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

October 4, 2018

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

RE: **Notice of Exempt Modification for T-Mobile, Crown Site BU: 881364**
T-Mobile Site ID: CT11782B
123 Costello Road in Newington, CT 06111
Latitude: 41° 39' 18.7" - Longitude: -72° 43' 17.1"

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 95 foot level of the existing 145-foot monopole at 123 Costello Road in Newington, CT. The tower is owned by Crown Castle. The property is owned by Costello Industries Inc. T-Mobile now intends to remove and replace three (3) of their existing antennas with three (3) new antennas. Remove and replace three (3) existing RRUs with three (3) new RRUs and replace one (1) coax with one (1) hybrid fiber line. T-Mobile will also be adding (3) new antenna mounts, removing a DUS41 unit on the ground and adding a 5216 Baseband unit in the existing radio cabinet.

This facility was approved by Newington Town Plan and Zoning Commission in Petition 65-01 on November 28, 2001. This approval included the conditions that:

1. All ground equipment shall be located within a 8' fence enclosure, no equipment shall be placed within 10' side setback area.

This modification complies with the aforementioned condition(s).

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.S.C.A. § 16-50j-73, a copy of this letter is being sent to The Honorable Stephen Woods, Mayor, Town of Newington, Craig Minor, Town Planner, as well as the property owner, and Crown Castle is the tower owner.

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

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

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

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

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

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

Sincerely,

William Stone
Real Estate Specialist
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065
518-373-3543
William.stone@crowncastle.com

Attachments:

Tab 1: Exhibit-1: Compound plan and elevation depicting the planned changes
Tab 2: Exhibit-2: Structural Modification Report
Tab 3: Exhibit-3: General Power Density Table Report (RF Emissions Analysis Report)

cc:

The Honorable Stephen Woods, Mayor, Town of Newington
131 Cedar Street
Newington, CT 06111

Craig Minor
Town Planner – Town of Newington
131 Cedar Street
Newington, CT 06111

Costello Industries Inc.
123 Costello Road, Newington, CT 06111

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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

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TOWN OF NEWINGTON

Town Hall • 131 Cedar Street, Newington, Connecticut 06111
Central Telephone (860) 665-8500
Department Telephone (860) 665-8575
Department Fax No. (860) 665-8577

Certified Mail No. 7106 4575 1292 0696 5209
OFFICE OF THE TOWN PLANNER

CERTIFICATE OF ACTION

TO: Kenneth C. Baldwin
Robinson & Cole LLP
280 Trumbull Street
Harford CT 06103-3597

DATE: December 3, 2001

SUBJECT: PETITION 65-01 123 Costello Road, Costello Industries owner, Cellco Partnership d/b/a Verizon Wireless applicant, represented by Kenneth C. Baldwin, Robinson & Cole LLP, 280 Trumbull Street Hartford, CT 06103-3597 requests Special Exception Section 3.2.7 PCS antenna co location and ground base equipment, PD Zone District.

At a meeting held November 28, 2001, the Newington Town Plan and Zoning Commission voted to approve the above referenced PETITION subject to the following conditions:

1. Approval is granted for the placement of Verizon Wireless PCS platform and antenna as a co-locator on the existing monopole at the elevation of 125' as shown on plans prepared by URS Corporation AES, 795 Brook Street Rocky Hill, CT, dated 10-11-01, Sheets T-1, Z-1 and Z-2, entitled "123 Costello Road", Newington, Connecticut."

2. All ground equipment shall be located within an 8' fence enclosure, no equipment shall be placed within 10' side setback area.

3. The approval of this special exception shall be void and of no effect unless construction of the project commences within one year from the date of the Commission's approval. The term "construction" pertains to the installation of the antenna and support ground facilities by the Verizon Wireless.

4. Prior to the installation of the Verizon Wireless antenna building permits shall be obtained.

Certified by:

Edmund J. Meehan
Town Planner

This Special Exception will not become effective until this Certificate of Action is filed by the applicant on the Land Records of the Town of Newington.

This Site Plan Modification will not become effective until 1) a transparency of the Certificate of Action is affixed to the original site plan mylar, 2) the modification is incorporated into the site plan and noted as a revision and 3) a mylar copy of the modified signed site plan original mylar is filed in the Town Plan and Zoning Office.

An Autocad DXF File shall be provided to the Town Planner for incorporation into the Town's GIS database at the time of submission of the plan mylar.

ca1128-2/3

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 2015.

Information on the Property Records for the Municipality of Newington was last updated on 11/5/2016.

Parcel Information

Location:	123 COSTELLO RD	Property Use:	Industrial	Primary Use:	Office Warehouse
Unique ID:	C0685500	Map Block Lot:	32/018/00A	Acres:	2.84
490 Acres:	0.00	Zone:	PD	Volume / Page:	0573/0098
Developers Map / Lot:	S/E 2020 & 2815	Census:			

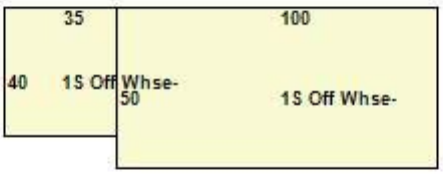
Value Information

	Appraised Value	70% Assessed Value
Land	382,500	267,750
Buildings	118,943	83,260
Detached Outbuildings	287,500	201,250
Total	788,943	552,260

Owner's Information

Owner's Data
COSTELLO INDUSTRIES INC 123 COSTELLO RD NEWINGTON CT 06111

Building 1



Category:	Industrial	Use:	Warehouse	GLA:	6,400
Stories:	1.00	Construction:	Steel	Year Built:	1975
Heating:	Unit Heater/AC	Fuel:	Natural Gas	Cooling Percent:	0

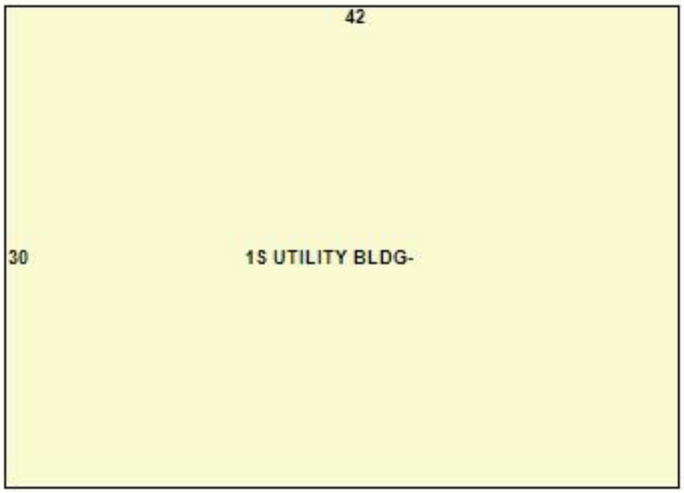
Siding:	Concrete Block	Roof Material:	Other	Beds/Units:	0

Special Features

Overhead Doors	2

Attached Components

Building 2



Category:	Industrial	Use:	Utility Building	GLA:	1,260

Stories:	1.00	Construction:	Steel	Year Built:	1981
Heating:	Unit Heater/AC	Fuel:	Natural Gas	Cooling Percent:	0
Siding:	Metal	Roof Material:	Other	Beds/Units:	0

Special Features

Overhead Doors	1

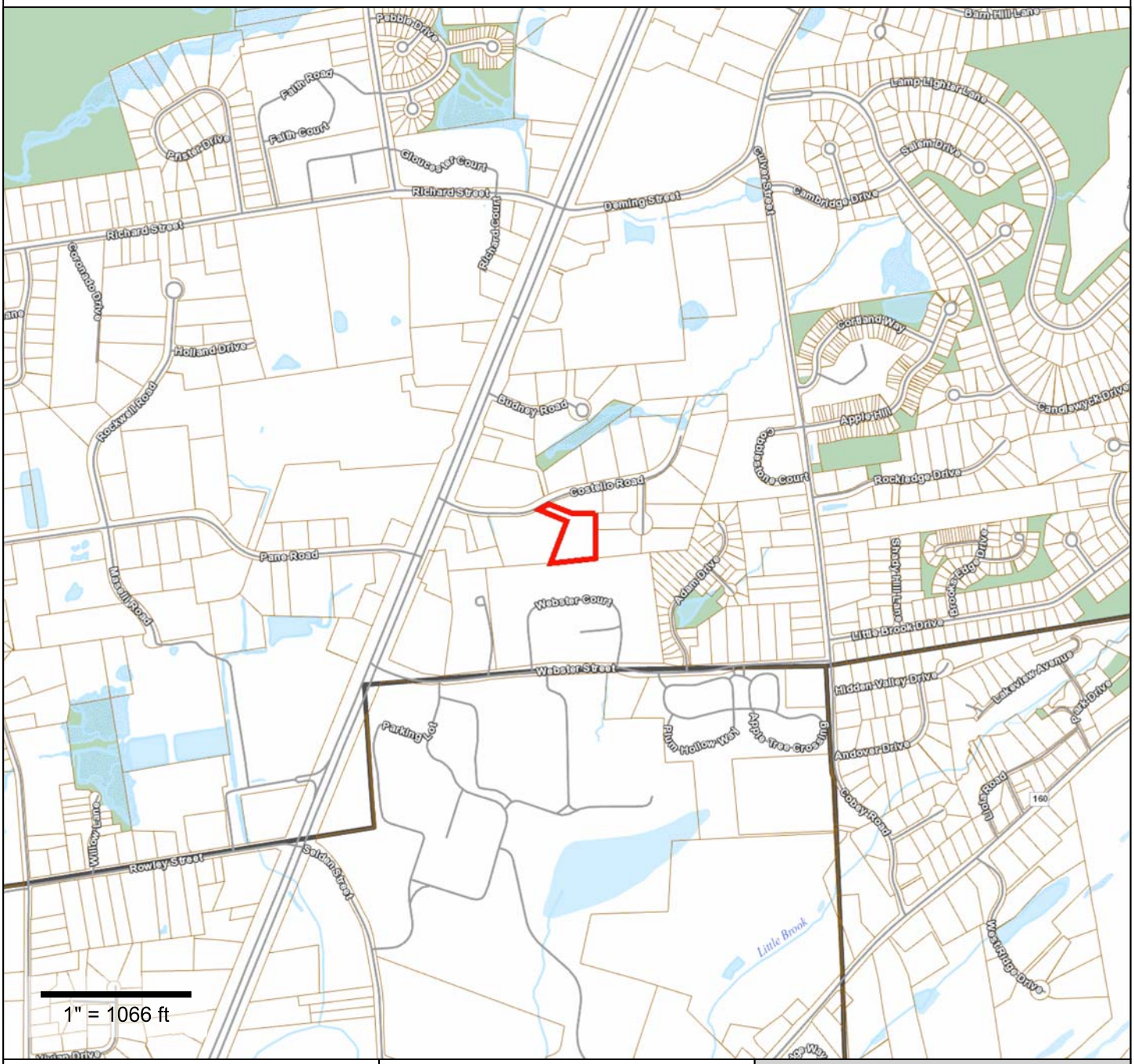
Attached Components

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Paving	1975	1.00	25,000.00	25,000
Cell Tower	1975	0.00	0.00	1

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Valid Sale	Sale Price
COSTELLO INDUSTRIES INC	573	98	03/31/1986		No	$0
COSTELLO INDUSTRIES INC	399	332	08/18/1980		No	$0
COSTELLO INDUSTRIES INC	385	280	12/18/1979		No	$0
COSTELLO INDUSTRIES INC	385	278	12/18/1979		No	$0
COSTELLO INDUSTRIES INC	314	129	06/06/1977		No	$0
COSTELLO CONSTRUCTION CORP THE	284	147	02/19/1976		No	$0
COSTELLO CONSTRUCTION CORP THE	271	180	06/17/1975		No	$0



Property Information

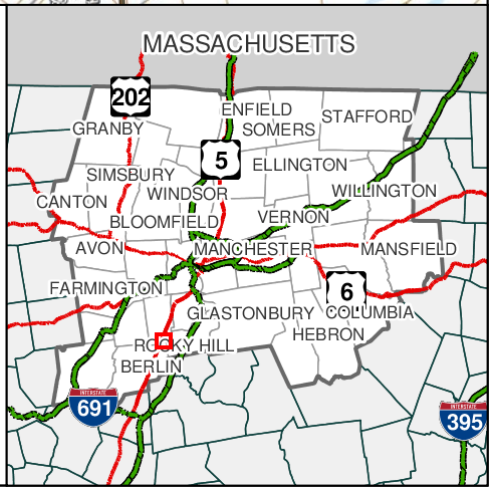
Property ID 09003094-C0685500
Location 123 COSTELLO RD
Owner Current Owner

CRCOG CAPITOL REGION COUNCIL OF GOVERNMENTS
Working together for a better region.

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

CRCOG and AppGeo make no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Parcels updated October 1, 2013



CROWN CASTLE

T··Mobile·

NORTHEAST, LLC.

CROWN SITE NAME:

NEWINGTON

SITE ID#: 881364

APP ID #: 447811

L600 UPGRADE

T–MOBILE SITE I.D. NUMBER:

CT11782A

T–MOBILE SITE NAME:

CT782/COSTELLO MP

VICINITY MAP

SITE DIRECTIONS

DIRECTIONS: (FROM BLOOMFIELD, CT):

HEAD NE ON GRIFFIN ROAD S TOWARD W NEWBERRY RD. TURN RIGHT ONTO DAYHILL RD. MERGE ONTO I–90 S. CONTINUE ONTO I–91 S AND TAKE EXIT 28 TO MERGE ONTO CT–15 S/US–5 S/BERLIN TURNPIKE. TURN ONTO COSTELLO RD. SITE WILL BE ON THE RIGHT.

PROJECT SUMMARY

T–MOBILE SITE NUMBER:	CT11782A
SITE ADDRESS:	123 COSTELO ROAD NEWINGTON, CT 06111
COUNTY:	HARTFORD
APPLICANT:	T–MOBILE NORTHEAST LLC. 4 SYLVAN WAY PARSIPPANY, NJ 07054
STRUCTURE TYPE:	MONOPOLE
STRUCTURE HEIGHT:	145'±
ANTENNA RAD CENTER:	95'±
LATITUDE: (NAD 83)	41° 39' 18.7" N
LONGITUDE: (NAD 83)	72° 43' 17.1" W
GRADE ELEVATION:	139'± AMSL

CONSTRUCTION MANAGER:	CROWN CASTLE 3 CORPORATE PARK DR. SUITE 101 CLIFTON PARK, NY 12065
CONTACT:	
PROJECT MANAGER:	CROWN CASTLE 3 CORPORATE PARK DR. SUITE 101 CLIFTON PARK, NY 12065
CONTACT: PHONE:	WILL STONE (518) 373–3543
ENGINEER:	TECTONIC ENGINEERING & SURVEYING CONSULTANTS P.C. 36 BRITISH AMERICAN BLVD SUITE 101 LATHAM, NY 12110
CONTACT: PHONE:	EDWARD IAMICELI (845) 567–6656

APPLICABLE CODES

DESIGN CRITERIA:

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

1. 2016 CT STATE BUILDING CODE (IBC 2012)
2. ACCESSIBILITY CODE ADA 2015. BASED ON ICC/ANSI A117.1–LATEST EDITION
3. 2014 NATIONAL ELECTRIC CODE
4. FIRE/LIFE SAFETY CODE – IFC 2015
5. ENERGY CODE IECC 2012

811 DigSafe

SHEET INDEX

SHEET NO	DESCRIPTION	REV NO	REVISION DATE
T–1	TITLE SHEET	2	10/10/18
A–1	OVERALL SITE PLAN	2	10/10/18
A–2	ELEVATION & ANTENNA PLANS	2	10/10/18
A–3	ANTENNA, MOUNTING DETAIL & RF DIAGRAM	2	10/10/18
A–4	NOTES	2	10/10/18
A–5	MOUNT DETAILS	2	10/10/18
E–1	ONE–LINE POWER DIAGRAM & NOTES	2	10/10/18
G–1	GROUNDING DETAILS & NOTES	2	10/10/18

THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL ITEMS HAVE BEEN ADDRESSED AND EACH OF THE DRAWINGS HAS BEEN REVISED AND ISSUED "FOR CONSTRUCTION".

