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

May 12, 2020

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

RE: **Notice of Exempt Modification for AT&T: 842859**
AT&T Site ID: 10070954
371 Terryville Avenue, Bristol, CT 06010
Latitude: 41° 40' 47.89"/ Longitude: 72° 57' 44.79"

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 168-foot level of the existing 169-foot monopole tower at 371 Terryville Ave. Bristol, CT 06010. The tower is owned by Crown Castle. Bristol Hospital owns the property. AT&T now intends to add three (3) antennas. AT&T also proposes mount modifications as shown on the enclosed Mount Analysis. AT&T is proposing structural reinforcements to the tower as well.

This facility was approved by the City of Bristol Zoning Commission on 12/09/2003, this approval was given without 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. §6-50j-72(b)(2). In accordance with R.S.C.A. § 16-50j-73, a copy of this letter is being sent to Mayor Ellen Zoppo-Sassu, City of Bristol, Edward Spyros, Zoning Enforcement Officer, City of Bristol, the property owner and Crown Castle is the tower 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: Ellen Zoppo-Sassu, Mayor (*via email only to mayorsoffice@bristolct.gov*)
City Hall
111 N. Main St.
Second Floor
Bristol, CT 06010

Edward Spyros, ZEO (*via email only to edwardspyros@bristolct.gov*)
City Hall
111 N. Main St.
Second Floor
Bristol, CT 06010

Bristol Hospital Administration
41 Brewster Rd.
Bristol, CT 06010

From: Zsamba, Anne Marie
To: mayorsoffice@bristolct.gov
Subject: 371 Terryville Avenue, Bristol - Notice of Exempt Modification Application
Date: Tuesday, May 12, 2020 12:11:00 PM
Attachments: AT&T-EM-371 TERRYVILLE AVE BRISTOL-842859-FA10070954.pdf

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Dear Mayor Zoppo-Sassu :

Attached please find AT&T's exempt modification application that is being submitted to the Connecticut Siting Council, today May 12, 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

From: Zsamba, Anne Marie
To: edwardspyros@bristolct.gov
Subject: 371 Terryville Avenue, Bristol - Notice of Exempt Modification Application
Date: Tuesday, May 12, 2020 12:11:00 PM
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Best,
Anne Marie Zsamba

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Clifton Park, NY 12065
CrownCastle.com

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
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.

Exhibit A

Original Facility Approval

Fee Received $15.00

CT-833 17647

ZONING PERMIT
CITY OF BRISTOL ZONING COMMISSION

THIS IS TO CERTIFY that in accordance with Section XII.D of the Zoning Regulations, This Permit is hereby granted.

PROPERTY INFORMATION

Location: 371 Terryville Avenue,

Zoning District: I, Property Use: Telecommunications.

TYPE OF PERMIT

- ☐ New Construction ☐ Addition ☐ Accessory Structure
- ☐ Fence ☐ Deck ☐ Swimming Pool
- ☐ Home Business/Office ☐ Change of Use ☒ Other: See Below

SIGNS

Classification: ☐ Permanent ☐ Temporary (30-day) ☐ Portable (1-Year)

Type: ☐ Wall ☐ Freestanding ☐ A-Frame ☐ Sandwich ☐ Other: _____

DESCRIPTION OF ACTIVITY

construct telecommunications facility, 171' high tower, retaining walls & associated equipment per submitted plans

OTHER APPROVALS

Description: CT Siting Council approval 4/3/02

APPLICANT INFORMATION

Applicant Name(s): Peter Maxwell

Business Name: UBS Corp.

This permit is based upon the plan submitted. Falsification, by misrepresentation or omission, or failure to comply with the conditions of approval of this permit shall constitute a violation of the City of Bristol Zoning Regulations.

Approved by: _____ 12/9/03

Zoning Enforcement Officer Date Issued

Exhibit B

Property Card

371 TERRYVILLE AVE

Location	371 TERRYVILLE AVE	**Mblu**	61/ / 67-1/ /
Acct#	0136999	**Owner**	BRISTOL HOSPITAL INC
Assessment	$363,370	**Appraisal**	$519,100
PID	2194	**Building Count**	2

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$280,000	$239,100	$519,100
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$196,000	$167,370	$363,370

Owner of Record

Owner	BRISTOL HOSPITAL INC	**Sale Price**	$400,000
Co-Owner		**Certificate**	1
Address	BREWSTER RD BRISTOL, CT 06010	**Book & Page**	1564/0795
		Sale Date	06/08/2004
		Instrument	00

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
BRISTOL HOSPITAL INC	$400,000	1	1564/0795	00	06/08/2004
LAVIERO REALTY LLC	$0		1564/0792		06/08/2004
LAVIERO REALTY LLC	$0		1352/0030		02/08/2001
LAVIERO MORRIS + RICHARD	$0		1139/0447		09/23/1994
GTT CORP TRUSTEE OF OREGON	$0		1103/0330		09/30/1993

Building Information

Building 1 : Section 1

Year Built: 1996

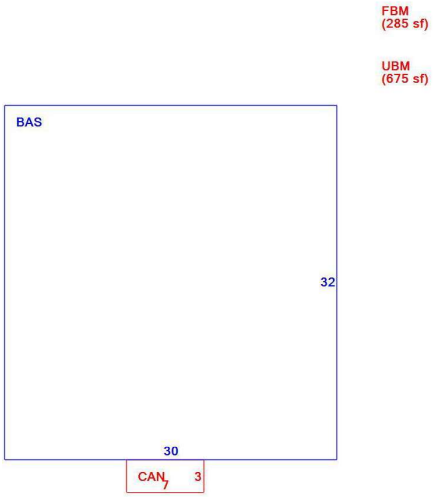
Building Photo

Living Area: 960
Replacement Cost: $117,937
Building Percent Good: 91
Replacement Cost Less Depreciation: $107,300

Building Attributes	
Field	**Description**
STYLE	Office Bldg
MODEL	Comm/Ind
Stories:	1
Occupancy	1.00
Exterior Wall 1	Vinyl Siding
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt Shingl
Interior Wall 1	Drywall/Sheetr
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	
Heating Fuel	Electric
Heating Type	Electr Basebrd
AC Type	Central
Struct Class	
Bldg Use	Hospital 94
Bedrooms	
Full Baths	
Half Baths	
Usrfld 218	
Usrfld 219	
1st Floor Use:	
Heat/AC	Heat/AC Split
Frame Type	Wood Frame
Baths/Plumbing	Average
Ceiling/Wall	Ceil & Walls
Rooms/Prtns	Average
Wall Height	10.00
% Comn Wall	

0136999 03/20/2016
(http://images.vgsi.com/photos2/BristolCTPhotos//\00\03\34\29.JPG)

Building Layout



(ParcelSketch.ashx?pid=2194&bid=2194)

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	960	960
CAN	Canopy	21	0
FBM	Basement, Finshed	285	0
UBM	Basement, Unfinished	675	0
		1,941	960

Building 2 : Section 1

Year Built: 1996
Living Area: 3,900
Replacement Cost: $185,406
Building Percent Good: 78

Replacement Cost
Less Depreciation: $144,600

Building Attributes : Bldg 2 of 2	
Field	**Description**
STYLE	Pre-Eng Garage
MODEL	Ind/Comm
Stories:	1
Occupancy	1.00
Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Metal/Tin
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Hot Air-no Duc
AC Type	None
Struct Class	
Bldg Use	Hospital 96
Bedrooms	
Full Baths	
Half Baths	
Usrfld 218	
Usrfld 219	
1st Floor Use:	
Heat/AC	None
Frame Type	Steel
Baths/Plumbing	Average
Ceiling/Wall	None
Rooms/Prtns	Average
Wall Height	18.00
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos2/BristolCTPhotos//default.jpg)

Building Layout

(ParcelSketch.ashx?pid=2194&bid=40200)

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	3,900	3,900
		3,900	3,900

Extra Features

Extra Features				Legend
Code	**Description**	**Size**	**Value**	**Bldg #**
OHD	Overhead Door	2.00 Units	$0	2
MEZ2	Mezzanine Fin.	600.00 S.F.	$12,900	2

Land

Land

Land Use

Use Code	928
Description	Hospital 94
Zone	I
Neighborhood	
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	1.8
Frontage	412
Depth	
Assessed Value	$167,370
Appraised Value	$239,100

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
PAV1	Paving Asph.			8285.00 S.F.	$8,700	1
LT1	Light (1fixt)			2.00 UNITS	$1,900	1
FN3	Fence 6'			470.00 L.F.	$3,600	1
SHD1	Shed	MT	Metal	160.00 S.F.	$1,000	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$280,000	$239,100	$519,100
19	$280,000	$239,100	$519,100
2018	$280,000	$239,100	$519,100

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$196,000	$167,370	$363,370
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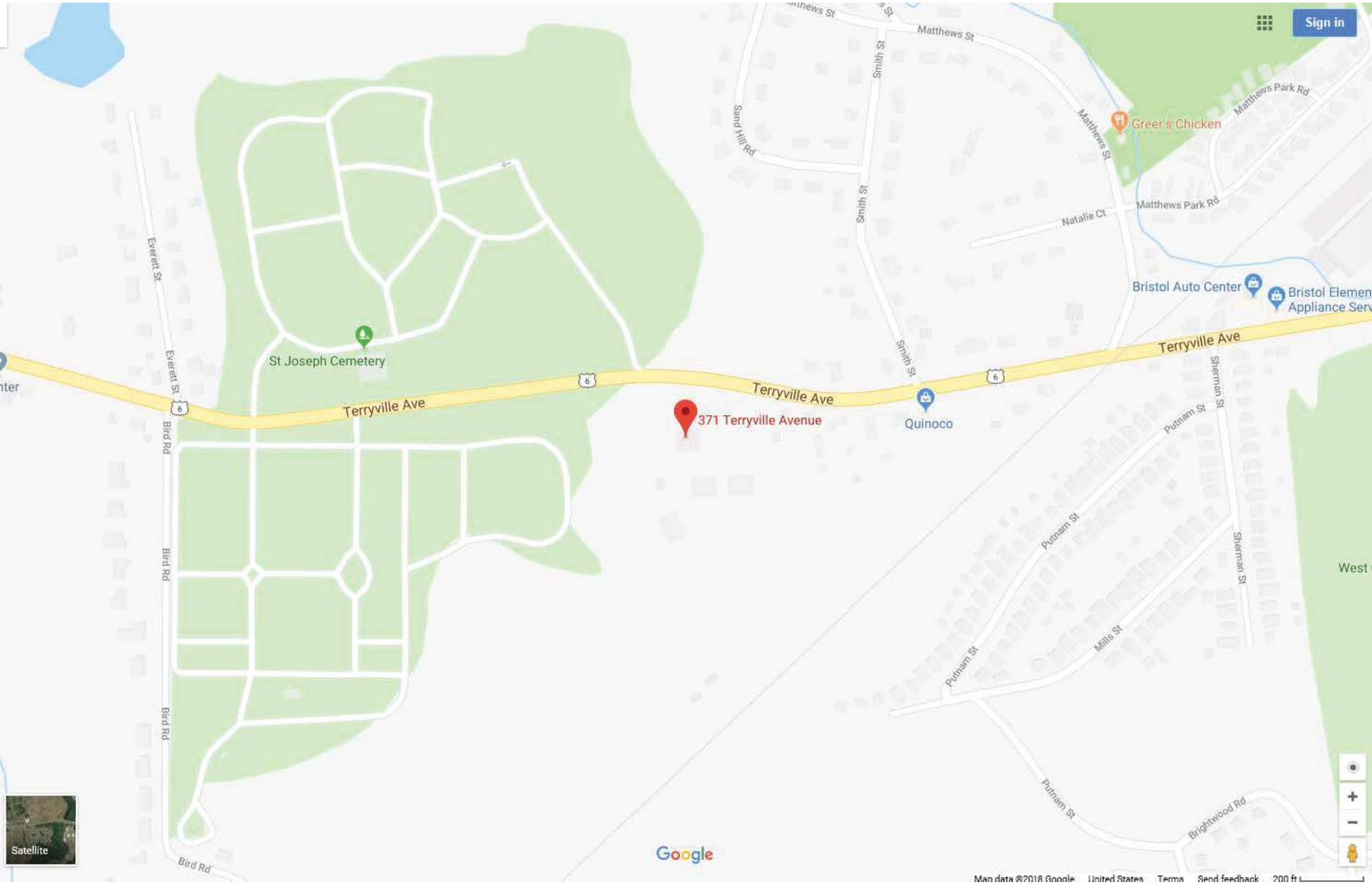

Sign in
Matthews St
Smith St
Sand Hill Rd
Greer's Chicken
Matthews Park Rd
Natalie Ct
Bristol Auto Center
Bristol Elemen
Appliance Serv
Everett St
St Joseph Cemetery
Terryville Ave
6
371 Terryville Avenue
Quinoco
Bird Rd
Sherman St
Putnam St
Mills St
Brightwood Rd
West
Satellite
Google
Map data ©2018 Google
United States
Terms
Send feedback
200 ft

Exhibit C

Construction Drawings

AT&T SITE NUMBER:	**CTL5833**	**BUSINESS UNIT #:**	**842859**
AT&T SITE NAME:	**BRISTOL CENTER**	**SITE ADDRESS:**	**371 TERRYVILLE AVE**
AT&T FA CODE:	**10070954**		**BRISTOL, CT 06010**
AT&T PACE NUMBER:	**MRCTB040713, MRCTB043871**	**COUNTY:**	**HARTFORD**
SITE TYPE:	**MONOPOLE**	**TOWER HEIGHT:**	**168'-6"**

PROJECT: AT&T LTE 7C

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	BRISTOL CENTER
SITE ADDRESS:	371 TERRYVILLE AVE BRISTOL, CT 06010
COUNTY:	HARTFORD
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.6808919
LONGITUDE:	-72.9656989
LAT/LONG TYPE:	NAD83
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	AT&T MOBILITY ONE AT&T WAY BEDMINSTER, NJ 07921
CROWN CASTLE USA INC. APPLICATION ID:	505606

PROJECT TEAM

A&E FIRM:	B+T GROUP 1717 SOUTH BOULDER, SUITE 300 TULSA, OK 74119 MIKE OAKES (918) 217-8574
CROWN CASTLE USA INC. DISTRICT CONTACTS:	3200 HORIZON SRIVE, SUITE 150 KING OF PRUSSIA, PA 19406

DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1	SITE PLAN
C-2	EQUIPMENT PLAN
C-3	TOWER ELEVATIONS
C-4	ANTENNA ORIENTATION
C-5	ANTENNA SCHEDULE
C-6	ANTENNA AND RRH SPECS.
C-7	ANTENNA AND RRH DETAIL
C-8	PLUMBING DIAGRAM
C-9	COLOR CODE STANDARD
G-1	GROUNDING DETAILS
G-2	GROUNDING DETAILS
S-1	MOUNT REINFORCEMENT DESIGN
S-2	MOUNT REINFORCEMENT DESIGN

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 11x17. 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

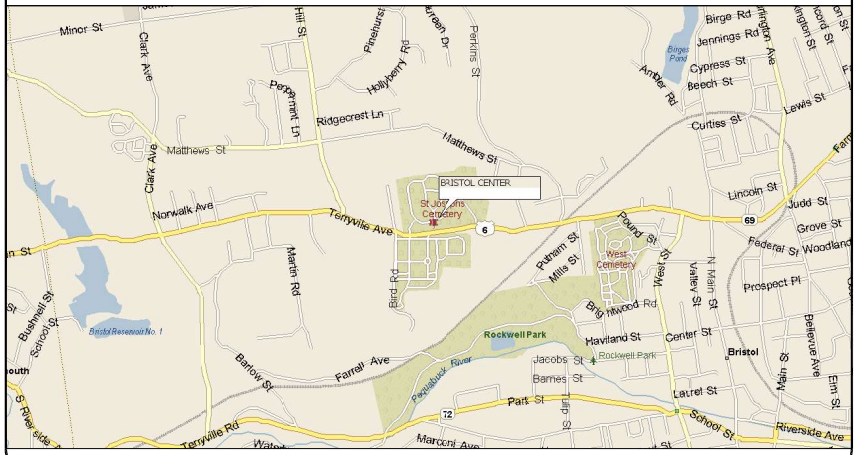
THE PURPOSE OF THIS PROJECT IS TO PROPOSE AN ANTENNA MODIFICATION ON AN EXISTING WIRELESS SITE.

TOWER SCOPE OF WORK
- MODIFY EXISTING MOUNT PER MOUNT ANALYSIS BY INFINIGY ENGINEERING DATED 11/4/19
- INSTALL (2) CCI DMP65R-BU8DA ANTENNAS
- INSTALL (1) CCI DMP65R-BU6DA ANTENNA
- INSTALL (3) ERICSSON 4415 B25 RRHS
- INSTALL (3) ERICSSON 4478 B14 RRHS
- INSTALL (1) RAYCAP DC6-48-60-18-8C SQUID
- INSTALL (2) #6 DC TRUNKS

DESIGN PACKAGE BASED ON THE RFDS
REVISION: 1.00
DATE: 5/22/19

DESIGN PACKAGE BASED ON THE APPLICATION
ID: 505606
REVISION: 4

LOCATION MAP



NO SCALE

APPLICABLE CODES/REFERENCE DOCUMENTS

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

CODE TYPE	CODE
BUILDING	2018 CT BUILDING CODE (2015 IBC)
MECHANICAL	2018 CT BUILDING CODE (2015 IMC)
ELECTRICAL	2017 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS: BLACK & VEATCH, NOVEMBER 20, 2019

MOUNT ANALYSIS: INFINIGY ENGINEERING, NOVEMBER 4, 2019

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

CALL CONNECTICUT ONE CALL
(800) 922-4455
CALL 3 WORKING DAYS BEFORE YOU DIG!

AT&T
ONE AT&T WAY
BEDMINSTER, NJ 07921

CROWN CASTLE
3200 HORIZON DRIVE, SUITE 150
KING OF PRUSSIA, PA 19406

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

AT&T SITE NUMBER:
CTL5833

BU #: **842859**
BRISTOL CENTER

371 TERRYVILLE AVE
BRISTOL, CT 06010

EXISTING 168'-6"
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	3/9/20	RMC	CONSTRUCTION	FWP
1	4/3/20	GEH	CONSTRUCTION	RMC
2	5/11/20	GEH	CONSTRUCTION	RMC

5/11/20

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

SHEET NUMBER: T-1
REVISION: 2

SITE WORK GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
2. 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 SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES, SUBCONTRACTOR 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.
3. 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 TIA 1019 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
4. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS.
5. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
6. 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, OWNER AND/OR LOCAL UTILITIES.
7. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.
8. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
9. 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.
10. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
11. 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 PROJECT SPECIFICATIONS.
12. SUBCONTRACTOR 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.
13. NOTICE TO PROCEED– NO WORK TO COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED AND THE ISSUANCE OF A PURCHASE ORDER.
14. 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 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 THE ANSI/TIA-322 (LATEST EDITION).

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND IN ACCORDANCE WITH ASTM A36 UNLESS OTHERWISE NOTED.
2. BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE (3/4"ø) CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
3. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8"ø ASTM A307 BOLTS UNLESS NOTED OTHERWISE.
4. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS.

CONCRETE AND REINFORCING STEEL NOTES:

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. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. SLAB FOUNDATION DESIGN ASSUMING ALLOWABLE SOIL BEARING PRESSURE OF 2000 PSF.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

   CONCRETE CAST AGAINST EARTH.....3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER.....2 IN.
   #5 AND SMALLER & WWF.....1 1/2 IN.
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
   SLAB AND WALLS.....3/4 IN.
   BEAMS AND COLUMNS.....1 1/2 IN.
5. A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE. IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

MASONRY NOTES:

1. HOLLOW CONCRETE MASONRY UNITS SHALL MEET A.S.T.M. SPECIFICATION C90, GRADE N. TYPE 1. THE SPECIFIED DESIGN COMPRESSIVE STRENGTH OF CONCRETE MASONRY (f'm) SHALL BE 1500 PSI.
2. MORTAR SHALL MEET THE PROPERTY SPECIFICATION OF A.S.T.M. C270 TYP. "S" MORTAR AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI.
3. GROUT SHALL MEET A.S.T.M. SPECIFICATION C475 AND HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2000 PSI.
4. CONCRETE MASONRY SHALL BE LAID IN RUNNING (COMMON) BOND.
5. WALL SHALL RECEIVE TEMPORARY BRACING. TEMPORARY BRACING SHALL NOT BE REMOVED UNTIL GROUT IS FULLY CURED.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

   CONTRACTOR–
   SUBCONTRACTOR– GENERAL CONTRACTOR (CONSTRUCTION)
   CARRIER– AT&T
   TOWER OWNER– CROWN CASTLE USA INC.
   OEM– ORIGINAL EQUIPMENT MANUFACTURER
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR 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 CONTRACTOR AND CROWN CASTLE USA INC.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. SUBCONTRACTOR 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.
4. DRAWINGS PROVIDED HERE ARE NOT TO SCALE AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR AND CROWN CASTLE USA INC. PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWINGS.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR 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.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

ABBREVIATIONS AND SYMBOLS:

ABBREVIATIONS:

AGL	ABOVE GRADE LEVEL
BTS	BASE TRANSCEIVER STATION
EXISTING	EXISTING
MIN.	MINIMUM
REF	REFERENCE
RF	RADIO FREQUENCY
T.B.D.	TO BE DETERMINED
T.B.R.	TO BE RESOLVED
TYP	TYPICAL
REQ	REQUIRED
EGR	EQUIPMENT GROUND RING
AWG	AMERICAN WIRE GAUGE
MGB	MASTER GROUND BAR
EG	EQUIPMENT GROUND
BCW	BARE COPPER WIRE
SIAD	SMART INTEGRATED ACCESS DEVICE
GEN	GENERATOR
IGR	INTERIOR GROUND RING (HALO)
RBS	RADIO BASE STATION

SYMBOLS:

#S/G#	SOLID GROUND BUS BAR
#S/N#	SOLID NEUTRAL BUS BAR
	SUPPLEMENTAL GROUND CONDUCTOR
	2-POLE THERMAL-MAGNETIC CIRCUIT BREAKER
	SINGLE-POLE THERMAL-MAGNETIC CIRCUIT BREAKER
	CHEMICAL GROUND ROD
	TEST WELL
	DISCONNECT SWITCH
M	METER
	EXOTHERMIC WELD (CADWELD) (UNLESS OTHERWISE NOTED)
	MECHANICAL CONNECTION
	GROUNDING WIRE

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. SUBCONTRACTOR 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. HILTI EPOXY ANCHORS ARE REQUIRED BY CROWN CASTLE USA INC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
5. CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
6. EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING AND T1 CONDUCTOR AND 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.
7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH PLASTIC TAPE PER COLOR SCHEDULE. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (I.E. PANEL BOARD AND CIRCUIT ID'S).
8. PANEL BOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
9. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
10. POWER, CONTROL AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#14 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET & DRY) OPERATION LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED UNLESS OTHERWISE SPECIFIED.
11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION WITH OUTER JACKET LISTED OR LABELED FOR THE LOCATION USED 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 AT NO 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) OR RIGID NONMETALLIC CONDUIT (I.E. RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
16. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT) OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) 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 NEC.
21. WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER).
22. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES 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 BUSHIN ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
23. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL; SHALL MEET OR EXCEED UL 50 AND RATED NEMA 1 (OR BETTER) INDOORS OR NEMA 3R (OR BETTER) OUTDOORS.
24. 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 RATED NEMA 1 (OR BETTER) INDOORS OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
25. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
26. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
27. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
28. INSTALL PLASTIC LABEL ON THE METER CENTER TO SHOW "AT&T".
29. ALL CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

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 SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE SUBCONTRACTOR 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 AWG 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 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 AWG 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 AWG 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 WIRES WITH 1-#2 AWG TIN-PLATED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED IN THE FACILITY GROUND 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 PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., 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 TINNED SOLID IN 3/4" LIQUID TIGHT CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE LIQUID TIGHT CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).

NEC INSULATOR COLOR CODE

DESCRIPTION	PHASE/CODE LETTER	WIRE COLOR
240/120 1Ø	LEG 1	BLACK
	LEG 2	RED
AC NEUTRAL	N	WHITE
GROUND (EGC)	G	GREEN
VDC POS	+	*RED–POLARITY MARK AT TERMINATION
VDC NEG	–	*BLACK–POLARITY MARK AT TERMINATION
240V OR 208V, 3Ø	PHASE A	BLACK
	PHASE B	RED(ORG. IF HI LEG)
	PHASE C	BLUE
480V, 3Ø	PHASE A	BROWN
	PHASE B	ORANGE OR PURPLE
	PHASE C	YELLOW

* SEE NEC 210.5(C)(1) AND (2)

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ONE AT&T WAY
BEDMINSTER, NJ 07921

CROWN CASTLE
3200 HORIZON DRIVE, SUITE 150
KING OF PRUSSIA, PA 19406

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

AT&T SITE NUMBER:
CTL5833

BU #: **842859**
BRISTOL CENTER

371 TERRYVILLE AVE
BRISTOL, CT 06010

EXISTING 168'-6"
MONOPOLE

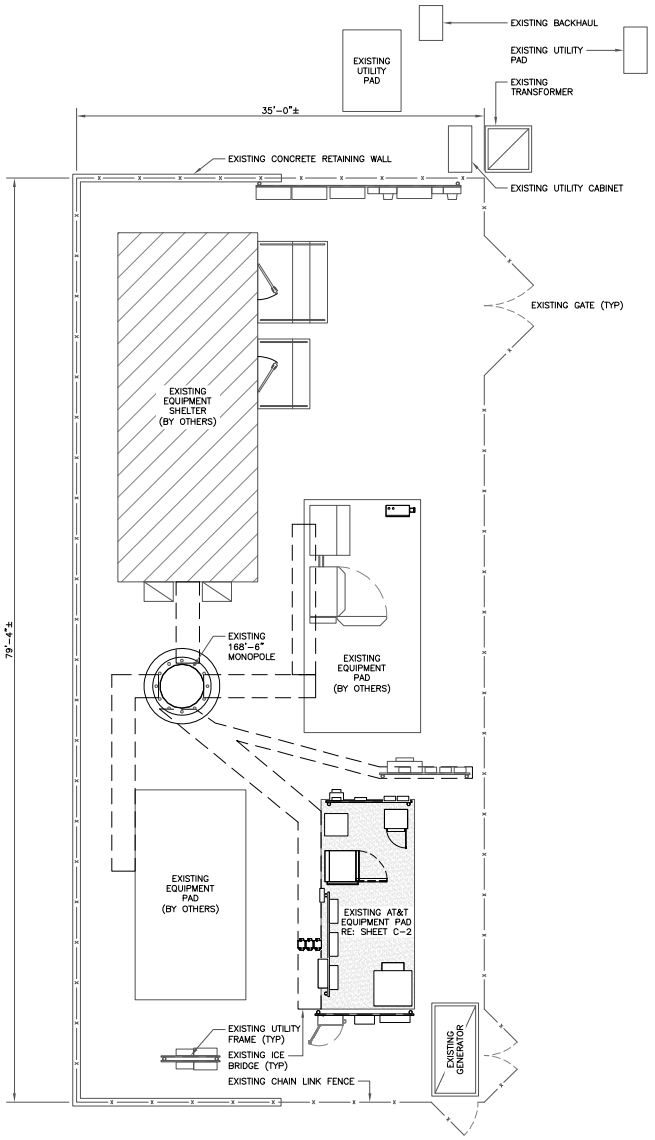
ISSUED FOR:

REV.	DATE	DRWN	DESCRIPTION	DES./QA
0	3/9/20	RMC	CONSTRUCTION	FWP
1	4/3/20	GEH	CONSTRUCTION	RMC
2	5/11/20	GEH	CONSTRUCTION	RMC

STATE OF CONNECTICUT
31627
LICENSED
PROFESSIONAL ENGINEER
5/11/20

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

SHEET NUMBER: T-2
REVISION: 2



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

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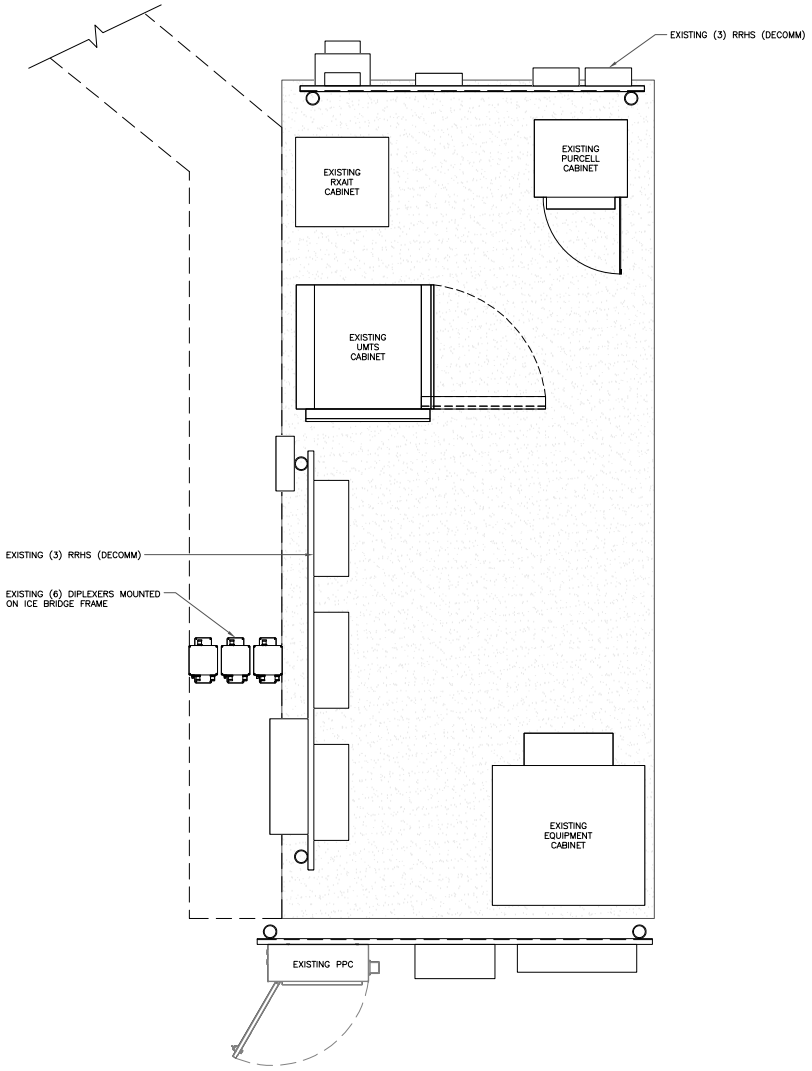
PEC.0001564
Expires 2/10/21

SHEET NUMBER: C-1
REVISION: 2



1 EXISTING EQUIPMENT PLAN
SCALE: 3/4"=1'-0" (FULL SIZE) 3/8"=1'-0" (11x17)

N

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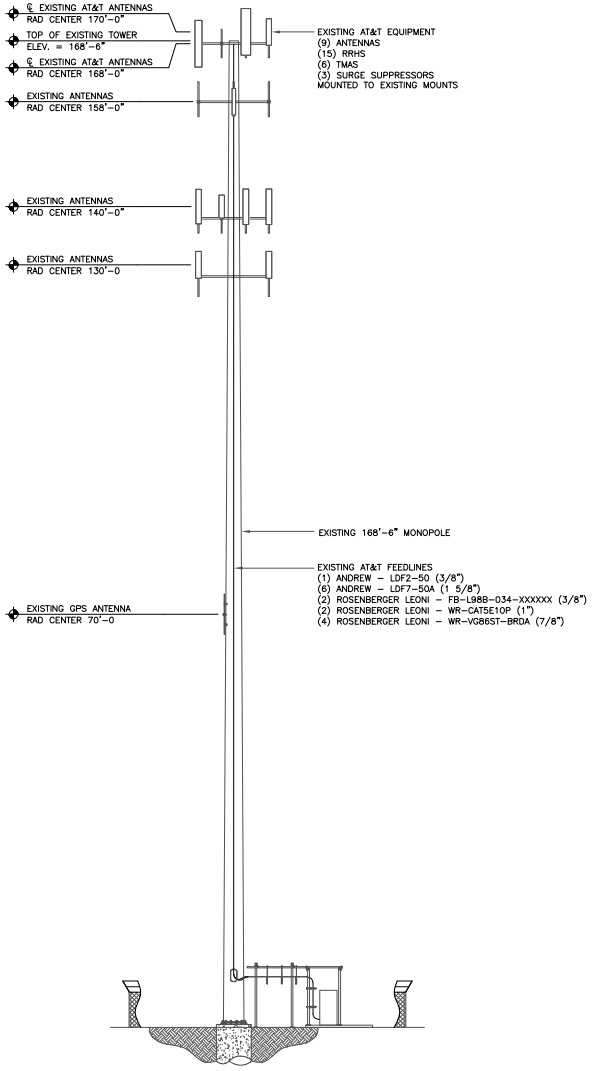
SHEET NUMBER: C-2
REVISION: 2

AT&T EQUIPMENT

ANTENNA CL: 168'-0"
ANTENNA CL: 170'-0"
MOUNT CL: 168'-0"

EXISTING TOWER REQUIRES MODIFICATIONS PER STRUCTURAL MODIFICATION REPORT BY BLACK & VEATCH DATED 11/20/19.

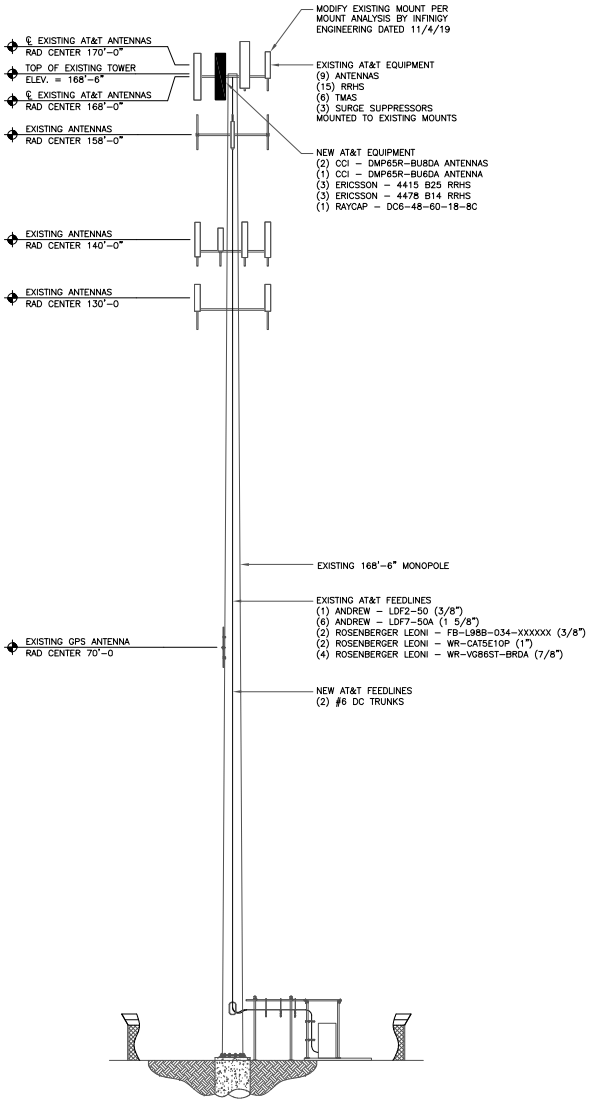
REFERENCE MONOPOLE REINFORCEMENT DRAWINGS IN THE STRUCTURAL MODIFICATION REPORT BY BLACK & VEATCH DATED 11/20/19.



1 EXISTING ELEVATION
SCALE: NOT TO SCALE

AT&T EQUIPMENT

ANTENNA CL: 168'-0"
ANTENNA CL: 170'-0"
MOUNT CL: 168'-0"



2 FINAL ELEVATION
SCALE: NOT TO SCALE

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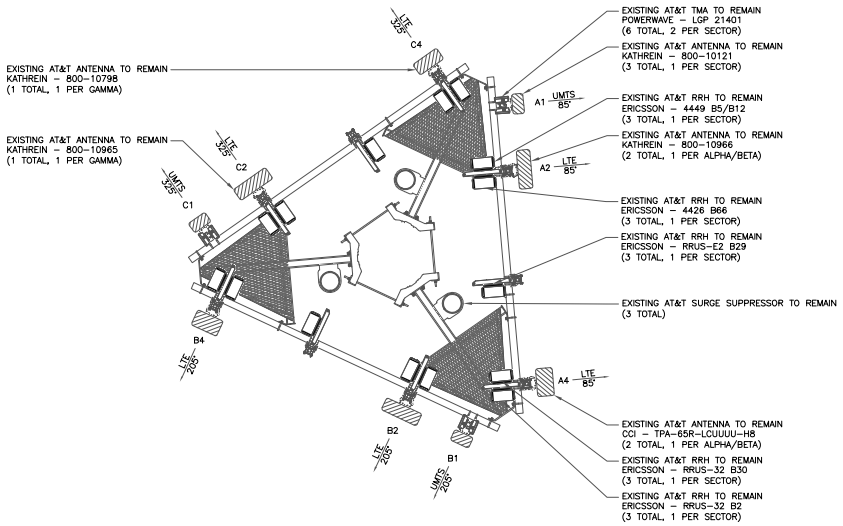
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

SHEET NUMBER: C-3

REVISION: 2



1 EXISTING ANTENNA LAYOUT
SCALE: NOT TO SCALE

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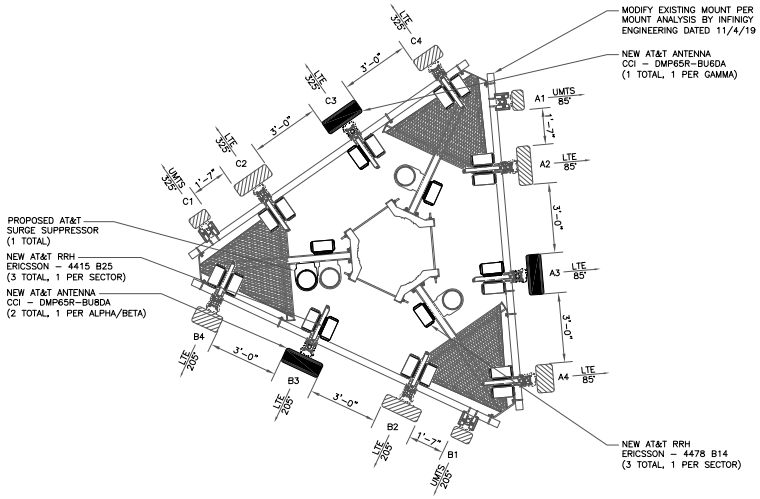

2 FINAL ANTENNA LAYOUT
SCALE: NOT TO SCALE

N

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5/11/20

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

SHEET NUMBER: C-4
REVISION: 2

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	RAYCAP	DC (WR-VG86ST-BRD) FIBER CABLES (FB-L98B-034-XXXXXX)	RRHS	DIPLEXER	RET CABLE
ALPHA SECTOR																
A1	UMTS	EXISTING	85°	KATHREIN 800-10121	170'-0"	0°	0°	1 5/8"	200'-0"	2	(2) LGP 21401	DC6-48-60-18-8F DC6-48-60-18-8C	(1) FIBER (2) DC LINES (2) DC LINES	–	(2) LGP 21901 (GROUND)	Y
A2	LTE	EXISTING	85°	KATHREIN 800-10966	170'-0"	0°	2°/2°/7°/2°	–	–	–	–			(1) 4449 B5/B12 (1) 4426 B66	–	Y
A3	LTE	NEW	85°	CCI DMP65R-BU8DA	168'-0"	0°	7°	–	–	–	–			(1) 4415 B25 (1) 4478 B14	–	Y
A4	LTE	EXISTING	85°	CCI TPA-65R-LCUUU U-H8	168'-0"	0°	3°/7°/7°/3°	–	–	–	–			(1) RRUS-E2 B29 (1) RRUS-32 B2 (1) RRUS-32 B30	–	Y
BETA SECTOR																
B1	UMTS	EXISTING	205°	KATHREIN 800-10121	170'-0"	3°	0°	1 5/8"	200'-0"	2	(2) LGP 21401	DC6-48-60-18-8F	(1) FIBER (2) DC LINES	–	(2) LGP 21901 (GROUND)	Y
B2	LTE	EXISTING	205°	KATHREIN 800-10966	170'-0"	0°	2°/2°/3°/2°	–	–	–	–			(1) 4449 B5/B12 (1) 4426 B66	–	Y
B3	LTE	NEW	205°	CCI DMP65R-BU8DA	168'-0"	0°	2°	–	–	–	–			(1) 4415 B25 (1) 4478 B14	–	Y
B4	LTE	EXISTING	205°	CCI TPA-65R-LCUUU U-H8	168'-0"	0°	3°/2°/2°/3°	–	–	–	–			(1) RRUS-E2 B29 (1) RRUS-32 B2 (1) RRUS-32 B30	–	Y
GAMMA SECTOR																
C1	UMTS	EXISTING	325°	KATHREIN 800-10121	170'-0"	3°	0°	1 5/8"	200'-0"	2	(2) LGP 21401	DC6-48-60-18-8F	SHARED FIBER (2) DC LINES	–	(2) LGP 21901 (GROUND)	Y
C2	LTE	EXISTING	325°	KATHREIN 800-10965	170'-0"	0°	2°/2°/6°/2°	–	–	–	–			(1) 4449 B5/B12 (1) 4426 B66	–	Y
C3	LTE	NEW	325°	CCI DMP65R-BU6DA	168'-0"	0°	6°	–	–	–	–			(1) 4415 B25 (1) 4478 B14	–	Y
C4	LTE	EXISTING	325°	KATHREIN 800-10798	168'-0"	0°	3°/6°/6°/3°	–	–	–	–			(1) RRUS-E2 B29 (1) RRUS-32 B2 (1) RRUS-32 B30	–	Y

NOTE: BOLD DENOTES NEW EQUIPMENT

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

AT&T
ONE AT&T WAY
BEDMINSTER, NJ 07921

CROWN CASTLE
3200 HORIZON DRIVE, SUITE 150
KING OF PRUSSIA, PA 19406

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

AT&T SITE NUMBER:
CTL5833

BU #: **842859**
BRISTOL CENTER

371 TERRYVILLE AVE
BRISTOL, CT 06010

EXISTING 168'-6"
MONOPOLE

ISSUED FOR:

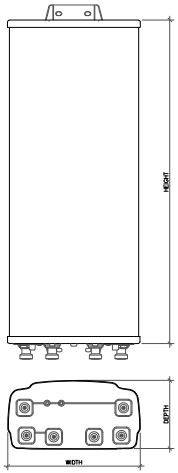
REV.	DATE	DRWN	DESCRIPTION	DES./QA
0	3/9/20	RMC	CONSTRUCTION	FWP
1	4/3/20	GEH	CONSTRUCTION	RMC
2	5/11/20	GEH	CONSTRUCTION	RMC

STATE OF CONNECTICUT
31627
LICENSED
PROFESSIONAL ENGINEER

5/11/20

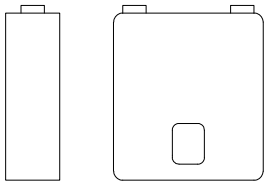
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

SHEET NUMBER: C-5
REVISION: 2



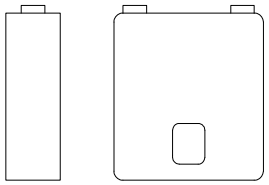
ANTENNA DIMENSIONS (INCHES)				
MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
DMP65R-BU8DA	96"	20.7"	7.7"	95.7 lbs
DMP65R-BU6DA	71.2"	20.7"	7.7"	79.4 lbs

1 ANTENNA DETAIL
SCALE: NOT TO SCALE



ERICSSON - 4415 B25
WEIGHT (FULLY EQUIPPED): 44.0 LBS
SIZE (HxWxD): 14.96x13.19x5.39 IN.

2 RRH DETAIL
SCALE: NOT TO SCALE



ERICSSON - 4478 B14
WEIGHT (FULLY EQUIPPED): 59.9 LBS
SIZE (HxWxD): 16.5x13.4x7.7 IN.

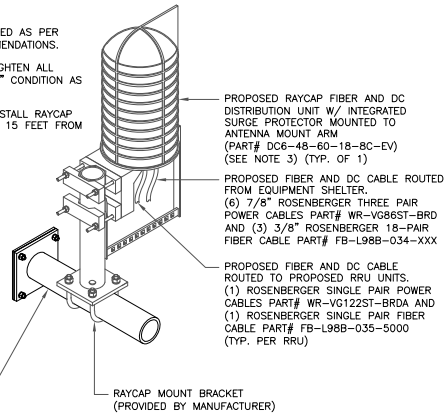
3 RRH DETAIL
SCALE: NOT TO SCALE

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.



4 SURGE SUPPRESSOR DETAIL
SCALE: NOT TO SCALE

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B&T ENGINEERING, INC.
PEC.0001564
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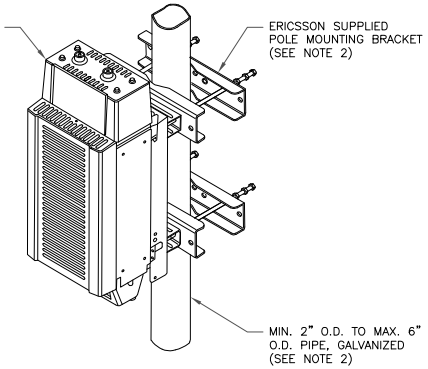
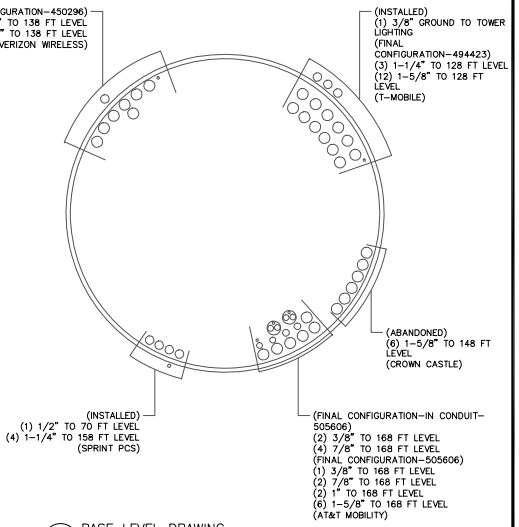
SHEET NUMBER: C-6
REVISION: 2

NOTES:

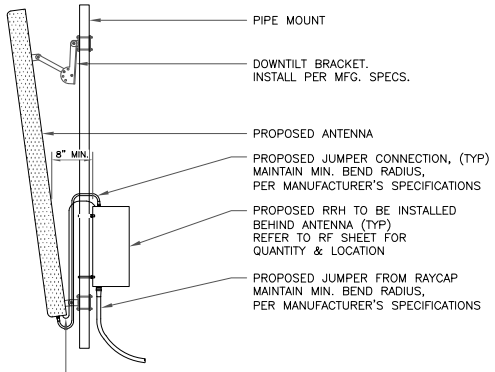
1. ERICSSON VIA AT&T SUPPLIES RRH, RRH POLE-MOUNTING BRACKET. SUBCONTRACTOR SHALL SUPPLY POLE/PIPE AND INSTALL ALL MOUNTING HARDWARE INCLUDING ERICSSON RRH POLE-MOUNTING BRACKET. ERICSSON INSTALLS RRH AND MAKES CABLE TERMINATIONS.
2. FOR POLE DIAMETERS FROM 6" TO 15", ERICSSON CAN SUPPLY A PAIR OF POLE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



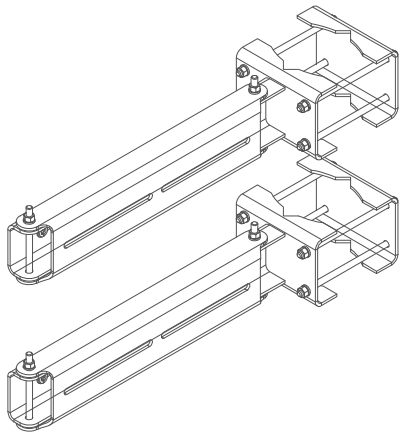
1 RRH MOUNTING DETAIL
SCALE: NOT TO SCALE



2 BASE LEVEL DRAWING
SCALE: NOT TO SCALE



3 ANTENNA MOUNTING DETAIL
SCALE: NOT TO SCALE



4 VALMONT - RRUDSM
SCALE: NOT TO SCALE

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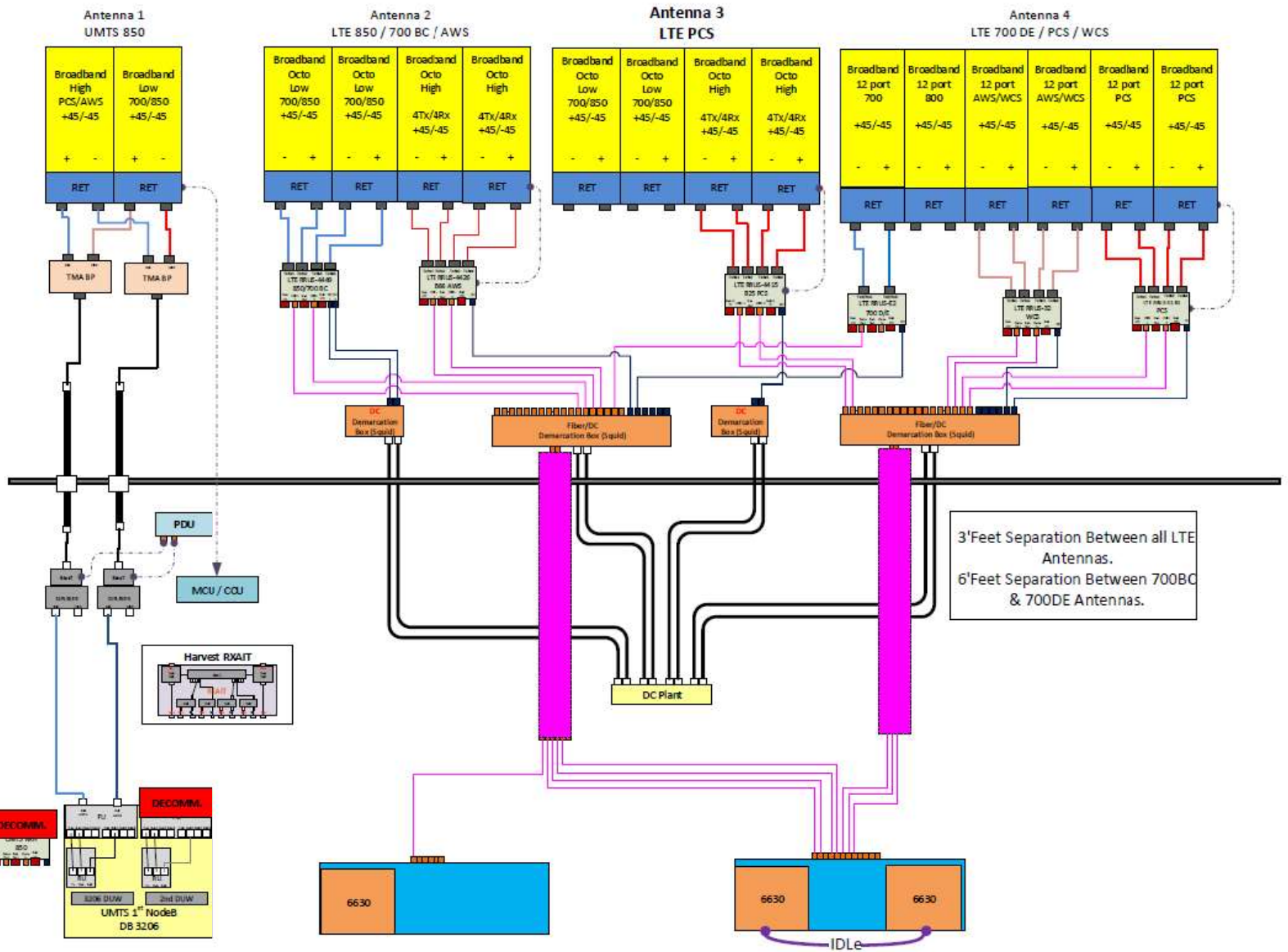
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/21

SHEET NUMBER: C-7
REVISION: 2



1 PLUMBING DIAGRAM
SCALE: NOT TO SCALE

AT&T
ONE AT&T WAY
BEDMINSTER, NJ 07921

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

SHEET NUMBER: C-8
REVISION: 2

SECTOR	TECHNOLOGY	FREQUENCY BAND	COLOR CODE – SECTOR DESIGNATION FOR SECTOR SPLIT	COLOR CODE – SECTOR (AMOUNT OF BANDS BASED ON POSITION)	COLOR CODE – FREQUENCY			45 + COAX	45 – COAX
A	LTE	700 (B/C)	BLANK	GREEN	VIOLET		BLANK	YELLOW	BLANK
A	LTE	850	BLANK	GREEN	YELLOW		BLANK	YELLOW	BLANK
A	LTE	850 – 2ND BLOCK	BLANK	GREEN	YELLOW	YELLOW	BLANK	YELLOW	BLANK
A	LTE	1900 (PCS)	BLANK	GREEN	RED		BLANK	YELLOW	BLANK
A	LTE	1900 (PCS) – 2ND BLOCK	BLANK	GREEN	RED	RED	BLANK	YELLOW	BLANK
A	LTE	2100 (AWS)	BLANK	GREEN	ORANGE		BLANK	YELLOW	BLANK
A	LTE	2100 (AWS) – 2ND BLOCK	BLANK	GREEN	ORANGE	ORANGE	BLANK	YELLOW	BLANK
A	LTE	2300 (WCS)	BLANK	GREEN	SLATE		BLANK	YELLOW	BLANK
A	LTE	2300 (WCS) – 2ND BLOCK	BLANK	GREEN	BROWN		BLANK	YELLOW	BLANK
A	LTE	2300 (WCS) – SXM REPEATER	BLANK	GREEN	BROWN	BROWN	BLANK	YELLOW	BLANK
A	LTE	700 (D/E)	BLANK	GREEN	BROWN	BROWN	BROWN	YELLOW	BLANK
A	LTE	700 FIRSTNET	BLANK	GREEN	VIOLET	BLUE	BLANK	YELLOW	BLANK
A	LTE	700 (B/C) / 700 FIRSTNET (DUAL RRH)	BLANK	GREEN	VIOLET	VIOLET	BLUE	YELLOW	BLANK
A	LTE	1900 (PCS) / 2100 (AWS) (DUAL RRH)	BLANK	GREEN	RED	ORANGE	BLANK	YELLOW	BLANK
A	LTE	8500 / 700 D/E (DUAL RRH)	BLANK	GREEN	YELLOW	SLATE	BLANK	YELLOW	BLANK
A – SPLIT	LTE	700 (B/C)	GREEN	ORANGE	VIOLET		BLANK	YELLOW	BLANK
A – SPLIT	LTE	850	GREEN	ORANGE	YELLOW		BLANK	YELLOW	BLANK
A – SPLIT	LTE	850 – 2ND BLOCK	GREEN	ORANGE	YELLOW	YELLOW	BLANK	YELLOW	BLANK
A – SPLIT	LTE	1900 (PCS)	GREEN	ORANGE	RED		BLANK	YELLOW	BLANK
A – SPLIT	LTE	1900 (PCS) – 2ND BLOCK	GREEN	ORANGE	RED	RED	BLANK	YELLOW	BLANK
A – SPLIT	LTE	2100 (AWS)	GREEN	ORANGE	ORANGE		BLANK	YELLOW	BLANK
A – SPLIT	LTE	2100 (AWS) – 2ND BLOCK	GREEN	ORANGE	ORANGE	ORANGE	BLANK	YELLOW	BLANK
A – SPLIT	LTE	2300 (WCS)	GREEN	ORANGE	SLATE		BLANK	YELLOW	BLANK
A – SPLIT	LTE	2300 (WCS) – 2ND BLOCK	GREEN	ORANGE	BROWN		BLANK	YELLOW	BLANK
A – SPLIT	LTE	2300 (WCS) – SXM REPEATER	GREEN	ORANGE	BROWN	BROWN	BLANK	YELLOW	BLANK
A – SPLIT	LTE	700 (D/E)	GREEN	ORANGE	BROWN	BROWN	BROWN	YELLOW	BLANK
A – SPLIT	LTE	700 FIRSTNET	GREEN	ORANGE	VIOLET	BLUE	BLANK	YELLOW	BLANK
A – SPLIT	LTE	700 (B/C) / 700 FIRSTNET (DUAL RRH)	GREEN	ORANGE	VIOLET	VIOLET	BLUE	YELLOW	BLANK
A – SPLIT	LTE	1900 (PCS) / 2100 (AWS) (DUAL RRH)	GREEN	ORANGE	RED	ORANGE	BLANK	YELLOW	BLANK
A – SPLIT	LTE	8500 / 700 D/E (DUAL RRH)	GREEN	ORANGE	YELLOW	SLATE	BLANK	YELLOW	BLANK
B	LTE	700 (B/C)	BLANK	BLUE	VIOLET		BLANK	YELLOW	BLANK
B	LTE	850	BLANK	BLUE	YELLOW		BLANK	YELLOW	BLANK
B	LTE	850 – 2ND BLOCK	BLANK	BLUE	YELLOW	YELLOW	BLANK	YELLOW	BLANK
B	LTE	1900 (PCS)	BLANK	BLUE	RED		BLANK	YELLOW	BLANK
B	LTE	1900 (PCS) – 2ND BLOCK	BLANK	BLUE	RED	RED	BLANK	YELLOW	BLANK
B	LTE	2100 (AWS)	BLANK	BLUE	ORANGE		BLANK	YELLOW	BLANK
B	LTE	2100 (AWS) – 2ND BLOCK	BLANK	BLUE	ORANGE	ORANGE	BLANK	YELLOW	BLANK
B	LTE	2300 (WCS)	BLANK	BLUE	SLATE		BLANK	YELLOW	BLANK
B	LTE	2300 (WCS) – 2ND BLOCK	BLANK	BLUE	BROWN		BLANK	YELLOW	BLANK
B	LTE	2300 (WCS) – SXM REPEATER	BLANK	BLUE	BROWN	BROWN	BLANK	YELLOW	BLANK
B	LTE	700 (D/E)	BLANK	BLUE	BROWN	BROWN	BROWN	YELLOW	BLANK
B	LTE	700 FIRSTNET	BLANK	BLUE	VIOLET	VIOLET	BLUE	YELLOW	BLANK
B	LTE	700 (B/C) / 700 FIRSTNET (DUAL RRH)	BLANK	BLUE	VIOLET	VIOLET	BLUE	YELLOW	BLANK
B	LTE	1900 (PCS) / 2100 (AWS) (DUAL RRH)	BLANK	BLUE	RED	ORANGE	BLANK	YELLOW	BLANK
B	LTE	8500 / 700 D/E (DUAL RRH)	BLANK	BLUE	YELLOW	SLATE	BLANK	YELLOW	BLANK
B – SPLIT	LTE	700 (B/C)	BLUE	BROWN	VIOLET		BLANK	YELLOW	BLANK
B – SPLIT	LTE	850	BLUE	BROWN	YELLOW		BLANK	YELLOW	BLANK
B – SPLIT	LTE	850 – 2ND BLOCK	BLUE	BROWN	YELLOW	YELLOW	BLANK	YELLOW	BLANK
B – SPLIT	LTE	1900 (PCS)	BLUE	BROWN	RED		BLANK	YELLOW	BLANK
B – SPLIT	LTE	1900 (PCS) – 2ND BLOCK	BLUE	BROWN	RED	RED	BLANK	YELLOW	BLANK
B – SPLIT	LTE	2100 (AWS)	BLUE	BROWN	ORANGE		BLANK	YELLOW	BLANK
B – SPLIT	LTE	2100 (AWS) – 2ND BLOCK	BLUE	BROWN	ORANGE	ORANGE	BLANK	YELLOW	BLANK
B – SPLIT	LTE	2300 (WCS)	BLUE	BROWN	SLATE		BLANK	YELLOW	BLANK
B – SPLIT	LTE	2300 (WCS) – 2ND BLOCK	BLUE	BROWN	BROWN		BLANK	YELLOW	BLANK
B – SPLIT	LTE	2300 (WCS) – SXM REPEATER	BLUE	BROWN	BROWN	BROWN	BLANK	YELLOW	BLANK
B – SPLIT	LTE	700 (D/E)	BLUE	BROWN	BROWN	BROWN	BROWN	YELLOW	BLANK
B – SPLIT	LTE	700 FIRSTNET	BLUE	BROWN	VIOLET	BLUE	BLANK	YELLOW	BLANK
B – SPLIT	LTE	700 (B/C) / 700 FIRSTNET (DUAL RRH)	BLUE	BROWN	VIOLET	VIOLET	BLUE	YELLOW	BLANK
B – SPLIT	LTE	1900 (PCS) / 2100 (AWS) (DUAL RRH)	BLUE	BROWN	RED	ORANGE	BLANK	YELLOW	BLANK
B – SPLIT	LTE	8500 / 700 D/E (DUAL RRH)	BLUE	BROWN	YELLOW	SLATE	BLANK	YELLOW	BLANK
C	LTE	700 (B/C)	BLANK	WHITE	VIOLET		BLANK	YELLOW	BLANK
C	LTE	850	BLANK	WHITE	YELLOW		BLANK	YELLOW	BLANK
C	LTE	850 – 2ND BLOCK	BLANK	WHITE	YELLOW	YELLOW	BLANK	YELLOW	BLANK
C	LTE	1900 (PCS)	BLANK	WHITE	RED		BLANK	YELLOW	BLANK
C	LTE	1900 (PCS) – 2ND BLOCK	BLANK	WHITE	RED	RED	BLANK	YELLOW	BLANK
C	LTE	2100 (AWS)	BLANK	WHITE	ORANGE		BLANK	YELLOW	BLANK
C	LTE	2100 (AWS) – 2ND BLOCK	BLANK	WHITE	ORANGE	ORANGE	BLANK	YELLOW	BLANK
C	LTE	2300 (WCS)	BLANK	WHITE	SLATE		BLANK	YELLOW	BLANK
C	LTE	2300 (WCS) – 2ND BLOCK	BLANK	WHITE	BROWN		BLANK	YELLOW	BLANK
C	LTE	2300 (WCS) – SXM REPEATER	BLANK	WHITE	BROWN	BROWN	BLANK	YELLOW	BLANK
C	LTE	700 (D/E)	BLANK	WHITE	BROWN	BROWN	BROWN	YELLOW	BLANK
C	LTE	700 FIRSTNET	BLANK	WHITE	VIOLET	BLUE	BLANK	YELLOW	BLANK
C	LTE	700 (B/C) / 700 FIRSTNET (DUAL RRH)	BLANK	WHITE	VIOLET	VIOLET	BLUE	YELLOW	BLANK
C	LTE	1900 (PCS) / 2100 (AWS) (DUAL RRH)	BLANK	WHITE	RED	ORANGE	BLANK	YELLOW	BLANK
C	LTE	8500 / 700 D/E (DUAL RRH)	BLANK	WHITE	YELLOW	SLATE	BLANK	YELLOW	BLANK
C – SPLIT	LTE	700 (B/C)	WHITE	VIOLET	VIOLET		BLANK	YELLOW	BLANK
C – SPLIT	LTE	850	WHITE	VIOLET	YELLOW		BLANK	YELLOW	BLANK
C – SPLIT	LTE	850 – 2ND BLOCK	WHITE	VIOLET	YELLOW	YELLOW	BLANK	YELLOW	BLANK
C – SPLIT	LTE	1900 (PCS)	WHITE	VIOLET	RED		BLANK	YELLOW	BLANK
C – SPLIT	LTE	1900 (PCS) – 2ND BLOCK	WHITE	VIOLET	RED	RED	BLANK	YELLOW	BLANK
C – SPLIT	LTE	2100 (AWS)	WHITE	VIOLET	ORANGE		BLANK	YELLOW	BLANK
C – SPLIT	LTE	2100 (AWS) – 2ND BLOCK	WHITE	VIOLET	ORANGE	ORANGE	BLANK	YELLOW	BLANK
C – SPLIT	LTE	2300 (WCS)	WHITE	VIOLET	SLATE		BLANK	YELLOW	BLANK
C – SPLIT	LTE	2300 (WCS) – 2ND BLOCK	WHITE	VIOLET	BROWN		BLANK	YELLOW	BLANK
C – SPLIT	LTE	2300 (WCS) – SXM REPEATER	WHITE	VIOLET	BROWN	BROWN	BLANK	YELLOW	BLANK
C – SPLIT	LTE	700 (D/E)	WHITE	VIOLET	BROWN	BROWN	BROWN	YELLOW	BLANK
C – SPLIT	LTE	700 FIRSTNET	WHITE	VIOLET	VIOLET	BLUE	BLANK	YELLOW	BLANK
C – SPLIT	LTE	700 (B/C) / 700 FIRSTNET (DUAL RRH)	WHITE	VIOLET	VIOLET	VIOLET	BLUE	YELLOW	BLANK
C – SPLIT	LTE	1900 (PCS) / 2100 (AWS) (DUAL RRH)	WHITE	VIOLET	RED	ORANGE	BLANK	YELLOW	BLANK
C – SPLIT	LTE	8500 / 700 D/E (DUAL RRH)	WHITE	VIOLET	YELLOW	SLATE	BLANK	YELLOW	BLANK
D	LTE	700 (B/C)	BLANK	ORANGE	VIOLET		BLANK	YELLOW	BLANK
D	LTE	850	BLANK	ORANGE	YELLOW		BLANK	YELLOW	BLANK
D	LTE	850 – 2ND BLOCK	BLANK	ORANGE	YELLOW	YELLOW	BLANK	YELLOW	BLANK
D	LTE	1900 (PCS)	BLANK	ORANGE	RED		BLANK	YELLOW	BLANK
D	LTE	1900 (PCS) – 2ND BLOCK	BLANK	ORANGE	RED	RED	BLANK	YELLOW	BLANK
D	LTE	2100 (AWS)	BLANK	ORANGE	ORANGE		BLANK	YELLOW	BLANK
D	LTE	2100 (AWS) – 2ND BLOCK	BLANK	ORANGE	ORANGE	ORANGE	BLANK	YELLOW	BLANK
D	LTE	2300 (WCS)	BLANK	ORANGE	SLATE		BLANK	YELLOW	BLANK
D	LTE	2300 (WCS) – 2ND BLOCK	BLANK	ORANGE	BROWN		BLANK	YELLOW	BLANK
D	LTE	2300 (WCS) – SXM REPEATER	BLANK	ORANGE	BROWN	BROWN	BLANK	YELLOW	BLANK
D	LTE	700 (D/E)	BLANK	ORANGE	BROWN	BROWN	BROWN	YELLOW	BLANK
D	LTE	700 FIRSTNET	BLANK	ORANGE	VIOLET	BLUE	BLANK	YELLOW	BLANK
D	LTE	700 (B/C) / 700 FIRSTNET (DUAL RRH)	BLANK	ORANGE	VIOLET	VIOLET	BLUE	YELLOW	BLANK
D	LTE	1900 (PCS) / 2100 (AWS) (DUAL RRH)	BLANK	ORANGE	RED	ORANGE	BLANK	YELLOW	BLANK
D	LTE	8500 / 700 D/E (DUAL RRH)	BLANK	ORANGE	YELLOW	SLATE	BLANK	YELLOW	BLANK
E	LTE	700 (B/C)	BLANK	BROWN	VIOLET		BLANK	YELLOW	BLANK
E	LTE	850	BLANK	BROWN	YELLOW		BLANK	YELLOW	BLANK
E	LTE	850 – 2ND BLOCK	BLANK	BROWN	YELLOW	YELLOW	BLANK	YELLOW	BLANK
E	LTE	1900 (PCS)	BLANK	BROWN	RED		BLANK	YELLOW	BLANK
E	LTE	1900 (PCS) – 2ND BLOCK	BLANK	BROWN	RED	RED	BLANK	YELLOW	BLANK
E	LTE	2100 (AWS)	BLANK	BROWN	ORANGE		BLANK	YELLOW	BLANK
E	LTE	2100 (AWS) – 2ND BLOCK	BLANK	BROWN	ORANGE	ORANGE	BLANK	YELLOW	BLANK
E	LTE	2300 (WCS)	BLANK	BROWN	SLATE		BLANK	YELLOW	BLANK
E	LTE	2300 (WCS) – 2ND BLOCK	BLANK	BROWN	BROWN		BLANK	YELLOW	BLANK
E	LTE	2300 (WCS) – SXM REPEATER	BLANK	BROWN	BROWN	BROWN	BLANK	YELLOW	BLANK
E	LTE	700 (D/E)	BLANK	BROWN	BROWN	BROWN	BROWN	YELLOW	BLANK
E	LTE	700 FIRSTNET	BLANK	BROWN	VIOLET	BLUE	BLANK	YELLOW	BLANK
E	LTE	700 (B/C) / 700 FIRSTNET (DUAL RRH)	BLANK	BROWN	VIOLET	VIOLET	BLUE	YELLOW	BLANK
E	LTE	1900 (PCS) / 2100 (AWS) (DUAL RRH)	BLANK	BROWN	RED	ORANGE	BLANK	YELLOW	BLANK
E	LTE	8500 / 700 D/E (DUAL RRH)	BLANK	BROWN	YELLOW	SLATE	BLANK	YELLOW	BLANK
F	LTE	700 (B/C)	BLANK	VIOLET	VIOLET		BLANK	YELLOW	BLANK
F	LTE	850	BLANK	VIOLET	YELLOW		BLANK	YELLOW	BLANK
F	LTE	850 – 2ND BLOCK	BLANK	VIOLET	YELLOW	YELLOW	BLANK	YELLOW	BLANK
F	LTE	1900 (PCS)	BLANK	VIOLET	RED		BLANK	YELLOW	BLANK
F	LTE	1900 (PCS) – 2ND BLOCK	BLANK	VIOLET	RED	RED	BLANK	YELLOW	BLANK
F	LTE	2100 (AWS)	BLANK	VIOLET	ORANGE		BLANK	YELLOW	BLANK
F	LTE	2100 (AWS) – 2ND BLOCK	BLANK	VIOLET	ORANGE	ORANGE	BLANK	YELLOW	BLANK
F	LTE	2300 (WCS)	BLANK	VIOLET	SLATE		BLANK	YELLOW	BLANK
F	LTE	2300 (WCS) – 2ND BLOCK	BLANK	VIOLET	BROWN		BLANK	YELLOW	BLANK
F	LTE	2300 (WCS) – SXM REPEATER	BLANK	VIOLET	BROWN	BROWN	BLANK	YELLOW	BLANK
F	LTE	700 (D/E)	BLANK	VIOLET	BROWN	BROWN	BROWN	YELLOW	BLANK
F	LTE	700 FIRSTNET	BLANK	VIOLET	VIOLET	BLUE	BLANK	YELLOW	BLANK
F	LTE	700 (B/C) / 700 FIRSTNET (DUAL RRH)	BLANK	VIOLET	VIOLET	VIOLET	BLUE	YELLOW	BLANK
F	LTE	1900 (PCS) / 2100 (AWS) (DUAL RRH)	BLANK	VIOLET	RED	ORANGE	BLANK	YELLOW	BLANK
F	LTE	8500 / 700 D/E (DUAL RRH)	BLANK	VIOLET	YELLOW	SLATE	BLANK	YELLOW	BLANK

NOTE 1: PRODUCTS ARE ONLY TO BE USED WHEN ADEQUATE PHYSICAL SPACE EXISTS FOR PROPER INSTALLATION.

NOTE 2: HEAT SHRINK MAY ONLY BE USED AT GROUND LEVEL OR ROOFTOP SITES WHEN APPLIED WITH A HEAT GUN. USE ON TOWERS OR INSTALLING WITH AN OPEN FLAME DEVICE, SUCH AS A TORCH, IS PROHIBITED DUE TO POTENTIAL DAMAGE TO CONNECTORS AND CABLES. HEAT SHRINK IS NOT ALLOWED ON CONNECTIONS TO TOWER TOP EQUIPMENT EVEN IF THE HEAT SHRINK IS APPLIED ON THE GROUND PRIOR TO INSTALLING THE EQUIPMENT ON THE TOWER TOP.

NOTE 3: HEAT SHRINK IS NOT TO BE USED ON RET/AISG CONNECTORS FOUND ON RF DEVICES (RRH/RRU, ANTENNAS, ETC.), DUE TO POSSIBLE DAMAGE BEING CAUSED TO THE DEVICE. IT MAY BE USED ON CONNECTORS ATTACHED TO RET SURGE PROTECTORS.

NOTE 4: WHEN GAMMA ELECTRONICS COLD SHRINK IS USED ON FULLY THREADED DIN CONNECTORS THE THREADS MUST HAVE EITHER ROSENBERGER THREAD ADAPTER OR BUTYL APPLIED PRIOR TO THE COLD SHRINK BEING INSTALLED. REFER TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS INCLUDED WITH THE PRODUCT FOR DETAILS.

TABLE 1: E/ PA / S. NJ / DE – COAX COLOR CODE

SECTOR	ALPHA	GREEN		
	A–SPLIT	GREEN	ORANGE	BLANK
	BETA	BLUE		
	B–SPLIT	BROWN	BROWN	BLANK
	GAMMA	WHITE		
	C–SPLIT	WHITE	VIOLET	BLANK
	D	ORANGE		
	E	BROWN		
	F	VIOLET		

DC TRUCNK / DC JUMPER / FIRST FIBER JUMPER

FREQUENCY BAND	700 (B/C)	VIOLET		
	850	YELLOW		
	850 – 2ND BLOCK	YELLOW	YELLOW	BLANK
	1900 (PCS)	RED		
	1900 (PCS) – 2ND BLOCK	RED	RED	BLANK
	2100 (AWS)	ORANGE		
	2100 (AWS) – 2ND BLOCK	ORANGE	ORANGE	BLANK
	2300 (WCS)	BROWN		
	2300 (WCS) – 2ND BLOCK	BROWN	BROWN	BLANK
	2300 (WCS) – SXM REPEATER	BROWN	BROWN	BROWN
	700 (D/E)	SLATE		
	700 FIRSTNET	VIOLET	BLUE	BLANK
	700 (B/C) / 700 FIRSTNET (DUAL RRH)	VIOLET	VIOLET	BLUE
	1900 (PCS) / 2100 (AWS) (DUAL RRH)	RED	ORANGE	BLANK
	8500 / 700 D/E (DUAL RRH)	YELLOW	SLATE	BLANK

WEATHERPROOFING PRODUCT APPLICATION TABLE

PRODUCT	APPLICATION					
	HARDLINE TO JUMPER CONNECTION	7–16 DIN RF CONNECTOR	4.3–10 RF CONNECTOR	RRH/RRU DC CONNECTOR	RRH/RRU FIBER CONNECTOR	RET/AISG
TAPE & BUTYL	YES	YES (1)	YES (1)	NO	NO	NO
SELF–FUSING TAPE	YES	YES (1)	YES (1)	YES	NO	YES
JUMPER BOOT	NO	YES	YES	NO	NO	NO

TORQUE VALUES FOR CONNECTORS

CONNECTOR TYPE	TORQUE Ft–lbs	TORQUE In–lbs
7–16 DIN	19–22	221–265
4.3–10	3.67	44
N	1.25	15
SMA	0.42	5
TNC	0.42	5
RET/AISG	HAND TIGHTEN	HAND TIGHTEN

MINIMUM BENDING RADIUS FOR GROUNDING CONDUCTORS

GROUNDING CONDUCTOR SIZE	MINIMUM BENDING RADIUS (INCHES)
6 AWG	2
4 AWG	3
2 AWG	3
1/0 AWG	4
4/0 AWG	4
750 KCML	7

1 COLOR CODE STANDARD
SCALE: NOT TO SCALE

AT&T
ONE AT&T WAY
BEDMINSTER, NJ 07921

CROWN CASTLE
3200 HORIZON DRIVE, SUITE 150
KING OF PRUSSIA, PA 19406

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
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AT&T SITE NUMBER:
CTL5833

BU #: **842859**
BRISTOL CENTER

371 TERRYVILLE AVE
BRISTOL, CT 06010

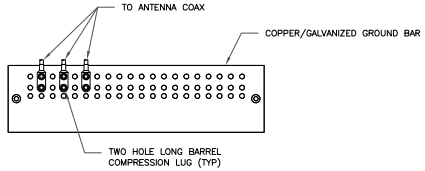
EXISTING 168'-6"
MONOPOLE

ISSUED FOR:

REV.	DATE	DRWN	DESCRIPTION	DES./QA
0	3/9/20	RMC	CONSTRUCTION	FWP
1	4/3/20	GEH	CONSTRUCTION	RMC
2	5/11/20	GEH	CONSTRUCTION	RMC

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

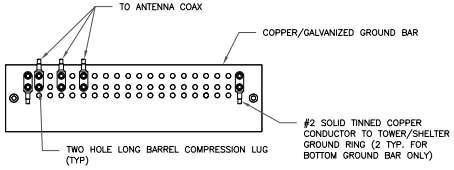
SHEET NUMBER: C-9
REVISION: 2



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.

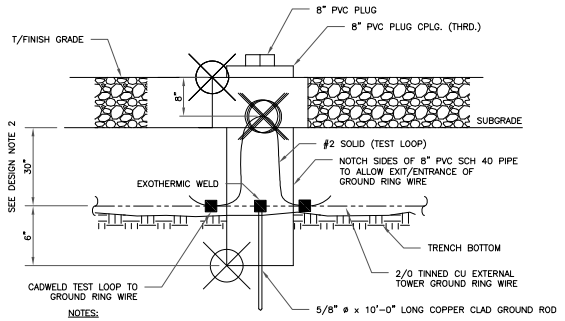
1 ANTENNA GROUND BAR DETAIL
SCALE: NOT TO SCALE



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.

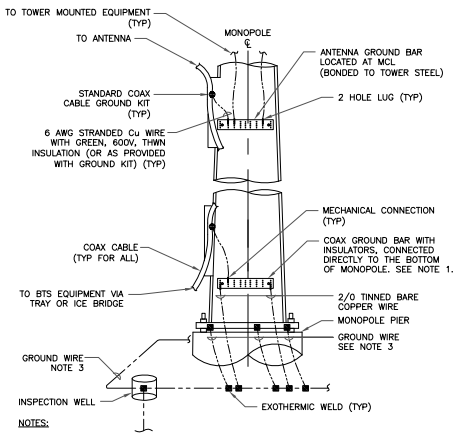
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL
2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D)

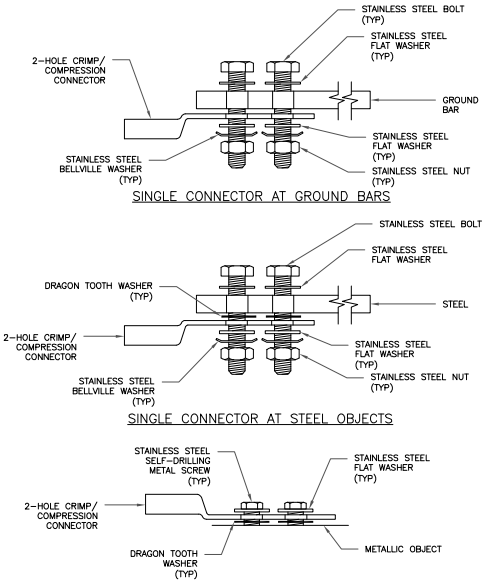
3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE



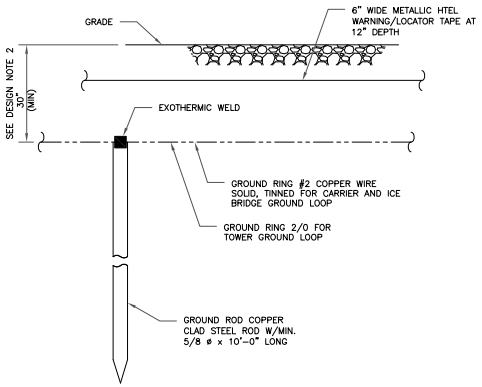
NOTES:

1. NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATIONS AND CONNECTION ORIENTATION. COAXIAL CABLES EXCEEDING 200 FEET ON THE TOWER SHALL HAVE GROUND KITS AT THE MIDPOINT. PROVIDE AS REQUIRED.
2. ONLY MECHANICAL CONNECTIONS ARE ALLOWED TO BE MADE TO CROWN CASTLE USA INC. TOWERS. ALL MECHANICAL CONNECTIONS SHALL BE TREATED WITH AN ANTI-OXIDANT COATING.
3. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF THE RECOGNIZED EDITION OF ANSI/TIA 222 AND NFPA 780.

4 TYPICAL ANTENNA CABLE GROUNDING
SCALE: NOT TO SCALE



5 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL
2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D)

6 GROUND ROD DETAIL
SCALE: NOT TO SCALE

AT&T
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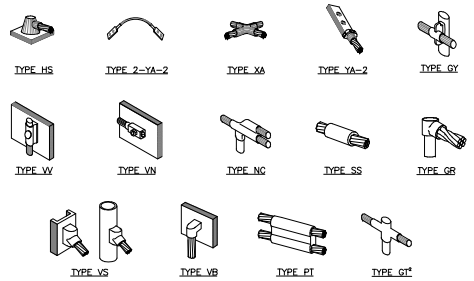
STATE OF CONNECTICUT
31627
LICENSED
PROFESSIONAL ENGINEER
5/11/20

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

SHEET NUMBER: G-1
REVISION: 2

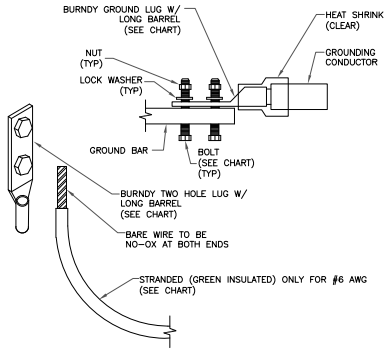


NOTE:

1. ERICO EXOTHERMIC "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH CONSTRUCTION MANAGER FOR SPECIFIC MOLDS TO BE USED FOR THIS PROJECT.
2. MOLD TYPE ONLY TO BE USED BELOW GRADE WHEN CONNECTING GROUND RING TO GROUND ROD.

1 CADWELD GROUNDING CONNECTIONS
SCALE: NOT TO SCALE

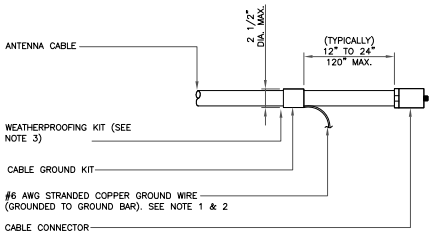
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA2B-2N	1/2" - 16 NC S 2 BOLT



NOTES:

1. 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.

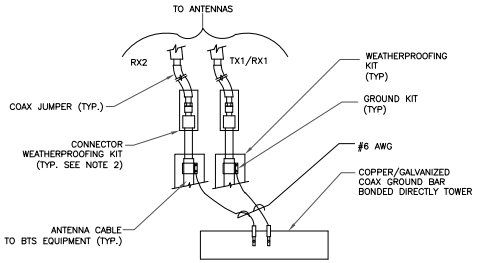
2 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



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.

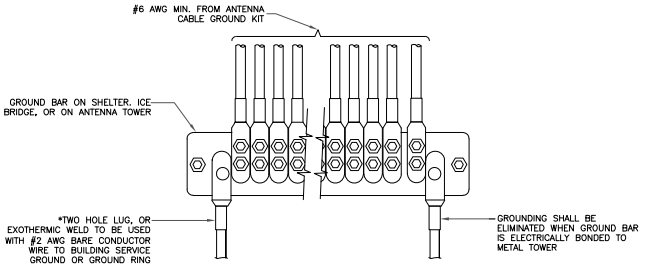
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



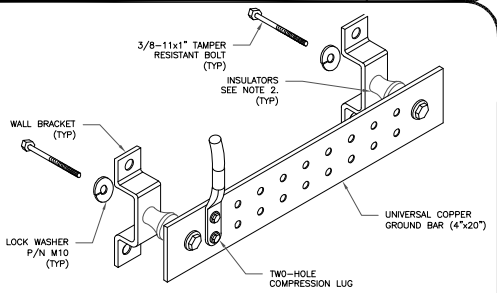
NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.

4 GROUND CABLE CONNECTION
SCALE: NOT TO SCALE



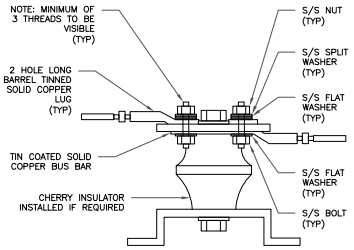
5 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



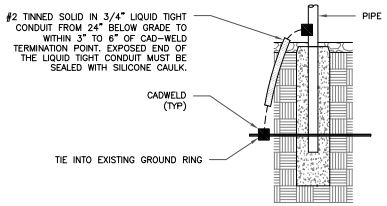
NOTES:

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.

6 GROUND BAR DETAIL
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE



8 TRANSITIONING GROUND DETAIL
SCALE: NOT TO SCALE

AT&T
ONE AT&T WAY
BEDMINSTER, NJ 07921

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2	5/11/20	GEH	CONSTRUCTION	RMC

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

SHEET NUMBER: G-2
REVISION: 2

GENERAL NOTES:

1. THESE DOCUMENTS WERE DESIGNED IN ACCORDANCE WITH THE LATEST VERSION OF APPLICABLE LOCAL/STATE/COUNTY/CITY BUILDING CODES, AS WELL AS ANSI/TIA-222 STANDARD, AWWA-D100 STANDARD, NDS, NEC, MSJC, AND/OR THE LATEST VERSION OF THE INTERNATIONAL BUILDING CODE, UNLESS NOTED OTHERWISE IN THE CORRESPONDING STRUCTURAL REPORT.
2. ALL CONSTRUCTION METHODS SHOULD FOLLOW STANDARDS OF GOOD CONSTRUCTION PRACTICE.
3. ALL WORK INDICATED ON THESE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN SIMILAR CONSTRUCTION.
4. ALL NEW WORK SHALL ACCOMMODATE EXISTING CONDITIONS. IF OBSTRUCTIONS ARE FOUND, CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD PRIOR TO CONTINUING WORK.
5. ANY CHANGES OR ADDITIONS MUST CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS, AND SHOULD BE SIMILAR TO THOSE SHOWN. ALL CHANGES OR ADDITIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION AND/OR CONSTRUCTION.
6. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND EXECUTION OF ALL MISCELLANEOUS SHORING, BRACING, TEMPORARY SUPPORTS, ETC. NECESSARY TO PROVIDE A COMPLETE AND STABLE STRUCTURE DURING CONSTRUCTION. TIA-1019-A-2011 IS AN APPROPRIATE REFERENCE FOR THOSE DESIGNS MEETING TIA STANDARDS. THE ENGINEER OF RECORD MAY PROVIDE FORMAL RIGGING PLANS AT THE REQUEST AND EXPENSE OF THE CONTRACTOR.
7. INSTALLATION SHALL NOT INTERFERE NOR DENY ADEQUATE ACCESS TO OR FROM ANY EXISTING OR PROPOSED OPERATIONAL AND SAFETY EQUIPMENT.
8. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO ANY FABRICATION. CONTACT INFINIGY ENGINEERING IF ANY DISCREPANCIES EXIST.

STEEL CONSTRUCTION NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE AISC MANUAL OF STEEL CONSTRUCTION 14TH EDITION, FOR THE DESIGN AND FABRICATION OF STEEL COMPONENTS.
2. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES, AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS' RECOMMENDATIONS.
3. ALL FIELD DRILLED HOLES TO BE USED FOR FIELD BOLTING INSTALLATION SHALL BE STANDARD HOLES, AS DEFINED BY AISC, UNLESS NOTED OTHERWISE.
4. ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.
5. ALL STEEL MEMBERS AND CONNECTIONS SHALL MEET THE FOLLOWING GRADES:
   - ANGLES, CHANNELS, PLATES AND BARS TO BE A36. Fy=36 KSI, U.N.O.
   - W SHAPES TO BE A992. Fy=50 KSI, U.N.O.
   - RECTANGULAR HSS TO BE A500, GRADE B. FY=46 KSI, U.N.O.
   - ROUND HSS TO BE A500, GRADE B. FY=42 KSI, U.N.O.
   - STEEL PIPE TO BE A53, GRADE B. Fy=35 KSI, U.N.O.
   - BOLTS TO BE A325-X. Fu=120 KSI, U.N.O.
   - U-BOLTS AND LAG SCREWS TO BE A307 OR A. Fu=60 KSI, U.N.O.
6. ALL WELDING SHALL BE DONE USING E70XX ELECTRODES, U.N.O.
7. ALL WELDING SHALL CONFORM TO AISC AND AWS D1.1 LATEST EDITION.
8. ALL HILTI ANCHORS TO BE CARBON STEEL, U.N.O.
   - MECHANICAL ANCHORS: KWIK BOLT-TZ, U.N.O.
   - CMU BLOCK ANCHORS: ADHESIVE – HY120, U.N.O.
   - CONCRETE ANCHORS: ADHESIVE – HY150, U.N.O.
   - CONCRETE REBAR: ADHESIVE – RE500, U.N.O.
9. ALL STUDS TO BE NELSON CAPACITOR DISCHARGE 1/4"-20 LOW CARBON STEEL COPPER-FLASH AT 55 KSI ULT/50 KSI YIELD, U.N.O.
10. BOLTS SHALL BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED BY AISC.
11. MINIMUM EDGE DISTANCES SHALL CONFORM TO AISC TABLE J3.4.

