



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

November 20, 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: 876405
186 Minortown Road, Woodbury, CT 06798
Latitude: 41° 34' 4.70" / Longitude: -73° 10' 46.85"

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 80-foot mount on the existing 110-foot Monopole Tower, located at 186 Minortown Road, Woodbury, CT. The tower is owned by Crown Castle and the property is owned by Raymond Hardisty. AT&T now intends to replace six (6) existing antennas with six (6) new antennas. The new antennas will be installed at the 80-ft level of the tower.

This facility was approved by the Connecticut Siting Council in Docket No. 235 on June 19, 2003 and on July 13, 2004 in Petition No. 678 the Council approved a ten foot extension in height to the tower. These approvals were given with conditions that this exempt modification complies with.

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 Barbara Perkinson, First Selectman for the Town of Woodbury, Mary Ellen Edwards, Land Use Coordinator, Crown Castle as the tower owner, and Raymond Hardisty, 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.

Melanie A. Bachman

Page 2

For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn: Anne Marie Zsamba.

Sincerely,

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

Attachments

cc:

Barbara Perkinson, First Selectman
Town of Woodbury
281 Main Street South
Woodbury, CT 06798
203-263-2141

Mary Ellen Edwards, Land Use Coordinator
Town of Woodbury
Land Use Department
281 Main Street South
Woodbury, CT 06798
203-263-2467

Raymond Hardisty
200 Minortown Road
Woodbury, CT 06798

Crown Castle, Tower Owner

ORIGIN ID: ONHA (585) 445-5896
RICHARD ZAJAC
CROMWELL CASTLE
300 MERIDIAN CENTRE
ROCHESTER, NY 14618
UNITED STATES US

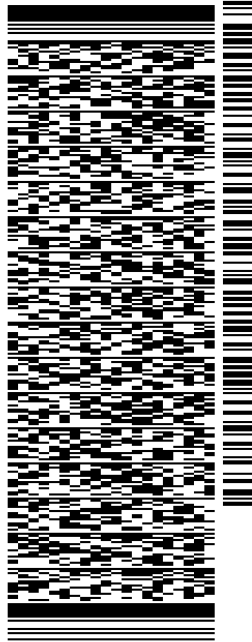
SHIP DATE: 19NOV19
ACTWGT: 4.00 LB
CAD: 104924194IN/ET4160

BILL SENDER

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

NEW BRITAIN CT 06051

(860) 827-2951 REF: 1765 6880
INV: DEPT:
PO:



J192119091901uv

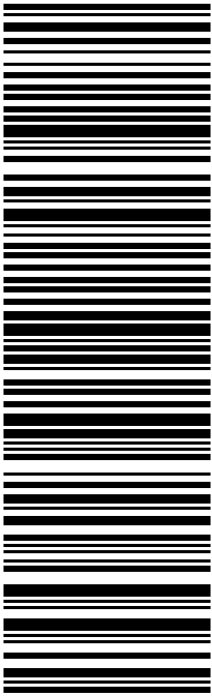
567J1/F330/05A2

TRK# 7770 2259 6597
0201

WED - 20 NOV 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 Service Guide. 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

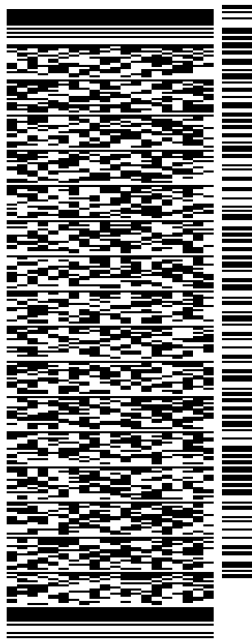
SHIP DATE: 19NOV19
ACTWGT: 1.50 LB
CAD: 104924194/NET4160

BILL SENDER

TO BARBARA PERKINSON, FIRST SELECTMAN
TOWN OF WOODBURY
281 MAIN STREET SOUTH

WOODBURY CT 06798

(203) 263-2141 REF: 1734.7890
INV: DEPT:
PO:



J192119091901uv

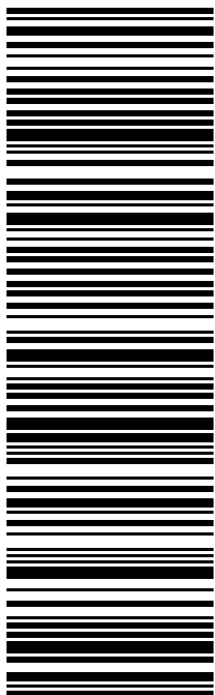
567J1/F330/05A2

TRK# 7770 2261 9238
0201

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PRIORITY OVERNIGHT

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06798
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300 MERIDIAN CENTRE
ROCHESTER, NY 14618
UNITED STATES US

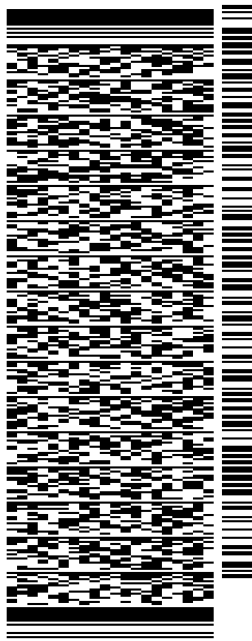
SHIP DATE: 19NOV19
ACTWGT: 1.50 LB
CAD: 104924194IN/ET4160

BILL SENDER

TO MARY ELLEN EDWARDS, LAND USE COORDI
TOWN OF WOODBURY
281 MAIN STREET SOUTH

WOODBURY CT 06798

(203) 263-2467 REF: 1734.7890
INV: DEPT:
PO:



J192119091901uv

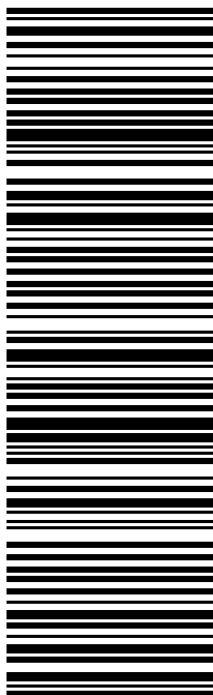
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TRK# 7770 2264 0120
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PRIORITY OVERNIGHT

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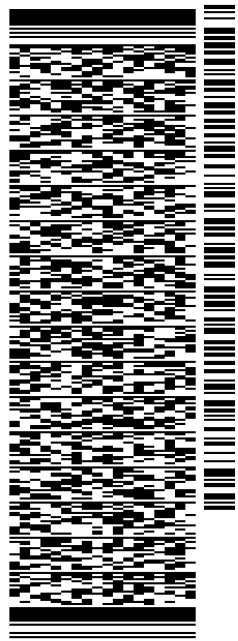
BILL SENDER

TO **RAYMOND HARDISTY**

200 MINORTOWN ROAD

WOODBURY CT 06798

(201) 236-9224 REF: 1734.7890
INV: DEPT:
PO:



J192119091901uv

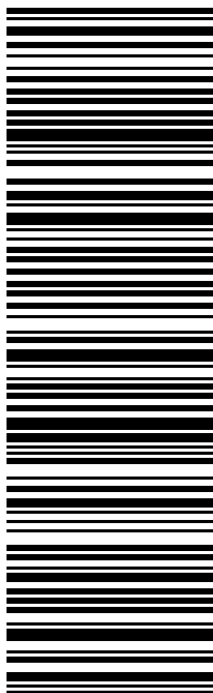
567J1/F330/05A2

TRK# 7770 2266 1930
0201

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Exhibit A

Original Facility Approval

Connecticut Siting Council

Decisions

DOCKET NO. 235 - Sprint Spectrum L.P. application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a wireless telecommunications facility at 186 Minortown Road or Main Street North, North Woodbury, Connecticut. } Connecticut
} Siting
} Council

June 19, 2003

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Sprint Spectrum L.P. d/b/a Sprint PCS for the construction, maintenance and operation of a wireless telecommunications facility at 186 Minortown Road, Woodbury, Connecticut. The Council denies certification of Site B located at Main Street North, Woodbury, Connecticut.

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

1. The tower shall be constructed no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of Sprint PCS, AT&T Wireless PCS, LLC and other entities, both public and private, but such tower shall not exceed a height of 100 feet above ground level.
2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a. Visual simulations of the monopole and stealth options for a 100-foot tower at the site including a flagpole and tree tower;
 - b. a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment building, access road, utility line, and landscaping; and
 - c. construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.
3. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of electromagnetic radio frequency power density is submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.
4. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or

economic reasons precluding such tower sharing.

6. If the facility does not initially provide wireless services within one year of completion of construction or ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.
7. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and cease to function.
8. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in the Waterbury Republican American, and Voices Sunday – The Weekly Star.

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

The parties and intervenors to this proceeding are:

Applicant

Sprint Spectrum L.P. d/b/a Sprint PCS

Its Representative

Thomas J. Regan, Esq.
Brown Rudnick Berlack Israels LLP
CityPlace I, 38th Floor
185 Asylum Street
Hartford, CT 06103-6522
860-509-6522

Intervenor

AT&T Wireless PCS, LLC d/b/a AT&T Wireless

Its Representative

Daniel F. Leary, Esq.
Cuddy & Feder LLP
90 Maple Avenue
White Plains, New York 10601
(914) 761-1300

Party

Anthony J. Vallillo

Connecticut Siting Council

Petition Staff Reports

Petition No. 678 - Project Summary

Cellco Partnership

North Woodbury, Connecticut

July 13, 2004

Introduction

Cellco Partnership d/b/a as Verizon Wireless (Cellco) seeks to extend the height of a Sprint Spectrum L.P. (Sprint) owned 100-foot monopole located in North Woodbury, Connecticut. The existing tower was approved by the Council on June 19, 2003 under Docket 235. The tower currently supports the antennas of Sprint (100-foot centerline) and AT&T Wireless PCS LLC (90-foot centerline). Cellco is seeking a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the tower extension. A copy of the Petition was provided to the Town. Additionally, Cellco contacted the First Selectman to discuss the proposal. The Town has no comment on the proposed tower extension. Abutting property owners were also notified of the proposed extension. No abutters commented on the proposal.

Proposed Modification

Cellco seeks to extend the height of the approved tower from 100 feet to 110 feet. Cellco would install three flush mounted PCS panel antennas a centerline height of 110 feet, bringing the total height of the facility to 112 feet above ground level. Cellco would expand the compound by 20 feet to the north to accommodate a 12-foot by 30-foot equipment shelter. The proposed compound expansion is within Sprint's 100-foot by 100-foot lease area and would require minimal grading. Additional site clearing would not be required.

Visibility Impact

Extending the tower from 100 feet agl to 110 feet agl would increase visibility from 27-acres to 34-acres within a two-mile radius of the site, mainly as a result of the expansion of existing areas with visibility. In addition, approximately 4 acres of seasonal visibility would occur from the open areas immediately southeast of the site. The extended tower would be seasonally visible from 0.2 miles of North Main Street, 0.1 miles of Minortown Road, and 0.2 miles of Middle Road Turnpike.

Power Density

The conservative worst-case approximation of electromagnetic radiofrequency emissions for telecommunications operations at the site would increase from 22.4% to 24.2% of the applicable standard for uncontrolled environments.

Exhibit B

Property Card

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2018.

Town of Woodbury

First Deed from the Indians 1659



Information on the Property Records for the Municipality of Woodbury was last updated on 10/12/2019.

Parcel Information

Location:	186 MINORTOWN RD	Property Use:	Vacant Land	Primary Use:	Broadcasting Facility
Unique ID:	346710	Map Block Lot:	025-036	Acres:	1.38
490 Acres:	0.00	Zone:	OS60	Volume / Page:	281/ 769
Developers Map / Lot:	32/82	Census:	3621		

Value Information

	Appraised Value	Assessed Value
Land	131,100	91,770
Buildings	0	0
Detached Outbuildings	274,238	191,970
Total	405,338	283,740

Owner's Information

Owner's Data

HARDISTY RAYMOND A
GLOBAL SIGNAL ACQUISITIONS II LLC
PMB 331
4017 WASHINGTON RD
MC MURRAY, PA 15317

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Building/Equipment Cell Towers	2005			160
Building/Equipment Cell Towers	2010			320
Fencing Cell Towers	2010			200
Mono Pole Cell Towers	2005			100
Pad Cell Towers	2010			120

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Valid Sale	Sale Price
HARDISTY RAYMOND A	0281	0769	10/22/2002		No	\$0

Building Permits

Permit Number	Permit Type	Date Opened	Date Closed	Permit Status	Reason
B208-14	Commercial Addition	11/14/2014		Closed	TMOBILE TO ADD 3 ATENNAS TO EXISTING ARAY NO GROUND WORK
B026-13	Comm Renovations	02/25/2013		Closed	DRILL 2- 1/2 INCH HOLE DEPTH OF 7'2" INTO EXISITING OUNATION AND EPOXY 3 (9') ANCHOPR BOLTS INTO HOL

Permit Number	Permit Type	Date Opened	Date Closed	Permit Status	Reason
B002-13	Comm Renovations	01/02/2013		Closed	CELL TOWER- ADD CABINET TO SHELTER INSTALL 3 NEW ANTENNAS & 6 RRUS TO EXISTING TOWER
B224-12	Comm Renovations	11/27/2012	10/21/2015	Closed	REPLACE R EXISTING ANTENNAS W/3 NEW SPRINT ANTENNAS ON EXISTING TOWER ADDING 6 REMOTE RADIO HEADS TO
10111		06/04/2008		Closed	VERIZON WIRELESS - INSTALLATION OF REINFORCEMENT FORM 1-80'; INSTALL WELDED TRANSISION STIFFENERS;
9387		11/08/2005		Closed	TELECOMMUNICATIONS TOWER/OWNER:SPRINT/EASEMENT MAP BK 30/34&35; CB-2004;SEPARATE ACCT FOR TOW

Information Published With Permission From The Assessor



Exhibit C

Construction Drawings

AT&T SITE NUMBER: CTL01168
AT&T SITE NAME: WOODBURY - MINORTOWN RD
AT&T FA CODE: 10071348
AT&T PACE NUMBER: MRCTB041571/ MRCTB041403/ MRCTB041410/ MRCTB041789/ MRCTB041479
SITE TYPE: MONOPOLE



BUSINESS UNIT #: 876405
SITE ADDRESS: 186 MINORTOWN ROAD WOODBURY, CT 06798
COUNTY: LITCHFIELD
TOWER HEIGHT: 110'-0"

PROJECT: AT&T LTE 2C/3C/4C/5C/4T4R



AT&T SITE NUMBER: CTL01168
BU #: 876405
WOODBURY NORTH
 186 MINORTOWN ROAD
 WOODBURY, CT 06798
 EXISTING 110'-0"
 MONOPOLE

SITE INFORMATION

CROWN CASTLE USA INC. WOODBURY NORTH
 SITE NAME:
 SITE ADDRESS: 186 MINORTOWN ROAD WOODBURY, CT 06798
 COUNTY: LITCHFIELD
 AREA OF CONSTRUCTION: EXISTING
 LATITUDE: 41.5679889
 LONGITUDE: -73.1796711
 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: 492776
 CRANE NEEDED AT 130'

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

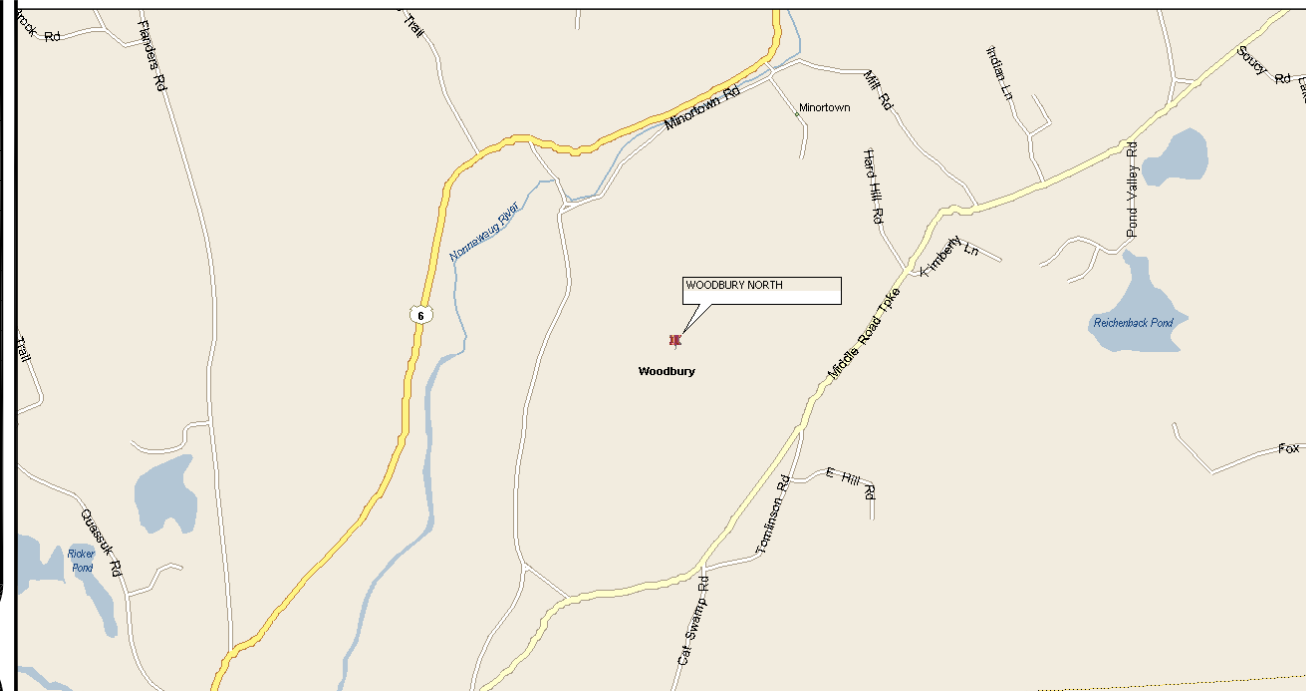
THE PURPOSE OF THIS PROJECT IS TO PROPOSE AN ANTENNA MODIFICATION ON AN EXISTING WIRELESS SITE.
 TOWER SCOPE OF WORK

- REMOVE (3) POWERWAVE 7770 ANTENNAS.
- REMOVE (2) KMW AM-X-CD-16-65-00T-RET ANTENNAS.
- REMOVE (1) KMW AM-X-CD-14-65-00T-RET ANTENNA.
- REMOVE (6) POWERWAVE LGP 13519 GSM DIPLEXERS.
- DECOMMISSION (3) ERICSSON RRUS11 B12 RRHS.
- INSTALL (3) NEW HANDRAIL PIPES.
- INSTALL (4) CCI DMP65R-BU6DA ANTENNAS.
- INSTALL (2) CCI DMP65R-BU4DA ANTENNAS.
- INSTALL (3) ERICSSON 4449 B5/B12 RRHS.
- INSTALL (3) ERICSSON 4478 B14 RRHS.
- INSTALL (3) ERICSSON 8843 B2/B66A RRHS.
- INSTALL (1) RAYCAP DC9-48-60-24-8C-EV SQUID.
- INSTALL (3) DC CABLES.
- INSTALL (1) FIBER CABLE.
- INSTALL (6) RRH BACK TO BACK MOUNTS.

GROUND SCOPE OF WORK

- REMOVE (1) DUS41.
 - REMOVE AND REPLACE EXISTING POWER SYSTEM WITH (1) NETSURE 7100 CABINET AND (3) -48V BATTERY STRINGS.
 - INSTALL (2) BB 6630S.
 - INSTALL (1) IDLe CABLE.
 - INSTALL (1) FIBER MANAGEMENT BOX.
- DESIGN PACKAGE BASED ON THE RFDS REVISION: 3.00 DATE: 7/29/19
- DESIGN PACKAGE BASED ON THE APPLICATION ID: 492776 REVISION: 0

LOCATION MAP



APPLICABLE CODES/REFERENCE DOCUMENTS

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

CODE TYPE	CODE
BUILDING	2018 IBC
MECHANICAL	2018 IMC
ELECTRICAL	2017 NEC

REFERENCE DOCUMENTS:

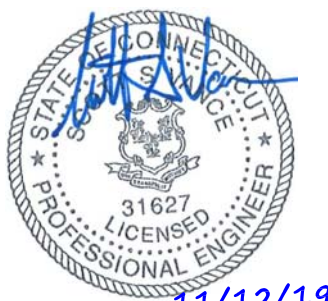
STRUCTURAL ANALYSIS: PAUL J. FORD AND COMPANY
 OCTOBER 7, 2019

MOUNT ANALYSIS: TOWER ENGINEERING PROFESSIONALS
 SEPTEMBER 30, 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!



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

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SHEET NUMBER: T-1 REVISION: 1

T-1 1



ONE AT&T WAY
BEDMINSTER, NJ 07921



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



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

AT&T SITE NUMBER:
CTL01168

BU #: 876405
WOODBURY NORTH

186 MINORTOWN ROAD
WOODBURY, CT 06798

EXISTING 110'-0"
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	10/22/19	MMI	CONSTRUCTION	RMC
1	11/12/19	JJD	CONSTRUCTION	GEH



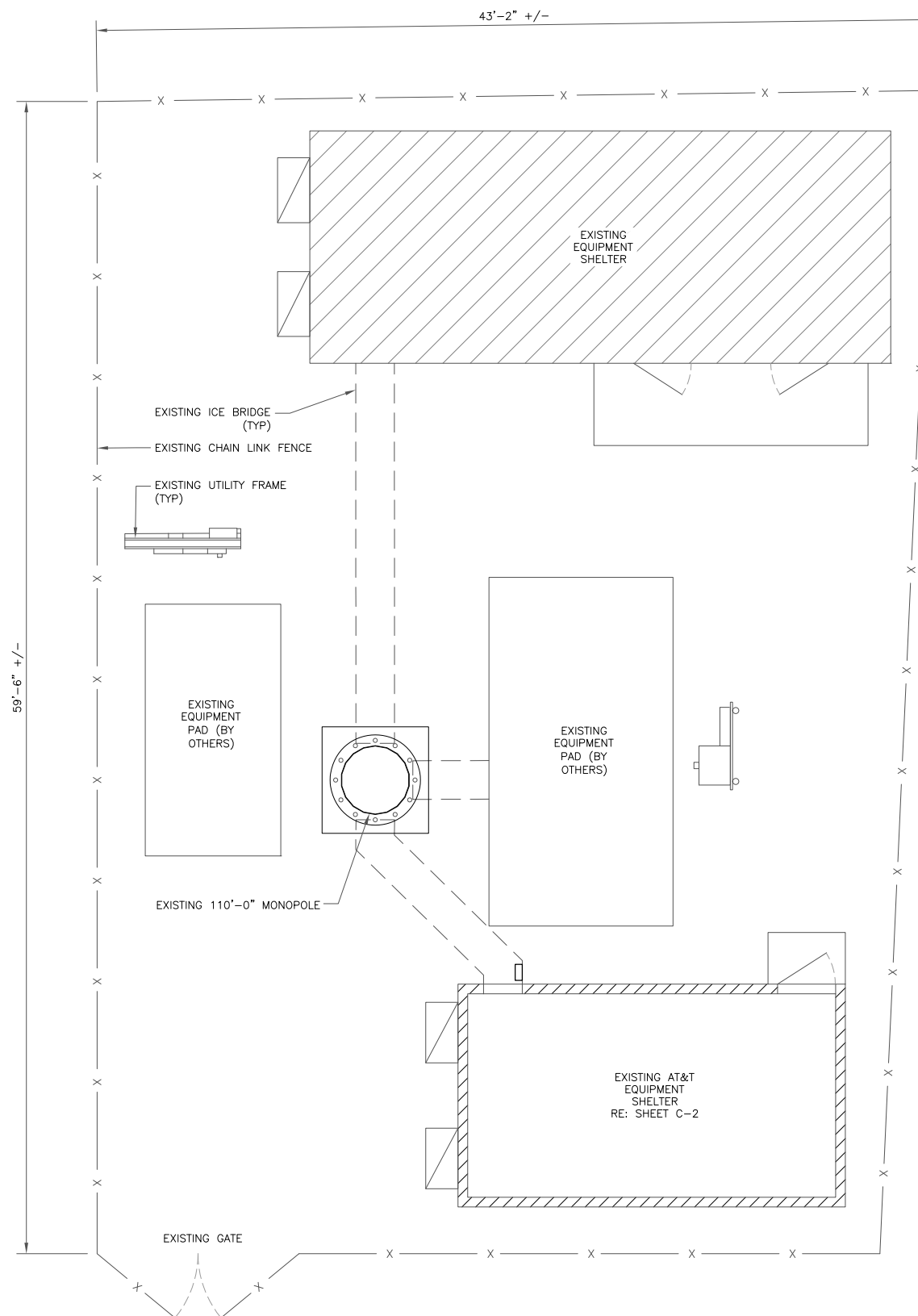
11/12/19

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SHEET NUMBER: REVISION:

C-1 **1**



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





ONE AT&T WAY
BEDMINSTER, NJ 07921



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11/12/19

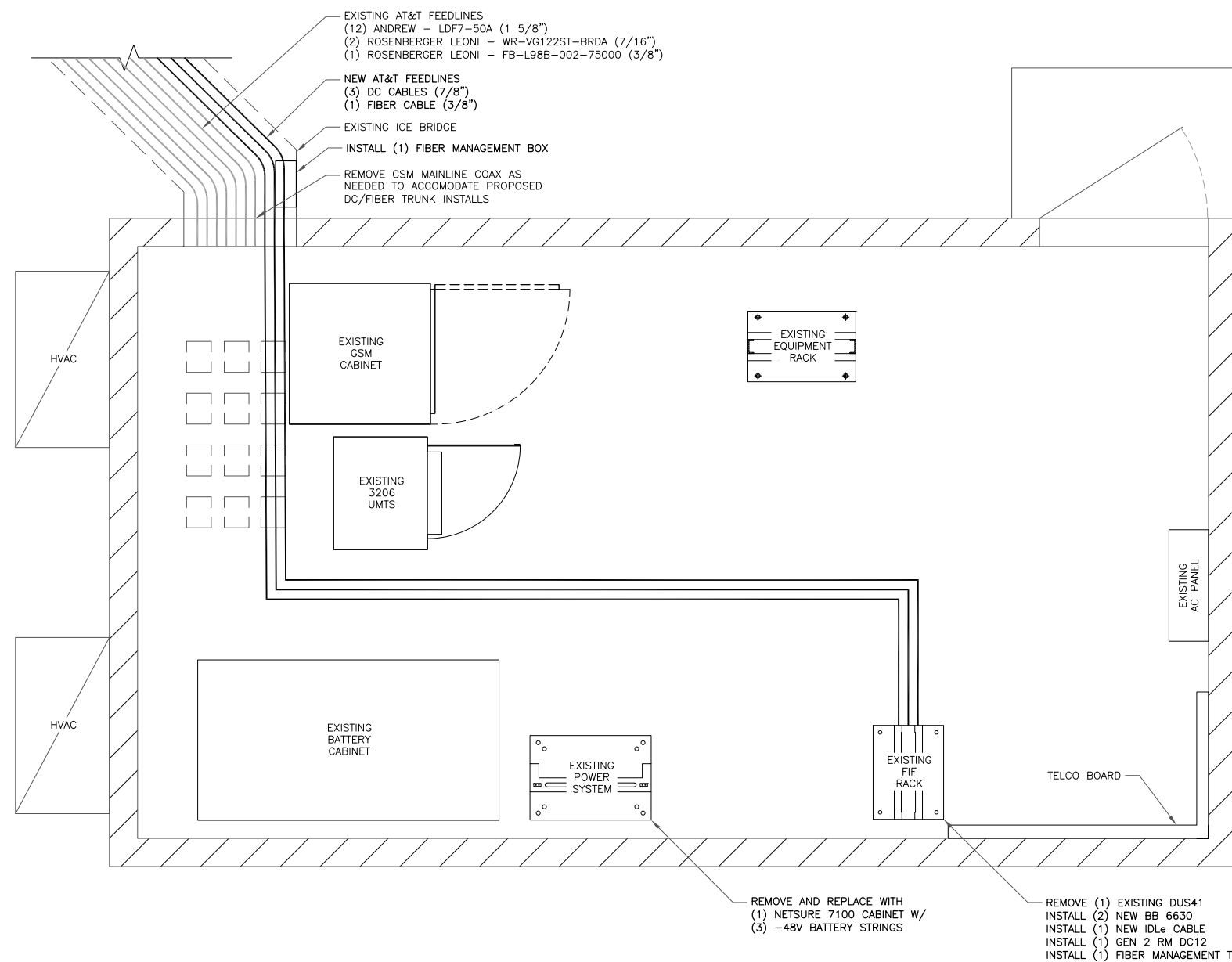
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SHEET NUMBER: REVISION:

C-2

1



REMOVE AND REPLACE WITH
(1) NETSURE 7100 CABINET W/
(3) -48V BATTERY STRINGS

REMOVE (1) EXISTING DUS41
INSTALL (2) NEW BB 6630
INSTALL (1) NEW IDLc CABLE
INSTALL (1) GEN 2 RM DC12
INSTALL (1) FIBER MANAGEMENT TRAY

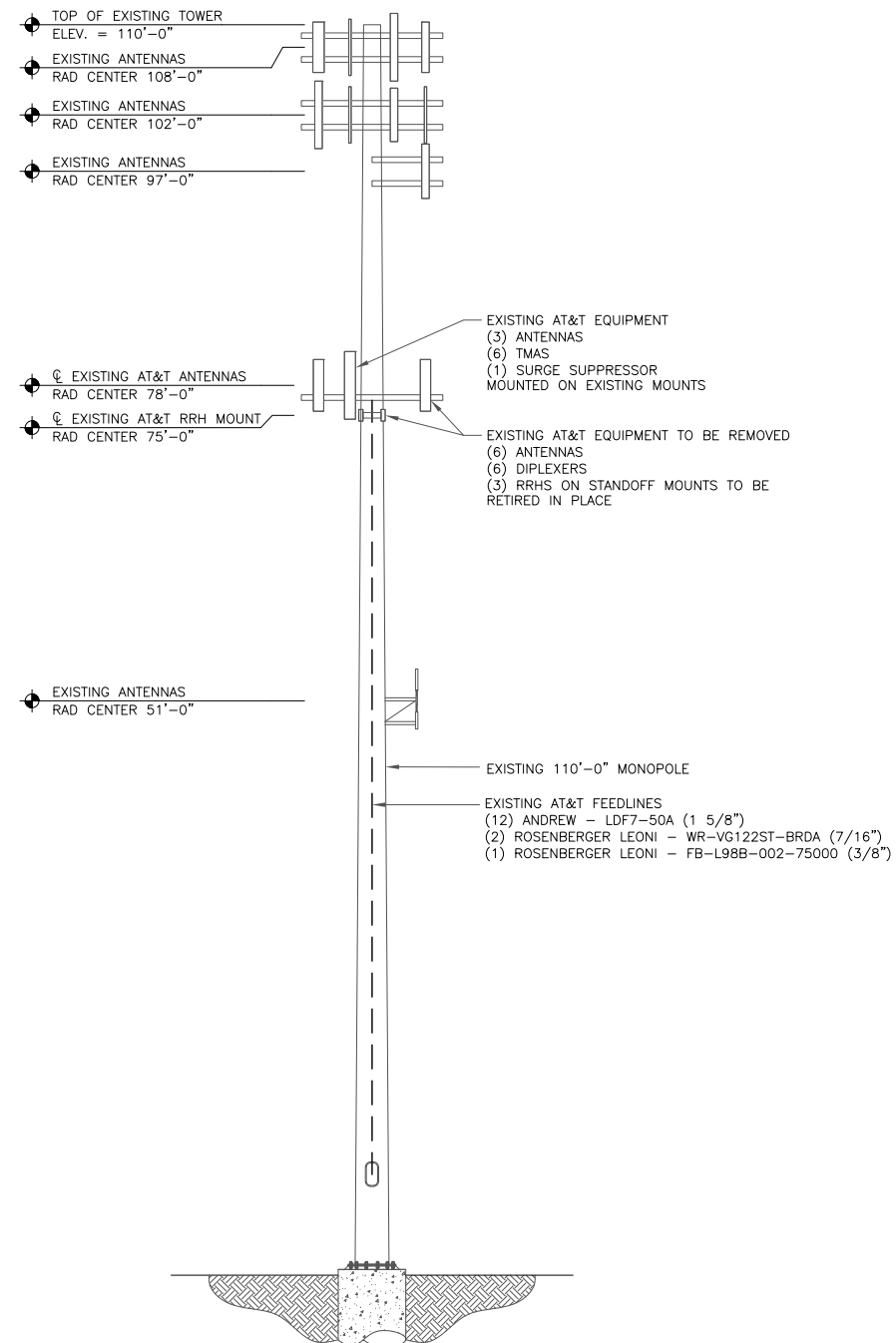
1 EXISTING EQUIPMENT PLAN
SCALE: 3/4"=1'-0" (FULL SIZE)
3/8"=1'-0" (11x17)



139242_876405_Woodbury_North_CD.dwg - Sheet:C-2 - User: ghayes - Nov 12, 2019 - 10:47am

AT&T EQUIPMENT

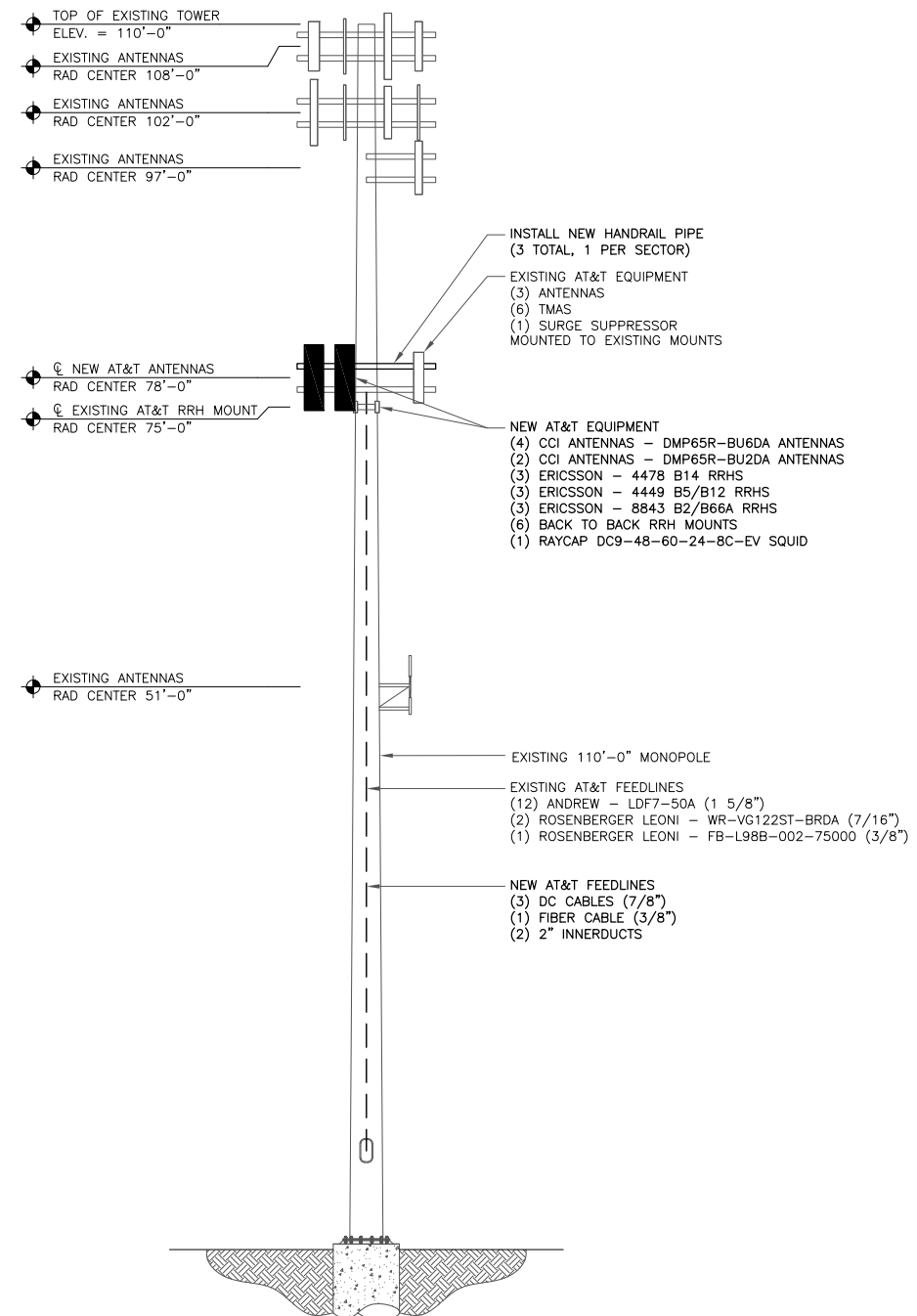
ANTENNA CL: 78'-0"
MOUNT CL: 80'-0"



1 EXISTING ELEVATION
SCALE: NOT TO SCALE

AT&T EQUIPMENT

ANTENNA CL: 78'-0"
MOUNT CL: 80'-0"



2 FINAL ELEVATION
SCALE: NOT TO SCALE



ONE AT&T WAY
BEDMINSTER, NJ 07921



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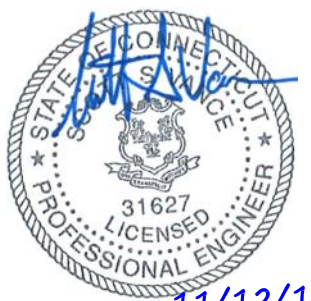
BU #: 876405
WOODBURY NORTH

186 MINORTOWN ROAD
WOODBURY, CT 06798

EXISTING 110'-0"
MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
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SHEET NUMBER: REVISION:

C-3

1



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BEDMINSTER, NJ 07921



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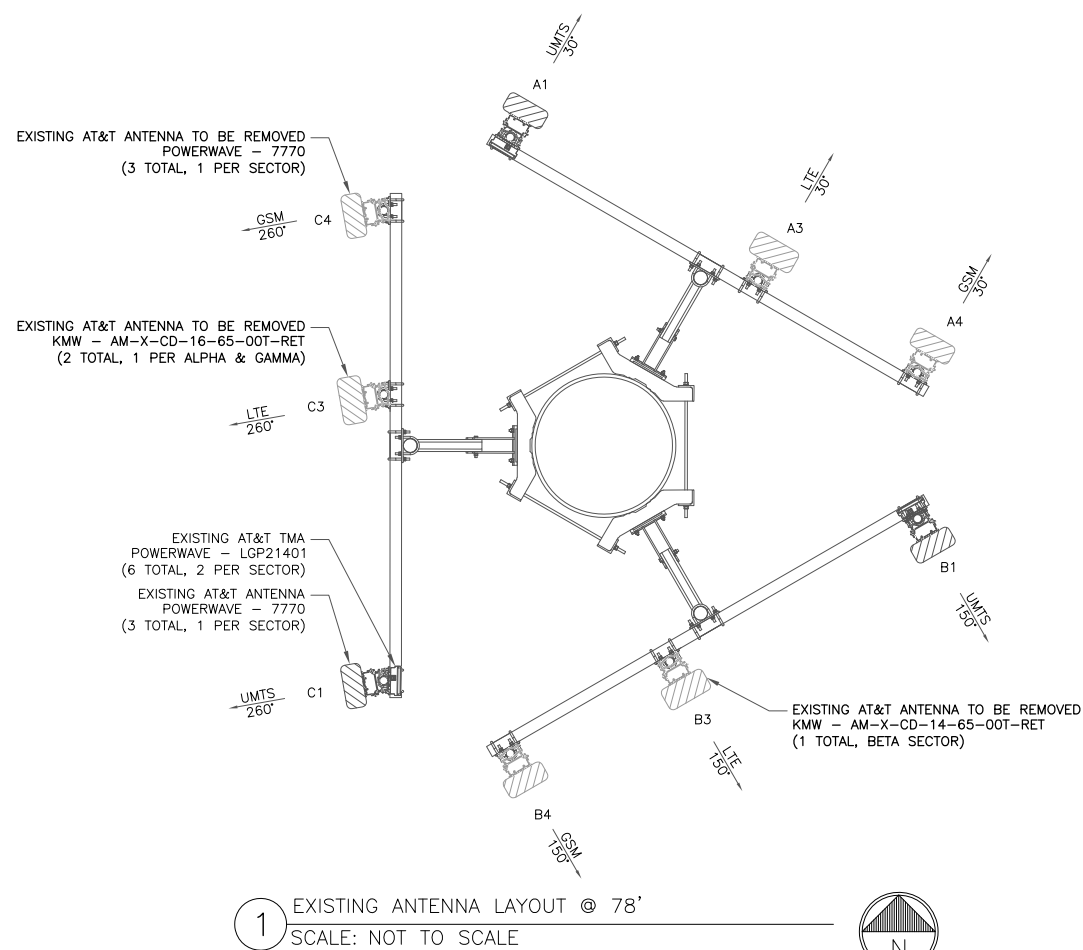
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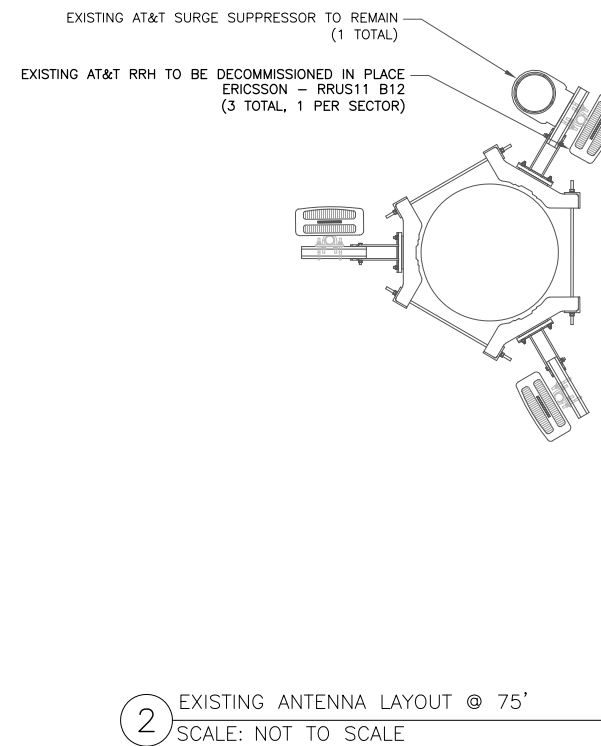
SHEET NUMBER: REVISION:

