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

October 14, 2019

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

RE: **Notice of Exempt Modification for AT&T: 876377**
161 Pinney Street, Colebrook, CT 06021
Latitude: 41° 57′ 58.90″ / Longitude: -73° 7′ 18.10″

Dear Ms. Bachman:

AT&T currently maintains six (6) antennas at the 140-foot mount on the existing 148-foot Monopole Tower, located at 161 Pinney Street, Colebrook, CT. The tower is owned by Crown Castle and the property is owned by Fifth State Farm LLC. AT&T now intends to replace six (6) existing antennas with six (6) new antennas, as well as, replace nine (9) RRUS with nine (9) new RRUs. The new antennas will be installed at the 140-ft level of the tower.

The facility was approved by the Town of Colebrook Planning & Zoning Commission by way of a Certificate of Special Permit on July 10, 2000, application number 00-01.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Thomas McKeon, First Selectman for the Town of Colebrook, Michael Halloran, Land Use Director, Crown Castle as the tower owner, and Fifth State Farm LLC, the property owner.

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

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

3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communication Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, T-Mobile 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
Network Real Estate Specialist
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065
(201) 236-9224
AnneMarie.Zsamba@crowncastle.com

Attachments
cc:

Thomas McKeon, First Selectman
Town of Colebrook
Town Hall – Board of Selectman
562 Colebrook Road
Colebrook, CT 06021
860.379.3359 ext. 202

Michael Halloran, Land Use Director
Town of Colebrook
Town Hall – Land Use Department
562 Colebrook Road
Colebrook, CT 06021
860.379.3359 ext. 209

Fifth State Farm LLC, Property Owner
70 North Old Stone Bridge Road
Cos Cob, CT 06807

Crown Castle, Tower Owner

ORIGIN ID:ONHA (585) 445-5896
RICHARD ZAJAC
CROWN CASTLE
300 MERIDIAN CENTRE

ROCHESTER, NY 14618
UNITED STATES US

SHIP DATE: 14OCT19
ACTWGT: 3.50 LB
CAD: 104924194/INET4160

BILL SENDER

TO **MELANIE BACHMAN**
CONNECTICUT SITING COUNCIL
10 FRANKLIN SQUARE

NEW BRITAIN CT 06051
(860) 827-2951 REF: 1765.6680
INV:
PO: DEPT:

567J3/2A3C/05A2

FedEx Express

J192119091901uv

TRK# 0201 **7767 0878 3514**

TUE - 15 OCT 10:30A
PRIORITY OVERNIGHT

XE BDLA

06051
CT-US **BDL**

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

ORIGIN ID:ONHA (585) 445-5896
RICHARD ZAJAC
CROWN CASTLE
300 MERIDIAN CENTRE

ROCHESTER, NY 14618
UNITED STATES US

SHIP DATE: 14OCT19
ACTWGT: 1.00 LB
CAD: 104924194/INET4160

BILL SENDER

TO THOMAS MCKEON, FIRST SELECTMAN
TOWN OF COLEBROOK
SELECTMAN'S OFFICE
562 COLEBROOK ROAD
COLEBROOK CT 06021
(860) 379-3359 X 202 REF: 1734.7680
INV:
PO: DEPT:

567J3/2A3C/05A2

FedEx Express

J192119091901uv

TUE - 15 OCT 10:30A
PRIORITY OVERNIGHT

TRK# 7767 0880 1160
0201

XE HFDA

06021
CT-US BDL

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ORIGIN ID:ONHA (585) 445-5896
RICHARD ZAJAC
CROWN CASTLE
300 MERIDIAN CENTRE

ROCHESTER, NY 14618
UNITED STATES US

SHIP DATE: 14OCT19
ACTWGT: 1.00 LB
CAD: 104924194/INET4160

BILL SENDER

TO **MICHAEL HALLORAN, LAND USE**
TOWN OF COLEBROOK
LAND USE DEPT
562 COLEBROOK ROAD
COLEBROOK CT 06021
(860) 379-3359 X 209 REF: 1734.7680
INV:
PO: DEPT:

567J3/2A3C/05A2

FedEx Express

J192119091901uv

TRK# 0201 **7767 0881 7192**

TUE - 15 OCT 10:30A
PRIORITY OVERNIGHT

XE HFDA

06021
BDL
CT-US

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CROWN CASTLE
300 MERIDIAN CENTRE

ROCHESTER, NY 14618
UNITED STATES US

SHIP DATE: 14OCT19
ACTWGT: 1.00 LB
CAD: 104924194/INET4160

BILL SENDER

TO **FIFTH STATE FARM LLC**

70 NORTH OLD STONE BRIDGE ROAD

COS COB CT 06807

(201) 236-9224 REF: 1734.7680
INV:
PO: DEPT:

567J3/2A3C/05A2

J192119091901uv

TRK# 0201 7767 0883 3199

TUE - 15 OCT 10:30A
PRIORITY OVERNIGHT

XE JSDA

06807
CT-US **JFK**

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Exhibit A

Original Facility Approval

BROWN
RUDNICK
FREED &
GESMER

THOMAS J. REGAN
Direct Dial Telephone: (860) 509-6522
E-MAIL: tregan@brfg.com

(115)

Recorded
Certificate
(Copy)

Via FedEx

August 28, 2000

Karen J. Nielsen
Property Specialist
Sprint PCS
Crossroads Corporate Center
1 International Blvd., Suite 300
Mahwah, NJ 07495

Re: CT33XC115, 161 Pinney Street, Colebrook, CT
Property Owner: Fredsall, Ellen C.

Dear Karen:

In connection with the above-referenced matter, I enclose herewith a copy of the recorded *"Certificate of Special Permit"* which has been recorded on the Land Records of the Town of Colebrook on August 1, 2000 in Volume 63, Page 923.

If you have any questions, please do not hesitate to contact me.

Very truly yours,

BROWN, RUDNICK, FREED & GESMER

By: T J Regan
Thomas J. Regan

TJR/bh
Enclosures

#40128382 v\1 - regantj - w39@011.doc - 80563/1813

A Partnership of
Professional Corporations

CITYPLACE I
185 ASYLUM STREET
HARTFORD, CONNECTICUT 06103-3402
860-509-6500
Fax: 860-509-6501

Boston | Providence | London

PLANNING & ZONING COMMISSION

TOWN OF COLEBROOK

Colebrook, Connecticut 06021

CERTIFICATE OF SPECIAL PERMIT

At a meeting held on July 10, 2000, the Planning & Zoning Commission of the Town of Colebrook voted to approve the following Special Permit:

1. Application No. 00-01
2. Owner(s) of record Ellen Fredsall
3. Applicant(s) Sprint PCS
4. Description of premises Raw Land at 161 Pinney St. - Installation of wireless telecommunication Facility & associated ground mounted Equipment.
5. The provisions of the Special Permit, including specific section(s) of the Regulations of the Planning & Zoning Commission are as follows:

See attached Letter to Sprint PCS dated July 21, 2000

By _____
Chairman, Colebrook Planning & Zoning Commission
PRO TEM

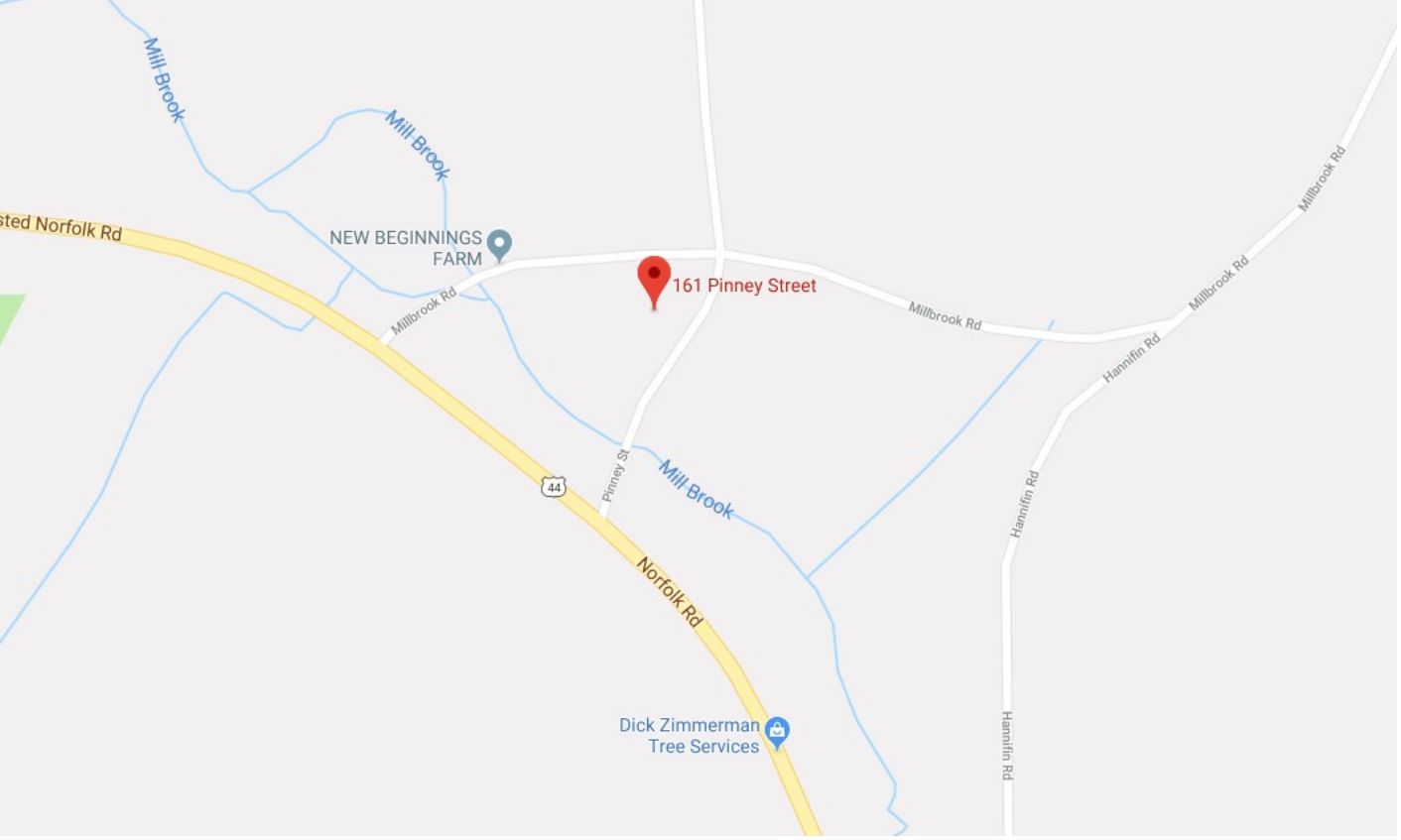
As per CGS 8-3d, all Special permits and/or Special Exceptions must be recorded by the applicant in the Land Records of the Town of Colebrook before they become effective.

As per Colebrook Zoning Regulations 6.14.7 all Special Exception and/or Special permits expire one year from the date of approval if no construction and/or use has commenced.

Any change in the use of this property from that stated above renders this permit null and void. A new permit is required for a change in use.

Exhibit B

Property Card


Mill Brook
Mill Brook
sted Norfolk Rd
NEW BEGINNINGS FARM
161 Pinney Street
Millbrook Rd
Millbrook Rd
Millbrook Rd
Hannifin Rd
Pinney St
Mill Brook
44
Norfolk Rd
Hannifin Rd
Dick Zimmerman Tree Services

161 PINNEY STREET

Location	161 PINNEY STREET	**Mblu**	02/ / 03/ /
Acct#	100273	**Owner**	FIFTH STATE FARM LLC
Assessment	$417,290	**Appraisal**	$747,000
PID	27	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$473,300	$273,700	$747,000

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$331,400	$85,890	$417,290

Owner of Record

Owner	FIFTH STATE FARM LLC	**Sale Price**	$200,000
Co-Owner		**Certificate**	
Address	70 NORTH OLD STONE BRIDGE RD COS COB, CT 06807	**Book & Page**	90/253
		Sale Date	06/27/2019
		Instrument	28

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
FIFTH STATE FARM LLC	$200,000		90/253	28	06/27/2019
FREDSALL JANET E SUCC TRUSTEE	$0		0086/0055	04	10/07/2014
FREDSALL ELLEN C TRUSTEE	$0		0077/0768		01/17/2008
FREDSALL ELLEN C	$0		0059/0804		03/21/1997

Building Information

Building 1 : Section 1

Year Built:	1979
Replacement Cost:	$0
Building Percent Good:	77
Replacement Cost Less Depreciation:	$0

Building Attributes	
Field	**Description**
STYLE	Tower Accsry Bldg
MODEL	Commercial
Grade	Average
Stories:	1
Occupancy	1.00
Exterior Wall 1	Concrete Block
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Metal/Tin
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Minimum/Plywd
Interior Floor 2	
Heating Fuel	Electric
Heating Type	None
AC Type	None
Struct Class	
Bldg Use	Comm Bldg.
Total Rooms	1
Total Bedrms	0
Total Baths	0
Usrfld 218	
Usrfld 219	
1st Floor Use:	
Heat/AC	None
Frame Type	None
Baths/Plumbing	None
Ceiling/Wall	None
Rooms/Prtns	Light
Wall Height	0.00
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos/ColebrookCTPhotos//\00\00\00\

Building Layout

(http://images.vgsi.com/photos/ColebrookCTPhotos//Sketches/2

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

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	2-2
Description	Comm Bldg.
Zone	R2
Neighborhood	R05
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	93
Frontage	0
Depth	0
Assessed Value	$85,890
Appraised Value	$273,700

Special Land			
Land Use Code	**Land Use Description**	**Units**	**Unit Type**
6-2	Forest	91	AC

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
BRN4	BARN W/LFT&BSMT			1408.00 S.F.	$21,100	1
FCP	CARPORT			300.00 S.F.	$2,400	1
BRN4	BARN W/LFT&BSMT			240.00 S.F.	$3,600	1
MAS	MASONRY OUTB			240.00 S.F.	$16,800	1
MAS	MASONRY OUTB			420.00 S.F.	$29,400	1
CTW	CELL TOWER			1.00 UNITS	$400,000	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$473,300	$280,800	$754,100
2017	$473,300	$280,800	$754,100
2015	$473,300	$280,800	$754,100

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$331,400	$90,120	$421,520
2017	$331,400	$90,120	$421,520
2015	$331,400	$90,120	$421,520

Exhibit C

Construction Drawings

AT&T SITE NUMBER: CT1012
AT&T SITE NAME: COLEBROOK
AT&T FA CODE: 10041785
AT&T PACE NUMBER: MRCTB041433/ MRCTB041449/ MRCTB041546/ MRCTB041470/ MRCTB041720
SITE TYPE: MONOPOLE

BUSINESS UNIT #: 876377
SITE ADDRESS: 161 PINNEY ST WINSTED, CT 06098
COUNTY: LITCHFIELD
TOWER HEIGHT: 148'-0"

PROJECT: AT&T LTE 2C, 3C, 4C, 5C

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	HORTON 2/FREDSALL PROPERTY
SITE ADDRESS:	161 PINNEY ST WINSTED, CT 06098
COUNTY:	LITCHFIELD
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.9663589
LONGITUDE:	-73.1216800
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:	492777

NOTE: CRANE NEEDED AT 190' TO ACCESS EQUIPMENT ON T-BOOMS

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
G-1	GROUNDING DETAILS
G-2	GROUNDING DETAILS

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.

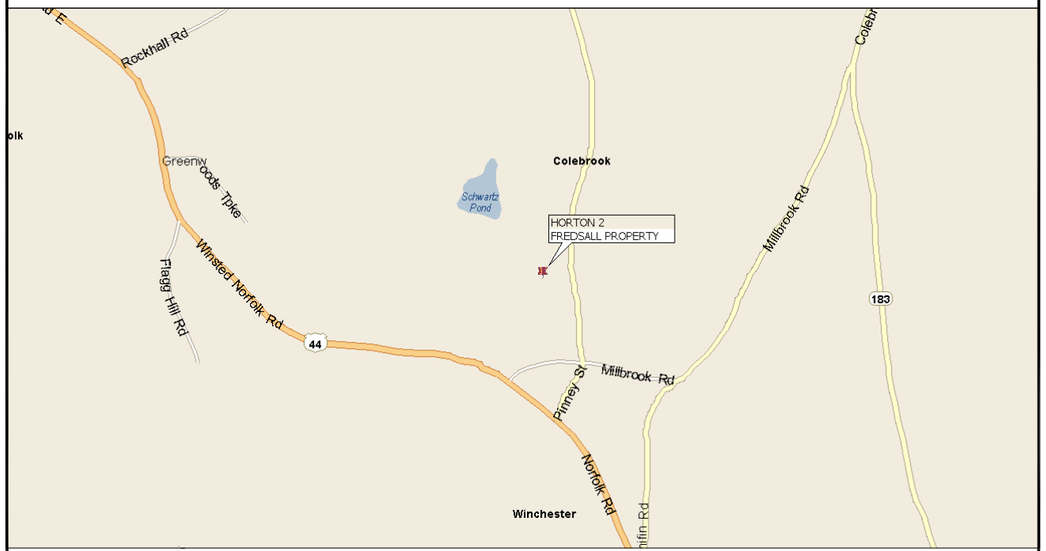
PROJECT DESCRIPTION

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

TOWER SCOPE OF WORK
- REMOVE (2) KMW AM-X-CD-16-65-00T-RET ANTENNAS
- REMOVE (1) KMW AM-X-CD-14-65-00T-RET ANTENNAS
- REMOVE (3) POWERWAVE 7770 ANTENNAS
- REMOVE (3) ERICSSON RRUS11 B12 RRHS
- REMOVE (6) POWERWAVE LGP21901 DIPLEXERS
- REMOVE (3) GSM TT08-19DB111-001 TMAS
- REMOVE AND REPLACE (1) EXISTING BB W/ (1) 6630
- REMOVE AND REPLACE (1) EXISTING PP W/ (1) NETSURE 7100 W/ BATTERY STRINGS
- INSTALL (4) CCI DMP65R-BU6DA ANTENNAS
- INSTALL (2) CCI DMP65R-BU4DA ANTENNAS
- INSTALL (3) ERICSSON 4449 B5/B12 RRH
- INSTALL (3) ERICSSCON 8843 B2/B66A RRHS
- INSTALL (3) ERICSSON 4478 B14 RRH
- INSTALL (4) ROSENBERGER LEONI WR-VG66ST BRD DC CABLES
- INSTALL (1) ROSENBERGER LEONI FB-L98B-034-XXX FIBER CABLE
- INSTALL (1) XMU
- INSTALL (1) 6630 W/ IDLE CABLE
- INSTALL (1) DC12

DESIGN PACKAGE BASED ON THE RFDS	DESIGN PACKAGE BASED ON THE APPLICATION
REVISION: 1.00	ID: 492777
DATE: 8/13/19	REVISION: 0

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	2015 IBC
MECHANICAL	2015 IMC
ELECTRICAL	2017 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	B+T GROUP SEPTEMBER 4, 2019
MOUNT ANALYSIS:	TOWER ENGINEERING PROFESSIONALS AUGUST 28, 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:
CT1012

BU #: **876377**
HORTON 2/FREDSALL PROPERTY

161 PINNEY ST
WINSTED, CT 06098

EXISTING 148'-0"
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	10/2/19	MTJ	CONSTRUCTION	MDW
1	10/11/19	JJD	CONSTRUCTION	MDW

STATE OF CONNECTICUT
31627
LICENSED
PROFESSIONAL ENGINEER
10/11/19

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/20

SHEET NUMBER: T-1
REVISION: 1

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)

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:
CT1012

BU #: **876377**
HORTON 2/FREDSALL PROPERTY

161 PINNEY ST
WINSTED, CT 06098

EXISTING 148'-0"
MONOPOLE

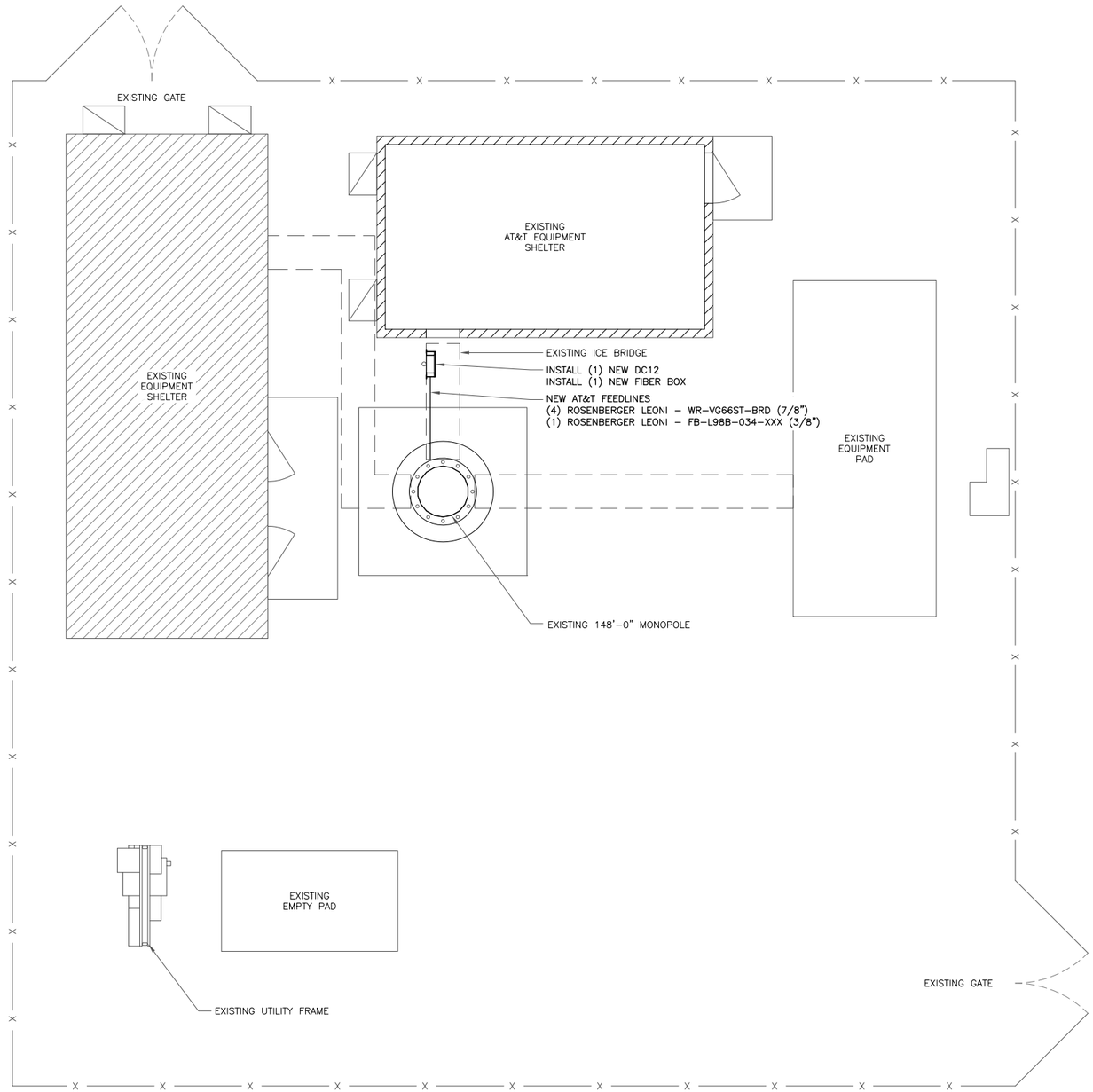
ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	10/2/19	MTJ	CONSTRUCTION	MDW
1	10/11/19	JJD	CONSTRUCTION	MDW

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/20

SHEET NUMBER: T-2

REVISION: 1



1 SITE PLAN
SCALE: 2' 1' 0 2' 1/2"=1'–0" (FULL SIZE) 1/4"=1'–0" (11x17)

N

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

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

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EXISTING 148'-0"
MONOPOLE

ISSUED FOR:

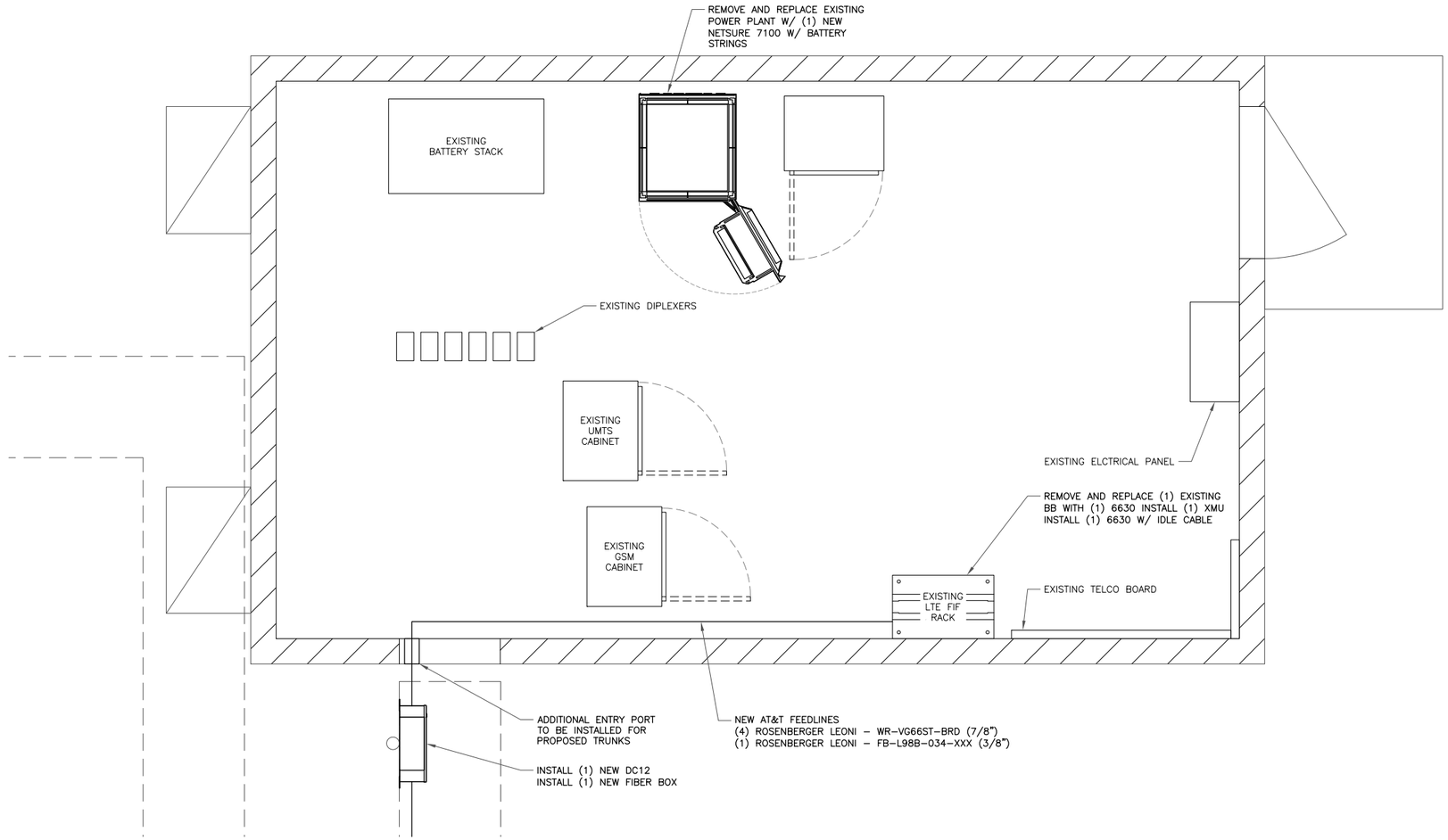
REV	DATE	DRWN	DESCRIPTION	DES./QA
0	10/2/19	MTJ	CONSTRUCTION	MDW
1	10/11/19	JJD	CONSTRUCTION	MDW

STATE OF CONNECTICUT
31627
LICENSED
PROFESSIONAL ENGINEER
10/11/19

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/20

SHEET NUMBER: C-1
REVISION: 1

112179_876377_Horton 2-Fredsall Property.dwg – Sheet:C-1 – User: ghoyes – Oct 11, 2019 – 1:44pm



1 EXISTING EQUIPMENT PLAN

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

N

AT&T
ONE AT&T WAY
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HORTON 2/FREDSALL PROPERTY

161 PINNEY ST
WINSTED, CT 06098

EXISTING 148'-0"
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	10/2/19	MTJ	CONSTRUCTION	MDW
1	10/11/19	JJD	CONSTRUCTION	MDW

STATE OF CONNECTICUT
31627
LICENSED
PROFESSIONAL ENGINEER
10/11/19

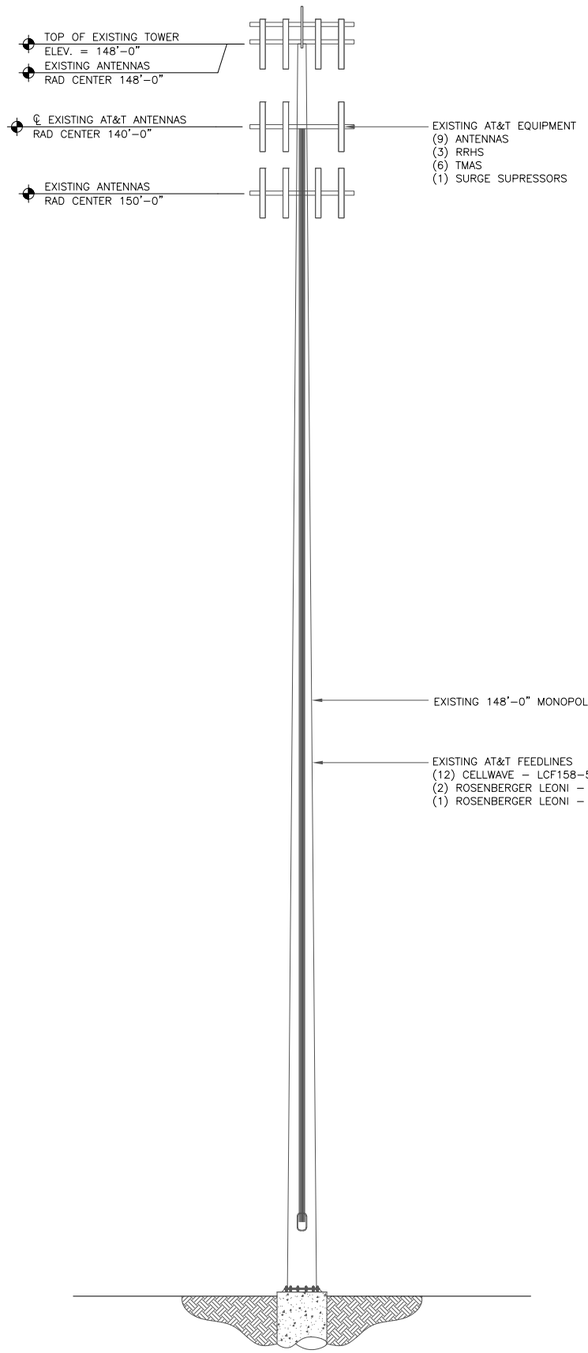
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/20

SHEET NUMBER: C-2

REVISION: 1

AT&T EQUIPMENT

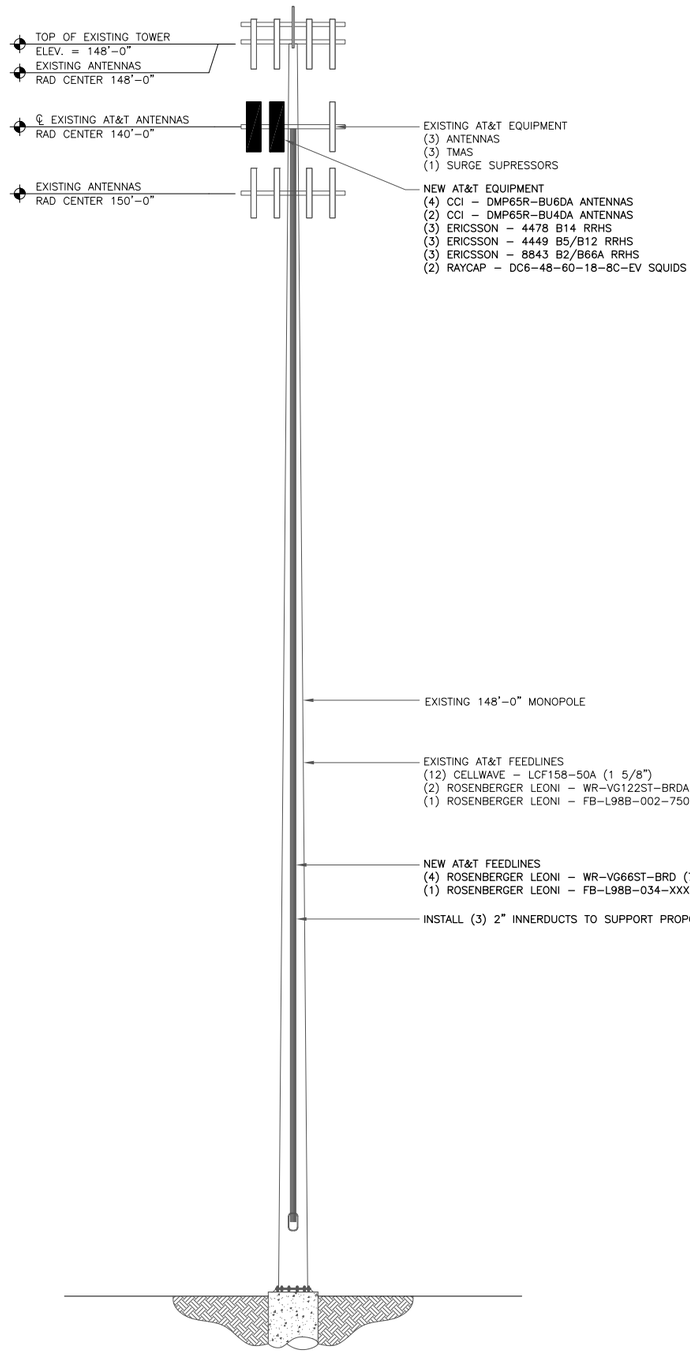
ANTENNA CL: 140'–0"
MOUNT CL: 140'–0"



1 EXISTING ELEVATION
SCALE: NOT TO SCALE

AT&T EQUIPMENT

ANTENNA CL: 140'–0"
MOUNT CL: 140'–0"



2 FINAL ELEVATION
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:
CT1012

BU #: **876377**
HORTON 2/FREDSALL PROPERTY

161 PINNEY ST
WINSTED, CT 06098

EXISTING 148'-0"
MONOPOLE

ISSUED FOR:

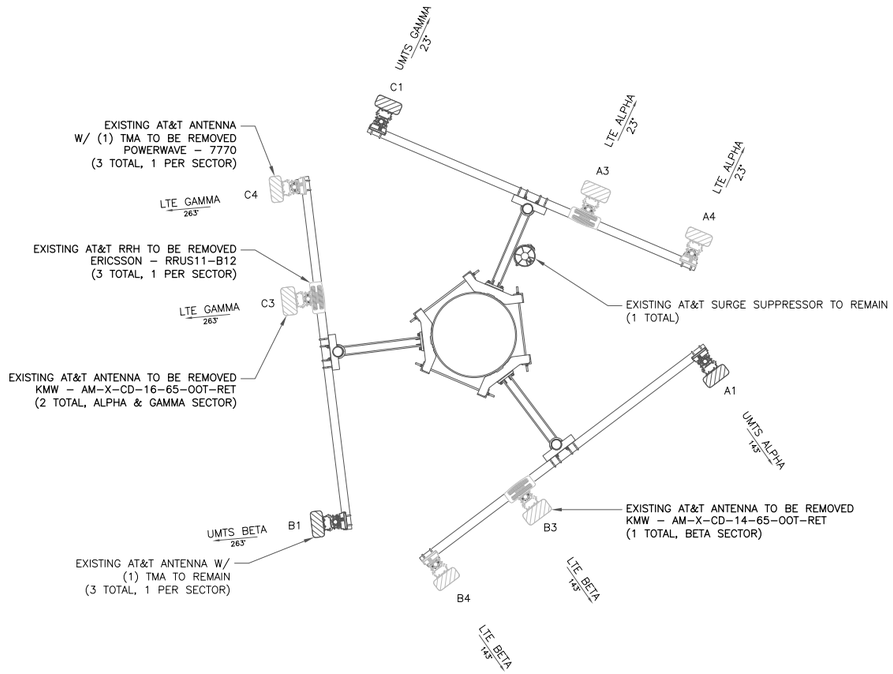
REV	DATE	DRWN	DESCRIPTION	DES./QA
0	10/2/19	MTJ	CONSTRUCTION	MDW
1	10/11/19	JJD	CONSTRUCTION	MDW

STATE OF CONNECTICUT
31627
LICENSED
PROFESSIONAL ENGINEER
10/11/19

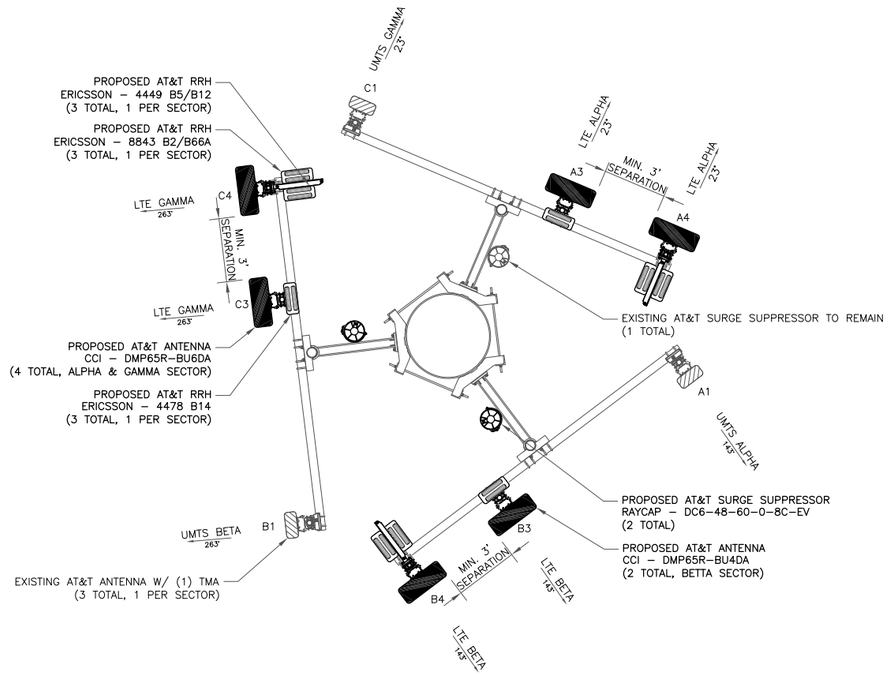
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/20

SHEET NUMBER: C-3

REVISION: 1



1 EXISTING ANTENNA LAYOUT
SCALE: NOT TO SCALE



2 FINAL ANTENNA LAYOUT
SCALE: NOT TO SCALE

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

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3200 HORIZON DRIVE, SUITE 150
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SHEET NUMBER: C-4
REVISION: 1

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 QTY ON TOWER	RRHs ON GROUND	DIPLEXER ON TOWER	DIPLEXER ON GROUND	RET CABLE
ALPHA SECTOR																		
C1	UMTS	EXISTING	143°	POWERWAVE 7770	140'-0"	0°	4°/2°	1-5/8"	162'-0"	4	TT08-19DB111-001	(1) DC6-48-60-18-8F (2) DC6-48-60-18-8C-EV	(2) FIBER (6) DC LINES	–	–	–	Y	Y
A2	–	–	23°	–	–	–	–	–	–	–	–			–	–	–	–	–
A3	LTE	NEW	–	CCI DMP65R-BU6DA	140'-0"	0°	6°/2°	–	–	–	–			(1) 4478 B14	–	–	–	Y
A4	LTE	NEW	23°	CCI DMP65R-BU6DA	140'-0"	0°	2°/2°/6°/6°	–	–	–	–			(1) 4449 B5/B12 (1) 8843 B2/B66A	–	–	–	Y
BETA SECTOR																		
A1	UMTS	EXISTING	263°	POWERWAVE 7770	140'-0"	0°	4°/2°	1-5/8"	162'-0"	4	TT08-19DB111-001	–	SHARED FIBER/DC	–	–	–	Y	Y
B2	–	–	–	–	–	–	–	–	–	–	–			–	–	–	–	–
B3	LTE	NEW	143°	CCI DMP65R-BU4DA	140'-0"	0°	6°/2°	–	–	–	–			(1) 4478 B14	–	–	–	Y
B4	LTE	NEW	143°	CCI DMP65R-BU4DA	140'-0"	0°	6°/2°/6°/6°	–	–	–	–			(1) 4449 B5/B12 (1) 8843 B2/B66A	–	–	–	Y
GAMMA SECTOR																		
B1	UMTS	EXISTING	23°	POWERWAVE 7770	140'-0"	0°	4°/2°	1-5/8"	162'-0"	4	TT08-19DB111-001	–	–	–	–	–	Y	Y
C2	–	–	–	–	–	–	–	–	–	–	–			–	–	–	–	–
C3	LTE	NEW	263°	CCI DMP65R-BU6DA	140'-0"	0°	2°/2°	–	–	–	–			(1) 4478 B14	–	–	–	Y
C4	LTE	NEW	263°	CCI DMP65R-BU6DA	140'-0"	0°	2°/2°/2°/2°	–	–	–	–			(1) 4449 B5/B12 (1) 8843 B2/B66A	–	–	–	Y

NOTE: BOLD DENOTES NEW EQUIPMENT

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

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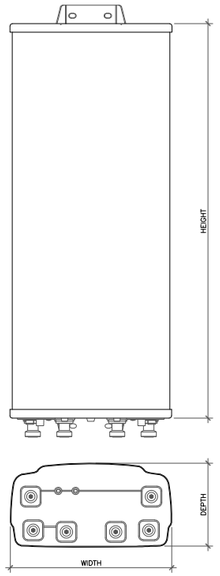
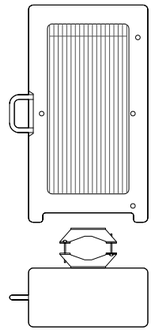
SHEET NUMBER: C-5

REVISION: 1



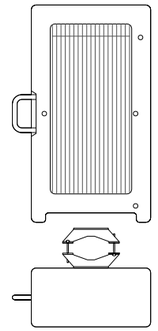
ANTENNA DIMENSIONS (INCHES)				
MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
DMP65R-BU6D	72"	20.7"	7.7"	79.4 lbs
DMP65R-BU4D	48"	20.7"	7.7"	67.9 lbs

1 ANTENNA DETAIL
SCALE: NOT TO SCALE



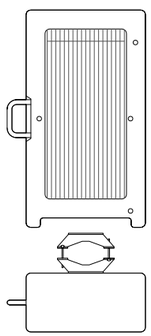
ERICSSON – 4449 B5/B12
WEIGHT (FULLY EQUIPPED): 71.0 LBS
SIZE (HxWxD): 17.9x13.19x9.44 IN.

