.08	%25
57	MP10	X	0	12.5

Member Point Loads (BLC 17 : Ice Wind Load AZI 0) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
58	MP10	Z	-12.52	12.5
59	MP10	X	0	83.5
60	MP10	Z	-12.52	83.5
61	MP11	X	0	12.5
62	MP11	Z	-13.93	12.5
63	MP11	X	0	83.5
64	MP11	Z	-13.93	83.5
65	MP12	X	0	12
66	MP12	Z	-15.07	12
67	MP12	X	0	84
68	MP12	Z	-15.07	84
69	MP9	X	0	24
70	MP9	Z	-8.11	24
71	MP9	X	0	72
72	MP9	Z	-8.11	72
73	MP9	X	0	%75
74	MP9	Z	-6.5	%75
75	MP11	X	0	%25
76	MP11	Z	-5.72	%25
77	MP12	X	0	%25
78	MP12	Z	-5.79	%25
79	MP9	X	0	%25
80	MP9	Z	-3.22	%25
81	MP9	X	0	%25
82	MP9	Z	-3.22	%25
83	MP10	X	0	%25
84	MP10	Z	-11.08	%25

Member Point Loads (BLC 18 : Ice Wind Load AZI 30)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-6.68	12.5
2	MP2	Z	-11.57	12.5
3	MP2	X	-6.68	83.5
4	MP2	Z	-11.57	83.5
5	MP3	X	-8.68	12.5
6	MP3	Z	-15.04	12.5
7	MP3	X	-8.68	83.5
8	MP3	Z	-15.04	83.5
9	MP4	X	-9.36	12
10	MP4	Z	-16.21	12
11	MP4	X	-9.36	84
12	MP4	Z	-16.21	84
13	MP1	X	-4.72	24
14	MP1	Z	-8.18	24
15	MP1	X	-4.72	72
16	MP1	Z	-8.18	72
17	MP1	X	-3.49	%75
18	MP1	Z	-6.04	%75
19	MP3	X	-3.21	%25
20	MP3	Z	-5.56	%25
21	MP4	X	-3.01	%25
22	MP4	Z	-5.22	%25
23	MP1	X	-2.24	%25
24	MP1	Z	-3.89	%25
25	MP1	X	-2.24	%25
26	MP1	Z	-3.89	%25

Member Point Loads (BLC 18 : Ice Wind Load AZI 30) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
27	MP2	X	-5.54	%25
28	MP2	Z	-9.6	%25
29	MP6	X	-6.68	12.5
30	MP6	Z	-11.57	12.5
31	MP6	X	-6.68	83.5
32	MP6	Z	-11.57	83.5
33	MP7	X	-8.68	12.5
34	MP7	Z	-15.04	12.5
35	MP7	X	-8.68	83.5
36	MP7	Z	-15.04	83.5
37	MP8	X	-9.36	12
38	MP8	Z	-16.21	12
39	MP8	X	-9.36	84
40	MP8	Z	-16.21	84
41	MP5	X	-4.72	24
42	MP5	Z	-8.18	24
43	MP5	X	-4.72	72
44	MP5	Z	-8.18	72
45	MP5	X	-3.49	%75
46	MP5	Z	-6.04	%75
47	MP7	X	-3.21	%25
48	MP7	Z	-5.56	%25
49	MP8	X	-3.01	%25
50	MP8	Z	-5.22	%25
51	MP5	X	-2.24	%25
52	MP5	Z	-3.89	%25
53	MP5	X	-2.24	%25
54	MP5	Z	-3.89	%25
55	MP6	X	-5.54	%25
56	MP6	Z	-9.6	%25
57	MP10	X	-6.05	12.5
58	MP10	Z	-10.47	12.5
59	MP10	X	-6.05	83.5
60	MP10	Z	-10.47	83.5
61	MP11	X	-6.11	12.5
62	MP11	Z	-10.58	12.5
63	MP11	X	-6.11	83.5
64	MP11	Z	-10.58	83.5
65	MP12	X	-6.62	12
66	MP12	Z	-11.47	12
67	MP12	X	-6.62	84
68	MP12	Z	-11.47	84
69	MP9	X	-3.72	24
70	MP9	Z	-6.45	24
71	MP9	X	-3.72	72
72	MP9	Z	-6.45	72
73	MP9	X	-3.13	%75
74	MP9	Z	-5.42	%75
75	MP11	X	-2.68	%25
76	MP11	Z	-4.65	%25
77	MP12	X	-2.83	%25
78	MP12	Z	-4.91	%25
79	MP9	X	-1.29	%25
80	MP9	Z	-2.23	%25
81	MP9	X	-1.29	%25
82	MP9	Z	-2.23	%25
83	MP10	X	-5.54	%25

Member Point Loads (BLC 18 : Ice Wind Load AZI 30) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
84	MP10	Z	-9.6	%25

Member Point Loads (BLC 19 : Ice Wind Load AZI 60)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-10.84	12.5
2	MP2	Z	-6.26	12.5
3	MP2	X	-10.84	83.5
4	MP2	Z	-6.26	83.5
5	MP3	X	-12.06	12.5
6	MP3	Z	-6.96	12.5
7	MP3	X	-12.06	83.5
8	MP3	Z	-6.96	83.5
9	MP4	X	-13.05	12
10	MP4	Z	-7.53	12
11	MP4	X	-13.05	84
12	MP4	Z	-7.53	84
13	MP1	X	-7.03	24
14	MP1	Z	-4.06	24
15	MP1	X	-7.03	72
16	MP1	Z	-4.06	72
17	MP1	X	-5.63	%75
18	MP1	Z	-3.25	%75
19	MP3	X	-4.95	%25
20	MP3	Z	-2.86	%25
21	MP4	X	-5.01	%25
22	MP4	Z	-2.89	%25
23	MP1	X	-2.78	%25
24	MP1	Z	-1.61	%25
25	MP1	X	-2.78	%25
26	MP1	Z	-1.61	%25
27	MP2	X	-9.6	%25
28	MP2	Z	-5.54	%25
29	MP6	X	-11.94	12.5
30	MP6	Z	-6.89	12.5
31	MP6	X	-11.94	83.5
32	MP6	Z	-6.89	83.5
33	MP7	X	-16.53	12.5
34	MP7	Z	-9.54	12.5
35	MP7	X	-16.53	83.5
36	MP7	Z	-9.54	83.5
37	MP8	X	-17.79	12
38	MP8	Z	-10.27	12
39	MP8	X	-17.79	84
40	MP8	Z	-10.27	84
41	MP5	X	-8.76	24
42	MP5	Z	-5.06	24
43	MP5	X	-8.76	72
44	MP5	Z	-5.06	72
45	MP5	X	-6.25	%75
46	MP5	Z	-3.61	%75
47	MP7	X	-5.86	%25
48	MP7	Z	-3.38	%25
49	MP8	X	-5.33	%25
50	MP8	Z	-3.08	%25
51	MP5	X	-4.44	%25
52	MP5	Z	-2.56	%25