PROJECT SCOPE OF WORK

THE PROPOSED WORK CONSISTS OF:

- REMOVE (3) EXISTING T–MOBILE PANEL ANTENNAS
- REMOVE (3) EXISTING T–MOBILE RRUS 11
- REMOVE (1) EXISTING T–MOBILE UNUSED COAX CABLE
- REMOVE (2) EXISTING T–MOBILE DUS41 UNITS
- REMOVE (1) EXISTING T–MOBILE PLATFORM MOUNT
- INSTALL (1) PROPOSED T–MOBILE 5216 BASEBAND UNIT
- INSTALL (3) PROPOSED T–MOBILE PANEL ANTENNAS
- INSTALL (3) PROPOSED T–MOBILE RRUS 4449 (B12 + B71)
- INSTALL (1) PROPOSED T–MOBILE 6X12 HYBRID CABLE
- INSTALL (3) PROPOSED T–MOBILE ANTENNA MOUNTS

CONFIGURATION

67D92DB

REFER TO LATEST T–MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM

CROWN CASTLE
3 CORPORATE PARK DR. STE 101
CLIFTON PARK, NY 12065

T··Mobile·
NORTHEAST LLC
4 SYLVAN WAY
PARSIPPANY, NJ 07054

Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.
Tectonic Engineering & Surveying Consultants P.C.
36 British American Blvd.
Suite 101
Latham, NY 12110
Phone: (518) 783–1630
(800) 829–6531
www.tectonicengineering.com

WORK ORDER NUMBER	DRAWN BY
9166.22	MQ

NO.	DATE	ISSUE
0	9/4/18	FOR COMMENT
1	9/24/18	FOR CONSTRUCTION
2	10/10/18	PER COMMENTS

RELEASED BY: EDWARD N. IAMICELI — DATE: 10/10/18

STATE OF CONNECTICUT — No. 11767 — REGISTERED PROFESSIONAL ENGINEER (CIVIL)

0 1 2 3
ORIGINAL SIZE IN INCHES

CROWN SITE INFORMATION

SITE ID #: 881364
APP ID #: 447811
NEWINGTON

T–MOBILE SITE INFORMATION

SITE ID #: CT11782A
CT782/COSTELLO MP

SITE ADDRESS

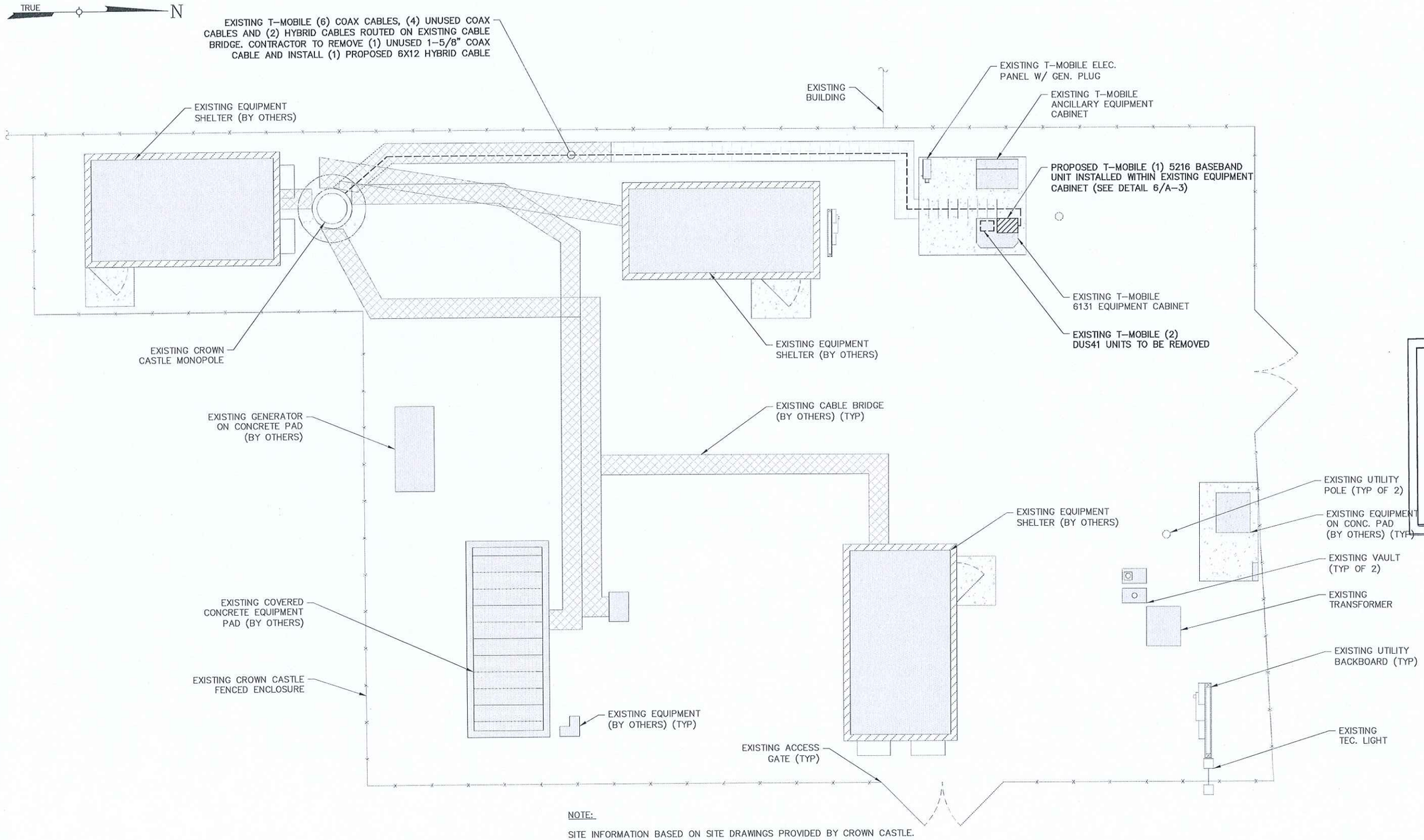
123 COSTELO ROAD
TOWN OF NEWINGTON
HARTFORD COUNTY
CT 06111

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T–1



NOTE:

SITE INFORMATION BASED ON SITE DRAWINGS PROVIDED BY CROWN CASTLE.

1/A-1 OVERALL SITE PLAN

SCALE: 1" = 5' (22x34 SIZE)
1" = 10' (11x17 SIZE)

CONFIGURATION
67D92DB
REFER TO LATEST T-MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM

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RELEASED BY | DATE

EDWARD N. IAMICELI
No. 11767
REGISTERED PROFESSIONAL ENGINEER (CIVIL)

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SITE ID #: CT11782A
CT782/COSTELLO MP

SITE ADDRESS
123 COSTELO ROAD
TOWN OF NEWINGTON
HARTFORD COUNTY
CT 06111

SHEET TITLE
OVERALL SITE PLAN

SHEET NUMBER
A-1

NORTH NOTE: NORTH SHOWN HAS BEEN ESTABLISHED USING THE USGS QUADRANGLE 7.5 MINUTE MAPS AND IS APPROXIMATE. VERIFY TRUE NORTH PRIOR TO INSTALLATION OF ANTENNAS.

STRUCTURAL NOTE:
PLEASE REFER TO STRUCTURAL ANALYSIS REPORT BY PAUL J. FORD & COMPANY, DATED 8/20/2018.

MOUNT NOTE:
THE STRUCTURAL CAPACITY OF THE REPLACEMENT MOUNTS HAS NOT BEEN REVIEWED BY TECTONIC ENGINEERING.

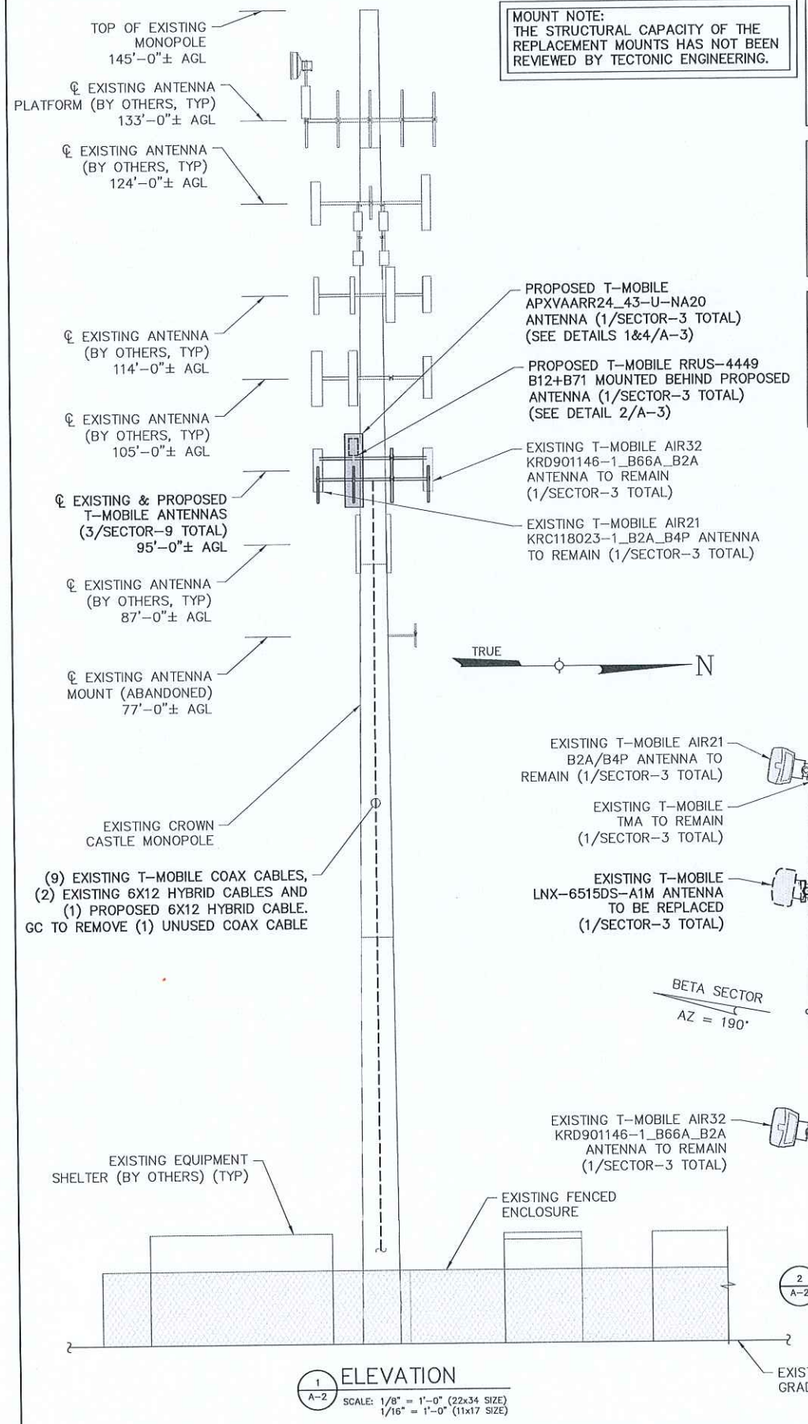
ANTENNA AND CABLE SCHEDULE

	ANT. POS. #	TECHNOLOGY	STATUS	ANTENNA DATA	MECH. DOWN TILT	ELEC. DOWN TILT	AZIMUTH (TRUE NORTH)	ANTENNA ℄ HEIGHT (AGL)	TMA/RRU	CABLE	JUMPER TYPE	CABLE LENGTH
SECTOR A	1	L2100, L1900	EXISTING	ERICSSON AIR32 B66AA/B2A 56.6" x 12.9" x 8.7", 132.2 LBS	0°	–	60°	95'	0/0	EXISTING SHARED HYBRID FIBER TRUNK	DC FIBER	144'–0"
	2	**L700, L600**	**REPLACEMENT**	**APXVAARR24_43–U–NA20 95.9" x 24" x 8.7", 128 LBS**	**0°**	–	**60°**	**95'**	**0/1**	**PROPOSED JUMPERS FROM RRUS**	DC FIBER	6'–0"
	3	G1900, U2100	EXISTING	ERICSSON AIR21 B2A/B4P 55.9" x 12" x 7.9", 83 LBS	0°	–	60°	95'	1/0	EXISTING (2) 7/8" COAX & EXISTING SHARED HYBRID FIBER TRUNK	DC FIBER	144'–0"
											7/8" COAX	144'–0"
SECTOR B	1	L2100, L1900	EXISTING	ERICSSON AIR32 B66AA/B2A 56.6" x 12.9" x 8.7", 132.2 LBS	0°	–	190°	95'	0/0	EXISTING SHARED HYBRID FIBER TRUNK	DC FIBER	144'–0"
	2	**L700, L600**	**REPLACEMENT**	**APXVAARR24_43–U–NA20 95.9" x 24" x 8.7", 128 LBS**	**0°**	–	**190°**	**95'**	**0/1**	**PROPOSED JUMPERS FROM RRUS**	DC FIBER	6'–0"
	3	G1900, U2100	EXISTING	ERICSSON AIR21 B2A/B4P 55.9" x 12" x 7.9", 83 LBS	0°	–	190°	95'	1/0	EXISTING (2) 7/8" COAX & EXISTING SHARED HYBRID FIBER TRUNK	DC FIBER	144'–0"
											7/8" COAX	144'–0"
SECTOR C	1	L2100, L1900	EXISTING	ERICSSON AIR32 B66AA/B2A 56.6" x 12.9" x 8.7", 132.2 LBS	0°	–	320°	95'	0/0	EXISTING SHARED HYBRID FIBER TRUNK	DC FIBER	144'–0"
	2	**L700, L600**	**REPLACEMENT**	**APXVAARR24_43–U–NA20 95.9" x 24" x 8.7", 128 LBS**	**0°**	–	**320°**	**95'**	**0/1**	**PROPOSED JUMPERS FROM RRUS**	DC FIBER	6'–0"
	3	G1900, U2100	EXISTING	ERICSSON AIR21 B2A/B4P 55.9" x 12" x 7.9", 83 LBS	0°	–	320°	95'	1/0	EXISTING (2) 7/8" COAX & EXISTING SHARED HYBRID FIBER TRUNK	DC FIBER	144'–0"
											7/8" COAX	144'–0"

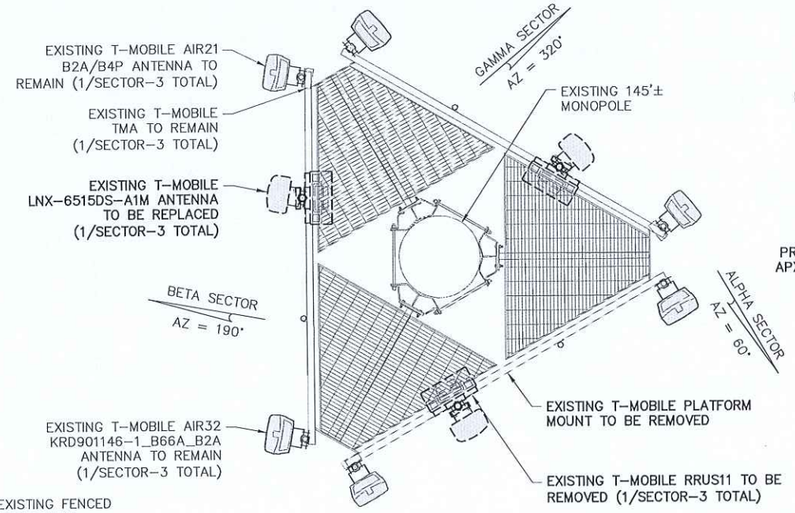
NOTE:
- INFORMATION BASED ON CROWN CASTLE APPLICATION #447811 REVISION 0, DATED 6/25/18, AND AN RFDS FROM T–MOBILE RF ENGINEER VERSION 3.2, DATED 5/15/18.