2 RRH DETAIL
SCALE: NOT TO SCALE



ERICSSON – 8843 B2/B66A
WEIGHT (FULLY EQUIPPED): 72.0 LBS
SIZE (HxWxD): 14.9x13.2x10.9 IN.

3 RRH DETAIL
SCALE: NOT TO SCALE



ERICSSON – 4478 B14
WEIGHT (FULLY EQUIPPED): 59.4 LBS
SIZE (HxWxD): 18.1x13.4x8.26 IN.

3 RRH DETAIL
SCALE: NOT TO SCALE

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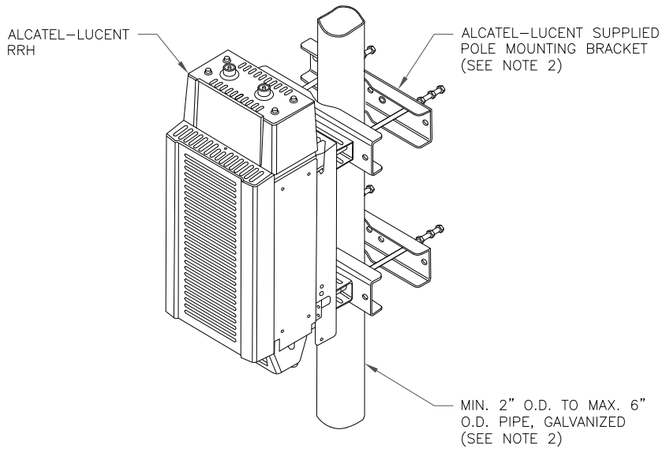
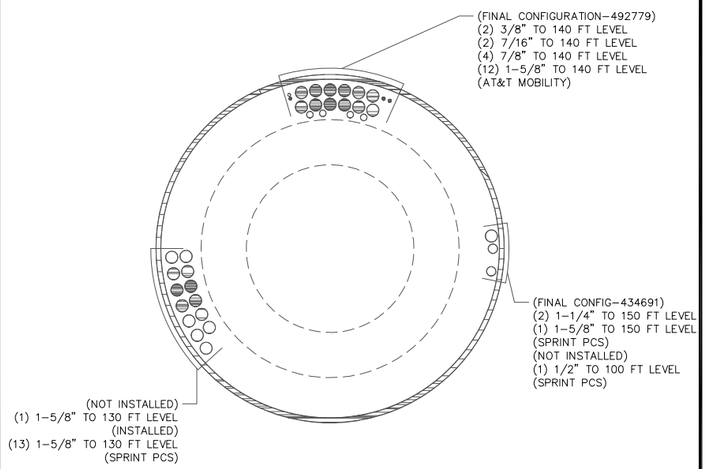
SHEET NUMBER: C-6
REVISION: 1

NOTES:

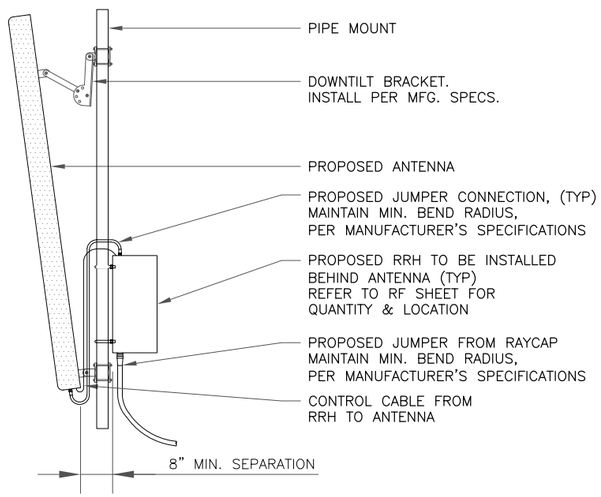
1. ALCATEL–LUCENT (ALU) VIA AT&T SUPPLIES RRH, RRH POLE–MOUNTING BRACKET. SUBCONTRACTOR SHALL SUPPLY POLE/PIPE AND INSTALL ALL MOUNTING HARDWARE INCLUDING ALU RRH POLE–MOUNTING BRACKET. ALU INSTALLS RRH AND MAKES CABLE TERMINATIONS.
2. FOR POLE DIAMETERS FROM 6" TO 15", ALCATEL–LUCENT CAN SUPPLY A PAIR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



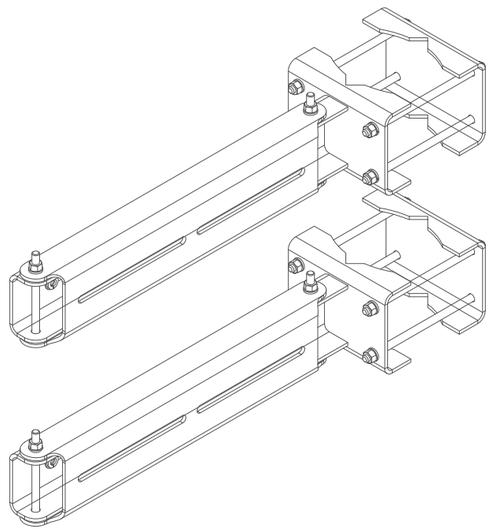
1 RRH MOUNTING DETAIL
SCALE: NOT TO SCALE



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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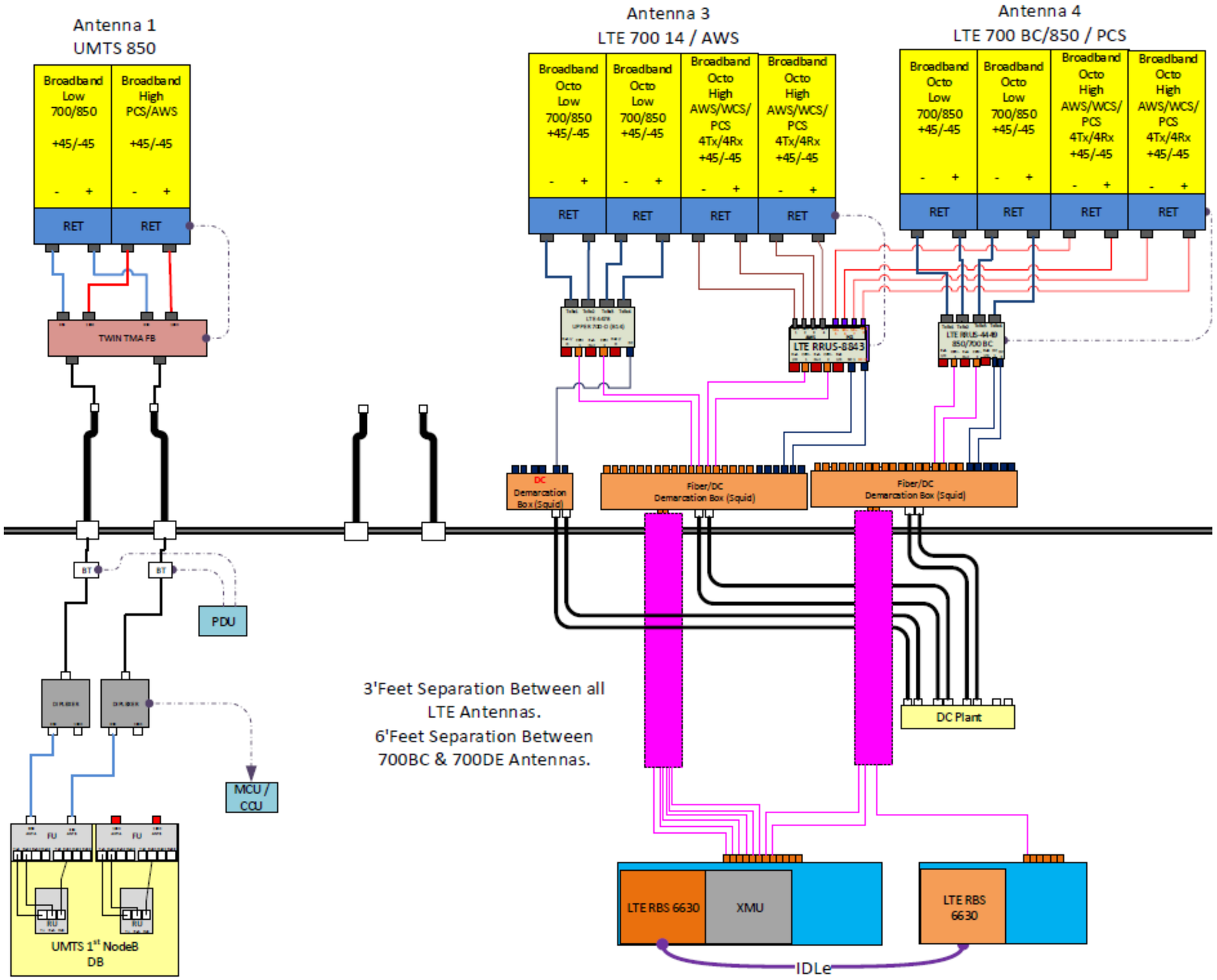
SHEET NUMBER: C-7
REVISION: 1



1 PLUMBING DIAGRAM
SCALE: NOT TO SCALE

AT&T
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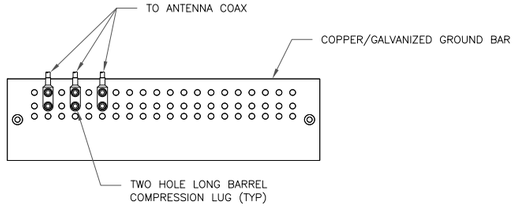
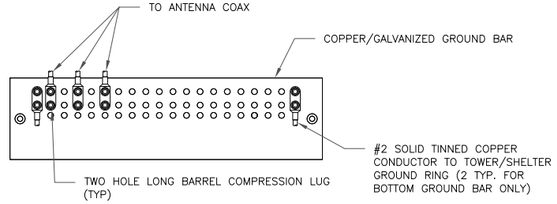
SHEET NUMBER: C-8
REVISION: 1



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.

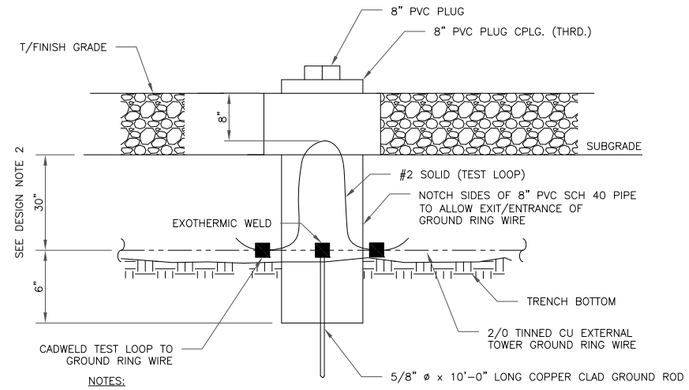
1 ANTENNA GROUND BAR DETAIL
SCALE: NOT TO SCALE



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.

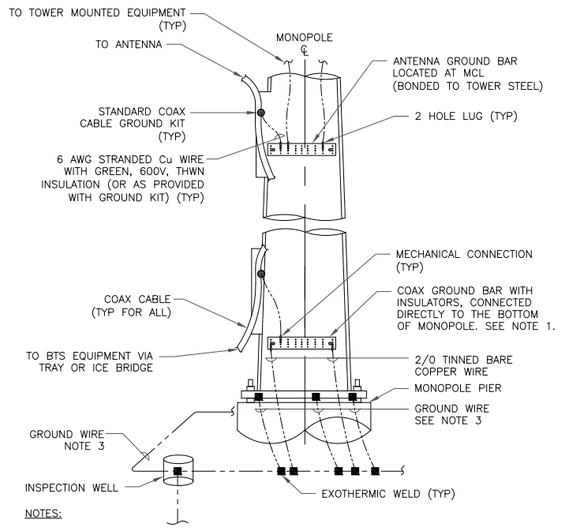
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



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)

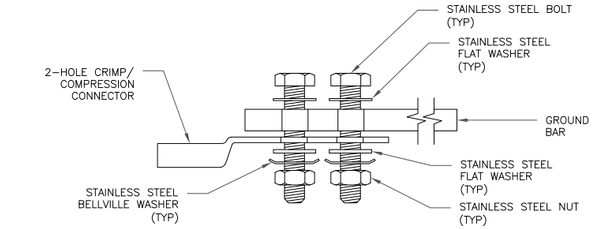
3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE



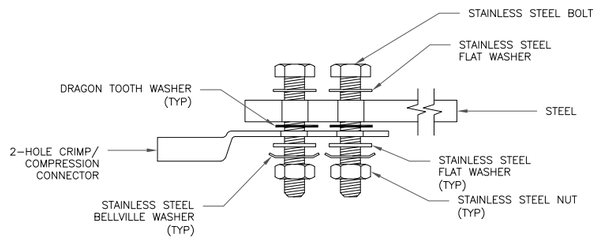
NOTES:

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.

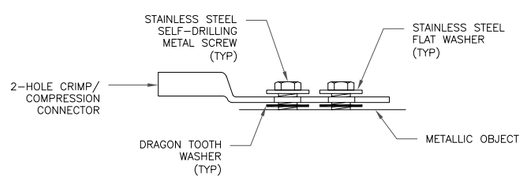
4 TYPICAL ANTENNA CABLE GROUNDING
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS

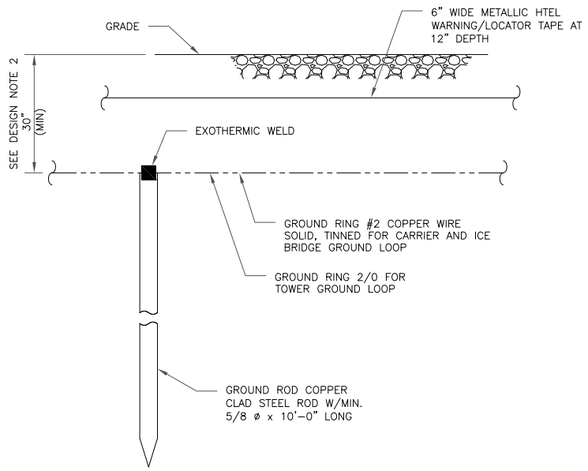


SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

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

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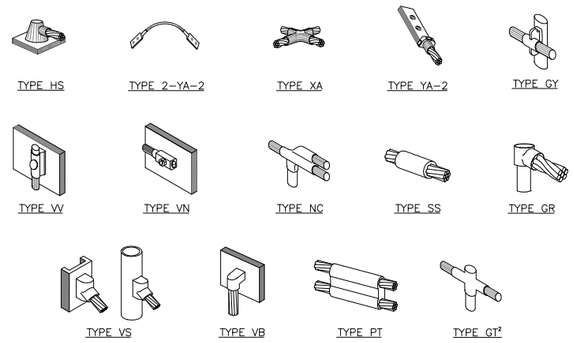
SHEET NUMBER: G-1
REVISION: 1

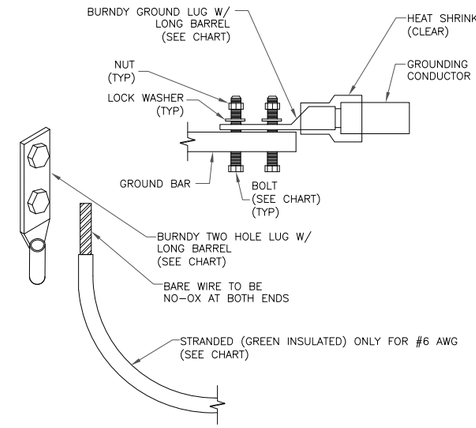


NOTE:

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

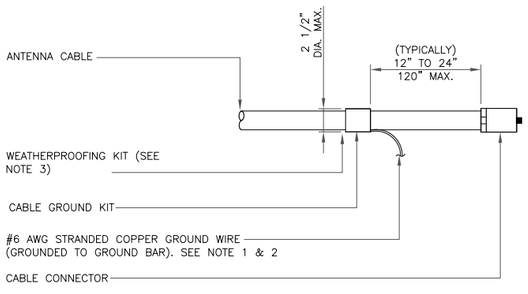
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT



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.

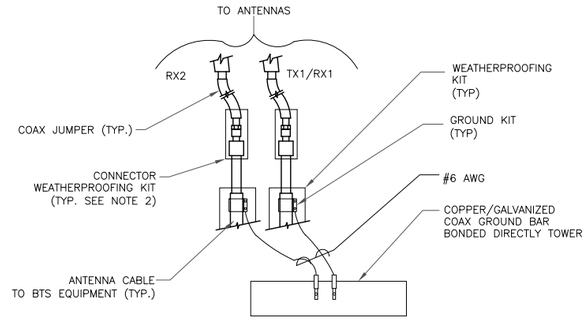
2 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



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.

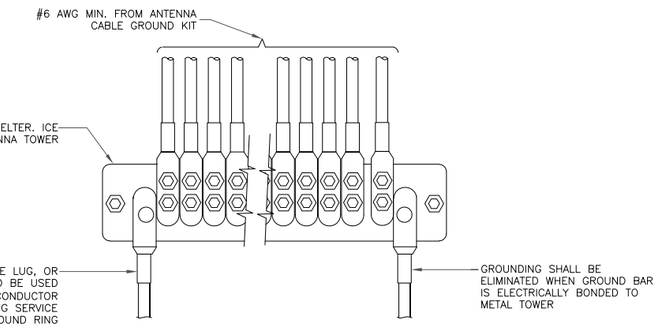
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



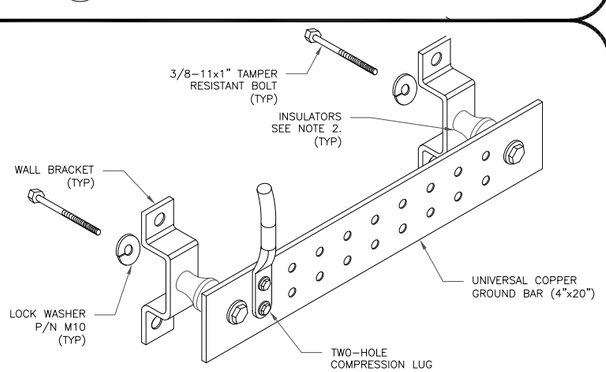
NOTES:

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



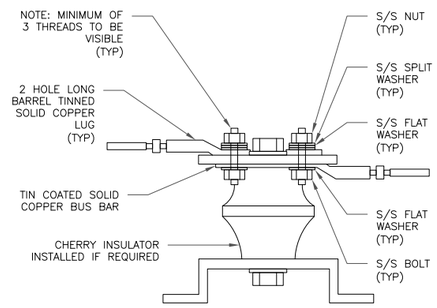
5 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



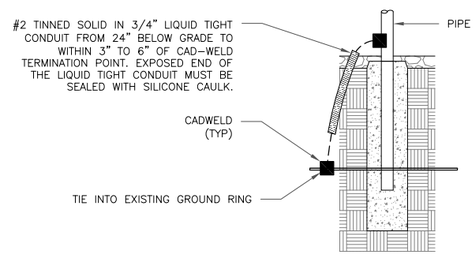
NOTES:

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

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:
CT1012

BU #: **876377**
HORTON 2/FREDSALL PROPERTY

161 PINNEY ST
WINSTED, CT 06098

EXISTING 148'-0"
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	10/2/19	MTJ	CONSTRUCTION	MDW
1	10/11/19	JJD	CONSTRUCTION	MDW

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/20

SHEET NUMBER: G-2
REVISION: 1

Exhibit D

Structural Analysis Report

Date: **September 04, 2019**

Amanda D Brown
Crown Castle
3530 Toringdon Way
Charlotte, NC 28277

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Subject:	**Structural Analysis Report**	
Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	10041785
	Carrier Site Name:	COLEBROOK
Crown Castle Designation:	**Crown Castle BU Number:**	876377
	Crown Castle Site Name:	Horton 2 / Fredsall Property
	Crown Castle JDE Job Number:	574663
	Crown Castle Work Order Number:	1784550
	Crown Castle Order Number:	492777 Rev. 0
Engineering Firm Designation:	**B+T Group Project Number:**	112179.005.01
Site Data:	**161 Pinney Street, Colebrook, Litchfield County, CT** **Latitude *41° 57' 58.9"*, Longitude *-73° 7' 18.1"*** **148 Foot - Monopole Tower**	

Dear Amanda D Brown,

B+T Group is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower.

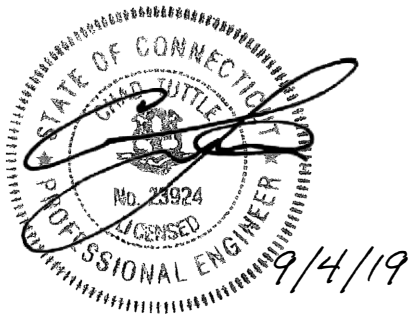
The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration **Sufficient Capacity - 76.9%**

This analysis utilizes an ultimate 3-second gust wind speed of 115 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: Jason Brock, E.I.

Respectfully submitted by: B+T Engineering, Inc.
COA: PEC.0001564 Expiration: 02/10/2020



Chad Tuttle, P.E.

tnxTower Report - version 8.0.5.0

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 148 ft. Monopole tower designed by Summit Manufacturer in September of 2000. The tower was originally designed for a wind speed of 85 mph per TIA/EIA-222-F. This tower was modified by PJF in February of 2009, and those modifications are incorporated in this analysis.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	115 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	40 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)
140.0	142.0	2	CCI Antennas	DMP65R-BU4D	12 4 2 2	1-5/8 7/8 7/16 3/8
		4	CCI Antennas	DMP65R-BU6D		
		3	Ericsson	RRUS 4449 B5/B12		
		3	Ericsson	RRUS 4478 B14		
		3	Ericsson	RRUS 8843 B2/B66A		
		3	Powerwave Tech.	7770.00		
		3	Powerwave Tech.	TT08-19DB111-001		
		2	Raycap	DC6-48-60-0-8C-EV		
	140.0	1	Raycap	DC6-48-60-18-8F		
		1	--	T-Arm Mount [TA 602-3]		

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)
150.0	150.0	1	Site Pro	PRK-I245	1 2	1-5/8 1-1/4
		1	--	Platform Mount [LP 1201-1-HR-1]		
	148.0	3	Alcatel Lucent	800 EXTERNAL NOTCH FILTER		
		6	Alcatel Lucent	800MHZ RRH		
		3	Alcatel Lucent	PCS 1900MHz 4x45W-65MHz		
		3	Alcatel Lucent	TD-RRH8X20-25		
		3	Commscope	NNVV-65B-R4		
		3	RFS Celwave	APXVTM14-ALU-I20		
		3	--	2.5" Std. (2.88" O.D.) Pipe		
141.0	143.0	3	Ericsson	RRUS 11 B12	--	--
	141.0	1	--	Side Arm Mount [SO 102-3]		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
130.0	130.0	3	Alcatel Lucent	RRH2X60-AWS	13	1-5/8
		3	Alcatel Lucent	RRH2x60-700		
		2	Antel	LPA-80080-6CF-EDIN-6		
		4	Antel	LPA-80080/6CF		
		6	Commscope	SBNHH-1D65B		
		1	--	Platform Mount [LP 303-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
Online Order Information	AT&T Mobility Co-Locate, Rev # 0	492777	CCI Sites
Tower Manufacturer Drawing	Summit Manufacturer, Inc. Job No. 11163	1883532	CCI Sites
Mount Analysis	TEP, Project No: 25722.293894	8624716	CCI Sites
Tower Modification Drawing	PJF, Job No. 37508-0010_BP-R1	2293404	CCI Sites
Post Modification Inspection	PJF, Job No. 41708-0177_Record	2385953	CCI Sites
Foundation Drawing	Summit Manufacturer, Inc. Job No. 11163	1629428	CCI Sites
Geotech Report	SEA Consultant, Inc. Reference No. 99674.03-A	1532992	CCI Sites
Antenna Configuration	Crown CAD Package	Date: 08/23/2019	CCI Sites

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.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) Mount areas and weights are assumed based on photographs provided.
5) The existing base plate grout was considered in this analysis. Grout must be maintained and inspected periodically and must be replaced if damaged or cracked. Refer to crown document ENG-STD-10323, Tower Base Plate Grout Inspection and Classification.

This analysis may be affected if any assumptions are not valid or have been made in error. B+T Group should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	148 - 143	Pole	TP22.85x22x0.188	1	-5.124	764.712	6.3%	Pass
L2	143 - 138	Pole	TP23.7x22.85x0.188	2	-8.347	793.390	14.4%	Pass
L3	138 - 133	Pole	TP24.55x23.7x0.188	3	-8.734	822.070	22.6%	Pass
L4	133 - 128	Pole	TP25.4x24.55x0.188	4	-11.643	850.749	31.7%	Pass
L5	128 - 123	Pole	TP26.25x25.4x0.188	5	-12.142	879.429	41.5%	Pass
L6	123 - 117.25	Pole	TP27.227x26.25x0.188	6	-12.373	892.334	45.6%	Pass
L7	117.25 - 115.75	Pole	TP27.107x26.257x0.25	7	-13.204	1208.329	38.2%	Pass
L8	115.75 - 110.75	Pole	TP27.957x27.107x0.25	8	-13.847	1246.570	43.7%	Pass
L9	110.75 - 105.75	Pole	TP28.807x27.957x0.25	9	-14.509	1284.801	48.7%	Pass
L10	105.75 - 100.75	Pole	TP29.657x28.807x0.25	10	-15.190	1323.042	53.4%	Pass
L11	100.75 - 97	Pole	TP30.294x29.657x0.25	11	-15.703	1351.717	56.7%	Pass
L12	97 - 96.75	Pole + Reinf.	TP30.336x30.294x0.463	12	-15.762	2486.536	41.1%	Pass
L13	96.75 - 91.75	Pole + Reinf.	TP31.186x30.336x0.45	13	-16.772	2489.161	44.3%	Pass
L14	91.75 - 86.75	Pole + Reinf.	TP32.036x31.186x0.444	14	-17.804	2522.961	47.4%	Pass
L15	86.75 - 80.75	Pole + Reinf.	TP33.056x32.036x0.444	15	-18.167	2546.722	48.5%	Pass
L16	80.75 - 80	Pole + Reinf.	TP32.684x31.834x0.469	16	-20.006	2944.074	49.2%	Pass
L17	80 - 75	Pole + Reinf.	TP33.533x32.684x0.469	17	-21.137	3021.753	51.8%	Pass
L18	75 - 70	Pole + Reinf.	TP34.383x33.533x0.463	18	-22.289	3058.660	54.3%	Pass
L19	70 - 65	Pole + Reinf.	TP35.233x34.383x0.456	19	-23.462	3093.489	56.8%	Pass
L20	65 - 60	Pole + Reinf.	TP36.083x35.233x0.456	20	-24.655	3169.089	59.1%	Pass
L21	60 - 55	Pole + Reinf.	TP36.933x36.083x0.444	21	-25.869	3156.877	61.3%	Pass
L22	55 - 50	Pole + Reinf.	TP37.783x36.933x0.444	22	-27.103	3230.409	63.4%	Pass
L23	50 - 40	Pole + Reinf.	TP39.483x37.783x0.438	23	-28.357	3257.940	65.5%	Pass
L24	40 - 39	Pole + Reinf.	TP39.09x38.071x0.469	24	-30.986	3529.596	64.9%	Pass
L25	39 - 34	Pole + Reinf.	TP39.94x39.09x0.463	25	-32.350	3559.741	66.6%	Pass
L26	34 - 29	Pole + Reinf.	TP40.79x39.94x0.463	26	-33.734	3636.381	68.2%	Pass
L27	29 - 24	Pole + Reinf.	TP41.64x40.79x0.456	27	-35.139	3663.397	69.8%	Pass
L28	24 - 19	Pole + Reinf.	TP42.49x41.64x0.45	28	-36.566	3688.335	71.2%	Pass
L29	19 - 14	Pole + Reinf.	TP43.34x42.49x0.45	29	-38.012	3762.895	72.7%	Pass
L30	14 - 12.0833	Pole + Reinf.	TP43.666x43.34x0.45	30	-38.565	3791.487	73.2%	Pass
L31	12.0833 - 11.8333	Pole + Reinf.	TP43.708x43.666x0.425	31	-38.654	3586.432	75.1%	Pass
L32	11.8333 - 6.83333	Pole + Reinf.	TP44.558x43.708x0.425	32	-40.184	3656.866	76.4%	Pass
L33	6.83333 - 4.91667	Pole + Reinf.	TP44.884x44.558x0.425	33	-40.772	3683.862	76.9%	Pass
L34	4.91667 - 4.66667	Pole + Reinf.	TP44.927x44.884x0.45	34	-40.860	3902.094	75.1%	Pass
L35	4.66667 - 0	Pole + Reinf.	TP45.72x44.927x0.444	35	-42.257	3917.067	76.3%	Pass
							Summary	
						Pole (L11)	61.9	Pass
						Reinforcement	76.9	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
						Rating =	76.9	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Anchor Rods	Base	72.8	Pass
1,2	Base Plate	Base	56.7	Pass
1,2	Base Foundation (Structure)	Base	69.3	Pass
1,2	Base Foundation (Soil Interaction)	Base	67.6	Pass

Structure Rating (max from all components) =	76.9%

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

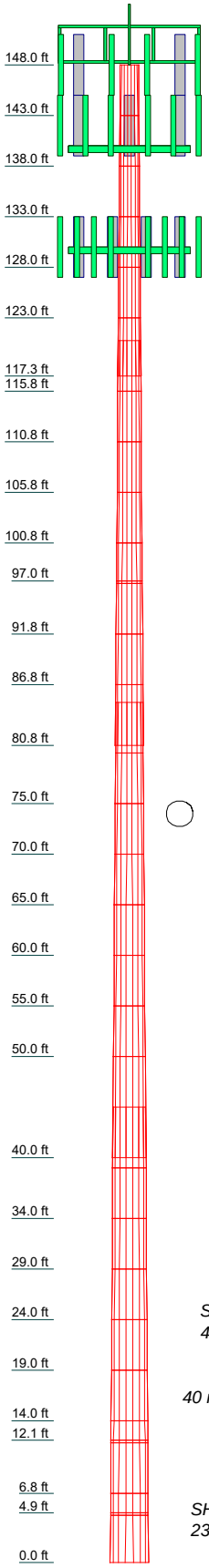
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	32	33	35
Length (ft)	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	10.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	4.667
Number of Sides	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
Thickness (in)	0.188	0.188	0.188	0.188	0.188	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.450	0.444	0.444	0.469	0.469	0.463	0.456	0.456	0.444	0.444	0.438	0.469	0.463	0.463	0.456	0.450	0.450	0.450	0.425	0.425	0.444
Socket Length (ft)					3.500										4.250								5.000										
Top Dia (in)	22.000	22.850	23.700	24.550	25.400	26.250	27.102	27.957	28.807	29.657	30.507	31.357	32.207	33.057	33.907	34.757	35.607	36.457	37.307	38.157	39.007	39.857	40.707	41.557	42.407	43.257	44.107	44.957	45.807	46.657	47.507	48.357	49.207
Bot Dia (in)	22.850	23.700	24.550	25.400	26.250	27.102	27.957	28.807	29.657	30.507	31.357	32.207	33.057	33.907	34.757	35.607	36.457	37.307	38.157	39.007	39.857	40.707	41.557	42.407	43.257	44.107	44.957	45.807	46.657	47.507	48.357	49.207	50.057
Grade	A607-60																						A607-65										
Weight (K)	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.0	0.7	0.7	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.7	1.1	0.9	1.0	1.0	1.0	1.0	0.4	1.1	0.4	1.0



ALL REACTIONS ARE FACTORED

AXIAL 70 K

SHEAR 4 K *MOMENT 428 kip-ft*

TORQUE 0 kip-ft

40 mph WIND - 1.500 in ICE

AXIAL 42 K

SHEAR 23 K *MOMENT 2375 kip-ft*

TORQUE 1 kip-ft

REACTIONS - 115 mph WIND

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A607-60	60 ksi	75 ksi	A607-65	65 ksi	80 ksi

TOWER DESIGN NOTES

1. Tower is located in Litchfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 115 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 40 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TIA-222-H Annex S
9. TOWER RATING: 76.9%

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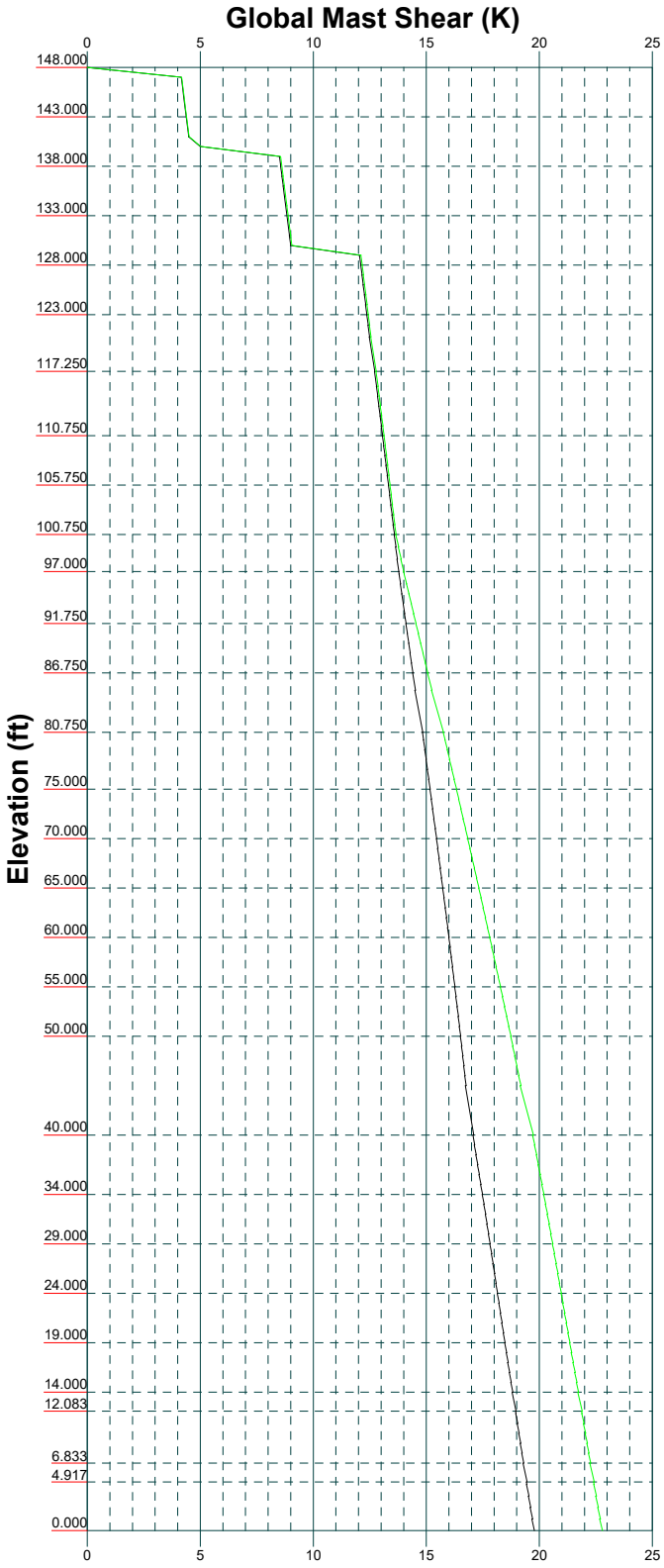
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

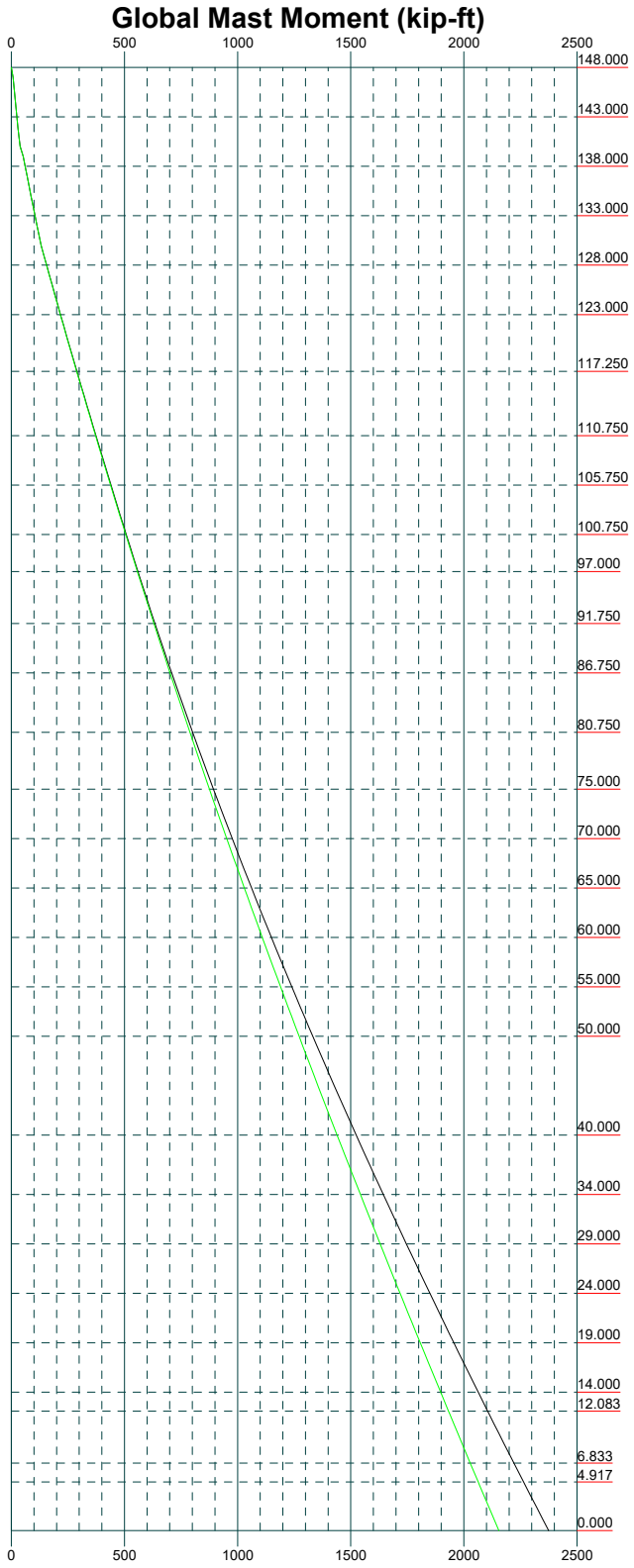
Job: 112179.005.01 - HORTON 2 FREDSALL PROPERTY, CT (BU# 876377			
Project:			
Client: Crown Castle	Drawn by: Sinchana	App'd:	
Code: TIA-222-H	Date: 09/04/19	Scale: NTS	
Path:		Dwg No. E-1	

TIA-222-H - 115 mph/40 mph 1.500 in Ice Exposure B

Maximum Values

Vx Vz Mx Mz





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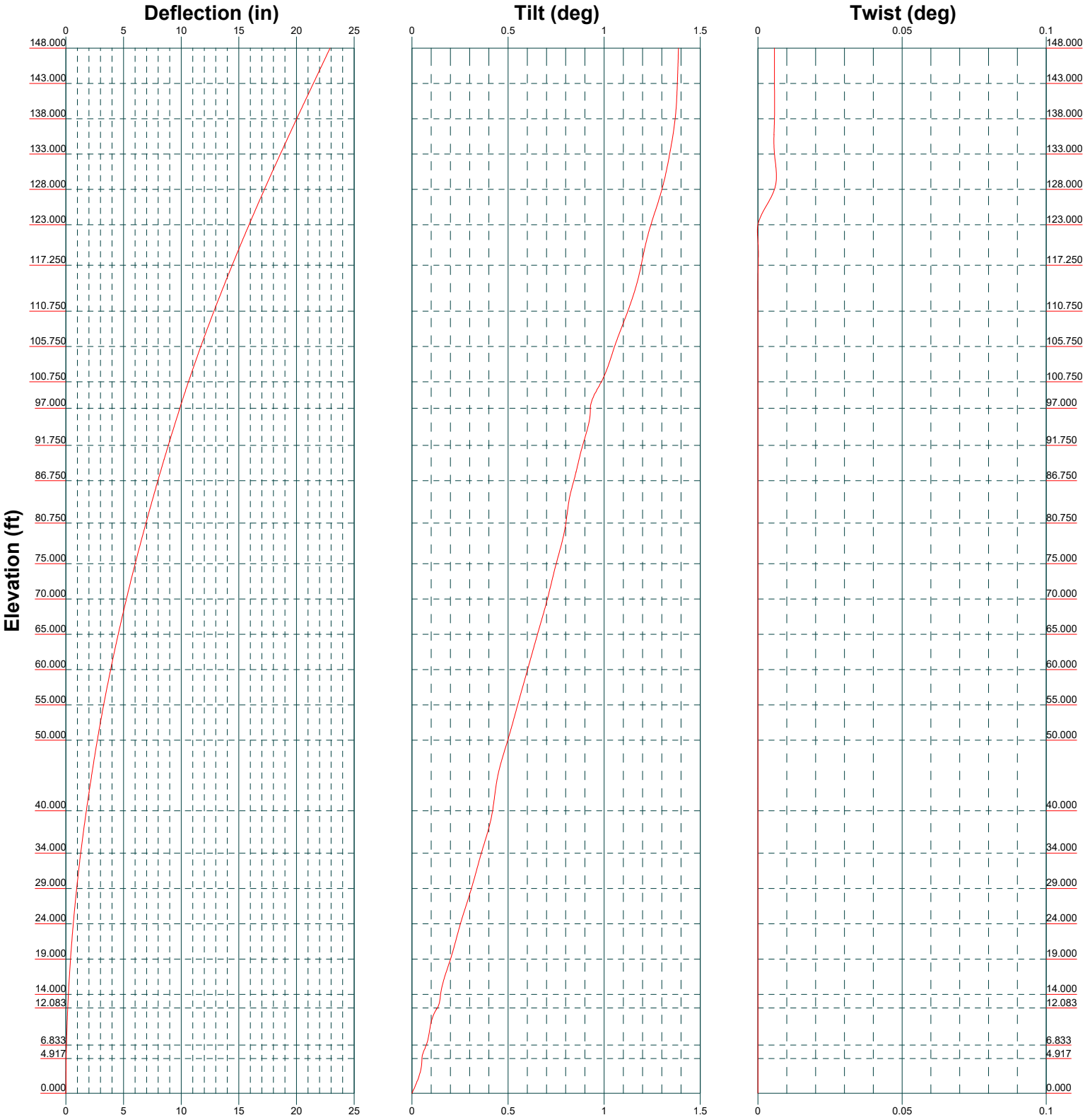
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 112179.005.01 - HORTON 2 FREDSALL PROPERTY, CT (BU# 876377			
Project:			
Client: Crown Castle	Drawn by: Sinchana	App'd:	
Code: TIA-222-H	Date: 09/04/19	Scale: NTS	
Path:		Dwg No. E-4	