Member Point Loads (BLC 19 : Ice Wind Load AZI 60) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	-4.44	%25
54	MP5	Z	-2.56	%25
55	MP6	X	-9.6	%25
56	MP6	Z	-5.54	%25
57	MP10	X	-10.84	12.5
58	MP10	Z	-6.26	12.5
59	MP10	X	-10.84	83.5
60	MP10	Z	-6.26	83.5
61	MP11	X	-12.06	12.5
62	MP11	Z	-6.96	12.5
63	MP11	X	-12.06	83.5
64	MP11	Z	-6.96	83.5
65	MP12	X	-13.05	12
66	MP12	Z	-7.53	12
67	MP12	X	-13.05	84
68	MP12	Z	-7.53	84
69	MP9	X	-7.03	24
70	MP9	Z	-4.06	24
71	MP9	X	-7.03	72
72	MP9	Z	-4.06	72
73	MP9	X	-5.63	%75
74	MP9	Z	-3.25	%75
75	MP11	X	-4.95	%25
76	MP11	Z	-2.86	%25
77	MP12	X	-5.01	%25
78	MP12	Z	-2.89	%25
79	MP9	X	-2.78	%25
80	MP9	Z	-1.61	%25
81	MP9	X	-2.78	%25
82	MP9	Z	-1.61	%25
83	MP10	X	-9.6	%25
84	MP10	Z	-5.54	%25

Member Point Loads (BLC 20 : Ice Wind Load AZI 90)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-12.09	12.5
2	MP2	Z	0	12.5
3	MP2	X	-12.09	83.5
4	MP2	Z	0	83.5
5	MP3	X	-12.21	12.5
6	MP3	Z	0	12.5
7	MP3	X	-12.21	83.5
8	MP3	Z	0	83.5
9	MP4	X	-13.24	12
10	MP4	Z	0	12
11	MP4	X	-13.24	84
12	MP4	Z	0	84
13	MP1	X	-7.45	24
14	MP1	Z	0	24
15	MP1	X	-7.45	72
16	MP1	Z	0	72
17	MP1	X	-6.26	%75
18	MP1	Z	0	%75
19	MP3	X	-5.37	%25
20	MP3	Z	0	%25
21	MP4	X	-5.66	%25

Member Point Loads (BLC 20 : Ice Wind Load AZI 90) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
22	MP4	Z	0	%25
23	MP1	X	-2.58	%25
24	MP1	Z	0	%25
25	MP1	X	-2.58	%25
26	MP1	Z	0	%25
27	MP2	X	-11.08	%25
28	MP2	Z	0	%25
29	MP6	X	-13.36	12.5
30	MP6	Z	0	12.5
31	MP6	X	-13.36	83.5
32	MP6	Z	0	83.5
33	MP7	X	-17.37	12.5
34	MP7	Z	0	12.5
35	MP7	X	-17.37	83.5
36	MP7	Z	0	83.5
37	MP8	X	-18.72	12
38	MP8	Z	0	12
39	MP8	X	-18.72	84
40	MP8	Z	0	84
41	MP5	X	-9.45	24
42	MP5	Z	0	24
43	MP5	X	-9.45	72
44	MP5	Z	0	72
45	MP5	X	-6.98	%75
46	MP5	Z	0	%75
47	MP7	X	-6.42	%25
48	MP7	Z	0	%25
49	MP8	X	-6.03	%25
50	MP8	Z	0	%25
51	MP5	X	-4.49	%25
52	MP5	Z	0	%25
53	MP5	X	-4.49	%25
54	MP5	Z	0	%25
55	MP6	X	-11.08	%25
56	MP6	Z	0	%25
57	MP10	X	-13.36	12.5
58	MP10	Z	0	12.5
59	MP10	X	-13.36	83.5
60	MP10	Z	0	83.5
61	MP11	X	-17.37	12.5
62	MP11	Z	0	12.5
63	MP11	X	-17.37	83.5
64	MP11	Z	0	83.5
65	MP12	X	-18.72	12
66	MP12	Z	0	12
67	MP12	X	-18.72	84
68	MP12	Z	0	84
69	MP9	X	-9.45	24
70	MP9	Z	0	24
71	MP9	X	-9.45	72
72	MP9	Z	0	72
73	MP9	X	-6.98	%75
74	MP9	Z	0	%75
75	MP11	X	-6.42	%25
76	MP11	Z	0	%25
77	MP12	X	-6.03	%25
78	MP12	Z	0	%25

Member Point Loads (BLC 20 : Ice Wind Load AZI 90) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
79	MP9	X	-4.49	%25
80	MP9	Z	0	%25
81	MP9	X	-4.49	%25
82	MP9	Z	0	%25
83	MP10	X	-11.08	%25
84	MP10	Z	0	%25

Member Point Loads (BLC 21 : Ice Wind Load AZI 120)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-10.84	12.5
2	MP2	Z	6.26	12.5
3	MP2	X	-10.84	83.5
4	MP2	Z	6.26	83.5
5	MP3	X	-12.06	12.5
6	MP3	Z	6.96	12.5
7	MP3	X	-12.06	83.5
8	MP3	Z	6.96	83.5
9	MP4	X	-13.05	12
10	MP4	Z	7.53	12
11	MP4	X	-13.05	84
12	MP4	Z	7.53	84
13	MP1	X	-7.03	24
14	MP1	Z	4.06	24
15	MP1	X	-7.03	72
16	MP1	Z	4.06	72
17	MP1	X	-5.63	%75
18	MP1	Z	3.25	%75
19	MP3	X	-4.95	%25
20	MP3	Z	2.86	%25
21	MP4	X	-5.01	%25
22	MP4	Z	2.89	%25
23	MP1	X	-2.78	%25
24	MP1	Z	1.61	%25
25	MP1	X	-2.78	%25
26	MP1	Z	1.61	%25
27	MP2	X	-9.6	%25
28	MP2	Z	5.54	%25
29	MP6	X	-10.84	12.5
30	MP6	Z	6.26	12.5
31	MP6	X	-10.84	83.5
32	MP6	Z	6.26	83.5
33	MP7	X	-12.06	12.5
34	MP7	Z	6.96	12.5
35	MP7	X	-12.06	83.5
36	MP7	Z	6.96	83.5
37	MP8	X	-13.05	12
38	MP8	Z	7.53	12
39	MP8	X	-13.05	84
40	MP8	Z	7.53	84
41	MP5	X	-7.03	24
42	MP5	Z	4.06	24
43	MP5	X	-7.03	72
44	MP5	Z	4.06	72
45	MP5	X	-5.63	%75
46	MP5	Z	3.25	%75
47	MP7	X	-4.95	%25