CONCRETE CONSTRUCTION NOTES:

1. CONCRETE TO BE 4000 PSI @ 28 DAYS. REINFORCING BAR TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. CONCRETE INSTALLATION TO CONFORM TO ACI-318 BUILDING REQUIREMENTS FOR REINFORCED CONCRETE. ALL CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH FREE OF WATER AND ALL FOREIGN OBJECTS AND MATERIALS. A MINIMUM OF THREE INCHES OF CONCRETE SHALL COVER ALL REINFORCEMENT. WELDING OF REBAR IS NOT PERMITTED.
2. EXISTING CONCRETE SURFACES THAT ARE TO BE IN CONTACT WITH NEW PROPOSED CONCRETE SHOULD BE WIRE BRUSHED CLEAN AND TREATED WITH APPROPRIATE MECHANICAL SCRATCH COAT AND REPAIR MATERIALS OR APPROPRIATE CHEMICAL METHODS SUCH AS THE APPLICATION OF A BONDING AGENT, EX. SAKRETE OR EQUIVALENT, TO ENSURE A QUALITY BOND BETWEEN EXISTING AND PROPOSED CONCRETE SURFACES.

FIBER REINFORCED POLYMER (FRP) NOTES:

1. FRP PLATES, SHAPES, BOLTS AND NUTS (STUD/NUT ASSEMBLIES) SHALL CONFORM TO ASTM D638, 695, 790. PLATES AND SHAPES TO BE FY = 5.35 KSI LW (SAFETY FACTOR OF 8), .945 KSI CW (SAFETY FACTOR OF 6) MIN.
2. IF FIELD FABRICATION IS REQUIRED, ALL CUT EDGES AND DRILLED HOLES TO BE SEALED USING VINYL ESTER SEALING KIT SUPPLIED BY THE MANUFACTURER.
3. ALL FASTENERS TO BE 1/2" DIA FRP THREADED ROD WITH FIBER REINFORCED THERMOPLASTIC NUT, SPACED AT 12 INCHES ON CENTER MAXIMUM, U.N.O., FOR PANELS AND AS DESIGNED FOR STRUCTURAL MEMBERS.
4. THE COLOR AND SURFACE PATTERN OF EXPOSED FRP PANELS SHALL MATCH THE EXTERIOR OF THE EXISTING BUILDING, U.N.O.
5. STUD/NUT ASSEMBLIES SHOULD BE LUBRICATED FOR INSTALLATION
6. ENSURE BEARING SURFACES OF THE NUTS ARE PARALLEL TO THE SURFACES BEING FASTENED.
7. TORQUE BOLTS ACCORDING TO THE FOLLOWING TABLE:

INSTALLATION TORQUE TABLE

SIZE	ULTIMATE TORQUE STRENGTH	RECOMMENDED MAXIMUM INSTALLATION TORQUE
3/8-16 UNC	8 FT-LBS	4 FT-LBS
1/2-13 UNC	18 FT-LBS	8 FT-LBS
5/8-11 UNC	35 FT-LBS	16 FT-LBS
3/4-10 UNC	50 FT-LBS	24 FT-LBS
1-8 UNC	110 FT-LBS	50 FT-LBS

8. WHEN TIGHTENING FRP STUD/NUT ASSEMBLIES, WRENCHES MUST MAKE FULL CONTACT WITH ALL NUT EDGES. A STANDARD SIX POINT SOCKET IS RECOMMENDED.
9. STUD/NUT ASSEMBLIES SHOULD BE BONDED BY APPLYING BONDING AGENT TO ENTIRE NUT AND EXPOSED STUD.
10. ALL FRP MATERIALS TO BE PROVIDED BY FIBERGRATE COMPOSITE STRUCTURES, DALLAS TX, OR APPROVED EQUAL.
11. ALL FRP SHAPES TO BE DYNAFORM PULTRUDED STRUCTURAL SHAPES.
12. ALL FRP PLATES TO BE FIBERPLATE MOLDED FRP PLATE.
13. ALL FRP PANELS TO BE FIBERPLATE CLADDING PANEL.
14. EACH FRP PANEL TO BE IDENTIFIED WITH LARR#25536 AND FIBERGRATE COMPOSITE STRUCTURAL LABEL.
15. FRP MATERIAL TO BE CLASSIFIED AS CC1 OR BETTER, AND HAVE MAXIMUM FLAME SPREAD OF 50.
16. ALL DESIGN AND CONSTRUCTION TO BE COMPLETED IN ACCORDANCE WITH LOS ANGELES RESEARCH REPORT RR25536, DATED FEBRUARY 1, 2016.
17. SPECIAL INSPECTIONS MUST BE PROVIDED FOR ALL FRP INSTALLMENTS. SEE SPECIAL INSPECTION SECTION, THIS SHEET.

RATIO OF EDGE DISTANCE TO FRP FASTENER DIAMETER

	RANGE	RECOMMENDED
EDGE DISTANCE – CL* BOLT TO END	2.0-4.0	3.0
EDGE DISTANCE – CL* BOLT TO SIDE	1.5-3.5	2.5
BOLT PITCH – CL* TO CL*	4.0-5.0	5.0

WOOD CONSTRUCTION NOTES:

1. ALL EXISTING WOOD SHAPES ARE ASSUMED TO BE DOUGLAS FIR-LARCH WITH A REFERENCE DESIGN BENDING VALUE OF 1000 PSI MIN.
2. ALL PROPOSED WOOD SHAPES ARE TO BE DOUGLAS FIR-LARCH WITH A REFERENCE DESIGN BENDING VALUE OF 1000 PSI MIN. U.N.O.
3. ALL EXISTING AND PROPOSED GLUED LAMINATED TIMBERS ARE TO BE 24F-1.8C DOUGLAS FIR BALANCED WITH A REFERENCE DESIGN BENDING VALUE OF 2400 PSI MIN. U.N.O.

MASONRY CONSTRUCTION NOTES:

1. ALL BRICK TO BE 1500 PSI MIN. REINFORCING BAR (IF APPLICABLE) TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. ALL MORTAR TO BE 2000 PSI MIN.
   - FOR INTERIOR/ABOVE GRADE APPLICATIONS TYPE N MORTAR HAVING MINIMUM MODULUS OF RUPTURE OF 100 PSI SHALL BE USED. FOR EXTERIOR/BELOW GRADE APPLICATIONS TYPE M OR S MORTAR HAVING A MINIMUM MODULUS OF RUPTURE OF 133 PSI.
   - BRICK AND MORTAR INSTALLATION TO CONFORM TO MSJC BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.
2. ALL CMU TO BE 1500 PSI MIN. REINFORCING BAR (IF APPLICABLE) TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. ALL MORTAR TO BE 2000 PSI MIN.
   - FOR INTERIOR/ABOVE GRADE APPLICATIONS, TYPE N MORTAR HAVING MINIMUM MODULUS OF RUPTURE OF 64 PSI SHALL BE USED FOR UNGROUTED BLOCKS, AND 158 PSI FOR FULLY GROUTED BLOCKS.
   - FOR EXTERIOR/BELOW GRADE APPLICATIONS TYPE M OR S MORTAR HAVING A MINIMUM MODULUS OF RUPTURE OF 84 PSI SHALL BE USED FOR UNGROUTED BLOCKS, AND 163 PSI FOR FULLY GROUTED BLOCKS.
   - BRICK AND MORTAR INSTALLATION TO CONFORM TO MSJC BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.

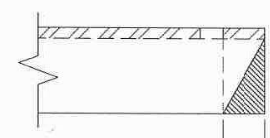
TOWER PLUMB & TENSION NOTES:

1. PLUMB AND TENSION TOWER UPON COMPLETION OF STRUCTURAL MODIFICATIONS DETAILED IN THESE DRAWINGS.
2. RETENSIONING OF EXISTING GUY WIRES SHALL BE PERFORMED AT A TIME WHEN THE WIND VELOCITY IS LESS THAN 10 MPH AT GROUND LEVEL AND WITH NO ICE ON THE STRUCTURE AND GUY WIRES.
3. PLUMB THE TOWER WHILE RETENSIONING THE EXISTING GUY WIRES. THE HORIZONTAL DISTANCE BETWEEN THE VERTICAL CENTERLINES AT ANY TWO ELEVATIONS SHALL NOT EXCEED 0.25% OF THE VERTICAL DISTANCE BETWEEN TWO ELEVATIONS FOR LATTICED STRUCTURES.
4. THE TWIST BETWEEN ANY TWO ELEVATIONS THROUGHOUT THE HEIGHT OF A LATTICE STRUCTURE SHALL NOT EXCEED 0.5 DEGREES IN 10 FEET. THE MAXIMUM TWIST OVER THE LATTICE STRUCTURE HEIGHT SHALL NOT EXCEED 5 DEGREES.

SPECIAL INSPECTIONS NOTES:

1. A QUALIFIED INDEPENDENT TESTING LABORATORY, EMPLOYED BY THE OWNER AND APPROVED BY THE JURISDICTION, SHALL PERFORM INSPECTION AND TESTING IN ACCORDANCE WITH THE THE GOVERNING BUILDING CODE, APPLICABLE SECTION(S) AS REQUIRED BY PROJECT SPECIFICATIONS FOR THE FOLLOWING CONSTRUCTION WORK:
   a. STRUCTURAL WELDING (CONTINUOUS INSPECTION OF FIELD WELDS ONLY).
   b. HIGH STRENGTH BOLTS (PERIODIC INSPECTION OF A325 AND/OR A490 BOLTS) TO BE TIGHTENED PER "TURN-OF-THE-NUT" METHOD.
   c. MECHANICAL AND EPOXIED ANCHORAGES.
   d. FIBER REINFORCED POLYMER.
   - THE SPECIAL INSPECTOR MUST VERIFY THAT THE FRP MATERIAL SPECIFIED ON THE APPROVED DESIGN DOCUMENTS IS BEING INSTALLED.
   - THE SPECIAL INSPECTOR MUST VERIFY THAT ALL CUT EDGES AND DRILLED HOLES ARE PROPERLY SEALED USING A VINYL ESTER SEALING KIT SUPPLIED BY THE MANUFACTURER.
   - THE SPECIAL INSPECTOR MUST VERIFY THAT THE STRUCTURE IS BUILT IN ACCORDANCE WITH THE APPROVED DESIGN DOCUMENTS.
2. THE INSPECTION AGENCY SHALL SUBMIT INSPECTION AND TEST REPORTS TO THE BUILDING DEPARTMENT, THE ENGINEER OF RECORD, AND THE OWNER UNLESS THE FABRICATOR IS APPROVED BY THE BUILDING OFFICIAL TO PERFORM WORK WITHOUT THE SPECIAL INSPECTIONS.

MAXIMUM ALLOWABLE ANGLE CLIP



NOT TO ENCROACH ON BOLT HOLE

INFINIGY
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

at&t

STATE OF CONNECTICUT JOSEPH R. JOHNSTON 29160 LICENSED PROFESSIONAL ENGINEER
FEB 11 2019

0	ISSUED FOR REVIEW	TAG	02/05/19
No.	Submittal / Revision	App'd	Date

Drawn: TAG Date: 02/05/19
Designed: CLK Date: 02/05/19
Checked: JE Date: 02/05/19

Project Number: 1039-A0002-B

Project Title: BU# 842859

BRISTOL CENTER

371 TERRYVILLE AVENUE
BRISTOL, CT 06010

Prepared For:

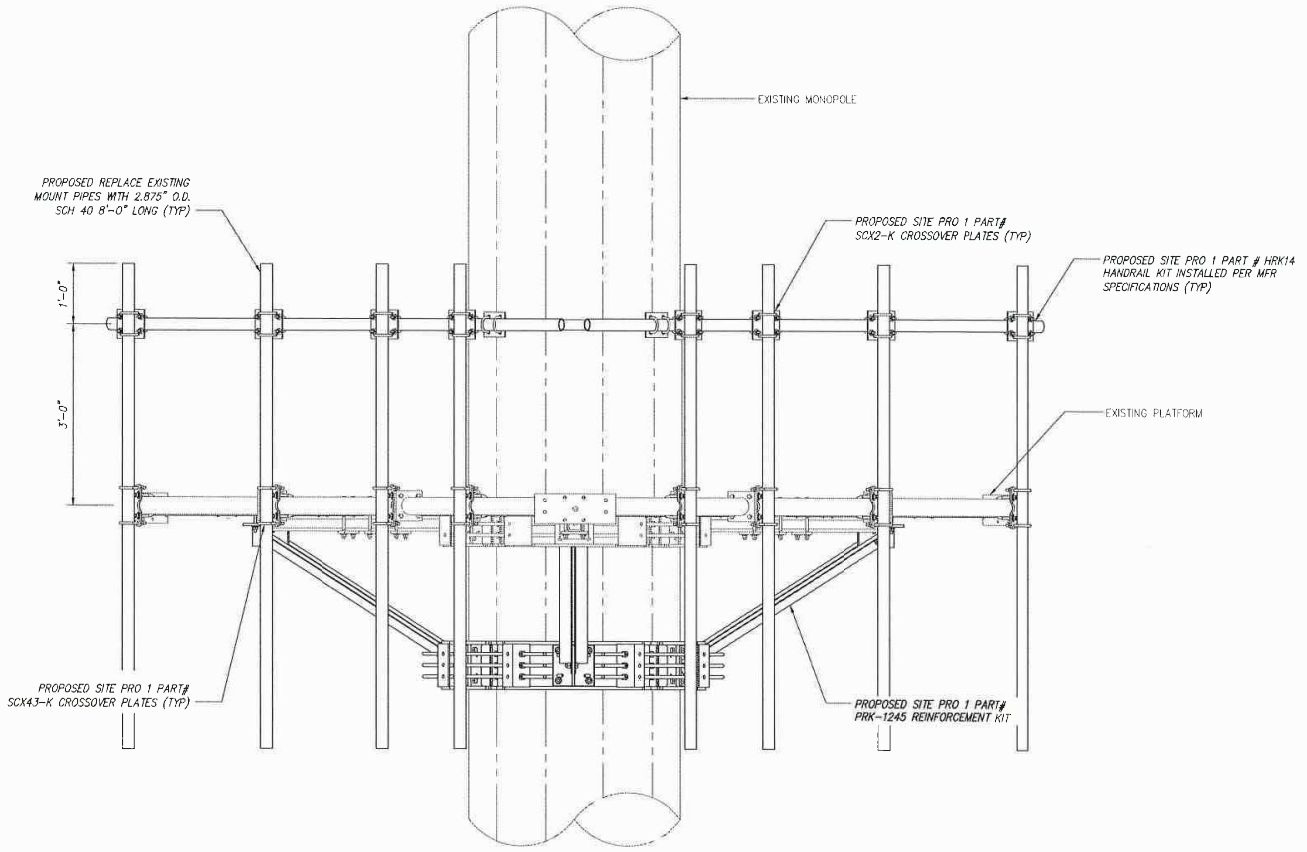
CROWN CASTLE
3 Corporate Park, Suite 101
Clifton Park, NY 12065

Drawing Scale: AS NOTED

Date: 02/05/19

Drawing Title: GENERAL NOTES

Drawing Number: S1



1 MOUNT ELEVATION
SCALE: NOT TO SCALE

INFINIGY
1033 Watervliet Shaker Rd
Albany, NY 12205
Phone #: (518) 690-0790
Fax #: (518) 690-0793

at&t

STATE OF CONNECTICUT
JOSEPH R. JOHNSTON
29400
LICENSED
PROFESSIONAL ENGINEER
Joseph Johnston
11/1/2019

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No.	Submittal / Revision	Rev.	Date
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Prepared For:
CROWN CASTLE
3 Corporate Park, Suite 101
Clifton Park, NY 12065

Drawing Scale
AS NOTED

Date:
02/05/19

Drawing Title
MOD DESIGN

Drawing Number
S2

Exhibit D

Structural Analysis Report

Date: **November 20, 2019**

Chanhdara Ratsavong
Crown Castle
3530 Toringdon Way
Charlotte, NC 28277

Black & Veatch Corp.
6800 W. 115th St., Suite 2292
Overland Park, KS 66211
(913) 458-6984

Subject:	**Structural Modification Report**	
Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	10070954
	Carrier Site Name:	BRISTOL CENTER
Crown Castle Designation:	**Crown Castle BU Number:**	842859
	Crown Castle Site Name:	BRISTOL CENTER
	Crown Castle JDE Job Number:	591151
	Crown Castle Work Order Number:	1805727
	Crown Castle Order Number:	505606 Rev. 4
Engineering Firm Designation:	**Black & Veatch Corp. Project Number:**	400087
Site Data:	**371 Terryville Avenue, Bristol, Hartford County, CT** **Latitude *41° 40' 47.71"*, Longitude *-72° 57' 45.18"*** **168.33 Foot - Monopole Tower**	

Dear Chanhdara Ratsavong,

Black & Veatch Corp. is pleased to submit this **"Structural Modification 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:

LC4: Modified Structure w/ Proposed Equipment Configuration **Sufficient Capacity – 98.6%**

This analysis utilizes an ultimate 3-second gust wind speed of 120 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: Thunwa Chalermyan

Respectfully submitted by:

Digitally signed by Jiang, Ping(telecom)
DN: CN="Jiang, Ping(telecom)", E=JiangP@bv.com, O=Black Veatch, C=US
Date: 2019.11.21 21:32:05-06'00'

STATE OF CONNECTICUT
PING JIANG
30767
LICENSED
PROFESSIONAL ENGINEER

Nov 21, 2019

Ping Jiang, P.E.
Professional Engineer

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 168.33 ft Monopole tower designed by Engineered Endeavors, Inc.

This tower has been modified multiple times in the past to accommodate additional loading.

The tower has been modified per reinforcement drawings prepared by Black & Veatch Corp. in May of 2012. Reinforcement consists of the addition of reinforcement plates between the elevations 0' and 120', baseplate stiffeners, and additional anchor rods. Refer to the Legacy Modification Inspection Report by Sinnot Gering and Schmitt Towers, Inc. in August of 2015. All reinforcement plates are considered ineffective in this analysis.

The tower was later modified per reinforcement drawings prepared by GPD Group, Inc. in February of 2013. Reinforcement consists of the removal and replacement of all baseplate stiffeners, reinforcement plates between elevations 0.75' and 115.83', and transition stiffener plates. Refer to Legacy Modification Inspection Report by B+T Group in March of 2015. This modification has been considered effective in this analysis.

The tower was later modified per reinforcement drawings prepared by GPD Group, Inc. in August of 2013. Reinforcement consists of the addition of new rebar to the existing foundation. Refer to the Post Modification Observation Report by GPD Group, Inc. in December of 2013. This modification has been considered effective in this analysis.

The tower was later modified per reinforcement drawings prepared by Black & Veatch Corp. in September of 2015. The modification consists of: the removal of existing reinforcement plates between elevation 0' and 84.67'; the removal and replacement of all baseplate stiffener plates; the addition of reinforcement plates between elevations 1.25' - 84.33' and 87.92' - 127.33'; the addition of transition stiffener plates; the addition of new rebar to the existing foundation. Refer to the Post Modification Inspection Report by Engineered Tower Solutions, PLLC in February of 2016. This modification has been considered effective in this analysis.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	120 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	2.00 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)
168.0	171.0	1	site pro 1	HRK14-U Handrail Kit	3 6 2 6 2	3/8 7/8 1 1-5/8 2"conduit
		12	site pro 1	SCX2-K		
	169.0	3	kathrein	800 10121		
		1	kathrein	80010965		
		6	powerwave technologies	LGP21401		
	168.0	1	cci antennas	DMP65R-BU6D		
		2	cci antennas	DMP65R-BU8D		
		2	cci antennas	TPA-65R-LCUUUU-H8		
		1	cci tower mounts (v2.0)	Platform Mount [LP 304-1]		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		3	ericsson	RRUS 32 B2		
		3	ericsson	RRUS 32 B30		
		3	ericsson	RRUS 4426 B66		
		3	ericsson	RRUS 4449 B5/B12		
		3	ericsson	RRUS 4478 B14		
		3	ericsson	RRUS E2 B29		
		1	kathrein	80010798		
		2	kathrein	80010966		
		1	raycap	DC6-48-60-18-8F		
		12	site pro 1	P3096		
		12	site pro 1	SCX43-K		
	167.0	3	ericsson	RRUS 4415 B25		
		1	raycap	DC6-48-60-18-8C		
		2	raycap	DC6-48-60-18-8F		
	165.5	1	site pro 1	PRK-1245 Tri-Sector Kickers		

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)
158.0	158.0	3	alcatel lucent	1900MHz RRH (65MHz)	4	1-1/4
		3	alcatel lucent	800 EXTERNAL NOTCH FILTER		
		3	alcatel lucent	800MHZ RRH		
		3	alcatel lucent	TD-RRH8x20-25		
		1	cci tower mounts (v2.0)	T-Arm Mount [TA 602-3_KCKR]		
		2	powerwave technologies	P40-16-XLPP-RR-A w/ Mount Pipe		
		1	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe		
		3	rfs celwave	APXVTM14-C-120 w/ Mount Pipe		
138.0	140.0	6	antel	BXA-70063/4CF w/ Mount Pipe	1 7	1-1/4 1-5/8
		6	commscope	SBNHH-1D65B w/ Mount Pipe		
		1	raycap	RVZDC-6627-PF-48		
		1	rfs celwave	DB-T1-6Z-8AB-0Z		
		3	samsung telecommunications	RFV01U-D1A		
		3	samsung telecommunications	RFV01U-D2A		
	138.0	1	cci tower mounts (v2.0)	Platform Mount [LP 303-1]		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
128.0	130.0	3	andrew	ONEBASE TWIN DUAL DUPLEX TMA	1 12	1-1/4 1-5/8
		3	ericsson	ERICSSON AIR 21 B2A B4P w/ Mount Pipe		
		3	ericsson	ERICSSON AIR 21 B4A B2P w/ Mount Pipe		
	128.0	1	cci tower mounts (v2.0)	Platform Mount [LP 303-1]		
70.0	70.0	1	cci tower mounts (v2.0)	Side Arm Mount [SO 701-1]	1	1/2
		1	gps	GPS_A		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	FDH Engineering, Inc.	5452600	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Engineered Endeavors, Inc.	4529295	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Engineered Endeavors, Inc.	5135435	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	Black & Veatch Corp.	5111174	CCISITES
4-POST-MODIFICATION INSPECTION	Sinnot Gerring and Schmitt Towers, Inc.	5839578	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD Group, Inc.	4964264	CCISITES
4-POST-MODIFICATION INSPECTION	B+T Group	5595874	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD Group, Inc.	5111173	CCISITES
4-POST-MODIFICATION INSPECTION	GPD Group, Inc.	5114340	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	Black & Veatch Corp.	5907572	CCISITES
4-POST-MODIFICATION INSPECTION	Engineered Tower Solutions, PLLC.	6121087	CCISITES
4-TOWER STRUCTURAL ANALYSIS REPORTS	Black & Veatch Corp.	8724572	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.

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) Tower and structures were built and maintained in accordance with the manufacturer's specifications.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
3) The existing base plate grout was not considered in this analysis.
4) The wind loading Exposure Category and Topographic Category for this site have been analyzed and determined by the tower owner. Black & Veatch does not assume any responsibility for its accuracy.
5) The wind loading EPA of the panel antennas has been analyzed and determined by the tower owner. Verification of its accuracy is outside the scope of this structural analysis/design. Black & Veatch does not assume any responsibility for its accuracy.
6) This analysis was performed under the assumption that all information provided to Black & Veatch is current and correct. This is to include site data, appurtenance loading, tower/foundation details, and geotechnical data. The loading on the structure is based on CAD level drawings and carrier orders provided by the owner. If any of this information is not current and correct, this report should be considered obsolete and further analysis will be required.

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

4) ANALYSIS RESULTS

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

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
168.33 - 163.33	Pole	TP19.834x19x0.1875	Pole	14.9%	Pass
163.33 - 158.33	Pole	TP20.669x19.834x0.1875	Pole	27.6%	Pass
158.33 - 153.33	Pole	TP21.503x20.669x0.1875	Pole	43.8%	Pass
153.33 - 148.33	Pole	TP22.338x21.503x0.1875	Pole	58.3%	Pass
148.33 - 143.33	Pole	TP23.172x22.338x0.1875	Pole	71.4%	Pass
143.33 - 138.33	Pole	TP24.007x23.172x0.1875	Pole	83.2%	Pass
138.33 - 134.16	Pole	TP25.314x24.007x0.1875	Pole	96.2%	Pass
134.16 - 129.16	Pole	TP25.151x24.328x0.25	Pole	77.5%	Pass
129.16 - 125.75	Pole	TP25.712x25.151x0.25	Pole	84.4%	Pass
125.75 - 125.5	Pole	TP25.753x25.712x0.25	Pole	84.9%	Pass
125.5 - 120.5	Pole	TP26.576x25.753x0.25	Pole	94.1%	Pass
120.5 - 120.25	Pole + Reinf.	TP26.617x26.576x0.4813	Reinf. 10 Tension Rupture	87.3%	Pass
120.25 - 115.25	Pole + Reinf.	TP27.44x26.617x0.475	Reinf. 10 Tension Rupture	95.8%	Pass

115.25 - 113.83	Pole + Reinf.	TP27.674x27.44x0.475	Reinf. 10 Tension Rupture	98.1%	Pass
113.83 - 113.48	Pole + Reinf.	TP27.731x27.674x0.65	Reinf. 10 Tension Rupture	68.7%	Pass
113.48 - 113.25	Pole + Reinf.	TP27.769x27.731x0.65	Reinf. 10 Tension Rupture	69.0%	Pass
113.25 - 108.25	Pole + Reinf.	TP28.592x27.769x0.6375	Reinf. 10 Tension Rupture	74.9%	Pass
108.25 - 103.25	Pole + Reinf.	TP29.415x28.592x0.625	Reinf. 10 Tension Rupture	80.5%	Pass
103.25 - 98.25	Pole + Reinf.	TP30.238x29.415x0.6125	Reinf. 10 Tension Rupture	85.9%	Pass
98.25 - 93.25	Pole + Reinf.	TP31.061x30.238x0.6	Reinf. 10 Tension Rupture	91.1%	Pass
93.25 - 89.11	Pole + Reinf.	TP32.493x31.061x0.6	Reinf. 10 Tension Rupture	95.3%	Pass
89.11 - 83.55	Pole + Reinf.	TP32.155x31.243x0.6625	Reinf. 2 Tension Rupture	91.2%	Pass
83.55 - 82.92	Pole + Reinf.	TP32.259x32.155x0.6625	Reinf. 2 Tension Rupture	91.8%	Pass
82.92 - 82.67	Pole + Reinf.	TP32.3x32.259x0.95	Reinf. 2 Tension Rupture	67.7%	Pass
82.67 - 82.5	Pole + Reinf.	TP32.328x32.3x0.95	Reinf. 2 Tension Rupture	67.8%	Pass
82.5 - 82.25	Pole + Reinf.	TP32.369x32.328x0.6875	Reinf. 2 Tension Rupture	90.0%	Pass
82.25 - 77.25	Pole + Reinf.	TP33.189x32.369x0.675	Reinf. 2 Tension Rupture	93.9%	Pass
77.25 - 73.42	Pole + Reinf.	TP33.818x33.189x0.6625	Reinf. 2 Tension Rupture	96.9%	Pass
73.42 - 73.17	Pole + Reinf.	TP33.859x33.818x0.9375	Reinf. 9 Tension Rupture	73.6%	Pass
73.17 - 68.17	Pole + Reinf.	TP34.679x33.859x0.9125	Reinf. 9 Tension Rupture	76.6%	Pass
68.17 - 64.25	Pole + Reinf.	TP35.323x34.679x0.8875	Reinf. 9 Tension Rupture	79.0%	Pass
64.25 - 64	Pole + Reinf.	TP35.364x35.323x0.7375	Reinf. 3 Tension Rupture	90.8%	Pass
64 - 59	Pole + Reinf.	TP36.184x35.364x0.7375	Reinf. 3 Tension Rupture	94.0%	Pass
59 - 54	Pole + Reinf.	TP37.005x36.184x0.7125	Reinf. 3 Tension Rupture	97.1%	Pass
54 - 53.5	Pole + Reinf.	TP37.087x37.005x0.7125	Reinf. 3 Tension Rupture	97.4%	Pass
53.5 - 53.25	Pole + Reinf.	TP37.128x37.087x0.825	Reinf. 7 Tension Rupture	91.9%	Pass
53.25 - 49	Pole + Reinf.	TP38.702x37.128x0.8125	Reinf. 7 Tension Rupture	94.4%	Pass
49 - 42.66	Pole + Reinf.	TP38.242x37.201x0.725	Reinf. 4 Tension Rupture	97.8%	Pass
42.66 - 41.75	Pole + Reinf.	TP38.392x38.242x0.725	Reinf. 4 Tension Rupture	98.2%	Pass
41.75 - 41.5	Pole + Reinf.	TP38.433x38.392x0.7625	Reinf. 4 Tension Rupture	94.3%	Pass
41.5 - 36.5	Pole + Reinf.	TP39.254x38.433x0.75	Reinf. 4 Tension Rupture	96.7%	Pass
36.5 - 32.75	Pole + Reinf.	TP39.87x39.254x0.75	Reinf. 4 Tension Rupture	98.3%	Pass
32.75 - 32.5	Pole + Reinf.	TP39.911x39.87x1.0125	Reinf. 4 Tension Rupture	75.4%	Pass
32.5 - 29.83	Pole + Reinf.	TP40.35x39.911x1	Reinf. 4 Tension Rupture	76.4%	Pass
29.83 - 29.58	Pole + Reinf.	TP40.391x40.35x0.9	Reinf. 8 Tension Rupture	92.7%	Pass
29.58 - 28.25	Pole + Reinf.	TP40.609x40.391x0.8875	Reinf. 8 Tension Rupture	93.3%	Pass
28.25 - 28	Pole + Reinf.	TP40.65x40.609x0.95	Reinf. 8 Tension Rupture	85.2%	Pass
28 - 23	Pole + Reinf.	TP41.472x40.65x0.95	Reinf. 8 Tension Rupture	87.2%	Pass
23 - 19.25	Pole + Reinf.	TP42.088x41.472x0.9375	Reinf. 8 Tension Rupture	88.7%	Pass
19.25 - 19	Pole + Reinf.	TP42.129x42.088x0.825	Reinf. 5 Tension Rupture	91.9%	Pass
19 - 14	Pole + Reinf.	TP42.95x42.129x0.8	Reinf. 5 Tension Rupture	93.8%	Pass
14 - 9	Pole + Reinf.	TP43.772x42.95x0.8	Reinf. 5 Tension Rupture	95.6%	Pass

9 - 4	Pole + Reinf.	TP44.593x43.772x0.7875	Reinf. 5 Tension Rupture	97.3%	Pass
4 - 0	Pole + Reinf.	TP45.25x44.593x0.775	Reinf. 5 Tension Rupture	98.6%	Pass
				Summary	
			Pole	96.2%	Pass
			Reinforcement	98.6%	Pass
			Overall	98.6%	Pass

Table 5 - Tower Component Stresses vs. Capacity (Monopole Tower) - LC4

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods (Original)	0	71.1	Pass
	Anchor Rods (Existing Modification)		71.1	Pass
	Base Plate		52.1	Pass
1	Base Foundation	0	89.4	Pass
	Base Foundation Soil Interaction		63.1	Pass

Structure Rating (max from all components) =	98.6%

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

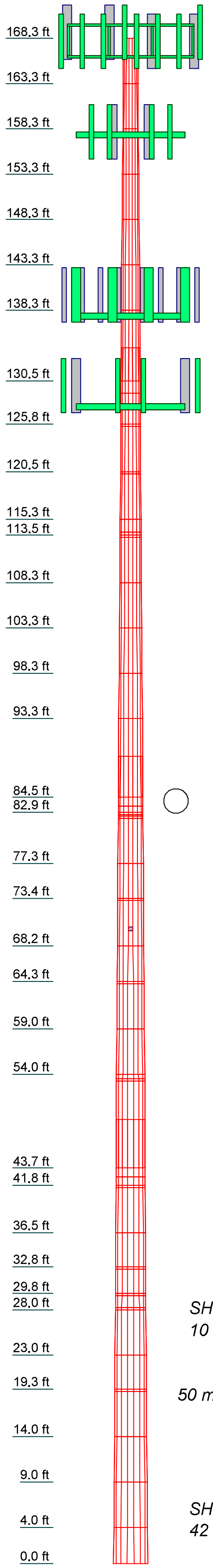
4.1) Recommendations

The tower and its foundation will have sufficient capacity to carry the proposed loading configuration after proper installation of the proposed reinforcements shown in Appendix D.

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.00	18	0.1875		19.0000	19.8345		0.2
2	5.00	18	0.1875		19.8345	20.6689		0.2
3	5.00	18	0.1875		20.6689	21.5034		0.2
4	5.00	18	0.1875		21.5034	22.3378		0.2
5	5.00	18	0.1875		22.3378	23.1723		0.2
6	5.00	18	0.1875		23.1723	24.0067		0.2
7	7.83	18	0.1875	3.66	24.0067	25.3135		0.4
8	[illegible]	18	[illegible]		[illegible]	[illegible]		0.3
9	3.41	18	[illegible]		[illegible]	[illegible]		0.2
10	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
11	5.00	18	[illegible]		[illegible]	[illegible]		0.3
12	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
13	5.00	18	[illegible]		[illegible]	[illegible]		0.8
14–16	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
17	5.00	18	[illegible]		[illegible]	[illegible]		0.9
18	5.00	18	0.6250		28.5923	29.4153		0.9
19	5.00	18	0.6125		29.4153	30.2383		0.9
20	5.00	18	0.6000		30.2383	31.0612		1.0
21	8.70	18	0.6000	4.56	31.0612	32.4932	A572-65	1.7
22–26	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
27	5.00	18	[illegible]		[illegible]	[illegible]		1.3
28	3.83	18	[illegible]		[illegible]	[illegible]		1.0
29	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
30	5.00	18	[illegible]		[illegible]	[illegible]		1.6
31	3.92	18	[illegible]		[illegible]	[illegible]		1.3
32	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
33	5.00	18	[illegible]		[illegible]	[illegible]		1.3
34	5.00	18	[illegible]		[illegible]	[illegible]		1.3
35–36	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
37	9.59	18	0.8125	5.34	37.128	38.702		3.0
38–40	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
41	5.00	18	[illegible]		[illegible]	[illegible]		1.7
42	5.75	18	[illegible]		[illegible]	[illegible]		1.3
43–47	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
48	5.00	18	[illegible]		[illegible]	[illegible]		2.0
49	5.75	18	[illegible]		[illegible]	[illegible]		1.5
50	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
51	5.00	18	[illegible]		[illegible]	[illegible]		1.8
52	5.00	18	0.8000		42.9502	43.7716		1.8
53	5.00	18	0.7875		43.7716	44.5929		1.8
54	4.00	18	0.7750		44.5929	45.2500		1.5
								39.6



MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 120 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 2.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft

ALL REACTIONS ARE FACTORED

AXIAL 126 K
SHEAR 10 K
MOMENT 1378 kip-ft
TORQUE 1 kip-ft
50 mph WIND - 2.0000 in ICE

AXIAL 72 K
SHEAR 42 K
MOMENT 4830 kip-ft
TORQUE 4 kip-ft
REACTIONS - 120 mph WIND

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Job: BRISTOL CENTER (BU# 842859)	
Project: 400087 (842859.1805727)	
Client: Crown Castle	Drawn by: Thunwa Chalermyan / App'd:
Code: TIA-222-H	Date: 11/20/19 / 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:

1) Tower is located in Hartford County, Connecticut.
2) Tower base elevation above sea level: 565.00 ft.
3) Basic wind speed of 120 mph.
4) Risk Category II.
5) Exposure Category C.
6) Simplified Topographic Factor Procedure for wind speed-up calculations is used.
7) Topographic Category: 1.
8) Crest Height: 0.00 ft.
9) Nominal ice thickness of 2.0000 in.
10) Ice thickness is considered to increase with height.
11) Ice density of 56 pcf.
12) A wind speed of 50 mph is used in combination with ice.
13) Temperature drop of 50 °F.
14) Deflections calculated using a wind speed of 60 mph.
15) A non-linear (P-delta) analysis was used.
16) Pressures are calculated at each section.
17) Stress ratio used in pole design is 1.05.
18) Tower analysis based on target reliabilities in accordance with Annex S.
19) Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
20) 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*	*Section Length*	*Splice Length*	*Number of Sides*	*Top Diameter*	*Bottom Diameter*	*Wall Thickness*	*Bend Radius*	*Pole Grade*
	ft	*ft*	*ft*		*in*	*in*	*in*	*in*	
L1	168.33-163.33	5.00	0.00	18	19.0000	19.8345	0.1875	0.7500	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
L2	163.33-158.33	5.00	0.00	18	19.8345	20.6689	0.1875	0.7500	A572-65 (65 ksi)
L3	158.33-153.33	5.00	0.00	18	20.6689	21.5034	0.1875	0.7500	A572-65 (65 ksi)
L4	153.33-148.33	5.00	0.00	18	21.5034	22.3378	0.1875	0.7500	A572-65 (65 ksi)
L5	148.33-143.33	5.00	0.00	18	22.3378	23.1723	0.1875	0.7500	A572-65 (65 ksi)
L6	143.33-138.33	5.00	0.00	18	23.1723	24.0067	0.1875	0.7500	A572-65 (65 ksi)
L7	138.33-130.50	7.83	3.66	18	24.0067	25.3135	0.1875	0.7500	A572-65 (65 ksi)
L8	130.50-129.16	5.00	0.00	18	24.3277	25.1506	0.2500	1.0000	A572-65 (65 ksi)
L9	129.16-125.75	3.41	0.00	18	25.1506	25.7119	0.2500	1.0000	A572-65 (65 ksi)
L10	125.75-125.50	0.25	0.00	18	25.7119	25.7531	0.2500	1.0000	A572-65 (65 ksi)
L11	125.50-120.50	5.00	0.00	18	25.7531	26.5760	0.2500	1.0000	A572-65 (65 ksi)
L12	120.50-120.25	0.25	0.00	18	26.5760	26.6172	0.4813	1.9250	A572-65 (65 ksi)
L13	120.25-115.25	5.00	0.00	18	26.6172	27.4402	0.4750	1.9000	A572-65 (65 ksi)
L14	115.25-113.83	1.42	0.00	18	27.4402	27.6739	0.4750	1.9000	A572-65 (65 ksi)
L15	113.83-113.48	0.35	0.00	18	27.6739	27.7315	0.6500	2.6000	A572-65 (65 ksi)
L16	113.48-113.25	0.23	0.00	18	27.7315	27.7693	0.6500	2.6000	A572-65 (65 ksi)
L17	113.25-108.25	5.00	0.00	18	27.7693	28.5923	0.6375	2.5500	A572-65 (65 ksi)
L18	108.25-103.25	5.00	0.00	18	28.5923	29.4153	0.6250	2.5000	A572-65 (65 ksi)
L19	103.25-98.25	5.00	0.00	18	29.4153	30.2383	0.6125	2.4500	A572-65 (65 ksi)
L20	98.25-93.25	5.00	0.00	18	30.2383	31.0612	0.6000	2.4000	A572-65 (65 ksi)
L21	93.25-84.55	8.70	4.56	18	31.0612	32.4932	0.6000	2.4000	A572-65 (65 ksi)
L22	84.55-83.55	5.56	0.00	18	31.2427	32.1552	0.6625	2.6500	A572-65 (65 ksi)
L23	83.55-82.92	0.63	0.00	18	32.1552	32.2586	0.6625	2.6500	A572-65 (65 ksi)
L24	82.92-82.67	0.25	0.00	18	32.2586	32.2996	0.9500	3.8000	A572-65 (65 ksi)
L25	82.67-82.50	0.17	0.00	18	32.2996	32.3275	0.9500	3.8000	A572-65 (65 ksi)
L26	82.50-82.25	0.25	0.00	18	32.3275	32.3685	0.6875	2.7500	A572-65 (65 ksi)
L27	82.25-77.25	5.00	0.00	18	32.3685	33.1892	0.6750	2.7000	A572-65 (65 ksi)
L28	77.25-73.42	3.83	0.00	18	33.1892	33.8178	0.6625	2.6500	A572-65 (65 ksi)
L29	73.42-73.17	0.25	0.00	18	33.8178	33.8588	0.9375	3.7500	A572-65 (65 ksi)
L30	73.17-68.17	5.00	0.00	18	33.8588	34.6794	0.9125	3.6500	A572-65 (65 ksi)
L31	68.17-64.25	3.92	0.00	18	34.6794	35.3228	0.8875	3.5500	A572-65 (65 ksi)
L32	64.25-64.00	0.25	0.00	18	35.3228	35.3638	0.7375	2.9500	A572-65 (65 ksi)
L33	64.00-59.00	5.00	0.00	18	35.3638	36.1844	0.7375	2.9500	A572-65 (65 ksi)
L34	59.00-54.00	5.00	0.00	18	36.1844	37.0051	0.7125	2.8500	A572-65 (65 ksi)
L35	54.00-53.50	0.50	0.00	18	37.0051	37.0871	0.7125	2.8500	A572-65 (65 ksi)
L36	53.50-53.25	0.25	0.00	18	37.0871	37.1281	0.8250	3.3000	A572-65

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
									(65 ksi)
L37	53.25-43.66	9.59	5.34	18	37.1281	38.7021	0.8125	3.2500	A572-65 (65 ksi)
L38	43.66-42.66	6.34	0.00	18	37.2007	38.2422	0.7250	2.9000	A572-65 (65 ksi)
L39	42.66-41.75	0.91	0.00	18	38.2422	38.3916	0.7250	2.9000	A572-65 (65 ksi)
L40	41.75-41.50	0.25	0.00	18	38.3916	38.4327	0.7625	3.0500	A572-65 (65 ksi)
L41	41.50-36.50	5.00	0.00	18	38.4327	39.2541	0.7500	3.0000	A572-65 (65 ksi)
L42	36.50-32.75	3.75	0.00	18	39.2541	39.8701	0.7500	3.0000	A572-65 (65 ksi)
L43	32.75-32.50	0.25	0.00	18	39.8701	39.9112	1.0125	4.0500	A572-65 (65 ksi)
L44	32.50-29.83	2.67	0.00	18	39.9112	40.3498	1.0000	4.0000	A572-65 (65 ksi)
L45	29.83-29.58	0.25	0.00	18	40.3498	40.3908	0.9000	3.6000	A572-65 (65 ksi)
L46	29.58-28.25	1.33	0.00	18	40.3908	40.6093	0.8875	3.5500	A572-65 (65 ksi)
L47	28.25-28.00	0.25	0.00	18	40.6093	40.6504	0.9500	3.8000	A572-65 (65 ksi)
L48	28.00-23.00	5.00	0.00	18	40.6504	41.4717	0.9500	3.8000	A572-65 (65 ksi)
L49	23.00-19.25	3.75	0.00	18	41.4717	42.0878	0.9375	3.7500	A572-65 (65 ksi)
L50	19.25-19.00	0.25	0.00	18	42.0878	42.1288	0.8250	3.3000	A572-65 (65 ksi)
L51	19.00-14.00	5.00	0.00	18	42.1288	42.9502	0.8000	3.2000	A572-65 (65 ksi)
L52	14.00-9.00	5.00	0.00	18	42.9502	43.7716	0.8000	3.2000	A572-65 (65 ksi)
L53	9.00-4.00	5.00	0.00	18	43.7716	44.5929	0.7875	3.1500	A572-65 (65 ksi)
L54	4.00-0.00	4.00		18	44.5929	45.2500	0.7750	3.1000	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	19.2642	11.1958	500.5935	6.6784	9.6520	51.8642	1001.8456	5.5990	3.0140	16.075
	20.1115	11.6924	570.2056	6.9747	10.0759	56.5910	1141.1616	5.8473	3.1609	16.858
L2	20.1115	11.6924	570.2056	6.9747	10.0759	56.5910	1141.1616	5.8473	3.1609	16.858
	20.9588	12.1890	645.9895	7.2709	10.4998	61.5239	1292.8289	6.0957	3.3077	17.641
L3	20.9588	12.1890	645.9895	7.2709	10.4998	61.5239	1292.8289	6.0957	3.3077	17.641
	21.8062	12.6856	728.2070	7.5671	10.9237	66.6630	1457.3722	6.3440	3.4546	18.424
L4	21.8062	12.6856	728.2070	7.5671	10.9237	66.6630	1457.3722	6.3440	3.4546	18.424
	22.6535	13.1822	817.1204	7.8634	11.3476	72.0081	1635.3161	6.5924	3.6015	19.208
L5	22.6535	13.1822	817.1204	7.8634	11.3476	72.0081	1635.3161	6.5924	3.6015	19.208
	23.5008	13.6788	912.9919	8.1596	11.7715	77.5594	1827.1851	6.8407	3.7483	19.991
L6	23.5008	13.6788	912.9919	8.1596	11.7715	77.5594	1827.1851	6.8407	3.7483	19.991
	24.3482	14.1754	1016.0835	8.4558	12.1954	83.3168	2033.5039	7.0891	3.8952	20.774
L7	24.3482	14.1754	1016.0835	8.4558	12.1954	83.3168	2033.5039	7.0891	3.8952	20.774
	25.6751	14.9531	1192.6574	8.9197	12.8593	92.7470	2386.8842	7.4780	4.1252	22.001
L8	25.2761	19.1056	1399.3559	8.5476	12.3585	113.2306	2800.5530	9.5546	3.8417	15.367
	25.5001	19.7587	1547.8055	8.8397	12.7765	121.1444	3097.6476	9.8812	3.9865	15.946
L9	25.5001	19.7587	1547.8055	8.8397	12.7765	121.1444	3097.6476	9.8812	3.9865	15.946
	26.0700	20.2040	1654.8461	9.0390	13.0617	126.6950	3311.8696	10.1039	4.0853	16.341
L10	26.0700	20.2040	1654.8461	9.0390	13.0617	126.6950	3311.8696	10.1039	4.0853	16.341
	26.1118	20.2367	1662.8821	9.0536	13.0826	127.1068	3327.9524	10.1203	4.0925	16.37
L11	26.1118	20.2367	1662.8821	9.0536	13.0826	127.1068	3327.9524	10.1203	4.0925	16.37
	26.9474	20.8897	1829.1140	9.3457	13.5006	135.4836	3660.6348	10.4468	4.2374	16.95
L12	26.9118	39.8595	3429.0697	9.2636	13.5006	253.9934	6862.6514	19.9335	3.8304	7.959

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
	26.9536	39.9223	3445.3171	9.2783	13.5215	254.8023	6895.1676	19.9649	3.8376	7.974
L13	26.9545	39.4133	3403.0128	9.2805	13.5215	251.6737	6810.5035	19.7104	3.8486	8.102
	27.7902	40.6540	3734.6230	9.5726	13.9396	267.9147	7474.1602	20.3309	3.9935	8.407
L14	27.7902	40.6540	3734.6230	9.5726	13.9396	267.9147	7474.1602	20.3309	3.9935	8.407
	28.0275	41.0064	3832.5781	9.6556	14.0583	272.6197	7670.1993	20.5071	4.0346	8.494
L15	28.0005	55.7530	5143.9982	9.5935	14.0583	365.9039	10294.765 1	27.8818	3.7266	5.733
	28.0590	55.8718	5176.9655	9.6139	14.0876	367.4840	10360.743 0	27.9412	3.7367	5.749
L16	28.0590	55.8718	5176.9655	9.6139	14.0876	367.4840	10360.743 0	27.9412	3.7367	5.749
	28.0975	55.9499	5198.7062	9.6274	14.1068	368.5241	10404.253 0	27.9803	3.7434	5.759
L17	28.0994	54.8993	5105.7847	9.6318	14.1068	361.9372	10218.287 8	27.4548	3.7654	5.907
	28.9351	56.5645	5584.6306	9.9240	14.5249	384.4868	11176.609 6	28.2876	3.9102	6.134
L18	28.9370	55.4802	5482.4759	9.9284	14.5249	377.4537	10972.165 9	27.7454	3.9322	6.292
	29.7726	57.1127	5980.8425	10.2206	14.9430	400.2447	11969.554 8	28.5618	4.0771	6.523
L19	29.7746	55.9948	5868.8634	10.2250	14.9430	392.7509	11745.449 2	28.0027	4.0991	6.692
	30.6102	57.5947	6386.4408	10.5171	15.3610	415.7559	12781.285 1	28.8028	4.2439	6.929
L20	30.6122	56.4431	6264.0276	10.5216	15.3610	407.7868	12536.297 5	28.2269	4.2659	7.11
	31.4478	58.0104	6800.4542	10.8137	15.7791	430.9785	13609.856 6	29.0107	4.4108	7.351
L21	31.4478	58.0104	6800.4542	10.8137	15.7791	430.9785	13609.856 6	29.0107	4.4108	7.351
	32.9019	60.7374	7805.3056	11.3221	16.5065	472.8612	15620.881 6	30.3745	4.6628	7.771
L22	32.3824	64.3032	7597.1219	10.8560	15.8713	478.6714	15204.240 2	32.1577	4.3327	6.54
	32.5490	66.2220	8297.7275	11.1799	16.3348	507.9775	16606.373 3	33.1173	4.4933	6.782
L23	32.5490	66.2220	8297.7275	11.1799	16.3348	507.9775	16606.373 3	33.1173	4.4933	6.782
	32.6540	66.4394	8379.7266	11.2166	16.3874	511.3531	16770.479 5	33.2260	4.5115	6.81
L24	32.6097	94.4048	11691.172 6	11.1145	16.3874	713.4263	23397.728 7	47.2114	4.0055	4.216
	32.6513	94.5285	11737.198 0	11.1291	16.4082	715.3250	23489.840 1	47.2732	4.0127	4.224
L25	32.6513	94.5285	11737.198 0	11.1291	16.4082	715.3250	23489.840 1	47.2732	4.0127	4.224
	32.6797	94.6126	11768.564 2	11.1390	16.4224	716.6176	23552.613 8	47.3153	4.0176	4.229
L26	32.7202	69.0425	8732.2666	11.2322	16.4224	531.7298	17476.023 2	34.5278	4.4796	6.516
	32.7618	69.1320	8766.2829	11.2468	16.4432	533.1245	17544.100 7	34.5726	4.4869	6.526
L27	32.7638	67.9018	8617.0877	11.2512	16.4432	524.0511	17245.514 0	33.9574	4.5089	6.68
	33.5970	69.6600	9303.9194	11.5425	16.8601	551.8308	18620.081 0	34.8366	4.6533	6.894
L28	33.5990	68.3963	9142.1605	11.5470	16.8601	542.2366	18296.350 5	34.2046	4.6753	7.057
	34.2373	69.7181	9682.5019	11.7701	17.1794	563.6104	19377.744 2	34.8657	4.7859	7.224
L29	34.1948	97.8393	13363.536 3	11.6725	17.1794	777.8804	26744.656 7	48.9290	4.3019	4.589
	34.2365	97.9614	13413.627 6	11.6871	17.2003	779.8500	26844.905 2	48.9900	4.3091	4.596
L30	34.2404	95.4215	13085.697 0	11.6959	17.2003	760.7846	26188.612 4	47.7198	4.3531	4.771
	35.0736	97.7983	14088.064 4	11.9873	17.6171	799.6793	28194.666 2	48.9084	4.4976	4.929
L31	35.0775	95.1893	13732.546	11.9961	17.6171	779.4991	27483.162	47.6037	4.5416	5.117

Section	Tip Dia. in	Area in²	I in⁴	r in	C in	I/C in³	J in⁴	It/Q in²	w in	w/t
	35.7308	97.0016	14531.9404	12.2245	17.9440	809.8508	29083.0022	48.5100	4.6548	5.245
L32	35.7539	80.9581	12234.3331	12.2778	17.9440	681.8074	24484.7645	40.4867	4.9188	6.67
	35.7956	81.0541	12277.9283	12.2923	17.9648	683.4430	24572.0122	40.5348	4.9260	6.679
L33	35.7956	81.0541	12277.9283	12.2923	17.9648	683.4430	24572.0122	40.5348	4.9260	6.679
	36.6289	82.9751	13171.7171	12.5837	18.3817	716.5672	26360.7658	41.4954	5.0705	6.875
L34	36.6327	80.2189	12752.1617	12.5925	18.3817	693.7425	25521.1030	40.1171	5.1145	7.178
	37.4660	82.0747	13657.8349	12.8839	18.7986	726.5359	27333.6411	41.0452	5.2589	7.381
L35	37.4660	82.0747	13657.8349	12.8839	18.7986	726.5359	27333.6411	41.0452	5.2589	7.381
	37.5493	82.2603	13750.6909	12.9130	18.8403	729.8569	27519.4754	41.1380	5.2733	7.401
L36	37.5320	94.9542	15774.5790	12.8731	18.8403	837.2805	31569.9146	47.4861	5.0753	6.152
	37.5736	95.0616	15828.1871	12.8876	18.8611	839.1975	31677.2013	47.5398	5.0826	6.161
L37	37.5756	93.6535	15604.4739	12.8921	18.8611	827.3364	31229.4806	46.8357	5.1046	6.283
	39.1738	97.7125	17722.6150	13.4508	19.6607	901.4249	35468.5499	48.8656	5.3816	6.623
L38	38.5535	83.9360	14108.8766	12.9489	18.8979	746.5826	28236.3179	41.9760	5.2713	7.271
	38.7203	86.3326	15352.2576	13.3186	19.4270	790.2529	30724.7161	43.1745	5.4546	7.524
L39	38.7203	86.3326	15352.2576	13.3186	19.4270	790.2529	30724.7161	43.1745	5.4546	7.524
	38.8721	86.6766	15536.5034	13.3717	19.5030	796.6230	31093.4501	43.3465	5.4809	7.56
L40	38.8663	91.0691	16291.3608	13.3583	19.5030	835.3277	32604.1581	45.5432	5.4149	7.102
	38.9080	91.1685	16344.7596	13.3729	19.5238	837.1702	32711.0260	45.5929	5.4222	7.111
L41	38.9099	89.7037	16092.8222	13.3774	19.5238	824.2661	32206.8197	44.8604	5.4442	7.259
	39.7439	91.6590	17168.2379	13.6689	19.9411	860.9487	34359.0663	45.8382	5.5887	7.452
L42	39.7439	91.6590	17168.2379	13.6689	19.9411	860.9487	34359.0663	45.8382	5.5887	7.452
	40.3695	93.1254	18005.5060	13.8876	20.2540	888.9848	36034.7042	46.5715	5.6971	7.596
L43	40.3290	124.8757	23821.3928	13.7944	20.2540	1176.1323	47674.1304	62.4497	5.2351	5.171
	40.3707	125.0077	23897.0020	13.8090	20.2749	1178.6513	47825.4483	62.5157	5.2424	5.178
L44	40.3726	123.5040	23624.7379	13.8135	20.2749	1165.2226	47280.5619	61.7638	5.2644	5.264
	40.8180	124.8962	24432.6699	13.9692	20.4977	1191.9723	48897.4889	62.4600	5.3416	5.342
L45	40.8334	112.6922	22157.4750	14.0047	20.4977	1080.9746	44344.1054	56.3568	5.5176	6.131
	40.8751	112.8095	22226.7462	14.0192	20.5185	1083.2516	44482.7389	56.4155	5.5248	6.139
L46	40.8770	111.2779	21938.8611	14.0237	20.5185	1069.2211	43906.5898	55.6495	5.5468	6.25
	41.0989	111.8934	22304.8907	14.1012	20.6295	1081.2116	44639.1307	55.9573	5.5852	6.293
L47	41.0892	119.5847	23763.1340	14.0791	20.6295	1151.8987	47557.5361	59.8037	5.4752	5.763
	41.1309	119.7086	23837.0320	14.0936	20.6504	1154.3135	47705.4293	59.8657	5.4825	5.771
L48	41.1309	119.7086	23837.0320	14.0936	20.6504	1154.3135	47705.4293	59.8657	5.4825	5.771
	41.9650	122.1852	25347.342	14.3852	21.0676	1203.1406	50728.036	61.1042	5.6270	5.923

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
L49	41.9669	120.6147	25036.9801	14.3897	21.0676	1188.4089	50106.9045	60.3188	5.6490	6.026
	42.5924	122.4478	26195.9153	14.6083	21.3806	1225.2198	52426.3000	61.2355	5.7574	6.141
L50	42.6098	108.0486	23241.9906	14.6483	21.3806	1087.0606	46514.5636	54.0346	5.9554	7.219
	42.6515	108.1562	23311.4565	14.6629	21.4014	1089.2467	46653.5868	54.0884	5.9627	7.227
L51	42.6553	104.9422	22646.1201	14.6717	21.4014	1058.1583	45322.0385	52.4811	6.0067	7.508
	43.4894	107.0278	24023.3223	14.9633	21.8187	1101.0429	48078.2551	53.5241	6.1512	7.689
L52	43.4894	107.0278	24023.3223	14.9633	21.8187	1101.0429	48078.2551	53.5241	6.1512	7.689
	44.3234	109.1134	25455.2579	15.2549	22.2359	1144.7795	50944.0104	54.5671	6.2958	7.87
L53	44.3253	107.4397	25079.3928	15.2593	22.2359	1127.8760	50191.7857	53.7301	6.3178	8.023
	45.1593	109.4927	26544.7264	15.5509	22.6532	1171.7871	53124.3810	54.7568	6.4624	8.206
L54	45.1613	107.7855	26145.7511	15.5554	22.6532	1154.1748	52325.9054	53.9030	6.4844	8.367
	45.8285	109.4018	27339.7126	15.7886	22.9870	1189.3554	54715.3996	54.7113	6.6000	8.516

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 168.33-163.33				1	1	1			
L2 163.33-158.33				1	1	1			
L3 158.33-153.33				1	1	1			
L4 153.33-148.33				1	1	1			
L5 148.33-143.33				1	1	1			
L6 143.33-138.33				1	1	1			
L7 138.33-130.50				1	1	1			
L8 130.50-129.16				1	1	1			
L9 129.16-125.75				1	1	1			
L10 125.75-125.50				1	1	1			
L11 125.50-120.50				1	1	1			
L12 120.50-120.25				1	1	1.11274			
L13 120.25-115.25				1	1	1.10878			
L14 115.25-113.83				1	1	1.10377			
L15 113.83-113.48				1	1	0.967531			
L16 113.48-113.25				1	1	0.966717			
L17 113.25-108.25				1	1	0.967759			
L18 108.25-103.25				1	1	0.969903			
L19 103.25-98.25				1	1	0.973125			

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
L20 98.25-93.25				1	1	0.977409			
L21 93.25-84.55				1	1	0.96514			
L22 84.55-83.55				1	1	1.04324			
L23 83.55-82.92				1	1	1.04137			
L24 82.92-82.67				1	1	0.922782			
L25 82.67-82.50				1	1	0.922254			
L26 82.50-82.25				1	1	1.08195			
L27 82.25-77.25				1	1	1.08543			
L28 77.25-73.42				1	1	1.09347			
L29 73.42-73.17				1	1	0.962378			
L30 73.17-68.17				1	1	0.972306			
L31 68.17-64.25				1	1	0.98687			
L32 64.25-64.00				1	1	0.959458			
L33 64.00-59.00				1	1	0.947056			
L34 59.00-54.00				1	1	0.967362			
L35 54.00-53.50				1	1	0.966169			
L36 53.50-53.25				1	1	0.967988			
L37 53.25-43.66				1	1	0.971274			
L38 43.66-42.66				1	1	1.07808			
L39 42.66-41.75				1	1	1.07585			
L40 41.75-41.50				1	1	1.08919			
L41 41.50-36.50				1	1	1.09403			
L42 36.50-32.75				1	1	1.08468			
L43 32.75-32.50				1	1	0.938426			
L44 32.50-29.83				1	1	0.943444			
L45 29.83-29.58				1	1	0.938582			
L46 29.58-28.25				1	1	0.94859			
L47 28.25-28.00				1	1	1.00194			
L48 28.00-23.00				1	1	0.989629			
L49 23.00-19.25				1	1	0.993495			
L50 19.25-19.00				1	1	0.958794			
L51 19.00-14.00				1	1	0.978037			
L52 14.00-9.00				1	1	0.968302			
L53 9.00-4.00				1	1	0.973876			

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_r	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
L54 4.00-0.00				1	1	0.981834			

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
***										
HB114-U6S12-XXX-LI(1-1/4)	A	No	Surface Ar (CaAa)	138.00 - 0.00	1	1	0.100 0.143	1.5400		1.70
MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	B	No	Surface Ar (CaAa)	128.00 - 0.00	1	1	-0.150 -0.116	1.2500		0.68
***										
LDF4-50A(1/2)	C	No	Surface Ar (CaAa)	70.00 - 0.00	1	1	0.150 0.165	0.6250		0.15
***										
PL0.625x5 Reinforcement - Wind Area/Weight	A	No	Surface Af (CaAa)	84.58 - 0.00	1	1	0.000 0.000	0.0000	0.0000	10.63
PL0.625x5 Reinforcement - Wind Area/Weight	C	No	Surface Af (CaAa)	84.58 - 0.00	1	1	0.000 0.000	0.0000	0.0000	10.63
PL0.625x5 Reinforcement - Wind Area/Weight	A	No	Surface Af (CaAa)	120.08 - 84.58	1	1	0.000 0.000	0.0000	0.0000	10.63
PL0.625x5 Reinforcement - Wind Area/Weight	B	No	Surface Af (CaAa)	120.08 - 84.58	1	1	0.000 0.000	0.0000	0.0000	10.63
PL0.625x5 Reinforcement - Wind Area/Weight	C	No	Surface Af (CaAa)	120.08 - 84.58	1	1	0.000 0.000	0.0000	0.0000	10.63
***										
PL1.25x6 Reinforcement - Wind Area	A	No	Surface Af (CaAa)	30.75 - 0.00	2	2	0.000 0.000	6.0000	14.5000	0.00
PL1.25x6 Reinforcement - Wind Area	B	No	Surface Af (CaAa)	30.75 - 0.00	1	1	0.000 0.000	6.0000	14.5000	0.00
PL1.25x6 Reinforcement - Wind Area	C	No	Surface Af (CaAa)	30.75 - 0.00	1	1	0.000 0.000	6.0000	14.5000	0.00
PL1.25x6 Reinforcement - Wind Area	A	No	Surface Af (CaAa)	47.92 - 27.83	2	2	0.000 0.000	6.0000	14.5000	0.00
PL1.25x6 Reinforcement - Wind Area	B	No	Surface Af (CaAa)	47.92 - 27.83	1	1	0.000 0.000	6.0000	14.5000	0.00
PL1.25x6 Reinforcement - Wind Area	C	No	Surface Af (CaAa)	47.92 - 27.83	1	1	0.000 0.000	6.0000	14.5000	0.00
PL1.25x5 Reinforcement - Wind Area	A	No	Surface Af (CaAa)	75.42 - 45.38	2	2	0.000 0.000	5.0000	12.5000	0.00
PL1.25x5 Reinforcement - Wind Area	B	No	Surface Af (CaAa)	75.42 - 45.38	1	1	0.000 0.000	5.0000	12.5000	0.00
PL1.25x5 Reinforcement - Wind Area	C	No	Surface Af (CaAa)	75.42 - 45.38	1	1	0.000 0.000	5.0000	12.5000	0.00
PL1.25x5 Reinforcement - Wind	A	No	Surface Af (CaAa)	87.92 - 72.92	2	2	0.000 0.000	5.0000	12.5000	0.00

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
Area										
PL1.25x5 Reinforcement - Wind Area	B	No	Surface Af (CaAa)	87.92 - 72.92	1	1	0.000 0.000	5.0000	12.5000	0.00
PL1.25x5 Reinforcement - Wind Area	C	No	Surface Af (CaAa)	87.92 - 72.92	1	1	0.000 0.000	5.0000	12.5000	0.00
PL1.25x5 Reinforcement - Wind Area	A	No	Surface Af (CaAa)	115.83 - 85.83	1	1	0.000 0.000	5.0000	12.5000	0.00
PL1.25x5 Reinforcement - Wind Area	B	No	Surface Af (CaAa)	115.83 - 85.83	1	1	0.000 0.000	5.0000	12.5000	0.00
PL1.25x5 Reinforcement - Wind Area	C	No	Surface Af (CaAa)	115.83 - 85.83	1	1	0.000 0.000	5.0000	12.5000	0.00
***										
CCI-SFP-060100	A	No	Surface Af (CaAa)	43.75 - 1.25	2	2	0.000 0.000	6.0000	14.0000	0.00
CCI-SFP-060100	B	No	Surface Af (CaAa)	43.75 - 1.25	1	1	0.000 0.000	6.0000	14.0000	0.00
CCI-SFP-060100	C	No	Surface Af (CaAa)	43.75 - 1.25	1	1	0.000 0.000	6.0000	14.0000	0.00
CCI-SFP-045100	A	No	Surface Af (CaAa)	84.67 - 43.75	2	2	0.000 0.000	4.5000	11.0000	0.00
CCI-SFP-045100	B	No	Surface Af (CaAa)	84.67 - 43.75	1	1	0.000 0.000	4.5000	11.0000	0.00
CCI-SFP-045100	C	No	Surface Af (CaAa)	84.67 - 43.75	1	1	0.000 0.000	4.5000	11.0000	0.00
CCI-SFP-045100	A	No	Surface Af (CaAa)	27.75 - 17.75	2	2	0.000 0.000	4.5000	11.0000	0.00
CCI-SFP-045100	B	No	Surface Af (CaAa)	27.75 - 17.75	1	1	0.000 0.000	4.5000	11.0000	0.00
CCI-SFP-045100	C	No	Surface Af (CaAa)	27.75 - 17.75	1	1	0.000 0.000	4.5000	11.0000	0.00
CCI-SFP-045100	A	No	Surface Af (CaAa)	72.75 - 62.75	2	2	0.000 0.000	4.5000	11.0000	0.00
CCI-SFP-045100	B	No	Surface Af (CaAa)	72.75 - 62.75	1	1	0.000 0.000	4.5000	11.0000	0.00
CCI-SFP-045100	C	No	Surface Af (CaAa)	72.75 - 62.75	1	1	0.000 0.000	4.5000	11.0000	0.00
CCI-SFP-045100	A	No	Surface Af (CaAa)	113.83 - 87.92	1	1	0.000 0.000	4.5000	11.0000	0.00
CCI-SFP-045100	B	No	Surface Af (CaAa)	113.83 - 87.92	1	1	0.000 0.000	4.5000	11.0000	0.00
CCI-SFP-045100	C	No	Surface Af (CaAa)	113.83 - 87.92	1	1	0.000 0.000	4.5000	11.0000	0.00
PL1x4.5 Reinforcement - Wind Area/Weight	A	No	Surface Af (CaAa)	127.33 - 113.83	1	1	0.000 0.000	4.5000	11.0000	15.31
PL1x4.5 Reinforcement - Wind Area/Weight	B	No	Surface Af (CaAa)	127.33 - 113.83	1	1	0.000 0.000	4.5000	11.0000	15.31
PL1x4.5 Reinforcement - Wind Area/Weight	C	No	Surface Af (CaAa)	127.33 - 113.83	1	1	0.000 0.000	4.5000	11.0000	15.31
*** Proposed Modification ***										
PL1.25x4 Reinforcement - Wind Area	A	No	Surface Af (CaAa)	122.00 - 112.00	1	1	0.000 0.000	4.0000	10.5000	0.00
PL1.25x4 Reinforcement - Wind Area	B	No	Surface Af (CaAa)	122.00 - 112.00	1	1	0.000 0.000	4.0000	10.5000	0.00
***										
PL1.25x5 Reinforcement - Wind Area	B	No	Surface Af (CaAa)	90.50 - 80.50	1	1	0.000 0.000	5.0000	12.5000	0.00

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
PL1.25x5 Reinforcement - Wind Area ***	C	No	Surface Af (CaAa)	90.50 - 80.50	1	1	0.000 0.000	5.0000	12.5000	0.00
PL1.25x5 Reinforcement - Wind Area	B	No	Surface Af (CaAa)	55.50 - 45.50	1	1	0.000 0.000	5.0000	12.5000	0.00
PL1.25x5 Reinforcement - Wind Area ****	C	No	Surface Af (CaAa)	55.50 - 45.50	1	1	0.000 0.000	5.0000	12.5000	0.00
PL1.25x6.5 Reinforcement - Wind Area	B	No	Surface Af (CaAa)	35.50 - 25.50	1	1	0.000 0.000	6.5000	15.5000	0.00
PL1.25x6.5 Reinforcement - Wind Area ***	C	No	Surface Af (CaAa)	35.50 - 25.50	1	1	0.000 0.000	6.5000	15.5000	0.00

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
3/8" Tower lighting	C	No	No	Inside Pole	168.33 - 0.00	1	No Ice	0.00	0.08
							1/2" Ice	0.00	0.08
							1" Ice	0.00	0.08
							2" Ice	0.00	0.08
3/8" Ground Wire ***	C	No	No	Inside Pole	168.33 - 0.00	1	No Ice	0.00	0.08
							1/2" Ice	0.00	0.08
							1" Ice	0.00	0.08
							2" Ice	0.00	0.08
2" innerduct conduit	C	No	No	Inside Pole	168.00 - 0.00	2	No Ice	0.00	0.20
							1/2" Ice	0.00	0.20
							1" Ice	0.00	0.20
							2" Ice	0.00	0.20
WR-VG86ST-BRDA(7/8)	C	No	No	Inside Pole	168.00 - 0.00	6	No Ice	0.00	0.68
							1/2" Ice	0.00	0.68
							1" Ice	0.00	0.68
							2" Ice	0.00	0.68
FB-L98B-034-XXXXXX(3/8)	C	No	No	Inside Pole	168.00 - 0.00	2	No Ice	0.00	0.05
							1/2" Ice	0.00	0.05
							1" Ice	0.00	0.05
							2" Ice	0.00	0.05
WR-CAT5E10P(1)	C	No	No	Inside Pole	168.00 - 0.00	2	No Ice	0.00	0.41
							1/2" Ice	0.00	0.41
							1" Ice	0.00	0.41
							2" Ice	0.00	0.41
LDF7-50A(1-5/8)	C	No	No	Inside Pole	168.00 - 0.00	6	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
LDF2-50(3/8)	C	No	No	Inside Pole	168.00 - 0.00	1	No Ice	0.00	0.08
							1/2" Ice	0.00	0.08
							1" Ice	0.00	0.08
							2" Ice	0.00	0.08
HB114-21U3M12-XXXF(1-1/4) ***	C	No	No	Inside Pole	158.00 - 0.00	1	No Ice	0.00	1.22
							1/2" Ice	0.00	1.22
							1" Ice	0.00	1.22
							2" Ice	0.00	1.22
LDF6-50A(1-1/4)	C	No	No	Inside Pole	158.00 - 0.00	3	No Ice	0.00	0.60
							1/2" Ice	0.00	0.60

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
							1" Ice	0.00	0.60
							2" Ice	0.00	0.60
***									
HB158-1-08U8-S8J18(1-5/8)	C	No	No	Inside Pole	138.00 - 0.00	1	No Ice	0.00	1.30
							1/2" Ice	0.00	1.30
							1" Ice	0.00	1.30
							2" Ice	0.00	1.30
LDF7-50A(1-5/8)	C	No	No	Inside Pole	138.00 - 0.00	6	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
***									
LDF7-50A(1-5/8)	C	No	No	Inside Pole	128.00 - 0.00	12	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
***									

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	168.33-163.33	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.05
L2	163.33-158.33	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.05
L3	158.33-153.33	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.07
L4	153.33-148.33	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.07
L5	148.33-143.33	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.07
L6	143.33-138.33	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.07
L7	138.33-130.50	A	0.000	0.000	1.155	0.000	0.01
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.15
L8	130.50-129.16	A	0.000	0.000	0.206	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.03
L9	129.16-125.75	A	0.000	0.000	1.710	0.000	0.03
		B	0.000	0.000	1.466	0.000	0.03
		C	0.000	0.000	1.185	0.000	0.11
L10	125.75-125.50	A	0.000	0.000	0.226	0.000	0.00
		B	0.000	0.000	0.219	0.000	0.00
		C	0.000	0.000	0.188	0.000	0.01
L11	125.50-120.50	A	0.000	0.000	5.520	0.000	0.09
		B	0.000	0.000	5.375	0.000	0.08
		C	0.000	0.000	3.750	0.000	0.22
L12	120.50-120.25	A	0.000	0.000	0.393	0.000	0.00
		B	0.000	0.000	0.385	0.000	0.00
		C	0.000	0.000	0.188	0.000	0.01
L13	120.25-115.25	A	0.000	0.000	8.339	0.000	0.14
		B	0.000	0.000	8.194	0.000	0.13
		C	0.000	0.000	4.236	0.000	0.28

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L14	115.25-113.83	A	0.000	0.000	3.414	0.000	0.04
		B	0.000	0.000	3.373	0.000	0.04
		C	0.000	0.000	2.248	0.000	0.08
L15	113.83-113.48	A	0.000	0.000	0.841	0.000	0.00
		B	0.000	0.000	0.831	0.000	0.00
		C	0.000	0.000	0.554	0.000	0.01
L16	113.48-113.25	A	0.000	0.000	0.553	0.000	0.00
		B	0.000	0.000	0.546	0.000	0.00
		C	0.000	0.000	0.364	0.000	0.01
L17	113.25-108.25	A	0.000	0.000	9.520	0.000	0.06
		B	0.000	0.000	9.375	0.000	0.06
		C	0.000	0.000	7.917	0.000	0.20
L18	108.25-103.25	A	0.000	0.000	8.687	0.000	0.06
		B	0.000	0.000	8.542	0.000	0.06
		C	0.000	0.000	7.917	0.000	0.20
L19	103.25-98.25	A	0.000	0.000	8.687	0.000	0.06
		B	0.000	0.000	8.542	0.000	0.06
		C	0.000	0.000	7.917	0.000	0.20
L20	98.25-93.25	A	0.000	0.000	8.687	0.000	0.06
		B	0.000	0.000	8.542	0.000	0.06
		C	0.000	0.000	7.917	0.000	0.20
L21	93.25-84.55	A	0.000	0.000	17.305	0.000	0.11
		B	0.000	0.000	18.975	0.000	0.10
		C	0.000	0.000	17.888	0.000	0.35
L22	84.55-83.55	A	0.000	0.000	3.321	0.000	0.01
		B	0.000	0.000	2.518	0.000	0.00
		C	0.000	0.000	2.393	0.000	0.04
L23	83.55-82.92	A	0.000	0.000	2.092	0.000	0.01
		B	0.000	0.000	1.586	0.000	0.00
		C	0.000	0.000	1.507	0.000	0.03
L24	82.92-82.67	A	0.000	0.000	0.830	0.000	0.00
		B	0.000	0.000	0.629	0.000	0.00
		C	0.000	0.000	0.598	0.000	0.01
L25	82.67-82.50	A	0.000	0.000	0.565	0.000	0.00
		B	0.000	0.000	0.428	0.000	0.00
		C	0.000	0.000	0.407	0.000	0.01
L26	82.50-82.25	A	0.000	0.000	0.830	0.000	0.00
		B	0.000	0.000	0.629	0.000	0.00
		C	0.000	0.000	0.598	0.000	0.01
L27	82.25-77.25	A	0.000	0.000	16.603	0.000	0.06
		B	0.000	0.000	9.958	0.000	0.00
		C	0.000	0.000	9.333	0.000	0.20
L28	77.25-73.42	A	0.000	0.000	16.046	0.000	0.05
		B	0.000	0.000	8.207	0.000	0.00
		C	0.000	0.000	7.728	0.000	0.15
L29	73.42-73.17	A	0.000	0.000	1.247	0.000	0.00
		B	0.000	0.000	0.635	0.000	0.00
		C	0.000	0.000	0.604	0.000	0.01
L30	73.17-68.17	A	0.000	0.000	23.895	0.000	0.06
		B	0.000	0.000	12.188	0.000	0.00
		C	0.000	0.000	11.677	0.000	0.20
L31	68.17-64.25	A	0.000	0.000	18.897	0.000	0.05
		B	0.000	0.000	9.637	0.000	0.00
		C	0.000	0.000	9.392	0.000	0.16
L32	64.25-64.00	A	0.000	0.000	1.205	0.000	0.00
		B	0.000	0.000	0.615	0.000	0.00
		C	0.000	0.000	0.599	0.000	0.01
L33	64.00-59.00	A	0.000	0.000	18.478	0.000	0.06
		B	0.000	0.000	9.479	0.000	0.00
		C	0.000	0.000	9.167	0.000	0.20
L34	59.00-54.00	A	0.000	0.000	16.603	0.000	0.06
		B	0.000	0.000	9.756	0.000	0.00
		C	0.000	0.000	9.443	0.000	0.20
L35	54.00-53.50	A	0.000	0.000	1.660	0.000	0.01
		B	0.000	0.000	1.259	0.000	0.00
		C	0.000	0.000	1.228	0.000	0.02
L36	53.50-53.25	A	0.000	0.000	0.830	0.000	0.00
		B	0.000	0.000	0.629	0.000	0.00
		C	0.000	0.000	0.614	0.000	0.01

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L37	53.25-43.66	A	0.000	0.000	37.545	0.000	0.12
		B	0.000	0.000	25.507	0.000	0.01
		C	0.000	0.000	24.907	0.000	0.39
L38	43.66-42.66	A	0.000	0.000	4.154	0.000	0.01
		B	0.000	0.000	2.125	0.000	0.00
		C	0.000	0.000	2.063	0.000	0.04
L39	42.66-41.75	A	0.000	0.000	3.780	0.000	0.01
		B	0.000	0.000	1.934	0.000	0.00
		C	0.000	0.000	1.877	0.000	0.04
L40	41.75-41.50	A	0.000	0.000	1.039	0.000	0.00
		B	0.000	0.000	0.531	0.000	0.00
		C	0.000	0.000	0.516	0.000	0.01
L41	41.50-36.50	A	0.000	0.000	20.770	0.000	0.06
		B	0.000	0.000	10.625	0.000	0.00
		C	0.000	0.000	10.313	0.000	0.20
L42	36.50-32.75	A	0.000	0.000	15.577	0.000	0.05
		B	0.000	0.000	10.607	0.000	0.00
		C	0.000	0.000	10.372	0.000	0.15
L43	32.75-32.50	A	0.000	0.000	1.039	0.000	0.00
		B	0.000	0.000	0.771	0.000	0.00
		C	0.000	0.000	0.755	0.000	0.01
L44	32.50-29.83	A	0.000	0.000	12.931	0.000	0.03
		B	0.000	0.000	9.155	0.000	0.00
		C	0.000	0.000	8.988	0.000	0.11
L45	29.83-29.58	A	0.000	0.000	1.539	0.000	0.00
		B	0.000	0.000	1.021	0.000	0.00
		C	0.000	0.000	1.005	0.000	0.01
L46	29.58-28.25	A	0.000	0.000	8.185	0.000	0.02
		B	0.000	0.000	5.432	0.000	0.00
		C	0.000	0.000	5.349	0.000	0.05
L47	28.25-28.00	A	0.000	0.000	1.539	0.000	0.00
		B	0.000	0.000	1.021	0.000	0.00
		C	0.000	0.000	1.005	0.000	0.01
L48	28.00-23.00	A	0.000	0.000	28.228	0.000	0.06
		B	0.000	0.000	16.752	0.000	0.00
		C	0.000	0.000	16.440	0.000	0.20
L49	23.00-19.25	A	0.000	0.000	21.203	0.000	0.05
		B	0.000	0.000	10.781	0.000	0.00
		C	0.000	0.000	10.547	0.000	0.15
L50	19.25-19.00	A	0.000	0.000	1.414	0.000	0.00
		B	0.000	0.000	0.719	0.000	0.00
		C	0.000	0.000	0.703	0.000	0.01
L51	19.00-14.00	A	0.000	0.000	22.645	0.000	0.06
		B	0.000	0.000	11.563	0.000	0.00
		C	0.000	0.000	11.250	0.000	0.20
L52	14.00-9.00	A	0.000	0.000	20.770	0.000	0.06
		B	0.000	0.000	10.625	0.000	0.00
		C	0.000	0.000	10.313	0.000	0.20
L53	9.00-4.00	A	0.000	0.000	20.770	0.000	0.06
		B	0.000	0.000	10.625	0.000	0.00
		C	0.000	0.000	10.313	0.000	0.20
L54	4.00-0.00	A	0.000	0.000	14.116	0.000	0.05
		B	0.000	0.000	7.250	0.000	0.00
		C	0.000	0.000	7.000	0.000	0.16

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	168.33-163.33	A	1.998	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.05
L2	163.33-158.33	A	1.992	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.05

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L3	158.33-153.33	A	1.985	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.07
L4	153.33-148.33	A	1.979	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.07
L5	148.33-143.33	A	1.972	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.07
L6	143.33-138.33	A	1.965	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.07
L7	138.33-130.50	A	1.956	0.000	0.000	4.089	0.000	0.08
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.15
L8	130.50-129.16	A	1.950	0.000	0.000	0.731	0.000	0.01
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.03
L9	129.16-125.75	A	1.946	0.000	0.000	3.547	0.000	0.08
		B		0.000	0.000	2.852	0.000	0.06
		C		0.000	0.000	1.695	0.000	0.14
L10	125.75-125.50	A	1.943	0.000	0.000	0.404	0.000	0.01
		B		0.000	0.000	0.397	0.000	0.01
		C		0.000	0.000	0.268	0.000	0.01
L11	125.50-120.50	A	1.939	0.000	0.000	9.432	0.000	0.22
		B		0.000	0.000	9.287	0.000	0.21
		C		0.000	0.000	5.360	0.000	0.29
L12	120.50-120.25	A	1.935	0.000	0.000	0.630	0.000	0.01
		B		0.000	0.000	0.623	0.000	0.01
		C		0.000	0.000	0.268	0.000	0.01
L13	120.25-115.25	A	1.931	0.000	0.000	15.172	0.000	0.35
		B		0.000	0.000	15.027	0.000	0.34
		C		0.000	0.000	7.934	0.000	0.38
L14	115.25-113.83	A	1.925	0.000	0.000	5.851	0.000	0.12
		B		0.000	0.000	5.810	0.000	0.12
		C		0.000	0.000	3.797	0.000	0.13
L15	113.83-113.48	A	1.924	0.000	0.000	1.464	0.000	0.02
		B		0.000	0.000	1.454	0.000	0.02
		C		0.000	0.000	0.958	0.000	0.03
L16	113.48-113.25	A	1.923	0.000	0.000	0.962	0.000	0.02
		B		0.000	0.000	0.955	0.000	0.02
		C		0.000	0.000	0.630	0.000	0.02
L17	113.25-108.25	A	1.919	0.000	0.000	17.495	0.000	0.29
		B		0.000	0.000	17.350	0.000	0.28
		C		0.000	0.000	13.673	0.000	0.37
L18	108.25-103.25	A	1.910	0.000	0.000	16.326	0.000	0.27
		B		0.000	0.000	16.181	0.000	0.26
		C		0.000	0.000	13.646	0.000	0.37
L19	103.25-98.25	A	1.901	0.000	0.000	16.290	0.000	0.27
		B		0.000	0.000	16.145	0.000	0.26
		C		0.000	0.000	13.619	0.000	0.37
L20	98.25-93.25	A	1.891	0.000	0.000	16.251	0.000	0.27
		B		0.000	0.000	16.106	0.000	0.26
		C		0.000	0.000	13.590	0.000	0.37
L21	93.25-84.55	A	1.877	0.000	0.000	22.835	0.000	0.47
		B		0.000	0.000	32.604	0.000	0.52
		C		0.000	0.000	28.262	0.000	0.71
L22	84.55-83.55	A	1.867	0.000	0.000	0.905	0.000	0.07
		B		0.000	0.000	3.796	0.000	0.05
		C		0.000	0.000	3.671	0.000	0.09
L23	83.55-82.92	A	1.865	0.000	0.000	0.567	0.000	0.04
		B		0.000	0.000	2.386	0.000	0.03
		C		0.000	0.000	2.307	0.000	0.05
L24	82.92-82.67	A	1.864	0.000	0.000	0.225	0.000	0.02
		B		0.000	0.000	0.947	0.000	0.01
		C		0.000	0.000	0.915	0.000	0.02
L25	82.67-82.50	A	1.863	0.000	0.000	0.153	0.000	0.01
		B		0.000	0.000	0.644	0.000	0.01
		C		0.000	0.000	0.622	0.000	0.01

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L26	82.50-82.25	A	1.863	0.000	0.000	0.225	0.000	0.02
		B		0.000	0.000	0.946	0.000	0.01
		C		0.000	0.000	0.915	0.000	0.02
L27	82.25-77.25	A	1.857	0.000	0.000	4.484	0.000	0.33
		B		0.000	0.000	15.647	0.000	0.20
		C		0.000	0.000	15.022	0.000	0.39
L28	77.25-73.42	A	1.846	0.000	0.000	3.418	0.000	0.29
		B		0.000	0.000	13.021	0.000	0.16
		C		0.000	0.000	12.542	0.000	0.30
L29	73.42-73.17	A	1.841	0.000	0.000	0.223	0.000	0.02
		B		0.000	0.000	0.993	0.000	0.01
		C		0.000	0.000	0.962	0.000	0.02
L30	73.17-68.17	A	1.834	0.000	0.000	4.439	0.000	0.42
		B		0.000	0.000	18.703	0.000	0.23
		C		0.000	0.000	18.864	0.000	0.43
L31	68.17-64.25	A	1.823	0.000	0.000	3.461	0.000	0.33
		B		0.000	0.000	14.714	0.000	0.18
		C		0.000	0.000	15.898	0.000	0.35
L32	64.25-64.00	A	1.817	0.000	0.000	0.220	0.000	0.02
		B		0.000	0.000	0.937	0.000	0.01
		C		0.000	0.000	1.013	0.000	0.02
L33	64.00-59.00	A	1.809	0.000	0.000	4.388	0.000	0.34
		B		0.000	0.000	15.157	0.000	0.18
		C		0.000	0.000	16.654	0.000	0.40
L34	59.00-54.00	A	1.794	0.000	0.000	4.358	0.000	0.32
		B		0.000	0.000	15.420	0.000	0.19
		C		0.000	0.000	16.902	0.000	0.40
L35	54.00-53.50	A	1.785	0.000	0.000	0.434	0.000	0.03
		B		0.000	0.000	1.888	0.000	0.02
		C		0.000	0.000	2.035	0.000	0.04
L36	53.50-53.25	A	1.784	0.000	0.000	0.217	0.000	0.02
		B		0.000	0.000	0.944	0.000	0.01
		C		0.000	0.000	1.017	0.000	0.02
L37	53.25-43.66	A	1.766	0.000	0.000	8.253	0.000	0.66
		B		0.000	0.000	38.008	0.000	0.45
		C		0.000	0.000	40.796	0.000	0.87
L38	43.66-42.66	A	1.746	0.000	0.000	0.861	0.000	0.07
		B		0.000	0.000	3.185	0.000	0.04
		C		0.000	0.000	3.476	0.000	0.08
L39	42.66-41.75	A	1.742	0.000	0.000	0.774	0.000	0.06
		B		0.000	0.000	2.885	0.000	0.03
		C		0.000	0.000	3.145	0.000	0.07
L40	41.75-41.50	A	1.740	0.000	0.000	0.212	0.000	0.02
		B		0.000	0.000	0.792	0.000	0.01
		C		0.000	0.000	0.864	0.000	0.02
L41	41.50-36.50	A	1.729	0.000	0.000	4.227	0.000	0.34
		B		0.000	0.000	15.811	0.000	0.17
		C		0.000	0.000	17.227	0.000	0.39
L42	36.50-32.75	A	1.708	0.000	0.000	3.140	0.000	0.25
		B		0.000	0.000	14.951	0.000	0.17
		C		0.000	0.000	15.998	0.000	0.33
L43	32.75-32.50	A	1.698	0.000	0.000	0.208	0.000	0.02
		B		0.000	0.000	1.071	0.000	0.01
		C		0.000	0.000	1.140	0.000	0.02
L44	32.50-29.83	A	1.690	0.000	0.000	2.216	0.000	0.20
		B		0.000	0.000	12.655	0.000	0.14
		C		0.000	0.000	13.391	0.000	0.26
L45	29.83-29.58	A	1.682	0.000	0.000	0.207	0.000	0.02
		B		0.000	0.000	1.402	0.000	0.02
		C		0.000	0.000	1.471	0.000	0.03
L46	29.58-28.25	A	1.678	0.000	0.000	1.097	0.000	0.12
		B		0.000	0.000	7.455	0.000	0.08
		C		0.000	0.000	7.818	0.000	0.14
L47	28.25-28.00	A	1.673	0.000	0.000	0.206	0.000	0.02
		B		0.000	0.000	1.400	0.000	0.02
		C		0.000	0.000	1.468	0.000	0.03
L48	28.00-23.00	A	1.657	0.000	0.000	4.083	0.000	0.41
		B		0.000	0.000	23.098	0.000	0.26
		C		0.000	0.000	24.442	0.000	0.47

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 K
L49	23.00-19.25	A	1.626	0.000	0.000	3.016	0.000	0.30
		B		0.000	0.000	15.121	0.000	0.16
		C		0.000	0.000	16.106	0.000	0.32
L50	19.25-19.00	A	1.610	0.000	0.000	0.199	0.000	0.02
		B		0.000	0.000	1.005	0.000	0.01
		C		0.000	0.000	1.070	0.000	0.02
L51	19.00-14.00	A	1.586	0.000	0.000	3.942	0.000	0.33
		B		0.000	0.000	16.543	0.000	0.17
		C		0.000	0.000	17.817	0.000	0.38
L52	14.00-9.00	A	1.530	0.000	0.000	3.830	0.000	0.30
		B		0.000	0.000	15.214	0.000	0.15
		C		0.000	0.000	16.432	0.000	0.36
L53	9.00-4.00	A	1.445	0.000	0.000	3.660	0.000	0.28
		B		0.000	0.000	14.960	0.000	0.14
		C		0.000	0.000	16.092	0.000	0.35
L54	4.00-0.00	A	1.284	0.000	0.000	2.671	0.000	0.18
		B		0.000	0.000	10.011	0.000	0.08
		C		0.000	0.000	10.788	0.000	0.25