TIA-222-H - Service - 60 mph

Maximum Values



B+T GRP

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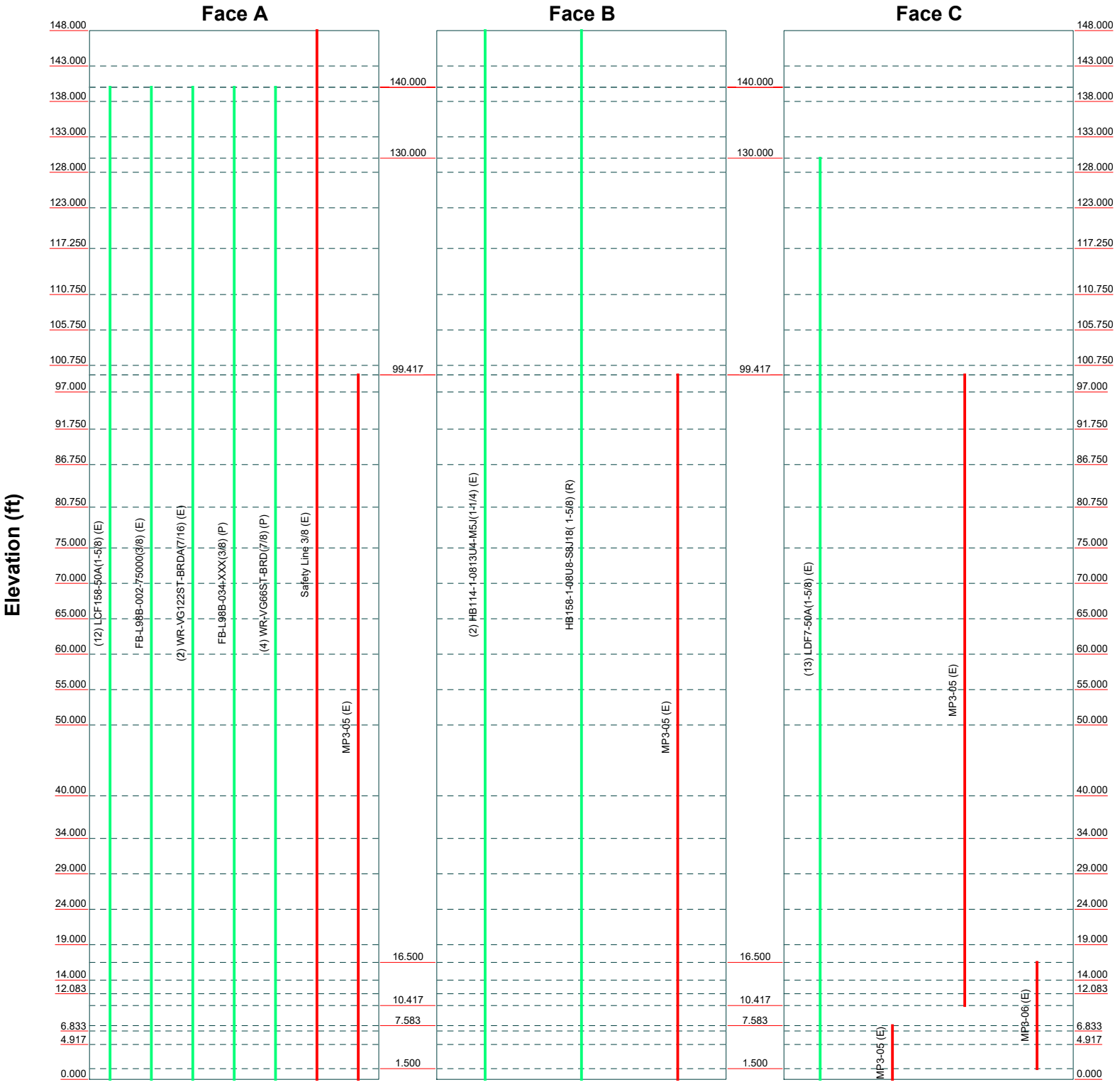
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: *112179.005.01 - HORTON 2 FREDSALL PROPERTY, CT (BU# 876377*			
Project:			
Client: Crown Castle	Drawn by: Sinchana	App'd:	
Code: TIA-222-H	Date: 09/04/19	Scale: NTS	
Path:		Dwg No. E-5	

Feed Line Distribution Chart
0' - 148'

Round | Flat | App In Face | App Out Face | Truss Leg



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FAX: (918) 295-0265

Job: 112179.005.01 - HORTON 2 FREDSALL PROPERTY, CT (BU# 876377			
Project:			
Client: Crown Castle	Drawn by: Sinchana	App'd:	
Code: TIA-222-H	Date: 09/04/19	Scale: NTS	
Path:		Dwg No. E-7	

Tower Input Data

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

Tower is located in Litchfield County, Connecticut.
Tower base elevation above sea level: 1223.000 ft.
Basic wind speed of 115 mph.
Risk Category II.
Exposure Category B.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.000 ft.
Nominal ice thickness of 1.500 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 40 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 60 mph.
TIA-222-H Annex S.
TOWER RATING: 76.9%.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.05.
Tower analysis based on target reliabilities in accordance with Annex S.
Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	148.000-143.000	5.000	0.000	18	22.000	22.850	0.188	0.750	A607-60 (60 ksi)
L2	143.000-138.000	5.000	0.000	18	22.850	23.700	0.188	0.750	A607-60 (60 ksi)
L3	138.000-133.000	5.000	0.000	18	23.700	24.550	0.188	0.750	A607-60 (60 ksi)
L4	133.000-128.000	5.000	0.000	18	24.550	25.400	0.188	0.750	A607-60 (60 ksi)
L5	128.000-123.000	5.000	0.000	18	25.400	26.250	0.188	0.750	A607-60 (60 ksi)
L6	123.000-117.250	5.750	3.500	18	26.250	27.227	0.188	0.750	A607-60 (60 ksi)
L7	117.250-115.750	5.000	0.000	18	26.257	27.107	0.250	1.000	A607-60 (60 ksi)
L8	115.750-110.750	5.000	0.000	18	27.107	27.957	0.250	1.000	A607-60 (60 ksi)
L9	110.750-105.750	5.000	0.000	18	27.957	28.807	0.250	1.000	A607-60 (60 ksi)
L10	105.750-100.750	5.000	0.000	18	28.807	29.657	0.250	1.000	A607-60 (60 ksi)
L11	100.750-97.000	3.750	0.000	18	29.657	30.294	0.250	1.000	A607-60 (60 ksi)
L12	97.000-96.750	0.250	0.000	18	30.294	30.336	0.463	1.850	A607-60 (60 ksi)
L13	96.750-91.750	5.000	0.000	18	30.336	31.186	0.450	1.800	A607-60 (60 ksi)
L14	91.750-86.750	5.000	0.000	18	31.186	32.036	0.444	1.775	A607-60 (60 ksi)
L15	86.750-80.750	6.000	4.250	18	32.036	33.056	0.444	1.775	A607-60 (60 ksi)
L16	80.750-80.000	5.000	0.000	18	31.834	32.684	0.469	1.875	A607-65 (65 ksi)
L17	80.000-75.000	5.000	0.000	18	32.684	33.533	0.469	1.875	A607-65 (65 ksi)
L18	75.000-70.000	5.000	0.000	18	33.533	34.383	0.463	1.850	A607-65 (65 ksi)
L19	70.000-65.000	5.000	0.000	18	34.383	35.233	0.456	1.825	A607-65 (65 ksi)
L20	65.000-60.000	5.000	0.000	18	35.233	36.083	0.456	1.825	A607-65 (65 ksi)
L21	60.000-55.000	5.000	0.000	18	36.083	36.933	0.444	1.775	A607-65 (65 ksi)
L22	55.000-50.000	5.000	0.000	18	36.933	37.783	0.444	1.775	A607-65 (65 ksi)
L23	50.000-40.000	10.000	5.000	18	37.783	39.483	0.438	1.750	A607-65 (65 ksi)
L24	40.000-39.000	6.000	0.000	18	38.071	39.090	0.469	1.875	A607-65 (65 ksi)
L25	39.000-34.000	5.000	0.000	18	39.090	39.940	0.463	1.850	A607-65 (65 ksi)
L26	34.000-29.000	5.000	0.000	18	39.940	40.790	0.463	1.850	A607-65 (65 ksi)
L27	29.000-24.000	5.000	0.000	18	40.790	41.640	0.456	1.825	A607-65 (65 ksi)
L28	24.000-19.000	5.000	0.000	18	41.640	42.490	0.450	1.800	A607-65 (65 ksi)
L29	19.000-14.000	5.000	0.000	18	42.490	43.340	0.450	1.800	A607-65 (65 ksi)

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L30	14.000-12.083	1.917	0.000	18	43.340	43.666	0.450	1.800	A607-65 (65 ksi)
L31	12.083-11.833	0.250	0.000	18	43.666	43.708	0.425	1.700	A607-65 (65 ksi)
L32	11.833-6.833	5.000	0.000	18	43.708	44.558	0.425	1.700	A607-65 (65 ksi)
L33	6.833-4.917	1.917	0.000	18	44.558	44.884	0.425	1.700	A607-65 (65 ksi)
L34	4.917-4.667	0.250	0.000	18	44.884	44.927	0.450	1.800	A607-65 (65 ksi)
L35	4.667-0.000	4.667		18	44.927	45.720	0.444	1.775	A607-65 (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	22.310	12.981	780.301	7.743	11.176	69.819	1561.628	6.492	3.542	18.891
	23.173	13.487	875.114	8.045	11.608	75.390	1751.379	6.745	3.692	19.688
L2	23.173	13.487	875.114	8.045	11.608	75.390	1751.379	6.745	3.692	19.688
	24.037	13.993	977.312	8.347	12.040	81.175	1955.909	6.998	3.841	20.486
L3	24.037	13.993	977.312	8.347	12.040	81.175	1955.909	6.998	3.841	20.486
	24.900	14.499	1087.172	8.649	12.471	87.174	2175.774	7.251	3.991	21.284
L4	24.900	14.499	1087.172	8.649	12.471	87.174	2175.774	7.251	3.991	21.284
	25.763	15.004	1204.971	8.950	12.903	93.387	2411.527	7.504	4.140	22.082
L5	25.763	15.004	1204.971	8.950	12.903	93.387	2411.527	7.504	4.140	22.082
	26.626	15.510	1330.986	9.252	13.335	99.813	2663.724	7.757	4.290	22.88
L6	26.626	15.510	1330.986	9.252	13.335	99.813	2663.724	7.757	4.290	22.88
	27.618	16.092	1486.420	9.599	13.831	107.468	2974.796	8.047	4.462	23.797
L7	27.228	20.637	1763.429	9.233	13.339	132.205	3529.179	10.320	4.181	16.725
	27.487	21.311	1942.018	9.534	13.770	141.029	3886.591	10.658	4.331	17.323
L8	27.487	21.311	1942.018	9.534	13.770	141.029	3886.591	10.658	4.331	17.323
	28.350	21.985	2132.275	9.836	14.202	150.139	4267.355	10.995	4.480	17.922
L9	28.350	21.985	2132.275	9.836	14.202	150.139	4267.355	10.995	4.480	17.922
	29.212	22.660	2334.569	10.138	14.634	159.533	4672.209	11.332	4.630	18.52
L10	29.212	22.660	2334.569	10.138	14.634	159.533	4672.209	11.332	4.630	18.52
	30.075	23.334	2549.269	10.439	15.066	169.212	5101.893	11.669	4.780	19.118
L11	30.075	23.334	2549.269	10.439	15.066	169.212	5101.893	11.669	4.780	19.118
	30.723	23.840	2718.658	10.666	15.389	176.659	5440.893	11.922	4.892	19.567
L12	30.690	43.792	4923.549	10.590	15.389	319.933	9853.577	21.900	4.518	9.768
	30.733	43.854	4944.620	10.605	15.411	320.852	9895.745	21.931	4.525	9.784
L13	30.735	42.687	4817.023	10.610	15.411	312.572	9640.384	21.347	4.547	10.105
	31.598	43.901	5239.758	10.911	15.843	330.738	10486.411	21.954	4.697	10.437
L14	31.599	43.300	5170.137	10.914	15.843	326.343	10347.076	21.654	4.708	10.609
	32.462	44.497	5610.879	11.215	16.274	344.768	11229.142	22.253	4.857	10.946
L15	32.462	44.497	5610.879	11.215	16.274	344.768	11229.142	22.253	4.857	10.946
	33.497	45.933	6171.987	11.577	16.792	367.545	12352.096	22.971	5.037	11.351
L16	32.986	46.665	5799.837	11.135	16.171	358.646	11607.306	23.337	4.778	10.192
	33.115	47.930	6284.225	11.436	16.603	378.494	12576.719	23.969	4.927	10.512
L17	33.115	47.930	6284.225	11.436	16.603	378.494	12576.719	23.969	4.927	10.512
	33.978	49.194	6794.859	11.738	17.035	398.876	13598.658	24.602	5.077	10.831
L18	33.979	48.547	6708.063	11.740	17.035	393.781	13424.953	24.278	5.088	11.001
	34.842	49.795	7238.666	12.042	17.467	414.425	14486.856	24.902	5.237	11.324
L19	34.843	49.131	7144.794	12.044	17.467	409.051	14298.989	24.570	5.248	11.504
	35.706	50.362	7695.325	12.346	17.899	429.942	15400.776	25.186	5.398	11.831
L20	35.706	50.362	7695.325	12.346	17.899	429.942	15400.776	25.186	5.398	11.831
	36.570	51.593	8273.434	12.648	18.330	451.353	16557.755	25.801	5.548	12.159
L21	36.571	50.197	8055.238	12.652	18.330	439.449	16121.074	25.103	5.570	12.551

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
	37.435	51.394	8645.395	12.954	18.762	460.791	17302.166	25.702	5.719	12.888
L22	37.435	51.394	8645.395	12.954	18.762	460.791	17302.166	25.702	5.719	12.888
	38.298	52.591	9263.695	13.255	19.194	482.639	18539.580	26.301	5.869	13.226
L23	38.299	51.859	9137.808	13.258	19.194	476.080	18287.639	25.934	5.880	13.44
	40.025	54.220	10443.243	13.861	20.057	520.669	20900.228	27.115	6.179	14.123
L24	39.449	55.944	9993.375	13.349	19.340	516.725	19999.899	27.978	5.875	12.534
	39.621	57.462	10828.822	13.711	19.858	545.314	21671.894	28.736	6.055	12.917
L25	39.622	56.705	10689.626	13.713	19.858	538.304	21393.318	28.358	6.066	13.116
	40.485	57.953	11410.881	14.015	20.290	562.397	22836.778	28.982	6.216	13.439
L26	40.485	57.953	11410.881	14.015	20.290	562.397	22836.778	28.982	6.216	13.439
	41.348	59.200	12163.872	14.316	20.722	587.017	24343.749	29.606	6.365	13.762
L27	41.349	58.409	12005.075	14.319	20.722	579.353	24025.947	29.210	6.376	13.975
	42.212	59.640	12780.107	14.620	21.153	604.167	25577.031	29.826	6.526	14.303
L28	42.213	58.832	12610.777	14.623	21.153	596.162	25238.148	29.422	6.537	14.526
	43.076	60.046	13407.643	14.924	21.585	621.154	26832.929	30.029	6.686	14.858
L29	43.076	60.046	13407.643	14.924	21.585	621.154	26832.929	30.029	6.686	14.858
	43.939	61.260	14237.391	15.226	22.017	646.660	28493.515	30.636	6.836	15.191
L30	43.939	61.260	14237.391	15.226	22.017	646.660	28493.515	30.636	6.836	15.191
	44.270	61.725	14564.318	15.342	22.182	656.573	29147.801	30.869	6.893	15.318
L31	44.274	58.330	13779.075	15.351	22.182	621.174	27576.281	29.171	6.937	16.323
	44.317	58.387	13819.741	15.366	22.204	622.401	27657.666	29.199	6.945	16.34
L32	44.317	58.387	13819.741	15.366	22.204	622.401	27657.666	29.199	6.945	16.34
	45.180	59.534	14649.947	15.667	22.636	647.206	29319.171	29.773	7.094	16.692
L33	45.180	59.534	14649.947	15.667	22.636	647.206	29319.171	29.773	7.094	16.692
	45.511	59.973	14976.802	15.783	22.801	656.843	29973.311	29.992	7.152	16.827
L34	45.507	63.465	15831.054	15.774	22.801	694.308	31682.939	31.739	7.108	15.795
	45.550	63.526	15876.520	15.789	22.823	695.644	31773.931	31.769	7.115	15.811
L35	45.551	62.653	15662.614	15.791	22.823	686.271	31345.837	31.332	7.126	16.059
	46.357	63.770	16515.590	16.073	23.226	711.089	33052.911	31.891	7.266	16.373

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 148.000-143.000				1	1	1			
L2 143.000-138.000				1	1	1			
L3 138.000-133.000				1	1	1			
L4 133.000-128.000				1	1	1			
L5 128.000-123.000				1	1	1			
L6 123.000-117.250				1	1	1			
L7 117.250-115.750				1	1	1			
L8 115.750-110.750				1	1	1			
L9 110.750-105.7				1	1	1			

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
50 L10 105.750-100.750				1	1	1			
50 L11 100.750-97.000				1	1	1			
0 L12 97.000-96.750				1	1	0.930908			
L13 96.750-91.750				1	1	0.945284			
L14 91.750-86.750				1	1	0.947776			
L15 86.750-80.750				1	1	0.944191			
L16 80.750-80.000				1	1	0.957149			
L17 80.000-75.000				1	1	0.947968			
L18 75.000-70.000				1	1	0.951765			
L19 70.000-65.000				1	1	0.956116			
L20 65.000-60.000				1	1	0.948012			
L21 60.000-55.000				1	1	0.966442			
L22 55.000-50.000				1	1	0.95887			
L23 50.000-40.000				1	1	0.965073			
L24 40.000-39.000				1	1	0.964352			
L25 39.000-34.000				1	1	0.970734			
L26 34.000-29.000				1	1	0.964515			
L27 29.000-24.000				1	1	0.971537			
L28 24.000-19.000				1	1	0.979009			
L29 19.000-14.000				1	1	0.97337			
L30 14.000-12.083				1	1	0.971267			
L31 12.083-11.833				1	1	1.07582			
L32 11.833-6.833				1	1	1.06926			
L33 6.833-4.917				1	1	1.06681			
L34 4.917-4.667				1	1	0.96342			
L35 4.667-0.000				1	1	0.972076			

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 klf
$$										
Safety Line 3/8 (E)	A	No	Surface Ar (CaAa)	148.000 - 0.000	1	1	-0.210 -0.200	0.375		0.000
$$										
MP3-05 (E)	A	No	Surface Af (CaAa)	99.417 - 0.000	1	1	0.000 0.000	5.330	14.840	0.000
MP3-05 (E)	B	No	Surface Af (CaAa)	99.417 - 0.000	1	1	0.000 0.000	5.330	14.840	0.000
MP3-05 (E)	C	No	Surface Af (CaAa)	7.583 - 0.000	1	1	0.000 0.000	5.330	14.840	0.000
MP3-05 (E)	C	No	Surface Af (CaAa)	99.417 - 10.417	1	1	0.000 0.000	5.330	14.840	0.000
MP3-06 (E)	C	No	Surface Af (CaAa)	16.500 - 1.500	1	1	0.000 0.000	6.890	18.992	0.000
$$										

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 klf
HB114-1-0813U4-M5J(1-1/4) (E)	B	No	No	Inside Pole	148.000 - 0.000	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.001 0.001 0.001 0.001
HB158-1-08U8-S8J18(1-5/8) (R)	B	No	No	Inside Pole	148.000 - 0.000	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.001 0.001 0.001 0.001
$$									
LCF158-50A(1-5/8) (E)	A	No	No	Inside Pole	140.000 - 0.000	12	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.001 0.001 0.001 0.001
FB-L98B-002-75000 (3/8) (E)	A	No	No	Inside Pole	140.000 - 0.000	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000
WR-VG122ST-BRDA(7/16) (E)	A	No	No	Inside Pole	140.000 - 0.000	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000
FB-L98B-034-XXX(3/8) (P)	A	No	No	Inside Pole	140.000 - 0.000	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000
WR-VG66ST-BRD(7/8) (P)	A	No	No	Inside Pole	140.000 - 0.000	4	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.001 0.001 0.001 0.001
$$									
LDF7-50A(1-5/8) (E)	C	No	No	Inside Pole	130.000 - 0.000	13	No Ice 1/2" Ice	0.000 0.000	0.001 0.001

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
$$									

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	148.000-143.000	A	0.000	0.000	0.188	0.000	0.001
		B	0.000	0.000	0.000	0.000	0.018
		C	0.000	0.000	0.000	0.000	0.000
L2	143.000-138.000	A	0.000	0.000	0.188	0.000	0.028
		B	0.000	0.000	0.000	0.000	0.018
		C	0.000	0.000	0.000	0.000	0.000
L3	138.000-133.000	A	0.000	0.000	0.188	0.000	0.069
		B	0.000	0.000	0.000	0.000	0.018
		C	0.000	0.000	0.000	0.000	0.000
L4	133.000-128.000	A	0.000	0.000	0.188	0.000	0.069
		B	0.000	0.000	0.000	0.000	0.018
		C	0.000	0.000	0.000	0.000	0.021
L5	128.000-123.000	A	0.000	0.000	0.188	0.000	0.069
		B	0.000	0.000	0.000	0.000	0.018
		C	0.000	0.000	0.000	0.000	0.053
L6	123.000-117.250	A	0.000	0.000	0.216	0.000	0.080
		B	0.000	0.000	0.000	0.000	0.021
		C	0.000	0.000	0.000	0.000	0.061
L7	117.250-115.750	A	0.000	0.000	0.056	0.000	0.021
		B	0.000	0.000	0.000	0.000	0.006
		C	0.000	0.000	0.000	0.000	0.016
L8	115.750-110.750	A	0.000	0.000	0.188	0.000	0.069
		B	0.000	0.000	0.000	0.000	0.018
		C	0.000	0.000	0.000	0.000	0.053
L9	110.750-105.750	A	0.000	0.000	0.188	0.000	0.069
		B	0.000	0.000	0.000	0.000	0.018
		C	0.000	0.000	0.000	0.000	0.053
L10	105.750-100.750	A	0.000	0.000	0.188	0.000	0.069
		B	0.000	0.000	0.000	0.000	0.018
		C	0.000	0.000	0.000	0.000	0.053
L11	100.750-97.000	A	0.000	0.000	2.288	0.000	0.052
		B	0.000	0.000	2.147	0.000	0.014
		C	0.000	0.000	2.147	0.000	0.040
L12	97.000-96.750	A	0.000	0.000	0.231	0.000	0.003
		B	0.000	0.000	0.222	0.000	0.001
		C	0.000	0.000	0.222	0.000	0.003
L13	96.750-91.750	A	0.000	0.000	4.629	0.000	0.069
		B	0.000	0.000	4.442	0.000	0.018
		C	0.000	0.000	4.442	0.000	0.053
L14	91.750-86.750	A	0.000	0.000	4.629	0.000	0.069
		B	0.000	0.000	4.442	0.000	0.018
		C	0.000	0.000	4.442	0.000	0.053
L15	86.750-80.750	A	0.000	0.000	5.555	0.000	0.083
		B	0.000	0.000	5.330	0.000	0.022
		C	0.000	0.000	5.330	0.000	0.064
L16	80.750-80.000	A	0.000	0.000	0.694	0.000	0.010
		B	0.000	0.000	0.666	0.000	0.003
		C	0.000	0.000	0.666	0.000	0.008

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
L17	80.000-75.000	A	0.000	0.000	4.629	0.000	0.069
		B	0.000	0.000	4.442	0.000	0.018
		C	0.000	0.000	4.442	0.000	0.053
L18	75.000-70.000	A	0.000	0.000	4.629	0.000	0.069
		B	0.000	0.000	4.442	0.000	0.018
		C	0.000	0.000	4.442	0.000	0.053
L19	70.000-65.000	A	0.000	0.000	4.629	0.000	0.069
		B	0.000	0.000	4.442	0.000	0.018
		C	0.000	0.000	4.442	0.000	0.053
L20	65.000-60.000	A	0.000	0.000	4.629	0.000	0.069
		B	0.000	0.000	4.442	0.000	0.018
		C	0.000	0.000	4.442	0.000	0.053
L21	60.000-55.000	A	0.000	0.000	4.629	0.000	0.069
		B	0.000	0.000	4.442	0.000	0.018
		C	0.000	0.000	4.442	0.000	0.053
L22	55.000-50.000	A	0.000	0.000	4.629	0.000	0.069
		B	0.000	0.000	4.442	0.000	0.018
		C	0.000	0.000	4.442	0.000	0.053
L23	50.000-40.000	A	0.000	0.000	9.258	0.000	0.139
		B	0.000	0.000	8.883	0.000	0.037
		C	0.000	0.000	8.883	0.000	0.107
L24	40.000-39.000	A	0.000	0.000	0.926	0.000	0.014
		B	0.000	0.000	0.888	0.000	0.004
		C	0.000	0.000	0.888	0.000	0.011
L25	39.000-34.000	A	0.000	0.000	4.629	0.000	0.069
		B	0.000	0.000	4.442	0.000	0.018
		C	0.000	0.000	4.442	0.000	0.053
L26	34.000-29.000	A	0.000	0.000	4.629	0.000	0.069
		B	0.000	0.000	4.442	0.000	0.018
		C	0.000	0.000	4.442	0.000	0.053
L27	29.000-24.000	A	0.000	0.000	4.629	0.000	0.069
		B	0.000	0.000	4.442	0.000	0.018
		C	0.000	0.000	4.442	0.000	0.053
L28	24.000-19.000	A	0.000	0.000	4.629	0.000	0.069
		B	0.000	0.000	4.442	0.000	0.018
		C	0.000	0.000	4.442	0.000	0.053
L29	19.000-14.000	A	0.000	0.000	4.629	0.000	0.069
		B	0.000	0.000	4.442	0.000	0.018
		C	0.000	0.000	7.285	0.000	0.053
L30	14.000-12.083	A	0.000	0.000	1.775	0.000	0.027
		B	0.000	0.000	1.703	0.000	0.007
		C	0.000	0.000	3.883	0.000	0.020
L31	12.083-11.833	A	0.000	0.000	0.231	0.000	0.003
		B	0.000	0.000	0.222	0.000	0.001
		C	0.000	0.000	0.506	0.000	0.003
L32	11.833-6.833	A	0.000	0.000	4.629	0.000	0.069
		B	0.000	0.000	4.442	0.000	0.018
		C	0.000	0.000	7.511	0.000	0.053
L33	6.833-4.917	A	0.000	0.000	1.775	0.000	0.027
		B	0.000	0.000	1.703	0.000	0.007
		C	0.000	0.000	3.625	0.000	0.020
L34	4.917-4.667	A	0.000	0.000	0.231	0.000	0.003
		B	0.000	0.000	0.222	0.000	0.001
		C	0.000	0.000	0.473	0.000	0.003
L35	4.667-0.000	A	0.000	0.000	4.321	0.000	0.065
		B	0.000	0.000	4.146	0.000	0.017
		C	0.000	0.000	7.119	0.000	0.050

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	148.000-143.000	A	1.479	0.000	0.000	1.666	0.000	0.018
		B		0.000	0.000	0.000	0.000	0.018
		C		0.000	0.000	0.000	0.000	0.000
L2	143.000-138.000	A	1.474	0.000	0.000	1.661	0.000	0.045
		B		0.000	0.000	0.000	0.000	0.018
		C		0.000	0.000	0.000	0.000	0.000
L3	138.000-133.000	A	1.468	0.000	0.000	1.656	0.000	0.086
		B		0.000	0.000	0.000	0.000	0.018
		C		0.000	0.000	0.000	0.000	0.000
L4	133.000-128.000	A	1.463	0.000	0.000	1.650	0.000	0.086
		B		0.000	0.000	0.000	0.000	0.018
		C		0.000	0.000	0.000	0.000	0.021
L5	128.000-123.000	A	1.457	0.000	0.000	1.645	0.000	0.086
		B		0.000	0.000	0.000	0.000	0.018
		C		0.000	0.000	0.000	0.000	0.053
L6	123.000-117.250	A	1.451	0.000	0.000	1.884	0.000	0.098
		B		0.000	0.000	0.000	0.000	0.021
		C		0.000	0.000	0.000	0.000	0.061
L7	117.250-115.750	A	1.446	0.000	0.000	0.491	0.000	0.026
		B		0.000	0.000	0.000	0.000	0.006
		C		0.000	0.000	0.000	0.000	0.016
L8	115.750-110.750	A	1.442	0.000	0.000	1.630	0.000	0.085
		B		0.000	0.000	0.000	0.000	0.018
		C		0.000	0.000	0.000	0.000	0.053
L9	110.750-105.750	A	1.436	0.000	0.000	1.623	0.000	0.085
		B		0.000	0.000	0.000	0.000	0.018
		C		0.000	0.000	0.000	0.000	0.053
L10	105.750-100.750	A	1.429	0.000	0.000	1.617	0.000	0.085
		B		0.000	0.000	0.000	0.000	0.018
		C		0.000	0.000	0.000	0.000	0.053
L11	100.750-97.000	A	1.423	0.000	0.000	4.043	0.000	0.091
		B		0.000	0.000	2.835	0.000	0.041
		C		0.000	0.000	2.835	0.000	0.067
L12	97.000-96.750	A	1.420	0.000	0.000	0.373	0.000	0.007
		B		0.000	0.000	0.293	0.000	0.004
		C		0.000	0.000	0.293	0.000	0.005
L13	96.750-91.750	A	1.416	0.000	0.000	7.461	0.000	0.140
		B		0.000	0.000	5.858	0.000	0.074
		C		0.000	0.000	5.858	0.000	0.109
L14	91.750-86.750	A	1.408	0.000	0.000	7.446	0.000	0.140
		B		0.000	0.000	5.850	0.000	0.074
		C		0.000	0.000	5.850	0.000	0.109
L15	86.750-80.750	A	1.399	0.000	0.000	8.914	0.000	0.167
		B		0.000	0.000	7.009	0.000	0.088
		C		0.000	0.000	7.009	0.000	0.130
L16	80.750-80.000	A	1.394	0.000	0.000	1.114	0.000	0.021
		B		0.000	0.000	0.876	0.000	0.011
		C		0.000	0.000	0.876	0.000	0.016
L17	80.000-75.000	A	1.389	0.000	0.000	7.406	0.000	0.139
		B		0.000	0.000	5.830	0.000	0.073
		C		0.000	0.000	5.830	0.000	0.108
L18	75.000-70.000	A	1.379	0.000	0.000	7.388	0.000	0.138
		B		0.000	0.000	5.821	0.000	0.072
		C		0.000	0.000	5.821	0.000	0.107
L19	70.000-65.000	A	1.370	0.000	0.000	7.368	0.000	0.137
		B		0.000	0.000	5.811	0.000	0.072
		C		0.000	0.000	5.811	0.000	0.107
L20	65.000-60.000	A	1.359	0.000	0.000	7.347	0.000	0.137

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
		B		0.000	0.000	5.801	0.000	0.071
		C		0.000	0.000	5.801	0.000	0.106
L21	60.000-55.000	A	1.348	0.000	0.000	7.325	0.000	0.136
		B		0.000	0.000	5.789	0.000	0.071
		C		0.000	0.000	5.789	0.000	0.106
L22	55.000-50.000	A	1.336	0.000	0.000	7.300	0.000	0.135
		B		0.000	0.000	5.777	0.000	0.070
		C		0.000	0.000	5.777	0.000	0.105
L23	50.000-40.000	A	1.315	0.000	0.000	14.519	0.000	0.267
		B		0.000	0.000	11.513	0.000	0.138
		C		0.000	0.000	11.513	0.000	0.208
L24	40.000-39.000	A	1.298	0.000	0.000	1.452	0.000	0.027
		B		0.000	0.000	1.151	0.000	0.014
		C		0.000	0.000	1.151	0.000	0.021
L25	39.000-34.000	A	1.288	0.000	0.000	7.205	0.000	0.132
		B		0.000	0.000	5.730	0.000	0.068
		C		0.000	0.000	5.730	0.000	0.103
L26	34.000-29.000	A	1.269	0.000	0.000	7.167	0.000	0.131
		B		0.000	0.000	5.711	0.000	0.067
		C		0.000	0.000	5.711	0.000	0.102
L27	29.000-24.000	A	1.247	0.000	0.000	7.124	0.000	0.129
		B		0.000	0.000	5.689	0.000	0.066
		C		0.000	0.000	5.689	0.000	0.101
L28	24.000-19.000	A	1.221	0.000	0.000	7.072	0.000	0.127
		B		0.000	0.000	5.663	0.000	0.065
		C		0.000	0.000	5.663	0.000	0.100
L29	19.000-14.000	A	1.190	0.000	0.000	7.008	0.000	0.125
		B		0.000	0.000	5.631	0.000	0.063
		C		0.000	0.000	8.802	0.000	0.125
L30	14.000-12.083	A	1.162	0.000	0.000	2.665	0.000	0.047
		B		0.000	0.000	2.148	0.000	0.024
		C		0.000	0.000	4.573	0.000	0.057
L31	12.083-11.833	A	1.152	0.000	0.000	0.347	0.000	0.006
		B		0.000	0.000	0.280	0.000	0.003
		C		0.000	0.000	0.596	0.000	0.007
L32	11.833-6.833	A	1.124	0.000	0.000	6.876	0.000	0.121
		B		0.000	0.000	5.565	0.000	0.060
		C		0.000	0.000	8.541	0.000	0.122
L33	6.833-4.917	A	1.073	0.000	0.000	2.597	0.000	0.045
		B		0.000	0.000	2.114	0.000	0.022
		C		0.000	0.000	4.078	0.000	0.054
L34	4.917-4.667	A	1.051	0.000	0.000	0.337	0.000	0.006
		B		0.000	0.000	0.275	0.000	0.003
		C		0.000	0.000	0.531	0.000	0.007
L35	4.667-0.000	A	0.978	0.000	0.000	6.146	0.000	0.105
		B		0.000	0.000	5.058	0.000	0.050
		C		0.000	0.000	7.965	0.000	0.110

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	148.000-143.000	-0.300	-0.028	-1.303	-0.123
L2	143.000-138.000	-0.300	-0.028	-1.309	-0.124
L3	138.000-133.000	-0.300	-0.028	-1.315	-0.124
L4	133.000-128.000	-0.300	-0.028	-1.320	-0.125
L5	128.000-123.000	-0.300	-0.028	-1.324	-0.125

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L6	123.000-117.250	-0.300	-0.028	-1.328	-0.126
L7	117.250-115.750	-0.300	-0.028	-1.330	-0.126
L8	115.750-110.750	-0.300	-0.028	-1.329	-0.126
L9	110.750-105.750	-0.300	-0.028	-1.332	-0.126
L10	105.750-100.750	-0.300	-0.028	-1.333	-0.126
L11	100.750-97.000	-0.157	-0.015	-0.823	-0.078
L12	97.000-96.750	-0.125	-0.012	-0.683	-0.065
L13	96.750-91.750	-0.126	-0.012	-0.687	-0.065
L14	91.750-86.750	-0.128	-0.012	-0.695	-0.066
L15	86.750-80.750	-0.131	-0.012	-0.703	-0.066
L16	80.750-80.000	-0.131	-0.012	-0.704	-0.067
L17	80.000-75.000	-0.132	-0.012	-0.706	-0.067
L18	75.000-70.000	-0.134	-0.013	-0.712	-0.067
L19	70.000-65.000	-0.135	-0.013	-0.718	-0.068
L20	65.000-60.000	-0.137	-0.013	-0.723	-0.068
L21	60.000-55.000	-0.139	-0.013	-0.727	-0.069
L22	55.000-50.000	-0.141	-0.013	-0.731	-0.069
L23	50.000-40.000	-0.143	-0.014	-0.735	-0.070
L24	40.000-39.000	-0.144	-0.014	-0.739	-0.070
L25	39.000-34.000	-0.145	-0.014	-0.733	-0.069
L26	34.000-29.000	-0.146	-0.014	-0.733	-0.069
L27	29.000-24.000	-0.148	-0.014	-0.731	-0.069
L28	24.000-19.000	-0.150	-0.014	-0.727	-0.069
L29	19.000-14.000	-0.106	1.696	-0.668	1.570
L30	14.000-12.083	-0.098	3.129	-0.611	2.965
L31	12.083-11.833	-0.098	3.135	-0.608	2.972
L32	11.833-6.833	-0.107	1.844	-0.652	1.517
L33	6.833-4.917	-0.101	2.840	-0.600	2.519
L34	4.917-4.667	-0.101	2.845	-0.592	2.530
L35	4.667-0.000	-0.107	1.906	-0.594	1.617