C-4

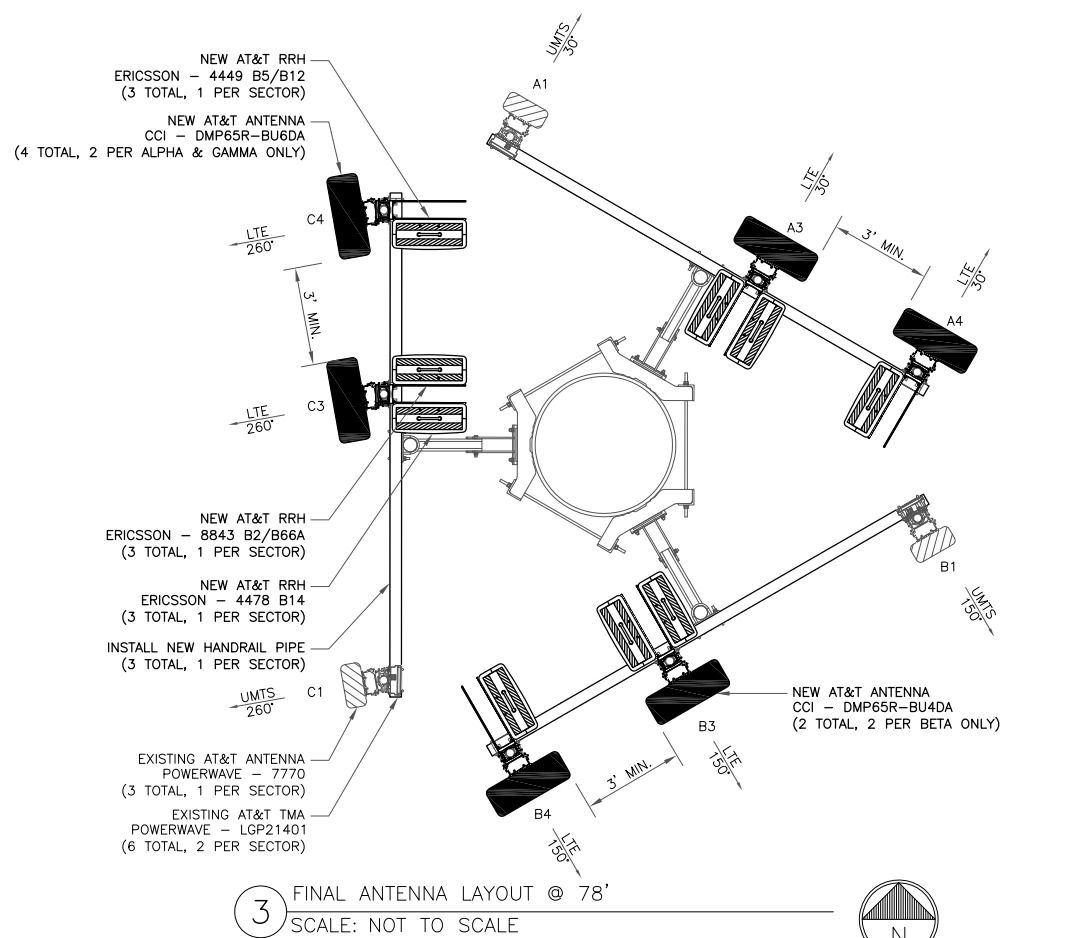
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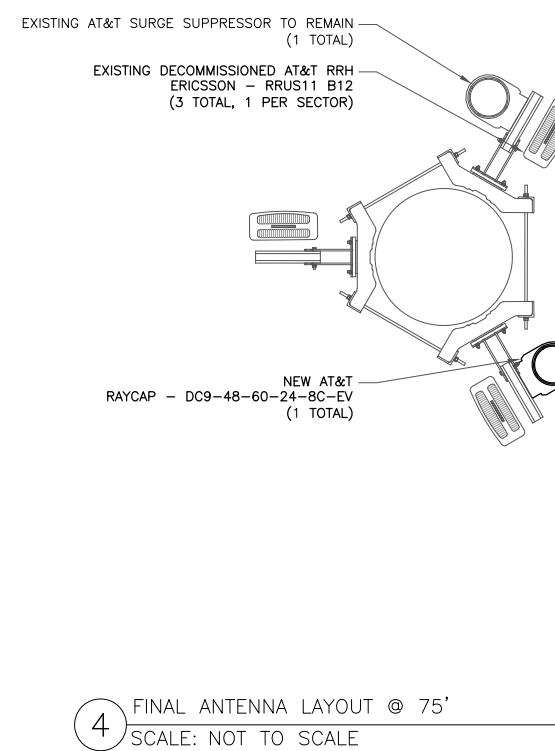
1 EXISTING ANTENNA LAYOUT @ 78'
SCALE: NOT TO SCALE



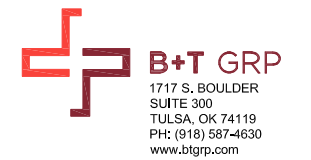
2 EXISTING ANTENNA LAYOUT @ 75'
SCALE: NOT TO SCALE



3 FINAL ANTENNA LAYOUT @ 78'
SCALE: NOT TO SCALE



4 FINAL ANTENNA LAYOUT @ 75'
SCALE: NOT TO SCALE



AT&T SITE NUMBER:
CTL01168

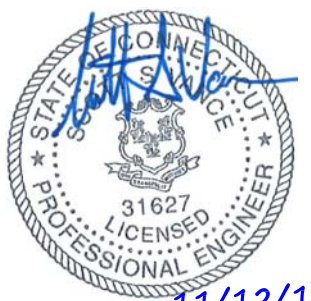
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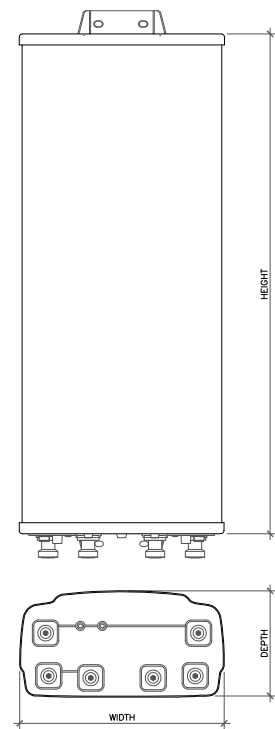
SHEET NUMBER: REVISION:

C-5 **1**

FINAL ANTENNA AND COAXIAL CABLE SCHEDULE

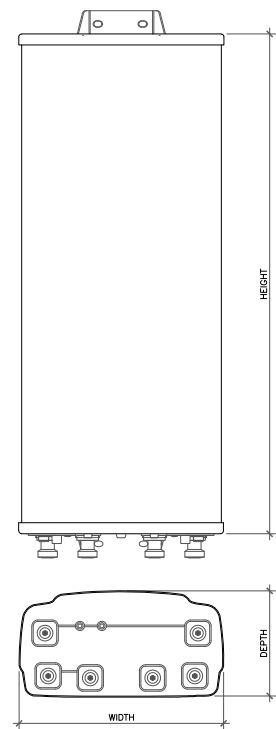
POS.	TECH	STATUS	AZIMUTH	ANTENNA TYPE	ANTENNA RAD CENTER	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	MAIN COAX SIZE	MAIN COAX LENGTH	COAX QTY	TMA QTY AND MODEL	RAYCAP	DC (WR-VG86ST-BRD) FIBER CABLES (FB-L98B-034-XXXXXX)	RRHs QTY ON TOWER	RRHs ON GROUND	DIPLEXER ON TOWER	DIPLEXER ON GROUND	RET CABLE		
ALPHA SECTOR																				
A1	UMTS	EXISTING	30°	POWERWAVE 7770	78'-0"	0°	0°	1 5/8"	100'-0"	4	(2) LGP 21401	DC6-48-60-18-8F	(1) FIBER (2) DC LINES	-	-	-	(4) LGP13519	-		
A2	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-
A3	LTE	NEW	30°	CCI DMP65R-BU6DA	78'-0"	0°	10°/7°/7°	-	-	-	-			-	(1) 4478 B14 (1) 8843 B2/B66A	-	-	-	-	-
A4	LTE	NEW	30°	CCI DMP65R-BU6DA	78'-0"	0°	6°/6°/7°/6°	-	-	-	-			-	(1) 4449 B5/B12	-	-	-	-	-
BETA SECTOR																				
B1	UMTS	EXISTING	150°	POWERWAVE 7770	78'-0"	0°	0°	1 5/8"	100'-0"	4	(2) LGP 21401	DC9-48-60-24-8C-EV	(1) FIBER (3) DC LINES	-	-	-	(4) LGP13519	-		
B2	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-
B3	LTE	NEW	150°	CCI DMP65R-BU4DA	78'-0"	0°	2°/2°/2°	-	-	-	-			-	(1) 4478 B14 (1) 8843 B2/B66A	-	-	-	-	-
B4	LTE	NEW	150°	CCI DMP65R-BU4DA	78'-0"	0°	2°/6°/2°/6°	-	-	-	-			-	(1) 4449 B5/B12	-	-	-	-	-
GAMMA SECTOR																				
C1	UMTS	EXISTING	260°	POWERWAVE 7770	78'-0"	0°	2°	1 5/8"	100'-0"	4	(2) LGP 21401	-	-	-	-	-	(4) LGP13519	-		
C2	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-
C3	LTE	NEW	260°	CCI DMP65R-BU6DA	78'-0"	0°	10°/8°/8°	-	-	-	-			-	(1) 4478 B14 (1) 8843 B2/B66A	-	-	-	-	-
C4	LTE	NEW	260°	CCI DMP65R-BU6DA	78'-0"	0°	10°/6°/8°/6°	-	-	-	-			-	(1) 4449 B5/B12	-	-	-	-	-

NOTE: BOLD DENOTES NEW EQUIPMENT



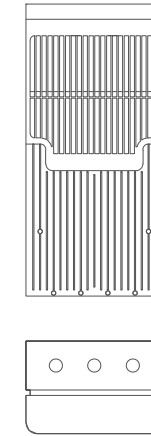
ANTENNA DIMENSIONS (INCHES)				
MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
DMP65R-BU6DA	71.2"	20.7"	7.7"	79.4 lbs

1 ANTENNA DETAIL
SCALE: NOT TO SCALE



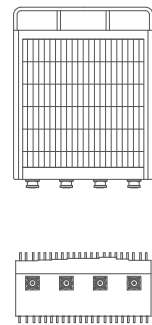
ANTENNA DIMENSIONS (INCHES)				
MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
DMP65R-BU4DA	48"	20.7"	7.7"	67.9 lbs

2 ANTENNA DETAIL
SCALE: NOT TO SCALE



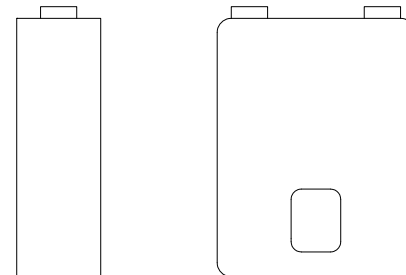
ERICSSON - 8843 B2/B66A
WEIGHT (FULLY EQUIPPED): 72.0 LBS
SIZE (HxWxD): 14.9x13.2x10.9 IN.

3 RRH DETAIL
SCALE: NOT TO SCALE



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

4 RRH DETAIL
SCALE: NOT TO SCALE



ERICSSON - 4478 B14
WEIGHT (FULLY EQUIPPED): 59.90 LBS
SIZE (HxWxD): 16.50x13.14x7.70 IN.

5 RRH DETAIL
SCALE: NOT TO SCALE

ONE AT&T WAY
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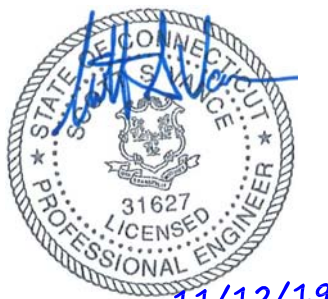
BU #: **876405**
WOODBURY NORTH

186 MINORTOWN ROAD
WOODBURY, CT 06798

EXISTING 110'-0"
MONOPOLE

ISSUED FOR:

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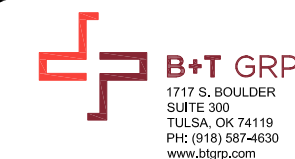


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MONOPOLE

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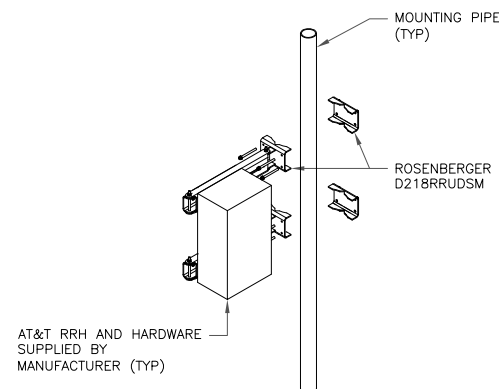
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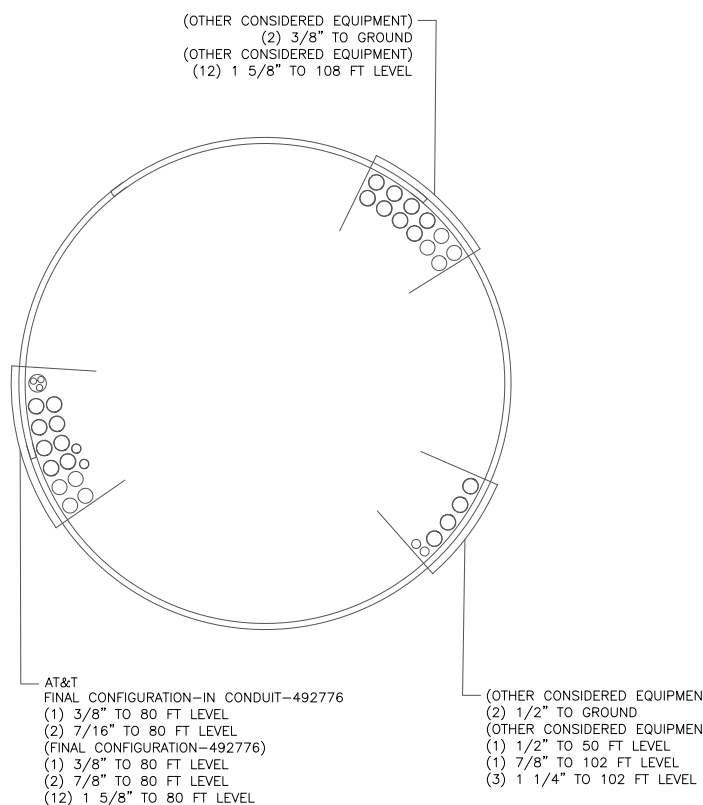
SHEET NUMBER: REVISION:

C-7 **1**

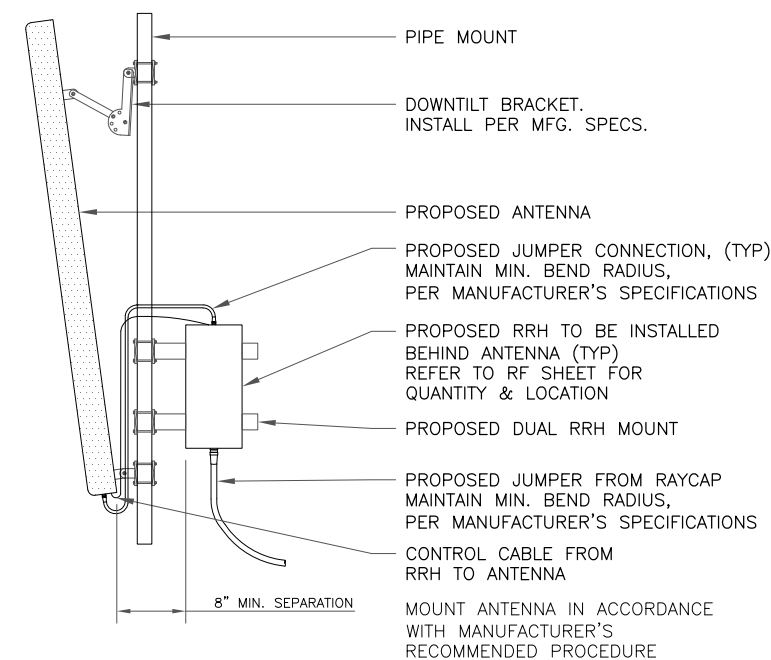
NOTE:
COMPLY WITH MANUFACTURERS INSTRUCTIONS TO
ENSURE THAT ALL RRH'S RECEIVE ELECTRICAL
POWER WITHIN 24 HOURS OF BEING REMOVED
FROM THE MANUFACTURER'S PACKAGING.
DO NOT OPEN RRH PACKAGES IN THE RAIN.



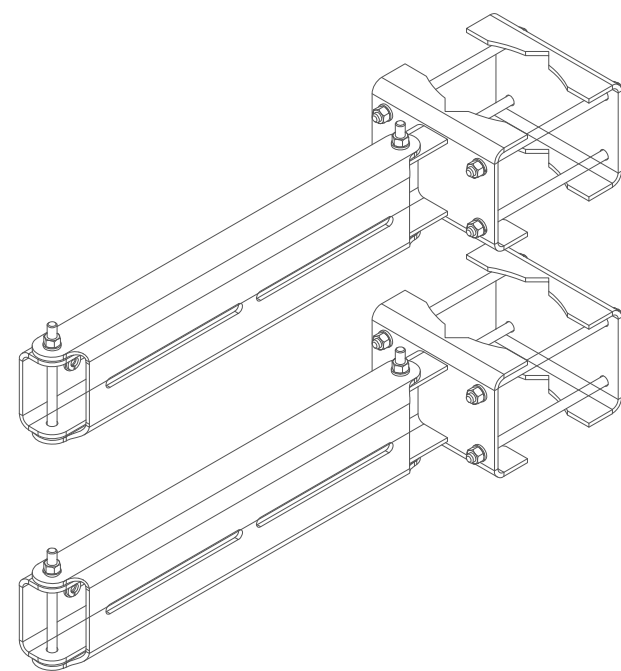
1 RRH DUAL BRACKET MOUNTING DETAIL
SCALE: NOT TO SCALE



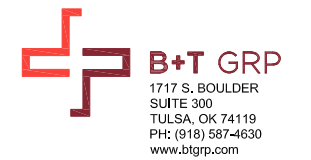
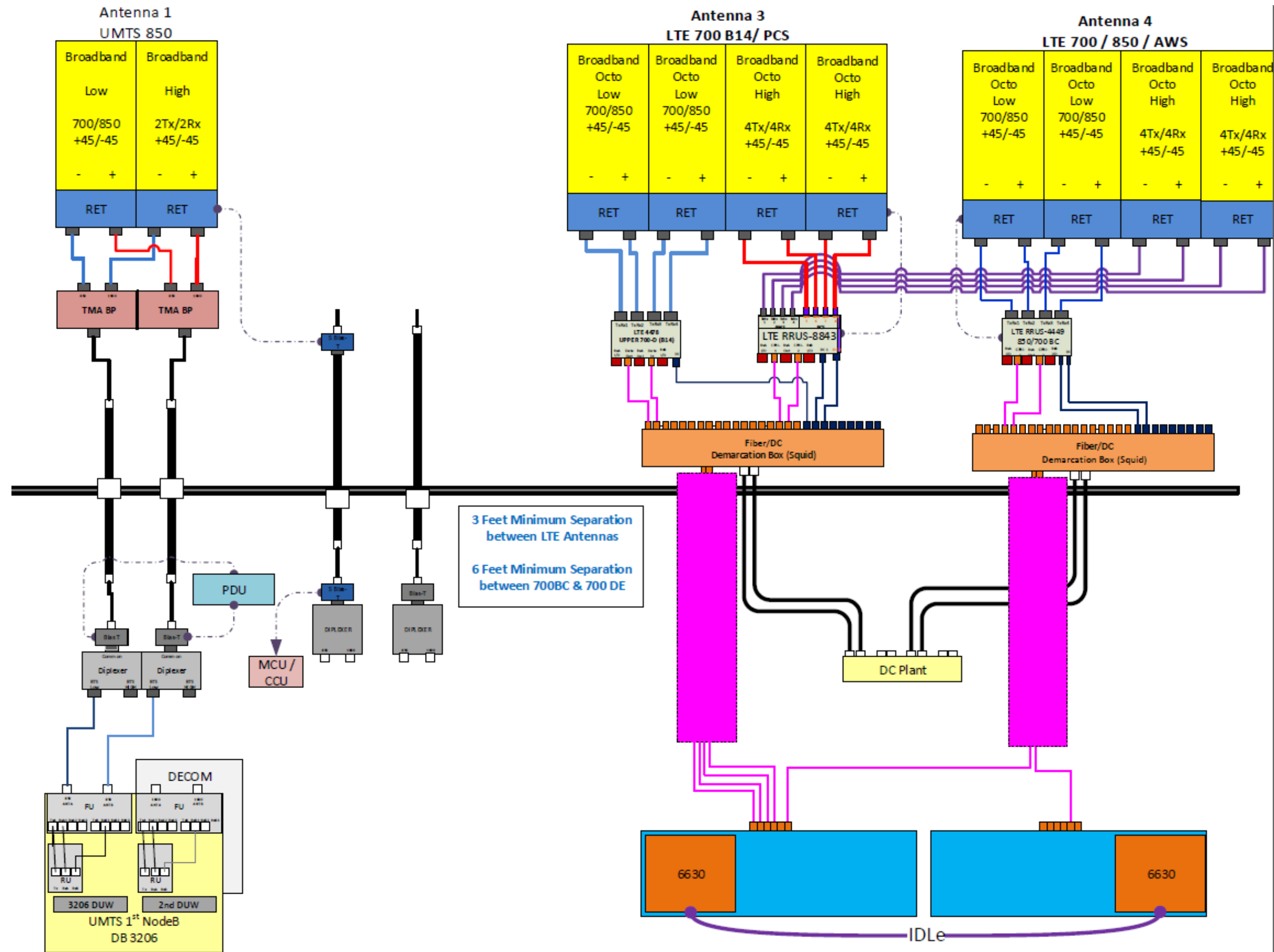
2 BASE LEVEL DRAWING
SCALE: NOT TO SCALE



3 ANTENNA MOUNTING DETAIL
SCALE: NOT TO SCALE



4 VALMONT - RRUDSM OR EQUIVALENT
SCALE: NOT TO SCALE



AT&T SITE NUMBER:
CTL01168

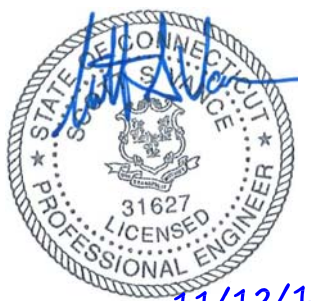
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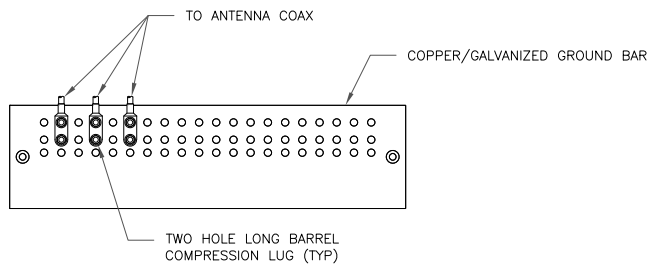
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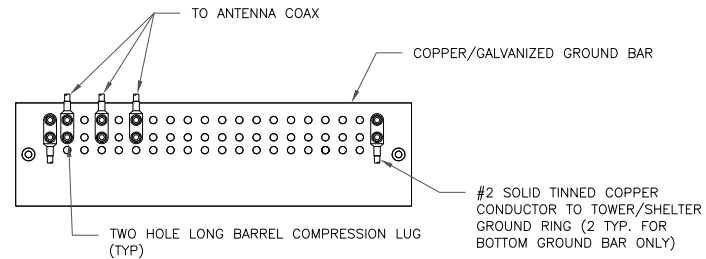
1 PLUMBING DIAGRAM
SCALE: NOT TO SCALE



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.

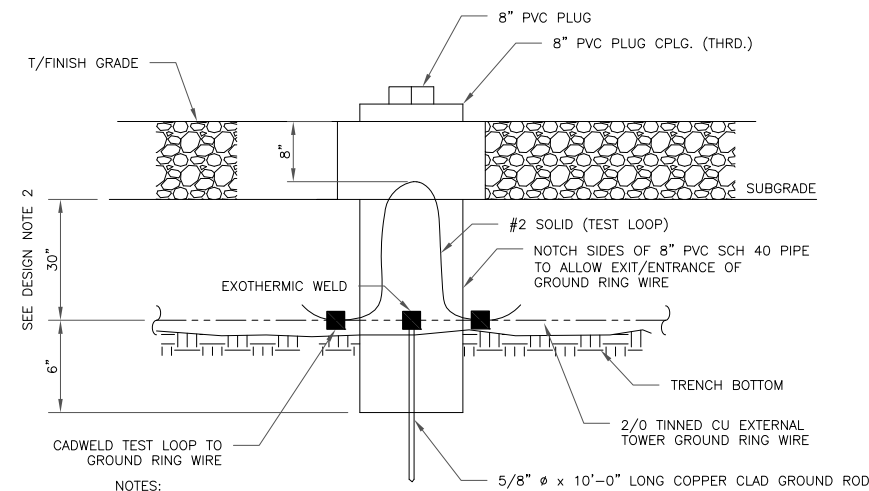
1 ANTENNA GROUND BAR DETAIL
SCALE: NOT TO SCALE



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.

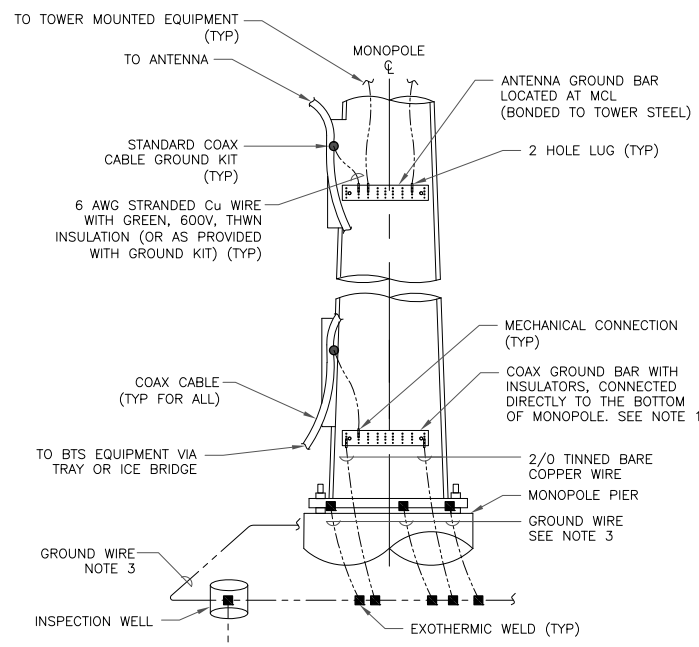
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



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).

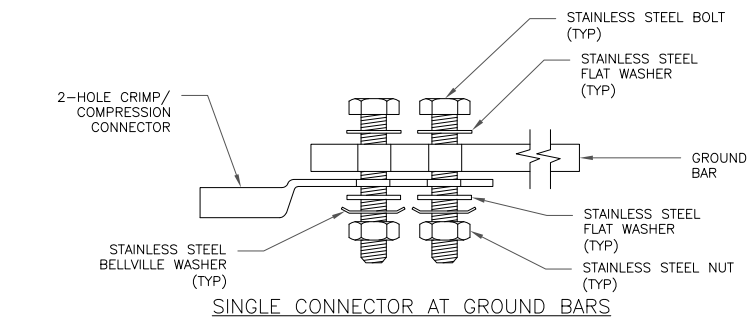
3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE



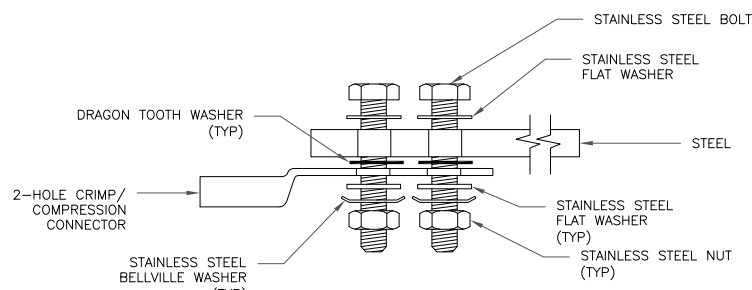
NOTES:

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.

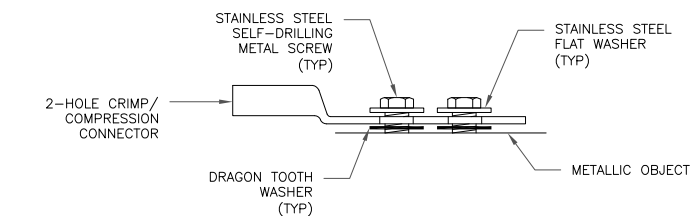
4 TYPICAL ANTENNA CABLE GROUNDING
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS

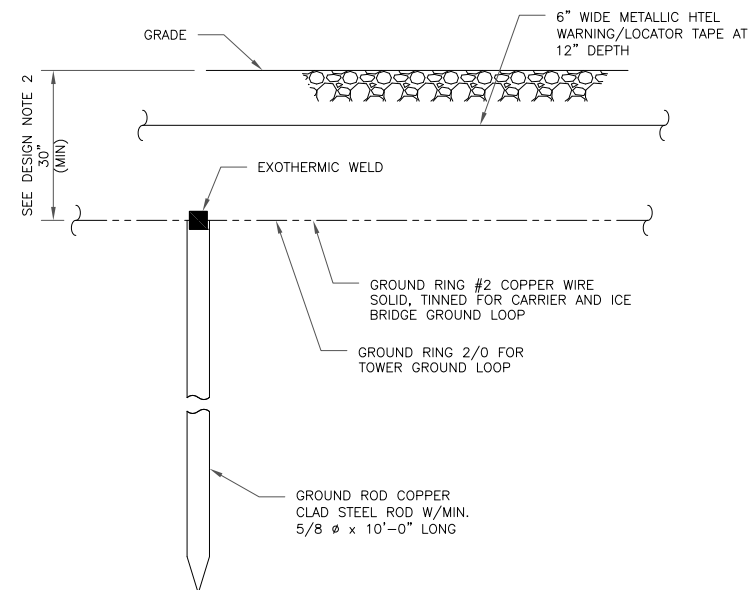


SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

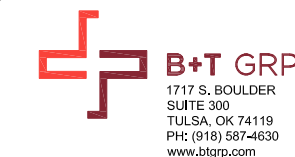
5 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



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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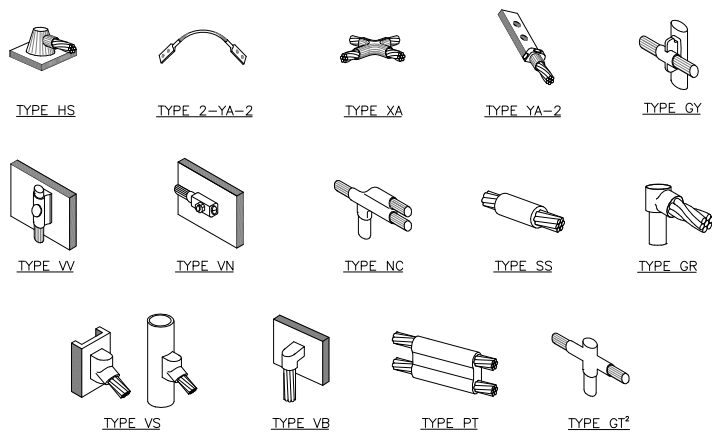
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PEC.0001564
Expires 2/10/20

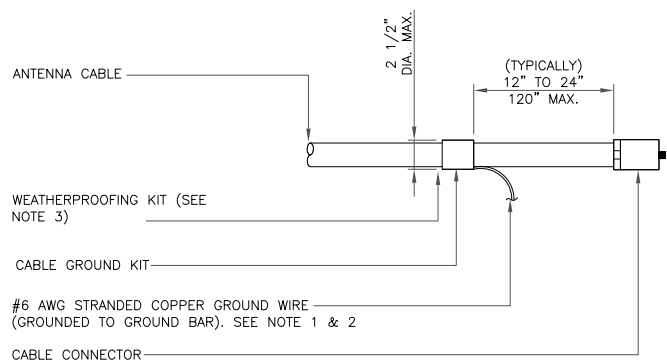
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SHEET NUMBER: **G-1** REVISION: **1**



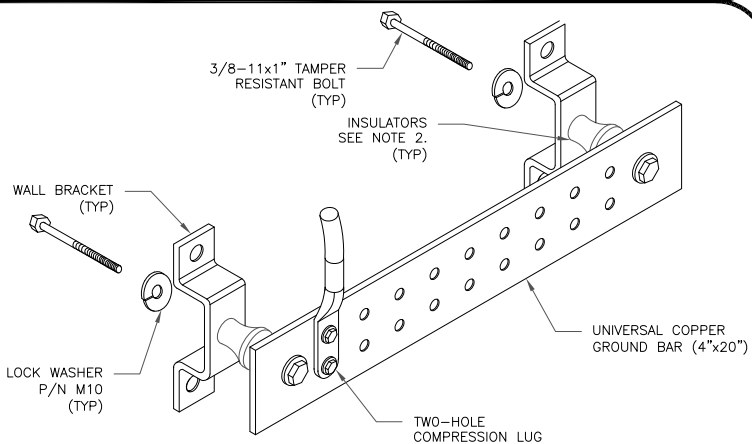
NOTE:
 1. ERICO EXOTHERMIC "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH CONSTRUCTION MANAGER FOR SPECIFIC MOLDS TO BE USED FOR THIS PROJECT.
 2. MOLD TYPE ONLY TO BE USED BELOW GRADE WHEN CONNECTING GROUND RING TO GROUND ROD.

1 CADWELD GROUNDING CONNECTIONS
 SCALE: NOT TO SCALE



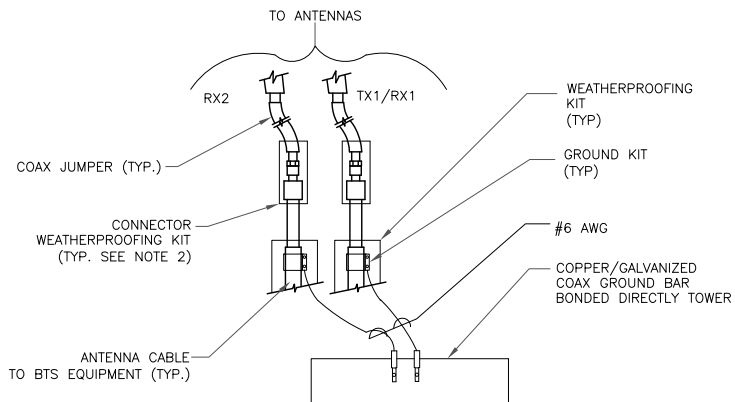
NOTES:
 1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
 2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
 3. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.

3 CABLE GROUND KIT CONNECTION
 SCALE: NOT TO SCALE



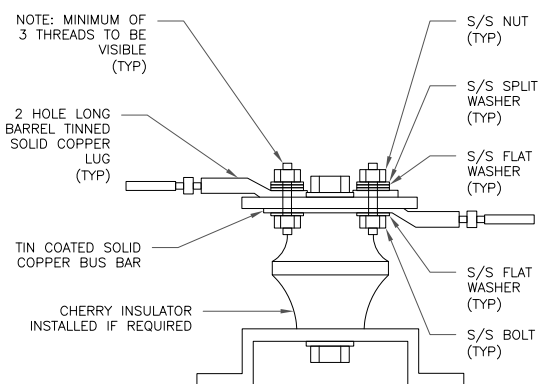
NOTES:
 1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY OAS-STD-10091, NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.
 2. OMIT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



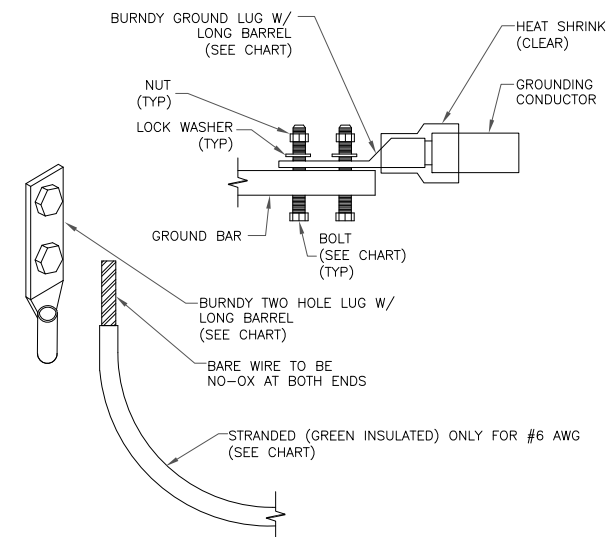
NOTES:
 1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
 2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.

4 GROUND CABLE CONNECTION
 SCALE: NOT TO SCALE



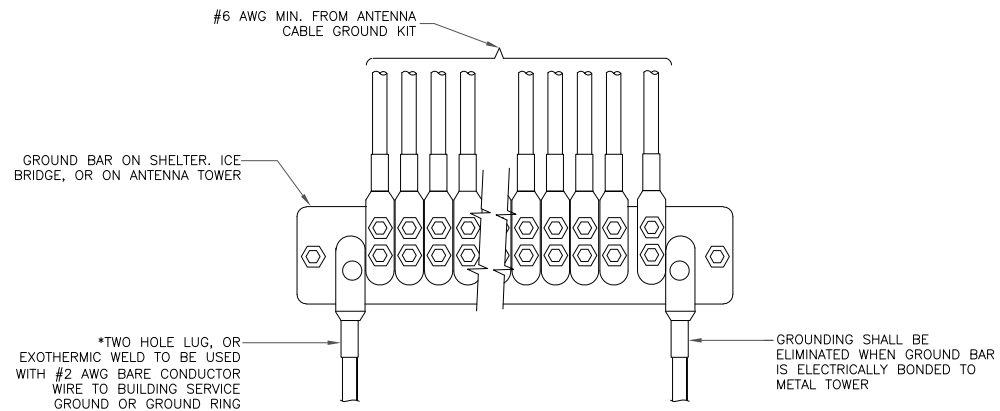
7 LUG DETAIL
 SCALE: NOT TO SCALE

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

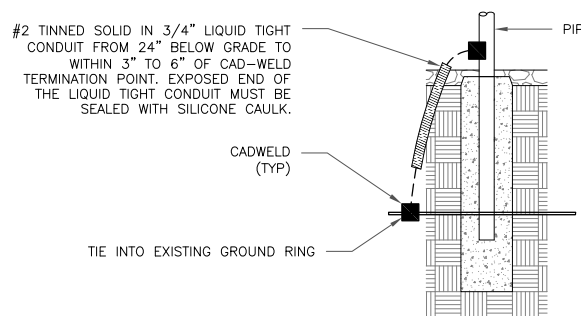


NOTES:
 1. ALL GROUNDING LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL HARDWARE BOLTS, NUTS, LOCK WASHERS SHALL BE STAINLESS STEEL. ALL HARDWARE ARE TO BE AS FOLLOWS: BOLT, FLAT WASHER, GROUND BAR, GROUND LUG, FLAT WASHER AND NUT.

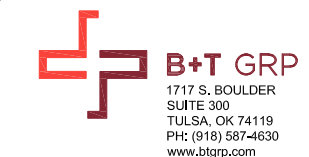
2 MECHANICAL LUG CONNECTION
 SCALE: NOT TO SCALE



5 GROUNDWIRE INSTALLATION
 SCALE: NOT TO SCALE



8 TRANSITIONING GROUND DETAIL
 SCALE: NOT TO SCALE



AT&T SITE NUMBER:
CTL01168

BU #: **876405**
WOODBURY NORTH

186 MINORTOWN ROAD
 WOODBURY, CT 06798

EXISTING 110'-0"
 MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	10/22/19	MMI	CONSTRUCTION	RMC
1	11/12/19	JJD	CONSTRUCTION	GEH



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

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SHEET NUMBER: **G-2** REVISION: **1**

Exhibit D

Structural Analysis Report

Date: **October 03, 2019**

Denice Nicholson
Crown Castle
3 Corporate Dr
Clifton Park, NY 12065

Paul J. Ford and Company
250 East Broad St., Ste 600
Columbus, OH 43215
614-221-6679

Subject: Structural Analysis Report

Carrier Designation: **AT&T Mobility Co-Locate**
Carrier Site Number: 10071348
Carrier Site Name: WOODBURY -
MINORTOWN ROAD

Crown Castle Designation: **Crown Castle BU Number:** 876405
Crown Castle Site Name: WOODBURY NORTH
Crown Castle JDE Job Number: 574666
Crown Castle Work Order Number: 1795612
Crown Castle Order Number: 492776 Rev. 0

Engineering Firm Designation: **Paul J. Ford and Company Project Number:** 37519-3399.001.7805

Site Data: **186 MinorTown, WOODBURY, Litchfield County, CT**
Latitude 41° 34' 4.79", Longitude -73° 10' 46.85"
100 Foot - Monopole Tower w/ Existing 10 Foot Extension

Dear Denice Nicholson,

Paul J. Ford and Company 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:

LC5: Proposed Equipment Configuration

Sufficient Capacity (94.0%)

This analysis utilizes an ultimate 3-second gust wind speed of 120 mph as required by the 2018 Connecticut State Building Code and Appendix N. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Respectfully submitted by:



Jared Forbes, E.I.
Structural Designer
jforbes@pauljford.com

C.J.P.