Member Point Loads (BLC 21 : Ice Wind Load AZI 120) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
48	MP7	Z	2.86	%25
49	MP8	X	-5.01	%25
50	MP8	Z	2.89	%25
51	MP5	X	-2.78	%25
52	MP5	Z	1.61	%25
53	MP5	X	-2.78	%25
54	MP5	Z	1.61	%25
55	MP6	X	-9.6	%25
56	MP6	Z	5.54	%25
57	MP10	X	-11.94	12.5
58	MP10	Z	6.89	12.5
59	MP10	X	-11.94	83.5
60	MP10	Z	6.89	83.5
61	MP11	X	-16.53	12.5
62	MP11	Z	9.54	12.5
63	MP11	X	-16.53	83.5
64	MP11	Z	9.54	83.5
65	MP12	X	-17.79	12
66	MP12	Z	10.27	12
67	MP12	X	-17.79	84
68	MP12	Z	10.27	84
69	MP9	X	-8.76	24
70	MP9	Z	5.06	24
71	MP9	X	-8.76	72
72	MP9	Z	5.06	72
73	MP9	X	-6.25	%75
74	MP9	Z	3.61	%75
75	MP11	X	-5.86	%25
76	MP11	Z	3.38	%25
77	MP12	X	-5.33	%25
78	MP12	Z	3.08	%25
79	MP9	X	-4.44	%25
80	MP9	Z	2.56	%25
81	MP9	X	-4.44	%25
82	MP9	Z	2.56	%25
83	MP10	X	-9.6	%25
84	MP10	Z	5.54	%25

Member Point Loads (BLC 22 : Ice Wind Load AZI 150)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-6.68	12.5
2	MP2	Z	11.57	12.5
3	MP2	X	-6.68	83.5
4	MP2	Z	11.57	83.5
5	MP3	X	-8.68	12.5
6	MP3	Z	15.04	12.5
7	MP3	X	-8.68	83.5
8	MP3	Z	15.04	83.5
9	MP4	X	-9.36	12
10	MP4	Z	16.21	12
11	MP4	X	-9.36	84
12	MP4	Z	16.21	84
13	MP1	X	-4.72	24
14	MP1	Z	8.18	24
15	MP1	X	-4.72	72
16	MP1	Z	8.18	72

Member Point Loads (BLC 22 : Ice Wind Load AZI 150) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
17	MP1	X	-3.49	%75
18	MP1	Z	6.04	%75
19	MP3	X	-3.21	%25
20	MP3	Z	5.56	%25
21	MP4	X	-3.01	%25
22	MP4	Z	5.22	%25
23	MP1	X	-2.24	%25
24	MP1	Z	3.89	%25
25	MP1	X	-2.24	%25
26	MP1	Z	3.89	%25
27	MP2	X	-5.54	%25
28	MP2	Z	9.6	%25
29	MP6	X	-6.05	12.5
30	MP6	Z	10.47	12.5
31	MP6	X	-6.05	83.5
32	MP6	Z	10.47	83.5
33	MP7	X	-6.11	12.5
34	MP7	Z	10.58	12.5
35	MP7	X	-6.11	83.5
36	MP7	Z	10.58	83.5
37	MP8	X	-6.62	12
38	MP8	Z	11.47	12
39	MP8	X	-6.62	84
40	MP8	Z	11.47	84
41	MP5	X	-3.72	24
42	MP5	Z	6.45	24
43	MP5	X	-3.72	72
44	MP5	Z	6.45	72
45	MP5	X	-3.13	%75
46	MP5	Z	5.42	%75
47	MP7	X	-2.68	%25
48	MP7	Z	4.65	%25
49	MP8	X	-2.83	%25
50	MP8	Z	4.91	%25
51	MP5	X	-1.29	%25
52	MP5	Z	2.23	%25
53	MP5	X	-1.29	%25
54	MP5	Z	2.23	%25
55	MP6	X	-5.54	%25
56	MP6	Z	9.6	%25
57	MP10	X	-6.68	12.5
58	MP10	Z	11.57	12.5
59	MP10	X	-6.68	83.5
60	MP10	Z	11.57	83.5
61	MP11	X	-8.68	12.5
62	MP11	Z	15.04	12.5
63	MP11	X	-8.68	83.5
64	MP11	Z	15.04	83.5
65	MP12	X	-9.36	12
66	MP12	Z	16.21	12
67	MP12	X	-9.36	84
68	MP12	Z	16.21	84
69	MP9	X	-4.72	24
70	MP9	Z	8.18	24
71	MP9	X	-4.72	72
72	MP9	Z	8.18	72
73	MP9	X	-3.49	%75

Member Point Loads (BLC 22 : Ice Wind Load AZI 150) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
74	MP9	Z	6.04	%75
75	MP11	X	-3.21	%25
76	MP11	Z	5.56	%25
77	MP12	X	-3.01	%25
78	MP12	Z	5.22	%25
79	MP9	X	-2.24	%25
80	MP9	Z	3.89	%25
81	MP9	X	-2.24	%25
82	MP9	Z	3.89	%25
83	MP10	X	-5.54	%25
84	MP10	Z	9.6	%25