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	13	Safety Line 3/8	143.00 - 148.00	1.0000	1.0000
L2	13	Safety Line 3/8	138.00 - 143.00	1.0000	1.0000
L3	13	Safety Line 3/8	133.00 - 138.00	1.0000	1.0000
L4	13	Safety Line 3/8	128.00 - 133.00	1.0000	1.0000
L5	13	Safety Line 3/8	123.00 - 128.00	1.0000	1.0000
L6	13	Safety Line 3/8	117.25 - 123.00	1.0000	1.0000
L8	13	Safety Line 3/8	110.75 - 115.75	1.0000	1.0000
L9	13	Safety Line 3/8	105.75 - 110.75	1.0000	1.0000
L10	13	Safety Line 3/8	100.75 - 105.75	1.0000	1.0000
L11	13	Safety Line 3/8	97.00 - 100.75	1.0000	1.0000
L11	15	MP3-05	97.00 - 99.42	1.0000	1.0000
L11	16	MP3-05	97.00 - 99.42	1.0000	1.0000
L11	18	MP3-05	97.00 - 99.42	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L12	13	Safety Line 3/8	96.75 - 97.00	1.0000	1.0000
L12	15	MP3-05	96.75 - 97.00	1.0000	1.0000
L12	16	MP3-05	96.75 - 97.00	1.0000	1.0000
L12	18	MP3-05	96.75 - 97.00	1.0000	1.0000
L13	13	Safety Line 3/8	91.75 - 96.75	1.0000	1.0000
L13	15	MP3-05	91.75 - 96.75	1.0000	1.0000
L13	16	MP3-05	91.75 - 96.75	1.0000	1.0000
L13	18	MP3-05	91.75 - 96.75	1.0000	1.0000
L14	13	Safety Line 3/8	86.75 - 91.75	1.0000	1.0000
L14	15	MP3-05	86.75 - 91.75	1.0000	1.0000
L14	16	MP3-05	86.75 - 91.75	1.0000	1.0000
L14	18	MP3-05	86.75 - 91.75	1.0000	1.0000
L15	13	Safety Line 3/8	80.75 - 86.75	1.0000	1.0000
L15	15	MP3-05	80.75 - 86.75	1.0000	1.0000
L15	16	MP3-05	80.75 - 86.75	1.0000	1.0000
L15	18	MP3-05	80.75 - 86.75	1.0000	1.0000
L17	13	Safety Line 3/8	75.00 - 80.00	1.0000	1.0000
L17	15	MP3-05	75.00 - 80.00	1.0000	1.0000
L17	16	MP3-05	75.00 - 80.00	1.0000	1.0000
L17	18	MP3-05	75.00 - 80.00	1.0000	1.0000
L18	13	Safety Line 3/8	70.00 - 75.00	1.0000	1.0000
L18	15	MP3-05	70.00 - 75.00	1.0000	1.0000
L18	16	MP3-05	70.00 - 75.00	1.0000	1.0000
L18	18	MP3-05	70.00 - 75.00	1.0000	1.0000
L19	13	Safety Line 3/8	65.00 - 70.00	1.0000	1.0000
L19	15	MP3-05	65.00 - 70.00	1.0000	1.0000
L19	16	MP3-05	65.00 - 70.00	1.0000	1.0000
L19	18	MP3-05	65.00 - 70.00	1.0000	1.0000
L20	13	Safety Line 3/8	60.00 - 65.00	1.0000	1.0000
L20	15	MP3-05	60.00 - 65.00	1.0000	1.0000
L20	16	MP3-05	60.00 - 65.00	1.0000	1.0000
L20	18	MP3-05	60.00 - 65.00	1.0000	1.0000
L21	13	Safety Line 3/8	55.00 - 60.00	1.0000	1.0000
L21	15	MP3-05	55.00 - 60.00	1.0000	1.0000
L21	16	MP3-05	55.00 - 60.00	1.0000	1.0000
L21	18	MP3-05	55.00 - 60.00	1.0000	1.0000
L22	13	Safety Line 3/8	50.00 - 55.00	1.0000	1.0000
L22	15	MP3-05	50.00 - 55.00	1.0000	1.0000
L22	16	MP3-05	50.00 - 55.00	1.0000	1.0000
L22	18	MP3-05	50.00 - 55.00	1.0000	1.0000
L23	13	Safety Line 3/8	40.00 - 50.00	1.0000	1.0000
L23	15	MP3-05	40.00 - 50.00	1.0000	1.0000
L23	16	MP3-05	40.00 - 50.00	1.0000	1.0000
L23	18	MP3-05	40.00 - 50.00	1.0000	1.0000
L25	13	Safety Line 3/8	34.00 - 39.00	1.0000	1.0000
L25	15	MP3-05	34.00 - 39.00	1.0000	1.0000
L25	16	MP3-05	34.00 - 39.00	1.0000	1.0000
L25	18	MP3-05	34.00 - 39.00	1.0000	1.0000
L26	13	Safety Line 3/8	29.00 - 34.00	1.0000	1.0000
L26	15	MP3-05	29.00 - 34.00	1.0000	1.0000
L26	16	MP3-05	29.00 - 34.00	1.0000	1.0000
L26	18	MP3-05	29.00 - 34.00	1.0000	1.0000
L27	13	Safety Line 3/8	24.00 - 29.00	1.0000	1.0000
L27	15	MP3-05	24.00 - 29.00	1.0000	1.0000
L27	16	MP3-05	24.00 - 29.00	1.0000	1.0000
L27	18	MP3-05	24.00 - 29.00	1.0000	1.0000
L28	13	Safety Line 3/8	19.00 - 24.00	1.0000	1.0000
L28	15	MP3-05	19.00 - 24.00	1.0000	1.0000
L28	16	MP3-05	19.00 - 24.00	1.0000	1.0000
L28	18	MP3-05	19.00 - 24.00	1.0000	1.0000
L29	13	Safety Line 3/8	14.00 - 19.00	1.0000	1.0000
L29	15	MP3-05	14.00 - 19.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L29	16	MP3-05	14.00 - 19.00	1.0000	1.0000
L29	18	MP3-05	14.00 - 19.00	1.0000	1.0000
L29	19	MP3-06	14.00 - 16.50	1.0000	1.0000
L30	13	Safety Line 3/8	12.08 - 14.00	1.0000	1.0000
L30	15	MP3-05	12.08 - 14.00	1.0000	1.0000
L30	16	MP3-05	12.08 - 14.00	1.0000	1.0000
L30	18	MP3-05	12.08 - 14.00	1.0000	1.0000
L30	19	MP3-06	12.08 - 14.00	1.0000	1.0000
L31	13	Safety Line 3/8	11.83 - 12.08	1.0000	1.0000
L31	15	MP3-05	11.83 - 12.08	1.0000	1.0000
L31	16	MP3-05	11.83 - 12.08	1.0000	1.0000
L31	18	MP3-05	11.83 - 12.08	1.0000	1.0000
L31	19	MP3-06	11.83 - 12.08	1.0000	1.0000
L32	13	Safety Line 3/8	6.83 - 11.83	1.0000	1.0000
L32	15	MP3-05	6.83 - 11.83	1.0000	1.0000
L32	16	MP3-05	6.83 - 11.83	1.0000	1.0000
L32	17	MP3-05	6.83 - 7.58	1.0000	1.0000
L32	18	MP3-05	10.42 - 11.83	1.0000	1.0000
L32	19	MP3-06	6.83 - 11.83	1.0000	1.0000
L33	13	Safety Line 3/8	4.92 - 6.83	1.0000	1.0000
L33	15	MP3-05	4.92 - 6.83	1.0000	1.0000
L33	16	MP3-05	4.92 - 6.83	1.0000	1.0000
L33	17	MP3-05	4.92 - 6.83	1.0000	1.0000
L33	19	MP3-06	4.92 - 6.83	1.0000	1.0000
L34	13	Safety Line 3/8	4.67 - 4.92	1.0000	1.0000
L34	15	MP3-05	4.67 - 4.92	1.0000	1.0000
L34	16	MP3-05	4.67 - 4.92	1.0000	1.0000
L34	17	MP3-05	4.67 - 4.92	1.0000	1.0000
L34	19	MP3-06	4.67 - 4.92	1.0000	1.0000
L35	13	Safety Line 3/8	0.00 - 4.67	1.0000	1.0000
L35	15	MP3-05	0.00 - 4.67	1.0000	1.0000
L35	16	MP3-05	0.00 - 4.67	1.0000	1.0000
L35	17	MP3-05	0.00 - 4.67	1.0000	1.0000
L35	19	MP3-06	1.50 - 4.67	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Top Hat (E)	C	None		0.000	149.000	No Ice	3.000	3.000	0.081
						1/2" Ice	3.480	3.480	0.111
						1" Ice	3.960	3.960	0.141
						2" Ice	4.920	4.920	0.201
6' x 2" Mount Pipe (E-Per Photo)	C	From Leg	0.000 0.000 3.000	0.000	148.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.425 1.925 2.294 3.060	1.425 1.925 2.294 3.060	0.022 0.033 0.048 0.090
$$									
(2) 800MHZ RRH (E)	A	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.134 2.320 2.512 2.920	1.773 1.946 2.127 2.510	0.053 0.074 0.098 0.157
800MHZ RRH (E)	C	From Leg	4.000 0.000	0.000	150.000	No Ice 1/2" Ice	2.134 2.320	1.773 1.946	0.053 0.074

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			-2.000			1" Ice	2.512	2.127	0.098
						2" Ice	2.920	2.510	0.157
800 EXTERNAL NOTCH FILTER (E)	A	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.660 0.763 0.873 1.115	0.321 0.398 0.483 0.674	0.011 0.017 0.024 0.045
800 EXTERNAL NOTCH FILTER (E)	B	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.660 0.763 0.873 1.115	0.321 0.398 0.483 0.674	0.011 0.017 0.024 0.045
800 EXTERNAL NOTCH FILTER (E)	C	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.660 0.763 0.873 1.115	0.321 0.398 0.483 0.674	0.011 0.017 0.024 0.045
PCS 1900MHz 4x45W-65MHz (E)	A	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.322 2.527 2.739 3.185	2.238 2.441 2.651 3.093	0.060 0.083 0.110 0.173
PCS 1900MHz 4x45W-65MHz (E)	B	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.322 2.527 2.739 3.185	2.238 2.441 2.651 3.093	0.060 0.083 0.110 0.173
PCS 1900MHz 4x45W-65MHz (E)	C	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.322 2.527 2.739 3.185	2.238 2.441 2.651 3.093	0.060 0.083 0.110 0.173
APXVTM14-ALU-I20 w/ Mount Pipe (R)	A	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.090 4.480 4.880 5.710	2.860 3.230 3.610 4.400	0.077 0.127 0.185 0.331
APXVTM14-ALU-I20 w/ Mount Pipe (R)	B	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.090 4.480 4.880 5.710	2.860 3.230 3.610 4.400	0.077 0.127 0.185 0.331
APXVTM14-ALU-I20 w/ Mount Pipe (R)	C	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.090 4.480 4.880 5.710	2.860 3.230 3.610 4.400	0.077 0.127 0.185 0.331
NNVV-65B-R4 w/ Mount Pipe (R)	A	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice	7.550 8.040 8.530 9.560	4.230 4.670 5.120 6.050	0.110 0.197 0.296 0.529
NNVV-65B-R4 w/ Mount Pipe (R)	B	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice	7.550 8.040 8.530 9.560	4.230 4.670 5.120 6.050	0.110 0.197 0.296 0.529
NNVV-65B-R4 w/ Mount Pipe (R)	C	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice	7.550 8.040 8.530 9.560	4.230 4.670 5.120 6.050	0.110 0.197 0.296 0.529
(2) 800MHZ RRH (R)	B	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.134 2.320 2.512 2.920	1.773 1.946 2.127 2.510	0.053 0.074 0.098 0.157
800MHZ RRH (R)	C	From Leg	4.000 0.000 -2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	2.134 2.320 2.512	1.773 1.946 2.127	0.053 0.074 0.098

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	2.920	2.510	0.157
TD-RRH8X20-25	A	From Leg	4.000	0.000	150.000	No Ice	4.045	1.535	0.070
(R)			0.000			1/2" Ice	4.298	1.714	0.097
			-2.000			1" Ice	4.557	1.901	0.128
						2" Ice	5.098	2.295	0.201
TD-RRH8X20-25	B	From Leg	4.000	0.000	150.000	No Ice	4.045	1.535	0.070
(R)			0.000			1/2" Ice	4.298	1.714	0.097
			-2.000			1" Ice	4.557	1.901	0.128
						2" Ice	5.098	2.295	0.201
TD-RRH8X20-25	C	From Leg	4.000	0.000	150.000	No Ice	4.045	1.535	0.070
(R)			0.000			1/2" Ice	4.298	1.714	0.097
			-2.000			1" Ice	4.557	1.901	0.128
						2" Ice	5.098	2.295	0.201
Pipe Mount [PM 601-3]	C	None		0.000	151.000	No Ice	3.170	3.170	0.195
(E-For TME/Photo)						1/2" Ice	3.790	3.790	0.232
						1" Ice	4.420	4.420	0.279
						2" Ice	5.760	5.760	0.401
8' x 2 7/8" Pipe Mount	A	From Leg	4.000	0.000	150.000	No Ice	2.300	2.300	0.041
(R)			0.000			1/2" Ice	3.132	3.132	0.057
			-2.000			1" Ice	3.620	3.620	0.080
						2" Ice	4.620	4.620	0.141
8' x 2 7/8" Pipe Mount	B	From Leg	4.000	0.000	150.000	No Ice	2.300	2.300	0.041
(R)			0.000			1/2" Ice	3.132	3.132	0.057
			-2.000			1" Ice	3.620	3.620	0.080
						2" Ice	4.620	4.620	0.141
8' x 2 7/8" Pipe Mount	C	From Leg	4.000	0.000	150.000	No Ice	2.300	2.300	0.041
(R)			0.000			1/2" Ice	3.132	3.132	0.057
			-2.000			1" Ice	3.620	3.620	0.080
						2" Ice	4.620	4.620	0.141
Platform Mount [LP 1201-1_KCKR-HR-1]	C	None		0.000	150.000	No Ice	37.610	37.610	2.631
(E-Per photo(Handrail+(R - Kicker)))						1/2" Ice	45.620	45.620	3.478
$$						1" Ice	53.590	53.590	4.462
						2" Ice	69.650	69.650	6.848
RRUS 11 B12	A	From Leg	1.000	0.000	141.000	No Ice	2.833	1.182	0.051
(E)			0.000			1/2" Ice	3.043	1.330	0.072
			2.000			1" Ice	3.259	1.485	0.095
						2" Ice	3.715	1.826	0.153
RRUS 11 B12	B	From Leg	1.000	0.000	141.000	No Ice	2.833	1.182	0.051
(E)			0.000			1/2" Ice	3.043	1.330	0.072
			2.000			1" Ice	3.259	1.485	0.095
						2" Ice	3.715	1.826	0.153
RRUS 11 B12	C	From Leg	1.000	0.000	141.000	No Ice	2.833	1.182	0.051
(E)			0.000			1/2" Ice	3.043	1.330	0.072
			2.000			1" Ice	3.259	1.485	0.095
						2" Ice	3.715	1.826	0.153
6' x 2.375" Mount Pipe	A	From Leg	1.000	0.000	141.000	No Ice	1.425	1.425	0.041
(E-Per Photo)			0.000			1/2" Ice	1.925	1.925	0.051
			1.000			1" Ice	2.294	2.294	0.066
						2" Ice	3.060	3.060	0.109
6' x 2.375" Mount Pipe	B	From Leg	1.000	0.000	141.000	No Ice	1.425	1.425	0.041
(E-Per Photo)			0.000			1/2" Ice	1.925	1.925	0.051
			1.000			1" Ice	2.294	2.294	0.066
						2" Ice	3.060	3.060	0.109
6' x 2.375" Mount Pipe	C	From Leg	1.000	0.000	141.000	No Ice	1.425	1.425	0.041
(E-Per Photo)			0.000			1/2" Ice	1.925	1.925	0.051
			1.000			1" Ice	2.294	2.294	0.066

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	3.060	3.060	0.109
Side Arm Mount [SO 102-3]	C	None		0.000	141.000	No Ice	3.600	3.600	0.075
(E)						1/2" Ice	4.180	4.180	0.105
						1" Ice	4.750	4.750	0.135
						2" Ice	5.900	5.900	0.195
$$									
7770.00 w/ Mount Pipe	A	From Leg	4.000	0.000	140.000	No Ice	5.746	4.254	0.055
(E - Installed)			0.000			1/2" Ice	6.179	5.014	0.103
			2.000			1" Ice	6.607	5.711	0.157
						2" Ice	7.488	7.155	0.287
7770.00 w/ Mount Pipe	B	From Leg	4.000	0.000	140.000	No Ice	5.746	4.254	0.055
(E - Installed)			0.000			1/2" Ice	6.179	5.014	0.103
			2.000			1" Ice	6.607	5.711	0.157
						2" Ice	7.488	7.155	0.287
7770.00 w/ Mount Pipe	C	From Leg	4.000	0.000	140.000	No Ice	5.746	4.254	0.055
(E - Installed)			0.000			1/2" Ice	6.179	5.014	0.103
			2.000			1" Ice	6.607	5.711	0.157
						2" Ice	7.488	7.155	0.287
TT08-19DB111-001	A	From Leg	4.000	0.000	140.000	No Ice	0.793	0.642	0.022
(E-per app)			0.000			1/2" Ice	0.913	0.752	0.030
			2.000			1" Ice	1.040	0.872	0.039
						2" Ice	1.317	1.134	0.065
TT08-19DB111-001	B	From Leg	4.000	0.000	140.000	No Ice	0.793	0.642	0.022
(E-per app)			0.000			1/2" Ice	0.913	0.752	0.030
			2.000			1" Ice	1.040	0.872	0.039
						2" Ice	1.317	1.134	0.065
TT08-19DB111-001	C	From Leg	4.000	0.000	140.000	No Ice	0.793	0.642	0.022
(E-per app)			0.000			1/2" Ice	0.913	0.752	0.030
			2.000			1" Ice	1.040	0.872	0.039
						2" Ice	1.317	1.134	0.065
DC6-48-60-18-8F	B	From Leg	1.000	0.000	140.000	No Ice	1.212	1.212	0.033
(E-per photo)			0.000			1/2" Ice	1.892	1.892	0.055
			0.000			1" Ice	2.105	2.105	0.080
						2" Ice	2.570	2.570	0.138
(2) DMP65R-BU6D w/	A	From Leg	4.000	0.000	140.000	No Ice	12.947	7.262	0.105
Mount Pipe			0.000			1/2" Ice	13.547	8.433	0.197
(P)			2.000			1" Ice	14.111	9.315	0.298
						2" Ice	15.264	11.128	0.529
(2) DMP65R-BU4D w/	B	From Leg	4.000	0.000	140.000	No Ice	8.518	4.693	0.086
Mount Pipe			0.000			1/2" Ice	8.964	5.306	0.151
(P)			2.000			1" Ice	9.420	5.928	0.223
						2" Ice	10.358	7.222	0.389
(2) DMP65R-BU6D w/	C	From Leg	4.000	0.000	140.000	No Ice	12.947	7.262	0.105
Mount Pipe			0.000			1/2" Ice	13.547	8.433	0.197
(P)			2.000			1" Ice	14.111	9.315	0.298
						2" Ice	15.264	11.128	0.529
RRUS 4478 B14	A	From Leg	4.000	0.000	140.000	No Ice	1.843	1.059	0.060
(P)			0.000			1/2" Ice	2.012	1.197	0.076
			2.000			1" Ice	2.190	1.342	0.094
						2" Ice	2.566	1.656	0.140
RRUS 4478 B14	B	From Leg	4.000	0.000	140.000	No Ice	1.843	1.059	0.060
(P)			0.000			1/2" Ice	2.012	1.197	0.076
			2.000			1" Ice	2.190	1.342	0.094
						2" Ice	2.566	1.656	0.140
RRUS 4478 B14	C	From Leg	4.000	0.000	140.000	No Ice	1.843	1.059	0.060
(P)			0.000			1/2" Ice	2.012	1.197	0.076
			2.000			1" Ice	2.190	1.342	0.094

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	2.566	1.656	0.140
DC6-48-60-0-8C-EV	A	From Leg	4.000	0.000	140.000	No Ice	2.736	4.783	0.026
(P)			0.000			1/2" Ice	2.962	5.063	0.063
			2.000			1" Ice	3.195	5.350	0.104
						2" Ice	3.683	5.947	0.200
DC6-48-60-0-8C-EV	C	From Leg	4.000	0.000	140.000	No Ice	2.736	4.783	0.026
(P)			0.000			1/2" Ice	2.962	5.063	0.063
			2.000			1" Ice	3.195	5.350	0.104
						2" Ice	3.683	5.947	0.200
RRUS 4449 B5/B12	A	From Leg	4.000	0.000	140.000	No Ice	1.968	1.408	0.071
(P)			0.000			1/2" Ice	2.144	1.564	0.090
			2.000			1" Ice	2.328	1.727	0.111
						2" Ice	2.718	2.075	0.163
RRUS 4449 B5/B12	B	From Leg	4.000	0.000	140.000	No Ice	1.968	1.408	0.071
(P)			0.000			1/2" Ice	2.144	1.564	0.090
			2.000			1" Ice	2.328	1.727	0.111
						2" Ice	2.718	2.075	0.163
RRUS 4449 B5/B12	C	From Leg	4.000	0.000	140.000	No Ice	1.968	1.408	0.071
(P)			0.000			1/2" Ice	2.144	1.564	0.090
			2.000			1" Ice	2.328	1.727	0.111
						2" Ice	2.718	2.075	0.163
RRUS 8843 B2/B66A	A	From Leg	4.000	0.000	140.000	No Ice	1.639	1.353	0.072
(P)			0.000			1/2" Ice	1.799	1.500	0.090
			2.000			1" Ice	1.966	1.655	0.110
						2" Ice	2.323	1.986	0.159
RRUS 8843 B2/B66A	B	From Leg	4.000	0.000	140.000	No Ice	1.639	1.353	0.072
(P)			0.000			1/2" Ice	1.799	1.500	0.090
			2.000			1" Ice	1.966	1.655	0.110
						2" Ice	2.323	1.986	0.159
RRUS 8843 B2/B66A	C	From Leg	4.000	0.000	140.000	No Ice	1.639	1.353	0.072
(P)			0.000			1/2" Ice	1.799	1.500	0.090
			2.000			1" Ice	1.966	1.655	0.110
						2" Ice	2.323	1.986	0.159
Side Arm Mount [SO 102-3]	C	None		0.000	140.000	No Ice	3.600	3.600	0.075
(E - Mount Attachment)						1/2" Ice	4.180	4.180	0.105
						1" Ice	4.750	4.750	0.135
						2" Ice	5.900	5.900	0.195
T-Arm Mount [TA 602-3]	C	None		0.000	140.000	No Ice	13.400	13.400	0.774
(E - Installed)						1/2" Ice	16.440	16.440	1.004
						1" Ice	19.700	19.700	1.292
						2" Ice	25.860	25.860	2.053
$$									
(2) LPA-80080/6CF w/	A	From Leg	4.000	0.000	130.000	No Ice	4.564	10.259	0.046
Mount Pipe			0.000			1/2" Ice	5.105	11.427	0.113
(E)			0.000			1" Ice	5.612	12.312	0.187
						2" Ice	6.651	14.129	0.363
(2) LPA-80080/6CF w/	B	From Leg	4.000	0.000	130.000	No Ice	4.564	10.259	0.046
Mount Pipe			0.000			1/2" Ice	5.105	11.427	0.113
(E)			0.000			1" Ice	5.612	12.312	0.187
						2" Ice	6.651	14.129	0.363
(2) LPA-80080-6CF-EDIN-6	C	From Leg	4.000	0.000	130.000	No Ice	4.564	10.259	0.046
w/ Mount Pipe			0.000			1/2" Ice	5.105	11.427	0.113
(E)			0.000			1" Ice	5.612	12.312	0.187
						2" Ice	6.651	14.129	0.363
(2) SBNHH-1D65B w/	A	From Leg	4.000	0.000	130.000	No Ice	4.090	3.300	0.066
Mount Pipe			0.000			1/2" Ice	4.490	3.680	0.130
(E)			0.000			1" Ice	4.890	4.070	0.204

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	5.720	4.870	0.386
(2) SBNHH-1D65B w/ Mount Pipe (E)	B	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.090 4.490 4.890 5.720	3.300 3.680 4.070 4.870	0.066 0.130 0.204 0.386
(2) SBNHH-1D65B w/ Mount Pipe (E)	C	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.090 4.490 4.890 5.720	3.300 3.680 4.070 4.870	0.066 0.130 0.204 0.386
RRH2x60-700 (E)	A	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.500 3.761 4.029 4.585	1.816 2.052 2.289 2.785	0.060 0.083 0.109 0.173
RRH2x60-700 (E)	B	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.500 3.761 4.029 4.585	1.816 2.052 2.289 2.785	0.060 0.083 0.109 0.173
RRH2x60-700 (E)	C	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.500 3.761 4.029 4.585	1.816 2.052 2.289 2.785	0.060 0.083 0.109 0.173
RRH2X60-AWS (E)	A	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.500 3.761 4.029 4.585	1.816 2.052 2.289 2.785	0.060 0.083 0.109 0.173
RRH2X60-AWS (E)	B	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.500 3.761 4.029 4.585	1.816 2.052 2.289 2.785	0.060 0.083 0.109 0.173
RRH2X60-AWS (E)	C	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.500 3.761 4.029 4.585	1.816 2.052 2.289 2.785	0.060 0.083 0.109 0.173
Platform Mount [LP 303-1] (E)	C	None		0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice	14.690 18.010 21.340 28.080	14.690 18.010 21.340 28.080	1.250 1.569 1.942 2.852
$$									

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

Comb. No.	Description
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	148 - 143	Pole	Max Tension	26	0.000	-0.000	-0.000
			Max. Compression	26	-11.679	0.092	-0.014
			Max. Mx	20	-5.138	24.514	-0.009
			Max. My	14	-5.124	0.030	-24.584
			Max. Vy	20	-4.377	24.514	-0.009
			Max. Vx	14	4.394	0.030	-24.584
			Max. Torque	24			0.049
L2	143 - 138	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-20.012	1.545	0.824
			Max. Mx	20	-8.372	61.230	0.002
			Max. My	2	-8.369	0.105	61.188
			Max. Vy	20	-8.558	61.230	0.002
			Max. Vx	14	8.609	0.282	-61.083
			Max. Torque	4			1.366

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L3	138 - 133	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-20.657	1.592	0.849
			Max. Mx	20	-8.760	104.704	-0.100
			Max. My	14	-8.729	0.403	-104.812
			Max. Vy	20	-8.835	104.704	-0.100
			Max. Vx	14	8.886	0.403	-104.812
			Max. Torque	4			1.366
L4	133 - 128	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-28.335	1.640	0.874
			Max. Mx	20	-11.684	155.545	-0.203
			Max. My	14	-11.643	0.525	-155.930
			Max. Vy	20	-12.104	155.545	-0.203
			Max. Vx	14	12.165	0.525	-155.930
			Max. Torque	4			1.366
L5	128 - 123	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-29.078	1.690	0.902
			Max. Mx	20	-12.184	216.716	-0.307
			Max. My	14	-12.142	0.648	-217.409
			Max. Vy	20	-12.372	216.716	-0.307
			Max. Vx	14	12.434	0.648	-217.409
			Max. Torque	4			1.365
L6	123 - 117.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-29.418	1.711	0.913
			Max. Mx	20	-12.415	244.674	-0.354
			Max. My	14	-12.373	0.702	-245.508
			Max. Vy	20	-12.490	244.674	-0.354
			Max. Vx	14	12.553	0.702	-245.508
			Max. Torque	4			1.365
L7	117.25 - 115.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-30.690	1.757	0.939
			Max. Mx	20	-13.247	307.896	-0.459
			Max. My	14	-13.204	0.824	-309.051
			Max. Vy	20	-12.801	307.896	-0.459
			Max. Vx	14	12.867	0.824	-309.051
			Max. Torque	4			1.364
L8	115.75 - 110.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-31.575	1.802	0.963
			Max. Mx	20	-13.891	372.535	-0.564
			Max. My	14	-13.847	0.944	-374.023
			Max. Vy	20	-13.068	372.535	-0.564
			Max. Vx	14	13.136	0.944	-374.023
			Max. Torque	4			1.364
L9	110.75 - 105.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-32.480	1.844	0.987
			Max. Mx	20	-14.553	438.508	-0.670
			Max. My	14	-14.508	1.063	-440.337
			Max. Vy	20	-13.333	438.508	-0.670
			Max. Vx	14	13.403	1.063	-440.337
			Max. Torque	4			1.363
L10	105.75 - 100.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-33.405	1.884	1.009
			Max. Mx	20	-15.235	505.791	-0.777
			Max. My	14	-15.190	1.180	-507.972
			Max. Vy	20	-13.594	505.791	-0.777
			Max. Vx	14	13.665	1.180	-507.972
			Max. Torque	4			1.363
L11	100.75 - 97	Pole	Max Tension	1	0.000	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	26	-34.193	1.912	1.025
			Max. Mx	20	-15.758	557.100	-0.856
			Max. My	14	-15.703	1.267	-559.819
			Max. Vy	20	-13.788	557.100	-0.856
			Max. Vx	14	14.005	1.267	-559.819
			Max. Torque	4			1.362
L12	97 - 96.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-34.266	1.918	1.028
			Max. Mx	20	-15.816	560.547	-0.861
			Max. My	14	-15.762	1.273	-563.321
			Max. Vy	20	-13.798	560.547	-0.861
			Max. Vx	14	14.022	1.273	-563.321
			Max. Torque	4			1.362
L13	96.75 - 91.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-35.735	1.952	1.046
			Max. Mx	20	-16.840	630.282	-0.968
			Max. My	14	-16.772	1.390	-634.728
			Max. Vy	20	-14.106	630.282	-0.968
			Max. Vx	14	14.548	1.390	-634.728
			Max. Torque	4			1.362
L14	91.75 - 86.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-37.222	1.989	1.067
			Max. Mx	20	-17.884	701.544	-1.074
			Max. My	14	-17.804	1.506	-708.737
			Max. Vy	20	-14.410	701.544	-1.074
			Max. Vx	14	15.068	1.506	-708.737
			Max. Torque	4			1.361
L15	86.75 - 80.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-37.748	2.001	1.074
			Max. Mx	20	-18.251	726.843	-1.112
			Max. My	14	-18.167	1.546	-735.253
			Max. Vy	20	-14.518	726.843	-1.112
			Max. Vx	14	15.252	1.546	-735.253
			Max. Torque	4			1.361
L16	80.75 - 80	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-40.307	2.021	1.085
			Max. Mx	20	-20.101	800.328	-1.218
			Max. My	14	-20.006	1.663	-812.953
			Max. Vy	20	-14.879	800.328	-1.218
			Max. Vx	14	15.832	1.663	-812.953
			Max. Torque	4			1.361
L17	80 - 75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-41.890	2.041	1.097
			Max. Mx	20	-21.240	875.427	-1.325
			Max. My	14	-21.137	1.779	-893.349
			Max. Vy	20	-15.172	875.427	-1.325
			Max. Vx	14	16.340	1.779	-893.349
			Max. Torque	4			1.361
L18	75 - 70	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-43.492	2.060	1.108
			Max. Mx	20	-22.399	951.966	-1.432
			Max. My	14	-22.289	1.894	-976.257
			Max. Vy	20	-15.458	951.966	-1.432
			Max. Vx	14	16.839	1.894	-976.257
			Max. Torque	4			1.360
L19	70 - 65	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-45.113	2.081	1.120
			Max. Mx	20	-23.577	1029.912	-1.539
			Max. My	14	-23.462	2.009	-1061.641
			Max. Vy	20	-15.736	1029.912	-1.539
			Max. Vx	14	17.331	2.009	-1061.641

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	4			1.360
L20	65 - 60	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-46.752	2.101	1.131
			Max. Mx	20	-24.772	1109.233	-1.646
			Max. My	14	-24.655	2.123	-1149.464
			Max. Vy	20	-16.008	1109.233	-1.646
			Max. Vx	14	17.815	2.123	-1149.464
			Max. Torque	4			1.359
L21	60 - 55	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-48.409	2.122	1.143
			Max. Mx	20	-25.986	1189.887	-1.753
			Max. My	14	-25.869	2.237	-1239.677
			Max. Vy	20	-16.270	1189.887	-1.753
			Max. Vx	14	18.288	2.237	-1239.677
			Max. Torque	4			1.359
L22	55 - 50	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-50.085	2.142	1.155
			Max. Mx	20	-27.219	1271.829	-1.860
			Max. My	14	-27.103	2.350	-1332.223
			Max. Vy	20	-16.524	1271.829	-1.860
			Max. Vx	14	18.750	2.350	-1332.223
			Max. Torque	4			1.359
L23	50 - 40	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-51.777	2.163	1.167
			Max. Mx	20	-28.469	1355.000	-1.966
			Max. My	14	-28.357	2.462	-1427.021
			Max. Vy	20	-16.763	1355.000	-1.966
			Max. Vx	14	19.190	2.462	-1427.021
			Max. Torque	4			1.358
L24	40 - 39	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-55.287	2.188	1.182
			Max. Mx	20	-31.098	1456.660	-2.093
			Max. My	14	-30.986	2.597	-1543.991
			Max. Vy	6	17.139	-1335.816	774.205
			Max. Vx	14	19.803	2.597	-1543.991
			Max. Torque	4			1.358
L25	39 - 34	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-57.078	2.209	1.194
			Max. Mx	20	-32.454	1542.782	-2.199
			Max. My	14	-32.350	2.708	-1643.970
			Max. Vy	6	17.493	-1422.345	824.291
			Max. Vx	14	20.212	2.708	-1643.970
			Max. Torque	4			1.358
L26	34 - 29	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-58.885	2.230	1.206
			Max. Mx	20	-33.829	1629.945	-2.304
			Max. My	14	-33.734	2.818	-1745.940
			Max. Vy	6	17.830	-1510.599	875.372
			Max. Vx	14	20.601	2.818	-1745.940
			Max. Torque	4			1.358
L27	29 - 24	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-60.707	2.250	1.218
			Max. Mx	20	-35.223	1718.096	-2.409
			Max. My	14	-35.139	2.927	-1849.831
			Max. Vy	6	18.159	-1600.517	927.412
			Max. Vx	14	20.981	2.927	-1849.831
			Max. Torque	4			1.357
L28	24 - 19	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-62.542	2.270	1.229
			Max. Mx	20	-36.636	1807.209	-2.514
			Max. My	14	-36.566	3.035	-1955.619

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	6	18.488	-1692.077	980.399
			Max. Vx	14	21.360	3.035	-1955.619
			Max. Torque	4			1.357
L29	19 - 14	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-64.413	2.290	1.189
			Max. Mx	20	-38.067	1897.270	-2.617
			Max. My	14	-38.012	3.142	-2063.298
			Max. Vy	6	18.827	-1785.304	1034.347
			Max. Vx	14	21.739	3.142	-2063.298
			Max. Torque	4			1.357
L30	14 - 12.0833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-65.142	2.297	1.154
			Max. Mx	20	-38.615	1932.045	-2.657
			Max. My	14	-38.565	3.182	-2105.078
			Max. Vy	6	18.972	-1821.493	1055.288
			Max. Vx	14	21.897	3.182	-2105.078
			Max. Torque	4			1.357
L31	12.0833 - 11.8333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-65.240	2.299	1.150
			Max. Mx	20	-38.701	1936.592	-2.662
			Max. My	14	-38.654	3.188	-2110.548
			Max. Vy	6	18.969	-1826.233	1058.030
			Max. Vx	14	21.893	3.188	-2110.548
			Max. Torque	4			1.357
L32	11.8333 - 6.83333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-67.173	2.317	1.107
			Max. Mx	20	-40.214	2027.992	-2.765
			Max. My	14	-40.185	3.293	-2220.923
			Max. Vy	6	19.312	-1921.894	1113.382
			Max. Vx	14	22.275	3.293	-2220.923
			Max. Torque	4			1.357
L33	6.83333 - 4.91667	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-67.921	2.323	1.074
			Max. Mx	20	-40.795	2063.267	-2.804
			Max. My	14	-40.772	3.333	-2263.725
			Max. Vy	6	19.456	-1959.010	1134.857
			Max. Vx	14	22.432	3.333	-2263.725
			Max. Torque	4			1.357
L34	4.91667 - 4.66667	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-68.015	2.325	1.071
			Max. Mx	20	-40.880	2067.879	-2.809
			Max. My	14	-40.861	3.338	-2269.328
			Max. Vy	6	19.451	-1963.870	1137.668
			Max. Vx	14	22.425	3.338	-2269.328
			Max. Torque	4			1.357
L35	4.66667 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-69.739	2.339	1.024
			Max. Mx	20	-42.259	2154.367	-2.904
			Max. My	14	-42.257	3.435	-2374.779
			Max. Vy	6	19.780	-2055.365	1190.605
			Max. Vx	14	22.790	3.435	-2374.779
			Max. Torque	4			1.357

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	69.739	0.000	0.000
	Max. H_x	23	31.700	19.745	11.400
	Max. H_z	2	42.266	-0.020	19.400
	Max. M_x	2	2164.881	-0.020	19.400
	Max. M_z	8	2153.631	-18.617	0.020
	Max. Torsion	4	1.357	-9.706	16.811
	Min. Vert	11	31.700	-16.109	-9.301
	Min. H_x	7	31.700	-19.765	11.435
	Min. H_z	15	31.700	0.020	-22.772
	Min. M_x	14	-2374.779	0.020	-22.772
	Min. M_z	20	-2154.367	18.617	-0.020
	Min. Torsion	16	-1.357	9.324	-16.150

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	35.222	0.000	0.000	-0.140	0.277	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	42.266	0.020	-19.400	-2164.881	-2.728	-1.194
0.9 Dead+1.0 Wind 0 deg - No Ice	31.700	0.020	-19.400	-2132.404	-2.773	-1.187
1.2 Dead+1.0 Wind 30 deg - No Ice	42.266	9.706	-16.811	-1876.397	-1082.882	-1.357
0.9 Dead+1.0 Wind 30 deg - No Ice	31.700	9.706	-16.811	-1848.240	-1066.749	-1.350
1.2 Dead+1.0 Wind 60 deg - No Ice	42.266	19.765	-11.435	-1190.605	-2055.365	-1.157
0.9 Dead+1.0 Wind 60 deg - No Ice	31.700	19.765	-11.435	-1173.379	-2025.808	-1.151
1.2 Dead+1.0 Wind 90 deg - No Ice	42.266	18.617	-0.020	-3.260	-2153.631	-0.645
0.9 Dead+1.0 Wind 90 deg - No Ice	31.700	18.617	-0.020	-3.161	-2121.374	-0.641
1.2 Dead+1.0 Wind 120 deg - No Ice	42.266	16.109	9.301	1075.907	-1863.480	0.042
0.9 Dead+1.0 Wind 120 deg - No Ice	31.700	16.109	9.301	1059.793	-1835.581	0.041
1.2 Dead+1.0 Wind 150 deg - No Ice	42.266	9.289	16.130	1866.736	-1073.951	0.717
0.9 Dead+1.0 Wind 150 deg - No Ice	31.700	9.289	16.130	1838.738	-1057.913	0.713
1.2 Dead+1.0 Wind 180 deg - No Ice	42.266	-0.020	22.772	2374.779	3.434	1.199
0.9 Dead+1.0 Wind 180 deg - No Ice	31.700	-0.020	22.772	2340.559	3.288	1.192
1.2 Dead+1.0 Wind 210 deg - No Ice	42.266	-9.324	16.150	1869.817	1079.995	1.357
0.9 Dead+1.0 Wind 210 deg - No Ice	31.700	-9.324	16.150	1841.766	1063.677	1.350
1.2 Dead+1.0 Wind 240 deg - No Ice	42.266	-16.130	9.336	1081.250	1867.278	1.152
0.9 Dead+1.0 Wind 240 deg -	31.700	-16.130	9.336	1065.044	1839.132	1.146

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
No Ice						
1.2 Dead+1.0 Wind 270 deg - No Ice	42.266	-18.617	0.020	2.904	2154.367	0.640
0.9 Dead+1.0 Wind 270 deg - No Ice	31.700	-18.617	0.020	2.901	2121.911	0.637
1.2 Dead+1.0 Wind 300 deg - No Ice	42.266	-19.745	-11.400	-1185.289	2053.027	-0.042
0.9 Dead+1.0 Wind 300 deg - No Ice	31.700	-19.745	-11.400	-1168.147	2023.323	-0.041
1.2 Dead+1.0 Wind 330 deg - No Ice	42.266	-9.670	-16.790	-1873.341	1078.267	-0.712
0.9 Dead+1.0 Wind 330 deg - No Ice	31.700	-9.670	-16.790	-1845.230	1062.028	-0.709
1.2 Dead+1.0 Ice+1.0 Temp	69.739	-0.000	-0.000	-1.024	2.339	-0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	69.739	0.000	-3.549	-424.045	2.487	-0.211
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	69.739	1.775	-3.074	-367.397	-208.958	-0.237
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	69.739	3.107	-1.794	-213.676	-365.597	-0.201
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	69.739	3.548	-0.000	-1.143	-420.368	-0.110
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	69.739	3.072	1.774	210.318	-363.699	0.010
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	69.739	1.774	3.072	365.125	-208.904	0.128
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	69.739	-0.000	3.580	423.886	2.541	0.211
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	69.739	-1.774	3.073	365.153	213.979	0.237
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	69.739	-3.072	1.774	210.365	368.756	0.201
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	69.739	-3.548	0.000	-1.089	425.398	0.110
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	69.739	-3.107	-1.794	-213.630	370.600	-0.010
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	69.739	-1.774	-3.074	-367.370	213.940	-0.128
Dead+Wind 0 deg - Service	35.222	0.005	-4.974	-550.185	-0.480	-0.308
Dead+Wind 30 deg - Service	35.222	2.488	-4.310	-476.885	-274.940	-0.350
Dead+Wind 60 deg - Service	35.222	5.067	-2.932	-302.757	-522.260	-0.298
Dead+Wind 90 deg - Service	35.222	4.773	-0.005	-0.935	-546.990	-0.166
Dead+Wind 120 deg - Service	35.222	4.130	2.385	273.265	-473.271	0.011
Dead+Wind 150 deg - Service	35.222	2.381	4.135	474.204	-272.664	0.184
Dead+Wind 180 deg - Service	35.222	-0.005	5.838	603.559	1.084	0.309
Dead+Wind 210 deg - Service	35.222	-2.391	4.141	474.986	274.624	0.350
Dead+Wind 240 deg - Service	35.222	-4.135	2.394	274.621	474.659	0.298
Dead+Wind 270 deg - Service	35.222	-4.773	0.005	0.630	547.596	0.166
Dead+Wind 300 deg - Service	35.222	-5.062	-2.923	-301.403	522.083	-0.011
Dead+Wind 330 deg - Service	35.222	-2.479	-4.305	-476.104	274.190	-0.184

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.000	-35.222	0.000	0.000	35.222	0.000	0.000%
2	0.020	-42.266	-19.400	-0.020	42.266	19.400	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
3	0.020	-31.700	-19.400	-0.020	31.700	19.400	0.000%
4	9.706	-42.266	-16.811	-9.706	42.266	16.811	0.000%
5	9.706	-31.700	-16.811	-9.706	31.700	16.811	0.000%
6	19.765	-42.266	-11.435	-19.765	42.266	11.435	0.000%
7	19.765	-31.700	-11.435	-19.765	31.700	11.435	0.000%
8	18.617	-42.266	-0.020	-18.617	42.266	0.020	0.000%
9	18.617	-31.700	-0.020	-18.617	31.700	0.020	0.000%
10	16.109	-42.266	9.301	-16.109	42.266	-9.301	0.000%
11	16.109	-31.700	9.301	-16.109	31.700	-9.301	0.000%
12	9.289	-42.266	16.130	-9.289	42.266	-16.130	0.000%
13	9.289	-31.700	16.130	-9.289	31.700	-16.130	0.000%
14	-0.020	-42.266	22.772	0.020	42.266	-22.772	0.000%
15	-0.020	-31.700	22.772	0.020	31.700	-22.772	0.000%
16	-9.324	-42.266	16.150	9.324	42.266	-16.150	0.000%
17	-9.324	-31.700	16.150	9.324	31.700	-16.150	0.000%
18	-16.130	-42.266	9.336	16.130	42.266	-9.336	0.000%
19	-16.130	-31.700	9.336	16.130	31.700	-9.336	0.000%
20	-18.617	-42.266	0.020	18.617	42.266	-0.020	0.000%
21	-18.617	-31.700	0.020	18.617	31.700	-0.020	0.000%
22	-19.745	-42.266	-11.400	19.745	42.266	11.400	0.000%
23	-19.745	-31.700	-11.400	19.745	31.700	11.400	0.000%
24	-9.670	-42.266	-16.790	9.670	42.266	16.790	0.000%
25	-9.670	-31.700	-16.790	9.670	31.700	16.790	0.000%
26	0.000	-69.739	0.000	0.000	69.739	0.000	0.000%
27	0.000	-69.739	-3.549	-0.000	69.739	3.549	0.000%
28	1.775	-69.739	-3.074	-1.775	69.739	3.074	0.000%
29	3.107	-69.739	-1.794	-3.107	69.739	1.794	0.000%
30	3.547	-69.739	-0.000	-3.548	69.739	0.000	0.000%
31	3.072	-69.739	1.774	-3.072	69.739	-1.774	0.000%
32	1.774	-69.739	3.072	-1.774	69.739	-3.072	0.000%
33	-0.000	-69.739	3.580	0.000	69.739	-3.580	0.000%
34	-1.774	-69.739	3.072	1.774	69.739	-3.073	0.000%
35	-3.072	-69.739	1.774	3.072	69.739	-1.774	0.000%
36	-3.547	-69.739	0.000	3.548	69.739	-0.000	0.000%
37	-3.107	-69.739	-1.794	3.107	69.739	1.794	0.000%
38	-1.774	-69.739	-3.074	1.774	69.739	3.074	0.000%
39	0.005	-35.222	-4.974	-0.005	35.222	4.974	0.000%
40	2.488	-35.222	-4.310	-2.488	35.222	4.310	0.000%
41	5.067	-35.222	-2.932	-5.067	35.222	2.932	0.000%
42	4.773	-35.222	-0.005	-4.773	35.222	0.005	0.000%
43	4.130	-35.222	2.385	-4.130	35.222	-2.385	0.000%
44	2.381	-35.222	4.135	-2.381	35.222	-4.135	0.000%
45	-0.005	-35.222	5.838	0.005	35.222	-5.838	0.000%
46	-2.391	-35.222	4.141	2.391	35.222	-4.141	0.000%
47	-4.135	-35.222	2.394	4.135	35.222	-2.394	0.000%
48	-4.773	-35.222	0.005	4.773	35.222	-0.005	0.000%
49	-5.062	-35.222	-2.923	5.062	35.222	2.923	0.000%
50	-2.479	-35.222	-4.305	2.479	35.222	4.305	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00000001	0.00091364
3	Yes	5	0.00000001	0.00045780
4	Yes	7	0.00000001	0.00008120
5	Yes	6	0.00000001	0.00041580