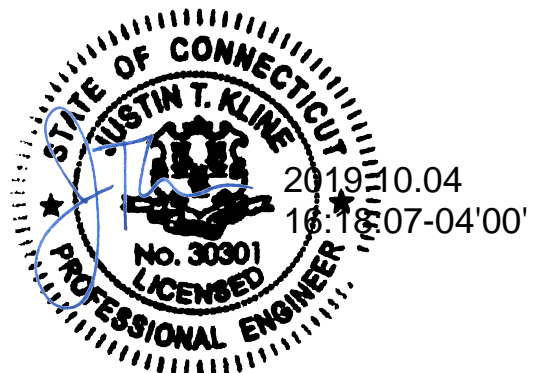


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1) INTRODUCTION

This tower is a 100 ft Monopole tower designed by ENGINEERED ENDEAVORS, INC. in April of 2003.

The tower has been modified multiple times to accommodate additional loading.

An existing 10-ft tower extension has been considered in this analysis, bringing the total tower height to 110-ft.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	120 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
80.0	80.0	6	powerwave technologies	7770.00 w/ Mount Pipe	12 2 2 2 2 1	1-5/8 3/8 7/16 7/8 2" Conduit
		1	tower mounts	T-Arm Mount [TA 602-3]		
	78.0	2	cci antennas	DMP65R-BU4D w/ Mount Pipe		
		4	cci antennas	DMP65R-BU6D w/ Mount Pipe		
		3	ericsson	RRUS 4449 B5/B12		
		3	ericsson	RRUS 4478 B14		
		3	ericsson	RRUS 8843 B2/B66A		
		3	powerwave technologies	1001940		
		6	powerwave technologies	LGP21401		
		1	raycap	DC6-48-60-0-8C-EV		
	1	raycap	DC6-48-60-18-8F			
	75.0	75.0	3	ericsson		
1			tower mounts	Side Arm Mount [SO 701-3]	-	-

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)
108.0	108.0	1	antel	BXA-171063-8BF-2 w/ Mount Pipe	12	1-5/8
		2	antel	BXA-171085-8BF-EDIN-2 w/ Mount Pipe		
		3	antel	BXA-70063/6CF-2 w/ Mount Pipe		
		1	antel	BXA-80063/4CFx5 w/ Mount Pipe		
		2	antel	BXA-80080/4CF w/ Mount Pipe		
		6	rfs celwave	FD9R6004/2C-3L		
		1	tower mounts	T-Arm Mount [TA 602-3]		
102.0	102.0	3	alcatel lucent	TD-RRH8x20-25	3 1	1-1/4 7/8
		3	rfs celwave	APXVSP18-C-A20 w/ Mount Pipe		
		3	rfs celwave	APXVTM14-C-120 w/ Mount Pipe		
		1	tower mounts	Miscellaneous [NA 507-1]		
		1	tower mounts	Platform Mount [LP 601-1]		
97.0	97.0	3	alcatel lucent	1900MHz RRH (65MHz)	-	-
		3	alcatel lucent	800MHZ RRH		
		1	tower mounts	Side Arm Mount [SO 701-3]		
50.0	51.0	1	lucent	KS24019-L112A	1	1/2
	50.0	1	tower mounts	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Clarence Welti Assoc., 3/20/2003	2158106	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	EEI, 11560, 4/24/2003	1613643	CCISITES
4-TOWER MANUFACTURER DRAWINGS	EEI, 11560, 4/21/2003	1614551	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 05A1056, 12/6/2005	1956156	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	PJF, 41708-0085, 07/24/2008	2177138	CCISITES
4-POST-MODIFICATION INSPECTION	PJF, 41708-0085, 7/24/2008	2309564	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	Reliapole, 11/14/2012	2055775	CCISITES
4-POST-MODIFICATION INSPECTION	Reliapole, 11/14/2012	3373272	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	PJF, 37512-1596, 11/19/2012	3382709	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 131001.876405, 5/6/2013	3849745	CCISITES

3.1) Analysis Method

tnxTower (version 8.0.5.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

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

3.2) Assumptions

- 1) Tower and structures were built 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) Monopole was modified in conformance with the referenced modification drawings.
- 5) The existing base plate grout was not considered in this analysis.

This analysis may be affected if any assumptions are not valid or have been made in error. Paul J. Ford and Company should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
109.86 - 104.86	Pole	TP13.752x12.7x0.1875	Pole	5.6%	Pass
104.86 - 99.86	Pole	TP14.803x13.752x0.1875	Pole	16.4%	Pass
99.86 - 99	Pole	TP14.984x14.803x0.1875	Pole	18.8%	Pass
99 - 98.5	Pole	TP15.5x14.984x0.1875	Pole	19.0%	Pass
98.5 - 93.5	Pole	TP16.477x15.5x0.1875	Pole	31.4%	Pass
93.5 - 88.5	Pole	TP17.454x16.477x0.1875	Pole	41.7%	Pass
88.5 - 83.5	Pole	TP18.431x17.454x0.1875	Pole	50.4%	Pass
83.5 - 79.33	Pole	TP19.246x18.431x0.1875	Pole	57.1%	Pass
79.33 - 79.08	Pole + Reinf.	TP19.295x19.246x0.55	Reinf. 4 Connection	31.3%	Pass
79.08 - 74.08	Pole + Reinf.	TP20.272x19.295x0.525	Reinf. 4 Compression	39.3%	Pass
74.08 - 69.08	Pole + Reinf.	TP21.249x20.272x0.5125	Reinf. 4 Compression	46.9%	Pass
69.08 - 64.08	Pole + Reinf.	TP22.226x21.249x0.4875	Reinf. 4 Compression	53.9%	Pass
64.08 - 59.08	Pole + Reinf.	TP23.203x22.226x0.475	Reinf. 4 Compression	60.3%	Pass
59.08 - 54.08	Pole + Reinf.	TP24.18x23.203x0.4625	Reinf. 4 Compression	66.2%	Pass
54.08 - 50.87	Pole + Reinf.	TP25.54x24.18x0.45	Reinf. 4 Compression	69.7%	Pass
50.87 - 45.87	Pole + Reinf.	TP25.397x24.432x0.5125	Reinf. 4 Compression	67.0%	Pass
45.87 - 40.87	Pole + Reinf.	TP26.362x25.397x0.5	Reinf. 4 Compression	71.2%	Pass
40.87 - 35.87	Pole + Reinf.	TP27.327x26.362x0.4875	Reinf. 4 Compression	75.0%	Pass
35.87 - 30.87	Pole + Reinf.	TP28.292x27.327x0.475	Reinf. 4 Compression	78.5%	Pass
30.87 - 25.87	Pole + Reinf.	TP29.257x28.292x0.4688	Reinf. 4 Compression	81.7%	Pass
25.87 - 20.87	Pole + Reinf.	TP30.222x29.257x0.4625	Reinf. 4 Compression	84.7%	Pass
20.87 - 15.87	Pole + Reinf.	TP31.187x30.222x0.45	Reinf. 4 Compression	87.4%	Pass
15.87 - 14.83	Pole + Reinf.	TP31.388x31.187x0.45	Reinf. 4 Compression	88.0%	Pass
14.83 - 14.58	Pole + Reinf.	TP31.436x31.388x0.55	Reinf. 3 Compression	77.6%	Pass
14.58 - 13.83	Pole + Reinf.	TP31.581x31.436x0.55	Reinf. 3 Compression	78.0%	Pass
13.83 - 13.58	Pole + Reinf.	TP31.629x31.581x0.475	Reinf. 2 Compression	89.8%	Pass
13.58 - 8.58	Pole + Reinf.	TP32.594x31.629x0.4688	Reinf. 2 Compression	92.4%	Pass
8.58 - 6	Pole + Reinf.	TP33.092x32.594x0.4625	Reinf. 2 Compression	93.7%	Pass
6 - 5.75	Pole + Reinf.	TP33.14x33.092x0.5375	Reinf. 3 Compression	81.7%	Pass
5.75 - 3.33	Pole + Reinf.	TP33.607x33.14x0.525	Reinf. 3 Connection	82.7%	Pass
3.33 - 2.98	Pole + Reinf.	TP33.675x33.607x0.45	Reinf. 5 Connection	82.8%	Pass
2.98 - 2.75	Pole + Reinf.	TP33.719x33.675x0.45	Reinf. 5 Compression	82.9%	Pass
2.75 - 0	Pole + Reinf.	TP34.25x33.719x0.45	Reinf. 5 Connection	83.9%	Pass
				Summary	
			Pole	67.8%	Pass
			Reinforcement	94.0%	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Flange Bolts	99.0	7.7	Pass
1	Flange Plate		42.7	Pass
1	Anchor Rods	0	63.9	Pass
1	Base Plate	0	70.5	Pass
1	Base Foundation Structural Steel	0	53.9	Pass
1	Base Foundation Soil Interaction	0	86.1	Pass

Structure Rating (max from all components) =	94.0%
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Notes:

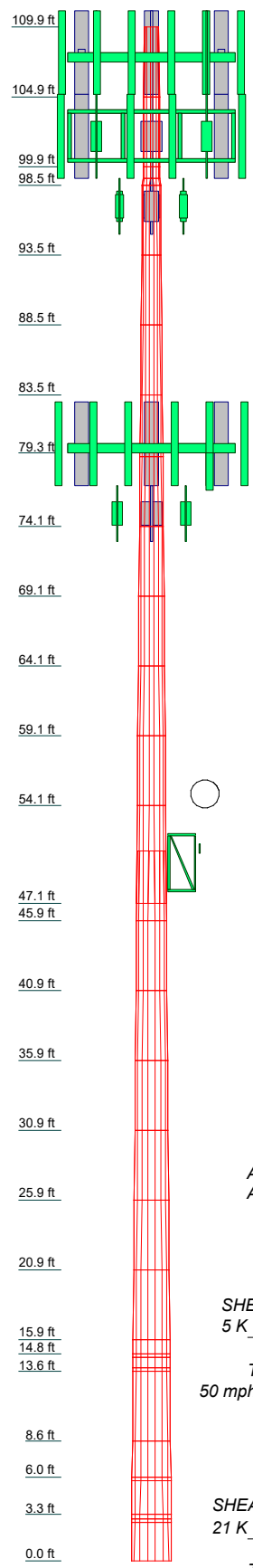
- All structural ratings are per TIA-222-H Section 15.5
- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

4.1) Recommendations

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

APPENDIX A
TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
2	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
3	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
4	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
5	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
6	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
7	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
8	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
9	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
10	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
11	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
12	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
13	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
14	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
15	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
16	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
17	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
18	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
19	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
20	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
21	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
22	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
23	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
24	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
25	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
26	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
27	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
28	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
29	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
30	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
31	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
32	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
33	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1
34	5.00	18	0.1875	0.1875	12.7000	13.7517	0.1	0.1



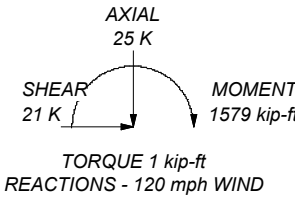
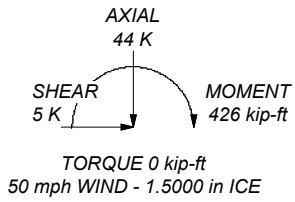
MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Litchfield County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 120 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TIA-222-H Annex S

ALL REACTIONS ARE FACTORED



Paul J. Ford and Company
 250 East Broad St., Ste 600
 Columbus, OH 43215
 Phone: 614-221-6679
 FAX:

Job: 110 Ft. Monopole / Woodbury, CT		
Project: PJF 37519-3399 / BU 876405		
Client: Crown Castle	Drawn by: jforbes	App'd:
Code: TIA-222-H	Date: 10/04/19	Scale: NTS
Path:		Dwg No. E-1

©TOWER375, Crown Castle/37519-3399, 876405, WOODBURY NORTH/37519-3399,01,7809, SA, 47956/2337519-3399,01,7809, CC/04/19

Tower Input Data

The tower is a monopole.

This tower is designed using the TIA-222-H standard.

The following design criteria apply:

- 1) Tower is located in Litchfield County, Connecticut.
- 2) Tower base elevation above sea level: 460.09 ft.
- 3) Basic wind speed of 120 mph.
- 4) Risk Category II.
- 5) Exposure Category C.
- 6) Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- 7) Topographic Category: 1.
- 8) Crest Height: 0.00 ft.
- 9) Nominal ice thickness of 1.5000 in.
- 10) Ice thickness is considered to increase with height.
- 11) Ice density of 56.00 pcf.
- 12) A wind speed of 50 mph is used in combination with ice.
- 13) Temperature drop of 50 °F.
- 14) Deflections calculated using a wind speed of 60 mph.
- 15) TIA-222-H Annex S.
- 16) A non-linear (P-delta) analysis was used.
- 17) Pressures are calculated at each section.
- 18) Stress ratio used in pole design is 1.05.
- 19) Tower analysis based on target reliabilities in accordance with Annex S.
- 20) Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- 21) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification Use Code Stress Ratios ✓ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric	Distribute Leg Loads As Uniform Assume Legs Pinned ✓ Assume Rigid Index Plate ✓ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension ✓ Bypass Mast Stability Checks ✓ Use Azimuth Dish Coefficients ✓ Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs	Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation ✓ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption <div style="text-align: center; background-color: #e0e0e0; padding: 2px;">Poles</div> ✓ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known
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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	109.86-104.86	5.00	0.00	18	12.7000	13.7517	0.1875	0.7500	A572-65 (65 ksi)
L2	104.86-99.86	5.00	0.00	18	13.7517	14.8034	0.1875	0.7500	A572-65 (65 ksi)
L3	99.86-99.00	0.86	0.00	18	14.8034	14.9843	0.1875	0.7500	A572-65 (65 ksi)
L4	99.00-98.50	0.50	0.00	18	14.9843	15.5000	0.1875	0.7500	A572-65 (65 ksi)

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L5	98.50-93.50	5.00	0.00	18	15.5000	16.4770	0.1875	0.7500	A572-65 (65 ksi)
L6	93.50-88.50	5.00	0.00	18	16.4770	17.4541	0.1875	0.7500	A572-65 (65 ksi)
L7	88.50-83.50	5.00	0.00	18	17.4541	18.4311	0.1875	0.7500	A572-65 (65 ksi)
L8	83.50-79.33	4.17	0.00	18	18.4311	19.2459	0.1875	0.7500	A572-65 (65 ksi)
L9	79.33-79.08	0.25	0.00	18	19.2459	19.2948	0.5500	2.2000	A572-65 (65 ksi)
L10	79.08-74.08	5.00	0.00	18	19.2948	20.2718	0.5250	2.1000	A572-65 (65 ksi)
L11	74.08-69.08	5.00	0.00	18	20.2718	21.2489	0.5125	2.0500	A572-65 (65 ksi)
L12	69.08-64.08	5.00	0.00	18	21.2489	22.2259	0.4875	1.9500	A572-65 (65 ksi)
L13	64.08-59.08	5.00	0.00	18	22.2259	23.2029	0.4750	1.9000	A572-65 (65 ksi)
L14	59.08-54.08	5.00	0.00	18	23.2029	24.1800	0.4625	1.8500	A572-65 (65 ksi)
L15	54.08-47.12	6.96	3.75	18	24.1800	25.5400	0.4500	1.8000	A572-65 (65 ksi)
L16	47.12-45.87	5.00	0.00	18	24.4322	25.3972	0.5125	2.0500	A572-65 (65 ksi)
L17	45.87-40.87	5.00	0.00	18	25.3972	26.3622	0.5000	2.0000	A572-65 (65 ksi)
L18	40.87-35.87	5.00	0.00	18	26.3622	27.3272	0.4875	1.9500	A572-65 (65 ksi)
L19	35.87-30.87	5.00	0.00	18	27.3272	28.2922	0.4750	1.9000	A572-65 (65 ksi)
L20	30.87-25.87	5.00	0.00	18	28.2922	29.2572	0.4688	1.8750	A572-65 (65 ksi)
L21	25.87-20.87	5.00	0.00	18	29.2572	30.2221	0.4625	1.8500	A572-65 (65 ksi)
L22	20.87-15.87	5.00	0.00	18	30.2221	31.1871	0.4500	1.8000	A572-65 (65 ksi)
L23	15.87-14.83	1.04	0.00	18	31.1871	31.3878	0.4500	1.8000	A572-65 (65 ksi)
L24	14.83-14.58	0.25	0.00	18	31.3878	31.4361	0.5500	2.2000	A572-65 (65 ksi)
L25	14.58-13.83	0.75	0.00	18	31.4361	31.5808	0.5500	2.2000	A572-65 (65 ksi)
L26	13.83-13.58	0.25	0.00	18	31.5808	31.6291	0.4750	1.9000	A572-65 (65 ksi)
L27	13.58-8.58	5.00	0.00	18	31.6291	32.5941	0.4688	1.8750	A572-65 (65 ksi)
L28	8.58-6.00	2.58	0.00	18	32.5941	33.0920	0.4625	1.8500	A572-65 (65 ksi)
L29	6.00-5.75	0.25	0.00	18	33.0920	33.1403	0.5375	2.1500	A572-65 (65 ksi)
L30	5.75-3.33	2.42	0.00	18	33.1403	33.6073	0.5250	2.1000	A572-65 (65 ksi)
L31	3.33-2.98	0.35	0.00	18	33.6073	33.6749	0.4500	1.8000	A572-65 (65 ksi)
L32	2.98-2.75	0.23	0.00	18	33.6749	33.7193	0.4500	1.8000	A572-65 (65 ksi)
L33	2.75-0.00	2.75		18	33.7193	34.2500	0.4500	1.8000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L1	12.8670	7.4465	147.2916	4.4419	6.4516	22.8302	294.7770	3.7240	1.9052	10.161
	13.9349	8.0724	187.6413	4.8153	6.9859	26.8601	375.5296	4.0370	2.0903	11.148
L2	13.9349	8.0724	187.6413	4.8153	6.9859	26.8601	375.5296	4.0370	2.0903	11.148
	15.0028	8.6983	234.7594	5.1886	7.5201	31.2175	469.8277	4.3500	2.2754	12.135

110 Ft Monopole Tower Structural Analysis
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Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	I/Q in ²	w in	w/t
L3	15.0028	8.6983	234.7594	5.1886	7.5201	31.2175	469.8277	4.3500	2.2754	12.135
	15.1865	8.8059	243.5842	5.2529	7.6120	31.9999	487.4888	4.4038	2.3072	12.305
L4	15.1865	8.8059	243.5842	5.2529	7.6120	31.9999	487.4888	4.4038	2.3072	12.305
	15.7102	9.1129	269.9504	5.4359	7.8740	34.2838	540.2560	4.5573	2.3980	12.789
L5	15.7102	9.1129	269.9504	5.4359	7.8740	34.2838	540.2560	4.5573	2.3980	12.789
	16.7023	9.6943	324.9912	5.7828	8.3703	38.8266	650.4101	4.8481	2.5700	13.706
L6	16.7023	9.6943	324.9912	5.7828	8.3703	38.8266	650.4101	4.8481	2.5700	13.706
	17.6944	10.2758	387.0470	6.1296	8.8667	43.6519	774.6033	5.1389	2.7419	14.624
L7	17.6944	10.2758	387.0470	6.1296	8.8667	43.6519	774.6033	5.1389	2.7419	14.624
	18.6865	10.8572	456.5385	6.4765	9.3630	48.7599	913.6777	5.4296	2.9139	15.541
L8	18.6865	10.8572	456.5385	6.4765	9.3630	48.7599	913.6777	5.4296	2.9139	15.541
	19.5139	11.3422	520.4850	6.7657	9.7769	53.2360	1041.6549	5.6722	3.0573	16.306
L9	19.4580	32.6375	1441.2839	6.6371	9.7769	147.4166	2884.4642	16.3219	2.4193	4.399
	19.5076	32.7228	1452.6114	6.6544	9.8018	148.1991	2907.1343	16.3645	2.4279	4.414
L10	19.5115	31.2771	1392.1389	6.6633	9.8018	142.0295	2786.1097	15.6415	2.4719	4.708
	20.5036	32.9051	1621.0487	7.0101	10.2981	157.4125	3244.2304	16.4557	2.6438	5.036
L11	20.5055	32.1420	1585.4593	7.0146	10.2981	153.9566	3173.0049	16.0741	2.6658	5.202
	21.4976	33.7313	1832.4675	7.3614	10.7944	169.7606	3667.3461	16.8689	2.8378	5.537
L12	21.5015	32.1246	1749.3908	7.3703	10.7944	162.0643	3501.0836	16.0653	2.8818	5.911
	22.4936	33.6364	2008.1761	7.7171	11.2908	177.8602	4018.9946	16.8214	3.0538	6.264
L13	22.4955	32.7927	1960.0617	7.7216	11.2908	173.5988	3922.7025	16.3995	3.0758	6.475
	23.4876	34.2658	2236.2375	8.0684	11.7871	189.7192	4475.4174	17.1361	3.2477	6.837
L14	23.4895	33.3824	2180.9837	8.0729	11.7871	185.0315	4364.8371	16.6944	3.2697	7.07
	24.4816	34.8167	2474.3500	8.4197	12.2834	201.4381	4951.9558	17.4116	3.4417	7.441
L15	24.4836	33.8935	2411.2841	8.4241	12.2834	196.3039	4825.7411	16.9500	3.4637	7.697
	25.8646	35.8360	2850.0919	8.9070	12.9743	219.6718	5703.9341	17.9214	3.7030	8.229
L16	25.4650	38.9096	2812.5922	8.4915	12.4116	226.6105	5628.8853	19.4585	3.3981	6.63
	25.7099	40.4793	3166.9125	8.8341	12.9018	245.4632	6337.9921	20.2435	3.5679	6.962
L17	25.7119	39.5119	3094.3291	8.8385	12.9018	239.8373	6192.7297	19.7597	3.5899	7.18
	26.6917	41.0433	3468.2523	9.1811	13.3920	258.9795	6941.0682	20.5256	3.7597	7.519
L18	26.6937	40.0366	3386.4516	9.1855	13.3920	252.8713	6777.3591	20.0221	3.7817	7.757
	27.6735	41.5297	3779.6469	9.5281	13.8822	272.2655	7564.2672	20.7688	3.9516	8.106
L19	27.6755	40.4837	3687.8808	9.5325	13.8822	265.6552	7380.6141	20.2457	3.9736	8.365
	28.6553	41.9386	4099.9343	9.8751	14.3724	285.2640	8205.2634	20.9733	4.1434	8.723
L20	28.6563	41.3960	4048.7156	9.8773	14.3724	281.7003	8102.7585	20.7020	4.1544	8.863
	29.6362	42.8318	4484.7539	10.2199	14.8626	301.7469	8975.4091	21.4199	4.3243	9.225
L21	29.6371	42.2698	4427.8398	10.2221	14.8626	297.9175	8861.5060	21.1389	4.3353	9.374
	30.6170	43.6864	4888.0919	10.5647	15.3528	318.3834	9782.6156	21.8474	4.5051	9.741
L22	30.6190	42.5236	4761.9768	10.5691	15.3528	310.1689	9530.2195	21.2658	4.5271	10.06
	31.5988	43.9018	5240.1885	10.9117	15.8431	330.7560	10487.272	21.9551	4.6969	10.438
L23	31.5988	43.9018	5240.1885	10.9117	15.8431	330.7560	10487.272	21.9551	4.6969	10.438
	31.8026	44.1885	5343.5176	10.9829	15.9450	335.1213	10694.066	22.0985	4.7323	10.516
L24	31.7872	53.8336	6467.8406	10.9474	15.9450	405.6337	12944.191	26.9219	4.5563	8.284
	31.8362	53.9179	6498.2471	10.9646	15.9695	406.9152	13005.044	26.9641	4.5648	8.3
L25	31.8362	53.9179	6498.2471	10.9646	15.9695	406.9152	13005.044	26.9641	4.5648	8.3
	31.9832	54.1705	6590.0382	11.0160	16.0431	410.7716	13188.747	27.0904	4.5902	8.346
L26	31.9948	46.8967	5732.7639	11.0426	16.0431	357.3358	11473.071	23.4528	4.7222	9.942
	32.0437	46.9695	5759.4822	11.0597	16.0676	358.4536	11526.542	23.4892	4.7307	9.959
L27	32.0447	46.3608	5687.1209	11.0619	16.0676	353.9500	11381.725	23.1848	4.7417	10.116
	33.0246	47.7965	6232.0159	11.4045	16.5578	376.3796	12472.232	23.9028	4.9116	10.478
L28	33.0256	47.1684	6152.5119	11.4067	16.5578	371.5780	12313.119	23.5887	4.9226	10.643
	33.5312	47.8993	6442.9981	11.5835	16.8107	383.2667	12894.474	23.9542	5.0102	10.833
L29	33.5196	55.5388	7436.2942	11.5569	16.8107	442.3537	14882.373	27.7747	4.8782	9.076
	33.5686	55.6211	7469.4075	11.5740	16.8353	443.6765	14948.643	27.8159	4.8867	9.092

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	I/Q in ²	w in	w/t
L30	33.5705	54.3484	7304.0951	11.5784	16.8353	433.8571	14617.801	27.1794	4.9087	9.35
	34.0448	55.1267	7622.3959	11.7442	17.0725	446.4717	15254.821	27.5686	4.9909	9.506
L31	34.0563	47.3586	6578.0187	11.7708	17.0725	385.2987	13164.692	23.6838	5.1229	11.384
	34.1249	47.4551	6618.3034	11.7948	17.1068	386.8807	13245.315	23.7320	5.1348	11.411
L32	34.1249	47.4551	6618.3034	11.7948	17.1068	386.8807	13245.315	23.7320	5.1348	11.411
	34.1700	47.5185	6644.8656	11.8106	17.1294	387.9221	13298.474	23.7638	5.1426	11.428
L33	34.1700	47.5185	6644.8656	11.8106	17.1294	387.9221	13298.474	23.7638	5.1426	11.428
	34.7089	48.2765	6967.9815	11.9990	17.3990	400.4817	13945.131	24.1429	5.2360	11.636

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _r	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontal in	Double Angle Stitch Bolt Spacing Redundants in
L1 109.86-104.86				1	1	1			
L2 104.86-99.86				1	1	1			
L3 99.86-99.00				1	1	1			
L4 99.00-98.50				1	1	1			
L5 98.50-93.50				1	1	1			
L6 93.50-88.50				1	1	1			
L7 88.50-83.50				1	1	1			
L8 83.50-79.33				1	1	1			
L9 79.33-79.08				1	1	0.865508			
L10 79.08-74.08				1	1	0.878383			
L11 74.08-69.08				1	1	0.874106			
L12 69.08-64.08				1	1	0.89386			
L13 64.08-59.08				1	1	0.894411			
L14 59.08-54.08				1	1	0.89696			
L15 54.08-47.12				1	1	0.908392			
L16 47.12-45.87				1	1	0.911698			
L17 45.87-40.87				1	1	0.917827			
L18 40.87-35.87				1	1	0.925515			
L19 35.87-30.87				1	1	0.93475			
L20 30.87-25.87				1	1	0.933135			
L21 25.87-20.87				1	1	0.932407			
L22 20.87-15.87				1	1	0.945273			
L23 15.87-14.83				1	1	0.942745			

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _r	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L24 14.83-14.58				1	1	0.95833			
L25 14.58-13.83				1	1	0.95598			
L26 13.83-13.58				1	1	0.983065			
L27 13.58-8.58				1	1	0.982076			
L28 8.58-6.00				1	1	0.988216			
L29 6.00-5.75				1	1	0.953295			
L30 5.75-3.33				1	1	0.968568			
L31 3.33-2.98				1	1	0.934268			
L32 2.98-2.75				1	1	0.933763			
L33 2.75-0.00				1	1	0.927824			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
**										
LDF4-50A(1/2)	B	No	Surface Ar (CaAa)	50.00 - 0.00	1	1	0.224 - 0.224	0.6250		0.15
**										
**										
MP3-08.5	A	No	Surface Af (CaAa)	16.58 - 1.58	1	1	-0.102 - 0.102	3.8415	13.2890	0.00
MP3-08.5	C	No	Surface Af (CaAa)	16.58 - 1.58	1	1	0.232 - 0.232	3.8415	13.2890	0.00
MP3-05 (W)	A	No	Surface Af (CaAa)	8.25 - 0.25	1	1	-0.435 - 0.435	5.3300	14.8400	0.00
MP3-05 (W)	A	No	Surface Af (CaAa)	81.58 - 11.58	1	1	-0.435 - 0.435	5.3300	14.8400	0.00
MP3-05 (W)	C	No	Surface Af (CaAa)	81.58 - 1.58	1	1	-0.435 - 0.435	5.3300	14.8400	0.00
MP3-05 (W)	B	No	Surface Af (CaAa)	81.58 - 1.58	1	1	-0.435 - 0.435	5.3300	14.8400	0.00

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C _A A _A ft ² /ft	Weight plf
**								

**								

LDF7-50A(1-5/8)	C	No	No	Inside Pole	108.00 - 0.00	12	No Ice 1/2" Ice 1" Ice 2" Ice	0.82 0.82 0.82 0.82
**								
HB114-1-0813U4-M5J(1-1/4)	C	No	No	Inside Pole	102.00 - 0.00	2	No Ice 1/2" Ice 1" Ice 2" Ice	1.20 1.20 1.20 1.20
HB114-21U3M12-XXXF(1-1/4)	C	No	No	Inside Pole	102.00 - 0.00	1	No Ice 1/2" Ice 1" Ice 2" Ice	1.22 1.22 1.22 1.22
LDF5-50A(7/8")	C	No	No	Inside Pole	102.00 - 0.00	1	No Ice 1/2" Ice	0.33 0.33

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _{AA} ft ² /ft	Weight plf
							1" Ice	0.00	0.33
							2" Ice	0.00	0.33
**									
LDF7-50A(1-5/8)	C	No	No	Inside Pole	80.00 - 0.00	12	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
WR-VG66ST-BRD(7/8)	C	No	No	Inside Pole	80.00 - 0.00	2	No Ice	0.00	0.91
							1/2" Ice	0.00	0.91
							1" Ice	0.00	0.91
							2" Ice	0.00	0.91
FB-L98B-002-75000(3/8)	C	No	No	Inside Pole	80.00 - 0.00	1	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
							2" Ice	0.00	0.06
WR-VG122ST-BRDA(7/16)	C	No	No	Inside Pole	80.00 - 0.00	2	No Ice	0.00	0.14
							1/2" Ice	0.00	0.14
							1" Ice	0.00	0.14
							2" Ice	0.00	0.14
2" (Nominal) Conduit	C	No	No	Inside Pole	80.00 - 0.00	1	No Ice	0.00	0.72
							1/2" Ice	0.00	0.72
							1" Ice	0.00	0.72
							2" Ice	0.00	0.72
FB-L98B-002-75000(3/8")	C	No	No	Inside Pole	80.00 - 0.00	1	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
							2" Ice	0.00	0.06
**									

Feed Line/Linear Appurtenances Section Areas

Tower Section n	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	109.86-104.86	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.03
L2	104.86-99.86	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.06
L3	99.86-99.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.01
L4	99.00-98.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.01
L5	98.50-93.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.07
L6	93.50-88.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.07
L7	88.50-83.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.07
L8	83.50-79.33	A	0.000	0.000	2.002	0.000	0.00
		B	0.000	0.000	2.002	0.000	0.00
		C	0.000	0.000	2.002	0.000	0.07
L9	79.33-79.08	A	0.000	0.000	0.222	0.000	0.00
		B	0.000	0.000	0.222	0.000	0.00
		C	0.000	0.000	0.222	0.000	0.01
L10	79.08-74.08	A	0.000	0.000	4.442	0.000	0.00
		B	0.000	0.000	4.442	0.000	0.00
		C	0.000	0.000	4.442	0.000	0.13
L11	74.08-69.08	A	0.000	0.000	4.442	0.000	0.00
		B	0.000	0.000	4.442	0.000	0.00
		C	0.000	0.000	4.442	0.000	0.13

Tower Sectio n	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L12	69.08-64.08	A	0.000	0.000	4.442	0.000	0.00
		B	0.000	0.000	4.442	0.000	0.00
		C	0.000	0.000	4.442	0.000	0.13
L13	64.08-59.08	A	0.000	0.000	4.442	0.000	0.00
		B	0.000	0.000	4.442	0.000	0.00
		C	0.000	0.000	4.442	0.000	0.13
L14	59.08-54.08	A	0.000	0.000	4.442	0.000	0.00
		B	0.000	0.000	4.442	0.000	0.00
		C	0.000	0.000	4.442	0.000	0.13
L15	54.08-47.12	A	0.000	0.000	6.183	0.000	0.00
		B	0.000	0.000	6.363	0.000	0.00
		C	0.000	0.000	6.183	0.000	0.18
L16	47.12-45.87	A	0.000	0.000	1.110	0.000	0.00
		B	0.000	0.000	1.189	0.000	0.00
		C	0.000	0.000	1.110	0.000	0.03
L17	45.87-40.87	A	0.000	0.000	4.442	0.000	0.00
		B	0.000	0.000	4.754	0.000	0.00
		C	0.000	0.000	4.442	0.000	0.13
L18	40.87-35.87	A	0.000	0.000	4.442	0.000	0.00
		B	0.000	0.000	4.754	0.000	0.00
		C	0.000	0.000	4.442	0.000	0.13
L19	35.87-30.87	A	0.000	0.000	4.442	0.000	0.00
		B	0.000	0.000	4.754	0.000	0.00
		C	0.000	0.000	4.442	0.000	0.13
L20	30.87-25.87	A	0.000	0.000	4.442	0.000	0.00
		B	0.000	0.000	4.754	0.000	0.00
		C	0.000	0.000	4.442	0.000	0.13
L21	25.87-20.87	A	0.000	0.000	4.442	0.000	0.00
		B	0.000	0.000	4.754	0.000	0.00
		C	0.000	0.000	4.442	0.000	0.13
L22	20.87-15.87	A	0.000	0.000	4.898	0.000	0.00
		B	0.000	0.000	4.754	0.000	0.00
		C	0.000	0.000	4.898	0.000	0.13
L23	15.87-14.83	A	0.000	0.000	1.590	0.000	0.00
		B	0.000	0.000	0.989	0.000	0.00
		C	0.000	0.000	1.590	0.000	0.03
L24	14.83-14.58	A	0.000	0.000	0.382	0.000	0.00
		B	0.000	0.000	0.238	0.000	0.00
		C	0.000	0.000	0.382	0.000	0.01
L25	14.58-13.83	A	0.000	0.000	1.146	0.000	0.00
		B	0.000	0.000	0.713	0.000	0.00
		C	0.000	0.000	1.146	0.000	0.02
L26	13.83-13.58	A	0.000	0.000	0.382	0.000	0.00
		B	0.000	0.000	0.238	0.000	0.00
		C	0.000	0.000	0.382	0.000	0.01
L27	13.58-8.58	A	0.000	0.000	4.975	0.000	0.00
		B	0.000	0.000	4.754	0.000	0.00
		C	0.000	0.000	7.643	0.000	0.13
L28	8.58-6.00	A	0.000	0.000	3.376	0.000	0.00
		B	0.000	0.000	2.453	0.000	0.00
		C	0.000	0.000	3.944	0.000	0.07
L29	6.00-5.75	A	0.000	0.000	0.352	0.000	0.00
		B	0.000	0.000	0.238	0.000	0.00
		C	0.000	0.000	0.382	0.000	0.01
L30	5.75-3.33	A	0.000	0.000	3.404	0.000	0.00
		B	0.000	0.000	2.301	0.000	0.00
		C	0.000	0.000	3.699	0.000	0.06
L31	3.33-2.98	A	0.000	0.000	0.492	0.000	0.00
		B	0.000	0.000	0.333	0.000	0.00
		C	0.000	0.000	0.535	0.000	0.01
L32	2.98-2.75	A	0.000	0.000	0.324	0.000	0.00
		B	0.000	0.000	0.219	0.000	0.00
		C	0.000	0.000	0.352	0.000	0.01
L33	2.75-0.00	A	0.000	0.000	2.663	0.000	0.00
		B	0.000	0.000	1.208	0.000	0.00
		C	0.000	0.000	1.783	0.000	0.07

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} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L1	109.86-104.86	A	1.435	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.03
L2	104.86-99.86	A	1.428	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.06
L3	99.86-99.00	A	1.424	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.01
L4	99.00-98.50	A	1.423	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.01
L5	98.50-93.50	A	1.419	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.07
L6	93.50-88.50	A	1.411	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.07
L7	88.50-83.50	A	1.403	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.07
L8	83.50-79.33	A	1.395	0.000	0.000	2.631	0.000	0.02
		B		0.000	0.000	2.631	0.000	0.02
		C		0.000	0.000	2.631	0.000	0.09
L9	79.33-79.08	A	1.392	0.000	0.000	0.292	0.000	0.00
		B		0.000	0.000	0.292	0.000	0.00
		C		0.000	0.000	0.292	0.000	0.01
L10	79.08-74.08	A	1.387	0.000	0.000	5.829	0.000	0.05
		B		0.000	0.000	5.829	0.000	0.05
		C		0.000	0.000	5.829	0.000	0.19
L11	74.08-69.08	A	1.378	0.000	0.000	5.819	0.000	0.05
		B		0.000	0.000	5.819	0.000	0.05
		C		0.000	0.000	5.819	0.000	0.19
L12	69.08-64.08	A	1.368	0.000	0.000	5.809	0.000	0.05
		B		0.000	0.000	5.809	0.000	0.05
		C		0.000	0.000	5.809	0.000	0.19
L13	64.08-59.08	A	1.357	0.000	0.000	5.799	0.000	0.05
		B		0.000	0.000	5.799	0.000	0.05
		C		0.000	0.000	5.799	0.000	0.19
L14	59.08-54.08	A	1.346	0.000	0.000	5.787	0.000	0.05
		B		0.000	0.000	5.787	0.000	0.05
		C		0.000	0.000	5.787	0.000	0.19
L15	54.08-47.12	A	1.331	0.000	0.000	8.035	0.000	0.07
		B		0.000	0.000	8.981	0.000	0.08
		C		0.000	0.000	8.035	0.000	0.26
L16	47.12-45.87	A	1.319	0.000	0.000	1.443	0.000	0.01
		B		0.000	0.000	1.854	0.000	0.02
		C		0.000	0.000	1.443	0.000	0.05
L17	45.87-40.87	A	1.310	0.000	0.000	5.752	0.000	0.05
		B		0.000	0.000	7.375	0.000	0.07
		C		0.000	0.000	5.752	0.000	0.18
L18	40.87-35.87	A	1.294	0.000	0.000	5.736	0.000	0.05
		B		0.000	0.000	7.343	0.000	0.07
		C		0.000	0.000	5.736	0.000	0.18
L19	35.87-30.87	A	1.276	0.000	0.000	5.718	0.000	0.05
		B		0.000	0.000	7.307	0.000	0.06
		C		0.000	0.000	5.718	0.000	0.18
L20	30.87-25.87	A	1.256	0.000	0.000	5.697	0.000	0.05
		B		0.000	0.000	7.266	0.000	0.06
		C		0.000	0.000	5.697	0.000	0.18
L21	25.87-20.87	A	1.232	0.000	0.000	5.673	0.000	0.05
		B		0.000	0.000	7.218	0.000	0.06
		C		0.000	0.000	5.673	0.000	0.18
L22	20.87-15.87	A	1.202	0.000	0.000	6.272	0.000	0.05
		B		0.000	0.000	7.159	0.000	0.06
		C		0.000	0.000	6.272	0.000	0.18
L23	15.87-14.83	A	1.181	0.000	0.000	2.081	0.000	0.02
		B		0.000	0.000	1.480	0.000	0.01

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L24	14.83-14.58	C		0.000	0.000	2.081	0.000	0.05
		A	1.176	0.000	0.000	0.500	0.000	0.00
		B		0.000	0.000	0.355	0.000	0.00
L25	14.58-13.83	C		0.000	0.000	0.500	0.000	0.01
		A	1.172	0.000	0.000	1.498	0.000	0.01
		B		0.000	0.000	1.065	0.000	0.01
L26	13.83-13.58	C		0.000	0.000	1.498	0.000	0.03
		A	1.168	0.000	0.000	0.499	0.000	0.00
		B		0.000	0.000	0.354	0.000	0.00
L27	13.58-8.58	C		0.000	0.000	0.499	0.000	0.01
		A	1.143	0.000	0.000	6.574	0.000	0.06
		B		0.000	0.000	7.040	0.000	0.06
L28	8.58-6.00	C		0.000	0.000	9.929	0.000	0.21
		A	1.096	0.000	0.000	4.213	0.000	0.04
		B		0.000	0.000	3.584	0.000	0.03
L29	6.00-5.75	C		0.000	0.000	5.075	0.000	0.11
		A	1.073	0.000	0.000	0.435	0.000	0.00
		B		0.000	0.000	0.345	0.000	0.00
L30	5.75-3.33	C		0.000	0.000	0.489	0.000	0.01
		A	1.046	0.000	0.000	4.189	0.000	0.04
		B		0.000	0.000	3.313	0.000	0.02
L31	3.33-2.98	C		0.000	0.000	4.711	0.000	0.10
		A	1.008	0.000	0.000	0.602	0.000	0.00
		B		0.000	0.000	0.474	0.000	0.00
L32	2.98-2.75	C		0.000	0.000	0.676	0.000	0.01
		A	0.999	0.000	0.000	0.395	0.000	0.00
		B		0.000	0.000	0.311	0.000	0.00
L33	2.75-0.00	C		0.000	0.000	0.443	0.000	0.01
		A	0.928	0.000	0.000	3.136	0.000	0.02
		B		0.000	0.000	1.935	0.000	0.01
		C		0.000	0.000	2.216	0.000	0.09