Member Point Loads (BLC 23 : Ice Wind Load AZI 180)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	0	12.5
2	MP2	Z	13.79	12.5
3	MP2	X	0	83.5
4	MP2	Z	13.79	83.5
5	MP3	X	0	12.5
6	MP3	Z	19.08	12.5
7	MP3	X	0	83.5
8	MP3	Z	19.08	83.5
9	MP4	X	0	12
10	MP4	Z	20.54	12
11	MP4	X	0	84
12	MP4	Z	20.54	84
13	MP1	X	0	24
14	MP1	Z	10.12	24
15	MP1	X	0	72
16	MP1	Z	10.12	72
17	MP1	X	0	%75
18	MP1	Z	7.22	%75
19	MP3	X	0	%25
20	MP3	Z	6.77	%25
21	MP4	X	0	%25
22	MP4	Z	6.15	%25
23	MP1	X	0	%25
24	MP1	Z	5.12	%25
25	MP1	X	0	%25
26	MP1	Z	5.12	%25
27	MP2	X	0	%25
28	MP2	Z	11.08	%25
29	MP6	X	0	12.5
30	MP6	Z	12.52	12.5
31	MP6	X	0	83.5
32	MP6	Z	12.52	83.5
33	MP7	X	0	12.5
34	MP7	Z	13.93	12.5
35	MP7	X	0	83.5
36	MP7	Z	13.93	83.5
37	MP8	X	0	12
38	MP8	Z	15.07	12
39	MP8	X	0	84
40	MP8	Z	15.07	84
41	MP5	X	0	24
42	MP5	Z	8.11	24

Member Point Loads (BLC 23 : Ice Wind Load AZI 180) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
43	MP5	X	0	72
44	MP5	Z	8.11	72
45	MP5	X	0	%75
46	MP5	Z	6.5	%75
47	MP7	X	0	%25
48	MP7	Z	5.72	%25
49	MP8	X	0	%25
50	MP8	Z	5.79	%25
51	MP5	X	0	%25
52	MP5	Z	3.22	%25
53	MP5	X	0	%25
54	MP5	Z	3.22	%25
55	MP6	X	0	%25
56	MP6	Z	11.08	%25
57	MP10	X	0	12.5
58	MP10	Z	12.52	12.5
59	MP10	X	0	83.5
60	MP10	Z	12.52	83.5
61	MP11	X	0	12.5
62	MP11	Z	13.93	12.5
63	MP11	X	0	83.5
64	MP11	Z	13.93	83.5
65	MP12	X	0	12
66	MP12	Z	15.07	12
67	MP12	X	0	84
68	MP12	Z	15.07	84
69	MP9	X	0	24
70	MP9	Z	8.11	24
71	MP9	X	0	72
72	MP9	Z	8.11	72
73	MP9	X	0	%75
74	MP9	Z	6.5	%75
75	MP11	X	0	%25
76	MP11	Z	5.72	%25
77	MP12	X	0	%25
78	MP12	Z	5.79	%25
79	MP9	X	0	%25
80	MP9	Z	3.22	%25
81	MP9	X	0	%25
82	MP9	Z	3.22	%25
83	MP10	X	0	%25
84	MP10	Z	11.08	%25

Member Point Loads (BLC 24 : Ice Wind Load AZI 210)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	6.68	12.5
2	MP2	Z	11.57	12.5
3	MP2	X	6.68	83.5
4	MP2	Z	11.57	83.5
5	MP3	X	8.68	12.5
6	MP3	Z	15.04	12.5
7	MP3	X	8.68	83.5
8	MP3	Z	15.04	83.5
9	MP4	X	9.36	12
10	MP4	Z	16.21	12
11	MP4	X	9.36	84

Member Point Loads (BLC 24 : Ice Wind Load AZI 210) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
12	MP4	Z	16.21	84
13	MP1	X	4.72	24
14	MP1	Z	8.18	24
15	MP1	X	4.72	72
16	MP1	Z	8.18	72
17	MP1	X	3.49	%75
18	MP1	Z	6.04	%75
19	MP3	X	3.21	%25
20	MP3	Z	5.56	%25
21	MP4	X	3.01	%25
22	MP4	Z	5.22	%25
23	MP1	X	2.24	%25
24	MP1	Z	3.89	%25
25	MP1	X	2.24	%25
26	MP1	Z	3.89	%25
27	MP2	X	5.54	%25
28	MP2	Z	9.6	%25
29	MP6	X	6.68	12.5
30	MP6	Z	11.57	12.5
31	MP6	X	6.68	83.5
32	MP6	Z	11.57	83.5
33	MP7	X	8.68	12.5
34	MP7	Z	15.04	12.5
35	MP7	X	8.68	83.5
36	MP7	Z	15.04	83.5
37	MP8	X	9.36	12
38	MP8	Z	16.21	12
39	MP8	X	9.36	84
40	MP8	Z	16.21	84
41	MP5	X	4.72	24
42	MP5	Z	8.18	24
43	MP5	X	4.72	72
44	MP5	Z	8.18	72
45	MP5	X	3.49	%75
46	MP5	Z	6.04	%75
47	MP7	X	3.21	%25
48	MP7	Z	5.56	%25
49	MP8	X	3.01	%25
50	MP8	Z	5.22	%25
51	MP5	X	2.24	%25
52	MP5	Z	3.89	%25
53	MP5	X	2.24	%25
54	MP5	Z	3.89	%25
55	MP6	X	5.54	%25
56	MP6	Z	9.6	%25
57	MP10	X	6.05	12.5
58	MP10	Z	10.47	12.5
59	MP10	X	6.05	83.5
60	MP10	Z	10.47	83.5
61	MP11	X	6.11	12.5
62	MP11	Z	10.58	12.5
63	MP11	X	6.11	83.5
64	MP11	Z	10.58	83.5
65	MP12	X	6.62	12
66	MP12	Z	11.47	12
67	MP12	X	6.62	84
68	MP12	Z	11.47	84

Member Point Loads (BLC 24 : Ice Wind Load AZI 210) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
69	MP9	X	3.72	24
70	MP9	Z	6.45	24
71	MP9	X	3.72	72
72	MP9	Z	6.45	72
73	MP9	X	3.13	%75
74	MP9	Z	5.42	%75
75	MP11	X	2.68	%25
76	MP11	Z	4.65	%25
77	MP12	X	2.83	%25
78	MP12	Z	4.91	%25
79	MP9	X	1.29	%25
80	MP9	Z	2.23	%25
81	MP9	X	1.29	%25
82	MP9	Z	2.23	%25
83	MP10	X	5.54	%25
84	MP10	Z	9.6	%25