6	Yes	7	0.00000001	0.00009469
7	Yes	6	0.00000001	0.00047955
8	Yes	5	0.00000001	0.00060910
9	Yes	5	0.00000001	0.00030088
10	Yes	7	0.00000001	0.00008337
11	Yes	6	0.00000001	0.00042790
12	Yes	7	0.00000001	0.00008183
13	Yes	6	0.00000001	0.00041964
14	Yes	6	0.00000001	0.00007414
15	Yes	5	0.00000001	0.00052174
16	Yes	7	0.00000001	0.00008710
17	Yes	6	0.00000001	0.00044735
18	Yes	7	0.00000001	0.00008164
19	Yes	6	0.00000001	0.00041833
20	Yes	5	0.00000001	0.00048292
21	Yes	5	0.00000001	0.00023765
22	Yes	7	0.00000001	0.00009149
23	Yes	6	0.00000001	0.00046277
24	Yes	7	0.00000001	0.00008502
25	Yes	6	0.00000001	0.00043620
26	Yes	4	0.00000001	0.00034273
27	Yes	6	0.00000001	0.00068818
28	Yes	6	0.00000001	0.00077221
29	Yes	6	0.00000001	0.00077668
30	Yes	6	0.00000001	0.00067527
31	Yes	6	0.00000001	0.00076423
32	Yes	6	0.00000001	0.00076376
33	Yes	6	0.00000001	0.00068137
34	Yes	6	0.00000001	0.00078209
35	Yes	6	0.00000001	0.00077973
36	Yes	6	0.00000001	0.00069140
37	Yes	6	0.00000001	0.00079134
38	Yes	6	0.00000001	0.00078970
39	Yes	5	0.00000001	0.00006484
40	Yes	5	0.00000001	0.00027181
41	Yes	5	0.00000001	0.00036509
42	Yes	4	0.00000001	0.00074819
43	Yes	5	0.00000001	0.00029190
44	Yes	5	0.00000001	0.00027759
45	Yes	5	0.00000001	0.00006946
46	Yes	5	0.00000001	0.00032888
47	Yes	5	0.00000001	0.00027484
48	Yes	4	0.00000001	0.00072913
49	Yes	5	0.00000001	0.00033351
50	Yes	5	0.00000001	0.00030993

Maximum Tower Deflections - Service Wind

Section No.	*Elevation* ft	*Horz. Deflection* in	*Gov. Load Comb.*	*Tilt* °	*Twist* °
L1	148 - 143	22.908	45	1.389	0.005
L2	143 - 138	21.457	45	1.383	0.005
L3	138 - 133	20.016	45	1.367	0.005
L4	133 - 128	18.599	45	1.338	0.004
L5	128 - 123	17.217	45	1.298	0.003
L6	123 - 117.25	15.885	45	1.246	0.003
L7	120.75 - 115.75	15.304	45	1.218	0.003
L8	115.75 - 110.75	14.045	45	1.181	0.002
L9	110.75 - 105.75	12.840	45	1.120	0.002
L10	105.75 - 100.75	11.701	45	1.055	0.002

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L11	100.75 - 97	10.632	45	0.985	0.002
L12	97 - 96.75	9.880	45	0.930	0.001
L13	96.75 - 91.75	9.832	45	0.928	0.001
L14	91.75 - 86.75	8.882	45	0.885	0.001
L15	86.75 - 80.75	7.978	45	0.841	0.001
L16	85 - 80	7.673	45	0.825	0.001
L17	80 - 75	6.822	45	0.798	0.001
L18	75 - 70	6.011	45	0.751	0.001
L19	70 - 65	5.250	45	0.703	0.001
L20	65 - 60	4.540	45	0.653	0.001
L21	60 - 55	3.882	45	0.603	0.001
L22	55 - 50	3.277	45	0.552	0.001
L23	50 - 40	2.726	45	0.500	0.000
L24	45 - 39	2.230	45	0.447	0.000
L25	39 - 34	1.688	41	0.411	0.000
L26	34 - 29	1.285	41	0.359	0.000
L27	29 - 24	0.936	41	0.307	0.000
L28	24 - 19	0.641	41	0.255	0.000
L29	19 - 14	0.402	41	0.202	0.000
L30	14 - 12.0833	0.218	41	0.150	0.000
L31	12.0833 - 11.8333	0.162	41	0.130	0.000
L32	11.8333 - 6.83333	0.155	41	0.127	0.000
L33	6.83333 - 4.91667	0.051	41	0.072	0.000
L34	4.91667 - 4.66667	0.026	41	0.051	0.000
L35	4.66667 - 0	0.024	41	0.049	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
151.000	Pipe Mount [PM 601-3]	45	22.908	1.389	0.005	27794
150.000	(2) 800MHZ RRH	45	22.908	1.389	0.005	27794
149.000	Top Hat	45	22.908	1.389	0.005	27794
148.000	6' x 2" Mount Pipe	45	22.908	1.389	0.005	27794
141.000	RRUS 11 B12	45	20.879	1.378	0.005	19148
140.000	7770.00 w/ Mount Pipe	45	20.591	1.375	0.005	16462
130.000	(2) LPA-80080/6CF w/ Mount Pipe	45	17.765	1.316	0.004	6905

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	148 - 143	90.316	14	5.484	0.019
L2	143 - 138	84.591	14	5.460	0.019
L3	138 - 133	78.909	14	5.399	0.018
L4	133 - 128	73.319	14	5.285	0.015
L5	128 - 123	67.871	14	5.126	0.013
L6	123 - 117.25	62.615	14	4.917	0.011
L7	120.75 - 115.75	60.325	14	4.808	0.010
L8	115.75 - 110.75	55.361	14	4.660	0.009
L9	110.75 - 105.75	50.609	14	4.422	0.008
L10	105.75 - 100.75	46.117	14	4.162	0.007

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L11	100.75 - 97	41.904	14	3.886	0.006
L12	97 - 96.75	38.939	14	3.670	0.005
L13	96.75 - 91.75	38.747	14	3.662	0.005
L14	91.75 - 86.75	35.003	14	3.493	0.005
L15	86.75 - 80.75	31.440	14	3.315	0.004
L16	85 - 80	30.237	14	3.252	0.004
L17	80 - 75	26.881	14	3.147	0.004
L18	75 - 70	23.684	14	2.961	0.003
L19	70 - 65	20.684	14	2.771	0.003
L20	65 - 60	17.885	14	2.575	0.003
L21	60 - 55	15.292	14	2.378	0.002
L22	55 - 50	12.908	14	2.175	0.002
L23	50 - 40	10.738	14	1.971	0.002
L24	45 - 39	8.783	14	1.763	0.002
L25	39 - 34	6.647	14	1.620	0.001
L26	34 - 29	5.059	6	1.415	0.001
L27	29 - 24	3.684	6	1.210	0.001
L28	24 - 19	2.525	6	1.004	0.001
L29	19 - 14	1.583	6	0.796	0.001
L30	14 - 12.0833	0.859	6	0.589	0.000
L31	12.0833 - 11.8333	0.638	6	0.511	0.000
L32	11.8333 - 6.83333	0.611	6	0.500	0.000
L33	6.83333 - 4.91667	0.201	6	0.283	0.000
L34	4.91667 - 4.66667	0.104	6	0.202	0.000
L35	4.66667 - 0	0.094	6	0.192	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
151.000	Pipe Mount [PM 601-3]	14	90.316	5.484	0.019	7170
150.000	(2) 800MHZ RRH	14	90.316	5.484	0.019	7170
149.000	Top Hat	14	90.316	5.484	0.019	7170
148.000	6' x 2" Mount Pipe	14	90.316	5.484	0.019	7170
141.000	RRUS 11 B12	14	82.311	5.442	0.018	4963
140.000	7770.00 w/ Mount Pipe	14	81.174	5.430	0.018	4273
130.000	(2) LPA-80080/6CF w/ Mount Pipe	14	70.030	5.195	0.014	1782

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	148 - 143 (1)	TP22.85x22x0.188	5.000	0.000	0.0	13.487	-5.124	728.297	0.007
L2	143 - 138 (2)	TP23.7x22.85x0.188	5.000	0.000	0.0	13.993	-8.347	755.610	0.011
L3	138 - 133 (3)	TP24.55x23.7x0.188	5.000	0.000	0.0	14.499	-8.734	782.924	0.011
L4	133 - 128 (4)	TP25.4x24.55x0.188	5.000	0.000	0.0	15.004	-11.643	810.237	0.014
L5	128 - 123 (5)	TP26.25x25.4x0.188	5.000	0.000	0.0	15.510	-12.142	837.551	0.014

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L6	123 - 117.25 (6)	TP27.227x26.25x0.188	5.750	0.000	0.0	15.738	-12.373	849.842	0.015
L7	117.25 - 115.75 (7)	TP27.107x26.257x0.25	5.000	0.000	0.0	21.311	-13.204	1150.790	0.011
L8	115.75 - 110.75 (8)	TP27.957x27.107x0.25	5.000	0.000	0.0	21.985	-13.847	1187.210	0.012
L9	110.75 - 105.75 (9)	TP28.807x27.957x0.25	5.000	0.000	0.0	22.660	-14.509	1223.620	0.012
L10	105.75 - 100.75 (10)	TP29.657x28.807x0.25	5.000	0.000	0.0	23.334	-15.190	1260.040	0.012
L11	100.75 - 97 (11)	TP30.294x29.657x0.25	3.750	0.000	0.0	23.840	-15.703	1287.350	0.012
L12	97 - 96.75 (12)	TP30.336x30.294x0.463	0.250	0.000	0.0	43.854	-15.762	2368.130	0.007
L13	96.75 - 91.75 (13)	TP31.186x30.336x0.45	5.000	0.000	0.0	43.901	-16.772	2370.630	0.007
L14	91.75 - 86.75 (14)	TP32.036x31.186x0.444	5.000	0.000	0.0	44.497	-17.804	2402.820	0.007
L15	86.75 - 80.75 (15)	TP33.056x32.036x0.444	6.000	0.000	0.0	44.916	-18.167	2425.450	0.007
L16	80.75 - 80 (16)	TP32.684x31.834x0.469	5.000	0.000	0.0	47.930	-20.006	2803.880	0.007
L17	80 - 75 (17)	TP33.533x32.684x0.469	5.000	0.000	0.0	49.194	-21.137	2877.860	0.007
L18	75 - 70 (18)	TP34.383x33.533x0.463	5.000	0.000	0.0	49.795	-22.289	2913.010	0.008
L19	70 - 65 (19)	TP35.233x34.383x0.456	5.000	0.000	0.0	50.362	-23.462	2946.180	0.008
L20	65 - 60 (20)	TP36.083x35.233x0.456	5.000	0.000	0.0	51.593	-24.655	3018.180	0.008
L21	60 - 55 (21)	TP36.933x36.083x0.444	5.000	0.000	0.0	51.394	-25.869	3006.550	0.009
L22	55 - 50 (22)	TP37.783x36.933x0.444	5.000	0.000	0.0	52.591	-27.103	3076.580	0.009
L23	50 - 40 (23)	TP39.483x37.783x0.438	10.000	0.000	0.0	53.039	-28.357	3102.800	0.009
L24	40 - 39 (24)	TP39.09x38.071x0.469	6.000	0.000	0.0	57.462	-30.986	3361.520	0.009
L25	39 - 34 (25)	TP39.94x39.09x0.463	5.000	0.000	0.0	57.953	-32.350	3390.230	0.010
L26	34 - 29 (26)	TP40.79x39.94x0.463	5.000	0.000	0.0	59.200	-33.734	3463.220	0.010
L27	29 - 24 (27)	TP41.64x40.79x0.456	5.000	0.000	0.0	59.640	-35.139	3488.950	0.010
L28	24 - 19 (28)	TP42.49x41.64x0.45	5.000	0.000	0.0	60.046	-36.566	3512.700	0.010
L29	19 - 14 (29)	TP43.34x42.49x0.45	5.000	0.000	0.0	61.260	-38.012	3583.710	0.011
L30	14 - 12.0833 (30)	TP43.666x43.34x0.45	1.917	0.000	0.0	61.725	-38.565	3610.940	0.011
L31	12.0833 - 11.8333 (31)	TP43.708x43.666x0.425	0.250	0.000	0.0	58.387	-38.654	3415.650	0.011
L32	11.8333 - 6.83333 (32)	TP44.558x43.708x0.425	5.000	0.000	0.0	59.534	-40.184	3482.730	0.012
L33	6.83333 - 4.91667 (33)	TP44.884x44.558x0.425	1.917	0.000	0.0	59.973	-40.772	3508.440	0.012
L34	4.91667 - 4.66667 (34)	TP44.927x44.884x0.45	0.250	0.000	0.0	63.526	-40.860	3716.280	0.011
L35	4.66667 - 0 (35)	TP45.72x44.927x0.444	4.667	0.000	0.0	63.770	-42.257	3730.540	0.011

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	148 - 143 (1)	TP22.85x22x0.188	24.584	407.930	0.060	0.000	407.930	0.000
L2	143 - 138 (2)	TP23.7x22.85x0.188	61.392	434.166	0.141	0.000	434.166	0.000
L3	138 - 133 (3)	TP24.55x23.7x0.188	104.940	460.809	0.228	0.000	460.809	0.000
L4	133 - 128 (4)	TP25.4x24.55x0.188	155.931	487.821	0.320	0.000	487.821	0.000
L5	128 - 123 (5)	TP26.25x25.4x0.188	217.410	515.161	0.422	0.000	515.161	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 $\frac{M_{uy}}{\phi M_{ny}}$
L6	123 - 117.25 (6)	TP27.227x26.25x0.188	245.508	527.560	0.465	0.000	527.560	0.000
L7	117.25 - 115.75 (7)	TP27.107x26.257x0.25	309.053	789.191	0.392	0.000	789.191	0.000
L8	115.75 - 110.75 (8)	TP27.957x27.107x0.25	374.024	833.138	0.449	0.000	833.138	0.000
L9	110.75 - 105.75 (9)	TP28.807x27.957x0.25	440.338	877.800	0.502	0.000	877.800	0.000
L10	105.75 - 100.75 (10)	TP29.657x28.807x0.25	507.973	923.142	0.550	0.000	923.142	0.000
L11	100.75 - 97 (11)	TP30.294x29.657x0.25	559.821	957.567	0.585	0.000	957.567	0.000
L12	97 - 96.75 (12)	TP30.336x30.294x0.463	563.322	1833.667	0.307	0.000	1833.667	0.000
L13	96.75 - 91.75 (13)	TP31.186x30.336x0.45	634.729	1890.167	0.336	0.000	1890.167	0.000
L14	91.75 - 86.75 (14)	TP32.036x31.186x0.444	708.739	1970.350	0.360	0.000	1970.350	0.000
L15	86.75 - 80.75 (15)	TP33.056x32.036x0.444	735.255	2007.883	0.366	0.000	2007.883	0.000
L16	80.75 - 80 (16)	TP32.684x31.834x0.469	812.954	2343.350	0.347	0.000	2343.350	0.000
L17	80 - 75 (17)	TP33.533x32.684x0.469	893.350	2469.542	0.362	0.000	2469.542	0.000
L18	75 - 70 (18)	TP34.383x33.533x0.463	976.258	2565.808	0.380	0.000	2565.808	0.000
L19	70 - 65 (19)	TP35.233x34.383x0.456	1061.642	2661.875	0.399	0.000	2661.875	0.000
L20	65 - 60 (20)	TP36.083x35.233x0.456	1149.467	2794.442	0.411	0.000	2794.442	0.000
L21	60 - 55 (21)	TP36.933x36.083x0.444	1239.675	2852.875	0.435	0.000	2852.875	0.000
L22	55 - 50 (22)	TP37.783x36.933x0.444	1332.225	2988.142	0.446	0.000	2988.142	0.000
L23	50 - 40 (23)	TP39.483x37.783x0.438	1427.025	3084.017	0.463	0.000	3084.017	0.000
L24	40 - 39 (24)	TP39.09x38.071x0.469	1543.992	3376.175	0.457	0.000	3376.175	0.000
L25	39 - 34 (25)	TP39.94x39.09x0.463	1643.975	3481.942	0.472	0.000	3481.942	0.000
L26	34 - 29 (26)	TP40.79x39.94x0.463	1745.942	3634.367	0.480	0.000	3634.367	0.000
L27	29 - 24 (27)	TP41.64x40.79x0.456	1849.833	3740.550	0.495	0.000	3740.550	0.000
L28	24 - 19 (28)	TP42.49x41.64x0.45	1955.625	3845.725	0.509	0.000	3845.725	0.000
L29	19 - 14 (29)	TP43.34x42.49x0.45	2063.300	4001.125	0.516	0.000	4001.125	0.000
L30	14 - 12.0833 (30)	TP43.666x43.34x0.45	2105.108	4055.083	0.519	0.000	4055.083	0.000
L31	12.0833 - 11.8333 (31)	TP43.708x43.666x0.425	2110.583	3787.917	0.557	0.000	3787.917	0.000
L32	11.8333 - 6.83333 (32)	TP44.558x43.708x0.425	2221.100	3918.783	0.567	0.000	3918.783	0.000
L33	6.83333 - 4.91667 (33)	TP44.884x44.558x0.425	2263.983	3969.317	0.570	0.000	3969.317	0.000
L34	4.91667 - 4.66667 (34)	TP44.927x44.884x0.45	2269.600	4266.133	0.532	0.000	4266.133	0.000
L35	4.66667 - 0 (35)	TP45.72x44.927x0.444	2375.300	4325.592	0.549	0.000	4325.592	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	148 - 143 (1)	TP22.85x22x0.188	4.394	218.489	0.020	0.042	433.627	0.000
L2	143 - 138 (2)	TP23.7x22.85x0.188	8.572	226.683	0.038	0.042	466.762	0.000
L3	138 - 133 (3)	TP24.55x23.7x0.188	8.850	234.877	0.038	0.042	501.116	0.000
L4	133 - 128 (4)	TP25.4x24.55x0.188	12.165	243.071	0.050	1.206	536.691	0.002
L5	128 - 123 (5)	TP26.25x25.4x0.188	12.434	251.265	0.049	1.206	573.485	0.002

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 $\frac{T_u}{\phi T_n}$
L6	123 - 117.25 (6)	TP27.227x26.25x0.188	12.553	254.953	0.049	1.206	590.440	0.002
L7	117.25 - 115.75 (7)	TP27.107x26.257x0.25	12.867	345.238	0.037	1.206	811.997	0.001
L8	115.75 - 110.75 (8)	TP27.957x27.107x0.25	13.136	356.163	0.037	1.205	864.200	0.001
L9	110.75 - 105.75 (9)	TP28.807x27.957x0.25	13.403	367.087	0.037	1.204	918.033	0.001
L10	105.75 - 100.75 (10)	TP29.657x28.807x0.25	13.665	378.012	0.036	1.204	973.483	0.001
L11	100.75 - 97 (11)	TP30.294x29.657x0.25	14.005	386.206	0.036	1.203	1016.142	0.001
L12	97 - 96.75 (12)	TP30.336x30.294x0.463	14.023	710.438	0.020	1.203	1858.650	0.001
L13	96.75 - 91.75 (13)	TP31.186x30.336x0.45	14.548	711.190	0.020	1.203	1914.333	0.001
L14	91.75 - 86.75 (14)	TP32.036x31.186x0.444	15.068	720.847	0.021	1.203	1994.367	0.001
L15	86.75 - 80.75 (15)	TP33.056x32.036x0.444	15.252	727.634	0.021	1.203	2032.100	0.001
L16	80.75 - 80 (16)	TP32.684x31.834x0.469	15.832	841.164	0.019	1.202	2373.100	0.001
L17	80 - 75 (17)	TP33.533x32.684x0.469	16.340	863.357	0.019	1.202	2499.975	0.000
L18	75 - 70 (18)	TP34.383x33.533x0.463	16.839	873.903	0.019	1.202	2596.033	0.000
L19	70 - 65 (19)	TP35.233x34.383x0.456	17.331	883.853	0.020	1.201	2691.867	0.000
L20	65 - 60 (20)	TP36.083x35.233x0.456	17.816	905.454	0.020	1.201	2825.050	0.000
L21	60 - 55 (21)	TP36.933x36.083x0.444	18.288	901.965	0.020	1.201	2882.283	0.000
L22	55 - 50 (22)	TP37.783x36.933x0.444	18.750	922.974	0.020	1.200	3018.125	0.000
L23	50 - 40 (23)	TP39.483x37.783x0.438	19.190	930.840	0.021	1.200	3113.642	0.000
L24	40 - 39 (24)	TP39.09x38.071x0.469	19.803	1008.460	0.020	1.200	3410.900	0.000
L25	39 - 34 (25)	TP39.94x39.09x0.463	20.212	1017.070	0.020	1.199	3516.292	0.000
L26	34 - 29 (26)	TP40.79x39.94x0.463	20.601	1038.970	0.020	1.199	3669.325	0.000
L27	29 - 24 (27)	TP41.64x40.79x0.456	20.981	1046.690	0.020	1.199	3775.067	0.000
L28	24 - 19 (28)	TP42.49x41.64x0.45	21.360	1053.810	0.020	1.199	3879.775	0.000
L29	19 - 14 (29)	TP43.34x42.49x0.45	21.739	1075.110	0.020	1.199	4038.242	0.000
L30	14 - 12.0833 (30)	TP43.666x43.34x0.45	21.919	1083.280	0.020	1.157	4099.825	0.000
L31	12.0833 - 11.8333 (31)	TP43.708x43.666x0.425	21.916	1024.700	0.021	1.157	3884.158	0.000
L32	11.8333 - 6.83333 (32)	TP44.558x43.708x0.425	22.312	1044.820	0.021	1.157	4038.200	0.000
L33	6.83333 - 4.91667 (33)	TP44.884x44.558x0.425	22.477	1052.530	0.021	1.157	4098.050	0.000
L34	4.91667 - 4.66667 (34)	TP44.927x44.884x0.45	22.472	1114.880	0.020	1.157	4342.525	0.000
L35	4.66667 - 0 (35)	TP45.72x44.927x0.444	22.852	1119.160	0.020	1.157	4437.550	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	148 - 143 (1)	0.007	0.060	0.000	0.020	0.000	0.068 ✔	1.050	4.8.2 ✔
L2	143 - 138 (2)	0.011	0.141	0.000	0.038	0.000	0.154 ✔	1.050	4.8.2 ✔

Section No.	Elevation ft	Ratio $P_u/\phi P_n$	Ratio $M_{ux}/\phi M_{nx}$	Ratio $M_{uy}/\phi M_{ny}$	Ratio $V_u/\phi V_n$	Ratio $T_u/\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L3	138 - 133 (3)	0.011	0.228	0.000	0.038	0.000	0.240 ✔	1.050	4.8.2 ✔
L4	133 - 128 (4)	0.014	0.320	0.000	0.050	0.002	0.337 ✔	1.050	4.8.2 ✔
L5	128 - 123 (5)	0.014	0.422	0.000	0.049	0.002	0.439 ✔	1.050	4.8.2 ✔
L6	123 - 117.25 (6)	0.015	0.465	0.000	0.049	0.002	0.483 ✔	1.050	4.8.2 ✔
L7	117.25 - 115.75 (7)	0.011	0.392	0.000	0.037	0.001	0.405 ✔	1.050	4.8.2 ✔
L8	115.75 - 110.75 (8)	0.012	0.449	0.000	0.037	0.001	0.462 ✔	1.050	4.8.2 ✔
L9	110.75 - 105.75 (9)	0.012	0.502	0.000	0.037	0.001	0.515 ✔	1.050	4.8.2 ✔
L10	105.75 - 100.75 (10)	0.012	0.550	0.000	0.036	0.001	0.564 ✔	1.050	4.8.2 ✔
L11	100.75 - 97 (11)	0.012	0.585	0.000	0.036	0.001	0.598 ✔	1.050	4.8.2 ✔
L12	97 - 96.75 (12)	0.007	0.307	0.000	0.020	0.001	0.314 ✔	1.050	4.8.2 ✔
L13	96.75 - 91.75 (13)	0.007	0.336	0.000	0.020	0.001	0.343 ✔	1.050	4.8.2 ✔
L14	91.75 - 86.75 (14)	0.007	0.360	0.000	0.021	0.001	0.368 ✔	1.050	4.8.2 ✔
L15	86.75 - 80.75 (15)	0.007	0.366	0.000	0.021	0.001	0.374 ✔	1.050	4.8.2 ✔
L16	80.75 - 80 (16)	0.007	0.347	0.000	0.019	0.001	0.354 ✔	1.050	4.8.2 ✔
L17	80 - 75 (17)	0.007	0.362	0.000	0.019	0.000	0.369 ✔	1.050	4.8.2 ✔
L18	75 - 70 (18)	0.008	0.380	0.000	0.019	0.000	0.389 ✔	1.050	4.8.2 ✔
L19	70 - 65 (19)	0.008	0.399	0.000	0.020	0.000	0.407 ✔	1.050	4.8.2 ✔
L20	65 - 60 (20)	0.008	0.411	0.000	0.020	0.000	0.420 ✔	1.050	4.8.2 ✔
L21	60 - 55 (21)	0.009	0.435	0.000	0.020	0.000	0.444 ✔	1.050	4.8.2 ✔
L22	55 - 50 (22)	0.009	0.446	0.000	0.020	0.000	0.455 ✔	1.050	4.8.2 ✔
L23	50 - 40 (23)	0.009	0.463	0.000	0.021	0.000	0.472 ✔	1.050	4.8.2 ✔
L24	40 - 39 (24)	0.009	0.457	0.000	0.020	0.000	0.467 ✔	1.050	4.8.2 ✔
L25	39 - 34 (25)	0.010	0.472	0.000	0.020	0.000	0.482 ✔	1.050	4.8.2 ✔
L26	34 - 29 (26)	0.010	0.480	0.000	0.020	0.000	0.491 ✔	1.050	4.8.2 ✔
L27	29 - 24 (27)	0.010	0.495	0.000	0.020	0.000	0.505 ✔	1.050	4.8.2 ✔
L28	24 - 19 (28)	0.010	0.509	0.000	0.020	0.000	0.519 ✔	1.050	4.8.2 ✔

Section No.	Elevation ft	Ratio $P_u/\phi P_n$	Ratio $M_{ux}/\phi M_{nx}$	Ratio $M_{uy}/\phi M_{ny}$	Ratio $V_u/\phi V_n$	Ratio $T_u/\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L29	19 - 14 (29)	0.011	0.516	0.000	0.020	0.000	0.527 ✔	1.050	4.8.2 ✔
L30	14 - 12.0833 (30)	0.011	0.519	0.000	0.020	0.000	0.530 ✔	1.050	4.8.2 ✔
L31	12.0833 - 11.8333 (31)	0.011	0.557	0.000	0.021	0.000	0.569 ✔	1.050	4.8.2 ✔
L32	11.8333 - 6.83333 (32)	0.012	0.567	0.000	0.021	0.000	0.579 ✔	1.050	4.8.2 ✔
L33	6.83333 - 4.91667 (33)	0.012	0.570	0.000	0.021	0.000	0.582 ✔	1.050	4.8.2 ✔
L34	4.91667 - 4.66667 (34)	0.011	0.532	0.000	0.020	0.000	0.543 ✔	1.050	4.8.2 ✔
L35	4.66667 - 0 (35)	0.011	0.549	0.000	0.020	0.000	0.561 ✔	1.050	4.8.2 ✔

Section Capacity Table

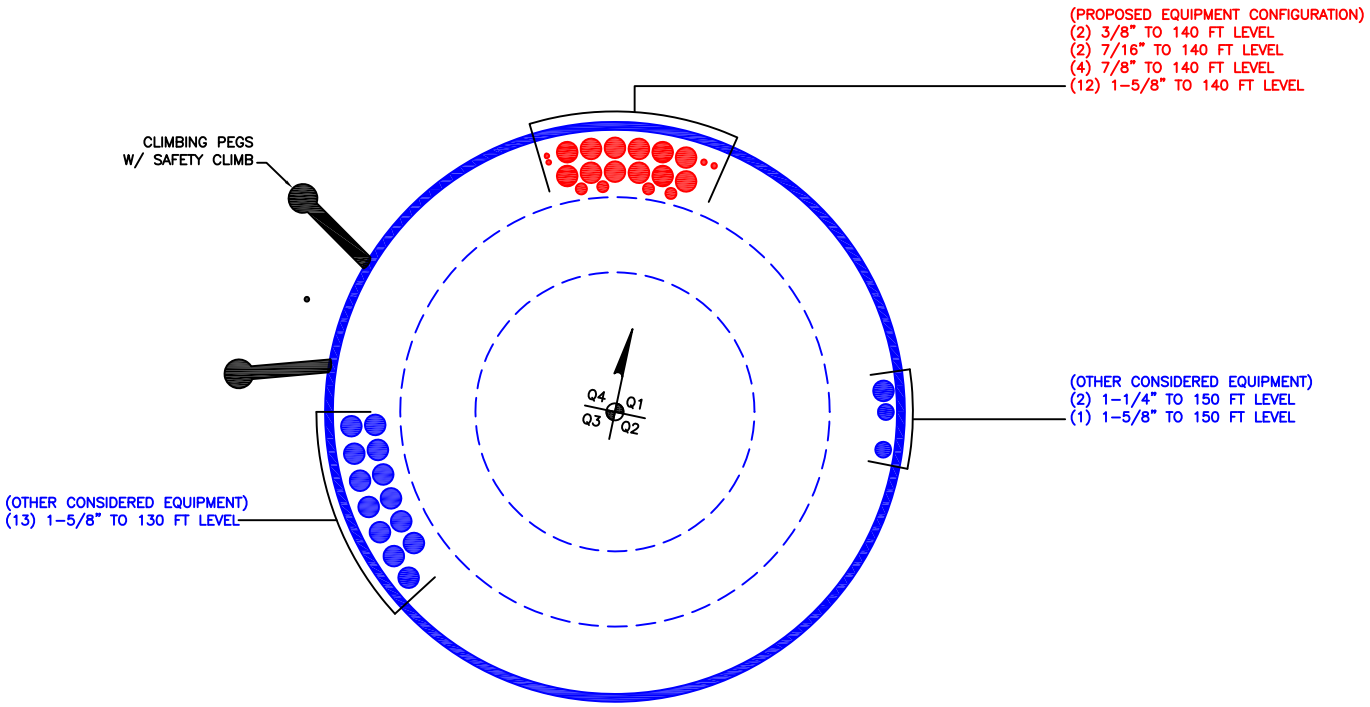
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	148 - 143	Pole	TP22.85x22x0.188	1	-5.124	764.712	**	**
L2	143 - 138	Pole	TP23.7x22.85x0.188	2	-8.347	793.390	**	**
L3	138 - 133	Pole	TP24.55x23.7x0.188	3	-8.734	822.070	**	**
L4	133 - 128	Pole	TP25.4x24.55x0.188	4	-11.643	850.749	**	**
L5	128 - 123	Pole	TP26.25x25.4x0.188	5	-12.142	879.429	**	**
L6	123 - 117.25	Pole	TP27.227x26.25x0.188	6	-12.373	892.334	**	**
L7	117.25 - 115.75	Pole	TP27.107x26.257x0.25	7	-13.204	1208.329	**	**
L8	115.75 - 110.75	Pole	TP27.957x27.107x0.25	8	-13.847	1246.570	**	**
L9	110.75 - 105.75	Pole	TP28.807x27.957x0.25	9	-14.509	1284.801	**	**
L10	105.75 - 100.75	Pole	TP29.657x28.807x0.25	10	-15.190	1323.042	**	**
L11	100.75 - 97	Pole	TP30.294x29.657x0.25	11	-15.703	1351.717	**	**
L12	97 - 96.75	Pole	TP30.336x30.294x0.463	12	-15.762	2486.536	**	**
L13	96.75 - 91.75	Pole	TP31.186x30.336x0.45	13	-16.772	2489.161	**	**
L14	91.75 - 86.75	Pole	TP32.036x31.186x0.444	14	-17.804	2522.961	**	**
L15	86.75 - 80.75	Pole	TP33.056x32.036x0.444	15	-18.167	2546.722	**	**
L16	80.75 - 80	Pole	TP32.684x31.834x0.469	16	-20.006	2944.074	**	**
L17	80 - 75	Pole	TP33.533x32.684x0.469	17	-21.137	3021.753	**	**
L18	75 - 70	Pole	TP34.383x33.533x0.463	18	-22.289	3058.660	**	**
L19	70 - 65	Pole	TP35.233x34.383x0.456	19	-23.462	3093.489	**	**
L20	65 - 60	Pole	TP36.083x35.233x0.456	20	-24.655	3169.089	**	**
L21	60 - 55	Pole	TP36.933x36.083x0.444	21	-25.869	3156.877	**	**
L22	55 - 50	Pole	TP37.783x36.933x0.444	22	-27.103	3230.409	**	**
L23	50 - 40	Pole	TP39.483x37.783x0.438	23	-28.357	3257.940	**	**
L24	40 - 39	Pole	TP39.09x38.071x0.469	24	-30.986	3529.596	**	**
L25	39 - 34	Pole	TP39.94x39.09x0.463	25	-32.350	3559.741	**	**
L26	34 - 29	Pole	TP40.79x39.94x0.463	26	-33.734	3636.381	**	**
L27	29 - 24	Pole	TP41.64x40.79x0.456	27	-35.139	3663.397	**	**
L28	24 - 19	Pole	TP42.49x41.64x0.45	28	-36.566	3688.335	**	**
L29	19 - 14	Pole	TP43.34x42.49x0.45	29	-38.012	3762.895	**	**
L30	14 - 12.0833	Pole	TP43.666x43.34x0.45	30	-38.565	3791.487	**	**
L31	12.0833 - 11.8333	Pole	TP43.708x43.666x0.425	31	-38.654	3586.432	**	**
L32	11.8333 - 6.83333	Pole	TP44.558x43.708x0.425	32	-40.184	3656.866	**	**
L33	6.83333 -	Pole	TP44.884x44.558x0.425	33	-40.772	3683.862	**	**

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L34	4.91667 4.91667 - 4.66667	Pole	TP44.927x44.884x0.45	34	-40.860	3902.094	**	**
L35	4.66667 - 0	Pole	TP45.72x44.927x0.444	35	-42.257	3917.067	**	**
						Summary		
						Pole (L11)	**	**
						RATING =	**	**

**Check Additional Calculations

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876377

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 876377

Work Order: 1784550

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	148	30.75	3.5	18	22	27.227	0.1875	Auto	A607-60
2	120.75	40	4.25	18	26.26	33.056	0.25	Auto	A607-60
3	85	45	5	18	31.83	39.483	0.28125	Auto	A607-65
4	45	45	0	18	38.07	45.72	0.3125	Auto	A607-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	0	97	channel	MP3-05 (1.1875in) - BW	2				E1												E1		
2	4.916	12.083	channel	MP3-06 (1.1875in)	1									E1									
3	0	4.916	channel	05 (1.1875in) - BW (0' -	1										E1								
4	12.083	97	channel	MP3-05 (1.1875in)	1										E1								
5																							
6																							
7																							
8																							
9																							
10																							

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Length (in)	Top Termination Length (in)	L_u (in)	Net Area (in^2)	Bolt Hole Size (in)	Reinforcement Material
1	5.33	2.09	5.65	0.79	n/a	29.000	18.000	5.025	1.1875	A572-65
2	6.89	2.61	8.47	0.93	41.000	41.000	24.000	7.670	1.1875	A572-65
3	5.33	2.09	5.65	0.79	n/a	29.000	18.000	5.025	1.1875	A572-65
4	5.33	2.09	5.65	0.79	29.000	29.000	18.000	5.025	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	148 - 143	5		18	22.000	22.850	0.1875	A607-60	1.000
2	143 - 138	5		18	22.850	23.700	0.1875	A607-60	1.000
3	138 - 133	5		18	23.700	24.550	0.1875	A607-60	1.000
4	133 - 128	5		18	24.550	25.400	0.1875	A607-60	1.000
5	128 - 123	5		18	25.400	26.250	0.1875	A607-60	1.000
6	123 - 120.75	5.75	3.5	18	26.250	27.227	0.1875	A607-60	1.000
7	120.75 - 115.75	5		18	26.257	27.107	0.25	A607-60	1.000
8	115.75 - 110.75	5		18	27.107	27.957	0.25	A607-60	1.000
9	110.75 - 105.75	5		18	27.957	28.807	0.25	A607-60	1.000
10	105.75 - 100.75	5		18	28.807	29.657	0.25	A607-60	1.000
11	100.75 - 97	3.75		18	29.657	30.294	0.25	A607-60	1.000
12	97 - 96.75	0.25		18	30.294	30.336	0.4625	A607-60	0.931
13	96.75 - 91.75	5		18	30.336	31.186	0.45	A607-60	0.945
14	91.75 - 86.75	5		18	31.186	32.036	0.44375	A607-60	0.948
15	86.75 - 85	6	4.25	18	32.036	33.056	0.44375	A607-60	0.944
16	85 - 80	5		18	31.834	32.684	0.46875	A607-65	0.957
17	80 - 75	5		18	32.684	33.533	0.46875	A607-65	0.948
18	75 - 70	5		18	33.533	34.383	0.4625	A607-65	0.952
19	70 - 65	5		18	34.383	35.233	0.45625	A607-65	0.956
20	65 - 60	5		18	35.233	36.083	0.45625	A607-65	0.948
21	60 - 55	5		18	36.083	36.933	0.44375	A607-65	0.966
22	55 - 50	5		18	36.933	37.783	0.44375	A607-65	0.959
23	50 - 45	10	5	18	37.783	39.483	0.4375	A607-65	0.965
24	45 - 39	6		18	38.071	39.090	0.46875	A607-65	0.964
25	39 - 34	5		18	39.090	39.940	0.4625	A607-65	0.971
26	34 - 29	5		18	39.940	40.790	0.4625	A607-65	0.965
27	29 - 24	5		18	40.790	41.640	0.45625	A607-65	0.972
28	24 - 19	5		18	41.640	42.490	0.45	A607-65	0.979
29	19 - 14	5		18	42.490	43.340	0.45	A607-65	0.973
30	14 - 12.08333	1.916666667		18	43.340	43.666	0.45	A607-65	0.971
31	12.08333 - 11.83333	0.25		18	43.666	43.708	0.425	A607-65	1.076
32	11.83333 - 6.833333	5		18	43.708	44.558	0.425	A607-65	1.069
33	6.833333 - 4.916667	1.916666667		18	44.558	44.884	0.425	A607-65	1.067
34	4.916667 - 4.666667	0.25		18	44.884	44.927	0.45	A607-65	0.963
35	4.666667 - 0	4.666666667		18	44.927	45.720	0.44375	A607-65	0.972

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	148 - 143	5.12	24.58	4.39
2	143 - 138	8.35	61.39	8.57
3	138 - 133	8.73	104.94	8.85
4	133 - 128	11.64	155.93	12.17
5	128 - 123	12.14	217.41	12.43
6	123 - 120.75	12.37	245.51	12.55
7	120.75 - 115.75	13.20	309.05	12.87
8	115.75 - 110.75	13.85	374.02	13.14
9	110.75 - 105.75	14.51	440.34	13.40
10	105.75 - 100.75	15.19	507.97	13.67
11	100.75 - 97	15.70	559.82	14.00
12	97 - 96.75	15.76	563.32	14.02
13	96.75 - 91.75	16.77	634.73	14.55
14	91.75 - 86.75	17.80	708.74	15.07
15	86.75 - 85	18.17	735.25	15.25
16	85 - 80	20.01	812.95	15.83
17	80 - 75	21.14	893.35	16.34
18	75 - 70	22.29	976.26	16.84
19	70 - 65	23.46	1061.64	17.33
20	65 - 60	24.66	1149.47	17.82
21	60 - 55	25.87	1239.68	18.29
22	55 - 50	27.10	1332.22	18.75
23	50 - 45	28.36	1427.02	19.19
24	45 - 39	30.99	1543.99	19.80
25	39 - 34	32.35	1643.97	20.21
26	34 - 29	33.73	1745.94	20.60
27	29 - 24	35.14	1849.83	20.98
28	24 - 19	36.57	1955.62	21.36
29	19 - 14	38.01	2063.30	21.74
30	14 - 12.08333	38.56	2105.11	21.92
31	12.08333 - 11.83333	38.65	2110.58	21.92
32	11.83333 - 6.833333	40.18	2221.10	22.31
33	6.833333 - 4.916667	40.77	2263.98	22.48
34	4.916667 - 4.666667	40.86	2269.60	22.47
35	4.666667 - 0	42.26	2375.30	22.85