RRH AND HYBRID SCHEDULE

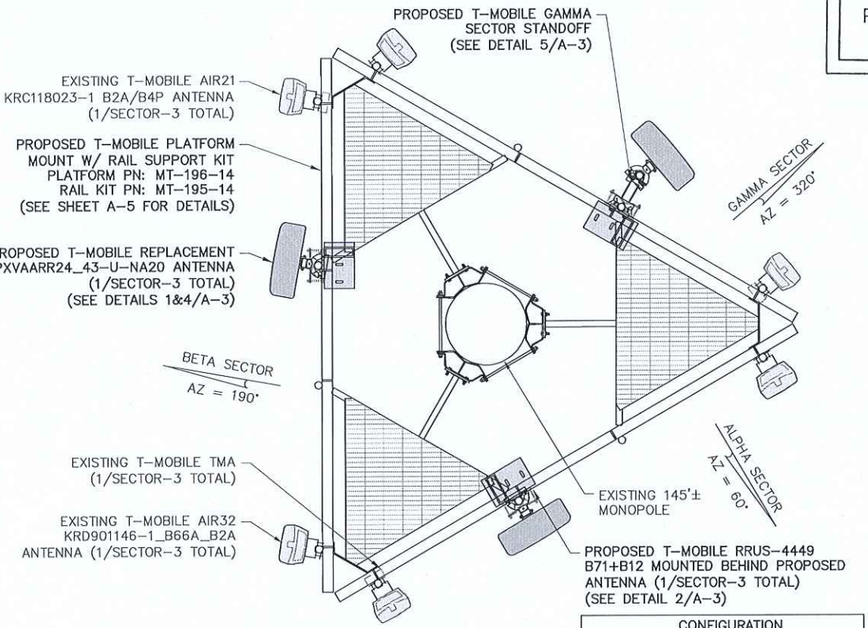
SECTOR	STATUS	UNITS	UNIT DATA	# OF UNITS	CABLE TYPE	# OF CABLES	CABLE LENGTH
ALPHA	PROPOSED	RRUS 4449	28" x 15" x 10", 74 LBS	1	PROPOSED HYBRID TRUNK	1	144'–0"
BETA	PROPOSED	RRUS 4449	28" x 15" x 10", 74 LBS	1	PROPOSED SHARED HYBRID FIBER TRUNK	1	144'–0"
GAMMA	PROPOSED	RRUS 4449	28" x 15" x 10", 74 LBS	1	PROPOSED SHARED HYBRID FIBER TRUNK	1	144'–0"



1 A–2 ELEVATION
SCALE: 1/8" = 1'–0" (22x34 SIZE) 1/16" = 1'–0" (11x17 SIZE)



2 A–2 ANTENNA PLAN (EXISTING)
SCALE: 1/2" = 1'–0" (22x34 SIZE) 1/4" = 1'–0" (11x17 SIZE)



3 A–2 ANTENNA PLAN (PROPOSED)
SCALE: 1/2" = 1'–0" (22x34 SIZE) 1/4" = 1'–0" (11x17 SIZE)

CONFIGURATION
67D92DB
REFER TO LATEST T–MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM

CROWN CASTLE
3 CORPORATE PARK DR. STE 101
CLIFTON PARK, NY 12065

T-Mobile
NORTHEAST LLC
4 SYLVAN WAY
PARSIPPANY, NJ 07054

Tectonic
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36 British American Blvd. Suite 101
Latham, NY 12110
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www.tectonicengineering.com

WORK ORDER NUMBER	DRAWN BY
9166.22	MQ

NO.	DATE	ISSUE
0	9/4/18	FOR COMMENT
1	9/24/18	FOR CONSTRUCTION
2	10/10/18	PER COMMENTS

RELEASED BY: EDWARD N. IAMICELI — DATE:

No. 11767
REGISTERED PROFESSIONAL ENGINEER (CIVIL)

0 1 2 3
ORIGINAL SIZE IN INCHES

CROWN SITE INFORMATION
SITE ID #: 881364
APP ID #: 447811
NEWINGTON

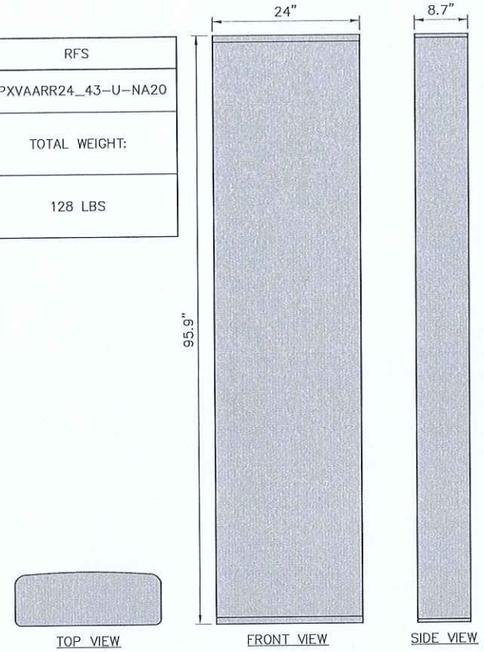
T–MOBILE SITE INFORMATION
SITE ID #: CT11782A
CT782/COSTELLO MP

SITE ADDRESS
123 COSTELO ROAD
TOWN OF NEWINGTON
HARTFORD COUNTY
CT 06111

SHEET TITLE
ELEVATION & ANTENNA PLANS

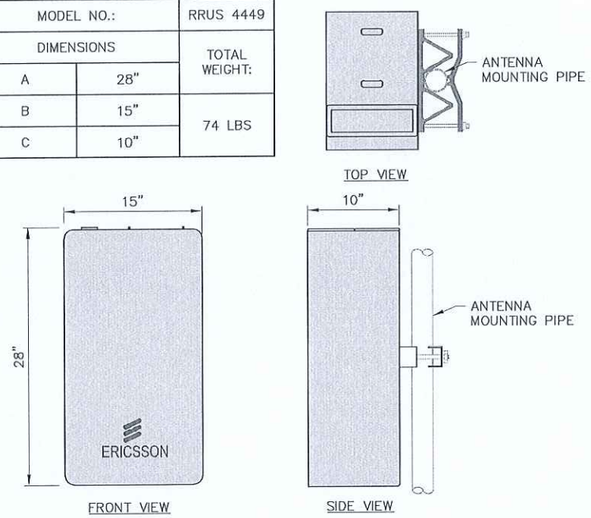
SHEET NUMBER
A–2

MANUFACTURER:		RFS
MODEL NO.:		APXVAARR24_43-U-NA20
DIMENSIONS		TOTAL WEIGHT:
A	95.9"	
B	24"	128 LBS
C	8.7"	

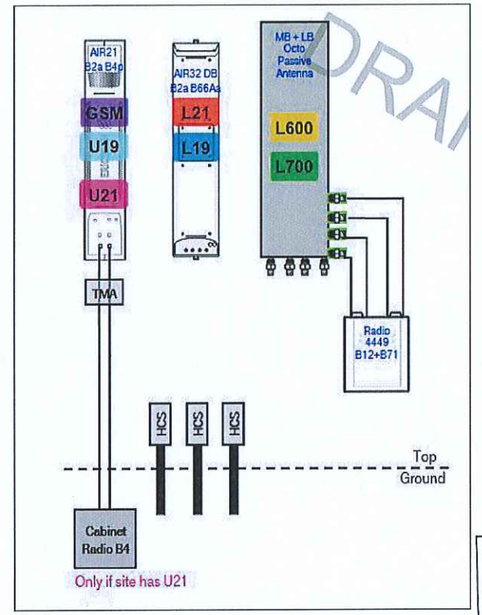


1 A-3 RFS ANTENNA DETAIL
SCALE: 1" = 1'-0" (22x34 SIZE)
2" = 1'-0" (11x17 SIZE)

MANUFACTURER:		ERICSSON
MODEL NO.:		RRUS 4449
DIMENSIONS		TOTAL WEIGHT:
A	28"	
B	15"	74 LBS
C	10"	



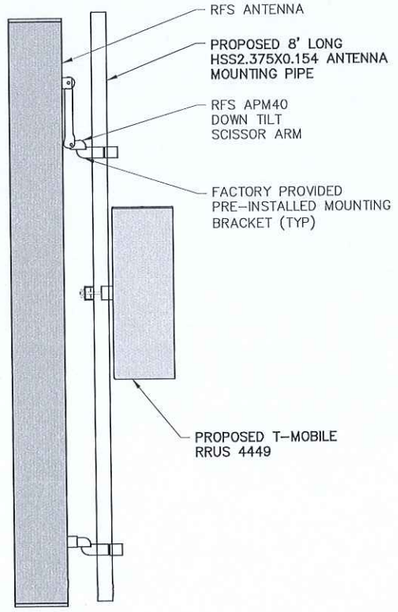
2 A-3 RRUS-4449 DETAIL
SCALE: 1-1/2" = 1'-0" (22x34 SIZE)
3" = 1'-0" (11x17 SIZE)



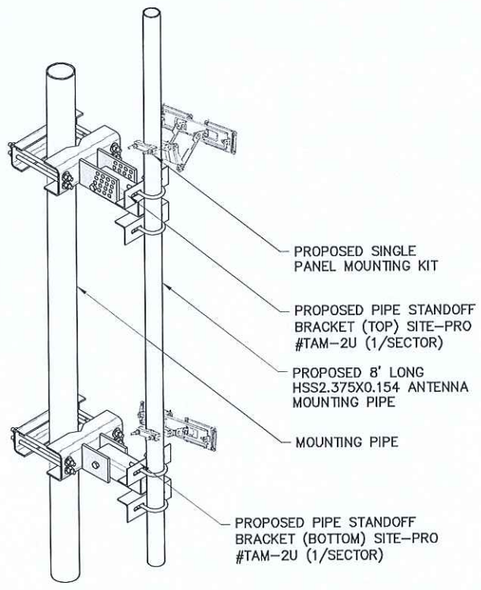
3 A-3 RF DIAGRAM
SCALE: NTS

MANUFACTURER:	RADIO FREQUENCY SYSTEMS
MODEL NO.:	APM40
TOTAL WEIGHT:	±2.8 LBS

MAXIMUM TORQUE	
M6	3.5 Nm (2.5 FT.LBS)
M12	40 Nm (29.5 FT.LBS)

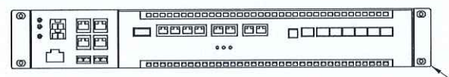


4 A-3 MOUNTING DETAIL
SCALE: NTS (22x34 SIZE)
NTS (11x17 SIZE)



5 A-3 OFFSET MOUNTING DETAIL
SCALE: NTS

MANUFACTURER:	ERICSSON
MODEL NO.:	5216 BASE UNIT
DIMENSIONS (HxWxD):	2.8"x19"x13.78"
WEIGHT	23LBS



*INSTALLED INSIDE EXISTING CABINET

6 A-3 5216 BASEBAND UNIT DETAIL
SCALE: NTS (22x34 SIZE)
NTS (11x17 SIZE)

CONFIGURATION
67D92DB
REFER TO LATEST T-MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM

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9166.22	MQ

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2	10/10/18	PER COMMENTS

RELEASED BY: EDWARD N. TAMICELI — DATE:

STATE OF CONNECTICUT — HOPE
No. 11767
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
10/18/18

0 1 2 3
ORIGINAL SIZE IN INCHES

CROWN SITE INFORMATION
SITE ID #: 881364
APP ID #: 447811
NEWINGTON

T-MOBILE SITE INFORMATION
SITE ID #: CT11782A
CT782/COSTELLO MP

SITE ADDRESS
123 COSTELO ROAD
TOWN OF NEWINGTON
HARTFORD COUNTY
CT 06111

SHEET TITLE
ANTENNA, MOUNTING DETAIL & RF DIAGRAM

SHEET NUMBER
A-3

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE STATE BUILDING CODE, LATEST VERSION AND ALL OTHER APPLICABLE CODES AND ORDINANCES.
2. CONTRACTOR SHALL VISIT THE JOB SITE AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
3. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY, UNLESS OTHERWISE NOTED. THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO EFFECT ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
4. DIMENSIONS SHOWN ARE TO FINISH SURFACES, UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS. SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS AND/OR DESIGN INTENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE AUTHORIZED REPRESENTATIVE OR THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
5. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK.
6. CONTRACTOR SHALL RECEIVE CLARIFICATION IN WRITING, AND SHALL RECEIVE IN WRITING AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEMS NOT CLEARLY DEFINED OR IDENTIFIED BY THE CONTRACT DOCUMENTS.
7. ONCE THE CONTRACTOR HAS RECEIVED AND ACCEPTED THE "NOTICE TO PROCEED," CONTRACTOR WILL CONTACT THE CONSTRUCTION MANAGER OF RECORD A MINIMUM OF 48 HOURS PRIOR TO WORK START.
8. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND TO BE IN THE FIELD.
9. CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE BEST CONSTRUCTION SKILLS AND ATTENTION. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT, UNLESS OTHERWISE NOTED.
10. ERECTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMEN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST ACCEPTED PRACTICE. ALL MEMBERS SHALL BE LAID PLUMB AND TRUE AS INDICATED ON THE DRAWINGS.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE WORK AREA, ADJACENT AREAS, AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFORM TO ALL OSHA REQUIREMENTS.
12. CONTRACTOR SHALL COORDINATE HIS WORK AND SCHEDULE HIS ACTIVITIES AND WORKING HOURS IN ACCORDANCE WITH THE REQUIREMENTS OF THE OWNER.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH THE WORK OF OTHERS AS IT MAY RELATE TO RADIO EQUIPMENT, ANTENNAS AND ANY OTHER PORTIONS OF THE WORK.
14. CONTRACTOR SHALL MAINTAIN LIABILITY INSURANCE TO PROTECT THE OWNER.
15. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
16. MAKE NECESSARY PROVISIONS TO PROTECT EXISTING SURFACES, EQUIPMENT, IMPROVEMENTS, AND PIPING. REPAIR ANY DAMAGE THAT OCCURS DURING CONSTRUCTION.
17. REPAIR ALL EXISTING SURFACES DAMAGED DURING CONSTRUCTION SUCH THAT THEY MATCH AND BLEND WITH ADJACENT SURFACES.
18. KEEP CONTRACT AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DEBRIS AND RUBBISH. EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY OF THE OWNER SHALL BE REMOVED. LEAVE PREMISES IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL ITEMS UNTIL COMPLETION OF CONSTRUCTION.
19. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.
20. PROVIDE 48 HOURS WRITTEN NOTICE TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
21. ALL BROCHURES, OPERATING AND MAINTENANCE MANUALS, CATALOGS, SHOP DRAWINGS AND OTHER DOCUMENTATION SHALL BE TURNED OVER TO AT COMPLETION OF CONSTRUCTION.
22. COMPLETE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER DATE OF ACCEPTANCE BY. ANY WORK, MATERIALS OR EQUIPMENT FOUND TO BE DEFECTIVE DURING THAT PERIOD SHALL BE CORRECTED IMMEDIATELY UPON WRITTEN NOTIFICATION AT NO ADDITIONAL COST TO T–MOBILE.