Member Point Loads (BLC 25 : Ice Wind Load AZI 240)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	10.84	12.5
2	MP2	Z	6.26	12.5
3	MP2	X	10.84	83.5
4	MP2	Z	6.26	83.5
5	MP3	X	12.06	12.5
6	MP3	Z	6.96	12.5
7	MP3	X	12.06	83.5
8	MP3	Z	6.96	83.5
9	MP4	X	13.05	12
10	MP4	Z	7.53	12
11	MP4	X	13.05	84
12	MP4	Z	7.53	84
13	MP1	X	7.03	24
14	MP1	Z	4.06	24
15	MP1	X	7.03	72
16	MP1	Z	4.06	72
17	MP1	X	5.63	%75
18	MP1	Z	3.25	%75
19	MP3	X	4.95	%25
20	MP3	Z	2.86	%25
21	MP4	X	5.01	%25
22	MP4	Z	2.89	%25
23	MP1	X	2.78	%25
24	MP1	Z	1.61	%25
25	MP1	X	2.78	%25
26	MP1	Z	1.61	%25
27	MP2	X	9.6	%25
28	MP2	Z	5.54	%25
29	MP6	X	11.94	12.5
30	MP6	Z	6.89	12.5
31	MP6	X	11.94	83.5
32	MP6	Z	6.89	83.5
33	MP7	X	16.53	12.5
34	MP7	Z	9.54	12.5
35	MP7	X	16.53	83.5
36	MP7	Z	9.54	83.5
37	MP8	X	17.79	12

Member Point Loads (BLC 25 : Ice Wind Load AZI 240) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
38	MP8	Z	10.27	12
39	MP8	X	17.79	84
40	MP8	Z	10.27	84
41	MP5	X	8.76	24
42	MP5	Z	5.06	24
43	MP5	X	8.76	72
44	MP5	Z	5.06	72
45	MP5	X	6.25	%75
46	MP5	Z	3.61	%75
47	MP7	X	5.86	%25
48	MP7	Z	3.38	%25
49	MP8	X	5.33	%25
50	MP8	Z	3.08	%25
51	MP5	X	4.44	%25
52	MP5	Z	2.56	%25
53	MP5	X	4.44	%25
54	MP5	Z	2.56	%25
55	MP6	X	9.6	%25
56	MP6	Z	5.54	%25
57	MP10	X	10.84	12.5
58	MP10	Z	6.26	12.5
59	MP10	X	10.84	83.5
60	MP10	Z	6.26	83.5
61	MP11	X	12.06	12.5
62	MP11	Z	6.96	12.5
63	MP11	X	12.06	83.5
64	MP11	Z	6.96	83.5
65	MP12	X	13.05	12
66	MP12	Z	7.53	12
67	MP12	X	13.05	84
68	MP12	Z	7.53	84
69	MP9	X	7.03	24
70	MP9	Z	4.06	24
71	MP9	X	7.03	72
72	MP9	Z	4.06	72
73	MP9	X	5.63	%75
74	MP9	Z	3.25	%75
75	MP11	X	4.95	%25
76	MP11	Z	2.86	%25
77	MP12	X	5.01	%25
78	MP12	Z	2.89	%25
79	MP9	X	2.78	%25
80	MP9	Z	1.61	%25
81	MP9	X	2.78	%25
82	MP9	Z	1.61	%25
83	MP10	X	9.6	%25
84	MP10	Z	5.54	%25

Member Point Loads (BLC 26 : Ice Wind Load AZI 270)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	12.09	12.5
2	MP2	Z	0	12.5
3	MP2	X	12.09	83.5
4	MP2	Z	0	83.5
5	MP3	X	12.21	12.5
6	MP3	Z	0	12.5

Member Point Loads (BLC 26 : Ice Wind Load AZI 270) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
7	MP3	X	12.21	83.5
8	MP3	Z	0	83.5
9	MP4	X	13.24	12
10	MP4	Z	0	12
11	MP4	X	13.24	84
12	MP4	Z	0	84
13	MP1	X	7.45	24
14	MP1	Z	0	24
15	MP1	X	7.45	72
16	MP1	Z	0	72
17	MP1	X	6.26	%75
18	MP1	Z	0	%75
19	MP3	X	5.37	%25
20	MP3	Z	0	%25
21	MP4	X	5.66	%25
22	MP4	Z	0	%25
23	MP1	X	2.58	%25
24	MP1	Z	0	%25
25	MP1	X	2.58	%25
26	MP1	Z	0	%25
27	MP2	X	11.08	%25
28	MP2	Z	0	%25
29	MP6	X	13.36	12.5
30	MP6	Z	0	12.5
31	MP6	X	13.36	83.5
32	MP6	Z	0	83.5
33	MP7	X	17.37	12.5
34	MP7	Z	0	12.5
35	MP7	X	17.37	83.5
36	MP7	Z	0	83.5
37	MP8	X	18.72	12
38	MP8	Z	0	12
39	MP8	X	18.72	84
40	MP8	Z	0	84
41	MP5	X	9.45	24
42	MP5	Z	0	24
43	MP5	X	9.45	72
44	MP5	Z	0	72
45	MP5	X	6.98	%75
46	MP5	Z	0	%75
47	MP7	X	6.42	%25
48	MP7	Z	0	%25
49	MP8	X	6.03	%25
50	MP8	Z	0	%25
51	MP5	X	4.49	%25
52	MP5	Z	0	%25
53	MP5	X	4.49	%25
54	MP5	Z	0	%25
55	MP6	X	11.08	%25
56	MP6	Z	0	%25
57	MP10	X	13.36	12.5
58	MP10	Z	0	12.5
59	MP10	X	13.36	83.5
60	MP10	Z	0	83.5
61	MP11	X	17.37	12.5
62	MP11	Z	0	12.5
63	MP11	X	17.37	83.5

Member Point Loads (BLC 26 : Ice Wind Load AZI 270) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
64	MP11	Z	0	83.5
65	MP12	X	18.72	12
66	MP12	Z	0	12
67	MP12	X	18.72	84
68	MP12	Z	0	84
69	MP9	X	9.45	24
70	MP9	Z	0	24
71	MP9	X	9.45	72
72	MP9	Z	0	72
73	MP9	X	6.98	%75
74	MP9	Z	0	%75
75	MP11	X	6.42	%25
76	MP11	Z	0	%25
77	MP12	X	6.03	%25
78	MP12	Z	0	%25
79	MP9	X	4.49	%25
80	MP9	Z	0	%25
81	MP9	X	4.49	%25
82	MP9	Z	0	%25
83	MP10	X	11.08	%25
84	MP10	Z	0	%25