Feed Line Center of Pressure

Section	Elevation ft	CP _x in	CP _z in	CP _x Ice in	CP _z Ice in
L1	109.86-104.86	0.0000	0.0000	0.0000	0.0000
L2	104.86-99.86	0.0000	0.0000	0.0000	0.0000
L3	99.86-99.00	0.0000	0.0000	0.0000	0.0000
L4	99.00-98.50	0.0000	0.0000	0.0000	0.0000
L5	98.50-93.50	0.0000	0.0000	0.0000	0.0000
L6	93.50-88.50	0.0000	0.0000	0.0000	0.0000
L7	88.50-83.50	0.0000	0.0000	0.0000	0.0000
L8	83.50-79.33	0.0000	0.0000	0.0000	0.0000
L9	79.33-79.08	0.0000	0.0000	0.0000	0.0000
L10	79.08-74.08	0.0000	0.0000	0.0000	0.0000
L11	74.08-69.08	0.0000	0.0000	0.0000	0.0000
L12	69.08-64.08	0.0000	0.0000	0.0000	0.0000
L13	64.08-59.08	0.0000	0.0000	0.0000	0.0000
L14	59.08-54.08	0.0000	0.0000	0.0000	0.0000
L15	54.08-47.12	0.0621	-0.0034	0.2672	-0.0146
L16	47.12-45.87	0.1480	-0.0081	0.6242	-0.0340
L17	45.87-40.87	0.1499	-0.0082	0.6275	-0.0342
L18	40.87-35.87	0.1528	-0.0083	0.6370	-0.0347
L19	35.87-30.87	0.1556	-0.0085	0.6452	-0.0352
L20	30.87-25.87	0.1584	-0.0086	0.6519	-0.0355
L21	25.87-20.87	0.1610	-0.0088	0.6568	-0.0358
L22	20.87-15.87	-0.3060	0.1315	0.1064	0.1249
L23	15.87-14.83	-2.5844	0.8127	-2.5151	0.8879
L24	14.83-14.58	-2.5904	0.8146	-2.5218	0.8899
L25	14.58-13.83	-2.5947	0.8158	-2.5267	0.8913
L26	13.83-13.58	-2.5985	0.8170	-2.5312	0.8925
L27	13.58-8.58	-2.0386	-0.6140	-1.9422	-0.5839
L28	8.58-6.00	-2.4170	0.2682	-2.2895	0.1927
L29	6.00-5.75	-2.5303	0.5248	-2.4051	0.4441
L30	5.75-3.33	-2.5404	0.5267	-2.4187	0.4477
L31	3.33-2.98	-2.5506	0.5285	-2.4334	0.4521

Section	Elevation ft	CP _x in	CP _z in	CP _x Ice in	CP _z Ice in
L32	2.98-2.75	-2.5528	0.5289	-2.4367	0.4531
L33	2.75-0.00	-2.1075	1.6737	-1.7894	1.6144

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
L8	32	MP3-05 (W)	79.33 - 81.58	1.0000	1.0000
L8	33	MP3-05 (W)	79.33 - 81.58	1.0000	1.0000
L8	34	MP3-05 (W)	79.33 - 81.58	1.0000	1.0000
L9	32	MP3-05 (W)	79.08 - 79.33	1.0000	1.0000
L9	33	MP3-05 (W)	79.08 - 79.33	1.0000	1.0000
L9	34	MP3-05 (W)	79.08 - 79.33	1.0000	1.0000
L10	32	MP3-05 (W)	74.08 - 79.08	1.0000	1.0000
L10	33	MP3-05 (W)	74.08 - 79.08	1.0000	1.0000
L10	34	MP3-05 (W)	74.08 - 79.08	1.0000	1.0000
L11	32	MP3-05 (W)	69.08 - 74.08	1.0000	1.0000
L11	33	MP3-05 (W)	69.08 - 74.08	1.0000	1.0000
L11	34	MP3-05 (W)	69.08 - 74.08	1.0000	1.0000
L12	32	MP3-05 (W)	64.08 - 69.08	1.0000	1.0000
L12	33	MP3-05 (W)	64.08 - 69.08	1.0000	1.0000
L12	34	MP3-05 (W)	64.08 - 69.08	1.0000	1.0000
L13	32	MP3-05 (W)	59.08 - 64.08	1.0000	1.0000
L13	33	MP3-05 (W)	59.08 - 64.08	1.0000	1.0000
L13	34	MP3-05 (W)	59.08 - 64.08	1.0000	1.0000
L14	32	MP3-05 (W)	54.08 - 59.08	1.0000	1.0000
L14	33	MP3-05 (W)	54.08 - 59.08	1.0000	1.0000
L14	34	MP3-05 (W)	54.08 - 59.08	1.0000	1.0000
L15	26	LDF4-50A(1/2)	47.12 - 50.00	1.0000	1.0000
L15	32	MP3-05 (W)	47.12 - 54.08	1.0000	1.0000
L15	33	MP3-05 (W)	47.12 - 54.08	1.0000	1.0000
L15	34	MP3-05 (W)	47.12 - 54.08	1.0000	1.0000
L17	26	LDF4-50A(1/2)	40.87 - 45.87	1.0000	1.0000
L17	32	MP3-05 (W)	40.87 - 45.87	1.0000	1.0000
L17	33	MP3-05 (W)	40.87 - 45.87	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L17	34	MP3-05 (W)	40.87 - 45.87	1.0000	1.0000
L18	26	LDF4-50A(1/2)	35.87 - 40.87	1.0000	1.0000
L18	32	MP3-05 (W)	35.87 - 40.87	1.0000	1.0000
L18	33	MP3-05 (W)	35.87 - 40.87	1.0000	1.0000
L18	34	MP3-05 (W)	35.87 - 40.87	1.0000	1.0000
L19	26	LDF4-50A(1/2)	30.87 - 35.87	1.0000	1.0000
L19	32	MP3-05 (W)	30.87 - 35.87	1.0000	1.0000
L19	33	MP3-05 (W)	30.87 - 35.87	1.0000	1.0000
L19	34	MP3-05 (W)	30.87 - 35.87	1.0000	1.0000
L20	26	LDF4-50A(1/2)	25.87 - 30.87	1.0000	1.0000
L20	32	MP3-05 (W)	25.87 - 30.87	1.0000	1.0000
L20	33	MP3-05 (W)	25.87 - 30.87	1.0000	1.0000
L20	34	MP3-05 (W)	25.87 - 30.87	1.0000	1.0000
L21	26	LDF4-50A(1/2)	20.87 - 25.87	1.0000	1.0000
L21	32	MP3-05 (W)	20.87 - 25.87	1.0000	1.0000
L21	33	MP3-05 (W)	20.87 - 25.87	1.0000	1.0000
L21	34	MP3-05 (W)	20.87 - 25.87	1.0000	1.0000
L22	26	LDF4-50A(1/2)	15.87 - 20.87	1.0000	1.0000
L22	29	MP3-08.5	15.87 - 16.58	1.0000	1.0000
L22	30	MP3-08.5	15.87 - 16.58	1.0000	1.0000
L22	32	MP3-05 (W)	15.87 - 20.87	1.0000	1.0000
L22	33	MP3-05 (W)	15.87 - 20.87	1.0000	1.0000
L22	34	MP3-05 (W)	15.87 - 20.87	1.0000	1.0000
L23	26	LDF4-50A(1/2)	14.83 - 15.87	1.0000	1.0000
L23	29	MP3-08.5	14.83 - 15.87	1.0000	1.0000
L23	30	MP3-08.5	14.83 - 15.87	1.0000	1.0000
L23	32	MP3-05 (W)	14.83 - 15.87	1.0000	1.0000
L23	33	MP3-05 (W)	14.83 - 15.87	1.0000	1.0000
L23	34	MP3-05 (W)	14.83 - 15.87	1.0000	1.0000
L24	26	LDF4-50A(1/2)	14.58 - 14.83	1.0000	1.0000
L24	29	MP3-08.5	14.58 - 14.83	1.0000	1.0000
L24	30	MP3-08.5	14.58 - 14.83	1.0000	1.0000
L24	32	MP3-05 (W)	14.58 - 14.83	1.0000	1.0000
L24	33	MP3-05 (W)	14.58 - 14.83	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L24	34	MP3-05 (W)	14.58 - 14.83	1.0000	1.0000
L25	26	LDF4-50A(1/2)	13.83 - 14.58	1.0000	1.0000
L25	29	MP3-08.5	13.83 - 14.58	1.0000	1.0000
L25	30	MP3-08.5	13.83 - 14.58	1.0000	1.0000
L25	32	MP3-05 (W)	13.83 - 14.58	1.0000	1.0000
L25	33	MP3-05 (W)	13.83 - 14.58	1.0000	1.0000
L25	34	MP3-05 (W)	13.83 - 14.58	1.0000	1.0000
L26	26	LDF4-50A(1/2)	13.58 - 13.83	1.0000	1.0000
L26	29	MP3-08.5	13.58 - 13.83	1.0000	1.0000
L26	30	MP3-08.5	13.58 - 13.83	1.0000	1.0000
L26	32	MP3-05 (W)	13.58 - 13.83	1.0000	1.0000
L26	33	MP3-05 (W)	13.58 - 13.83	1.0000	1.0000
L26	34	MP3-05 (W)	13.58 - 13.83	1.0000	1.0000
L27	26	LDF4-50A(1/2)	8.58 - 13.58	1.0000	1.0000
L27	29	MP3-08.5	8.58 - 13.58	1.0000	1.0000
L27	30	MP3-08.5	8.58 - 13.58	1.0000	1.0000
L27	32	MP3-05 (W)	11.58 - 13.58	1.0000	1.0000
L27	33	MP3-05 (W)	8.58 - 13.58	1.0000	1.0000
L27	34	MP3-05 (W)	8.58 - 13.58	1.0000	1.0000
L28	26	LDF4-50A(1/2)	6.00 - 8.58	1.0000	1.0000
L28	29	MP3-08.5	6.00 - 8.58	1.0000	1.0000
L28	30	MP3-08.5	6.00 - 8.58	1.0000	1.0000
L28	31	MP3-05 (W)	6.00 - 8.25	1.0000	1.0000
L28	33	MP3-05 (W)	6.00 - 8.58	1.0000	1.0000
L28	34	MP3-05 (W)	6.00 - 8.58	1.0000	1.0000
L29	26	LDF4-50A(1/2)	5.75 - 6.00	1.0000	1.0000
L29	29	MP3-08.5	5.75 - 6.00	1.0000	1.0000
L29	30	MP3-08.5	5.75 - 6.00	1.0000	1.0000
L29	31	MP3-05 (W)	5.75 - 6.00	1.0000	1.0000
L29	33	MP3-05 (W)	5.75 - 6.00	1.0000	1.0000
L29	34	MP3-05 (W)	5.75 - 6.00	1.0000	1.0000
L30	26	LDF4-50A(1/2)	3.33 - 5.75	1.0000	1.0000
L30	29	MP3-08.5	3.33 - 5.75	1.0000	1.0000
L30	30	MP3-08.5	3.33 - 5.75	1.0000	1.0000
L30	31	MP3-05 (W)	3.33 - 5.75	1.0000	1.0000
L30	33	MP3-05 (W)	3.33 - 5.75	1.0000	1.0000
L30	34	MP3-05 (W)	3.33 - 5.75	1.0000	1.0000
L31	26	LDF4-50A(1/2)	2.98 - 3.33	1.0000	1.0000
L31	29	MP3-08.5	2.98 - 3.33	1.0000	1.0000
L31	30	MP3-08.5	2.98 - 3.33	1.0000	1.0000
L31	31	MP3-05 (W)	2.98 - 3.33	1.0000	1.0000
L31	33	MP3-05 (W)	2.98 - 3.33	1.0000	1.0000
L31	34	MP3-05 (W)	2.98 - 3.33	1.0000	1.0000
L32	26	LDF4-50A(1/2)	2.75 - 2.98	1.0000	1.0000
L32	29	MP3-08.5	2.75 - 2.98	1.0000	1.0000
L32	30	MP3-08.5	2.75 - 2.98	1.0000	1.0000
L32	31	MP3-05 (W)	2.75 - 2.98	1.0000	1.0000
L32	33	MP3-05 (W)	2.75 - 2.98	1.0000	1.0000
L32	34	MP3-05 (W)	2.75 - 2.98	1.0000	1.0000
L33	26	LDF4-50A(1/2)	0.00 - 2.75	1.0000	1.0000
L33	29	MP3-08.5	1.58 - 2.75	1.0000	1.0000
L33	30	MP3-08.5	1.58 - 2.75	1.0000	1.0000
L33	31	MP3-05 (W)	0.25 - 2.75	1.0000	1.0000
L33	33	MP3-05 (W)	1.58 - 2.75	1.0000	1.0000
L33	34	MP3-05 (W)	1.58 - 2.75	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
BXA-171085-8BF-EDIN-2 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.00	108.00	No Ice	3.18	3.35	0.03
						1/2"	3.56	3.97	0.06
						Ice	3.93	4.60	0.10
						1" Ice	4.70	5.90	0.19
						2" Ice			
BXA-171085-8BF-EDIN-2 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.00	108.00	No Ice	3.18	3.35	0.03
						1/2"	3.56	3.97	0.06
						Ice	3.93	4.60	0.10
						1" Ice	4.70	5.90	0.19
						2" Ice			
BXA-70063/6CF-2 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.00	108.00	No Ice	7.81	5.40	0.04
						1/2"	8.36	6.55	0.10
						Ice	8.87	7.41	0.17
						1" Ice	9.93	9.18	0.33
						2" Ice			
BXA-70063/6CF-2 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.00	108.00	No Ice	7.81	5.40	0.04
						1/2"	8.36	6.55	0.10
						Ice	8.87	7.41	0.17
						1" Ice	9.93	9.18	0.33
						2" Ice			
BXA-70063/6CF-2 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.00	108.00	No Ice	7.81	5.40	0.04
						1/2"	8.36	6.55	0.10
						Ice	8.87	7.41	0.17
						1" Ice	9.93	9.18	0.33
						2" Ice			
BXA-80080/4CF w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.00	108.00	No Ice	5.04	4.03	0.03
						1/2"	5.42	4.65	0.08
						Ice	5.81	5.28	0.13
						1" Ice	6.62	6.56	0.25
						2" Ice			
BXA-80080/4CF w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.00	108.00	No Ice	5.04	4.03	0.03
						1/2"	5.42	4.65	0.08
						Ice	5.81	5.28	0.13
						1" Ice	6.62	6.56	0.25
						2" Ice			
BXA-171063-8BF-2 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.00	108.00	No Ice	3.18	3.35	0.03
						1/2"	3.56	3.97	0.06
						Ice	3.93	4.60	0.10
						1" Ice	4.69	5.89	0.19
						2" Ice			
BXA-80063/4CFx5 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.00	108.00	No Ice	4.95	3.62	0.03
						1/2"	5.32	4.22	0.07
						Ice	5.71	4.83	0.12
						1" Ice	6.51	6.11	0.23
						2" Ice			
(2) FD9R6004/2C-3L	A	From Leg	4.00 0.00 0.00	0.00	108.00	No Ice	0.31	0.08	0.00
						1/2"	0.39	0.12	0.01
						Ice	0.47	0.17	0.01
						1" Ice	0.65	0.29	0.02
						2" Ice			
(2) FD9R6004/2C-3L	B	From Leg	4.00 0.00 0.00	0.00	108.00	No Ice	0.31	0.08	0.00
						1/2"	0.39	0.12	0.01
						Ice	0.47	0.17	0.01
						1" Ice	0.65	0.29	0.02
						2" Ice			
(2) FD9R6004/2C-3L	C	From Leg	4.00 0.00 0.00	0.00	108.00	No Ice	0.31	0.08	0.00
						1/2"	0.39	0.12	0.01
						Ice	0.47	0.17	0.01
						1" Ice	0.65	0.29	0.02
						2" Ice			

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
2.375" OD x 6' Mount Pipe	A	From Leg	4.00 0.00 0.00	0.00	108.00	No Ice	1.43	1.43	0.03
						1/2" Ice	1.92	1.92	0.04
						Ice	2.29	2.29	0.05
						1" Ice	3.06	3.06	0.09
						2" Ice			
2.375" OD x 6' Mount Pipe	B	From Leg	4.00 0.00 0.00	0.00	108.00	No Ice	1.43	1.43	0.03
						1/2" Ice	1.92	1.92	0.04
						Ice	2.29	2.29	0.05
						1" Ice	3.06	3.06	0.09
						2" Ice			
2.375" OD x 6' Mount Pipe	C	From Leg	4.00 0.00 0.00	0.00	108.00	No Ice	1.43	1.43	0.03
						1/2" Ice	1.92	1.92	0.04
						Ice	2.29	2.29	0.05
						1" Ice	3.06	3.06	0.09
						2" Ice			
T-Arm Mount [TA 602-3]	C	None		0.00	108.00	No Ice	13.40	13.40	0.77
						1/2" Ice	16.44	16.44	1.00
						Ice	19.70	19.70	1.29
						1" Ice	25.86	25.86	2.05
						2" Ice			

APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.00	102.00	No Ice	4.60	4.01	0.10
						1/2" Ice	5.05	4.45	0.16
						Ice	5.50	4.89	0.23
						1" Ice	6.44	5.82	0.42
						2" Ice			
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.00	102.00	No Ice	4.60	4.01	0.10
						1/2" Ice	5.05	4.45	0.16
						Ice	5.50	4.89	0.23
						1" Ice	6.44	5.82	0.42
						2" Ice			
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.00	102.00	No Ice	4.60	4.01	0.10
						1/2" Ice	5.05	4.45	0.16
						Ice	5.50	4.89	0.23
						1" Ice	6.44	5.82	0.42
						2" Ice			
APXVTM14-C-120 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.00	102.00	No Ice	4.09	2.86	0.08
						1/2" Ice	4.48	3.23	0.13
						Ice	4.88	3.61	0.19
						1" Ice	5.71	4.40	0.33
						2" Ice			
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.00	102.00	No Ice	4.09	2.86	0.08
						1/2" Ice	4.48	3.23	0.13
						Ice	4.88	3.61	0.19
						1" Ice	5.71	4.40	0.33
						2" Ice			
APXVTM14-C-120 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.00	102.00	No Ice	4.09	2.86	0.08
						1/2" Ice	4.48	3.23	0.13
						Ice	4.88	3.61	0.19
						1" Ice	5.71	4.40	0.33
						2" Ice			
TD-RRH8x20-25	A	From Leg	4.00 0.00 0.00	0.00	102.00	No Ice	4.05	1.53	0.07
						1/2" Ice	4.30	1.71	0.10
						Ice	4.56	1.90	0.13
						1" Ice	5.10	2.30	0.20
						2" Ice			
TD-RRH8x20-25	B	From Leg	4.00 0.00 0.00	0.00	102.00	No Ice	4.05	1.53	0.07
						1/2" Ice	4.30	1.71	0.10
						Ice	4.56	1.90	0.13
						1" Ice	5.10	2.30	0.20
						2" Ice			
TD-RRH8x20-25	C	From Leg	4.00 0.00 0.00	0.00	102.00	No Ice	4.05	1.53	0.07
						1/2" Ice	4.30	1.71	0.10
						Ice	4.56	1.90	0.13
						1" Ice	5.10	2.30	0.20
						2" Ice			

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K	
(2) 2.375" OD x 6' Mount Pipe	A	From Leg	4.00 0.00 0.00	0.00	102.00	2" Ice			
						No Ice	1.43	1.43	0.03
						1/2"	1.92	1.92	0.04
						Ice	2.29	2.29	0.05
						1" Ice	3.06	3.06	0.09
(2) 2.375" OD x 6' Mount Pipe	B	From Leg	4.00 0.00 0.00	0.00	102.00	2" Ice			
						No Ice	1.43	1.43	0.03
						1/2"	1.92	1.92	0.04
						Ice	2.29	2.29	0.05
						1" Ice	3.06	3.06	0.09
(2) 2.375" OD x 6' Mount Pipe	C	From Leg	4.00 0.00 0.00	0.00	102.00	2" Ice			
						No Ice	1.43	1.43	0.03
						1/2"	1.92	1.92	0.04
						Ice	2.29	2.29	0.05
						1" Ice	3.06	3.06	0.09
Platform Mount [LP 601-1]	C	None		0.00	102.00	2" Ice			
						No Ice	28.50	28.50	1.12
						1/2"	31.69	31.69	1.68
						Ice	34.87	34.87	2.28
						1" Ice	41.23	41.23	3.65
Miscellaneous [NA 507-1]	C	None		0.00	102.00	2" Ice			
						No Ice	4.56	4.56	0.25
						1/2"	6.39	6.39	0.31
						Ice	8.18	8.18	0.40
						1" Ice	11.66	11.66	0.66
*** 1900MHz RRH (65MHz)	A	From Leg	2.00 0.00 0.00	0.00	97.00	2" Ice			
						No Ice	2.32	2.24	0.06
						1/2"	2.53	2.44	0.08
						Ice	2.74	2.65	0.11
						1" Ice	3.19	3.09	0.17
1900MHz RRH (65MHz)	B	From Leg	2.00 0.00 0.00	0.00	97.00	2" Ice			
						No Ice	2.32	2.24	0.06
						1/2"	2.53	2.44	0.08
						Ice	2.74	2.65	0.11
						1" Ice	3.19	3.09	0.17
1900MHz RRH (65MHz)	C	From Leg	2.00 0.00 0.00	0.00	97.00	2" Ice			
						No Ice	2.32	2.24	0.06
						1/2"	2.53	2.44	0.08
						Ice	2.74	2.65	0.11
						1" Ice	3.19	3.09	0.17
800MHz RRH	A	From Leg	2.00 0.00 0.00	0.00	97.00	2" Ice			
						No Ice	2.13	1.77	0.05
						1/2"	2.32	1.95	0.07
						Ice	2.51	2.13	0.10
						1" Ice	2.92	2.51	0.16
800MHz RRH	B	From Leg	2.00 0.00 0.00	0.00	97.00	2" Ice			
						No Ice	2.13	1.77	0.05
						1/2"	2.32	1.95	0.07
						Ice	2.51	2.13	0.10
						1" Ice	2.92	2.51	0.16
800MHz RRH	C	From Leg	2.00 0.00 0.00	0.00	97.00	2" Ice			
						No Ice	2.13	1.77	0.05
						1/2"	2.32	1.95	0.07
						Ice	2.51	2.13	0.10
						1" Ice	2.92	2.51	0.16
2.375" OD x 4' Mount Pipe	A	From Leg	2.00 0.00 0.00	0.00	97.00	2" Ice			
						No Ice	0.87	0.87	0.02
						1/2"	1.11	1.11	0.03
						Ice	1.36	1.36	0.04
						1" Ice	1.90	1.90	0.06
2.375" OD x 4' Mount Pipe	B	From Leg	2.00 0.00 0.00	0.00	97.00	2" Ice			
						No Ice	0.87	0.87	0.02
						1/2"	1.11	1.11	0.03
						Ice	1.36	1.36	0.04

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
						1" Ice	1.90	1.90	0.06
						2" Ice			
2.375" OD x 4' Mount Pipe	C	From Leg	2.00	0.00	97.00	No Ice	0.87	0.87	0.02
			0.00			1/2"	1.11	1.11	0.03
			0.00			Ice	1.36	1.36	0.04
						1" Ice	1.90	1.90	0.06
						2" Ice			
Side Arm Mount [SO 701-3]	C	None		0.00	97.00	No Ice	3.02	3.02	0.20
						1/2"	4.18	4.18	0.24
						Ice	5.33	5.33	0.28
						1" Ice	7.63	7.63	0.36
						2" Ice			

(2) 7770.00 w/ Mount Pipe	A	From Leg	4.00	0.00	80.00	No Ice	5.75	4.25	0.06
			0.00			1/2"	6.18	5.01	0.10
			0.00			Ice	6.61	5.71	0.16
						1" Ice	7.49	7.16	0.29
						2" Ice			
(2) 7770.00 w/ Mount Pipe	B	From Leg	4.00	0.00	80.00	No Ice	5.75	4.25	0.06
			0.00			1/2"	6.18	5.01	0.10
			0.00			Ice	6.61	5.71	0.16
						1" Ice	7.49	7.16	0.29
						2" Ice			
(2) 7770.00 w/ Mount Pipe	C	From Leg	4.00	0.00	80.00	No Ice	5.75	4.25	0.06
			0.00			1/2"	6.18	5.01	0.10
			0.00			Ice	6.61	5.71	0.16
						1" Ice	7.49	7.16	0.29
						2" Ice			
(2) DMP65R-BU6D w/ Mount Pipe	A	From Leg	4.00	0.00	80.00	No Ice	12.95	7.26	0.10
			0.00			1/2"	13.55	8.43	0.20
			-2.00			Ice	14.11	9.31	0.30
						1" Ice	15.26	11.13	0.53
						2" Ice			
(2) DMP65R-BU6D w/ Mount Pipe	C	From Leg	4.00	0.00	80.00	No Ice	12.95	7.26	0.10
			0.00			1/2"	13.55	8.43	0.20
			-2.00			Ice	14.11	9.31	0.30
						1" Ice	15.26	11.13	0.53
						2" Ice			
(2) DMP65R-BU4D w/ Mount Pipe	B	From Leg	4.00	0.00	80.00	No Ice	8.52	4.69	0.09
			0.00			1/2"	8.96	5.31	0.15
			-2.00			Ice	9.42	5.93	0.22
						1" Ice	10.36	7.22	0.39
						2" Ice			
(2) LGP21401	A	From Leg	4.00	0.00	80.00	No Ice	1.10	0.35	0.01
			0.00			1/2"	1.24	0.44	0.02
			-2.00			Ice	1.38	0.54	0.03
						1" Ice	1.69	0.77	0.05
						2" Ice			
(2) LGP21401	B	From Leg	4.00	0.00	80.00	No Ice	1.10	0.35	0.01
			0.00			1/2"	1.24	0.44	0.02
			-2.00			Ice	1.38	0.54	0.03
						1" Ice	1.69	0.77	0.05
						2" Ice			
(2) LGP21401	C	From Leg	4.00	0.00	80.00	No Ice	1.10	0.35	0.01
			0.00			1/2"	1.24	0.44	0.02
			-2.00			Ice	1.38	0.54	0.03
						1" Ice	1.69	0.77	0.05
						2" Ice			
(3) RRUS 8843 B2/B66A	A	From Leg	4.00	0.00	80.00	No Ice	1.64	1.35	0.07
			0.00			1/2"	1.80	1.50	0.09
			-2.00			Ice	1.97	1.65	0.11
						1" Ice	2.32	1.99	0.16
						2" Ice			
(3) RRUS 4478 B14	A	From Leg	4.00	0.00	80.00	No Ice	2.02	1.25	0.06
			0.00				2.20	1.40	0.08

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K	
			-2.00			1/2" Ice	2.39 2.78	1.55 1.89	0.10 0.15
RRUS 4449 B5/B12	A	From Leg	4.00 0.00 -2.00	0.00	80.00	1" 2" No Ice	1.97 2.14 2.33	1.41 1.56 1.73	0.07 0.09 0.11
(2) RRUS 4449 B5/B12	B	From Leg	4.00 0.00 -2.00	0.00	80.00	1" 2" No Ice	2.72 2.07 1.97	2.07 2.07 1.41	0.16 0.16 0.07
1001940	B	From Leg	4.00 0.00 -2.00	0.00	80.00	1" 2" No Ice	0.44 0.30 0.18	0.30 0.18 0.08	0.01 0.01 0.00
(2) 1001940	C	From Leg	4.00 0.00 -2.00	0.00	80.00	1" 2" No Ice	0.44 0.30 0.18	0.30 0.18 0.08	0.01 0.01 0.00
DC6-48-60-0-8C-EV	C	From Leg	4.00 0.00 -2.00	0.00	80.00	1" 2" No Ice	3.68 3.20 2.96	5.95 5.35 5.06	0.20 0.10 0.06
DC6-48-60-18-8F	B	From Leg	4.00 0.00 -2.00	0.00	80.00	1" 2" No Ice	2.57 2.11 1.89	2.57 2.11 1.89	0.14 0.08 0.05
T-Arm Mount [TA 602-3]	C	None		0.00	80.00	1" 2" No Ice	25.86 19.70 16.44	25.86 19.70 16.44	2.05 1.29 1.00
***						1" 2" No Ice	3.71 3.26 3.04	1.83 1.48 1.33	0.15 0.10 0.07
RRUS 11 B12	A	From Leg	2.00 0.00 0.00	0.00	75.00	1" 2" No Ice	3.71 3.26 2.83	1.83 1.48 1.18	0.15 0.10 0.05
RRUS 11 B12	B	From Leg	2.00 0.00 0.00	0.00	75.00	1" 2" No Ice	3.71 3.26 2.83	1.83 1.48 1.18	0.15 0.10 0.05
RRUS 11 B12	C	From Leg	2.00 0.00 0.00	0.00	75.00	1" 2" No Ice	3.71 3.26 2.83	1.83 1.48 1.18	0.15 0.10 0.05
2.375" OD x 4' Mount Pipe	A	From Leg	2.00 0.00 0.00	0.00	75.00	1" 2" No Ice	1.90 1.36 1.11	1.90 1.36 1.11	0.06 0.04 0.03
2.375" OD x 4' Mount Pipe	B	From Leg	2.00 0.00 0.00	0.00	75.00	1" 2" No Ice	1.90 1.36 1.11	1.90 1.36 1.11	0.06 0.04 0.03

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft	C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K	
2.375" OD x 4' Mount Pipe	C	From Leg	2.00 0.00 0.00	0.00	75.00	No Ice	0.87	0.87	0.02
						1/2" Ice	1.11	1.11	0.03
						Ice	1.36	1.36	0.04
						1" Ice	1.90	1.90	0.06
						2" Ice			
Side Arm Mount [SO 701-3]	C	None		0.00	75.00	No Ice	3.02	3.02	0.20
						1/2" Ice	4.18	4.18	0.24
						Ice	5.33	5.33	0.28
						1" Ice	7.63	7.63	0.36
						2" Ice			
*** KS24019-L112A	B	From Leg	3.00 0.00 1.00	0.00	50.00	No Ice	0.14	0.14	0.01
						1/2" Ice	0.20	0.20	0.01
						Ice	0.26	0.26	0.01
						1" Ice	0.41	0.41	0.02
						2" Ice			
Side Arm Mount [SO 701-1]	B	From Leg	1.50 0.00 0.00	0.00	50.00	No Ice	0.85	1.67	0.07
						1/2" Ice	1.14	2.34	0.08
						Ice	1.43	3.01	0.09
						1" Ice	2.01	4.35	0.12
						2" Ice			
**									

Tower Pressures - No Ice

$G_H = 1.100$

Section Elevation ft	z ft	K _Z	q _Z psf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
L1 109.86-104.86	107.33	1.285	42.03	5.584	A	0.000	5.584	5.584	100.00	0.000	0.000
					B	0.000	5.584	5.584	100.00	0.000	0.000
					C	0.000	5.584	5.584	100.00	0.000	0.000
L2 104.86-99.86	102.33	1.272	41.61	6.029	A	0.000	6.029	6.029	100.00	0.000	0.000
					B	0.000	6.029	6.029	100.00	0.000	0.000
					C	0.000	6.029	6.029	100.00	0.000	0.000
L3 99.86-99.00	99.43	1.264	41.36	1.082	A	0.000	1.082	1.082	100.00	0.000	0.000
					B	0.000	1.082	1.082	100.00	0.000	0.000
					C	0.000	1.082	1.082	100.00	0.000	0.000
L4 99.00-98.50	98.75	1.262	41.30	0.644	A	0.000	0.644	0.644	100.00	0.000	0.000
					B	0.000	0.644	0.644	100.00	0.000	0.000
					C	0.000	0.644	0.644	100.00	0.000	0.000
L5 98.50-93.50	95.97	1.255	41.05	6.753	A	0.000	6.753	6.753	100.00	0.000	0.000
					B	0.000	6.753	6.753	100.00	0.000	0.000
					C	0.000	6.753	6.753	100.00	0.000	0.000
L6 93.50-88.50	90.98	1.241	40.59	7.166	A	0.000	7.166	7.166	100.00	0.000	0.000
					B	0.000	7.166	7.166	100.00	0.000	0.000
					C	0.000	7.166	7.166	100.00	0.000	0.000
L7 88.50-83.50	85.98	1.226	40.11	7.579	A	0.000	7.579	7.579	100.00	0.000	0.000
					B	0.000	7.579	7.579	100.00	0.000	0.000
					C	0.000	7.579	7.579	100.00	0.000	0.000
L8 83.50-79.33	81.40	1.212	39.66	6.637	A	0.000	6.637	6.637	100.00	2.002	0.000
					B	0.000	6.637	6.637	100.00	2.002	0.000
					C	0.000	6.637	6.637	100.00	2.002	0.000
L9 79.33-79.08	79.20	1.205	39.43	0.406	A	0.000	0.406	0.406	100.00	0.222	0.000
					B	0.000	0.406	0.406	100.00	0.222	0.000
					C	0.000	0.406	0.406	100.00	0.222	0.000
L10 79.08-74.08	76.56	1.196	39.15	8.336	A	0.000	8.336	8.336	100.00	4.442	0.000
					B	0.000	8.336	8.336	100.00	4.442	0.000
					C	0.000	8.336	8.336	100.00	4.442	0.000
L11 74.08-69.08	71.56	1.18	38.59	8.751	A	0.000	8.751	8.751	100.00	4.442	0.000
					B	0.000	8.751	8.751	100.00	4.442	0.000
					C	0.000	8.751	8.751	100.00	4.442	0.000

Section Elevation ft	z ft	K_z	q_z psf	A_G ft ²	F a c e	A_F ft ²	A_R ft ²	A_{leg} ft ²	Leg %	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²
L12 69.08-64.08	66.56	1.162	38.01	9.166	A	0.000	9.166	9.166	100.00	4.442	0.000
					B	0.000	9.166	100.00	4.442	0.000	
					C	0.000	9.166	100.00	4.442	0.000	
L13 64.08-59.08	61.56	1.143	37.39	9.580	A	0.000	9.580	9.580	100.00	4.442	0.000
					B	0.000	9.580	100.00	4.442	0.000	
					C	0.000	9.580	100.00	4.442	0.000	
L14 59.08-54.08	56.56	1.123	36.73	9.994	A	0.000	9.994	9.994	100.00	4.442	0.000
					B	0.000	9.994	100.00	4.442	0.000	
					C	0.000	9.994	100.00	4.442	0.000	
L15 54.08-47.12	50.57	1.096	35.87	14.601	A	0.000	14.601	14.601	100.00	6.183	0.000
					B	0.000	14.601	100.00	6.363	0.000	
					C	0.000	14.601	100.00	6.183	0.000	
L16 47.12-45.87	46.49	1.077	35.25	2.665	A	0.000	2.665	2.665	100.00	1.110	0.000
					B	0.000	2.665	100.00	1.189	0.000	
					C	0.000	2.665	100.00	1.110	0.000	
L17 45.87-40.87	43.35	1.061	34.73	10.917	A	0.000	10.917	10.917	100.00	4.442	0.000
					B	0.000	10.917	100.00	4.754	0.000	
					C	0.000	10.917	100.00	4.442	0.000	
L18 40.87-35.87	38.36	1.034	33.85	11.327	A	0.000	11.327	11.327	100.00	4.442	0.000
					B	0.000	11.327	100.00	4.754	0.000	
					C	0.000	11.327	100.00	4.442	0.000	
L19 35.87-30.87	33.36	1.004	32.86	11.736	A	0.000	11.736	11.736	100.00	4.442	0.000
					B	0.000	11.736	100.00	4.754	0.000	
					C	0.000	11.736	100.00	4.442	0.000	
L20 30.87-25.87	28.36	0.971	31.76	12.144	A	0.000	12.144	12.144	100.00	4.442	0.000
					B	0.000	12.144	100.00	4.754	0.000	
					C	0.000	12.144	100.00	4.442	0.000	
L21 25.87-20.87	23.36	0.932	30.49	12.553	A	0.000	12.553	12.553	100.00	4.442	0.000
					B	0.000	12.553	100.00	4.754	0.000	
					C	0.000	12.553	100.00	4.442	0.000	
L22 20.87-15.87	18.36	0.886	28.98	12.962	A	0.000	12.962	12.962	100.00	4.898	0.000
					B	0.000	12.962	100.00	4.754	0.000	
					C	0.000	12.962	100.00	4.898	0.000	
L23 15.87-14.83	15.35	0.853	27.91	2.747	A	0.000	2.747	2.747	100.00	1.590	0.000
					B	0.000	2.747	100.00	0.989	0.000	
					C	0.000	2.747	100.00	1.590	0.000	
L24 14.83-14.58	14.70	0.85	27.81	0.663	A	0.000	0.663	0.663	100.00	0.382	0.000
					B	0.000	0.663	100.00	0.238	0.000	
					C	0.000	0.663	100.00	0.382	0.000	
L25 14.58-13.83	14.20	0.85	27.81	1.994	A	0.000	1.994	1.994	100.00	1.146	0.000
					B	0.000	1.994	100.00	0.713	0.000	
					C	0.000	1.994	100.00	1.146	0.000	
L26 13.83-13.58	13.70	0.85	27.81	0.667	A	0.000	0.667	0.667	100.00	0.382	0.000
					B	0.000	0.667	100.00	0.238	0.000	
					C	0.000	0.667	100.00	0.382	0.000	
L27 13.58-8.58	11.07	0.85	27.81	13.556	A	0.000	13.556	13.556	100.00	4.975	0.000
					B	0.000	13.556	100.00	4.754	0.000	
					C	0.000	13.556	100.00	7.643	0.000	
L28 8.58-6.00	7.29	0.85	27.81	7.155	A	0.000	7.155	7.155	100.00	3.376	0.000
					B	0.000	7.155	100.00	2.453	0.000	
					C	0.000	7.155	100.00	3.944	0.000	
L29 6.00-5.75	5.87	0.85	27.81	0.699	A	0.000	0.699	0.699	100.00	0.352	0.000
					B	0.000	0.699	100.00	0.238	0.000	
					C	0.000	0.699	100.00	0.382	0.000	
L30 5.75-3.33	4.54	0.85	27.81	6.818	A	0.000	6.818	6.818	100.00	3.404	0.000
					B	0.000	6.818	100.00	2.301	0.000	
					C	0.000	6.818	100.00	3.699	0.000	
L31 3.33-2.98	3.15	0.85	27.81	0.994	A	0.000	0.994	0.994	100.00	0.492	0.000
					B	0.000	0.994	100.00	0.333	0.000	
					C	0.000	0.994	100.00	0.535	0.000	
L32 2.98-2.75	2.86	0.85	27.81	0.654	A	0.000	0.654	0.654	100.00	0.324	0.000
					B	0.000	0.654	100.00	0.219	0.000	
					C	0.000	0.654	100.00	0.352	0.000	
L33 2.75-0.00	1.37	0.85	27.81	7.892	A	0.000	7.892	7.892	100.00	2.663	0.000
					B	0.000	7.892	100.00	1.208	0.000	
					C	0.000	7.892	100.00	1.783	0.000	

Tower Pressure - With Ice

$G_H = 1.100$

Section Elevation ft	z ft	K_z	q_z psf	t_z in	A_G ft ²	F a c e	A_F ft ²	A_R ft ²	A_{leg} ft ²	Leg %	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²
L1 109.86-104.86	107.33	1.285	7.30	1.4346	6.779	A	0.000	6.779	6.779	100.00	0.000	0.000
						B	0.000	6.779	100.00	0.000	0.000	
						C	0.000	6.779	100.00	0.000	0.000	
L2 104.86-99.86	102.33	1.272	7.22	1.4278	7.219	A	0.000	7.219	7.219	100.00	0.000	0.000
						B	0.000	7.219	100.00	0.000	0.000	
						C	0.000	7.219	100.00	0.000	0.000	
L3 99.86-99.00	99.43	1.264	7.18	1.4237	1.286	A	0.000	1.286	1.286	100.00	0.000	0.000
						B	0.000	1.286	100.00	0.000	0.000	
						C	0.000	1.286	100.00	0.000	0.000	
L4 99.00-98.50	98.75	1.262	7.17	1.4227	0.762	A	0.000	0.762	0.762	100.00	0.000	0.000
						B	0.000	0.762	100.00	0.000	0.000	
						C	0.000	0.762	100.00	0.000	0.000	
L5 98.50-93.50	95.97	1.255	7.13	1.4186	7.935	A	0.000	7.935	7.935	100.00	0.000	0.000
						B	0.000	7.935	100.00	0.000	0.000	
						C	0.000	7.935	100.00	0.000	0.000	
L6 93.50-88.50	90.98	1.241	7.05	1.4111	8.342	A	0.000	8.342	8.342	100.00	0.000	0.000
						B	0.000	8.342	100.00	0.000	0.000	
						C	0.000	8.342	100.00	0.000	0.000	
L7 88.50-83.50	85.98	1.226	6.96	1.4031	8.749	A	0.000	8.749	8.749	100.00	0.000	0.000
						B	0.000	8.749	100.00	0.000	0.000	
						C	0.000	8.749	100.00	0.000	0.000	
L8 83.50-79.33	81.40	1.212	6.88	1.3955	7.607	A	0.000	7.607	7.607	100.00	2.631	0.000
						B	0.000	7.607	100.00	2.631	0.000	
						C	0.000	7.607	100.00	2.631	0.000	
L9 79.33-79.08	79.20	1.205	6.85	1.3917	0.464	A	0.000	0.464	0.464	100.00	0.292	0.000
						B	0.000	0.464	100.00	0.292	0.000	
						C	0.000	0.464	100.00	0.292	0.000	
L10 79.08-74.08	76.56	1.196	6.80	1.3869	9.492	A	0.000	9.492	9.492	100.00	5.829	0.000
						B	0.000	9.492	100.00	5.829	0.000	
						C	0.000	9.492	100.00	5.829	0.000	
L11 74.08-69.08	71.56	1.18	6.70	1.3776	9.899	A	0.000	9.899	9.899	100.00	5.819	0.000
						B	0.000	9.899	100.00	5.819	0.000	
						C	0.000	9.899	100.00	5.819	0.000	
L12 69.08-64.08	66.56	1.162	6.60	1.3677	10.305	A	0.000	10.305	10.305	100.00	5.809	0.000
						B	0.000	10.305	100.00	5.809	0.000	
						C	0.000	10.305	100.00	5.809	0.000	
L13 64.08-59.08	61.56	1.143	6.49	1.3570	10.711	A	0.000	10.711	10.711	100.00	5.799	0.000
						B	0.000	10.711	100.00	5.799	0.000	
						C	0.000	10.711	100.00	5.799	0.000	
L14 59.08-54.08	56.56	1.123	6.38	1.3456	11.115	A	0.000	11.115	11.115	100.00	5.787	0.000
						B	0.000	11.115	100.00	5.787	0.000	
						C	0.000	11.115	100.00	5.787	0.000	
L15 54.08-47.12	50.57	1.096	6.23	1.3306	16.144	A	0.000	16.144	16.144	100.00	8.035	0.000
						B	0.000	16.144	100.00	8.981	0.000	
						C	0.000	16.144	100.00	8.035	0.000	
L16 47.12-45.87	46.49	1.077	6.12	1.3195	2.943	A	0.000	2.943	2.943	100.00	1.443	0.000
						B	0.000	2.943	100.00	1.854	0.000	
						C	0.000	2.943	100.00	1.443	0.000	
L17 45.87-40.87	43.35	1.061	6.03	1.3103	12.009	A	0.000	12.009	12.009	100.00	5.752	0.000
						B	0.000	12.009	100.00	7.375	0.000	
						C	0.000	12.009	100.00	5.752	0.000	
L18 40.87-35.87	38.36	1.034	5.88	1.2943	12.405	A	0.000	12.405	12.405	100.00	5.736	0.000
						B	0.000	12.405	100.00	7.343	0.000	
						C	0.000	12.405	100.00	5.736	0.000	
L19 35.87-30.87	33.36	1.004	5.71	1.2764	12.799	A	0.000	12.799	12.799	100.00	5.718	0.000
						B	0.000	12.799	100.00	7.307	0.000	
						C	0.000	12.799	100.00	5.718	0.000	
L20 30.87-25.87	28.36	0.971	5.51	1.2558	13.191	A	0.000	13.191	13.191	100.00	5.697	0.000
						B	0.000	13.191	100.00	7.266	0.000	
						C	0.000	13.191	100.00	5.697	0.000	
L21 25.87-20.87	23.36	0.932	5.29	1.2317	13.579	A	0.000	13.579	13.579	100.00	5.673	0.000
						B	0.000	13.579	100.00	7.218	0.000	
						C	0.000	13.579	100.00	5.673	0.000	