STRUCTURAL NOTES

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.
2. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS", LATEST EDITION.
3. STRUCTURAL STEEL BEAMS SHALL CONFORM TO ASTM A992 (FY=50KSI). STRUCTURAL STEEL PLATES AND ANGLES SHALL CONFORM TO ASTM A36.
4. ROUND AND SQUARE HOLLOW STRUCTURAL SECTIONS (HSS) CONFORM TO ASTM A500 "COLD–FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B.
5. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD–FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 "PIPE, STEEL, BLACK AND HOT–DIPPED, ZINC–COATED WELDED AND SEAMLESS", TYPE E OR S, GRADE B.
6. CONNECTIONS: WELD OR BOLT CONNECTIONS, AS INDICATED:
   A. CONNECTIONS NOT DETAILED ON THE DRAWINGS SHALL CONFORM TO THE REQUIREMENTS OF THE CITED AISC SPECIFICATION.
   B. STRUCTURAL BOLTS SHALL CONFORM TO THE LATEST ASTM A325 "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS".
   C. WHERE THE REACTION VALUES OF BEAMS, BRACING, STRUTS, ETC., ARE NOT SHOWN ON THE DRAWINGS THE CONNECTIONS SHALL BE DESIGNED TO SUPPORT THE END REACTION DERIVED FROM THE TABLES AND FORMULA OF UNIFORM LOAD CONSTANTS IN PART 2, NINTH EDITION, OF THE AISC MANUAL OF STEEL CONSTRUCTION FOR THE GIVEN MEMBER SIZE, SPAN AND YIELD STRENGTH.
   D. MINIMUM 3/16" FILLET E70–XX WELD SHALL APPLY UNLESS NOTED.
   E. MINIMUM 1/2" DIA. A325 BOLTS SHALL APPLY UNLESS NOTED.
   F. MINIMUM SIZE OF CLIP ANGLES SHALL BE L3X3X3/8" UNLESS NOTED.
   G. ALL GUSSET PLATES SHALL BE 3/8" THICK UNLESS NOTED.
   H. ALL HOLES FOR BOLTS SHALL BE 1/16 INCH LARGER THAN THE BOLT DIAMETER WITH AN EDGE DISTANCE OF AT LEAST 1 1/2 TIMES THE BOLT DIAMETER AND A SPACING OF AT LEAST 3 TIMES THE BOLT DIAMETER. ALL BOLTS SHALL BE PROVIDED WITH PALNUTS OR LOCK NUTS.
7. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS AND CONFORM TO ASTM A325 "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS", LATEST EDITION. BOLTS SHALL BE 3/4 INCH DIA. UNLESS OTHERWISE NOTED.
8. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES".
9. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT–DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
10. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.
11. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC–COATING (HOT–DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
12. ALL STEEL SUPPORTS SHALL BE INSTALLED WITH DOUBLE NUTS AND SHALL BE INSTALLED SNUG TIGHT.
13. SLEEVE ANCHORS SHALL CONFORM TO FEDERAL SPECIFICATION FF–S–325, GROUP II, TYPE 3, CLASS 3, AS MANUFACTURED BY HILTI FASTENING SYSTEMS OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE THREE (3) INCHES.
14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF–S–325, GROUP II, TYPE 4, CLASS 1, HILTI KWIK BOLT II OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE FOUR (4) INCHES.
15. EPOXY ANCHORING SYSTEM SHALL BE THE HILTI HY–70 FOR MASONRY CONSTRUCTION WITH HOLLOW BRICK OR BLOCK & THE HILTI HIT HY200 INJECTION ADHESIVE ANCHOR FOR GROUT FILLED CONCRETE MASONRY UNITS AND CONCRETE. EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF 1/2"ø STAINLESS STEEL ANCHOR ROD W/NUTS & WASHERS, AN INTERNALLY THREADED INSERT, A SCREEN TUBE FOR THE HY–270 ONLY & AN EPOXY ADHESIVE (6" MIN EMBEDMENT). THE INSTALLATION PROCEDURE SHALL BE AS FOLLOWS:
   A. DRILL THE HOLE USING MANUFACTURER RECOMMENDED DRILL BIT UP TO SPECIFIED DEPTH. HAMMERING IS NOT PERMITTED.
   B. CLEAN THE HOLE USING NYLON BRUSH AND/OR COMPRESSED AIR. THE HOLE SHOULD BE CLEAR OF ANY LOOSE MATERIAL. IF WET, THE MASONRY SHOULD BE ALLOWED TO DRY FULLY BEFORE ANCHOR INSTALLATION.
   C. INSERT SPECIFIED SCREEN TUBE INTO THE HOLE.
   D. FILL THE SCREEN TUBE COMPLETELY WITH ADHESIVE, BEGINNING AT THE BOTTOM END.
   E. INSERT ANCHOR ROD OR INTERNALLY THREADED INSERT INTO THE ADHESIVE–FILLED SCREEN TUBE, TWISTING SLIGHTLY.
   F. LOAD FASTENER ONLY AFTER MANUFACTURER SPECIFIED CURE TIME HAS ELAPSED.
16. GRATING SHALL BE GALVANIZED WELDED STEEL BAR GRATING TYPE W/BA WITH 1–1/4" BEARING BARS AT 1–3/16" OC. FASTEN TO SUPPORTING MEMBERS WITH SADDLE–TYPE CLIPS AT 2'–0" O.C. AND BAND ALL EXPOSED EDGES.
17. HAMMER DRILLS ARE NOT TO BE USED WHEN DRILLING HOLES FOR SLEEVE OR EXPANSION BOLTS INSTALLED IN MASONRY BLOCKS/BRICKS.
18. ALL HOLES TO BE ADDED IN THE FIELD SHALL BE PUNCHED OR DRILLED. NO HOLE BURNING SHALL BE ALLOWED.
19. SUBMIT DRAWINGS OF ALL STRUCTURAL AND MISCELLANEOUS STEEL TO THE ENGINEER FOR APPROVAL AND INCORPORATE ALL COMMENTS PRIOR TO FABRICATION.
20. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE ENGINEER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER APPROVAL.
21. ALL WORK SHALL BE INSPECTED BY THE ENGINEER DURING AND AT THE COMPLETION OF CONSTRUCTION.
22. CONTRACTOR TO REMOVE MASTIC ON THE EXISTING WALL/PARAPET AT EVERY STEEL SUPPORT ATTACHMENT AND REPOINT MASONRY AS REQUIRED. A BED OF SILICONE SHALL BE APPLIED BEHIND AND ALL AROUND THE STEEL SUPPORT ATTACHMENT TO MAKE IT WEATHERPROOF.

SITE NOTES

1. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWING.
2. RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
3. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED, AND COVERED WITH MULCH.
4. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
5. CARE SHALL BE TAKEN TO RETAIN NATURAL GROWTH AND PREVENT DAMAGE TO TREES WITHIN AND OUTSIDE THE LIMITS OF CONSTRUCTION AND SPECIFIED WORK AREAS CAUSED BY EQUIPMENT AND MATERIALS. ANY DAMAGE TO THIS NATURAL GROWTH SHALL BE RESTORED AT THE EXPENSE OF THE CONTRACTOR.
6. ALL AREAS DISTURBED BY THE CONTRACTOR WITHOUT AUTHORIZATION SHALL BE RESTORED BY THE CONTRACTOR.
7. IN THE EVENT THE CONTRACTOR DAMAGES AN EXISTING UTILITY SERVICE CAUSING AN INTERRUPTION IN SAID SERVICE, HE SHALL IMMEDIATELY COMMENCE WORK TO RESTORE SERVICE AND MAY NOT CEASE HIS WORK OPERATION UNTIL SERVICE IS RESTORED.

CONFIGURATION
67D92DB
REFER TO LATEST T–MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM

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9166.22	MQ

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RELEASED BY	DATE

10/10/18

0 1 2 3
ORIGINAL SIZE IN INCHES

CROWN SITE INFORMATION
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APP ID #: 447811
NEWINGTON

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SITE ID #: CT11782A
CT782/COSTELLO MP

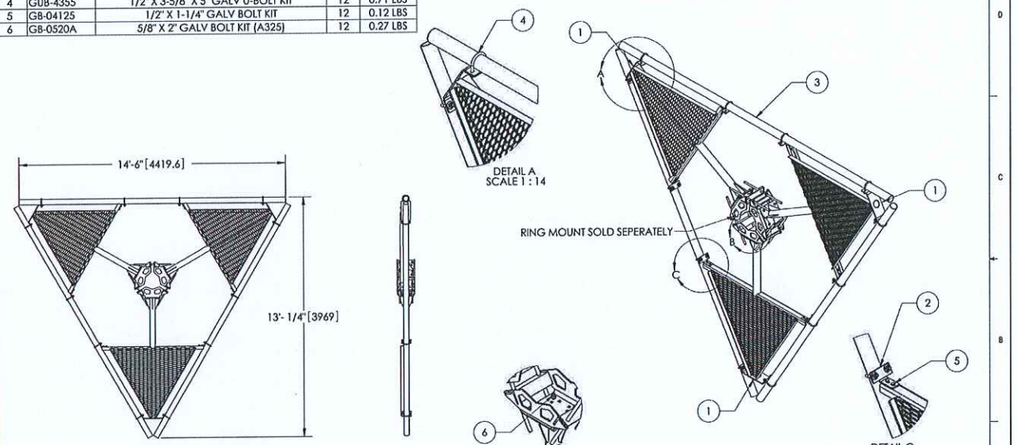
SITE ADDRESS
123 COSTELO ROAD
TOWN OF NEWINGTON
HARTFORD COUNTY
CT 06111

SHEET TITLE
NOTES

SHEET NUMBER
A-4

ITEM	PART NO.	DESCRIPTION	QTY.	WEIGHT
1	MT19614.05	Low Profile Co-Location Platform 14' Widmnt	3	147.44 LBS
2	MT196.17	MT196 Pipe Mount Plate	6	2.49 LBS
3	MT-547-174	3.5" O.D. X 174" PIPE	3	109.27 LBS
4	GUB-4355	1/2" X 3-5/8" X 5" GALV U-BOLT KIT	12	0.71 LBS
5	GB-04125	1/2" X 1-1/4" GALV BOLT KIT	12	0.12 LBS
6	GB-0520A	5/8" X 2" GALV BOLT KIT (A325)	12	0.27 LBS

REVISIONS				
REV.	ZONE	DESCRIPTION	BY	DATE
C		UPDATED	DI	03/07/05
D		REDESIGN OF ASSEMBLY	MSM	03/13/08
E		CHANGE ITEM #6	MSM	05/09/08
F		UPDATED MT19614.05 WELDMENT	DRR	02/24/12



NOTES:
1. ALL METRIC DIMENSIONS ARE IN BRACKETS.
2. FITS ROUND MEMBERS ø10"–ø30"

DRAWN BY: MSM	SHT. 1 of 1	PART NUMBER: MT-196-14	
ENGINEER: TP	SCALE: NTS	DESCRIPTION: Low Profile Co-Location Platform 14'6"	
DATE: 05/13/08	MATERIAL: A36, A500	DRAWING: ASSEMBLY DRAWING	
REVISION: F	FINISH: GALV A123	COMMSCOPE® WESTCHESTER, IL. 60154 U.S.A.	
	WEIGHT: 926.28 LBS		

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED
X ± .12 ANGLES ±2°
XX ± .06 FRACTIONS ±1/32
.XXX ± .03
REMOVE BURRS AND BREAK EDGES .015

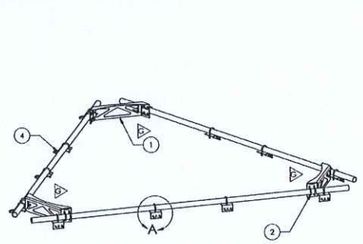
DO NOT SCALE THIS PRINT

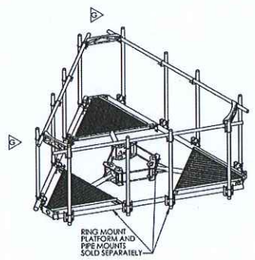
1 A–5 PLATFORM DETAIL
SCALE: NTS

NOTES:

REVISIONS				
REV.	ZONE	DESCRIPTION	BY	DATE
C		UPDATED	DI	01/09/06
D		UPDATED DRAWING	MSM	04/04/08
E		DELETED MOUNTS AND ANTENNAS	MSM	05/09/13
F		ADD SHEET 2 PLAN VIEWS	MSM	08/26/14
G	1	UPDATE ITEM 1	KTR	9/05/2018

ITEM	PART NO.	DESCRIPTION	QTY.	WEIGHT	NOTE NO.
1	MT19525	CORNER WELDMENT FOR MT-195	3	14.56 LBS	
2	GUB-4240	1/2"X 2-1/2" X 4" GALV U-BOLT	36	0.56 LBS	
3	KA2000.01	CROSS OVER ANGLE	12	2.65 LBS	
4	MT-651-xxx	Ø 2-3/8" O.D. PIPE (SEE TABLE)	3	-	





PART NUMBER	PIPE	DESCRIPTION	WEIGHT
MT-195-12	MT-651-150	TOP MOUNT KIT, 12' PLATFORM	242.29 LBS
MT-195-14	MT-537-174	TOP MOUNT KIT, 14' PLATFORM	255.73 LBS

DENSITY	lbs/in³	COMMSCOPE, INC. OF NORTH CAROLINA	
MASS	lbs	TOLERANCES: 0 PLACE ± .25, 1 PLACE ± .12, 2 PLACE ± .06, ANGLES ± 2°	SAP MATERIAL MASTER: MT-195-SERIES
VOLUME	in³	FINISH: GALV A123	MATERIAL: A36, A500
SURFACE AREA	in²	DRAWN: DI 01/09/06	TITLE: UPPER SUPPORT RAIL KITS-CO-LO PLATFORM
HEIGHT		CHECKED:	
LENGTH		ENGR APPR: TP 01/09/06	SCALE: 1:1
ANGLES		MFG APPR:	DOCUMENT NO: MT-195-SERIES
		BOM: 80000132361	
		SIZE: C	DRAWING: MODEL VERSION, STATUS, REVISION; VERSION, STATUS, REVISION: G
		WORK AREA	SHEET: 1 OF 2

2 A–5 RAIL KIT DETAIL
SCALE: NTS

CONFIGURATION
67D92DB
REFER TO LATEST T–MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM

CROWN CASTLE
3 CORPORATE PARK DR. STE 101
CLIFTON PARK, NY 12065

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9166.22	MQ

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2	10/10/18	PER COMMENTS

RELEASED BY: EDWARD N. TAMICELI — DATE:

STATE OF RHODE ISLAND — No. 11767 — REGISTERED PROFESSIONAL ENGINEER (CIVIL) — 10/10/18

0 1 2 3
ORIGINAL SIZE IN INCHES

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APP ID #: 447811
NEWINGTON

T–MOBILE SITE INFORMATION
SITE ID #: CT11782A
CT782/COSTELLO MP

SITE ADDRESS
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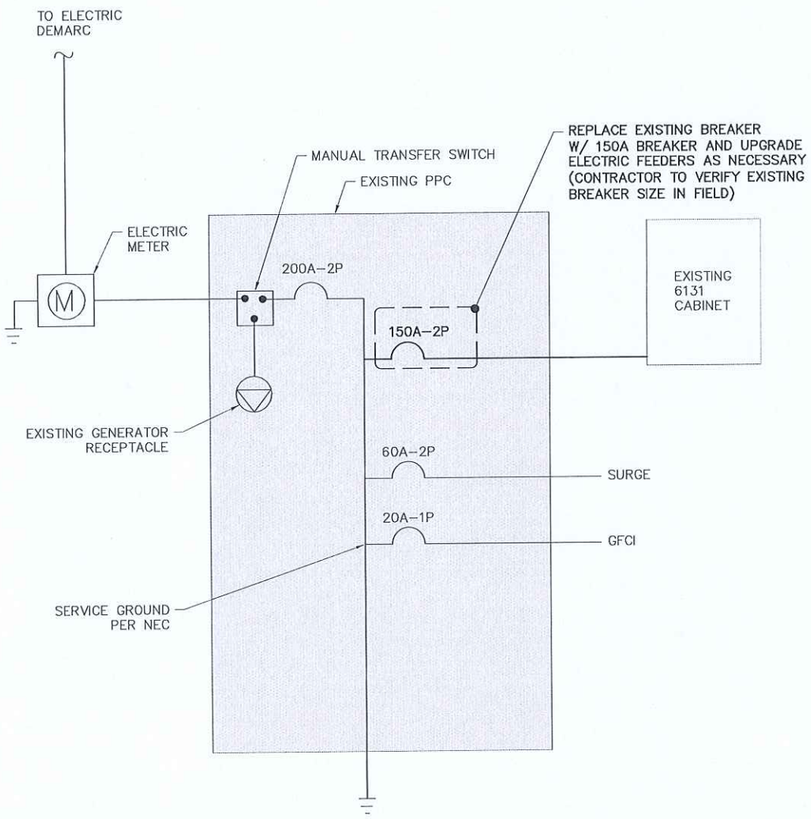
TOWN OF NEWINGTON
HARTFORD COUNTY
CT 06111

SHEET TITLE
MOUNT DETAILS

SHEET NUMBER
A-5



NOTE:
THE ABOVE DIAGRAM IS GENERIC AND ANY ELECTRICAL WORK SHALL BE COMPLETED BY A LICENSED ELECTRICIAN IN ACCORDANCE WITH NEC STANDARDS.