Member Point Loads (BLC 27 : Ice Wind Load AZI 300)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	10.84	12.5
2	MP2	Z	-6.26	12.5
3	MP2	X	10.84	83.5
4	MP2	Z	-6.26	83.5
5	MP3	X	12.06	12.5
6	MP3	Z	-6.96	12.5
7	MP3	X	12.06	83.5
8	MP3	Z	-6.96	83.5
9	MP4	X	13.05	12
10	MP4	Z	-7.53	12
11	MP4	X	13.05	84
12	MP4	Z	-7.53	84
13	MP1	X	7.03	24
14	MP1	Z	-4.06	24
15	MP1	X	7.03	72
16	MP1	Z	-4.06	72
17	MP1	X	5.63	%75
18	MP1	Z	-3.25	%75
19	MP3	X	4.95	%25
20	MP3	Z	-2.86	%25
21	MP4	X	5.01	%25
22	MP4	Z	-2.89	%25
23	MP1	X	2.78	%25
24	MP1	Z	-1.61	%25
25	MP1	X	2.78	%25
26	MP1	Z	-1.61	%25
27	MP2	X	9.6	%25
28	MP2	Z	-5.54	%25
29	MP6	X	10.84	12.5
30	MP6	Z	-6.26	12.5
31	MP6	X	10.84	83.5
32	MP6	Z	-6.26	83.5

Member Point Loads (BLC 27 : Ice Wind Load AZI 300) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
33	MP7	X	12.06	12.5
34	MP7	Z	-6.96	12.5
35	MP7	X	12.06	83.5
36	MP7	Z	-6.96	83.5
37	MP8	X	13.05	12
38	MP8	Z	-7.53	12
39	MP8	X	13.05	84
40	MP8	Z	-7.53	84
41	MP5	X	7.03	24
42	MP5	Z	-4.06	24
43	MP5	X	7.03	72
44	MP5	Z	-4.06	72
45	MP5	X	5.63	%75
46	MP5	Z	-3.25	%75
47	MP7	X	4.95	%25
48	MP7	Z	-2.86	%25
49	MP8	X	5.01	%25
50	MP8	Z	-2.89	%25
51	MP5	X	2.78	%25
52	MP5	Z	-1.61	%25
53	MP5	X	2.78	%25
54	MP5	Z	-1.61	%25
55	MP6	X	9.6	%25
56	MP6	Z	-5.54	%25
57	MP10	X	11.94	12.5
58	MP10	Z	-6.89	12.5
59	MP10	X	11.94	83.5
60	MP10	Z	-6.89	83.5
61	MP11	X	16.53	12.5
62	MP11	Z	-9.54	12.5
63	MP11	X	16.53	83.5
64	MP11	Z	-9.54	83.5
65	MP12	X	17.79	12
66	MP12	Z	-10.27	12
67	MP12	X	17.79	84
68	MP12	Z	-10.27	84
69	MP9	X	8.76	24
70	MP9	Z	-5.06	24
71	MP9	X	8.76	72
72	MP9	Z	-5.06	72
73	MP9	X	6.25	%75
74	MP9	Z	-3.61	%75
75	MP11	X	5.86	%25
76	MP11	Z	-3.38	%25
77	MP12	X	5.33	%25
78	MP12	Z	-3.08	%25
79	MP9	X	4.44	%25
80	MP9	Z	-2.56	%25
81	MP9	X	4.44	%25
82	MP9	Z	-2.56	%25
83	MP10	X	9.6	%25
84	MP10	Z	-5.54	%25

Member Point Loads (BLC 28 : Ice Wind Load AZI 330)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	6.68	12.5

Member Point Loads (BLC 28 : Ice Wind Load AZI 330) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
2	MP2	Z	-11.57	12.5
3	MP2	X	6.68	83.5
4	MP2	Z	-11.57	83.5
5	MP3	X	8.68	12.5
6	MP3	Z	-15.04	12.5
7	MP3	X	8.68	83.5
8	MP3	Z	-15.04	83.5
9	MP4	X	9.36	12
10	MP4	Z	-16.21	12
11	MP4	X	9.36	84
12	MP4	Z	-16.21	84
13	MP1	X	4.72	24
14	MP1	Z	-8.18	24
15	MP1	X	4.72	72
16	MP1	Z	-8.18	72
17	MP1	X	3.49	%75
18	MP1	Z	-6.04	%75
19	MP3	X	3.21	%25
20	MP3	Z	-5.56	%25
21	MP4	X	3.01	%25
22	MP4	Z	-5.22	%25
23	MP1	X	2.24	%25
24	MP1	Z	-3.89	%25
25	MP1	X	2.24	%25
26	MP1	Z	-3.89	%25
27	MP2	X	5.54	%25
28	MP2	Z	-9.6	%25
29	MP6	X	6.05	12.5
30	MP6	Z	-10.47	12.5
31	MP6	X	6.05	83.5
32	MP6	Z	-10.47	83.5
33	MP7	X	6.11	12.5
34	MP7	Z	-10.58	12.5
35	MP7	X	6.11	83.5
36	MP7	Z	-10.58	83.5
37	MP8	X	6.62	12
38	MP8	Z	-11.47	12
39	MP8	X	6.62	84
40	MP8	Z	-11.47	84
41	MP5	X	3.72	24
42	MP5	Z	-6.45	24
43	MP5	X	3.72	72
44	MP5	Z	-6.45	72
45	MP5	X	3.13	%75
46	MP5	Z	-5.42	%75
47	MP7	X	2.68	%25
48	MP7	Z	-4.65	%25
49	MP8	X	2.83	%25
50	MP8	Z	-4.91	%25
51	MP5	X	1.29	%25
52	MP5	Z	-2.23	%25
53	MP5	X	1.29	%25
54	MP5	Z	-2.23	%25
55	MP6	X	5.54	%25
56	MP6	Z	-9.6	%25
57	MP10	X	6.68	12.5
58	MP10	Z	-11.57	12.5

Member Point Loads (BLC 28 : Ice Wind Load AZI 330) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
59	MP10	X	6.68	83.5
60	MP10	Z	-11.57	83.5
61	MP11	X	8.68	12.5
62	MP11	Z	-15.04	12.5
63	MP11	X	8.68	83.5
64	MP11	Z	-15.04	83.5
65	MP12	X	9.36	12
66	MP12	Z	-16.21	12
67	MP12	X	9.36	84
68	MP12	Z	-16.21	84
69	MP9	X	4.72	24
70	MP9	Z	-8.18	24
71	MP9	X	4.72	72
72	MP9	Z	-8.18	72
73	MP9	X	3.49	%75
74	MP9	Z	-6.04	%75
75	MP11	X	3.21	%25
76	MP11	Z	-5.56	%25
77	MP12	X	3.01	%25
78	MP12	Z	-5.22	%25
79	MP9	X	2.24	%25
80	MP9	Z	-3.89	%25
81	MP9	X	2.24	%25
82	MP9	Z	-3.89	%25
83	MP10	X	5.54	%25
84	MP10	Z	-9.6	%25