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	168.33-163.33	0.0000	0.0000	0.0000	0.0000
L2	163.33-158.33	0.0000	0.0000	0.0000	0.0000
L3	158.33-153.33	0.0000	0.0000	0.0000	0.0000
L4	153.33-148.33	0.0000	0.0000	0.0000	0.0000
L5	148.33-143.33	0.0000	0.0000	0.0000	0.0000
L6	143.33-138.33	0.0000	0.0000	0.0000	0.0000
L7	138.33-130.50	-0.8255	-0.8135	-1.4286	-1.4078
L8	130.50-129.16	-0.8583	-0.8458	-1.4852	-1.4636
L9	129.16-125.75	-0.2499	-0.7907	-0.3857	-1.5740
L10	125.75-125.50	-0.0786	-0.6526	-0.0623	-1.3993
L11	125.50-120.50	-0.0723	-1.2105	-0.0585	-1.7941
L12	120.50-120.25	-0.0606	-2.1913	-0.0508	-2.5216
L13	120.25-115.25	-0.0581	-2.1035	-0.0439	-2.1807
L14	115.25-113.83	-0.0371	-1.3443	-0.0337	-1.6795
L15	113.83-113.48	-0.0372	-1.3494	-0.0334	-1.6639
L16	113.48-113.25	-0.0373	-1.3510	-0.0334	-1.6661
L17	113.25-108.25	-0.0422	-0.6427	-0.0373	-1.0931
L18	108.25-103.25	-0.0447	-0.3726	-0.0394	-0.8881
L19	103.25-98.25	-0.0454	-0.3790	-0.0401	-0.9050
L20	98.25-93.25	-0.0461	-0.3853	-0.0408	-0.9215
L21	93.25-84.55	0.2866	-0.1521	1.1404	-0.1777
L22	84.55-83.55	-0.9789	-0.8282	2.6739	1.1649
L23	83.55-82.92	-0.9818	-0.8307	2.6842	1.1701
L24	82.92-82.67	-0.9837	-0.8323	2.6897	1.1726
L25	82.67-82.50	-0.9844	-0.8329	2.6920	1.1736
L26	82.50-82.25	-0.9848	-0.8333	2.6937	1.1744
L27	82.25-77.25	-1.8335	-1.3547	2.3136	0.9131
L28	77.25-73.42	-2.5801	-1.7598	2.4024	0.9986
L29	73.42-73.17	-2.7232	-1.8110	2.6320	1.1736
L30	73.17-68.17	-2.7175	-1.7830	2.4761	1.2516
L31	68.17-64.25	-2.7736	-1.7573	2.3977	1.5145
L32	64.25-64.00	-2.7927	-1.7693	2.4168	1.5261
L33	64.00-59.00	-2.6067	-1.6968	2.1262	1.3827
L34	59.00-54.00	-2.0660	-1.3918	2.2781	1.4742
L35	54.00-53.50	-1.1078	-0.8199	2.7935	1.7574
L36	53.50-53.25	-1.1092	-0.8209	2.7976	1.7598
L37	53.25-43.66	-1.6345	-1.1143	2.8801	1.7997
L38	43.66-42.66	-2.8268	-1.8164	2.3448	1.5055
L39	42.66-41.75	-2.8347	-1.8214	2.3577	1.5100
L40	41.75-41.50	-2.8396	-1.8246	2.3627	1.5129
L41	41.50-36.50	-2.8610	-1.8383	2.3849	1.5255

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L42	36.50-32.75	-1.6872	-1.1419	3.0120	1.8716
L43	32.75-32.50	-1.3218	-0.9255	3.2184	1.9855
L44	32.50-29.83	-1.5936	-1.0684	3.3826	2.0695
L45	29.83-29.58	-1.9928	-1.2778	3.6199	2.1902
L46	29.58-28.25	-1.9977	-1.2810	3.6301	2.1960
L47	28.25-28.00	-2.0027	-1.2842	3.6405	2.2018
L48	28.00-23.00	-2.5184	-1.5992	3.2497	1.9874
L49	23.00-19.25	-3.2859	-2.0539	2.9687	1.8300
L50	19.25-19.00	-3.3042	-2.0653	2.9902	1.8411
L51	19.00-14.00	-3.1224	-1.9891	2.7086	1.6943
L52	14.00-9.00	-3.0777	-1.9773	2.6347	1.6518
L53	9.00-4.00	-3.1155	-2.0015	2.6930	1.6725
L54	4.00-0.00	-2.9672	-1.9410	2.4853	1.5336

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
L7	16	HB114-U6S12-XXX-LI(1-1/4)	130.50 - 138.00	1.0000	1.0000
L9	16	HB114-U6S12-XXX-LI(1-1/4)	125.75 - 129.16	1.0000	1.0000
L9	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	125.75 - 128.00	1.0000	1.0000
L9	64	PL1x4.5 Reinforcement - Wind Area/Weight	125.75 - 127.33	1.0000	1.0000
L9	65	PL1x4.5 Reinforcement - Wind Area/Weight	125.75 - 127.33	1.0000	1.0000
L9	66	PL1x4.5 Reinforcement - Wind Area/Weight	125.75 - 127.33	1.0000	1.0000
L10	16	HB114-U6S12-XXX-LI(1-1/4)	125.50 - 125.75	1.0000	1.0000
L10	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	125.50 - 125.75	1.0000	1.0000
L10	64	PL1x4.5 Reinforcement - Wind Area/Weight	125.50 - 125.75	1.0000	1.0000
L10	65	PL1x4.5 Reinforcement - Wind Area/Weight	125.50 - 125.75	1.0000	1.0000
L10	66	PL1x4.5 Reinforcement - Wind Area/Weight	125.50 - 125.75	1.0000	1.0000
L11	16	HB114-U6S12-XXX-LI(1-1/4)	120.50 - 125.50	1.0000	1.0000
L11	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	120.50 - 125.50	1.0000	1.0000
L11	64	PL1x4.5 Reinforcement - Wind Area/Weight	120.50 - 125.50	1.0000	1.0000
L11	65	PL1x4.5 Reinforcement - Wind Area/Weight	120.50 - 125.50	1.0000	1.0000
L11	66	PL1x4.5 Reinforcement - Wind Area/Weight	120.50 - 125.50	1.0000	1.0000
L11	68	PL1.25x4 Reinforcement - Wind Area	120.50 - 122.00	1.0000	1.0000
L11	69	PL1.25x4 Reinforcement - Wind Area	120.50 - 122.00	1.0000	1.0000
L12	16	HB114-U6S12-XXX-LI(1-1/4)	120.25 - 120.50	1.0000	1.0000
L12	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	120.25 - 120.50	1.0000	1.0000
L12	64	PL1x4.5 Reinforcement -	120.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		Wind Area/Weight	120.50		
L12	65	PL1x4.5 Reinforcement - Wind Area/Weight	120.25 - 120.50	1.0000	1.0000
L12	66	PL1x4.5 Reinforcement - Wind Area/Weight	120.25 - 120.50	1.0000	1.0000
L12	68	PL1.25x4 Reinforcement - Wind Area	120.25 - 120.50	1.0000	1.0000
L12	69	PL1.25x4 Reinforcement - Wind Area	120.25 - 120.50	1.0000	1.0000
L13	16	HB114-U6S12-XXX-LI(1-1/4)	115.25 - 120.25	1.0000	1.0000
L13	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	115.25 - 120.25	1.0000	1.0000
L13	29	PL0.625x5 Reinforcement - Wind Area/Weight	115.25 - 120.08	1.0000	1.0000
L13	30	PL0.625x5 Reinforcement - Wind Area/Weight	115.25 - 120.08	1.0000	1.0000
L13	31	PL0.625x5 Reinforcement - Wind Area/Weight	115.25 - 120.08	1.0000	1.0000
L13	45	PL1.25x5 Reinforcement - Wind Area	115.25 - 115.83	1.0000	1.0000
L13	46	PL1.25x5 Reinforcement - Wind Area	115.25 - 115.83	1.0000	1.0000
L13	47	PL1.25x5 Reinforcement - Wind Area	115.25 - 115.83	1.0000	1.0000
L13	64	PL1x4.5 Reinforcement - Wind Area/Weight	115.25 - 120.25	1.0000	1.0000
L13	65	PL1x4.5 Reinforcement - Wind Area/Weight	115.25 - 120.25	1.0000	1.0000
L13	66	PL1x4.5 Reinforcement - Wind Area/Weight	115.25 - 120.25	1.0000	1.0000
L13	68	PL1.25x4 Reinforcement - Wind Area	115.25 - 120.25	1.0000	1.0000
L13	69	PL1.25x4 Reinforcement - Wind Area	115.25 - 120.25	1.0000	1.0000
L14	16	HB114-U6S12-XXX-LI(1-1/4)	113.83 - 115.25	1.0000	1.0000
L14	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	113.83 - 115.25	1.0000	1.0000
L14	29	PL0.625x5 Reinforcement - Wind Area/Weight	113.83 - 115.25	1.0000	1.0000
L14	30	PL0.625x5 Reinforcement - Wind Area/Weight	113.83 - 115.25	1.0000	1.0000
L14	31	PL0.625x5 Reinforcement - Wind Area/Weight	113.83 - 115.25	1.0000	1.0000
L14	45	PL1.25x5 Reinforcement - Wind Area	113.83 - 115.25	1.0000	1.0000
L14	46	PL1.25x5 Reinforcement - Wind Area	113.83 - 115.25	1.0000	1.0000
L14	47	PL1.25x5 Reinforcement - Wind Area	113.83 - 115.25	1.0000	1.0000
L14	64	PL1x4.5 Reinforcement - Wind Area/Weight	113.83 - 115.25	1.0000	1.0000
L14	65	PL1x4.5 Reinforcement - Wind Area/Weight	113.83 - 115.25	1.0000	1.0000
L14	66	PL1x4.5 Reinforcement - Wind Area/Weight	113.83 - 115.25	1.0000	1.0000
L14	68	PL1.25x4 Reinforcement - Wind Area	113.83 - 115.25	1.0000	1.0000
L14	69	PL1.25x4 Reinforcement - Wind Area	113.83 - 115.25	1.0000	1.0000
L15	16	HB114-U6S12-XXX-LI(1-1/4)	113.48 - 113.83	1.0000	1.0000
L15	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	113.48 - 113.83	1.0000	1.0000
L15	29	PL0.625x5 Reinforcement - Wind Area/Weight	113.48 - 113.83	1.0000	1.0000
L15	30	PL0.625x5 Reinforcement - Wind Area/Weight	113.48 - 113.83	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L15	31	PL0.625x5 Reinforcement - Wind Area/Weight	113.48 - 113.83	1.0000	1.0000
L15	45	PL1.25x5 Reinforcement - Wind Area	113.48 - 113.83	1.0000	1.0000
L15	46	PL1.25x5 Reinforcement - Wind Area	113.48 - 113.83	1.0000	1.0000
L15	47	PL1.25x5 Reinforcement - Wind Area	113.48 - 113.83	1.0000	1.0000
L15	61	CCI-SFP-045100	113.48 - 113.83	1.0000	1.0000
L15	62	CCI-SFP-045100	113.48 - 113.83	1.0000	1.0000
L15	63	CCI-SFP-045100	113.48 - 113.83	1.0000	1.0000
L15	68	PL1.25x4 Reinforcement - Wind Area	113.48 - 113.83	1.0000	1.0000
L15	69	PL1.25x4 Reinforcement - Wind Area	113.48 - 113.83	1.0000	1.0000
L16	16	HB114-U6S12-XXX-LI(1-1/4)	113.25 - 113.48	1.0000	1.0000
L16	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	113.25 - 113.48	1.0000	1.0000
L16	29	PL0.625x5 Reinforcement - Wind Area/Weight	113.25 - 113.48	1.0000	1.0000
L16	30	PL0.625x5 Reinforcement - Wind Area/Weight	113.25 - 113.48	1.0000	1.0000
L16	31	PL0.625x5 Reinforcement - Wind Area/Weight	113.25 - 113.48	1.0000	1.0000
L16	45	PL1.25x5 Reinforcement - Wind Area	113.25 - 113.48	1.0000	1.0000
L16	46	PL1.25x5 Reinforcement - Wind Area	113.25 - 113.48	1.0000	1.0000
L16	47	PL1.25x5 Reinforcement - Wind Area	113.25 - 113.48	1.0000	1.0000
L16	61	CCI-SFP-045100	113.25 - 113.48	1.0000	1.0000
L16	62	CCI-SFP-045100	113.25 - 113.48	1.0000	1.0000
L16	63	CCI-SFP-045100	113.25 - 113.48	1.0000	1.0000
L16	68	PL1.25x4 Reinforcement - Wind Area	113.25 - 113.48	1.0000	1.0000
L16	69	PL1.25x4 Reinforcement - Wind Area	113.25 - 113.48	1.0000	1.0000
L17	16	HB114-U6S12-XXX-LI(1-1/4)	108.25 - 113.25	1.0000	1.0000
L17	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	108.25 - 113.25	1.0000	1.0000
L17	29	PL0.625x5 Reinforcement - Wind Area/Weight	108.25 - 113.25	1.0000	1.0000
L17	30	PL0.625x5 Reinforcement - Wind Area/Weight	108.25 - 113.25	1.0000	1.0000
L17	31	PL0.625x5 Reinforcement - Wind Area/Weight	108.25 - 113.25	1.0000	1.0000
L17	45	PL1.25x5 Reinforcement - Wind Area	108.25 - 113.25	1.0000	1.0000
L17	46	PL1.25x5 Reinforcement - Wind Area	108.25 - 113.25	1.0000	1.0000
L17	47	PL1.25x5 Reinforcement - Wind Area	108.25 - 113.25	1.0000	1.0000
L17	61	CCI-SFP-045100	108.25 - 113.25	1.0000	1.0000
L17	62	CCI-SFP-045100	108.25 - 113.25	1.0000	1.0000
L17	63	CCI-SFP-045100	108.25 - 113.25	1.0000	1.0000
L17	68	PL1.25x4 Reinforcement - Wind Area	112.00 - 113.25	1.0000	1.0000
L17	69	PL1.25x4 Reinforcement -	112.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		Wind Area	113.25		
L18	16	HB114-U6S12-XXX-LI(1-1/4)	103.25 - 108.25	1.0000	1.0000
L18	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	103.25 - 108.25	1.0000	1.0000
L18	29	PL0.625x5 Reinforcement - Wind Area/Weight	103.25 - 108.25	1.0000	1.0000
L18	30	PL0.625x5 Reinforcement - Wind Area/Weight	103.25 - 108.25	1.0000	1.0000
L18	31	PL0.625x5 Reinforcement - Wind Area/Weight	103.25 - 108.25	1.0000	1.0000
L18	45	PL1.25x5 Reinforcement - Wind Area	103.25 - 108.25	1.0000	1.0000
L18	46	PL1.25x5 Reinforcement - Wind Area	103.25 - 108.25	1.0000	1.0000
L18	47	PL1.25x5 Reinforcement - Wind Area	103.25 - 108.25	1.0000	1.0000
L18	61	CCI-SFP-045100	103.25 - 108.25	1.0000	1.0000
L18	62	CCI-SFP-045100	103.25 - 108.25	1.0000	1.0000
L18	63	CCI-SFP-045100	103.25 - 108.25	1.0000	1.0000
L19	16	HB114-U6S12-XXX-LI(1-1/4)	98.25 - 103.25	1.0000	1.0000
L19	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	98.25 - 103.25	1.0000	1.0000
L19	29	PL0.625x5 Reinforcement - Wind Area/Weight	98.25 - 103.25	1.0000	1.0000
L19	30	PL0.625x5 Reinforcement - Wind Area/Weight	98.25 - 103.25	1.0000	1.0000
L19	31	PL0.625x5 Reinforcement - Wind Area/Weight	98.25 - 103.25	1.0000	1.0000
L19	45	PL1.25x5 Reinforcement - Wind Area	98.25 - 103.25	1.0000	1.0000
L19	46	PL1.25x5 Reinforcement - Wind Area	98.25 - 103.25	1.0000	1.0000
L19	47	PL1.25x5 Reinforcement - Wind Area	98.25 - 103.25	1.0000	1.0000
L19	61	CCI-SFP-045100	98.25 - 103.25	1.0000	1.0000
L19	62	CCI-SFP-045100	98.25 - 103.25	1.0000	1.0000
L19	63	CCI-SFP-045100	98.25 - 103.25	1.0000	1.0000
L20	16	HB114-U6S12-XXX-LI(1-1/4)	93.25 - 98.25	1.0000	1.0000
L20	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	93.25 - 98.25	1.0000	1.0000
L20	29	PL0.625x5 Reinforcement - Wind Area/Weight	93.25 - 98.25	1.0000	1.0000
L20	30	PL0.625x5 Reinforcement - Wind Area/Weight	93.25 - 98.25	1.0000	1.0000
L20	31	PL0.625x5 Reinforcement - Wind Area/Weight	93.25 - 98.25	1.0000	1.0000
L20	45	PL1.25x5 Reinforcement - Wind Area	93.25 - 98.25	1.0000	1.0000
L20	46	PL1.25x5 Reinforcement - Wind Area	93.25 - 98.25	1.0000	1.0000
L20	47	PL1.25x5 Reinforcement - Wind Area	93.25 - 98.25	1.0000	1.0000
L20	61	CCI-SFP-045100	93.25 - 98.25	1.0000	1.0000
L20	62	CCI-SFP-045100	93.25 - 98.25	1.0000	1.0000
L20	63	CCI-SFP-045100	93.25 - 98.25	1.0000	1.0000
L21	16	HB114-U6S12-XXX-LI(1-1/4)	84.55 - 93.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L21	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	84.55 - 93.25	1.0000	1.0000
L21	26	PL0.625x5 Reinforcement - Wind Area/Weight	84.55 - 84.58	1.0000	1.0000
L21	28	PL0.625x5 Reinforcement - Wind Area/Weight	84.55 - 84.58	1.0000	1.0000
L21	29	PL0.625x5 Reinforcement - Wind Area/Weight	84.58 - 93.25	1.0000	1.0000
L21	30	PL0.625x5 Reinforcement - Wind Area/Weight	84.58 - 93.25	1.0000	1.0000
L21	31	PL0.625x5 Reinforcement - Wind Area/Weight	84.58 - 93.25	1.0000	1.0000
L21	42	PL1.25x5 Reinforcement - Wind Area	84.55 - 87.92	1.0000	1.0000
L21	43	PL1.25x5 Reinforcement - Wind Area	84.55 - 87.92	1.0000	1.0000
L21	44	PL1.25x5 Reinforcement - Wind Area	84.55 - 87.92	1.0000	1.0000
L21	45	PL1.25x5 Reinforcement - Wind Area	85.83 - 93.25	1.0000	1.0000
L21	46	PL1.25x5 Reinforcement - Wind Area	85.83 - 93.25	1.0000	1.0000
L21	47	PL1.25x5 Reinforcement - Wind Area	85.83 - 93.25	1.0000	1.0000
L21	52	CCI-SFP-045100	84.55 - 84.67	1.0000	1.0000
L21	53	CCI-SFP-045100	84.55 - 84.67	1.0000	1.0000
L21	54	CCI-SFP-045100	84.55 - 84.67	1.0000	1.0000
L21	61	CCI-SFP-045100	87.92 - 93.25	1.0000	1.0000
L21	62	CCI-SFP-045100	87.92 - 93.25	1.0000	1.0000
L21	63	CCI-SFP-045100	87.92 - 93.25	1.0000	1.0000
L21	71	PL1.25x5 Reinforcement - Wind Area	84.55 - 90.50	1.0000	1.0000
L21	72	PL1.25x5 Reinforcement - Wind Area	84.55 - 90.50	1.0000	1.0000
L23	16	HB114-U6S12-XXX-LI(1-1/4)	82.92 - 83.55	1.0000	1.0000
L23	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	82.92 - 83.55	1.0000	1.0000
L23	26	PL0.625x5 Reinforcement - Wind Area/Weight	82.92 - 83.55	1.0000	1.0000
L23	28	PL0.625x5 Reinforcement - Wind Area/Weight	82.92 - 83.55	1.0000	1.0000
L23	42	PL1.25x5 Reinforcement - Wind Area	82.92 - 83.55	1.0000	1.0000
L23	43	PL1.25x5 Reinforcement - Wind Area	82.92 - 83.55	1.0000	1.0000
L23	44	PL1.25x5 Reinforcement - Wind Area	82.92 - 83.55	1.0000	1.0000
L23	52	CCI-SFP-045100	82.92 - 83.55	1.0000	1.0000
L23	53	CCI-SFP-045100	82.92 - 83.55	1.0000	1.0000
L23	54	CCI-SFP-045100	82.92 - 83.55	1.0000	1.0000
L23	71	PL1.25x5 Reinforcement - Wind Area	82.92 - 83.55	1.0000	1.0000
L23	72	PL1.25x5 Reinforcement - Wind Area	82.92 - 83.55	1.0000	1.0000
L24	16	HB114-U6S12-XXX-LI(1-1/4)	82.67 - 82.92	1.0000	1.0000
L24	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	82.67 - 82.92	1.0000	1.0000
L24	26	PL0.625x5 Reinforcement	82.67 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		- Wind Area/Weight	82.92		
L24	28	PL0.625x5 Reinforcement - Wind Area/Weight	82.67 - 82.92	1.0000	1.0000
L24	42	PL1.25x5 Reinforcement - Wind Area	82.67 - 82.92	1.0000	1.0000
L24	43	PL1.25x5 Reinforcement - Wind Area	82.67 - 82.92	1.0000	1.0000
L24	44	PL1.25x5 Reinforcement - Wind Area	82.67 - 82.92	1.0000	1.0000
L24	52	CCI-SFP-045100	82.67 - 82.92	1.0000	1.0000
L24	53	CCI-SFP-045100	82.67 - 82.92	1.0000	1.0000
L24	54	CCI-SFP-045100	82.67 - 82.92	1.0000	1.0000
L24	71	PL1.25x5 Reinforcement - Wind Area	82.67 - 82.92	1.0000	1.0000
L24	72	PL1.25x5 Reinforcement - Wind Area	82.67 - 82.92	1.0000	1.0000
L25	16	HB114-U6S12-XXX-LI(1-1/4)	82.50 - 82.67	1.0000	1.0000
L25	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	82.50 - 82.67	1.0000	1.0000
L25	26	PL0.625x5 Reinforcement - Wind Area/Weight	82.50 - 82.67	1.0000	1.0000
L25	28	PL0.625x5 Reinforcement - Wind Area/Weight	82.50 - 82.67	1.0000	1.0000
L25	42	PL1.25x5 Reinforcement - Wind Area	82.50 - 82.67	1.0000	1.0000
L25	43	PL1.25x5 Reinforcement - Wind Area	82.50 - 82.67	1.0000	1.0000
L25	44	PL1.25x5 Reinforcement - Wind Area	82.50 - 82.67	1.0000	1.0000
L25	52	CCI-SFP-045100	82.50 - 82.67	1.0000	1.0000
L25	53	CCI-SFP-045100	82.50 - 82.67	1.0000	1.0000
L25	54	CCI-SFP-045100	82.50 - 82.67	1.0000	1.0000
L25	71	PL1.25x5 Reinforcement - Wind Area	82.50 - 82.67	1.0000	1.0000
L25	72	PL1.25x5 Reinforcement - Wind Area	82.50 - 82.67	1.0000	1.0000
L26	16	HB114-U6S12-XXX-LI(1-1/4)	82.25 - 82.50	1.0000	1.0000
L26	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	82.25 - 82.50	1.0000	1.0000
L26	26	PL0.625x5 Reinforcement - Wind Area/Weight	82.25 - 82.50	1.0000	1.0000
L26	28	PL0.625x5 Reinforcement - Wind Area/Weight	82.25 - 82.50	1.0000	1.0000
L26	42	PL1.25x5 Reinforcement - Wind Area	82.25 - 82.50	1.0000	1.0000
L26	43	PL1.25x5 Reinforcement - Wind Area	82.25 - 82.50	1.0000	1.0000
L26	44	PL1.25x5 Reinforcement - Wind Area	82.25 - 82.50	1.0000	1.0000
L26	52	CCI-SFP-045100	82.25 - 82.50	1.0000	1.0000
L26	53	CCI-SFP-045100	82.25 - 82.50	1.0000	1.0000
L26	54	CCI-SFP-045100	82.25 - 82.50	1.0000	1.0000
L26	71	PL1.25x5 Reinforcement - Wind Area	82.25 - 82.50	1.0000	1.0000
L26	72	PL1.25x5 Reinforcement - Wind Area	82.25 - 82.50	1.0000	1.0000
L27	16	HB114-U6S12-XXX-LI(1-1/4)	77.25 - 82.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L27	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	77.25 - 82.25	1.0000	1.0000
L27	26	PL0.625x5 Reinforcement - Wind Area/Weight	77.25 - 82.25	1.0000	1.0000
L27	28	PL0.625x5 Reinforcement - Wind Area/Weight	77.25 - 82.25	1.0000	1.0000
L27	42	PL1.25x5 Reinforcement - Wind Area	77.25 - 82.25	1.0000	1.0000
L27	43	PL1.25x5 Reinforcement - Wind Area	77.25 - 82.25	1.0000	1.0000
L27	44	PL1.25x5 Reinforcement - Wind Area	77.25 - 82.25	1.0000	1.0000
L27	52	CCI-SFP-045100	77.25 - 82.25	1.0000	1.0000
L27	53	CCI-SFP-045100	77.25 - 82.25	1.0000	1.0000
L27	54	CCI-SFP-045100	77.25 - 82.25	1.0000	1.0000
L27	71	PL1.25x5 Reinforcement - Wind Area	80.50 - 82.25	1.0000	1.0000
L27	72	PL1.25x5 Reinforcement - Wind Area	80.50 - 82.25	1.0000	1.0000
L28	16	HB114-U6S12-XXX-LI(1-1/4)	73.42 - 77.25	1.0000	1.0000
L28	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	73.42 - 77.25	1.0000	1.0000
L28	26	PL0.625x5 Reinforcement - Wind Area/Weight	73.42 - 77.25	1.0000	1.0000
L28	28	PL0.625x5 Reinforcement - Wind Area/Weight	73.42 - 77.25	1.0000	1.0000
L28	39	PL1.25x5 Reinforcement - Wind Area	73.42 - 75.42	1.0000	1.0000
L28	40	PL1.25x5 Reinforcement - Wind Area	73.42 - 75.42	1.0000	1.0000
L28	41	PL1.25x5 Reinforcement - Wind Area	73.42 - 75.42	1.0000	1.0000
L28	42	PL1.25x5 Reinforcement - Wind Area	73.42 - 77.25	1.0000	1.0000
L28	43	PL1.25x5 Reinforcement - Wind Area	73.42 - 77.25	1.0000	1.0000
L28	44	PL1.25x5 Reinforcement - Wind Area	73.42 - 77.25	1.0000	1.0000
L28	52	CCI-SFP-045100	73.42 - 77.25	1.0000	1.0000
L28	53	CCI-SFP-045100	73.42 - 77.25	1.0000	1.0000
L28	54	CCI-SFP-045100	73.42 - 77.25	1.0000	1.0000
L29	16	HB114-U6S12-XXX-LI(1-1/4)	73.17 - 73.42	1.0000	1.0000
L29	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	73.17 - 73.42	1.0000	1.0000
L29	26	PL0.625x5 Reinforcement - Wind Area/Weight	73.17 - 73.42	1.0000	1.0000
L29	28	PL0.625x5 Reinforcement - Wind Area/Weight	73.17 - 73.42	1.0000	1.0000
L29	39	PL1.25x5 Reinforcement - Wind Area	73.17 - 73.42	1.0000	1.0000
L29	40	PL1.25x5 Reinforcement - Wind Area	73.17 - 73.42	1.0000	1.0000
L29	41	PL1.25x5 Reinforcement - Wind Area	73.17 - 73.42	1.0000	1.0000
L29	42	PL1.25x5 Reinforcement - Wind Area	73.17 - 73.42	1.0000	1.0000
L29	43	PL1.25x5 Reinforcement - Wind Area	73.17 - 73.42	1.0000	1.0000
L29	44	PL1.25x5 Reinforcement - Wind Area	73.17 - 73.42	1.0000	1.0000
L29	52	CCI-SFP-045100	73.17 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			73.42		
L29	53	CCI-SFP-045100	73.17 - 73.42	1.0000	1.0000
L29	54	CCI-SFP-045100	73.17 - 73.42	1.0000	1.0000
L30	16	HB114-U6S12-XXX-LI(1-1/4)	68.17 - 73.17	1.0000	1.0000
L30	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	68.17 - 73.17	1.0000	1.0000
L30	24	LDF4-50A(1/2)	68.17 - 70.00	1.0000	1.0000
L30	26	PL0.625x5 Reinforcement - Wind Area/Weight	68.17 - 73.17	1.0000	1.0000
L30	28	PL0.625x5 Reinforcement - Wind Area/Weight	68.17 - 73.17	1.0000	1.0000
L30	39	PL1.25x5 Reinforcement - Wind Area	68.17 - 73.17	1.0000	1.0000
L30	40	PL1.25x5 Reinforcement - Wind Area	68.17 - 73.17	1.0000	1.0000
L30	41	PL1.25x5 Reinforcement - Wind Area	68.17 - 73.17	1.0000	1.0000
L30	42	PL1.25x5 Reinforcement - Wind Area	72.92 - 73.17	1.0000	1.0000
L30	43	PL1.25x5 Reinforcement - Wind Area	72.92 - 73.17	1.0000	1.0000
L30	44	PL1.25x5 Reinforcement - Wind Area	72.92 - 73.17	1.0000	1.0000
L30	52	CCI-SFP-045100	68.17 - 73.17	1.0000	1.0000
L30	53	CCI-SFP-045100	68.17 - 73.17	1.0000	1.0000
L30	54	CCI-SFP-045100	68.17 - 73.17	1.0000	1.0000
L30	58	CCI-SFP-045100	68.17 - 72.75	1.0000	1.0000
L30	59	CCI-SFP-045100	68.17 - 72.75	1.0000	1.0000
L30	60	CCI-SFP-045100	68.17 - 72.75	1.0000	1.0000
L31	16	HB114-U6S12-XXX-LI(1-1/4)	64.25 - 68.17	1.0000	1.0000
L31	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	64.25 - 68.17	1.0000	1.0000
L31	24	LDF4-50A(1/2)	64.25 - 68.17	1.0000	1.0000
L31	26	PL0.625x5 Reinforcement - Wind Area/Weight	64.25 - 68.17	1.0000	1.0000
L31	28	PL0.625x5 Reinforcement - Wind Area/Weight	64.25 - 68.17	1.0000	1.0000
L31	39	PL1.25x5 Reinforcement - Wind Area	64.25 - 68.17	1.0000	1.0000
L31	40	PL1.25x5 Reinforcement - Wind Area	64.25 - 68.17	1.0000	1.0000
L31	41	PL1.25x5 Reinforcement - Wind Area	64.25 - 68.17	1.0000	1.0000
L31	52	CCI-SFP-045100	64.25 - 68.17	1.0000	1.0000
L31	53	CCI-SFP-045100	64.25 - 68.17	1.0000	1.0000
L31	54	CCI-SFP-045100	64.25 - 68.17	1.0000	1.0000
L31	58	CCI-SFP-045100	64.25 - 68.17	1.0000	1.0000
L31	59	CCI-SFP-045100	64.25 - 68.17	1.0000	1.0000
L31	60	CCI-SFP-045100	64.25 - 68.17	1.0000	1.0000
L32	16	HB114-U6S12-XXX-LI(1-1/4)	64.00 - 64.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L32	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	64.00 - 64.25	1.0000	1.0000
L32	24	LDF4-50A(1/2)	64.00 - 64.25	1.0000	1.0000
L32	26	PL0.625x5 Reinforcement - Wind Area/Weight	64.00 - 64.25	1.0000	1.0000
L32	28	PL0.625x5 Reinforcement - Wind Area/Weight	64.00 - 64.25	1.0000	1.0000
L32	39	PL1.25x5 Reinforcement - Wind Area	64.00 - 64.25	1.0000	1.0000
L32	40	PL1.25x5 Reinforcement - Wind Area	64.00 - 64.25	1.0000	1.0000
L32	41	PL1.25x5 Reinforcement - Wind Area	64.00 - 64.25	1.0000	1.0000
L32	52	CCI-SFP-045100	64.00 - 64.25	1.0000	1.0000
L32	53	CCI-SFP-045100	64.00 - 64.25	1.0000	1.0000
L32	54	CCI-SFP-045100	64.00 - 64.25	1.0000	1.0000
L32	58	CCI-SFP-045100	64.00 - 64.25	1.0000	1.0000
L32	59	CCI-SFP-045100	64.00 - 64.25	1.0000	1.0000
L32	60	CCI-SFP-045100	64.00 - 64.25	1.0000	1.0000
L33	16	HB114-U6S12-XXX-LI(1-1/4)	59.00 - 64.00	1.0000	1.0000
L33	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	59.00 - 64.00	1.0000	1.0000
L33	24	LDF4-50A(1/2)	59.00 - 64.00	1.0000	1.0000
L33	26	PL0.625x5 Reinforcement - Wind Area/Weight	59.00 - 64.00	1.0000	1.0000
L33	28	PL0.625x5 Reinforcement - Wind Area/Weight	59.00 - 64.00	1.0000	1.0000
L33	39	PL1.25x5 Reinforcement - Wind Area	59.00 - 64.00	1.0000	1.0000
L33	40	PL1.25x5 Reinforcement - Wind Area	59.00 - 64.00	1.0000	1.0000
L33	41	PL1.25x5 Reinforcement - Wind Area	59.00 - 64.00	1.0000	1.0000
L33	52	CCI-SFP-045100	59.00 - 64.00	1.0000	1.0000
L33	53	CCI-SFP-045100	59.00 - 64.00	1.0000	1.0000
L33	54	CCI-SFP-045100	59.00 - 64.00	1.0000	1.0000
L33	58	CCI-SFP-045100	62.75 - 64.00	1.0000	1.0000
L33	59	CCI-SFP-045100	62.75 - 64.00	1.0000	1.0000
L33	60	CCI-SFP-045100	62.75 - 64.00	1.0000	1.0000
L34	16	HB114-U6S12-XXX-LI(1-1/4)	54.00 - 59.00	1.0000	1.0000
L34	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	54.00 - 59.00	1.0000	1.0000
L34	24	LDF4-50A(1/2)	54.00 - 59.00	1.0000	1.0000
L34	26	PL0.625x5 Reinforcement - Wind Area/Weight	54.00 - 59.00	1.0000	1.0000
L34	28	PL0.625x5 Reinforcement - Wind Area/Weight	54.00 - 59.00	1.0000	1.0000
L34	39	PL1.25x5 Reinforcement - Wind Area	54.00 - 59.00	1.0000	1.0000
L34	40	PL1.25x5 Reinforcement - Wind Area	54.00 - 59.00	1.0000	1.0000
L34	41	PL1.25x5 Reinforcement -	54.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		Wind Area	59.00		
L34	52	CCI-SFP-045100	54.00 - 59.00	1.0000	1.0000
L34	53	CCI-SFP-045100	54.00 - 59.00	1.0000	1.0000
L34	54	CCI-SFP-045100	54.00 - 59.00	1.0000	1.0000
L34	74	PL1.25x5 Reinforcement - Wind Area	54.00 - 55.50	1.0000	1.0000
L34	75	PL1.25x5 Reinforcement - Wind Area	54.00 - 55.50	1.0000	1.0000
L35	16	HB114-U6S12-XXX-LI(1-1/4)	53.50 - 54.00	1.0000	1.0000
L35	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	53.50 - 54.00	1.0000	1.0000
L35	24	LDF4-50A(1/2)	53.50 - 54.00	1.0000	1.0000
L35	26	PL0.625x5 Reinforcement - Wind Area/Weight	53.50 - 54.00	1.0000	1.0000
L35	28	PL0.625x5 Reinforcement - Wind Area/Weight	53.50 - 54.00	1.0000	1.0000
L35	39	PL1.25x5 Reinforcement - Wind Area	53.50 - 54.00	1.0000	1.0000
L35	40	PL1.25x5 Reinforcement - Wind Area	53.50 - 54.00	1.0000	1.0000
L35	41	PL1.25x5 Reinforcement - Wind Area	53.50 - 54.00	1.0000	1.0000
L35	52	CCI-SFP-045100	53.50 - 54.00	1.0000	1.0000
L35	53	CCI-SFP-045100	53.50 - 54.00	1.0000	1.0000
L35	54	CCI-SFP-045100	53.50 - 54.00	1.0000	1.0000
L35	74	PL1.25x5 Reinforcement - Wind Area	53.50 - 54.00	1.0000	1.0000
L35	75	PL1.25x5 Reinforcement - Wind Area	53.50 - 54.00	1.0000	1.0000
L36	16	HB114-U6S12-XXX-LI(1-1/4)	53.25 - 53.50	1.0000	1.0000
L36	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	53.25 - 53.50	1.0000	1.0000
L36	24	LDF4-50A(1/2)	53.25 - 53.50	1.0000	1.0000
L36	26	PL0.625x5 Reinforcement - Wind Area/Weight	53.25 - 53.50	1.0000	1.0000
L36	28	PL0.625x5 Reinforcement - Wind Area/Weight	53.25 - 53.50	1.0000	1.0000
L36	39	PL1.25x5 Reinforcement - Wind Area	53.25 - 53.50	1.0000	1.0000
L36	40	PL1.25x5 Reinforcement - Wind Area	53.25 - 53.50	1.0000	1.0000
L36	41	PL1.25x5 Reinforcement - Wind Area	53.25 - 53.50	1.0000	1.0000
L36	52	CCI-SFP-045100	53.25 - 53.50	1.0000	1.0000
L36	53	CCI-SFP-045100	53.25 - 53.50	1.0000	1.0000
L36	54	CCI-SFP-045100	53.25 - 53.50	1.0000	1.0000
L36	74	PL1.25x5 Reinforcement - Wind Area	53.25 - 53.50	1.0000	1.0000
L36	75	PL1.25x5 Reinforcement - Wind Area	53.25 - 53.50	1.0000	1.0000
L37	16	HB114-U6S12-XXX-LI(1-1/4)	43.66 - 53.25	1.0000	1.0000
L37	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	43.66 - 53.25	1.0000	1.0000
L37	24	LDF4-50A(1/2)	43.66 - 53.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L37	26	PL0.625x5 Reinforcement - Wind Area/Weight	43.66 - 53.25	1.0000	1.0000
L37	28	PL0.625x5 Reinforcement - Wind Area/Weight	43.66 - 53.25	1.0000	1.0000
L37	36	PL1.25x6 Reinforcement - Wind Area	43.66 - 47.92	1.0000	1.0000
L37	37	PL1.25x6 Reinforcement - Wind Area	43.66 - 47.92	1.0000	1.0000
L37	38	PL1.25x6 Reinforcement - Wind Area	43.66 - 47.92	1.0000	1.0000
L37	39	PL1.25x5 Reinforcement - Wind Area	45.38 - 53.25	1.0000	1.0000
L37	40	PL1.25x5 Reinforcement - Wind Area	45.38 - 53.25	1.0000	1.0000
L37	41	PL1.25x5 Reinforcement - Wind Area	45.38 - 53.25	1.0000	1.0000
L37	49	CCI-SFP-060100	43.66 - 43.75	1.0000	1.0000
L37	50	CCI-SFP-060100	43.66 - 43.75	1.0000	1.0000
L37	51	CCI-SFP-060100	43.66 - 43.75	1.0000	1.0000
L37	52	CCI-SFP-045100	43.75 - 53.25	1.0000	1.0000
L37	53	CCI-SFP-045100	43.75 - 53.25	1.0000	1.0000
L37	54	CCI-SFP-045100	43.75 - 53.25	1.0000	1.0000
L37	74	PL1.25x5 Reinforcement - Wind Area	45.50 - 53.25	1.0000	1.0000
L37	75	PL1.25x5 Reinforcement - Wind Area	45.50 - 53.25	1.0000	1.0000
L39	16	HB114-U6S12-XXX-LI(1-1/4)	41.75 - 42.66	1.0000	1.0000
L39	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	41.75 - 42.66	1.0000	1.0000
L39	24	LDF4-50A(1/2)	41.75 - 42.66	1.0000	1.0000
L39	26	PL0.625x5 Reinforcement - Wind Area/Weight	41.75 - 42.66	1.0000	1.0000
L39	28	PL0.625x5 Reinforcement - Wind Area/Weight	41.75 - 42.66	1.0000	1.0000
L39	36	PL1.25x6 Reinforcement - Wind Area	41.75 - 42.66	1.0000	1.0000
L39	37	PL1.25x6 Reinforcement - Wind Area	41.75 - 42.66	1.0000	1.0000
L39	38	PL1.25x6 Reinforcement - Wind Area	41.75 - 42.66	1.0000	1.0000
L39	49	CCI-SFP-060100	41.75 - 42.66	1.0000	1.0000
L39	50	CCI-SFP-060100	41.75 - 42.66	1.0000	1.0000
L39	51	CCI-SFP-060100	41.75 - 42.66	1.0000	1.0000
L40	16	HB114-U6S12-XXX-LI(1-1/4)	41.50 - 41.75	1.0000	1.0000
L40	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	41.50 - 41.75	1.0000	1.0000
L40	24	LDF4-50A(1/2)	41.50 - 41.75	1.0000	1.0000
L40	26	PL0.625x5 Reinforcement - Wind Area/Weight	41.50 - 41.75	1.0000	1.0000
L40	28	PL0.625x5 Reinforcement - Wind Area/Weight	41.50 - 41.75	1.0000	1.0000
L40	36	PL1.25x6 Reinforcement - Wind Area	41.50 - 41.75	1.0000	1.0000
L40	37	PL1.25x6 Reinforcement - Wind Area	41.50 - 41.75	1.0000	1.0000
L40	38	PL1.25x6 Reinforcement -	41.50 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		Wind Area	41.75		
L40	49	CCI-SFP-060100	41.50 - 41.75	1.0000	1.0000
L40	50	CCI-SFP-060100	41.50 - 41.75	1.0000	1.0000
L40	51	CCI-SFP-060100	41.50 - 41.75	1.0000	1.0000
L41	16	HB114-U6S12-XXX-LI(1-1/4)	36.50 - 41.50	1.0000	1.0000
L41	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	36.50 - 41.50	1.0000	1.0000
L41	24	LDF4-50A(1/2)	36.50 - 41.50	1.0000	1.0000
L41	26	PL0.625x5 Reinforcement - Wind Area/Weight	36.50 - 41.50	1.0000	1.0000
L41	28	PL0.625x5 Reinforcement - Wind Area/Weight	36.50 - 41.50	1.0000	1.0000
L41	36	PL1.25x6 Reinforcement - Wind Area	36.50 - 41.50	1.0000	1.0000
L41	37	PL1.25x6 Reinforcement - Wind Area	36.50 - 41.50	1.0000	1.0000
L41	38	PL1.25x6 Reinforcement - Wind Area	36.50 - 41.50	1.0000	1.0000
L41	49	CCI-SFP-060100	36.50 - 41.50	1.0000	1.0000
L41	50	CCI-SFP-060100	36.50 - 41.50	1.0000	1.0000
L41	51	CCI-SFP-060100	36.50 - 41.50	1.0000	1.0000
L42	16	HB114-U6S12-XXX-LI(1-1/4)	32.75 - 36.50	1.0000	1.0000
L42	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	32.75 - 36.50	1.0000	1.0000
L42	24	LDF4-50A(1/2)	32.75 - 36.50	1.0000	1.0000
L42	26	PL0.625x5 Reinforcement - Wind Area/Weight	32.75 - 36.50	1.0000	1.0000
L42	28	PL0.625x5 Reinforcement - Wind Area/Weight	32.75 - 36.50	1.0000	1.0000
L42	36	PL1.25x6 Reinforcement - Wind Area	32.75 - 36.50	1.0000	1.0000
L42	37	PL1.25x6 Reinforcement - Wind Area	32.75 - 36.50	1.0000	1.0000
L42	38	PL1.25x6 Reinforcement - Wind Area	32.75 - 36.50	1.0000	1.0000
L42	49	CCI-SFP-060100	32.75 - 36.50	1.0000	1.0000
L42	50	CCI-SFP-060100	32.75 - 36.50	1.0000	1.0000
L42	51	CCI-SFP-060100	32.75 - 36.50	1.0000	1.0000
L42	77	PL1.25x6.5 Reinforcement - Wind Area	32.75 - 35.50	1.0000	1.0000
L42	78	PL1.25x6.5 Reinforcement - Wind Area	32.75 - 35.50	1.0000	1.0000
L43	16	HB114-U6S12-XXX-LI(1-1/4)	32.50 - 32.75	1.0000	1.0000
L43	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	32.50 - 32.75	1.0000	1.0000
L43	24	LDF4-50A(1/2)	32.50 - 32.75	1.0000	1.0000
L43	26	PL0.625x5 Reinforcement - Wind Area/Weight	32.50 - 32.75	1.0000	1.0000
L43	28	PL0.625x5 Reinforcement - Wind Area/Weight	32.50 - 32.75	1.0000	1.0000
L43	36	PL1.25x6 Reinforcement - Wind Area	32.50 - 32.75	1.0000	1.0000
L43	37	PL1.25x6 Reinforcement - Wind Area	32.50 - 32.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L43	38	PL1.25x6 Reinforcement - Wind Area	32.50 - 32.75	1.0000	1.0000
L43	49	CCI-SFP-060100	32.50 - 32.75	1.0000	1.0000
L43	50	CCI-SFP-060100	32.50 - 32.75	1.0000	1.0000
L43	51	CCI-SFP-060100	32.50 - 32.75	1.0000	1.0000
L43	77	PL1.25x6.5 Reinforcement - Wind Area	32.50 - 32.75	1.0000	1.0000
L43	78	PL1.25x6.5 Reinforcement - Wind Area	32.50 - 32.75	1.0000	1.0000
L44	16	HB114-U6S12-XXX-LI(1-1/4)	29.83 - 32.50	1.0000	1.0000
L44	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	29.83 - 32.50	1.0000	1.0000
L44	24	LDF4-50A(1/2)	29.83 - 32.50	1.0000	1.0000
L44	26	PL0.625x5 Reinforcement - Wind Area/Weight	29.83 - 32.50	1.0000	1.0000
L44	28	PL0.625x5 Reinforcement - Wind Area/Weight	29.83 - 32.50	1.0000	1.0000
L44	33	PL1.25x6 Reinforcement - Wind Area	29.83 - 30.75	1.0000	1.0000
L44	34	PL1.25x6 Reinforcement - Wind Area	29.83 - 30.75	1.0000	1.0000
L44	35	PL1.25x6 Reinforcement - Wind Area	29.83 - 30.75	1.0000	1.0000
L44	36	PL1.25x6 Reinforcement - Wind Area	29.83 - 32.50	1.0000	1.0000
L44	37	PL1.25x6 Reinforcement - Wind Area	29.83 - 32.50	1.0000	1.0000
L44	38	PL1.25x6 Reinforcement - Wind Area	29.83 - 32.50	1.0000	1.0000
L44	49	CCI-SFP-060100	29.83 - 32.50	1.0000	1.0000
L44	50	CCI-SFP-060100	29.83 - 32.50	1.0000	1.0000
L44	51	CCI-SFP-060100	29.83 - 32.50	1.0000	1.0000
L44	77	PL1.25x6.5 Reinforcement - Wind Area	29.83 - 32.50	1.0000	1.0000
L44	78	PL1.25x6.5 Reinforcement - Wind Area	29.83 - 32.50	1.0000	1.0000
L45	16	HB114-U6S12-XXX-LI(1-1/4)	29.58 - 29.83	1.0000	1.0000
L45	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	29.58 - 29.83	1.0000	1.0000
L45	24	LDF4-50A(1/2)	29.58 - 29.83	1.0000	1.0000
L45	26	PL0.625x5 Reinforcement - Wind Area/Weight	29.58 - 29.83	1.0000	1.0000
L45	28	PL0.625x5 Reinforcement - Wind Area/Weight	29.58 - 29.83	1.0000	1.0000
L45	33	PL1.25x6 Reinforcement - Wind Area	29.58 - 29.83	1.0000	1.0000
L45	34	PL1.25x6 Reinforcement - Wind Area	29.58 - 29.83	1.0000	1.0000
L45	35	PL1.25x6 Reinforcement - Wind Area	29.58 - 29.83	1.0000	1.0000
L45	36	PL1.25x6 Reinforcement - Wind Area	29.58 - 29.83	1.0000	1.0000
L45	37	PL1.25x6 Reinforcement - Wind Area	29.58 - 29.83	1.0000	1.0000
L45	38	PL1.25x6 Reinforcement - Wind Area	29.58 - 29.83	1.0000	1.0000
L45	49	CCI-SFP-060100	29.58 - 29.83	1.0000	1.0000
L45	50	CCI-SFP-060100	29.58 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			29.83		
L45	51	CCI-SFP-060100	29.58 - 29.83	1.0000	1.0000
L45	77	PL1.25x6.5 Reinforcement - Wind Area	29.58 - 29.83	1.0000	1.0000
L45	78	PL1.25x6.5 Reinforcement - Wind Area	29.58 - 29.83	1.0000	1.0000
L46	16	HB114-U6S12-XXX-LI(1-1/4)	28.25 - 29.58	1.0000	1.0000
L46	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	28.25 - 29.58	1.0000	1.0000
L46	24	LDF4-50A(1/2)	28.25 - 29.58	1.0000	1.0000
L46	26	PL0.625x5 Reinforcement - Wind Area/Weight	28.25 - 29.58	1.0000	1.0000
L46	28	PL0.625x5 Reinforcement - Wind Area/Weight	28.25 - 29.58	1.0000	1.0000
L46	33	PL1.25x6 Reinforcement - Wind Area	28.25 - 29.58	1.0000	1.0000
L46	34	PL1.25x6 Reinforcement - Wind Area	28.25 - 29.58	1.0000	1.0000
L46	35	PL1.25x6 Reinforcement - Wind Area	28.25 - 29.58	1.0000	1.0000
L46	36	PL1.25x6 Reinforcement - Wind Area	28.25 - 29.58	1.0000	1.0000
L46	37	PL1.25x6 Reinforcement - Wind Area	28.25 - 29.58	1.0000	1.0000
L46	38	PL1.25x6 Reinforcement - Wind Area	28.25 - 29.58	1.0000	1.0000
L46	49	CCI-SFP-060100	28.25 - 29.58	1.0000	1.0000
L46	50	CCI-SFP-060100	28.25 - 29.58	1.0000	1.0000
L46	51	CCI-SFP-060100	28.25 - 29.58	1.0000	1.0000
L46	77	PL1.25x6.5 Reinforcement - Wind Area	28.25 - 29.58	1.0000	1.0000
L46	78	PL1.25x6.5 Reinforcement - Wind Area	28.25 - 29.58	1.0000	1.0000
L47	16	HB114-U6S12-XXX-LI(1-1/4)	28.00 - 28.25	1.0000	1.0000
L47	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	28.00 - 28.25	1.0000	1.0000
L47	24	LDF4-50A(1/2)	28.00 - 28.25	1.0000	1.0000
L47	26	PL0.625x5 Reinforcement - Wind Area/Weight	28.00 - 28.25	1.0000	1.0000
L47	28	PL0.625x5 Reinforcement - Wind Area/Weight	28.00 - 28.25	1.0000	1.0000
L47	33	PL1.25x6 Reinforcement - Wind Area	28.00 - 28.25	1.0000	1.0000
L47	34	PL1.25x6 Reinforcement - Wind Area	28.00 - 28.25	1.0000	1.0000
L47	35	PL1.25x6 Reinforcement - Wind Area	28.00 - 28.25	1.0000	1.0000
L47	36	PL1.25x6 Reinforcement - Wind Area	28.00 - 28.25	1.0000	1.0000
L47	37	PL1.25x6 Reinforcement - Wind Area	28.00 - 28.25	1.0000	1.0000
L47	38	PL1.25x6 Reinforcement - Wind Area	28.00 - 28.25	1.0000	1.0000
L47	49	CCI-SFP-060100	28.00 - 28.25	1.0000	1.0000
L47	50	CCI-SFP-060100	28.00 - 28.25	1.0000	1.0000
L47	51	CCI-SFP-060100	28.00 - 28.25	1.0000	1.0000
L47	77	PL1.25x6.5 Reinforcement - Wind Area	28.00 - 28.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L47	78	PL1.25x6.5 Reinforcement - Wind Area	28.00 - 28.25	1.0000	1.0000
L48	16	HB114-U6S12-XXX-LI(1-1/4)	23.00 - 28.00	1.0000	1.0000
L48	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	23.00 - 28.00	1.0000	1.0000
L48	24	LDF4-50A(1/2)	23.00 - 28.00	1.0000	1.0000
L48	26	PL0.625x5 Reinforcement - Wind Area/Weight	23.00 - 28.00	1.0000	1.0000
L48	28	PL0.625x5 Reinforcement - Wind Area/Weight	23.00 - 28.00	1.0000	1.0000
L48	33	PL1.25x6 Reinforcement - Wind Area	23.00 - 28.00	1.0000	1.0000
L48	34	PL1.25x6 Reinforcement - Wind Area	23.00 - 28.00	1.0000	1.0000
L48	35	PL1.25x6 Reinforcement - Wind Area	23.00 - 28.00	1.0000	1.0000
L48	36	PL1.25x6 Reinforcement - Wind Area	27.83 - 28.00	1.0000	1.0000
L48	37	PL1.25x6 Reinforcement - Wind Area	27.83 - 28.00	1.0000	1.0000
L48	38	PL1.25x6 Reinforcement - Wind Area	27.83 - 28.00	1.0000	1.0000
L48	49	CCI-SFP-060100	23.00 - 28.00	1.0000	1.0000
L48	50	CCI-SFP-060100	23.00 - 28.00	1.0000	1.0000
L48	51	CCI-SFP-060100	23.00 - 28.00	1.0000	1.0000
L48	55	CCI-SFP-045100	23.00 - 27.75	1.0000	1.0000
L48	56	CCI-SFP-045100	23.00 - 27.75	1.0000	1.0000
L48	57	CCI-SFP-045100	23.00 - 27.75	1.0000	1.0000
L48	77	PL1.25x6.5 Reinforcement - Wind Area	25.50 - 28.00	1.0000	1.0000
L48	78	PL1.25x6.5 Reinforcement - Wind Area	25.50 - 28.00	1.0000	1.0000
L49	16	HB114-U6S12-XXX-LI(1-1/4)	19.25 - 23.00	1.0000	1.0000
L49	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	19.25 - 23.00	1.0000	1.0000
L49	24	LDF4-50A(1/2)	19.25 - 23.00	1.0000	1.0000
L49	26	PL0.625x5 Reinforcement - Wind Area/Weight	19.25 - 23.00	1.0000	1.0000
L49	28	PL0.625x5 Reinforcement - Wind Area/Weight	19.25 - 23.00	1.0000	1.0000
L49	33	PL1.25x6 Reinforcement - Wind Area	19.25 - 23.00	1.0000	1.0000
L49	34	PL1.25x6 Reinforcement - Wind Area	19.25 - 23.00	1.0000	1.0000
L49	35	PL1.25x6 Reinforcement - Wind Area	19.25 - 23.00	1.0000	1.0000
L49	49	CCI-SFP-060100	19.25 - 23.00	1.0000	1.0000
L49	50	CCI-SFP-060100	19.25 - 23.00	1.0000	1.0000
L49	51	CCI-SFP-060100	19.25 - 23.00	1.0000	1.0000
L49	55	CCI-SFP-045100	19.25 - 23.00	1.0000	1.0000
L49	56	CCI-SFP-045100	19.25 - 23.00	1.0000	1.0000
L49	57	CCI-SFP-045100	19.25 - 23.00	1.0000	1.0000
L50	16	HB114-U6S12-XXX-LI(1-	19.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		1/4)	19.25		
L50	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	19.00 - 19.25	1.0000	1.0000
L50	24	LDF4-50A(1/2)	19.00 - 19.25	1.0000	1.0000
L50	26	PL0.625x5 Reinforcement - Wind Area/Weight	19.00 - 19.25	1.0000	1.0000
L50	28	PL0.625x5 Reinforcement - Wind Area/Weight	19.00 - 19.25	1.0000	1.0000
L50	33	PL1.25x6 Reinforcement - Wind Area	19.00 - 19.25	1.0000	1.0000
L50	34	PL1.25x6 Reinforcement - Wind Area	19.00 - 19.25	1.0000	1.0000
L50	35	PL1.25x6 Reinforcement - Wind Area	19.00 - 19.25	1.0000	1.0000
L50	49	CCI-SFP-060100	19.00 - 19.25	1.0000	1.0000
L50	50	CCI-SFP-060100	19.00 - 19.25	1.0000	1.0000
L50	51	CCI-SFP-060100	19.00 - 19.25	1.0000	1.0000
L50	55	CCI-SFP-045100	19.00 - 19.25	1.0000	1.0000
L50	56	CCI-SFP-045100	19.00 - 19.25	1.0000	1.0000
L50	57	CCI-SFP-045100	19.00 - 19.25	1.0000	1.0000
L51	16	HB114-U6S12-XXX-LI(1-1/4)	14.00 - 19.00	1.0000	1.0000
L51	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	14.00 - 19.00	1.0000	1.0000
L51	24	LDF4-50A(1/2)	14.00 - 19.00	1.0000	1.0000
L51	26	PL0.625x5 Reinforcement - Wind Area/Weight	14.00 - 19.00	1.0000	1.0000
L51	28	PL0.625x5 Reinforcement - Wind Area/Weight	14.00 - 19.00	1.0000	1.0000
L51	33	PL1.25x6 Reinforcement - Wind Area	14.00 - 19.00	1.0000	1.0000
L51	34	PL1.25x6 Reinforcement - Wind Area	14.00 - 19.00	1.0000	1.0000
L51	35	PL1.25x6 Reinforcement - Wind Area	14.00 - 19.00	1.0000	1.0000
L51	49	CCI-SFP-060100	14.00 - 19.00	1.0000	1.0000
L51	50	CCI-SFP-060100	14.00 - 19.00	1.0000	1.0000
L51	51	CCI-SFP-060100	14.00 - 19.00	1.0000	1.0000
L51	55	CCI-SFP-045100	17.75 - 19.00	1.0000	1.0000
L51	56	CCI-SFP-045100	17.75 - 19.00	1.0000	1.0000
L51	57	CCI-SFP-045100	17.75 - 19.00	1.0000	1.0000
L52	16	HB114-U6S12-XXX-LI(1-1/4)	9.00 - 14.00	1.0000	1.0000
L52	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	9.00 - 14.00	1.0000	1.0000
L52	24	LDF4-50A(1/2)	9.00 - 14.00	1.0000	1.0000
L52	26	PL0.625x5 Reinforcement - Wind Area/Weight	9.00 - 14.00	1.0000	1.0000
L52	28	PL0.625x5 Reinforcement - Wind Area/Weight	9.00 - 14.00	1.0000	1.0000
L52	33	PL1.25x6 Reinforcement - Wind Area	9.00 - 14.00	1.0000	1.0000
L52	34	PL1.25x6 Reinforcement - Wind Area	9.00 - 14.00	1.0000	1.0000
L52	35	PL1.25x6 Reinforcement -	9.00 - 14.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		Wind Area			
L52	49	CCI-SFP-060100	9.00 - 14.00	1.0000	1.0000
L52	50	CCI-SFP-060100	9.00 - 14.00	1.0000	1.0000
L52	51	CCI-SFP-060100	9.00 - 14.00	1.0000	1.0000
L53	16	HB114-U6S12-XXX-LI(1-1/4)	4.00 - 9.00	1.0000	1.0000
L53	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	4.00 - 9.00	1.0000	1.0000
L53	24	LDF4-50A(1/2)	4.00 - 9.00	1.0000	1.0000
L53	26	PL0.625x5 Reinforcement - Wind Area/Weight	4.00 - 9.00	1.0000	1.0000
L53	28	PL0.625x5 Reinforcement - Wind Area/Weight	4.00 - 9.00	1.0000	1.0000
L53	33	PL1.25x6 Reinforcement - Wind Area	4.00 - 9.00	1.0000	1.0000
L53	34	PL1.25x6 Reinforcement - Wind Area	4.00 - 9.00	1.0000	1.0000
L53	35	PL1.25x6 Reinforcement - Wind Area	4.00 - 9.00	1.0000	1.0000
L53	49	CCI-SFP-060100	4.00 - 9.00	1.0000	1.0000
L53	50	CCI-SFP-060100	4.00 - 9.00	1.0000	1.0000
L53	51	CCI-SFP-060100	4.00 - 9.00	1.0000	1.0000
L54	16	HB114-U6S12-XXX-LI(1-1/4)	0.00 - 4.00	1.0000	1.0000
L54	21	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	0.00 - 4.00	1.0000	1.0000
L54	24	LDF4-50A(1/2)	0.00 - 4.00	1.0000	1.0000
L54	26	PL0.625x5 Reinforcement - Wind Area/Weight	0.00 - 4.00	1.0000	1.0000
L54	28	PL0.625x5 Reinforcement - Wind Area/Weight	0.00 - 4.00	1.0000	1.0000
L54	33	PL1.25x6 Reinforcement - Wind Area	0.00 - 4.00	1.0000	1.0000
L54	34	PL1.25x6 Reinforcement - Wind Area	0.00 - 4.00	1.0000	1.0000
L54	35	PL1.25x6 Reinforcement - Wind Area	0.00 - 4.00	1.0000	1.0000
L54	49	CCI-SFP-060100	1.25 - 4.00	1.0000	1.0000
L54	50	CCI-SFP-060100	1.25 - 4.00	1.0000	1.0000
L54	51	CCI-SFP-060100	1.25 - 4.00	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
***									
Platform Mount [LP 304-1]	C	None		0.00	168.00	No Ice	17.49	17.49	1.35
						1/2" Ice	21.37	21.37	1.71
						1" Ice	25.28	25.28	2.13
						2" Ice	33.17	33.17	3.16
Site Pro 1 HRK14-U Handrail Kit	C	From Leg	4.00 0.00 3.00	0.00	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.36 8.52 10.62 14.64	6.36 8.52 10.62 14.64	0.26 0.34 0.46 0.77
Site Pro 1 PRK-1245 Tri-	C	From Leg	0.00	0.00	168.00	No Ice	1.97	1.75	0.47

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Sector Kickers			0.00 -2.50			1/2" Ice 1" Ice 2" Ice	2.33 2.73 3.41	2.26 2.80 3.79	0.51 0.57 0.63
(4) Site Pro 1 P3096	A	From Leg	4.00 0.00 0.00	0.00	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.30 3.13 3.62 4.62	2.30 3.13 3.62 4.62	0.05 0.06 0.09 0.15
(4) Site Pro 1 P3096	B	From Leg	4.00 0.00 0.00	0.00	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.30 3.13 3.62 4.62	2.30 3.13 3.62 4.62	0.05 0.06 0.09 0.15
(4) Site Pro 1 P3096	C	From Leg	4.00 0.00 0.00	0.00	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.30 3.13 3.62 4.62	2.30 3.13 3.62 4.62	0.05 0.06 0.09 0.15
(4) Site Pro 1 SCX2-K	A	From Leg	4.00 0.00 3.00	0.00	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00
(4) Site Pro 1 SCX2-K	B	From Leg	4.00 0.00 3.00	0.00	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00
(4) Site Pro 1 SCX2-K	C	From Leg	4.00 0.00 3.00	0.00	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00
(4) Site Pro 1 SCX43-K	A	From Leg	4.00 0.00 0.00	0.00	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00
(4) Site Pro 1 SCX43-K	B	From Leg	4.00 0.00 0.00	0.00	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00
(4) Site Pro 1 SCX43-K	C	From Leg	4.00 0.00 0.00	0.00	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00
800 10121	A	From Leg	4.00 -7.00 1.00	0.00	168.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	3.74 4.18 4.63 5.57	2.17 2.58 3.00 3.88	0.05 0.08 0.12 0.21
800 10121	B	From Leg	4.00 -7.00 1.00	0.00	168.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	3.74 4.18 4.63 5.57	2.17 2.58 3.00 3.88	0.05 0.08 0.12 0.21
800 10121	C	From Leg	4.00 -7.00 1.00	0.00	168.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	3.74 4.18 4.63 5.57	2.17 2.58 3.00 3.88	0.05 0.08 0.12 0.21
TPA-65R-LCUUUU-H8	B	From Leg	4.00	0.00	168.00	No Ice	11.87	7.02	0.08

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			-2.33			1/2"	12.82	7.91	0.16
			0.00			Ice	13.77	8.82	0.25
						1" Ice	15.74	10.68	0.45
						2" Ice			
TPA-65R-LCUUUU-H8	C	From Leg	4.00	0.00	168.00	No Ice	11.87	7.02	0.08
			2.33			1/2"	12.82	7.91	0.16
			0.00			Ice	13.77	8.82	0.25
						1" Ice	15.74	10.68	0.45
						2" Ice			
DMP65R-BU6D	A	From Leg	4.00	0.00	168.00	No Ice	12.71	5.62	0.08
			7.00			1/2"	13.21	6.07	0.15
			0.00			Ice	13.71	6.53	0.23
						1" Ice	14.74	7.47	0.42
						2" Ice			
DMP65R-BU8D	B	From Leg	4.00	0.00	168.00	No Ice	17.87	8.12	0.10
			7.00			1/2"	18.50	8.72	0.19
			0.00			Ice	19.14	9.32	0.30
						1" Ice	20.44	10.54	0.54
						2" Ice			
DMP65R-BU8D	C	From Leg	4.00	0.00	168.00	No Ice	17.87	8.12	0.10
			7.00			1/2"	18.50	8.72	0.19
			0.00			Ice	19.14	9.32	0.30
						1" Ice	20.44	10.54	0.54
						2" Ice			
80010966	B	From Leg	4.00	0.00	168.00	No Ice	14.59	5.04	0.13
			2.33			1/2"	15.46	5.81	0.22
			0.00			Ice	16.35	6.59	0.32
						1" Ice	18.16	8.21	0.54
						2" Ice			
80010966	C	From Leg	4.00	0.00	168.00	No Ice	14.59	5.04	0.13
			-2.33			1/2"	15.46	5.81	0.22
			0.00			Ice	16.35	6.59	0.32
						1" Ice	18.16	8.21	0.54
						2" Ice			
80010965	A	From Leg	4.00	0.00	168.00	No Ice	12.23	4.21	0.11
			-2.33			1/2"	13.00	4.88	0.19
			1.00			Ice	13.79	5.57	0.27
						1" Ice	15.41	6.99	0.46
						2" Ice			
80010798	A	From Leg	4.00	0.00	168.00	No Ice	7.83	3.63	0.09
			2.33			1/2"	8.45	4.20	0.15
			0.00			Ice	9.09	4.78	0.22
						1" Ice	10.40	5.99	0.37
						2" Ice			
(2) LGP21401	A	From Leg	4.00	0.00	168.00	No Ice	1.10	0.35	0.01
			0.00			1/2"	1.24	0.44	0.02
			1.00			Ice	1.38	0.54	0.03
						1" Ice	1.69	0.77	0.05
						2" Ice			
(2) LGP21401	B	From Leg	4.00	0.00	168.00	No Ice	1.10	0.35	0.01
			0.00			1/2"	1.24	0.44	0.02
			1.00			Ice	1.38	0.54	0.03
						1" Ice	1.69	0.77	0.05
						2" Ice			
(2) LGP21401	C	From Leg	4.00	0.00	168.00	No Ice	1.10	0.35	0.01
			0.00			1/2"	1.24	0.44	0.02
			1.00			Ice	1.38	0.54	0.03
						1" Ice	1.69	0.77	0.05
						2" Ice			
RRUS 32 B2	A	From Leg	4.00	0.00	168.00	No Ice	2.73	1.67	0.05
			0.00			1/2"	2.95	1.86	0.07
			0.00			Ice	3.18	2.05	0.10
						1" Ice	3.66	2.46	0.16
						2" Ice			
RRUS 32 B2	B	From Leg	4.00	0.00	168.00	No Ice	2.73	1.67	0.05

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1/2"	2.95	1.86	0.07
			0.00			Ice	3.18	2.05	0.10
						1" Ice	3.66	2.46	0.16
						2" Ice			
RRUS 32 B2	C	From Leg	4.00	0.00	168.00	No Ice	2.73	1.67	0.05
			0.00			1/2"	2.95	1.86	0.07
			0.00			Ice	3.18	2.05	0.10
						1" Ice	3.66	2.46	0.16
						2" Ice			
RRUS 32 B30	A	From Leg	4.00	0.00	168.00	No Ice	2.69	1.57	0.06
			0.00			1/2"	2.91	1.76	0.08
			0.00			Ice	3.14	1.95	0.10
						1" Ice	3.61	2.35	0.16
						2" Ice			
RRUS 32 B30	B	From Leg	4.00	0.00	168.00	No Ice	2.69	1.57	0.06
			0.00			1/2"	2.91	1.76	0.08
			0.00			Ice	3.14	1.95	0.10
						1" Ice	3.61	2.35	0.16
						2" Ice			
RRUS 32 B30	C	From Leg	4.00	0.00	168.00	No Ice	2.69	1.57	0.06
			0.00			1/2"	2.91	1.76	0.08
			0.00			Ice	3.14	1.95	0.10
						1" Ice	3.61	2.35	0.16
						2" Ice			
RRUS 4415 B25	A	From Leg	4.00	0.00	168.00	No Ice	1.64	0.68	0.04
			0.00			1/2"	1.80	0.79	0.06
			-1.00			Ice	1.97	0.91	0.07
						1" Ice	2.33	1.18	0.11
						2" Ice			
RRUS 4415 B25	B	From Leg	4.00	0.00	168.00	No Ice	1.64	0.68	0.04
			0.00			1/2"	1.80	0.79	0.06
			-1.00			Ice	1.97	0.91	0.07
						1" Ice	2.33	1.18	0.11
						2" Ice			
RRUS 4415 B25	C	From Leg	4.00	0.00	168.00	No Ice	1.64	0.68	0.04
			0.00			1/2"	1.80	0.79	0.06
			-1.00			Ice	1.97	0.91	0.07
						1" Ice	2.33	1.18	0.11
						2" Ice			
RRUS 4426 B66	A	From Leg	4.00	0.00	168.00	No Ice	1.64	0.73	0.10
			0.00			1/2"	1.80	0.84	0.11
			0.00			Ice	1.97	0.97	0.13
						1" Ice	2.33	1.24	0.17
						2" Ice			
RRUS 4426 B66	B	From Leg	4.00	0.00	168.00	No Ice	1.64	0.73	0.10
			0.00			1/2"	1.80	0.84	0.11
			0.00			Ice	1.97	0.97	0.13
						1" Ice	2.33	1.24	0.17
						2" Ice			
RRUS 4426 B66	C	From Leg	4.00	0.00	168.00	No Ice	1.64	0.73	0.10
			0.00			1/2"	1.80	0.84	0.11
			0.00			Ice	1.97	0.97	0.13
						1" Ice	2.33	1.24	0.17
						2" Ice			
RRUS 4449 B5/B12	A	From Leg	4.00	0.00	168.00	No Ice	1.97	1.41	0.07
			0.00			1/2"	2.14	1.56	0.09
			0.00			Ice	2.33	1.73	0.11
						1" Ice	2.72	2.07	0.16
						2" Ice			
RRUS 4449 B5/B12	B	From Leg	4.00	0.00	168.00	No Ice	1.97	1.41	0.07
			0.00			1/2"	2.14	1.56	0.09
			0.00			Ice	2.33	1.73	0.11
						1" Ice	2.72	2.07	0.16
						2" Ice			
RRUS 4449 B5/B12	C	From Leg	4.00	0.00	168.00	No Ice	1.97	1.41	0.07

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00 0.00			1/2" Ice 1" Ice 2" Ice	2.14 2.33 2.72	1.56 1.73 2.07	0.09 0.11 0.16
RRUS 4478 B14	A	From Leg	4.00 0.00 0.00	0.00	168.00	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	0.06 0.08 0.09 0.14
RRUS 4478 B14	B	From Leg	4.00 0.00 0.00	0.00	168.00	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	0.06 0.08 0.09 0.14
RRUS 4478 B14	C	From Leg	4.00 0.00 0.00	0.00	168.00	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	0.06 0.08 0.09 0.14
RRUS E2 B29	A	From Leg	4.00 0.00 0.00	0.00	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.15 3.36 3.59 4.07	1.29 1.44 1.60 1.95	0.05 0.08 0.10 0.17
RRUS E2 B29	B	From Leg	4.00 0.00 0.00	0.00	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.15 3.36 3.59 4.07	1.29 1.44 1.60 1.95	0.05 0.08 0.10 0.17
RRUS E2 B29	C	From Leg	4.00 0.00 0.00	0.00	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.15 3.36 3.59 4.07	1.29 1.44 1.60 1.95	0.05 0.08 0.10 0.17
DC6-48-60-18-8C	B	From Leg	1.00 0.00 -1.00	0.00	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.14 1.79 2.00 2.45	1.14 1.79 2.00 2.45	0.03 0.05 0.07 0.13
DC6-48-60-18-8F	A	From Leg	1.00 0.00 -1.00	0.00	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.92 1.46 1.64 2.04	0.92 1.46 1.64 2.04	0.02 0.04 0.06 0.11
DC6-48-60-18-8F	B	From Leg	1.00 0.00 -1.00	0.00	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.92 1.46 1.64 2.04	0.92 1.46 1.64 2.04	0.02 0.04 0.06 0.11
DC6-48-60-18-8F	C	From Leg	1.00 0.00 0.00	0.00	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.92 1.46 1.64 2.04	0.92 1.46 1.64 2.04	0.02 0.04 0.06 0.11
***									
T-Arm Mount [TA 602-3_KCKR]	C	None		0.00	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	23.41 28.72 34.48 46.49	23.41 28.72 34.48 46.49	1.05 1.42 1.90 3.21
12'x2" Horizontal Pipe	C	From Face	3.00 0.00 0.00	0.00	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.85 4.08 5.32 7.60	0.01 0.05 0.08 0.16	0.04 0.07 0.09 0.18

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) 6'x2" Mount Pipe	A	From Leg	3.00 0.00 0.00	0.00	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.43 1.92 2.29 3.06	1.43 1.92 2.29 3.06	0.02 0.03 0.05 0.09
(2) 6'x2" Mount Pipe	B	From Leg	3.00 0.00 0.00	0.00	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.43 1.92 2.29 3.06	1.43 1.92 2.29 3.06	0.02 0.03 0.05 0.09
(2) 6'x2" Mount Pipe	C	From Leg	3.00 0.00 0.00	0.00	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.43 1.92 2.29 3.06	1.43 1.92 2.29 3.06	0.02 0.03 0.05 0.09
APXVTM14-C-120 w/ Mount Pipe	A	From Leg	3.00 -2.00 0.00	0.00	158.00	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	0.08 0.13 0.19 0.33
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	3.00 -2.00 0.00	0.00	158.00	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	0.08 0.13 0.19 0.33
APXVTM14-C-120 w/ Mount Pipe	C	From Leg	3.00 -2.00 0.00	0.00	158.00	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	0.08 0.13 0.19 0.33
P40-16-XLPP-RR-A w/ Mount Pipe	A	From Leg	3.00 2.00 0.00	0.00	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	8.24 8.70 9.16 10.09	4.83 5.57 6.27 7.67	0.07 0.14 0.21 0.37
P40-16-XLPP-RR-A w/ Mount Pipe	B	From Leg	3.00 2.00 0.00	0.00	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	8.24 8.70 9.16 10.09	4.83 5.57 6.27 7.67	0.07 0.14 0.21 0.37
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	3.00 2.00 0.00	0.00	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.60 5.05 5.50 6.44	4.01 4.45 4.89 5.82	0.10 0.16 0.23 0.42
TD-RRH8x20-25	A	From Leg	3.00 0.00 0.00	0.00	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.05 4.30 4.56 5.10	1.53 1.71 1.90 2.30	0.07 0.10 0.13 0.20
TD-RRH8x20-25	B	From Leg	3.00 0.00 0.00	0.00	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.05 4.30 4.56 5.10	1.53 1.71 1.90 2.30	0.07 0.10 0.13 0.20
TD-RRH8x20-25	C	From Leg	3.00 0.00 0.00	0.00	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.05 4.30 4.56 5.10	1.53 1.71 1.90 2.30	0.07 0.10 0.13 0.20
800MHZ RRH	A	From Leg	3.00 0.00 0.00	0.00	158.00	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	0.05 0.07 0.10 0.16

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
800MHZ RRH	B	From Leg	3.00 0.00 0.00	0.00	158.00	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	0.05 0.07 0.10 0.16
800MHZ RRH	C	From Leg	3.00 0.00 0.00	0.00	158.00	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	0.05 0.07 0.10 0.16
1900MHz RRH (65MHz)	A	From Leg	3.00 0.00 0.00	0.00	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.32 2.53 2.74 3.19	2.24 2.44 2.65 3.09	0.06 0.08 0.11 0.17
1900MHz RRH (65MHz)	B	From Leg	3.00 0.00 0.00	0.00	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.32 2.53 2.74 3.19	2.24 2.44 2.65 3.09	0.06 0.08 0.11 0.17
1900MHz RRH (65MHz)	C	From Leg	3.00 0.00 0.00	0.00	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.32 2.53 2.74 3.19	2.24 2.44 2.65 3.09	0.06 0.08 0.11 0.17
800 EXTERNAL NOTCH FILTER	A	From Leg	3.00 0.00 0.00	0.00	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.66 0.76 0.87 1.11	0.32 0.40 0.48 0.67	0.01 0.02 0.02 0.04
800 EXTERNAL NOTCH FILTER	B	From Leg	3.00 0.00 0.00	0.00	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.66 0.76 0.87 1.11	0.32 0.40 0.48 0.67	0.01 0.02 0.02 0.04
800 EXTERNAL NOTCH FILTER	C	From Leg	3.00 0.00 0.00	0.00	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.66 0.76 0.87 1.11	0.32 0.40 0.48 0.67	0.01 0.02 0.02 0.04
*** ***									
Platform Mount [LP 303-1]	C	None		0.00	138.00	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	1.25 1.57 1.94 2.85
BXA-70063/4CF w/ Mount Pipe	A	From Face	4.00 -2.00 2.00	0.00	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.95 5.32 5.71 6.51	3.62 4.22 4.83 6.11	0.03 0.07 0.12 0.23
BXA-70063/4CF w/ Mount Pipe	A	From Face	4.00 6.00 2.00	0.00	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.95 5.32 5.71 6.51	3.62 4.22 4.83 6.11	0.03 0.07 0.12 0.23
BXA-70063/4CF w/ Mount Pipe	B	From Face	4.00 -6.00 2.00	0.00	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.95 5.32 5.71 6.51	3.62 4.22 4.83 6.11	0.03 0.07 0.12 0.23
BXA-70063/4CF w/ Mount Pipe	B	From Face	4.00 6.00 2.00	0.00	138.00	No Ice 1/2" Ice	4.95 5.32 5.71	3.62 4.22 4.83	0.03 0.07 0.12

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice	6.51	6.11	0.23
						2" Ice			
BXA-70063/4CF w/ Mount Pipe	C	From Face	4.00 -2.00 2.00	0.00	138.00	No Ice	4.95	3.62	0.03
						1/2" Ice	5.32	4.22	0.07
						1" Ice	5.71	4.83	0.12
						2" Ice	6.51	6.11	0.23
BXA-70063/4CF w/ Mount Pipe	C	From Face	4.00 6.00 2.00	0.00	138.00	No Ice	4.95	3.62	0.03
						1/2" Ice	5.32	4.22	0.07
						1" Ice	5.71	4.83	0.12
						2" Ice	6.51	6.11	0.23
SBNHH-1D65B w/ Mount Pipe	A	From Face	4.00 -6.00 2.00	0.00	138.00	No Ice	4.09	3.30	0.07
						1/2" Ice	4.49	3.68	0.13
						1" Ice	4.89	4.07	0.20
						2" Ice	5.72	4.87	0.39
SBNHH-1D65B w/ Mount Pipe	A	From Face	4.00 2.00 2.00	0.00	138.00	No Ice	4.09	3.30	0.07
						1/2" Ice	4.49	3.68	0.13
						1" Ice	4.89	4.07	0.20
						2" Ice	5.72	4.87	0.39
SBNHH-1D65B w/ Mount Pipe	B	From Face	4.00 -2.00 2.00	0.00	138.00	No Ice	4.09	3.30	0.07
						1/2" Ice	4.49	3.68	0.13
						1" Ice	4.89	4.07	0.20
						2" Ice	5.72	4.87	0.39
SBNHH-1D65B w/ Mount Pipe	B	From Face	4.00 2.00 2.00	0.00	138.00	No Ice	4.09	3.30	0.07
						1/2" Ice	4.49	3.68	0.13
						1" Ice	4.89	4.07	0.20
						2" Ice	5.72	4.87	0.39
SBNHH-1D65B w/ Mount Pipe	C	From Face	4.00 -6.00 2.00	0.00	138.00	No Ice	4.09	3.30	0.07
						1/2" Ice	4.49	3.68	0.13
						1" Ice	4.89	4.07	0.20
						2" Ice	5.72	4.87	0.39
SBNHH-1D65B w/ Mount Pipe	C	From Face	4.00 2.00 2.00	0.00	138.00	No Ice	4.09	3.30	0.07
						1/2" Ice	4.49	3.68	0.13
						1" Ice	4.89	4.07	0.20
						2" Ice	5.72	4.87	0.39
RFV01U-D2A	A	From Face	4.00 0.00 2.00	0.00	138.00	No Ice	1.88	1.01	0.07
						1/2" Ice	2.05	1.14	0.09
						1" Ice	2.22	1.28	0.11
						2" Ice	2.60	1.59	0.15
RFV01U-D2A	B	From Face	4.00 0.00 2.00	0.00	138.00	No Ice	1.88	1.01	0.07
						1/2" Ice	2.05	1.14	0.09
						1" Ice	2.22	1.28	0.11
						2" Ice	2.60	1.59	0.15
RFV01U-D2A	C	From Face	4.00 0.00 2.00	0.00	138.00	No Ice	1.88	1.01	0.07
						1/2" Ice	2.05	1.14	0.09
						1" Ice	2.22	1.28	0.11
						2" Ice	2.60	1.59	0.15
RFV01U-D1A	A	From Face	4.00 0.00 2.00	0.00	138.00	No Ice	1.88	1.25	0.08
						1/2" Ice	2.05	1.39	0.10
						1" Ice	2.22	1.54	0.12
						2" Ice	2.60	1.86	0.18
RFV01U-D1A	B	From Face	4.00 0.00 2.00	0.00	138.00	No Ice	1.88	1.25	0.08
						1/2" Ice	2.05	1.39	0.10
						1" Ice	2.22	1.54	0.12

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice	2.60	1.86	0.18
						2" Ice			
RFV01U-D1A	C	From Face	4.00	0.00	138.00	No Ice	1.88	1.25	0.08
			0.00			1/2"	2.05	1.39	0.10
			2.00			Ice	2.22	1.54	0.12
						1" Ice	2.60	1.86	0.18
						2" Ice			
RVZDC-6627-PF-48	A	From Face	1.00	0.00	138.00	No Ice	3.79	2.51	0.03
			0.00			1/2"	4.04	2.73	0.06
			2.00			Ice	4.30	2.95	0.10
						1" Ice	4.84	3.42	0.18
						2" Ice			
DB-T1-6Z-8AB-0Z	A	From Face	4.00	0.00	138.00	No Ice	4.80	2.00	0.04
			0.00			1/2"	5.07	2.19	0.08
			2.00			Ice	5.35	2.39	0.12
						1" Ice	5.93	2.81	0.21
						2" Ice			
***									
Platform Mount [LP 303-1]	C	None		0.00	128.00	No Ice	14.69	14.69	1.25
						1/2"	18.01	18.01	1.57
						Ice	21.34	21.34	1.94
						1" Ice	28.08	28.08	2.85
						2" Ice			
6'x2" Mount Pipe	A	From Leg	4.00	0.00	128.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
						1" Ice	3.06	3.06	0.09
						2" Ice			
6'x2" Mount Pipe	B	From Leg	4.00	0.00	128.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
						1" Ice	3.06	3.06	0.09
						2" Ice			
6'x2" Mount Pipe	C	From Leg	4.00	0.00	128.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
						1" Ice	3.06	3.06	0.09
						2" Ice			
ERICSSON AIR 21 B2A	A	From Leg	4.00	0.00	128.00	No Ice	6.33	5.64	0.11
B4P w/ Mount Pipe			-6.00			1/2"	6.78	6.43	0.17
			2.00			Ice	7.21	7.13	0.23
						1" Ice	8.12	8.59	0.38
						2" Ice			
ERICSSON AIR 21 B2A	B	From Leg	4.00	0.00	128.00	No Ice	6.33	5.64	0.11
B4P w/ Mount Pipe			-6.00			1/2"	6.78	6.43	0.17
			2.00			Ice	7.21	7.13	0.23
						1" Ice	8.12	8.59	0.38
						2" Ice			
ERICSSON AIR 21 B2A	C	From Leg	4.00	0.00	128.00	No Ice	6.33	5.64	0.11
B4P w/ Mount Pipe			-6.00			1/2"	6.78	6.43	0.17
			2.00			Ice	7.21	7.13	0.23
						1" Ice	8.12	8.59	0.38
						2" Ice			
ERICSSON AIR 21 B4A	A	From Leg	4.00	0.00	128.00	No Ice	6.32	5.63	0.11
B2P w/ Mount Pipe			6.00			1/2"	6.76	6.41	0.17
			2.00			Ice	7.20	7.12	0.23
						1" Ice	8.10	8.57	0.38
						2" Ice			
ERICSSON AIR 21 B4A	B	From Leg	4.00	0.00	128.00	No Ice	6.32	5.63	0.11
B2P w/ Mount Pipe			6.00			1/2"	6.76	6.41	0.17
			2.00			Ice	7.20	7.12	0.23
						1" Ice	8.10	8.57	0.38
						2" Ice			
ERICSSON AIR 21 B4A	C	From Leg	4.00	0.00	128.00	No Ice	6.32	5.63	0.11
B2P w/ Mount Pipe			6.00			1/2"	6.76	6.41	0.17

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			2.00			Ice	7.20	7.12	0.23
						1" Ice	8.10	8.57	0.38
						2" Ice			
ONEBASE TWIN DUAL DUPLEX TMA	A	From Leg	4.00 0.00 2.00	0.00	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.58 0.67 0.78 1.01	0.26 0.34 0.42 0.60	0.01 0.02 0.02 0.04
ONEBASE TWIN DUAL DUPLEX TMA	B	From Leg	4.00 0.00 2.00	0.00	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.58 0.67 0.78 1.01	0.26 0.34 0.42 0.60	0.01 0.02 0.02 0.04
ONEBASE TWIN DUAL DUPLEX TMA	C	From Leg	4.00 0.00 2.00	0.00	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.58 0.67 0.78 1.01	0.26 0.34 0.42 0.60	0.01 0.02 0.02 0.04
***									
Side Arm Mount [SO 701-1]	A	From Leg	0.00 0.00 0.00	0.00	70.00	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	0.07 0.08 0.09 0.12
GPS_A	A	From Leg	3.00 0.00 0.00	0.00	70.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	0.26 0.32 0.39 0.56	0.26 0.32 0.39 0.56	0.00 0.00 0.01 0.02
***									

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

Comb. No.	Description
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 K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	168.33 - 163.33	Pole	Max Tension	30	0.00	0.00	0.00
			Max. Compression	26	-16.81	4.94	-4.31
			Max. Mx	20	-4.74	51.07	-0.97
			Max. My	14	-4.77	1.28	-50.21
			Max. Vy	20	-10.43	51.07	-0.97
			Max. Vx	14	10.25	1.28	-50.21
			Max. Torque	25			4.33
L2	163.33 - 158.33	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-17.39	5.08	-4.42
			Max. Mx	20	-5.02	104.08	-1.02
			Max. My	14	-5.04	1.35	-102.32
			Max. Vy	20	-10.78	104.08	-1.02
			Max. Vx	14	10.60	1.35	-102.32
			Max. Torque	25			4.33
L3	158.33 - 153.33	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-26.22	5.52	-5.29
			Max. Mx	20	-7.42	177.16	-1.01
			Max. My	14	-7.42	1.37	-175.36
			Max. Vy	20	-15.02	177.16	-1.01
			Max. Vx	14	15.01	1.37	-175.36
			Max. Torque	25			4.32
L4	153.33 - 148.33	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-26.86	5.69	-5.43
			Max. Mx	20	-7.81	253.09	-0.81
			Max. My	14	-7.80	1.19	-251.25
			Max. Vy	20	-15.36	253.09	-0.81
			Max. Vx	14	15.35	1.19	-251.25
			Max. Torque	25			4.19
L5	148.33 - 143.33	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-27.51	5.85	-5.54