1 / E-1 ONE–LINE POWER DIAGRAM
SCALE: NTS

SITE NOTES

1. CONTRACTOR SHALL PERFORM ALL VERIFICATION OBSERVATION TESTS, AND EXAMINATION WORK PRIOR TO THE ORDERING OF THE ELECTRICAL EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE ENGINEER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
2. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR A COMPLETE AND PROPERLY OPERATIVE SYSTEM ENERGIZED THROUGHOUT AND AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
3. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED AND APPROVED BY UNDERWRITER'S LABORATORIES (U.L.) AND SHALL BEAR THE INSPECTION LABEL "J" WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH APPROVAL OF ALL GOVERNING BODIES HAVING JURISDICTION. AND SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA AND NBFU.
4. CONTRACTOR TO COORDINATE WITH SITE OWNER FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS TO BE PAID BY CONTRACTOR.
5. ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THAN THE MAXIMUM SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED, AND A MINIMUM OF 10,000 A.I.C.
6. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS.
7. METER SOCKETS AMPERES, VOLTAGE AND NUMBER OF PHASES SHALL BE NOTED AND SHALL BE MANUFACTURED BY SQUARE "D" COMPANY, SANGAMO OR APPROVED EQUAL. METER SOCKET SHALL BE APPROVED BY UTILITY COMPANY PRIOR TO INSTALLATION.
8. WIRE AND CABLE CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM WITH TYPE THHN INSULATION UNLESS SPECIFICALLY NOTED OTHERWISE.
9. ALL CONDUCTORS SHALL BE COPPER.
10. USE T–TAP CONNECTIONS ON ALL MULTI–CIRCUITS WITH COMMON NEUTRAL CONDUCTOR FOR LIGHTING FIXTURES.
11. EACH CONDUCTOR OF EVERY SYSTEM SHALL BE PERMANENTLY TAGGED IN EACH PANEL BOARD, PULLBOX, J–BOX, SWITCH BOX, ETC., IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT (O.S.H.A.)
12. CONDUIT:
    A. RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR.
    B. INTERMEDIATE METAL CONDUIT SHALL BE U.L. LABEL, FITTINGS SHALL BE THREADED ALUMINUM OR STEEL AND SHALL BE USED FOR ALL EXTERIOR RUNS. THREADLESS COUPLINGS AND CONNECTORS SHALL NOT BE USED.
    C. ELECTRICAL METALLIC TUBING (EMT) SHALL HAVE U.L. LABEL, FITTINGS SHALL BE NO SET SCREW OR CRIMP TYPE FITTINGS SHALL BE USED. GLAND RING COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.
    D. FLEXIBLE METALLIC CONDUIT SHALL HAVE U.L. LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE, SEAL TIGHT FLEXIBLE CONDUIT. ALL CONDUIT IN EXCESS OF SIX FEET IN LENGTH SHALL HAVE FULL SIZE GROUND WIRE.
    E. CONDUIT SHALL BE SIZED PER THE NEC AND AS SHOWN.
    F. CONDUIT RUNS MAY BE SURFACE MOUNTED IN CEILINGS OR WALLS UNLESS INDICATED OTHERWISE. CONDUIT INDICATED SHALL RUN PARALLEL OR AT RIGHT ANGLES TO CEILING, FLOOR OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH OWNER PRIOR TO INSTALLING.
    G. ALL CONDUIT ONLY (C.O.) RUNS SHALL HAVE A PULL WIRE OR ROPE.
13. COVERPLATES SHALL BE BRUSHED STAINLESS STEEL FOR ALL SWITCHES, RECEPTACLES, TELEPHONE AND BLANKED OUTLETS, AND SHALL HAVE ENGRAVED LETTERING WHERE INDICATED WEATHERPROOF RECEPTACLES SHALL HAVE SIERRA #WPD–8 LIFT COVERPLATES.
14. REFER TO MANUFACTURERS MANUAL FOR RECOMMENDED FUSE AND WIRE SIZES.
15. ALL FINAL CONNECTIONS TO THE EQUIPMENT ARE TO BE OF FLEXIBLE WEATHERPROOF CONDUIT TO MEET APPLICABLE CODES.
16. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY ALL APPLICABLE CODES.
17. GROUNDING CONDUCTORS SHALL BE SOLID TINNED COPPER AND ANNEALED #2, UNLESS OTHERWISE NOTED.
18. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL OF POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO THE CONSTRUCTION MANAGER. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION.
19. PROVIDE CONSTRUCTION MANAGER WITH ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS, AND CIRCUITS.
20. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH GAINING APPROVALS AND PAYING ALL FEES ASSESSED BY UTILITY COMPANY FOR ELECTRICAL SERVICE.

CONFIGURATION
67D92DB
REFER TO LATEST T–MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM

CROWN CASTLE
3 CORPORATE PARK DR, STE 101
CLIFTON PARK, NY 12065

T-Mobile
NORTHEAST LLC
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RELEASED BY | DATE

EDWARD N. IAMICELI
No. 11767
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
10/10/18

0 1 2 3
ORIGINAL SIZE IN INCHES

CROWN SITE INFORMATION
SITE ID #: 881364
APP ID #: 447811
NEWINGTON

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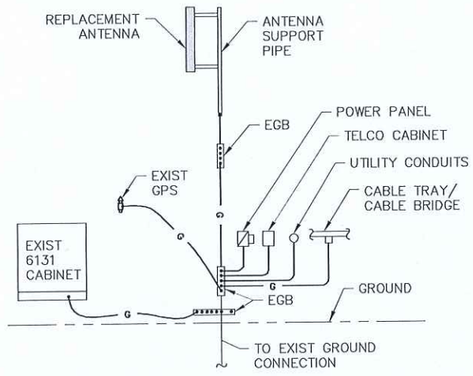
CT782/COSTELLO MP

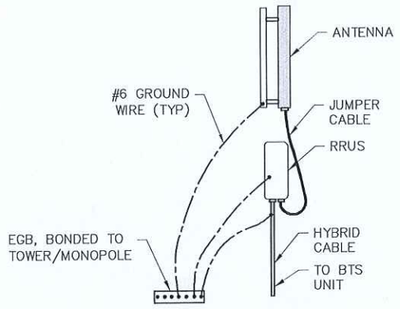
SITE ADDRESS
123 COSTELO ROAD
TOWN OF NEWINGTON
HARTFORD COUNTY
CT 06111

SHEET TITLE
ONE–LINE POWER DIAGRAM & NOTES

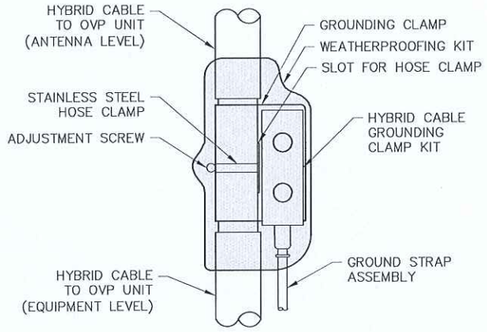
SHEET NUMBER
E-1



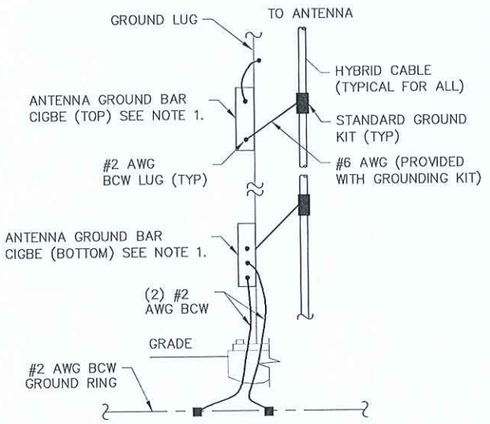
1 G-1 GROUNDING RISER DIAGRAM
SCALE: NTS



2 G-1 HYBRID CABLE CONNECTION DETAIL
SCALE: NTS



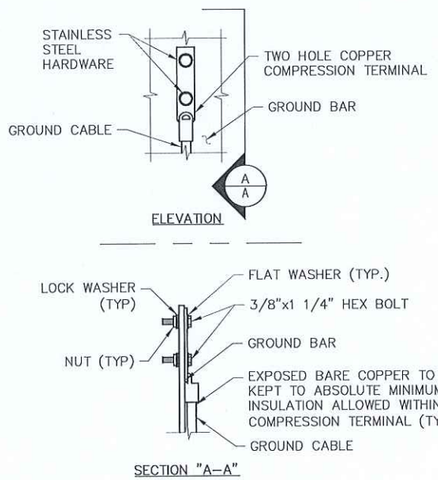
3 G-1 HYBRID CABLE GROUNDING DETAIL
SCALE: NTS



NOTES:

1. NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER. ANTENNA LOCATION AND CONNECTION ANTENNA LOCATION AND CONNECTION ORIENTATION. PROVIDE AS REQUIRED.
2. A SEPARATE GROUND BAR TO BE USED FOR GPS UNIT IF REQUIRED.

4 G-1 ANTENNA CABLE GROUNDING
SCALE: NTS



NOTES:

1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.
4. ALL GROUND LUGS MUST NE HEAT SHRUNK AT WIRE/LUG CONNECTION.

5 G-1 GROUNDING BAR CONN. DETAIL
SCALE: NTS

GROUNDING NOTES

1. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY ALL APPLICABLE CODES.
2. ALL GROUNDING WORK SHALL BE IN ACCORDANCE WITH T-MOBILE STANDARD PRACTICE.
3. ALL BUS CONNECTORS SHALL BE TWO-HOLE, LONG-BARREL TYPE COMPRESSION LUGS, T&B OR EQUAL, UNLESS OTHERWISE NOTED ON DRAWINGS. ALL LUGS SHALL BE ATTACHED TO BUSSES USING BOLTS, NUTS, AND LOCK WASHERS. NO WASHERS ARE ALLOWED BETWEEN THE ITEMS BEING GROUNDED.
4. ALL CONNECTORS SHALL BE CRIMPED USING HYDRAULIC CRIMPING TOOLS, T&B #TBM 8 OR EQUIVALENT.
5. ALL CONNECTIONS SHALL BE MADE TO BARE METAL. ALL PAINTED SURFACES SHALL BE FILED TO ENSURE PROPER CONTACT. NO WASHERS ARE ALLOWED BETWEEN THE ITEMS BEING GROUNDED. ALL CONNECTIONS ARE TO HAVE A NON-OXIDIZING AGENT APPLIED PRIOR TO INSTALLATION.
6. ALL COPPER BUSSES SHALL BE CLEANED, POLISHED, AND A NON-OXIDIZING AGENT APPLIED. NO FINGERPRINTS OR DISCOLORED COPPER WILL BE PERMITTED.
7. ALL BENDS SHALL BE AS SHALLOW AS POSSIBLE, WITH NO TURN SHORTER THAN AN 8-INCH NOMINAL RADIUS.
8. GROUNDING CONDUCTORS SHALL BE SOLID TINNED COPPER AND ANNEALED #2. ALL GROUNDING CONDUCTORS SHALL RUN THROUGH PVC SLEEVES WHEREVER CONDUCTORS RUN THROUGH WALLS, FLOORS, OR CEILINGS. IF CONDUCTORS MUST RUN THROUGH EMT, BOTH ENDS OF CONDUIT SHALL BE GROUNDED. SEAL BOTH ENDS OF CONDUIT WITH SILICONE CAULK.
9. GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED 10 OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE PROJECT MANAGER FOR FURTHER INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE VALUE.
10. ALL ROOF TOP ANTENNA MOUNTS SHALL BE GROUNDED WITH A #2 GROUND WIRE CONNECTED TO THE NEAREST GROUND BUS. ALL CONNECTIONS ARE TO BE CAD-WELDED IF POSSIBLE.
11. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL OF POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO THE PROJECT MANAGER.
12. GROUNDING CONNECTION TO TRAVEL IN A DOWNWARD DIRECTION.
13. ALL EXPOSED #2 WIRE MUST BE TINN NOT BTW.
14. TECTONIC TAKES NO RESPONSIBILITY OR LIABILITY FOR THE GROUNDING SYSTEM AS SHOWN ON THIS SITE. THIS IS A STANDARD GROUNDING SYSTEM.

CONFIGURATION
67D92DB
REFER TO LATEST T-MOBILE RF DATA SHEET FOR FINAL RF DESIGN & BOM

CROWN CASTLE
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STATE OF RHODE ISLAND — No. 11767 — REGISTERED PROFESSIONAL ENGINEER (CIVIL)

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NEWINGTON

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TOWN OF NEWINGTON
HARTFORD COUNTY
CT 06111

SHEET TITLE
GROUNDING DETAILS & NOTES

SHEET NUMBER
G-1

PAUL J. FORD & COMPANY

Date: **August 20, 2018**

Charles Trask
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277

Paul J. Ford and Company
250 East Broad St., Suite 600
Columbus, OH 43215
(614) 221-6679
gaustin@pauljford.com

Subject: **Structural Analysis Report**

Carrier Designation:	***T-Mobile* Co-Locate**	
	Carrier Site Number:	CT11782A
	Carrier Site Name:	N/A
Crown Castle Designation:	**Crown Castle BU Number:**	881364
	Crown Castle Site Name:	Newington
	Crown Castle JDE Job Number:	515662
	Crown Castle Work Order Number:	1600449
	Crown Castle Order Number:	447811 Rev. 0
Engineering Firm Designation:	**Paul J. Ford and Company Project Number:**	37518-2864.001.7805
Site Data:	**123 Costelo Road, Newington, Hartford County, CT**	
	Latitude *41° 39' 18.72"*, Longitude *-72° 43' 17.19"*	
	145 Foot - Monopole Tower	

Dear Charles Trask,

Paul J. Ford and Company is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 1238048, in accordance with order 447811, revision 0.

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

LC7: Existing + Reserved + Proposed Equipment **Sufficient Capacity**
Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second gust wind speed of 97 mph per Section 1609.3 and Appendix N as required for use in the ANSI/TIA-222-G-2005 Standard, "Structural Standard for Antenna Supporting Structures and Antennas", with ANSI/TIA-222-G-1-2007 and ANSI/TIA-222-G-2-2009 Addenda per Exception #5 of Section 1609.1.1. Risk Category II, Exposure Category C and Topographic Category 1 were used in this analysis.

We at *Paul J. Ford and Company* appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:

Grant J. Austin C.J.P.
Structural Designer

STATE OF CONNECTICUT
JUSTIN T. KLINE
No. 30301
LICENSED PROFESSIONAL ENGINEER

8/24/18

tnxTower Report - version 8.0.2.1

PAUL J. FORD & COMPANY

Date: **August 20, 2018**

Charles Trask
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277

Paul J. Ford and Company
250 East Broad St., Suite 600
Columbus, OH 43215
(614) 221-6679
gaustin@pauljford.com

Subject: **Structural Analysis Report**

Carrier Designation:	***T-Mobile* Co-Locate**	
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	Carrier Site Name:	N/A
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	Crown Castle JDE Job Number:	515662
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	Crown Castle Order Number:	447811 Rev. 0
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Structural Designer

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 145 ft Monopole tower designed by SUMMIT in August of 1999. The tower was originally designed for a wind speed of 85 mph per TIA/EIA-222-F.

2) ANALYSIS CRITERIA

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second gust wind speed of 97 mph per Section 1609.3 and Appendix N as required for use in the ANSI/TIA-222-G-2005 Standard, "Structural Standard for Antenna Supporting Structures and Antennas", with ANSI/TIA-222-G-1-2007 and ANSI/TIA-222-G-2-2009 Addenda per Exception #5 of Section 1609.1.1. Risk Category II, Exposure Category C and Topographic Category 1 were used in this analysis.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
94.0	95.0	3	ericsson	RADIO 4449 B12/B71	1	1-5/8	--
		3	rfs celwave	APXVAARR24_43-U-NA20 w/ MP			
	94.0	1	tower mounts	MT-195-14 [NA 510-1]			
		1	tower mounts	MT-196-14 [LP 304-1]			

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
133.0	139.0	2	andrew	VHLP2.5-11	6 2 2	5/16 1/2 Conduit	1
		1	samsung telecom.	WIMAX DAP HEAD			
		1	dragonwave	HORIZON COMPACT			
	135.0	3	argus tech.	LLPX310R-V1 w/ MP			
		1	dragonwave	HORIZON COMPACT			
		1	motorola	TIMING 2000			
		2	samsung telecom.	WIMAX DAP HEAD			
	133.0	1	tower mounts	Platform Mount [LP 712-1]			
124.0	124.0	3	alcatel lucent	TD-RRH8X20-25	4	1-1/4	1
		3	rfs celwave	APXVSPP18-C-A20 w/ MP			
		3	rfs celwave	APXVTM14-C-120 w/ MP			
		3	rfs celwave	IBC1900BB-1			
		3	rfs celwave	IBC1900HG-2A			
		1	tower mounts	Platform Mount [LP 712-1]			
122.0	122.0	3	alcatel lucent	PCS 1900MHz 4x45W-65MHz	--	--	1
		1	tower mounts	Pipe Mount [PM 601-3]			
	118.0	3	alcatel lucent	800MHz 2X50W RRH W/FILTER			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
114.0	116.0	1	lucent	KS24019-L112A	1 7	1/2 1-5/8	1
	115.0	3	antel	BXA-80063/4CFX5 w/ MP			
		1	rfs celwave	DB-T1-6Z-8AB-0Z			
		6	andrew	SBNHH-1D65B w/ MP	1	1-5/8	2
		3	antel	BXA-80063/4CFX5 w/ MP			
		1	rfs celwave	DB-T1-6Z-8AB-0Z			
		3	samsung telecom.	RFV01U-D1A			
		3	samsung telecom.	RFV01U-D2A			
	114.0	1	tower mounts	Platform Mount [LP 712-1]	--	--	1
105.0	105.0	3	cci antennas	HPA-45R-BUU-H6 w/ MP	--	--	2
		3	ericsson	RRUS 4478 B14			
		3	ericsson	RRUS 32 B30	2 4 12 2	3/8 3/4 1-5/8 Conduit	1
		6	ericsson	RRUS-11			
		3	kmw comm.	AM-X-CD-16-65-00T-RET w/ MP			
		3	powerwave tech.	7770.00 w/ MP			
		6	powerwave tech.	LGP2140X			
		3	cci antennas	OPA-65R-LCUU-H6 w/ MP			
		2	raycap	DC6-48-60-18-8F			
		1	tower mounts	Platform Mount [LP 712-1]			
94.0	95.0	3	commscope	LNX-6515DS-A1M w/ MP	1	1-5/8	3
		3	ericsson	RRUS 11 B12			
		3	ericsson	AIR -32 B2A/B66AA w/ MP	1 11	1-1/4 1-5/8	1
		3	ericsson	ERICSSON AIR 21 B4A B2P w/ MP			
	94.0	3	ericsson	KRY 112 144/1			
		1	tower mounts	Platform Mount [LP 712-1]	--	--	3
87.0	87.0	3	kathrein	742 213 w/ Mount Pipe	6	1-5/8	1
		1	tower mounts	Pipe Mount [PM 601-3]			
77.0	77.0	1	symmetricom	58532A	1	1/2	1
		1	tower mounts	Side Arm Mount [SO 701-1]			

Notes:
1) Existing Equipment
2) Reserved Equipment
3) Equipment To Be Removed

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Dr. Clarence Welti, 08/10/1999	1425352	CCISITES
4-POST-MODIFICATION INSPECTION	ETS, 160020, 02/29/2016	6120832	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Summit/PJF, 5153/29299-105, 08/11/1999	1425473	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Summit, 5153, 08/10/1999	1425417	CCISITES

3.1) Analysis Method

tnxTower (version 8.0.2.1), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) Monopole was modified in conformance with the referenced modification drawings.