Section Elevation ft	z ft	K_z	q_z psf	t_z in	A_G ft ²	F a c e	A_F ft ²	A_R ft ²	A_{leg} ft ²	Leg %	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²
L22 20.87-15.87	18.36	0.886	5.03	1.2024	13.964	A	0.000	13.964	13.964	100.00	6.272	0.000
						B	0.000	13.964	13.964	100.00	7.159	0.000
						C	0.000	13.964	13.964	100.00	6.272	0.000
L23 15.87-14.83	15.35	0.853	4.85	1.1810	2.952	A	0.000	2.952	2.952	100.00	2.081	0.000
						B	0.000	2.952	2.952	100.00	1.480	0.000
						C	0.000	2.952	2.952	100.00	2.081	0.000
L24 14.83-14.58	14.70	0.85	4.83	1.1760	0.712	A	0.000	0.712	0.712	100.00	0.500	0.000
						B	0.000	0.712	0.712	100.00	0.355	0.000
						C	0.000	0.712	0.712	100.00	0.500	0.000
L25 14.58-13.83	14.20	0.85	4.83	1.1719	2.141	A	0.000	2.141	2.141	100.00	1.498	0.000
						B	0.000	2.141	2.141	100.00	1.065	0.000
						C	0.000	2.141	2.141	100.00	1.498	0.000
L26 13.83-13.58	13.70	0.85	4.83	1.1677	0.716	A	0.000	0.716	0.716	100.00	0.499	0.000
						B	0.000	0.716	0.716	100.00	0.354	0.000
						C	0.000	0.716	0.716	100.00	0.499	0.000
L27 13.58-8.58	11.07	0.85	4.83	1.1430	14.509	A	0.000	14.509	14.509	100.00	6.574	0.000
						B	0.000	14.509	14.509	100.00	7.040	0.000
						C	0.000	14.509	14.509	100.00	9.929	0.000
L28 8.58-6.00	7.29	0.85	4.83	1.0963	7.626	A	0.000	7.626	7.626	100.00	4.213	0.000
						B	0.000	7.626	7.626	100.00	3.584	0.000
						C	0.000	7.626	7.626	100.00	5.075	0.000
L29 6.00-5.75	5.87	0.85	4.83	1.0729	0.744	A	0.000	0.744	0.744	100.00	0.435	0.000
						B	0.000	0.744	0.744	100.00	0.345	0.000
						C	0.000	0.744	0.744	100.00	0.489	0.000
L30 5.75-3.33	4.54	0.85	4.83	1.0455	7.240	A	0.000	7.240	7.240	100.00	4.189	0.000
						B	0.000	7.240	7.240	100.00	3.313	0.000
						C	0.000	7.240	7.240	100.00	4.711	0.000
L31 3.33-2.98	3.15	0.85	4.83	1.0082	1.053	A	0.000	1.053	1.053	100.00	0.602	0.000
						B	0.000	1.053	1.053	100.00	0.474	0.000
						C	0.000	1.053	1.053	100.00	0.676	0.000
L32 2.98-2.75	2.86	0.85	4.83	0.9986	0.693	A	0.000	0.693	0.693	100.00	0.395	0.000
						B	0.000	0.693	0.693	100.00	0.311	0.000
						C	0.000	0.693	0.693	100.00	0.443	0.000
L33 2.75-0.00	1.37	0.85	4.83	0.9276	8.318	A	0.000	8.318	8.318	100.00	3.136	0.000
						B	0.000	8.318	8.318	100.00	1.935	0.000
						C	0.000	8.318	8.318	100.00	2.216	0.000

Tower Pressure - Service

$G_H = 1.100$

Section Elevation ft	z ft	K_z	q_z psf	A_G ft ²	F a c e	A_F ft ²	A_R ft ²	A_{leg} ft ²	Leg %	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²
L1 109.86-104.86	107.33	1.285	9.90	5.584	A	0.000	5.584	5.584	100.00	0.000	0.000
					B	0.000	5.584	5.584	100.00	0.000	0.000
					C	0.000	5.584	5.584	100.00	0.000	0.000
L2 104.86-99.86	102.33	1.272	9.80	6.029	A	0.000	6.029	6.029	100.00	0.000	0.000
					B	0.000	6.029	6.029	100.00	0.000	0.000
					C	0.000	6.029	6.029	100.00	0.000	0.000
L3 99.86-99.00	99.43	1.264	9.74	1.082	A	0.000	1.082	1.082	100.00	0.000	0.000
					B	0.000	1.082	1.082	100.00	0.000	0.000
					C	0.000	1.082	1.082	100.00	0.000	0.000
L4 99.00-98.50	98.75	1.262	9.72	0.644	A	0.000	0.644	0.644	100.00	0.000	0.000
					B	0.000	0.644	0.644	100.00	0.000	0.000
					C	0.000	0.644	0.644	100.00	0.000	0.000
L5 98.50-93.50	95.97	1.255	9.67	6.753	A	0.000	6.753	6.753	100.00	0.000	0.000
					B	0.000	6.753	6.753	100.00	0.000	0.000
					C	0.000	6.753	6.753	100.00	0.000	0.000
L6 93.50-88.50	90.98	1.241	9.56	7.166	A	0.000	7.166	7.166	100.00	0.000	0.000
					B	0.000	7.166	7.166	100.00	0.000	0.000
					C	0.000	7.166	7.166	100.00	0.000	0.000
L7 88.50-83.50	85.98	1.226	9.45	7.579	A	0.000	7.579	7.579	100.00	0.000	0.000
					B	0.000	7.579	7.579	100.00	0.000	0.000
					C	0.000	7.579	7.579	100.00	0.000	0.000

Section Elevation ft	z ft	K_z	q_z psf	A_G ft ²	F a c e	A_F ft ²	A_R ft ²	A_{leg} ft ²	Leg %	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²
L8 83.50-79.33	81.40	1.212	9.34	6.637	A	0.000	6.637	6.637	100.00	2.002	0.000
					B	0.000	6.637	6.637	100.00	2.002	0.000
					C	0.000	6.637	6.637	100.00	2.002	0.000
L9 79.33-79.08	79.20	1.205	9.28	0.406	A	0.000	0.406	0.406	100.00	0.222	0.000
					B	0.000	0.406	0.406	100.00	0.222	0.000
					C	0.000	0.406	0.406	100.00	0.222	0.000
L10 79.08-74.08	76.56	1.196	9.22	8.336	A	0.000	8.336	8.336	100.00	4.442	0.000
					B	0.000	8.336	8.336	100.00	4.442	0.000
					C	0.000	8.336	8.336	100.00	4.442	0.000
L11 74.08-69.08	71.56	1.18	9.09	8.751	A	0.000	8.751	8.751	100.00	4.442	0.000
					B	0.000	8.751	8.751	100.00	4.442	0.000
					C	0.000	8.751	8.751	100.00	4.442	0.000
L12 69.08-64.08	66.56	1.162	8.95	9.166	A	0.000	9.166	9.166	100.00	4.442	0.000
					B	0.000	9.166	9.166	100.00	4.442	0.000
					C	0.000	9.166	9.166	100.00	4.442	0.000
L13 64.08-59.08	61.56	1.143	8.80	9.580	A	0.000	9.580	9.580	100.00	4.442	0.000
					B	0.000	9.580	9.580	100.00	4.442	0.000
					C	0.000	9.580	9.580	100.00	4.442	0.000
L14 59.08-54.08	56.56	1.123	8.65	9.994	A	0.000	9.994	9.994	100.00	4.442	0.000
					B	0.000	9.994	9.994	100.00	4.442	0.000
					C	0.000	9.994	9.994	100.00	4.442	0.000
L15 54.08-47.12	50.57	1.096	8.45	14.601	A	0.000	14.601	14.601	100.00	6.183	0.000
					B	0.000	14.601	14.601	100.00	6.363	0.000
					C	0.000	14.601	14.601	100.00	6.183	0.000
L16 47.12-45.87	46.49	1.077	8.30	2.665	A	0.000	2.665	2.665	100.00	1.110	0.000
					B	0.000	2.665	2.665	100.00	1.189	0.000
					C	0.000	2.665	2.665	100.00	1.110	0.000
L17 45.87-40.87	43.35	1.061	8.18	10.917	A	0.000	10.917	10.917	100.00	4.442	0.000
					B	0.000	10.917	10.917	100.00	4.754	0.000
					C	0.000	10.917	10.917	100.00	4.442	0.000
L18 40.87-35.87	38.36	1.034	7.97	11.327	A	0.000	11.327	11.327	100.00	4.442	0.000
					B	0.000	11.327	11.327	100.00	4.754	0.000
					C	0.000	11.327	11.327	100.00	4.442	0.000
L19 35.87-30.87	33.36	1.004	7.74	11.736	A	0.000	11.736	11.736	100.00	4.442	0.000
					B	0.000	11.736	11.736	100.00	4.754	0.000
					C	0.000	11.736	11.736	100.00	4.442	0.000
L20 30.87-25.87	28.36	0.971	7.48	12.144	A	0.000	12.144	12.144	100.00	4.442	0.000
					B	0.000	12.144	12.144	100.00	4.754	0.000
					C	0.000	12.144	12.144	100.00	4.442	0.000
L21 25.87-20.87	23.36	0.932	7.18	12.553	A	0.000	12.553	12.553	100.00	4.442	0.000
					B	0.000	12.553	12.553	100.00	4.754	0.000
					C	0.000	12.553	12.553	100.00	4.442	0.000
L22 20.87-15.87	18.36	0.886	6.82	12.962	A	0.000	12.962	12.962	100.00	4.898	0.000
					B	0.000	12.962	12.962	100.00	4.754	0.000
					C	0.000	12.962	12.962	100.00	4.898	0.000
L23 15.87-14.83	15.35	0.853	6.57	2.747	A	0.000	2.747	2.747	100.00	1.590	0.000
					B	0.000	2.747	2.747	100.00	0.989	0.000
					C	0.000	2.747	2.747	100.00	1.590	0.000
L24 14.83-14.58	14.70	0.85	6.55	0.663	A	0.000	0.663	0.663	100.00	0.382	0.000
					B	0.000	0.663	0.663	100.00	0.238	0.000
					C	0.000	0.663	0.663	100.00	0.382	0.000
L25 14.58-13.83	14.20	0.85	6.55	1.994	A	0.000	1.994	1.994	100.00	1.146	0.000
					B	0.000	1.994	1.994	100.00	0.713	0.000
					C	0.000	1.994	1.994	100.00	1.146	0.000
L26 13.83-13.58	13.70	0.85	6.55	0.667	A	0.000	0.667	0.667	100.00	0.382	0.000
					B	0.000	0.667	0.667	100.00	0.238	0.000
					C	0.000	0.667	0.667	100.00	0.382	0.000
L27 13.58-8.58	11.07	0.85	6.55	13.556	A	0.000	13.556	13.556	100.00	4.975	0.000
					B	0.000	13.556	13.556	100.00	4.754	0.000
					C	0.000	13.556	13.556	100.00	7.643	0.000
L28 8.58-6.00	7.29	0.85	6.55	7.155	A	0.000	7.155	7.155	100.00	3.376	0.000
					B	0.000	7.155	7.155	100.00	2.453	0.000
					C	0.000	7.155	7.155	100.00	3.944	0.000
L29 6.00-5.75	5.87	0.85	6.55	0.699	A	0.000	0.699	0.699	100.00	0.352	0.000
					B	0.000	0.699	0.699	100.00	0.238	0.000
					C	0.000	0.699	0.699	100.00	0.382	0.000
L30 5.75-3.33	4.54	0.85	6.55	6.818	A	0.000	6.818	6.818	100.00	3.404	0.000
					B	0.000	6.818	6.818	100.00	2.301	0.000

Section Elevation ft	z ft	K_z	q_z psf	A_G ft ²	F a c e	A_F ft ²	A_R ft ²	A_{leg} ft ²	Leg %	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²
L31 3.33-2.98	3.15	0.85	6.55	0.994	C	0.000	6.818	0.994	100.00	3.699	0.000
					A	0.000	0.994		100.00	0.492	0.000
					B	0.000	0.994		100.00	0.333	0.000
L32 2.98-2.75	2.86	0.85	6.55	0.654	C	0.000	0.994	0.654	100.00	0.535	0.000
					A	0.000	0.654		100.00	0.324	0.000
					B	0.000	0.654		100.00	0.219	0.000
L33 2.75-0.00	1.37	0.85	6.55	7.892	C	0.000	0.654	7.892	100.00	0.352	0.000
					A	0.000	7.892		100.00	2.663	0.000
					B	0.000	7.892		100.00	1.208	0.000
					C	0.000	7.892		100.00	1.783	0.000

Load Combinations

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	109.86 - 104.86	Pole	Max Tension	2	0.00	-0.00	-0.00
			Max. Compression	26	-4.13	-0.05	0.03
			Max. Mx	20	-1.28	9.32	-0.02
			Max. My	2	-1.28	-0.01	9.30
			Max. Vy	20	-3.01	9.32	-0.02
			Max. Vx	2	-3.01	-0.01	9.30
			Max. Torque	13			0.08
L2	104.86 - 99.86	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-10.92	-0.05	0.05
			Max. Mx	20	-3.88	32.10	-0.04
			Max. My	2	-3.87	-0.04	32.06
			Max. Vy	20	-6.58	32.10	-0.04
			Max. Vx	2	-6.58	-0.04	32.06
			Max. Torque	13			0.08
L3	99.86 - 99	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-10.99	-0.05	0.06
			Max. Mx	20	-3.92	37.78	-0.05
			Max. My	2	-3.92	-0.05	37.74
			Max. Vy	20	-6.62	37.78	-0.05
			Max. Vx	2	-6.62	-0.05	37.74
			Max. Torque	13			0.08
L4	99 - 98.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-11.03	-0.05	0.06
			Max. Mx	20	-3.95	41.10	-0.05
			Max. My	2	-3.94	-0.05	41.05
			Max. Vy	20	-6.64	41.10	-0.05
			Max. Vx	2	-6.64	-0.05	41.05
			Max. Torque	13			0.08
L5	98.5 - 93.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-12.81	-0.06	0.10
			Max. Mx	20	-4.85	77.63	-0.07
			Max. My	2	-4.85	-0.08	77.58
			Max. Vy	20	-7.66	77.63	-0.07
			Max. Vx	2	-7.66	-0.08	77.58
			Max. Torque	13			0.08
L6	93.5 - 88.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-13.25	-0.06	0.13
			Max. Mx	20	-5.17	116.49	-0.08
			Max. My	2	-5.16	-0.11	116.43
			Max. Vy	20	-7.89	116.49	-0.08
			Max. Vx	2	-7.89	-0.11	116.43
			Max. Torque	13			0.08
L7	88.5 - 83.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-13.72	-0.06	0.16
			Max. Mx	20	-5.50	156.48	-0.10
			Max. My	2	-5.50	-0.14	156.42
			Max. Vy	20	-8.12	156.48	-0.10
			Max. Vx	2	-8.12	-0.14	156.42
			Max. Torque	13			0.08
L8	83.5 - 79.33	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-21.30	-0.22	3.92
			Max. Mx	8	-8.40	-188.95	2.26
			Max. My	2	-8.34	-0.82	190.61
			Max. Vy	20	-12.90	188.25	1.91
			Max. Vx	2	-13.11	-0.82	190.61
			Max. Torque	7			1.43
L9	79.33 - 79.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-21.36	-0.22	3.92
			Max. Mx	8	-8.44	-192.14	2.26
			Max. My	2	-8.38	-0.82	193.88
			Max. Vy	20	-12.92	191.48	1.91
			Max. Vx	2	-13.13	-0.82	193.88
			Max. Torque	7			1.43

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L10	79.08 - 74.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-23.32	-0.23	3.97
			Max. Mx	20	-9.60	257.76	1.85
			Max. My	2	-9.57	-0.90	261.19
			Max. Vy	20	-13.91	257.76	1.85
			Max. Vx	2	-14.11	-0.90	261.19
L11	74.08 - 69.08	Pole	Max. Torque	7			1.43
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-24.42	-0.23	4.02
			Max. Mx	20	-10.37	328.52	1.78
			Max. My	2	-10.34	-0.98	332.99
			Max. Vy	20	-14.41	328.52	1.78
L12	69.08 - 64.08	Pole	Max. Vx	2	-14.62	-0.98	332.99
			Max. Torque	7			1.43
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-25.53	-0.24	4.06
			Max. Mx	20	-11.16	401.79	1.72
			Max. My	2	-11.13	-1.06	407.30
L13	64.08 - 59.08	Pole	Max. Vy	20	-14.91	401.79	1.72
			Max. Vx	2	-15.12	-1.06	407.30
			Max. Torque	7			1.43
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-26.66	-0.24	4.09
			Max. Mx	20	-11.97	477.57	1.65
L14	59.08 - 54.08	Pole	Max. My	2	-11.95	-1.15	484.12
			Max. Vy	20	-15.41	477.57	1.65
			Max. Vx	2	-15.62	-1.15	484.12
			Max. Torque	7			1.43
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-27.81	-0.25	4.13
L15	54.08 - 47.12	Pole	Max. Mx	20	-12.81	555.85	1.58
			Max. My	2	-12.79	-1.23	563.44
			Max. Vy	20	-15.92	555.85	1.58
			Max. Vx	2	-16.12	-1.23	563.44
			Max. Torque	7			1.43
			Max Tension	1	0.00	0.00	0.00
L16	47.12 - 45.87	Pole	Max. Compression	26	-28.56	-0.25	4.15
			Max. Mx	20	-13.36	607.43	1.54
			Max. My	2	-13.34	-1.29	615.68
			Max. Vy	20	-16.23	607.43	1.54
			Max. Vx	2	-16.44	-1.29	615.68
			Max. Torque	7			1.43
L17	45.87 - 40.87	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-30.62	-0.56	4.01
			Max. Mx	20	-14.86	690.02	1.30
			Max. My	2	-14.83	-1.61	699.46
			Max. Vy	20	-16.85	690.02	1.30
			Max. Vx	2	-17.07	-1.61	699.46
L18	40.87 - 35.87	Pole	Max. Torque	7			1.27
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31.93	-0.58	4.04
			Max. Mx	20	-15.84	775.43	1.16
			Max. My	2	-15.82	-1.77	785.99
			Max. Vy	20	-17.34	775.43	1.16
L18	40.87 - 35.87	Pole	Max. Vx	2	-17.56	-1.77	785.99
			Max. Torque	7			1.26
			Max Tension	1	0.00	0.00	0.00
L18	40.87 - 35.87	Pole	Max. Compression	26	-33.25	-0.60	4.07
			Max. Mx	20	-16.85	863.28	1.02
			Max. My	2	-16.83	-1.92	874.96

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L19	35.87 - 30.87	Pole	Max. Vy	20	-17.82	863.28	1.02
			Max. Vx	2	-18.05	-1.92	874.96
			Max. Torque	7			1.26
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-34.58	-0.62	4.10
			Max. Mx	20	-17.88	953.52	0.88
			Max. My	2	-17.86	-2.07	966.31
L20	30.87 - 25.87	Pole	Max. Vy	20	-18.30	953.52	0.88
			Max. Vx	2	-18.52	-2.07	966.31
			Max. Torque	7			1.26
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-35.94	-0.64	4.11
			Max. Mx	20	-18.93	1046.09	0.73
			Max. My	2	-18.92	-2.23	1059.99
L21	25.87 - 20.87	Pole	Max. Vy	20	-18.75	1046.09	0.73
			Max. Vx	2	-18.98	-2.23	1059.99
			Max. Torque	7			1.26
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-37.30	-0.65	4.12
			Max. Mx	20	-20.00	1140.90	0.58
			Max. My	2	-19.99	-2.38	1155.91
L22	20.87 - 15.87	Pole	Max. Vy	20	-19.20	1140.90	0.58
			Max. Vx	2	-19.42	-2.38	1155.91
			Max. Torque	7			1.26
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.70	-0.66	4.12
			Max. Mx	20	-21.10	1237.86	0.44
			Max. My	2	-21.09	-2.54	1253.97
L23	15.87 - 14.83	Pole	Max. Vy	20	-19.61	1237.86	0.44
			Max. Vx	2	-19.84	-2.54	1253.97
			Max. Torque	7			1.26
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.00	-0.65	4.11
			Max. Mx	20	-21.33	1258.29	0.41
			Max. My	2	-21.33	-2.57	1274.63
L24	14.83 - 14.58	Pole	Max. Vy	20	-19.70	1258.29	0.41
			Max. Vx	2	-19.92	-2.57	1274.63
			Max. Torque	7			1.26
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.09	-0.64	4.11
			Max. Mx	20	-21.41	1263.22	0.40
			Max. My	2	-21.40	-2.57	1279.61
L25	14.58 - 13.83	Pole	Max. Vy	20	-19.71	1263.22	0.40
			Max. Vx	2	-19.94	-2.57	1279.61
			Max. Torque	7			1.26
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.34	-0.63	4.10
			Max. Mx	20	-21.60	1278.02	0.38
			Max. My	2	-21.59	-2.60	1294.59
L26	13.83 - 13.58	Pole	Max. Vy	20	-19.78	1278.02	0.38
			Max. Vx	2	-20.01	-2.60	1294.59
			Max. Torque	7			1.26
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.42	-0.63	4.11
			Max. Mx	20	-21.66	1282.96	0.37
			Max. My	2	-21.66	-2.61	1299.59
L27	13.58 - 8.58	Pole	Max. Vy	20	-19.79	1282.96	0.37
			Max. Vx	2	-20.02	-2.61	1299.59
			Max. Torque	7			1.26
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-40.95	-0.61	4.08

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L28	8.58 - 6	Pole	Max. Mx	20	-22.86	1382.93	0.22
			Max. My	2	-22.86	-2.76	1400.70
			Max. Vy	20	-20.21	1382.93	0.22
			Max. Vx	2	-20.44	-2.76	1400.70
			Max. Torque	7			1.26
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41.75	-0.59	4.06
			Max. Mx	20	-23.49	1435.30	0.15
			Max. My	2	-23.49	-2.84	1453.69
			Max. Vy	20	-20.42	1435.30	0.15
L29	6 - 5.75	Pole	Max. Vx	2	-20.66	-2.84	1453.69
			Max. Torque	7			1.26
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41.83	-0.58	4.06
			Max. Mx	20	-23.57	1440.41	0.14
			Max. My	2	-23.57	-2.84	1458.85
			Max. Vy	20	-20.43	1440.41	0.14
			Max. Vx	2	-20.67	-2.84	1458.85
			Max. Torque	7			1.26
			Max Tension	1	0.00	0.00	0.00
L30	5.75 - 3.33	Pole	Max. Compression	26	-42.64	-0.55	4.04
			Max. Mx	20	-24.21	1490.09	0.07
			Max. My	2	-24.21	-2.92	1509.12
			Max. Vy	20	-20.65	1490.09	0.07
			Max. Vx	2	-20.90	-2.92	1509.12
			Max. Torque	7			1.26
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.74	-0.55	4.04
			Max. Mx	20	-24.30	1497.32	0.06
			Max. My	2	-24.30	-2.93	1516.44
L31	3.33 - 2.98	Pole	Max. Vy	20	-20.67	1497.32	0.06
			Max. Vx	2	-20.92	-2.93	1516.44
			Max. Torque	7			1.26
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.81	-0.55	4.04
			Max. Mx	20	-24.36	1502.08	0.05
			Max. My	2	-24.36	-2.93	1521.25
			Max. Vy	20	-20.69	1502.08	0.05
			Max. Vx	2	-20.93	-2.93	1521.25
			Max. Torque	7			1.26
L32	2.98 - 2.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.81	-0.55	4.04
			Max. Mx	20	-24.36	1502.08	0.05
			Max. My	2	-24.36	-2.93	1521.25
			Max. Vy	20	-20.69	1502.08	0.05
			Max. Vx	2	-20.93	-2.93	1521.25
			Max. Torque	7			1.26
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.55	-0.52	4.03
			Max. Mx	20	-25.00	1559.09	-0.03
L33	2.75 - 0	Pole	Max. My	2	-25.00	-3.02	1579.11
			Max. Vy	20	-20.80	1559.09	-0.03
			Max. Vx	2	-21.17	-3.02	1579.11
			Max. Torque	7			1.26

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	43.55	0.00	-0.00
	Max. H _x	21	18.76	20.78	-0.03
	Max. H _z	3	18.76	-0.03	21.15
	Max. M _x	2	1579.11	-0.03	21.15
	Max. M _z	8	1503.55	-19.58	0.03
	Max. Torsion	7	1.26	-16.97	9.92
	Min. Vert	3	18.76	-0.03	21.15
	Min. H _x	9	18.76	-19.58	0.03
	Min. H _z	15	18.76	0.03	-19.45
	Min. M _x	14	-1513.11	0.03	-19.45
	Min. M _z	20	-1559.09	20.78	-0.03
	Min. Torsion	19	-1.25	18.01	-10.52

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	20.84	-0.00	0.00	-1.66	-0.66	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	25.01	0.03	-21.15	-1579.11	-3.02	-0.64
0.9 Dead+1.0 Wind 0 deg - No Ice	18.76	0.03	-21.15	-1561.99	-2.77	-0.63
1.2 Dead+1.0 Wind 30 deg - No Ice	25.01	10.52	-18.38	-1369.43	-783.18	-1.09
0.9 Dead+1.0 Wind 30 deg - No Ice	18.76	10.52	-18.38	-1354.49	-774.72	-1.09
1.2 Dead+1.0 Wind 60 deg - No Ice	25.01	16.97	-9.92	-763.71	-1303.33	-1.25
0.9 Dead+1.0 Wind 60 deg - No Ice	18.76	16.97	-9.92	-755.02	-1289.19	-1.26
1.2 Dead+1.0 Wind 90 deg - No Ice	25.01	19.58	-0.03	-4.31	-1503.55	-1.07
0.9 Dead+1.0 Wind 90 deg - No Ice	18.76	19.58	-0.03	-3.72	-1487.29	-1.09
1.2 Dead+1.0 Wind 120 deg - No Ice	25.01	18.12	10.55	784.53	-1351.13	-0.60
0.9 Dead+1.0 Wind 120 deg - No Ice	18.76	18.12	10.55	776.82	-1336.69	-0.62
1.2 Dead+1.0 Wind 150 deg - No Ice	25.01	10.44	18.30	1362.56	-779.17	0.02
0.9 Dead+1.0 Wind 150 deg - No Ice	18.76	10.44	18.30	1348.77	-770.76	0.01
1.2 Dead+1.0 Wind 180 deg - No Ice	25.01	-0.03	19.45	1513.11	1.32	0.64
0.9 Dead+1.0 Wind 180 deg - No Ice	18.76	-0.03	19.45	1497.49	1.52	0.63
1.2 Dead+1.0 Wind 210 deg - No Ice	25.01	-9.41	16.45	1307.47	748.18	1.08
0.9 Dead+1.0 Wind 210 deg - No Ice	18.76	-9.41	16.45	1294.00	740.36	1.09
1.2 Dead+1.0 Wind 240 deg - No Ice	25.01	-18.01	10.52	788.05	1351.20	1.24
0.9 Dead+1.0 Wind 240 deg - No Ice	18.76	-18.01	10.52	780.30	1337.18	1.25
1.2 Dead+1.0 Wind 270 deg - No Ice	25.01	-20.78	0.03	0.03	1559.09	1.07
0.9 Dead+1.0 Wind 270 deg - No Ice	18.76	-20.78	0.03	0.57	1542.89	1.09
1.2 Dead+1.0 Wind 300 deg - No Ice	25.01	-16.64	-9.70	-757.94	1295.99	0.61
0.9 Dead+1.0 Wind 300 deg - No Ice	18.76	-16.64	-9.70	-749.29	1282.32	0.63
1.2 Dead+1.0 Wind 330 deg - No Ice	25.01	-9.59	-16.83	-1313.37	746.61	-0.01
0.9 Dead+1.0 Wind 330 deg - No Ice	18.76	-9.59	-16.83	-1298.79	738.83	-0.00
1.2 Dead+1.0 Ice+1.0 Temp	43.55	-0.00	0.00	-4.03	-0.52	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	43.55	0.00	-5.04	-426.05	-0.77	-0.09
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	43.55	2.51	-4.37	-369.74	-210.22	-0.18
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	43.55	4.26	-2.48	-213.18	-359.71	-0.23
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	43.55	4.92	-0.00	-4.39	-415.14	-0.21
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	43.55	4.33	2.51	206.58	-363.18	-0.14
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	43.55	2.50	4.36	361.09	-209.78	-0.03
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	43.55	-0.00	4.95	413.40	-0.31	0.09

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
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	43.55	-2.46	4.28	357.52	206.90	0.18
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	43.55	-4.32	2.52	206.94	362.27	0.23
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	43.55	-4.99	0.00	-3.94	418.27	0.21
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	43.55	-4.25	-2.47	-212.76	358.36	0.14
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	43.55	-2.45	-4.28	-365.68	206.54	0.03
Dead+Wind 0 deg - Service	20.84	0.01	-4.98	-371.12	-1.20	-0.15
Dead+Wind 30 deg - Service	20.84	2.48	-4.33	-322.02	-183.93	-0.26
Dead+Wind 60 deg - Service	20.84	4.00	-2.34	-180.12	-305.72	-0.30
Dead+Wind 90 deg - Service	20.84	4.61	-0.01	-2.28	-352.58	-0.26
Dead+Wind 120 deg - Service	20.84	4.27	2.48	182.47	-316.95	-0.15
Dead+Wind 150 deg - Service	20.84	2.46	4.31	317.86	-182.99	0.00
Dead+Wind 180 deg - Service	20.84	-0.01	4.58	353.06	-0.19	0.15
Dead+Wind 210 deg - Service	20.84	-2.22	3.87	304.91	174.71	0.26
Dead+Wind 240 deg - Service	20.84	-4.24	2.48	183.29	315.97	0.30
Dead+Wind 270 deg - Service	20.84	-4.89	0.01	-1.27	364.63	0.26
Dead+Wind 300 deg - Service	20.84	-3.92	-2.28	-178.77	302.99	0.15
Dead+Wind 330 deg - Service	20.84	-2.26	-3.96	-308.84	174.35	-0.00

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-20.84	0.00	0.00	20.84	-0.00	0.005%
2	0.03	-25.01	-21.15	-0.03	25.01	21.15	0.003%
3	0.03	-18.76	-21.15	-0.03	18.76	21.15	0.002%
4	10.52	-25.01	-18.38	-10.52	25.01	18.38	0.000%
5	10.52	-18.76	-18.38	-10.52	18.76	18.38	0.000%
6	16.97	-25.01	-9.92	-16.97	25.01	9.92	0.000%
7	16.97	-18.76	-9.92	-16.97	18.76	9.92	0.000%
8	19.58	-25.01	-0.03	-19.58	25.01	0.03	0.001%
9	19.58	-18.76	-0.03	-19.58	18.76	0.03	0.001%
10	18.12	-25.01	10.55	-18.12	25.01	-10.55	0.000%
11	18.12	-18.76	10.55	-18.12	18.76	-10.55	0.000%
12	10.44	-25.01	18.30	-10.44	25.01	-18.30	0.000%
13	10.44	-18.76	18.30	-10.44	18.76	-18.30	0.000%
14	-0.03	-25.01	19.45	0.03	25.01	-19.45	0.003%
15	-0.03	-18.76	19.45	0.03	18.76	-19.45	0.002%
16	-9.41	-25.01	16.45	9.41	25.01	-16.45	0.000%
17	-9.41	-18.76	16.45	9.41	18.76	-16.45	0.000%
18	-18.01	-25.01	10.52	18.01	25.01	-10.52	0.000%
19	-18.01	-18.76	10.52	18.01	18.76	-10.52	0.000%
20	-20.78	-25.01	0.03	20.78	25.01	-0.03	0.001%
21	-20.78	-18.76	0.03	20.78	18.76	-0.03	0.001%
22	-16.64	-25.01	-9.70	16.64	25.01	9.70	0.000%
23	-16.64	-18.76	-9.70	16.64	18.76	9.70	0.000%
24	-9.59	-25.01	-16.83	9.59	25.01	16.83	0.000%
25	-9.59	-18.76	-16.83	9.59	18.76	16.83	0.000%
26	0.00	-43.55	0.00	0.00	43.55	-0.00	0.002%
27	0.00	-43.55	-5.04	-0.00	43.55	5.04	0.000%
28	2.51	-43.55	-4.37	-2.51	43.55	4.37	0.000%
29	4.26	-43.55	-2.48	-4.26	43.55	2.48	0.000%
30	4.92	-43.55	-0.00	-4.92	43.55	0.00	0.000%
31	4.33	-43.55	2.51	-4.33	43.55	-2.51	0.000%
32	2.50	-43.55	4.36	-2.50	43.55	-4.36	0.000%

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
33	-0.00	-43.55	4.95	0.00	43.55	-4.95	0.000%
34	-2.46	-43.55	4.28	2.46	43.55	-4.28	0.000%
35	-4.32	-43.55	2.52	4.32	43.55	-2.52	0.000%
36	-4.99	-43.55	0.00	4.99	43.55	-0.00	0.000%
37	-4.25	-43.55	-2.47	4.25	43.55	2.47	0.000%
38	-2.45	-43.55	-4.28	2.45	43.55	4.28	0.000%
39	0.01	-20.84	-4.98	-0.01	20.84	4.98	0.003%
40	2.48	-20.84	-4.33	-2.48	20.84	4.33	0.002%
41	4.00	-20.84	-2.34	-4.00	20.84	2.34	0.002%
42	4.61	-20.84	-0.01	-4.61	20.84	0.01	0.003%
43	4.27	-20.84	2.48	-4.27	20.84	-2.48	0.002%
44	2.46	-20.84	4.31	-2.46	20.84	-4.31	0.002%
45	-0.01	-20.84	4.58	0.01	20.84	-4.58	0.003%
46	-2.22	-20.84	3.87	2.22	20.84	-3.87	0.002%
47	-4.24	-20.84	2.48	4.24	20.84	-2.48	0.002%
48	-4.89	-20.84	0.01	4.89	20.84	-0.01	0.003%
49	-3.92	-20.84	-2.28	3.92	20.84	2.28	0.002%
50	-2.26	-20.84	-3.96	2.26	20.84	3.96	0.002%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00001538
2	Yes	18	0.00002644	0.00012134
3	Yes	18	0.00000001	0.00009440
4	Yes	23	0.00000001	0.00010433
5	Yes	22	0.00000001	0.00014786
6	Yes	23	0.00000001	0.00010871
7	Yes	23	0.00000001	0.00007610
8	Yes	19	0.00000001	0.00012172
9	Yes	19	0.00000001	0.00009270
10	Yes	23	0.00000001	0.00010414
11	Yes	22	0.00000001	0.00014825
12	Yes	23	0.00000001	0.00010581
13	Yes	23	0.00000001	0.00007363
14	Yes	18	0.00000001	0.00014057
15	Yes	18	0.00000001	0.00010968
16	Yes	23	0.00000001	0.00010680
17	Yes	23	0.00000001	0.00007504
18	Yes	23	0.00000001	0.00010234
19	Yes	22	0.00000001	0.00014574
20	Yes	19	0.00000001	0.00011121
21	Yes	19	0.00000001	0.00008436
22	Yes	23	0.00000001	0.00010526
23	Yes	23	0.00000001	0.00007376
24	Yes	23	0.00000001	0.00010349
25	Yes	22	0.00000001	0.00014803
26	Yes	11	0.00000001	0.00014619
27	Yes	20	0.00000001	0.00011480
28	Yes	21	0.00000001	0.00008271
29	Yes	21	0.00000001	0.00008363
30	Yes	20	0.00000001	0.00011224
31	Yes	20	0.00000001	0.00014623
32	Yes	20	0.00000001	0.00014770
33	Yes	20	0.00000001	0.00011017
34	Yes	20	0.00000001	0.00014714
35	Yes	20	0.00000001	0.00014516
36	Yes	20	0.00000001	0.00011244
37	Yes	21	0.00000001	0.00008266
38	Yes	21	0.00000001	0.00008208
39	Yes	16	0.00000001	0.00004875
40	Yes	17	0.00000001	0.00010141
41	Yes	17	0.00000001	0.00012725
42	Yes	16	0.00000001	0.00006732
43	Yes	17	0.00000001	0.00009993
44	Yes	17	0.00000001	0.00010685
45	Yes	16	0.00000001	0.00004786
46	Yes	17	0.00000001	0.00011870
47	Yes	17	0.00000001	0.00009391
48	Yes	16	0.00000001	0.00006706
49	Yes	17	0.00000001	0.00011295
50	Yes	17	0.00000001	0.00010561

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	109.86 - 104.86	18.83	39	1.54	0.00
L2	104.86 - 99.86	17.21	39	1.53	0.00
L3	99.86 - 99	15.62	39	1.51	0.00
L4	99 - 98.5	15.35	39	1.50	0.00
L5	98.5 - 93.5	15.19	39	1.49	0.00
L6	93.5 - 88.5	13.66	39	1.43	0.00
L7	88.5 - 83.5	12.21	39	1.34	0.00
L8	83.5 - 79.33	10.87	39	1.23	0.00
L9	79.33 - 79.08	9.84	39	1.13	0.00
L10	79.08 - 74.08	9.78	39	1.13	0.00
L11	74.08 - 69.08	8.62	39	1.08	0.00
L12	69.08 - 64.08	7.52	39	1.02	0.00

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L13	64.08 - 59.08	6.49	39	0.95	0.00
L14	59.08 - 54.08	5.53	39	0.88	0.00
L15	54.08 - 47.12	4.65	39	0.80	0.00
L16	50.87 - 45.87	4.13	39	0.75	0.00
L17	45.87 - 40.87	3.36	39	0.71	0.00
L18	40.87 - 35.87	2.66	39	0.63	0.00
L19	35.87 - 30.87	2.04	39	0.55	0.00
L20	30.87 - 25.87	1.50	39	0.47	0.00
L21	25.87 - 20.87	1.05	39	0.39	0.00
L22	20.87 - 15.87	0.68	39	0.31	0.00
L23	15.87 - 14.83	0.39	39	0.23	0.00
L24	14.83 - 14.58	0.34	39	0.22	0.00
L25	14.58 - 13.83	0.33	39	0.21	0.00
L26	13.83 - 13.58	0.29	39	0.20	0.00
L27	13.58 - 8.58	0.28	39	0.20	0.00
L28	8.58 - 6	0.11	39	0.13	0.00
L29	6 - 5.75	0.06	39	0.09	0.00
L30	5.75 - 3.33	0.05	39	0.08	0.00
L31	3.33 - 2.98	0.02	39	0.05	0.00
L32	2.98 - 2.75	0.01	39	0.05	0.00
L33	2.75 - 0	0.01	39	0.04	0.00

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
108.00	BXA-171085-8BF-EDIN-2 w/ Mount Pipe	39	18.22	1.54	0.00	17488
102.00	APXVSPP18-C-A20 w/ Mount Pipe	39	16.30	1.52	0.00	9219
97.00	1900MHz RRH (65MHz)	39	14.73	1.48	0.00	4791
80.00	(2) 7770.00 w/ Mount Pipe	39	10.00	1.14	0.00	3093
75.00	RRUS 11 B12	39	8.83	1.09	0.00	5257
50.00	KS24019-L112A	39	3.99	0.74	0.00	5013

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	109.86 - 104.86	79.87	2	6.54	0.01
L2	104.86 - 99.86	73.04	2	6.52	0.01
L3	99.86 - 99	66.28	2	6.40	0.01
L4	99 - 98.5	65.14	2	6.36	0.01
L5	98.5 - 93.5	64.47	2	6.34	0.01
L6	93.5 - 88.5	57.98	2	6.06	0.01
L7	88.5 - 83.5	51.84	2	5.67	0.01
L8	83.5 - 79.33	46.14	2	5.21	0.01
L9	79.33 - 79.08	41.78	2	4.79	0.01
L10	79.08 - 74.08	41.53	2	4.78	0.01
L11	74.08 - 69.08	36.63	2	4.57	0.01
L12	69.08 - 64.08	31.98	2	4.32	0.01
L13	64.08 - 59.08	27.60	2	4.04	0.01
L14	59.08 - 54.08	23.53	2	3.74	0.01
L15	54.08 - 47.12	19.78	2	3.42	0.01
L16	50.87 - 45.87	17.55	2	3.21	0.01
L17	45.87 - 40.87	14.29	2	3.01	0.00
L18	40.87 - 35.87	11.31	2	2.68	0.00
L19	35.87 - 30.87	8.68	2	2.35	0.00
L20	30.87 - 25.87	6.39	2	2.02	0.00
L21	25.87 - 20.87	4.45	2	1.68	0.00
L22	20.87 - 15.87	2.87	2	1.34	0.00
L23	15.87 - 14.83	1.65	2	1.00	0.00
L24	14.83 - 14.58	1.44	2	0.93	0.00