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	20	-8.24	330.67	-0.60
			Max. My	14	-8.23	0.99	-328.80
			Max. Vy	20	-15.69	330.67	-0.60
			Max. Vx	14	15.68	0.99	-328.80
			Max. Torque	25			4.18
L6	143.33 - 138.33	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-28.19	5.98	-5.64
			Max. Mx	20	-8.70	409.88	-0.38
			Max. My	14	-8.68	0.79	-407.98
			Max. Vy	20	-16.01	409.88	-0.38
			Max. Vx	14	16.01	0.79	-407.98
			Max. Torque	25			4.18
L7	138.33 - 130.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-37.14	7.10	-5.52
			Max. Mx	20	-11.51	496.07	0.16
			Max. My	14	-11.50	0.33	-493.49
			Max. Vy	20	-19.86	496.07	0.16
			Max. Vx	14	19.77	0.33	-493.49
			Max. Torque	25			4.45
L8	130.5 - 129.16	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.49	7.28	-5.58
			Max. Mx	20	-12.32	596.32	0.74
			Max. My	14	-12.31	-0.21	-593.31
			Max. Vy	20	-20.25	596.32	0.74
			Max. Vx	14	20.17	-0.21	-593.31
			Max. Torque	25			4.44
L9	129.16 - 125.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.14	7.40	-5.61
			Max. Mx	20	-15.01	674.33	1.14
			Max. My	14	-15.00	-0.59	-671.04
			Max. Vy	20	-23.04	674.33	1.14
			Max. Vx	14	22.96	-0.59	-671.04
			Max. Torque	25			4.44
L10	125.75 - 125.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.22	7.40	-5.61
			Max. Mx	20	-15.08	680.08	1.17
			Max. My	14	-15.07	-0.62	-676.78
			Max. Vy	20	-23.04	680.08	1.17
			Max. Vx	14	22.98	-0.62	-676.78
			Max. Torque	25			4.44
L11	125.5 - 120.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-46.77	7.54	-5.62
			Max. Mx	20	-16.12	796.70	1.76
			Max. My	14	-16.10	-1.19	-793.17
			Max. Vy	20	-23.62	796.70	1.76
			Max. Vx	14	23.60	-1.19	-793.17
			Max. Torque	25			4.44
L12	120.5 - 120.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-46.87	7.55	-5.62
			Max. Mx	20	-16.21	802.60	1.79
			Max. My	14	-16.19	-1.21	-799.07
			Max. Vy	20	-23.64	802.60	1.79
			Max. Vx	14	23.62	-1.21	-799.07
			Max. Torque	25			4.43
L13	120.25 - 115.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-49.30	7.67	-5.55
			Max. Mx	20	-17.83	922.62	2.38
			Max. My	14	-17.79	-1.78	-919.15
			Max. Vy	8	24.38	-918.19	-5.36
			Max. Vx	14	24.43	-1.78	-919.15
			Max. Torque	25			4.43

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L14	115.25 - 113.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-50.05	7.70	-5.53
			Max. Mx	20	-18.29	957.37	2.55
			Max. My	14	-18.25	-1.94	-953.99
			Max. Vy	8	24.60	-952.94	-5.54
			Max. Vx	14	24.68	-1.94	-953.99
			Max. Torque	25			4.42
L15	113.83 - 113.48	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-50.23	7.71	-5.53
			Max. Mx	20	-18.41	965.98	2.59
			Max. My	14	-18.38	-1.98	-962.64
			Max. Vy	8	24.64	-961.55	-5.58
			Max. Vx	14	24.72	-1.98	-962.64
			Max. Torque	25			4.42
L16	113.48 - 113.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-50.35	7.72	-5.52
			Max. Mx	20	-18.48	971.65	2.62
			Max. My	14	-18.45	-2.01	-968.33
			Max. Vy	8	24.67	-967.22	-5.61
			Max. Vx	14	24.76	-2.01	-968.33
			Max. Torque	25			4.42
L17	113.25 - 108.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.81	7.83	-5.51
			Max. Mx	20	-20.00	1096.87	3.21
			Max. My	14	-19.96	-2.57	-1094.18
			Max. Vy	8	25.43	-1092.43	-6.23
			Max. Vx	14	25.59	-2.57	-1094.18
			Max. Torque	25			4.42
L18	108.25 - 103.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-55.25	7.94	-5.51
			Max. Mx	20	-21.56	1225.78	3.81
			Max. My	14	-21.51	-3.15	-1224.09
			Max. Vy	8	26.16	-1221.33	-6.84
			Max. Vx	14	26.40	-3.15	-1224.09
			Max. Torque	25			4.42
L19	103.25 - 98.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.71	8.05	-5.50
			Max. Mx	20	-23.14	1358.32	4.41
			Max. My	14	-23.08	-3.72	-1357.98
			Max. Vy	8	26.88	-1353.87	-7.46
			Max. Vx	14	27.19	-3.72	-1357.98
			Max. Torque	25			4.42
L20	98.25 - 93.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.19	8.15	-5.49
			Max. Mx	20	-24.75	1494.46	5.02
			Max. My	14	-24.69	-4.30	-1495.82
			Max. Vy	8	27.60	-1490.01	-8.07
			Max. Vx	14	27.97	-4.30	-1495.82
			Max. Torque	25			4.41
L21	93.25 - 84.55	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.33	8.20	-5.50
			Max. Mx	20	-26.10	1609.90	5.52
			Max. My	14	-26.03	-4.77	-1612.93
			Max. Vy	20	-28.20	1609.90	5.52
			Max. Vx	14	28.64	-4.77	-1612.93
			Max. Torque	25			4.41
L22	84.55 - 83.55	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.91	8.29	-5.52
			Max. Mx	20	-29.16	1769.39	6.18
			Max. My	14	-29.09	-5.40	-1775.10

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	20	-29.17	1769.39	6.18
			Max. Vx	14	29.71	-5.40	-1775.10
			Max. Torque	25			4.41
L23	83.55 - 82.92	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-67.27	8.32	-5.52
			Max. Mx	20	-29.40	1787.80	6.25
			Max. My	14	-29.33	-5.46	-1793.84
			Max. Vy	20	-29.25	1787.80	6.25
			Max. Vx	14	29.81	-5.46	-1793.84
			Max. Torque	25			4.41
L24	82.92 - 82.67	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-67.43	8.33	-5.52
			Max. Mx	20	-29.51	1795.12	6.28
			Max. My	14	-29.44	-5.49	-1801.30
			Max. Vy	20	-29.29	1795.12	6.28
			Max. Vx	14	29.85	-5.49	-1801.30
			Max. Torque	25			4.41
L25	82.67 - 82.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-67.54	8.33	-5.53
			Max. Mx	20	-29.59	1800.10	6.30
			Max. My	14	-29.52	-5.50	-1806.38
			Max. Vy	20	-29.32	1800.10	6.30
			Max. Vx	14	29.88	-5.50	-1806.38
			Max. Torque	25			4.41
L26	82.5 - 82.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-67.69	8.34	-5.53
			Max. Mx	20	-29.68	1807.44	6.32
			Max. My	14	-29.61	-5.53	-1813.85
			Max. Vy	8	29.35	-1802.82	-9.43
			Max. Vx	14	29.92	-5.53	-1813.85
			Max. Torque	25			4.41
L27	82.25 - 77.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70.58	8.59	-5.54
			Max. Mx	20	-31.62	1956.05	6.89
			Max. My	14	-31.54	-6.04	-1965.59
			Max. Vy	8	30.13	-1951.41	-10.09
			Max. Vx	14	30.78	-6.04	-1965.59
			Max. Torque	25			4.41
L28	77.25 - 73.42	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-72.87	8.83	-5.52
			Max. Mx	20	-33.12	2072.29	7.32
			Max. My	14	-33.04	-6.42	-2084.69
			Max. Vy	8	30.74	-2067.84	-10.59
			Max. Vx	14	31.44	-6.42	-2084.69
			Max. Torque	25			4.40
L29	73.42 - 73.17	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-73.04	8.85	-5.52
			Max. Mx	20	-33.25	2079.95	7.35
			Max. My	14	-33.17	-6.45	-2092.55
			Max. Vy	8	30.77	-2075.52	-10.62
			Max. Vx	14	31.46	-6.45	-2092.55
			Max. Torque	25			4.40
L30	73.17 - 68.17	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-76.66	9.17	-5.21
			Max. Mx	20	-35.63	2235.32	8.02
			Max. My	14	-35.54	-6.95	-2252.14
			Max. Vy	8	31.73	-2231.55	-11.17
			Max. Vx	14	32.44	-6.95	-2252.14
			Max. Torque	25			4.40
L31	68.17 - 64.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-79.41	9.42	-5.21
			Max. Mx	20	-37.46	2360.03	8.45

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	14	-37.37	-7.34	-2380.64
			Max. Vy	8	32.40	-2357.10	-11.68
			Max. Vx	14	33.15	-7.34	-2380.64
			Max. Torque	25			4.33
L32	64.25 - 64	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-79.56	9.44	-5.21
			Max. Mx	20	-37.57	2368.06	8.48
			Max. My	14	-37.48	-7.36	-2388.93
			Max. Vy	8	32.42	-2365.19	-11.71
			Max. Vx	14	33.17	-7.36	-2388.93
			Max. Torque	25			4.32
L33	64 - 59	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-82.55	9.73	-5.23
			Max. Mx	20	-39.58	2530.48	9.04
			Max. My	14	-39.49	-7.86	-2556.84
			Max. Vy	8	33.18	-2529.04	-12.36
			Max. Vx	14	34.00	-7.86	-2556.84
			Max. Torque	25			4.32
L34	59 - 54	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-85.54	9.98	-5.26
			Max. Mx	8	-41.60	-2696.52	-13.01
			Max. My	14	-41.54	-8.36	-2728.71
			Max. Vy	8	33.89	-2696.52	-13.01
			Max. Vx	14	34.78	-8.36	-2728.71
			Max. Torque	25			4.32
L35	54 - 53.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-85.85	10.00	-5.27
			Max. Mx	8	-41.82	-2713.47	-13.08
			Max. My	14	-41.75	-8.41	-2746.12
			Max. Vy	8	33.95	-2713.47	-13.08
			Max. Vx	14	34.85	-8.41	-2746.12
			Max. Torque	25			4.32
L36	53.5 - 53.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-86.01	10.01	-5.27
			Max. Mx	8	-41.94	-2721.95	-13.11
			Max. My	14	-41.87	-8.43	-2754.83
			Max. Vy	8	33.98	-2721.95	-13.11
			Max. Vx	14	34.88	-8.43	-2754.83
			Max. Torque	25			4.32
L37	53.25 - 43.66	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-88.90	10.20	-5.32
			Max. Mx	8	-43.89	-2867.59	-13.66
			Max. My	14	-43.82	-8.85	-2904.58
			Max. Vy	8	34.62	-2867.59	-13.66
			Max. Vx	14	35.60	-8.85	-2904.58
			Max. Torque	25			4.32
L38	43.66 - 42.66	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-95.68	10.49	-5.37
			Max. Mx	8	-48.79	-3090.41	-14.48
			Max. My	14	-48.73	-9.47	-3134.16
			Max. Vy	8	35.71	-3090.41	-14.48
			Max. Vx	14	36.81	-9.47	-3134.16
			Max. Torque	25			4.32
L39	42.66 - 41.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-96.28	10.55	-5.37
			Max. Mx	8	-49.22	-3122.92	-14.60
			Max. My	14	-49.16	-9.56	-3167.70
			Max. Vy	8	35.83	-3122.92	-14.60
			Max. Vx	14	36.94	-9.56	-3167.70
			Max. Torque	25			4.32
L40	41.75 - 41.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-96.45	10.56	-5.37
			Max. Mx	8	-49.36	-3131.87	-14.63
			Max. My	14	-49.30	-9.59	-3176.94
			Max. Vy	8	35.85	-3131.87	-14.63
			Max. Vx	14	36.96	-9.59	-3176.94

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	25			4.32
L41	41.5 - 36.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-99.87	10.85	-5.36
			Max. Mx	8	-51.84	-3312.64	-15.28
			Max. My	14	-51.78	-10.08	-3363.58
			Max. Vy	8	36.53	-3312.64	-15.28
			Max. Vx	14	37.71	-10.08	-3363.58
			Max. Torque	25			4.32
L42	36.5 - 32.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-102.52	10.98	-5.38
			Max. Mx	8	-53.72	-3450.34	-15.76
			Max. My	14	-53.67	-10.44	-3505.93
			Max. Vy	8	37.01	-3450.34	-15.76
			Max. Vx	14	38.26	-10.44	-3505.93
			Max. Torque	25			4.32
L43	32.75 - 32.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-102.71	10.99	-5.38
			Max. Mx	8	-53.88	-3459.59	-15.79
			Max. My	14	-53.83	-10.47	-3515.49
			Max. Vy	8	37.02	-3459.59	-15.79
			Max. Vx	14	38.27	-10.47	-3515.49
			Max. Torque	25			4.31
L44	32.5 - 29.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-104.84	11.08	-5.40
			Max. Mx	8	-55.38	-3558.86	-16.13
			Max. My	14	-55.33	-10.72	-3618.23
			Max. Vy	8	37.41	-3558.86	-16.13
			Max. Vx	14	38.70	-10.72	-3618.23
			Max. Torque	25			4.31
L45	29.83 - 29.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-105.04	11.09	-5.40
			Max. Mx	8	-55.52	-3568.20	-16.16
			Max. My	14	-55.47	-10.75	-3627.90
			Max. Vy	8	37.43	-3568.20	-16.16
			Max. Vx	14	38.72	-10.75	-3627.90
			Max. Torque	25			4.31
L46	29.58 - 28.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-106.08	11.14	-5.40
			Max. Mx	8	-56.20	-3618.07	-16.33
			Max. My	14	-56.15	-10.88	-3679.53
			Max. Vy	8	37.64	-3618.07	-16.33
			Max. Vx	14	38.93	-10.88	-3679.53
			Max. Torque	25			4.31
L47	28.25 - 28	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-106.29	11.15	-5.40
			Max. Mx	8	-56.36	-3627.47	-16.36
			Max. My	14	-56.31	-10.90	-3689.26
			Max. Vy	8	37.65	-3627.47	-16.36
			Max. Vx	14	38.95	-10.90	-3689.26
			Max. Torque	25			4.31
L48	28 - 23	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-110.36	11.40	-5.38
			Max. Mx	8	-59.24	-3817.30	-17.00
			Max. My	14	-59.20	-11.38	-3885.81
			Max. Vy	8	38.35	-3817.30	-17.00
			Max. Vx	14	39.69	-11.38	-3885.81
			Max. Torque	25			4.31
L49	23 - 19.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-113.35	11.63	-5.35
			Max. Mx	8	-61.42	-3961.84	-17.47
			Max. My	14	-61.38	-11.73	-4035.55
			Max. Vy	8	38.83	-3961.84	-17.47
			Max. Vx	14	40.21	-11.73	-4035.55
			Max. Torque	25			4.31
L50	19.25 - 19	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-113.54	11.64	-5.35
			Max. Mx	8	-61.56	-3971.54	-17.50

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	14	-61.53	-11.76	-4045.60
			Max. Vy	8	38.84	-3971.54	-17.50
			Max. Vx	14	40.21	-11.76	-4045.60
			Max. Torque	25			4.31
L51	19 - 14	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-117.02	11.91	-5.32
			Max. Mx	8	-64.15	-4166.89	-18.13
			Max. My	14	-64.12	-12.23	-4248.12
			Max. Vy	8	39.38	-4166.89	-18.13
			Max. Vx	14	40.81	-12.23	-4248.12
			Max. Torque	25			4.31
L52	14 - 9	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-120.43	12.17	-5.30
			Max. Mx	8	-66.77	-4364.75	-18.76
			Max. My	14	-66.75	-12.70	-4453.43
			Max. Vy	8	39.86	-4364.75	-18.76
			Max. Vx	14	41.35	-12.70	-4453.43
			Max. Torque	25			4.31
L53	9 - 4	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-123.82	12.42	-5.29
			Max. Mx	8	-69.41	-4565.01	-19.37
			Max. My	14	-69.40	-13.16	-4661.40
			Max. Vy	8	40.34	-4565.01	-19.37
			Max. Vx	14	41.88	-13.16	-4661.40
			Max. Torque	25			4.31
L54	4 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-126.41	12.59	-5.28
			Max. Mx	8	-71.55	-4726.88	-19.86
			Max. My	14	-71.55	-13.52	-4829.62
			Max. Vy	8	40.70	-4726.88	-19.86
			Max. Vx	14	42.27	-13.52	-4829.62
			Max. Torque	25			4.31

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	33	126.41	-0.02	-10.04
	Max. H_x	20	71.56	39.65	0.11
	Max. H_z	2	71.56	0.11	38.96
	Max. M_x	2	4595.45	0.11	38.96
	Max. M_z	8	4726.88	-40.67	-0.11
	Max. Torsion	25	4.31	19.65	33.81
	Min. Vert	25	53.67	19.65	33.81
	Min. H_x	8	71.56	-40.67	-0.11
	Min. H_z	14	71.56	-0.11	-42.24
	Min. M_x	14	-4829.62	-0.11	-42.24
	Min. M_z	20	-4690.61	39.65	0.11
	Min. Torsion	13	-4.30	-20.43	-35.16

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	59.64	-0.00	0.00	1.82	3.39	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	71.56	-0.11	-38.96	-4595.45	21.79	-3.66
0.9 Dead+1.0 Wind 0 deg - No Ice	53.67	-0.11	-38.96	-4522.94	20.38	-3.70

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 30 deg - No Ice	71.56	19.46	-33.71	-3974.46	-2290.82	-2.08
0.9 Dead+1.0 Wind 30 deg - No Ice	53.67	19.46	-33.71	-3911.85	-2255.44	-2.10
1.2 Dead+1.0 Wind 60 deg - No Ice	71.56	36.58	-20.99	-2392.57	-4177.34	0.05
0.9 Dead+1.0 Wind 60 deg - No Ice	53.67	36.58	-20.99	-2355.73	-4113.04	0.06
1.2 Dead+1.0 Wind 90 deg - No Ice	71.56	40.67	0.11	19.86	-4726.88	2.17
0.9 Dead+1.0 Wind 90 deg - No Ice	53.67	40.67	0.11	18.96	-4653.32	2.19
1.2 Dead+1.0 Wind 120 deg - No Ice	71.56	35.28	20.37	2373.77	-4101.83	3.70
0.9 Dead+1.0 Wind 120 deg - No Ice	53.67	35.28	20.37	2335.73	-4038.12	3.74
1.2 Dead+1.0 Wind 150 deg - No Ice	71.56	20.43	35.16	4092.31	-2376.69	4.25
0.9 Dead+1.0 Wind 150 deg - No Ice	53.67	20.43	35.16	4027.15	-2340.20	4.30
1.2 Dead+1.0 Wind 180 deg - No Ice	71.56	0.11	42.24	4829.62	-13.53	3.67
0.9 Dead+1.0 Wind 180 deg - No Ice	53.67	0.11	42.24	4753.51	-14.33	3.70
1.2 Dead+1.0 Wind 210 deg - No Ice	71.56	-19.72	34.17	4036.23	2332.18	2.10
0.9 Dead+1.0 Wind 210 deg - No Ice	53.67	-19.72	34.17	3971.61	2294.13	2.11
1.2 Dead+1.0 Wind 240 deg - No Ice	71.56	-34.28	19.66	2321.03	4054.04	-0.05
0.9 Dead+1.0 Wind 240 deg - No Ice	53.67	-34.28	19.66	2283.64	3988.65	-0.05
1.2 Dead+1.0 Wind 270 deg - No Ice	71.56	-39.65	-0.11	-15.44	4690.61	-2.18
0.9 Dead+1.0 Wind 270 deg - No Ice	53.67	-39.65	-0.11	-15.75	4615.11	-2.21
1.2 Dead+1.0 Wind 300 deg - No Ice	71.56	-36.02	-20.79	-2406.21	4173.91	-3.72
0.9 Dead+1.0 Wind 300 deg - No Ice	53.67	-36.02	-20.79	-2368.96	4107.29	-3.76
1.2 Dead+1.0 Wind 330 deg - No Ice	71.56	-19.65	-33.81	-3989.89	2328.37	-4.27
0.9 Dead+1.0 Wind 330 deg - No Ice	53.67	-19.65	-33.81	-3927.01	2290.28	-4.31
1.2 Dead+1.0 Ice+1.0 Temp	126.41	-0.00	0.00	5.28	12.59	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	126.41	-0.02	-9.51	-1334.52	16.22	-0.93
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	126.41	4.74	-8.23	-1153.28	-653.48	-0.55
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	126.41	8.68	-5.00	-677.44	-1172.13	-0.02
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	126.41	9.72	0.02	8.81	-1335.83	0.51
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	126.41	8.43	4.88	683.33	-1156.89	0.91
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	126.41	4.88	8.43	1176.18	-664.55	1.06
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	126.41	0.02	10.04	1378.46	9.27	0.93
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	126.41	-4.75	8.24	1165.08	679.62	0.55
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	126.41	-8.24	4.74	672.91	1171.27	0.02
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	126.41	-9.53	-0.02	1.87	1352.50	-0.51
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	126.41	-8.57	-4.96	-680.12	1195.31	-0.91
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	126.41	-4.78	-8.25	-1156.75	684.98	-1.06

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead+Wind 0 deg - Service	59.64	-0.03	-9.17	-1072.18	7.63	-0.90
Dead+Wind 30 deg - Service	59.64	4.58	-7.94	-927.11	-532.62	-0.51
Dead+Wind 60 deg - Service	59.64	8.61	-4.94	-557.70	-973.57	0.02
Dead+Wind 90 deg - Service	59.64	9.58	0.03	6.01	-1101.88	0.54
Dead+Wind 120 deg - Service	59.64	8.31	4.80	556.00	-955.85	0.91
Dead+Wind 150 deg - Service	59.64	4.81	8.28	957.52	-552.76	1.04
Dead+Wind 180 deg - Service	59.64	0.03	9.95	1129.89	-0.62	0.90
Dead+Wind 210 deg - Service	59.64	-4.64	8.04	944.32	547.39	0.51
Dead+Wind 240 deg - Service	59.64	-8.07	4.63	543.62	949.66	-0.01
Dead+Wind 270 deg - Service	59.64	-9.33	-0.03	-2.23	1098.42	-0.54
Dead+Wind 300 deg - Service	59.64	-8.48	-4.90	-560.87	977.84	-0.91
Dead+Wind 330 deg - Service	59.64	-4.63	-7.96	-930.74	546.48	-1.05

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-59.64	0.00	0.00	59.64	-0.00	0.000%
2	-0.11	-71.56	-38.96	0.11	71.56	38.96	0.000%
3	-0.11	-53.67	-38.96	0.11	53.67	38.96	0.000%
4	19.46	-71.56	-33.71	-19.46	71.56	33.71	0.000%
5	19.46	-53.67	-33.71	-19.46	53.67	33.71	0.000%
6	36.58	-71.56	-20.99	-36.58	71.56	20.99	0.000%
7	36.58	-53.67	-20.99	-36.58	53.67	20.99	0.000%
8	40.67	-71.56	0.11	-40.67	71.56	-0.11	0.000%
9	40.67	-53.67	0.11	-40.67	53.67	-0.11	0.000%
10	35.28	-71.56	20.37	-35.28	71.56	-20.37	0.000%
11	35.28	-53.67	20.37	-35.28	53.67	-20.37	0.000%
12	20.43	-71.56	35.16	-20.43	71.56	-35.16	0.000%
13	20.43	-53.67	35.16	-20.43	53.67	-35.16	0.000%
14	0.11	-71.56	42.24	-0.11	71.56	-42.24	0.000%
15	0.11	-53.67	42.24	-0.11	53.67	-42.24	0.000%
16	-19.72	-71.56	34.17	19.72	71.56	-34.17	0.000%
17	-19.72	-53.67	34.17	19.72	53.67	-34.17	0.000%
18	-34.28	-71.56	19.66	34.28	71.56	-19.66	0.000%
19	-34.28	-53.67	19.66	34.28	53.67	-19.66	0.000%
20	-39.65	-71.56	-0.11	39.65	71.56	0.11	0.000%
21	-39.65	-53.67	-0.11	39.65	53.67	0.11	0.000%
22	-36.02	-71.56	-20.79	36.02	71.56	20.79	0.000%
23	-36.02	-53.67	-20.79	36.02	53.67	20.79	0.000%
24	-19.65	-71.56	-33.81	19.65	71.56	33.81	0.000%
25	-19.65	-53.67	-33.81	19.65	53.67	33.81	0.000%
26	0.00	-126.41	0.00	0.00	126.41	-0.00	0.000%
27	-0.02	-126.41	-9.51	0.02	126.41	9.51	0.000%
28	4.74	-126.41	-8.23	-4.74	126.41	8.23	0.000%
29	8.68	-126.41	-5.00	-8.68	126.41	5.00	0.000%
30	9.72	-126.41	0.02	-9.72	126.41	-0.02	0.000%
31	8.43	-126.41	4.88	-8.43	126.41	-4.88	0.000%
32	4.88	-126.41	8.43	-4.88	126.41	-8.43	0.000%
33	0.02	-126.41	10.04	-0.02	126.41	-10.04	0.000%
34	-4.75	-126.41	8.24	4.75	126.41	-8.24	0.000%
35	-8.24	-126.41	4.74	8.24	126.41	-4.74	0.000%
36	-9.53	-126.41	-0.02	9.53	126.41	0.02	0.000%
37	-8.57	-126.41	-4.96	8.57	126.41	4.96	0.000%
38	-4.78	-126.41	-8.25	4.78	126.41	8.25	0.000%
39	-0.03	-59.64	-9.17	0.03	59.64	9.17	0.000%
40	4.58	-59.64	-7.94	-4.58	59.64	7.94	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
41	8.61	-59.64	-4.94	-8.61	59.64	4.94	0.000%
42	9.58	-59.64	0.03	-9.58	59.64	-0.03	0.000%
43	8.31	-59.64	4.80	-8.31	59.64	-4.80	0.000%
44	4.81	-59.64	8.28	-4.81	59.64	-8.28	0.000%
45	0.03	-59.64	9.95	-0.03	59.64	-9.95	0.000%
46	-4.64	-59.64	8.04	4.64	59.64	-8.04	0.000%
47	-8.07	-59.64	4.63	8.07	59.64	-4.63	0.000%
48	-9.33	-59.64	-0.03	9.33	59.64	0.03	0.000%
49	-8.48	-59.64	-4.90	8.48	59.64	4.90	0.000%
50	-4.63	-59.64	-7.96	4.63	59.64	7.96	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00001521
2	Yes	6	0.00000001	0.00058206
3	Yes	6	0.00000001	0.00019162
4	Yes	7	0.00000001	0.00047891
5	Yes	7	0.00000001	0.00010214
6	Yes	7	0.00000001	0.00050954
7	Yes	7	0.00000001	0.00010748
8	Yes	6	0.00000001	0.00038744
9	Yes	6	0.00000001	0.00012600
10	Yes	7	0.00000001	0.00053026
11	Yes	7	0.00000001	0.00011345
12	Yes	7	0.00000001	0.00048113
13	Yes	7	0.00000001	0.00010032
14	Yes	6	0.00000001	0.00041589
15	Yes	6	0.00000001	0.00013654
16	Yes	7	0.00000001	0.00051139
17	Yes	7	0.00000001	0.00010951
18	Yes	7	0.00000001	0.00049916
19	Yes	7	0.00000001	0.00010624
20	Yes	6	0.00000001	0.00022760
21	Yes	6	0.00000001	0.00007529
22	Yes	7	0.00000001	0.00049062
23	Yes	7	0.00000001	0.00010178
24	Yes	7	0.00000001	0.00052281
25	Yes	7	0.00000001	0.00011303
26	Yes	6	0.00000001	0.00025254
27	Yes	8	0.00000001	0.00042823
28	Yes	8	0.00000001	0.00062053
29	Yes	8	0.00000001	0.00063729
30	Yes	8	0.00000001	0.00042430
31	Yes	8	0.00000001	0.00065898
32	Yes	8	0.00000001	0.00064024
33	Yes	8	0.00000001	0.00044206
34	Yes	8	0.00000001	0.00067159
35	Yes	8	0.00000001	0.00066537
36	Yes	8	0.00000001	0.00043769
37	Yes	8	0.00000001	0.00065722
38	Yes	8	0.00000001	0.00066688
39	Yes	5	0.00000001	0.00049301
40	Yes	6	0.00000001	0.00011545
41	Yes	6	0.00000001	0.00013228
42	Yes	5	0.00000001	0.00033973
43	Yes	6	0.00000001	0.00014987
44	Yes	6	0.00000001	0.00011995
45	Yes	5	0.00000001	0.00047758
46	Yes	6	0.00000001	0.00013961
47	Yes	6	0.00000001	0.00013156
48	Yes	5	0.00000001	0.00031406
49	Yes	6	0.00000001	0.00012559
50	Yes	6	0.00000001	0.00014709

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	168.33 - 163.33	38.0241	49	2.38	0.02
L2	163.33 - 158.33	35.5375	49	2.37	0.02
L3	158.33 - 153.33	33.0825	49	2.32	0.02
L4	153.33 - 148.33	30.6853	49	2.25	0.01
L5	148.33 - 143.33	28.3730	49	2.16	0.01
L6	143.33 - 138.33	26.1688	49	2.05	0.01
L7	138.33 - 130.5	24.0910	49	1.92	0.01
L8	134.16 - 129.16	22.4665	49	1.80	0.01
L9	129.16 - 125.75	20.6197	49	1.72	0.01
L10	125.75 - 125.5	19.4266	49	1.63	0.01
L11	125.5 - 120.5	19.3417	49	1.62	0.01
L12	120.5 - 120.25	17.7205	49	1.48	0.00
L13	120.25 - 115.25	17.6433	49	1.47	0.00
L14	115.25 - 113.83	16.1428	49	1.39	0.00
L15	113.83 - 113.48	15.7322	49	1.37	0.00
L16	113.48 - 113.25	15.6320	49	1.36	0.00
L17	113.25 - 108.25	15.5663	49	1.36	0.00
L18	108.25 - 103.25	14.1740	49	1.30	0.00
L19	103.25 - 98.25	12.8511	49	1.23	0.00
L20	98.25 - 93.25	11.6005	49	1.16	0.00
L21	93.25 - 84.55	10.4252	49	1.09	0.00
L22	89.11 - 83.55	9.5103	49	1.02	0.00
L23	83.55 - 82.92	8.3413	49	0.98	0.00
L24	82.92 - 82.67	8.2130	49	0.97	0.00
L25	82.67 - 82.5	8.1624	49	0.97	0.00
L26	82.5 - 82.25	8.1280	49	0.96	0.00
L27	82.25 - 77.25	8.0777	49	0.96	0.00
L28	77.25 - 73.42	7.1089	49	0.89	0.00
L29	73.42 - 73.17	6.4172	49	0.83	0.00
L30	73.17 - 68.17	6.3735	49	0.83	0.00
L31	68.17 - 64.25	5.5300	49	0.78	0.00
L32	64.25 - 64	4.9085	45	0.74	0.00
L33	64 - 59	4.8701	45	0.73	0.00
L34	59 - 54	4.1375	45	0.67	0.00
L35	54 - 53.5	3.4737	45	0.60	0.00
L36	53.5 - 53.25	3.4111	45	0.59	0.00
L37	53.25 - 43.66	3.3801	45	0.59	0.00
L38	49 - 42.66	2.8760	45	0.54	0.00
L39	42.66 - 41.75	2.1841	45	0.49	0.00
L40	41.75 - 41.5	2.0910	45	0.48	0.00
L41	41.5 - 36.5	2.0659	45	0.48	0.00
L42	36.5 - 32.75	1.5987	45	0.41	0.00
L43	32.75 - 32.5	1.2931	45	0.36	0.00
L44	32.5 - 29.83	1.2740	45	0.36	0.00
L45	29.83 - 29.58	1.0788	45	0.34	0.00
L46	29.58 - 28.25	1.0613	45	0.33	0.00
L47	28.25 - 28	0.9704	45	0.32	0.00
L48	28 - 23	0.9538	45	0.32	0.00
L49	23 - 19.25	0.6495	45	0.27	0.00
L50	19.25 - 19	0.4565	45	0.23	0.00
L51	19 - 14	0.4447	45	0.22	0.00
L52	14 - 9	0.2415	45	0.16	0.00
L53	9 - 4	0.1000	45	0.11	0.00
L54	4 - 0	0.0198	45	0.05	0.00

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
168.00	Platform Mount [LP 304-1]	49	37.8596	2.38	0.02	8712
158.00	T-Arm Mount [TA 602-3_KCKR]	49	32.9222	2.32	0.02	4831
138.00	Platform Mount [LP 303-1]	49	23.9590	1.91	0.01	2158
128.00	Platform Mount [LP 303-1]	49	20.2070	1.69	0.01	2347
70.00	Side Arm Mount [SO 701-1]	49	5.8323	0.80	0.00	5250

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	168.33 - 163.33	161.7796	22	10.14	0.10
L2	163.33 - 158.33	151.2758	22	10.08	0.09
L3	158.33 - 153.33	140.8972	22	9.90	0.07
L4	153.33 - 148.33	130.7539	22	9.61	0.06
L5	148.33 - 143.33	120.9598	22	9.22	0.05
L6	143.33 - 138.33	111.6136	22	8.74	0.04
L7	138.33 - 130.5	102.7937	22	8.20	0.04
L8	134.16 - 129.16	95.8899	22	7.69	0.03
L9	129.16 - 125.75	88.0351	22	7.33	0.03
L10	125.75 - 125.5	82.9573	22	6.95	0.02
L11	125.5 - 120.5	82.5958	22	6.92	0.02
L12	120.5 - 120.25	75.6894	22	6.32	0.02
L13	120.25 - 115.25	75.3603	22	6.30	0.02
L14	115.25 - 113.83	68.9632	22	5.96	0.02
L15	113.83 - 113.48	67.2122	22	5.86	0.02
L16	113.48 - 113.25	66.7849	22	5.84	0.02
L17	113.25 - 108.25	66.5048	22	5.83	0.02
L18	108.25 - 103.25	60.5654	22	5.55	0.01
L19	103.25 - 98.25	54.9197	22	5.26	0.01
L20	98.25 - 93.25	49.5813	22	4.96	0.01
L21	93.25 - 84.55	44.5623	22	4.65	0.01
L22	89.11 - 83.55	40.6543	22	4.38	0.01
L23	83.55 - 82.92	35.6603	22	4.18	0.01
L24	82.92 - 82.67	35.1120	22	4.14	0.01
L25	82.67 - 82.5	34.8957	22	4.13	0.01
L26	82.5 - 82.25	34.7490	22	4.12	0.01
L27	82.25 - 77.25	34.5338	22	4.11	0.01
L28	77.25 - 73.42	30.3940	22	3.81	0.01
L29	73.42 - 73.17	27.4385	14	3.57	0.01
L30	73.17 - 68.17	27.2521	14	3.56	0.01
L31	68.17 - 64.25	23.6500	14	3.33	0.01
L32	64.25 - 64	20.9940	14	3.15	0.01
L33	64 - 59	20.8297	14	3.13	0.01
L34	59 - 54	17.6966	14	2.86	0.00
L35	54 - 53.5	14.8570	14	2.57	0.00
L36	53.5 - 53.25	14.5895	14	2.54	0.00
L37	53.25 - 43.66	14.4567	14	2.53	0.00
L38	49 - 42.66	12.3006	14	2.32	0.00
L39	42.66 - 41.75	9.3408	14	2.11	0.00
L40	41.75 - 41.5	8.9428	14	2.06	0.00
L41	41.5 - 36.5	8.8352	14	2.05	0.00
L42	36.5 - 32.75	6.8370	14	1.77	0.00
L43	32.75 - 32.5	5.5298	14	1.56	0.00
L44	32.5 - 29.83	5.4484	14	1.55	0.00
L45	29.83 - 29.58	4.6132	14	1.44	0.00
L46	29.58 - 28.25	4.5383	14	1.43	0.00
L47	28.25 - 28	4.1498	14	1.36	0.00
L48	28 - 23	4.0787	14	1.35	0.00
L49	23 - 19.25	2.7772	14	1.13	0.00
L50	19.25 - 19	1.9518	14	0.97	0.00
L51	19 - 14	1.9014	14	0.96	0.00
L52	14 - 9	1.0327	14	0.70	0.00
L53	9 - 4	0.4273	14	0.45	0.00
L54	4 - 0	0.0845	14	0.20	0.00

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

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
168.00	Platform Mount [LP 304-1]	22	161.0849	10.14	0.10	2428
158.00	T-Arm Mount [TA 602-3_KCKR]	22	140.2193	9.89	0.07	1263
138.00	Platform Mount [LP 303-1]	22	102.2330	8.16	0.04	531
128.00	Platform Mount [LP 303-1]	22	86.2790	7.21	0.03	570
70.00	Side Arm Mount [SO 701-1]	14	24.9408	3.42	0.01	1236

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	168.33 - 163.33 (1)	TP19.8345x19x0.1875	5.00	0.00	0.0	11.692 4	-4.75	684.01	0.007
L2	163.33 - 158.33 (2)	TP20.6689x19.8345x0.1875	5.00	0.00	0.0	12.189 0	-5.02	713.06	0.007
L3	158.33 - 153.33 (3)	TP21.5034x20.6689x0.1875	5.00	0.00	0.0	12.685 6	-7.42	742.11	0.010
L4	153.33 - 148.33 (4)	TP22.3378x21.5034x0.1875	5.00	0.00	0.0	13.182 2	-7.81	771.16	0.010
L5	148.33 - 143.33 (5)	TP23.1723x22.3378x0.1875	5.00	0.00	0.0	13.678 8	-8.24	800.21	0.010
L6	143.33 - 138.33 (6)	TP24.0067x23.1723x0.1875	5.00	0.00	0.0	14.175 4	-8.70	829.26	0.010
L7	138.33 - 130.5 (7)	TP25.3135x24.0067x0.1875	7.83	0.00	0.0	14.589 6	-11.47	853.49	0.013
L8	130.5 - 129.16 (8)	TP25.1506x24.3277x0.25	5.00	0.00	0.0	19.758 7	-12.28	1155.88	0.011
L9	129.16 - 125.75 (9)	TP25.7119x25.1506x0.25	3.41	0.00	0.0	20.204 0	-14.97	1181.94	0.013
L10	125.75 - 125.5 (10)	TP25.7531x25.7119x0.25	0.25	0.00	0.0	20.236 7	-15.04	1183.85	0.013
L11	125.5 - 120.5 (11)	TP26.576x25.7531x0.25	5.00	0.00	0.0	20.889 7	-16.07	1222.05	0.013
L12	120.5 - 120.25 (12)	TP26.6172x26.576x0.4813	0.25	0.00	0.0	39.922 3	-16.17	2335.46	0.007
L13	120.25 - 115.25 (13)	TP27.4402x26.6172x0.475	5.00	0.00	0.0	40.654 0	-17.77	2378.26	0.007
L14	115.25 - 113.83 (14)	TP27.6739x27.4402x0.475	1.42	0.00	0.0	41.006 4	-18.23	2398.87	0.008
L15	113.83 - 113.48 (15)	TP27.7315x27.6739x0.65	0.35	0.00	0.0	55.871 8	-18.36	3268.50	0.006
L16	113.48 - 113.25 (16)	TP27.7693x27.7315x0.65	0.23	0.00	0.0	55.949 9	-18.43	3273.07	0.006
L17	113.25 - 108.25 (17)	TP28.5923x27.7693x0.6375	5.00	0.00	0.0	56.564 5	-19.94	3309.02	0.006
L18	108.25 - 103.25 (18)	TP29.4153x28.5923x0.625	5.00	0.00	0.0	57.112 7	-21.49	3341.09	0.006
L19	103.25 - 98.25 (19)	TP30.2383x29.4153x0.6125	5.00	0.00	0.0	57.594 7	-23.07	3369.29	0.007
L20	98.25 - 93.25	TP31.0612x30.2383x0.6	5.00	0.00	0.0	58.010	-24.67	3393.61	0.007

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	(20)					4			
L21	93.25 - 84.55	TP32.4932x31.0612x0.6	8.70	0.00	0.0	59.308	-26.02	3469.52	0.007
	(21)					1			
L22	84.55 - 83.55	TP32.1552x31.2427x0.66	5.56	0.00	0.0	66.222	-29.08	3873.99	0.008
	(22)	25				0			
L23	83.55 - 82.92	TP32.2586x32.1552x0.66	0.63	0.00	0.0	66.439	-29.32	3886.71	0.008
	(23)	25				4			
L24	82.92 - 82.67	TP32.2996x32.2586x0.95	0.25	0.00	0.0	94.528	-29.43	5529.92	0.005
	(24)					5			
L25	82.67 - 82.5	TP32.3275x32.2996x0.95	0.17	0.00	0.0	94.612	-29.50	5534.84	0.005
	(25)					6			
L26	82.5 - 82.25	TP32.3685x32.3275x0.68	0.25	0.00	0.0	69.132	-29.60	4044.22	0.007
	(26)	75				0			
L27	82.25 - 77.25	TP33.1892x32.3685x0.67	5.00	0.00	0.0	69.660	-31.53	4075.11	0.008
	(27)	5				0			
L28	77.25 - 73.42	TP33.8178x33.1892x0.66	3.83	0.00	0.0	69.718	-33.03	4078.51	0.008
	(28)	25				1			
L29	73.42 - 73.17	TP33.8588x33.8178x0.93	0.25	0.00	0.0	97.961	-33.17	5730.74	0.006
	(29)	75				4			
L30	73.17 - 68.17	TP34.6794x33.8588x0.91	5.00	0.00	0.0	97.798	-35.54	5721.20	0.006
	(30)	25				3			
L31	68.17 - 64.25	TP35.3228x34.6794x0.88	3.92	0.00	0.0	97.001	-37.37	5674.59	0.007
	(31)	75				6			
L32	64.25 - 64	TP35.3638x35.3228x0.73	0.25	0.00	0.0	81.054	-37.48	4741.67	0.008
	(32)	75				1			
L33	64 - 59 (33)	TP36.1844x35.3638x0.73	5.00	0.00	0.0	82.975	-39.49	4854.04	0.008
		75				1			
L34	59 - 54 (34)	TP37.0051x36.1844x0.71	5.00	0.00	0.0	82.074	-41.54	4801.37	0.009
		25				7			
L35	54 - 53.5 (35)	TP37.0871x37.0051x0.71	0.50	0.00	0.0	82.260	-41.76	4812.23	0.009
		25				3			
L36	53.5 - 53.25	TP37.1281x37.0871x0.82	0.25	0.00	0.0	95.061	-41.88	5561.10	0.008
	(36)	5				6			
L37	53.25 - 43.66	TP38.7021x37.1281x0.81	9.59	0.00	0.0	95.452	-43.83	5583.96	0.008
	(37)	25				4			
L38	43.66 - 42.66	TP38.2422x37.2007x0.72	6.34	0.00	0.0	86.332	-48.74	5050.46	0.010
	(38)	5				6			
L39	42.66 - 41.75	TP38.3916x38.2422x0.72	0.91	0.00	0.0	86.676	-49.17	5070.58	0.010
	(39)	5				6			
L40	41.75 - 41.5	TP38.4327x38.3916x0.76	0.25	0.00	0.0	91.168	-49.31	5333.36	0.009
	(40)	25				5			
L41	41.5 - 36.5	TP39.2541x38.4327x0.75	5.00	0.00	0.0	91.659	-51.79	5362.05	0.010
	(41)					0			
L42	36.5 - 32.75	TP39.8701x39.2541x0.75	3.75	0.00	0.0	93.125	-53.68	5447.84	0.010
	(42)					4			
L43	32.75 - 32.5	TP39.9112x39.8701x1.01	0.25	0.00	0.0	125.00	-53.84	7312.95	0.007
	(43)	25				80			
L44	32.5 - 29.83	TP40.3498x39.9112x1	2.67	0.00	0.0	124.89	-55.34	7306.43	0.008
	(44)					60			
L45	29.83 - 29.58	TP40.3908x40.3498x0.9	0.25	0.00	0.0	112.81	-55.48	6599.36	0.008
	(45)					00			
L46	29.58 - 28.25	TP40.6093x40.3908x0.88	1.33	0.00	0.0	111.89	-56.16	6545.76	0.009
	(46)	75				30			
L47	28.25 - 28	TP40.6504x40.6093x0.95	0.25	0.00	0.0	119.70	-56.32	7002.95	0.008
	(47)					90			
L48	28 - 23 (48)	TP41.4717x40.6504x0.95	5.00	0.00	0.0	122.18	-59.20	7147.84	0.008
						50			
L49	23 - 19.25	TP42.0878x41.4717x0.93	3.75	0.00	0.0	122.44	-61.38	7163.19	0.009
	(49)	75				80			
L50	19.25 - 19	TP42.1288x42.0878x0.82	0.25	0.00	0.0	108.15	-61.53	6327.14	0.010
	(50)	5				60			
L51	19 - 14 (51)	TP42.9502x42.1288x0.8	5.00	0.00	0.0	107.02	-64.12	6261.12	0.010
						80			
L52	14 - 9 (52)	TP43.7716x42.9502x0.8	5.00	0.00	0.0	109.11	-66.75	6383.13	0.010
						30			
L53	9 - 4 (53)	TP44.5929x43.7716x0.78	5.00	0.00	0.0	109.49	-69.40	6405.32	0.011
		75				30			
L54	4 - 0 (54)	TP45.25x44.5929x0.775	4.00	0.00	0.0	109.40	-71.55	6400.01	0.011
						20			

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	

Pole Bending Design Data

Section No.	Elevation	Size	M_{ux}	ϕM_{nx}	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy}	ϕM_{ny}	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	ft		kip-ft	kip-ft		kip-ft	kip-ft	
L1	168.33 - 163.33 (1)	TP19.8345x19x0.1875	51.40	341.83	0.150	0.00	341.83	0.000
L2	163.33 - 158.33 (2)	TP20.6689x19.8345x0.1875	104.08	367.37	0.283	0.00	367.37	0.000
L3	158.33 - 153.33 (3)	TP21.5034x20.6689x0.1875	177.16	393.45	0.450	0.00	393.45	0.000
L4	153.33 - 148.33 (4)	TP22.3378x21.5034x0.1875	253.09	420.03	0.603	0.00	420.03	0.000
L5	148.33 - 143.33 (5)	TP23.1723x22.3378x0.1875	330.67	447.05	0.740	0.00	447.05	0.000
L6	143.33 - 138.33 (6)	TP24.0067x23.1723x0.1875	409.88	474.48	0.864	0.00	474.48	0.000
L7	138.33 - 130.5 (7)	TP25.3135x24.0067x0.1875	496.04	497.63	0.997	0.00	497.63	0.000
L8	130.5 - 129.16 (8)	TP25.1506x24.3277x0.25	596.74	741.50	0.805	0.00	741.50	0.000
L9	129.16 - 125.75 (9)	TP25.7119x25.1506x0.25	675.07	771.05	0.876	0.00	771.05	0.000
L10	125.75 - 125.5 (10)	TP25.7531x25.7119x0.25	680.86	773.24	0.881	0.00	773.24	0.000
L11	125.5 - 120.5 (11)	TP26.576x25.7531x0.25	798.10	817.27	0.977	0.00	817.27	0.000
L12	120.5 - 120.25 (12)	TP26.6172x26.576x0.4813	804.04	1577.54	0.510	0.00	1577.54	0.000
L13	120.25 - 115.25 (13)	TP27.4402x26.6172x0.475	924.89	1658.72	0.558	0.00	1658.72	0.000
L14	115.25 - 113.83 (14)	TP27.6739x27.4402x0.475	959.92	1687.86	0.569	0.00	1687.86	0.000
L15	113.83 - 113.48 (15)	TP27.7315x27.6739x0.65	968.61	2275.18	0.426	0.00	2275.18	0.000
L16	113.48 - 113.25 (16)	TP27.7693x27.7315x0.65	974.33	2281.63	0.427	0.00	2281.63	0.000
L17	113.25 - 108.25 (17)	TP28.5923x27.7693x0.6375	1100.78	2380.45	0.462	0.00	2380.45	0.000
L18	108.25 - 103.25 (18)	TP29.4153x28.5923x0.625	1231.29	2478.02	0.497	0.00	2478.02	0.000
L19	103.25 - 98.25 (19)	TP30.2383x29.4153x0.6125	1365.78	2574.05	0.531	0.00	2574.05	0.000
L20	98.25 - 93.25 (20)	TP31.0612x30.2383x0.6	1504.21	2668.29	0.564	0.00	2668.29	0.000
L21	93.25 - 84.55 (21)	TP32.4932x31.0612x0.6	1621.83	2790.19	0.581	0.00	2790.19	0.000
L22	84.55 - 83.55 (22)	TP32.1552x31.2427x0.6625	1784.72	3145.02	0.567	0.00	3145.02	0.000
L23	83.55 - 82.92 (23)	TP32.2586x32.1552x0.6625	1803.55	3165.92	0.570	0.00	3165.92	0.000
L24	82.92 - 82.67 (24)	TP32.2996x32.2586x0.95	1811.03	4428.76	0.409	0.00	4428.76	0.000
L25	82.67 - 82.5 (25)	TP32.3275x32.2996x0.95	1816.13	4436.76	0.409	0.00	4436.76	0.000
L26	82.5 - 82.25 (26)	TP32.3685x32.3275x0.6875	1823.64	3300.71	0.553	0.00	3300.71	0.000
L27	82.25 - 77.25 (27)	TP33.1892x32.3685x0.675	1975.87	3416.53	0.578	0.00	3416.53	0.000
L28	77.25 - 73.42 (28)	TP33.8178x33.1892x0.6625	2095.14	3489.45	0.600	0.00	3489.45	0.000
L29	73.42 - 73.17 (29)	TP33.8588x33.8178x0.9375	2103.01	4828.25	0.436	0.00	4828.25	0.000
L30	73.17 - 68.17	TP34.6794x33.8588x0.91	2262.80	4951.02	0.457	0.00	4951.02	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	(30)	25						
L31	68.17 - 64.25 (31)	TP35.3228x34.6794x0.8875	2391.22	5013.99	0.477	0.00	5013.99	0.000
L32	64.25 - 64 (32)	TP35.3638x35.3228x0.7375	2399.51	4231.37	0.567	0.00	4231.37	0.000
L33	64 - 59 (33)	TP36.1844x35.3638x0.7375	2567.03	4436.45	0.579	0.00	4436.45	0.000
L34	59 - 54 (34)	TP37.0051x36.1844x0.7125	2738.24	4498.17	0.609	0.00	4498.17	0.000
L35	54 - 53.5 (35)	TP37.0871x37.0051x0.7125	2755.56	4518.73	0.610	0.00	4518.73	0.000
L36	53.5 - 53.25 (36)	TP37.1281x37.0871x0.825	2764.23	5195.68	0.532	0.00	5195.68	0.000
L37	53.25 - 43.66 (37)	TP38.7021x37.1281x0.8125	2913.20	5323.10	0.547	0.00	5323.10	0.000
L38	43.66 - 42.66 (38)	TP38.2422x37.2007x0.725	3141.32	4892.65	0.642	0.00	4892.65	0.000
L39	42.66 - 41.75 (39)	TP38.3916x38.2422x0.725	3174.61	4932.09	0.644	0.00	4932.09	0.000
L40	41.75 - 41.5 (40)	TP38.4327x38.3916x0.7625	3183.78	5183.13	0.614	0.00	5183.13	0.000
L41	41.5 - 36.5 (41)	TP39.2541x38.4327x0.75	3368.83	5330.35	0.632	0.00	5330.35	0.000
L42	36.5 - 32.75 (42)	TP39.8701x39.2541x0.75	3509.82	5503.93	0.638	0.00	5503.93	0.000
L43	32.75 - 32.5 (43)	TP39.9112x39.8701x1.0125	3519.28	7297.32	0.482	0.00	7297.32	0.000
L44	32.5 - 29.83 (44)	TP40.3498x39.9112x1	3621.00	7379.80	0.491	0.00	7379.80	0.000
L45	29.83 - 29.58 (45)	TP40.3908x40.3498x0.9	3630.58	6706.68	0.541	0.00	6706.68	0.000
L46	29.58 - 28.25 (46)	TP40.6093x40.3908x0.8875	3681.70	6694.05	0.550	0.00	6694.05	0.000
L47	28.25 - 28 (47)	TP40.6504x40.6093x0.95	3691.34	7146.64	0.517	0.00	7146.64	0.000
L48	28 - 23 (48)	TP41.4717x40.6504x0.95	3885.97	7448.94	0.522	0.00	7448.94	0.000
L49	23 - 19.25 (49)	TP42.0878x41.4717x0.9375	4035.57	7585.64	0.532	0.00	7585.64	0.000
L50	19.25 - 19 (50)	TP42.1288x42.0878x0.825	4045.62	6743.80	0.600	0.00	6743.80	0.000
L51	19 - 14 (51)	TP42.9502x42.1288x0.8	4248.14	6816.83	0.623	0.00	6816.83	0.000
L52	14 - 9 (52)	TP43.7716x42.9502x0.8	4453.45	7087.62	0.628	0.00	7087.62	0.000
L53	9 - 4 (53)	TP44.5929x43.7716x0.7875	4661.43	7254.82	0.643	0.00	7254.82	0.000
L54	4 - 0 (54)	TP45.25x44.5929x0.775	4829.63	7363.60	0.656	0.00	7363.60	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	168.33 - 163.33 (1)	TP19.8345x19x0.1875	10.39	205.20	0.051	0.52	353.07	0.001
L2	163.33 - 158.33 (2)	TP20.6689x19.8345x0.1875	10.78	213.92	0.050	2.60	383.69	0.007
L3	158.33 - 153.33 (3)	TP21.5034x20.6689x0.1875	15.02	222.63	0.067	2.77	415.60	0.007
L4	153.33 - 148.33 (4)	TP22.3378x21.5034x0.1875	15.36	231.35	0.066	2.77	448.77	0.006
L5	148.33 - 143.33 (5)	TP23.1723x22.3378x0.1875	15.69	240.06	0.065	2.77	483.22	0.006
L6	143.33 - 138.33 (6)	TP24.0067x23.1723x0.1875	16.01	248.78	0.064	2.76	518.95	0.005
L7	138.33 - 130.5 (7)	TP25.3135x24.0067x0.1875	19.95	256.05	0.078	3.91	549.71	0.007

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L8	130.5 - 129.16 (8)	TP25.1506x24.3277x0.25	20.34	346.76	0.059	3.90	756.18	0.005
L9	129.16 - 125.75 (9)	TP25.7119x25.1506x0.25	23.13	354.58	0.065	3.90	790.65	0.005
L10	125.75 - 125.5 (10)	TP25.7531x25.7119x0.25	23.15	355.15	0.065	3.90	793.21	0.005
L11	125.5 - 120.5 (11)	TP26.576x25.7531x0.25	23.76	366.61	0.065	3.89	845.23	0.005
L12	120.5 - 120.25 (12)	TP26.6172x26.576x0.4813	23.79	700.64	0.034	3.89	1603.66	0.002
L13	120.25 - 115.25 (13)	TP27.4402x26.6172x0.475	24.56	713.48	0.034	3.89	1684.86	0.002
L14	115.25 - 113.83 (14)	TP27.6739x27.4402x0.475	24.80	719.66	0.034	3.89	1714.19	0.002
L15	113.83 - 113.48 (15)	TP27.7315x27.6739x0.65	24.85	980.55	0.025	3.89	2325.53	0.002
L16	113.48 - 113.25 (16)	TP27.7693x27.7315x0.65	24.89	981.92	0.025	3.89	2332.04	0.002
L17	113.25 - 108.25 (17)	TP28.5923x27.7693x0.6375	25.71	992.71	0.026	3.88	2430.28	0.002
L18	108.25 - 103.25 (18)	TP29.4153x28.5923x0.625	26.51	1002.33	0.026	3.88	2527.18	0.002
L19	103.25 - 98.25 (19)	TP30.2383x29.4153x0.6125	27.30	1010.79	0.027	3.88	2622.46	0.001
L20	98.25 - 93.25 (20)	TP31.0612x30.2383x0.6	28.09	1018.08	0.028	3.87	2715.88	0.001
L21	93.25 - 84.55 (21)	TP32.4932x31.0612x0.6	28.76	1040.86	0.028	3.87	2838.74	0.001
L22	84.55 - 83.55 (22)	TP32.1552x31.2427x0.6625	29.83	1162.20	0.026	3.87	3205.30	0.001
L23	83.55 - 82.92 (23)	TP32.2586x32.1552x0.6625	29.93	1166.01	0.026	3.87	3226.38	0.001
L24	82.92 - 82.67 (24)	TP32.2996x32.2586x0.95	29.97	1658.97	0.018	3.87	4554.62	0.001
L25	82.67 - 82.5 (25)	TP32.3275x32.2996x0.95	30.01	1660.45	0.018	3.87	4562.73	0.001
L26	82.5 - 82.25 (26)	TP32.3685x32.3275x0.6875	30.05	1213.27	0.025	3.87	3366.17	0.001
L27	82.25 - 77.25 (27)	TP33.1892x32.3685x0.675	30.85	1222.53	0.025	3.87	3481.07	0.001
L28	77.25 - 73.42 (28)	TP33.8178x33.1892x0.6625	31.45	1223.55	0.026	3.87	3552.67	0.001
L29	73.42 - 73.17 (29)	TP33.8588x33.8178x0.9375	31.48	1719.22	0.018	3.87	4956.66	0.001
L30	73.17 - 68.17 (30)	TP34.6794x33.8588x0.9125	32.43	1716.36	0.019	3.73	5075.51	0.001
L31	68.17 - 64.25 (31)	TP35.3228x34.6794x0.8875	33.10	1702.38	0.019	3.73	5133.81	0.001
L32	64.25 - 64 (32)	TP35.3638x35.3228x0.7375	33.13	1422.50	0.023	3.73	4313.58	0.001
L33	64 - 59 (33)	TP36.1844x35.3638x0.7375	33.89	1456.21	0.023	3.73	4520.47	0.001
L34	59 - 54 (34)	TP37.0051x36.1844x0.7125	34.61	1440.41	0.024	3.73	4578.08	0.001
L35	54 - 53.5 (35)	TP37.0871x37.0051x0.7125	34.68	1443.67	0.024	3.73	4598.82	0.001
L36	53.5 - 53.25 (36)	TP37.1281x37.0871x0.825	34.71	1668.33	0.021	3.73	5304.03	0.001
L37	53.25 - 43.66 (37)	TP38.7021x37.1281x0.8125	35.39	1675.19	0.021	3.73	5430.00	0.001
L38	43.66 - 42.66 (38)	TP38.2422x37.2007x0.725	36.54	1515.14	0.024	3.73	4978.08	0.001
L39	42.66 - 41.75 (39)	TP38.3916x38.2422x0.725	36.66	1521.17	0.024	3.73	5017.83	0.001
L40	41.75 - 41.5 (40)	TP38.4327x38.3916x0.7625	36.68	1600.01	0.023	3.73	5278.38	0.001
L41	41.5 - 36.5 (41)	TP39.2541x38.4327x0.75	37.35	1608.61	0.023	3.72	5424.24	0.001
L42	36.5 - 32.75	TP39.8701x39.2541x0.75	37.87	1634.35	0.023	3.72	5599.19	0.001

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L43	32.75 - 32.5 (42)	TP39.9112x39.8701x1.01 25	37.88	2193.88	0.017	3.72	7473.57	0.000
L44	32.5 - 29.83 (43)	TP40.3498x39.9112x1	38.32	2191.93	0.017	3.72	7553.50	0.000
L45	29.83 - 29.58 (44)	TP40.3908x40.3498x0.9	38.33	1979.81	0.019	3.72	6846.98	0.001
L46	29.58 - 28.25 (45)	TP40.6093x40.3908x0.88 75	38.55	1963.73	0.020	3.72	6831.10	0.001
L47	28.25 - 28 (46)	TP40.6504x40.6093x0.95	38.56	2100.89	0.018	3.72	7304.27	0.001
L48	28 - 23 (47)	TP41.4717x40.6504x0.95	39.29	2144.35	0.018	3.72	7609.63	0.000
L49	23 - 19.25 (48)	TP42.0878x41.4717x0.93 75	40.21	2148.96	0.019	3.67	7744.27	0.000
L50	19.25 - 19 (49)	TP42.1288x42.0878x0.82 5	40.22	1898.14	0.021	3.67	6865.92	0.001
L51	19 - 14 (50)	TP42.9502x42.1288x0.8	40.81	1878.34	0.022	3.67	6933.51	0.001
L52	14 - 9 (51)	TP43.7716x42.9502x0.8	41.35	1914.94	0.022	3.67	7206.37	0.001
L53	9 - 4 (52)	TP44.5929x43.7716x0.78 75	41.88	1921.60	0.022	3.67	7371.74	0.000
L54	4 - 0 (53)	TP45.25x44.5929x0.775	42.27	1920.00	0.022	3.67	7478.21	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	168.33 - 163.33 (1)	0.007	0.150	0.000	0.051	0.001	0.160	1.050	4.8.2
L2	163.33 - 158.33 (2)	0.007	0.283	0.000	0.050	0.007	0.294	1.050	4.8.2
L3	158.33 - 153.33 (3)	0.010	0.450	0.000	0.067	0.007	0.466	1.050	4.8.2
L4	153.33 - 148.33 (4)	0.010	0.603	0.000	0.066	0.006	0.618	1.050	4.8.2
L5	148.33 - 143.33 (5)	0.010	0.740	0.000	0.065	0.006	0.755	1.050	4.8.2
L6	143.33 - 138.33 (6)	0.010	0.864	0.000	0.064	0.005	0.879	1.050	4.8.2
L7	138.33 - 130.5 (7)	0.013	0.997	0.000	0.078	0.007	1.017	1.050	4.8.2
L8	130.5 - 129.16 (8)	0.011	0.805	0.000	0.059	0.005	0.819	1.050	4.8.2
L9	129.16 - 125.75 (9)	0.013	0.876	0.000	0.065	0.005	0.893	1.050	4.8.2
L10	125.75 - 125.5 (10)	0.013	0.881	0.000	0.065	0.005	0.898	1.050	4.8.2
L11	125.5 - 120.5 (11)	0.013	0.977	0.000	0.065	0.005	0.995	1.050	4.8.2
L12	120.5 - 120.25 (12)	0.007	0.510	0.000	0.034	0.002	0.518	1.050	4.8.2
L13	120.25 - 115.25 (13)	0.007	0.558	0.000	0.034	0.002	0.566	1.050	4.8.2
L14	115.25 - 113.83 (14)	0.008	0.569	0.000	0.034	0.002	0.578	1.050	4.8.2
L15	113.83 - 113.48 (15)	0.006	0.426	0.000	0.025	0.002	0.432	1.050	4.8.2
L16	113.48 - 113.25 (16)	0.006	0.427	0.000	0.025	0.002	0.433	1.050	4.8.2
L17	113.25 - 108.25 (17)	0.006	0.462	0.000	0.026	0.002	0.469	1.050	4.8.2
L18	108.25 - 103.25 (18)	0.006	0.497	0.000	0.026	0.002	0.504	1.050	4.8.2

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L19	103.25 - 98.25 (19)	0.007	0.531	0.000	0.027	0.001	0.538	1.050	4.8.2
L20	98.25 - 93.25 (20)	0.007	0.564	0.000	0.028	0.001	0.572	1.050	4.8.2
L21	93.25 - 84.55 (21)	0.007	0.581	0.000	0.028	0.001	0.590	1.050	4.8.2
L22	84.55 - 83.55 (22)	0.008	0.567	0.000	0.026	0.001	0.576	1.050	4.8.2
L23	83.55 - 82.92 (23)	0.008	0.570	0.000	0.026	0.001	0.578	1.050	4.8.2
L24	82.92 - 82.67 (24)	0.005	0.409	0.000	0.018	0.001	0.415	1.050	4.8.2
L25	82.67 - 82.5 (25)	0.005	0.409	0.000	0.018	0.001	0.415	1.050	4.8.2
L26	82.5 - 82.25 (26)	0.007	0.553	0.000	0.025	0.001	0.560	1.050	4.8.2
L27	82.25 - 77.25 (27)	0.008	0.578	0.000	0.025	0.001	0.587	1.050	4.8.2
L28	77.25 - 73.42 (28)	0.008	0.600	0.000	0.026	0.001	0.609	1.050	4.8.2
L29	73.42 - 73.17 (29)	0.006	0.436	0.000	0.018	0.001	0.442	1.050	4.8.2
L30	73.17 - 68.17 (30)	0.006	0.457	0.000	0.019	0.001	0.464	1.050	4.8.2
L31	68.17 - 64.25 (31)	0.007	0.477	0.000	0.019	0.001	0.484	1.050	4.8.2
L32	64.25 - 64 (32)	0.008	0.567	0.000	0.023	0.001	0.576	1.050	4.8.2
L33	64 - 59 (33)	0.008	0.579	0.000	0.023	0.001	0.587	1.050	4.8.2
L34	59 - 54 (34)	0.009	0.609	0.000	0.024	0.001	0.618	1.050	4.8.2
L35	54 - 53.5 (35)	0.009	0.610	0.000	0.024	0.001	0.619	1.050	4.8.2
L36	53.5 - 53.25 (36)	0.008	0.532	0.000	0.021	0.001	0.540	1.050	4.8.2
L37	53.25 - 43.66 (37)	0.008	0.547	0.000	0.021	0.001	0.556	1.050	4.8.2
L38	43.66 - 42.66 (38)	0.010	0.642	0.000	0.024	0.001	0.652	1.050	4.8.2
L39	42.66 - 41.75 (39)	0.010	0.644	0.000	0.024	0.001	0.654	1.050	4.8.2
L40	41.75 - 41.5 (40)	0.009	0.614	0.000	0.023	0.001	0.624	1.050	4.8.2
L41	41.5 - 36.5 (41)	0.010	0.632	0.000	0.023	0.001	0.642	1.050	4.8.2
L42	36.5 - 32.75 (42)	0.010	0.638	0.000	0.023	0.001	0.648	1.050	4.8.2
L43	32.75 - 32.5 (43)	0.007	0.482	0.000	0.017	0.000	0.490	1.050	4.8.2
L44	32.5 - 29.83 (44)	0.008	0.491	0.000	0.017	0.000	0.499	1.050	4.8.2
L45	29.83 - 29.58 (45)	0.008	0.541	0.000	0.019	0.001	0.550	1.050	4.8.2
L46	29.58 - 28.25 (46)	0.009	0.550	0.000	0.020	0.001	0.559	1.050	4.8.2
L47	28.25 - 28 (47)	0.008	0.517	0.000	0.018	0.001	0.525	1.050	4.8.2
L48	28 - 23 (48)	0.008	0.522	0.000	0.018	0.000	0.530	1.050	4.8.2
L49	23 - 19.25 (49)	0.009	0.532	0.000	0.019	0.000	0.541	1.050	4.8.2
L50	19.25 - 19 (50)	0.010	0.600	0.000	0.021	0.001	0.610	1.050	4.8.2
L51	19 - 14 (51)	0.010	0.623	0.000	0.022	0.001	0.634	1.050	4.8.2
L52	14 - 9 (52)	0.010	0.628	0.000	0.022	0.001	0.639	1.050	4.8.2
L53	9 - 4 (53)	0.011	0.643	0.000	0.022	0.000	0.654	1.050	4.8.2
L54	4 - 0 (54)	0.011	0.656	0.000	0.022	0.000	0.668	1.050	4.8.2

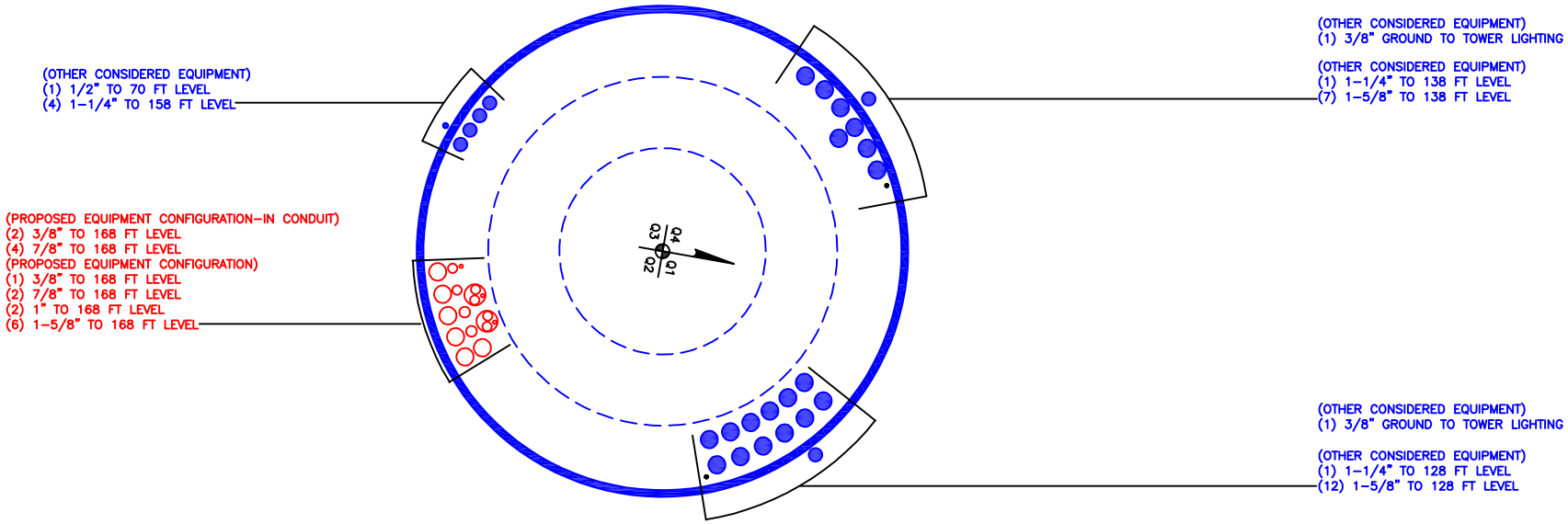
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	168.33 - 163.33	Pole	TP19.8345x19x0.1875	1	-4.75	718.21	15.2	Pass
L2	163.33 - 158.33	Pole	TP20.6689x19.8345x0.1875	2	-5.02	748.71	28.0	Pass
L3	158.33 - 153.33	Pole	TP21.5034x20.6689x0.1875	3	-7.42	779.21	44.4	Pass
L4	153.33 - 148.33	Pole	TP22.3378x21.5034x0.1875	4	-7.81	809.72	58.9	Pass
L5	148.33 - 143.33	Pole	TP23.1723x22.3378x0.1875	5	-8.24	840.22	71.9	Pass
L6	143.33 - 138.33	Pole	TP24.0067x23.1723x0.1875	6	-8.70	870.73	83.7	Pass
L7	138.33 - 130.5	Pole	TP25.3135x24.0067x0.1875	7	-11.47	896.17	96.9	Pass
L8	130.5 - 129.16	Pole	TP25.1506x24.3277x0.25	8	-12.28	1213.67	78.0	Pass
L9	129.16 - 125.75	Pole	TP25.7119x25.1506x0.25	9	-14.97	1241.04	85.1	Pass
L10	125.75 - 125.5	Pole	TP25.7531x25.7119x0.25	10	-15.04	1243.04	85.5	Pass
L11	125.5 - 120.5	Pole	TP26.576x25.7531x0.25	11	-16.07	1283.15	94.7	Pass
L12	120.5 - 120.25	Pole	TP26.6172x26.576x0.4813	12	-16.17	2452.23	49.3	Pass
L13	120.25 - 115.25	Pole	TP27.4402x26.6172x0.475	13	-17.77	2497.17	53.9	Pass
L14	115.25 - 113.83	Pole	TP27.6739x27.4402x0.475	14	-18.23	2518.81	55.0	Pass
L15	113.83 - 113.48	Pole	TP27.7315x27.6739x0.65	15	-18.36	3431.92	41.1	Pass
L16	113.48 - 113.25	Pole	TP27.7693x27.7315x0.65	16	-18.43	3436.72	41.3	Pass
L17	113.25 - 108.25	Pole	TP28.5923x27.7693x0.6375	17	-19.94	3474.47	44.7	Pass
L18	108.25 - 103.25	Pole	TP29.4153x28.5923x0.625	18	-21.49	3508.14	48.0	Pass
L19	103.25 - 98.25	Pole	TP30.2383x29.4153x0.6125	19	-23.07	3537.75	51.3	Pass
L20	98.25 - 93.25	Pole	TP31.0612x30.2383x0.6	20	-24.67	3563.29	54.5	Pass
L21	93.25 - 84.55	Pole	TP32.4932x31.0612x0.6	21	-26.02	3643.00	56.2	Pass
L22	84.55 - 83.55	Pole	TP32.1552x31.2427x0.6625	22	-29.08	4067.69	54.8	Pass
L23	83.55 - 82.92	Pole	TP32.2586x32.1552x0.6625	23	-29.32	4081.05	55.0	Pass
L24	82.92 - 82.67	Pole	TP32.2996x32.2586x0.95	24	-29.43	5806.42	39.5	Pass
L25	82.67 - 82.5	Pole	TP32.3275x32.2996x0.95	25	-29.50	5811.58	39.5	Pass
L26	82.5 - 82.25	Pole	TP32.3685x32.3275x0.6875	26	-29.60	4246.43	53.4	Pass
L27	82.25 - 77.25	Pole	TP33.1892x32.3685x0.675	27	-31.53	4278.87	55.9	Pass
L28	77.25 - 73.42	Pole	TP33.8178x33.1892x0.6625	28	-33.03	4282.44	58.0	Pass
L29	73.42 - 73.17	Pole	TP33.8588x33.8178x0.9375	29	-33.17	6017.28	42.1	Pass
L30	73.17 - 68.17	Pole	TP34.6794x33.8588x0.9125	30	-35.54	6007.26	44.2	Pass
L31	68.17 - 64.25	Pole	TP35.3228x34.6794x0.8875	31	-37.37	5958.32	46.1	Pass
L32	64.25 - 64	Pole	TP35.3638x35.3228x0.7375	32	-37.48	4978.75	54.8	Pass
L33	64 - 59	Pole	TP36.1844x35.3638x0.7375	33	-39.49	5096.74	55.9	Pass
L34	59 - 54	Pole	TP37.0051x36.1844x0.7125	34	-41.54	5041.44	58.9	Pass
L35	54 - 53.5	Pole	TP37.0871x37.0051x0.7125	35	-41.76	5052.84	59.0	Pass
L36	53.5 - 53.25	Pole	TP37.1281x37.0871x0.825	36	-41.88	5839.15	51.4	Pass
L37	53.25 - 43.66	Pole	TP38.7021x37.1281x0.8125	37	-43.83	5863.16	52.9	Pass
L38	43.66 - 42.66	Pole	TP38.2422x37.2007x0.725	38	-48.74	5302.98	62.1	Pass
L39	42.66 - 41.75	Pole	TP38.3916x38.2422x0.725	39	-49.17	5324.11	62.3	Pass
L40	41.75 - 41.5	Pole	TP38.4327x38.3916x0.7625	40	-49.31	5600.03	59.4	Pass
L41	41.5 - 36.5	Pole	TP39.2541x38.4327x0.75	41	-51.79	5630.15	61.2	Pass
L42	36.5 - 32.75	Pole	TP39.8701x39.2541x0.75	42	-53.68	5720.23	61.7	Pass
L43	32.75 - 32.5	Pole	TP39.9112x39.8701x1.0125	43	-53.84	7678.60	46.7	Pass
L44	32.5 - 29.83	Pole	TP40.3498x39.9112x1	44	-55.34	7671.75	47.5	Pass
L45	29.83 - 29.58	Pole	TP40.3908x40.3498x0.9	45	-55.48	6929.33	52.4	Pass
L46	29.58 - 28.25	Pole	TP40.6093x40.3908x0.8875	46	-56.16	6873.05	53.2	Pass
L47	28.25 - 28	Pole	TP40.6504x40.6093x0.95	47	-56.32	7353.10	50.0	Pass
L48	28 - 23	Pole	TP41.4717x40.6504x0.95	48	-59.20	7505.23	50.5	Pass
L49	23 - 19.25	Pole	TP42.0878x41.4717x0.9375	49	-61.38	7521.35	51.5	Pass
L50	19.25 - 19	Pole	TP42.1288x42.0878x0.825	50	-61.53	6643.50	58.1	Pass
L51	19 - 14	Pole	TP42.9502x42.1288x0.8	51	-64.12	6574.18	60.4	Pass
L52	14 - 9	Pole	TP43.7716x42.9502x0.8	52	-66.75	6702.29	60.9	Pass
L53	9 - 4	Pole	TP44.5929x43.7716x0.7875	53	-69.40	6725.59	62.3	Pass
L54	4 - 0	Pole	TP45.25x44.5929x0.775	54	-71.55	6720.01	63.6	Pass
							Summary	
						Pole (L7)	96.9	Pass
						RATING =	**96.9**	**Pass**

***NOTE: Above stress ratios for reinforced sections are approximate. More exact calculations are presented in Appendix C.**

APPENDIX B

BASE LEVEL DRAWING


(OTHER CONSIDERED EQUIPMENT)
(1) 1/2" TO 70 FT LEVEL
(4) 1-1/4" TO 158 FT LEVEL
(PROPOSED EQUIPMENT CONFIGURATION-IN CONDUIT)
(2) 3/8" TO 168 FT LEVEL
(4) 7/8" TO 168 FT LEVEL
(PROPOSED EQUIPMENT CONFIGURATION)
(1) 3/8" TO 168 FT LEVEL
(2) 7/8" TO 168 FT LEVEL
(2) 1" TO 168 FT LEVEL
(6) 1-5/8" TO 168 FT LEVEL
Q4
Q3
Q1
Q2
(OTHER CONSIDERED EQUIPMENT)
(1) 3/8" GROUND TO TOWER LIGHTING
(OTHER CONSIDERED EQUIPMENT)
(1) 1-1/4" TO 138 FT LEVEL
(7) 1-5/8" TO 138 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 3/8" GROUND TO TOWER LIGHTING
(OTHER CONSIDERED EQUIPMENT)
(1) 1-1/4" TO 128 FT LEVEL
(12) 1-5/8" TO 128 FT LEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 842859

Work Order: 1805727

CROWN CASTLE

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	168.33	37.83	3.66	18	19	25.3135	0.1875	Auto	A572-65
2	134.16	49.61	4.56	18	24.33	32.4932	0.25	Auto	A572-65
3	89.11	45.45	5.34	18	31.24	38.7021	0.3125	Auto	A572-65
4	49	49	0	18	37.20	45.25	0.375	Auto	A572-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Pole Flat Width (in)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	87.83	113.83	plate	5"x1.25"	4.88				E3						E3						E3		
2	73.42	85.92	plate	5"x1.25"	5.69			E3					E3						E3				E3
3	47.35	73.42	plate	5"x1.25"	5.96		E3				E3					E3				E3			
4	29.83	45.42	plate	6"x1.25"	6.77			E3					E3						E3				E3
5	0	28.25	plate	6"x1.25" (Welded)	7.16		E3				E3					E3				E3			
6	0	41.75	plate	CFP-060100	6.77	E4						E4			E4						E4		
7	41.75	82.92	plate	CFP-045100	5.69	E4						E4			E4						E4		
8	19.25	29.83	plate	CCI-SFP-045100	7.11			E4					E4						E4				E4
9	64.25	73.42	plate	CCI-SFP-045100	5.96			E4					E4						E4				E4
10	85.92	125.75	plate	I-SFP-045100 (Modifie	4.53			E4					E4						E4				
11	28.25	32.75	plate	CCI-SFP-065125	7.03					P							P						
12	47.5	53.5	plate	CCI-SFP-050125	6.54					P							P						
13	82.5	88.5	plate	CCI-SFP-050125	5.61					P							P						
14	113.5	120.5	plate	CCI-SFP-040125	4.69									P									P
15																							

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	5	1.25	6.25	0.625	24.000	24.000	18.000	4.688	1.1875	A572-65
2	5	1.25	6.25	0.625	24.000	24.000	18.000	4.688	1.1875	A572-65
3	5	1.25	6.25	0.625	24.000	24.000	18.000	4.688	1.1875	A572-65
4	6	1.25	7.5	0.625	30.000	30.000	18.000	5.938	1.1875	A572-65
5	6	1.25	7.5	0.625	n/a	30.000	18.000	5.938	1.1875	A572-65
6	6	1	6	0.5	24.000	24.000	12.000	4.750	1.1875	A572-65
7	4.5	1	4.5	0.5	18.000	18.000	12.000	3.250	1.1875	A572-65
8	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
9	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
10	4.5	1	4.5	0.5	18.000	19.000	20.000	3.250	1.1875	A572-65
11	6.5	1.25	8.125	0.625	33.000	33.000	19.000	6.563	1.1875	A572-65
12	5	1.25	6.25	0.625	24.000	24.000	23.000	4.688	1.1875	A572-65
13	5	1.25	6.25	0.625	24.000	24.000	23.000	4.688	1.1875	A572-65
14	4	1.25	5	0.625	18.000	18.000	27.000	3.438	1.1875	A572-65

TNX Geometry Input

Increment (ft): 5

	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	168.33 - 163.33	5		18	19.000	19.834	0.1875	A572-65	1.000
2	163.33 - 158.33	5		18	19.834	20.669	0.1875	A572-65	1.000
3	158.33 - 153.33	5		18	20.669	21.503	0.1875	A572-65	1.000
4	153.33 - 148.33	5		18	21.503	22.338	0.1875	A572-65	1.000
5	148.33 - 143.33	5		18	22.338	23.172	0.1875	A572-65	1.000
6	143.33 - 138.33	5		18	23.172	24.007	0.1875	A572-65	1.000
7	138.33 - 134.16	7.83	3.66	18	24.007	25.314	0.1875	A572-65	1.000
8	134.16 - 129.16	5		18	24.328	25.151	0.25	A572-65	1.000
9	129.16 - 125.75	3.41		18	25.151	25.712	0.25	A572-65	1.000
10	125.75 - 125.5	0.25		18	25.712	25.753	0.25	A572-65	1.000
11	125.5 - 120.5	5		18	25.753	26.576	0.25	A572-65	1.000
12	120.5 - 120.25	0.25		18	26.576	26.617	0.48125	A572-65	1.113
13	120.25 - 115.25	5		18	26.617	27.440	0.475	A572-65	1.109
14	115.25 - 113.83	1.42		18	27.440	27.674	0.475	A572-65	1.104
15	113.83 - 113.48	0.35		18	27.674	27.731	0.65	A572-65	0.968
16	113.48 - 113.25	0.23		18	27.731	27.769	0.65	A572-65	0.967
17	113.25 - 108.25	5		18	27.769	28.592	0.6375	A572-65	0.968
18	108.25 - 103.25	5		18	28.592	29.415	0.625	A572-65	0.970
19	103.25 - 98.25	5		18	29.415	30.238	0.6125	A572-65	0.973
20	98.25 - 93.25	5		18	30.238	31.061	0.6	A572-65	0.977
21	93.25 - 89.11	8.7	4.56	18	31.061	32.493	0.6	A572-65	0.965
22	89.11 - 83.55	5.56		18	31.243	32.155	0.6625	A572-65	1.043
23	83.55 - 82.92	0.63		18	32.155	32.259	0.6625	A572-65	1.041
24	82.92 - 82.67	0.25		18	32.259	32.300	0.95	A572-65	0.923
25	82.67 - 82.5	0.17		18	32.300	32.328	0.95	A572-65	0.922
26	82.5 - 82.25	0.25		18	32.328	32.369	0.6875	A572-65	1.082
27	82.25 - 77.25	5		18	32.369	33.189	0.675	A572-65	1.085
28	77.25 - 73.42	3.83		18	33.189	33.818	0.6625	A572-65	1.093
29	73.42 - 73.17	0.25		18	33.818	33.859	0.9375	A572-65	0.962
30	73.17 - 68.17	5		18	33.859	34.679	0.9125	A572-65	0.972
31	68.17 - 64.25	3.92		18	34.679	35.323	0.8875	A572-65	0.987
32	64.25 - 64	0.25		18	35.323	35.364	0.7375	A572-65	0.959
33	64 - 59	5		18	35.364	36.184	0.7375	A572-65	0.947
34	59 - 54	5		18	36.184	37.005	0.7125	A572-65	0.967
35	54 - 53.5	0.5		18	37.005	37.087	0.7125	A572-65	0.966
36	53.5 - 53.25	0.25		18	37.087	37.128	0.825	A572-65	0.968
37	53.25 - 49	9.59	5.34	18	37.128	38.702	0.8125	A572-65	0.971
38	49 - 42.66	6.34		18	37.201	38.242	0.725	A572-65	1.078
39	42.66 - 41.75	0.91		18	38.242	38.392	0.725	A572-65	1.076
40	41.75 - 41.5	0.25		18	38.392	38.433	0.7625	A572-65	1.089
41	41.5 - 36.5	5		18	38.433	39.254	0.75	A572-65	1.094
42	36.5 - 32.75	3.75		18	39.254	39.870	0.75	A572-65	1.085
43	32.75 - 32.5	0.25		18	39.870	39.911	1.0125	A572-65	0.938
44	32.5 - 29.83	2.67		18	39.911	40.350	1	A572-65	0.943
45	29.83 - 29.58	0.25		18	40.350	40.391	0.9	A572-65	0.939
46	29.58 - 28.25	1.33		18	40.391	40.609	0.8875	A572-65	0.949
47	28.25 - 28	0.25		18	40.609	40.650	0.95	A572-65	1.002
48	28 - 23	5		18	40.650	41.472	0.95	A572-65	0.990
49	23 - 19.25	3.75		18	41.472	42.088	0.9375	A572-65	0.993
50	19.25 - 19	0.25		18	42.088	42.129	0.825	A572-65	0.959
51	19 - 14	5		18	42.129	42.950	0.8	A572-65	0.978
52	14 - 9	5		18	42.950	43.772	0.8	A572-65	0.968
53	9 - 4	5		18	43.772	44.593	0.7875	A572-65	0.974
54	4 - 0	4		18	44.593	45.250	0.775	A572-65	0.982

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	168.33 - 163.33	4.75	51.40	10.39
2	163.33 - 158.33	5.03	104.18	10.73
3	158.33 - 153.33	7.42	177.16	15.02
4	153.33 - 148.33	7.81	253.09	15.36
5	148.33 - 143.33	8.24	330.67	15.69
6	143.33 - 138.33	8.70	409.88	16.01
7	138.33 - 134.16	11.51	496.07	19.86
8	134.16 - 129.16	12.28	596.74	20.34
9	129.16 - 125.75	14.97	675.07	23.13
10	125.75 - 125.5	15.04	680.85	23.15
11	125.5 - 120.5	16.07	798.10	23.76
12	120.5 - 120.25	16.17	804.04	23.79
13	120.25 - 115.25	17.77	924.89	24.56
14	115.25 - 113.83	18.23	959.92	24.80
15	113.83 - 113.48	18.36	968.61	24.85
16	113.48 - 113.25	18.43	974.33	24.89
17	113.25 - 108.25	19.94	1100.79	25.71
18	108.25 - 103.25	21.49	1231.29	26.51
19	103.25 - 98.25	23.07	1365.78	27.30
20	98.25 - 93.25	24.67	1504.21	28.09
21	93.25 - 89.11	26.02	1621.83	28.76
22	89.11 - 83.55	29.08	1784.72	29.83
23	83.55 - 82.92	29.32	1803.55	29.93
24	82.92 - 82.67	29.43	1811.04	29.97
25	82.67 - 82.5	29.50	1816.14	30.01
26	82.5 - 82.25	29.60	1823.64	30.05
27	82.25 - 77.25	31.53	1975.87	30.85
28	77.25 - 73.42	33.03	2095.14	31.45
29	73.42 - 73.17	33.17	2103.01	31.48
30	73.17 - 68.17	35.54	2262.80	32.43
31	68.17 - 64.25	37.37	2391.23	33.10
32	64.25 - 64	37.48	2399.51	33.13
33	64 - 59	39.49	2567.04	33.89
34	59 - 54	41.54	2738.24	34.61
35	54 - 53.5	41.76	2755.56	34.68
36	53.5 - 53.25	41.88	2764.23	34.71
37	53.25 - 49	43.83	2913.20	35.39
38	49 - 42.66	48.74	3141.32	36.54
39	42.66 - 41.75	49.17	3174.61	36.66
40	41.75 - 41.5	49.31	3183.78	36.68
41	41.5 - 36.5	51.79	3368.83	37.35
42	36.5 - 32.75	53.68	3509.82	37.87
43	32.75 - 32.5	53.84	3519.29	37.88
44	32.5 - 29.83	55.34	3621.00	38.32
45	29.83 - 29.58	55.48	3630.58	38.33
46	29.58 - 28.25	56.16	3681.70	38.55
47	28.25 - 28	56.32	3691.34	38.56
48	28 - 23	59.20	3885.96	39.29
49	23 - 19.25	61.38	4035.56	40.21
50	19.25 - 19	61.53	4045.61	40.22
51	19 - 14	64.12	4248.14	40.81
52	14 - 9	66.75	4453.45	41.35
53	9 - 4	69.40	4661.42	41.88
54	4 - 0	71.55	4829.63	42.27