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)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
L1	145 - 140	Pole	TP24.923x24x0.1875	Pole	0.2%	Pass
L2	140 - 135	Pole	TP25.847x24.923x0.1875	Pole	1.4%	Pass
L3	135 - 130	Pole	TP26.77x25.847x0.1875	Pole	4.6%	Pass
L4	130 - 125	Pole	TP27.709x26.77x0.25	Pole	5.5%	Pass
L5	125 - 120	Pole	TP28.648x27.709x0.25	Pole	9.8%	Pass
L6	120 - 115	Pole	TP29.588x28.648x0.25	Pole	14.5%	Pass
L7	115 - 110	Pole	TP30.527x29.588x0.25	Pole	21.4%	Pass
L8	110 - 105	Pole	TP31.466x30.527x0.25	Pole	27.9%	Pass
L9	105 - 100	Pole	TP32.405x31.466x0.25	Pole	37.0%	Pass
L10	100 - 95	Pole	TP33.345x32.405x0.25	Pole	45.2%	Pass
L11	95 - 90	Pole	TP34.284x33.345x0.25	Pole	55.1%	Pass
L12	90 - 89.25	Pole	TP35.27x34.284x0.25	Pole	56.5%	Pass
L13	89.25 - 84.25	Pole	TP34.851x33.925x0.3125	Pole	50.3%	Pass
L14	84.25 - 79.25	Pole	TP35.777x34.851x0.3125	Pole	56.9%	Pass
L15	79.25 - 74.25	Pole	TP36.703x35.777x0.3125	Pole	63.0%	Pass
L16	74.25 - 69.25	Pole	TP37.629x36.703x0.3125	Pole	68.9%	Pass
L17	69.25 - 64.25	Pole	TP38.555x37.629x0.3125	Pole	74.3%	Pass
L18	64.25 - 59.25	Pole	TP39.482x38.555x0.3125	Pole	79.5%	Pass
L19	59.25 - 58.08	Pole	TP39.698x39.482x0.3125	Pole	80.7%	Pass
L20	58.08 - 57.83	Pole + Reinf.	TP39.745x39.698x0.4125	Reinf. 2 Tension Rupture	81.3%	Pass
L21	57.83 - 52.83	Pole + Reinf.	TP40.671x39.745x0.4188	Reinf. 2 Tension Rupture	86.0%	Pass
L22	52.83 - 49.5	Pole + Reinf.	TP42.26x40.671x0.4125	Reinf. 2 Tension Rupture	89.0%	Pass
L23	49.5 - 43.25	Pole + Reinf.	TP41.82x40.663x0.475	Reinf. 2 Tension Rupture	85.1%	Pass
L24	43.25 - 38.25	Pole + Reinf.	TP42.746x41.82x0.475	Reinf. 2 Tension Rupture	88.6%	Pass
L25	38.25 - 33.25	Pole + Reinf.	TP43.672x42.746x0.475	Reinf. 2 Tension Rupture	91.9%	Pass
L26	33.25 - 31.25	Pole + Reinf.	TP44.042x43.672x0.475	Reinf. 2 Tension Rupture	93.2%	Pass
L27	31.25 - 31	Pole + Reinf.	TP44.089x44.042x0.5375	Reinf. 1 Compression	73.4%	Pass
L28	31 - 26	Pole + Reinf.	TP45.015x44.089x0.5375	Reinf. 1 Compression	76.0%	Pass
L29	26 - 21	Pole + Reinf.	TP45.941x45.015x0.525	Reinf. 1 Compression	78.4%	Pass
L30	21 - 16	Pole + Reinf.	TP46.867x45.941x0.525	Reinf. 1 Compression	80.7%	Pass
L31	16 - 11	Pole + Reinf.	TP47.793x46.867x0.525	Reinf. 1 Compression	82.9%	Pass
L32	11 - 6	Pole + Reinf.	TP48.719x47.793x0.5188	Reinf. 1 Compression	84.9%	Pass
L33	6 - 4.75	Pole + Reinf.	TP48.95x48.719x0.5188	Reinf. 1 Compression	85.4%	Pass
L34	4.75 - 4.5	Pole + Reinf.	TP48.997x48.95x0.5875	Reinf. 3 Compression	79.6%	Pass
L35	4.5 - 0	Pole + Reinf.	TP49.83x48.997x0.575	Reinf. 3 Compression	81.2%	Pass
					Summary	
				Pole	80.7%	Pass
				Reinforcement	93.2%	Pass
				Overall	93.2%	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	84.7	Pass
1	Base Plate	0	79.1	Pass
1	Base Foundation Structural Steel	0	63.9	Pass
1	Base Foundation Soil Interaction	0	62.7	Pass
1	Flange Connection	130	6.8	Pass

Structure Rating (max from all components) =	93.2%

Notes:
1) See additional documentation in “Appendix C – Additional Calculations” for calculations supporting the % capacity consumed.

4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Tower Input Data

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

1) Tower is located in Hartford County, Connecticut.
2) ASCE 7-10 Wind Data is used (wind speeds converted to nominal values).
3) Basic wind speed of 97 mph.
4) Structure Class II.
5) Exposure Category C.
6) Topographic Category 1.
7) Crest Height 0.0000 ft.
8) Nominal ice thickness of 1.0000 in.
9) Ice thickness is considered to increase with height.
10) Ice density of 56 pcf.
11) A wind speed of 50 mph is used in combination with ice.
12) Temperature drop of 50 °F.
13) Deflections calculated using a wind speed of 60 mph.
14) A non-linear (P-delta) analysis was used.
15) Pressures are calculated at each section.
16) Stress ratio used in pole design is 1.
17) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	*Elevation*	*Section Length*	*Splice Length*	*Number of Sides*	*Top Diameter*	*Bottom Diameter*	*Wall Thickness*	*Bend Radius*	*Pole Grade*
	ft	*ft*	*ft*		*in*	*in*	*in*	*in*	
L1	145.0000-140.0000	5.0000	0.00	18	24.0000	24.9233	0.1875	0.7500	A607-65 (65 ksi)
L2	140.0000-135.0000	5.0000	0.00	18	24.9233	25.8467	0.1875	0.7500	A607-65 (65 ksi)
L3	135.0000-130.0000	5.0000	0.00	18	25.8467	26.7700	0.1875	0.7500	A607-65 (65 ksi)
L4	130.0000-125.0000	5.0000	0.00	18	26.7700	27.7092	0.2500	1.0000	A607-65 (65 ksi)
L5	125.0000-	5.0000	0.00	18	27.7092	28.6485	0.2500	1.0000	A607-65

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
	120.0000								(65 ksi)
L6	120.0000-115.0000	5.0000	0.00	18	28.6485	29.5877	0.2500	1.0000	A607-65 (65 ksi)
L7	115.0000-110.0000	5.0000	0.00	18	29.5877	30.5269	0.2500	1.0000	A607-65 (65 ksi)
L8	110.0000-105.0000	5.0000	0.00	18	30.5269	31.4661	0.2500	1.0000	A607-65 (65 ksi)
L9	105.0000-100.0000	5.0000	0.00	18	31.4661	32.4054	0.2500	1.0000	A607-65 (65 ksi)
L10	100.0000-95.0000	5.0000	0.00	18	32.4054	33.3446	0.2500	1.0000	A607-65 (65 ksi)
L11	95.0000-90.0000	5.0000	0.00	18	33.3446	34.2838	0.2500	1.0000	A607-65 (65 ksi)
L12	90.0000-84.7500	5.2500	4.50	18	34.2838	35.2700	0.2500	1.0000	A607-65 (65 ksi)
L13	84.7500-84.2500	5.0000	0.00	18	33.9247	34.8508	0.3125	1.2500	A607-65 (65 ksi)
L14	84.2500-79.2500	5.0000	0.00	18	34.8508	35.7770	0.3125	1.2500	A607-65 (65 ksi)
L15	79.2500-74.2500	5.0000	0.00	18	35.7770	36.7031	0.3125	1.2500	A607-65 (65 ksi)
L16	74.2500-69.2500	5.0000	0.00	18	36.7031	37.6293	0.3125	1.2500	A607-65 (65 ksi)
L17	69.2500-64.2500	5.0000	0.00	18	37.6293	38.5554	0.3125	1.2500	A607-65 (65 ksi)
L18	64.2500-59.2500	5.0000	0.00	18	38.5554	39.4816	0.3125	1.2500	A607-65 (65 ksi)
L19	59.2500-58.0800	1.1700	0.00	18	39.4816	39.6983	0.3125	1.2500	A607-65 (65 ksi)
L20	58.0800-57.8300	0.2500	0.00	18	39.6983	39.7446	0.4125	1.6500	A607-65 (65 ksi)
L21	57.8300-52.8300	5.0000	0.00	18	39.7446	40.6707	0.4188	1.6750	A607-65 (65 ksi)
L22	52.8300-44.2500	8.5800	5.25	18	40.6707	42.2600	0.4125	1.6500	A607-65 (65 ksi)
L23	44.2500-43.2500	6.2500	0.00	18	40.6625	41.8200	0.4750	1.9000	A607-65 (65 ksi)
L24	43.2500-38.2500	5.0000	0.00	18	41.8200	42.7460	0.4750	1.9000	A607-65 (65 ksi)
L25	38.2500-33.2500	5.0000	0.00	18	42.7460	43.6720	0.4750	1.9000	A607-65 (65 ksi)
L26	33.2500-31.2500	2.0000	0.00	18	43.6720	44.0424	0.4750	1.9000	A607-65 (65 ksi)
L27	31.2500-31.0000	0.2500	0.00	18	44.0424	44.0887	0.5375	2.1500	A607-65 (65 ksi)
L28	31.0000-26.0000	5.0000	0.00	18	44.0887	45.0147	0.5375	2.1500	A607-65 (65 ksi)
L29	26.0000-21.0000	5.0000	0.00	18	45.0147	45.9408	0.5250	2.1000	A607-65 (65 ksi)
L30	21.0000-16.0000	5.0000	0.00	18	45.9408	46.8668	0.5250	2.1000	A607-65 (65 ksi)
L31	16.0000-11.0000	5.0000	0.00	18	46.8668	47.7928	0.5250	2.1000	A607-65 (65 ksi)
L32	11.0000-6.0000	5.0000	0.00	18	47.7928	48.7188	0.5188	2.0750	A607-65 (65 ksi)
L33	6.0000-4.7500	1.2500	0.00	18	48.7188	48.9503	0.5188	2.0750	A607-65 (65 ksi)
L34	4.7500-4.5000	0.2500	0.00	18	48.9503	48.9966	0.5875	2.3500	A607-65 (65 ksi)
L35	4.5000-0.0000	4.5000		18	48.9966	49.8300	0.5750	2.3000	A607-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	24.3413	14.1714	1015.2211	8.4534	12.1920	83.2694	2031.7780	7.0871	3.8940	20.768
	25.2789	14.7209	1137.9555	8.7812	12.6611	89.8784	2277.4083	7.3619	4.0565	21.635
L2	25.2789	14.7209	1137.9555	8.7812	12.6611	89.8784	2277.4083	7.3619	4.0565	21.635
	26.2165	15.2704	1270.2035	9.1090	13.1301	96.7398	2542.0784	7.6367	4.2190	22.501
L3	26.2165	15.2704	1270.2035	9.1090	13.1301	96.7398	2542.0784	7.6367	4.2190	22.501
	27.1540	15.8199	1412.3200	9.4368	13.5992	103.8535	2826.4984	7.9115	4.3815	23.368
L4	27.1444	21.0436	1869.8421	9.4146	13.5992	137.4969	3742.1446	10.5238	4.2715	17.086
	28.0981	21.7889	2075.6270	9.7480	14.0763	147.4556	4153.9851	10.8965	4.4368	17.747
L5	28.0981	21.7889	2075.6270	9.7480	14.0763	147.4556	4153.9851	10.8965	4.4368	17.747
	29.0518	22.5342	2295.9817	10.0815	14.5534	157.7624	4594.9846	11.2692	4.6021	18.409
L6	29.0518	22.5342	2295.9817	10.0815	14.5534	157.7624	4594.9846	11.2692	4.6021	18.409
	30.0056	23.2794	2531.4053	10.4149	15.0305	168.4174	5066.1415	11.6419	4.7674	19.07
L7	30.0056	23.2794	2531.4053	10.4149	15.0305	168.4174	5066.1415	11.6419	4.7674	19.07
	30.9593	24.0247	2782.3955	10.7483	15.5077	179.4206	5568.4521	12.0146	4.9327	19.731
L8	30.9593	24.0247	2782.3955	10.7483	15.5077	179.4206	5568.4521	12.0146	4.9327	19.731
	31.9130	24.7700	3049.4512	11.0817	15.9848	190.7720	6102.9150	12.3874	5.0980	20.392
L9	31.9130	24.7700	3049.4512	11.0817	15.9848	190.7720	6102.9150	12.3874	5.0980	20.392
	32.8667	25.5153	3333.0703	11.4152	16.4619	202.4715	6670.5263	12.7601	5.2633	21.053
L10	32.8667	25.5153	3333.0703	11.4152	16.4619	202.4715	6670.5263	12.7601	5.2633	21.053
	33.8204	26.2606	3633.7516	11.7486	16.9390	214.5192	7272.2846	13.1328	5.4286	21.715
L11	33.8204	26.2606	3633.7516	11.7486	16.9390	214.5192	7272.2846	13.1328	5.4286	21.715
	34.7741	27.0058	3951.9930	12.0820	17.4162	226.9151	7909.1862	13.5055	5.5940	22.376
L12	34.7741	27.0058	3951.9930	12.0820	17.4162	226.9151	7909.1862	13.5055	5.5940	22.376
	35.7755	27.7884	4305.5913	12.4321	17.9172	240.3055	8616.8481	13.8968	5.7675	23.07
L13	35.2462	33.3391	4758.6642	11.9323	17.2337	276.1248	9523.5899	16.6727	5.4207	17.346
	35.3403	34.2577	5162.9606	12.2611	17.7042	291.6230	10332.7148	17.1321	5.5837	17.868
L14	35.3403	34.2577	5162.9606	12.2611	17.7042	291.6230	10332.7148	17.1321	5.5837	17.868
	36.2807	35.1763	5589.5314	12.5899	18.1747	307.5445	11186.4177	17.5915	5.7467	18.39
L15	36.2807	35.1763	5589.5314	12.5899	18.1747	307.5445	11186.4177	17.5915	5.7467	18.39
	37.2211	36.0950	6038.9739	12.9187	18.6452	323.8891	12085.8940	18.0509	5.9098	18.911
L16	37.2211	36.0950	6038.9739	12.9187	18.6452	323.8891	12085.8940	18.0509	5.9098	18.911
	38.1616	37.0136	6511.8853	13.2475	19.1157	340.6569	13032.3391	18.5103	6.0728	19.433
L17	38.1616	37.0136	6511.8853	13.2475	19.1157	340.6569	13032.3391	18.5103	6.0728	19.433
	39.1020	37.9322	7008.8623	13.5762	19.5862	357.8478	14026.9471	18.9697	6.2358	19.954
L18	39.1020	37.9322	7008.8623	13.5762	19.5862	357.8478	14026.9471	18.9697	6.2358	19.954
	40.0424	38.8508	7530.5034	13.9050	20.0566	375.4620	15070.9156	19.4291	6.3988	20.476
L19	40.0424	38.8508	7530.5034	13.9050	20.0566	375.4620	15070.9156	19.4291	6.3988	20.476
	40.2625	39.0658	7656.1925	13.9820	20.1667	379.6448	15322.4593	19.5366	6.4369	20.598
L20	40.2471	51.4359	10029.3911	13.9465	20.1667	497.3237	20071.9791	25.7228	6.2609	15.178
	40.2941	51.4965	10064.8992	13.9629	20.1903	498.5029	20143.0421	25.7532	6.2690	15.198
L21	40.2931	52.2685	10212.5277	13.9607	20.1903	505.8148	20438.4934	26.1392	6.2580	14.945
	41.2335	53.4994	10951.1846	14.2895	20.6607	530.0482	21916.7790	26.7548	6.4210	15.334
L22	41.2345	52.7091	10792.7599	14.2917	20.6607	522.3803	21599.7213	26.3596	6.4320	15.593
	42.8483	54.7899	12122.0726	14.8559	21.4681	564.6556	24260.0957	27.4001	6.7118	16.271
L23	42.2038	60.5887	12362.6323	14.2666	20.6565	598.4849	24741.5317	30.3001	6.3206	13.307
	42.3919	62.3338	13461.931	14.6775	21.2446	633.6647	26941.576	31.1728	6.5243	13.735