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
148 - 143	Pole	TP22.85x22x0.1875	Pole	6.3%	Pass
143 - 138	Pole	TP23.7x22.85x0.1875	Pole	14.4%	Pass
138 - 133	Pole	TP24.55x23.7x0.1875	Pole	22.6%	Pass
133 - 128	Pole	TP25.4x24.55x0.1875	Pole	31.7%	Pass
128 - 123	Pole	TP26.25x25.4x0.1875	Pole	41.5%	Pass
123 - 120.75	Pole	TP27.227x26.25x0.1875	Pole	45.6%	Pass
120.75 - 115.75	Pole	TP27.107x26.257x0.25	Pole	38.2%	Pass
115.75 - 110.75	Pole	TP27.957x27.107x0.25	Pole	43.7%	Pass
110.75 - 105.75	Pole	TP28.807x27.957x0.25	Pole	48.7%	Pass
105.75 - 100.75	Pole	TP29.657x28.807x0.25	Pole	53.4%	Pass
100.75 - 97	Pole	TP30.294x29.657x0.25	Pole	56.7%	Pass
97 - 96.75	Pole + Reinf.	TP30.336x30.294x0.4625	Reinf. 1 Tension Rupture	41.1%	Pass
96.75 - 91.75	Pole + Reinf.	TP31.186x30.336x0.45	Reinf. 1 Tension Rupture	44.3%	Pass
91.75 - 86.75	Pole + Reinf.	TP32.036x31.186x0.4438	Reinf. 1 Tension Rupture	47.4%	Pass
86.75 - 85	Pole + Reinf.	TP33.056x32.036x0.4438	Reinf. 1 Tension Rupture	48.5%	Pass
85 - 80	Pole + Reinf.	TP32.684x31.834x0.4688	Reinf. 1 Tension Rupture	49.2%	Pass
80 - 75	Pole + Reinf.	TP33.533x32.684x0.4688	Reinf. 1 Tension Rupture	51.8%	Pass
75 - 70	Pole + Reinf.	TP34.383x33.533x0.4625	Reinf. 1 Tension Rupture	54.3%	Pass
70 - 65	Pole + Reinf.	TP35.233x34.383x0.4563	Reinf. 4 Tension Rupture	56.8%	Pass
65 - 60	Pole + Reinf.	TP36.083x35.233x0.4563	Reinf. 1 Tension Rupture	59.1%	Pass
60 - 55	Pole + Reinf.	TP36.933x36.083x0.4438	Reinf. 1 Tension Rupture	61.3%	Pass
55 - 50	Pole + Reinf.	TP37.783x36.933x0.4438	Reinf. 1 Tension Rupture	63.4%	Pass
50 - 45	Pole + Reinf.	TP39.483x37.783x0.4375	Reinf. 1 Tension Rupture	65.5%	Pass
45 - 39	Pole + Reinf.	TP39.09x38.071x0.4688	Reinf. 1 Tension Rupture	64.9%	Pass
39 - 34	Pole + Reinf.	TP39.94x39.09x0.4625	Reinf. 1 Tension Rupture	66.6%	Pass
34 - 29	Pole + Reinf.	TP40.79x39.94x0.4625	Reinf. 1 Tension Rupture	68.2%	Pass
29 - 24	Pole + Reinf.	TP41.64x40.79x0.4563	Reinf. 1 Tension Rupture	69.8%	Pass
24 - 19	Pole + Reinf.	TP42.49x41.64x0.45	Reinf. 1 Tension Rupture	71.2%	Pass
19 - 14	Pole + Reinf.	TP43.34x42.49x0.45	Reinf. 1 Tension Rupture	72.7%	Pass
14 - 12.08	Pole + Reinf.	TP43.666x43.34x0.45	Reinf. 1 Tension Rupture	73.2%	Pass
12.08 - 11.83	Pole + Reinf.	TP43.708x43.666x0.425	Reinf. 1 Tension Rupture	75.1%	Pass
11.83 - 6.83	Pole + Reinf.	TP44.558x43.708x0.425	Reinf. 1 Tension Rupture	76.4%	Pass
6.83 - 4.92	Pole + Reinf.	TP44.884x44.558x0.425	Reinf. 1 Tension Rupture	76.9%	Pass
4.92 - 4.67	Pole + Reinf.	TP44.927x44.884x0.45	Reinf. 1 Tension Rupture	75.1%	Pass
4.67 - 0	Pole + Reinf.	TP45.72x44.927x0.4438	Reinf. 1 Tension Rupture	76.3%	Pass
				Summary	
			Pole	61.9%	Pass
			Reinforcement	76.9%	Pass
			Overall	76.9%	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
148 - 143	875	n/a	875	13.49	n/a	13.49	6.3%				
143 - 138	977	n/a	977	13.99	n/a	13.99	14.4%				
138 - 133	1087	n/a	1087	14.50	n/a	14.50	22.6%				
133 - 128	1205	n/a	1205	15.00	n/a	15.00	31.7%				
128 - 123	1331	n/a	1331	15.51	n/a	15.51	41.5%				
123 - 120.75	1390	n/a	1390	15.74	n/a	15.74	45.6%				
120.75 - 115.75	1941	n/a	1941	21.31	n/a	21.31	38.2%				
115.75 - 110.75	2132	n/a	2132	21.98	n/a	21.98	43.7%				
110.75 - 105.75	2334	n/a	2334	22.66	n/a	22.66	48.7%				
105.75 - 100.75	2548	n/a	2548	23.33	n/a	23.33	53.4%				
100.75 - 97	2718	n/a	2718	23.84	n/a	23.84	56.7%				
97 - 96.75	2729	2169	4898	23.87	16.95	40.82	31.3%	41.1%			41.1%
96.75 - 91.75	2967	2286	5253	24.55	16.95	41.50	34.1%	44.3%			44.3%
91.75 - 86.75	3218	2405	5623	25.22	16.95	42.17	36.8%	47.4%			47.4%
86.75 - 85	3310	2448	5757	25.46	16.95	42.41	37.8%	48.5%			48.5%
85 - 80	3835	2498	6334	28.92	16.95	45.87	34.7%	49.2%			49.2%
80 - 75	4145	2623	6768	29.68	16.95	46.63	36.8%	51.8%			51.8%
75 - 70	4471	2751	7222	30.44	16.95	47.39	39.0%	54.3%			54.3%
70 - 65	4814	2882	7696	31.20	16.95	48.15	41.1%	56.8%			56.8%
65 - 60	5174	3016	8190	31.96	16.95	48.91	43.2%	59.1%			59.1%
60 - 55	5551	3153	8704	32.72	16.95	49.67	45.2%	61.3%			61.3%
55 - 50	5946	3294	9240	33.48	16.95	50.43	47.2%	63.4%			63.4%
50 - 45	6360	3437	9797	34.23	16.95	51.18	49.2%	65.5%			65.5%
45 - 39	7305	3515	10820	38.46	16.95	55.41	47.1%	64.9%			64.9%
39 - 34	7795	3663	11459	39.30	16.95	56.25	48.8%	66.6%			66.6%
34 - 29	8308	3814	12122	40.15	16.95	57.10	50.4%	68.2%			68.2%
29 - 24	8842	3969	12811	40.99	16.95	57.94	52.0%	69.8%			69.8%
24 - 19	9399	4126	13525	41.83	16.95	58.78	53.5%	71.2%			71.2%
19 - 14	9979	4286	14265	42.68	16.95	59.63	55.0%	72.7%			72.7%
14 - 12.08	10207	4348	14556	43.00	16.95	59.95	55.6%	73.2%			73.2%
12.08 - 11.83	10243	3693	13936	43.04	19.77	62.81	59.8%	75.1%	61.9%		
11.83 - 6.83	10857	3832	14689	43.88	19.77	63.65	61.4%	76.4%	63.1%		
6.83 - 4.92	11098	3886	14984	44.21	19.77	63.98	61.9%	76.9%	63.6%		
4.92 - 4.67	11124	4593	15717	44.25	16.95	61.20	57.8%	75.1%		75.1%	
4.67 - 0	11728	4751	16479	45.04	16.95	61.99	59.1%	76.3%		76.3%	

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

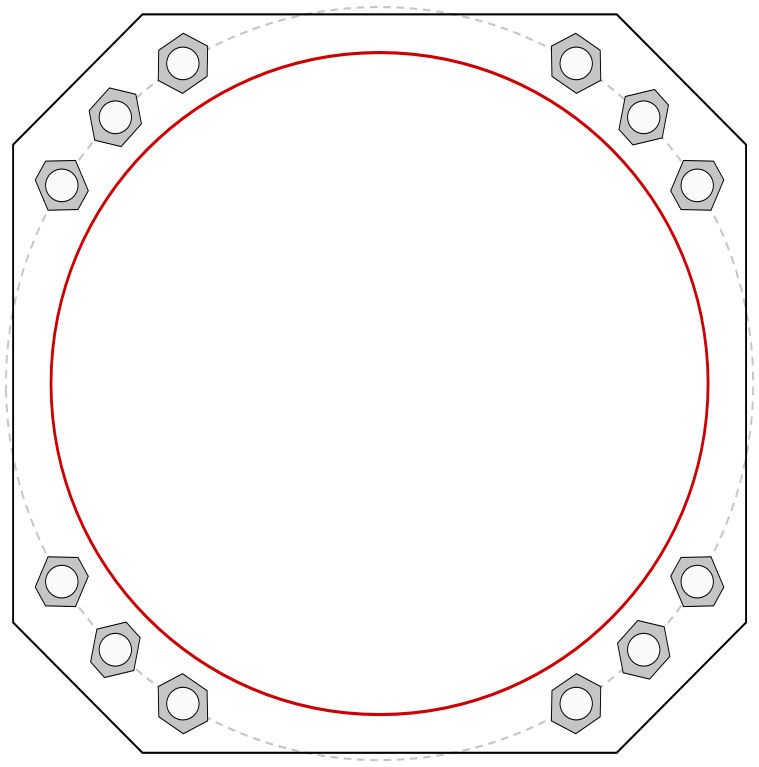
Monopole Base Plate Connection

Site Info	
BU #	876377
Site Name	on 2 / Fredsall Propert
Order #	492777 Rev. 0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	0

Applied Loads	
Moment (kip-ft)	2375.30
Axial Force (kips)	42.26
Shear Force (kips)	22.85

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

(12) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 52" BC

Anchor Spacing: 6 in

Base Plate Data

51" OD x 2.75" Plate (A572-55; Fy=55 ksi, Fu=70 ksi)

Stiffener Data

N/A

Pole Data

45.72" x 0.3125" 18-sided pole (A607-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

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

Pu_c = 186.1	ϕPn_c = 243.75	**Stress Rating**
Vu = 1.9	ϕVn = 73.13	**72.8%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	29.48	(Flexural)
Allowable Stress (ksi):	49.5	
Stress Rating:	**56.7%**	**Pass**

Drilled Pier Foundation

BU # :	876377
Site Name:	Horton 2 / Fredsall Pro
Order Number:	492777 Rev. 0

TIA-222 Revison:	H
Tower Type:	Monopole

Applied Loads	Comp.	Uplift
Moment (kip-ft)	2375	
Axial Force (kips)	42	
Shear Force (kips)	23	

Material Properties		
Concrete Strength, f'c:	3	ksi
Rebar Strength, Fy:	60	ksi

Pier Design Data		
Depth	18.5	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
From 0.5' above grade to 5' below grade		
Pier Diameter	10	ft
Rebar Quantity	16	
Rebar Size	11	
Clear Cover to Ties	27	in
Tie Size	5	
Pier Section 2		
From 5' below grade to 18.5' below grade		
Pier Diameter	6	ft
Rebar Quantity	16	
Rebar Size	11	
Clear Cover to Ties	3	in
Tie Size	5	

Analysis Results		
Soil Lateral Capacity	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	5.17	-
Soil Safety Factor	1.87	-
Max Moment (kip-ft)	2518.74	-
Rating*	*67.6%*	-
Soil Vertical Capacity	*Compression*	*Uplift*
Skin Friction (kips)	302.11	-
End Bearing (kips)	254.47	-
Weight of Concrete (kips)	130.49	-
Total Capacity (kips)	556.58	-
Axial (kips)	172.49	-
Rating*	*29.5%*	-
Reinforced Concrete Capacity	*Compression*	*Uplift*
Critical Depth (ft from TOC)	5.50	-
Critical Moment (kip-ft)	2517.53	-
Critical Moment Capacity	3457.47	-
Rating*	*69.3%*	-

Soil Interaction Rating*	**67.6%**
Structural Foundation Rating*	**69.3%**

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

*Rating per TIA-222-H Section 15.5

Soil Profile			
Groundwater Depth	11	ft	# of Layers: 4

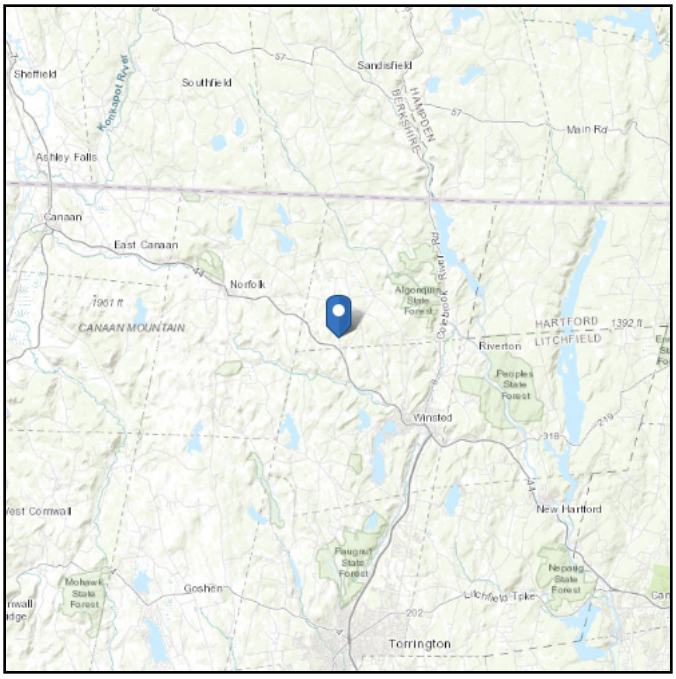
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	3.33	3.33	100	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	3.33	11	7.67	140	150	0	38	0.991	0.991				33	Cohesionless
3	11	14	3	77.6	87.6	0	38	1.558	1.558				33	Cohesionless
4	14	18.5	4.5	97.6	87.6	0	40	1.777	1.777			12	50	Cohesionless

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 1223.1 ft (NAVD 88)
Latitude: 41.966361
Longitude: -73.121694



Wind

Results:

Wind Speed:	115 Vmph
10-year MRI	76 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	96 Vmph
Data Source:	ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, incorporating errata of March 12, 2014
Date Accessed:	Wed Sep 04 2019

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2.

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

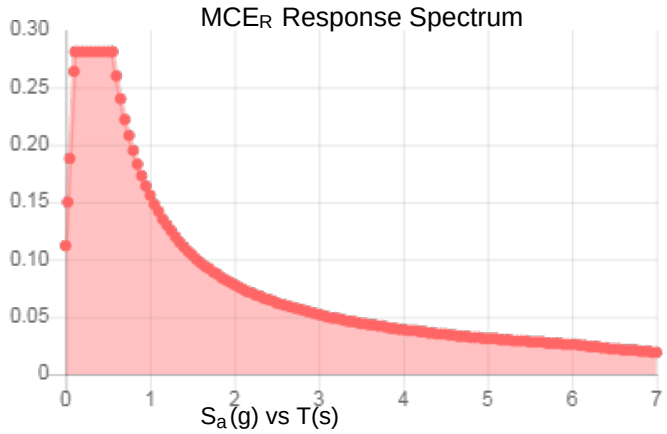
Seismic

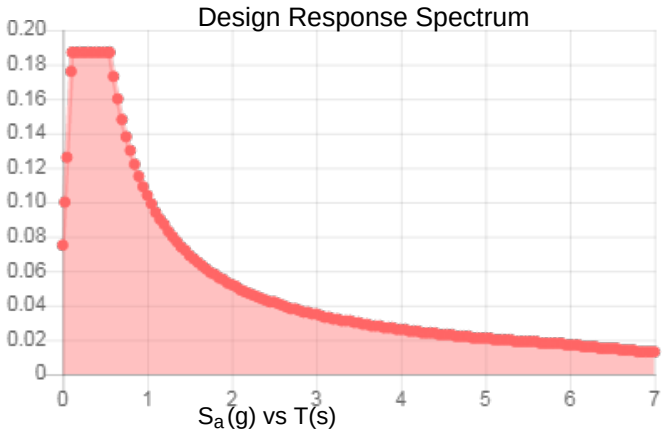
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.176	S_{DS} :	0.187
S_1 :	0.065	S_{D1} :	0.104
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.086
S_{MS} :	0.281	PGA_M :	0.138
S_{M1} :	0.156	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Wed Sep 04 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:

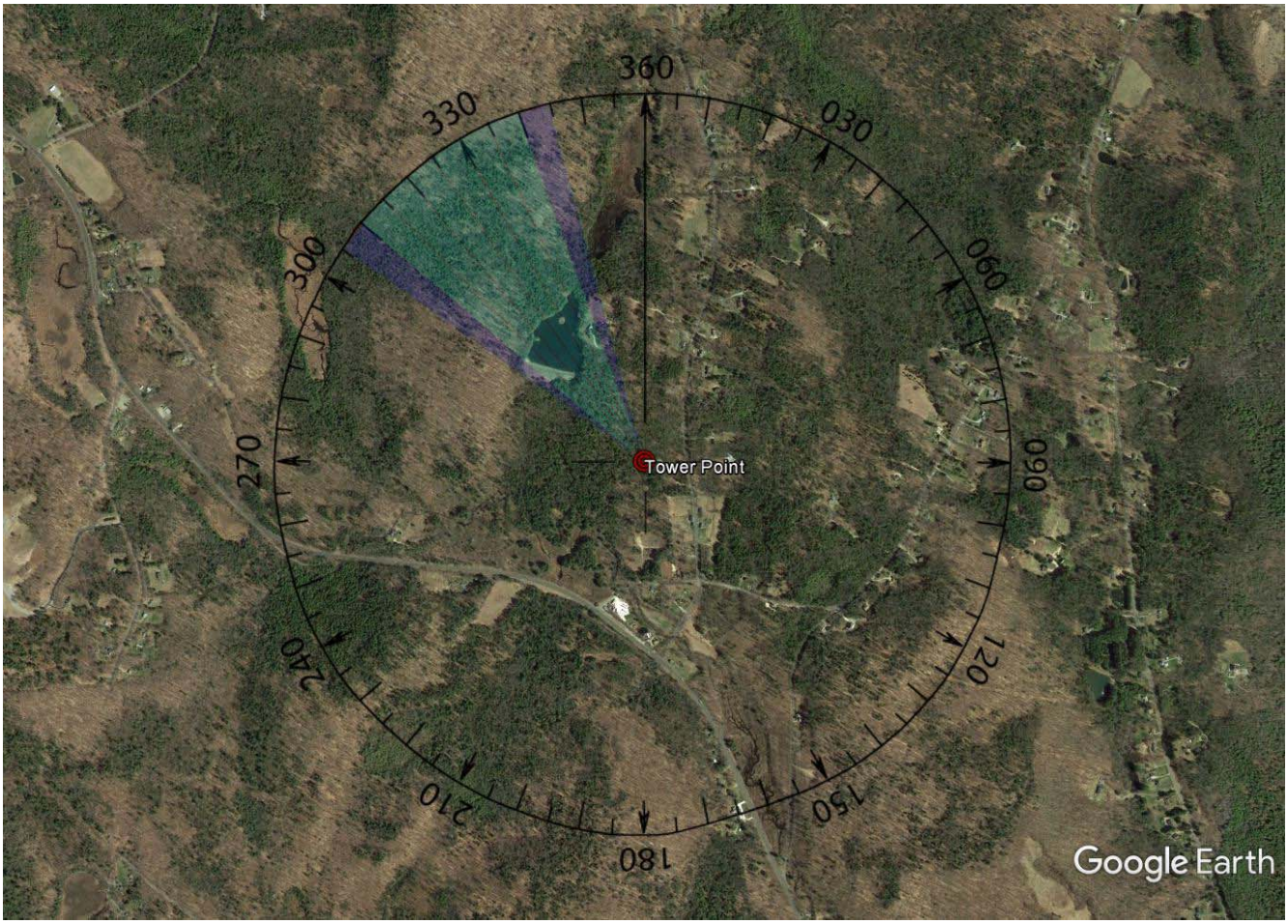
Ice Thickness:	0.75 in.
Concurrent Temperature:	5 F
Gust Speed:	40 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Wed Sep 04 2019

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.

Exposure Category Determination
BU#876377

- Latitude/Longitude = 41° 57' 58.9", -73° 7' 18.1"
- Tower Height = 148 ft
- Upwind Fetch Radius = Greater of 25 x Tower Height or 3250 ft = 3700 ft
- Minimum Open Patch = 164 ft x 164 ft
- Maximum continuous surface roughness category C arc angle = 0 degrees
- Kmz file saved in folder … R:\SA Models - Letters\Work Area\Exposure_Topo_KMZ



Exposure Category for this site is B.

The determination is based on Crown Castle standard ENG-PRC-10202, Determination of Exposure Category, revision C.

Completed by: Andy Dykstra

Date: 03/03/17

Approved by: Kayla Weimert

Date: 03/03/2017

Unmitigated Percentage (B/C)

Inputs

Tower Height (ft):	148'
Starting Azimuth:	310°
Upwind Fetch Radius (ft):	3700'
20% Unmitigated Limit (ft):	740'
Overlay Size Selected:	30°

Subsector (Degrees)	Total Unmitigated Length (ft)	Percentage of Subsector Unmitigated
295°		0.0%
300°		0.0%
305°	185'	5.0%
310°	430'	11.6%
315°	540'	14.6%
320°	665'	18.0%
325°	600'	16.2%
330°	425'	11.5%
335°	185'	5.0%
340°	250'	6.8%
345°		0.0%
350°		0.0%
355°		0.0%
360°		0.0%

THIS SITE IS EXPOSURE:	B

Length measurements should be taken to the nearest 5' increment.

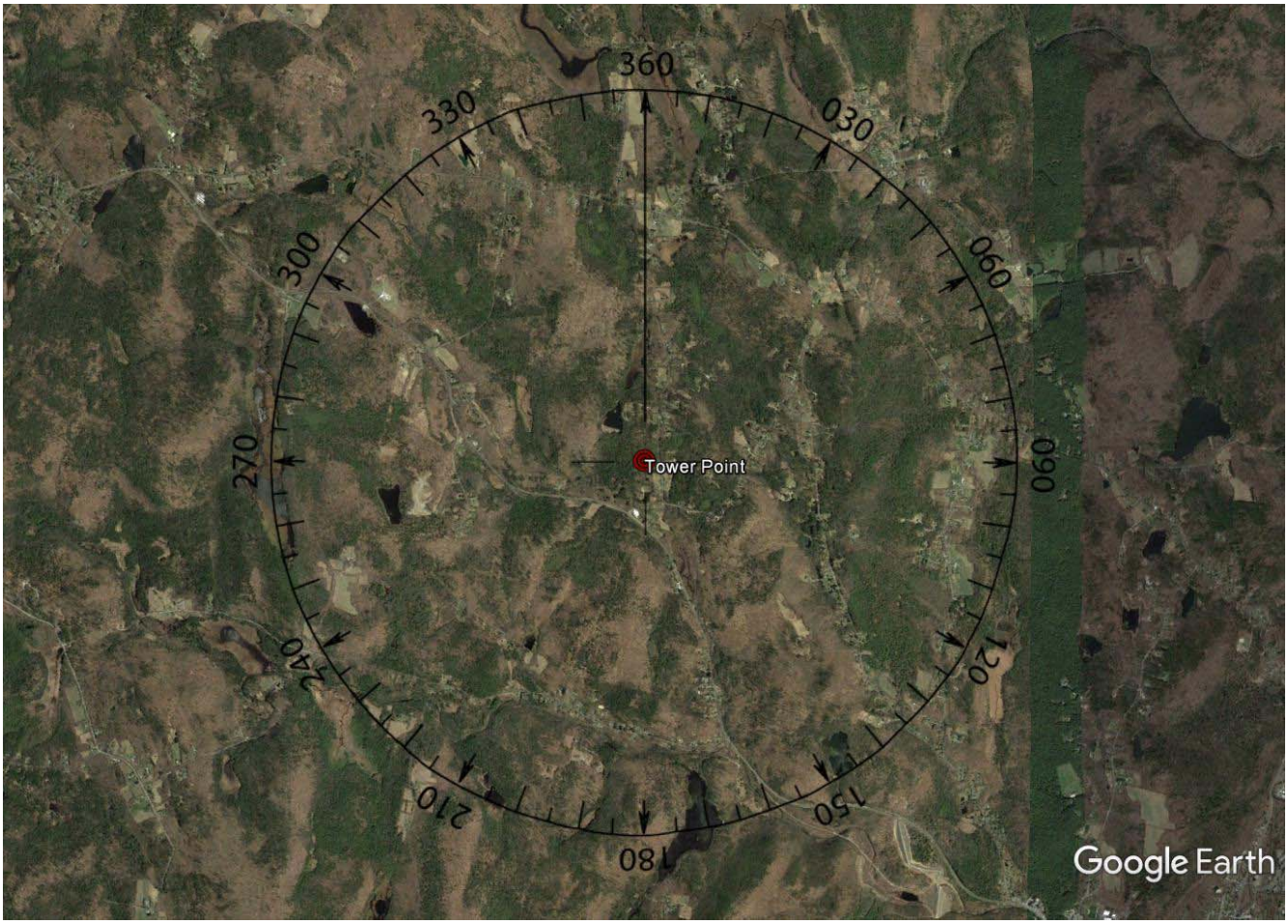
The determination is based on Crown Castle standard ENG-PRC-10202, Determination of Exposure Category, revision C.

This chart is intended only for use with Exposures B and C and is <u>Not</u> applicable for Exposure D.

LEGEND	
	Considered Subsector
	Bookending Subsector

Topographic Factor Determination
BU#876377

- Latitude/Longitude = 41° 57' 58.9", -73° 7' 18.1"
- Tower Height = 148 ft
- Topo Radius = 10,560 ft
- Maximum continuous effective topo arc angle = 0 degrees
- Critical wind azimuth used in topo tool = 0
- Kmz file saved in folder … R:\SA Models - Letters\Work Area\Exposure_Topo_KMZ



Exposure Category for this site is B.
No topo feature.
Topographic Factor (K_{ZT}) at base is 1.00.

The determination is based on Crown Castle standard ENG-PRC-10040, Determination of Topographic Factor, initial release.

Completed by: Andy Dykstra

Date: 03/03/17

Approved by: Kayla Weimert

Date: 03/03/2017

Exhibit E

Mount Analysis

August 28, 2019

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

Tower Engineering Professionals
326 Tryon Road
Raleigh, NC 27603
(919) 661-6351
Structures@tepgroup.net

Subject:	**Mount Analysis**	
Carrier Designation:	***AT&T Mobility* Reconfiguration**	
	Client Site Number:	10041785
	Client Site Name:	Colebrook
Crown Castle Designation:	**Crown Castle BU Number:**	876377
	Crown Castle Site Name:	Horton 2/Fredsall Property
	Crown Castle JDE Job Number:	574663
	Crown Castle Order Number:	492777 Rev. 0
Engineering Firm Designation:	**TEP Project Number:**	25722.293894
Site Data:	**161 Pinney Street, Colebrook, Litchfield County, CT 06021** **Latitude *41° 57' 58.90"*, Longitude *-73° 7' 18.10"***	
Structure Information:	**Tower Height & Type:**	148.0± ft Monopole
	Mount Elevation:	140.0 ft
	Mount Width & Type:	12.0 ft T-Arm Mount

Dear Kevin Morrow,

Tower Engineering Professionals is pleased to submit this **"Mount Analysis"** to determine the structural integrity of AT&T Mobility's antenna mounting system with proposed appurtenance and equipment addition on the above mentioned 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:

T-Arm Mount **Sufficient Capacity**

The analysis has been performed in accordance with the 2018 International Building Code based upon an ultimate 3-second gust wind speed of 115 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Daniel Cisneros / GHM

Respectfully submitted by:

Aaron T. Rucker, P.E.
Structural Division Manager

STATE OF CONNECTICUT
AARON THOMAS RUCKER
32608
LICENSED
PROFESSIONAL ENGINEER
Electronic Copy

08/28/2019

TABLE OF CONTENTS

1) INTRODUCTION

The mount is an existing 12.0-ft T-Arm mount, mapped by Tower Engineering Professionals.

2) ANALYSIS CRITERIA

Building Code:	2018 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	115 mph
Exposure Category:	B
Topographic Category at Base:	1.0
Topographic Category at Mount:	1.0
Ice Thickness:	1.00 in
Wind Speed with Ice:	40 mph
Seismic Design Category:	B
Seismic S_s:	0.166
Seismic S_1:	0.054
Live Loading Wind Speed:	30 mph
Live Loading at Mid/End-Points:	250 lb
Man Live Loading 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
140.0	142.0	2	CCI Antennas	DMP65R-BU4D	T-Arm Mount
		4	CCI Antennas	DMP65R-BU6D	
		3	Powerwave	7770.00	
		3	Ericsson	RRUS 4449 B5/B12	
		3	Ericsson	RRUS 4478 B14	
		3	Ericsson	RRUS 8843 B2/B66A	
		3	Powerwave	TT08-19DB111-001	
		2	Raycap	DC6-48-60-0-8C-EV	
	140.0	1	Raycap	DC6-48-60-18-8F	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Mount Mapping	Tower Engineering Professionals	8500539	CCIsites
Loading Application	AT&T Mobility	Order 492777 Rev. 0	CCIsites

3.1) Analysis Method

RISA-3D (Version 17.0.1), a commercially available analysis software package, was used to create a three-dimensional model of the mount and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A and Appendix C.

TEP Mount Analysis Tool, a tool internally developed by TEP using Microsoft Excel, was used to calculate member loading for various load cases. Selected output from the analysis is included in Appendix B.

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

In addition, this analysis is in accordance with AT&T's *Mount Technical Directive – R14.1*.

3.2) Assumptions

1) The mount was built in accordance with the manufacturer's specifications.
2) The mount has been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, mounts and other appurtenances are as specified in Table 1. All mount components have been assumed to be in sufficient condition to carry their full design capacity for this analysis. Refer to the issued mapping for any structural and/or maintenance issues found during our site visit if applicable.
4) All mount components are in sufficient condition to carry their full design capacity.
5) TEP did not analyze the collar mount connection to the pole and assumes it to have sufficient structural capacity to transfer the applied forces from the mount to the tower.
6) All material grades used for this analysis, unless verified by mount manufacturer design, were assumed per AISC Table 2-4, 15th Edition. See RISA-3D output for confirmation on grades used in this analysis.

This analysis may be affected if any assumptions are not valid or have been made in error. Tower Engineering Professionals should be notified to determine the effect on the structural integrity of the antenna mounting system.

4) ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity (T-Arm Mount)

Notes	Component	Critical Member	Mount Centerline (ft)	% Capacity	Pass / Fail
1	Face Horizontals	FFTH	140.0	81.2	Pass
1	Support Arms	SA-1	140.0	33.6	Pass
1	Mount Pipes	MP-2	140.0	39.5	Pass
2	Connection Bolts	-	140.0	27.5	Pass
2	Connection Plate	-	140.0	48.8	Pass

Structure Rating (max from all components) =	81.2%

Notes:
1) See additional documentation in "Appendix C - Analysis Output" for calculations supporting the % capacity listed.
2) See additional documentation in "Appendix D - Additional Calculations" for calculations supporting the % capacity listed.

Table 4 - Tieback Connection Data Table

Tower Connection Node No.	Existing/ Proposed	Resultant End Reaction (lb)	Connected Member Type	Connected Member Size	Member Compressive Capacity (lb)[3]	Notes
-	-	-	-	-	-	-

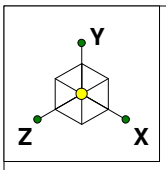
Notes:
1) Tieback connection point is within 25% of either end of the connected tower member.
2) Tower connection point is NOT within 25% of either end of the connected tower member.
3) Reduced member compressive capacity according to CED-STD-10294 *Standard for Installation of Mounts and Appurtenances.*

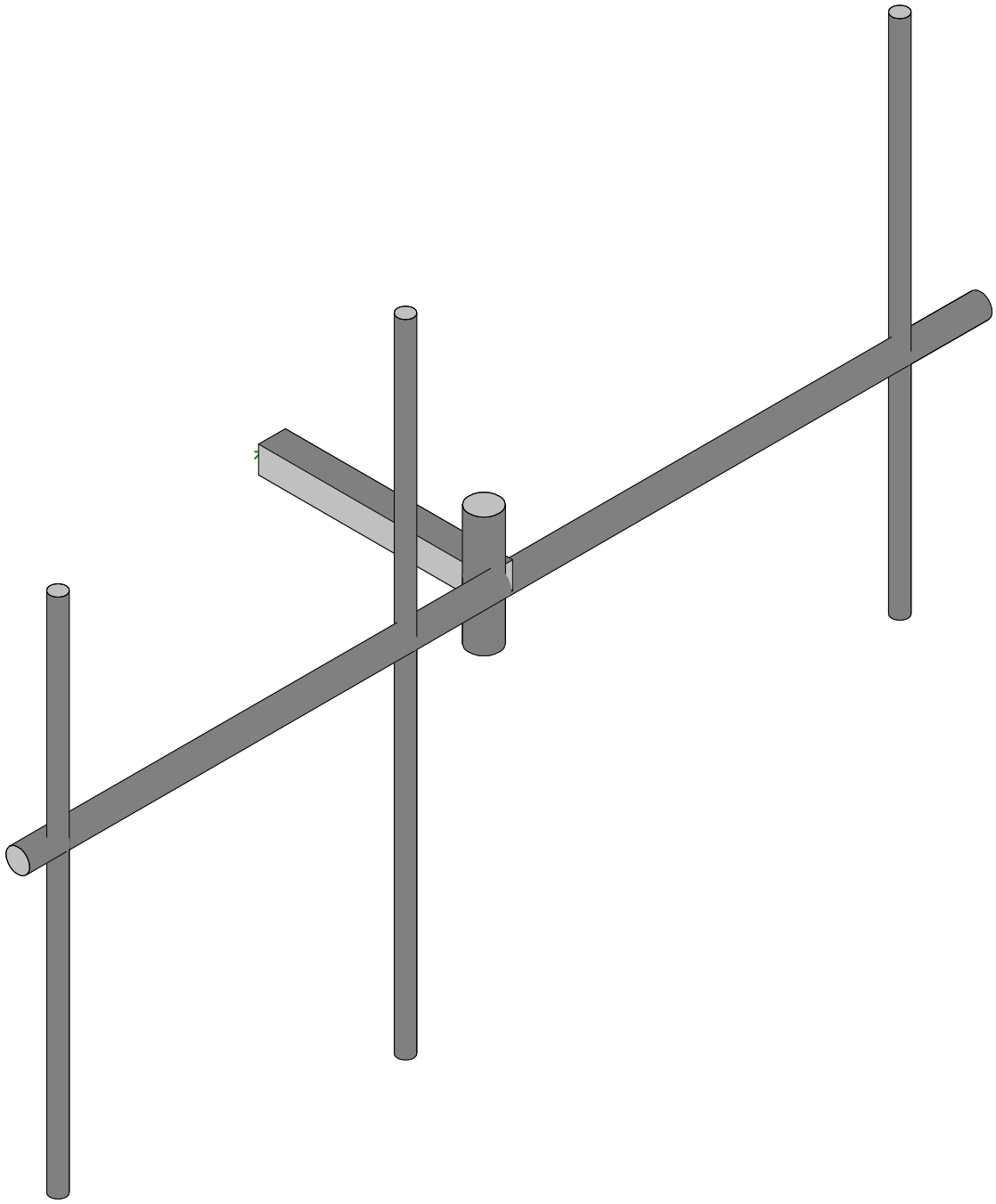
4.1) Recommendations

1) If the load differs from that described in Table 1 of this report or the provisions of this analysis are found to be invalid, another structural analysis should be performed.
2) The mount and its connection have sufficient capacity to carry the proposed loading configuration. No modifications are required at this time.