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
168.33 - 163.33	Pole	TP19.834x19x0.1875	Pole	14.9%	Pass
163.33 - 158.33	Pole	TP20.669x19.834x0.1875	Pole	27.6%	Pass
158.33 - 153.33	Pole	TP21.503x20.669x0.1875	Pole	43.8%	Pass
153.33 - 148.33	Pole	TP22.338x21.503x0.1875	Pole	58.3%	Pass
148.33 - 143.33	Pole	TP23.172x22.338x0.1875	Pole	71.4%	Pass
143.33 - 138.33	Pole	TP24.007x23.172x0.1875	Pole	83.2%	Pass
138.33 - 134.16	Pole	TP25.314x24.007x0.1875	Pole	96.2%	Pass
134.16 - 129.16	Pole	TP25.151x24.328x0.25	Pole	77.5%	Pass
129.16 - 125.75	Pole	TP25.712x25.151x0.25	Pole	84.4%	Pass
125.75 - 125.5	Pole	TP25.753x25.712x0.25	Pole	84.9%	Pass
125.5 - 120.5	Pole	TP26.576x25.753x0.25	Pole	94.1%	Pass
120.5 - 120.25	Pole + Reinf.	TP26.617x26.576x0.4813	Reinf. 10 Tension Rupture	87.3%	Pass
120.25 - 115.25	Pole + Reinf.	TP27.44x26.617x0.475	Reinf. 10 Tension Rupture	95.8%	Pass
115.25 - 113.83	Pole + Reinf.	TP27.674x27.44x0.475	Reinf. 10 Tension Rupture	98.1%	Pass
113.83 - 113.48	Pole + Reinf.	TP27.731x27.674x0.65	Reinf. 10 Tension Rupture	68.7%	Pass
113.48 - 113.25	Pole + Reinf.	TP27.769x27.731x0.65	Reinf. 10 Tension Rupture	69.0%	Pass
113.25 - 108.25	Pole + Reinf.	TP28.592x27.769x0.6375	Reinf. 10 Tension Rupture	74.9%	Pass
108.25 - 103.25	Pole + Reinf.	TP29.415x28.592x0.625	Reinf. 10 Tension Rupture	80.5%	Pass
103.25 - 98.25	Pole + Reinf.	TP30.238x29.415x0.6125	Reinf. 10 Tension Rupture	85.9%	Pass
98.25 - 93.25	Pole + Reinf.	TP31.061x30.238x0.6	Reinf. 10 Tension Rupture	91.1%	Pass
93.25 - 89.11	Pole + Reinf.	TP32.493x31.061x0.6	Reinf. 10 Tension Rupture	95.3%	Pass
89.11 - 83.55	Pole + Reinf.	TP32.155x31.243x0.6625	Reinf. 2 Tension Rupture	91.2%	Pass
83.55 - 82.92	Pole + Reinf.	TP32.259x32.155x0.6625	Reinf. 2 Tension Rupture	91.8%	Pass
82.92 - 82.67	Pole + Reinf.	TP32.3x32.259x0.95	Reinf. 2 Tension Rupture	67.7%	Pass
82.67 - 82.5	Pole + Reinf.	TP32.328x32.3x0.95	Reinf. 2 Tension Rupture	67.8%	Pass
82.5 - 82.25	Pole + Reinf.	TP32.369x32.328x0.6875	Reinf. 2 Tension Rupture	90.0%	Pass
82.25 - 77.25	Pole + Reinf.	TP33.189x32.369x0.675	Reinf. 2 Tension Rupture	93.9%	Pass
77.25 - 73.42	Pole + Reinf.	TP33.818x33.189x0.6625	Reinf. 2 Tension Rupture	96.9%	Pass
73.42 - 73.17	Pole + Reinf.	TP33.859x33.818x0.9375	Reinf. 9 Tension Rupture	73.6%	Pass
73.17 - 68.17	Pole + Reinf.	TP34.679x33.859x0.9125	Reinf. 9 Tension Rupture	76.6%	Pass
68.17 - 64.25	Pole + Reinf.	TP35.323x34.679x0.8875	Reinf. 9 Tension Rupture	79.0%	Pass
64.25 - 64	Pole + Reinf.	TP35.364x35.323x0.7375	Reinf. 3 Tension Rupture	90.8%	Pass
64 - 59	Pole + Reinf.	TP36.184x35.364x0.7375	Reinf. 3 Tension Rupture	94.0%	Pass
59 - 54	Pole + Reinf.	TP37.005x36.184x0.7125	Reinf. 3 Tension Rupture	97.1%	Pass
54 - 53.5	Pole + Reinf.	TP37.087x37.005x0.7125	Reinf. 3 Tension Rupture	97.4%	Pass
53.5 - 53.25	Pole + Reinf.	TP37.128x37.087x0.825	Reinf. 7 Tension Rupture	91.9%	Pass
53.25 - 49	Pole + Reinf.	TP38.702x37.128x0.8125	Reinf. 7 Tension Rupture	94.4%	Pass
49 - 42.66	Pole + Reinf.	TP38.242x37.201x0.725	Reinf. 4 Tension Rupture	97.8%	Pass
42.66 - 41.75	Pole + Reinf.	TP38.392x38.242x0.725	Reinf. 4 Tension Rupture	98.2%	Pass
41.75 - 41.5	Pole + Reinf.	TP38.433x38.392x0.7625	Reinf. 4 Tension Rupture	94.3%	Pass
41.5 - 36.5	Pole + Reinf.	TP39.254x38.433x0.75	Reinf. 4 Tension Rupture	96.7%	Pass
36.5 - 32.75	Pole + Reinf.	TP39.87x39.254x0.75	Reinf. 4 Tension Rupture	98.3%	Pass
32.75 - 32.5	Pole + Reinf.	TP39.911x39.87x1.0125	Reinf. 4 Tension Rupture	75.4%	Pass
32.5 - 29.83	Pole + Reinf.	TP40.35x39.911x1	Reinf. 4 Tension Rupture	76.4%	Pass
29.83 - 29.58	Pole + Reinf.	TP40.391x40.35x0.9	Reinf. 8 Tension Rupture	92.7%	Pass
29.58 - 28.25	Pole + Reinf.	TP40.609x40.391x0.8875	Reinf. 8 Tension Rupture	93.3%	Pass
28.25 - 28	Pole + Reinf.	TP40.65x40.609x0.95	Reinf. 8 Tension Rupture	85.2%	Pass
28 - 23	Pole + Reinf.	TP41.472x40.65x0.95	Reinf. 8 Tension Rupture	87.2%	Pass
23 - 19.25	Pole + Reinf.	TP42.088x41.472x0.9375	Reinf. 8 Tension Rupture	88.7%	Pass
19.25 - 19	Pole + Reinf.	TP42.129x42.088x0.825	Reinf. 5 Tension Rupture	91.9%	Pass
19 - 14	Pole + Reinf.	TP42.95x42.129x0.8	Reinf. 5 Tension Rupture	93.8%	Pass
14 - 9	Pole + Reinf.	TP43.772x42.95x0.8	Reinf. 5 Tension Rupture	95.6%	Pass
9 - 4	Pole + Reinf.	TP44.593x43.772x0.7875	Reinf. 5 Tension Rupture	97.3%	Pass
4 - 0	Pole + Reinf.	TP45.25x44.593x0.775	Reinf. 5 Tension Rupture	98.6%	Pass
				Summary	
			Pole	96.2%	Pass
			Reinforcement	98.6%	Pass
			Overall	98.6%	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	R6	R7	R8	R9	R10	R11	R12	R13	R14
168.33 - 163.33	570	n/a	570	11.69	n/a	11.69	14.9%														
163.33 - 158.33	646	n/a	646	12.19	n/a	12.19	27.6%														
158.33 - 153.33	728	n/a	728	12.69	n/a	12.69	43.8%														
153.33 - 148.33	817	n/a	817	13.18	n/a	13.18	58.3%														
148.33 - 143.33	913	n/a	913	13.68	n/a	13.68	71.4%														
143.33 - 138.33	1016	n/a	1016	14.17	n/a	14.17	83.2%														
138.33 - 134.16	1107	n/a	1107	14.59	n/a	14.59	96.2%														
134.16 - 129.16	1547	n/a	1547	19.76	n/a	19.76	77.5%														
129.16 - 125.75	1654	n/a	1654	20.20	n/a	20.20	84.4%														
125.75 - 125.5	1662	n/a	1662	20.24	n/a	20.24	84.9%														
125.5 - 120.5	1828	n/a	1828	20.89	n/a	20.89	94.1%														
120.5 - 120.25	1840	1610	3450	20.92	23.50	44.42	51.5%										87.3%				67.2%
120.25 - 115.25	2017	1706	3724	21.57	23.50	45.07	57.0%										95.8%				74.1%
115.25 - 113.83	2070	1734	3804	21.76	23.50	45.26	58.5%										98.1%				76.0%
113.83 - 113.48	2083	3142	5225	21.81	32.25	54.06	43.3%	68.2%									68.7%				
113.48 - 113.25	2092	3150	5242	21.84	32.25	54.09	43.5%	68.4%									69.0%				
113.25 - 108.25	2285	3330	5615	22.49	32.25	54.74	47.6%	74.2%									74.9%				
108.25 - 103.25	2490	3515	6005	23.14	32.25	55.39	51.6%	79.8%									80.5%				
103.25 - 98.25	2706	3705	6411	23.79	32.25	56.04	55.6%	85.1%									85.9%				
98.25 - 93.25	2935	3900	6835	24.45	32.25	56.70	59.5%	90.2%									91.1%				
93.25 - 89.11	3134	4065	7200	24.99	32.25	57.24	62.6%	94.3%									95.3%				
89.11 - 83.55	4045	4262	8307	31.58	37.50	69.08	55.5%		91.2%											78.7%	
83.55 - 82.92	4084	4288	8372	31.69	37.50	69.19	55.9%		91.8%											79.2%	
82.92 - 82.67	4105	7653	11757	31.73	55.50	87.23	40.5%		67.7%					67.6%						67.7%	
82.67 - 82.5	4115	7665	11781	31.75	55.50	87.25	40.6%		67.8%					67.7%						67.8%	
82.5 - 82.25	4130	4614	8743	31.79	43.00	74.79	55.4%		90.0%					82.0%							
82.25 - 77.25	4455	4840	9295	32.61	43.00	75.61	58.3%		93.9%					85.7%							
77.25 - 73.42	4715	5017	9732	33.23	43.00	76.23	60.5%		96.9%					88.5%							
73.42 - 73.17	4730	8571	13301	33.27	61.00	94.27	43.9%			70.7%				70.0%		73.6%					
73.17 - 68.17	5085	8975	14060	34.09	61.00	95.09	46.1%			73.6%				72.9%		76.6%					
68.17 - 64.25	5376	9298	14674	34.72	61.00	95.72	47.8%			75.9%				75.2%		79.0%					
64.25 - 64	5395	6949	12344	34.77	43.00	77.77	56.7%			90.8%				89.9%							
64 - 59	5782	7263	13045	35.58	43.00	78.58	59.1%			94.0%				93.1%							
59 - 54	6188	7584	13772	36.39	43.00	79.39	61.5%			97.1%				96.2%							
54 - 53.5	6230	7616	13846	36.47	43.00	79.47	61.8%			97.4%				96.5%							
53.5 - 53.25	6275	9557	15832	36.52	55.50	92.02	56.6%			85.2%				91.9%					77.9%		
53.25 - 49	6638	9907	16544	37.21	55.50	92.71	58.5%			87.5%				94.4%					80.1%		
49 - 42.66	8168	7264	15432	45.07	48.00	93.07	63.7%				97.8%			96.5%							
42.66 - 41.75	8265	7319	15584	45.25	48.00	93.25	64.0%				98.2%			97.0%							
41.75 - 41.5	8291	7984	16275	45.30	54.00	99.30	61.5%				94.3%		82.7%								
41.5 - 36.5	8840	8315	17154	46.27	54.00	100.27	63.4%				96.7%		84.9%								
36.5 - 32.75	9266	8567	17833	47.01	54.00	101.01	64.8%				98.3%		86.4%								
32.75 - 32.5	9300	14569	23869	47.06	70.25	117.31	48.3%				75.4%		72.7%					73.7%			
32.5 - 29.83	9612	14880	24492	47.58	70.25	117.83	49.1%				76.4%		73.7%					74.7%			
29.83 - 29.58	9642	12407	22049	47.63	58.25	105.88	54.8%						84.2%		92.7%			82.1%			
29.58 - 28.25	9801	12537	22338	47.89	58.25	106.14	55.2%						84.7%		93.3%			82.6%			
28.25 - 28	9821	14241	24063	47.94	72.00	119.94	51.2%					76.9%	73.2%		85.2%						
28 - 23	10435	14802	25237	48.91	72.00	120.91	52.7%					78.7%	74.9%		87.2%						
23 - 19.25	10911	15230	26141	49.65	72.00	121.65	53.9%					80.1%	76.3%		88.7%						
19.25 - 19	10942	12189	23131	49.70	54.00	103.70	60.7%					91.9%	87.4%								
19 - 14	11601	12653	24253	50.67	54.00	104.67	62.4%					93.8%	89.2%								
14 - 9	12285	13125	25410	51.65	54.00	105.65	64.0%					95.6%	91.0%								
9 - 4	12996	13606	26602	52.63	54.00	106.63	65.6%					97.3%	92.7%								
4 - 0	13584	13997	27581	53.41	54.00	107.41	66.8%					98.6%	94.0%								

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

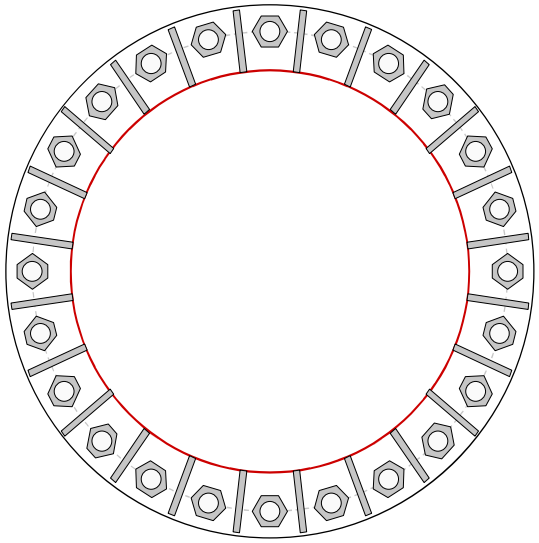
Monopole Base Plate Connection

Site Info	
BU #	842859
Site Name	BRISTOL CENTER
Order #	505606 Rev.4

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	1.3125

Applied Loads	
Moment (kip-ft)	4829.63
Axial Force (kips)	71.55
Shear Force (kips)	42.27

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

GROUP 1: (12) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 54" BC
GROUP 2: (12) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 54" BC

Base Plate Data

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

Stiffener Data

(24) 15"H x 7"W x 0.75"T, Notch: 0.75"
plate: Fy= 65 ksi ; weld: Fy= 80 ksi
horiz. weld: 0.375" groove, 45° dbl bevel, 0.375" fillet
vert. weld: 0.3125" fillet

Pole Data

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

Analysis Results

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

GROUP 1:		
Pu_c = 181.73	ϕPn_c = 243.75	**Stress Rating**
Vu = 1.76	ϕVn = 73.13	**71.1%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 2:		
Pu_c = 181.73	ϕPn_c = 243.75	**Stress Rating**
Vu = 1.76	ϕVn = 73.13	**71.1%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	29.56	(Roark's Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	**52.1%**	**Pass**

Stiffener Summary

Horizontal Weld:	**57.0%**	**Pass**
Vertical Weld:	**71.6%**	**Pass**
Plate Flexure+Shear:	**25.7%**	**Pass**
Plate Tension+Shear:	**55.6%**	**Pass**
Plate Compression:	**69.2%**	**Pass**

Pole Summary

Punching Shear:	**23.1%**	**Pass**

Drilled Pier Foundation

BU # :	842859
Site Name:	BRISTOL CENTER
Order Number:	505606 Rev.4

TIA-222 Revison:	H
Tower Type:	Monopole

Applied Loads	Comp.	Uplift
Moment (kip-ft)	4829.63	
Axial Force (kips)	71.55	
Shear Force (kips)	42.27	

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

Pier Design Data		
Depth	26	ft
Ext. Above Grade	1	ft
Pier Section 1		
From 1' above grade to 17.27' below grade		
Pier Diameter	6.5	ft
Rebar Quantity	16	
Rebar Size	11	
Rebar Cage Diameter	67	in
Tie Size	5	
Rebar Quantity	8	
Rebar Size	11	
Rebar Cage Diameter	64	in
Pier Section 2		
From 17.27' below grade to 26' below grade		
Pier Diameter	6.5	ft
Rebar Quantity	16	
Rebar Size	11	
Clear Cover to Ties	67	in
Tie Size	5	

Analysis Results		
Soil Lateral Capacity	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	8.19	-
Soil Safety Factor	2.01	-
Max Moment (kip-ft)	5137.13	-
Rating*	*63.1%*	-
Soil Vertical Capacity	*Compression*	*Uplift*
Skin Friction (kips)	530.14	-
End Bearing (kips)	412.78	-
Weight of Concrete (kips)	161.27	-
Total Capacity (kips)	942.92	-
Axial (kips)	232.82	-
Rating*	*23.5%*	-
Reinforced Concrete Capacity	*Compression*	*Uplift*
Critical Depth (ft from TOC)	8.01	-
Critical Moment (kip-ft)	5136.71	-
Critical Moment Capacity	5471.24	-
Rating*	*89.4%*	-

Soil Interaction Rating*	**63.1%**
Structural Foundation Rating*	**89.4%**

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

*Rating per TIA-222-H Section 15.5

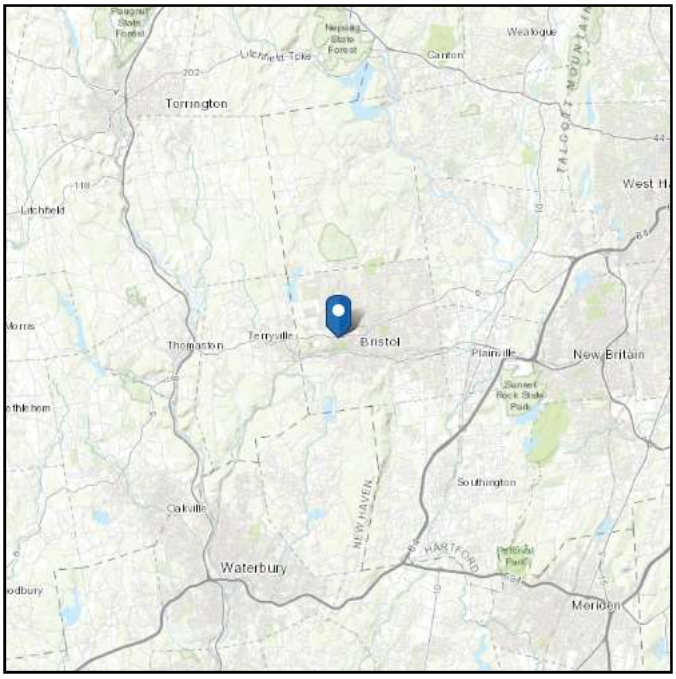
Soil Profile			
Groundwater Depth	n/a	ft	# of Layers: 8

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	4	4	105	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	4	5	1	110	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
3	5	6	1	110	150		30	0.000	0.000	1.35	1.35			Cohesionless
4	6	8	2	115	150		31	0.000	0.000	0.57	0.57			Cohesionless
5	8	12	4	120	150		33	0.000	0.000	1.19	1.19			Cohesionless
6	12	20	8	115	150		31	0.000	0.000	1.73	1.73			Cohesionless
7	20	25	5	125	150		35	0.00	0.00	2.22	2.22			Cohesionless
8	25	26	1	130	150		37	0.00	0.00	2.38	2.38	16.586		Cohesionless

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-10	**Elevation:**	564.8 ft (NAVD 88)
Risk Category:	II	**Latitude:**	41.679919
Soil Class:	D - Stiff Soil	**Longitude:**	-72.96255



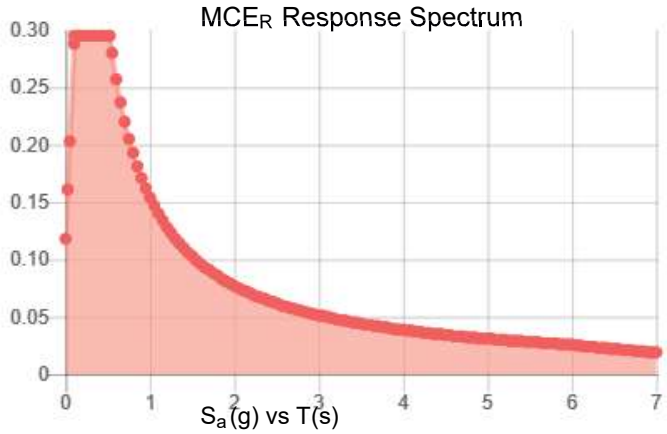
Seismic

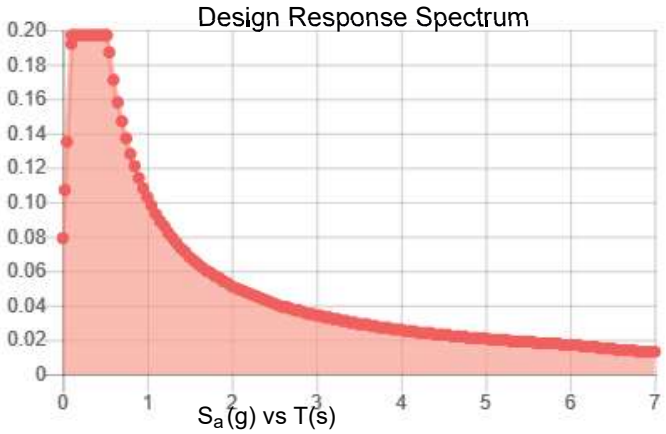
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.185	S_{DS} :	0.197
S_1 :	0.064	S_{D1} :	0.103
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.094
S_{MS} :	0.295	PGA_M :	0.151
S_{M1} :	0.154	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Wed Nov 06 2019

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:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Wed Nov 06 2019

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.

APPENDIX D

STRUCTURAL DESIGN DRAWING

MONOPOLE REINFORCEMENT DRAWINGS

SITE NAME: BRISTOL CENTER
BU NUMBER: 842859

SITE ADDRESS:
371 TERRYVILLE AVENUE
BRISTOL, CT 06010
HARTFORD COUNTY, USA

HOT WORK INCLUDED	
N/A	BASE GRINDING ONLY
N/A	BASE WELDING (AND GRINDING)
N/A	AERIAL GRINDING ONLY
N/A	AERIAL WELDING (AND GRINDING)

LOOK UP!

SAFETY CLIMB: 'LOOK UP'
THE INTEGRITY OF THE WIRE ROPE SAFETY CLIMB SYSTEM SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER REINFORCEMENTS AND EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF ANY WIRE ROPE SAFETY CLIMB 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, OR IMPACT TO THE ANCHORAGE POINTS IN ANY WAY. ANY COMPROMISED SAFETY CLIMB MUST BE REPORTED TO YOUR CROWN POC FOR RESOLUTION, INCLUDING EXISTING CONDITIONS.

CODE COMPLIANCE

THIS REINFORCEMENT DESIGN IS BASED ON THE TIA-222-H STRUCTURAL STANDARD USING AN ULTIMATE 3-SECOND GUST WIND SPEED OF 120 MPH FROM THE 2018 CONNECTICUT STATE BUILDING CODE, 50 MPH WITH 2.00 INCH ICE THICKNESS AND 60 MPH UNDER SERVICE LOADS, EXPOSURE CATEGORY C.

TOWER INFORMATION

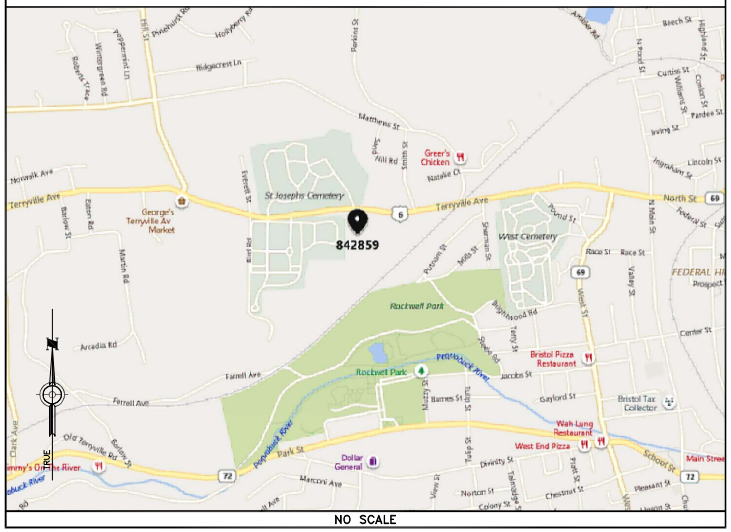
TOWER MANUFACTURER / CCI DOC #:	EEI / CCI DOC #5135435
TOWER HEIGHT / TYPE:	168.33 FT MONOPOLE TOWER
TOWER LOCATION: DATUM: NAD 1983	LATITUDE 41° 40' 47.71" LONGITUDE -72° 57' 45.18"
STRUCTURAL DESIGN DRAWING:	B&V / WO #1805727
STRUCTURAL ANALYSIS REPORT:	B&V / WO #1799068
ORDER ID:	505606 REV #4

PROJECT CONTACTS

CROWN PROJECT MANAGER
DAN VADNEY
(518) 373-3510
DAN.VADNEY@CROWNCASTLE.COM

BLACK & VEATCH CONTACTS
CROWNCASTLERFI@BV.COM
PATRICK DAVIS, P.E.
(913) 458-6984

LOCATION MAP



NO SCALE

DRIVING DIRECTIONS

FROM I-84 WEST TAKE EXIT 33 FOR CONNECTICUT 72 W TOWARD BRISTOL 0.3 MI. KEEP LEFT AT THE FORK AND MERGE ONTO CT-72 W 4.1 MI. TURN RIGHT ONTO CT-72 0.4 MI. TAKE THE 3RD RIGHT ONTO RIVERSIDE AVE 1.0 MI. TURN RIGHT ONTO N MAIN ST 0.7 MI. TURN LEFT ONTO NORTH ST DESTINATION WILL BE ON THE LEFT.

ATTENTION ALL CONTRACTORS

ANYTIME YOU ACCESS A CROWN SITE FOR ANY REASON YOU ARE TO CALL THE CROWN NOC UPON ARRIVAL AND DEPARTURE, DAILY AT 800-788-7011.

DRAWING INDEX

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

PREPARED FOR:

CROWN CASTLE

BLACK & VEATCH
6800 W 115TH ST, SUITE 2292
OVERLAND PARK, KS 66211

PROJECT NO:	400087
DRAWN BY:	TYW
CHECKED BY:	AR

REV	DATE	DESCRIPTION
0	11/20/19	ISSUED FOR CONSTRUCTION

STATE OF CONNECTICUT
PING JIANG
30767
LICENSED PROFESSIONAL ENGINEER

Nov 21, 2019

BU #842859
WO #1805727
BRISTOL CENTER
371 TERRYVILLE AVENUE
BRISTOL, CT 06010
HARTFORD COUNTY, USA

SHEET TITLE
TITLE PAGE

SHEET NUMBER
TM-1

MI CHECKLIST

REQUIRED	REPORT ITEM	APPLICABLE CROWN DOC #	BRIEF DESCRIPTION
	PRE-CONSTRUCTION		
X	MI CHECKLIST DRAWING	CED-SOW-10007	THIS CHECKLIST SERVES AS A GUIDELINE FOR THE REQUIRED CONSTRUCTION DOCUMENTS AND INSPECTIONS FOR THIS MODIFICATION.
X	EOR APPROVED SHOP DRAWINGS	CED-SOW-10007	ONCE THE PRE-MODIFICATION MAPPING IS COMPLETE AND PRIOR TO FABRICATION, THE CONTRACTOR SHALL PROVIDE DETAILED ASSEMBLY DRAWINGS AND/OR SHOP DRAWINGS. THESE ARE TO INCLUDE, BUT ARE NOT LIMITED TO, A VISUAL LAYOUT OF NEW REINFORCEMENT, EXISTING REINFORCEMENT CONFIGURATION, PORTHOLES, MOUNTS, STEP PEGS, SAFETY CLIMBS AND ANY OTHER MISCELLANEOUS ITEMS WHICH MAY AFFECT SUCCESSFUL INSTALLATION OF MODIFICATIONS ON THE TOWER. THESE DRAWINGS SHALL BE SUBMITTED TO THE EOR FOR APPROVAL. SHOP DRAWING SUBMISSION SHALL INCLUDE THE EOR RFI FORM DETAILING ANY CHANGES FROM ORIGINAL DESIGN.
X	FABRICATION INSPECTION	CED-SOW-10007	A LETTER FROM THE FABRICATOR, STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH INDUSTRY STANDARDS AND THE CONTRACT DOCUMENTS, SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	FABRICATOR CERTIFIED WELD INSPECTION	CED-SOW-10007 CED-STD-10069	A CWI SHALL INSPECT ALL WELDING PERFORMED ON STRUCTURAL MEMBERS DURING FABRICATION. A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	MATERIAL TEST REPORTS (MTR)	CED-SOW-10007	MATERIAL TEST REPORTS SHALL BE PROVIDED FOR MATERIAL USED AS REQUIRED PER SECTION 9.2.5 OF CED-SOW-10007. MTRS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	FABRICATOR NDE INSPECTION REPORT	CED-SOW-10066 CED-STD-10069	CRITICAL SHOP WELDS THAT REQUIRE TESTING ARE NOTED ON THESE CONTRACT DRAWINGS. A CERTIFIED NDT INSPECTOR SHALL PERFORM NON-DESTRUCTIVE EXAMINATION AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	NDE OF MONOPOLE BASE PLATE	ENG-SOW-10033	A NDE OF THE POLE TO BASE PLATE CONNECTION IS REQUIRED AND A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	PACKING SLIPS	CED-SOW-10007	PACKING/SHIPPING LIST FOR ALL MATERIAL USED DURING CONSTRUCTION OF THE MODIFICATION.
ADDITIONAL TESTING AND INSPECTIONS:			
N/A			
	CONSTRUCTION		
N/A	FOUNDATION INSPECTIONS	CED-SOW-10144	A VISUAL OBSERVATION OF THE EXCAVATION AND REBAR SHALL BE PERFORMED BEFORE PLACING THE CONCRETE. A VISUAL OBSERVATION OF THE REBAR SHALL BE PERFORMED BEFORE PLACING THE EPOXY. A SEALED WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	CONCRETE COMP. STRENGTH AND SLUMP TEST	CED-SOW-10144	THE CONCRETE MIX DESIGN, SLUMP TEST, AND COMPRESSIVE STRENGTH TESTS SHALL BE PROVIDED AS PART OF THE FOUNDATION REPORT.
N/A	EARTHWORK	CED-SOW-10144	FOUNDATION SUB-GRADES SHALL BE INSPECTED AND APPROVED BY AN APPROVED FOUNDATION INSPECTOR AND RESULTS INCLUDED AS PART OF THE FOUNDATION REPORT.
N/A	MICROPILE/ROCK ANCHOR	CED-SOW-10144	MICROPILES/ROCK ANCHORS SHALL BE INSPECTED BY THE FOUNDATION INSPECTION VENDOR AND SHALL BE INCLUDED AS PART OF THE FOUNDATION INSPECTION REPORT. ADDITIONAL TESTING AND/OR INSPECTION REQUIREMENTS ARE NOTED IN THESE CONTRACT DOCUMENTS.
N/A	POST-INSTALLED ANCHOR ROD VERIFICATION	CED-SOW-10007 CED-FRM-10358	POST INSTALLED ANCHOR ROD VERIFICATION SHALL BE PERFORMED IN ACCORDANCE WITH CROWN REQUIREMENTS AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	BASE PLATE GROUT VERIFICATION	ENG-STD-10323	THE GENERAL CONTRACTOR SHALL PROVIDE DOCUMENTATION TO THE MI INSPECTOR THAT CERTIFIES THAT THE GROUT WAS REMOVED AND/OR INSTALLED IN ACCORDANCE WITH CROWN REQUIREMENTS FOR INCLUSION IN THE MI REPORT.
N/A	FIELD CERTIFIED WELD INSPECTION	CED-SOW-10066 CED-STD-10069	A CROWN APPROVED CERTIFIED WELD INSPECTOR SHALL INSPECT AND TEST FIELD WELDS, FOLLOWING ALL PROCEDURES SPECIFIED IN CROWN STANDARD DOCUMENTS APPLICABLE TO WELD INSPECTIONS. A REPORT SHALL BE PROVIDED. NDE OF FIELD WELDS SHALL BE PERFORMED AS REQUIRED BY CROWN STANDARDS AND CONTRACT DOCUMENTS. THE NDE REPORT SHALL BE INCLUDED IN THE CWI REPORT.
X	ON-SITE COLD GALVANIZING VERIFICATION	ENG-STD-10149 CED-FRM-10358	THE GENERAL CONTRACTOR SHALL PROVIDE WRITTEN AND PHOTOGRAPHIC DOCUMENTATION TO THE MI INSPECTOR VERIFYING THAT ANY ON-SITE COLD GALVANIZING WAS APPLIED PER MANUFACTURER SPECIFICATIONS AND APPLICABLE STANDARDS.
N/A	TENSION TWIST AND PLUMB	CED-PRC-10182 CED-STD-10261	THE GENERAL CONTRACTOR SHALL PROVIDE A REPORT IN ACCORDANCE WITH APPLICABLE STANDARDS DOCUMENTING TENSION TWIST AND PLUMB.
X	GC AS-BUILT DRAWINGS	CED-SOW-10007	THE GENERAL CONTRACTOR SHALL SUBMIT A LEGIBLE COPY OF THE ORIGINAL DESIGN DRAWINGS EITHER STATING "INSTALLED AS DESIGNED" OR NOTING ANY CHANGES THAT WERE REQUIRED AND APPROVED BY THE ENGINEER OF RECORD. EOR/RFI FORMS APPROVING ALL CHANGES SHALL BE SUBMITTED.
ADDITIONAL TESTING AND INSPECTIONS:			
N/A			
	POST-CONSTRUCTION		
X	CONSTRUCTION COMPLIANCE LETTER	CED-SOW-10007 CED-FRM-10358	A LETTER FROM THE GENERAL CONTRACTOR STATING THAT THE WORKMANSHIP WAS PERFORMED IN ACCORDANCE WITH INDUSTRY STANDARDS AND THESE CONTRACT DRAWINGS, INCLUDING LISTING ADDITIONAL PARTIES TO THE MODIFICATION PROCESS.
N/A	POST-INSTALLED ANCHOR ROD PULL TESTS	CED-PRC-10119	POST-INSTALLED ANCHOR RODS SHALL BE TESTED BY A CROWN APPROVED PULL TEST INSPECTOR AND A REPORT SHALL BE PROVIDED INDICATING TESTING RESULTS.
X	PHOTOGRAPHS	CED-SOW-10007	PHOTOGRAPHS SHALL BE SUBMITTED TO THE MI. PHOTOS SHALL DOCUMENT ALL PHASES OF THE CONSTRUCTION. THE PHOTOS SHALL BE ORGANIZED IN A MANNER THAT EASILY IDENTIFIES THE EXACT LOCATION OF THE PHOTO.
N/A	BOLT HOLE INSTALLATION VERIFICATION REPORT	CED-SOW-10007	THE MI INSPECTOR SHALL VERIFY THE INSTALLATION AND TIGHTNESS 10% OF ALL NON PRE-TENSIONED BOLTS INSTALLED AS PART OF THE MODIFICATION. THE MI INSPECTOR SHALL LOOSEN THE NUT AND VERIFY THE BOLT HOLE SIZE AND CONDITION. THE MI REPORT SHALL CONTAIN THE COMPLETED BOLT INSTALLATION VERIFICATION REPORT, INCLUDING THE SUPPORTING PHOTOGRAPHS.
X	PUNCHLIST DEVELOPMENT AND CORRECTION DOCUMENTATION	CED-PRC-10283 CED-FRM-10285	FINAL PUNCHLIST INDICATING ALL NONCONFORMANCE(S) IDENTIFIED AND THE FINAL RESOLUTION AND APPROVAL.
X	MI INSPECTOR REDLINE OR RECORD DRAWING(S)	CED-SOW-10007	THE MI INSPECTOR SHALL OBSERVE AND REPORT ANY DISCREPANCIES BETWEEN THE CONTRACTOR'S REDLINE DRAWING AND THE ACTUAL COMPLETED INSTALLATION.
ADDITIONAL TESTING AND INSPECTIONS:			
N/A			

THE MI CHECKLIST SHALL BE REVIEWED PRIOR TO THE START OF CONSTRUCTION. ALL PARTIES TO THE MODIFICATION SHALL UNDERSTAND CROWN REQUIREMENTS AND INSPECTIONS/DOCUMENTATION THAT ARE APPLICABLE TO THE SOW THEY ARE PERFORMING. ERRORS ON THE CHECKLIST DO NOT ABSOLVE THE GC OR MI INSPECTOR FROM PERFORMING/COLLECTING DOCUMENTATION.

MODIFICATION INSPECTION NOTES

GENERAL

1. THE MI IS AN ON-SITE VISUAL AND HANDS-ON INSPECTION OF TOWER MODIFICATIONS INCLUDING A REVIEW OF CONSTRUCTION REPORTS AND ADDITIONAL PERTINENT DOCUMENTATION PROVIDED BY THE GENERAL CONTRACTOR (GC), AS WELL AS ANY INSPECTION DOCUMENTS PROVIDED BY 3RD PARTY INSPECTORS. THE MI IS TO ENSURE THE INSTALLATION WAS CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, NAMELY THE MODIFICATION DRAWINGS; IN ACCORDANCE WITH APPLICABLE CROWN STANDARDS; AND AS DESIGNED BY THE ENGINEER OF RECORD (EOR).
2. NO DOCUMENT, CODE OR POLICY CAN ANTICIPATE EVERY SITUATION THAT MAY ARISE. ACCORDINGLY, THIS CHECKLIST IS INTENDED TO SERVE AS A SOURCE OF GUIDING PRINCIPLES IN ESTABLISHING GUIDELINES FOR MODIFICATION INSPECTION.
3. THE MI IS TO CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A REVIEW OF THE MODIFICATION DESIGN ITSELF, AND THE MI INSPECTOR DOES NOT TAKE OWNERSHIP OF THE MODIFICATION DESIGN. OWNERSHIP OF THE STRUCTURAL MODIFICATION DESIGN EFFECTIVENESS AND INTEGRITY RESIDES WITH THE EOR AT ALL TIMES. THE MI INSPECTOR SHALL INSPECT AND NOTE CONFORMANCE/NONCONFORMANCE AND PROVIDE TO THE CROWN POINT OF CONTACT (CROWN POC) FOR EVALUATION.
4. ALL MI'S SHALL BE CONDUCTED BY A CROWN APPROVED MI INSPECTOR, WORKING FOR A CROWN APPROVED MI VENDOR. SEE CROWN CED-LST-10173, "APPROVED MI VENDORS".
5. TO ENSURE THAT THE REQUIREMENTS OF THE MI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE MI INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A PURCHASE ORDER (PO) IS RECEIVED. IT IS EXPECTED THAT EACH PARTY WILL BE PROACTIVE IN REACHING OUT TO THE OTHER PARTY. IF CONTACT INFORMATION IS NOT KNOWN THE GC AND/OR INSPECTOR SHALL CONTACT THE CROWN POINT OF CONTACT (CROWN POC).
6. REFER TO CROWN CED-SOW-10007, "MODIFICATION INSPECTION SOW", FOR FURTHER DETAILS AND REQUIREMENTS.

SERVICE LEVEL COMMITMENT

1. THE FOLLOWING RECOMMENDATIONS AND SUGGESTIONS ARE OFFERED TO ENHANCE THE EFFICIENCY AND EFFECTIVENESS OF DELIVERING AN MI REPORT:
   - THE GC SHALL PROVIDE A MINIMUM OF 5 BUSINESS DAYS NOTICE, PREFERABLY 10, TO THE MI INSPECTOR AS TO WHEN THE SITE WILL BE READY FOR THE MI TO BE CONDUCTED.
   - THE GC AND MI INSPECTOR COORDINATE CLOSELY THROUGHOUT THE ENTIRE PROJECT.
   - WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE SIMULTANEOUSLY FOR ANY GUY WIRE TENSIONING OR RE-TENSIONING OPERATIONS.
   - WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE DURING THE MI TO HAVE ANY MINOR DEFICIENCIES CORRECTED DURING THE INITIAL MI. THEREFORE, THE GC MAY CHOOSE TO COORDINATE THE MI CAREFULLY TO ENSURE ALL CONSTRUCTION FACILITIES ARE AT THEIR DISPOSAL WHEN THE MI INSPECTOR IS ON SITE.

REQUIRED PHOTOS

1. BETWEEN THE GC AND THE MI INSPECTOR THE FOLLOWING PHOTOGRAPHS, AT A MINIMUM, ARE TO BE TAKEN AND INCLUDED IN THE MI REPORT:
   - PRE-CONSTRUCTION GENERAL SITE CONDITION
   - PHOTOGRAPHS DURING THE REINFORCEMENT MODIFICATION CONSTRUCTION/ERECTION AND INSPECTION
     - RAW MATERIALS
     - PHOTOS OF ALL CRITICAL DETAILS
     - FOUNDATION MODIFICATIONS
     - WELD PREPARATION
     - BOLT INSTALLATION
     - FINAL INSTALLED CONDITION
     - SURFACE COATING REPAIR
   - POST CONSTRUCTION PHOTOGRAPHS
     - FINAL INFIELD CONDITION
2. PHOTOS OF ELEVATED MODIFICATIONS TAKEN ONLY FROM THE GROUND SHALL BE CONSIDERED INADEQUATE.
3. THIS IS NOT A COMPLETE LIST OF REQUIRED PHOTOS, FOR COMPLETE LIST OF PHOTO SEE DOCUMENT # CED-SOW-10007.

PREPARED FOR:

CROWN CASTLE

BLACK & VEATCH

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PROJECT NO:	400087
DRAWN BY:	TYW
CHECKED BY:	AR

REV	DATE	DESCRIPTION
0	11/20/19	ISSUED FOR CONSTRUCTION

STATE OF CONNECTICUT
PING JIANG
30767
LICENSED PROFESSIONAL ENGINEER

Nov 21, 2019

BU #842859
WO #1805727
BRISTOL CENTER
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BRISTOL, CT 06010
HARTFORD COUNTY, USA

SHEET TITLE

MODIFICATION INSPECTION CHECKLIST

SHEET NUMBER

TM-2

GENERAL NOTES

1. The General Contractor (GC) shall reference CED–STD–10159, "Tower Modification Construction Specifications", as a continuation of the following General Notes. The GC shall keep a copy of this document with the Structural Design Drawings (SDD) at all times, and shall ensure that all Contractor Personnel are aware of the information enclosed within the General Notes and CED–STD–10159.

2. The Contract Documents are the property of Crown Castle (Crown). They are provided to the GC and its Lower Tier Contractors and material suppliers for the limited purpose of use in completing the Work for this Site, and shall be kept in strict confidence and not disclosed to any third parties. The Contract Documents shall not be used for any other purpose whatsoever without the prior written consent of Crown.

3. Detail drawings, including notes and tables, shall govern over general notes and typical details. Contact the Crown Point of Contact (POC) and Engineer of Record (EOR) for clarification as needed.

4. Do not scale drawings.

5. Any Work performed without a prefabrication mapping is done at the risk of the GC and/or fabricator. All dimensions of existing structural elements are assumed based on the available documentation and are preliminary until field–verified by the GC, unless noted otherwise (UNO). Where discrepancies are found, GC shall contact the Crown POC and EOR through RFI.

6. For this analysis and modification, the tower has been assumed to be in good condition without any structural defects, UNO. If the GC discovers any indication of an existing structural defect, contact the Crown POC and EOR immediately.

7. 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 GC 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 standard CED–STD–10253, "Rigging Program", including the required involvement of a qualified engineer for class IV construction to certify the supporting structure(s) in accordance with the ANSI/TIA–322 (latest edition).

8. The structural integrity of the modification design extends to the complete condition only. The GC must be cognizant that the removal of any structural component of an existing tower has the potential to cause the partial or complete collapse of the structure. All necessary precautions must be taken to ensure structural integrity, including, but not limited to, engineering assessment of construction stresses with installation maximum wind speed and/or temporary bracing and shoring.

9. Aerial and underground utilities and facilities may or may not be shown on the drawings. The GC shall take every precaution to preserve and protect these items, which may include aerial or underground power lines, telephone lines, water lines, sewer lines, cable television facilities, pipelines, structures and other public and private improvements within or adjacent to the Work area. The responsibility for determining the actual on–site location of these items shall rest exclusively with the GC.

10. All manufacturer's hardware assembly instructions shall be followed, UNO. Conflicting notes shall be brought to the attention of the EOR and the Crown POC.

11. The GC shall fabricate all required items per the materials specified below, UNO on the detail drawing sheets. If the GC finds for any component that the materials have not been clearly specified, the GC shall submit an RFI to the EOR to confirm the required material.

    All structural elements shall be new and shall conform to the following requirements, UNO:

    Monopoles:
    - Structural shapes and plates: ASTM A572 Grade 65 (FY = 65 KSI)
    - Welding electrodes, SMAW: E80XX
    - Welding electrodes, FCAW: E8XT–XX

    Self–Support and Guyed Towers:
    - Structural shapes and plates: ASTM A572 Grade 50 (FY = 50 KSI)
    - Welding electrodes, SMAW: E70XX
    - Welding electrodes, FCAW: E7XT–XX

    All tower types:
    - Steel angle: ASTM A572 Grade 50 (FY = 50 KSI)
    - Solid rod: ASTM A36 (FY = 36 KSI)
    - Pipe/tube (round): ASTM A500 Grade C (FY = 46 KSI)
    - Pipe/tube (square): ASTM A500 Grade C (FY = 50 KSI)
    - Bolts: ASTM F3125 Grade A325 Type 1
    - U–bolts: ASTM A307 Grade A, or SAE J429 Grade 2
    - Nuts: ASTM A563 Grade DH
    - Washers: ASTM F436 Type 1
    - Guy Wires: ASTM A475 Grade EHS
    - Bridge Strand: ASTM A586 Grade 1

12. After fabrication, hot–dip galvanize all steel items, UNO. Galvanize per ASTM A123, ASTM A153/A153M, or ASTM A653 G90, as applicable. ASTM A490 bolts shall not be hot–dip galvanized, but shall instead be coated with Magni 565 or EOR approved equivalent, per ASTM F2833.

13. Contractor Personnel shall not drill holes in any new or existing structural members, other than those drilled holes shown on structural drawings, without the approval of the EOR.

14. For a list of Crown–approved cold galvanizing compounds, refer to ENG–STD–10149, "Tower Protective Coatings Guidelines".

15. All exposed structural steel as the result of this scope of Work including welds (after final inspection of the weld by the CWI), field drilled holes, and shaft interiors (where accessible), shall be cleaned and two (2) coats cold galvanizing shall be applied by brush in accordance with ENG–STD–10149, "Tower Protective Coatings Guidelines". Photo documentation is required to be submitted to the MI Inspector.

16. If removal of existing modifications is required per the modification scope, the GC shall clean and cold galvanize any existing empty bolt holes, UNO. If additional unexpected, oversized, or slotted holes are found, the GC shall contact the EOR and Crown POC for guidance prior to proceeding with the modifications.

17. All Work involving base plate grout scope items or resulting in disturbance of base plate grout shall reference ENG–STD–10323, "Base Plate Grout", and shall follow any Base Plate Grout Removal Notes contained herein.

18. All tower grounding affected by the Work shall be repaired or replaced in accordance with OPS–STD–10090, "Tower Grounding", and OPS–BUL–10133, "Grounding Repair Recommendation".

19. If scope of modification requires removal or covering of tower ID tag, the tag must be replaced.

20. Any hardware removed from the existing tower shall be replaced with new hardware of equal size and quality, UNO. No existing fasteners shall be reused.

21. All joints using ASTM A325 or A490 bolts, U–bolts, V–bolts, and threaded rods shall be snug tightened, UNO.

22. A nut locking device shall be installed on all proposed and/or replaced snug tightened ASTM A325 or A490 bolts, U–bolts, V–bolts, and threaded rods.

23. All joints are bearing type connections UNO. If no bolt length is given in the Bill of Materials, the connection may include threads in the shear planes, and the GC is responsible for sizing the length of the bolt.

24. Blind bolts shall be installed per the installation specifications on the corresponding Approved Fastener sheets contained in CED–CAT–10300, "Monopole Standard Drawings and Approved Reinforcement Components".

25. If ASTM A325 or A490 bolts, and/or threaded rods are specified to be pre–tensioned, these shall be installed and tightened to the pretensioned condition according to the requirements of the RCSC Specification for Structural Joints Using ASTM High Strength Bolts.

26. All proposed and/or replaced bolts shall be of sufficient length such that the end of the bolt be at least flush with the face of the nut. It is not permitted for the bolt end to be below the face of the nut after tightening is completed.

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NOTES

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TM-3

CONCRETE NOTES

1. All concrete work shall be in accordance with ACI 301 specifications for structural concrete (latest edition). All concrete shall have a minimum 28 day compressive strength of 4500 PSI.
2. Prepare and submit batch tickets for each type and strength of concrete.
3. For field mixing, prepare and submit mix designs for pre-approval for each type and strength of concrete in accordance with ACI 211, "Proportioning Concrete Mixtures", and ACI 301, "Specifications for Structural Concrete".
4. All concrete shall be normal weight concrete.
5. Slump tests shall be made in accordance with ASTM C143. The allowable concrete slump shall be 4 inches (+/- 1") unless admixtures are used. Admixtures shall be in accordance with ASTM C494 standard types A, B, C, D, or E.
6. The engineer shall pre-approve superplasticizer use.
7. Cement shall conform to ASTM C150 Type II. Fine aggregate shall conform to ASTM C33. Coarse aggregate shall be gravel or crushed stone conforming to C33. Maximum aggregate size shall be 3/4".
8. Water shall be clean and free from oils, acids, alkalies, and organic materials. No additional water shall be added to the concrete at the job site.
9. Do not use chloride-containing admixtures.
10. Air entraining admixtures shall conform to ASTM C260.
11. Hot weather concrete placement shall comply with ACI 305R. Cold weather concrete placement shall comply with ACI 306.1.
12. Concrete shall be placed within 24 hours of excavation inspections. The contractor shall be responsible for protecting exposed excavations prior to concrete placement.
13. Place concrete by using a chute or hopper device such that concrete shall not free fall from a height greater than 5 feet. Deposit concrete within the center of the steel reinforcing cage to prevent segregation.
14. Consolidate placed concrete with mechanical vibrating equipment in accordance with ACI 309R. Do not use vibrators to transport concrete.
15. Concrete shall be cured in accordance with ACI 301. When applicable, curing compounds shall be water clear, styrene acrylate type with a minimum solids content of 30%. Application shall be in conformance with manufacturer's instructions.
16. All concrete testing shall be in accordance with ACI 318. A minimum of two 6"x12" concrete cylinders per anchor block (Guyed towers only) and a minimum six 6"x12" concrete cylinders per batch are required.
17. A chamfer of 3/4" shall be provided at all exposed edges of concrete, unless noted otherwise, in accordance with ACI 301.

CONCRETE REINFORCING STEEL NOTES

1. All reinforcing steel shall be deformed billet steel conforming to ASTM A615, Grade 60 unless noted otherwise.
2. Reinforcing steel shall be detailed, fabricated, bent, and placed in accordance with the CRSI Manual of Standard Practice and ACI 315 (latest edition).
3. Welding of reinforcing and embedments is prohibited.
4. All reinforcing steel shall have a minimum three (3) inches concrete coverage unless noted otherwise.
5. Spacing devices shall be used as required to maintain the side and bottom clearance between the steel reinforcement and excavation.

BASE PLATE GROUT REMOVAL NOTES

1. When base plate grout removal is specified in the tower modification table, the contractor shall take the following steps:
   - A. The GC shall begin this procedure as early as possible during the modification process so that if issues arise, they can be resolved within the anticipated modification timeline.
   - B. If any deteriorated grout exists, begin at this location. Remove deteriorated grout and the grout around the nearest one or two anchor rods to fully expose the leveling nut. If the GC discovers that a half nut or jam nut was used as a leveling nut, or if no leveling nut is present, immediately contact CED and the Crown POC (typically the Mod PM) for a resolution. Do not remove any additional grout until directed to by Crown.
   - C. Otherwise, check the leveling nut for tightness in accordance with Section 7.2.3 of ENG-STD-10323 "Base Plate Grout". If severe corrosion / material loss is found or corrosion exists to the point where the leveling nut is unable to be tightened when obviously loose, immediately notify the Crown POC (typically the Mod PM). Reference ENG-BUL-10114 "Rust Classification" for examples of material loss. Do not remove any additional grout until directed to by Crown.
   - D. In the event that severe corrosion is not encountered, and being sure to check each anchor rod for corrosion per ENG-BUL-10114 "Rust Classification", remove all existing base plate grout while checking each leveling nut for tightness in accordance with Section 1.3.2.3 of ENG-STD-10323 "Base Plate Grout".
   - E. Consistent with Section 7.2.4 of ENG-STD-10323 "Base Plate Grout", hand tool clean to SSPC-SP2 and solvent clean to SSPC-SP1, all exposed structural steel elements, including anchor rods, leveling nuts, and underside of base plate to the greatest extent possible. Ensure that all existing grout is removed to allow cold galvanizing to adhere to the steel.
   - F. Apply by brush two coats of a Crown-approved cold-galvanizing compound to all exposed structural steel elements beneath the base plate, and allow curing in accordance with the manufacturer's recommendation. A list of Crown-approved direct application cold-galvanizing compounds can be found in ENG-STD-10149 "Tower Protective Coatings Guidelines" Section 2.1.1.
   - G. The GC shall provide photos of each anchor rod with leveling nut after cleaning but before cold-galvanization, and also again after cold-galvanization, for inclusion in the MI report.

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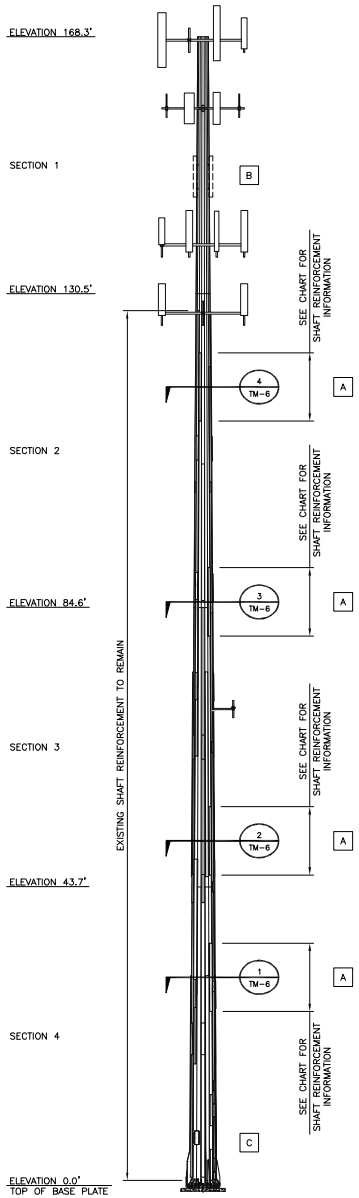


TOWER ELEVATION
NO SCALE

POLE MODIFICATION SCHEDULE			
CALLOUT	ELEVATION (FT)	MODIFICATION	REFERENCE SHEET
A	25.5 – 35.5 45.5 – 55.5 80.5 – 90.5 112.0 – 122.0	INSTALL NEW FLAT PLATE REINFORCEMENT	TM-6
B	148.0	REMOVE ALL MOUNTS, FFEDLINES, AND ASSOCIATED EQUIPMENT	–
C	0.0	CLIMBING PATH MAY BECOME OBSTRUCTED AFTER INSTALLATION OF THE PROPOSED MODIFICATIONS. IF NOT ALREADY EXISTING ON THIS TOWER, CONTRACTOR TO PROVIDE NEW SIGNAGE PER CROWN CASTLE REQUIREMENTS.	–
FOR PARTS NOT DETAILED WITHIN THE DRAWING AND STARTING WITH "CCI–", SEE THE FOLLOWING CATALOG FOR DETAILS: CED–CAT–10300, MONOPOLE STANDARD DRAWINGS AND APPROVED REINFORCEMENT COMPONENTS.			
PRIOR TO FABRICATION AND INSTALLATION, CONTRACTOR SHALL FIELD VERIFY ALL LENGTH AND QUANTITIES GIVEN. LENGTHS AND QUANTITIES GIVEN ARE FOR QUOTING PURPOSES ONLY, AND SHALL NOT BE USED FOR FABRICATION.			

PRIOR TO FABRICATION AND INSTALLATION, CONTRACTOR SHALL FIELD VERIFY ALL LENGTHS AND QUANTITIES GIVEN. LENGTH AND QUANTITIES PROVIDED ARE FOR QUOTING PURPOSES ONLY AND SHALL NOT BE USED FOR FABRICATION.

CCI FLAT PLATE (65 KSI) REINFORCEMENT SCHEDULE										
BOTTOM ELEVATION	TOP ELEVATION	PART NUMBER	FLATS / DEGREES (°)	TERMINATION BOLTS (BOTTOM)	TERMINATION BOLTS (TOP)	MAX INTERMEDIATE BOLT SPACING	BOLT QUANTITY PER PLATE	STEEL WEIGHT PER PLATE (BLACK)	TOTAL BOLT QUANTITY	TOTAL STEEL WEIGHT (BLACK)
25'–6"	35'–6"	CCI–SFP–06512510	5, 12	11	11	1'–7"	24	276.3	48	552.6
45'–6"	55'–6"	CCI–SFP–05012510	5, 12	8	8	1'–11"	19	213.0	38	426.0
80'–6"	90'–6"	CCI–SFP–05012510	5, 12	8	8	1'–11"	19	213.0	38	426.0
112'–0"	122'–0"	CCI–SFP–04012510	9, 18	6	6	2'–3"	15	170.4	30	340.8
								TOTAL	154	1745.4

NOTES FOR CROWN REINFORCING (65 KSI) MATERIAL

1. APPROVED FASTENERS MAY BE USED ON THIS PROJECT AS INDICATED IN THE FOLLOWING TABLE:

NEXGEN2	APPROVED	SPECIALTY FASTENERS	N/A

ORDERING INFORMATION AND INSTALLATION DETAILS FOR APPROVED FASTENERS CAN BE FOUND IN CED–CAT–10300.

2. ALL FLAT PLATE REINFORCEMENT IS TO BE INSTALLED CENTERED ON ITS DESIGNATED FLAT OR AZIMUTH, UNO, WITH A TOLERANCE FROM CENTER OF THE FLAT OR AZIMUTH AS FOLLOWS:

ALLOWABLE FLAT PLATE CENTERING TOLERANCE	3/8"

GC SHALL REDLINE ALL DEVIATIONS FROM CENTER, INCLUDING THOSE WITHIN TOLERANCE.

3. GC SHALL REPLACE ANY STEP BOLTS AND STEP BOLT CLIPS THAT INTERFERE WITH THE INSTALLATION OF FLAT PLATE. REFERENCE CED–CAT–10300 FOR APPROVED OPTIONS. CCI–SB–0100 IS THE DEFAULT OPTION; OTHER OPTIONS MAY BE REQUIRED FOR FIT–UP.

4. FOR PLATES STARTING AT 6', THE BOTTOM OF THE FLAT PLATE SHALL BEGIN AT 6" ± 1". FOR SINGLE PLATES OR MULTIPLE PLATES SPLICED TOGETHER, THE BOTTOM OF THE FLAT PLATE RUN SHALL BEGIN AT THE PROPOSED ELEVATION 3". FOR MULTIPLE PLATES SPLICED TOGETHER, THE TOP OF THE FLAT PLATE IS TO BE PLACED SUCH THAT THERE IS NO MORE THAN 3" DIFFERENCE BETWEEN THE ACTUAL OVERALL LENGTH OF THE SPAN AND THE PROPOSED OVERALL LENGTH OF THE SPAN, FROM THE BOTTOM OF THE BOTTOM PLATE TO THE TOP OF THE TOP PLATE.

5. SHIMS FOR MONOPOLE REINFORCEMENT MEMBER SHALL BE REQUIRED WHERE GAPS BETWEEN THE POLE SHAFT AND REINFORCING MEMBER EXIST AT FASTENER LOCATIONS. FOR INTERMEDIATE CONNECTIONS, THE MINIMUM SHIM LENGTH AND WIDTH SHALL BE THE WIDTH OF THE REINFORCING MEMBER. FOR TERMINATION CONNECTIONS, A CONTINUOUS SHIM PLATE (PREFERRED) OR EQUIVALENT INDIVIDUAL SHIM PLATES THE WIDTH OF THE REINFORCING MEMBER MAY BE USED. SHIM THICKNESS SHALL BE NO LESS THAN 1/16". STACKING OF SHIMS IS PERMITTED. FINGER SHIMS AND HORSESHOE SHIMS ARE PERMITTED. SINGLE AND STACKED SHIMS IN BOLT TERMINATION REGIONS SHALL BE NO GREATER THAN A TOTAL OF 1/4" WITHOUT EOR APPROVAL. SINGLE AND STACKED SHIMS AT INTERMEDIATE CONNECTIONS SHALL BE NO GREATER THAN A TOTAL OF 5/8" WITHOUT EOR APPROVAL.

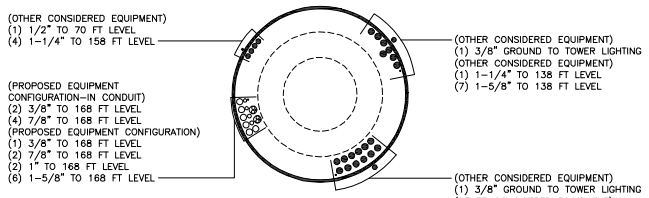
6. SHIM MATERIAL SHALL BE STEEL GRADE A36 OR GREATER IF WELDED, UNO, AND SHALL REQUIRE MTR; IF SHIMS ARE NOT WELDED, THERE IS NO MINIMUM REQUIRED STEEL GRADE.

7. IF UNEXPECTED HOLES ARE FOUND IN A LOCATION WHERE FLAT PLATE IS PROPOSED TO BE INSTALLED, THE GC SHALL NOT PLACE NEW BOLT HOLES WITHIN A CENTER–TO–CENTER DISTANCE OF 3 TIMES THE DIAMETER OF THE LARGER OF THE TWO HOLES, WITHOUT EOR APPROVAL. EXISTING HOLES MAY INCLUDE BUT ARE NOT LIMITED TO EMPTY BOLT HOLES AND JACKING NUTS WITH CENTER HOLES.

BOLT COUNT BY LENGTH	
LENGTH	QUANTITY
SHORT	154
MEDIUM	0
LONG	0
TOTAL	154

MANUFACTURER POLE SPECIFICATIONS	
POLE SHAFT TYPE	18 SIDED POLYGON
TAPER	0.00 IN/FT
SHAFT STEEL	ASTM A572 GRADE 65
BASE PLATE STEEL	ASTM A572 GRADE 50 (50 KSI)
ANCHOR RODS	2 1/4"ø #18J ASTM A615 GRADE 75

MANUFACTURER SHAFT SECTION DATA					
SHAFT SECTION	SHAFT LENGTH (FT)	THICKNESS (IN)	LAP SPLICE (IN)	DIAMETER ACROSS FLAT (IN)	
				@ TOP	@ BOTTOM
1	37.83	0.1875	43.9	19.00	25.31
2	49.61	0.2500	54.7	24.33	32.49
3	45.45	0.3125	64.1	31.24	38.70
4	49.00	0.3750		37.20	45.25
NOTE: DIMENSIONS SHOWN DO NOT INCLUDE GALVANIZING TOLERANCES					



COAX FEEDLINE PLAN
NO SCALE

PREPARED FOR:

CROWN CASTLE

BLACK & VEATCH

6800 W 115TH ST, SUITE 2292
OVERLAND PARK, KS 66211

PROJECT NO:	400087
DRAWN BY:	TYW
CHECKED BY:	AR

REV	DATE	DESCRIPTION
0	11/20/19	ISSUED FOR CONSTRUCTION

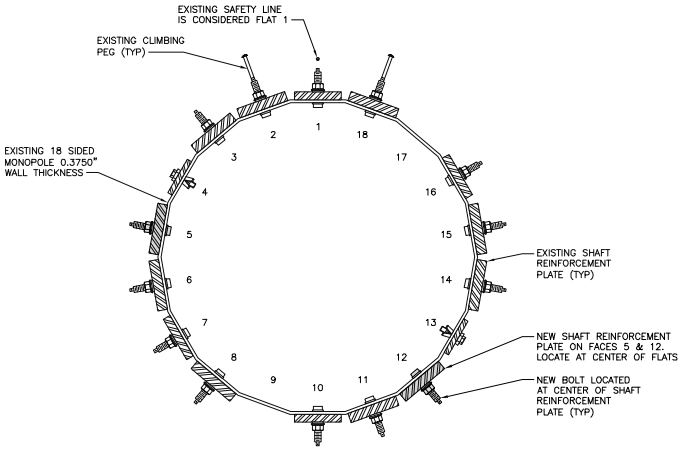
STATE OF CONNECTICUT
PING JIANG
30767
LICENSED PROFESSIONAL ENGINEER
Nov 21, 2019

BU #842859
WO #1805727
BRISTOL CENTER
371 TERRYVILLE AVENUE
BRISTOL, CT 06010
HARTFORD COUNTY, USA

SHEET TITLE
TOWER ELEVATION

SHEET NUMBER
TM-5

CLIMBING PATH MAY BECOME OBSTRUCTED AFTER INSTALLATION OF THE PROPOSED MODIFICATIONS. IF NOT ALREADY EXISTING ON THIS TOWER, CONTRACTOR TO PROVIDE NEW SIGNAGE PER CROWN CASTLE REQUIREMENTS.



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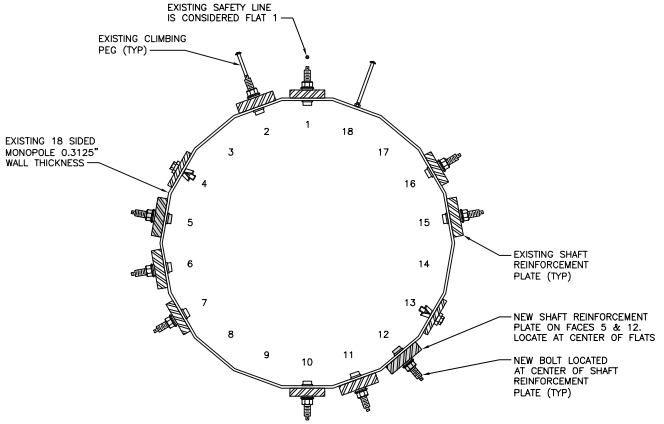

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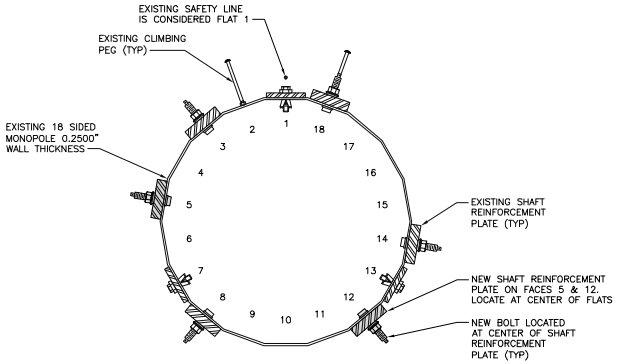

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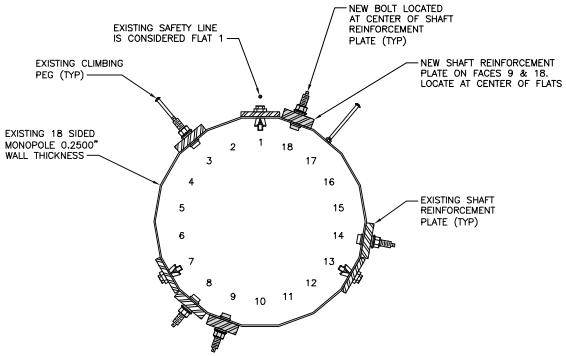


SECTION 4
NO SCALE

PREPARED FOR:

CROWN CASTLE

BLACK & VEATCH

6800 W 115TH ST, SUITE 2292
OVERLAND PARK, KS 66211

PROJECT NO:	400087
DRAWN BY:	TYW
CHECKED BY:	AR

REV	DATE	DESCRIPTION
0	11/20/19	ISSUED FOR CONSTRUCTION

STATE OF CONNECTICUT
PING JIANG
30767
LICENSED PROFESSIONAL ENGINEER

Nov 21, 2019

BU #842859
WO #1805727
BRISTOL CENTER
371 TERRYVILLE AVENUE
BRISTOL, CT 06010
HARTFORD COUNTY, USA

SHEET TITLE

TOWER SECTIONS

SHEET NUMBER

TM-6

Exhibit E

Mount Analysis

Date: **November 4, 2019**

Kevin Morrow
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277
(704) 405-6619

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

Subject:	**Mount Analysis Report**	
Carrier Designation:	**AT&T Mobility Equipment Change-Out**	
	Carrier Site Number:	10070954
	Carrier Site Name:	BRISTOL CENTER
Crown Castle Designation:	**Crown Castle BU Number:**	842859
	Crown Castle Site Name:	BRISTOL CENTER
	Crown Castle JDE Job Number:	591151
	Crown Castle Order Number:	505606 Rev. 4
Engineering Firm Designation:	**Infinigy Engineering, PLLC Report Designation:** 1039-A0002-B	
Site Data:	**371 Terryville Avenue, Bristol, Hartford County, CT, 06010** **Latitude 41° 40' 47.71" Longitude -72° 57' 45.18"**	
Structure Information:	**Tower Height & Type:**	**168.3 ft Monopole**
	Mount Elevation:	**168.0 ft**
	Mount Type:	**14.5 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.

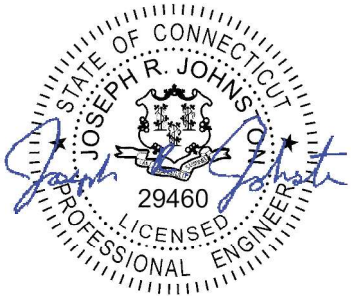
The purpose of the analysis is to determine acceptability of the mount stress level. Based on our analysis we have determined the mount stress level to be:

Platform **Sufficient**
***Sufficient upon completion of the changes listed in the 'Recommendations' section of this report.**

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Thomas Bekele

Respectfully Submitted by:
Joe Johnston, PE.
518-690-0790
jjohnston@infinigy.com
CT PE License No.PEN.0029460



11/04/2019

TABLE OF CONTENTS

1) INTRODUCTION

This is a 14.5 ft Platform mount**,** designed by Site Pro 1. Analyzed with proposed modifications designed by Infinigy Engineering [DOC ID: 8540402].

2) ANALYSIS CRITERIA

Building Code:	2015 IBC / 2018 Connecticut State Building Code
TIA-222 Revision:	TIA-222- H
Risk Category:	II
Ultimate Wind Speed:	125 mph
Exposure Category:	C
Topographic Factor at Base:	1.000
Topographic Factor at Mount:	1.000
Ice Thickness:	1.0 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.186
Seismic S_1:	0.054
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	500 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
168.0	169.0	3	KATHREIN	800 10121	14.5 ft Platform
		1	KATHREIN	80010965	
		6	POWERWAVE TECHNOLOGIES	LGP21401	
	168.0	1	CCI ANTENNAS	DMP65R-BU6D	
		2	CCI ANTENNAS	DMP65R-BU8D	
		2	CCI ANTENNAS	TPA-65R-LCUUUU-H8	
		1	KATHREIN	80010798	
		2	KATHREIN	80010966	
		3	ERICSSON	RRUS 32 B2	
		3	ERICSSON	RRUS 32 B30	
		3	ERICSSON	RRUS 4426 B66	
		3	ERICSSON	RRUS 4449 B5/B12	
		3	ERICSSON	RRUS 4478 B14	
		3	ERICSSON	RRUS E2 B29	
		1	RAYCAP	DC6-48-60-18-8F	
	167.0	3	ERICSSON	RRUS 4415 B25	
		1	RAYCAP	DC6-48-60-18-8C	
		2	RAYCAP	DC6-48-60-18-8F	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	AT&T Mobility Application	505606 Rev. 4	CCI Sites
Mount Reinforcement Design	Infinigy Engineering, PLLC	8540402	CCI Sites

3.1) Analysis Method

RISA3D (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 Wind Load Calculator V 2.0.1, 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 show in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.
5) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36) & Q345 (GR 36)
HSS (Rectangular)	ASTM 500 (GR B-46)
Pipe	ASTM A53 (GR 35) & Q235-GB (GR 35)
Connection Bolts	ASTM A325

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

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1	Horizontal(s)	M1	168.0	18.7	Pass
	Standoff(s)	M37		28.0	Pass
	Mount Pipe(s)	MP3		59.5	Pass
	Bracing(s)	M53		18.7	Pass
	Corner Plate(s)	M99		29.7	Pass
	Kicker(s)	M89		23.7	Pass
	Grating Angle(s)	M67		61.9	Pass
	Bolted Connection(s)	-		26.4	Pass

Structure Rating (max from all components) =	61.9%

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

4.1) Recommendations

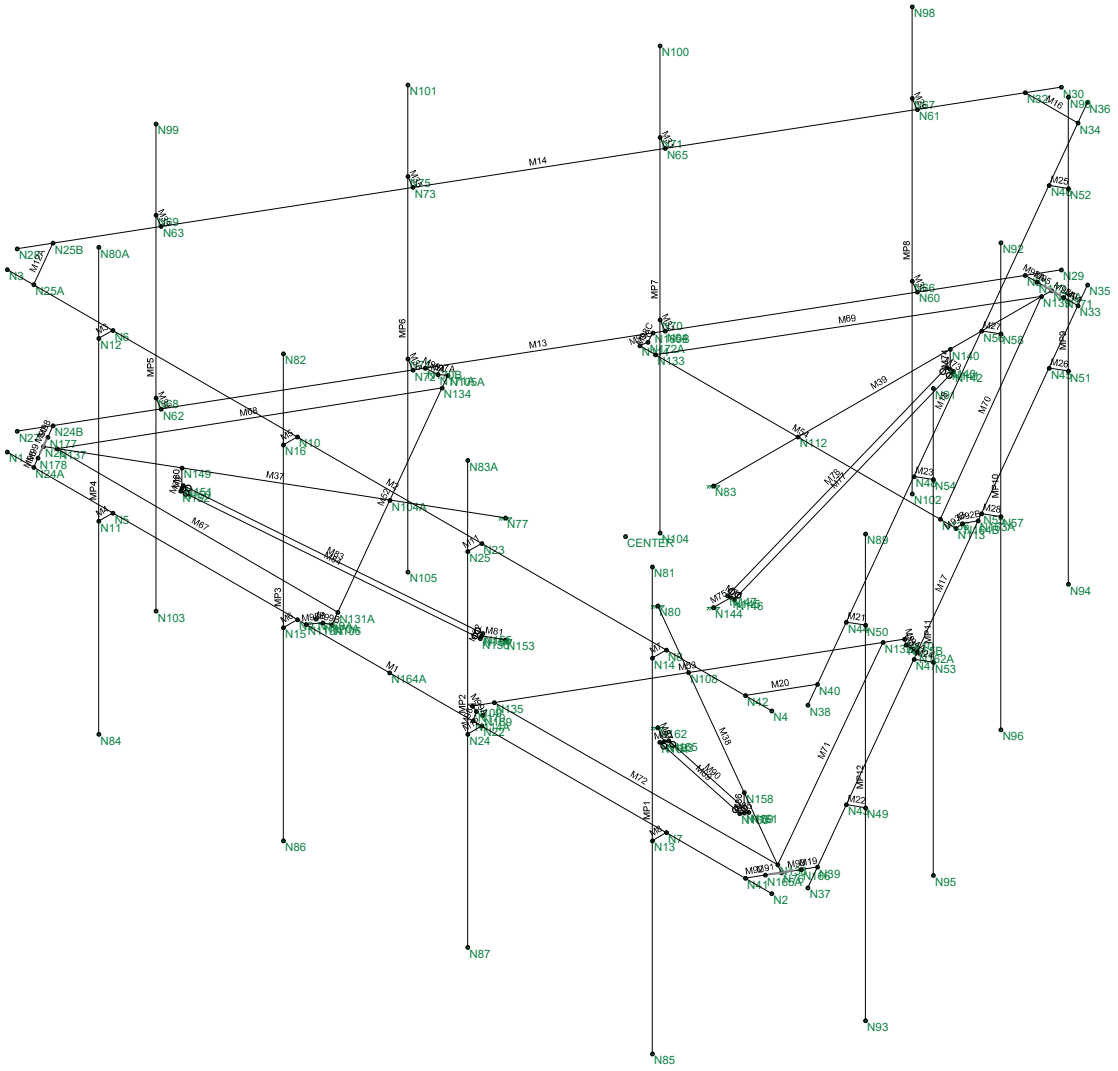
The mount has sufficient capacity to carry the proposed loading configuration. In order for the results of the analysis to be considered valid, the loading modification listed below must be completed.

1. Installation of proposed modification as noted in MOUNT REINFORCEMENT DESIGN(DOC ID: 8222354) performed by Infinigy Engineering on February 5, 2019 included in the analysis.

No structural modifications are required at this time, provided that the above-listed changes are implemented.

APPENDIX A

WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

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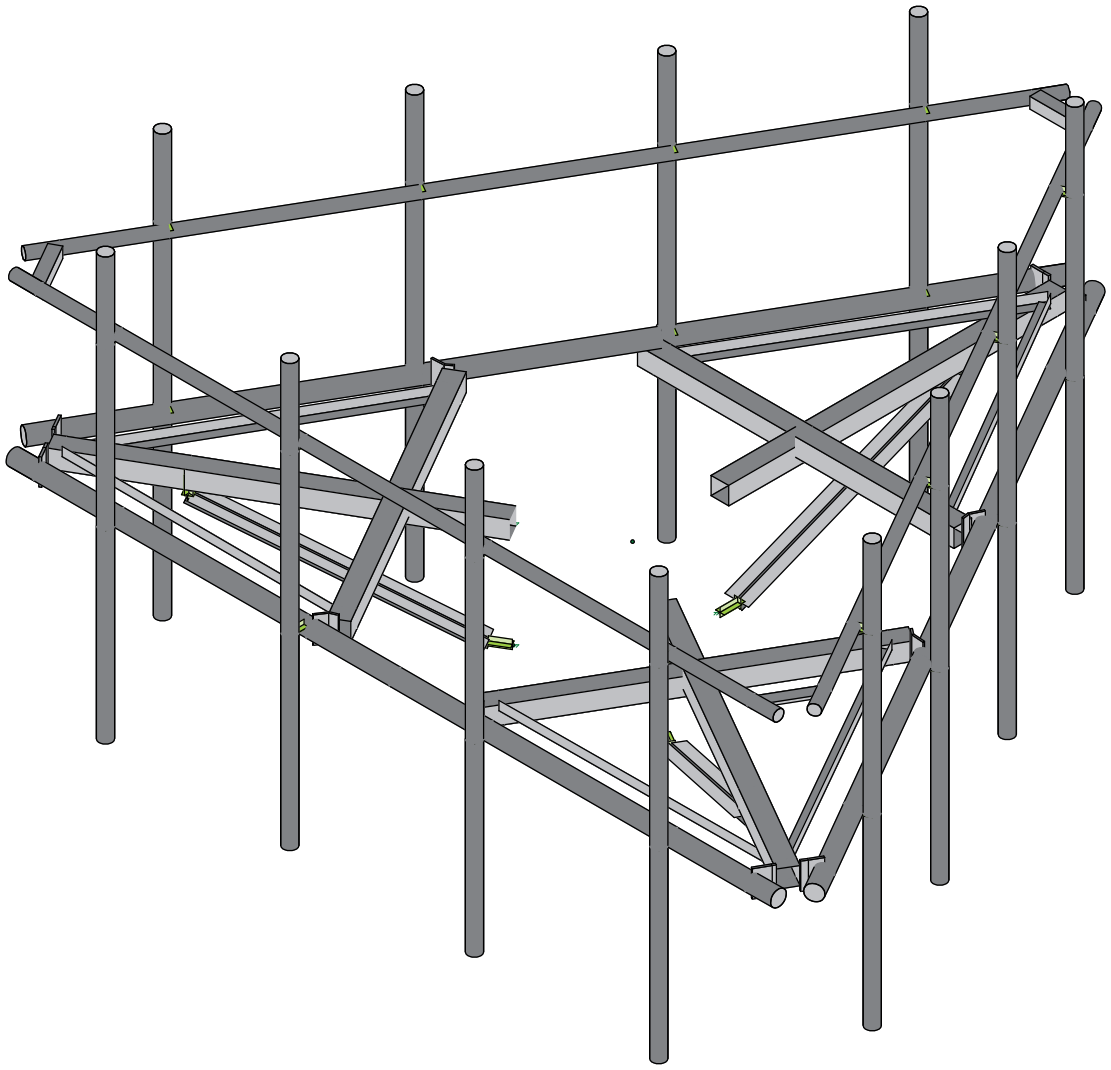

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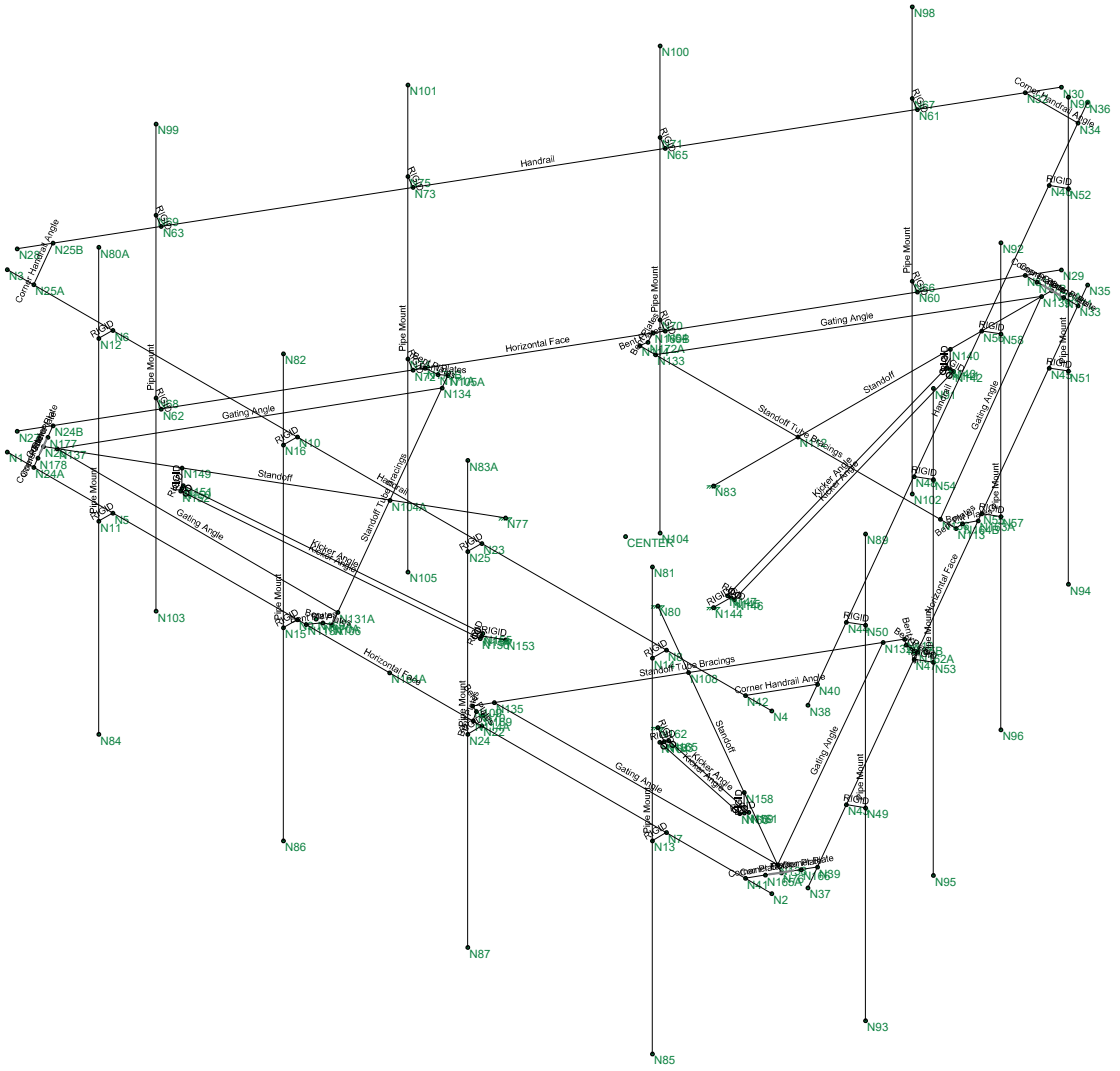

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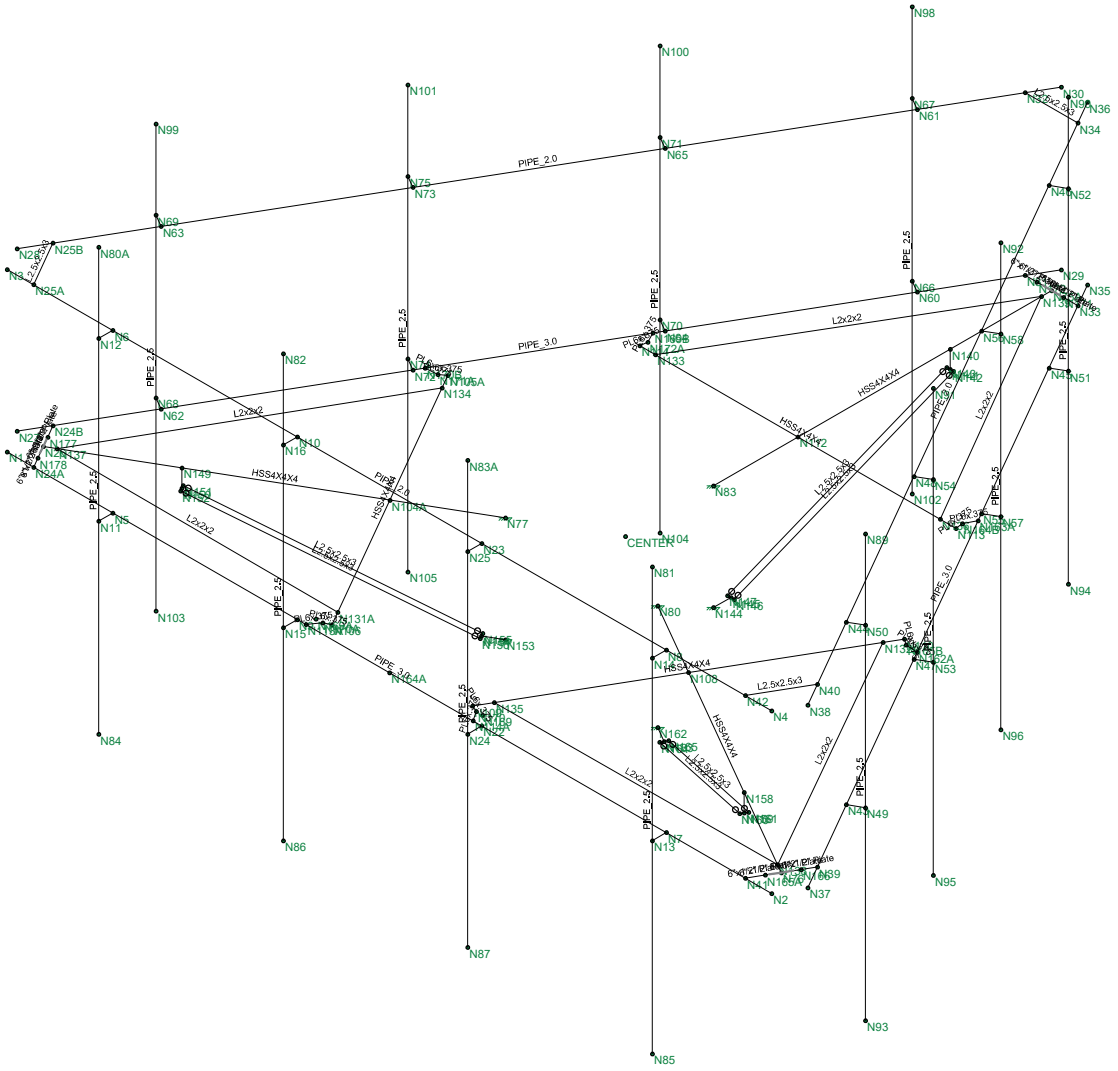

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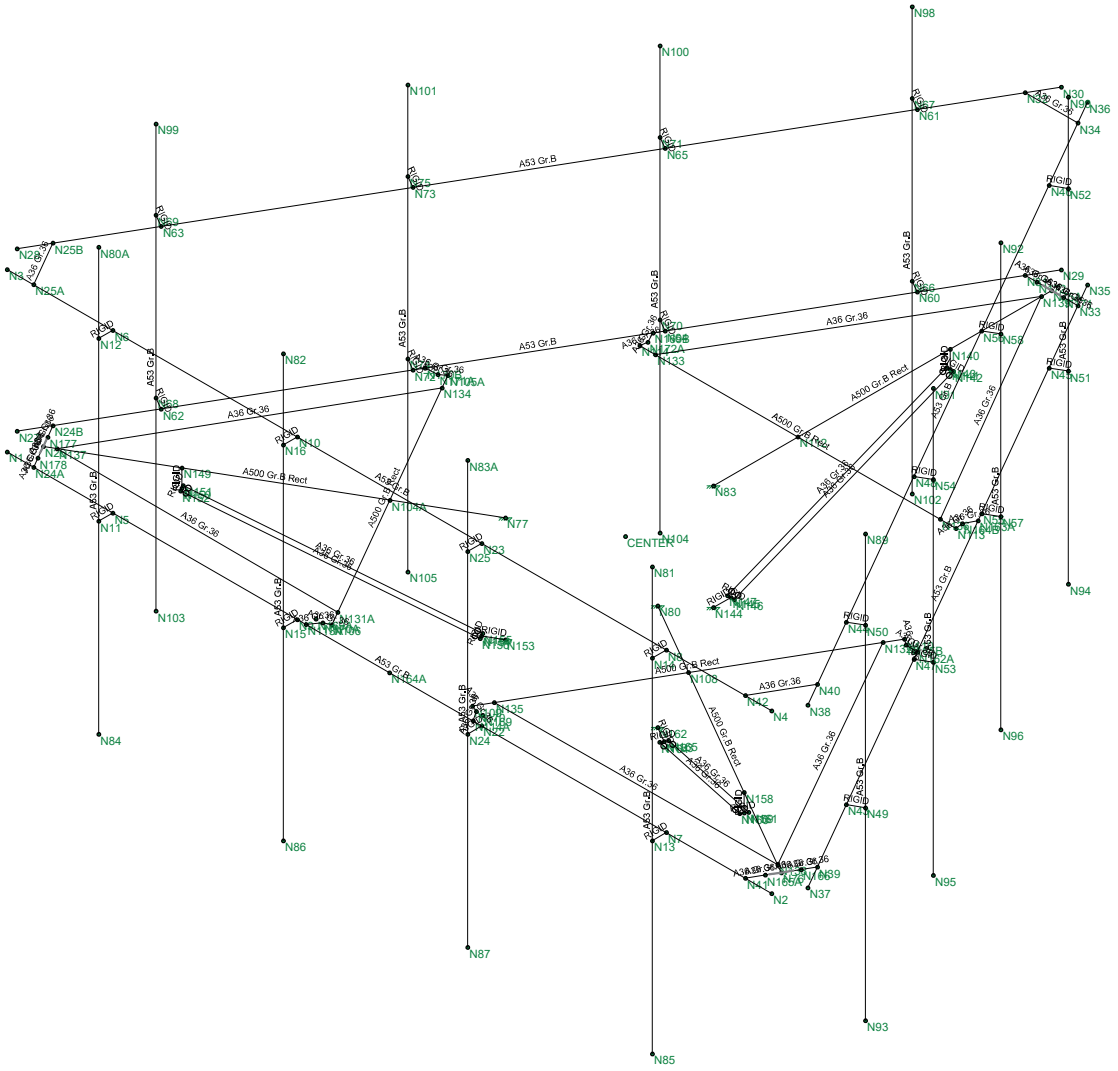