Section	Tip Dia. in	Area in²	I in⁴	r in	C in	I/C in³	J in⁴	It/Q in²	w in	w/t
			6				8			
L24	42.3919	62.3338	13461.931	14.6775	21.2446	633.6647	26941.576	31.1728	6.5243	13.735
			6				8			
	43.3322	63.7299	14386.867	15.0062	21.7150	662.5320	28792.666	31.8710	6.6873	14.079
			9				5			
L25	43.3322	63.7299	14386.867	15.0062	21.7150	662.5320	28792.666	31.8710	6.6873	14.079
			9				5			
	44.2725	65.1260	15353.229	15.3349	22.1854	692.0423	30726.660	32.5692	6.8503	14.422
			3				8			
L26	44.2725	65.1260	15353.229	15.3349	22.1854	692.0423	30726.660	32.5692	6.8503	14.422
			3				8			
	44.6486	65.6844	15751.576	15.4664	22.3736	704.0264	31523.878	32.8485	6.9155	14.559
			2				7			
L27	44.6389	74.2205	17747.552	15.4443	22.3736	793.2378	35518.458	37.1173	6.8055	12.661
			7				0			
	44.6860	74.2995	17804.276	15.4607	22.3971	794.9374	35631.980	37.1568	6.8136	12.676
			3				0			
L28	44.6860	74.2995	17804.276	15.4607	22.3971	794.9374	35631.980	37.1568	6.8136	12.676
			3				0			
	45.6263	75.8793	18964.287	15.7894	22.8675	829.3121	37953.529	37.9469	6.9766	12.98
			7				1			
L29	45.6282	74.1355	18538.879	15.7939	22.8675	810.7089	37102.153	37.0748	6.9986	13.331
			6				2			
	46.5685	75.6785	19720.747	16.1226	23.3379	845.0093	39467.444	37.8465	7.1616	13.641
			7				5			
L30	46.5685	75.6785	19720.747	16.1226	23.3379	845.0093	39467.444	37.8465	7.1616	13.641
			7				5			
	47.5088	77.2216	20951.806	16.4513	23.8083	880.0204	41931.181	38.6181	7.3246	13.952
			4				7			
L31	47.5088	77.2216	20951.806	16.4513	23.8083	880.0204	41931.181	38.6181	7.3246	13.952
			4				7			
	48.4491	78.7647	22233.059	16.7801	24.2787	915.7422	44495.374	39.3898	7.4875	14.262
			9				6			
L32	48.4500	77.8373	21977.096	16.7823	24.2787	905.1995	43983.110	38.9260	7.4985	14.455
			1				2			
	49.3903	79.3620	23294.029	17.1110	24.7491	941.2055	46618.710	39.6885	7.6615	14.769
			7				2			
L33	49.3903	79.3620	23294.029	17.1110	24.7491	941.2055	46618.710	39.6885	7.6615	14.769
			7				2			
	49.6254	79.7431	23631.283	17.1932	24.8667	950.3166	47293.662	39.8791	7.7023	14.848
			9				5			
L34	49.6148	90.1833	26649.329	17.1688	24.8667	1071.6854	53333.724	45.1002	7.5813	12.904
			4				6			
	49.6618	90.2696	26725.942	17.1852	24.8903	1073.7507	53487.051	45.1434	7.5894	12.918
			3				3			
L35	49.6637	88.3718	26177.573	17.1897	24.8903	1051.7192	52389.591	44.1943	7.6114	13.237
			2				5			
	50.5100	89.8928	27552.638	17.4855	25.3136	1088.4503	55141.530	44.9550	7.7581	13.492
			1				6			

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 145.0000-140.0000				1	1	1			
L2 140.0000-135.0000				1	1	1			
L3 135.0000-130.0000				1	1	1			
L4 130.0000-125.0000				1	1	1			
L5 125.0000-120.0000				1	1	1			
L6 120.0000-115.0000				1	1	1			
L7 115.0000-110.0000				1	1	1			

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L8 110.0000-105.0000				1	1	1			
L9 105.0000-100.0000				1	1	1			
L10 100.0000-95.0000				1	1	1			
L11 95.0000-90.0000				1	1	1			
L12 90.0000-84.7500				1	1	1			
L13 84.7500-84.2500				1	1	1			
L14 84.2500-79.2500				1	1	1			
L15 79.2500-74.2500				1	1	1			
L16 74.2500-69.2500				1	1	1			
L17 69.2500-64.2500				1	1	1			
L18 64.2500-59.2500				1	1	1			
L19 59.2500-58.0800				1	1	1			
L20 58.0800-57.8300				1	1	1.10905			
L21 57.8300-52.8300				1	1	1.0847			
L22 52.8300-44.2500				1	1	1.09579			
L23 44.2500-43.2500				1	1	1.08016			
L24 43.2500-38.2500				1	1	1.07379			
L25 38.2500-33.2500				1	1	1.0677			
L26 33.2500-31.2500				1	1	1.06533			
L27 31.2500-31.0000				1	1	1.1293			
L28 31.0000-26.0000				1	1	1.12031			
L29 26.0000-21.0000				1	1	1.13785			
L30 21.0000-16.0000				1	1	1.12939			
L31 16.0000-11.0000				1	1	1.12125			
L32 11.0000-6.0000				1	1	1.1267			
L33 6.0000-4.7500				1	1	1.12477			
L34 4.7500-4.5000				1	1	0.963063			
L35 4.5000-0.0000				1	1	0.978135			

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
ATCB-B01-005(5/16)	C	No	No	Inside Pole	133.0000 - 0.0000	6	No Ice	0.0000	0.07
							1/2" Ice	0.0000	0.07
							1" Ice	0.0000	0.07
FSJ4-50B(1/2)	C	No	No	Inside Pole	133.0000 - 0.0000	2	No Ice	0.0000	0.14
							1/2" Ice	0.0000	0.14
							1" Ice	0.0000	0.14
2" (Nominal) Conduit	C	No	No	Inside Pole	133.0000 - 0.0000	2	No Ice	0.0000	0.72
							1/2" Ice	0.0000	0.72
							1" Ice	0.0000	0.72
***									
HB114-1-08U4-M5J(1-1/4)	C	No	No	Inside Pole	124.0000 - 0.0000	3	No Ice	0.0000	1.08
							1/2" Ice	0.0000	1.08
							1" Ice	0.0000	1.08
HB114-21U3M12-XXXF(1-1/4)	C	No	No	Inside Pole	124.0000 - 0.0000	1	No Ice	0.0000	1.22
							1/2" Ice	0.0000	1.22
							1" Ice	0.0000	1.22
***									
LDF4-50A(1/2)	C	No	No	Inside Pole	114.0000 - 0.0000	1	No Ice	0.0000	0.15
							1/2" Ice	0.0000	0.15
							1" Ice	0.0000	0.15
LDF7-50A(1-5/8)	C	No	No	Inside Pole	114.0000 - 0.0000	6	No Ice	0.0000	0.82
							1/2" Ice	0.0000	0.82
							1" Ice	0.0000	0.82
HB158-1-08U8-S8J18(1-5/8)	C	No	No	Inside Pole	114.0000 - 0.0000	1	No Ice	0.0000	1.30
							1/2" Ice	0.0000	1.30
							1" Ice	0.0000	1.30
HB158-1-08U8-S8J18(1-5/8)	C	No	No	CaAa (Out Of Face)	114.0000 - 0.0000	1	No Ice	0.1980	1.30
							1/2" Ice	0.2980	2.81
							1" Ice	0.3980	4.94
***									
LCF158-50A(1-5/8)	C	No	No	Inside Pole	105.0000 - 0.0000	12	No Ice	0.0000	0.80
							1/2" Ice	0.0000	0.80
							1" Ice	0.0000	0.80
FB-L98B-002-75000(3/8)	C	No	No	Inside Pole	105.0000 - 0.0000	2	No Ice	0.0000	0.06
							1/2" Ice	0.0000	0.06
							1" Ice	0.0000	0.06
WR-VG86ST-BRD(3/4)	C	No	No	Inside Pole	105.0000 - 0.0000	4	No Ice	0.0000	0.58
							1/2" Ice	0.0000	0.58
							1" Ice	0.0000	0.58
2" (Nominal) Conduit	C	No	No	Inside Pole	105.0000 - 0.0000	2	No Ice	0.0000	0.72
							1/2" Ice	0.0000	0.72
							1" Ice	0.0000	0.72
***									
HJ7-50A(1-5/8)	C	No	No	Inside Pole	94.0000 - 0.0000	6	No Ice	0.0000	1.04
							1/2" Ice	0.0000	1.04
							1" Ice	0.0000	1.04
HJ7-50A(1-5/8)	C	No	No	CaAa (Out Of Face)	94.0000 - 0.0000	1	No Ice	0.1980	1.04
							1/2" Ice	0.2980	2.55
							1" Ice	0.3980	4.68
HJ7-50A(1-5/8)	C	No	No	CaAa (Out Of Face)	94.0000 - 0.0000	3	No Ice	0.0000	1.04
							1/2" Ice	0.0000	2.55
							1" Ice	0.0000	4.68
MLE HYBRID 3POWER/6FIBER RL 2 10AWG(1-1/4)	C	No	No	CaAa (Out Of Face)	94.0000 - 0.0000	1	No Ice	0.0000	0.46
							1/2" Ice	0.0000	1.53
							1" Ice	0.0000	3.21
MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	C	No	No	CaAa (Out Of Face)	94.0000 - 0.0000	1	No Ice	0.0000	1.07
							1/2" Ice	0.0000	2.37
							1" Ice	0.0000	4.28
HCS 6X12 4AWG(1-5/8)	C	No	No	CaAa (Out Of Face)	94.0000 - 0.0000	1	No Ice	0.1660	2.40
							1/2" Ice	0.2660	3.72
							1" Ice	0.3660	5.65
***									
AVA7-50(1-5/8)	C	No	No	Inside Pole	87.0000 -	6	No Ice	0.0000	0.70

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft²/ft	Weight plf
					0.0000		1/2" Ice	0.0000	0.70
							1" Ice	0.0000	0.70
***									
LDF4-50A(1/2)	C	No	No	CaAa (Out Of Face)	77.0000 - 0.0000	1	No Ice	0.0000	0.15
							1/2" Ice	0.0000	0.84
							1" Ice	0.0000	2.14
**********									
1 1/4" Flat Reinforcement	C	No	No	CaAa (Out Of Face)	35.5000 - 0.0000	1	No Ice	0.2083	0.00
							1/2" Ice	0.3194	0.00
							1" Ice	0.4306	0.00
1" Flat Reinforcement	C	No	No	CaAa (Out Of Face)	60.5800 - 35.5000	1	No Ice	0.1667	0.00
							1/2" Ice	0.2778	0.00
							1" Ice	0.3889	0.00

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight K
L1	145.0000-140.0000	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	0.00
L2	140.0000-135.0000	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	0.00
L3	135.0000-130.0000	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	130.0000-125.0000	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	125.0000-120.0000	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
L6	120.0000-115.0000	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
L7	115.0000-110.0000	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	0.792	0.06
L8	110.0000-105.0000	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	0.990	0.07
L9	105.0000-100.0000	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	0.990	0.14
L10	100.0000-95.0000	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	0.990	0.14
L11	95.0000-90.0000	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	2.446	0.20
L12	90.0000-84.7500	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	2.950	0.23
L13	84.7500-84.2500	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	0.281	0.02
L14	84.2500-79.2500	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	2.810	0.23
L15	79.2500-74.2500	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	2.810	0.23
L16	74.2500-69.2500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight K
		C	0.000	0.000	0.000	2.810	0.23
L17	69.2500-64.2500	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	2.810	0.23
L18	64.2500-59.2500	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	3.032	0.23
L19	59.2500-58.0800	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	0.853	0.05
L20	58.0800-57.8300	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	0.182	0.01
L21	57.8300-52.8300	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	3.643	0.23
L22	52.8300-44.2500	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	6.252	0.40
L23	44.2500-43.2500	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	0.729	0.05
L24	43.2500-38.2500	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	3.643	0.23
L25	38.2500-33.2500	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	3.737	0.23
L26	33.2500-31.2500	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	1.541	0.09
L27	31.2500-31.0000	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	0.193	0.01
L28	31.0000-26.0000	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	3.852	0.23
L29	26.0000-21.0000	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	3.852	0.23
L30	21.0000-16.0000	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	3.852	0.23
L31	16.0000-11.0000	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	3.852	0.23
L32	11.0000-6.0000	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	3.852	0.23
L33	6.0000-4.7500	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	0.963	0.06
L34	4.7500-4.5000	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	0.193	0.01
L35	4.5000-0.0000	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	3.466	0.21

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight K
L1	145.0000-140.0000	A	2.315	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	0.00

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight K
L2	140.0000-135.0000	A	2.307	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	0.00
L3	135.0000-130.0000	A	2.298	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	130.0000-125.0000	A	2.289	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	125.0000-120.0000	A	2.280	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
L6	120.0000-115.0000	A	2.271	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
L7	115.0000-110.0000	A	2.261	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	2.601	0.11
L8	110.0000-105.0000	A	2.251	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	3.241	0.13
L9	105.0000-100.0000	A	2.240	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	3.230	0.20
L10	100.0000-95.0000	A	2.229	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	3.219	0.20
L11	95.0000-90.0000	A	2.217	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	8.210	0.57
L12	90.0000-84.7500	A	2.205	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	9.895	0.70
L13	84.7500-84.2500	A	2.197	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	0.942	0.07
L14	84.2500-79.2500	A	2.190	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	9.380	0.68
L15	79.2500-74.2500	A	2.176	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	9.338	0.69
L16	74.2500-69.2500	A	2.161	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	9.294	0.70
L17	69.2500-64.2500	A	2.146	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	9.248	0.70
L18	64.2500-59.2500	A	2.129	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	10.049	0.69
L19	59.2500-58.0800	A	2.118	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	2.890	0.16
L20	58.0800-57.8300	A	2.116	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	0.617	0.03
L21	57.8300-52.8300	A	2.106	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	12.301	0.68
L22	52.8300-44.2500	A	2.079	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	20.916	1.15
L23	44.2500-43.2500	A	2.057	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	2.438	0.13
L24	43.2500-38.2500	A	2.043	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	12.041	0.65

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight K
L25	38.2500-33.2500	A	2.016	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	12.025	0.64
L26	33.2500-31.2500	A	1.995	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	4.822	0.25
L27	31.2500-31.0000	A	1.988	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	0.601	0.03
L28	31.0000-26.0000	A	1.971	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	11.954	0.63
L29	26.0000-21.0000	A	1.933	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	11.799	0.62
L30	21.0000-16.0000	A	1.887	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	11.611	0.61
L31	16.0000-11.0000	A	1.829	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	11.370	0.59
L32	11.0000-6.0000	A	1.746	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	11.030	0.57
L33	6.0000-4.7500	A	1.668	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	2.677	0.14
L34	4.7500-4.5000	A	1.643	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	0.530	0.03
L35	4.5000-0.0000	A	1.529	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	9.122	0.46