Member Point Loads (BLC 31 : Seismic Load Z)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	Z	-2.994	12.5
2	MP2	Z	-2.994	83.5
3	MP3	Z	-3.488	12.5
4	MP3	Z	-3.488	83.5
5	MP4	Z	-5.966	12
6	MP4	Z	-5.966	84
7	MP1	Z	-1.923	24
8	MP1	Z	-1.923	72
9	MP1	Z	-7.801	%75
10	MP3	Z	-6.581	%25
11	MP4	Z	-7.91	%25
12	MP1	Z	-1.549	%25
13	MP1	Z	-1.549	%25
14	MP2	Z	-3.604	%25
15	MP6	Z	-2.994	12.5
16	MP6	Z	-2.994	83.5
17	MP7	Z	-3.488	12.5
18	MP7	Z	-3.488	83.5
19	MP8	Z	-5.966	12
20	MP8	Z	-5.966	84
21	MP5	Z	-1.923	24
22	MP5	Z	-1.923	72
23	MP5	Z	-7.801	%75
24	MP7	Z	-6.581	%25
25	MP8	Z	-7.91	%25
26	MP5	Z	-1.549	%25
27	MP5	Z	-1.549	%25

Member Point Loads (BLC 31 : Seismic Load Z) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
28	MP6	Z	-3.604	%25
29	MP10	Z	-2.994	12.5
30	MP10	Z	-2.994	83.5
31	MP11	Z	-3.488	12.5
32	MP11	Z	-3.488	83.5
33	MP12	Z	-5.966	12
34	MP12	Z	-5.966	84
35	MP9	Z	-1.923	24
36	MP9	Z	-1.923	72
37	MP9	Z	-7.801	%75
38	MP11	Z	-6.581	%25
39	MP12	Z	-7.91	%25
40	MP9	Z	-1.549	%25
41	MP9	Z	-1.549	%25
42	MP10	Z	-3.604	%25

Member Point Loads (BLC 32 : Seismic Load X)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-2.994	12.5
2	MP2	X	-2.994	83.5
3	MP3	X	-3.488	12.5
4	MP3	X	-3.488	83.5
5	MP4	X	-5.966	12
6	MP4	X	-5.966	84
7	MP1	X	-1.923	24
8	MP1	X	-1.923	72
9	MP1	X	-7.801	%75
10	MP3	X	-6.581	%25
11	MP4	X	-7.91	%25
12	MP1	X	-1.549	%25
13	MP1	X	-1.549	%25
14	MP2	X	-3.604	%25
15	MP6	X	-2.994	12.5
16	MP6	X	-2.994	83.5
17	MP7	X	-3.488	12.5
18	MP7	X	-3.488	83.5
19	MP8	X	-5.966	12
20	MP8	X	-5.966	84
21	MP5	X	-1.923	24
22	MP5	X	-1.923	72
23	MP5	X	-7.801	%75
24	MP7	X	-6.581	%25
25	MP8	X	-7.91	%25
26	MP5	X	-1.549	%25
27	MP5	X	-1.549	%25
28	MP6	X	-3.604	%25
29	MP10	X	-2.994	12.5
30	MP10	X	-2.994	83.5
31	MP11	X	-3.488	12.5
32	MP11	X	-3.488	83.5
33	MP12	X	-5.966	12
34	MP12	X	-5.966	84
35	MP9	X	-1.923	24
36	MP9	X	-1.923	72
37	MP9	X	-7.801	%75
38	MP11	X	-6.581	%25

Member Point Loads (BLC 32 : Seismic Load X) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
39	MP12	X	-7.91	%25
40	MP9	X	-1.549	%25
41	MP9	X	-1.549	%25
42	MP10	X	-3.604	%25

Member Area Loads (BLC 1 : Self Weight)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N15	N11	N10	N16	Y	Two Way	-1.75
2	N24	N18	N19	N23	Y	Two Way	-1.75
3	N30	N31	N35	N36	Y	Two Way	-1.75

Member Area Loads (BLC 16 : Ice Weight)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N15	N11	N10	N16	Y	Two Way	-5.586
2	N24	N18	N19	N23	Y	Two Way	-5.586
3	N30	N31	N35	N36	Y	Two Way	-5.586

Joint Loads and Enforced Displacements (BLC 33 : Service Live Loads)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	N125B	L	Y	-250

Joint Loads and Enforced Displacements (BLC 34 : Maintenance Load 1)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	N56	L	Y	-500

Joint Loads and Enforced Displacements (BLC 35 : Maintenance Load 2)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	N58	L	Y	-500

Joint Loads and Enforced Displacements (BLC 36 : Maintenance Load 3)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	N60	L	Y	-500

Joint Loads and Enforced Displacements (BLC 37 : Maintenance Load 4)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	N62	L	Y	-500

Joint Loads and Enforced Displacements (BLC 38 : Maintenance Load 5)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	N81	L	Y	-500

Joint Loads and Enforced Displacements (BLC 39 : Maintenance Load 6)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	N83	L	Y	-500

Joint Loads and Enforced Displacements (BLC 40 : Maintenance Load 7)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	N85	L	Y	-500

Joint Loads and Enforced Displacements (BLC 41 : Maintenance Load 8)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	N87	L	Y	-500

Joint Loads and Enforced Displacements (BLC 42 : Maintenance Load 9)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	N106	L	Y	-500

Joint Loads and Enforced Displacements (BLC 43 : Maintenance Load 10)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	N108	L	Y	-500

Joint Loads and Enforced Displacements (BLC 44 : Maintenance Load 11)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	N110	L	Y	-500

Joint Loads and Enforced Displacements (BLC 45 : Maintenance Load 12)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	N112	L	Y	-500

APPENDIX D

ADDITIONAL CALCUATIONS

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

Bolt Calculation Tool, V1.4

PROJECT DATA	
Site Name:	GUILDFORD
Site Number:	CTL05640
Job Code:	1039-Z0001-B
Connection Description:	Standoff to collar mount

APPLIED LOADS		
Bolt Tension:	7008.41	lbs
Bolt Shear:	823.42	lbs

BOLT PROPERTIES		
Bolt Type:	Bolt	-
Bolt Diameter:	0.625	in
Bolt Grade:	A325	-
# of Bolts:	4	-
Threads Excluded?	No	-

BOLT CHECK		
Tensile Strength	20340.15	
Shear Strength	13805.83	
Tensile Usage	34.5%	
Shear Usage	6.0%	
Interaction Check	0.12	***≤1.05***
Result	Pass	