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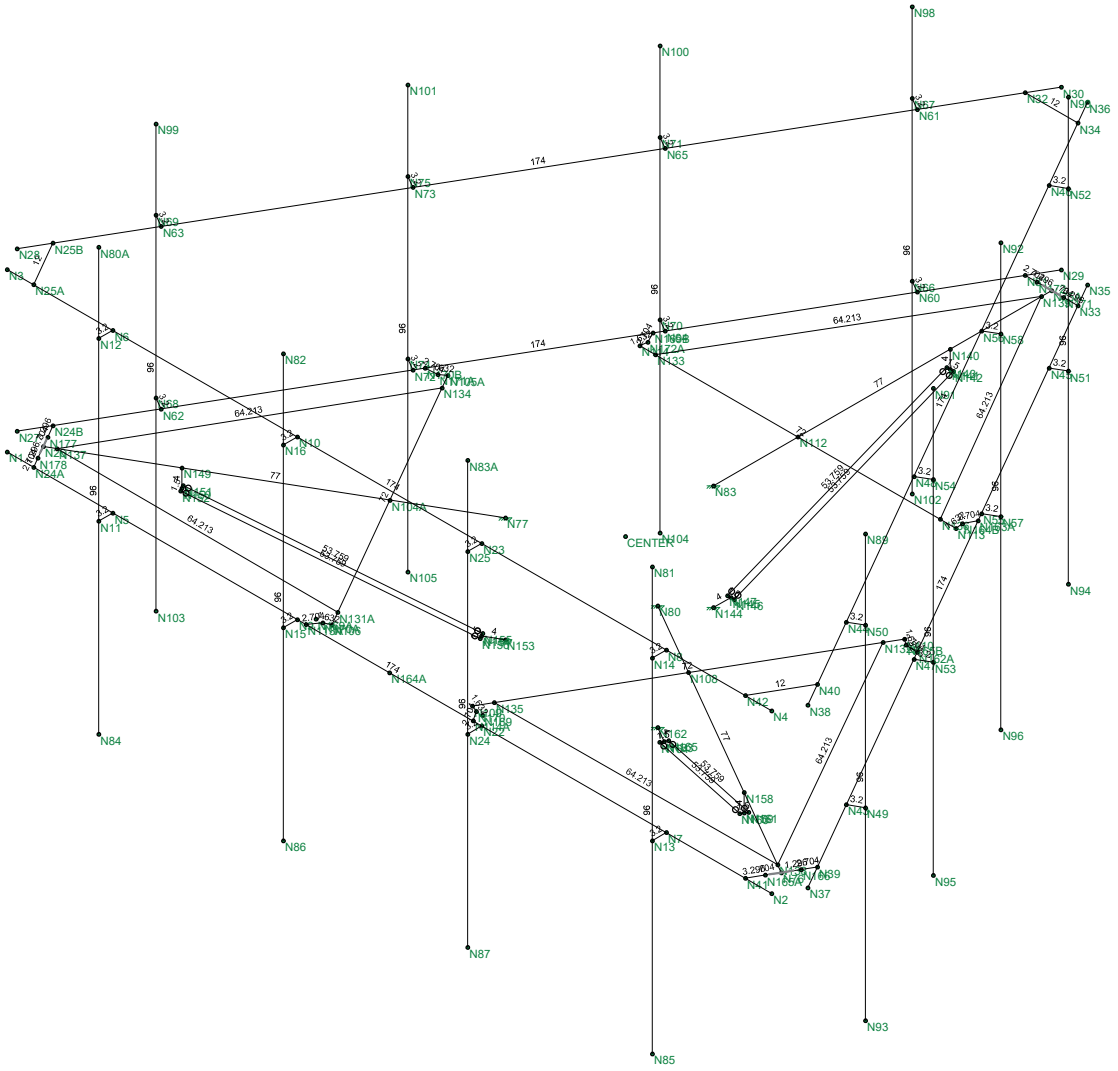

Member Length (in) Displayed
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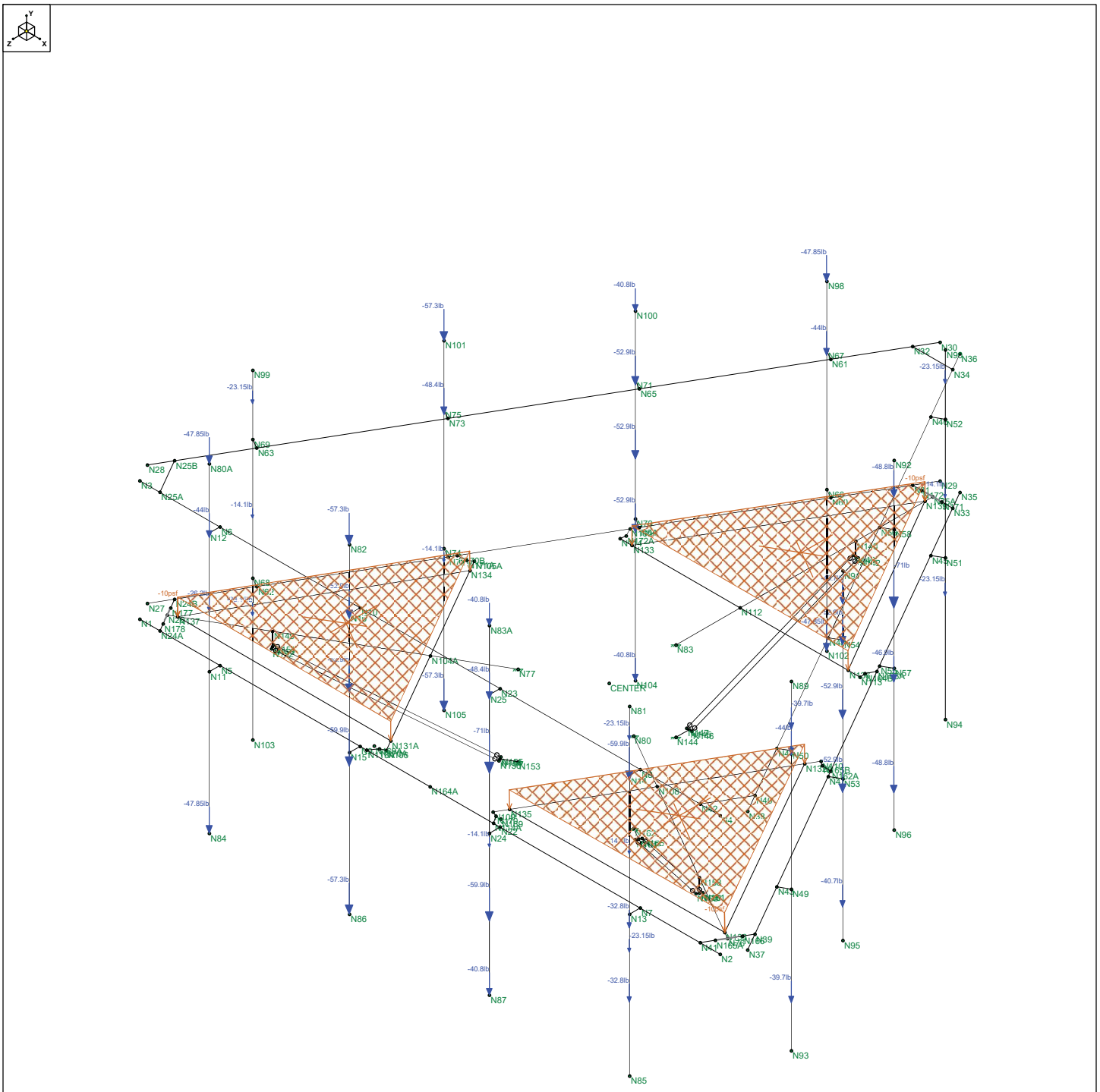

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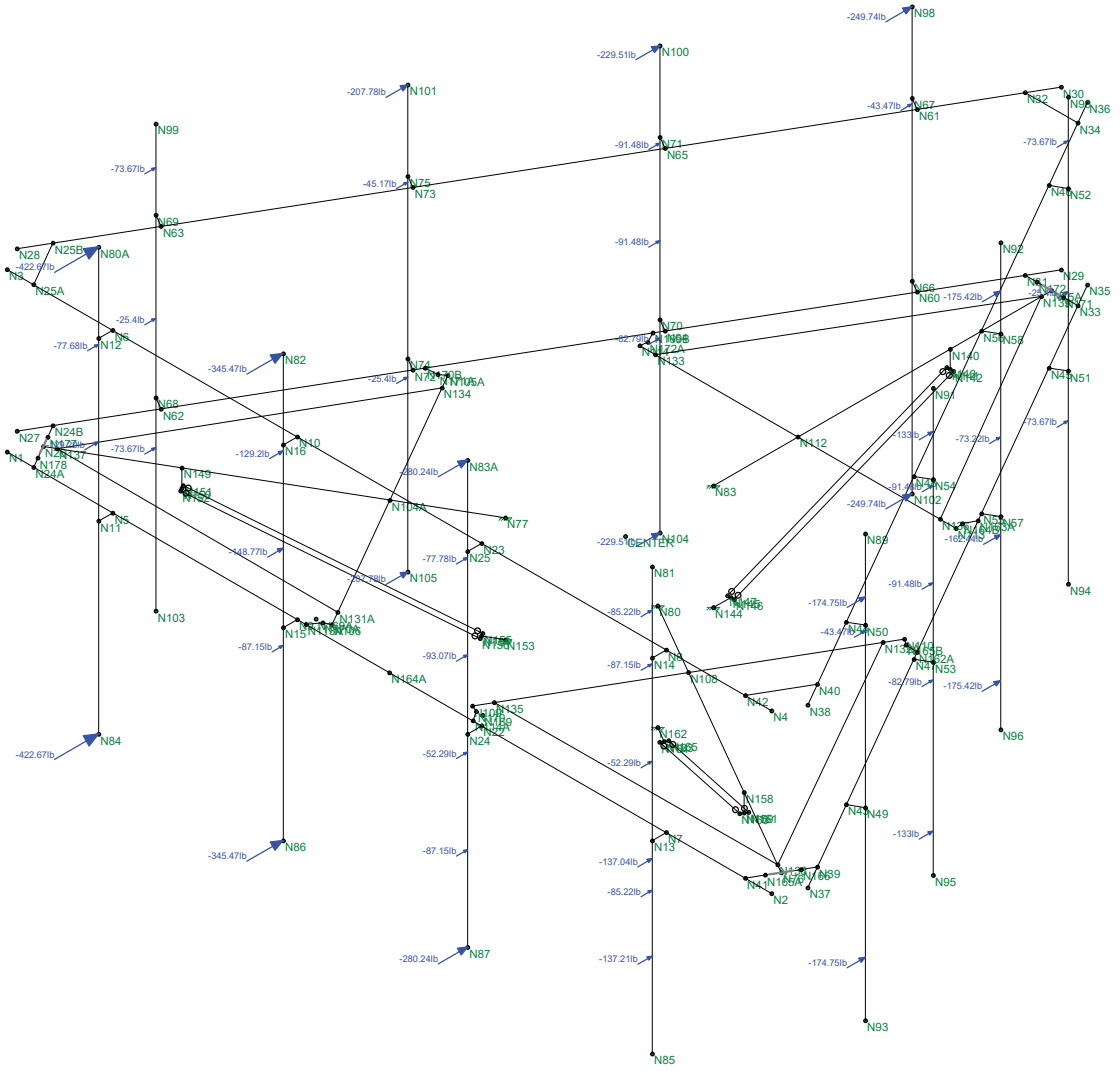

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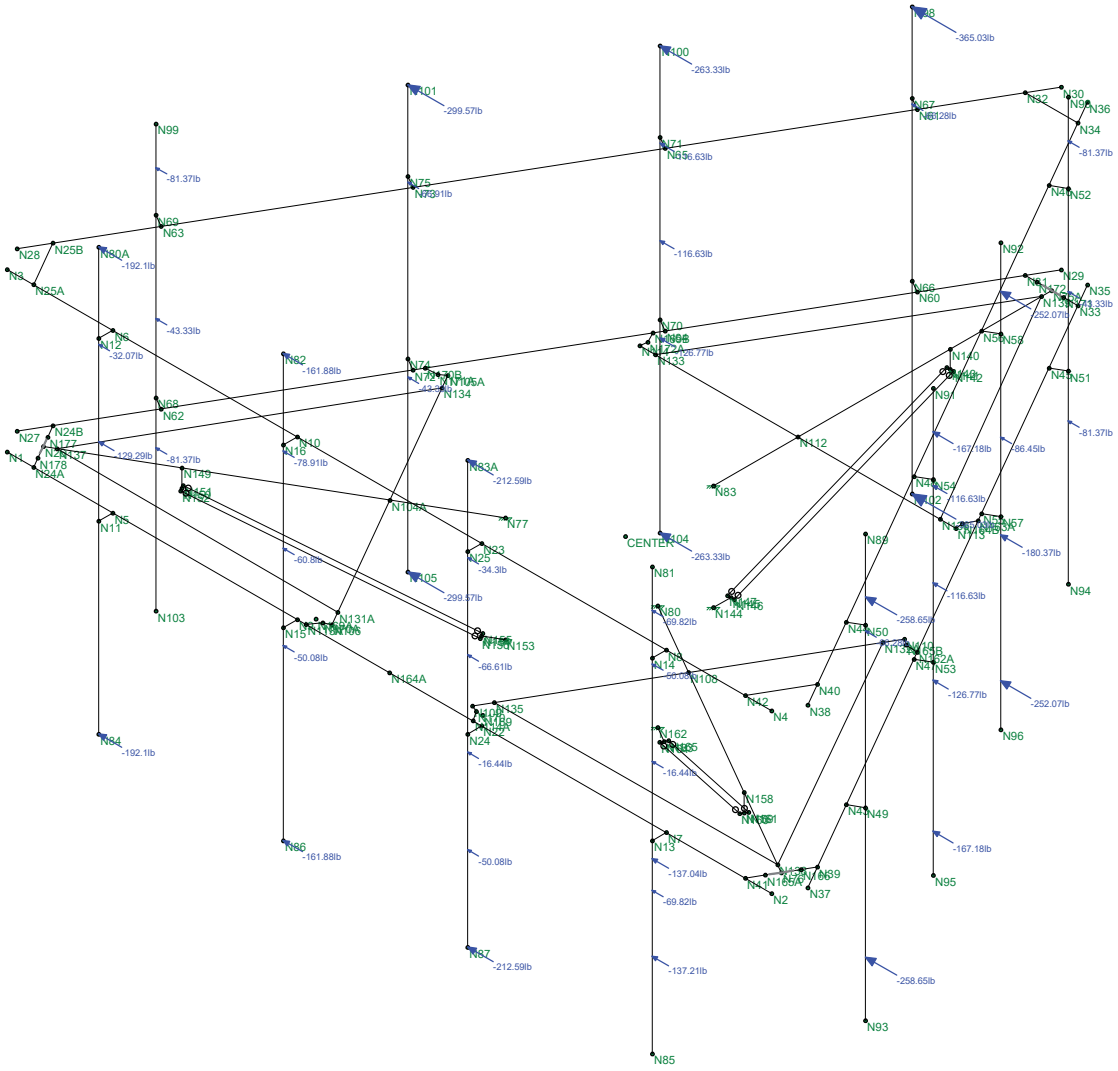

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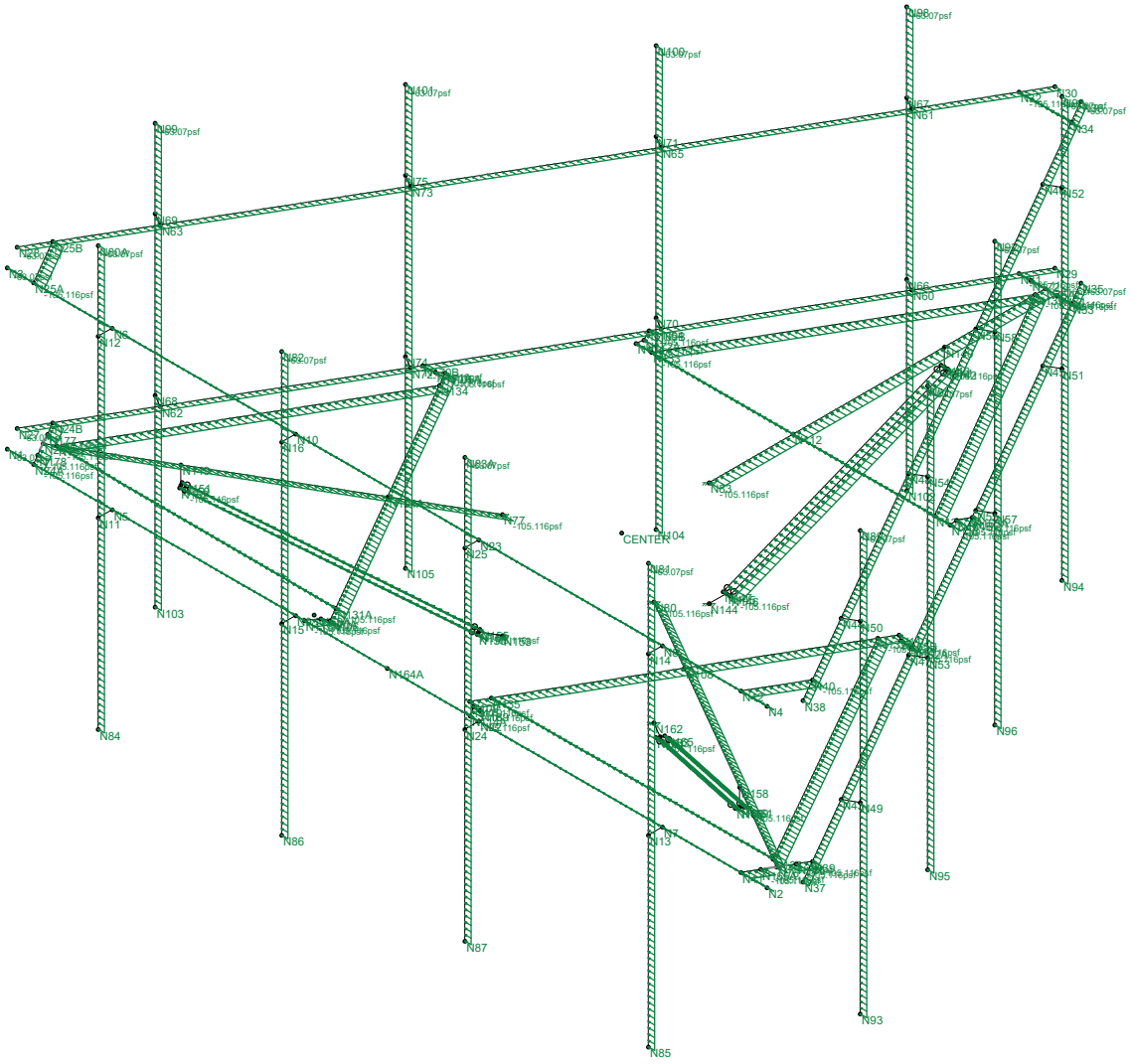

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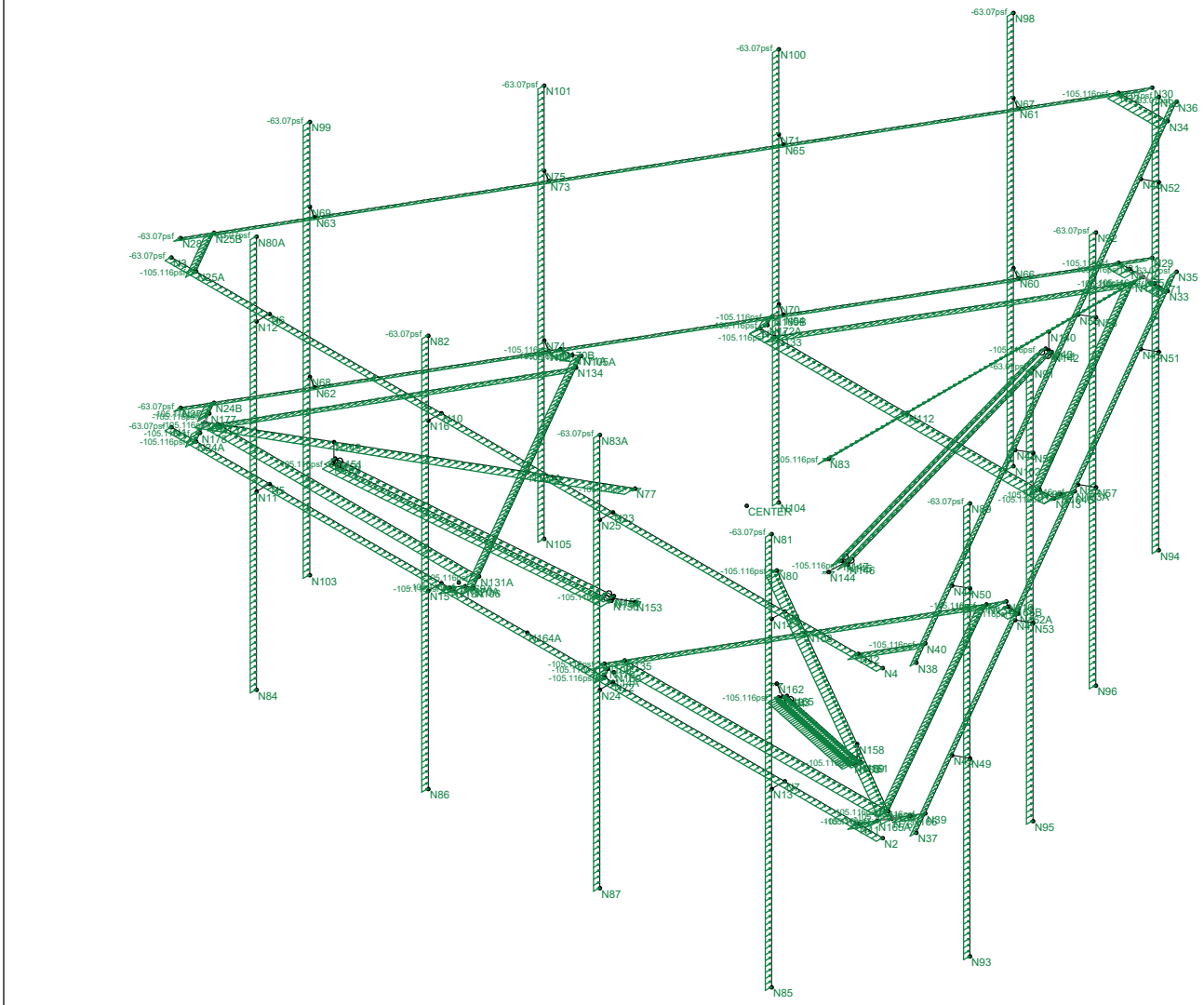

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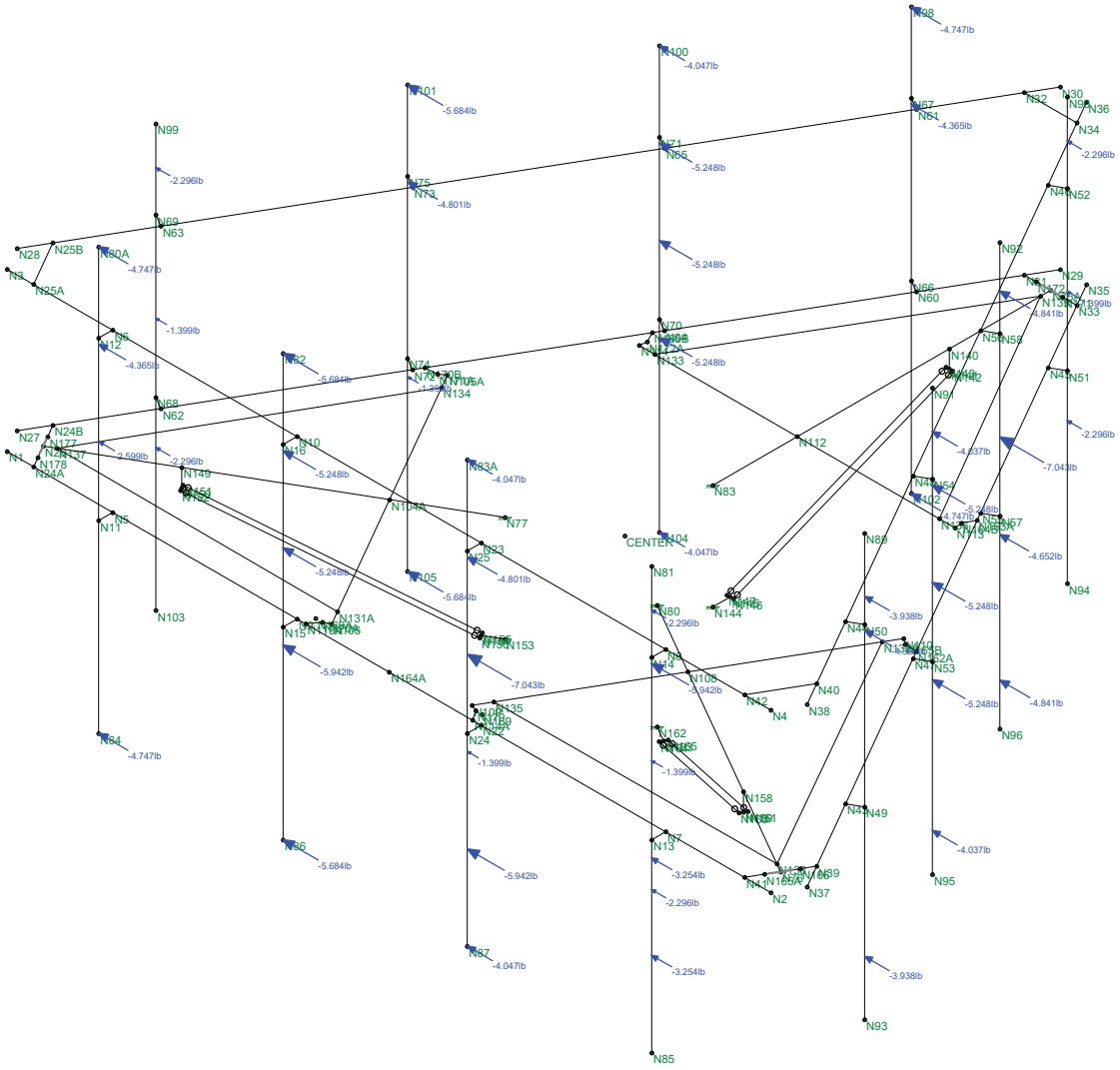

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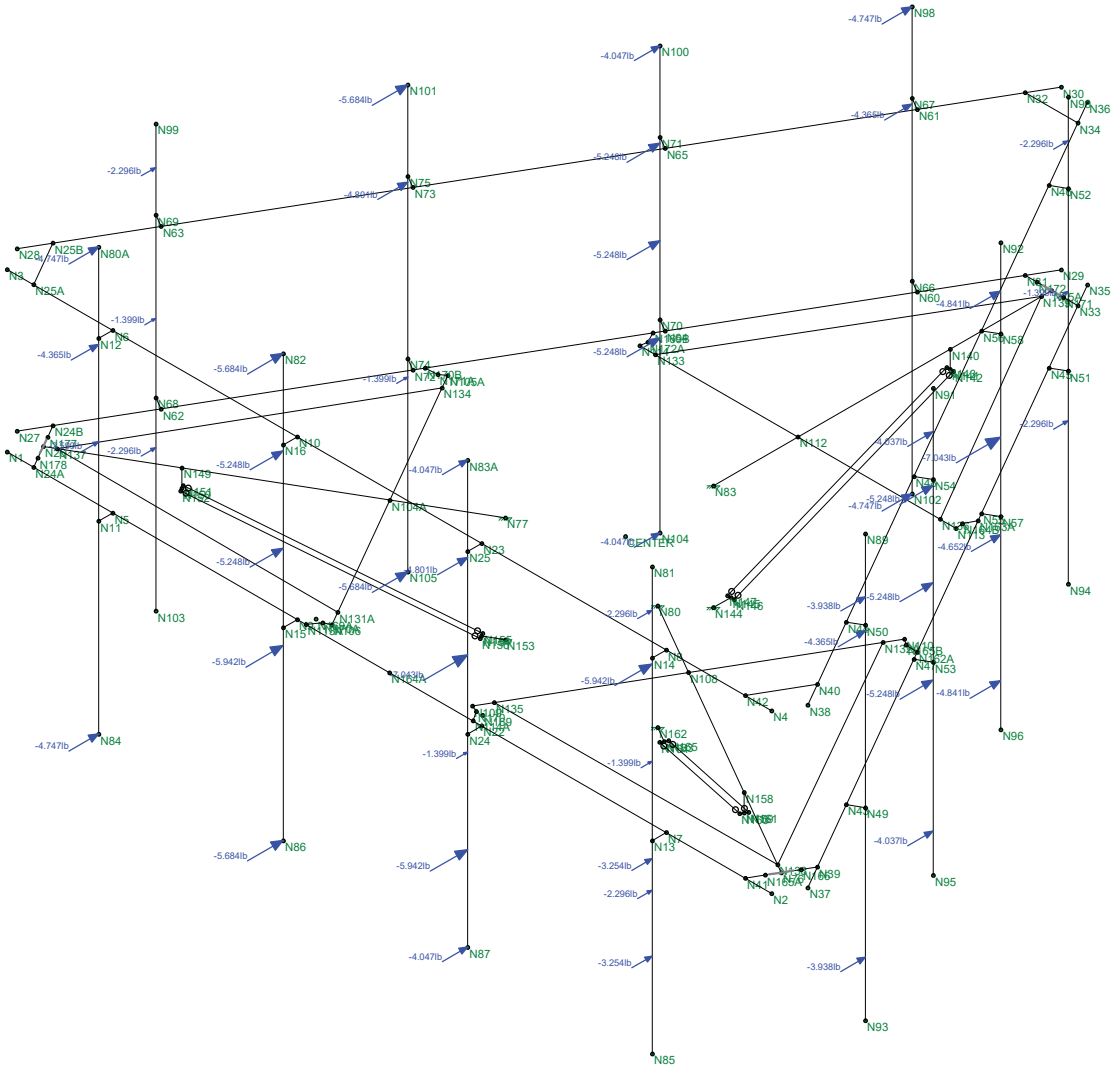

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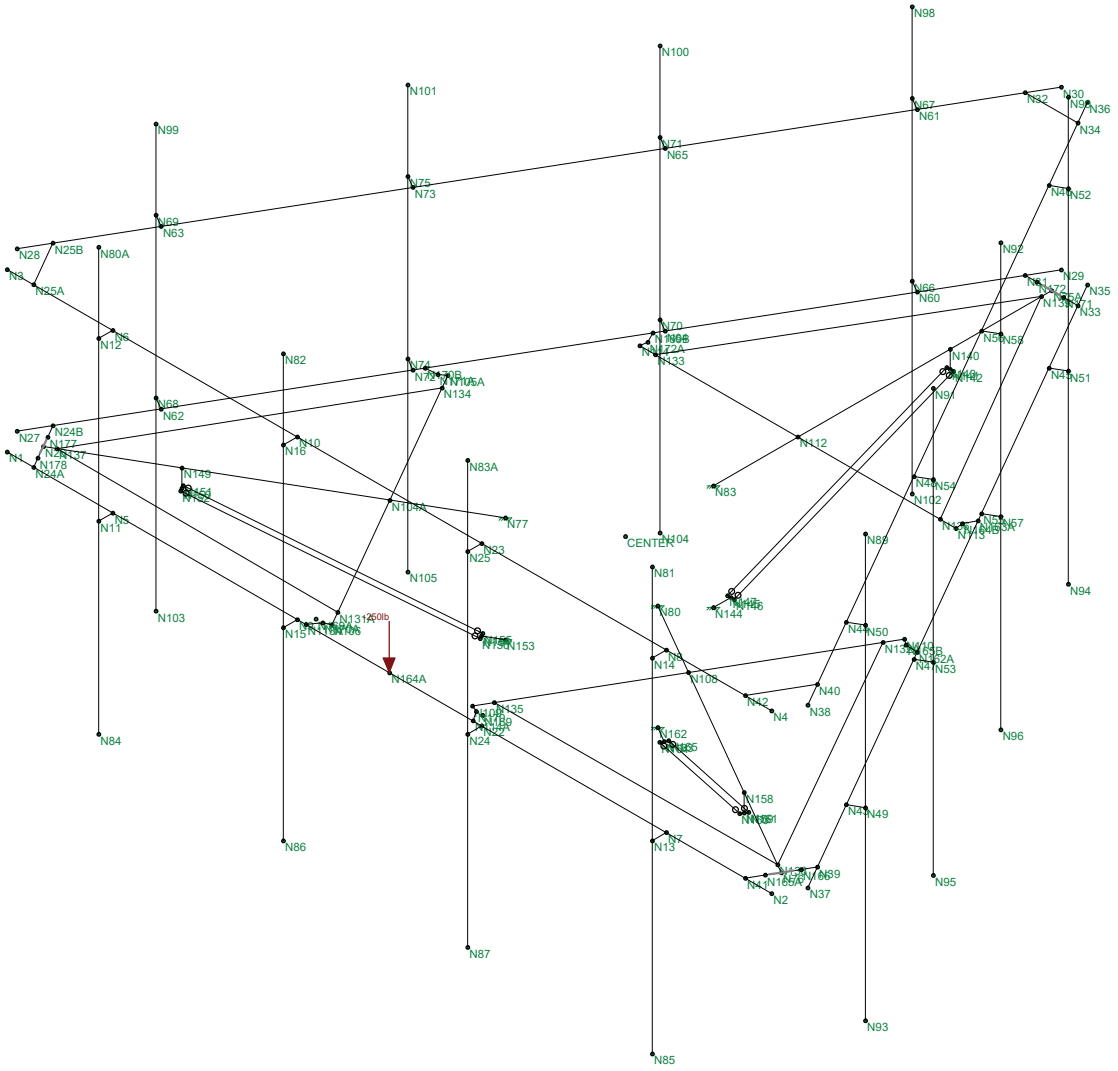

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Envelope Only Solution

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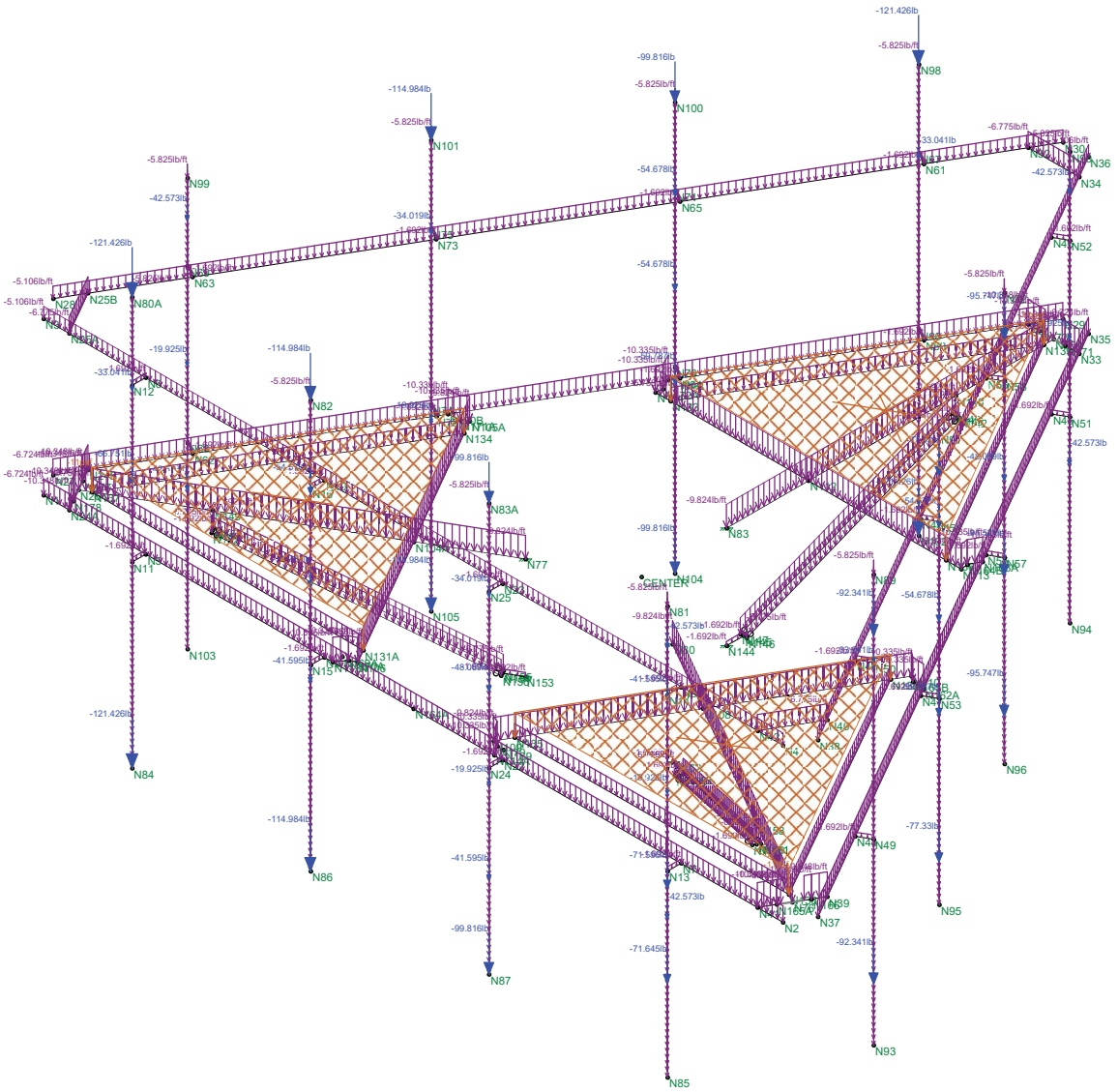

Loads: BLC 16, Ice Weight
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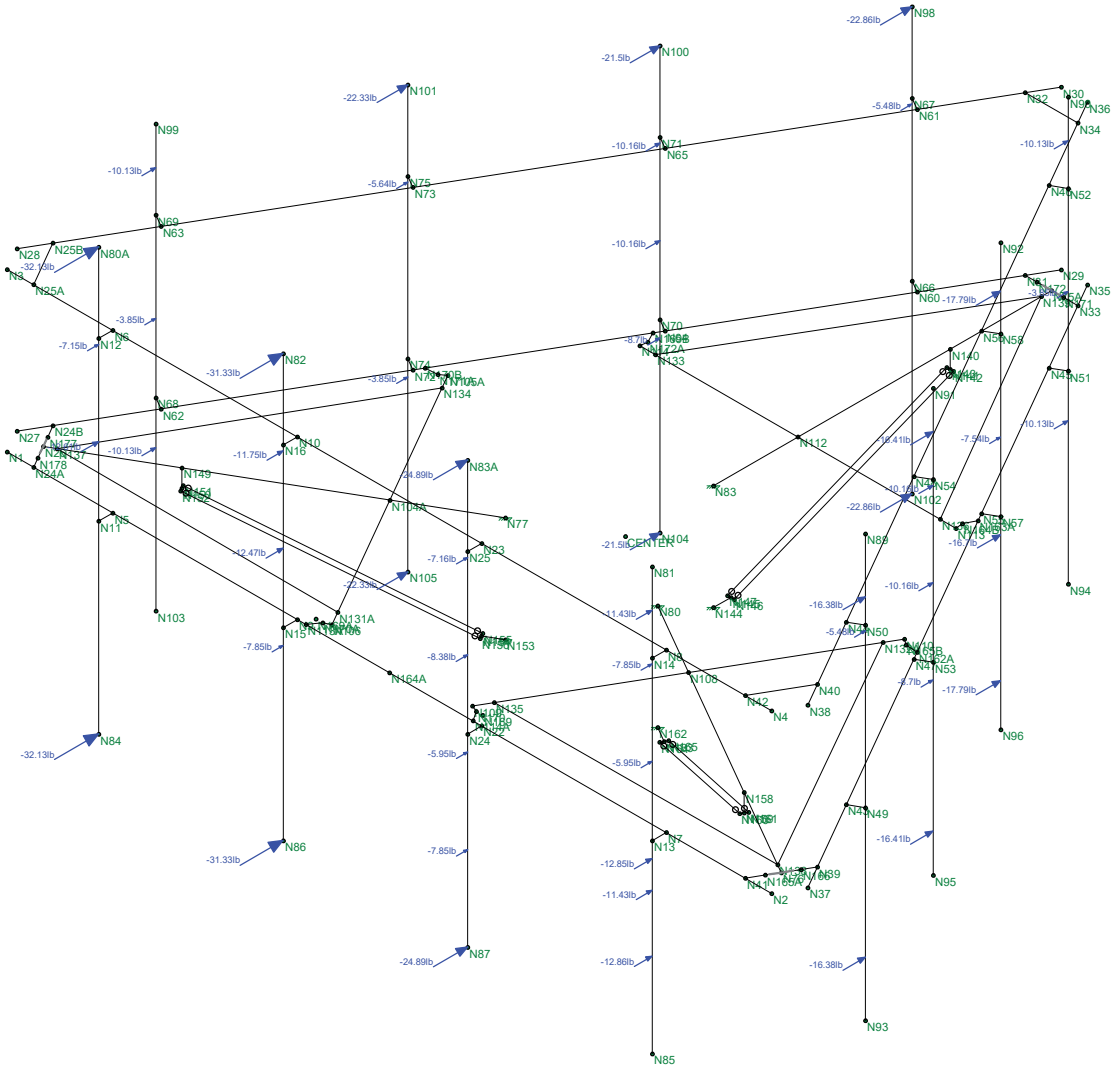

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Envelope Only Solution

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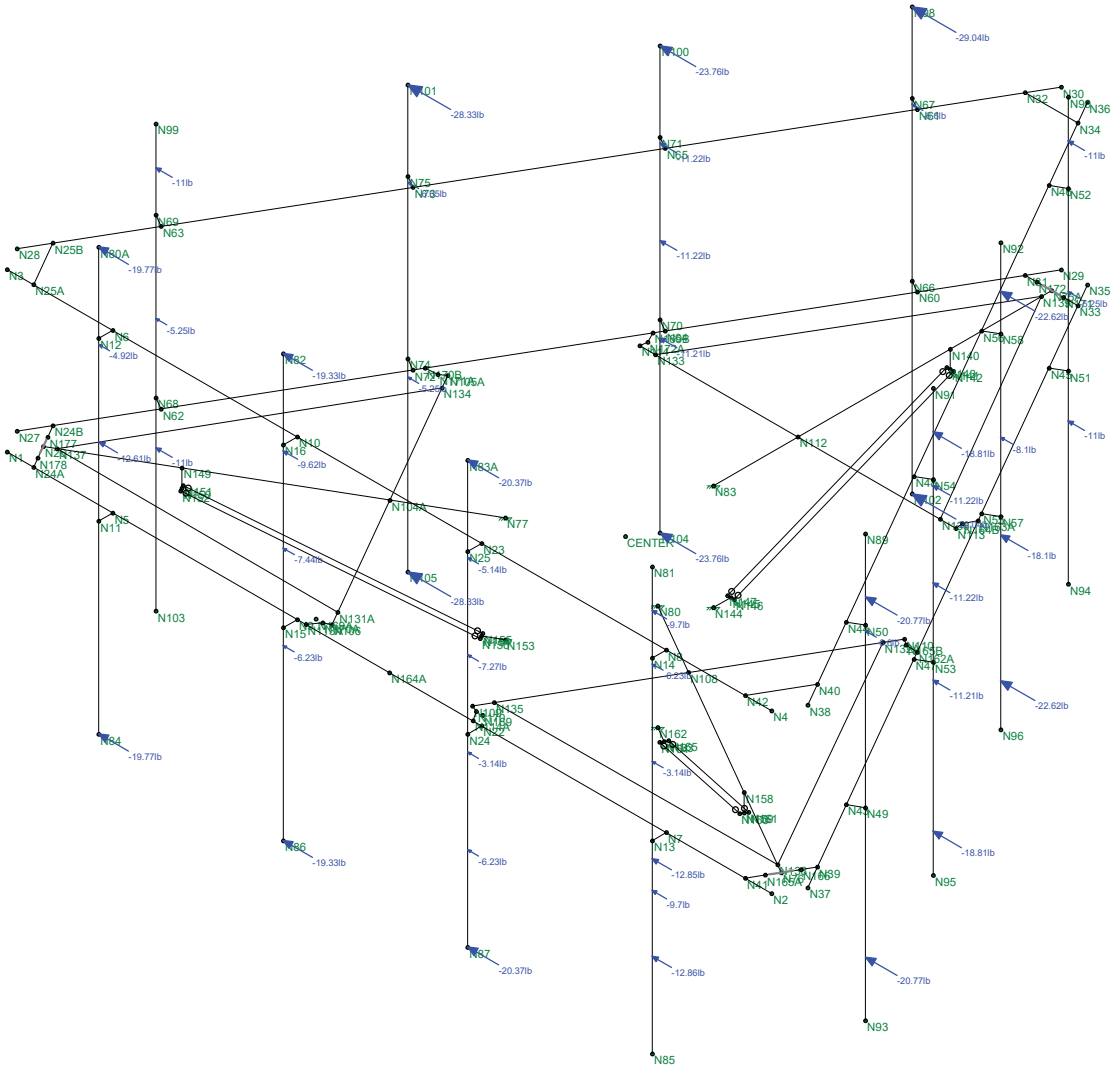

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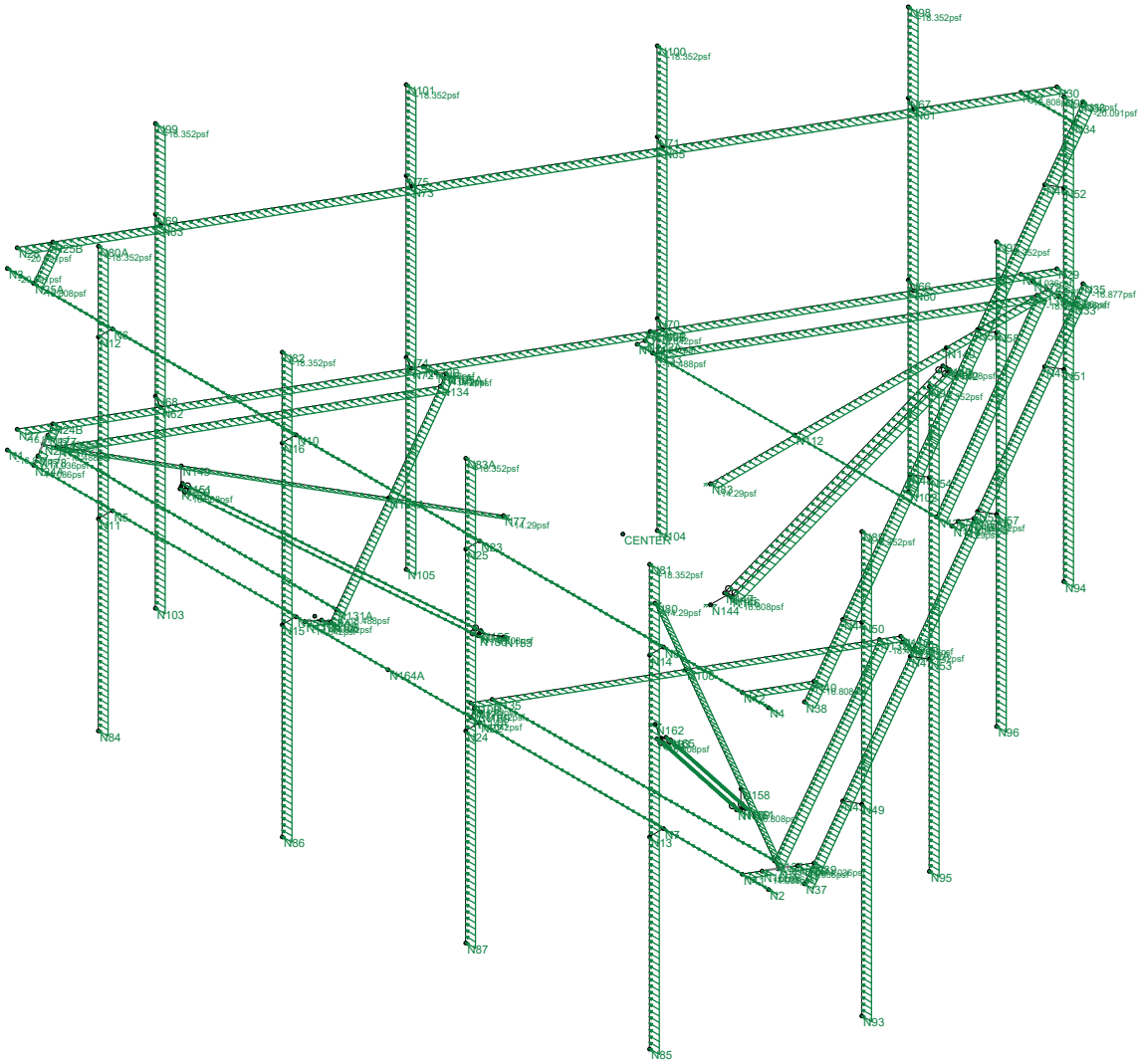

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Envelope Only Solution

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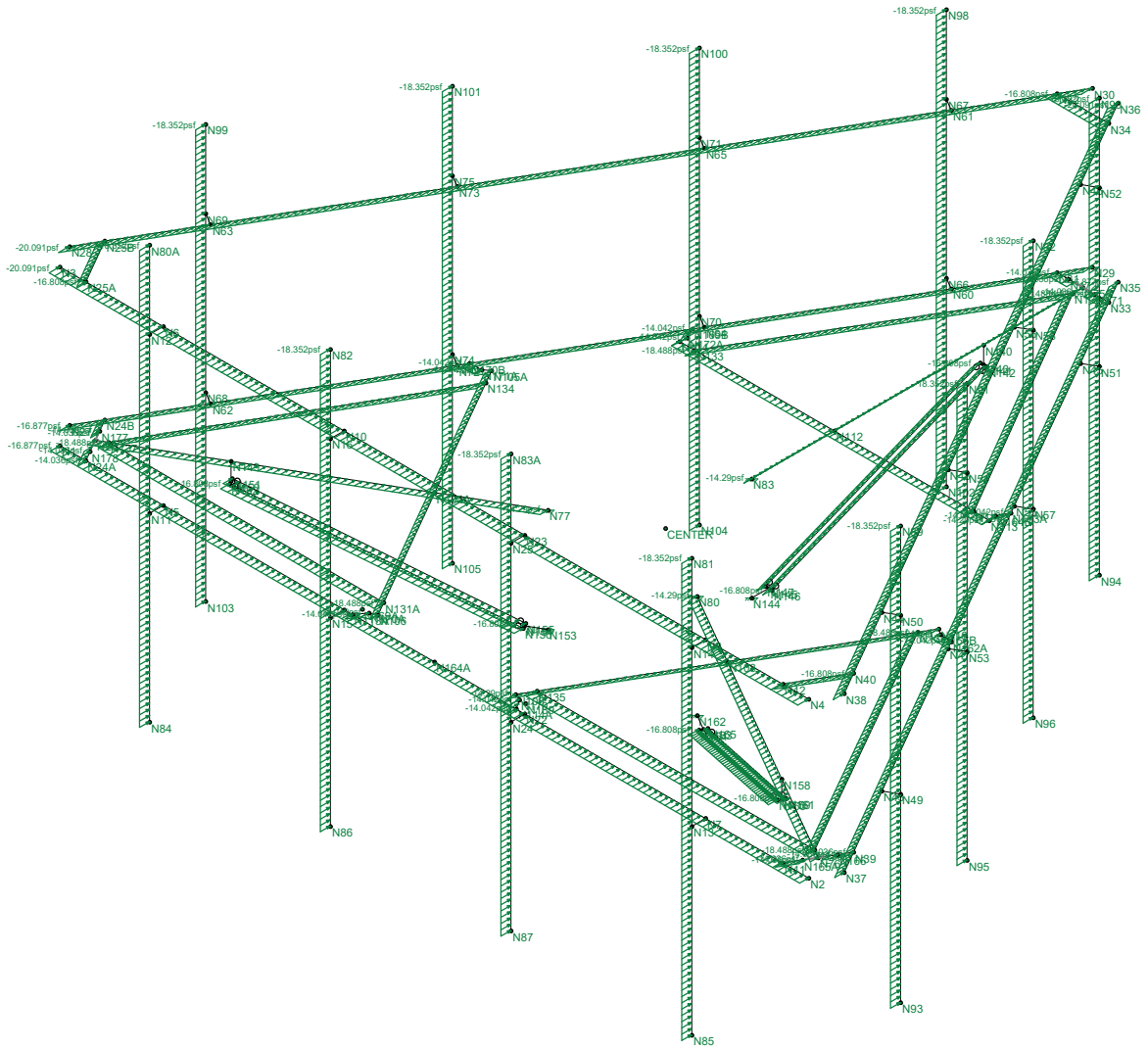

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Envelope Only Solution

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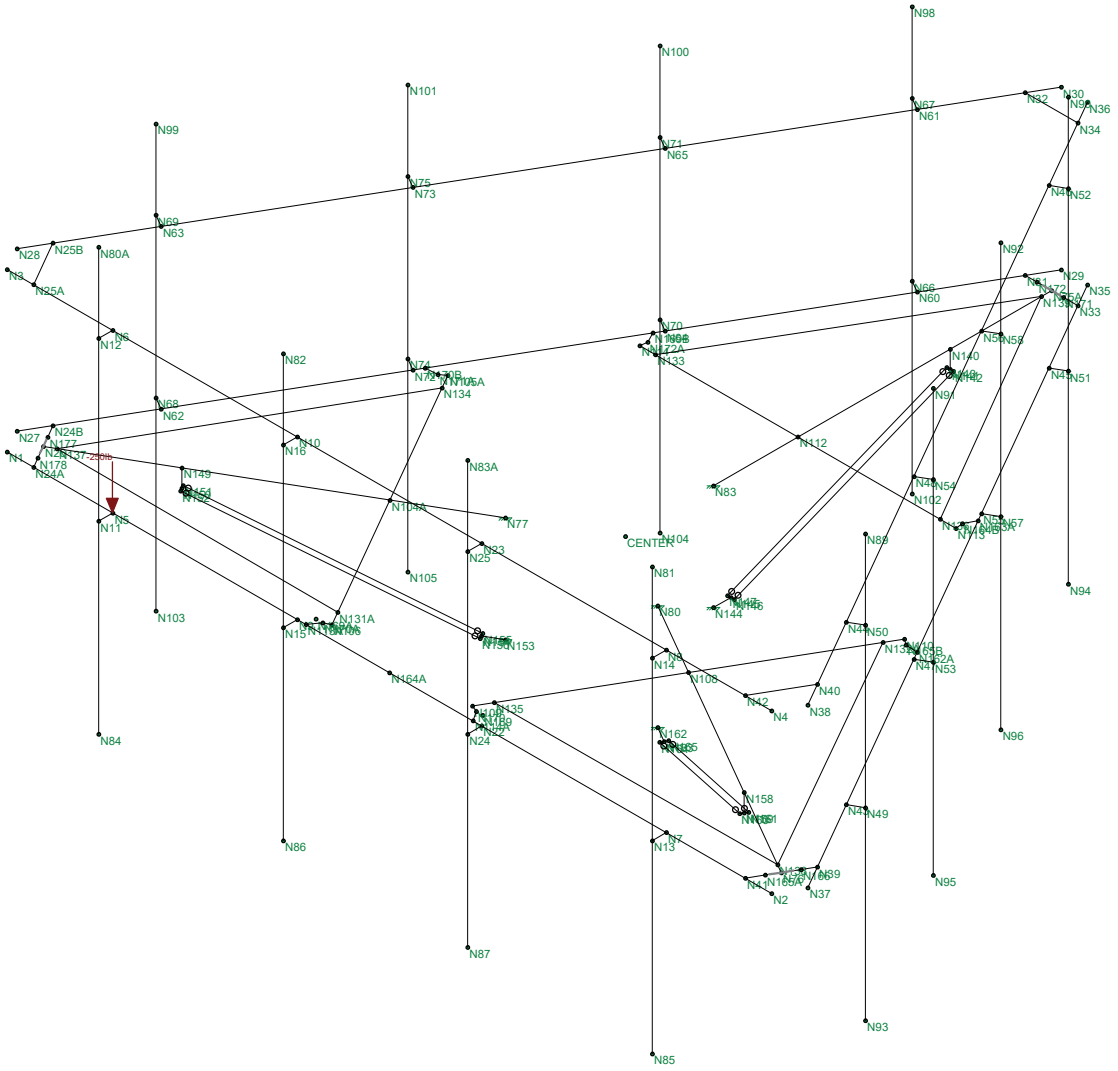

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Envelope Only Solution

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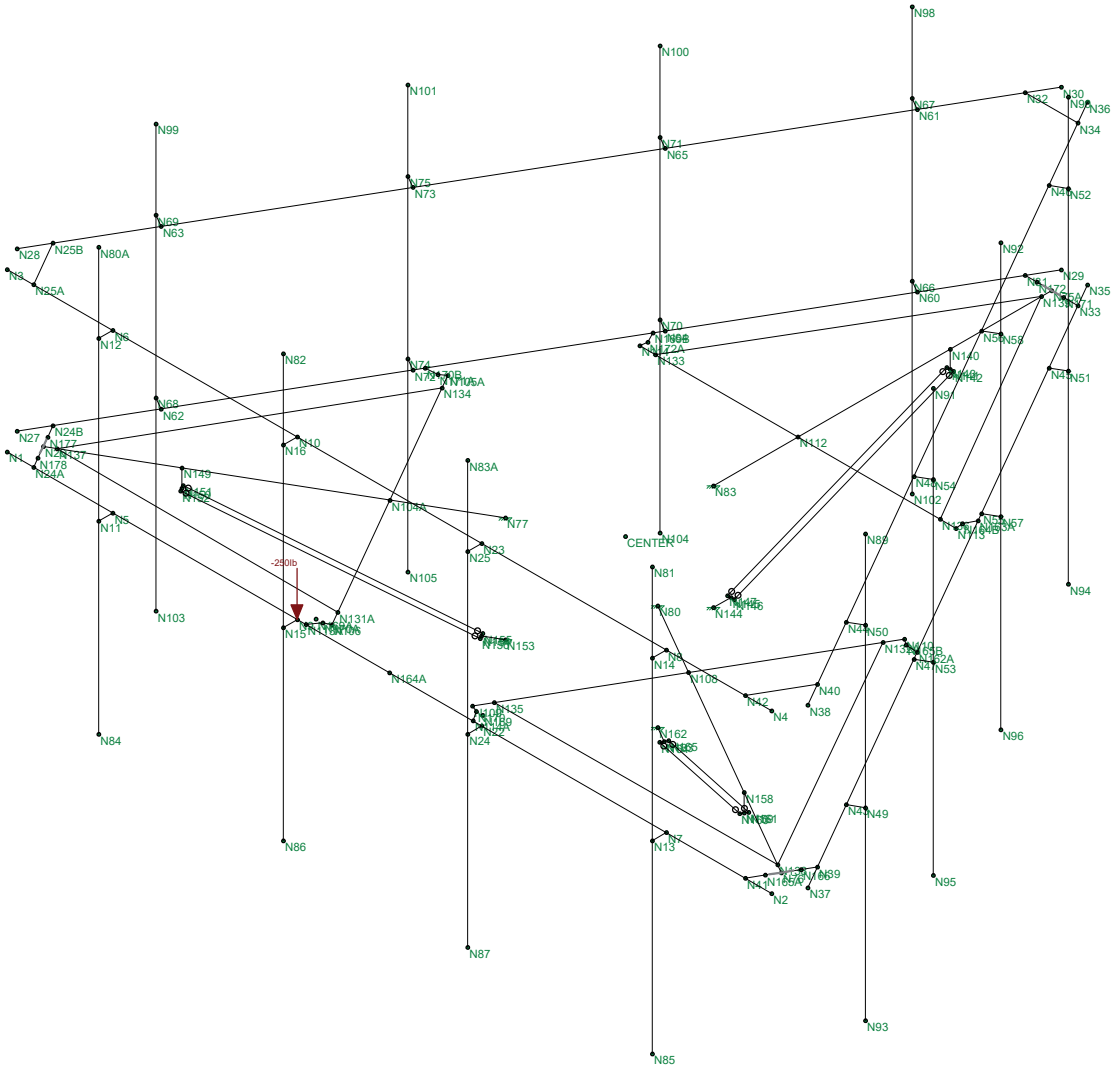

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Envelope Only Solution

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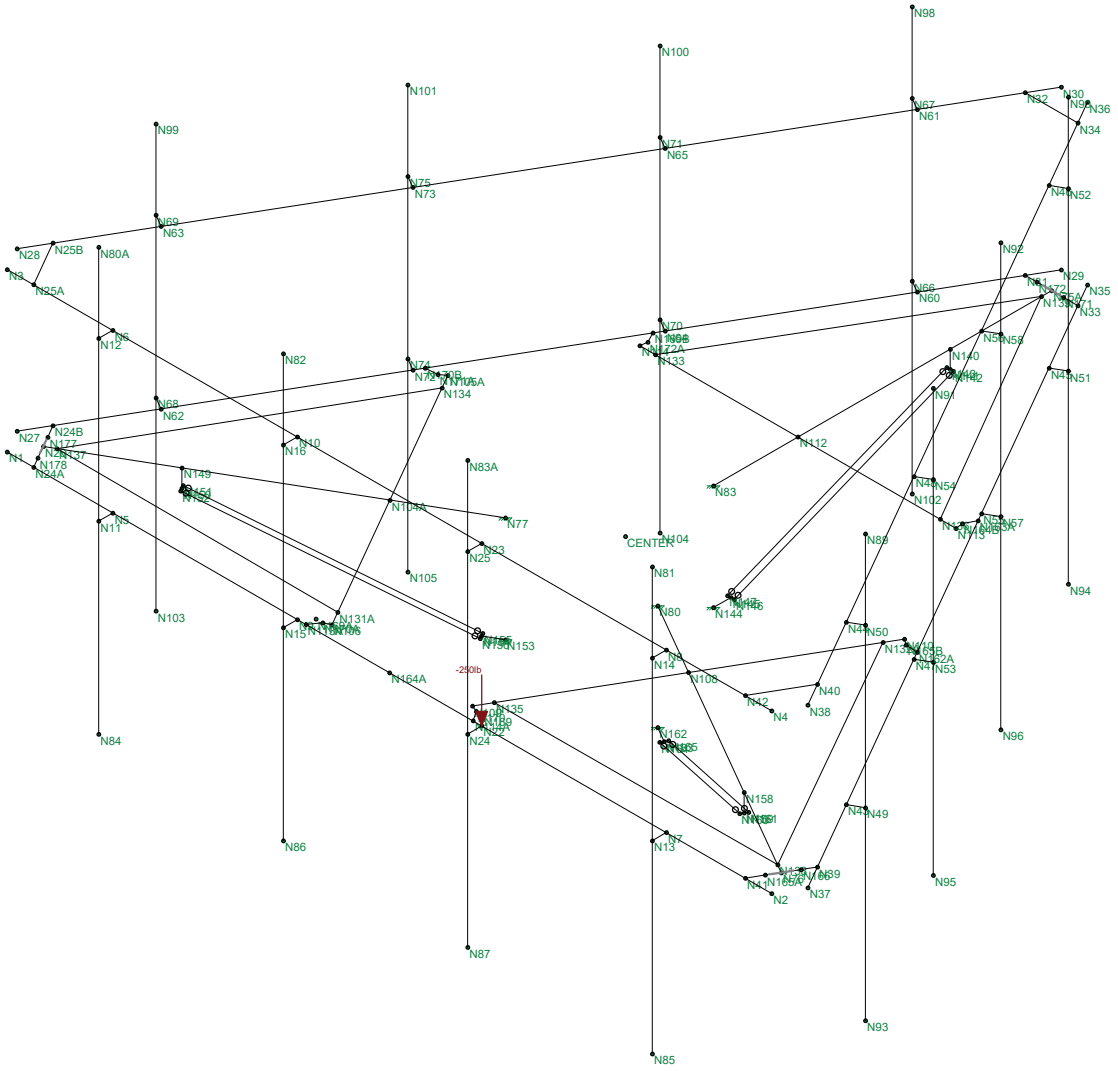

Loads: BLC 36, Maintenance Load 3
Envelope Only Solution

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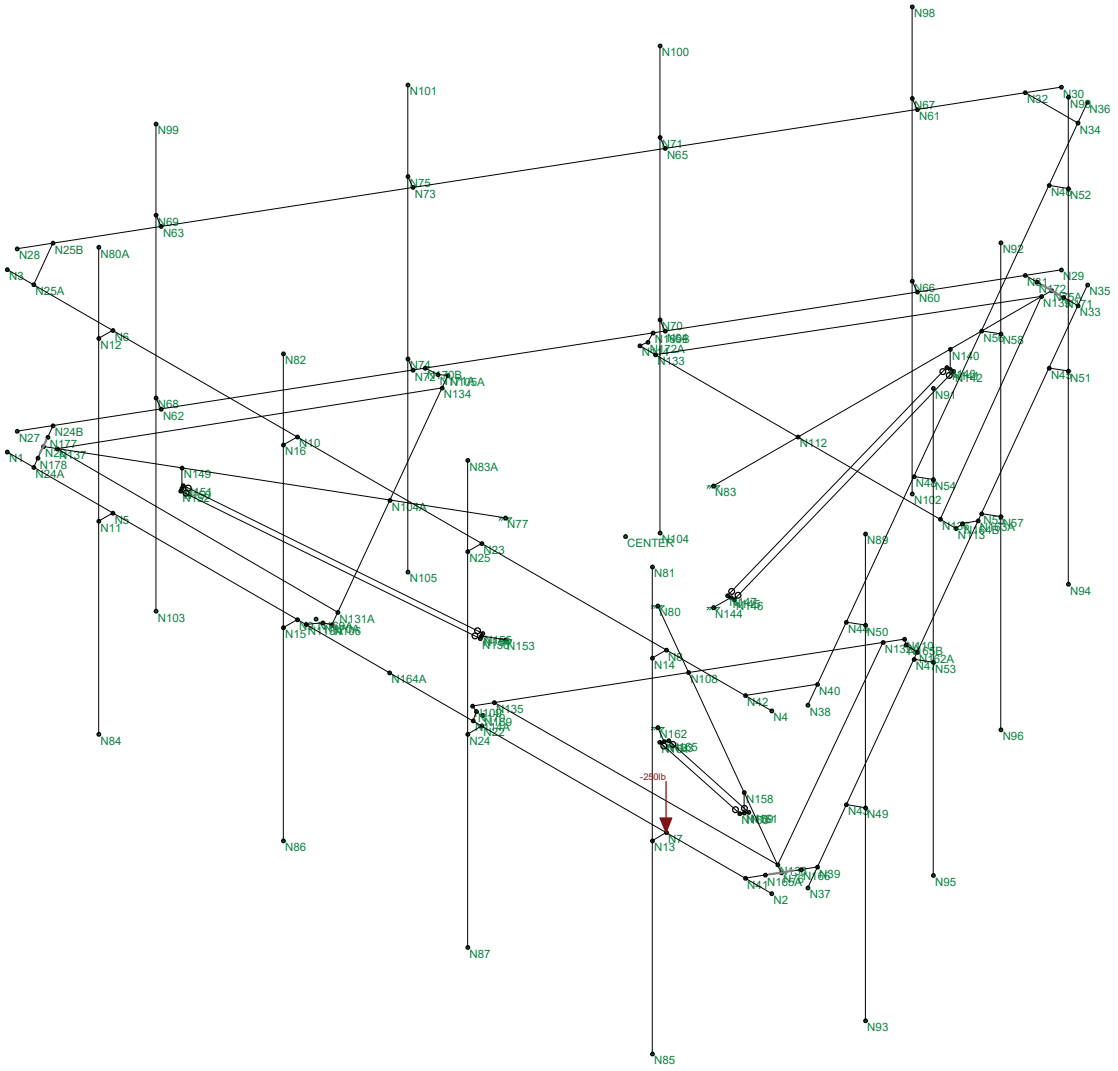

Loads: BLC 37, Maintenance Load 4
Envelope Only Solution

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APPENDIX B

SOFTWARE INPUT CALCULATIONS

Program Inputs

PROJECT INFORMATION	
Client:	Crown Castle
Carrier:	AT&T Mobility
Engineer:	Thomas Bekele

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	C	
Topo Category:	1	
Site Class:	D - Stiff Soil	
Ground Elevation:	564.8	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Platform	
Num Sectors:	3	
Centerline AGL:	168.0	ft
Tower Height AGL:	168.0	ft

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

FACTORS		
Directionality Fact. (K_d):	0.95	
Ground Ele. Factor (K_e):	0.98	*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}):	125	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	1	in
Flat Pressure:	105.12	psf
Round Pressure:	63.07	psf
Ice Wind Pressure:	10.09	psf

SEISMIC DATA		
Short-Period Accel. (S_s):	0.19	g
1-Second Accel. (S_1):	0.05	g
Short-Period Design (S_{DS}):	0.20	
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
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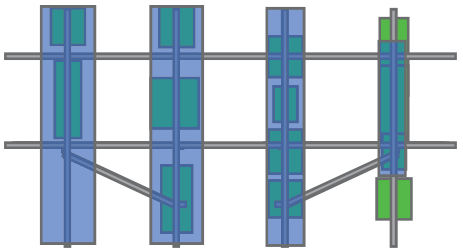
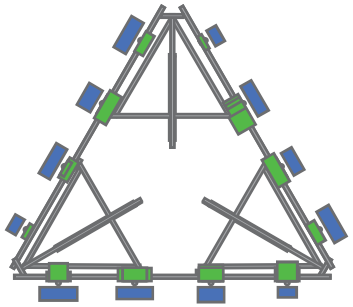
Infinigy Wind Load Calculator V2.0.1

Program Inputs

ELEVATION VIEW



PLAN VIEW



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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 DMP65R-BU6D	168.0	1	0.90	52.56	12.71	5.62	601.19	265.61	79.40	7.88	Leg/Flush
CCI ANTENNAS DMP65R-BU8D	168.0	2	0.90	52.56	17.87	8.12	845.35	384.20	95.70	9.49	MP4
CCI ANTENNAS TPA-65R-LCUUUU-H8	168.0	2	0.90	52.56	11.85	8.99	560.49	425.19	81.60	8.09	MP2
KATHREIN 800 10121	169.0	3	0.90	52.62	3.60	2.95	170.43	139.63	46.30	4.59	MP1
KATHREIN 80010798	168.0	1	0.90	52.56	7.79	4.90	368.55	231.82	81.40	8.07	Leg/Flush
KATHREIN 80010965	169.0	1	0.90	52.62	12.26	5.79	580.78	274.20	97.60	9.68	Leg/Flush
KATHREIN 80010966	168.0	2	0.90	52.56	14.61	6.84	690.94	323.76	114.60	11.37	MP3
ERICSSON RRUS 32 B2	168.0	3	0.90	52.56	2.73	1.67	129.20	78.91	52.90	5.25	Leg/Flush
ERICSSON RRUS 32 B30	168.0	3	0.90	52.56	2.73	1.67	129.20	78.91	52.90	5.25	MP3
ERICSSON RRUS 4415 B25	167.0	3	0.90	52.49	1.64	0.68	77.68	32.07	44.00	4.36	MP4
ERICSSON RRUS 4426 B66	168.0	3	0.90	52.56	1.64	0.73	77.78	34.30	48.40	4.80	MP2
ERICSSON RRUS 4449 B5/B12	168.0	3	0.90	52.56	1.97	1.41	93.07	66.61	71.00	7.04	MP2
ERICSSON RRUS 4478 B14	168.0	1	0.90	52.56	1.84	1.06	87.15	50.08	59.90	5.94	MP1
ERICSSON RRUS E2 B29	168.0	3	0.90	52.56	3.15	1.29	148.77	60.80	52.90	5.25	MP3
POWERWAVE TECHNOLOGIES LGP2140:	169.0	3	0.90	52.62	1.10	0.35	52.29	16.44	14.10	1.40	MP1
RAYCAP DC6-48-60-18-8C	167.0	1	0.90	52.49	2.74	2.74	129.29	129.29	26.20	2.60	MP4
RAYCAP DC6-48-60-18-8F	167.0	2	0.90	52.49	2.90	2.90	137.04	137.04	32.80	3.25	MP1
RAYCAP DC6-48-60-18-8F	168.0	1	0.90	52.56	2.90	2.90	137.21	137.21	32.80	3.25	MP1
POWERWAVE TECHNOLOGIES LGP2140:	169.0	3	0.90	52.62	1.10	0.35	52.29	16.44	14.10	1.40	MP2
ERICSSON RRUS 4478 B14	168.0	1	0.90	52.56	1.84	1.06	87.15	50.08	59.90	5.94	MP2
ERICSSON RRUS 4478 B14	168.0	1	0.90	52.56	1.84	1.06	87.15	50.08	59.90	5.94	MP3

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	M1	N1	N2			Horizontal Face	Beam	Pipe	A53 Gr.B	Typical
2	M2	N3	N4			Handrail	Beam	Pipe	A53 Gr.B	Typical
3	M3	N6	N12			RIGID	None	None	RIGID	Typical
4	M4	N5	N11			RIGID	None	None	RIGID	Typical
5	M5	N10	N16			RIGID	None	None	RIGID	Typical
6	M6	N9	N15			RIGID	None	None	RIGID	Typical
7	M7	N8	N14			RIGID	None	None	RIGID	Typical
8	M8	N7	N13			RIGID	None	None	RIGID	Typical
9	M11	N23	N25			RIGID	None	None	RIGID	Typical
10	M12	N22	N24			RIGID	None	None	RIGID	Typical
11	M12A	N25A	N25B		180	Corner Handra...	Beam	Single Angle	A36 Gr.36	Typical
12	M13	N27	N29			Horizontal Face	Beam	Pipe	A53 Gr.B	Typical
13	M14	N28	N30			Handrail	Beam	Pipe	A53 Gr.B	Typical
14	M16	N32	N34		180	Corner Handra...	Beam	Single Angle	A36 Gr.36	Typical
15	M17	N35	N37			Horizontal Face	Beam	Pipe	A53 Gr.B	Typical
16	M18	N36	N38			Handrail	Beam	Pipe	A53 Gr.B	Typical
17	M19	N39	N166			Corner Plate	Beam	RECT	A36 Gr.36	Typical
18	M20	N40	N42		180	Corner Handra...	Beam	Single Angle	A36 Gr.36	Typical
19	M21	N44	N50			RIGID	None	None	RIGID	Typical
20	M22	N43	N49			RIGID	None	None	RIGID	Typical
21	M23	N48	N54			RIGID	None	None	RIGID	Typical
22	M24	N47	N53			RIGID	None	None	RIGID	Typical
23	M25	N46	N52			RIGID	None	None	RIGID	Typical
24	M26	N45	N51			RIGID	None	None	RIGID	Typical
25	M27	N56	N58			RIGID	None	None	RIGID	Typical
26	M28	N55	N57			RIGID	None	None	RIGID	Typical
27	M29	N61	N67			RIGID	None	None	RIGID	Typical
28	M30	N60	N66			RIGID	None	None	RIGID	Typical
29	M31	N65	N71			RIGID	None	None	RIGID	Typical
30	M32	N64	N70			RIGID	None	None	RIGID	Typical
31	M33	N63	N69			RIGID	None	None	RIGID	Typical
32	M34	N62	N68			RIGID	None	None	RIGID	Typical
33	M35	N73	N75			RIGID	None	None	RIGID	Typical
34	M36	N72	N74			RIGID	None	None	RIGID	Typical
35	M37	N77	N26			Standoff	Beam	Tube	A500 Gr.B...	Typical
36	M38	N80	N76			Standoff	Beam	Tube	A500 Gr.B...	Typical
37	M39	N83	N75A			Standoff	Beam	Tube	A500 Gr.B...	Typical
38	MP4	N80A	N84			Pipe Mount	Column	Pipe	A53 Gr.B	Typical
39	MP3	N82	N86			Pipe Mount	Column	Pipe	A53 Gr.B	Typical
40	MP2	N83A	N87			Pipe Mount	Column	Pipe	A53 Gr.B	Typical
41	MP1	N81	N85			Pipe Mount	Column	Pipe	A53 Gr.B	Typical
42	MP12	N89	N93			Pipe Mount	Column	Pipe	A53 Gr.B	Typical
43	MP11	N91	N95			Pipe Mount	Column	Pipe	A53 Gr.B	Typical
44	MP10	N92	N96			Pipe Mount	Column	Pipe	A53 Gr.B	Typical
45	MP9	N90	N94			Pipe Mount	Column	Pipe	A53 Gr.B	Typical
46	MP8	N98	N102			Pipe Mount	Column	Pipe	A53 Gr.B	Typical
47	MP7	N100	N104			Pipe Mount	Column	Pipe	A53 Gr.B	Typical
48	MP6	N101	N105			Pipe Mount	Column	Pipe	A53 Gr.B	Typical
49	MP5	N99	N103			Pipe Mount	Column	Pipe	A53 Gr.B	Typical
50	M52	N105A	N106			Standoff Tube ...	Beam	Tube	A500 Gr.B...	Typical
51	M53	N109	N110			Standoff Tube ...	Beam	Tube	A500 Gr.B...	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
52	M54	N113	N114			Standoff Tube ...	Beam	Tube	A500 Gr.B...	Typical
53	M67	N131A	N137			Gating Angle	Beam	Single Angle	A36 Gr.36	Typical
54	M68	N137	N134			Gating Angle	Beam	Single Angle	A36 Gr.36	Typical
55	M69	N133	N139			Gating Angle	Beam	Single Angle	A36 Gr.36	Typical
56	M70	N139	N136			Gating Angle	Beam	Single Angle	A36 Gr.36	Typical
57	M71	N132A	N138			Gating Angle	Beam	Single Angle	A36 Gr.36	Typical
58	M72	N138	N135			Gating Angle	Beam	Single Angle	A36 Gr.36	Typical
59	M73	N142	N143			RIGID	None	None	RIGID	Typical
60	M74	N140	N141			RIGID	None	None	RIGID	Typical
61	M75	N144	N145			RIGID	None	None	RIGID	Typical
62	M76	N147	N146			RIGID	None	None	RIGID	Typical
63	M77	N146	N142		90	Kicker Angle	VBrace	Single Angle	A36 Gr.36	Typical
64	M78	N143	N147		90	Kicker Angle	VBrace	Single Angle	A36 Gr.36	Typical
65	M79	N151	N152			RIGID	None	None	RIGID	Typical
66	M80	N149	N150			RIGID	None	None	RIGID	Typical
67	M81	N153	N154			RIGID	None	None	RIGID	Typical
68	M82	N156	N155			RIGID	None	None	RIGID	Typical
69	M83	N155	N151		90	Kicker Angle	VBrace	Single Angle	A36 Gr.36	Typical
70	M84	N152	N156		90	Kicker Angle	VBrace	Single Angle	A36 Gr.36	Typical
71	M85	N160	N161			RIGID	None	None	RIGID	Typical
72	M86	N158	N159			RIGID	None	None	RIGID	Typical
73	M87	N162	N163			RIGID	None	None	RIGID	Typical
74	M88	N165	N164			RIGID	None	None	RIGID	Typical
75	M89	N164	N160		90	Kicker Angle	VBrace	Single Angle	A36 Gr.36	Typical
76	M90	N161	N165		90	Kicker Angle	VBrace	Single Angle	A36 Gr.36	Typical
77	M91	N76	N165A			Corner Plate	Beam	RECT	A36 Gr.36	Typical
78	M92	N165A	N41			Corner Plate	Beam	RECT	A36 Gr.36	Typical
79	M93	N166	N76			Corner Plate	Beam	RECT	A36 Gr.36	Typical
80	M92A	N31	N172			Corner Plate	Beam	RECT	A36 Gr.36	Typical
81	M93A	N75A	N171			Corner Plate	Beam	RECT	A36 Gr.36	Typical
82	M94	N171	N33			Corner Plate	Beam	RECT	A36 Gr.36	Typical
83	M95	N172	N75A			Corner Plate	Beam	RECT	A36 Gr.36	Typical
84	M96	N24A	N178			Corner Plate	Beam	RECT	A36 Gr.36	Typical
85	M97	N26	N177			Corner Plate	Beam	RECT	A36 Gr.36	Typical
86	M98	N177	N24B			Corner Plate	Beam	RECT	A36 Gr.36	Typical
87	M99	N178	N26			Corner Plate	Beam	RECT	A36 Gr.36	Typical
88	M98A	N114A	N170			Bent Plates	Beam	RECT	A36 Gr.36	Typical
89	M99A	N170	N109			Bent Plates	Beam	RECT	A36 Gr.36	Typical
90	M98B	N113A	N170A			Bent Plates	Beam	RECT	A36 Gr.36	Typical
91	M99B	N170A	N106			Bent Plates	Beam	RECT	A36 Gr.36	Typical
92	M92B	N163A	N164B			Bent Plates	Beam	RECT	A36 Gr.36	Typical
93	M93B	N164B	N113			Bent Plates	Beam	RECT	A36 Gr.36	Typical
94	M94A	N162A	N165B			Bent Plates	Beam	RECT	A36 Gr.36	Typical
95	M95A	N165B	N110			Bent Plates	Beam	RECT	A36 Gr.36	Typical
96	M96A	N170B	N171A			Bent Plates	Beam	RECT	A36 Gr.36	Typical
97	M97A	N171A	N105A			Bent Plates	Beam	RECT	A36 Gr.36	Typical
98	M98C	N169B	N172A			Bent Plates	Beam	RECT	A36 Gr.36	Typical
99	M99C	N172A	N114			Bent Plates	Beam	RECT	A36 Gr.36	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		36	109.8	0
3	Total General		36	109.8	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	6"x1/2" Plate	12	24	20.417
7	A36 Gr.36	L2x2x2	6	385.3	53.643
8	A36 Gr.36	L2.5x2.5x3	9	358.6	91.607
9	A36 Gr.36	PL6x.375	12	26	16.601
10	A500 Gr.B Rect	HSS4X4X4	6	447	459.414
11	A53 Gr.B	PIPE_2.0	3	522	150.981
12	A53 Gr.B	PIPE_2.5	12	1152	525.934
13	A53 Gr.B	PIPE_3.0	3	522	306.403
14	Total HR Steel		63	3436.9	1625.001

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(...
1	Self Weight	DL		-1			52		9	
2	Wind Load AZI 0	WLZ					104			
3	Wind Load AZI 30	None					104			
4	Wind Load AZI 60	None					104			
5	Wind Load AZI 90	WLX					104			
6	Wind Load AZI 120	None					104			
7	Wind Load AZI 150	None					104			
8	Wind Load AZI 180	None					104			
9	Wind Load AZI 210	None					104			
10	Wind Load AZI 240	None					104			
11	Wind Load AZI 270	None					104			
12	Wind Load AZI 300	None					104			
13	Wind Load AZI 330	None					104			
14	Distr. Wind Load Z	WLZ						99		
15	Distr. Wind Load X	WLX						99		
16	Ice Weight	OL1					52	99	9	
17	Ice Wind Load AZI 0	OL2					104			
18	Ice Wind Load AZI 30	None					104			
19	Ice Wind Load AZI 60	None					104			
20	Ice Wind Load AZI 90	OL3					104			
21	Ice Wind Load AZI 120	None					104			
22	Ice Wind Load AZI 150	None					104			
23	Ice Wind Load AZI 180	None					104			
24	Ice Wind Load AZI 210	None					104			
25	Ice Wind Load AZI 240	None					104			
26	Ice Wind Load AZI 270	None					104			
27	Ice Wind Load AZI 300	None					104			
28	Ice Wind Load AZI 330	None					104			
29	Distr. Ice Wind Load Z	OL2						99		
30	Distr. Ice Wind Load X	OL3						99		
31	Seismic Load Z	ELZ			-.099		52			
32	Seismic Load X	ELX	-.099				52			

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(...
33	Service Live Loads	LL				1				
34	Maintenance Load 1	LL				1				
35	Maintenance Load 2	LL				1				
36	Maintenance Load 3	LL				1				
37	Maintenance Load 4	LL				1				
38	Maintenance Load 5	LL				1				
39	Maintenance Load 6	LL				1				
40	Maintenance Load 7	LL				1				
41	Maintenance Load 8	LL				1				
42	Maintenance Load 9	LL				1				
43	Maintenance Load 10	LL				1				
44	Maintenance Load 11	LL				1				
45	Maintenance Load 12	LL				1				
46	BLC 1 Transient Area Lo...	None						33		
47	BLC 16 Transient Area L...	None						33		

Load Combinations

	Description	Solve	PDelta	SRSS	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Factor
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	.8...	15	.5														
4	1.2DL + 1WL AZI 60	Yes	Y		1	1.2	4	1	14	.5	15	.8...														
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	.8...														
7	1.2DL + 1WL AZI 150	Yes	Y		1	1.2	7	1	14	-....	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	-....	15	-.5														
10	1.2DL + 1WL AZI 240	Yes	Y		1	1.2	10	1	14	-.5	15	-....														
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	-....														
13	1.2DL + 1WL AZI 330	Yes	Y		1	1.2	13	1	14	.8...	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	.8...	15	.5														
16	0.9DL + 1WL AZI 60	Yes	Y		1	.9	4	1	14	.5	15	.8...														
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	.8...														
19	0.9DL + 1WL AZI 150	Yes	Y		1	.9	7	1	14	-....	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	-....	15	-.5														
22	0.9DL + 1WL AZI 240	Yes	Y		1	.9	10	1	14	-.5	15	-....														
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	-....														
25	0.9DL + 1WL AZI 330	Yes	Y		1	.9	13	1	14	.8...	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...	Yes	Y		1	1.2	16	1	18	1	29	.8...	30	.5												
29	1.2D + 1.0Di +1.0Wi AZI...	Yes	Y		1	1.2	16	1	19	1	29	.5	30	.8...												
30	1.2D + 1.0Di +1.0Wi AZI...	Yes	Y		1	1.2	16	1	20	1	29		30	1												
31	1.2D + 1.0Di +1.0Wi AZI...	Yes	Y		1	1.2	16	1	21	1	29	-.5	30	.8...												
32	1.2D + 1.0Di +1.0Wi AZI...	Yes	Y		1	1.2	16	1	22	1	29	-....	30	.5												

Load Combinations (Continued)