APPENDIX A

WIRE FRAME AND RENDERED MODELS





Envelope Only Solution

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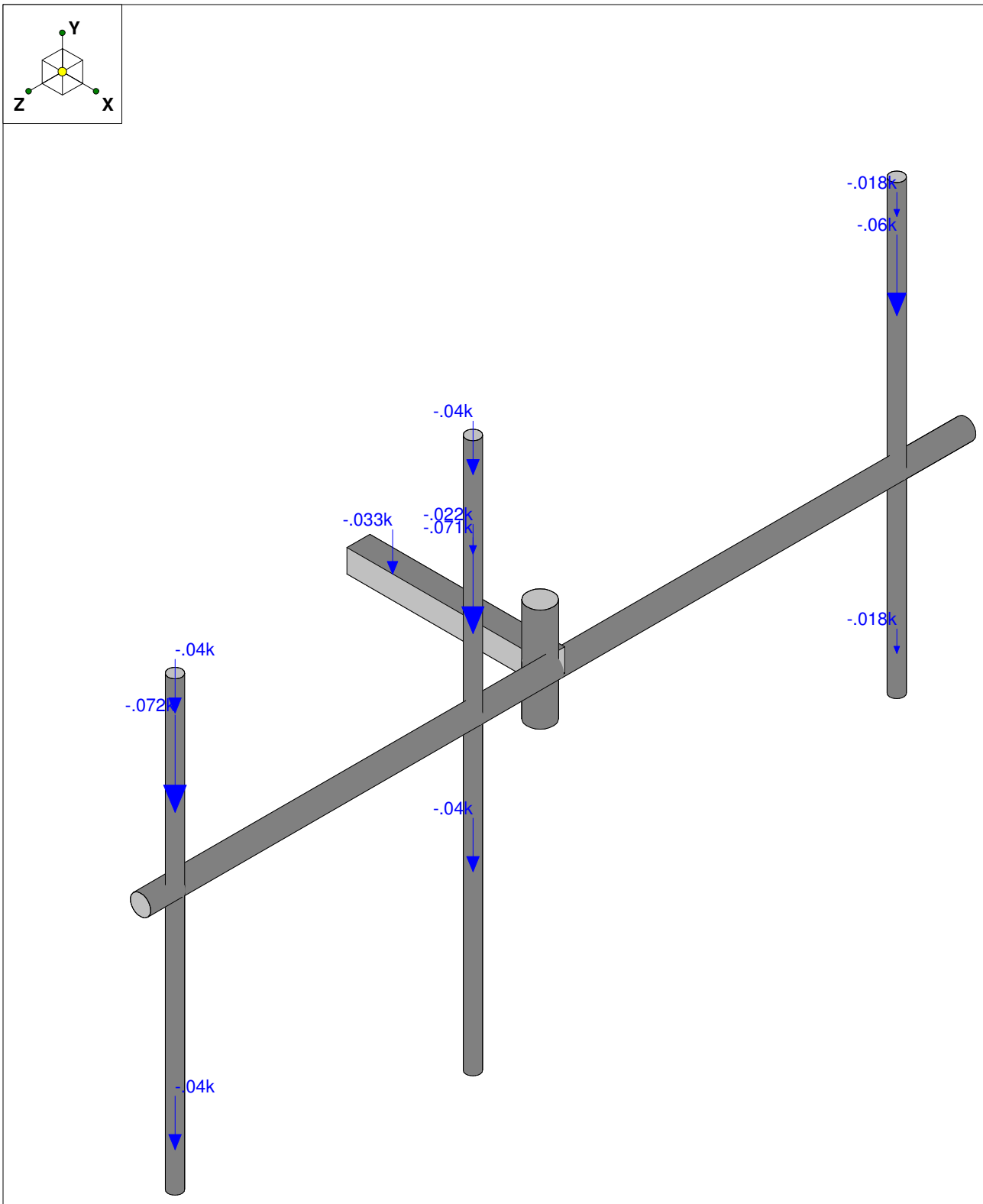
TEP No. 25722.293894		Mount Rev H.r3d



Loads: BLC 1, Dead
Envelope Only Solution

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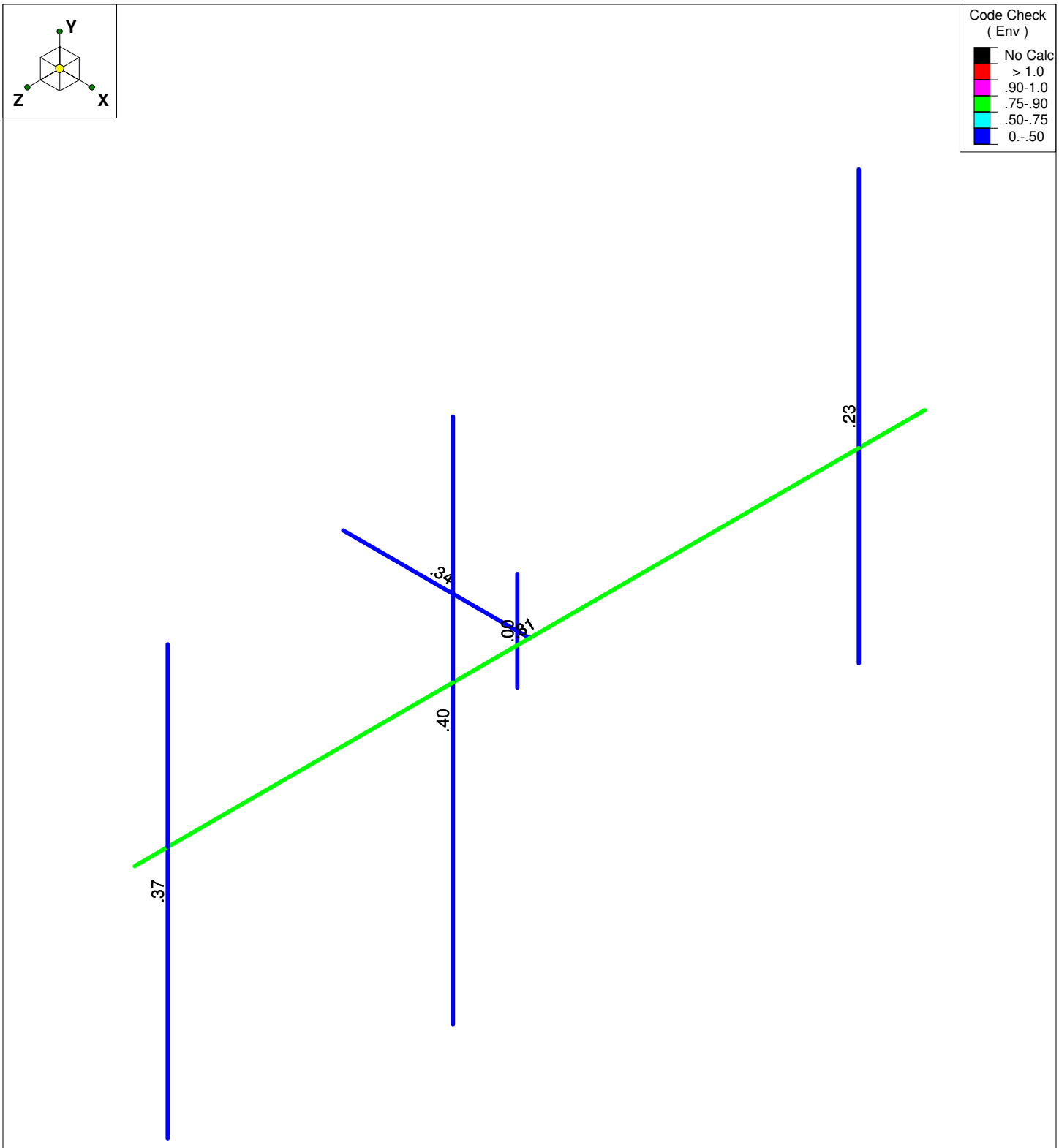

Member Code Checks Displayed (Enveloped)
Envelope Only Solution

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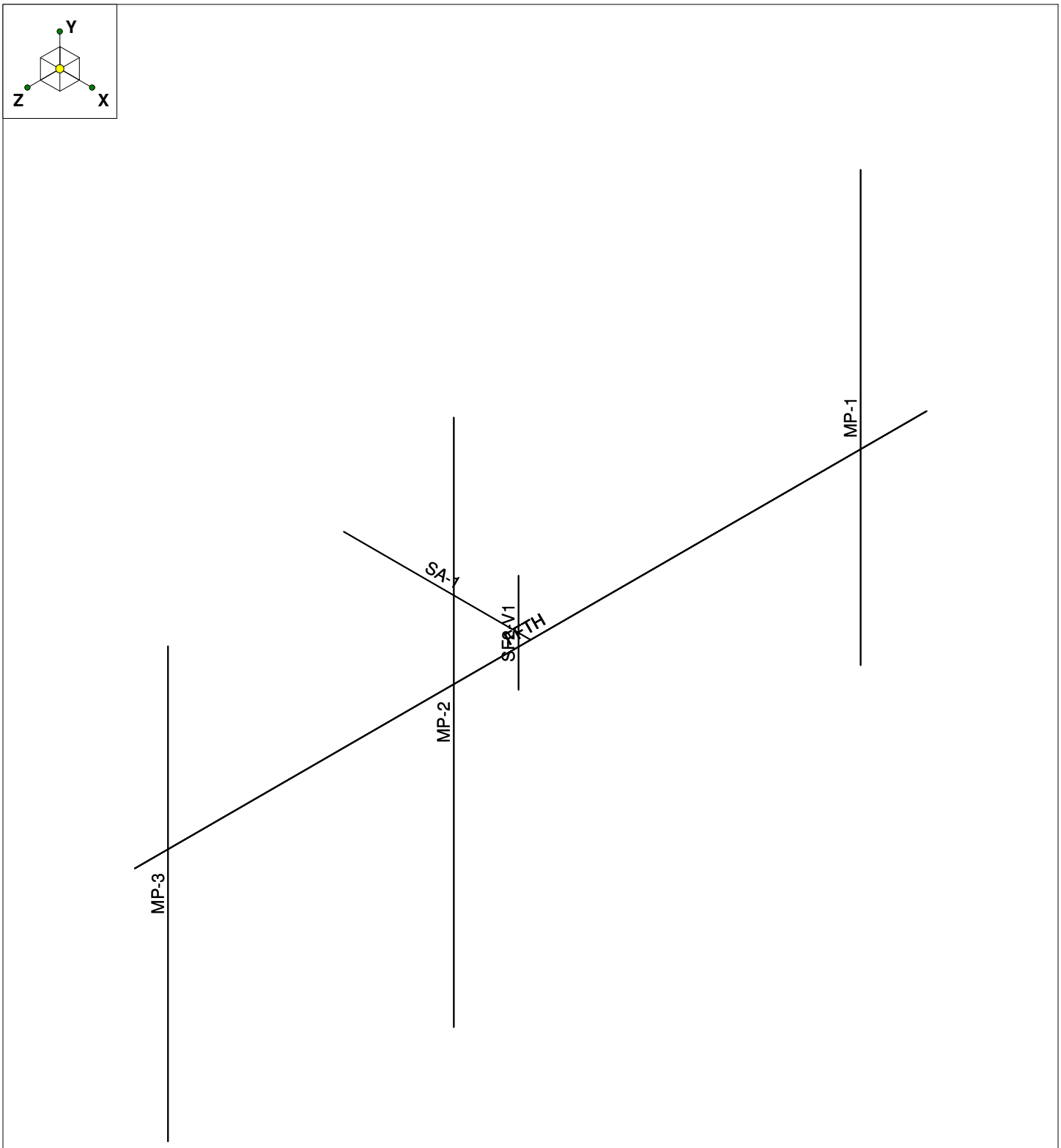

Envelope Only Solution

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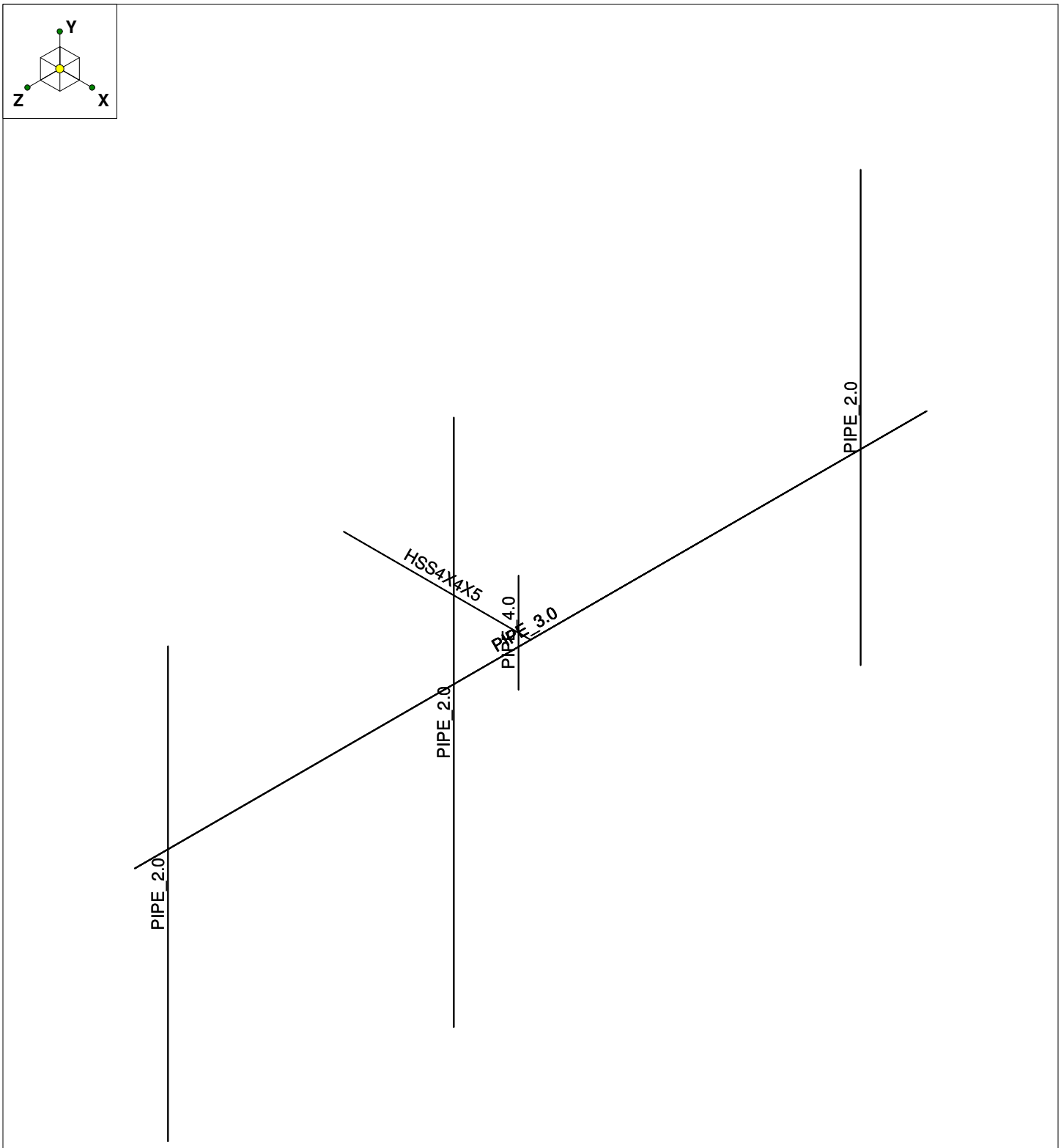

Envelope Only Solution

Tower Engineering Profes...	CCI BU No. 876377	SK - 5
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TEP No. 25722.293894		Mount Rev H.r3d

APPENDIX B

SOFTWARE INPUT CALCULATIONS

TOWER ENGINEERING PROFESSIONALS

CCI BU No. 876377

TEP No.	25722.293894	
Analysis By:	DC	8/28/2019
Checked By:	GHM	8/28/2019

Code Revisions:	TIA-222-H	IBC 2018
Tower Type:	Monopole	

Wind Inputs:

Ult. Wind Velocity:	115.0	mph
Live Load Velocity:	30.0	mph
Ice Wind Velocity:	40.0	mph
Base Ice Thickness:	1.50	inches
Mount Centerline:	140.0	ft
Antenna Centerline:	142.0	ft
Exposure Category:	B	
Topo Category:	1	
Risk Category:	II	
Ground Elevation:	1223	ft

Wind Calculations:

K_{zt}:	1.000	Section 2.6.6
K_d:	0.950	
$K_{z\text{-}Mount}$:	1.088	Section 2.6.5.2
$K_{z\text{-}Antenna}$:	1.092	Section 2.6.5.2
K_{iz}:	1.156	Section 2.6.10
Ice Thickness:	1.734	inches - Section 2.6.10

Without Ice - (psf)		With Ice - (psf)	
$(q_zG_h)_{Mount}$:	33.48	**$(q_zG_h)_{Mount}$:**	4.05
$(q_zG_h)_{Antenna}$:	33.61	**$(q_zG_h)_{Antenna}$:**	4.07

TOWER ENGINEERING PROFESSIONALS

CCI BU No. 876377

TEP No.	25722.293894	
Analysis By:	DC	8/28/2019
Checked By:	GHM	8/28/2019

Antenna Loads are Calculated in Accordance with TIA-222-H

Azimuth is the absolute angle measured clockwise from RISA-3D global X-axis.

										Distance from start node of the member		
MFR	Model	Height (in)	Width (in)	Depth (in)	Wt. (lbs)	Azimuth°	Qty	Shape	Member Label	Location #1 (ft,%)	Location #2 (ft,%)	Location #3 (ft,%)
POWERWAVE TECHNOLOGIES	7770.00	55.00	11.00	5.00	35.00	0.00	1	Flat	MP-1	0.50	6.00	
ERICSSON	RRUS 4478 B14	16.50	13.40	7.70	59.90	0.00	1	Flat	MP-1	1.75		
CCI ANTENNAS	DMP65R-BU6D	71.20	20.70	7.70	79.40	0.00	1	Flat	MP-2	0.50	5.50	
POWERWAVE TECHNOLOGIES	TT08-19DB111-001	14.20	6.70	5.40	22.00	0.00	1	Flat	MP-2	1.50		
ERICSSON	RRUS 4449 B5/B12	17.90	13.19	9.44	71.00	0.00	1	Flat	MP-2	2.50		
CCI ANTENNAS	DMP65R-BU6D	71.20	20.70	7.70	79.40	0.00	1	Flat	MP-3	0.50	6.00	
ERICSSON	RRUS 8843 B2/B66A	14.90	13.20	10.90	72.00	0.00	1	Flat	MP-3	1.75		
RAYCAP	DC6-48-60-18-8F	31.25	11.00	11.00	32.80	0.00	1	Round	SA-1	0.50		

Member Forces are Calculated in Accordance with TIA-222-H

Member Name	Wind Proj. (in)	Length (in)	Shape	θ (°)	Perimeter (in)
FFTH	3.500	144.00	Round	90.00	11.00
MP-1	2.375	78.00	Round		7.46
MP-2	2.375	96.00	Round		7.46
MP-3	2.375	78.00	Round		7.46
SA-1	4.000	34.00	Flat	0.00	16.00
SF2-V1	4.500	18.00	Round		14.14

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	24
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 15th(360-16): LRFD
Adjust Stiffness?	No
RISAConnection Code	None
Cold Formed Steel Code	None
Wood Code	None
Wood Temperature	< 100F
Concrete Code	None
Masonry Code	None
Aluminum Code	None - Building
Stainless Steel Code	None

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

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Designer : DC
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(Global) Model Settings, Continued

Seismic Code	ASCE 7-10
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	1
Cd X	1
Rho Z	1
Rho X	1

Hot Rolled Steel Properties

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

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Face Horiz.	PIPE_3.0	None	None	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	Support Arm	HSS4X4X5	None	None	A500 Gr.B Rect	Typical	4.1	9.14	9.14	15.3
3	Support Vert.	PIPE_4.0	None	None	A53 Gr.B	Typical	2.96	6.82	6.82	13.6
4	Mount Pipe	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rul...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Unistrut	P1000 Unistrut	Beam	None	A653 SS G...	Typical	.554	.19	.21	.002

Material Takeoff

	Material	Size	Pieces	Length[ft]	Weight[K]
1	Hot Rolled Steel				
2	A500 Gr.B Rect	HSS4X4X5	1	2.8	0
3	A53 Gr.B	PIPE_2.0	3	21	0
4	A53 Gr.B	PIPE_3.0	1	12	0
5	A53 Gr.B	PIPE_4.0	1	1.5	0

Material Takeoff (Continued)

	Material	Size	Pieces	Length[ft]	Weight[K]
6	Total HR Steel		6	37.3	.2

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	SF1-1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(de...	Section/Shape	Type	Design List	Material	Design Rules
1	FFTH	FF1	N4			Face Horiz.	None	None	A53 Gr.B	Typical
2	MP-1	N16	N19			Mount Pipe	None	None	A53 Gr.B	Typical
3	MP-2	N15	N18			Mount Pipe	None	None	A53 Gr.B	Typical
4	MP-3	N18A	N19A			Mount Pipe	None	None	A53 Gr.B	Typical
5	SA-1	SF1-1	N2			Support Arm	None	None	A500 Gr....	Typical
6	SF2-V1	N30	N31			Support Vert.	None	None	A53 Gr.B	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ratio Opti...	Analysis ...	Inactive	Seismic...
1	FFTH						Yes	** NA **			None
2	MP-1						Yes	** NA **			None
3	MP-2						Yes	** NA **			None
4	MP-3						Yes	** NA **			None
5	SA-1						Yes	** NA **			None
6	SF2-V1						Yes	** NA **			None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[...	L-torq...	Kyy	Kzz	Cb	Function
1	FFTH	Face Horiz.	12	6	6				2.1	2.1		Lateral
2	MP-1	Mount Pipe	6.5	Segment	Segment				2.1	2.1		Lateral
3	MP-2	Mount Pipe	8	Segment	Segment				2.1	2.1		Lateral
4	MP-3	Mount Pipe	6.5	Segment	Segment				2.1	2.1		Lateral
5	SA-1	Support Arm	2.833						2.1	2.1		Lateral
6	SF2-V1	Support V...	1.5	Segment	Segment				2.1	2.1		Lateral

Cold Formed Steel Design Parameters

Label	Shape	Length...	Lbyy[ft]	Lbzz[ft]	Lcomp to...	Lcomp b...	Kyy	Kzz	Cm-yy	Cm-zz	Cb	R	y sway	z sway
No Data to Print ...														

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Dead	None		-1			11			
2	0 Wind - No Ice	None					11	6		
3	30 Wind - No Ice	None					22	12		
4	45 Wind - No Ice	None					22	12		
5	60 Wind - No Ice	None					22	12		
6	90 Wind - No Ice	None					11	6		
7	120 Wind - No Ice	None					22	12		
8	135 Wind - No Ice	None					22	12		
9	150 Wind - No Ice	None					22	12		

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Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
10	180 Wind - No Ice	None					11	6		
11	210 Wind - No Ice	None					22	12		
12	225 Wind - No Ice	None					22	12		
13	240 Wind - No Ice	None					22	12		
14	270 Wind - No Ice	None					11	6		
15	300 Wind - No Ice	None					22	12		
16	315 Wind - No Ice	None					22	12		
17	330 Wind - No Ice	None					22	12		
18	Ice Weight	None					11	6		
19	0 Wind - Ice	None					11	6		
20	30 Wind - Ice	None					22	12		
21	45 Wind - Ice	None					22	12		
22	60 Wind - Ice	None					22	12		
23	90 Wind - Ice	None					11	6		
24	120 Wind - Ice	None					22	12		
25	135 Wind - Ice	None					22	12		
26	150 Wind - Ice	None					22	12		
27	180 Wind - Ice	None					11	6		
28	210 Wind - Ice	None					22	12		
29	225 Wind - Ice	None					22	12		
30	240 Wind - Ice	None					22	12		
31	270 Wind - Ice	None					11	6		
32	300 Wind - Ice	None					22	12		
33	315 Wind - Ice	None					22	12		
34	330 Wind - Ice	None					22	12		
35	Lm	None				1				
36	Lv	None				1				

Load Combinations

	Description	Solve	PDelta	S...	BLC	Fa...	BLC	Factor	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4D	Yes	Y		1	1.4																
2	0.9D+1.0 0-W...	Yes	Y		1	.9	2	1														
3	0.9D+1.0 30-...	Yes	Y		1	.9	3	1														
4	0.9D+1.0 45-...	Yes	Y		1	.9	4	1														
5	0.9D+1.0 60-...	Yes	Y		1	.9	5	1														
6	0.9D+1.0 90-...	Yes	Y		1	.9	6	1														
7	0.9D+1.0 120...	Yes	Y		1	.9	7	1														
8	0.9D+1.0 135...	Yes	Y		1	.9	8	1														
9	0.9D+1.0 150...	Yes	Y		1	.9	9	1														
10	0.9D+1.0 180...	Yes	Y		1	.9	10	1														
11	0.9D+1.0 210...	Yes	Y		1	.9	11	1														
12	0.9D+1.0 225...	Yes	Y		1	.9	12	1														
13	0.9D+1.0 240...	Yes	Y		1	.9	13	1														
14	0.9D+1.0 270...	Yes	Y		1	.9	14	1														
15	0.9D+1.0 300...	Yes	Y		1	.9	15	1														
16	0.9D+1.0 315...	Yes	Y		1	.9	16	1														
17	0.9D+1.0 330...	Yes	Y		1	.9	17	1														
18	1.2D+1.0 0-W...	Yes	Y		1	1.2	2	1														
19	1.2D+1.0 30-...	Yes	Y		1	1.2	3	1														
20	1.2D+1.0 45-...	Yes	Y		1	1.2	4	1														
21	1.2D+1.0 60-...	Yes	Y		1	1.2	5	1														
22	1.2D+1.0 90-...	Yes	Y		1	1.2	6	1														
23	1.2D+1.0 120...	Yes	Y		1	1.2	7	1														
24	1.2D+1.0 135...	Yes	Y		1	1.2	8	1														
25	1.2D+1.0 150...	Yes	Y		1	1.2	9	1														

Load Combinations (Continued)

	Description	Solve	PDelta	S...	BLC	Fa...	BLC	Factor	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
26	1.2D+1.0 180...	Yes	Y		1	1.2	10	1																
27	1.2D+1.0 210...	Yes	Y		1	1.2	11	1																
28	1.2D+1.0 225...	Yes	Y		1	1.2	12	1																
29	1.2D+1.0 240...	Yes	Y		1	1.2	13	1																
30	1.2D+1.0 270...	Yes	Y		1	1.2	14	1																
31	1.2D+1.0 300...	Yes	Y		1	1.2	15	1																
32	1.2D+1.0 315...	Yes	Y		1	1.2	16	1																
33	1.2D+1.0 330...	Yes	Y		1	1.2	17	1																
34	1.2D+1.0Di+1...	Yes	Y		1	1.2	18	1	19	1														
35	1.2D+1.0Di+1...	Yes	Y		1	1.2	18	1	20	1														
36	1.2D+1.0Di+1...	Yes	Y		1	1.2	18	1	21	1														
37	1.2D+1.0Di+1...	Yes	Y		1	1.2	18	1	22	1														
38	1.2D+1.0Di+1...	Yes	Y		1	1.2	18	1	23	1														
39	1.2D+1.0Di+1...	Yes	Y		1	1.2	18	1	24	1														
40	1.2D+1.0Di+1...	Yes	Y		1	1.2	18	1	25	1														
41	1.2D+1.0Di+1...	Yes	Y		1	1.2	18	1	26	1														
42	1.2D+1.0Di+1...	Yes	Y		1	1.2	18	1	27	1														
43	1.2D+1.0Di+1...	Yes	Y		1	1.2	18	1	28	1														
44	1.2D+1.0Di+1...	Yes	Y		1	1.2	18	1	29	1														
45	1.2D+1.0Di+1...	Yes	Y		1	1.2	18	1	30	1														
46	1.2D+1.0Di+1...	Yes	Y		1	1.2	18	1	31	1														
47	1.2D+1.0Di+1...	Yes	Y		1	1.2	18	1	32	1														
48	1.2D+1.0Di+1...	Yes	Y		1	1.2	18	1	33	1														
49	1.2D+1.0Di+1...	Yes	Y		1	1.2	18	1	34	1														
50	1.2D+1.5Lv	Yes	Y		36	1.5	1	1.2																
51	1.2D+1.5Lm+...	Yes	Y		1	1.2	2	.068	35	1.5														
52	1.2D+1.5Lm+...	Yes	Y		1	1.2	3	.068	35	1.5														
53	1.2D+1.5Lm+...	Yes	Y		1	1.2	4	.068	35	1.5														
54	1.2D+1.5Lm+...	Yes	Y		1	1.2	5	.068	35	1.5														
55	1.2D+1.5Lm+...	Yes	Y		1	1.2	6	.068	35	1.5														
56	1.2D+1.5Lm+...	Yes	Y		1	1.2	7	.068	35	1.5														
57	1.2D+1.5Lm+...	Yes	Y		1	1.2	8	.068	35	1.5														
58	1.2D+1.5Lm+...	Yes	Y		1	1.2	9	.068	35	1.5														
59	1.2D+1.5Lm+...	Yes	Y		1	1.2	10	.068	35	1.5														
60	1.2D+1.5Lm+...	Yes	Y		1	1.2	11	.068	35	1.5														
61	1.2D+1.5Lm+...	Yes	Y		1	1.2	12	.068	35	1.5														
62	1.2D+1.5Lm+...	Yes	Y		1	1.2	13	.068	35	1.5														
63	1.2D+1.5Lm+...	Yes	Y		1	1.2	14	.068	35	1.5														
64	1.2D+1.5Lm+...	Yes	Y		1	1.2	15	.068	35	1.5														
65	1.2D+1.5Lm+...	Yes	Y		1	1.2	16	.068	35	1.5														
66	1.2D+1.5Lm+...	Yes	Y		1	1.2	17	.068	35	1.5														

Joint Loads and Enforced Displacements (BLC 35 : Lm)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft...
1	X1	L	Y	-.5

Joint Loads and Enforced Displacements (BLC 36 : Lv)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft...
1	FF1	L	Y	-.25

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	Y	-.018	.5

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Member Point Loads (BLC 1 : Dead) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
2	MP-1	Y	-.06	1.75
3	MP-2	Y	-.04	.5
4	MP-2	Y	-.022	1.5
5	MP-2	Y	-.071	2.5
6	MP-3	Y	-.04	.5
7	MP-3	Y	-.072	1.75
8	SA-1	Y	-.033	.5
9	MP-1	Y	-.018	6
10	MP-2	Y	-.04	5.5
11	MP-3	Y	-.04	6

Member Point Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	-.083	.5
2	MP-1	X	-.056	1.75
3	MP-2	X	-.192	.5
4	MP-2	X	-.024	1.5
5	MP-2	X	-.06	2.5
6	MP-3	X	-.192	.5
7	MP-3	X	-.05	1.75
8	SA-1	X	-.037	.5
9	MP-1	X	-.083	6
10	MP-2	X	-.192	5.5
11	MP-3	X	-.192	6

Member Point Loads (BLC 3 : 30 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	-.064	.5
2	MP-1	X	-.043	1.75
3	MP-2	X	-.143	.5
4	MP-2	X	-.02	1.5
5	MP-2	X	-.048	2.5
6	MP-3	X	-.143	.5
7	MP-3	X	-.041	1.75
8	SA-1	X	-.032	.5
9	MP-1	X	-.064	6
10	MP-2	X	-.143	5.5
11	MP-3	X	-.143	6
12	MP-1	Z	-.037	.5
13	MP-1	Z	-.025	1.75
14	MP-2	Z	-.083	.5
15	MP-2	Z	-.011	1.5
16	MP-2	Z	-.028	2.5
17	MP-3	Z	-.083	.5
18	MP-3	Z	-.024	1.75
19	SA-1	Z	-.018	.5
20	MP-1	Z	-.037	6
21	MP-2	Z	-.083	5.5
22	MP-3	Z	-.083	6

Member Point Loads (BLC 4 : 45 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	-.045	.5
2	MP-1	X	-.031	1.75
3	MP-2	X	-.098	.5

Member Point Loads (BLC 4 : 45 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
4	MP-2	X	-.015	1.5
5	MP-2	X	-.036	2.5
6	MP-3	X	-.098	.5
7	MP-3	X	-.032	1.75
8	SA-1	X	-.026	.5
9	MP-1	X	-.045	6
10	MP-2	X	-.098	5.5
11	MP-3	X	-.098	6
12	MP-1	Z	-.045	.5
13	MP-1	Z	-.031	1.75
14	MP-2	Z	-.098	.5
15	MP-2	Z	-.015	1.5
16	MP-2	Z	-.036	2.5
17	MP-3	Z	-.098	.5
18	MP-3	Z	-.032	1.75
19	SA-1	Z	-.026	.5
20	MP-1	Z	-.045	6
21	MP-2	Z	-.098	5.5
22	MP-3	Z	-.098	6

Member Point Loads (BLC 5 : 60 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	-.027	.5
2	MP-1	X	-.019	1.75
3	MP-2	X	-.056	.5
4	MP-2	X	-.01	1.5
5	MP-2	X	-.023	2.5
6	MP-3	X	-.056	.5
7	MP-3	X	-.022	1.75
8	SA-1	X	-.018	.5
9	MP-1	X	-.027	6
10	MP-2	X	-.056	5.5
11	MP-3	X	-.056	6
12	MP-1	Z	-.047	.5
13	MP-1	Z	-.033	1.75
14	MP-2	Z	-.097	.5
15	MP-2	Z	-.018	1.5
16	MP-2	Z	-.041	2.5
17	MP-3	Z	-.097	.5
18	MP-3	Z	-.037	1.75
19	SA-1	Z	-.032	.5
20	MP-1	Z	-.047	6
21	MP-2	Z	-.097	5.5
22	MP-3	Z	-.097	6

Member Point Loads (BLC 6 : 90 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	Z	-.044	.5
2	MP-1	Z	-.032	1.75
3	MP-2	Z	-.085	.5
4	MP-2	Z	-.019	1.5
5	MP-2	Z	-.043	2.5
6	MP-3	Z	-.085	.5
7	MP-3	Z	-.041	1.75
8	SA-1	Z	-.037	.5
9	MP-1	Z	-.044	6

Member Point Loads (BLC 6 : 90 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
10	MP-2	Z	-.085	5.5
11	MP-3	Z	-.085	6

Member Point Loads (BLC 7 : 120 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	.027	.5
2	MP-1	X	.019	1.75
3	MP-2	X	.056	.5
4	MP-2	X	.01	1.5
5	MP-2	X	.023	2.5
6	MP-3	X	.056	.5
7	MP-3	X	.022	1.75
8	SA-1	X	.018	.5
9	MP-1	X	.027	6
10	MP-2	X	.056	5.5
11	MP-3	X	.056	6
12	MP-1	Z	-.047	.5
13	MP-1	Z	-.033	1.75
14	MP-2	Z	-.097	.5
15	MP-2	Z	-.018	1.5
16	MP-2	Z	-.041	2.5
17	MP-3	Z	-.097	.5
18	MP-3	Z	-.037	1.75
19	SA-1	Z	-.032	.5
20	MP-1	Z	-.047	6
21	MP-2	Z	-.097	5.5
22	MP-3	Z	-.097	6

Member Point Loads (BLC 8 : 135 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	.045	.5
2	MP-1	X	.031	1.75
3	MP-2	X	.098	.5
4	MP-2	X	.015	1.5
5	MP-2	X	.036	2.5
6	MP-3	X	.098	.5
7	MP-3	X	.032	1.75
8	SA-1	X	.026	.5
9	MP-1	X	.045	6
10	MP-2	X	.098	5.5
11	MP-3	X	.098	6
12	MP-1	Z	-.045	.5
13	MP-1	Z	-.031	1.75
14	MP-2	Z	-.098	.5
15	MP-2	Z	-.015	1.5
16	MP-2	Z	-.036	2.5
17	MP-3	Z	-.098	.5
18	MP-3	Z	-.032	1.75
19	SA-1	Z	-.026	.5
20	MP-1	Z	-.045	6
21	MP-2	Z	-.098	5.5
22	MP-3	Z	-.098	6

Member Point Loads (BLC 9 : 150 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]

Member Point Loads (BLC 9 : 150 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	.064	.5
2	MP-1	X	.043	1.75
3	MP-2	X	.143	.5
4	MP-2	X	.02	1.5
5	MP-2	X	.048	2.5
6	MP-3	X	.143	.5
7	MP-3	X	.041	1.75
8	SA-1	X	.032	.5
9	MP-1	X	.064	6
10	MP-2	X	.143	5.5
11	MP-3	X	.143	6
12	MP-1	Z	-.037	.5
13	MP-1	Z	-.025	1.75
14	MP-2	Z	-.083	.5
15	MP-2	Z	-.011	1.5
16	MP-2	Z	-.028	2.5
17	MP-3	Z	-.083	.5
18	MP-3	Z	-.024	1.75
19	SA-1	Z	-.018	.5
20	MP-1	Z	-.037	6
21	MP-2	Z	-.083	5.5
22	MP-3	Z	-.083	6

Member Point Loads (BLC 10 : 180 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	.083	.5
2	MP-1	X	.056	1.75
3	MP-2	X	.192	.5
4	MP-2	X	.024	1.5
5	MP-2	X	.06	2.5
6	MP-3	X	.192	.5
7	MP-3	X	.05	1.75
8	SA-1	X	.037	.5
9	MP-1	X	.083	6
10	MP-2	X	.192	5.5
11	MP-3	X	.192	6

Member Point Loads (BLC 11 : 210 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	.064	.5
2	MP-1	X	.043	1.75
3	MP-2	X	.143	.5
4	MP-2	X	.02	1.5
5	MP-2	X	.048	2.5
6	MP-3	X	.143	.5
7	MP-3	X	.041	1.75
8	SA-1	X	.032	.5
9	MP-1	X	.064	6
10	MP-2	X	.143	5.5
11	MP-3	X	.143	6
12	MP-1	Z	.037	.5
13	MP-1	Z	.025	1.75
14	MP-2	Z	.083	.5
15	MP-2	Z	.011	1.5
16	MP-2	Z	.028	2.5
17	MP-3	Z	.083	.5

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Member Point Loads (BLC 11 : 210 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
18	MP-3	Z	.024	1.75
19	SA-1	Z	.018	.5
20	MP-1	Z	.037	6
21	MP-2	Z	.083	5.5
22	MP-3	Z	.083	6

Member Point Loads (BLC 12 : 225 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	.045	.5
2	MP-1	X	.031	1.75
3	MP-2	X	.098	.5
4	MP-2	X	.015	1.5
5	MP-2	X	.036	2.5
6	MP-3	X	.098	.5
7	MP-3	X	.032	1.75
8	SA-1	X	.026	.5
9	MP-1	X	.045	6
10	MP-2	X	.098	5.5
11	MP-3	X	.098	6
12	MP-1	Z	.045	.5
13	MP-1	Z	.031	1.75
14	MP-2	Z	.098	.5
15	MP-2	Z	.015	1.5
16	MP-2	Z	.036	2.5
17	MP-3	Z	.098	.5
18	MP-3	Z	.032	1.75
19	SA-1	Z	.026	.5
20	MP-1	Z	.045	6
21	MP-2	Z	.098	5.5
22	MP-3	Z	.098	6

Member Point Loads (BLC 13 : 240 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	.027	.5
2	MP-1	X	.019	1.75
3	MP-2	X	.056	.5
4	MP-2	X	.01	1.5
5	MP-2	X	.023	2.5
6	MP-3	X	.056	.5
7	MP-3	X	.022	1.75
8	SA-1	X	.018	.5
9	MP-1	X	.027	6
10	MP-2	X	.056	5.5
11	MP-3	X	.056	6
12	MP-1	Z	.047	.5
13	MP-1	Z	.033	1.75
14	MP-2	Z	.097	.5
15	MP-2	Z	.018	1.5
16	MP-2	Z	.041	2.5
17	MP-3	Z	.097	.5
18	MP-3	Z	.037	1.75
19	SA-1	Z	.032	.5
20	MP-1	Z	.047	6
21	MP-2	Z	.097	5.5
22	MP-3	Z	.097	6

Member Point Loads (BLC 14 : 270 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	Z	.044	.5
2	MP-1	Z	.032	1.75
3	MP-2	Z	.085	.5
4	MP-2	Z	.019	1.5
5	MP-2	Z	.043	2.5
6	MP-3	Z	.085	.5
7	MP-3	Z	.041	1.75
8	SA-1	Z	.037	.5
9	MP-1	Z	.044	6
10	MP-2	Z	.085	5.5
11	MP-3	Z	.085	6

Member Point Loads (BLC 15 : 300 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	-.027	.5
2	MP-1	X	-.019	1.75
3	MP-2	X	-.056	.5
4	MP-2	X	-.01	1.5
5	MP-2	X	-.023	2.5
6	MP-3	X	-.056	.5
7	MP-3	X	-.022	1.75
8	SA-1	X	-.018	.5
9	MP-1	X	-.027	6
10	MP-2	X	-.056	5.5
11	MP-3	X	-.056	6
12	MP-1	Z	.047	.5
13	MP-1	Z	.033	1.75
14	MP-2	Z	.097	.5
15	MP-2	Z	.018	1.5
16	MP-2	Z	.041	2.5
17	MP-3	Z	.097	.5
18	MP-3	Z	.037	1.75
19	SA-1	Z	.032	.5
20	MP-1	Z	.047	6
21	MP-2	Z	.097	5.5
22	MP-3	Z	.097	6

Member Point Loads (BLC 16 : 315 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	-.045	.5
2	MP-1	X	-.031	1.75
3	MP-2	X	-.098	.5
4	MP-2	X	-.015	1.5
5	MP-2	X	-.036	2.5
6	MP-3	X	-.098	.5
7	MP-3	X	-.032	1.75
8	SA-1	X	-.026	.5
9	MP-1	X	-.045	6
10	MP-2	X	-.098	5.5
11	MP-3	X	-.098	6
12	MP-1	Z	.045	.5
13	MP-1	Z	.031	1.75
14	MP-2	Z	.098	.5
15	MP-2	Z	.015	1.5
16	MP-2	Z	.036	2.5
17	MP-3	Z	.098	.5

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Member Point Loads (BLC 16 : 315 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
18	MP-3	Z	.032	1.75
19	SA-1	Z	.026	.5
20	MP-1	Z	.045	6
21	MP-2	Z	.098	5.5
22	MP-3	Z	.098	6

Member Point Loads (BLC 17 : 330 Wind - No Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	-.064	.5
2	MP-1	X	-.043	1.75
3	MP-2	X	-.143	.5
4	MP-2	X	-.02	1.5
5	MP-2	X	-.048	2.5
6	MP-3	X	-.143	.5
7	MP-3	X	-.041	1.75
8	SA-1	X	-.032	.5
9	MP-1	X	-.064	6
10	MP-2	X	-.143	5.5
11	MP-3	X	-.143	6
12	MP-1	Z	.037	.5
13	MP-1	Z	.025	1.75
14	MP-2	Z	.083	.5
15	MP-2	Z	.011	1.5
16	MP-2	Z	.028	2.5
17	MP-3	Z	.083	.5
18	MP-3	Z	.024	1.75
19	SA-1	Z	.018	.5
20	MP-1	Z	.037	6
21	MP-2	Z	.083	5.5
22	MP-3	Z	.083	6

Member Point Loads (BLC 18 : Ice Weight)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	Y	-.067	.5
2	MP-1	Y	-.067	1.75
3	MP-2	Y	-.143	.5
4	MP-2	Y	-.035	1.5
5	MP-2	Y	-.077	2.5
6	MP-3	Y	-.143	.5
7	MP-3	Y	-.073	1.75
8	SA-1	Y	-.078	.5
9	MP-1	Y	-.067	6
10	MP-2	Y	-.143	5.5
11	MP-3	Y	-.143	6

Member Point Loads (BLC 19 : 0 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	-.014	.5
2	MP-1	X	-.01	1.75
3	MP-2	X	-.028	.5
4	MP-2	X	-.005	1.5
5	MP-2	X	-.011	2.5
6	MP-3	X	-.028	.5
7	MP-3	X	-.009	1.75
8	SA-1	X	-.006	.5

Member Point Loads (BLC 19 : 0 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
9	MP-1	X	-.014	6
10	MP-2	X	-.028	5.5
11	MP-3	X	-.028	6

Member Point Loads (BLC 20 : 30 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	-.011	.5
2	MP-1	X	-.008	1.75
3	MP-2	X	-.021	.5
4	MP-2	X	-.005	1.5
5	MP-2	X	-.009	2.5
6	MP-3	X	-.021	.5
7	MP-3	X	-.008	1.75
8	SA-1	X	-.006	.5
9	MP-1	X	-.011	6
10	MP-2	X	-.021	5.5
11	MP-3	X	-.021	6
12	MP-1	Z	-.006	.5
13	MP-1	Z	-.005	1.75
14	MP-2	Z	-.012	.5
15	MP-2	Z	-.003	1.5
16	MP-2	Z	-.005	2.5
17	MP-3	Z	-.012	.5
18	MP-3	Z	-.005	1.75
19	SA-1	Z	-.003	.5
20	MP-1	Z	-.006	6
21	MP-2	Z	-.012	5.5
22	MP-3	Z	-.012	6

Member Point Loads (BLC 21 : 45 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	-.008	.5
2	MP-1	X	-.006	1.75
3	MP-2	X	-.015	.5
4	MP-2	X	-.004	1.5
5	MP-2	X	-.007	2.5
6	MP-3	X	-.015	.5
7	MP-3	X	-.006	1.75
8	SA-1	X	-.005	.5
9	MP-1	X	-.008	6
10	MP-2	X	-.015	5.5
11	MP-3	X	-.015	6
12	MP-1	Z	-.008	.5
13	MP-1	Z	-.006	1.75
14	MP-2	Z	-.015	.5
15	MP-2	Z	-.004	1.5
16	MP-2	Z	-.007	2.5
17	MP-3	Z	-.015	.5
18	MP-3	Z	-.006	1.75
19	SA-1	Z	-.005	.5
20	MP-1	Z	-.008	6
21	MP-2	Z	-.015	5.5
22	MP-3	Z	-.015	6

Member Point Loads (BLC 22 : 60 Wind - Ice)

Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]

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Member Point Loads (BLC 22 : 60 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	-.005	.5
2	MP-1	X	-.004	1.75
3	MP-2	X	-.009	.5
4	MP-2	X	-.002	1.5
5	MP-2	X	-.005	2.5
6	MP-3	X	-.009	.5
7	MP-3	X	-.004	1.75
8	SA-1	X	-.003	.5
9	MP-1	X	-.005	6
10	MP-2	X	-.009	5.5
11	MP-3	X	-.009	6
12	MP-1	Z	-.009	.5
13	MP-1	Z	-.007	1.75
14	MP-2	Z	-.016	.5
15	MP-2	Z	-.004	1.5
16	MP-2	Z	-.008	2.5
17	MP-3	Z	-.016	.5
18	MP-3	Z	-.007	1.75
19	SA-1	Z	-.006	.5
20	MP-1	Z	-.009	6
21	MP-2	Z	-.016	5.5
22	MP-3	Z	-.016	6

Member Point Loads (BLC 23 : 90 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	Z	-.009	.5
2	MP-1	Z	-.007	1.75
3	MP-2	Z	-.015	.5
4	MP-2	Z	-.005	1.5
5	MP-2	Z	-.008	2.5
6	MP-3	Z	-.015	.5
7	MP-3	Z	-.008	1.75
8	SA-1	Z	-.006	.5
9	MP-1	Z	-.009	6
10	MP-2	Z	-.015	5.5
11	MP-3	Z	-.015	6