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L25	14.58 - 13.83	1.39	2	0.91	0.00
L26	13.83 - 13.58	1.25	2	0.87	0.00
L27	13.58 - 8.58	1.21	2	0.86	0.00
L28	8.58 - 6	0.48	2	0.53	0.00
L29	6 - 5.75	0.24	2	0.37	0.00
L30	5.75 - 3.33	0.22	2	0.35	0.00
L31	3.33 - 2.98	0.08	2	0.22	0.00
L32	2.98 - 2.75	0.06	2	0.19	0.00
L33	2.75 - 0	0.05	2	0.18	0.00

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
108.00	BXA-171085-8BF-EDIN-2 w/ Mount Pipe	2	77.33	6.54	0.01	4204
102.00	APXVSP18-C-A20 w/ Mount Pipe	2	69.16	6.47	0.01	2213
97.00	1900MHz RRH (65MHz)	2	62.50	6.27	0.01	1147
80.00	(2) 7770.00 w/ Mount Pipe	2	42.45	4.83	0.01	742
75.00	RRUS 11 B12	2	37.51	4.61	0.01	1272
50.00	KS24019-L112A	2	16.97	3.16	0.00	1189

Compression Checks Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K
L1	109.86 - 104.86 (1)	TP13.7517x12.7x0.1875	5.00	0.00	0.0	8.0724	-1.28
L2	104.86 - 99.86 (2)	TP14.8034x13.7517x0.1875	5.00	0.00	0.0	8.6983	-3.88
L3	99.86 - 99 (3)	TP14.9843x14.8034x0.1875	0.86	0.00	0.0	8.8060	-3.92
L4	99 - 98.5 (4)	TP15.5x14.9843x0.1875	0.50	0.00	0.0	9.1129	-3.95
L5	98.5 - 93.5 (5)	TP16.477x15.5x0.1875	5.00	0.00	0.0	9.6943	-4.85
L6	93.5 - 88.5 (6)	TP17.4541x16.477x0.1875	5.00	0.00	0.0	10.2758	-5.16
L7	88.5 - 83.5 (7)	TP18.4311x17.4541x0.1875	5.00	0.00	0.0	10.8572	-5.50
L8	83.5 - 79.33 (8)	TP19.2459x18.4311x0.1875	4.17	0.00	0.0	11.3422	-8.34
L9	79.33 - 79.08 (9)	TP19.2948x19.2459x0.55	0.25	0.00	0.0	32.7228	-8.39
L10	79.08 - 74.08 (10)	TP20.2718x19.2948x0.525	5.00	0.00	0.0	32.9051	-9.58
L11	74.08 - 69.08 (11)	TP21.2489x20.2718x0.5125	5.00	0.00	0.0	33.7313	-10.34
L12	69.08 - 64.08 (12)	TP22.2259x21.2489x0.4875	5.00	0.00	0.0	33.6364	-11.13
L13	64.08 - 59.08 (13)	TP23.2029x22.2259x0.475	5.00	0.00	0.0	34.2658	-11.95
L14	59.08 - 54.08 (14)	TP24.18x23.2029x0.4625	5.00	0.00	0.0	34.8167	-12.79
L15	54.08 - 47.12 (15)	TP25.54x24.18x0.45	6.96	0.00	0.0	34.7894	-13.34
L16	47.12 - 45.87 (16)	TP25.3972x24.4322x0.5125	5.00	0.00	0.0	40.4793	-14.83
L17	45.87 - 40.87 (17)	TP26.3622x25.3972x0.5	5.00	0.00	0.0	41.0433	-15.82
L18	40.87 - 35.87 (18)	TP27.3272x26.3622x0.4875	5.00	0.00	0.0	41.5297	-16.83
L19	35.87 - 30.87 (19)	TP28.2922x27.3272x0.475	5.00	0.00	0.0	41.9386	-17.86
L20	30.87 - 25.87 (20)	TP29.2572x28.2922x0.4688	5.00	0.00	0.0	42.8318	-18.92
L21	25.87 - 20.87 (21)	TP30.2221x29.2572x0.4625	5.00	0.00	0.0	43.6864	-19.99
L22	20.87 - 15.87 (22)	TP31.1871x30.2221x0.45	5.00	0.00	0.0	43.9018	-21.09
L23	15.87 - 14.83 (23)	TP31.3878x31.1871x0.45	1.04	0.00	0.0	44.1885	-21.33
L24	14.83 - 14.58 (24)	TP31.4361x31.3878x0.55	0.25	0.00	0.0	53.9179	-21.40
L25	14.58 - 13.83 (25)	TP31.5808x31.4361x0.55	0.75	0.00	0.0	54.1705	-21.59
L26	13.83 - 13.58 (26)	TP31.6291x31.5808x0.475	0.25	0.00	0.0	46.9695	-21.66
L27	13.58 - 8.58 (27)	TP32.5941x31.6291x0.4688	5.00	0.00	0.0	47.7965	-22.86
L28	8.58 - 6 (28)	TP33.092x32.5941x0.4625	2.58	0.00	0.0	47.8993	-23.49
L29	6 - 5.75 (29)	TP33.1403x33.092x0.5375	0.25	0.00	0.0	55.6211	-23.57
L30	5.75 - 3.33 (30)	TP33.6073x33.1403x0.525	2.42	0.00	0.0	55.1267	-24.21
L31	3.33 - 2.98 (31)	TP33.6749x33.6073x0.45	0.35	0.00	0.0	47.4551	-24.30
L32	2.98 - 2.75 (32)	TP33.7193x33.6749x0.45	0.23	0.00	0.0	47.5185	-24.36
L33	2.75 - 0 (33)	TP34.25x33.7193x0.45	2.75	0.00	0.0	48.2765	-25.00

Pole Bending Design Data

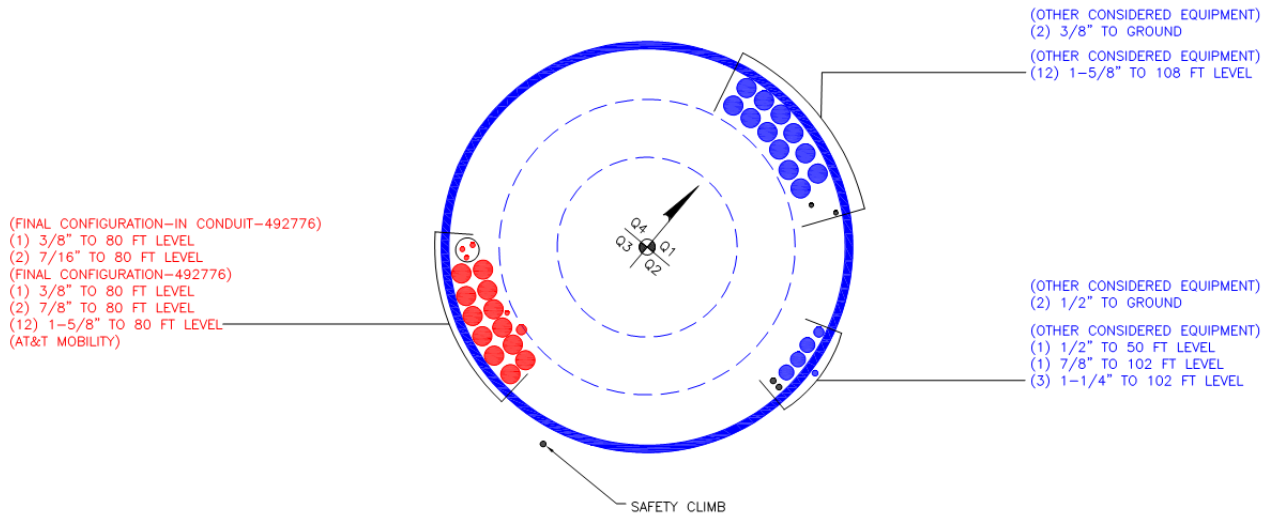
Section No.	Elevation ft	Size	M_{ux} kip-ft
L1	109.86 - 104.86 (1)	TP13.7517x12.7x0.1875	9.33
L2	104.86 - 99.86 (2)	TP14.8034x13.7517x0.1875	32.13
L3	99.86 - 99 (3)	TP14.9843x14.8034x0.1875	37.81
L4	99 - 98.5 (4)	TP15.5x14.9843x0.1875	41.13
L5	98.5 - 93.5 (5)	TP16.477x15.5x0.1875	77.69
L6	93.5 - 88.5 (6)	TP17.4541x16.477x0.1875	116.57
L7	88.5 - 83.5 (7)	TP18.4311x17.4541x0.1875	156.58
L8	83.5 - 79.33 (8)	TP19.2459x18.4311x0.1875	190.87
L9	79.33 - 79.08 (9)	TP19.2948x19.2459x0.55	194.14
L10	79.08 - 74.08 (10)	TP20.2718x19.2948x0.525	261.27
L11	74.08 - 69.08 (11)	TP21.2489x20.2718x0.5125	332.99
L12	69.08 - 64.08 (12)	TP22.2259x21.2489x0.4875	407.30
L13	64.08 - 59.08 (13)	TP23.2029x22.2259x0.475	484.12
L14	59.08 - 54.08 (14)	TP24.18x23.2029x0.4625	563.45
L15	54.08 - 47.12 (15)	TP25.54x24.18x0.45	615.68
L16	47.12 - 45.87 (16)	TP25.3972x24.4322x0.5125	699.46
L17	45.87 - 40.87 (17)	TP26.3622x25.3972x0.5	786.00
L18	40.87 - 35.87 (18)	TP27.3272x26.3622x0.4875	874.96
L19	35.87 - 30.87 (19)	TP28.2922x27.3272x0.475	966.32
L20	30.87 - 25.87 (20)	TP29.2572x28.2922x0.4688	1059.99
L21	25.87 - 20.87 (21)	TP30.2221x29.2572x0.4625	1155.91
L22	20.87 - 15.87 (22)	TP31.1871x30.2221x0.45	1253.97
L23	15.87 - 14.83 (23)	TP31.3878x31.1871x0.45	1274.63
L24	14.83 - 14.58 (24)	TP31.4361x31.3878x0.55	1279.62
L25	14.58 - 13.83 (25)	TP31.5808x31.4361x0.55	1294.59
L26	13.83 - 13.58 (26)	TP31.6291x31.5808x0.475	1299.59
L27	13.58 - 8.58 (27)	TP32.5941x31.6291x0.4688	1400.71
L28	8.58 - 6 (28)	TP33.092x32.5941x0.4625	1453.69
L29	6 - 5.75 (29)	TP33.1403x33.092x0.5375	1458.85
L30	5.75 - 3.33 (30)	TP33.6073x33.1403x0.525	1509.13
L31	3.33 - 2.98 (31)	TP33.6749x33.6073x0.45	1516.44
L32	2.98 - 2.75 (32)	TP33.7193x33.6749x0.45	1521.25
L33	2.75 - 0 (33)	TP34.25x33.7193x0.45	1579.12

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K
L1	109.86 - 104.86 (1)	TP13.7517x12.7x0.1875	3.02
L2	104.86 - 99.86 (2)	TP14.8034x13.7517x0.1875	6.59
L3	99.86 - 99 (3)	TP14.9843x14.8034x0.1875	6.63
L4	99 - 98.5 (4)	TP15.5x14.9843x0.1875	6.65
L5	98.5 - 93.5 (5)	TP16.477x15.5x0.1875	7.66
L6	93.5 - 88.5 (6)	TP17.4541x16.477x0.1875	7.89
L7	88.5 - 83.5 (7)	TP18.4311x17.4541x0.1875	8.12
L8	83.5 - 79.33 (8)	TP19.2459x18.4311x0.1875	13.07
L9	79.33 - 79.08 (9)	TP19.2948x19.2459x0.55	13.11
L10	79.08 - 74.08 (10)	TP20.2718x19.2948x0.525	14.08
L11	74.08 - 69.08 (11)	TP21.2489x20.2718x0.5125	14.62
L12	69.08 - 64.08 (12)	TP22.2259x21.2489x0.4875	15.12
L13	64.08 - 59.08 (13)	TP23.2029x22.2259x0.475	15.62
L14	59.08 - 54.08 (14)	TP24.18x23.2029x0.4625	16.12
L15	54.08 - 47.12 (15)	TP25.54x24.18x0.45	16.44
L16	47.12 - 45.87 (16)	TP25.3972x24.4322x0.5125	17.07
L17	45.87 - 40.87 (17)	TP26.3622x25.3972x0.5	17.56
L18	40.87 - 35.87 (18)	TP27.3272x26.3622x0.4875	18.05
L19	35.87 - 30.87 (19)	TP28.2922x27.3272x0.475	18.52
L20	30.87 - 25.87 (20)	TP29.2572x28.2922x0.4688	18.98
L21	25.87 - 20.87 (21)	TP30.2221x29.2572x0.4625	19.42
L22	20.87 - 15.87 (22)	TP31.1871x30.2221x0.45	19.84
L23	15.87 - 14.83 (23)	TP31.3878x31.1871x0.45	19.92
L24	14.83 - 14.58 (24)	TP31.4361x31.3878x0.55	19.94
L25	14.58 - 13.83 (25)	TP31.5808x31.4361x0.55	20.01

Section No.	Elevation ft	Size	Actual V_u K
L26	13.83 - 13.58 (26)	TP31.6291x31.5808x0.475	20.02
L27	13.58 - 8.58 (27)	TP32.5941x31.6291x0.4688	20.44
L28	8.58 - 6 (28)	TP33.092x32.5941x0.4625	20.66
L29	6 - 5.75 (29)	TP33.1403x33.092x0.5375	20.67
L30	5.75 - 3.33 (30)	TP33.6073x33.1403x0.525	20.90
L31	3.33 - 2.98 (31)	TP33.6749x33.6073x0.45	20.92
L32	2.98 - 2.75 (32)	TP33.7193x33.6749x0.45	20.93
L33	2.75 - 0 (33)	TP34.25x33.7193x0.45	21.17

APPENDIX B
BASE LEVEL DRAWING



APPENDIX C
ADDITIONAL CALCULATIONS

Site BU: 876405
Work Order: _____



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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	109.86	10.86	0	18	12.7	14.9843	0.1875	Auto	A572-65
2	99	0.5	0	18	14.98	15.5	0.1875	Auto	A572-65
3	98.5	51.38	3.75	18	15.50	25.54	0.1875	Auto	A572-65
4	50.87	50.87	0	18	24.43	34.25	0.25	Auto	A572-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number																			
						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1	3	6	channel	MP3-05; (1) (1.1875)_1	1														o					
2	3.33	14.83	plate	MP3-08.5 (1.1875)_1	2													o			o			
3	3	79.33	channel	MP3-05; (1) (1.1875)_1	2	o																		
4	13.83	79.33	channel	MP3-05; (1) (1.1875)_1	1														o					
5	0	3	plate	FP 1.25 x 2.375_1	6		o				o		o					o		o				o
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	n/a	18.000	5.025	1.1875	A572-65
2	3.82714	1.31853	4.9869805	0.957	n/a	n/a	18.000	4.008	1.1875	A572-65
3	5.33	2.09	5.65	0.79	n/a	n/a	18.000	5.025	1.1875	A572-65
4	5.33	2.09	5.65	0.79	n/a	n/a	18.000	5.025	1.1875	A572-65
5	1.25	2.375	2.96875	1.1875	n/a	n/a	0.000	2.969	0.0000	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	109.86 - 104.86	5		18	12.700	13.752	0.1875	A572-65	1.000
2	104.86 - 99.86	5		18	13.752	14.803	0.1875	A572-65	1.000
3	99.86 - 99	0.86	0	18	14.803	14.984	0.1875	A572-65	1.000
4	99 - 98.5	0.5	0	18	14.984	15.500	0.1875	A572-65	1.000
5	98.5 - 93.5	5		18	15.500	16.477	0.1875	A572-65	1.000
6	93.5 - 88.5	5		18	16.477	17.454	0.1875	A572-65	1.000
7	88.5 - 83.5	5		18	17.454	18.431	0.1875	A572-65	1.000
8	83.5 - 79.33	4.17		18	18.431	19.246	0.1875	A572-65	1.000
9	79.33 - 79.08	0.25		18	19.246	19.295	0.55	A572-65	0.866
10	79.08 - 74.08	5		18	19.295	20.272	0.525	A572-65	0.878
11	74.08 - 69.08	5		18	20.272	21.249	0.5125	A572-65	0.874
12	69.08 - 64.08	5		18	21.249	22.226	0.4875	A572-65	0.894
13	64.08 - 59.08	5		18	22.226	23.203	0.475	A572-65	0.894
14	59.08 - 54.08	5		18	23.203	24.180	0.4625	A572-65	0.897
15	54.08 - 50.87	6.96	3.75	18	24.180	25.540	0.45	A572-65	0.908
16	50.87 - 45.87	5		18	24.432	25.397	0.5125	A572-65	0.912
17	45.87 - 40.87	5		18	25.397	26.362	0.5	A572-65	0.918
18	40.87 - 35.87	5		18	26.362	27.327	0.4875	A572-65	0.926
19	35.87 - 30.87	5		18	27.327	28.292	0.475	A572-65	0.935
20	30.87 - 25.87	5		18	28.292	29.257	0.46875	A572-65	0.933
21	25.87 - 20.87	5		18	29.257	30.222	0.4625	A572-65	0.932
22	20.87 - 15.87	5		18	30.222	31.187	0.45	A572-65	0.945
23	15.87 - 14.83	1.04		18	31.187	31.388	0.45	A572-65	0.943
24	14.83 - 14.58	0.25		18	31.388	31.436	0.55	A572-65	0.958
25	14.58 - 13.83	0.75		18	31.436	31.581	0.55	A572-65	0.956
26	13.83 - 13.58	0.25		18	31.581	31.629	0.475	A572-65	0.983
27	13.58 - 8.58	5		18	31.629	32.594	0.46875	A572-65	0.982
28	8.58 - 6	2.58		18	32.594	33.092	0.4625	A572-65	0.988
29	6 - 5.75	0.25		18	33.092	33.140	0.5375	A572-65	0.953
30	5.75 - 3.33	2.42		18	33.140	33.607	0.525	A572-65	0.969
31	3.33 - 2.98	0.35		18	33.607	33.675	0.45	A572-65	0.934
32	2.98 - 2.75	0.23		18	33.675	33.719	0.45	A572-65	0.934
33	2.75 - 0	2.75		18	33.719	34.250	0.45	A572-65	0.928

TNX Section Forces

Increment (ft):		TNX Output				
	5	Section Height (ft)		P_u (K)	M_{ux} (kip-ft)	V_u (K)
1		109.86 - 104.86	1.28	9.33	3.02	
2		104.86 - 99.86	3.88	32.13	6.59	
3		99.86 - 99	3.92	37.81	6.63	
4		99 - 98.5	3.95	41.13	6.65	
5		98.5 - 93.5	4.85	77.69	7.66	
6		93.5 - 88.5	5.16	116.57	7.89	
7		88.5 - 83.5	5.50	156.58	8.12	
8		83.5 - 79.33	8.34	190.87	13.07	
9		79.33 - 79.08	8.39	194.14	13.11	
10		79.08 - 74.08	9.58	261.27	14.08	
11		74.08 - 69.08	10.34	332.99	14.62	
12		69.08 - 64.08	11.13	407.30	15.12	
13		64.08 - 59.08	11.95	484.12	15.62	
14		59.08 - 54.08	12.79	563.45	16.12	
15		54.08 - 50.87	13.34	615.68	16.44	
16		50.87 - 45.87	14.83	699.46	17.07	
17		45.87 - 40.87	15.82	786.00	17.56	
18		40.87 - 35.87	16.83	874.96	18.05	
19		35.87 - 30.87	17.86	966.31	18.52	
20		30.87 - 25.87	18.92	1059.99	18.98	
21		25.87 - 20.87	19.99	1155.91	19.42	
22		20.87 - 15.87	21.09	1253.98	19.84	
23		15.87 - 14.83	21.33	1274.64	19.92	
24		14.83 - 14.58	21.40	1279.62	19.94	
25		14.58 - 13.83	21.59	1294.59	20.01	
26		13.83 - 13.58	21.66	1299.59	20.02	
27		13.58 - 8.58	22.86	1400.71	20.44	
28		8.58 - 6	23.49	1453.69	20.66	
29		6 - 5.75	23.57	1458.85	20.67	
30		5.75 - 3.33	24.21	1509.13	20.90	
31		3.33 - 2.98	24.30	1516.44	20.92	
32		2.98 - 2.75	24.36	1521.25	20.93	
33		2.75 - 0	25.00	1579.11	21.17	

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
109.86 - 104.86	Pole	TP13.752x12.7x0.1875	Pole	5.6%	Pass
104.86 - 99.86	Pole	TP14.803x13.752x0.1875	Pole	16.4%	Pass
99.86 - 99	Pole	TP14.984x14.803x0.1875	Pole	18.8%	Pass
99 - 98.5	Pole	TP15.5x14.984x0.1875	Pole	19.0%	Pass
98.5 - 93.5	Pole	TP16.477x15.5x0.1875	Pole	31.4%	Pass
93.5 - 88.5	Pole	TP17.454x16.477x0.1875	Pole	41.7%	Pass
88.5 - 83.5	Pole	TP18.431x17.454x0.1875	Pole	50.4%	Pass
83.5 - 79.33	Pole	TP19.246x18.431x0.1875	Pole	57.1%	Pass
79.33 - 79.08	Pole + Reinf.	TP19.295x19.246x0.55	Reinf. 4 Connection	31.3%	Pass
79.08 - 74.08	Pole + Reinf.	TP20.272x19.295x0.525	Reinf. 4 Compression	39.3%	Pass
74.08 - 69.08	Pole + Reinf.	TP21.249x20.272x0.5125	Reinf. 4 Compression	46.9%	Pass
69.08 - 64.08	Pole + Reinf.	TP22.226x21.249x0.4875	Reinf. 4 Compression	53.9%	Pass
64.08 - 59.08	Pole + Reinf.	TP23.203x22.226x0.475	Reinf. 4 Compression	60.3%	Pass
59.08 - 54.08	Pole + Reinf.	TP24.18x23.203x0.4625	Reinf. 4 Compression	66.2%	Pass
54.08 - 50.87	Pole + Reinf.	TP25.54x24.18x0.45	Reinf. 4 Compression	69.7%	Pass
50.87 - 45.87	Pole + Reinf.	TP25.397x24.432x0.5125	Reinf. 4 Compression	67.0%	Pass
45.87 - 40.87	Pole + Reinf.	TP26.362x25.397x0.5	Reinf. 4 Compression	71.2%	Pass
40.87 - 35.87	Pole + Reinf.	TP27.327x26.362x0.4875	Reinf. 4 Compression	75.0%	Pass
35.87 - 30.87	Pole + Reinf.	TP28.292x27.327x0.475	Reinf. 4 Compression	78.5%	Pass
30.87 - 25.87	Pole + Reinf.	TP29.257x28.292x0.4688	Reinf. 4 Compression	81.7%	Pass
25.87 - 20.87	Pole + Reinf.	TP30.222x29.257x0.4625	Reinf. 4 Compression	84.7%	Pass
20.87 - 15.87	Pole + Reinf.	TP31.187x30.222x0.45	Reinf. 4 Compression	87.4%	Pass
15.87 - 14.83	Pole + Reinf.	TP31.388x31.187x0.45	Reinf. 4 Compression	88.0%	Pass
14.83 - 14.58	Pole + Reinf.	TP31.436x31.388x0.55	Reinf. 3 Compression	77.6%	Pass
14.58 - 13.83	Pole + Reinf.	TP31.581x31.436x0.55	Reinf. 3 Compression	78.0%	Pass
13.83 - 13.58	Pole + Reinf.	TP31.629x31.581x0.475	Reinf. 2 Compression	89.8%	Pass
13.58 - 8.58	Pole + Reinf.	TP32.594x31.629x0.4688	Reinf. 2 Compression	92.4%	Pass
8.58 - 6	Pole + Reinf.	TP33.092x32.594x0.4625	Reinf. 2 Compression	93.7%	Pass
6 - 5.75	Pole + Reinf.	TP33.14x33.092x0.5375	Reinf. 3 Compression	81.7%	Pass
5.75 - 3.33	Pole + Reinf.	TP33.607x33.14x0.525	Reinf. 3 Connection	82.7%	Pass
3.33 - 2.98	Pole + Reinf.	TP33.675x33.607x0.45	Reinf. 5 Connection	82.8%	Pass
2.98 - 2.75	Pole + Reinf.	TP33.719x33.675x0.45	Reinf. 5 Compression	82.9%	Pass
2.75 - 0	Pole + Reinf.	TP34.25x33.719x0.45	Reinf. 5 Connection	83.9%	Pass
				Summary	
			Pole	67.8%	Pass
			Reinforcement	94.0%	Pass
			Overall	94.0%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in ⁴)			Area (in ²)			% Capacity*					
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5
109.86 - 104.86	188	n/a	188	8.07	n/a	8.07	5.6%					
104.86 - 99.86	235	n/a	235	8.70	n/a	8.70	16.4%					
99.86 - 99	244	n/a	244	8.81	n/a	8.81	18.8%					
99 - 98.5	270	n/a	270	9.11	n/a	9.11	19.0%					
98.5 - 93.5	325	n/a	325	9.69	n/a	9.69	31.4%					
93.5 - 88.5	387	n/a	387	10.28	n/a	10.28	41.7%					
88.5 - 83.5	456	n/a	456	10.86	n/a	10.86	50.4%					
83.5 - 79.33	520	n/a	520	11.34	n/a	11.34	57.1%					
79.33 - 79.08	524	934	1458	11.37	16.95	28.32	20.6%			31.3%	31.3%	
79.08 - 74.08	609	1023	1631	11.95	16.95	28.90	26.3%			39.3%	39.3%	
74.08 - 69.08	702	1115	1817	12.53	16.95	29.48	31.9%			46.9%	46.9%	
69.08 - 64.08	805	1212	2016	13.12	16.95	30.07	37.2%			53.9%	53.9%	
64.08 - 59.08	916	1312	2228	13.70	16.95	30.65	42.3%			60.3%	60.3%	
59.08 - 54.08	1038	1417	2455	14.28	16.95	31.23	47.2%			66.2%	66.2%	
54.08 - 50.87	1122	1486	2608	14.65	16.95	31.60	50.3%			69.7%	69.7%	
50.87 - 45.87	1594	1553	3146	19.95	16.95	36.90	44.7%			67.0%	67.0%	
45.87 - 40.87	1784	1665	3449	20.72	16.95	37.67	48.0%			71.2%	71.2%	
40.87 - 35.87	1989	1781	3771	21.48	16.95	38.43	51.2%			75.0%	75.0%	
35.87 - 30.87	2210	1901	4111	22.25	16.95	39.20	54.2%			78.5%	78.5%	
30.87 - 25.87	2446	2026	4472	23.02	16.95	39.97	57.1%			81.7%	81.7%	
25.87 - 20.87	2698	2154	4852	23.78	16.95	40.73	59.9%			84.7%	84.7%	
20.87 - 15.87	2967	2286	5253	24.55	16.95	41.50	62.5%			87.4%	87.4%	
15.87 - 14.83	3025	2314	5339	24.71	16.95	41.66	63.1%			88.0%	88.0%	
14.83 - 14.58	3089	3479	6568	24.75	26.92	51.67	56.8%		72.9%	77.7%	60.3%	
14.58 - 13.83	3132	3510	6642	24.86	26.92	51.78	57.1%		73.3%	78.1%	60.6%	
13.83 - 13.58	3107	2678	5785	24.90	21.27	46.17	63.3%		90.0%	79.5%		
13.58 - 8.58	3402	2835	6237	25.66	21.27	46.94	65.8%		92.7%	81.8%		
8.58 - 6	3561	2917	6478	26.06	21.27	47.33	67.1%		94.0%	83.0%		
6 - 5.75	3620	3847	7467	26.10	26.92	53.02	61.0%	63.8%	77.1%	81.8%		
5.75 - 3.33	3776	3951	7727	26.47	26.92	53.39	62.1%	64.7%	78.1%	82.9%		
3.33 - 2.98	3742	2899	6641	26.52	17.81	44.33	66.4%					82.8%
2.98 - 2.75	3757	2906	6663	26.56	17.81	44.37	66.5%					82.9%
2.75 - 0	3939	2992	6931	26.98	17.81	44.79	67.8%					83.9%

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

Monopole Flange Plate Connection

Elevation = 99 ft.

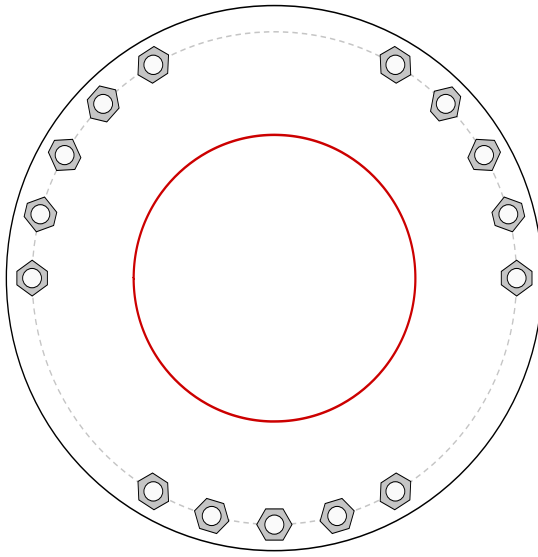


BU #	876405
Site Name	
Order #	
TIA-222 Revision	H

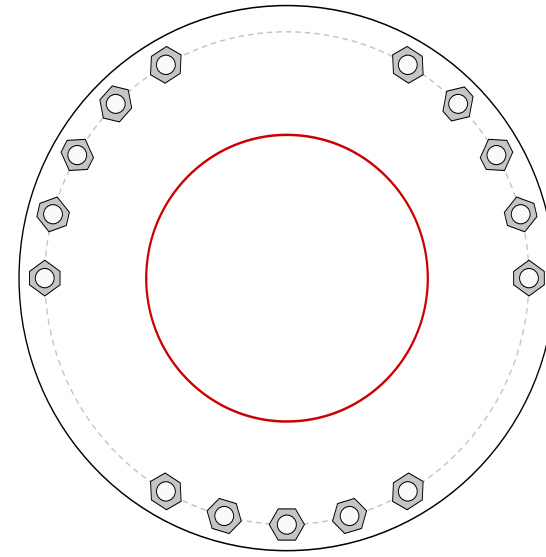
Applied Loads	
Moment (kip-ft)	37.81
Axial Force (kips)	3.92
Shear Force (kips)	6.63

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(15) 1" ϕ bolts (A325 X; Fy=92 ksi, Fu=120 ksi) on 25.75" BC

Top Plate Data

28.5" OD x 1" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Top Stiffener Data

N/A

Top Pole Data

14.9843" x 0.1875" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Bottom Plate Data

28.5" OD x 1" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

14.9843" x 0.1875" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	4.44
Allowable (kips)	54.54
Stress Rating:	7.7% Pass

Top Plate Capacity

Max Stress (ksi):	20.21	(Flexural)
Allowable Stress (ksi):	54.00	
Stress Rating:	35.6%	Pass
Tension Side Stress Rating:	42.7%	Pass

Bottom Plate Capacity

Max Stress (ksi):	20.21	(Flexural)
Allowable Stress (ksi):	54.00	
Stress Rating:	35.6%	Pass
Tension Side Stress Rating:	42.7%	Pass

Monopole Base Plate Connection

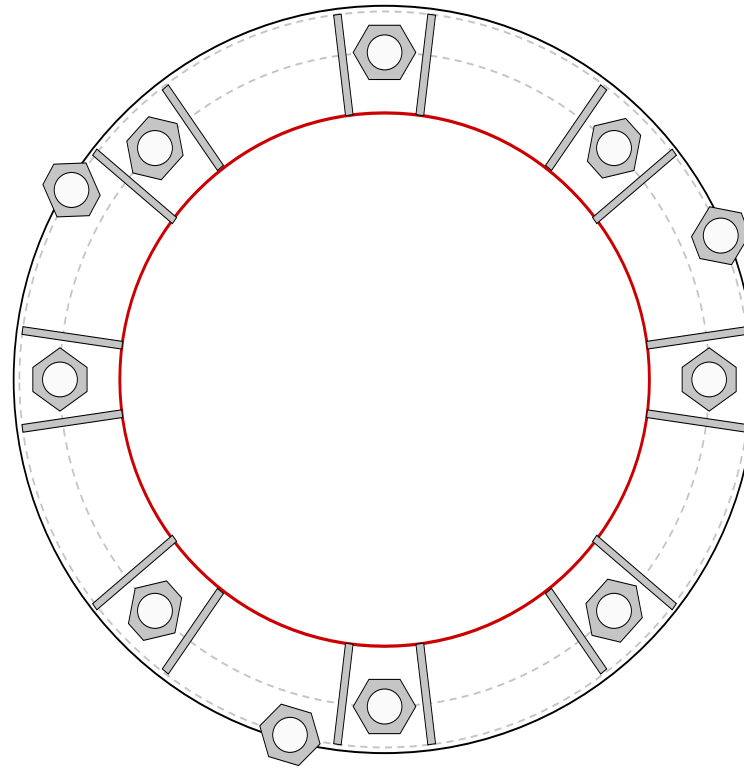


Site Info	
BU #	876405
Site Name	
Order #	

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	0.75

Applied Loads	
Moment (kip-ft)	1579.11
Axial Force (kips)	25.00
Shear Force (kips)	21.17

*TIA-222-H Section 15.5 Applied



Connection Properties	Analysis Results
-----------------------	------------------

Anchor Rod Data
GROUP 1: (8) 2-1/4" ϕ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 42" BC
GROUP 2: (3) 2-1/4" ϕ bolts (A193 Gr. B7 N; $F_y=105$ ksi, $F_u=125$ ksi) on 47.25" BC
pos. (deg): 23, 149, 255
Base Plate Data
48" OD x 1.5" Plate (A572-60; $F_y=60$ ksi, $F_u=75$ ksi)
Stiffener Data
(16) 18"H x 6.5"W x 0.5"T, Notch: 1"
plate: $F_y=36$ ksi ; weld: $F_y=70$ ksi
horiz. weld: 0.375" fillet
vert. weld: 0.25" fillet
Pole Data
34.25" x 0.25" 18-sided pole (A572-65; $F_y=65$ ksi, $F_u=80$ ksi)

Anchor Rod Summary			(units of kips, kip-in)
GROUP 1:			
$P_{u,c} = 163.23$	$\phi P_{n,c} = 243.75$	Stress Rating	
$V_u = 2.65$	$\phi V_n = 73.13$		63.9%
$M_u = n/a$	$\phi M_n = n/a$		Pass
GROUP 2:			
$P_{u,c} = 173.57$	$\phi P_{n,c} = 341.25$	Stress Rating	
$V_u = 0$	$\phi V_n = 102.38$		48.4%
$M_u = n/a$	$\phi M_n = n/a$		Pass
Base Plate Summary			
Max Stress (ksi):	8.37		(Shear)
Allowable Stress (ksi):	33.75		
Stress Rating:	23.6%		Pass
Stiffener Summary			
Horizontal Weld:	62.7%		Pass
Vertical Weld:	33.8%		Pass
Plate Flexure+Shear:	21.2%		Pass
Plate Tension+Shear:	70.5%		Pass
Plate Compression:	69.7%		Pass
Pole Summary			
Punching Shear:	9.8%		Pass

Pier and Pad Foundation



BU #: 876405
 Site Name:
 App. Number:

TIA-222 Revision: H
 Tower Type: Monopole

Top & Bot. Pad Rein. Different?:
 Block Foundation?:

Superstructure Analysis Reactions		
Compression, P_{comp} :	25	kips
Base Shear, V_{u_comp} :	21	kips
Moment, M_u :	1579	ft-kips
Tower Height, H :	110	ft
BP Dist. Above Fdn, bp_{dist} :	5.25	in

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
<i>Lateral (Sliding) (kips)</i>	158.08	21.00	12.7%	Pass
<i>Bearing Pressure (ksf)</i>	9.00	4.57	50.7%	Pass
<i>Overtuning (kip*ft)</i>	2028.64	1745.69	86.1%	Pass
<i>Pier Flexure (Comp.) (kip*ft)</i>	2954.44	1673.50	53.9%	Pass
<i>Pier Compression (kip)</i>	19253.52	49.50	0.2%	Pass
<i>Pad Flexure (kip*ft)</i>	1867.53	878.99	44.8%	Pass
<i>Pad Shear - 1-way (kips)</i>	591.69	202.69	32.6%	Pass
<i>Pad Shear - 2-way (Comp) (ksi)</i>	0.190	0.000	0.0%	Pass
<i>Flexural 2-way (Comp) (kip*ft)</i>	3203.98	1004.10	29.8%	Pass

Pier Properties		
Pier Shape:	Square	
Pier Diameter, d_{pier} :	5.5	ft
Ext. Above Grade, E :	1	ft
Pier Rebar Size, S_c :	8	
Pier Rebar Quantity, mc :	30	
Pier Tie/Spiral Size, S_t :	4	
Pier Tie/Spiral Quantity, mt :	5	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	3	in

*Rating per TIA-222-H Section 15.5

Soil Rating*:	86.1%
Structural Rating*:	53.9%

Pad Properties		
Depth, D :	6.5	ft
Pad Width, W :	16.5	ft
Pad Thickness, T :	3	ft
Pad Rebar Size (Bottom), S_p :	8	
Pad Rebar Quantity (Bottom), mp :	17	
Pad Clear Cover, cc_{pad} :	3	in

Material Properties		
Rebar Grade, F_y :	60	ksi
Concrete Compressive Strength, F'_c :	4	ksi
Dry Concrete Density, δ_c :	150	pcf

Soil Properties		
Total Soil Unit Weight, γ :	125	pcf
Ultimate Gross Bearing, Q_{ult} :	12.000	ksf
Cohesion, C_u :	0.000	ksf
Friction Angle, ϕ :	34	degrees
SPT Blow Count, N_{blows} :	10	
Base Friction, μ :		
Neglected Depth, N :	3.50	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw :	N/A	ft

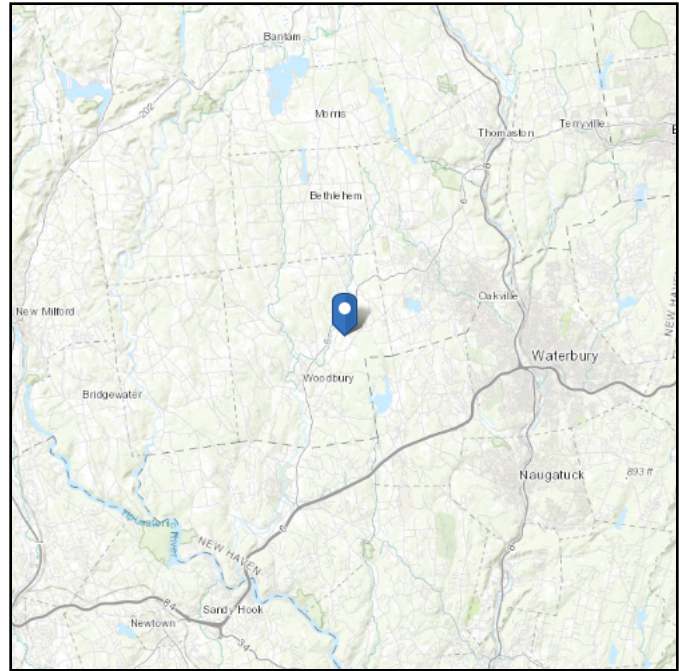
<--Toggle between Gross and Net

ASCE 7 Hazards Report

Address:
No Address at This
Location

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

Elevation: 460.09 ft (NAVD 88)
Latitude: 41.567997
Longitude: -73.179681



Wind

Results:

Wind Speed:	118 Vmph
10-year MRI	76 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	97 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: Tue Oct 01 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 in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

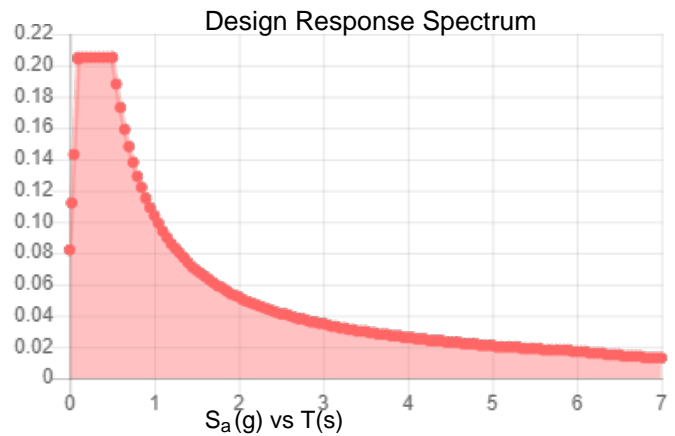
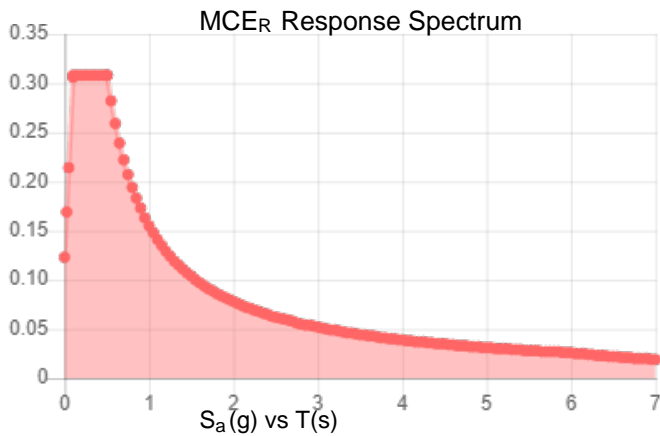
Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.

Site Soil Class: D - Stiff Soil

Results:

S_s :	0.192	S_{DS} :	0.205
S_1 :	0.065	S_{D1} :	0.104
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.1
S_{MS} :	0.308	PGA _M :	0.16
S_{M1} :	0.155	F _{PGA} :	1.6
		I_e :	1

Seismic Design Category B



Data Accessed:

Tue Oct 01 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: 15 F

Gust Speed: 50 mph

Data Source: Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8

Date Accessed: Tue Oct 01 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.