	Description	Solve	PDelta	SRSS	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Factor
33	1.2D + 1.0Di +1.0Wi AZI...	Yes	Y		1	1.2	16	1	23	1	29	-1	30											
34	1.2D + 1.0Di +1.0Wi AZI...	Yes	Y		1	1.2	16	1	24	1	29	-....	30	-.5										
35	1.2D + 1.0Di +1.0Wi AZI...	Yes	Y		1	1.2	16	1	25	1	29	-.5	30	-....										
36	1.2D + 1.0Di +1.0Wi AZI...	Yes	Y		1	1.2	16	1	26	1	29		30	-1										
37	1.2D + 1.0Di +1.0Wi AZI...	Yes	Y		1	1.2	16	1	27	1	29	.5	30	-....										
38	1.2D + 1.0Di +1.0Wi AZI...	Yes	Y		1	1.2	16	1	28	1	29	.8...	30	-.5										
39	(1.2 + 0.2Sds)DL + 1.0E...	Yes	Y		1	1....	31	1	32															
40	(1.2 + 0.2Sds)DL + 1.0E...	Yes	Y		1	1....	31	.8...	32	.5														
41	(1.2 + 0.2Sds)DL + 1.0E...	Yes	Y		1	1....	31	.5	32	.8...														
42	(1.2 + 0.2Sds)DL + 1.0E...	Yes	Y		1	1....	31		32	1														
43	(1.2 + 0.2Sds)DL + 1.0E...	Yes	Y		1	1....	31	-.5	32	.8...														
44	(1.2 + 0.2Sds)DL + 1.0E...	Yes	Y		1	1....	31	-....	32	.5														
45	(1.2 + 0.2Sds)DL + 1.0E...	Yes	Y		1	1....	31	-1	32															
46	(1.2 + 0.2Sds)DL + 1.0E...	Yes	Y		1	1....	31	-....	32	-.5														
47	(1.2 + 0.2Sds)DL + 1.0E...	Yes	Y		1	1....	31	-.5	32	-....														
48	(1.2 + 0.2Sds)DL + 1.0E...	Yes	Y		1	1....	31		32	-1														
49	(1.2 + 0.2Sds)DL + 1.0E...	Yes	Y		1	1....	31	.5	32	-....														
50	(1.2 + 0.2Sds)DL + 1.0E...	Yes	Y		1	1....	31	.8...	32	-.5														
51	(0.9 - 0.2Sds)DL + 1.0E ...	Yes	Y		1	.86	31	1	32															
52	(0.9 - 0.2Sds)DL + 1.0E ...	Yes	Y		1	.86	31	.8...	32	.5														
53	(0.9 - 0.2Sds)DL + 1.0E ...	Yes	Y		1	.86	31	.5	32	.8...														
54	(0.9 - 0.2Sds)DL + 1.0E ...	Yes	Y		1	.86	31		32	1														
55	(0.9 - 0.2Sds)DL + 1.0E ...	Yes	Y		1	.86	31	-.5	32	.8...														
56	(0.9 - 0.2Sds)DL + 1.0E ...	Yes	Y		1	.86	31	-....	32	.5														
57	(0.9 - 0.2Sds)DL + 1.0E ...	Yes	Y		1	.86	31	-1	32															
58	(0.9 - 0.2Sds)DL + 1.0E ...	Yes	Y		1	.86	31	-....	32	-.5														
59	(0.9 - 0.2Sds)DL + 1.0E ...	Yes	Y		1	.86	31	-.5	32	-....														
60	(0.9 - 0.2Sds)DL + 1.0E ...	Yes	Y		1	.86	31		32	-1														
61	(0.9 - 0.2Sds)DL + 1.0E ...	Yes	Y		1	.86	31	.5	32	-....														
62	(0.9 - 0.2Sds)DL + 1.0E ...	Yes	Y		1	.86	31	.8...	32	-.5														
63	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	2	.23	14	.23	15		33	1.5										
64	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	3	.23	14	.2	15	.1...	33	1.5										
65	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	4	.23	14	.1...	15	.2	33	1.5										
66	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	5	.23	14		15	.23	33	1.5										
67	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	6	.23	14	-....	15	.2	33	1.5										
68	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	7	.23	14	-.2	15	.1...	33	1.5										
69	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	8	.23	14	-.23	15		33	1.5										
70	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	9	.23	14	-.2	15	-....	33	1.5										
71	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	10	.23	14	-....	15	-.2	33	1.5										
72	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	11	.23	14		15	-.23	33	1.5										
73	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	12	.23	14	.1...	15	-.2	33	1.5										
74	1.0DL + 1.5LL + 1.0SW...	Yes	Y		1	1	13	.23	14	.2	15	-....	33	1.5										
75	1.2DL + 1.5LL	Yes	Y		1	1.2	33	1.5																
76	1.2DL + 1.5LM-MP1 + 1...	Yes	Y		1	1.2	34	1.5	2	.0...	14	.0...	15											
77	1.2DL + 1.5LM-MP1 + 1...	Yes	Y		1	1.2	34	1.5	3	.0...	14	.05	15	.0...										
78	1.2DL + 1.5LM-MP1 + 1...	Yes	Y		1	1.2	34	1.5	4	.0...	14	.0...	15	.05										
79	1.2DL + 1.5LM-MP1 + 1...	Yes	Y		1	1.2	34	1.5	5	.0...	14		15	.0...										
80	1.2DL + 1.5LM-MP1 + 1...	Yes	Y		1	1.2	34	1.5	6	.0...	14	-....	15	.05										
81	1.2DL + 1.5LM-MP1 + 1...	Yes	Y		1	1.2	34	1.5	7	.0...	14	-.05	15	.0...										
82	1.2DL + 1.5LM-MP1 + 1...	Yes	Y		1	1.2	34	1.5	8	.0...	14	-....	15											
83	1.2DL + 1.5LM-MP1 + 1...	Yes	Y		1	1.2	34	1.5	9	.0...	14	-.05	15	-....										
84	1.2DL + 1.5LM-MP1 + 1...	Yes	Y		1	1.2	34	1.5	10	.0...	14	-....	15	-.05										

Load Combinations (Continued)

	Description	Solve	PDelta	SRSS	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Factor
85	1.2DL + 1.5LM-MP1 + 1...	Yes	Y		1	1.2	34	1.5	11	.0...	14		15	-....										
86	1.2DL + 1.5LM-MP1 + 1...	Yes	Y		1	1.2	34	1.5	12	.0...	14	.0...	15	-.05										
87	1.2DL + 1.5LM-MP1 + 1...	Yes	Y		1	1.2	34	1.5	13	.0...	14	.05	15	-....										
88	1.2DL + 1.5LM-MP2 + 1...	Yes	Y		1	1.2	35	1.5	2	.0...	14	.0...	15											
89	1.2DL + 1.5LM-MP2 + 1...	Yes	Y		1	1.2	35	1.5	3	.0...	14	.05	15	.0...										
90	1.2DL + 1.5LM-MP2 + 1...	Yes	Y		1	1.2	35	1.5	4	.0...	14	.0...	15	.05										
91	1.2DL + 1.5LM-MP2 + 1...	Yes	Y		1	1.2	35	1.5	5	.0...	14		15	.0...										
92	1.2DL + 1.5LM-MP2 + 1...	Yes	Y		1	1.2	35	1.5	6	.0...	14	-....	15	.05										
93	1.2DL + 1.5LM-MP2 + 1...	Yes	Y		1	1.2	35	1.5	7	.0...	14	-.05	15	.0...										
94	1.2DL + 1.5LM-MP2 + 1...	Yes	Y		1	1.2	35	1.5	8	.0...	14	-....	15											
95	1.2DL + 1.5LM-MP2 + 1...	Yes	Y		1	1.2	35	1.5	9	.0...	14	-.05	15	-....										
96	1.2DL + 1.5LM-MP2 + 1...	Yes	Y		1	1.2	35	1.5	10	.0...	14	-....	15	-.05										
97	1.2DL + 1.5LM-MP2 + 1...	Yes	Y		1	1.2	35	1.5	11	.0...	14		15	-....										
98	1.2DL + 1.5LM-MP2 + 1...	Yes	Y		1	1.2	35	1.5	12	.0...	14	.0...	15	-.05										
99	1.2DL + 1.5LM-MP2 + 1...	Yes	Y		1	1.2	35	1.5	13	.0...	14	.05	15	-....										
100	1.2DL + 1.5LM-MP3 + 1...	Yes	Y		1	1.2	36	1.5	2	.0...	14	.0...	15											
101	1.2DL + 1.5LM-MP3 + 1...	Yes	Y		1	1.2	36	1.5	3	.0...	14	.05	15	.0...										
102	1.2DL + 1.5LM-MP3 + 1...	Yes	Y		1	1.2	36	1.5	4	.0...	14	.0...	15	.05										
103	1.2DL + 1.5LM-MP3 + 1...	Yes	Y		1	1.2	36	1.5	5	.0...	14		15	.0...										
104	1.2DL + 1.5LM-MP3 + 1...	Yes	Y		1	1.2	36	1.5	6	.0...	14	-....	15	.05										
105	1.2DL + 1.5LM-MP3 + 1...	Yes	Y		1	1.2	36	1.5	7	.0...	14	-.05	15	.0...										
106	1.2DL + 1.5LM-MP3 + 1...	Yes	Y		1	1.2	36	1.5	8	.0...	14	-....	15											
107	1.2DL + 1.5LM-MP3 + 1...	Yes	Y		1	1.2	36	1.5	9	.0...	14	-.05	15	-....										
108	1.2DL + 1.5LM-MP3 + 1...	Yes	Y		1	1.2	36	1.5	10	.0...	14	-....	15	-.05										
109	1.2DL + 1.5LM-MP3 + 1...	Yes	Y		1	1.2	36	1.5	11	.0...	14		15	-....										
110	1.2DL + 1.5LM-MP3 + 1...	Yes	Y		1	1.2	36	1.5	12	.0...	14	.0...	15	-.05										
111	1.2DL + 1.5LM-MP3 + 1...	Yes	Y		1	1.2	36	1.5	13	.0...	14	.05	15	-....										
112	1.2DL + 1.5LM-MP4 + 1...	Yes	Y		1	1.2	37	1.5	2	.0...	14	.0...	15											
113	1.2DL + 1.5LM-MP4 + 1...	Yes	Y		1	1.2	37	1.5	3	.0...	14	.05	15	.0...										
114	1.2DL + 1.5LM-MP4 + 1...	Yes	Y		1	1.2	37	1.5	4	.0...	14	.0...	15	.05										
115	1.2DL + 1.5LM-MP4 + 1...	Yes	Y		1	1.2	37	1.5	5	.0...	14		15	.0...										
116	1.2DL + 1.5LM-MP4 + 1...	Yes	Y		1	1.2	37	1.5	6	.0...	14	-....	15	.05										
117	1.2DL + 1.5LM-MP4 + 1...	Yes	Y		1	1.2	37	1.5	7	.0...	14	-.05	15	.0...										
118	1.2DL + 1.5LM-MP4 + 1...	Yes	Y		1	1.2	37	1.5	8	.0...	14	-....	15											
119	1.2DL + 1.5LM-MP4 + 1...	Yes	Y		1	1.2	37	1.5	9	.0...	14	-.05	15	-....										
120	1.2DL + 1.5LM-MP4 + 1...	Yes	Y		1	1.2	37	1.5	10	.0...	14	-....	15	-.05										
121	1.2DL + 1.5LM-MP4 + 1...	Yes	Y		1	1.2	37	1.5	11	.0...	14		15	-....										
122	1.2DL + 1.5LM-MP4 + 1...	Yes	Y		1	1.2	37	1.5	12	.0...	14	.0...	15	-.05										
123	1.2DL + 1.5LM-MP4 + 1...	Yes	Y		1	1.2	37	1.5	13	.0...	14	.05	15	-....										
124	1.2DL + 1.5LM-MP5 + 1...	Yes	Y		1	1.2	38	1.5	2	.0...	14	.0...	15											
125	1.2DL + 1.5LM-MP5 + 1...	Yes	Y		1	1.2	38	1.5	3	.0...	14	.05	15	.0...										
126	1.2DL + 1.5LM-MP5 + 1...	Yes	Y		1	1.2	38	1.5	4	.0...	14	.0...	15	.05										
127	1.2DL + 1.5LM-MP5 + 1...	Yes	Y		1	1.2	38	1.5	5	.0...	14		15	.0...										
128	1.2DL + 1.5LM-MP5 + 1...	Yes	Y		1	1.2	38	1.5	6	.0...	14	-....	15	.05										
129	1.2DL + 1.5LM-MP5 + 1...	Yes	Y		1	1.2	38	1.5	7	.0...	14	-.05	15	.0...										
130	1.2DL + 1.5LM-MP5 + 1...	Yes	Y		1	1.2	38	1.5	8	.0...	14	-....	15											
131	1.2DL + 1.5LM-MP5 + 1...	Yes	Y		1	1.2	38	1.5	9	.0...	14	-.05	15	-....										
132	1.2DL + 1.5LM-MP5 + 1...	Yes	Y		1	1.2	38	1.5	10	.0...	14	-....	15	-.05										
133	1.2DL + 1.5LM-MP5 + 1...	Yes	Y		1	1.2	38	1.5	11	.0...	14		15	-....										
134	1.2DL + 1.5LM-MP5 + 1...	Yes	Y		1	1.2	38	1.5	12	.0...	14	.0...	15	-.05										
135	1.2DL + 1.5LM-MP5 + 1...	Yes	Y		1	1.2	38	1.5	13	.0...	14	.05	15	-....										
136	1.2DL + 1.5LM-MP6 + 1...	Yes	Y		1	1.2	39	1.5	2	.0...	14	.0...	15											

Load Combinations (Continued)

	Description	Solve	PDelta	SRSS	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Factor
137	1.2DL + 1.5LM-MP6 + 1...	Yes	Y		1	1.2	39	1.5	3	.0...	14	.05	15	.0...										
138	1.2DL + 1.5LM-MP6 + 1...	Yes	Y		1	1.2	39	1.5	4	.0...	14	.0...	15	.05										
139	1.2DL + 1.5LM-MP6 + 1...	Yes	Y		1	1.2	39	1.5	5	.0...	14		15	.0...										
140	1.2DL + 1.5LM-MP6 + 1...	Yes	Y		1	1.2	39	1.5	6	.0...	14	-....	15	.05										
141	1.2DL + 1.5LM-MP6 + 1...	Yes	Y		1	1.2	39	1.5	7	.0...	14	-.05	15	.0...										
142	1.2DL + 1.5LM-MP6 + 1...	Yes	Y		1	1.2	39	1.5	8	.0...	14	-....	15											
143	1.2DL + 1.5LM-MP6 + 1...	Yes	Y		1	1.2	39	1.5	9	.0...	14	-.05	15	-....										
144	1.2DL + 1.5LM-MP6 + 1...	Yes	Y		1	1.2	39	1.5	10	.0...	14	-....	15	-.05										
145	1.2DL + 1.5LM-MP6 + 1...	Yes	Y		1	1.2	39	1.5	11	.0...	14		15	-....										
146	1.2DL + 1.5LM-MP6 + 1...	Yes	Y		1	1.2	39	1.5	12	.0...	14	.0...	15	-.05										
147	1.2DL + 1.5LM-MP6 + 1...	Yes	Y		1	1.2	39	1.5	13	.0...	14	.05	15	-....										
148	1.2DL + 1.5LM-MP7 + 1...	Yes	Y		1	1.2	40	1.5	2	.0...	14	.0...	15											
149	1.2DL + 1.5LM-MP7 + 1...	Yes	Y		1	1.2	40	1.5	3	.0...	14	.05	15	.0...										
150	1.2DL + 1.5LM-MP7 + 1...	Yes	Y		1	1.2	40	1.5	4	.0...	14	.0...	15	.05										
151	1.2DL + 1.5LM-MP7 + 1...	Yes	Y		1	1.2	40	1.5	5	.0...	14		15	.0...										
152	1.2DL + 1.5LM-MP7 + 1...	Yes	Y		1	1.2	40	1.5	6	.0...	14	-....	15	.05										
153	1.2DL + 1.5LM-MP7 + 1...	Yes	Y		1	1.2	40	1.5	7	.0...	14	-.05	15	.0...										
154	1.2DL + 1.5LM-MP7 + 1...	Yes	Y		1	1.2	40	1.5	8	.0...	14	-....	15											
155	1.2DL + 1.5LM-MP7 + 1...	Yes	Y		1	1.2	40	1.5	9	.0...	14	-.05	15	-....										
156	1.2DL + 1.5LM-MP7 + 1...	Yes	Y		1	1.2	40	1.5	10	.0...	14	-....	15	-.05										
157	1.2DL + 1.5LM-MP7 + 1...	Yes	Y		1	1.2	40	1.5	11	.0...	14		15	-....										
158	1.2DL + 1.5LM-MP7 + 1...	Yes	Y		1	1.2	40	1.5	12	.0...	14	.0...	15	-.05										
159	1.2DL + 1.5LM-MP7 + 1...	Yes	Y		1	1.2	40	1.5	13	.0...	14	.05	15	-....										
160	1.2DL + 1.5LM-MP8 + 1...	Yes	Y		1	1.2	41	1.5	2	.0...	14	.0...	15											
161	1.2DL + 1.5LM-MP8 + 1...	Yes	Y		1	1.2	41	1.5	3	.0...	14	.05	15	.0...										
162	1.2DL + 1.5LM-MP8 + 1...	Yes	Y		1	1.2	41	1.5	4	.0...	14	.0...	15	.05										
163	1.2DL + 1.5LM-MP8 + 1...	Yes	Y		1	1.2	41	1.5	5	.0...	14		15	.0...										
164	1.2DL + 1.5LM-MP8 + 1...	Yes	Y		1	1.2	41	1.5	6	.0...	14	-....	15	.05										
165	1.2DL + 1.5LM-MP8 + 1...	Yes	Y		1	1.2	41	1.5	7	.0...	14	-.05	15	.0...										
166	1.2DL + 1.5LM-MP8 + 1...	Yes	Y		1	1.2	41	1.5	8	.0...	14	-....	15											
167	1.2DL + 1.5LM-MP8 + 1...	Yes	Y		1	1.2	41	1.5	9	.0...	14	-.05	15	-....										
168	1.2DL + 1.5LM-MP8 + 1...	Yes	Y		1	1.2	41	1.5	10	.0...	14	-....	15	-.05										
169	1.2DL + 1.5LM-MP8 + 1...	Yes	Y		1	1.2	41	1.5	11	.0...	14		15	-....										
170	1.2DL + 1.5LM-MP8 + 1...	Yes	Y		1	1.2	41	1.5	12	.0...	14	.0...	15	-.05										
171	1.2DL + 1.5LM-MP8 + 1...	Yes	Y		1	1.2	41	1.5	13	.0...	14	.05	15	-....										
172	1.2DL + 1.5LM-MP9 + 1...	Yes	Y		1	1.2	42	1.5	2	.0...	14	.0...	15											
173	1.2DL + 1.5LM-MP9 + 1...	Yes	Y		1	1.2	42	1.5	3	.0...	14	.05	15	.0...										
174	1.2DL + 1.5LM-MP9 + 1...	Yes	Y		1	1.2	42	1.5	4	.0...	14	.0...	15	.05										
175	1.2DL + 1.5LM-MP9 + 1...	Yes	Y		1	1.2	42	1.5	5	.0...	14		15	.0...										
176	1.2DL + 1.5LM-MP9 + 1...	Yes	Y		1	1.2	42	1.5	6	.0...	14	-....	15	.05										
177	1.2DL + 1.5LM-MP9 + 1...	Yes	Y		1	1.2	42	1.5	7	.0...	14	-.05	15	.0...										
178	1.2DL + 1.5LM-MP9 + 1...	Yes	Y		1	1.2	42	1.5	8	.0...	14	-....	15											
179	1.2DL + 1.5LM-MP9 + 1...	Yes	Y		1	1.2	42	1.5	9	.0...	14	-.05	15	-....										
180	1.2DL + 1.5LM-MP9 + 1...	Yes	Y		1	1.2	42	1.5	10	.0...	14	-....	15	-.05										
181	1.2DL + 1.5LM-MP9 + 1...	Yes	Y		1	1.2	42	1.5	11	.0...	14		15	-....										
182	1.2DL + 1.5LM-MP9 + 1...	Yes	Y		1	1.2	42	1.5	12	.0...	14	.0...	15	-.05										
183	1.2DL + 1.5LM-MP9 + 1...	Yes	Y		1	1.2	42	1.5	13	.0...	14	.05	15	-....										
184	1.2DL + 1.5LM-MP10 + ...	Yes	Y		1	1.2	43	1.5	2	.0...	14	.0...	15											
185	1.2DL + 1.5LM-MP10 + ...	Yes	Y		1	1.2	43	1.5	3	.0...	14	.05	15	.0...										
186	1.2DL + 1.5LM-MP10 + ...	Yes	Y		1	1.2	43	1.5	4	.0...	14	.0...	15	.05										
187	1.2DL + 1.5LM-MP10 + ...	Yes	Y		1	1.2	43	1.5	5	.0...	14		15	.0...										
188	1.2DL + 1.5LM-MP10 + ...	Yes	Y		1	1.2	43	1.5	6	.0...	14	-....	15	.05										

Load Combinations (Continued)

	Description	Solve	PDelta	SRSS	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Factor
189	1.2DL + 1.5LM-MP10 + ...	Yes	Y		1	1.2	43	1.5	7	.0...	14	-.05	15	.0...										
190	1.2DL + 1.5LM-MP10 + ...	Yes	Y		1	1.2	43	1.5	8	.0...	14	-....	15											
191	1.2DL + 1.5LM-MP10 + ...	Yes	Y		1	1.2	43	1.5	9	.0...	14	-.05	15	-....										
192	1.2DL + 1.5LM-MP10 + ...	Yes	Y		1	1.2	43	1.5	10	.0...	14	-....	15	-.05										
193	1.2DL + 1.5LM-MP10 + ...	Yes	Y		1	1.2	43	1.5	11	.0...	14		15	-....										
194	1.2DL + 1.5LM-MP10 + ...	Yes	Y		1	1.2	43	1.5	12	.0...	14	.0...	15	-.05										
195	1.2DL + 1.5LM-MP10 + ...	Yes	Y		1	1.2	43	1.5	13	.0...	14	.05	15	-....										
196	1.2DL + 1.5LM-MP11 + ...	Yes	Y		1	1.2	44	1.5	2	.0...	14	.0...	15											
197	1.2DL + 1.5LM-MP11 + ...	Yes	Y		1	1.2	44	1.5	3	.0...	14	.05	15	.0...										
198	1.2DL + 1.5LM-MP11 + ...	Yes	Y		1	1.2	44	1.5	4	.0...	14	.0...	15	.05										
199	1.2DL + 1.5LM-MP11 + ...	Yes	Y		1	1.2	44	1.5	5	.0...	14		15	.0...										
200	1.2DL + 1.5LM-MP11 + ...	Yes	Y		1	1.2	44	1.5	6	.0...	14	-....	15	.05										
201	1.2DL + 1.5LM-MP11 + ...	Yes	Y		1	1.2	44	1.5	7	.0...	14	-.05	15	.0...										
202	1.2DL + 1.5LM-MP11 + ...	Yes	Y		1	1.2	44	1.5	8	.0...	14	-....	15											
203	1.2DL + 1.5LM-MP11 + ...	Yes	Y		1	1.2	44	1.5	9	.0...	14	-.05	15	-....										
204	1.2DL + 1.5LM-MP11 + ...	Yes	Y		1	1.2	44	1.5	10	.0...	14	-....	15	-.05										
205	1.2DL + 1.5LM-MP11 + ...	Yes	Y		1	1.2	44	1.5	11	.0...	14		15	-....										
206	1.2DL + 1.5LM-MP11 + ...	Yes	Y		1	1.2	44	1.5	12	.0...	14	.0...	15	-.05										
207	1.2DL + 1.5LM-MP11 + ...	Yes	Y		1	1.2	44	1.5	13	.0...	14	.05	15	-....										
208	1.2DL + 1.5LM-MP12 + ...	Yes	Y		1	1.2	45	1.5	2	.0...	14	.0...	15											
209	1.2DL + 1.5LM-MP12 + ...	Yes	Y		1	1.2	45	1.5	3	.0...	14	.05	15	.0...										
210	1.2DL + 1.5LM-MP12 + ...	Yes	Y		1	1.2	45	1.5	4	.0...	14	.0...	15	.05										
211	1.2DL + 1.5LM-MP12 + ...	Yes	Y		1	1.2	45	1.5	5	.0...	14		15	.0...										
212	1.2DL + 1.5LM-MP12 + ...	Yes	Y		1	1.2	45	1.5	6	.0...	14	-....	15	.05										
213	1.2DL + 1.5LM-MP12 + ...	Yes	Y		1	1.2	45	1.5	7	.0...	14	-.05	15	.0...										
214	1.2DL + 1.5LM-MP12 + ...	Yes	Y		1	1.2	45	1.5	8	.0...	14	-....	15											
215	1.2DL + 1.5LM-MP12 + ...	Yes	Y		1	1.2	45	1.5	9	.0...	14	-.05	15	-....										
216	1.2DL + 1.5LM-MP12 + ...	Yes	Y		1	1.2	45	1.5	10	.0...	14	-....	15	-.05										
217	1.2DL + 1.5LM-MP12 + ...	Yes	Y		1	1.2	45	1.5	11	.0...	14		15	-....										
218	1.2DL + 1.5LM-MP12 + ...	Yes	Y		1	1.2	45	1.5	12	.0...	14	.0...	15	-.05										

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	N77	max	6750.914	6	1586.448	28	3344.399	14	-12.19	14	3471.321	15	-211.157	22
2		min	-4008.49	24	508.731	21	-4929.383	8	-1271.974	33	-3473.402	9	-1518.537	29
3	N80	max	3846.258	16	1606.802	35	2578.042	15	-35.959	25	3234.603	19	1586.725	36
4		min	-7012.879	10	529.761	25	-4403.35	9	-1212.673	32	-3239.583	13	275.269	17
5	N83	max	2942.949	17	1430.229	27	7583.258	2	1738.163	27	3180.171	11	384.898	23
6		min	-2945.112	11	425.562	20	-4739.16	20	330.46	20	-3177.956	17	-413.928	5
7	N144	max	96.659	17	1940.619	27	-216.473	20	646.779	27	73.601	23	17.183	23
8		min	-96.789	23	84.513	20	-4722.74	27	28.171	20	-75.239	5	-17.974	5
9	N153	max	-319.998	24	2111.995	31	2570.213	31	-24.703	24	81.303	15	-35.067	24
10		min	-4455.171	31	128.16	24	196.065	24	-356.055	31	-89.153	9	-607.23	31
11	N162	max	4798.179	35	2270.421	35	2768.409	35	-37.944	16	79.725	7	653.711	35
12		min	520.805	16	221.089	16	311.909	16	-381.166	35	-74.289	25	63.19	16
13	Totals:	max	11039.534	17	10666.335	37	11378.116	14						
14		min	-11039.535	11	3581.707	55	-11378.125	8						

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

	Memb...	Shape	Code Check	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*...	phi*...	phi*...	phi*Mn...	Cb	Eqn
1	M67	L2x2x2	.619	0	8	.016	0	z	2	411...	159...	402...	795.156	2.913	H2-1
2	MP3	PIPE_2.5	.595	54	2	.080	54		7	300...	507...	359...	3596.25	2.078	H1-1b
3	M69	L2x2x2	.560	0	4	.013	64.213	y	38	411...	159...	402...	794.473	2.901	H2-1
4	MP7	PIPE_2.5	.545	54	10	.081	54		3	300...	507...	359...	3596.25	1.618	H1-1b
5	M72	L2x2x2	.539	64.213	8	.016	64.213	z	2	411...	159...	402...	786.764	2.764	H2-1
6	M71	L2x2x2	.514	0	12	.014	64.213	y	34	411...	159...	402...	784.753	2.73	H2-1
7	MP2	PIPE_2.5	.493	54	2	.112	54		8	300...	507...	359...	3596.25	2.049	H1-1b
8	MP6	PIPE_2.5	.479	54	10	.092	54		4	300...	507...	359...	3596.25	1.536	H1-1b
9	M12A	L2.5x2.5x3	.475	12	8	.141	12	z	8	277...	291...	872...	1971.83	1.826	H2-1
10	M70	L2x2x2	.457	64.213	12	.014	0	y	28	411...	159...	402...	791.237	2.842	H2-1
11	MP4	PIPE_2.5	.453	54	8	.167	54		8	300...	507...	359...	3596.25	1.673	H1-1b
12	MP8	PIPE_2.5	.444	54	4	.156	54		4	300...	507...	359...	3596.25	1.641	H1-1b
13	M68	L2x2x2	.439	64.213	4	.014	0	y	32	411...	159...	402...	793.024	2.874	H2-1
14	M16	L2.5x2.5x3	.431	12	4	.131	12	z	10	277...	291...	872...	1971.83	1.884	H2-1
15	MP11	PIPE_2.5	.397	54	6	.072	54		11	300...	507...	359...	3596.25	1.86	H1-1b
16	M99B	PL6x.375	.379	1.632	8	.571	1.632	y	2	720...	729...	569...	9112.5	1.044	H1-1b
17	MP10	PIPE_2.5	.369	54	6	.081	54		12	300...	507...	359...	3596.25	1.692	H1-1b
18	M2	PIPE_2.0	.368	23.563	8	.159	148.625		8	467...	321...	187...	1871.6...	3.678	H1-1b
19	M14	PIPE_2.0	.341	150.4...	4	.158	25.375		4	467...	321...	187...	1871.6...	3.656	H1-1b
20	M99C	PL6x.375	.339	1.632	4	.560	1.632	y	10	720...	729...	569...	9112.5	1.04	H1-1b
21	M99A	PL6x.375	.307	1.632	7	.529	1.632	y	2	720...	729...	569...	9112.5	1.054	H1-1b
22	M99	6"x1/2" Plate	.297	1.296	12	.259	1.296	y	29	967...	972...	101...	12150	1.23	H1-1b
23	M95	6"x1/2" Plate	.296	1.296	9	.234	1.296	y	37	967...	972...	101...	12150	1.055	H1-1b
24	M91	6"x1/2" Plate	.293	0	4	.267	0	y	37	970...	972...	101...	12150	1.046	H1-1b
25	M20	L2.5x2.5x3	.289	0	8	.108	12	z	7	277...	291...	872...	1971.83	1.729	H2-1
26	M93	6"x1/2" Plate	.289	1.296	11	.255	1.296	y	33	967...	972...	101...	12150	1.032	H1-1b
27	M95A	PL6x.375	.284	1.632	12	.598	1.632	y	6	720...	729...	569...	9112.5	1.046	H1-1b
28	M37	HSS4X4X4	.280	0	3	.127	0	z	9	117...	139...	161...	16180.5	1.904	H1-1b
29	M93A	6"x1/2" Plate	.278	0	8	.208	0	y	29	970...	972...	101...	12150	1.015	H1-1b
30	M93B	PL6x.375	.275	1.632	11	.517	1.632	y	6	720...	729...	569...	9112.5	1.042	H1-1b
31	M97	6"x1/2" Plate	.271	0	5	.219	0	y	34	970...	972...	101...	12150	1.015	H1-1b
32	M97A	PL6x.375	.269	1.632	3	.547	1.632	y	10	720...	729...	569...	9112.5	1.046	H1-1b
33	M38	HSS4X4X4	.269	0	7	.116	0	z	7	117...	139...	161...	16180.5	1.846	H1-1b
34	MP1	PIPE_2.5	.264	54	12	.134	54		8	300...	507...	359...	3596.25	1.848	H1-1b
35	M18	PIPE_2.0	.258	23.563	11	.101	25.375		12	467...	321...	187...	1871.6...	3.801	H1-1b
36	M39	HSS4X4X4	.255	0	11	.108	19.25	z	5	117...	139...	161...	16180.5	1.865	H1-1b
37	MP12	PIPE_2.5	.252	54	12	.111	54		12	300...	507...	359...	3596.25	1.567	H1-1b
38	M89	L2.5x2.5x3	.237	26.879	34	.009	53.759	y	7	151...	291...	872...	1665.8...	1.136	H2-1
39	MP5	PIPE_2.5	.232	54	8	.114	54		4	300...	507...	359...	3596.25	1.953	H1-1b
40	M94	6"x1/2" Plate	.229	3.296	8	.208	0	y	29	945...	972...	101...	12150	1.083	H1-1b
41	M90	L2.5x2.5x3	.226	26.879	36	.009	0	y	7	151...	291...	872...	1665.8...	1.136	H2-1
42	M84	L2.5x2.5x3	.225	26.879	32	.009	53.759	y	9	151...	291...	872...	1665.8...	1.136	H2-1
43	M92	6"x1/2" Plate	.223	0	9	.267	0	y	37	945...	972...	101...	12150	1.096	H1-1b
44	M92A	6"x1/2" Plate	.216	0	8	.234	2.704	y	37	954...	972...	101...	12150	1.414	H1-1b
45	M98	6"x1/2" Plate	.213	3.296	12	.219	0	y	34	945...	972...	101...	12150	2.273	H1-1b
46	MP9	PIPE_2.5	.212	54	4	.085	54		12	300...	507...	359...	3596.25	2.079	H1-1b
47	M83	L2.5x2.5x3	.210	26.879	30	.009	53.759	y	9	151...	291...	872...	1665.8...	1.136	H2-1
48	M96	6"x1/2" Plate	.209	0	11	.259	2.704	y	29	954...	972...	101...	12150	1.233	H1-1b
49	M19	6"x1/2" Plate	.206	0	4	.255	2.704	y	33	954...	972...	101...	12150	1.352	H1-1b
50	M98B	PL6x.375	.206	0	9	.114	2.704	y	33	705...	729...	569...	9112.5	1.062	H1-1b
51	M78	L2.5x2.5x3	.204	26.879	29	.010	53.759	y	5	151...	291...	872...	1665.8...	1.136	H2-1

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

	Memb...	Shape	Code Check	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*...	phi*...	phi*...	phi*Mn...	Cb	Eqn
52	M77	L2.5x2.5x3	.200	26.879	38	.010	53.759	y	5	151...	291...	872...	1665.8...	1.136	H2-1
53	M1	PIPE_3.0	.187	25.375	20	.182	67.063		2	212...	652...	574...	5748.75	2.927	H1-1b
54	M53	HSS4X4X4	.187	36	33	.069	69	z	12	120...	139...	161...	16180.5	1.351	H1-1b
55	M52	HSS4X4X4	.183	36	29	.079	69	z	8	120...	139...	161...	16180.5	1.355	H1-1b
56	M98C	PL6x.375	.179	0	5	.102	2.704	y	29	705...	729...	569...	9112.5	1.054	H1-1b
57	M13	PIPE_3.0	.176	148.6...	3	.166	106.938		10	212...	652...	574...	5748.75	2.47	H1-1b
58	M98A	PL6x.375	.172	0	3	.104	2.704	y	32	705...	729...	569...	9112.5	1.091	H1-1b
59	M96A	PL6x.375	.168	0	9	.077	2.704	y	3	705...	729...	569...	9112.5	1.066	H1-1b
60	M94A	PL6x.375	.162	0	5	.082	2.704	y	12	705...	729...	569...	9112.5	1.068	H1-1b
61	M54	HSS4X4X4	.157	36	28	.074	69	z	4	120...	139...	161...	16180.5	1.343	H1-1b
62	M92B	PL6x.375	.156	0	11	.077	2.704	y	11	705...	729...	569...	9112.5	1.068	H1-1b
63	M17	PIPE_3.0	.147	148.6...	24	.174	106.938		6	212...	652...	574...	5748.75	2.705	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	N77	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N80	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N83	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N144	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N145						
6	N146						
7	N147						
8	N153	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
9	N154						
10	N155						
11	N156						
12	N162	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
13	N163						
14	N164						
15	N165						

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes				None
2	M2						Yes	Default			None
3	M3						Yes	** NA **			None
4	M4						Yes	** NA **			None
5	M5						Yes	** NA **			None
6	M6						Yes	** NA **			None
7	M7						Yes	** NA **			None
8	M8						Yes	** NA **			None
9	M11						Yes	** NA **			None
10	M12						Yes	** NA **			None
11	M12A						Yes				None
12	M13						Yes				None
13	M14						Yes				None
14	M16						Yes				None
15	M17						Yes				None
16	M18						Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
17	M19						Yes	Default			None
18	M20						Yes				None
19	M21						Yes	** NA **			None
20	M22						Yes	** NA **			None
21	M23						Yes	** NA **			None
22	M24						Yes	** NA **			None
23	M25						Yes	** NA **			None
24	M26						Yes	** NA **			None
25	M27						Yes	** NA **			None
26	M28						Yes	** NA **			None
27	M29						Yes	** NA **			None
28	M30						Yes	** NA **			None
29	M31						Yes	** NA **			None
30	M32						Yes	** NA **			None
31	M33						Yes	** NA **			None
32	M34						Yes	** NA **			None
33	M35						Yes	** NA **			None
34	M36						Yes	** NA **			None
35	M37						Yes				None
36	M38						Yes				None
37	M39						Yes				None
38	MP4						Yes	** NA **			None
39	MP3						Yes	** NA **			None
40	MP2						Yes	** NA **			None
41	MP1						Yes	** NA **			None
42	MP12						Yes	** NA **			None
43	MP11						Yes	** NA **			None
44	MP10						Yes	** NA **			None
45	MP9						Yes	** NA **			None
46	MP8						Yes	** NA **			None
47	MP7						Yes	** NA **			None
48	MP6						Yes	** NA **			None
49	MP5						Yes	** NA **			None
50	M52						Yes				None
51	M53						Yes				None
52	M54						Yes				None
53	M67						Yes				None
54	M68						Yes				None
55	M69						Yes				None
56	M70						Yes				None
57	M71						Yes				None
58	M72						Yes				None
59	M73						Yes	** NA **			None
60	M74						Yes	** NA **			None
61	M75						Yes	** NA **			None
62	M76						Yes	** NA **			None
63	M77	BenPIN	BenPIN				Yes	** NA **			None
64	M78	BenPIN	BenPIN				Yes	** NA **			None
65	M79						Yes	** NA **			None
66	M80						Yes	** NA **			None
67	M81						Yes	** NA **			None
68	M82						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
69	M83	BenPIN	BenPIN				Yes	** NA **			None
70	M84	BenPIN	BenPIN				Yes	** NA **			None
71	M85						Yes	** NA **			None
72	M86						Yes	** NA **			None
73	M87						Yes	** NA **			None
74	M88						Yes	** NA **			None
75	M89	BenPIN	BenPIN				Yes	** NA **			None
76	M90	BenPIN	BenPIN				Yes	** NA **			None
77	M91			2			Yes				None
78	M92						Yes	Default			None
79	M93				2		Yes				None
80	M92A						Yes	Default			None
81	M93A			2			Yes				None
82	M94						Yes	Default			None
83	M95				2		Yes				None
84	M96						Yes	Default			None
85	M97			2			Yes				None
86	M98						Yes	Default			None
87	M99				2		Yes				None
88	M98A						Yes				None
89	M99A						Yes				None
90	M98B						Yes				None
91	M99B						Yes				None
92	M92B						Yes				None
93	M93B						Yes				None
94	M94A						Yes				None
95	M95A						Yes				None
96	M96A						Yes				None
97	M97A						Yes				None
98	M98C						Yes				None
99	M99C						Yes				None

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	Y	-47.85	0
2	MP4	Y	-47.85	%100
3	MP2	Y	-40.8	0
4	MP2	Y	-40.8	%100
5	MP1	Y	-23.15	%9
6	MP1	Y	-23.15	%66.5
7	MP3	Y	-57.3	0
8	MP3	Y	-57.3	%100
9	MP3	Y	-52.9	%20
10	MP4	Y	-44	%20
11	MP2	Y	-48.4	%20
12	MP2	Y	-71	%40
13	MP1	Y	-59.9	%20
14	MP3	Y	-52.9	%40
15	MP1	Y	-14.1	%40
16	MP4	Y	-26.2	%40

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
17	MP1	Y	-32.8	%60
18	MP1	Y	-32.8	%80
19	MP2	Y	-14.1	%60
20	MP2	Y	-59.9	%80
21	MP3	Y	-59.9	%60
22	MP8	Y	-47.85	0
23	MP8	Y	-47.85	%100
24	MP7	Y	-40.8	0
25	MP7	Y	-40.8	%100
26	MP5	Y	-23.15	%9
27	MP5	Y	-23.15	%66.5
28	MP6	Y	-57.3	0
29	MP6	Y	-57.3	%100
30	MP7	Y	-52.9	%20
31	MP7	Y	-52.9	%40
32	MP8	Y	-44	%20
33	MP6	Y	-48.4	%20
34	MP7	Y	-52.9	%60
35	MP5	Y	-14.1	%40
36	MP6	Y	-14.1	%60
37	MP12	Y	-39.7	%13
38	MP12	Y	-39.7	%87
39	MP9	Y	-23.15	%9
40	MP9	Y	-23.15	%66.5
41	MP11	Y	-40.7	%9
42	MP11	Y	-40.7	%91
43	MP10	Y	-48.8	%10
44	MP10	Y	-48.8	%90
45	MP11	Y	-52.9	%20
46	MP11	Y	-52.9	%40
47	MP12	Y	-44	%20
48	MP10	Y	-71	%40
49	MP11	Y	-52.9	%60
50	MP9	Y	-14.1	%40
51	MP10	Y	-32.8	%60
52	MP10	Y	-14.1	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	0	0
2	MP4	Z	-422.67	0
3	MP4	X	0	%100
4	MP4	Z	-422.67	%100
5	MP2	X	0	0
6	MP2	Z	-280.24	0
7	MP2	X	0	%100
8	MP2	Z	-280.24	%100
9	MP1	X	0	%9
10	MP1	Z	-85.22	%9
11	MP1	X	0	%66.5
12	MP1	Z	-85.22	%66.5

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
13	MP3	X	0	0
14	MP3	Z	-345.47	0
15	MP3	X	0	%100
16	MP3	Z	-345.47	%100
17	MP3	X	0	%20
18	MP3	Z	-129.2	%20
19	MP4	X	0	%20
20	MP4	Z	-77.68	%20
21	MP2	X	0	%20
22	MP2	Z	-77.78	%20
23	MP2	X	0	%40
24	MP2	Z	-93.07	%40
25	MP1	X	0	%20
26	MP1	Z	-87.15	%20
27	MP3	X	0	%40
28	MP3	Z	-148.77	%40
29	MP1	X	0	%40
30	MP1	Z	-52.29	%40
31	MP4	X	0	%40
32	MP4	Z	-129.29	%40
33	MP1	X	0	%60
34	MP1	Z	-137.04	%60
35	MP1	X	0	%80
36	MP1	Z	-137.21	%80
37	MP2	X	0	%60
38	MP2	Z	-52.29	%60
39	MP2	X	0	%80
40	MP2	Z	-87.15	%80
41	MP3	X	0	%60
42	MP3	Z	-87.15	%60
43	MP8	X	0	0
44	MP8	Z	-249.74	0
45	MP8	X	0	%100
46	MP8	Z	-249.74	%100
47	MP7	X	0	0
48	MP7	Z	-229.51	0
49	MP7	X	0	%100
50	MP7	Z	-229.51	%100
51	MP5	X	0	%9
52	MP5	Z	-73.67	%9
53	MP5	X	0	%66.5
54	MP5	Z	-73.67	%66.5
55	MP6	X	0	0
56	MP6	Z	-207.78	0
57	MP6	X	0	%100
58	MP6	Z	-207.78	%100
59	MP7	X	0	%20
60	MP7	Z	-91.48	%20
61	MP7	X	0	%40
62	MP7	Z	-91.48	%40
63	MP8	X	0	%20
64	MP8	Z	-43.47	%20

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
65	MP6	X	0	%20
66	MP6	Z	-45.17	%20
67	MP7	X	0	%60
68	MP7	Z	-82.79	%60
69	MP5	X	0	%40
70	MP5	Z	-25.4	%40
71	MP6	X	0	%60
72	MP6	Z	-25.4	%60
73	MP12	X	0	%13
74	MP12	Z	-174.75	%13
75	MP12	X	0	%87
76	MP12	Z	-174.75	%87
77	MP9	X	0	%9
78	MP9	Z	-73.67	%9
79	MP9	X	0	%66.5
80	MP9	Z	-73.67	%66.5
81	MP11	X	0	%9
82	MP11	Z	-133	%9
83	MP11	X	0	%91
84	MP11	Z	-133	%91
85	MP10	X	0	%10
86	MP10	Z	-175.42	%10
87	MP10	X	0	%90
88	MP10	Z	-175.42	%90
89	MP11	X	0	%20
90	MP11	Z	-91.48	%20
91	MP11	X	0	%40
92	MP11	Z	-91.48	%40
93	MP12	X	0	%20
94	MP12	Z	-43.47	%20
95	MP10	X	0	%40
96	MP10	Z	-73.22	%40
97	MP11	X	0	%60
98	MP11	Z	-82.79	%60
99	MP9	X	0	%40
100	MP9	Z	-25.4	%40
101	MP10	X	0	%60
102	MP10	Z	-137.04	%60
103	MP10	X	0	%60
104	MP10	Z	-25.4	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	-182.51	0
2	MP4	Z	-316.13	0
3	MP4	X	-182.51	%100
4	MP4	Z	-316.13	%100
5	MP2	X	-131.67	0
6	MP2	Z	-228.05	0
7	MP2	X	-131.67	%100
8	MP2	Z	-228.05	%100

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
9	MP1	X	-40.68	%9
10	MP1	Z	-70.46	%9
11	MP1	X	-40.68	%66.5
12	MP1	Z	-70.46	%66.5
13	MP3	X	-149.79	0
14	MP3	Z	-259.44	0
15	MP3	X	-149.79	%100
16	MP3	Z	-259.44	%100
17	MP3	X	-58.31	%20
18	MP3	Z	-101	%20
19	MP4	X	-33.14	%20
20	MP4	Z	-57.4	%20
21	MP2	X	-33.46	%20
22	MP2	Z	-57.95	%20
23	MP2	X	-43.23	%40
24	MP2	Z	-74.87	%40
25	MP1	X	-38.94	%20
26	MP1	Z	-67.45	%20
27	MP3	X	-63.39	%40
28	MP3	Z	-109.79	%40
29	MP1	X	-21.66	%40
30	MP1	Z	-37.52	%40
31	MP4	X	-64.64	%40
32	MP4	Z	-111.97	%40
33	MP1	X	-68.52	%60
34	MP1	Z	-118.68	%60
35	MP1	X	-68.61	%80
36	MP1	Z	-118.83	%80
37	MP2	X	-21.66	%60
38	MP2	Z	-37.52	%60
39	MP2	X	-38.94	%80
40	MP2	Z	-67.45	%80
41	MP3	X	-38.94	%60
42	MP3	Z	-67.45	%60
43	MP8	X	-182.51	0
44	MP8	Z	-316.13	0
45	MP8	X	-182.51	%100
46	MP8	Z	-316.13	%100
47	MP7	X	-131.67	0
48	MP7	Z	-228.05	0
49	MP7	X	-131.67	%100
50	MP7	Z	-228.05	%100
51	MP5	X	-40.68	%9
52	MP5	Z	-70.46	%9
53	MP5	X	-40.68	%66.5
54	MP5	Z	-70.46	%66.5
55	MP6	X	-149.79	0
56	MP6	Z	-259.44	0
57	MP6	X	-149.79	%100
58	MP6	Z	-259.44	%100
59	MP7	X	-58.31	%20
60	MP7	Z	-101	%20

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
61	MP7	X	-58.31	%40
62	MP7	Z	-101	%40
63	MP8	X	-33.14	%20
64	MP8	Z	-57.4	%20
65	MP6	X	-33.46	%20
66	MP6	Z	-57.95	%20
67	MP7	X	-63.39	%60
68	MP7	Z	-109.79	%60
69	MP5	X	-21.66	%40
70	MP5	Z	-37.52	%40
71	MP6	X	-21.66	%60
72	MP6	Z	-37.52	%60
73	MP12	X	-66.4	%13
74	MP12	Z	-115.01	%13
75	MP12	X	-66.4	%87
76	MP12	Z	-115.01	%87
77	MP9	X	-34.91	%9
78	MP9	Z	-60.46	%9
79	MP9	X	-34.91	%66.5
80	MP9	Z	-60.46	%66.5
81	MP11	X	-57.96	%9
82	MP11	Z	-100.38	%9
83	MP11	X	-57.96	%91
84	MP11	Z	-100.38	%91
85	MP10	X	-68.55	%10
86	MP10	Z	-118.73	%10
87	MP10	X	-68.55	%90
88	MP10	Z	-118.73	%90
89	MP11	X	-39.45	%20
90	MP11	Z	-68.33	%20
91	MP11	X	-39.45	%40
92	MP11	Z	-68.33	%40
93	MP12	X	-16.03	%20
94	MP12	Z	-27.77	%20
95	MP10	X	-33.3	%40
96	MP10	Z	-57.68	%40
97	MP11	X	-30.4	%60
98	MP11	Z	-52.66	%60
99	MP9	X	-8.22	%40
100	MP9	Z	-14.24	%40
101	MP10	X	-68.52	%60
102	MP10	Z	-118.68	%60
103	MP10	X	-8.22	%60
104	MP10	Z	-14.24	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	-216.28	0
2	MP4	Z	-124.87	0
3	MP4	X	-216.28	%100
4	MP4	Z	-124.87	%100

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
5	MP2	X	-198.76	0
6	MP2	Z	-114.75	0
7	MP2	X	-198.76	%100
8	MP2	Z	-114.75	%100
9	MP1	X	-63.8	%9
10	MP1	Z	-36.83	%9
11	MP1	X	-63.8	%66.5
12	MP1	Z	-36.83	%66.5
13	MP3	X	-179.94	0
14	MP3	Z	-103.89	0
15	MP3	X	-179.94	%100
16	MP3	Z	-103.89	%100
17	MP3	X	-79.22	%20
18	MP3	Z	-45.74	%20
19	MP4	X	-37.65	%20
20	MP4	Z	-21.74	%20
21	MP2	X	-39.12	%20
22	MP2	Z	-22.59	%20
23	MP2	X	-63.41	%40
24	MP2	Z	-36.61	%40
25	MP1	X	-51.4	%20
26	MP1	Z	-29.67	%20
27	MP3	X	-71.7	%40
28	MP3	Z	-41.4	%40
29	MP1	X	-22	%40
30	MP1	Z	-12.7	%40
31	MP4	X	-111.97	%40
32	MP4	Z	-64.64	%40
33	MP1	X	-118.68	%60
34	MP1	Z	-68.52	%60
35	MP1	X	-118.83	%80
36	MP1	Z	-68.61	%80
37	MP2	X	-22	%60
38	MP2	Z	-12.7	%60
39	MP2	X	-51.4	%80
40	MP2	Z	-29.67	%80
41	MP3	X	-51.4	%60
42	MP3	Z	-29.67	%60
43	MP8	X	-366.05	0
44	MP8	Z	-211.34	0
45	MP8	X	-366.05	%100
46	MP8	Z	-211.34	%100
47	MP7	X	-242.7	0
48	MP7	Z	-140.12	0
49	MP7	X	-242.7	%100
50	MP7	Z	-140.12	%100
51	MP5	X	-73.8	%9
52	MP5	Z	-42.61	%9
53	MP5	X	-73.8	%66.5
54	MP5	Z	-42.61	%66.5
55	MP6	X	-299.18	0
56	MP6	Z	-172.73	0

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
57	MP6	X	-299.18	%100
58	MP6	Z	-172.73	%100
59	MP7	X	-111.89	%20
60	MP7	Z	-64.6	%20
61	MP7	X	-111.89	%40
62	MP7	Z	-64.6	%40
63	MP8	X	-67.28	%20
64	MP8	Z	-38.84	%20
65	MP6	X	-67.36	%20
66	MP6	Z	-38.89	%20
67	MP7	X	-128.84	%60
68	MP7	Z	-74.38	%60
69	MP5	X	-45.28	%40
70	MP5	Z	-26.14	%40
71	MP6	X	-45.28	%60
72	MP6	Z	-26.14	%60
73	MP12	X	-151.34	%13
74	MP12	Z	-87.38	%13
75	MP12	X	-151.34	%87
76	MP12	Z	-87.38	%87
77	MP9	X	-63.8	%9
78	MP9	Z	-36.83	%9
79	MP9	X	-63.8	%66.5
80	MP9	Z	-36.83	%66.5
81	MP11	X	-115.18	%9
82	MP11	Z	-66.5	%9
83	MP11	X	-115.18	%91
84	MP11	Z	-66.5	%91
85	MP10	X	-151.92	%10
86	MP10	Z	-87.71	%10
87	MP10	X	-151.92	%90
88	MP10	Z	-87.71	%90
89	MP11	X	-79.22	%20
90	MP11	Z	-45.74	%20
91	MP11	X	-79.22	%40
92	MP11	Z	-45.74	%40
93	MP12	X	-37.65	%20
94	MP12	Z	-21.74	%20
95	MP10	X	-63.41	%40
96	MP10	Z	-36.61	%40
97	MP11	X	-71.7	%60
98	MP11	Z	-41.4	%60
99	MP9	X	-22	%40
100	MP9	Z	-12.7	%40
101	MP10	X	-118.68	%60
102	MP10	Z	-68.52	%60
103	MP10	X	-22	%60
104	MP10	Z	-12.7	%60

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

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

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	-192.1	0
2	MP4	Z	0	0
3	MP4	X	-192.1	%100
4	MP4	Z	0	%100
5	MP2	X	-212.59	0
6	MP2	Z	0	0
7	MP2	X	-212.59	%100
8	MP2	Z	0	%100
9	MP1	X	-69.82	%9
10	MP1	Z	0	%9
11	MP1	X	-69.82	%66.5
12	MP1	Z	0	%66.5
13	MP3	X	-161.88	0
14	MP3	Z	0	0
15	MP3	X	-161.88	%100
16	MP3	Z	0	%100
17	MP3	X	-78.91	%20
18	MP3	Z	0	%20
19	MP4	X	-32.07	%20
20	MP4	Z	0	%20
21	MP2	X	-34.3	%20
22	MP2	Z	0	%20
23	MP2	X	-66.61	%40
24	MP2	Z	0	%40
25	MP1	X	-50.08	%20
26	MP1	Z	0	%20
27	MP3	X	-60.8	%40
28	MP3	Z	0	%40
29	MP1	X	-16.44	%40
30	MP1	Z	0	%40
31	MP4	X	-129.29	%40
32	MP4	Z	0	%40
33	MP1	X	-137.04	%60
34	MP1	Z	0	%60
35	MP1	X	-137.21	%80
36	MP1	Z	0	%80
37	MP2	X	-16.44	%60
38	MP2	Z	0	%60
39	MP2	X	-50.08	%80
40	MP2	Z	0	%80
41	MP3	X	-50.08	%60
42	MP3	Z	0	%60
43	MP8	X	-365.03	0
44	MP8	Z	0	0
45	MP8	X	-365.03	%100
46	MP8	Z	0	%100
47	MP7	X	-263.33	0
48	MP7	Z	0	0
49	MP7	X	-263.33	%100
50	MP7	Z	0	%100
51	MP5	X	-81.37	%9
52	MP5	Z	0	%9

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	-81.37	%66.5
54	MP5	Z	0	%66.5
55	MP6	X	-299.57	0
56	MP6	Z	0	0
57	MP6	X	-299.57	%100
58	MP6	Z	0	%100
59	MP7	X	-116.63	%20
60	MP7	Z	0	%20
61	MP7	X	-116.63	%40
62	MP7	Z	0	%40
63	MP8	X	-66.28	%20
64	MP8	Z	0	%20
65	MP6	X	-66.91	%20
66	MP6	Z	0	%20
67	MP7	X	-126.77	%60
68	MP7	Z	0	%60
69	MP5	X	-43.33	%40
70	MP5	Z	0	%40
71	MP6	X	-43.33	%60
72	MP6	Z	0	%60
73	MP12	X	-258.65	%13
74	MP12	Z	0	%13
75	MP12	X	-258.65	%87
76	MP12	Z	0	%87
77	MP9	X	-81.37	%9
78	MP9	Z	0	%9
79	MP9	X	-81.37	%66.5
80	MP9	Z	0	%66.5
81	MP11	X	-167.18	%9
82	MP11	Z	0	%9
83	MP11	X	-167.18	%91
84	MP11	Z	0	%91
85	MP10	X	-252.07	%10
86	MP10	Z	0	%10
87	MP10	X	-252.07	%90
88	MP10	Z	0	%90
89	MP11	X	-116.63	%20
90	MP11	Z	0	%20
91	MP11	X	-116.63	%40
92	MP11	Z	0	%40
93	MP12	X	-66.28	%20
94	MP12	Z	0	%20
95	MP10	X	-86.45	%40
96	MP10	Z	0	%40
97	MP11	X	-126.77	%60
98	MP11	Z	0	%60
99	MP9	X	-43.33	%40
100	MP9	Z	0	%40
101	MP10	X	-137.04	%60
102	MP10	Z	0	%60
103	MP10	X	-43.33	%60
104	MP10	Z	0	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	-216.28	0
2	MP4	Z	124.87	0
3	MP4	X	-216.28	%100
4	MP4	Z	124.87	%100
5	MP2	X	-198.76	0
6	MP2	Z	114.75	0
7	MP2	X	-198.76	%100
8	MP2	Z	114.75	%100
9	MP1	X	-63.8	%9
10	MP1	Z	36.83	%9
11	MP1	X	-63.8	%66.5
12	MP1	Z	36.83	%66.5
13	MP3	X	-179.94	0
14	MP3	Z	103.89	0
15	MP3	X	-179.94	%100
16	MP3	Z	103.89	%100
17	MP3	X	-79.22	%20
18	MP3	Z	45.74	%20
19	MP4	X	-37.65	%20
20	MP4	Z	21.74	%20
21	MP2	X	-39.12	%20
22	MP2	Z	22.59	%20
23	MP2	X	-63.41	%40
24	MP2	Z	36.61	%40
25	MP1	X	-51.4	%20
26	MP1	Z	29.67	%20
27	MP3	X	-71.7	%40
28	MP3	Z	41.4	%40
29	MP1	X	-22	%40
30	MP1	Z	12.7	%40
31	MP4	X	-111.97	%40
32	MP4	Z	64.64	%40
33	MP1	X	-118.68	%60
34	MP1	Z	68.52	%60
35	MP1	X	-118.83	%80
36	MP1	Z	68.61	%80
37	MP2	X	-22	%60
38	MP2	Z	12.7	%60
39	MP2	X	-51.4	%80
40	MP2	Z	29.67	%80
41	MP3	X	-51.4	%60
42	MP3	Z	29.67	%60
43	MP8	X	-216.28	0
44	MP8	Z	124.87	0
45	MP8	X	-216.28	%100
46	MP8	Z	124.87	%100
47	MP7	X	-198.76	0
48	MP7	Z	114.75	0
49	MP7	X	-198.76	%100
50	MP7	Z	114.75	%100
51	MP5	X	-63.8	%9
52	MP5	Z	36.83	%9

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	-63.8	%66.5
54	MP5	Z	36.83	%66.5
55	MP6	X	-179.94	0
56	MP6	Z	103.89	0
57	MP6	X	-179.94	%100
58	MP6	Z	103.89	%100
59	MP7	X	-79.22	%20
60	MP7	Z	45.74	%20
61	MP7	X	-79.22	%40
62	MP7	Z	45.74	%40
63	MP8	X	-37.65	%20
64	MP8	Z	21.74	%20
65	MP6	X	-39.12	%20
66	MP6	Z	22.59	%20
67	MP7	X	-71.7	%60
68	MP7	Z	41.4	%60
69	MP5	X	-22	%40
70	MP5	Z	12.7	%40
71	MP6	X	-22	%60
72	MP6	Z	12.7	%60
73	MP12	X	-260.32	%13
74	MP12	Z	150.3	%13
75	MP12	X	-260.32	%87
76	MP12	Z	150.3	%87
77	MP9	X	-73.8	%9
78	MP9	Z	42.61	%9
79	MP9	X	-73.8	%66.5
80	MP9	Z	42.61	%66.5
81	MP11	X	-159.59	%9
82	MP11	Z	92.14	%9
83	MP11	X	-159.59	%91
84	MP11	Z	92.14	%91
85	MP10	X	-251.49	%10
86	MP10	Z	145.2	%10
87	MP10	X	-251.49	%90
88	MP10	Z	145.2	%90
89	MP11	X	-111.89	%20
90	MP11	Z	64.6	%20
91	MP11	X	-111.89	%40
92	MP11	Z	64.6	%40
93	MP12	X	-67.28	%20
94	MP12	Z	38.84	%20
95	MP10	X	-80.6	%40
96	MP10	Z	46.53	%40
97	MP11	X	-128.84	%60
98	MP11	Z	74.38	%60
99	MP9	X	-45.28	%40
100	MP9	Z	26.14	%40
101	MP10	X	-118.68	%60
102	MP10	Z	68.52	%60
103	MP10	X	-45.28	%60
104	MP10	Z	26.14	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	-182.51	0
2	MP4	Z	316.13	0
3	MP4	X	-182.51	%100
4	MP4	Z	316.13	%100
5	MP2	X	-131.67	0
6	MP2	Z	228.05	0
7	MP2	X	-131.67	%100
8	MP2	Z	228.05	%100
9	MP1	X	-40.68	%9
10	MP1	Z	70.46	%9
11	MP1	X	-40.68	%66.5
12	MP1	Z	70.46	%66.5
13	MP3	X	-149.79	0
14	MP3	Z	259.44	0
15	MP3	X	-149.79	%100
16	MP3	Z	259.44	%100
17	MP3	X	-58.31	%20
18	MP3	Z	101	%20
19	MP4	X	-33.14	%20
20	MP4	Z	57.4	%20
21	MP2	X	-33.46	%20
22	MP2	Z	57.95	%20
23	MP2	X	-43.23	%40
24	MP2	Z	74.87	%40
25	MP1	X	-38.94	%20
26	MP1	Z	67.45	%20
27	MP3	X	-63.39	%40
28	MP3	Z	109.79	%40
29	MP1	X	-21.66	%40
30	MP1	Z	37.52	%40
31	MP4	X	-64.64	%40
32	MP4	Z	111.97	%40
33	MP1	X	-68.52	%60
34	MP1	Z	118.68	%60
35	MP1	X	-68.61	%80
36	MP1	Z	118.83	%80
37	MP2	X	-21.66	%60
38	MP2	Z	37.52	%60
39	MP2	X	-38.94	%80
40	MP2	Z	67.45	%80
41	MP3	X	-38.94	%60
42	MP3	Z	67.45	%60
43	MP8	X	-96.05	0
44	MP8	Z	166.36	0
45	MP8	X	-96.05	%100
46	MP8	Z	166.36	%100
47	MP7	X	-106.3	0
48	MP7	Z	184.11	0
49	MP7	X	-106.3	%100
50	MP7	Z	184.11	%100
51	MP5	X	-34.91	%9
52	MP5	Z	60.46	%9

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	-34.91	%66.5
54	MP5	Z	60.46	%66.5
55	MP6	X	-80.94	0
56	MP6	Z	140.19	0
57	MP6	X	-80.94	%100
58	MP6	Z	140.19	%100
59	MP7	X	-39.45	%20
60	MP7	Z	68.33	%20
61	MP7	X	-39.45	%40
62	MP7	Z	68.33	%40
63	MP8	X	-16.03	%20
64	MP8	Z	27.77	%20
65	MP6	X	-17.15	%20
66	MP6	Z	29.71	%20
67	MP7	X	-30.4	%60
68	MP7	Z	52.66	%60
69	MP5	X	-8.22	%40
70	MP5	Z	14.24	%40
71	MP6	X	-8.22	%60
72	MP6	Z	14.24	%60
73	MP12	X	-129.32	%13
74	MP12	Z	223.99	%13
75	MP12	X	-129.32	%87
76	MP12	Z	223.99	%87
77	MP9	X	-40.68	%9
78	MP9	Z	70.46	%9
79	MP9	X	-40.68	%66.5
80	MP9	Z	70.46	%66.5
81	MP11	X	-83.59	%9
82	MP11	Z	144.78	%9
83	MP11	X	-83.59	%91
84	MP11	Z	144.78	%91
85	MP10	X	-126.03	%10
86	MP10	Z	218.3	%10
87	MP10	X	-126.03	%90
88	MP10	Z	218.3	%90
89	MP11	X	-58.31	%20
90	MP11	Z	101	%20
91	MP11	X	-58.31	%40
92	MP11	Z	101	%40
93	MP12	X	-33.14	%20
94	MP12	Z	57.4	%20
95	MP10	X	-43.23	%40
96	MP10	Z	74.87	%40
97	MP11	X	-63.39	%60
98	MP11	Z	109.79	%60
99	MP9	X	-21.66	%40
100	MP9	Z	37.52	%40
101	MP10	X	-68.52	%60
102	MP10	Z	118.68	%60
103	MP10	X	-21.66	%60
104	MP10	Z	37.52	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	0	0
2	MP4	Z	422.67	0
3	MP4	X	0	%100
4	MP4	Z	422.67	%100
5	MP2	X	0	0
6	MP2	Z	280.24	0
7	MP2	X	0	%100
8	MP2	Z	280.24	%100
9	MP1	X	0	%9
10	MP1	Z	85.22	%9
11	MP1	X	0	%66.5
12	MP1	Z	85.22	%66.5
13	MP3	X	0	0
14	MP3	Z	345.47	0
15	MP3	X	0	%100
16	MP3	Z	345.47	%100
17	MP3	X	0	%20
18	MP3	Z	129.2	%20
19	MP4	X	0	%20
20	MP4	Z	77.68	%20
21	MP2	X	0	%20
22	MP2	Z	77.78	%20
23	MP2	X	0	%40
24	MP2	Z	93.07	%40
25	MP1	X	0	%20
26	MP1	Z	87.15	%20
27	MP3	X	0	%40
28	MP3	Z	148.77	%40
29	MP1	X	0	%40
30	MP1	Z	52.29	%40
31	MP4	X	0	%40
32	MP4	Z	129.29	%40
33	MP1	X	0	%60
34	MP1	Z	137.04	%60
35	MP1	X	0	%80
36	MP1	Z	137.21	%80
37	MP2	X	0	%60
38	MP2	Z	52.29	%60
39	MP2	X	0	%80
40	MP2	Z	87.15	%80
41	MP3	X	0	%60
42	MP3	Z	87.15	%60
43	MP8	X	0	0
44	MP8	Z	249.74	0
45	MP8	X	0	%100
46	MP8	Z	249.74	%100
47	MP7	X	0	0
48	MP7	Z	229.51	0
49	MP7	X	0	%100
50	MP7	Z	229.51	%100
51	MP5	X	0	%9
52	MP5	Z	73.67	%9

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	0	%66.5
54	MP5	Z	73.67	%66.5
55	MP6	X	0	0
56	MP6	Z	207.78	0
57	MP6	X	0	%100
58	MP6	Z	207.78	%100
59	MP7	X	0	%20
60	MP7	Z	91.48	%20
61	MP7	X	0	%40
62	MP7	Z	91.48	%40
63	MP8	X	0	%20
64	MP8	Z	43.47	%20
65	MP6	X	0	%20
66	MP6	Z	45.17	%20
67	MP7	X	0	%60
68	MP7	Z	82.79	%60
69	MP5	X	0	%40
70	MP5	Z	25.4	%40
71	MP6	X	0	%60
72	MP6	Z	25.4	%60
73	MP12	X	0	%13
74	MP12	Z	174.75	%13
75	MP12	X	0	%87
76	MP12	Z	174.75	%87
77	MP9	X	0	%9
78	MP9	Z	73.67	%9
79	MP9	X	0	%66.5
80	MP9	Z	73.67	%66.5
81	MP11	X	0	%9
82	MP11	Z	133	%9
83	MP11	X	0	%91
84	MP11	Z	133	%91
85	MP10	X	0	%10
86	MP10	Z	175.42	%10
87	MP10	X	0	%90
88	MP10	Z	175.42	%90
89	MP11	X	0	%20
90	MP11	Z	91.48	%20
91	MP11	X	0	%40
92	MP11	Z	91.48	%40
93	MP12	X	0	%20
94	MP12	Z	43.47	%20
95	MP10	X	0	%40
96	MP10	Z	73.22	%40
97	MP11	X	0	%60
98	MP11	Z	82.79	%60
99	MP9	X	0	%40
100	MP9	Z	25.4	%40
101	MP10	X	0	%60
102	MP10	Z	137.04	%60
103	MP10	X	0	%60
104	MP10	Z	25.4	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	182.51	0
2	MP4	Z	316.13	0
3	MP4	X	182.51	%100
4	MP4	Z	316.13	%100
5	MP2	X	131.67	0
6	MP2	Z	228.05	0
7	MP2	X	131.67	%100
8	MP2	Z	228.05	%100
9	MP1	X	40.68	%9
10	MP1	Z	70.46	%9
11	MP1	X	40.68	%66.5
12	MP1	Z	70.46	%66.5
13	MP3	X	149.79	0
14	MP3	Z	259.44	0
15	MP3	X	149.79	%100
16	MP3	Z	259.44	%100
17	MP3	X	58.31	%20
18	MP3	Z	101	%20
19	MP4	X	33.14	%20
20	MP4	Z	57.4	%20
21	MP2	X	33.46	%20
22	MP2	Z	57.95	%20
23	MP2	X	43.23	%40
24	MP2	Z	74.87	%40
25	MP1	X	38.94	%20
26	MP1	Z	67.45	%20
27	MP3	X	63.39	%40
28	MP3	Z	109.79	%40
29	MP1	X	21.66	%40
30	MP1	Z	37.52	%40
31	MP4	X	64.64	%40
32	MP4	Z	111.97	%40
33	MP1	X	68.52	%60
34	MP1	Z	118.68	%60
35	MP1	X	68.61	%80
36	MP1	Z	118.83	%80
37	MP2	X	21.66	%60
38	MP2	Z	37.52	%60
39	MP2	X	38.94	%80
40	MP2	Z	67.45	%80
41	MP3	X	38.94	%60
42	MP3	Z	67.45	%60
43	MP8	X	182.51	0
44	MP8	Z	316.13	0
45	MP8	X	182.51	%100
46	MP8	Z	316.13	%100
47	MP7	X	131.67	0
48	MP7	Z	228.05	0
49	MP7	X	131.67	%100
50	MP7	Z	228.05	%100
51	MP5	X	40.68	%9
52	MP5	Z	70.46	%9

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	40.68	%66.5
54	MP5	Z	70.46	%66.5
55	MP6	X	149.79	0
56	MP6	Z	259.44	0
57	MP6	X	149.79	%100
58	MP6	Z	259.44	%100
59	MP7	X	58.31	%20
60	MP7	Z	101	%20
61	MP7	X	58.31	%40
62	MP7	Z	101	%40
63	MP8	X	33.14	%20
64	MP8	Z	57.4	%20
65	MP6	X	33.46	%20
66	MP6	Z	57.95	%20
67	MP7	X	63.39	%60
68	MP7	Z	109.79	%60
69	MP5	X	21.66	%40
70	MP5	Z	37.52	%40
71	MP6	X	21.66	%60
72	MP6	Z	37.52	%60
73	MP12	X	66.4	%13
74	MP12	Z	115.01	%13
75	MP12	X	66.4	%87
76	MP12	Z	115.01	%87
77	MP9	X	34.91	%9
78	MP9	Z	60.46	%9
79	MP9	X	34.91	%66.5
80	MP9	Z	60.46	%66.5
81	MP11	X	57.96	%9
82	MP11	Z	100.38	%9
83	MP11	X	57.96	%91
84	MP11	Z	100.38	%91
85	MP10	X	68.55	%10
86	MP10	Z	118.73	%10
87	MP10	X	68.55	%90
88	MP10	Z	118.73	%90
89	MP11	X	39.45	%20
90	MP11	Z	68.33	%20
91	MP11	X	39.45	%40
92	MP11	Z	68.33	%40
93	MP12	X	16.03	%20
94	MP12	Z	27.77	%20
95	MP10	X	33.3	%40
96	MP10	Z	57.68	%40
97	MP11	X	30.4	%60
98	MP11	Z	52.66	%60
99	MP9	X	8.22	%40
100	MP9	Z	14.24	%40
101	MP10	X	68.52	%60
102	MP10	Z	118.68	%60
103	MP10	X	8.22	%60
104	MP10	Z	14.24	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	216.28	0
2	MP4	Z	124.87	0
3	MP4	X	216.28	%100
4	MP4	Z	124.87	%100
5	MP2	X	198.76	0
6	MP2	Z	114.75	0
7	MP2	X	198.76	%100
8	MP2	Z	114.75	%100
9	MP1	X	63.8	%9
10	MP1	Z	36.83	%9
11	MP1	X	63.8	%66.5
12	MP1	Z	36.83	%66.5
13	MP3	X	179.94	0
14	MP3	Z	103.89	0
15	MP3	X	179.94	%100
16	MP3	Z	103.89	%100
17	MP3	X	79.22	%20
18	MP3	Z	45.74	%20
19	MP4	X	37.65	%20
20	MP4	Z	21.74	%20
21	MP2	X	39.12	%20
22	MP2	Z	22.59	%20
23	MP2	X	63.41	%40
24	MP2	Z	36.61	%40
25	MP1	X	51.4	%20
26	MP1	Z	29.67	%20
27	MP3	X	71.7	%40
28	MP3	Z	41.4	%40
29	MP1	X	22	%40
30	MP1	Z	12.7	%40
31	MP4	X	111.97	%40
32	MP4	Z	64.64	%40
33	MP1	X	118.68	%60
34	MP1	Z	68.52	%60
35	MP1	X	118.83	%80
36	MP1	Z	68.61	%80
37	MP2	X	22	%60
38	MP2	Z	12.7	%60
39	MP2	X	51.4	%80
40	MP2	Z	29.67	%80
41	MP3	X	51.4	%60
42	MP3	Z	29.67	%60
43	MP8	X	366.05	0
44	MP8	Z	211.34	0
45	MP8	X	366.05	%100
46	MP8	Z	211.34	%100
47	MP7	X	242.7	0
48	MP7	Z	140.12	0
49	MP7	X	242.7	%100
50	MP7	Z	140.12	%100
51	MP5	X	73.8	%9
52	MP5	Z	42.61	%9

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	73.8	%66.5
54	MP5	Z	42.61	%66.5
55	MP6	X	299.18	0
56	MP6	Z	172.73	0
57	MP6	X	299.18	%100
58	MP6	Z	172.73	%100
59	MP7	X	111.89	%20
60	MP7	Z	64.6	%20
61	MP7	X	111.89	%40
62	MP7	Z	64.6	%40
63	MP8	X	67.28	%20
64	MP8	Z	38.84	%20
65	MP6	X	67.36	%20
66	MP6	Z	38.89	%20
67	MP7	X	128.84	%60
68	MP7	Z	74.38	%60
69	MP5	X	45.28	%40
70	MP5	Z	26.14	%40
71	MP6	X	45.28	%60
72	MP6	Z	26.14	%60
73	MP12	X	151.34	%13
74	MP12	Z	87.38	%13
75	MP12	X	151.34	%87
76	MP12	Z	87.38	%87
77	MP9	X	63.8	%9
78	MP9	Z	36.83	%9
79	MP9	X	63.8	%66.5
80	MP9	Z	36.83	%66.5
81	MP11	X	115.18	%9
82	MP11	Z	66.5	%9
83	MP11	X	115.18	%91
84	MP11	Z	66.5	%91
85	MP10	X	151.92	%10
86	MP10	Z	87.71	%10
87	MP10	X	151.92	%90
88	MP10	Z	87.71	%90
89	MP11	X	79.22	%20
90	MP11	Z	45.74	%20
91	MP11	X	79.22	%40
92	MP11	Z	45.74	%40
93	MP12	X	37.65	%20
94	MP12	Z	21.74	%20
95	MP10	X	63.41	%40
96	MP10	Z	36.61	%40
97	MP11	X	71.7	%60
98	MP11	Z	41.4	%60
99	MP9	X	22	%40
100	MP9	Z	12.7	%40
101	MP10	X	118.68	%60
102	MP10	Z	68.52	%60
103	MP10	X	22	%60
104	MP10	Z	12.7	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	192.1	0
2	MP4	Z	0	0
3	MP4	X	192.1	%100
4	MP4	Z	0	%100
5	MP2	X	212.59	0
6	MP2	Z	0	0
7	MP2	X	212.59	%100
8	MP2	Z	0	%100
9	MP1	X	69.82	%9
10	MP1	Z	0	%9
11	MP1	X	69.82	%66.5
12	MP1	Z	0	%66.5
13	MP3	X	161.88	0
14	MP3	Z	0	0
15	MP3	X	161.88	%100
16	MP3	Z	0	%100
17	MP3	X	78.91	%20
18	MP3	Z	0	%20
19	MP4	X	32.07	%20
20	MP4	Z	0	%20
21	MP2	X	34.3	%20
22	MP2	Z	0	%20
23	MP2	X	66.61	%40
24	MP2	Z	0	%40
25	MP1	X	50.08	%20
26	MP1	Z	0	%20
27	MP3	X	60.8	%40
28	MP3	Z	0	%40
29	MP1	X	16.44	%40
30	MP1	Z	0	%40
31	MP4	X	129.29	%40
32	MP4	Z	0	%40
33	MP1	X	137.04	%60
34	MP1	Z	0	%60
35	MP1	X	137.21	%80
36	MP1	Z	0	%80
37	MP2	X	16.44	%60
38	MP2	Z	0	%60
39	MP2	X	50.08	%80
40	MP2	Z	0	%80
41	MP3	X	50.08	%60
42	MP3	Z	0	%60
43	MP8	X	365.03	0
44	MP8	Z	0	0
45	MP8	X	365.03	%100
46	MP8	Z	0	%100
47	MP7	X	263.33	0
48	MP7	Z	0	0
49	MP7	X	263.33	%100
50	MP7	Z	0	%100
51	MP5	X	81.37	%9
52	MP5	Z	0	%9

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	81.37	%66.5
54	MP5	Z	0	%66.5
55	MP6	X	299.57	0
56	MP6	Z	0	0
57	MP6	X	299.57	%100
58	MP6	Z	0	%100
59	MP7	X	116.63	%20
60	MP7	Z	0	%20
61	MP7	X	116.63	%40
62	MP7	Z	0	%40
63	MP8	X	66.28	%20
64	MP8	Z	0	%20
65	MP6	X	66.91	%20
66	MP6	Z	0	%20
67	MP7	X	126.77	%60
68	MP7	Z	0	%60
69	MP5	X	43.33	%40
70	MP5	Z	0	%40
71	MP6	X	43.33	%60
72	MP6	Z	0	%60
73	MP12	X	258.65	%13
74	MP12	Z	0	%13
75	MP12	X	258.65	%87
76	MP12	Z	0	%87
77	MP9	X	81.37	%9
78	MP9	Z	0	%9
79	MP9	X	81.37	%66.5
80	MP9	Z	0	%66.5
81	MP11	X	167.18	%9
82	MP11	Z	0	%9
83	MP11	X	167.18	%91
84	MP11	Z	0	%91
85	MP10	X	252.07	%10
86	MP10	Z	0	%10
87	MP10	X	252.07	%90
88	MP10	Z	0	%90
89	MP11	X	116.63	%20
90	MP11	Z	0	%20
91	MP11	X	116.63	%40
92	MP11	Z	0	%40
93	MP12	X	66.28	%20
94	MP12	Z	0	%20
95	MP10	X	86.45	%40
96	MP10	Z	0	%40
97	MP11	X	126.77	%60
98	MP11	Z	0	%60
99	MP9	X	43.33	%40
100	MP9	Z	0	%40
101	MP10	X	137.04	%60
102	MP10	Z	0	%60
103	MP10	X	43.33	%60
104	MP10	Z	0	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	216.28	0
2	MP4	Z	-124.87	0
3	MP4	X	216.28	%100
4	MP4	Z	-124.87	%100
5	MP2	X	198.76	0
6	MP2	Z	-114.75	0
7	MP2	X	198.76	%100
8	MP2	Z	-114.75	%100
9	MP1	X	63.8	%9
10	MP1	Z	-36.83	%9
11	MP1	X	63.8	%66.5
12	MP1	Z	-36.83	%66.5
13	MP3	X	179.94	0
14	MP3	Z	-103.89	0
15	MP3	X	179.94	%100
16	MP3	Z	-103.89	%100
17	MP3	X	79.22	%20
18	MP3	Z	-45.74	%20
19	MP4	X	37.65	%20
20	MP4	Z	-21.74	%20
21	MP2	X	39.12	%20
22	MP2	Z	-22.59	%20
23	MP2	X	63.41	%40
24	MP2	Z	-36.61	%40
25	MP1	X	51.4	%20
26	MP1	Z	-29.67	%20
27	MP3	X	71.7	%40
28	MP3	Z	-41.4	%40
29	MP1	X	22	%40
30	MP1	Z	-12.7	%40
31	MP4	X	111.97	%40
32	MP4	Z	-64.64	%40
33	MP1	X	118.68	%60
34	MP1	Z	-68.52	%60
35	MP1	X	118.83	%80
36	MP1	Z	-68.61	%80
37	MP2	X	22	%60
38	MP2	Z	-12.7	%60
39	MP2	X	51.4	%80
40	MP2	Z	-29.67	%80
41	MP3	X	51.4	%60
42	MP3	Z	-29.67	%60
43	MP8	X	216.28	0
44	MP8	Z	-124.87	0
45	MP8	X	216.28	%100
46	MP8	Z	-124.87	%100
47	MP7	X	198.76	0
48	MP7	Z	-114.75	0
49	MP7	X	198.76	%100
50	MP7	Z	-114.75	%100
51	MP5	X	63.8	%9
52	MP5	Z	-36.83	%9

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	63.8	%66.5
54	MP5	Z	-36.83	%66.5
55	MP6	X	179.94	0
56	MP6	Z	-103.89	0
57	MP6	X	179.94	%100
58	MP6	Z	-103.89	%100
59	MP7	X	79.22	%20
60	MP7	Z	-45.74	%20
61	MP7	X	79.22	%40
62	MP7	Z	-45.74	%40
63	MP8	X	37.65	%20
64	MP8	Z	-21.74	%20
65	MP6	X	39.12	%20
66	MP6	Z	-22.59	%20
67	MP7	X	71.7	%60
68	MP7	Z	-41.4	%60
69	MP5	X	22	%40
70	MP5	Z	-12.7	%40
71	MP6	X	22	%60
72	MP6	Z	-12.7	%60
73	MP12	X	260.32	%13
74	MP12	Z	-150.3	%13
75	MP12	X	260.32	%87
76	MP12	Z	-150.3	%87
77	MP9	X	73.8	%9
78	MP9	Z	-42.61	%9
79	MP9	X	73.8	%66.5
80	MP9	Z	-42.61	%66.5
81	MP11	X	159.59	%9
82	MP11	Z	-92.14	%9
83	MP11	X	159.59	%91
84	MP11	Z	-92.14	%91
85	MP10	X	251.49	%10
86	MP10	Z	-145.2	%10
87	MP10	X	251.49	%90
88	MP10	Z	-145.2	%90
89	MP11	X	111.89	%20
90	MP11	Z	-64.6	%20
91	MP11	X	111.89	%40
92	MP11	Z	-64.6	%40
93	MP12	X	67.28	%20
94	MP12	Z	-38.84	%20
95	MP10	X	80.6	%40
96	MP10	Z	-46.53	%40
97	MP11	X	128.84	%60
98	MP11	Z	-74.38	%60
99	MP9	X	45.28	%40
100	MP9	Z	-26.14	%40
101	MP10	X	118.68	%60
102	MP10	Z	-68.52	%60
103	MP10	X	45.28	%60
104	MP10	Z	-26.14	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	182.51	0
2	MP4	Z	-316.13	0
3	MP4	X	182.51	%100
4	MP4	Z	-316.13	%100
5	MP2	X	131.67	0
6	MP2	Z	-228.05	0
7	MP2	X	131.67	%100
8	MP2	Z	-228.05	%100
9	MP1	X	40.68	%9
10	MP1	Z	-70.46	%9
11	MP1	X	40.68	%66.5
12	MP1	Z	-70.46	%66.5
13	MP3	X	149.79	0
14	MP3	Z	-259.44	0
15	MP3	X	149.79	%100
16	MP3	Z	-259.44	%100
17	MP3	X	58.31	%20
18	MP3	Z	-101	%20
19	MP4	X	33.14	%20
20	MP4	Z	-57.4	%20
21	MP2	X	33.46	%20
22	MP2	Z	-57.95	%20
23	MP2	X	43.23	%40
24	MP2	Z	-74.87	%40
25	MP1	X	38.94	%20
26	MP1	Z	-67.45	%20
27	MP3	X	63.39	%40
28	MP3	Z	-109.79	%40
29	MP1	X	21.66	%40
30	MP1	Z	-37.52	%40
31	MP4	X	64.64	%40
32	MP4	Z	-111.97	%40
33	MP1	X	68.52	%60
34	MP1	Z	-118.68	%60
35	MP1	X	68.61	%80
36	MP1	Z	-118.83	%80
37	MP2	X	21.66	%60
38	MP2	Z	-37.52	%60
39	MP2	X	38.94	%80
40	MP2	Z	-67.45	%80
41	MP3	X	38.94	%60
42	MP3	Z	-67.45	%60
43	MP8	X	96.05	0
44	MP8	Z	-166.36	0
45	MP8	X	96.05	%100
46	MP8	Z	-166.36	%100
47	MP7	X	106.3	0
48	MP7	Z	-184.11	0
49	MP7	X	106.3	%100
50	MP7	Z	-184.11	%100
51	MP5	X	34.91	%9
52	MP5	Z	-60.46	%9

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	34.91	%66.5
54	MP5	Z	-60.46	%66.5
55	MP6	X	80.94	0
56	MP6	Z	-140.19	0
57	MP6	X	80.94	%100
58	MP6	Z	-140.19	%100
59	MP7	X	39.45	%20
60	MP7	Z	-68.33	%20
61	MP7	X	39.45	%40
62	MP7	Z	-68.33	%40
63	MP8	X	16.03	%20
64	MP8	Z	-27.77	%20
65	MP6	X	17.15	%20
66	MP6	Z	-29.71	%20
67	MP7	X	30.4	%60
68	MP7	Z	-52.66	%60
69	MP5	X	8.22	%40
70	MP5	Z	-14.24	%40
71	MP6	X	8.22	%60
72	MP6	Z	-14.24	%60
73	MP12	X	129.32	%13
74	MP12	Z	-223.99	%13
75	MP12	X	129.32	%87
76	MP12	Z	-223.99	%87
77	MP9	X	40.68	%9
78	MP9	Z	-70.46	%9
79	MP9	X	40.68	%66.5
80	MP9	Z	-70.46	%66.5
81	MP11	X	83.59	%9
82	MP11	Z	-144.78	%9
83	MP11	X	83.59	%91
84	MP11	Z	-144.78	%91
85	MP10	X	126.03	%10
86	MP10	Z	-218.3	%10
87	MP10	X	126.03	%90
88	MP10	Z	-218.3	%90
89	MP11	X	58.31	%20
90	MP11	Z	-101	%20
91	MP11	X	58.31	%40
92	MP11	Z	-101	%40
93	MP12	X	33.14	%20
94	MP12	Z	-57.4	%20
95	MP10	X	43.23	%40
96	MP10	Z	-74.87	%40
97	MP11	X	63.39	%60
98	MP11	Z	-109.79	%60
99	MP9	X	21.66	%40
100	MP9	Z	-37.52	%40
101	MP10	X	68.52	%60
102	MP10	Z	-118.68	%60
103	MP10	X	21.66	%60
104	MP10	Z	-37.52	%60

Member Point Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	Y	-121.426	0
2	MP4	Y	-121.426	%100
3	MP2	Y	-99.816	0
4	MP2	Y	-99.816	%100
5	MP1	Y	-42.573	%9
6	MP1	Y	-42.573	%66.5
7	MP3	Y	-114.984	0
8	MP3	Y	-114.984	%100
9	MP3	Y	-54.678	%20
10	MP4	Y	-33.041	%20
11	MP2	Y	-34.019	%20
12	MP2	Y	-48.089	%40
13	MP1	Y	-41.595	%20
14	MP3	Y	-59.787	%40
15	MP1	Y	-19.925	%40
16	MP4	Y	-66.751	%40
17	MP1	Y	-71.596	%60
18	MP1	Y	-71.645	%80
19	MP2	Y	-19.925	%60
20	MP2	Y	-41.595	%80
21	MP3	Y	-41.595	%60
22	MP8	Y	-121.426	0
23	MP8	Y	-121.426	%100
24	MP7	Y	-99.816	0
25	MP7	Y	-99.816	%100
26	MP5	Y	-42.573	%9
27	MP5	Y	-42.573	%66.5
28	MP6	Y	-114.984	0
29	MP6	Y	-114.984	%100
30	MP7	Y	-54.678	%20
31	MP7	Y	-54.678	%40
32	MP8	Y	-33.041	%20
33	MP6	Y	-34.019	%20
34	MP7	Y	-59.787	%60
35	MP5	Y	-19.925	%40
36	MP6	Y	-19.925	%60
37	MP12	Y	-92.341	%13
38	MP12	Y	-92.341	%87
39	MP9	Y	-42.573	%9
40	MP9	Y	-42.573	%66.5
41	MP11	Y	-77.33	%9
42	MP11	Y	-77.33	%91
43	MP10	Y	-95.747	%10
44	MP10	Y	-95.747	%90
45	MP11	Y	-54.678	%20
46	MP11	Y	-54.678	%40
47	MP12	Y	-33.041	%20
48	MP10	Y	-48.089	%40
49	MP11	Y	-59.787	%60
50	MP9	Y	-19.925	%40
51	MP10	Y	-71.596	%60
52	MP10	Y	-19.925	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	0	0
2	MP4	Z	-32.13	0
3	MP4	X	0	%100
4	MP4	Z	-32.13	%100
5	MP2	X	0	0
6	MP2	Z	-24.89	0
7	MP2	X	0	%100
8	MP2	Z	-24.89	%100
9	MP1	X	0	%9
10	MP1	Z	-11.43	%9
11	MP1	X	0	%66.5
12	MP1	Z	-11.43	%66.5
13	MP3	X	0	0
14	MP3	Z	-31.33	0
15	MP3	X	0	%100
16	MP3	Z	-31.33	%100
17	MP3	X	0	%20
18	MP3	Z	-11.75	%20
19	MP4	X	0	%20
20	MP4	Z	-7.15	%20
21	MP2	X	0	%20
22	MP2	Z	-7.16	%20
23	MP2	X	0	%40
24	MP2	Z	-8.38	%40
25	MP1	X	0	%20
26	MP1	Z	-7.85	%20
27	MP3	X	0	%40
28	MP3	Z	-12.47	%40
29	MP1	X	0	%40
30	MP1	Z	-5.95	%40
31	MP4	X	0	%40
32	MP4	Z	-12.61	%40
33	MP1	X	0	%60
34	MP1	Z	-12.85	%60
35	MP1	X	0	%80
36	MP1	Z	-12.86	%80
37	MP2	X	0	%60
38	MP2	Z	-5.95	%60
39	MP2	X	0	%80
40	MP2	Z	-7.85	%80
41	MP3	X	0	%60
42	MP3	Z	-7.85	%60
43	MP8	X	0	0
44	MP8	Z	-22.86	0
45	MP8	X	0	%100
46	MP8	Z	-22.86	%100
47	MP7	X	0	0
48	MP7	Z	-21.5	0
49	MP7	X	0	%100
50	MP7	Z	-21.5	%100
51	MP5	X	0	%9
52	MP5	Z	-10.13	%9