Member Point Loads (BLC 24 : 120 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	.005	.5
2	MP-1	X	.004	1.75
3	MP-2	X	.009	.5
4	MP-2	X	.002	1.5
5	MP-2	X	.005	2.5
6	MP-3	X	.009	.5
7	MP-3	X	.004	1.75
8	SA-1	X	.003	.5
9	MP-1	X	.005	6
10	MP-2	X	.009	5.5
11	MP-3	X	.009	6
12	MP-1	Z	-.009	.5
13	MP-1	Z	-.007	1.75
14	MP-2	Z	-.016	.5
15	MP-2	Z	-.004	1.5
16	MP-2	Z	-.008	2.5
17	MP-3	Z	-.016	.5

Member Point Loads (BLC 24 : 120 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
18	MP-3	Z	-.007	1.75
19	SA-1	Z	-.006	.5
20	MP-1	Z	-.009	6
21	MP-2	Z	-.016	5.5
22	MP-3	Z	-.016	6

Member Point Loads (BLC 25 : 135 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	.008	.5
2	MP-1	X	.006	1.75
3	MP-2	X	.015	.5
4	MP-2	X	.004	1.5
5	MP-2	X	.007	2.5
6	MP-3	X	.015	.5
7	MP-3	X	.006	1.75
8	SA-1	X	.005	.5
9	MP-1	X	.008	6
10	MP-2	X	.015	5.5
11	MP-3	X	.015	6
12	MP-1	Z	-.008	.5
13	MP-1	Z	-.006	1.75
14	MP-2	Z	-.015	.5
15	MP-2	Z	-.004	1.5
16	MP-2	Z	-.007	2.5
17	MP-3	Z	-.015	.5
18	MP-3	Z	-.006	1.75
19	SA-1	Z	-.005	.5
20	MP-1	Z	-.008	6
21	MP-2	Z	-.015	5.5
22	MP-3	Z	-.015	6

Member Point Loads (BLC 26 : 150 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	.011	.5
2	MP-1	X	.008	1.75
3	MP-2	X	.021	.5
4	MP-2	X	.005	1.5
5	MP-2	X	.009	2.5
6	MP-3	X	.021	.5
7	MP-3	X	.008	1.75
8	SA-1	X	.006	.5
9	MP-1	X	.011	6
10	MP-2	X	.021	5.5
11	MP-3	X	.021	6
12	MP-1	Z	-.006	.5
13	MP-1	Z	-.005	1.75
14	MP-2	Z	-.012	.5
15	MP-2	Z	-.003	1.5
16	MP-2	Z	-.005	2.5
17	MP-3	Z	-.012	.5
18	MP-3	Z	-.005	1.75
19	SA-1	Z	-.003	.5
20	MP-1	Z	-.006	6
21	MP-2	Z	-.012	5.5
22	MP-3	Z	-.012	6

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Designer : DC
Job Number : TEP No. 25722.293894
Model Name : CCI BU No. 876377

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Member Point Loads (BLC 27 : 180 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	.014	.5
2	MP-1	X	.01	1.75
3	MP-2	X	.028	.5
4	MP-2	X	.005	1.5
5	MP-2	X	.011	2.5
6	MP-3	X	.028	.5
7	MP-3	X	.009	1.75
8	SA-1	X	.006	.5
9	MP-1	X	.014	6
10	MP-2	X	.028	5.5
11	MP-3	X	.028	6

Member Point Loads (BLC 28 : 210 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	.011	.5
2	MP-1	X	.008	1.75
3	MP-2	X	.021	.5
4	MP-2	X	.005	1.5
5	MP-2	X	.009	2.5
6	MP-3	X	.021	.5
7	MP-3	X	.008	1.75
8	SA-1	X	.006	.5
9	MP-1	X	.011	6
10	MP-2	X	.021	5.5
11	MP-3	X	.021	6
12	MP-1	Z	.006	.5
13	MP-1	Z	.005	1.75
14	MP-2	Z	.012	.5
15	MP-2	Z	.003	1.5
16	MP-2	Z	.005	2.5
17	MP-3	Z	.012	.5
18	MP-3	Z	.005	1.75
19	SA-1	Z	.003	.5
20	MP-1	Z	.006	6
21	MP-2	Z	.012	5.5
22	MP-3	Z	.012	6

Member Point Loads (BLC 29 : 225 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	.008	.5
2	MP-1	X	.006	1.75
3	MP-2	X	.015	.5
4	MP-2	X	.004	1.5
5	MP-2	X	.007	2.5
6	MP-3	X	.015	.5
7	MP-3	X	.006	1.75
8	SA-1	X	.005	.5
9	MP-1	X	.008	6
10	MP-2	X	.015	5.5
11	MP-3	X	.015	6
12	MP-1	Z	.008	.5
13	MP-1	Z	.006	1.75
14	MP-2	Z	.015	.5
15	MP-2	Z	.004	1.5
16	MP-2	Z	.007	2.5
17	MP-3	Z	.015	.5

Member Point Loads (BLC 29 : 225 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
18	MP-3	Z	.006	1.75
19	SA-1	Z	.005	.5
20	MP-1	Z	.008	6
21	MP-2	Z	.015	5.5
22	MP-3	Z	.015	6

Member Point Loads (BLC 30 : 240 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	.005	.5
2	MP-1	X	.004	1.75
3	MP-2	X	.009	.5
4	MP-2	X	.002	1.5
5	MP-2	X	.005	2.5
6	MP-3	X	.009	.5
7	MP-3	X	.004	1.75
8	SA-1	X	.003	.5
9	MP-1	X	.005	6
10	MP-2	X	.009	5.5
11	MP-3	X	.009	6
12	MP-1	Z	.009	.5
13	MP-1	Z	.007	1.75
14	MP-2	Z	.016	.5
15	MP-2	Z	.004	1.5
16	MP-2	Z	.008	2.5
17	MP-3	Z	.016	.5
18	MP-3	Z	.007	1.75
19	SA-1	Z	.006	.5
20	MP-1	Z	.009	6
21	MP-2	Z	.016	5.5
22	MP-3	Z	.016	6

Member Point Loads (BLC 31 : 270 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	Z	.009	.5
2	MP-1	Z	.007	1.75
3	MP-2	Z	.015	.5
4	MP-2	Z	.005	1.5
5	MP-2	Z	.008	2.5
6	MP-3	Z	.015	.5
7	MP-3	Z	.008	1.75
8	SA-1	Z	.006	.5
9	MP-1	Z	.009	6
10	MP-2	Z	.015	5.5
11	MP-3	Z	.015	6

Member Point Loads (BLC 32 : 300 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	-.005	.5
2	MP-1	X	-.004	1.75
3	MP-2	X	-.009	.5
4	MP-2	X	-.002	1.5
5	MP-2	X	-.005	2.5
6	MP-3	X	-.009	.5
7	MP-3	X	-.004	1.75
8	SA-1	X	-.003	.5

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Designer : DC
Job Number : TEP No. 25722.293894
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Member Point Loads (BLC 32 : 300 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
9	MP-1	X	-.005	6
10	MP-2	X	-.009	5.5
11	MP-3	X	-.009	6
12	MP-1	Z	.009	.5
13	MP-1	Z	.007	1.75
14	MP-2	Z	.016	.5
15	MP-2	Z	.004	1.5
16	MP-2	Z	.008	2.5
17	MP-3	Z	.016	.5
18	MP-3	Z	.007	1.75
19	SA-1	Z	.006	.5
20	MP-1	Z	.009	6
21	MP-2	Z	.016	5.5
22	MP-3	Z	.016	6

Member Point Loads (BLC 33 : 315 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	-.008	.5
2	MP-1	X	-.006	1.75
3	MP-2	X	-.015	.5
4	MP-2	X	-.004	1.5
5	MP-2	X	-.007	2.5
6	MP-3	X	-.015	.5
7	MP-3	X	-.006	1.75
8	SA-1	X	-.005	.5
9	MP-1	X	-.008	6
10	MP-2	X	-.015	5.5
11	MP-3	X	-.015	6
12	MP-1	Z	.008	.5
13	MP-1	Z	.006	1.75
14	MP-2	Z	.015	.5
15	MP-2	Z	.004	1.5
16	MP-2	Z	.007	2.5
17	MP-3	Z	.015	.5
18	MP-3	Z	.006	1.75
19	SA-1	Z	.005	.5
20	MP-1	Z	.008	6
21	MP-2	Z	.015	5.5
22	MP-3	Z	.015	6

Member Point Loads (BLC 34 : 330 Wind - Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP-1	X	-.011	.5
2	MP-1	X	-.008	1.75
3	MP-2	X	-.021	.5
4	MP-2	X	-.005	1.5
5	MP-2	X	-.009	2.5
6	MP-3	X	-.021	.5
7	MP-3	X	-.008	1.75
8	SA-1	X	-.006	.5
9	MP-1	X	-.011	6
10	MP-2	X	-.021	5.5
11	MP-3	X	-.021	6
12	MP-1	Z	.006	.5
13	MP-1	Z	.005	1.75
14	MP-2	Z	.012	.5

Member Point Loads (BLC 34 : 330 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
15	MP-2	Z	.003	1.5
16	MP-2	Z	.005	2.5
17	MP-3	Z	.012	.5
18	MP-3	Z	.005	1.75
19	SA-1	Z	.003	.5
20	MP-1	Z	.006	6
21	MP-2	Z	.012	5.5
22	MP-3	Z	.012	6

Member Distributed Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	-.01	-.01	0	%100
2	MP-1	X	-.007	-.007	0	%100
3	MP-2	X	-.007	-.007	0	%100
4	MP-3	X	-.007	-.007	0	%100
5	SA-1	X	0	0	0	%100
6	SF2-V1	X	-.006	-.006	0	%100

Member Distributed Loads (BLC 3 : 30 Wind - No Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	-.007	-.007	0	%100
2	MP-1	X	-.006	-.006	0	%100
3	MP-2	X	-.006	-.006	0	%100
4	MP-3	X	-.006	-.006	0	%100
5	SA-1	X	-.005	-.005	0	%100
6	SF2-V1	X	-.006	-.006	0	%100
7	FFTH	Z	-.004	-.004	0	%100
8	MP-1	Z	-.004	-.004	0	%100
9	MP-2	Z	-.004	-.004	0	%100
10	MP-3	Z	-.004	-.004	0	%100
11	SA-1	Z	-.004	-.004	0	%100
12	SF2-V1	Z	-.003	-.003	0	%100

Member Distributed Loads (BLC 4 : 45 Wind - No Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	-.005	-.005	0	%100
2	MP-1	X	-.005	-.005	0	%100
3	MP-2	X	-.005	-.005	0	%100
4	MP-3	X	-.005	-.005	0	%100
5	SA-1	X	-.006	-.006	0	%100
6	SF2-V1	X	-.005	-.005	0	%100
7	FFTH	Z	-.005	-.005	0	%100
8	MP-1	Z	-.005	-.005	0	%100
9	MP-2	Z	-.005	-.005	0	%100
10	MP-3	Z	-.005	-.005	0	%100
11	SA-1	Z	-.007	-.007	0	%100
12	SF2-V1	Z	-.005	-.005	0	%100

Member Distributed Loads (BLC 5 : 60 Wind - No Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	-.002	-.002	0	%100
2	MP-1	X	-.004	-.004	0	%100
3	MP-2	X	-.004	-.004	0	%100
4	MP-3	X	-.004	-.004	0	%100

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Designer : DC
Job Number : TEP No. 25722.293894
Model Name : CCI BU No. 876377

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Member Distributed Loads (BLC 5 : 60 Wind - No Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
5	SA-1	X	-.005	-.005	0	%100
6	SF2-V1	X	-.003	-.003	0	%100
7	FFTH	Z	-.004	-.004	0	%100
8	MP-1	Z	-.006	-.006	0	%100
9	MP-2	Z	-.006	-.006	0	%100
10	MP-3	Z	-.006	-.006	0	%100
11	SA-1	Z	-.011	-.011	0	%100
12	SF2-V1	Z	-.006	-.006	0	%100

Member Distributed Loads (BLC 6 : 90 Wind - No Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	Z	0	0	0	%100
2	MP-1	Z	-.007	-.007	0	%100
3	MP-2	Z	-.007	-.007	0	%100
4	MP-3	Z	-.007	-.007	0	%100
5	SA-1	Z	-.015	-.015	0	%100
6	SF2-V1	Z	-.006	-.006	0	%100

Member Distributed Loads (BLC 7 : 120 Wind - No Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	.002	.002	0	%100
2	MP-1	X	.004	.004	0	%100
3	MP-2	X	.004	.004	0	%100
4	MP-3	X	.004	.004	0	%100
5	SA-1	X	.005	.005	0	%100
6	SF2-V1	X	.003	.003	0	%100
7	FFTH	Z	-.004	-.004	0	%100
8	MP-1	Z	-.006	-.006	0	%100
9	MP-2	Z	-.006	-.006	0	%100
10	MP-3	Z	-.006	-.006	0	%100
11	SA-1	Z	-.011	-.011	0	%100
12	SF2-V1	Z	-.006	-.006	0	%100

Member Distributed Loads (BLC 8 : 135 Wind - No Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	.005	.005	0	%100
2	MP-1	X	.005	.005	0	%100
3	MP-2	X	.005	.005	0	%100
4	MP-3	X	.005	.005	0	%100
5	SA-1	X	.006	.006	0	%100
6	SF2-V1	X	.005	.005	0	%100
7	FFTH	Z	-.005	-.005	0	%100
8	MP-1	Z	-.005	-.005	0	%100
9	MP-2	Z	-.005	-.005	0	%100
10	MP-3	Z	-.005	-.005	0	%100
11	SA-1	Z	-.007	-.007	0	%100
12	SF2-V1	Z	-.005	-.005	0	%100

Member Distributed Loads (BLC 9 : 150 Wind - No Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	.007	.007	0	%100
2	MP-1	X	.006	.006	0	%100
3	MP-2	X	.006	.006	0	%100
4	MP-3	X	.006	.006	0	%100
5	SA-1	X	.005	.005	0	%100

Member Distributed Loads (BLC 9 : 150 Wind - No Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
6	SF2-V1	X	.006	.006	0	%100
7	FFTH	Z	-.004	-.004	0	%100
8	MP-1	Z	-.004	-.004	0	%100
9	MP-2	Z	-.004	-.004	0	%100
10	MP-3	Z	-.004	-.004	0	%100
11	SA-1	Z	-.004	-.004	0	%100
12	SF2-V1	Z	-.003	-.003	0	%100

Member Distributed Loads (BLC 10 : 180 Wind - No Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	.01	.01	0	%100
2	MP-1	X	.007	.007	0	%100
3	MP-2	X	.007	.007	0	%100
4	MP-3	X	.007	.007	0	%100
5	SA-1	X	0	0	0	%100
6	SF2-V1	X	.006	.006	0	%100

Member Distributed Loads (BLC 11 : 210 Wind - No Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	.007	.007	0	%100
2	MP-1	X	.006	.006	0	%100
3	MP-2	X	.006	.006	0	%100
4	MP-3	X	.006	.006	0	%100
5	SA-1	X	.005	.005	0	%100
6	SF2-V1	X	.006	.006	0	%100
7	FFTH	Z	.004	.004	0	%100
8	MP-1	Z	.004	.004	0	%100
9	MP-2	Z	.004	.004	0	%100
10	MP-3	Z	.004	.004	0	%100
11	SA-1	Z	.004	.004	0	%100
12	SF2-V1	Z	.003	.003	0	%100

Member Distributed Loads (BLC 12 : 225 Wind - No Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	.005	.005	0	%100
2	MP-1	X	.005	.005	0	%100
3	MP-2	X	.005	.005	0	%100
4	MP-3	X	.005	.005	0	%100
5	SA-1	X	.006	.006	0	%100
6	SF2-V1	X	.005	.005	0	%100
7	FFTH	Z	.005	.005	0	%100
8	MP-1	Z	.005	.005	0	%100
9	MP-2	Z	.005	.005	0	%100
10	MP-3	Z	.005	.005	0	%100
11	SA-1	Z	.007	.007	0	%100
12	SF2-V1	Z	.005	.005	0	%100

Member Distributed Loads (BLC 13 : 240 Wind - No Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	.002	.002	0	%100
2	MP-1	X	.004	.004	0	%100
3	MP-2	X	.004	.004	0	%100
4	MP-3	X	.004	.004	0	%100
5	SA-1	X	.005	.005	0	%100
6	SF2-V1	X	.003	.003	0	%100

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Designer : DC
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Member Distributed Loads (BLC 13 : 240 Wind - No Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
7	FFTH	Z	.004	.004	0	%100
8	MP-1	Z	.006	.006	0	%100
9	MP-2	Z	.006	.006	0	%100
10	MP-3	Z	.006	.006	0	%100
11	SA-1	Z	.011	.011	0	%100
12	SF2-V1	Z	.006	.006	0	%100

Member Distributed Loads (BLC 14 : 270 Wind - No Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	Z	0	0	0	%100
2	MP-1	Z	.007	.007	0	%100
3	MP-2	Z	.007	.007	0	%100
4	MP-3	Z	.007	.007	0	%100
5	SA-1	Z	.015	.015	0	%100
6	SF2-V1	Z	.006	.006	0	%100

Member Distributed Loads (BLC 15 : 300 Wind - No Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	-.002	-.002	0	%100
2	MP-1	X	-.004	-.004	0	%100
3	MP-2	X	-.004	-.004	0	%100
4	MP-3	X	-.004	-.004	0	%100
5	SA-1	X	-.005	-.005	0	%100
6	SF2-V1	X	-.003	-.003	0	%100
7	FFTH	Z	.004	.004	0	%100
8	MP-1	Z	.006	.006	0	%100
9	MP-2	Z	.006	.006	0	%100
10	MP-3	Z	.006	.006	0	%100
11	SA-1	Z	.011	.011	0	%100
12	SF2-V1	Z	.006	.006	0	%100

Member Distributed Loads (BLC 16 : 315 Wind - No Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	-.005	-.005	0	%100
2	MP-1	X	-.005	-.005	0	%100
3	MP-2	X	-.005	-.005	0	%100
4	MP-3	X	-.005	-.005	0	%100
5	SA-1	X	-.006	-.006	0	%100
6	SF2-V1	X	-.005	-.005	0	%100
7	FFTH	Z	.005	.005	0	%100
8	MP-1	Z	.005	.005	0	%100
9	MP-2	Z	.005	.005	0	%100
10	MP-3	Z	.005	.005	0	%100
11	SA-1	Z	.007	.007	0	%100
12	SF2-V1	Z	.005	.005	0	%100

Member Distributed Loads (BLC 17 : 330 Wind - No Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	-.007	-.007	0	%100
2	MP-1	X	-.006	-.006	0	%100
3	MP-2	X	-.006	-.006	0	%100
4	MP-3	X	-.006	-.006	0	%100
5	SA-1	X	-.005	-.005	0	%100
6	SF2-V1	X	-.006	-.006	0	%100
7	FFTH	Z	.004	.004	0	%100

Member Distributed Loads (BLC 17 : 330 Wind - No Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
8	MP-1	Z	.004	.004	0	%100
9	MP-2	Z	.004	.004	0	%100
10	MP-3	Z	.004	.004	0	%100
11	SA-1	Z	.004	.004	0	%100
12	SF2-V1	Z	.003	.003	0	%100

Member Distributed Loads (BLC 18 : Ice Weight)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	Y	-.011	-.011	0	%100
2	MP-1	Y	-.009	-.009	0	%100
3	MP-2	Y	-.009	-.009	0	%100
4	MP-3	Y	-.009	-.009	0	%100
5	SA-1	Y	-.012	-.012	0	%100
6	SF2-V1	Y	-.016	-.016	0	%100

Member Distributed Loads (BLC 19 : 0 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	-.002	-.002	0	%100
2	MP-1	X	-.002	-.002	0	%100
3	MP-2	X	-.002	-.002	0	%100
4	MP-3	X	-.002	-.002	0	%100
5	SA-1	X	-.003	-.003	0	%100
6	SF2-V1	X	-.002	-.002	0	%100

Member Distributed Loads (BLC 20 : 30 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	-.002	-.002	0	%100
2	MP-1	X	-.001	-.001	0	%100
3	MP-2	X	-.001	-.001	0	%100
4	MP-3	X	-.001	-.001	0	%100
5	SA-1	X	-.001	-.001	0	%100
6	SF2-V1	X	-.002	-.002	0	%100
7	FFTH	Z	-.000942	-.000942	0	%100
8	MP-1	Z	-.000885	-.000885	0	%100
9	MP-2	Z	-.00094	-.00094	0	%100
10	MP-3	Z	-.000885	-.000885	0	%100
11	SA-1	Z	-.00082	-.00082	0	%100
12	SF2-V1	Z	-.001	-.001	0	%100

Member Distributed Loads (BLC 21 : 45 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	-.001	-.001	0	%100
2	MP-1	X	-.001	-.001	0	%100
3	MP-2	X	-.001	-.001	0	%100
4	MP-3	X	-.001	-.001	0	%100
5	SA-1	X	-.002	-.002	0	%100
6	SF2-V1	X	-.001	-.001	0	%100
7	FFTH	Z	-.001	-.001	0	%100
8	MP-1	Z	-.001	-.001	0	%100
9	MP-2	Z	-.001	-.001	0	%100
10	MP-3	Z	-.001	-.001	0	%100
11	SA-1	Z	-.002	-.002	0	%100
12	SF2-V1	Z	-.001	-.001	0	%100

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Designer : DC
Job Number : TEP No. 25722.293894
Model Name : CCI BU No. 876377

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Member Distributed Loads (BLC 22 : 60 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	-.000604	-.000604	0	%100
2	MP-1	X	-.000796	-.000796	0	%100
3	MP-2	X	-.000846	-.000846	0	%100
4	MP-3	X	-.000796	-.000796	0	%100
5	SA-1	X	-.001	-.001	0	%100
6	SF2-V1	X	-.000915	-.000915	0	%100
7	FFTH	Z	-.000942	-.000942	0	%100
8	MP-1	Z	-.002	-.002	0	%100
9	MP-2	Z	-.002	-.002	0	%100
10	MP-3	Z	-.002	-.002	0	%100
11	SA-1	Z	-.002	-.002	0	%100
12	SF2-V1	Z	-.002	-.002	0	%100

Member Distributed Loads (BLC 23 : 90 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	Z	0	0	0	%100
2	MP-1	Z	-.002	-.002	0	%100
3	MP-2	Z	-.002	-.002	0	%100
4	MP-3	Z	-.002	-.002	0	%100
5	SA-1	Z	-.003	-.003	0	%100
6	SF2-V1	Z	-.002	-.002	0	%100

Member Distributed Loads (BLC 24 : 120 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	.000604	.000604	0	%100
2	MP-1	X	.000796	.000796	0	%100
3	MP-2	X	.000846	.000846	0	%100
4	MP-3	X	.000796	.000796	0	%100
5	SA-1	X	.001	.001	0	%100
6	SF2-V1	X	.000915	.000915	0	%100
7	FFTH	Z	-.000942	-.000942	0	%100
8	MP-1	Z	-.002	-.002	0	%100
9	MP-2	Z	-.002	-.002	0	%100
10	MP-3	Z	-.002	-.002	0	%100
11	SA-1	Z	-.002	-.002	0	%100
12	SF2-V1	Z	-.002	-.002	0	%100

Member Distributed Loads (BLC 25 : 135 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	.001	.001	0	%100
2	MP-1	X	.001	.001	0	%100
3	MP-2	X	.001	.001	0	%100
4	MP-3	X	.001	.001	0	%100
5	SA-1	X	.002	.002	0	%100
6	SF2-V1	X	.001	.001	0	%100
7	FFTH	Z	-.001	-.001	0	%100
8	MP-1	Z	-.001	-.001	0	%100
9	MP-2	Z	-.001	-.001	0	%100
10	MP-3	Z	-.001	-.001	0	%100
11	SA-1	Z	-.002	-.002	0	%100
12	SF2-V1	Z	-.001	-.001	0	%100

Member Distributed Loads (BLC 26 : 150 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	.002	.002	0	%100

Member Distributed Loads (BLC 26 : 150 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
2	MP-1	X	.001	.001	0	%100
3	MP-2	X	.001	.001	0	%100
4	MP-3	X	.001	.001	0	%100
5	SA-1	X	.001	.001	0	%100
6	SF2-V1	X	.002	.002	0	%100
7	FFTH	Z	-.000942	-.000942	0	%100
8	MP-1	Z	-.000885	-.000885	0	%100
9	MP-2	Z	-.00094	-.00094	0	%100
10	MP-3	Z	-.000885	-.000885	0	%100
11	SA-1	Z	-.00082	-.00082	0	%100
12	SF2-V1	Z	-.001	-.001	0	%100

Member Distributed Loads (BLC 27 : 180 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	.002	.002	0	%100
2	MP-1	X	.002	.002	0	%100
3	MP-2	X	.002	.002	0	%100
4	MP-3	X	.002	.002	0	%100
5	SA-1	X	.003	.003	0	%100
6	SF2-V1	X	.002	.002	0	%100

Member Distributed Loads (BLC 28 : 210 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	.002	.002	0	%100
2	MP-1	X	.001	.001	0	%100
3	MP-2	X	.001	.001	0	%100
4	MP-3	X	.001	.001	0	%100
5	SA-1	X	.001	.001	0	%100
6	SF2-V1	X	.002	.002	0	%100
7	FFTH	Z	.000942	.000942	0	%100
8	MP-1	Z	.000885	.000885	0	%100
9	MP-2	Z	.00094	.00094	0	%100
10	MP-3	Z	.000885	.000885	0	%100
11	SA-1	Z	.00082	.00082	0	%100
12	SF2-V1	Z	.001	.001	0	%100

Member Distributed Loads (BLC 29 : 225 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	.001	.001	0	%100
2	MP-1	X	.001	.001	0	%100
3	MP-2	X	.001	.001	0	%100
4	MP-3	X	.001	.001	0	%100
5	SA-1	X	.002	.002	0	%100
6	SF2-V1	X	.001	.001	0	%100
7	FFTH	Z	.001	.001	0	%100
8	MP-1	Z	.001	.001	0	%100
9	MP-2	Z	.001	.001	0	%100
10	MP-3	Z	.001	.001	0	%100
11	SA-1	Z	.002	.002	0	%100
12	SF2-V1	Z	.001	.001	0	%100

Member Distributed Loads (BLC 30 : 240 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	.000604	.000604	0	%100
2	MP-1	X	.000796	.000796	0	%100

Company : Tower Engineering Professionals
Designer : DC
Job Number : TEP No. 25722.293894
Model Name : CCI BU No. 876377

Aug 28, 2019
3:01 PM
Checked By: GHM

Member Distributed Loads (BLC 30 : 240 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
3	MP-2	X	.000846	.000846	0	%100
4	MP-3	X	.000796	.000796	0	%100
5	SA-1	X	.001	.001	0	%100
6	SF2-V1	X	.000915	.000915	0	%100
7	FFTH	Z	.000942	.000942	0	%100
8	MP-1	Z	.002	.002	0	%100
9	MP-2	Z	.002	.002	0	%100
10	MP-3	Z	.002	.002	0	%100
11	SA-1	Z	.002	.002	0	%100
12	SF2-V1	Z	.002	.002	0	%100

Member Distributed Loads (BLC 31 : 270 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	Z	0	0	0	%100
2	MP-1	Z	.002	.002	0	%100
3	MP-2	Z	.002	.002	0	%100
4	MP-3	Z	.002	.002	0	%100
5	SA-1	Z	.003	.003	0	%100
6	SF2-V1	Z	.002	.002	0	%100

Member Distributed Loads (BLC 32 : 300 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	-.000604	-.000604	0	%100
2	MP-1	X	-.000796	-.000796	0	%100
3	MP-2	X	-.000846	-.000846	0	%100
4	MP-3	X	-.000796	-.000796	0	%100
5	SA-1	X	-.001	-.001	0	%100
6	SF2-V1	X	-.000915	-.000915	0	%100
7	FFTH	Z	.000942	.000942	0	%100
8	MP-1	Z	.002	.002	0	%100
9	MP-2	Z	.002	.002	0	%100
10	MP-3	Z	.002	.002	0	%100
11	SA-1	Z	.002	.002	0	%100
12	SF2-V1	Z	.002	.002	0	%100

Member Distributed Loads (BLC 33 : 315 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	-.001	-.001	0	%100
2	MP-1	X	-.001	-.001	0	%100
3	MP-2	X	-.001	-.001	0	%100
4	MP-3	X	-.001	-.001	0	%100
5	SA-1	X	-.002	-.002	0	%100
6	SF2-V1	X	-.001	-.001	0	%100
7	FFTH	Z	.001	.001	0	%100
8	MP-1	Z	.001	.001	0	%100
9	MP-2	Z	.001	.001	0	%100
10	MP-3	Z	.001	.001	0	%100
11	SA-1	Z	.002	.002	0	%100
12	SF2-V1	Z	.001	.001	0	%100

Member Distributed Loads (BLC 34 : 330 Wind - Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	FFTH	X	-.002	-.002	0	%100
2	MP-1	X	-.001	-.001	0	%100
3	MP-2	X	-.001	-.001	0	%100

Member Distributed Loads (BLC 34 : 330 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
4	MP-3	X	-.001	-.001	0	%100
5	SA-1	X	-.001	-.001	0	%100
6	SF2-V1	X	-.002	-.002	0	%100
7	FFTH	Z	.000942	.000942	0	%100
8	MP-1	Z	.000885	.000885	0	%100
9	MP-2	Z	.00094	.00094	0	%100
10	MP-3	Z	.000885	.000885	0	%100
11	SA-1	Z	.00082	.00082	0	%100
12	SF2-V1	Z	.001	.001	0	%100

Member Area Loads

Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
No Data to Print ...						

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	SF1-1	max	1.437	18	2.219	49	.861	23	3.042	55	3.217	33	5.935	42
2		min	-1.437	10	.6	2	-.861	13	-2.301	46	-3.234	9	1.313	2
3	Totals:	max	1.437	18	2.219	49	.861	23						
4		min	-1.437	10	.6	2	-.861	13						

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

	Member	Shape	Code Check	Loc...	LC	Shear Ch...	Loc[ft]	Dir	LC	phi*Pn...	phi*Pn...	phi*M...	phi*M...	...	Eqn
1	FFTH	PIPE_3.0	.812	6	42	.099	6		26	27.874	65.205	5.749	5.749	1...	H1-1b
2	MP-2	PIPE_2.0	.395	3.5	26	.031	3.5		26	16.812	32.13	1.872	1.872	2...	H1-1b
3	MP-3	PIPE_2.0	.366	2.7...	26	.027	2.641		26	14.773	32.13	1.872	1.872	1...	H1-1b
4	SA-1	HSS4X4...	.336	0	40	.218	0	y	55	145.538	169.74	19.285	19.285	1...	H1-1b
5	MP-1	PIPE_2.0	.227	3.6...	26	.017	3.656		26	15.783	32.13	1.872	1.872	1...	H1-1b
6	SF2-V1	PIPE_4.0	.000	.75	28	.000	.75		28	92.503	93.24	10.631	10.631	1...	H1-1b

Envelope None Cold Formed Steel Code Checks

Member	Shape	Code Check	Loc[ft]	LC	Shear...	Loc[ft]	Dir	LC	Pn[k]	Tn[k]	Mnyy[k-...	Mnzz[k-...	Cb	Cmyy	Cmzz	Eqn
No Data to Print ...																

APPENDIX D

ADDITIONAL CALCULATIONS

Job Name: CCI BU No. 806565
Job Number: TEP #219134.293546
Calc: DC Check: GHM
Date: 8/28/2019

Moment Bolt Group - Support Arm

Bolt Size:	0.625	in
# Bolts:	4	
Plate Width:	10	in
Plate Height:	10	in
Bolt H Gap:	7	in
Bolt V Gap:	7	in
Plate T:	0.625	in
Slip Member Ø:	N/A	in
Bolt Grade:	A325N	
Fu_{bolt}:	120	ksi
r:	4.9497	in
J:	98.00	in^4/in^2
$Bolt_{Area}$:	0.307	in^2
$Bolt_{Area, Net Tensile}$:	0.226	in^2
Pretension:	19	kips
Slotted Holes:	No	

Code Checks Per ANSI/TIA-222-H:

Bolt Capacity =	**27.5%**	**PASS**
Plate Capacity =	**48.8%**	**PASS**

Plate Bending

Horizontal Member height: 4 in
Horizontal Member width: 4 in
Plate Fy: 36 ksi

My =	9.1590	k - in	Z_y =	0.977	in^3	S_y =	0.651	in^3
Mz =	15.4542	k - in	Z_z =	0.977	in^3	S_z =	0.651	in^3

$ØMp_y$ (Z):	31.641	k - in
$ØMp_y$ (S):	33.750	k - in
$ØMp_z$ (Z):	31.641	k - in
$ØMp_z$ (S):	33.750	k - in

Exhibit F

Power Density/RF Emissions Report

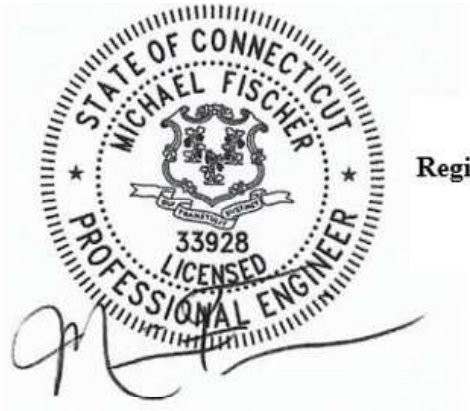
RF EMISSIONS COMPLIANCE REPORT

Crown Castle on behalf of AT&T Mobility, LLC

Crown Castle Site Name: HORTON 2 / FREDSALL PROPERTY
Crown Castle Site BU: 876377
AT&T Mobility, LLC Site FA #: 10041785
161 Pinney Street
Colebrook, CT
10/7/2019

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 07 October 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
COLEBROOK, 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 "HORTON 2 / FREDSALL PROPERTY" ("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 2.640% 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 5.283% 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
HORTON 2 / FREDSALL PROPERTY
Site Summary

Carrier	Area Maximum Percentage MPE
AT&T Mobility, LLC	0.083 %
AT&T Mobility, LLC (Proposed)	0.546 %
AT&T Mobility, LLC (Proposed)	0.287 %
AT&T Mobility, LLC (Proposed)	0.264 %
AT&T Mobility, LLC (Proposed)	0.604 %
AT&T Mobility, LLC (Proposed)	0.583 %
AT&T Mobility, LLC (Proposed)	0.273 %
Sprint	0.2 %
Sprint	0.2 %
Sprint	0.078 %
Sprint	0.078 %
Verizon Wireless	0.425 %
Verizon Wireless	0.618 %
Verizon Wireless	0.339 %
Verizon Wireless	0.705 %
Composite Site MPE:	5.283 %

AT&T Mobility, LLC
HORTON 2 / FREDSALL PROPERTY
Carrier Summary

Frequency:	850	MHz
Maximum Permissible Exposure (MPE):	566.67	µW/cm^2
Maximum power density at ground level:	0.4726	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.0834	%

					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	7770	142	23	547	0.261004	0.04606	0.404051	0.071303
Powerwave	7770	142	143	547	0.261004	0.04606	0.404051	0.071303
Powerwave	7770	142	263	547	0.261004	0.04606	0.404051	0.071303

AT&T Mobility, LLC (Proposed)
HORTON 2 / FREDSALL PROPERTY
Carrier Summary

Frequency:	2100	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	5.46423	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.54642	%

					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-BU6D	142	23	4788	4.284269	0.428427	5.424788	0.542479
CCI Antennas	DMP65R-BU4D	142	143	4066	3.042935	0.304294	4.153373	0.415337
CCI Antennas	DMP65R-BU6D	142	263	4788	4.284269	0.428427	5.424788	0.542479

AT&T Mobility, LLC (Proposed)
HORTON 2 / FREDSALL PROPERTY
Carrier Summary

Frequency:	850	MHz
Maximum Permissible Exposure (MPE):	566.67	µW/cm^2
Maximum power density at ground level:	1.62688	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.2871	%

					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-BU6D	142	23	2239	0.857637	0.151348	1.581671	0.279118
CCI Antennas	DMP65R-BU4D	142	143	1695	1.014076	0.178954	1.066069	0.18813
CCI Antennas	DMP65R-BU6D	142	263	2239	0.857637	0.151348	1.581671	0.279118

AT&T Mobility, LLC (Proposed)
HORTON 2 / FREDSALL PROPERTY
Carrier Summary

Frequency:	763	MHz
Maximum Permissible Exposure (MPE):	508.67	µW/cm^2
Maximum power density at ground level:	1.34259	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.26394	%

					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-BU6D	142	23	2400	0.915769	0.180033	1.206377	0.237165
CCI Antennas	DMP65R-BU4D	142	143	1582	1.00454	0.197485	1.047155	0.205863
CCI Antennas	DMP65R-BU6D	142	263	2400	0.915769	0.180033	1.206377	0.237165

AT&T Mobility, LLC (Proposed)
HORTON 2 / FREDSALL PROPERTY
Carrier Summary

Frequency:	2300	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	6.04081	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.60408	%

					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-BU6D	142	23	2606	5.836295	0.583629	6.025829	0.602583
CCI Antennas	DMP65R-BU4D	142	143	2917	2.167878	0.216788	2.784187	0.278419
CCI Antennas	DMP65R-BU6D	142	263	2606	5.836295	0.583629	6.025829	0.602583

AT&T Mobility, LLC (Proposed)
HORTON 2 / FREDSALL PROPERTY
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	5.83291	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.58329	%

					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-BU6D	142	23	4075	4.854338	0.485434	5.736091	0.573609
CCI Antennas	DMP65R-BU4D	142	143	3541	3.609674	0.360967	4.654695	0.46547
CCI Antennas	DMP65R-BU6D	142	263	4075	4.854338	0.485434	5.736091	0.573609

AT&T Mobility, LLC (Proposed)
HORTON 2 / FREDSALL PROPERTY
Carrier Summary

Frequency:	737	MHz
Maximum Permissible Exposure (MPE):	491.33	µW/cm^2
Maximum power density at ground level:	1.34259	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.27325	%

					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-BU6D	142	23	2400	0.915769	0.186384	1.206377	0.245531
CCI Antennas	DMP65R-BU4D	142	143	1582	1.00454	0.204452	1.047155	0.213125
CCI Antennas	DMP65R-BU6D	142	263	2400	0.915769	0.186384	1.206377	0.245531

Sprint
HORTON 2 / FREDSALL PROPERTY
Carrier Summary

Frequency:	1990	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	2.00059	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.20006	%

					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	APXVSPP18-C-A20	148	20	3804	0.826115	0.082612	1.55483	0.155483
RFS	APXVSPP18-C-A20	148	120	3804	0.826115	0.082612	1.55483	0.155483
RFS	APXVSPP18-C-A20	148	280	3804	0.826115	0.082612	1.55483	0.155483

Sprint
HORTON 2 / FREDSALL PROPERTY
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	2.00059	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.20006	%

					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	APXVSPP18-C-A20	148	20	3804	0.826115	0.082612	1.55483	0.155483
RFS	APXVSPP18-C-A20	148	120	3804	0.826115	0.082612	1.55483	0.155483
RFS	APXVSPP18-C-A20	148	280	3804	0.826115	0.082612	1.55483	0.155483

Sprint
HORTON 2 / FREDSALL PROPERTY
Carrier Summary

Frequency:	866	MHz
Maximum Permissible Exposure (MPE):	577.33	µW/cm^2
Maximum power density at ground level:	0.45065	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.07806	%

					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	APXVSPP18-C-A20	148	20	1084	0.354663	0.061431	0.362401	0.062772
RFS	APXVSPP18-C-A20	148	120	1084	0.354663	0.061431	0.362401	0.062772
RFS	APXVSPP18-C-A20	148	280	1084	0.354663	0.061431	0.362401	0.062772

Sprint
HORTON 2 / FREDSALL PROPERTY
Carrier Summary

Frequency:	862	MHz
Maximum Permissible Exposure (MPE):	574.67	µW/cm^2
Maximum power density at ground level:	0.45065	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.07842	%

					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	APXVSPP18-C-A20	148	20	1084	0.354663	0.061716	0.362401	0.063063
RFS	APXVSPP18-C-A20	148	120	1084	0.354663	0.061716	0.362401	0.063063
RFS	APXVSPP18-C-A20	148	280	1084	0.354663	0.061716	0.362401	0.063063

Verizon Wireless
HORTON 2 / FREDSALL PROPERTY
Carrier Summary

Frequency:	2100	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	4.25291	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.42529	%

					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	130	30	5154	2.636687	0.263669	4.085107	0.408511
ANDREW	SBNHH-1D65B	130	150	5154	2.636687	0.263669	4.085107	0.408511
ANDREW	SBNHH-1D65B	130	270	5154	2.636687	0.263669	4.085107	0.408511

Verizon Wireless
HORTON 2 / FREDSALL PROPERTY
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	6.18102	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.6181	%

					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	130	30	4583	4.694023	0.469402	6.101776	0.610178
ANDREW	SBNHH-1D65B	130	150	4583	4.694023	0.469402	6.101776	0.610178
ANDREW	SBNHH-1D65B	130	270	4583	4.694023	0.469402	6.101776	0.610178

Verizon Wireless
HORTON 2 / FREDSALL PROPERTY
Carrier Summary

Frequency:	751	MHz
Maximum Permissible Exposure (MPE):	500.67	µW/cm^2
Maximum power density at ground level:	1.69735	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.33902	%

					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	130	30	2043	0.87781	0.175328	1.433467	0.286312
ANDREW	SBNHH-1D65B	130	150	2043	0.87781	0.175328	1.433467	0.286312
ANDREW	SBNHH-1D65B	130	270	2043	0.87781	0.175328	1.433467	0.286312

Verizon Wireless
HORTON 2 / FREDSALL PROPERTY
Carrier Summary

Frequency:	850	MHz
Maximum Permissible Exposure (MPE):	566.67	µW/cm^2
Maximum power density at ground level:	3.99305	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.70466	%

					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	LPA-80080-6CF	130	30	4019	1.588075	0.280248	2.472209	0.436272
Antel	LPA-80080-6CF-EDIN-6	130	150	4019	3.538267	0.6244	3.898134	0.687906
Antel	LPA-80080-6CF-EDIN-6	130	270	4019	3.538267	0.6244	3.898134	0.687906