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided "as is" and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.

Exhibit E

Mount Analysis

September 30, 2019

Charles McGuirt
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277
(704) 405-6607



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: 10071348
Client Site Name: Woodbury – Minortown Road

Crown Castle Designation: Crown Castle BU Number: 876405
Crown Castle Site Name: Woodbury North
Crown Castle JDE Job Number: 574666
Crown Castle Order Number: 492776 Rev. 0

Engineering Firm Designation: TEP Project Number: 25640.307957

Site Data: 186 MinorTown, Woodbury, Litchfield County, CT 06798
Latitude 41° 34' 4.79", Longitude -73° 10' 46.85"

Structure Information: Tower Height & Type: 110.0± ft Monopole
Mount Elevation: 80.0 ft
Mount Width & Type: 8.0 ft T-Arm Mount

Dear Charles McGuirt,

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 116 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Roger W. Martel

Respectfully submitted by:

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



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1) INTRODUCTION

The mount is an existing 8.0-ft T-Arm mount.

2) ANALYSIS CRITERIA

Building Code:	2018 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	116 mph
Exposure Category:	B
Topographic Category at Base:	1.0
Topographic Category at Mount:	1.0
Ice Thickness:	1.0 in
Wind Speed with Ice:	50 mph
Seismic Design Category:	B
Seismic S_s:	0.192
Seismic S_1:	0.065
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
80.0	80.0	3	Powerwave Technologies	7770.00	T-Arm Mount
	78.0	2	CCI Antennas	DMP65R-BU4D	
		4	CCI Antennas	DMP65R-BU6D	
		6	Powerwave Technologies	LGP21401	
		1	Raycap	DC6-48-60-18-8F	
		3	Ericsson	RRUS 4449 B5/B12	
		3	Ericsson	RRUS 4478 B14	
		3	Ericsson	RRUS 8843 B2/B66A	
		3	Powerwave Technologies	1001940	
	1	Raycap	DC6-48-60-0-8C-EV		

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Mount Mapping	Tower Engineering Professionals	25640.265575	TEP
Loading Application	AT&T Mobility	Order 492776 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	80.0	59.3	Pass
1	Support Horizontals	SF1-TH	80.0	31.5	Pass
1	Mount Pipes	MP-2	80.0	30.7	Pass
2	Connection Bolts	-	80.0	40.7	Pass
2	Connection Plate	-	80.0	51.6	Pass

Structure Rating (max from all components) =	59.3 %
---	---------------

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.

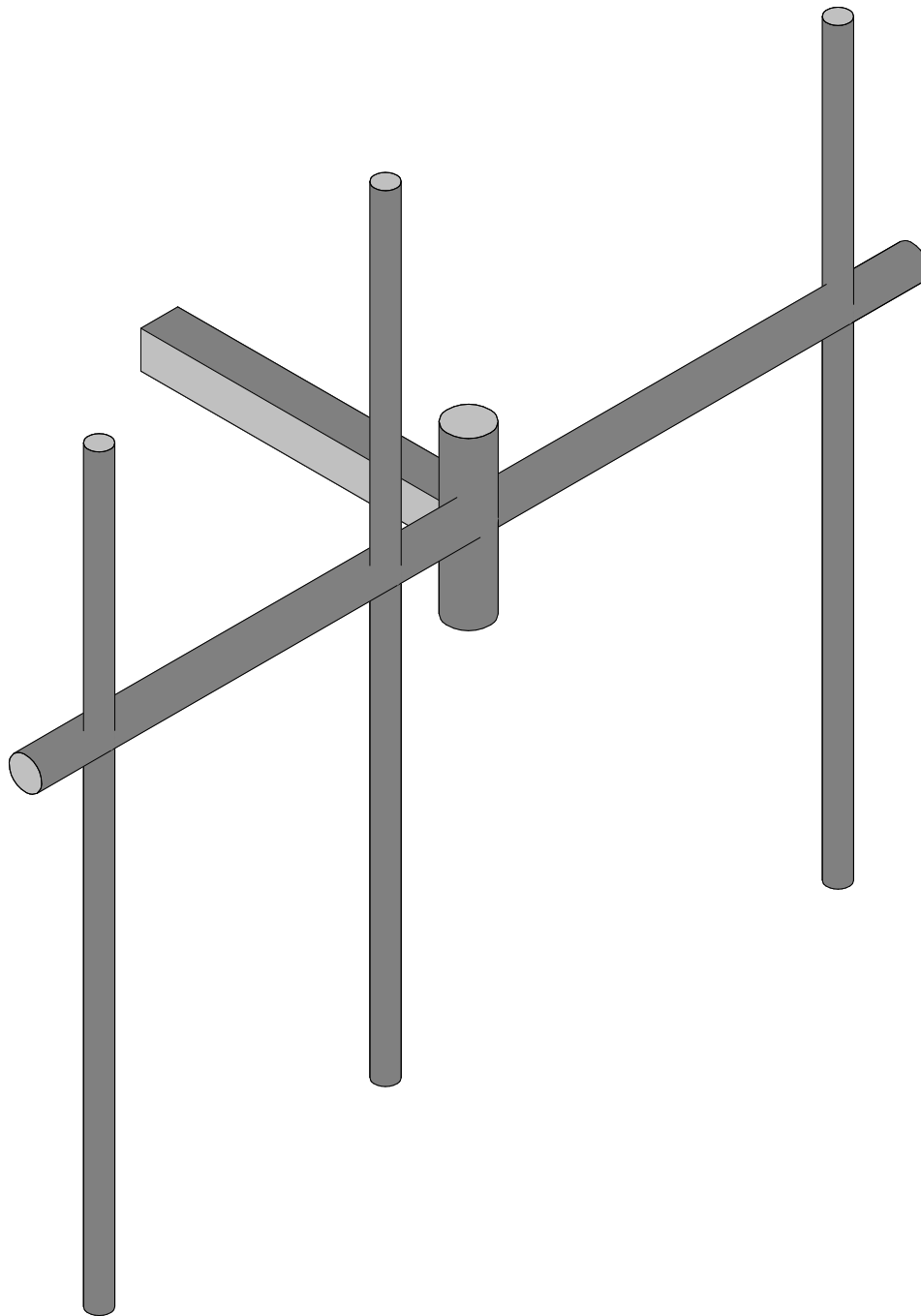
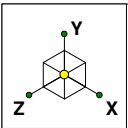
Table 4 - Tieback Connection Data Table

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

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



Tower Engineering Profes...

RWM

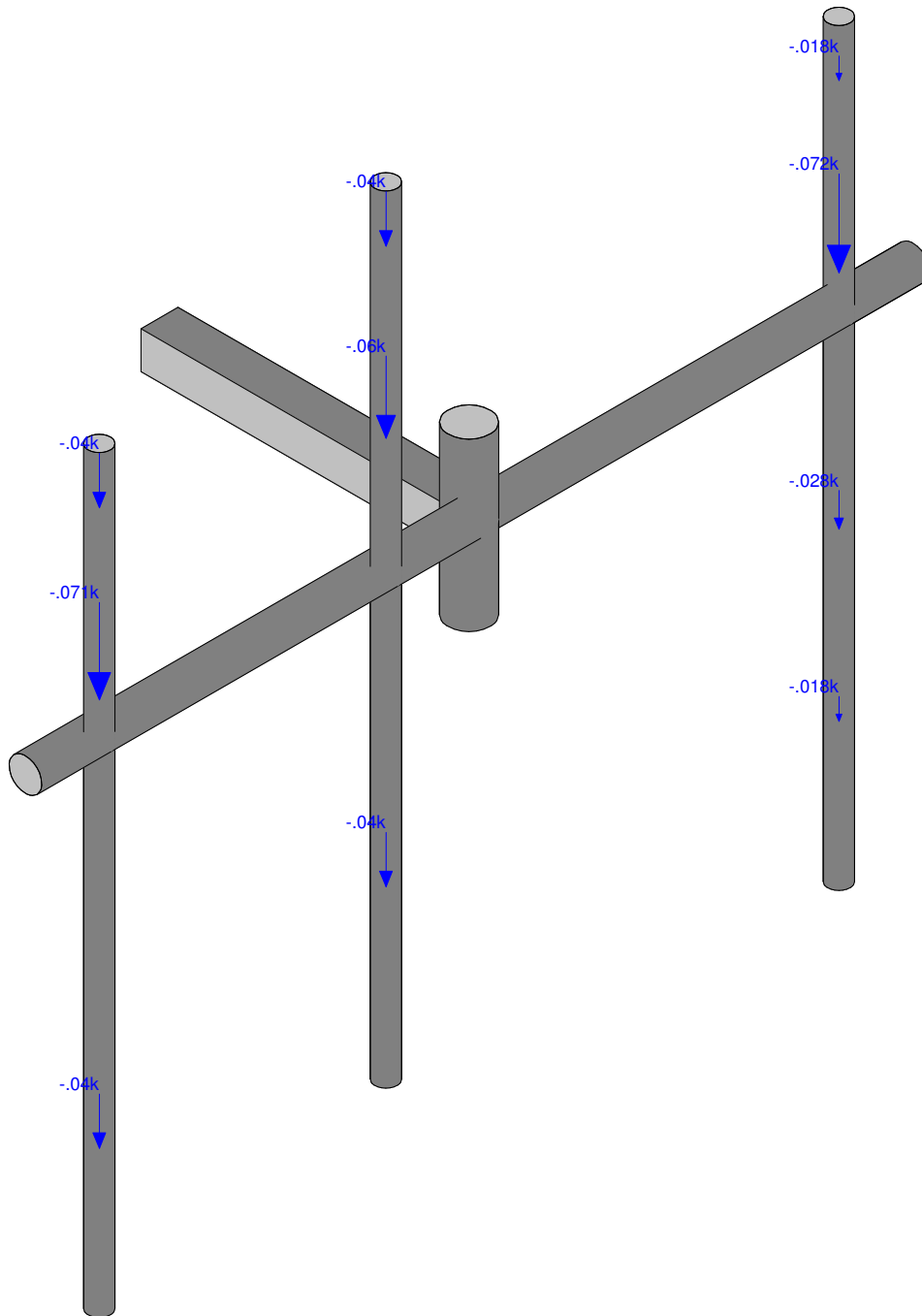
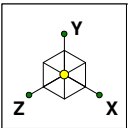
TEP No. 25640.307957

CCI BU No. 876504

SK - 1

Sept 30, 2019 at 4:12 PM

Mount Rev H.r3d



Loads: BLC 1, Dead

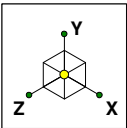
Tower Engineering Profes...
RWM
TEP No. 25640.307957

CCI BU No. 876504

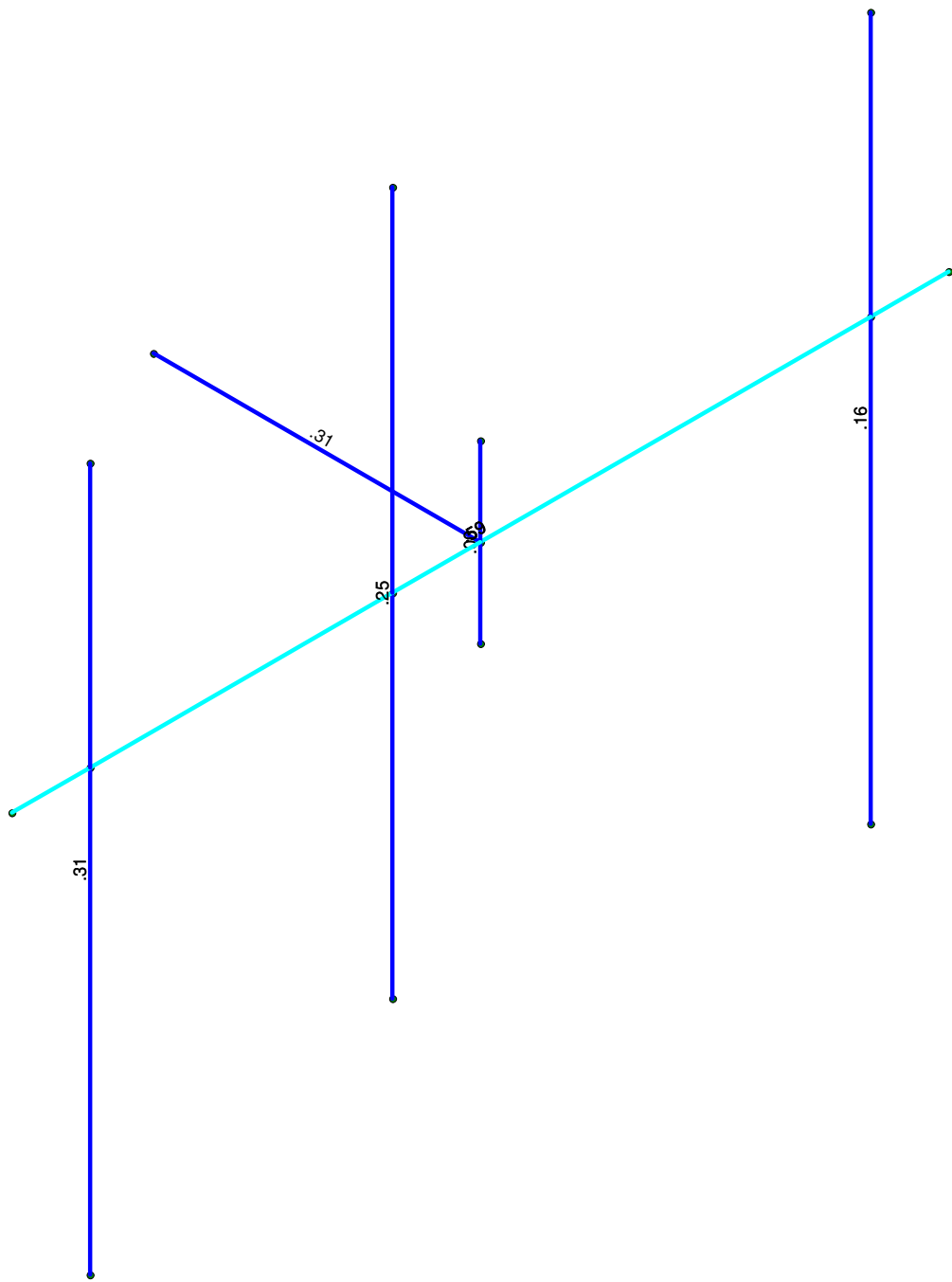
SK - 2

Sept 30, 2019 at 4:12 PM

Mount Rev H.r3d

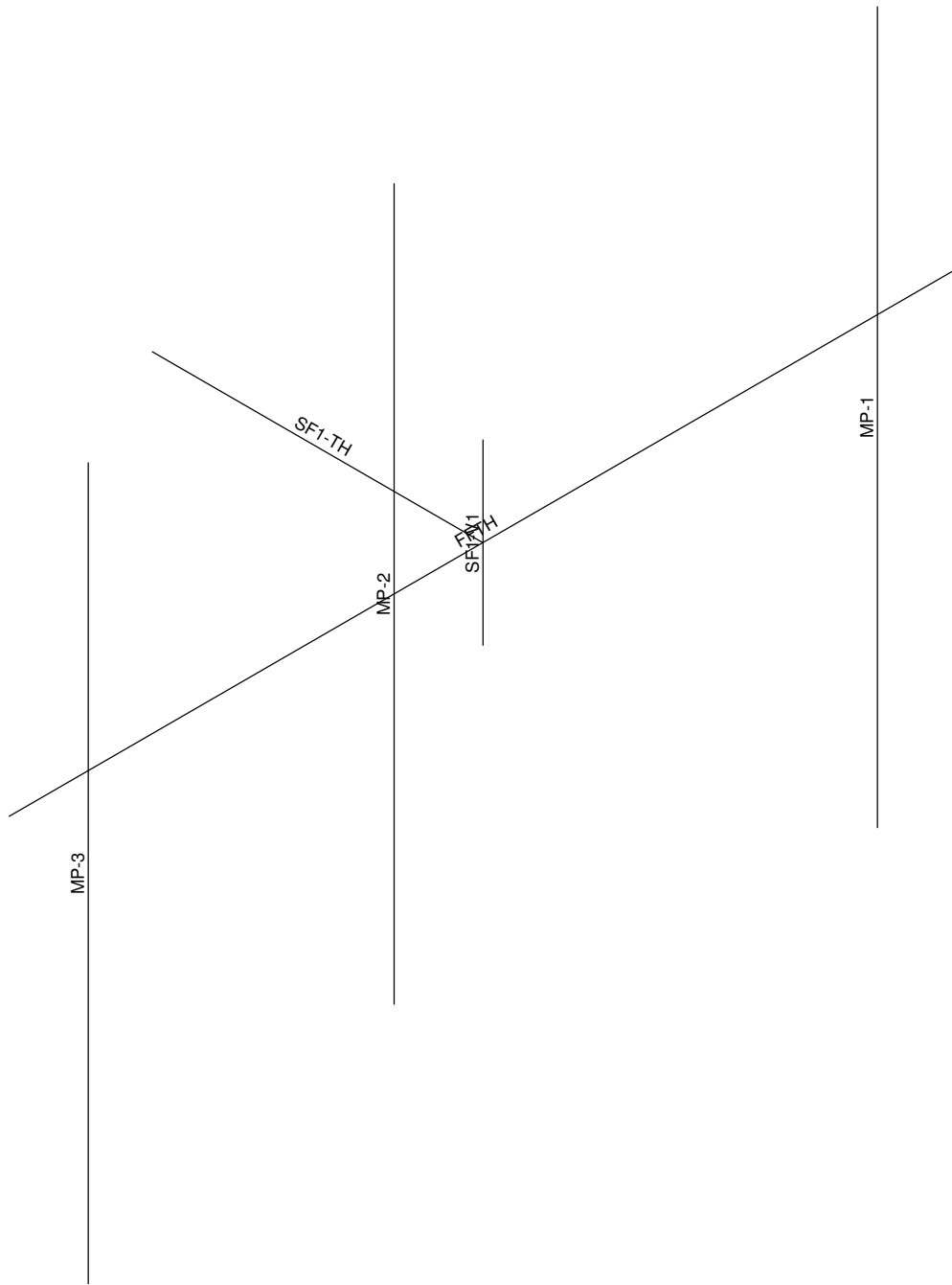
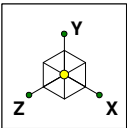


Code Check (Env)	
Black	No Calc
Red	> 1.0
Pink	.90-1.0
Green	.75-.90
Cyan	.50-.75
Blue	0.-.50



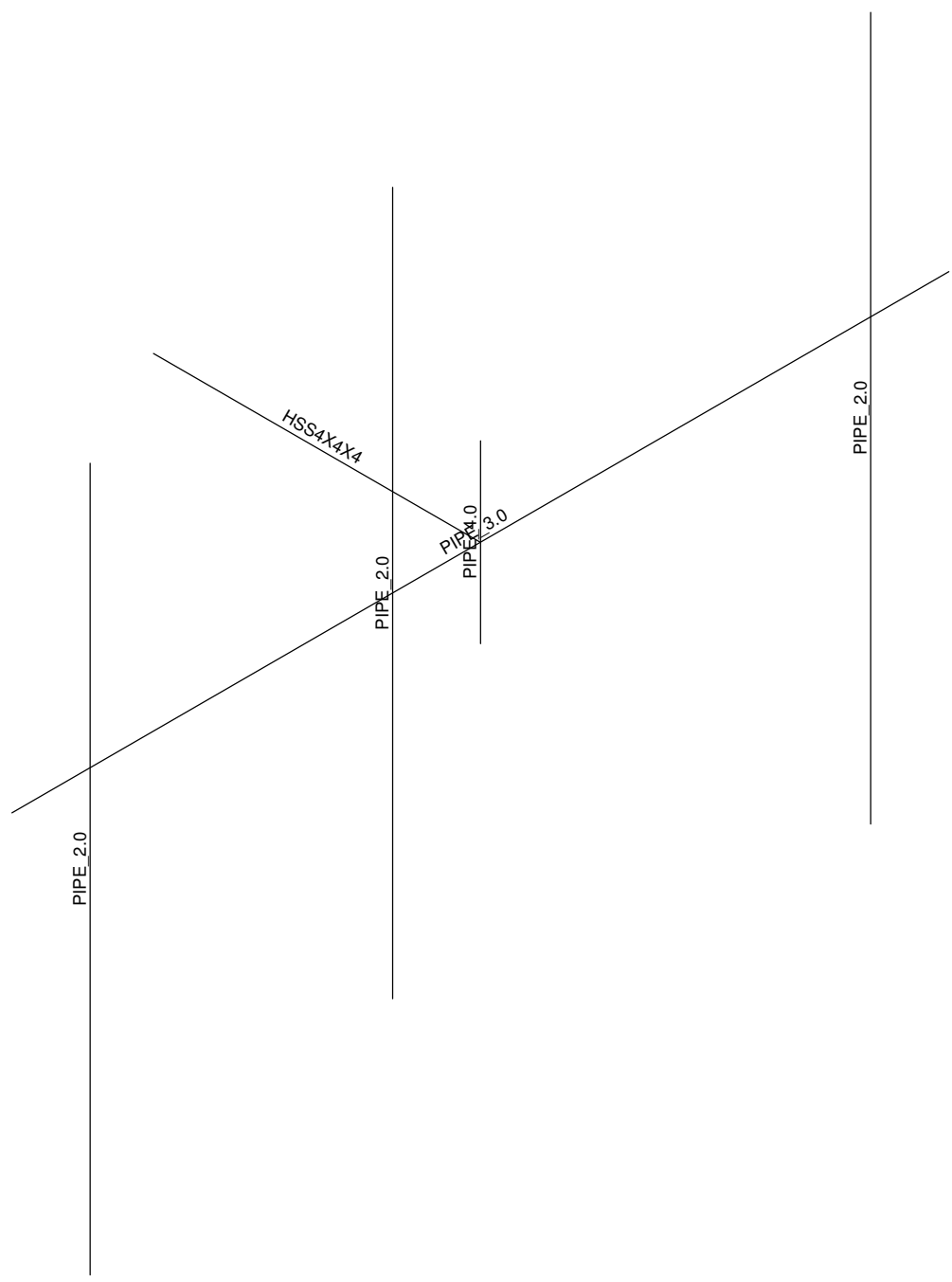
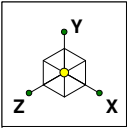
Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Tower Engineering Profes...	CCI BU No. 876504	SK - 3
RWM		Sept 30, 2019 at 4:19 PM
TEP No. 25640.307957		Mount Rev H.r3d



Envelope Only Solution

Tower Engineering Profes...	CCI BU No. 876504	SK - 4
RWM		Sept 30, 2019 at 4:20 PM
TEP No. 25640.307957		Mount Rev H.r3d



Envelope Only Solution

Tower Engineering Profes...	CCI BU No. 876504	SK - 5
RWM		Sept 30, 2019 at 4:20 PM
TEP No. 25640.307957		Mount Rev H.r3d

APPENDIX B
SOFTWARE INPUT CALCULATIONS



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

Wind Inputs:

Ult. Wind Velocity:	116.0	mph
Live Load Velocity:	30.0	mph
Ice Wind Velocity:	50.0	mph
Base Ice Thickness:	1.00	inches
Mount Centerline:	80.0	ft
Antenna Centerline:	80.0	ft
Exposure Category:	B	
Topo Category:	1	
Risk Category:	II	
Ground Elevation:	460	ft

Wind Calculations:

K_{zt} :	1.000	Section 2.6.6
K_d :	0.950	
$K_{z-Mount}$:	0.927	Section 2.6.5.2
$K_{z-Antenna}$:	0.927	Section 2.6.5.2
K_{iz} :	1.093	Section 2.6.10
Ice Thickness:	0.929	inches - Section 2.6.10
$K_{es-wind}$:	0.95	Annex S (Table S-1)
K_{es-ice} :	0.85	Annex S (Table S-1)

Without Ice - (psf)		With Ice - (psf)	
$(q_z G_h)_{Mount}$:	28.35	$(q_z G_h)_{Mount}$:	5.54
$(q_z G_h)_{Antenna}$:	28.35	$(q_z G_h)_{Antenna}$:	5.54



CCI BU No 876504
 TEP No. 25640.307957
 Analysis By: RWM 9/30/2019
 Checked By: TWC 9/30/2019

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

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

MFR	Model	Height (in)	Width (in)	Depth (in)	Wt. (lbs)	Azimuth°	Qty	Shape	Member Label	Distance from start node of the member		
										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	5.50	
Powerwave Technologies	LGP21401	14.40	9.20	2.60	14.10	90.00	2	Flat	MP-1	4.00		
Ericsson	RRUS 8843 B2/B66A	14.90	13.20	10.90	72.00	90.00	1	Flat	MP-1	2.00		
CCI Antennas	DMP65R-BU6D	71.20	20.70	7.70	79.40	0.00	1	Flat	MP-2	0.50	5.50	
Ericsson	RRUS 4478 B14	16.50	13.40	7.70	59.90	90.00	1	Flat	MP-2	2.00		
CCI Antennas	DMP65R-BU6D	71.20	20.70	7.70	79.40	0.00	1	Flat	MP-3	0.50	5.50	
Ericsson	RRUS 4449 B5/B12	17.90	13.19	9.44	71.00	90.00	1	Flat	MP-3	2.00		



CCI BU No 876504

TEP No. 25640.307957

Analysis By: RWM 9/30/2019

Checked By: TWC 9/30/2019

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

Member Name	Wind Proj. (in)	Length (in)	Shape	θ (°)	Perimeter (in)
FFTH	3.500	96.00	Round	90.00	11.00
MP-1	2.375	72.00	Round		7.46
MP-2	2.375	72.00	Round		7.46
MP-3	2.375	72.00	Round		7.46
SF1-TH	4.000	33.50	Flat	0.00	16.00
SF1-V1	4.500	18.00	Round		14.14

APPENDIX C
SOFTWARE ANALYSIS OUTPUT



Company : Tower Engineering Professionals
 Designer : RWM
 Job Number : TEP No. 25640.307957
 Model Name : CCI BU No. 876504

Sept 30, 2019
 4:16 PM
 Checked By: TWC

(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)	12
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



Company : Tower Engineering Professionals
 Designer : RWM
 Job Number : TEP No. 25640.307957
 Model Name : CCI BU No. 876504

Sept 30, 2019
 4:16 PM
 Checked By: TWC

(Global) Model Settings, Continued

Seismic Code	ASCE 7-05
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
Occupancy 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	F [ksj]	G [ksj]	Nu	Therm (1.E., Density[k/ft.,	Yield[ksj]	Ry	Fu[ksj]	Rt	
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
3	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.42	29000	11154	.3	.65	.49	42	1.4	58	1.3
5	A500 Gr.46	29000	11154	.3	.65	.49	46	1.4	58	1.3
6	A53-B-35	29000	11154	.3	.65	.49	35	1.5	60	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Face Horizo...	PIPE 3.0	None	None	A53-B-35	Typical	2.07	2.85	2.85	5.69
2	Mount Pipes	PIPE 2.0	None	None	A53-B-35	Typical	1.02	.627	.627	1.25
3	Support Arm	HSS4X4X4	None	None	A500 Gr.46	Typical	3.37	7.8	7.8	12.8
4	ConnPipe	PIPE 4.0	None	None	A53-B-35	Typical	2.96	6.82	6.82	13.6

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	CF1A	1.5CU1.25X...	Beam	None	A570 Gr.33	Typical	.131	.022	.052	5.4e-5

Material Takeoff

	Material	Size	Pieces	Length[ft]	Weight[K]
1	Hot Rolled Steel				
2	A500 Gr.46	HSS4X4X4	1	2.8	0
3	A53-B-35	PIPE 2.0	3	18	0
4	A53-B-35	PIPE 3.0	1	8	0
5	A53-B-35	PIPE 4.0	1	1.5	0
6	Total HR Steel		6	30.3	.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(d...)	Section/Shape	Type	Design List	Material	Design Rul...
1 FFTH	FF1	FF2			Face Horizontal	None	None	A53-B-35	Typical
2 MP-1	MP-1A	MP-1B			Mount Pipes	None	None	A53-B-35	Typical
3 MP-2	MP-3A	MP-3B			Mount Pipes	None	None	A53-B-35	Typical
4 MP-3	MP-4A	MP-4B			Mount Pipes	None	None	A53-B-35	Typical
5 SF1-TH	SF1-1	SF1-3			Support Arm	None	None	A500 Gr...	Typical
6 SF1-V1	SF1-V1A	SF1-V1B			ConnPipe	None	None	A53-B-35	Typical

Member Advanced Data

Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	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 SF1-TH						Yes	** NA **			None
6 SF1-V1						Yes	** NA **			None

Hot Rolled Steel Design Parameters

Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
1 FFTH	Face Horizo..	8	4	4				2.1	2.1		Lateral
2 MP-1	Mount Pipes	6	Segment	Segment				2.1	2.1		Lateral
3 MP-2	Mount Pipes	6	Segment	Segment				2.1	2.1		Lateral
4 MP-3	Mount Pipes	6	Segment	Segment				2.1	2.1		Lateral
5 SF1-TH	Support Arm	2.792						2.1	2.1		Lateral
6 SF1-V1	ConnPipe	1.5	Segment	Segment				2.1	2.1		Lateral

Basic Load Cases

BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Member)	Surface...
1 Dead	None		-1			10			
2 0 Wind - No Ice	None					10	6		
3 30 Wind - No Ice	None					20	12		
4 45 Wind - No Ice	None					20	12		
5 60 Wind - No Ice	None					20	12		
6 90 Wind - No Ice	None					10	6		
7 120 Wind - No Ice	None					20	12		
8 135 Wind - No Ice	None					20	12		
9 150 Wind - No Ice	None					20	12		
10 180 Wind - No Ice	None					10	6		
11 210 Wind - No Ice	None					20	12		
12 225 Wind - No Ice	None					20	12		
13 240 Wind - No Ice	None					20	12		
14 270 Wind - No Ice	None					10	6		
15 300 Wind - No Ice	None					20	12		
16 315 Wind - No Ice	None					20	12		
17 330 Wind - No Ice	None					20	12		
18 Ice Weight	None					10	6		
19 0 Wind - Ice	None					10	6		



Basic Load Cases (Continued)

BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Member)	Surface...
20 30 Wind - Ice	None					20	12		
21 45 Wind - Ice	None					20	12		
22 60 Wind - Ice	None					20	12		
23 90 Wind - Ice	None					10	6		
24 120 Wind - Ice	None					20	12		
25 135 Wind - Ice	None					20	12		
26 150 Wind - Ice	None					20	12		
27 180 Wind - Ice	None					10	6		
28 210 Wind - Ice	None					20	12		
29 225 Wind - Ice	None					20	12		
30 240 Wind - Ice	None					20	12		
31 270 Wind - Ice	None					10	6		
32 300 Wind - Ice	None					20	12		
33 315 Wind - Ice	None					20	12		
34 330 Wind - Ice	None					20	12		
35 Lm	None				1				
36 Lv	None				1				
37 Seismic Load X	ELX	-1				10			
38 Seismic Load Z	ELZ			-1		10			

Load Combinations

Description	Sol..	PD..	SR..	BLC Fact...	BLC Fact...	BLC Fact...	BLC Fact...	BLC Fact...	BLC Fact...	BLC Fact...	BLC Fact...	BLC Fact...	BLC Fact...
1 1.4D	Yes	Y		1	1.4								
2 0.9D+1.0 ...	Yes	Y		1	.9	2	1						
3 0.9D+1.0 ...	Yes	Y		1	.9	3	1						
4 0.9D+1.0 ...	Yes	Y		1	.9	4	1						
5 0.9D+1.0 ...	Yes	Y		1	.9	5	1						
6 0.9D+1.0 ...	Yes	Y		1	.9	6	1						
7 0.9D+1.0 ...	Yes	Y		1	.9	7	1						
8 0.9D+1.0 ...	Yes	Y		1	.9	8	1						
9 0.9D+1.0 ...	Yes	Y		1	.9	9	1						
10 0.9D+1.0 ...	Yes	Y		1	.9	10	1						
11 0.9D+1.0 ...	Yes	Y		1	.9	11	1						
12 0.9D+1.0 ...	Yes	Y		1	.9	12	1						
13 0.9D+1.0 ...	Yes	Y		1	.9	13	1						
14 0.9D+1.0 ...	Yes	Y		1	.9	14	1						
15 0.9D+1.0 ...	Yes	Y		1	.9	15	1						
16 0.9D+1.0 ...	Yes	Y		1	.9	16	1						
17 0.9D+1.0 ...	Yes	Y		1	.9	17	1						
18 1.2D+1.0 ...	Yes	Y		1	1.2	2	1						
19 1.2D+1.0 ...	Yes	Y		1	1.2	3	1						
20 1.2D+1.0 ...	Yes	Y		1	1.2	4	1						
21 1.2D+1.0 ...	Yes	Y		1	1.2	5	1						
22 1.2D+1.0 ...	Yes	Y		1	1.2	6	1						
23 1.2D+1.0 ...	Yes	Y		1	1.2	7	1						
24 1.2D+1.0 ...	Yes	Y		1	1.2	8	1						
25 1.2D+1.0 ...	Yes	Y		1	1.2	9	1						
26 1.2D+1.0 ...	Yes	Y		1	1.2	10	1						
27 1.2D+1.0 ...	Yes	Y		1	1.2	11	1						
28 1.2D+1.0 ...	Yes	Y		1	1.2	12	1						
29 1.2D+1.0 ...	Yes	Y		1	1.2	13	1						
30 1.2D+1.0 ...	Yes	Y		1	1.2	14	1						
31 1.2D+1.0 ...	Yes	Y		1	1.2	15	1						
32 1.2D+1.0 ...	Yes	Y		1	1.2	16	1						
33 1.2D+1.0 ...	Yes	Y		1	1.2	17	1						



Company : Tower Engineering Professionals
 Designer : RWM
 Job Number : TEP No. 25640.307957
 Model Name : CCI BU No. 876504

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Load Combinations (Continued)

Description	Sol.	PD.	SR.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.
34	1.2D+1.0...	Yes	Y	1	1.2	18	1	19	1				
35	1.2D+1.0...	Yes	Y	1	1.2	18	1	20	1				
36	1.2D+1.0...	Yes	Y	1	1.2	18	1	21	1				
37	1.2D+1.0...	Yes	Y	1	1.2	18	1	22	1				
38	1.2D+1.0...	Yes	Y	1	1.2	18	1	23	1				
39	1.2D+1.0...	Yes	Y	1	1.2	18	1	24	1				
40	1.2D+1.0...	Yes	Y	1	1.2	18	1	25	1				
41	1.2D+1.0...	Yes	Y	1	1.2	18	1	26	1				
42	1.2D+1.0...	Yes	Y	1	1.2	18	1	27	1				
43	1.2D+1.0...	Yes	Y	1	1.2	18	1	28	1				
44	1.2D+1.0...	Yes	Y	1	1.2	18	1	29	1				
45	1.2D+1.0...	Yes	Y	1	1.2	18	1	30	1				
46	1.2D+1.0...	Yes	Y	1	1.2	18	1	31	1				
47	1.2D+1.0...	Yes	Y	1	1.2	18	1	32	1				
48	1.2D+1.0...	Yes	Y	1	1.2	18	1	33	1				
49	1.2D+1.0...	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+1.5L...	Yes	Y	1	1.2	2	.067	35	1.5				
52	1.2D+1.5L...	Yes	Y	1	1.2	3	.067	35	1.5				
53	1.2D+1.5L...	Yes	Y	1	1.2	4	.067	35	1.5				
54	1.2D+1.5L...	Yes	Y	1	1.2	5	.067	35	1.5				
55	1.2D+1.5L...	Yes	Y	1	1.2	6	.067	35	1.5				
56	1.2D+1.5L...	Yes	Y	1	1.2	7	.067	35	1.5				
57	1.2D+1.5L...	Yes	Y	1	1.2	8	.067	35	1.5				
58	1.2D+1.5L...	Yes	Y	1	1.2	9	.067	35	1.5				
59	1.2D+1.5L...	Yes	Y	1	1.2	10	.067	35	1.5				
60	1.2D+1.5L...	Yes	Y	1	1.2	11	.067	35	1.5				
61	1.2D+1.5L...	Yes	Y	1	1.2	12	.067	35	1.5				
62	1.2D+1.5L...	Yes	Y	1	1.2	13	.067	35	1.5				
63	1.2D+1.5L...	Yes	Y	1	1.2	14	.067	35	1.5				
64	1.2D+1.5L...	Yes	Y	1	1.2	15	.067	35	1.5				
65	1.2D+1.5L...	Yes	Y	1	1.2	16	.067	35	1.5				
66	1.2D+1.5L...	Yes	Y	1	1.2	17	.067	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	X20	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	FF2	L	Y	-.25

Member Point Loads (BLC 1 : Dead)

Member Label	Direction	Magnitude(k,k-ft)	Location(ft,%)	
1	MP-1	Y	-.018	.5
2	MP-1	Y	-.028	4
3	MP-1	Y	-.072	2
4	MP-2	Y	-.04	.5
5	MP-2	Y	-.06	2
6	MP-3	Y	-.04	.5
7	MP-3	Y	-.071	2
8	MP-1	Y	-.018	5.5
9	MP-2	Y	-.04	5.5



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

Member Label	Direction	Magnitude(k,k-ft)	Location(ft,%)	
10	MP-3	Y	-.04	5.5

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

Member Label	Direction	Magnitude(k,k-ft)	Location(ft,%)	
1	MP-1	X	-.07	.5
2	MP-1	X	-.018	4
3	MP-1	X	-.035	2
4	MP-2	X	-.162	.5
5	MP-2	X	-.027	2
6	MP-3	X	-.162	.5
7	MP-3	X	-.036	2
8	MP-1	X	-.07	5.5
9	MP-2	X	-.162	5.5
10	MP-3	X	-.162	5.5

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

Member Label	Direction	Magnitude(k,k-ft)	Location(ft,%)	
1	MP-1	X	-.054	.5
2	MP-1	X	-.024	4
3	MP-1	X	-.031	2
4	MP-2	X	-.121	.5
5	MP-2	X	-.028	2
6	MP-3	X	-.121	.5
7	MP-3	X	-.034	2
8	MP-1	X	-.054	5.5
9	MP-2	X	-.121	5.5
10	MP-3	X	-.121	5.5
11	MP-1	Z	-.031	.5
12	MP-1	Z	-.014	4
13	MP-1	Z	-.018	2
14	MP-2	Z	-.07	.5
15	MP-2	Z	-.016	2
16	MP-3	Z	-.07	.5
17	MP-3	Z	-.02	2
18	MP-1	Z	-.031	5.5
19	MP-2	Z	-.07	5.5
20	MP-3	Z	-.07	5.5

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

Member Label	Direction	Magnitude(k,k-ft)	Location(ft,%)	
1	MP-1	X	-.038	.5
2	MP-1	X	-.026	4
3	MP-1	X	-.027	2
4	MP-2	X	-.083	.5
5	MP-2	X	-.026	2
6	MP-3	X	-.083	.5
7	MP-3	X	-.03	2
8	MP-1	X	-.038	5.5
9	MP-2	X	-.083	5.5
10	MP-3	X	-.083	5.5
11	MP-1	Z	-.038	.5
12	MP-1	Z	-.026	4
13	MP-1	Z	-.027	2
14	MP-2	Z	-.083	.5
15	MP-2	Z	-.026	2



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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
16	MP-3	Z	-0.83	.5
17	MP-3	Z	-.03	2
18	MP-1	Z	-.038	5.5
19	MP-2	Z	-.083	5.5
20	MP-3	Z	-.083	5.5

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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	-.023	.5
2	MP-1	X	-.023	4
3	MP-1	X	-.02	2
4	MP-2	X	-.047	.5
5	MP-2	X	-.021	2
6	MP-3	X	-.047	.5
7	MP-3	X	-.023	2
8	MP-1	X	-.023	5.5
9	MP-2	X	-.047	5.5
10	MP-3	X	-.047	5.5
11	MP-1	Z	-.039	.5
12	MP-1	Z	-.04	4
13	MP-1	Z	-.035	2
14	MP-2	Z	-.082	.5
15	MP-2	Z	-.036	2
16	MP-3	Z	-.082	.5
17	MP-3	Z	-.04	2
18	MP-1	Z	-.039	5.5
19	MP-2	Z	-.082	5.5
20	MP-3	Z	-.082	5.5

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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	Z	-.037	.5
2	MP-1	Z	-.056	4
3	MP-1	Z	-.042	2
4	MP-2	Z	-.072	.5
5	MP-2	Z	-.047	2
6	MP-3	Z	-.072	.5
7	MP-3	Z	-.05	2
8	MP-1	Z	-.037	5.5
9	MP-2	Z	-.072	5.5
10	MP-3	Z	-.072	5.5

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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	.023	.5
2	MP-1	X	.023	4
3	MP-1	X	.02	2
4	MP-2	X	.047	.5
5	MP-2	X	.021	2
6	MP-3	X	.047	.5
7	MP-3	X	.023	2
8	MP-1	X	.023	5.5
9	MP-2	X	.047	5.5
10	MP-3	X	.047	5.5
11	MP-1	Z	-.039	.5



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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
12	MP-1	Z	-.04	4
13	MP-1	Z	-.035	2
14	MP-2	Z	-.082	.5
15	MP-2	Z	-.036	2
16	MP-3	Z	-.082	.5
17	MP-3	Z	-.04	2
18	MP-1	Z	-.039	5.5
19	MP-2	Z	-.082	5.5
20	MP-3	Z	-.082	5.5

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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	.038	.5
2	MP-1	X	.026	4
3	MP-1	X	.027	2
4	MP-2	X	.083	.5
5	MP-2	X	.026	2
6	MP-3	X	.083	.5
7	MP-3	X	.03	2
8	MP-1	X	.038	5.5
9	MP-2	X	.083	5.5
10	MP-3	X	.083	5.5
11	MP-1	Z	-.038	.5
12	MP-1	Z	-.026	4
13	MP-1	Z	-.027	2
14	MP-2	Z	-.083	.5
15	MP-2	Z	-.026	2
16	MP-3	Z	-.083	.5
17	MP-3	Z	-.03	2
18	MP-1	Z	-.038	5.5
19	MP-2	Z	-.083	5.5
20	MP-3	Z	-.083	5.5