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	0	%66.5
54	MP5	Z	-10.13	%66.5
55	MP6	X	0	0
56	MP6	Z	-22.33	0
57	MP6	X	0	%100
58	MP6	Z	-22.33	%100
59	MP7	X	0	%20
60	MP7	Z	-10.16	%20
61	MP7	X	0	%40
62	MP7	Z	-10.16	%40
63	MP8	X	0	%20
64	MP8	Z	-5.48	%20
65	MP6	X	0	%20
66	MP6	Z	-5.64	%20
67	MP7	X	0	%60
68	MP7	Z	-8.7	%60
69	MP5	X	0	%40
70	MP5	Z	-3.85	%40
71	MP6	X	0	%60
72	MP6	Z	-3.85	%60
73	MP12	X	0	%13
74	MP12	Z	-16.38	%13
75	MP12	X	0	%87
76	MP12	Z	-16.38	%87
77	MP9	X	0	%9
78	MP9	Z	-10.13	%9
79	MP9	X	0	%66.5
80	MP9	Z	-10.13	%66.5
81	MP11	X	0	%9
82	MP11	Z	-16.41	%9
83	MP11	X	0	%91
84	MP11	Z	-16.41	%91
85	MP10	X	0	%10
86	MP10	Z	-17.79	%10
87	MP10	X	0	%90
88	MP10	Z	-17.79	%90
89	MP11	X	0	%20
90	MP11	Z	-10.16	%20
91	MP11	X	0	%40
92	MP11	Z	-10.16	%40
93	MP12	X	0	%20
94	MP12	Z	-5.48	%20
95	MP10	X	0	%40
96	MP10	Z	-7.54	%40
97	MP11	X	0	%60
98	MP11	Z	-8.7	%60
99	MP9	X	0	%40
100	MP9	Z	-3.85	%40
101	MP10	X	0	%60
102	MP10	Z	-12.85	%60
103	MP10	X	0	%60
104	MP10	Z	-3.85	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	-14.52	0
2	MP4	Z	-25.15	0
3	MP4	X	-14.52	%100
4	MP4	Z	-25.15	%100
5	MP2	X	-11.88	0
6	MP2	Z	-20.58	0
7	MP2	X	-11.88	%100
8	MP2	Z	-20.58	%100
9	MP1	X	-5.5	%9
10	MP1	Z	-9.52	%9
11	MP1	X	-5.5	%66.5
12	MP1	Z	-9.52	%66.5
13	MP3	X	-14.16	0
14	MP3	Z	-24.53	0
15	MP3	X	-14.16	%100
16	MP3	Z	-24.53	%100
17	MP3	X	-5.61	%20
18	MP3	Z	-9.72	%20
19	MP4	X	-3.3	%20
20	MP4	Z	-5.71	%20
21	MP2	X	-3.33	%20
22	MP2	Z	-5.76	%20
23	MP2	X	-4.05	%40
24	MP2	Z	-7.01	%40
25	MP1	X	-3.72	%20
26	MP1	Z	-6.45	%20
27	MP3	X	-5.61	%40
28	MP3	Z	-9.71	%40
29	MP1	X	-2.63	%40
30	MP1	Z	-4.55	%40
31	MP4	X	-6.3	%40
32	MP4	Z	-10.92	%40
33	MP1	X	-6.42	%60
34	MP1	Z	-11.13	%60
35	MP1	X	-6.43	%80
36	MP1	Z	-11.14	%80
37	MP2	X	-2.63	%60
38	MP2	Z	-4.55	%60
39	MP2	X	-3.72	%80
40	MP2	Z	-6.45	%80
41	MP3	X	-3.72	%60
42	MP3	Z	-6.45	%60
43	MP8	X	-14.52	0
44	MP8	Z	-25.15	0
45	MP8	X	-14.52	%100
46	MP8	Z	-25.15	%100
47	MP7	X	-11.88	0
48	MP7	Z	-20.58	0
49	MP7	X	-11.88	%100
50	MP7	Z	-20.58	%100
51	MP5	X	-5.5	%9
52	MP5	Z	-9.52	%9

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	-5.5	%66.5
54	MP5	Z	-9.52	%66.5
55	MP6	X	-14.16	0
56	MP6	Z	-24.53	0
57	MP6	X	-14.16	%100
58	MP6	Z	-24.53	%100
59	MP7	X	-5.61	%20
60	MP7	Z	-9.72	%20
61	MP7	X	-5.61	%40
62	MP7	Z	-9.72	%40
63	MP8	X	-3.3	%20
64	MP8	Z	-5.71	%20
65	MP6	X	-3.33	%20
66	MP6	Z	-5.76	%20
67	MP7	X	-5.61	%60
68	MP7	Z	-9.71	%60
69	MP5	X	-2.63	%40
70	MP5	Z	-4.55	%40
71	MP6	X	-2.63	%60
72	MP6	Z	-4.55	%60
73	MP12	X	-7.09	%13
74	MP12	Z	-12.29	%13
75	MP12	X	-7.09	%87
76	MP12	Z	-12.29	%87
77	MP9	X	-4.85	%9
78	MP9	Z	-8.4	%9
79	MP9	X	-4.85	%66.5
80	MP9	Z	-8.4	%66.5
81	MP11	X	-7.6	%9
82	MP11	Z	-13.17	%9
83	MP11	X	-7.6	%91
84	MP11	Z	-13.17	%91
85	MP10	X	-7.69	%10
86	MP10	Z	-13.31	%10
87	MP10	X	-7.69	%90
88	MP10	Z	-13.31	%90
89	MP11	X	-4.81	%20
90	MP11	Z	-8.33	%20
91	MP11	X	-4.81	%40
92	MP11	Z	-8.33	%40
93	MP12	X	-2.46	%20
94	MP12	Z	-4.27	%20
95	MP10	X	-3.63	%40
96	MP10	Z	-6.29	%40
97	MP11	X	-3.72	%60
98	MP11	Z	-6.44	%60
99	MP9	X	-1.57	%40
100	MP9	Z	-2.72	%40
101	MP10	X	-6.42	%60
102	MP10	Z	-11.13	%60
103	MP10	X	-1.57	%60
104	MP10	Z	-2.72	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	-19.8	0
2	MP4	Z	-11.43	0
3	MP4	X	-19.8	%100
4	MP4	Z	-11.43	%100
5	MP2	X	-18.62	0
6	MP2	Z	-10.75	0
7	MP2	X	-18.62	%100
8	MP2	Z	-10.75	%100
9	MP1	X	-8.77	%9
10	MP1	Z	-5.07	%9
11	MP1	X	-8.77	%66.5
12	MP1	Z	-5.07	%66.5
13	MP3	X	-19.34	0
14	MP3	Z	-11.16	0
15	MP3	X	-19.34	%100
16	MP3	Z	-11.16	%100
17	MP3	X	-8.79	%20
18	MP3	Z	-5.08	%20
19	MP4	X	-4.75	%20
20	MP4	Z	-2.74	%20
21	MP2	X	-4.89	%20
22	MP2	Z	-2.82	%20
23	MP2	X	-6.53	%40
24	MP2	Z	-3.77	%40
25	MP1	X	-5.75	%20
26	MP1	Z	-3.32	%20
27	MP3	X	-7.53	%40
28	MP3	Z	-4.35	%40
29	MP1	X	-3.33	%40
30	MP1	Z	-1.92	%40
31	MP4	X	-10.92	%40
32	MP4	Z	-6.3	%40
33	MP1	X	-11.13	%60
34	MP1	Z	-6.42	%60
35	MP1	X	-11.14	%80
36	MP1	Z	-6.43	%80
37	MP2	X	-3.33	%60
38	MP2	Z	-1.92	%60
39	MP2	X	-5.75	%80
40	MP2	Z	-3.32	%80
41	MP3	X	-5.75	%60
42	MP3	Z	-3.32	%60
43	MP8	X	-27.83	0
44	MP8	Z	-16.07	0
45	MP8	X	-27.83	%100
46	MP8	Z	-16.07	%100
47	MP7	X	-21.56	0
48	MP7	Z	-12.45	0
49	MP7	X	-21.56	%100
50	MP7	Z	-12.45	%100
51	MP5	X	-9.9	%9
52	MP5	Z	-5.72	%9

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	-9.9	%66.5
54	MP5	Z	-5.72	%66.5
55	MP6	X	-27.13	0
56	MP6	Z	-15.66	0
57	MP6	X	-27.13	%100
58	MP6	Z	-15.66	%100
59	MP7	X	-10.18	%20
60	MP7	Z	-5.88	%20
61	MP7	X	-10.18	%40
62	MP7	Z	-5.88	%40
63	MP8	X	-6.19	%20
64	MP8	Z	-3.58	%20
65	MP6	X	-6.2	%20
66	MP6	Z	-3.58	%20
67	MP7	X	-10.8	%60
68	MP7	Z	-6.23	%60
69	MP5	X	-5.16	%40
70	MP5	Z	-2.98	%40
71	MP6	X	-5.16	%60
72	MP6	Z	-2.98	%60
73	MP12	X	-14.19	%13
74	MP12	Z	-8.19	%13
75	MP12	X	-14.19	%87
76	MP12	Z	-8.19	%87
77	MP9	X	-8.77	%9
78	MP9	Z	-5.07	%9
79	MP9	X	-8.77	%66.5
80	MP9	Z	-5.07	%66.5
81	MP11	X	-14.21	%9
82	MP11	Z	-8.2	%9
83	MP11	X	-14.21	%91
84	MP11	Z	-8.2	%91
85	MP10	X	-15.4	%10
86	MP10	Z	-8.89	%10
87	MP10	X	-15.4	%90
88	MP10	Z	-8.89	%90
89	MP11	X	-8.79	%20
90	MP11	Z	-5.08	%20
91	MP11	X	-8.79	%40
92	MP11	Z	-5.08	%40
93	MP12	X	-4.75	%20
94	MP12	Z	-2.74	%20
95	MP10	X	-6.53	%40
96	MP10	Z	-3.77	%40
97	MP11	X	-7.53	%60
98	MP11	Z	-4.35	%60
99	MP9	X	-3.33	%40
100	MP9	Z	-1.92	%40
101	MP10	X	-11.13	%60
102	MP10	Z	-6.42	%60
103	MP10	X	-3.33	%60
104	MP10	Z	-1.92	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	-9.9	%66.5
54	MP5	Z	-5.72	%66.5
55	MP6	X	-27.13	0
56	MP6	Z	-15.66	0
57	MP6	X	-27.13	%100
58	MP6	Z	-15.66	%100
59	MP7	X	-10.18	%20
60	MP7	Z	-5.88	%20
61	MP7	X	-10.18	%40
62	MP7	Z	-5.88	%40
63	MP8	X	-6.19	%20
64	MP8	Z	-3.58	%20
65	MP6	X	-6.2	%20
66	MP6	Z	-3.58	%20
67	MP7	X	-10.8	%60
68	MP7	Z	-6.23	%60
69	MP5	X	-5.16	%40
70	MP5	Z	-2.98	%40
71	MP6	X	-5.16	%60
72	MP6	Z	-2.98	%60
73	MP12	X	-14.19	%13
74	MP12	Z	-8.19	%13
75	MP12	X	-14.19	%87
76	MP12	Z	-8.19	%87
77	MP9	X	-8.77	%9
78	MP9	Z	-5.07	%9
79	MP9	X	-8.77	%66.5
80	MP9	Z	-5.07	%66.5
81	MP11	X	-14.21	%9
82	MP11	Z	-8.2	%9
83	MP11	X	-14.21	%91
84	MP11	Z	-8.2	%91
85	MP10	X	-15.4	%10
86	MP10	Z	-8.89	%10
87	MP10	X	-15.4	%90
88	MP10	Z	-8.89	%90
89	MP11	X	-8.79	%20
90	MP11	Z	-5.08	%20
91	MP11	X	-8.79	%40
92	MP11	Z	-5.08	%40
93	MP12	X	-4.75	%20
94	MP12	Z	-2.74	%20
95	MP10	X	-6.53	%40
96	MP10	Z	-3.77	%40
97	MP11	X	-7.53	%60
98	MP11	Z	-4.35	%60
99	MP9	X	-3.33	%40
100	MP9	Z	-1.92	%40
101	MP10	X	-11.13	%60
102	MP10	Z	-6.42	%60
103	MP10	X	-3.33	%60
104	MP10	Z	-1.92	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	-19.77	0
2	MP4	Z	0	0
3	MP4	X	-19.77	%100
4	MP4	Z	0	%100
5	MP2	X	-20.37	0
6	MP2	Z	0	0
7	MP2	X	-20.37	%100
8	MP2	Z	0	%100
9	MP1	X	-9.7	%9
10	MP1	Z	0	%9
11	MP1	X	-9.7	%66.5
12	MP1	Z	0	%66.5
13	MP3	X	-19.33	0
14	MP3	Z	0	0
15	MP3	X	-19.33	%100
16	MP3	Z	0	%100
17	MP3	X	-9.62	%20
18	MP3	Z	0	%20
19	MP4	X	-4.92	%20
20	MP4	Z	0	%20
21	MP2	X	-5.14	%20
22	MP2	Z	0	%20
23	MP2	X	-7.27	%40
24	MP2	Z	0	%40
25	MP1	X	-6.23	%20
26	MP1	Z	0	%20
27	MP3	X	-7.44	%40
28	MP3	Z	0	%40
29	MP1	X	-3.14	%40
30	MP1	Z	0	%40
31	MP4	X	-12.61	%40
32	MP4	Z	0	%40
33	MP1	X	-12.85	%60
34	MP1	Z	0	%60
35	MP1	X	-12.86	%80
36	MP1	Z	0	%80
37	MP2	X	-3.14	%60
38	MP2	Z	0	%60
39	MP2	X	-6.23	%80
40	MP2	Z	0	%80
41	MP3	X	-6.23	%60
42	MP3	Z	0	%60
43	MP8	X	-29.04	0
44	MP8	Z	0	0
45	MP8	X	-29.04	%100
46	MP8	Z	0	%100
47	MP7	X	-23.76	0
48	MP7	Z	0	0
49	MP7	X	-23.76	%100
50	MP7	Z	0	%100
51	MP5	X	-11	%9
52	MP5	Z	0	%9

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	-11	%66.5
54	MP5	Z	0	%66.5
55	MP6	X	-28.33	0
56	MP6	Z	0	0
57	MP6	X	-28.33	%100
58	MP6	Z	0	%100
59	MP7	X	-11.22	%20
60	MP7	Z	0	%20
61	MP7	X	-11.22	%40
62	MP7	Z	0	%40
63	MP8	X	-6.6	%20
64	MP8	Z	0	%20
65	MP6	X	-6.65	%20
66	MP6	Z	0	%20
67	MP7	X	-11.21	%60
68	MP7	Z	0	%60
69	MP5	X	-5.25	%40
70	MP5	Z	0	%40
71	MP6	X	-5.25	%60
72	MP6	Z	0	%60
73	MP12	X	-20.77	%13
74	MP12	Z	0	%13
75	MP12	X	-20.77	%87
76	MP12	Z	0	%87
77	MP9	X	-11	%9
78	MP9	Z	0	%9
79	MP9	X	-11	%66.5
80	MP9	Z	0	%66.5
81	MP11	X	-18.81	%9
82	MP11	Z	0	%9
83	MP11	X	-18.81	%91
84	MP11	Z	0	%91
85	MP10	X	-22.62	%10
86	MP10	Z	0	%10
87	MP10	X	-22.62	%90
88	MP10	Z	0	%90
89	MP11	X	-11.22	%20
90	MP11	Z	0	%20
91	MP11	X	-11.22	%40
92	MP11	Z	0	%40
93	MP12	X	-6.6	%20
94	MP12	Z	0	%20
95	MP10	X	-8.1	%40
96	MP10	Z	0	%40
97	MP11	X	-11.21	%60
98	MP11	Z	0	%60
99	MP9	X	-5.25	%40
100	MP9	Z	0	%40
101	MP10	X	-12.85	%60
102	MP10	Z	0	%60
103	MP10	X	-5.25	%60
104	MP10	Z	0	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	-19.8	0
2	MP4	Z	11.43	0
3	MP4	X	-19.8	%100
4	MP4	Z	11.43	%100
5	MP2	X	-18.62	0
6	MP2	Z	10.75	0
7	MP2	X	-18.62	%100
8	MP2	Z	10.75	%100
9	MP1	X	-8.77	%9
10	MP1	Z	5.07	%9
11	MP1	X	-8.77	%66.5
12	MP1	Z	5.07	%66.5
13	MP3	X	-19.34	0
14	MP3	Z	11.16	0
15	MP3	X	-19.34	%100
16	MP3	Z	11.16	%100
17	MP3	X	-8.79	%20
18	MP3	Z	5.08	%20
19	MP4	X	-4.75	%20
20	MP4	Z	2.74	%20
21	MP2	X	-4.89	%20
22	MP2	Z	2.82	%20
23	MP2	X	-6.53	%40
24	MP2	Z	3.77	%40
25	MP1	X	-5.75	%20
26	MP1	Z	3.32	%20
27	MP3	X	-7.53	%40
28	MP3	Z	4.35	%40
29	MP1	X	-3.33	%40
30	MP1	Z	1.92	%40
31	MP4	X	-10.92	%40
32	MP4	Z	6.3	%40
33	MP1	X	-11.13	%60
34	MP1	Z	6.42	%60
35	MP1	X	-11.14	%80
36	MP1	Z	6.43	%80
37	MP2	X	-3.33	%60
38	MP2	Z	1.92	%60
39	MP2	X	-5.75	%80
40	MP2	Z	3.32	%80
41	MP3	X	-5.75	%60
42	MP3	Z	3.32	%60
43	MP8	X	-19.8	0
44	MP8	Z	11.43	0
45	MP8	X	-19.8	%100
46	MP8	Z	11.43	%100
47	MP7	X	-18.62	0
48	MP7	Z	10.75	0
49	MP7	X	-18.62	%100
50	MP7	Z	10.75	%100
51	MP5	X	-8.77	%9
52	MP5	Z	5.07	%9

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	-8.77	%66.5
54	MP5	Z	5.07	%66.5
55	MP6	X	-19.34	0
56	MP6	Z	11.16	0
57	MP6	X	-19.34	%100
58	MP6	Z	11.16	%100
59	MP7	X	-8.79	%20
60	MP7	Z	5.08	%20
61	MP7	X	-8.79	%40
62	MP7	Z	5.08	%40
63	MP8	X	-4.75	%20
64	MP8	Z	2.74	%20
65	MP6	X	-4.89	%20
66	MP6	Z	2.82	%20
67	MP7	X	-7.53	%60
68	MP7	Z	4.35	%60
69	MP5	X	-3.33	%40
70	MP5	Z	1.92	%40
71	MP6	X	-3.33	%60
72	MP6	Z	1.92	%60
73	MP12	X	-19.89	%13
74	MP12	Z	11.48	%13
75	MP12	X	-19.89	%87
76	MP12	Z	11.48	%87
77	MP9	X	-9.9	%9
78	MP9	Z	5.72	%9
79	MP9	X	-9.9	%66.5
80	MP9	Z	5.72	%66.5
81	MP11	X	-17.33	%9
82	MP11	Z	10.01	%9
83	MP11	X	-17.33	%91
84	MP11	Z	10.01	%91
85	MP10	X	-21.68	%10
86	MP10	Z	12.52	%10
87	MP10	X	-21.68	%90
88	MP10	Z	12.52	%90
89	MP11	X	-10.18	%20
90	MP11	Z	5.88	%20
91	MP11	X	-10.18	%40
92	MP11	Z	5.88	%40
93	MP12	X	-6.19	%20
94	MP12	Z	3.58	%20
95	MP10	X	-7.25	%40
96	MP10	Z	4.19	%40
97	MP11	X	-10.8	%60
98	MP11	Z	6.23	%60
99	MP9	X	-5.16	%40
100	MP9	Z	2.98	%40
101	MP10	X	-11.13	%60
102	MP10	Z	6.42	%60
103	MP10	X	-5.16	%60
104	MP10	Z	2.98	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	-14.52	0
2	MP4	Z	25.15	0
3	MP4	X	-14.52	%100
4	MP4	Z	25.15	%100
5	MP2	X	-11.88	0
6	MP2	Z	20.58	0
7	MP2	X	-11.88	%100
8	MP2	Z	20.58	%100
9	MP1	X	-5.5	%9
10	MP1	Z	9.52	%9
11	MP1	X	-5.5	%66.5
12	MP1	Z	9.52	%66.5
13	MP3	X	-14.16	0
14	MP3	Z	24.53	0
15	MP3	X	-14.16	%100
16	MP3	Z	24.53	%100
17	MP3	X	-5.61	%20
18	MP3	Z	9.72	%20
19	MP4	X	-3.3	%20
20	MP4	Z	5.71	%20
21	MP2	X	-3.33	%20
22	MP2	Z	5.76	%20
23	MP2	X	-4.05	%40
24	MP2	Z	7.01	%40
25	MP1	X	-3.72	%20
26	MP1	Z	6.45	%20
27	MP3	X	-5.61	%40
28	MP3	Z	9.71	%40
29	MP1	X	-2.63	%40
30	MP1	Z	4.55	%40
31	MP4	X	-6.3	%40
32	MP4	Z	10.92	%40
33	MP1	X	-6.42	%60
34	MP1	Z	11.13	%60
35	MP1	X	-6.43	%80
36	MP1	Z	11.14	%80
37	MP2	X	-2.63	%60
38	MP2	Z	4.55	%60
39	MP2	X	-3.72	%80
40	MP2	Z	6.45	%80
41	MP3	X	-3.72	%60
42	MP3	Z	6.45	%60
43	MP8	X	-9.88	0
44	MP8	Z	17.12	0
45	MP8	X	-9.88	%100
46	MP8	Z	17.12	%100
47	MP7	X	-10.19	0
48	MP7	Z	17.64	0
49	MP7	X	-10.19	%100
50	MP7	Z	17.64	%100
51	MP5	X	-4.85	%9
52	MP5	Z	8.4	%9

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	-4.85	%66.5
54	MP5	Z	8.4	%66.5
55	MP6	X	-9.66	0
56	MP6	Z	16.74	0
57	MP6	X	-9.66	%100
58	MP6	Z	16.74	%100
59	MP7	X	-4.81	%20
60	MP7	Z	8.33	%20
61	MP7	X	-4.81	%40
62	MP7	Z	8.33	%40
63	MP8	X	-2.46	%20
64	MP8	Z	4.27	%20
65	MP6	X	-2.57	%20
66	MP6	Z	4.45	%20
67	MP7	X	-3.72	%60
68	MP7	Z	6.44	%60
69	MP5	X	-1.57	%40
70	MP5	Z	2.72	%40
71	MP6	X	-1.57	%60
72	MP6	Z	2.72	%60
73	MP12	X	-10.39	%13
74	MP12	Z	17.99	%13
75	MP12	X	-10.39	%87
76	MP12	Z	17.99	%87
77	MP9	X	-5.5	%9
78	MP9	Z	9.52	%9
79	MP9	X	-5.5	%66.5
80	MP9	Z	9.52	%66.5
81	MP11	X	-9.41	%9
82	MP11	Z	16.29	%9
83	MP11	X	-9.41	%91
84	MP11	Z	16.29	%91
85	MP10	X	-11.31	%10
86	MP10	Z	19.59	%10
87	MP10	X	-11.31	%90
88	MP10	Z	19.59	%90
89	MP11	X	-5.61	%20
90	MP11	Z	9.72	%20
91	MP11	X	-5.61	%40
92	MP11	Z	9.72	%40
93	MP12	X	-3.3	%20
94	MP12	Z	5.71	%20
95	MP10	X	-4.05	%40
96	MP10	Z	7.01	%40
97	MP11	X	-5.61	%60
98	MP11	Z	9.71	%60
99	MP9	X	-2.63	%40
100	MP9	Z	4.55	%40
101	MP10	X	-6.42	%60
102	MP10	Z	11.13	%60
103	MP10	X	-2.63	%60
104	MP10	Z	4.55	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	0	0
2	MP4	Z	32.13	0
3	MP4	X	0	%100
4	MP4	Z	32.13	%100
5	MP2	X	0	0
6	MP2	Z	24.89	0
7	MP2	X	0	%100
8	MP2	Z	24.89	%100
9	MP1	X	0	%9
10	MP1	Z	11.43	%9
11	MP1	X	0	%66.5
12	MP1	Z	11.43	%66.5
13	MP3	X	0	0
14	MP3	Z	31.33	0
15	MP3	X	0	%100
16	MP3	Z	31.33	%100
17	MP3	X	0	%20
18	MP3	Z	11.75	%20
19	MP4	X	0	%20
20	MP4	Z	7.15	%20
21	MP2	X	0	%20
22	MP2	Z	7.16	%20
23	MP2	X	0	%40
24	MP2	Z	8.38	%40
25	MP1	X	0	%20
26	MP1	Z	7.85	%20
27	MP3	X	0	%40
28	MP3	Z	12.47	%40
29	MP1	X	0	%40
30	MP1	Z	5.95	%40
31	MP4	X	0	%40
32	MP4	Z	12.61	%40
33	MP1	X	0	%60
34	MP1	Z	12.85	%60
35	MP1	X	0	%80
36	MP1	Z	12.86	%80
37	MP2	X	0	%60
38	MP2	Z	5.95	%60
39	MP2	X	0	%80
40	MP2	Z	7.85	%80
41	MP3	X	0	%60
42	MP3	Z	7.85	%60
43	MP8	X	0	0
44	MP8	Z	22.86	0
45	MP8	X	0	%100
46	MP8	Z	22.86	%100
47	MP7	X	0	0
48	MP7	Z	21.5	0
49	MP7	X	0	%100
50	MP7	Z	21.5	%100
51	MP5	X	0	%9
52	MP5	Z	10.13	%9

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	0	%66.5
54	MP5	Z	10.13	%66.5
55	MP6	X	0	0
56	MP6	Z	22.33	0
57	MP6	X	0	%100
58	MP6	Z	22.33	%100
59	MP7	X	0	%20
60	MP7	Z	10.16	%20
61	MP7	X	0	%40
62	MP7	Z	10.16	%40
63	MP8	X	0	%20
64	MP8	Z	5.48	%20
65	MP6	X	0	%20
66	MP6	Z	5.64	%20
67	MP7	X	0	%60
68	MP7	Z	8.7	%60
69	MP5	X	0	%40
70	MP5	Z	3.85	%40
71	MP6	X	0	%60
72	MP6	Z	3.85	%60
73	MP12	X	0	%13
74	MP12	Z	16.38	%13
75	MP12	X	0	%87
76	MP12	Z	16.38	%87
77	MP9	X	0	%9
78	MP9	Z	10.13	%9
79	MP9	X	0	%66.5
80	MP9	Z	10.13	%66.5
81	MP11	X	0	%9
82	MP11	Z	16.41	%9
83	MP11	X	0	%91
84	MP11	Z	16.41	%91
85	MP10	X	0	%10
86	MP10	Z	17.79	%10
87	MP10	X	0	%90
88	MP10	Z	17.79	%90
89	MP11	X	0	%20
90	MP11	Z	10.16	%20
91	MP11	X	0	%40
92	MP11	Z	10.16	%40
93	MP12	X	0	%20
94	MP12	Z	5.48	%20
95	MP10	X	0	%40
96	MP10	Z	7.54	%40
97	MP11	X	0	%60
98	MP11	Z	8.7	%60
99	MP9	X	0	%40
100	MP9	Z	3.85	%40
101	MP10	X	0	%60
102	MP10	Z	12.85	%60
103	MP10	X	0	%60
104	MP10	Z	3.85	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	14.52	0
2	MP4	Z	25.15	0
3	MP4	X	14.52	%100
4	MP4	Z	25.15	%100
5	MP2	X	11.88	0
6	MP2	Z	20.58	0
7	MP2	X	11.88	%100
8	MP2	Z	20.58	%100
9	MP1	X	5.5	%9
10	MP1	Z	9.52	%9
11	MP1	X	5.5	%66.5
12	MP1	Z	9.52	%66.5
13	MP3	X	14.16	0
14	MP3	Z	24.53	0
15	MP3	X	14.16	%100
16	MP3	Z	24.53	%100
17	MP3	X	5.61	%20
18	MP3	Z	9.72	%20
19	MP4	X	3.3	%20
20	MP4	Z	5.71	%20
21	MP2	X	3.33	%20
22	MP2	Z	5.76	%20
23	MP2	X	4.05	%40
24	MP2	Z	7.01	%40
25	MP1	X	3.72	%20
26	MP1	Z	6.45	%20
27	MP3	X	5.61	%40
28	MP3	Z	9.71	%40
29	MP1	X	2.63	%40
30	MP1	Z	4.55	%40
31	MP4	X	6.3	%40
32	MP4	Z	10.92	%40
33	MP1	X	6.42	%60
34	MP1	Z	11.13	%60
35	MP1	X	6.43	%80
36	MP1	Z	11.14	%80
37	MP2	X	2.63	%60
38	MP2	Z	4.55	%60
39	MP2	X	3.72	%80
40	MP2	Z	6.45	%80
41	MP3	X	3.72	%60
42	MP3	Z	6.45	%60
43	MP8	X	14.52	0
44	MP8	Z	25.15	0
45	MP8	X	14.52	%100
46	MP8	Z	25.15	%100
47	MP7	X	11.88	0
48	MP7	Z	20.58	0
49	MP7	X	11.88	%100
50	MP7	Z	20.58	%100
51	MP5	X	5.5	%9
52	MP5	Z	9.52	%9

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	5.5	%66.5
54	MP5	Z	9.52	%66.5
55	MP6	X	14.16	0
56	MP6	Z	24.53	0
57	MP6	X	14.16	%100
58	MP6	Z	24.53	%100
59	MP7	X	5.61	%20
60	MP7	Z	9.72	%20
61	MP7	X	5.61	%40
62	MP7	Z	9.72	%40
63	MP8	X	3.3	%20
64	MP8	Z	5.71	%20
65	MP6	X	3.33	%20
66	MP6	Z	5.76	%20
67	MP7	X	5.61	%60
68	MP7	Z	9.71	%60
69	MP5	X	2.63	%40
70	MP5	Z	4.55	%40
71	MP6	X	2.63	%60
72	MP6	Z	4.55	%60
73	MP12	X	7.09	%13
74	MP12	Z	12.29	%13
75	MP12	X	7.09	%87
76	MP12	Z	12.29	%87
77	MP9	X	4.85	%9
78	MP9	Z	8.4	%9
79	MP9	X	4.85	%66.5
80	MP9	Z	8.4	%66.5
81	MP11	X	7.6	%9
82	MP11	Z	13.17	%9
83	MP11	X	7.6	%91
84	MP11	Z	13.17	%91
85	MP10	X	7.69	%10
86	MP10	Z	13.31	%10
87	MP10	X	7.69	%90
88	MP10	Z	13.31	%90
89	MP11	X	4.81	%20
90	MP11	Z	8.33	%20
91	MP11	X	4.81	%40
92	MP11	Z	8.33	%40
93	MP12	X	2.46	%20
94	MP12	Z	4.27	%20
95	MP10	X	3.63	%40
96	MP10	Z	6.29	%40
97	MP11	X	3.72	%60
98	MP11	Z	6.44	%60
99	MP9	X	1.57	%40
100	MP9	Z	2.72	%40
101	MP10	X	6.42	%60
102	MP10	Z	11.13	%60
103	MP10	X	1.57	%60
104	MP10	Z	2.72	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	19.8	0
2	MP4	Z	11.43	0
3	MP4	X	19.8	%100
4	MP4	Z	11.43	%100
5	MP2	X	18.62	0
6	MP2	Z	10.75	0
7	MP2	X	18.62	%100
8	MP2	Z	10.75	%100
9	MP1	X	8.77	%9
10	MP1	Z	5.07	%9
11	MP1	X	8.77	%66.5
12	MP1	Z	5.07	%66.5
13	MP3	X	19.34	0
14	MP3	Z	11.16	0
15	MP3	X	19.34	%100
16	MP3	Z	11.16	%100
17	MP3	X	8.79	%20
18	MP3	Z	5.08	%20
19	MP4	X	4.75	%20
20	MP4	Z	2.74	%20
21	MP2	X	4.89	%20
22	MP2	Z	2.82	%20
23	MP2	X	6.53	%40
24	MP2	Z	3.77	%40
25	MP1	X	5.75	%20
26	MP1	Z	3.32	%20
27	MP3	X	7.53	%40
28	MP3	Z	4.35	%40
29	MP1	X	3.33	%40
30	MP1	Z	1.92	%40
31	MP4	X	10.92	%40
32	MP4	Z	6.3	%40
33	MP1	X	11.13	%60
34	MP1	Z	6.42	%60
35	MP1	X	11.14	%80
36	MP1	Z	6.43	%80
37	MP2	X	3.33	%60
38	MP2	Z	1.92	%60
39	MP2	X	5.75	%80
40	MP2	Z	3.32	%80
41	MP3	X	5.75	%60
42	MP3	Z	3.32	%60
43	MP8	X	27.83	0
44	MP8	Z	16.07	0
45	MP8	X	27.83	%100
46	MP8	Z	16.07	%100
47	MP7	X	21.56	0
48	MP7	Z	12.45	0
49	MP7	X	21.56	%100
50	MP7	Z	12.45	%100
51	MP5	X	9.9	%9
52	MP5	Z	5.72	%9

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	9.9	%66.5
54	MP5	Z	5.72	%66.5
55	MP6	X	27.13	0
56	MP6	Z	15.66	0
57	MP6	X	27.13	%100
58	MP6	Z	15.66	%100
59	MP7	X	10.18	%20
60	MP7	Z	5.88	%20
61	MP7	X	10.18	%40
62	MP7	Z	5.88	%40
63	MP8	X	6.19	%20
64	MP8	Z	3.58	%20
65	MP6	X	6.2	%20
66	MP6	Z	3.58	%20
67	MP7	X	10.8	%60
68	MP7	Z	6.23	%60
69	MP5	X	5.16	%40
70	MP5	Z	2.98	%40
71	MP6	X	5.16	%60
72	MP6	Z	2.98	%60
73	MP12	X	14.19	%13
74	MP12	Z	8.19	%13
75	MP12	X	14.19	%87
76	MP12	Z	8.19	%87
77	MP9	X	8.77	%9
78	MP9	Z	5.07	%9
79	MP9	X	8.77	%66.5
80	MP9	Z	5.07	%66.5
81	MP11	X	14.21	%9
82	MP11	Z	8.2	%9
83	MP11	X	14.21	%91
84	MP11	Z	8.2	%91
85	MP10	X	15.4	%10
86	MP10	Z	8.89	%10
87	MP10	X	15.4	%90
88	MP10	Z	8.89	%90
89	MP11	X	8.79	%20
90	MP11	Z	5.08	%20
91	MP11	X	8.79	%40
92	MP11	Z	5.08	%40
93	MP12	X	4.75	%20
94	MP12	Z	2.74	%20
95	MP10	X	6.53	%40
96	MP10	Z	3.77	%40
97	MP11	X	7.53	%60
98	MP11	Z	4.35	%60
99	MP9	X	3.33	%40
100	MP9	Z	1.92	%40
101	MP10	X	11.13	%60
102	MP10	Z	6.42	%60
103	MP10	X	3.33	%60
104	MP10	Z	1.92	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	19.77	0
2	MP4	Z	0	0
3	MP4	X	19.77	%100
4	MP4	Z	0	%100
5	MP2	X	20.37	0
6	MP2	Z	0	0
7	MP2	X	20.37	%100
8	MP2	Z	0	%100
9	MP1	X	9.7	%9
10	MP1	Z	0	%9
11	MP1	X	9.7	%66.5
12	MP1	Z	0	%66.5
13	MP3	X	19.33	0
14	MP3	Z	0	0
15	MP3	X	19.33	%100
16	MP3	Z	0	%100
17	MP3	X	9.62	%20
18	MP3	Z	0	%20
19	MP4	X	4.92	%20
20	MP4	Z	0	%20
21	MP2	X	5.14	%20
22	MP2	Z	0	%20
23	MP2	X	7.27	%40
24	MP2	Z	0	%40
25	MP1	X	6.23	%20
26	MP1	Z	0	%20
27	MP3	X	7.44	%40
28	MP3	Z	0	%40
29	MP1	X	3.14	%40
30	MP1	Z	0	%40
31	MP4	X	12.61	%40
32	MP4	Z	0	%40
33	MP1	X	12.85	%60
34	MP1	Z	0	%60
35	MP1	X	12.86	%80
36	MP1	Z	0	%80
37	MP2	X	3.14	%60
38	MP2	Z	0	%60
39	MP2	X	6.23	%80
40	MP2	Z	0	%80
41	MP3	X	6.23	%60
42	MP3	Z	0	%60
43	MP8	X	29.04	0
44	MP8	Z	0	0
45	MP8	X	29.04	%100
46	MP8	Z	0	%100
47	MP7	X	23.76	0
48	MP7	Z	0	0
49	MP7	X	23.76	%100
50	MP7	Z	0	%100
51	MP5	X	11	%9
52	MP5	Z	0	%9

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	11	%66.5
54	MP5	Z	0	%66.5
55	MP6	X	28.33	0
56	MP6	Z	0	0
57	MP6	X	28.33	%100
58	MP6	Z	0	%100
59	MP7	X	11.22	%20
60	MP7	Z	0	%20
61	MP7	X	11.22	%40
62	MP7	Z	0	%40
63	MP8	X	6.6	%20
64	MP8	Z	0	%20
65	MP6	X	6.65	%20
66	MP6	Z	0	%20
67	MP7	X	11.21	%60
68	MP7	Z	0	%60
69	MP5	X	5.25	%40
70	MP5	Z	0	%40
71	MP6	X	5.25	%60
72	MP6	Z	0	%60
73	MP12	X	20.77	%13
74	MP12	Z	0	%13
75	MP12	X	20.77	%87
76	MP12	Z	0	%87
77	MP9	X	11	%9
78	MP9	Z	0	%9
79	MP9	X	11	%66.5
80	MP9	Z	0	%66.5
81	MP11	X	18.81	%9
82	MP11	Z	0	%9
83	MP11	X	18.81	%91
84	MP11	Z	0	%91
85	MP10	X	22.62	%10
86	MP10	Z	0	%10
87	MP10	X	22.62	%90
88	MP10	Z	0	%90
89	MP11	X	11.22	%20
90	MP11	Z	0	%20
91	MP11	X	11.22	%40
92	MP11	Z	0	%40
93	MP12	X	6.6	%20
94	MP12	Z	0	%20
95	MP10	X	8.1	%40
96	MP10	Z	0	%40
97	MP11	X	11.21	%60
98	MP11	Z	0	%60
99	MP9	X	5.25	%40
100	MP9	Z	0	%40
101	MP10	X	12.85	%60
102	MP10	Z	0	%60
103	MP10	X	5.25	%60
104	MP10	Z	0	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	19.8	0
2	MP4	Z	-11.43	0
3	MP4	X	19.8	%100
4	MP4	Z	-11.43	%100
5	MP2	X	18.62	0
6	MP2	Z	-10.75	0
7	MP2	X	18.62	%100
8	MP2	Z	-10.75	%100
9	MP1	X	8.77	%9
10	MP1	Z	-5.07	%9
11	MP1	X	8.77	%66.5
12	MP1	Z	-5.07	%66.5
13	MP3	X	19.34	0
14	MP3	Z	-11.16	0
15	MP3	X	19.34	%100
16	MP3	Z	-11.16	%100
17	MP3	X	8.79	%20
18	MP3	Z	-5.08	%20
19	MP4	X	4.75	%20
20	MP4	Z	-2.74	%20
21	MP2	X	4.89	%20
22	MP2	Z	-2.82	%20
23	MP2	X	6.53	%40
24	MP2	Z	-3.77	%40
25	MP1	X	5.75	%20
26	MP1	Z	-3.32	%20
27	MP3	X	7.53	%40
28	MP3	Z	-4.35	%40
29	MP1	X	3.33	%40
30	MP1	Z	-1.92	%40
31	MP4	X	10.92	%40
32	MP4	Z	-6.3	%40
33	MP1	X	11.13	%60
34	MP1	Z	-6.42	%60
35	MP1	X	11.14	%80
36	MP1	Z	-6.43	%80
37	MP2	X	3.33	%60
38	MP2	Z	-1.92	%60
39	MP2	X	5.75	%80
40	MP2	Z	-3.32	%80
41	MP3	X	5.75	%60
42	MP3	Z	-3.32	%60
43	MP8	X	19.8	0
44	MP8	Z	-11.43	0
45	MP8	X	19.8	%100
46	MP8	Z	-11.43	%100
47	MP7	X	18.62	0
48	MP7	Z	-10.75	0
49	MP7	X	18.62	%100
50	MP7	Z	-10.75	%100
51	MP5	X	8.77	%9
52	MP5	Z	-5.07	%9

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	8.77	%66.5
54	MP5	Z	-5.07	%66.5
55	MP6	X	19.34	0
56	MP6	Z	-11.16	0
57	MP6	X	19.34	%100
58	MP6	Z	-11.16	%100
59	MP7	X	8.79	%20
60	MP7	Z	-5.08	%20
61	MP7	X	8.79	%40
62	MP7	Z	-5.08	%40
63	MP8	X	4.75	%20
64	MP8	Z	-2.74	%20
65	MP6	X	4.89	%20
66	MP6	Z	-2.82	%20
67	MP7	X	7.53	%60
68	MP7	Z	-4.35	%60
69	MP5	X	3.33	%40
70	MP5	Z	-1.92	%40
71	MP6	X	3.33	%60
72	MP6	Z	-1.92	%60
73	MP12	X	19.89	%13
74	MP12	Z	-11.48	%13
75	MP12	X	19.89	%87
76	MP12	Z	-11.48	%87
77	MP9	X	9.9	%9
78	MP9	Z	-5.72	%9
79	MP9	X	9.9	%66.5
80	MP9	Z	-5.72	%66.5
81	MP11	X	17.33	%9
82	MP11	Z	-10.01	%9
83	MP11	X	17.33	%91
84	MP11	Z	-10.01	%91
85	MP10	X	21.68	%10
86	MP10	Z	-12.52	%10
87	MP10	X	21.68	%90
88	MP10	Z	-12.52	%90
89	MP11	X	10.18	%20
90	MP11	Z	-5.88	%20
91	MP11	X	10.18	%40
92	MP11	Z	-5.88	%40
93	MP12	X	6.19	%20
94	MP12	Z	-3.58	%20
95	MP10	X	7.25	%40
96	MP10	Z	-4.19	%40
97	MP11	X	10.8	%60
98	MP11	Z	-6.23	%60
99	MP9	X	5.16	%40
100	MP9	Z	-2.98	%40
101	MP10	X	11.13	%60
102	MP10	Z	-6.42	%60
103	MP10	X	5.16	%60
104	MP10	Z	-2.98	%60

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	14.52	0
2	MP4	Z	-25.15	0
3	MP4	X	14.52	%100
4	MP4	Z	-25.15	%100
5	MP2	X	11.88	0
6	MP2	Z	-20.58	0
7	MP2	X	11.88	%100
8	MP2	Z	-20.58	%100
9	MP1	X	5.5	%9
10	MP1	Z	-9.52	%9
11	MP1	X	5.5	%66.5
12	MP1	Z	-9.52	%66.5
13	MP3	X	14.16	0
14	MP3	Z	-24.53	0
15	MP3	X	14.16	%100
16	MP3	Z	-24.53	%100
17	MP3	X	5.61	%20
18	MP3	Z	-9.72	%20
19	MP4	X	3.3	%20
20	MP4	Z	-5.71	%20
21	MP2	X	3.33	%20
22	MP2	Z	-5.76	%20
23	MP2	X	4.05	%40
24	MP2	Z	-7.01	%40
25	MP1	X	3.72	%20
26	MP1	Z	-6.45	%20
27	MP3	X	5.61	%40
28	MP3	Z	-9.71	%40
29	MP1	X	2.63	%40
30	MP1	Z	-4.55	%40
31	MP4	X	6.3	%40
32	MP4	Z	-10.92	%40
33	MP1	X	6.42	%60
34	MP1	Z	-11.13	%60
35	MP1	X	6.43	%80
36	MP1	Z	-11.14	%80
37	MP2	X	2.63	%60
38	MP2	Z	-4.55	%60
39	MP2	X	3.72	%80
40	MP2	Z	-6.45	%80
41	MP3	X	3.72	%60
42	MP3	Z	-6.45	%60
43	MP8	X	9.88	0
44	MP8	Z	-17.12	0
45	MP8	X	9.88	%100
46	MP8	Z	-17.12	%100
47	MP7	X	10.19	0
48	MP7	Z	-17.64	0
49	MP7	X	10.19	%100
50	MP7	Z	-17.64	%100
51	MP5	X	4.85	%9
52	MP5	Z	-8.4	%9

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
53	MP5	X	4.85	%66.5
54	MP5	Z	-8.4	%66.5
55	MP6	X	9.66	0
56	MP6	Z	-16.74	0
57	MP6	X	9.66	%100
58	MP6	Z	-16.74	%100
59	MP7	X	4.81	%20
60	MP7	Z	-8.33	%20
61	MP7	X	4.81	%40
62	MP7	Z	-8.33	%40
63	MP8	X	2.46	%20
64	MP8	Z	-4.27	%20
65	MP6	X	2.57	%20
66	MP6	Z	-4.45	%20
67	MP7	X	3.72	%60
68	MP7	Z	-6.44	%60
69	MP5	X	1.57	%40
70	MP5	Z	-2.72	%40
71	MP6	X	1.57	%60
72	MP6	Z	-2.72	%60
73	MP12	X	10.39	%13
74	MP12	Z	-17.99	%13
75	MP12	X	10.39	%87
76	MP12	Z	-17.99	%87
77	MP9	X	5.5	%9
78	MP9	Z	-9.52	%9
79	MP9	X	5.5	%66.5
80	MP9	Z	-9.52	%66.5
81	MP11	X	9.41	%9
82	MP11	Z	-16.29	%9
83	MP11	X	9.41	%91
84	MP11	Z	-16.29	%91
85	MP10	X	11.31	%10
86	MP10	Z	-19.59	%10
87	MP10	X	11.31	%90
88	MP10	Z	-19.59	%90
89	MP11	X	5.61	%20
90	MP11	Z	-9.72	%20
91	MP11	X	5.61	%40
92	MP11	Z	-9.72	%40
93	MP12	X	3.3	%20
94	MP12	Z	-5.71	%20
95	MP10	X	4.05	%40
96	MP10	Z	-7.01	%40
97	MP11	X	5.61	%60
98	MP11	Z	-9.71	%60
99	MP9	X	2.63	%40
100	MP9	Z	-4.55	%40
101	MP10	X	6.42	%60
102	MP10	Z	-11.13	%60
103	MP10	X	2.63	%60
104	MP10	Z	-4.55	%60

Member Point Loads (BLC 31 : Seismic Load Z)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	Z	-4.747	0
2	MP4	Z	-4.747	%100
3	MP2	Z	-4.047	0
4	MP2	Z	-4.047	%100
5	MP1	Z	-2.296	%9
6	MP1	Z	-2.296	%66.5
7	MP3	Z	-5.684	0
8	MP3	Z	-5.684	%100
9	MP3	Z	-5.248	%20
10	MP4	Z	-4.365	%20
11	MP2	Z	-4.801	%20
12	MP2	Z	-7.043	%40
13	MP1	Z	-5.942	%20
14	MP3	Z	-5.248	%40
15	MP1	Z	-1.399	%40
16	MP4	Z	-2.599	%40
17	MP1	Z	-3.254	%60
18	MP1	Z	-3.254	%80
19	MP2	Z	-1.399	%60
20	MP2	Z	-5.942	%80
21	MP3	Z	-5.942	%60
22	MP8	Z	-4.747	0
23	MP8	Z	-4.747	%100
24	MP7	Z	-4.047	0
25	MP7	Z	-4.047	%100
26	MP5	Z	-2.296	%9
27	MP5	Z	-2.296	%66.5
28	MP6	Z	-5.684	0
29	MP6	Z	-5.684	%100
30	MP7	Z	-5.248	%20
31	MP7	Z	-5.248	%40
32	MP8	Z	-4.365	%20
33	MP6	Z	-4.801	%20
34	MP7	Z	-5.248	%60
35	MP5	Z	-1.399	%40
36	MP6	Z	-1.399	%60
37	MP12	Z	-3.938	%13
38	MP12	Z	-3.938	%87
39	MP9	Z	-2.296	%9
40	MP9	Z	-2.296	%66.5
41	MP11	Z	-4.037	%9
42	MP11	Z	-4.037	%91
43	MP10	Z	-4.841	%10
44	MP10	Z	-4.841	%90
45	MP11	Z	-5.248	%20
46	MP11	Z	-5.248	%40
47	MP12	Z	-4.365	%20
48	MP10	Z	-7.043	%40
49	MP11	Z	-5.248	%60
50	MP9	Z	-1.399	%40
51	MP10	Z	-3.254	%60
52	MP10	Z	-1.399	%60

Member Point Loads (BLC 32 : Seismic Load X)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	X	-4.747	0
2	MP4	X	-4.747	%100
3	MP2	X	-4.047	0
4	MP2	X	-4.047	%100
5	MP1	X	-2.296	%9
6	MP1	X	-2.296	%66.5
7	MP3	X	-5.684	0
8	MP3	X	-5.684	%100
9	MP3	X	-5.248	%20
10	MP4	X	-4.365	%20
11	MP2	X	-4.801	%20
12	MP2	X	-7.043	%40
13	MP1	X	-5.942	%20
14	MP3	X	-5.248	%40
15	MP1	X	-1.399	%40
16	MP4	X	-2.599	%40
17	MP1	X	-3.254	%60
18	MP1	X	-3.254	%80
19	MP2	X	-1.399	%60
20	MP2	X	-5.942	%80
21	MP3	X	-5.942	%60
22	MP8	X	-4.747	0
23	MP8	X	-4.747	%100
24	MP7	X	-4.047	0
25	MP7	X	-4.047	%100
26	MP5	X	-2.296	%9
27	MP5	X	-2.296	%66.5
28	MP6	X	-5.684	0
29	MP6	X	-5.684	%100
30	MP7	X	-5.248	%20
31	MP7	X	-5.248	%40
32	MP8	X	-4.365	%20
33	MP6	X	-4.801	%20
34	MP7	X	-5.248	%60
35	MP5	X	-1.399	%40
36	MP6	X	-1.399	%60
37	MP12	X	-3.938	%13
38	MP12	X	-3.938	%87
39	MP9	X	-2.296	%9
40	MP9	X	-2.296	%66.5
41	MP11	X	-4.037	%9
42	MP11	X	-4.037	%91
43	MP10	X	-4.841	%10
44	MP10	X	-4.841	%90
45	MP11	X	-5.248	%20
46	MP11	X	-5.248	%40
47	MP12	X	-4.365	%20
48	MP10	X	-7.043	%40
49	MP11	X	-5.248	%60
50	MP9	X	-1.399	%40
51	MP10	X	-3.254	%60
52	MP10	X	-1.399	%60

Member Area Loads (BLC 1 : Self Weight)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N138	N132A	N135		Y	Two Way	0
2	N137	N134	N131A		Y	Two Way	0
3	N139	N136	N133		Y	Two Way	0
4	N139	N136	N133		Y	Two Way	0
5	N138	N132A	N135		Y	Two Way	0
6	N137	N134	N131A		Y	Two Way	0
7	N138	N132A	N135		Y	Two Way	-10
8	N137	N131A	N134		Y	Two Way	-10
9	N139	N133	N136		Y	Two Way	-10

Member Area Loads (BLC 16 : Ice Weight)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N138	N132A	N135		Y	Two Way	0
2	N137	N134	N131A		Y	Two Way	0
3	N139	N136	N133		Y	Two Way	0
4	N139	N136	N133		Y	Two Way	0
5	N138	N132A	N135		Y	Two Way	0
6	N137	N134	N131A		Y	Two Way	0
7	N138	N132A	N135		Y	Two Way	-11
8	N139	N133	N136		Y	Two Way	-11
9	N137	N131A	N134		Y	Two Way	-11

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N164A	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^2/in, lb*s^2*in)]
1	N5	L	Y	-250

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N9	L	Y	-250

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N22	L	Y	-250

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N7	L	Y	-250

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N43	L	Y	-250

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N47	L	Y	-250

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N55	L	Y	-250

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N45	L	Y	-250

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N60	L	Y	-250

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N64	L	Y	-250

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N72	L	Y	-250

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N62	L	Y	-250

APPENDIX D

ADDITIONAL CALCUATIONS

Additional Calculations

PROJECT DATA	
Site Name:	Bristol Center
Site Number:	842859
Job Code:	1039-A0002-B

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

Steel Bolt Calculator V2.0.0

BOLT INFORMATION		
Code:	LRFD	
Bolt Diameter	5/8	in
Bolt Grade:	A325	
Threads Excluded?:	N	
Yield Strength (F_{yb})	92.0	ksi
Ultimate Strength (F_{ub})	120.0	ksi
Threads/in (n)	11	
Gross Area (A_{gb})	0.307 in²	in^2
Net Area (A_{nb})	0.226 in²	in^2
Applied Axial:	5370.63	lbs
Applied Shear	1941.73	lbs

BOLT CAPCITIES				
	Ult Load / Bolt	Factored Load (ϕ=0.75)	# of Bolts	Factor Joint Capacity
Axial (lb)	27120.2	20340.1	1	20340.1
Shear(lb)	16567.0	12425.2	1	12425.2

INTERACTION CHECK	
T /ϕT_n	**26.4%**
V /ϕVn	**15.6%**
≤1.0	**9.4%**
Result	**OK**

LIMIT CURVE ABORTED

Jan 10 2017 UPDATE

2017 TARP Mount Program Spec Sheet Sample								
INPUT FIELDS							OUTPUT FIELDS	
BASIC WINDFSPEED (mph)	Radial Ice (in)	Height (ft)	Exposure Category	Class	TOPO Category	Number of Mount Pipes / Sector	Allowable EPA / pipe (ft sq)	Allowable Weight / Pipe (lbf)
							NOTE : Specify how many pipes are being considered per face for each EPA/WT pair	
125	1.0"	168	C	II	1	4	*32*	*2,901*

GENERAL NOTES:

1. THESE DOCUMENTS WERE DESIGNED IN ACCORDANCE WITH THE LATEST VERSION OF APPLICABLE LOCAL/STATE/COUNTY/CITY BUILDING CODES, AS WELL AS ANSI/TIA-222 STANDARD, AWWA-D100 STANDARD, NDS, NEC, MSJC, AND/OR THE LATEST VERSION OF THE INTERNATIONAL BUILDING CODE, UNLESS NOTED OTHERWISE IN THE CORRESPONDING STRUCTURAL REPORT.

2. ALL CONSTRUCTION METHODS SHOULD FOLLOW STANDARDS OF GOOD CONSTRUCTION PRACTICE.

3. ALL WORK INDICATED ON THESE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN SIMILAR CONSTRUCTION.

4. ALL NEW WORK SHALL ACCOMMODATE EXISTING CONDITIONS. IF OBSTRUCTIONS ARE FOUND, CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD PRIOR TO CONTINUING WORK.

5. ANY CHANGES OR ADDITIONS MUST CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS, AND SHOULD BE SIMILAR TO THOSE SHOWN. ALL CHANGES OR ADDITIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION AND/OR CONSTRUCTION.

6. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND EXECUTION OF ALL MISCELLANEOUS SHORING, BRACING, TEMPORARY SUPPORTS, ETC. NECESSARY TO PROVIDE A COMPLETE AND STABLE STRUCTURE DURING CONSTRUCTION. TIA-1019-A-2011 IS AN APPROPRIATE REFERENCE FOR THOSE DESIGNS MEETING TIA STANDARDS. THE ENGINEER OF RECORD MAY PROVIDE FORMAL RIGGING PLANS AT THE REQUEST AND EXPENSE OF THE CONTRACTOR.

7. INSTALLATION SHALL NOT INTERFERE NOR DENY ADEQUATE ACCESS TO OR FROM ANY EXISTING OR PROPOSED OPERATIONAL AND SAFETY EQUIPMENT.

8. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO ANY FABRICATION. CONTACT INFINIGY ENGINEERING IF ANY DISCREPANCIES EXIST.

STEEL CONSTRUCTION NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE AISC MANUAL OF STEEL CONSTRUCTION 14TH EDITION, FOR THE DESIGN AND FABRICATION OF STEEL COMPONENTS.

2. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES, AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS' RECOMMENDATIONS.

3. ALL FIELD DRILLED HOLES TO BE USED FOR FIELD BOLTING INSTALLATION SHALL BE STANDARD HOLES, AS DEFINED BY AISC, UNLESS NOTED OTHERWISE.

4. ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.

5. ALL STEEL MEMBERS AND CONNECTIONS SHALL MEET THE FOLLOWING GRADES:
   - ANGLES, CHANNELS, PLATES AND BARS TO BE A36. Fy=36 KSI, U.N.O.
   - W SHAPES TO BE A992. Fy=50 KSI, U.N.O.
   - RECTANGULAR HSS TO BE A500, GRADE B. FY=46 KSI, U.N.O.
   - ROUND HSS TO BE A500, GRADE B. FY=42 KSI, U.N.O.
   - STEEL PIPE TO BE A53, GRADE B. Fy=35 KSI, U.N.O.
   - BOLTS TO BE A325-X. Fu=120 KSI, U.N.O.
   - U-BOLTS AND LAG SCREWS TO BE A307 OR A. Fu=60 KSI, U.N.O.

6. ALL WELDING SHALL BE DONE USING E70XX ELECTRODES, U.N.O.

7. ALL WELDING SHALL CONFORM TO AISC AND AWS D1.1 LATEST EDITION.

8. ALL HILTI ANCHORS TO BE CARBON STEEL, U.N.O.
   - MECHANICAL ANCHORS: KWIK BOLT-TZ, U.N.O.
   - CMU BLOCK ANCHORS: ADHESIVE - HY120, U.N.O.
   - CONCRETE ANCHORS: ADHESIVE - HY150, U.N.O.
   - CONCRETE REBAR: ADHESIVE - RE500, U.N.O.

9. ALL STUDS TO BE NELSON CAPACITOR DISCHARGE 1/4"-20 LOW CARBON STEEL COPPER-FLASH AT 55 KSI ULT/50 KSI YIELD, U.N.O.

10. BOLTS SHALL BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED BY AISC.

11. MINIMUM EDGE DISTANCES SHALL CONFORM TO AISC TABLE J3.4.

CONCRETE CONSTRUCTION NOTES:

1. CONCRETE TO BE 4000 PSI @ 28 DAYS. REINFORCING BAR TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. CONCRETE INSTALLATION TO CONFORM TO ACI-318 BUILDING REQUIREMENTS FOR REINFORCED CONCRETE. ALL CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH FREE OF WATER AND ALL FOREIGN OBJECTS AND MATERIALS. A MINIMUM OF THREE INCHES OF CONCRETE SHALL COVER ALL REINFORCEMENT. WELDING OF REBAR IS NOT PERMITTED.

2. EXISTING CONCRETE SURFACES THAT ARE TO BE IN CONTACT WITH NEW PROPOSED CONCRETE SHOULD BE WIRE BRUSHED CLEAN AND TREATED WITH APPROPRIATE MECHANICAL SCRATCH COAT AND REPAIR MATERIALS OR APPROPRIATE CHEMICAL METHODS SUCH AS THE APPLICATION OF A BONDING AGENT, EX. SAKRETE OR EQUIVALENT, TO ENSURE A QUALITY BOND BETWEEN EXISTING AND PROPOSED CONCRETE SURFACES.

FIBER REINFORCED POLYMER (FRP) NOTES:

1. FRP PLATES, SHAPES, BOLTS AND NUTS (STUD/NUT ASSEMBLIES) SHALL CONFORM TO ASTM D638, 695, 790. PLATES AND SHAPES TO BE FY = 5.35 KSI LW (SAFETY FACTOR OF 8), .945 KSI CW (SAFETY FACTOR OF 6) MIN.

2. IF FIELD FABRICATION IS REQUIRED, ALL CUT EDGES AND DRILLED HOLES TO BE SEALED USING VINYL ESTER SEALING KIT SUPPLIED BY THE MANUFACTURER.

3. ALL FASTENERS TO BE 1/2" DIA FRP THREADED ROD WITH FIBER REINFORCED THERMOPLASTIC NUT, SPACED AT 12 INCHES ON CENTER MAXIMUM, U.N.O., FOR PANELS AND AS DESIGNED FOR STRUCTURAL MEMBERS.

4. THE COLOR AND SURFACE PATTERN OF EXPOSED FRP PANELS SHALL MATCH THE EXTERIOR OF THE EXISTING BUILDING, U.N.O.

5. STUD/NUT ASSEMBLIES SHOULD BE LUBRICATED FOR INSTALLATION

6. ENSURE BEARING SURFACES OF THE NUTS ARE PARALLEL TO THE SURFACES BEING FASTENED.

7. TORQUE BOLTS ACCORDING TO THE FOLLOWING TABLE:

INSTALLATION TORQUE TABLE

SIZE	ULTIMATE TORQUE STRENGTH	RECOMMENDED MAXIMUM INSTALLATION TORQUE
3/8-16 UNC	8 FT-LBS	4 FT-LBS
1/2-13 UNC	18 FT-LBS	8 FT-LBS
5/8-11 UNC	35 FT-LBS	16 FT-LBS
3/4-10 UNC	50 FT-LBS	24 FT-LBS
1-8 UNC	110 FT-LBS	50 FT-LBS

8. WHEN TIGHTENING FRP STUD/NUT ASSEMBLIES, WRENCHES MUST MAKE FULL CONTACT WITH ALL NUT EDGES. A STANDARD SIX POINT SOCKET IS RECOMMENDED.

9. STUD/NUT ASSEMBLIES SHOULD BE BONDED BY APPLYING BONDING AGENT TO ENTIRE NUT AND EXPOSED STUD.

10. ALL FRP MATERIALS TO BE PROVIDED BY FIBERGRATE COMPOSITE STRUCTURES, DALLAS TX, OR APPROVED EQUAL.

11. ALL FRP SHAPES TO BE DYNAFORM PULTRUDED STRUCTURAL SHAPES.

12. ALL FRP PLATES TO BE FIBERPLATE MOLDED FRP PLATE.

13. ALL FRP PANELS TO BE FIBERPLATE CLADDING PANEL.

14. EACH FRP PANEL TO BE IDENTIFIED WITH LARR#25536 AND FIBERGRATE COMPOSITE STRUCTURAL LABEL.

15. FRP MATERIAL TO BE CLASSIFIED AS CC1 OR BETTER, AND HAVE MAXIMUM FLAME SPREAD OF 50.

16. ALL DESIGN AND CONSTRUCTION TO BE COMPLETED IN ACCORDANCE WITH LOS ANGELES RESEARCH REPORT RR25536, DATED FEBRUARY 1, 2016.

17. SPECIAL INSPECTIONS MUST BE PROVIDED FOR ALL FRP INSTALLMENTS. SEE SPECIAL INSPECTION SECTION, THIS SHEET.

RATIO OF EDGE DISTANCE TO FRP FASTENER DIAMETER

	RANGE	RECOMMENDED
EDGE DISTANCE - CL* BOLT TO END	2.0-4.0	3.0
EDGE DISTANCE - CL* BOLT TO SIDE	1.5-3.5	2.5
BOLT PITCH - CL* TO CL*	4.0-5.0	5.0

WOOD CONSTRUCTION NOTES:

1. ALL EXISTING WOOD SHAPES ARE ASSUMED TO BE DOUGLAS FIR-LARCH WITH A REFERENCE DESIGN BENDING VALUE OF 1000 PSI MIN.

2. ALL PROPOSED WOOD SHAPES ARE TO BE DOUGLAS FIR-LARCH WITH A REFERENCE DESIGN BENDING VALUE OF 1000 PSI MIN. U.N.O.

3. ALL EXISTING AND PROPOSED GLUED LAMINATED TIMBERS ARE TO BE 24F-1.8C DOUGLAS FIR BALANCED WITH A REFERENCE DESIGN BENDING VALUE OF 2400 PSI MIN. U.N.O.

MASONRY CONSTRUCTION NOTES:

1. ALL BRICK TO BE 1500 PSI MIN. REINFORCING BAR (IF APPLICABLE) TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. ALL MORTAR TO BE 2000 PSI MIN.
   - FOR INTERIOR/ABOVE GRADE APPLICATIONS TYPE N MORTAR HAVING MINIMUM MODULUS OF RUPTURE OF 100 PSI SHALL BE USED. FOR EXTERIOR/BELOW GRADE APPLICATIONS TYPE M OR S MORTAR HAVING A MINIMUM MODULUS OF RUPTURE OF 133 PSI.
   - BRICK AND MORTAR INSTALLATION TO CONFORM TO MSJC BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.

2. ALL CMU TO BE 1500 PSI MIN. REINFORCING BAR (IF APPLICABLE) TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. ALL MORTAR TO BE 2000 PSI MIN.
   - FOR INTERIOR/ABOVE GRADE APPLICATIONS, TYPE N MORTAR HAVING MINIMUM MODULUS OF RUPTURE OF 64 PSI SHALL BE USED FOR UNGROUTED BLOCKS, AND 158 PSI FOR FULLY GROUTED BLOCKS.
   - FOR EXTERIOR/BELOW GRADE APPLICATIONS TYPE M OR S MORTAR HAVING A MINIMUM MODULUS OF RUPTURE OF 84 PSI SHALL BE USED FOR UNGROUTED BLOCKS, AND 163 PSI FOR FULLY GROUTED BLOCKS.
   - BRICK AND MORTAR INSTALLATION TO CONFORM TO MSJC BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.

TOWER PLUMB & TENSION NOTES:

1. PLUMB AND TENSION TOWER UPON COMPLETION OF STRUCTURAL MODIFICATIONS DETAILED IN THESE DRAWINGS.

2. RETENSIONING OF EXISTING GUY WIRES SHALL BE PERFORMED AT A TIME WHEN THE WIND VELOCITY IS LESS THAN 10 MPH AT GROUND LEVEL AND WITH NO ICE ON THE STRUCTURE AND GUY WIRES.

3. PLUMB THE TOWER WHILE RETENSIONING THE EXISTING GUY WIRES. THE HORIZONTAL DISTANCE BETWEEN THE VERTICAL CENTERLINES AT ANY TWO ELEVATIONS SHALL NOT EXCEED 0.25% OF THE VERTICAL DISTANCE BETWEEN TWO ELEVATIONS FOR LATTICED STRUCTURES.

4. THE TWIST BETWEEN ANY TWO ELEVATIONS THROUGHOUT THE HEIGHT OF A LATTICE STRUCTURE SHALL NOT EXCEED 0.5 DEGREES IN 10 FEET. THE MAXIMUM TWIST OVER THE LATTICE STRUCTURE HEIGHT SHALL NOT EXCEED 5 DEGREES.

SPECIAL INSPECTIONS NOTES:

1. A QUALIFIED INDEPENDENT TESTING LABORATORY, EMPLOYED BY THE OWNER AND APPROVED BY THE JURISDICTION, SHALL PERFORM INSPECTION AND TESTING IN ACCORDANCE WITH THE THE GOVERNING BUILDING CODE, APPLICABLE SECTION(S) AS REQUIRED BY PROJECT SPECIFICATIONS FOR THE FOLLOWING CONSTRUCTION WORK:

   a. STRUCTURAL WELDING (CONTINUOUS INSPECTION OF FIELD WELDS ONLY).

   b. HIGH STRENGTH BOLTS (PERIODIC INSPECTION OF A325 AND/OR A490 BOLTS) TO BE TIGHTENED PER "TURN-OF-THE-NUT" METHOD.

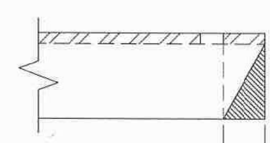
   c. MECHANICAL AND EPOXIED ANCHORAGES.

   d. FIBER REINFORCED POLYMER.

   - THE SPECIAL INSPECTOR MUST VERIFY THAT THE FRP MATERIAL SPECIFIED ON THE APPROVED DESIGN DOCUMENTS IS BEING INSTALLED.
   - THE SPECIAL INSPECTOR MUST VERIFY THAT ALL CUT EDGES AND DRILLED HOLES ARE PROPERLY SEALED USING A VINYL ESTER SEALING KIT SUPPLIED BY THE MANUFACTURER.
   - THE SPECIAL INSPECTOR MUST VERIFY THAT THE STRUCTURE IS BUILT IN ACCORDANCE WITH THE APPROVED DESIGN DOCUMENTS.

2. THE INSPECTION AGENCY SHALL SUBMIT INSPECTION AND TEST REPORTS TO THE BUILDING DEPARTMENT, THE ENGINEER OF RECORD, AND THE OWNER UNLESS THE FABRICATOR IS APPROVED BY THE BUILDING OFFICIAL TO PERFORM WORK WITHOUT THE SPECIAL INSPECTIONS.

MAXIMUM ALLOWABLE ANGLE CLIP



NOT TO ENCROACH ON BOLT HOLE

INFINIGY
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

at&t

STATE OF CONNECTICUT
JOSEPH R. JOHNSTON
29460
LICENSED PROFESSIONAL ENGINEER
FEB 11 2019

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No	Submittal / Revision	App'd	Date
0	ISSUED FOR REVIEW	TAG	02/05/19

Drawn: TAG Date: 02/05/19
Designed: CLK Date: 02/05/19
Checked: #E Date: 02/05/19

Project Number: 1039-A0002-B

Project Title:
BU# 842859

BRISTOL CENTER

371 TERRYVILLE AVENUE
BRISTOL, CT 06010

Prepared For:

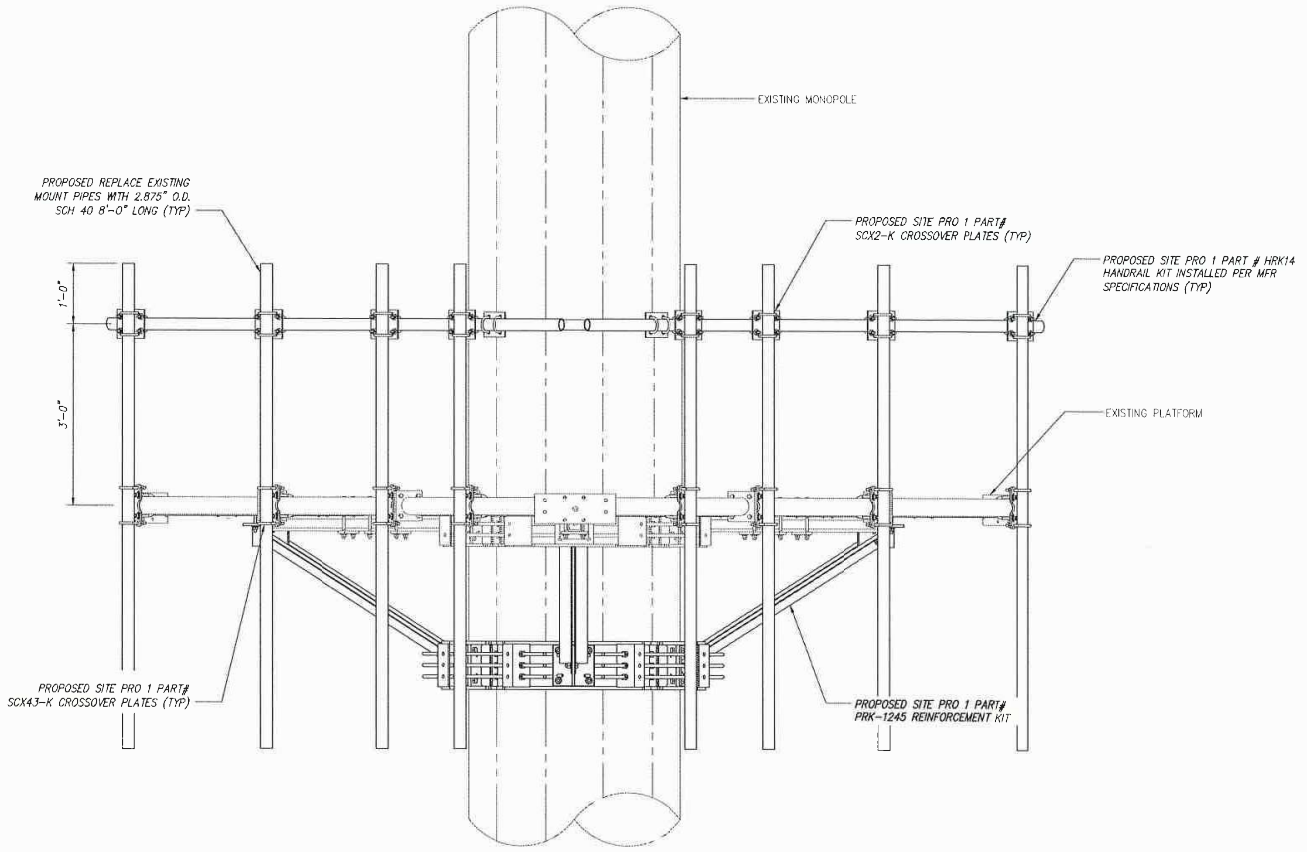
CROWN CASTLE
3 Corporate Park, Suite 101
Clifton Park, NY 12065

Drawing Scale: AS NOTED

Date: 02/05/19

Drawing Title:
GENERAL NOTES

Drawing Number:
S1



1 MOUNT ELEVATION
SCALE: NOT TO SCALE

INFINIGY
1033 Watervliet Shaker Rd
Albany, NY 12205
Phone #: (518) 690-0790
Fax #: (518) 690-0793

at&t

STATE OF CONNECTICUT
JOSEPH R. JOHNSTON
29400
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Joseph Johnston
11/1/2019

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BRISTOL CENTER

371 TERRYVILLE AVENUE
BRISTOL, CT 06010

Prepared For:
CROWN CASTLE
3 Corporate Park, Suite 101
Clifton Park, NY 12065

Drawing Scale
AS NOTED

Date:
02/05/19

Drawing Title
MOD DESIGN

Drawing Number
S2

Exhibit F

Power Density/RF Emissions Report

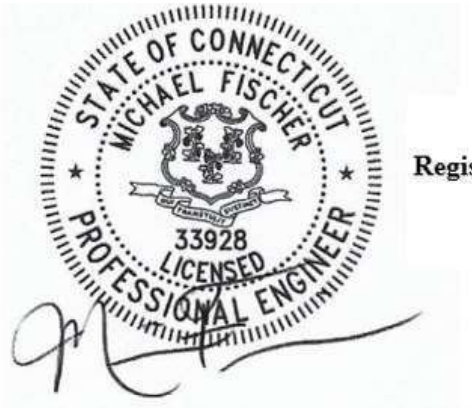
RF EMISSIONS COMPLIANCE REPORT

Crown Castle on behalf of AT&T Mobility, LLC

Crown Castle Site Name: BRISTOL CENTER
Crown Castle Site BU: 842859
AT&T Mobility, LLC Site FA #: 10070954
371 TERRYVILLE AVENUE
BRISTOL, CT
12/3/2019

Report Status:

AT&T Mobility, LLC Is Compliant



Michael Fischer, P.E.
Registered Professional Engineer (Electrical)
Connecticut License Number 33928
Expires January 31, 2020

Signed 03 December 2019

Prepared By:

Site Safe, LLC

8618 Westwood Center Drive
Suite 315
Vienna, VA 22182
Voice: 703-276-1100
Fax: 703-276-1169

Engineering Statement in Re:
Electromagnetic Energy Analysis
Crown Castle
BRISTOL, CT

My signature on the cover of this document indicates:

That I am registered as a Professional Engineer in the jurisdiction indicated; and

That I have extensive professional experience in the wireless communications engineering industry; and

That I am an employee of Site Safe, LLC in Vienna, Virginia; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission ("the FCC" and "the FCC Rules") both in general and specifically as they apply to the FCC's Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields; and

That the technical information serving as the basis for this report was supplied by Crown Castle (see attached Site Summary and Carrier documents) and that AT&T Mobility, LLC's installation involves communications equipment, antennas and associated technical equipment at a location referred to as "BRISTOL CENTER" ("the site"); and

That AT&T Mobility, LLC proposes to operate at the site with transmit antennas listed in the carrier summary and with a maximum effective radiated power as specified by AT&T Mobility, LLC and shown on the worksheet and that worst-case 100% duty cycle has been assumed; and

That this analysis has been performed with the assumption that the ground immediately surrounding the tower is primarily flat or falling; and

That at this time, the FCC requires that certain licensees address specific levels of radio frequency energy to which workers or members of the public might possibly be exposed (at §1.1307(b) of the FCC Rules); and

That such consideration of possible exposure of humans to radio frequency energy must utilize the standards set by the FCC, which is the federal agency having jurisdiction over communications facilities; and

That the FCC rules define two tiers of permissible exposure guidelines: 1) "uncontrolled environments," which defines situations in which persons may not be aware of (the "general public"), or may not be able to control their exposure to a transmission facility; and 2) "controlled environments," which defines situations in which persons are aware of their potential for exposure (industry personnel); and

That this statement specifically addresses the uncontrolled environment (which is more conservative than the controlled environment) and the limit set forth in the FCC rules for licensees of AT&T Mobility, LLC's operating frequencies as shown on the attached antenna worksheet; and

That when applying the uncontrolled environment standards, the predicted Maximum Power Density at two meters above ground level from the proposed AT&T Mobility, LLC operation is

no more than 2.071% of the maximum permissible exposure limits in any accessible area on the ground; and

That it is understood per FCC Guidelines and OET 65 Appendix A, that regardless of the existent radio frequency environment, only those licensees whose contributions exceed 5% of the exposure limit pertinent to their operation(s) bear any responsibility for bringing any non-compliant area(s) into compliance; and

That when applying the uncontrolled environment standards, the cumulative predicted energy density from the proposed operation is no more than 6.562% of the maximum in any accessible area up to two meters above the ground per OET 65; and

That the calculations provided in this report are based on data provided by the client and antenna pattern data supplied by the antenna manufacturer, in accordance with FCC guidelines listed in OET 65. Horizontal and vertical antenna patterns are combined for modeling purposes to accurately reflect the energy two meters above ground level where on-axis energy refers to maximum energy two meters above the ground along the azimuth of the antenna and where area energy refers to the maximum energy anywhere two meters above the ground regardless of the antenna azimuth, accounting for cumulative energy from multiple antennas for the carrier(s) and frequency range(s) indicated; and

That the Occupational Safety and Health Administration has policies in place which address worker safety in and around communications sites, thus individual companies will be responsible for their employees' training regarding radio frequency safety; and

In summary, it is stated here that the proposed operation at the site will not result in exposure of the public to excessive levels of radio frequency energy as defined in the FCC Rules and Regulations, specifically 47 CFR 1.1307(b), and that AT&T Mobility, LLC's proposed operation is completely compliant.

Finally, it is stated that access to the tower should be restricted to communication industry professionals and approved contractor personnel trained in radio frequency safety and that this instant analysis addresses exposure levels at two meters above ground level and does not address exposure levels on the tower or in the immediate proximity of the antennas.

Crown Castle
BRISTOL CENTER
Site Summary

Carrier	Area Maximum Percentage MPE
AT&T Mobility, LLC	0.107 %
AT&T Mobility, LLC (Proposed)	0.239 %
AT&T Mobility, LLC (Proposed)	0.316 %
AT&T Mobility, LLC (Proposed)	0.307 %
AT&T Mobility, LLC (Proposed)	0.290 %
AT&T Mobility, LLC (Proposed)	0.161 %
AT&T Mobility, LLC (Proposed)	0.530 %
AT&T Mobility, LLC (Proposed)	0.121 %
Sprint	0.153 %
Sprint	0.195 %
Sprint	0.115 %
Sprint	0.116 %
Sprint	0.335 %
T-Mobile	0.616 %
T-Mobile	0.225 %
T-Mobile	0.351 %
T-Mobile	0.286 %
Verizon Wireless	0.487 %
Verizon Wireless	0.704 %
Verizon Wireless	0.387 %
Verizon Wireless	0.521 %
Composite Site MPE:	6.562 %

AT&T Mobility, LLC
BRISTOL CENTER
Carrier Summary

Frequency:	850	MHz
Maximum Permissible Exposure (MPE):	566.67	µW/cm^2
Maximum power density at ground level:	0.60468	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.10671	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Kathrein-Scala	800-10121	169	85	1043	0.355721	0.062774	0.543148	0.09585
Kathrein-Scala	800-10121	169	205	1043	0.355721	0.062774	0.543148	0.09585
Kathrein-Scala	800-10121	169	325	1043	0.355721	0.062774	0.543148	0.09585

AT&T Mobility, LLC (Proposed)
BRISTOL CENTER
Carrier Summary

Frequency:	763	MHz
Maximum Permissible Exposure (MPE):	508.67	µW/cm^2
Maximum power density at ground level:	1.21366	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.2386	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
CCI Antennas	DMP65R-BU8D	168	85	2692	0.548936	0.107917	1.010591	0.198674
CCI Antennas	DMP65R-BU8D	168	205	2692	0.548936	0.107917	1.010591	0.198674
CCI Antennas	DMP65R-BU6D	168	325	2400	0.655903	0.128945	0.848436	0.166796

AT&T Mobility, LLC (Proposed)
BRISTOL CENTER
Carrier Summary

Frequency:	2100	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	3.16155	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.31616	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Kathrein-Scala	800-10966	168	85	7364	1.511513	0.151151	3.024253	0.302425
Kathrein-Scala	800-10966	168	205	7364	1.511513	0.151151	3.024253	0.302425
Kathrein-Scala	800-10965	169	325	7114	1.071297	0.10713	2.537596	0.25376

AT&T Mobility, LLC (Proposed)
BRISTOL CENTER
Carrier Summary

Frequency:	850	MHz
Maximum Permissible Exposure (MPE):	566.67	µW/cm^2
Maximum power density at ground level:	1.73871	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.30683	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Kathrein-Scala	800-10966	168	85	4287	1.020731	0.180129	1.661597	0.293223
Kathrein-Scala	800-10966	168	205	4287	1.020731	0.180129	1.661597	0.293223
Kathrein-Scala	800-10965	169	325	3607	0.777041	0.137125	0.79552	0.140386

AT&T Mobility, LLC (Proposed)
BRISTOL CENTER
Carrier Summary

Frequency:	737	MHz
Maximum Permissible Exposure (MPE):	491.33	µW/cm^2
Maximum power density at ground level:	1.42278	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.28957	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Kathrein-Scala	800-10966	168	85	3623	0.971396	0.197706	1.273538	0.2592
Kathrein-Scala	800-10966	168	205	3623	0.971396	0.197706	1.273538	0.2592
Kathrein-Scala	800-10965	169	325	2959	0.811080	0.165077	1.025284	0.208674

AT&T Mobility, LLC (Proposed)
BRISTOL CENTER
Carrier Summary

Frequency:	2300	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	1.60678	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.16068	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
CCI Antennas	TPA-65R-LCUUUU-H8	168	85	4366	0.701648	0.070165	1.557328	0.155733
CCI Antennas	TPA-65R-LCUUUU-H8	168	205	4366	0.701648	0.070165	1.557328	0.155733
Kathrein-Scala	800-10798	168	325	2099	0.638638	0.063864	1.226567	0.122657

AT&T Mobility, LLC (Proposed)
BRISTOL CENTER
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	5.29655	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.52966	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
CCI Antennas	TPA-65R-LCUUUU-H8	168	85	3892	0.684329	0.068433	1.556359	0.155636
CCI Antennas	DMP65R-BU8D	168	85	4170	2.922526	0.292253	3.737947	0.373795
CCI Antennas	TPA-65R-LCUUUU-H8	168	205	3892	0.684329	0.068433	1.556359	0.155636
CCI Antennas	DMP65R-BU8D	168	205	4170	2.922526	0.292253	3.737947	0.373795
Kathrein-Scala	800-10798	168	325	3751	0.797303	0.07973	1.44455	0.144455
CCI Antennas	DMP65R-BU6D	168	325	4075	3.345975	0.334597	4.038846	0.403885

AT&T Mobility, LLC (Proposed)
BRISTOL CENTER
Carrier Summary

Frequency:	722	MHz
Maximum Permissible Exposure (MPE):	481.33	µW/cm^2
Maximum power density at ground level:	0.58327	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.12118	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
CCI Antennas	TPA-65R-LCUUUU-H8	168	85	1816	0.372589	0.077408	0.388821	0.08078
CCI Antennas	TPA-65R-LCUUUU-H8	168	205	1816	0.372589	0.077408	0.388821	0.08078
Kathrein-Scala	800-10798	168	325	1452	0.352587	0.073252	0.557953	0.115918

Sprint
BRISTOL CENTER
Carrier Summary

Frequency:	1990	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	1.53167	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.15317	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Powerwave	P40-16-XLPP-RR	158	355	3583	0.79316	0.079316	1.229079	0.122908
Powerwave	P40-16-XLPP-RR	158	200	3583	0.79316	0.079316	1.229079	0.122908
RFS	APXVSPP18-C-A20	158	280	2113	0.415701	0.04157	0.754385	0.075439

Sprint
BRISTOL CENTER
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	1.94792	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.19479	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Powerwave	P40-16-XLPP-RR	158	355	3583	0.79316	0.079316	1.229079	0.122908
Powerwave	P40-16-XLPP-RR	158	200	3583	0.79316	0.079316	1.229079	0.122908
RFS	APXVSPP18-C-A20	158	280	3804	0.748262	0.074826	1.357894	0.135789

Sprint
BRISTOL CENTER
Carrier Summary

Frequency:	869	MHz
Maximum Permissible Exposure (MPE):	579.33	µW/cm^2
Maximum power density at ground level:	0.66904	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.11548	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Powerwave	P40-16-XLPP-RR	158	355	1315	0.612768	0.105771	0.629789	0.108709
Powerwave	P40-16-XLPP-RR	158	200	1315	0.612768	0.105771	0.629789	0.108709
RFS	APXVSPP18-C-A20	158	280	1084	0.307576	0.053091	0.313338	0.054086

Sprint
BRISTOL CENTER
Carrier Summary

Frequency:	862	MHz
Maximum Permissible Exposure (MPE):	574.67	µW/cm^2
Maximum power density at ground level:	0.66904	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.11642	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Powerwave	P40-16-XLPP-RR	158	355	1315	0.612768	0.10663	0.629789	0.109592
Powerwave	P40-16-XLPP-RR	158	200	1315	0.612768	0.10663	0.629789	0.109592
RFS	APXVSPP18-C-A20	158	280	1084	0.307576	0.053522	0.313338	0.054525

Sprint
BRISTOL CENTER
Carrier Summary

Frequency:	2500	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	3.34612	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.33461	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RFS	APXVTM14-C-I20	158	355	6168	0.887815	0.088782	1.68428	0.168428
RFS	APXVTM14-C-I20	158	200	6168	0.887815	0.088782	1.68428	0.168428
RFS	APXVTM14-C-I20	158	280	6168	0.887815	0.088782	1.68428	0.168428

T-Mobile
BRISTOL CENTER
Carrier Summary

Frequency:	2100	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	6.16124	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.61612	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Ericsson	AIR 32 B2A B66AA	130	30	4626	5.747868	0.574787	5.747868	0.574787
Ericsson	AIR 32 B2A B66AA	130	150	4626	5.747868	0.574787	5.747868	0.574787
Ericsson	AIR 32 B2A B66AA	130	270	4626	5.747868	0.574787	5.747868	0.574787

T-Mobile
BRISTOL CENTER
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	2.24582	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.22458	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Ericsson	AIR 32 B2A B66AA	130	30	4626	1.337832	0.133783	1.532073	0.153207
Ericsson	AIR 32 B2A B66AA	130	150	4626	1.337832	0.133783	1.532073	0.153207
Ericsson	AIR 32 B2A B66AA	130	270	4626	1.337832	0.133783	1.532073	0.153207

T-Mobile
BRISTOL CENTER
Carrier Summary

Frequency:	700	MHz
Maximum Permissible Exposure (MPE):	466.67	µW/cm^2
Maximum power density at ground level:	1.638	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.35098	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RFS	APXVAARR24_43-U-NA20	130	30	3484	1.339821	0.287104	1.405786	0.30124
RFS	APXVAARR24_43-U-NA20	130	150	3484	1.339821	0.287104	1.405786	0.30124
RFS	APXVAARR24_43-U-NA20	130	270	3484	1.339821	0.287104	1.405786	0.30124

T-Mobile
BRISTOL CENTER
Carrier Summary

Frequency:	600	MHz
Maximum Permissible Exposure (MPE):	400	µW/cm^2
Maximum power density at ground level:	1.14469	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.28617	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RFS	APXVAARR24_43-U-NA20	130	30	2501	1.036644	0.259161	1.054496	0.263624
RFS	APXVAARR24_43-U-NA20	130	150	2501	1.036644	0.259161	1.054496	0.263624
RFS	APXVAARR24_43-U-NA20	130	270	2501	1.036644	0.259161	1.054496	0.263624

Verizon Wireless
BRISTOL CENTER
Carrier Summary

Frequency:	2100	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	4.86737	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.48674	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
ANDREW	SBNHH-1D65B	140	60	6873	3.038646	0.303865	4.662581	0.466258
ANDREW	SBNHH-1D65B	140	180	6873	3.038646	0.303865	4.662581	0.466258
ANDREW	SBNHH-1D65B	140	300	6873	3.038646	0.303865	4.662581	0.466258

Verizon Wireless
BRISTOL CENTER
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	7.04288	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.70429	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
ANDREW	SBNHH-1D65B	140	60	6111	5.374937	0.537494	6.963387	0.696339
ANDREW	SBNHH-1D65B	140	180	6111	5.374937	0.537494	6.963387	0.696339
ANDREW	SBNHH-1D65B	140	300	6111	5.374937	0.537494	6.963387	0.696339

Verizon Wireless
BRISTOL CENTER
Carrier Summary

Frequency:	751	MHz
Maximum Permissible Exposure (MPE):	500.67	µW/cm^2
Maximum power density at ground level:	1.93752	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.38699	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
ANDREW	SBNHH-1D65B	140	60	2723	1.01208	0.202146	1.635614	0.326687
ANDREW	SBNHH-1D65B	140	180	2723	1.01208	0.202146	1.635614	0.326687
ANDREW	SBNHH-1D65B	140	300	2723	1.01208	0.202146	1.635614	0.326687

Verizon Wireless
BRISTOL CENTER
Carrier Summary

Frequency:	850	MHz
Maximum Permissible Exposure (MPE):	566.67	µW/cm^2
Maximum power density at ground level:	2.95053	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.52068	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Antel	BXA-70063-4CF	140	60	3192	2.221003	0.391942	2.908859	0.513328
Antel	BXA-70063-4CF	140	180	3192	2.221003	0.391942	2.908859	0.513328
Antel	BXA-70063-4CF	140	300	3192	2.221003	0.391942	2.908859	0.513328