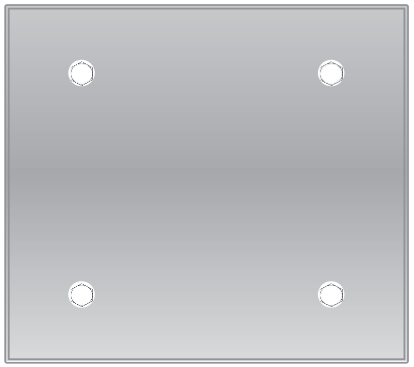


Exhibit F

Power Density/RF Emissions Report

Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CTL05640

Project Type: AT&T LTE 5C

Guilford
2381 Long Hill Road
Guilford, CT 06437

July 8, 2020

Fullerton Project Number: 2020.0182.0005

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**11.43 %**

July 8, 2020

Crown Castle on Behalf of AT&T
Attn: Anne Marie Zsamba, Site Acquisition Specialist
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065

Emissions Analysis for Site: **CTL05640 – Guilford**

Fullerton Engineering Consultants, LLC ("Fullerton") was directed to analyze the proposed upgrades to the AT&T facility located at **2381 Long Hill Road, Guilford, CT**, for the purpose of determining whether the emissions from the proposed AT&T antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 700 MHz & 850 MHz bands are approximately 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (AWS) bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed upgrades to the AT&T antenna facility located at **2381 Long Hill Road, Guilford, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves.

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
UMTS	850 MHz	1	20
LTE	1900 MHz (PCS)	4	40
LTE	700 MHz (Band 14)	4	40
LTE	700 MHz	4	40
LTE / 5G NR	850 MHz	4	40
LTE	2100 MHz (AWS)	4	40

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS) and 2100 MHz (AWS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Powerwave 7770	167
A	2	CCI HPA65R-BU6A	167
A	3	CCI OPA65R-BU6D	167
A	4	Kathrein 800-10965	167
B	1	Powerwave 7770	167
B	2	CCI HPA65R-BU6A	167
B	3	CCI OPA65R-BU6D	167
B	4	Kathrein 800-10965	167
C	1	Powerwave 7770	167
C	2	CCI HPA65R-BU6A	167
C	3	CCI OPA65R-BU6D	167
C	4	Kathrein 800-10965	167

Table 2: Antenna Data

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

Cable losses were factored in the calculations for this site. For each **700 MHz** Remote Radio Unit (RRU) there was **0.18 dB** of cable loss calculated into the system gains / losses for this site. For each **850 MHz** Remote Radio Unit (RRU) there was **0.20 dB** of cable loss calculated into the system gains / losses for this site. For each **1900 MHz (PCS)** Remote Radio Unit (RRU) there was **0.32 dB** of cable loss calculated into the system gains / losses for this site. For each **2100 MHz (AWS)** Remote Radio Unit (RRU) there was **0.34 dB** of cable loss calculated into the system gains / losses for this site. For each **850 MHz** ground mounted radio there was **1.14 dB** of cable loss calculated into the system gains / losses for this site These values were calculated based upon the manufacturers specifications for **10 feet** of **1/2"** coax for each Remote Radio Unit (RRU) and **185 feet** of **1-5/8"** coax for each ground mounted radio.

RESULTS

Per the calculations completed for the proposed AT&T configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Powerwave 7770	850 MHz	11.4	1	25	265.42	0.06
Antenna A2	CCI HPA65R-BU6A	1900 MHz (PCS)	15.95	4	160	5,849.52	0.81
Antenna A3	CCI OPA65R-BU6D	700 MHz (Band 14)	12.15	4	160	2,518.37	0.75
Antenna A4	Kathrein 800-10965	700 MHz / 850 MHz / 2100 MHz (AWS)	12.65 / 13.45 / 15.95	12	480	12,029.88	2.48
						Sector A Composite MPE%	**4.10**
Antenna B1	Powerwave 7770	850 MHz	11.4	1	25	265.42	0.06
Antenna B2	CCI HPA65R-BU6A	1900 MHz (PCS)	15.95	4	160	5,849.52	0.81
Antenna B3	CCI OPA65R-BU6D	700 MHz (Band 14)	12.15	4	160	2,518.37	0.75
Antenna B4	Kathrein 800-10965	700 MHz / 850 MHz / 2100 MHz (AWS)	12.65 / 13.45 / 15.95	12	480	12,029.88	2.48
						Sector B Composite MPE%	**4.10**
Antenna C1	Powerwave 7770	850 MHz	11.4	1	25	265.42	0.06
Antenna C2	CCI HPA65R-BU6A	1900 MHz (PCS)	15.95	4	160	5,849.52	0.81
Antenna C3	CCI OPA65R-BU6D	700 MHz (Band 14)	12.15	4	160	2,518.37	0.75
Antenna C4	Kathrein 800-10965	700 MHz / 850 MHz / 2100 MHz (AWS)	12.65 / 13.45 / 15.95	12	480	12,029.88	2.48
						Sector C Composite MPE%	**4.10**

Table 3: AT&T *Emissions Levels*

The following table (*Table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum AT&T MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each AT&T Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max Per Sector Value	**4.10 %**
Sprint	1.80 %
T-Mobile	3.20 %
Verizon Wireless	2.33 %
Site Total MPE %:	**11.43 %**

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	4.10 %
AT&T Sector B Total:	4.10 %
AT&T Sector C Total:	4.10 %
Site Total:	11.43 %

Table 5: Site MPE Summary

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s).. For this site, all three sectors have the same configuration yielding the same results on all three sectors.

AT&T _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
AT&T 850 MHz UMTS	1	265.42	167	0.37	850 MHz	567	0.06%
AT&T 1900 MHz (PCS) LTE	4	1,462.38	167	8.11	1900 MHz (PCS)	1000	0.81%
AT&T 700 MHz LTE	4	629.59	167	3.49	700 MHz	467	0.75%
AT&T 700 MHz LTE	4	706.42	167	3.92	700 MHz	467	0.84%
AT&T 850 MHz LTE / 5G NR	4	845.40	167	4.69	850 MHz	567	0.83%
AT&T 2100 MHz (AWS) LTE	4	1,455.66	167	8.08	2100 MHz (AWS)	1000	0.81%
						Total:	**4.10%**

Table 6: AT&T *Maximum Sector MPE Power Values*

Summary

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

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

AT&T Sector	Power Density Value (%)
Sector A:	4.10 %
Sector B:	4.10 %
Sector C:	4.10 %
AT&T Maximum Total (per sector):	4.10 %
Site Total:	11.43 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **11.43 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

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