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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	.054	.5
2	MP-1	X	.024	4
3	MP-1	X	.031	2
4	MP-2	X	.121	.5
5	MP-2	X	.028	2
6	MP-3	X	.121	.5
7	MP-3	X	.034	2
8	MP-1	X	.054	5.5
9	MP-2	X	.121	5.5
10	MP-3	X	.121	5.5
11	MP-1	Z	-.031	.5
12	MP-1	Z	-.014	4
13	MP-1	Z	-.018	2
14	MP-2	Z	-.07	.5
15	MP-2	Z	-.016	2
16	MP-3	Z	-.07	.5
17	MP-3	Z	-.02	2
18	MP-1	Z	-.031	5.5
19	MP-2	Z	-.07	5.5
20	MP-3	Z	-.07	5.5



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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	.07	.5
2	MP-1	X	.018	4
3	MP-1	X	.035	2
4	MP-2	X	.162	.5
5	MP-2	X	.027	2
6	MP-3	X	.162	.5
7	MP-3	X	.036	2
8	MP-1	X	.07	5.5
9	MP-2	X	.162	5.5
10	MP-3	X	.162	5.5

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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	.054	.5
2	MP-1	X	.024	4
3	MP-1	X	.031	2
4	MP-2	X	.121	.5
5	MP-2	X	.028	2
6	MP-3	X	.121	.5
7	MP-3	X	.034	2
8	MP-1	X	.054	5.5
9	MP-2	X	.121	5.5
10	MP-3	X	.121	5.5
11	MP-1	Z	.031	.5
12	MP-1	Z	.014	4
13	MP-1	Z	.018	2
14	MP-2	Z	.07	.5
15	MP-2	Z	.016	2
16	MP-3	Z	.07	.5
17	MP-3	Z	.02	2
18	MP-1	Z	.031	5.5
19	MP-2	Z	.07	5.5
20	MP-3	Z	.07	5.5

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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	.038	.5
2	MP-1	X	.026	4
3	MP-1	X	.027	2
4	MP-2	X	.083	.5
5	MP-2	X	.026	2
6	MP-3	X	.083	.5
7	MP-3	X	.03	2
8	MP-1	X	.038	5.5
9	MP-2	X	.083	5.5
10	MP-3	X	.083	5.5
11	MP-1	Z	.038	.5
12	MP-1	Z	.026	4
13	MP-1	Z	.027	2
14	MP-2	Z	.083	.5
15	MP-2	Z	.026	2
16	MP-3	Z	.083	.5
17	MP-3	Z	.03	2
18	MP-1	Z	.038	5.5
19	MP-2	Z	.083	5.5
20	MP-3	Z	.083	5.5



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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	.023	.5
2	MP-1	X	.023	4
3	MP-1	X	.02	2
4	MP-2	X	.047	.5
5	MP-2	X	.021	2
6	MP-3	X	.047	.5
7	MP-3	X	.023	2
8	MP-1	X	.023	5.5
9	MP-2	X	.047	5.5
10	MP-3	X	.047	5.5
11	MP-1	Z	.039	.5
12	MP-1	Z	.04	4
13	MP-1	Z	.035	2
14	MP-2	Z	.082	.5
15	MP-2	Z	.036	2
16	MP-3	Z	.082	.5
17	MP-3	Z	.04	2
18	MP-1	Z	.039	5.5
19	MP-2	Z	.082	5.5
20	MP-3	Z	.082	5.5

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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	Z	.037	.5
2	MP-1	Z	.056	4
3	MP-1	Z	.042	2
4	MP-2	Z	.072	.5
5	MP-2	Z	.047	2
6	MP-3	Z	.072	.5
7	MP-3	Z	.05	2
8	MP-1	Z	.037	5.5
9	MP-2	Z	.072	5.5
10	MP-3	Z	.072	5.5

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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	-.023	.5
2	MP-1	X	-.023	4
3	MP-1	X	-.02	2
4	MP-2	X	-.047	.5
5	MP-2	X	-.021	2
6	MP-3	X	-.047	.5
7	MP-3	X	-.023	2
8	MP-1	X	-.023	5.5
9	MP-2	X	-.047	5.5
10	MP-3	X	-.047	5.5
11	MP-1	Z	.039	.5
12	MP-1	Z	.04	4
13	MP-1	Z	.035	2
14	MP-2	Z	.082	.5
15	MP-2	Z	.036	2
16	MP-3	Z	.082	.5
17	MP-3	Z	.04	2
18	MP-1	Z	.039	5.5
19	MP-2	Z	.082	5.5
20	MP-3	Z	.082	5.5



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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	-.038	.5
2	MP-1	X	-.026	4
3	MP-1	X	-.027	2
4	MP-2	X	-.083	.5
5	MP-2	X	-.026	2
6	MP-3	X	-.083	.5
7	MP-3	X	-.03	2
8	MP-1	X	-.038	5.5
9	MP-2	X	-.083	5.5
10	MP-3	X	-.083	5.5
11	MP-1	Z	.038	.5
12	MP-1	Z	.026	4
13	MP-1	Z	.027	2
14	MP-2	Z	.083	.5
15	MP-2	Z	.026	2
16	MP-3	Z	.083	.5
17	MP-3	Z	.03	2
18	MP-1	Z	.038	5.5
19	MP-2	Z	.083	5.5
20	MP-3	Z	.083	5.5

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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	-.054	.5
2	MP-1	X	-.024	4
3	MP-1	X	-.031	2
4	MP-2	X	-.121	.5
5	MP-2	X	-.028	2
6	MP-3	X	-.121	.5
7	MP-3	X	-.034	2
8	MP-1	X	-.054	5.5
9	MP-2	X	-.121	5.5
10	MP-3	X	-.121	5.5
11	MP-1	Z	.031	.5
12	MP-1	Z	.014	4
13	MP-1	Z	.018	2
14	MP-2	Z	.07	.5
15	MP-2	Z	.016	2
16	MP-3	Z	.07	.5
17	MP-3	Z	.02	2
18	MP-1	Z	.031	5.5
19	MP-2	Z	.07	5.5
20	MP-3	Z	.07	5.5

Member Point Loads (BLC 18 : Ice Weight)

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	Y	-.032	.5
2	MP-1	Y	-.03	4
3	MP-1	Y	-.035	2
4	MP-2	Y	-.071	.5
5	MP-2	Y	-.032	2
6	MP-3	Y	-.071	.5
7	MP-3	Y	-.037	2
8	MP-1	Y	-.032	5.5
9	MP-2	Y	-.071	5.5
10	MP-3	Y	-.071	5.5



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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	-.016	.5
2	MP-1	X	-.015	4
3	MP-1	X	-.01	2
4	MP-2	X	-.035	.5
5	MP-2	X	-.012	2
6	MP-3	X	-.035	.5
7	MP-3	X	-.012	2
8	MP-1	X	-.016	5.5
9	MP-2	X	-.035	5.5
10	MP-3	X	-.035	5.5

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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	-.013	.5
2	MP-1	X	-.007	4
3	MP-1	X	-.008	2
4	MP-2	X	-.027	.5
5	MP-2	X	-.007	2
6	MP-3	X	-.027	.5
7	MP-3	X	-.009	2
8	MP-1	X	-.013	5.5
9	MP-2	X	-.027	5.5
10	MP-3	X	-.027	5.5
11	MP-1	Z	-.007	.5
12	MP-1	Z	-.004	4
13	MP-1	Z	-.005	2
14	MP-2	Z	-.015	.5
15	MP-2	Z	-.004	2
16	MP-3	Z	-.015	.5
17	MP-3	Z	-.005	2
18	MP-1	Z	-.007	5.5
19	MP-2	Z	-.015	5.5
20	MP-3	Z	-.015	5.5

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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	-.009	.5
2	MP-1	X	-.008	4
3	MP-1	X	-.007	2
4	MP-2	X	-.019	.5
5	MP-2	X	-.007	2
6	MP-3	X	-.019	.5
7	MP-3	X	-.008	2
8	MP-1	X	-.009	5.5
9	MP-2	X	-.019	5.5
10	MP-3	X	-.019	5.5
11	MP-1	Z	-.009	.5
12	MP-1	Z	-.008	4
13	MP-1	Z	-.007	2
14	MP-2	Z	-.019	.5
15	MP-2	Z	-.007	2
16	MP-3	Z	-.019	.5
17	MP-3	Z	-.008	2
18	MP-1	Z	-.009	5.5
19	MP-2	Z	-.019	5.5
20	MP-3	Z	-.019	5.5



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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	-0.06	.5
2	MP-1	X	-0.06	4
3	MP-1	X	-0.05	2
4	MP-2	X	-0.11	.5
5	MP-2	X	-0.05	2
6	MP-3	X	-0.11	.5
7	MP-3	X	-0.06	2
8	MP-1	X	-0.06	5.5
9	MP-2	X	-0.11	5.5
10	MP-3	X	-0.11	5.5
11	MP-1	Z	-.01	.5
12	MP-1	Z	-0.11	4
13	MP-1	Z	-0.09	2
14	MP-2	Z	-0.19	.5
15	MP-2	Z	-0.09	2
16	MP-3	Z	-0.19	.5
17	MP-3	Z	-.01	2
18	MP-1	Z	-.01	5.5
19	MP-2	Z	-0.19	5.5
20	MP-3	Z	-0.19	5.5

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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	Z	-.01	.5
2	MP-1	Z	-0.06	4
3	MP-1	Z	-0.09	2
4	MP-2	Z	-0.17	.5
5	MP-2	Z	-0.07	2
6	MP-3	Z	-0.17	.5
7	MP-3	Z	-0.09	2
8	MP-1	Z	-.01	5.5
9	MP-2	Z	-0.17	5.5
10	MP-3	Z	-0.17	5.5

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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	.006	.5
2	MP-1	X	.006	4
3	MP-1	X	.005	2
4	MP-2	X	.011	.5
5	MP-2	X	.005	2
6	MP-3	X	.011	.5
7	MP-3	X	.006	2
8	MP-1	X	.006	5.5
9	MP-2	X	.011	5.5
10	MP-3	X	.011	5.5
11	MP-1	Z	-.01	.5
12	MP-1	Z	-0.11	4
13	MP-1	Z	-0.09	2
14	MP-2	Z	-0.19	.5
15	MP-2	Z	-0.09	2
16	MP-3	Z	-0.19	.5
17	MP-3	Z	-.01	2
18	MP-1	Z	-.01	5.5
19	MP-2	Z	-0.19	5.5
20	MP-3	Z	-0.19	5.5



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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	.009	.5
2	MP-1	X	.008	4
3	MP-1	X	.007	2
4	MP-2	X	.019	.5
5	MP-2	X	.007	2
6	MP-3	X	.019	.5
7	MP-3	X	.008	2
8	MP-1	X	.009	5.5
9	MP-2	X	.019	5.5
10	MP-3	X	.019	5.5
11	MP-1	Z	-.009	.5
12	MP-1	Z	-.008	4
13	MP-1	Z	-.007	2
14	MP-2	Z	-.019	.5
15	MP-2	Z	-.007	2
16	MP-3	Z	-.019	.5
17	MP-3	Z	-.008	2
18	MP-1	Z	-.009	5.5
19	MP-2	Z	-.019	5.5
20	MP-3	Z	-.019	5.5

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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	.013	.5
2	MP-1	X	.007	4
3	MP-1	X	.008	2
4	MP-2	X	.027	.5
5	MP-2	X	.007	2
6	MP-3	X	.027	.5
7	MP-3	X	.009	2
8	MP-1	X	.013	5.5
9	MP-2	X	.027	5.5
10	MP-3	X	.027	5.5
11	MP-1	Z	-.007	.5
12	MP-1	Z	-.004	4
13	MP-1	Z	-.005	2
14	MP-2	Z	-.015	.5
15	MP-2	Z	-.004	2
16	MP-3	Z	-.015	.5
17	MP-3	Z	-.005	2
18	MP-1	Z	-.007	5.5
19	MP-2	Z	-.015	5.5
20	MP-3	Z	-.015	5.5

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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	.016	.5
2	MP-1	X	.015	4
3	MP-1	X	.01	2
4	MP-2	X	.035	.5
5	MP-2	X	.012	2
6	MP-3	X	.035	.5
7	MP-3	X	.012	2
8	MP-1	X	.016	5.5
9	MP-2	X	.035	5.5
10	MP-3	X	.035	5.5



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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	.013	.5
2	MP-1	X	.007	4
3	MP-1	X	.008	2
4	MP-2	X	.027	.5
5	MP-2	X	.007	2
6	MP-3	X	.027	.5
7	MP-3	X	.009	2
8	MP-1	X	.013	5.5
9	MP-2	X	.027	5.5
10	MP-3	X	.027	5.5
11	MP-1	Z	.007	.5
12	MP-1	Z	.004	4
13	MP-1	Z	.005	2
14	MP-2	Z	.015	.5
15	MP-2	Z	.004	2
16	MP-3	Z	.015	.5
17	MP-3	Z	.005	2
18	MP-1	Z	.007	5.5
19	MP-2	Z	.015	5.5
20	MP-3	Z	.015	5.5

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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	.009	.5
2	MP-1	X	.008	4
3	MP-1	X	.007	2
4	MP-2	X	.019	.5
5	MP-2	X	.007	2
6	MP-3	X	.019	.5
7	MP-3	X	.008	2
8	MP-1	X	.009	5.5
9	MP-2	X	.019	5.5
10	MP-3	X	.019	5.5
11	MP-1	Z	.009	.5
12	MP-1	Z	.008	4
13	MP-1	Z	.007	2
14	MP-2	Z	.019	.5
15	MP-2	Z	.007	2
16	MP-3	Z	.019	.5
17	MP-3	Z	.008	2
18	MP-1	Z	.009	5.5
19	MP-2	Z	.019	5.5
20	MP-3	Z	.019	5.5

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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	.006	.5
2	MP-1	X	.006	4
3	MP-1	X	.005	2
4	MP-2	X	.011	.5
5	MP-2	X	.005	2
6	MP-3	X	.011	.5
7	MP-3	X	.006	2
8	MP-1	X	.006	5.5
9	MP-2	X	.011	5.5
10	MP-3	X	.011	5.5



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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
11	MP-1	Z	.01	.5
12	MP-1	Z	.011	4
13	MP-1	Z	.009	2
14	MP-2	Z	.019	.5
15	MP-2	Z	.009	2
16	MP-3	Z	.019	.5
17	MP-3	Z	.01	2
18	MP-1	Z	.01	5.5
19	MP-2	Z	.019	5.5
20	MP-3	Z	.019	5.5

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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	Z	.01	.5
2	MP-1	Z	.006	4
3	MP-1	Z	.009	2
4	MP-2	Z	.017	.5
5	MP-2	Z	.007	2
6	MP-3	Z	.017	.5
7	MP-3	Z	.009	2
8	MP-1	Z	.01	5.5
9	MP-2	Z	.017	5.5
10	MP-3	Z	.017	5.5

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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	-.006	.5
2	MP-1	X	-.006	4
3	MP-1	X	-.005	2
4	MP-2	X	-.011	.5
5	MP-2	X	-.005	2
6	MP-3	X	-.011	.5
7	MP-3	X	-.006	2
8	MP-1	X	-.006	5.5
9	MP-2	X	-.011	5.5
10	MP-3	X	-.011	5.5
11	MP-1	Z	.01	.5
12	MP-1	Z	.011	4
13	MP-1	Z	.009	2
14	MP-2	Z	.019	.5
15	MP-2	Z	.009	2
16	MP-3	Z	.019	.5
17	MP-3	Z	.01	2
18	MP-1	Z	.01	5.5
19	MP-2	Z	.019	5.5
20	MP-3	Z	.019	5.5

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

	Member Label	Direction	Magnitude[k.k-ft]	Location[ft.%]
1	MP-1	X	-.009	.5
2	MP-1	X	-.008	4
3	MP-1	X	-.007	2
4	MP-2	X	-.019	.5
5	MP-2	X	-.007	2
6	MP-3	X	-.019	.5



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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft.%]
7	MP-3	X	-008	2
8	MP-1	X	-009	5.5
9	MP-2	X	-019	5.5
10	MP-3	X	-019	5.5
11	MP-1	Z	.009	.5
12	MP-1	Z	.008	4
13	MP-1	Z	.007	2
14	MP-2	Z	.019	.5
15	MP-2	Z	.007	2
16	MP-3	Z	.019	.5
17	MP-3	Z	.008	2
18	MP-1	Z	.009	5.5
19	MP-2	Z	.019	5.5
20	MP-3	Z	.019	5.5

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft.%]
1	MP-1	X	-013	.5
2	MP-1	X	-007	4
3	MP-1	X	-008	2
4	MP-2	X	-027	.5
5	MP-2	X	-007	2
6	MP-3	X	-027	.5
7	MP-3	X	-009	2
8	MP-1	X	-013	5.5
9	MP-2	X	-027	5.5
10	MP-3	X	-027	5.5
11	MP-1	Z	.007	.5
12	MP-1	Z	.004	4
13	MP-1	Z	.005	2
14	MP-2	Z	.015	.5
15	MP-2	Z	.004	2
16	MP-3	Z	.015	.5
17	MP-3	Z	.005	2
18	MP-1	Z	.007	5.5
19	MP-2	Z	.015	5.5
20	MP-3	Z	.015	5.5

Member Point Loads (BLC 37 : Seismic Load X)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft.%]
1	MP-1	X	-018	.5
2	MP-1	X	-028	4
3	MP-1	X	-072	2
4	MP-2	X	-.04	.5
5	MP-2	X	-.06	2
6	MP-3	X	-.04	.5
7	MP-3	X	-.071	2
8	MP-1	X	-.018	5.5
9	MP-2	X	-.04	5.5
10	MP-3	X	-.04	5.5

Member Point Loads (BLC 38 : Seismic Load Z)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft.%]
1	MP-1	Z	-018	.5
2	MP-1	Z	-028	4



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Member Point Loads (BLC 38 : Seismic Load Z) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft.%]
3	MP-1	Z	-.072	2
4	MP-2	Z	-.04	.5
5	MP-2	Z	-.06	2
6	MP-3	Z	-.04	.5
7	MP-3	Z	-.071	2
8	MP-1	Z	-.018	5.5
9	MP-2	Z	-.04	5.5
10	MP-3	Z	-.04	5.5

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	-.009	-.009	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	SF1-TH	X	0	0	0	%100
6	SF1-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	-.005	-.005	0	%100
3	MP-2	X	-.005	-.005	0	%100
4	MP-3	X	-.005	-.005	0	%100
5	SF1-TH	X	-.004	-.004	0	%100
6	SF1-V1	X	-.005	-.005	0	%100
7	FFTH	Z	-.004	-.004	0	%100
8	MP-1	Z	-.003	-.003	0	%100
9	MP-2	Z	-.003	-.003	0	%100
10	MP-3	Z	-.003	-.003	0	%100
11	SF1-TH	Z	-.003	-.003	0	%100
12	SF1-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	-.004	-.004	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	SF1-TH	X	-.005	-.005	0	%100
6	SF1-V1	X	-.004	-.004	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	SF1-TH	Z	-.006	-.006	0	%100
12	SF1-V1	Z	-.004	-.004	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	-.003	-.003	0	%100
3	MP-2	X	-.003	-.003	0	%100
4	MP-3	X	-.003	-.003	0	%100



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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	SF1-TH	X	-.004	-.004	0	%100
6	SF1-V1	X	-.003	-.003	0	%100
7	FFTH	Z	-.004	-.004	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	SF1-TH	Z	-.009	-.009	0	%100
12	SF1-V1	Z	-.005	-.005	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	-.006	-.006	0	%100
3	MP-2	Z	-.006	-.006	0	%100
4	MP-3	Z	-.006	-.006	0	%100
5	SF1-TH	Z	-.012	-.012	0	%100
6	SF1-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	.003	.003	0	%100
3	MP-2	X	.003	.003	0	%100
4	MP-3	X	.003	.003	0	%100
5	SF1-TH	X	.004	.004	0	%100
6	SF1-V1	X	.003	.003	0	%100
7	FFTH	Z	-.004	-.004	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	SF1-TH	Z	-.009	-.009	0	%100
12	SF1-V1	Z	-.005	-.005	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	.004	.004	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	SF1-TH	X	.005	.005	0	%100
6	SF1-V1	X	.004	.004	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	SF1-TH	Z	-.006	-.006	0	%100
12	SF1-V1	Z	-.004	-.004	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	.005	.005	0	%100
3	MP-2	X	.005	.005	0	%100
4	MP-3	X	.005	.005	0	%100
5	SF1-TH	X	.004	.004	0	%100



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 Designer : RWM
 Job Number : TEP No. 25640.307957
 Model Name : CCI BU No. 876504

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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	SF1-V1	X	.005	.005	0	%100
7	FFTH	Z	-.004	-.004	0	%100
8	MP-1	Z	-.003	-.003	0	%100
9	MP-2	Z	-.003	-.003	0	%100
10	MP-3	Z	-.003	-.003	0	%100
11	SF1-TH	Z	-.003	-.003	0	%100
12	SF1-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	.009	.009	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	SF1-TH	X	0	0	0	%100
6	SF1-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	.005	.005	0	%100
3	MP-2	X	.005	.005	0	%100
4	MP-3	X	.005	.005	0	%100
5	SF1-TH	X	.004	.004	0	%100
6	SF1-V1	X	.005	.005	0	%100
7	FFTH	Z	.004	.004	0	%100
8	MP-1	Z	.003	.003	0	%100
9	MP-2	Z	.003	.003	0	%100
10	MP-3	Z	.003	.003	0	%100
11	SF1-TH	Z	.003	.003	0	%100
12	SF1-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	.004	.004	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	SF1-TH	X	.005	.005	0	%100
6	SF1-V1	X	.004	.004	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	SF1-TH	Z	.006	.006	0	%100
12	SF1-V1	Z	.004	.004	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	.003	.003	0	%100
3	MP-2	X	.003	.003	0	%100
4	MP-3	X	.003	.003	0	%100
5	SF1-TH	X	.004	.004	0	%100
6	SF1-V1	X	.003	.003	0	%100



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	.005	.005	0	%100
9	MP-2	Z	.005	.005	0	%100
10	MP-3	Z	.005	.005	0	%100
11	SF1-TH	Z	.009	.009	0	%100
12	SF1-V1	Z	.005	.005	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	.006	.006	0	%100
3	MP-2	Z	.006	.006	0	%100
4	MP-3	Z	.006	.006	0	%100
5	SF1-TH	Z	.012	.012	0	%100
6	SF1-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	-.003	-.003	0	%100
3	MP-2	X	-.003	-.003	0	%100
4	MP-3	X	-.003	-.003	0	%100
5	SF1-TH	X	-.004	-.004	0	%100
6	SF1-V1	X	-.003	-.003	0	%100
7	FFTH	Z	.004	.004	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	SF1-TH	Z	.009	.009	0	%100
12	SF1-V1	Z	.005	.005	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	-.004	-.004	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	SF1-TH	X	-.005	-.005	0	%100
6	SF1-V1	X	-.004	-.004	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	SF1-TH	Z	.006	.006	0	%100
12	SF1-V1	Z	.004	.004	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	-.005	-.005	0	%100
3	MP-2	X	-.005	-.005	0	%100
4	MP-3	X	-.005	-.005	0	%100
5	SF1-TH	X	-.004	-.004	0	%100
6	SF1-V1	X	-.005	-.005	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	.003	.003	0	%100
9	MP-2	Z	.003	.003	0	%100
10	MP-3	Z	.003	.003	0	%100
11	SF1-TH	Z	.003	.003	0	%100
12	SF1-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	-.005	-.005	0	%100
2	MP-1	Y	-.004	-.004	0	%100
3	MP-2	Y	-.004	-.004	0	%100
4	MP-3	Y	-.004	-.004	0	%100
5	SF1-TH	Y	-.006	-.006	0	%100
6	SF1-V1	Y	-.007	-.007	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	SF1-TH	X	-.003	-.003	0	%100
6	SF1-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	SF1-TH	X	-.001	-.001	0	%100
6	SF1-V1	X	-.002	-.002	0	%100
7	FFTH	Z	-.00093	-.00093	0	%100
8	MP-1	Z	-.000932	-.000932	0	%100
9	MP-2	Z	-.000932	-.000932	0	%100
10	MP-3	Z	-.000932	-.000932	0	%100
11	SF1-TH	Z	-.000872	-.000872	0	%100
12	SF1-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	SF1-TH	X	-.002	-.002	0	%100
6	SF1-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	SF1-TH	Z	-.002	-.002	0	%100
12	SF1-V1	Z	-.001	-.001	0	%100



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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	-0.00596	-0.00596	0	%100
2	MP-1	X	-0.00839	-0.00839	0	%100
3	MP-2	X	-0.00839	-0.00839	0	%100
4	MP-3	X	-0.00839	-0.00839	0	%100
5	SF1-TH	X	-0.01	-0.01	0	%100
6	SF1-V1	X	-0.00937	-0.00937	0	%100
7	FFTH	Z	-0.0093	-0.0093	0	%100
8	MP-1	Z	-0.02	-0.02	0	%100
9	MP-2	Z	-0.02	-0.02	0	%100
10	MP-3	Z	-0.02	-0.02	0	%100
11	SF1-TH	Z	-0.03	-0.03	0	%100
12	SF1-V1	Z	-0.02	-0.02	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	-0.02	-0.02	0	%100
3	MP-2	Z	-0.02	-0.02	0	%100
4	MP-3	Z	-0.02	-0.02	0	%100
5	SF1-TH	Z	-0.03	-0.03	0	%100
6	SF1-V1	Z	-0.02	-0.02	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	0.00596	0.00596	0	%100
2	MP-1	X	0.00839	0.00839	0	%100
3	MP-2	X	0.00839	0.00839	0	%100
4	MP-3	X	0.00839	0.00839	0	%100
5	SF1-TH	X	0.01	0.01	0	%100
6	SF1-V1	X	0.00937	0.00937	0	%100
7	FFTH	Z	-0.0093	-0.0093	0	%100
8	MP-1	Z	-0.02	-0.02	0	%100
9	MP-2	Z	-0.02	-0.02	0	%100
10	MP-3	Z	-0.02	-0.02	0	%100
11	SF1-TH	Z	-0.03	-0.03	0	%100
12	SF1-V1	Z	-0.02	-0.02	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	0.01	0.01	0	%100
2	MP-1	X	0.01	0.01	0	%100
3	MP-2	X	0.01	0.01	0	%100
4	MP-3	X	0.01	0.01	0	%100
5	SF1-TH	X	0.02	0.02	0	%100
6	SF1-V1	X	0.01	0.01	0	%100
7	FFTH	Z	-0.01	-0.01	0	%100
8	MP-1	Z	-0.01	-0.01	0	%100
9	MP-2	Z	-0.01	-0.01	0	%100
10	MP-3	Z	-0.01	-0.01	0	%100
11	SF1-TH	Z	-0.02	-0.02	0	%100
12	SF1-V1	Z	-0.01	-0.01	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	0.02	0.02	0	%100



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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	0.01	0.01	0	%100
3	MP-2	X	0.01	0.01	0	%100
4	MP-3	X	0.01	0.01	0	%100
5	SF1-TH	X	0.01	0.01	0	%100
6	SF1-V1	X	0.02	0.02	0	%100
7	FFTH	Z	-0.0093	-0.0093	0	%100
8	MP-1	Z	-0.00932	-0.00932	0	%100
9	MP-2	Z	-0.00932	-0.00932	0	%100
10	MP-3	Z	-0.00932	-0.00932	0	%100
11	SF1-TH	Z	-0.00872	-0.00872	0	%100
12	SF1-V1	Z	-0.01	-0.01	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	0.02	0.02	0	%100
2	MP-1	X	0.02	0.02	0	%100
3	MP-2	X	0.02	0.02	0	%100
4	MP-3	X	0.02	0.02	0	%100
5	SF1-TH	X	0.03	0.03	0	%100
6	SF1-V1	X	0.02	0.02	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	0.02	0.02	0	%100
2	MP-1	X	0.01	0.01	0	%100
3	MP-2	X	0.01	0.01	0	%100
4	MP-3	X	0.01	0.01	0	%100
5	SF1-TH	X	0.01	0.01	0	%100
6	SF1-V1	X	0.02	0.02	0	%100
7	FFTH	Z	0.0093	0.0093	0	%100
8	MP-1	Z	0.00932	0.00932	0	%100
9	MP-2	Z	0.00932	0.00932	0	%100
10	MP-3	Z	0.00932	0.00932	0	%100
11	SF1-TH	Z	0.00872	0.00872	0	%100
12	SF1-V1	Z	0.01	0.01	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	0.01	0.01	0	%100
2	MP-1	X	0.01	0.01	0	%100
3	MP-2	X	0.01	0.01	0	%100
4	MP-3	X	0.01	0.01	0	%100
5	SF1-TH	X	0.02	0.02	0	%100
6	SF1-V1	X	0.01	0.01	0	%100
7	FFTH	Z	0.01	0.01	0	%100
8	MP-1	Z	0.01	0.01	0	%100
9	MP-2	Z	0.01	0.01	0	%100
10	MP-3	Z	0.01	0.01	0	%100
11	SF1-TH	Z	0.02	0.02	0	%100
12	SF1-V1	Z	0.01	0.01	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	0.00596	0.00596	0	%100
2	MP-1	X	0.00839	0.00839	0	%100



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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	.000839	.000839	0	%100
4	MP-3	X	.000839	.000839	0	%100
5	SF1-TH	X	.001	.001	0	%100
6	SF1-V1	X	.000937	.000937	0	%100
7	FFTH	Z	.00093	.00093	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	SF1-TH	Z	.003	.003	0	%100
12	SF1-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	SF1-TH	Z	.003	.003	0	%100
6	SF1-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	-.000596	-.000596	0	%100
2	MP-1	X	-.000839	-.000839	0	%100
3	MP-2	X	-.000839	-.000839	0	%100
4	MP-3	X	-.000839	-.000839	0	%100
5	SF1-TH	X	-.001	-.001	0	%100
6	SF1-V1	X	-.000937	-.000937	0	%100
7	FFTH	Z	.00093	.00093	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	SF1-TH	Z	.003	.003	0	%100
12	SF1-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	SF1-TH	X	-.002	-.002	0	%100
6	SF1-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	SF1-TH	Z	.002	.002	0	%100
12	SF1-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



Company : Tower Engineering Professionals
 Designer : RWM
 Job Number : TEP No. 25640.307957
 Model Name : CCI BU No. 876504

Sept 30, 2019
 4:16 PM
 Checked By: TWC

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	SF1-TH	X	-.001	-.001	0	%100
6	SF1-V1	X	-.002	-.002	0	%100
7	FFTH	Z	.00093	.00093	0	%100
8	MP-1	Z	.000932	.000932	0	%100
9	MP-2	Z	.000932	.000932	0	%100
10	MP-3	Z	.000932	.000932	0	%100
11	SF1-TH	Z	.000872	.000872	0	%100
12	SF1-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	1.092	18	1.459	66	.715	23	.094	14	2.18	32	4.046	51
2		min	-1.092	10	.532	2	-.715	13	-2.724	55	-2.181	8	1.055	10
3	Totals:	max	1.092	18	1.459	66	.715	23						
4		min	-1.092	10	.532	2	-.715	13						

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

Member	Shape	Code Check	Loc	LC	Shear	Loc	Dir	C	phi	Pn	phi	Pnt	phi	Mn	phi	Mn	Cb	Eqn
1	FFTH	PIPE 3.0	.593	4	57	.098	4.75	18	44.693	65.205	5.749	5.749	1.	H1-1b				
2	SF1-TH	HSS4x4x4	.315	0	56	.237	0	55	120.827	139.518	16.181	16.181	1.	H3-6				
3	MP-3	PIPE 2.0	.307	2.25	26	.022	2.25	26	24.584	32.13	1.872	1.872	1.	H1-1b				
4	MP-2	PIPE 2.0	.249	3	26	.022	3	26	19.964	32.13	1.872	1.872	1.	H1-1b				
5	MP-1	PIPE 2.0	.164	2.25	26	.012	2.25	26	24.584	32.13	1.872	1.872	1.	H1-1b				
6	SF1-V1	PIPE 4.0	.000	.75	27	.000	.75	27	92.503	93.24	10.631	10.631	1.	H1-1b				

APPENDIX D
ADDITIONAL CALCULATIONS

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: 0.5 in
 Slip Member Ø: N/A in
 Bolt Grade: A36
 $F_{u\text{bolt}}$: 58 ksi
 r: 4.9497 in
 J: 98.00 in⁴/in²
 $Bolt_{Area}$: 0.307 in²
 $Bolt_{Area, Net Tensile}$: 0.226 in²
 Pretension: 9 kips
 Slotted Holes: No

Code Checks Per ANSI/TIA-222-H:		
Bolt Capacity =	40.7%	PASS
Plate Capacity =	51.6%	PASS

Plate Bending

Horizontal Member height: 4 in
 Horizontal Member width: 4 in

Plate Fy: 36 ksi

$$M_y = 7.5080 \text{ k-in}$$

$$Z_y = 0.625 \text{ in}^3$$

$$S_y = 0.417 \text{ in}^3$$

$$M_z = 10.4588 \text{ k-in}$$

$$Z_z = 0.625 \text{ in}^3$$

$$S_z = 0.417 \text{ in}^3$$

$$\emptyset Mp_y (Z): 20.250 \text{ k-in}$$

$$\emptyset Mp_y (S): 21.600 \text{ k-in}$$

$$\emptyset Mp_z (Z): 20.250 \text{ k-in}$$

$$\emptyset Mp_z (S): 21.600 \text{ k-in}$$

Exhibit F

Power Density/RF Emissions Report



RF EMISSIONS COMPLIANCE REPORT

Crown Castle on behalf of AT&T Mobility, LLC

Crown Castle Site Name: WOODBURY NORTH
Crown Castle Site BU: 876405
AT&T Mobility, LLC FA #: 10071348
186 Minortown Road
Woodbury, CT
10/17/2019

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 17 October 2019

Prepared By:

Site Safe, LLC

Engineering Statement in Re:
Electromagnetic Energy Analysis
Crown Castle
WOODBURY, 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 "WOODBURY NORTH" ("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 8.408% 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 12.309% 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
WOODBURY NORTH
Site Summary**

Carrier	Area Maximum Percentage MPE
AT&T Mobility, LLC	0.333 %
AT&T Mobility, LLC (Proposed)	1.443 %
AT&T Mobility, LLC (Proposed)	1.788 %
AT&T Mobility, LLC (Proposed)	2.000 %
AT&T Mobility, LLC (Proposed)	1.039 %
AT&T Mobility, LLC (Proposed)	0.887 %
AT&T Mobility, LLC (Proposed)	0.918 %
Sprint	0.663 %
Sprint	0.436 %
Sprint	0.436 %
Sprint	0.171 %
Sprint	0.172 %
Verizon Wireless	0.726 %
Verizon Wireless	0.797 %
Verizon Wireless	0.500 %
Composite Site MPE:	12.309 %

**AT&T Mobility, LLC
WOODBURY NORTH
Carrier Summary**

Frequency: 850 MHz
Maximum Permissible Exposure (MPE): 566.67 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 1.8853 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.3327 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Powerwave	7770	80	30	547	0.891332	0.157294	1.37593	0.242811
Powerwave	7770	80	150	547	0.891332	0.157294	1.37593	0.242811
Powerwave	7770	80	260	547	0.891332	0.157294	1.37593	0.242811

**AT&T Mobility, LLC (Proposed)
WOODBURY NORTH
Carrier Summary**

Frequency: 2300 MHz
 Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 14.43338 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 1.44334 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
CCI Antennas	DMP65R-BU6D	78	30	2606	14.379421	1.437942	14.379421	1.437942
CCI Antennas	DMP65R-BU4D	78	150	2917	8.108788	0.810879	9.96567	0.996567
CCI Antennas	DMP65R-BU6D	78	260	2606	14.379421	1.437942	14.379421	1.437942

**AT&T Mobility, LLC (Proposed)
WOODBURY NORTH
Carrier Summary**

Frequency: 2100 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 17.87586 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 1.78759 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
CCI Antennas	DMP65R-BU6D	78	30	4788	14.903721	1.490372	17.672091	1.767209
CCI Antennas	DMP65R-BU4D	78	150	4066	11.125676	1.112568	14.917191	1.491719
CCI Antennas	DMP65R-BU6D	78	260	4788	14.903721	1.490372	17.672091	1.767209

**AT&T Mobility, LLC (Proposed)
WOODBURY NORTH
Carrier Summary**

Frequency: 1900 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 19.9955 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 1.99955 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
CCI Antennas	DMP65R-BU6D	78	30	4075	16.983046	1.698305	19.878029	1.987803
CCI Antennas	DMP65R-BU4D	78	150	3541	13.160496	1.31605	16.775534	1.677553
CCI Antennas	DMP65R-BU6D	78	260	4075	16.983046	1.698305	19.878029	1.987803

**AT&T Mobility, LLC (Proposed)
WOODBURY NORTH
Carrier Summary**

Frequency: 850 MHz
 Maximum Permissible Exposure (MPE): 566.67 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 5.88968 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 1.03936 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
CCI Antennas	DMP65R-BU6D	78	30	2239	3.13147	0.552612	5.694451	1.004903
CCI Antennas	DMP65R-BU4D	78	150	1695	3.644013	0.643061	3.850902	0.679571
CCI Antennas	DMP65R-BU6D	78	260	2239	3.13147	0.552612	5.694451	1.004903

**AT&T Mobility, LLC (Proposed)
WOODBURY NORTH
Carrier Summary**

Frequency: 763 MHz
Maximum Permissible Exposure (MPE): 508.67 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 4.51142 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.88691 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
CCI Antennas	DMP65R-BU6D	78	30	2400	3.354764	0.659521	4.336091	0.852442
CCI Antennas	DMP65R-BU4D	78	150	1582	3.618334	0.711337	3.808324	0.748688
CCI Antennas	DMP65R-BU6D	78	260	2400	3.354764	0.659521	4.336091	0.852442

**AT&T Mobility, LLC (Proposed)
WOODBURY NORTH
Carrier Summary**

Frequency: 737 MHz
 Maximum Permissible Exposure (MPE): 491.33 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 4.51142 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.9182 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
CCI Antennas	DMP65R-BU6D	78	30	2400	3.354764	0.682788	4.336091	0.882515
CCI Antennas	DMP65R-BU4D	78	150	1582	3.618334	0.736432	3.808324	0.7751
CCI Antennas	DMP65R-BU6D	78	260	2400	3.354764	0.682788	4.336091	0.882515

Sprint WOODBURY NORTH Carrier Summary

Frequency: 2500 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 6.63228 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.66323 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
RFS	APXVTM14-C-I20	102	0	6168	2.22596	0.222596	4.244634	0.424463
RFS	APXVTM14-C-I20	102	140	6168	2.22596	0.222596	4.244634	0.424463
RFS	APXVTM14-C-I20	102	260	6168	2.22596	0.222596	4.244634	0.424463

Sprint WOODBURY NORTH Carrier Summary

Frequency: 1990 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 4.35803 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.4358 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
RFS	APXVSP18-C-A20	102	0	3804	1.482057	0.148206	3.424334	0.342433
RFS	APXVSP18-C-A20	102	140	3804	1.482057	0.148206	3.424334	0.342433
RFS	APXVSP18-C-A20	102	260	3804	1.482057	0.148206	3.424334	0.342433

Sprint WOODBURY NORTH Carrier Summary

Frequency: 1900 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 4.35803 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.4358 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
RFS	APXVSP18-C-A20	102	0	3804	1.482057	0.148206	3.424334	0.342433
RFS	APXVSP18-C-A20	102	140	3804	1.482057	0.148206	3.424334	0.342433
RFS	APXVSP18-C-A20	102	260	3804	1.482057	0.148206	3.424334	0.342433

**Sprint
WOODBURY NORTH
Carrier Summary**

Frequency: 866 MHz
Maximum Permissible Exposure (MPE): 577.33 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 0.98786 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.17111 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
RFS	APXVSPP18-C-A20	102	0	1084	0.777842	0.13473	0.791664	0.137124
RFS	APXVSPP18-C-A20	102	140	1084	0.777842	0.13473	0.791664	0.137124
RFS	APXVSPP18-C-A20	102	260	1084	0.777842	0.13473	0.791664	0.137124

Sprint WOODBURY NORTH Carrier Summary

Frequency: 862 MHz
Maximum Permissible Exposure (MPE): 574.67 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 0.98786 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.1719 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
RFS	APXVSPP18-C-A20	102	0	1084	0.777842	0.135355	0.791664	0.137761
RFS	APXVSPP18-C-A20	102	140	1084	0.777842	0.135355	0.791664	0.137761
RFS	APXVSPP18-C-A20	102	260	1084	0.777842	0.135355	0.791664	0.137761

Verizon Wireless WOODBURY NORTH Carrier Summary

Frequency: 850 MHz
Maximum Permissible Exposure (MPE): 566.67 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 4.11287 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.7258 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Antel	BXA-80080-4CF	108	350	2536	2.068839	0.365089	3.534375	0.623713
Antel	BXA-80080-4CF	108	110	2536	2.068839	0.365089	3.534375	0.623713
Antel	BXA-80063-4CFX5	108	230	3192	3.976052	0.701656	3.978651	0.702115

**Verizon Wireless
WOODBURY NORTH
Carrier Summary**

Frequency: 751 MHz
 Maximum Permissible Exposure (MPE): 500.67 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 3.99096 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.79713 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Antel	BXA-70063-6CF-2	108	350	4019	2.715015	0.54228	3.95699	0.790344
Antel	BXA-70063-6CF-2	108	110	4019	2.715015	0.54228	3.95699	0.790344
Antel	BXA-70063-6CF-2	108	230	4019	2.715015	0.54228	3.95699	0.790344

Verizon Wireless WOODBURY NORTH Carrier Summary

Frequency: 1900 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 4.99732 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.49973 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Antel	BXA-171085-8BF-EDIN-2	108	350	3928	1.702489	0.170249	4.404937	0.440494
Antel	BXA-171085-8BF-EDIN-2	108	110	3928	1.702489	0.170249	4.404937	0.440494
Antel	BXA-171063-8BF-2	108	230	4945	2.284709	0.228471	4.334355	0.433435