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	145.0000-140.0000	0.0000	0.0000	0.0000	0.0000
L2	140.0000-135.0000	0.0000	0.0000	0.0000	0.0000
L3	135.0000-130.0000	0.0000	0.0000	0.0000	0.0000
L4	130.0000-125.0000	0.0000	0.0000	0.0000	0.0000
L5	125.0000-120.0000	0.0000	0.0000	0.0000	0.0000
L6	120.0000-115.0000	0.0000	0.0000	0.0000	0.0000
L7	115.0000-110.0000	-1.1429	0.6598	-1.6891	0.9752
L8	110.0000-105.0000	-1.3981	0.8072	-2.0508	1.1840
L9	105.0000-100.0000	-1.4024	0.8097	-2.0617	1.1903
L10	100.0000-95.0000	-1.4064	0.8120	-2.0715	1.1960
L11	95.0000-90.0000	-2.7760	1.6027	-4.3668	2.5212
L12	90.0000-84.7500	-3.0088	1.7371	-4.8490	2.7996
L13	84.7500-84.2500	-3.0105	1.7381	-4.8513	2.8009
L14	84.2500-79.2500	-3.0334	1.7513	-4.8661	2.8095
L15	79.2500-74.2500	-3.0742	1.7749	-4.9027	2.8306
L16	74.2500-69.2500	-3.1141	1.7979	-4.9364	2.8500
L17	69.2500-64.2500	-3.1530	1.8204	-4.9671	2.8678
L18	64.2500-59.2500	-3.3152	1.9140	-5.3155	3.0689
L19	59.2500-58.0800	-3.6363	2.0994	-6.1295	3.5389

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L20	58.0800-57.8300	-3.6437	2.1037	-6.1365	3.5429
L21	57.8300-52.8300	-3.6683	2.1179	-6.1563	3.5544
L22	52.8300-44.2500	-3.7308	2.1540	-6.2017	3.5806
L23	44.2500-43.2500	-3.7440	2.1616	-6.2183	3.5902
L24	43.2500-38.2500	-3.7709	2.1771	-6.2075	3.5839
L25	38.2500-33.2500	-3.8606	2.2289	-6.2601	3.6143
L26	33.2500-31.2500	-3.9454	2.2779	-6.3100	3.6431
L27	31.2500-31.0000	-3.9560	2.2840	-6.3135	3.6451
L28	31.0000-26.0000	-3.9796	2.2976	-6.3176	3.6475
L29	26.0000-21.0000	-4.0238	2.3231	-6.3171	3.6472
L30	21.0000-16.0000	-4.0672	2.3482	-6.3026	3.6388
L31	16.0000-11.0000	-4.1099	2.3729	-6.2661	3.6177
L32	11.0000-6.0000	-4.1517	2.3970	-6.1897	3.5736
L33	6.0000-4.7500	-4.1775	2.4119	-6.0988	3.5212
L34	4.7500-4.5000	-4.1841	2.4157	-6.0679	3.5033
L35	4.5000-0.0000	-4.2034	2.4268	-5.9080	3.4110

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
LLPX310R-V1 w/ Mount Pipe	A	From Leg	4.0000 0.00 2.00	0.0000	133.0000	No Ice 1/2" Ice 1" Ice	4.5378 4.8914 5.2539	2.9834 3.5263 4.0859	0.05 0.08 0.13
LLPX310R-V1 w/ Mount Pipe	B	From Leg	4.0000 0.00 2.00	0.0000	133.0000	No Ice 1/2" Ice 1" Ice	4.5378 4.8914 5.2539	2.9834 3.5263 4.0859	0.05 0.08 0.13
LLPX310R-V1 w/ Mount Pipe	C	From Leg	4.0000 0.00 2.00	0.0000	133.0000	No Ice 1/2" Ice 1" Ice	4.5378 4.8914 5.2539	2.9834 3.5263 4.0859	0.05 0.08 0.13
WIMAX DAP HEAD	A	From Leg	4.0000 0.00 6.00	0.0000	133.0000	No Ice 1/2" Ice 1" Ice	1.5467 1.7037 1.8681	0.6840 0.7999 0.9228	0.03 0.04 0.06
WIMAX DAP HEAD	B	From Leg	4.0000 0.00 2.00	0.0000	133.0000	No Ice 1/2" Ice 1" Ice	1.5467 1.7037 1.8681	0.6840 0.7999 0.9228	0.03 0.04 0.06
WIMAX DAP HEAD	C	From Leg	4.0000 0.00 2.00	0.0000	133.0000	No Ice 1/2" Ice 1" Ice	1.5467 1.7037 1.8681	0.6840 0.7999 0.9228	0.03 0.04 0.06
TIMING 2000	A	From Leg	4.0000 0.00 2.00	0.0000	133.0000	No Ice 1/2" Ice 1" Ice	0.1079 0.1518 0.2031	0.1079 0.1518 0.2031	0.00 0.00 0.01
HORIZON COMPACT	A	From Leg	4.0000 0.00 6.00	0.0000	133.0000	No Ice 1/2" Ice 1" Ice	0.7208 0.8278 0.9422	0.3681 0.4499 0.5391	0.01 0.02 0.03
HORIZON COMPACT	B	From Leg	4.0000 0.00	0.0000	133.0000	No Ice 1/2"	0.7208 0.8278	0.3681 0.4499	0.01 0.02

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight K
			2.00			Ice 1" Ice	0.9422	0.5391	0.03
2.375" OD x 5' Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.0000	133.0000	No Ice 1/2" Ice 1" Ice	1.1875 1.4956 1.8071	1.1875 1.4956 1.8071	0.02 0.03 0.04
2.375" OD x 5' Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.0000	133.0000	No Ice 1/2" Ice 1" Ice	1.1875 1.4956 1.8071	1.1875 1.4956 1.8071	0.02 0.03 0.04
2.375" OD x 5' Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.0000	133.0000	No Ice 1/2" Ice 1" Ice	1.1875 1.4956 1.8071	1.1875 1.4956 1.8071	0.02 0.03 0.04
Platform Mount [LP 712-1]	C	None		0.0000	133.0000	No Ice 1/2" Ice 1" Ice	24.5300 29.9400 35.3500	24.5300 29.9400 35.3500	1.34 1.65 1.96
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APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.0000	124.0000	No Ice 1/2" Ice 1" Ice	8.2619 8.8215 9.3462	6.9458 8.1266 9.0212	0.08 0.15 0.23
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.0000	124.0000	No Ice 1/2" Ice 1" Ice	8.2619 8.8215 9.3462	6.9458 8.1266 9.0212	0.08 0.15 0.23
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.0000	124.0000	No Ice 1/2" Ice 1" Ice	8.2619 8.8215 9.3462	6.9458 8.1266 9.0212	0.08 0.15 0.23
APXVTM14-C-120 w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.0000	124.0000	No Ice 1/2" Ice 1" Ice	6.5799 7.0306 7.4733	4.9591 5.7544 6.4723	0.08 0.13 0.19
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.0000	124.0000	No Ice 1/2" Ice 1" Ice	6.5799 7.0306 7.4733	4.9591 5.7544 6.4723	0.08 0.13 0.19
APXVTM14-C-120 w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.0000	124.0000	No Ice 1/2" Ice 1" Ice	6.5799 7.0306 7.4733	4.9591 5.7544 6.4723	0.08 0.13 0.19
IBC1900BB-1	A	From Leg	4.0000 0.00 0.00	0.0000	124.0000	No Ice 1/2" Ice 1" Ice	0.9660 1.0908 1.2230	0.4635 0.5576 0.6599	0.02 0.03 0.04
IBC1900BB-1	B	From Leg	4.0000 0.00 0.00	0.0000	124.0000	No Ice 1/2" Ice 1" Ice	0.9660 1.0908 1.2230	0.4635 0.5576 0.6599	0.02 0.03 0.04
IBC1900BB-1	C	From Leg	4.0000 0.00 0.00	0.0000	124.0000	No Ice 1/2" Ice 1" Ice	0.9660 1.0908 1.2230	0.4635 0.5576 0.6599	0.02 0.03 0.04
IBC1900HG-2A	A	From Leg	4.0000 0.00 0.00	0.0000	124.0000	No Ice 1/2" Ice 1" Ice	0.9660 1.0908 1.2230	0.4635 0.5576 0.6599	0.02 0.03 0.04
IBC1900HG-2A	B	From Leg	4.0000 0.00 0.00	0.0000	124.0000	No Ice 1/2" Ice 1" Ice	0.9660 1.0908 1.2230	0.4635 0.5576 0.6599	0.02 0.03 0.04
IBC1900HG-2A	C	From Leg	4.0000 0.00	0.0000	124.0000	No Ice 1/2"	0.9660 1.0908	0.4635 0.5576	0.02 0.03

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight K
			0.00			Ice 1" Ice	1.2230	0.6599	0.04
TD-RRH8X20-25	A	From Leg	4.0000 0.00 0.00	0.0000	124.0000	No Ice 1/2" Ice 1" Ice	4.0455 4.2975 4.5570	1.5345 1.7142 1.9008	0.07 0.10 0.13
TD-RRH8X20-25	B	From Leg	4.0000 0.00 0.00	0.0000	124.0000	No Ice 1/2" Ice 1" Ice	4.0455 4.2975 4.5570	1.5345 1.7142 1.9008	0.07 0.10 0.13
TD-RRH8X20-25	C	From Leg	4.0000 0.00 0.00	0.0000	124.0000	No Ice 1/2" Ice 1" Ice	4.0455 4.2975 4.5570	1.5345 1.7142 1.9008	0.07 0.10 0.13
2.375" OD x 5' Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.0000	124.0000	No Ice 1/2" Ice 1" Ice	1.1875 1.4956 1.8071	1.1875 1.4956 1.8071	0.02 0.03 0.04
2.375" OD x 5' Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.0000	124.0000	No Ice 1/2" Ice 1" Ice	1.1875 1.4956 1.8071	1.1875 1.4956 1.8071	0.02 0.03 0.04
2.375" OD x 5' Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.0000	124.0000	No Ice 1/2" Ice 1" Ice	1.1875 1.4956 1.8071	1.1875 1.4956 1.8071	0.02 0.03 0.04
Platform Mount [LP 712-1]	C	None		0.0000	124.0000	No Ice 1/2" Ice 1" Ice	24.5300 29.9400 35.3500	24.5300 29.9400 35.3500	1.34 1.65 1.96
***									
800MHz 2X50W RRH W/FILTER	A	From Leg	1.0000 0.00 -4.00	0.0000	122.0000	No Ice 1/2" Ice 1" Ice	2.0583 2.2398 2.4287	1.9317 2.1087 2.2931	0.06 0.09 0.11
800MHz 2X50W RRH W/FILTER	B	From Leg	1.0000 0.00 -4.00	0.0000	122.0000	No Ice 1/2" Ice 1" Ice	2.0583 2.2398 2.4287	1.9317 2.1087 2.2931	0.06 0.09 0.11
800MHz 2X50W RRH W/FILTER	C	From Leg	1.0000 0.00 -4.00	0.0000	122.0000	No Ice 1/2" Ice 1" Ice	2.0583 2.2398 2.4287	1.9317 2.1087 2.2931	0.06 0.09 0.11
PCS 1900MHz 4x45W-65MHz	A	From Leg	1.0000 0.00 0.00	0.0000	122.0000	No Ice 1/2" Ice 1" Ice	2.3218 2.5266 2.7388	2.2381 2.4407 2.6507	0.06 0.08 0.11
PCS 1900MHz 4x45W-65MHz	B	From Leg	1.0000 0.00 0.00	0.0000	122.0000	No Ice 1/2" Ice 1" Ice	2.3218 2.5266 2.7388	2.2381 2.4407 2.6507	0.06 0.08 0.11
PCS 1900MHz 4x45W-65MHz	C	From Leg	1.0000 0.00 0.00	0.0000	122.0000	No Ice 1/2" Ice 1" Ice	2.3218 2.5266 2.7388	2.2381 2.4407 2.6507	0.06 0.08 0.11
Pipe Mount [PM 601-3]	C	None		0.0000	122.0000	No Ice 1/2" Ice 1" Ice	4.3900 5.4800 6.5700	4.3900 5.4800 6.5700	0.20 0.24 0.28
***									
BXA-80063/4CFX5 w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.0000	114.0000	No Ice 1/2" Ice 1" Ice	4.9453 5.3243 5.7120	3.6158 4.2169 4.8343	0.03 0.07 0.12
BXA-80063/4CFX5 w/	B	From Leg	4.0000	0.0000	114.0000	No Ice	4.9453	3.6158	0.03

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight K
Mount Pipe			0.00 1.00			1/2" Ice 1" Ice	5.3243 5.7120	4.2169 4.8343	0.07 0.12
BXA-80063/4CFX5 w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.0000	114.0000	No Ice 1/2" Ice 1" Ice	4.9453 5.3243 5.7120	3.6158 4.2169 4.8343	0.03 0.07 0.12
KS24019-L112A	B	From Leg	4.0000 0.00 2.00	0.0000	114.0000	No Ice 1/2" Ice 1" Ice	0.1407 0.1979 0.2621	0.1407 0.1979 0.2621	0.01 0.01 0.01
DB-T1-6Z-8AB-0Z	B	From Leg	4.0000 0.00 1.00	0.0000	114.0000	No Ice 1/2" Ice 1" Ice	4.8000 5.0704 5.3481	2.0000 2.1926 2.3926	0.04 0.08 0.12
BXA-80063/4CFX5 w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.0000	114.0000	No Ice 1/2" Ice 1" Ice	4.9453 5.3243 5.7120	3.6158 4.2169 4.8343	0.03 0.07 0.12
BXA-80063/4CFX5 w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.0000	114.0000	No Ice 1/2" Ice 1" Ice	4.9453 5.3243 5.7120	3.6158 4.2169 4.8343	0.03 0.07 0.12
BXA-80063/4CFX5 w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.0000	114.0000	No Ice 1/2" Ice 1" Ice	4.9453 5.3243 5.7120	3.6158 4.2169 4.8343	0.03 0.07 0.12
(2) SBNHH-1D65B w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.0000	114.0000	No Ice 1/2" Ice 1" Ice	8.4186 8.9558 9.4801	7.4197 8.4535 9.3468	0.08 0.15 0.23
(2) SBNHH-1D65B w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.0000	114.0000	No Ice 1/2" Ice 1" Ice	8.4186 8.9558 9.4801	7.4197 8.4535 9.3468	0.08 0.15 0.23
(2) SBNHH-1D65B w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.0000	114.0000	No Ice 1/2" Ice 1" Ice	8.4186 8.9558 9.4801	7.4197 8.4535 9.3468	0.08 0.15 0.23
DB-T1-6Z-8AB-0Z	A	From Leg	4.0000 0.00 1.00	0.0000	114.0000	No Ice 1/2" Ice 1" Ice	4.8000 5.0704 5.3481	2.0000 2.1926 2.3926	0.04 0.08 0.12
(2) RFV01U-D2A	A	From Leg	4.0000 0.00 1.00	0.0000	114.0000	No Ice 1/2" Ice 1" Ice	1.8750 2.0454 2.2231	1.0125 1.1445 1.2840	0.07 0.09 0.11
RFV01U-D2A	B	From Leg	4.0000 0.00 1.00	0.0000	114.0000	No Ice 1/2" Ice 1" Ice	1.8750 2.0454 2.2231	1.0125 1.1445 1.2840	0.07 0.09 0.11
RFV01U-D1A	B	From Leg	4.0000 0.00 1.00	0.0000	114.0000	No Ice 1/2" Ice 1" Ice	1.8750 2.0454 2.2231	1.2500 1.3926 1.5426	0.08 0.10 0.12
(2) RFV01U-D1A	C	From Leg	4.0000 0.00 1.00	0.0000	114.0000	No Ice 1/2" Ice 1" Ice	1.8750 2.0454 2.2231	1.2500 1.3926 1.5426	0.08 0.10 0.12
Platform Mount [LP 712-1]	C	None		0.0000	114.0000	No Ice 1/2" Ice 1" Ice	24.5300 29.9400 35.3500	24.5300 29.9400 35.3500	1.34 1.65 1.96
***									
7770.00 w/ Mount Pipe	A	From Leg	4.0000	0.0000	105.0000	No Ice	5.7460	4.2543	0.06

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight K
			0.00			1/2" Ice	6.1791	5.0137	0.10
			0.00			1" Ice	6.6067	5.7109	0.16
7770.00 w/ Mount Pipe	B	From Leg	4.0000	0.0000	105.0000	No Ice	5.7460	4.2543	0.06
			0.00			1/2" Ice	6.1791	5.0137	0.10
			0.00			1" Ice	6.6067	5.7109	0.16
7770.00 w/ Mount Pipe	C	From Leg	4.0000	0.0000	105.0000	No Ice	5.7460	4.2543	0.06
			0.00			1/2" Ice	6.1791	5.0137	0.10
			0.00			1" Ice	6.6067	5.7109	0.16
AM-X-CD-16-65-00T-RET w/ Mount Pipe	A	From Leg	4.0000	0.0000	105.0000	No Ice	8.2619	6.3042	0.07
			0.00			1/2" Ice	8.8215	7.4790	0.14
			0.00			1" Ice	9.3462	8.3676	0.21
AM-X-CD-16-65-00T-RET w/ Mount Pipe	B	From Leg	4.0000	0.0000	105.0000	No Ice	8.2619	6.3042	0.07
			0.00			1/2" Ice	8.8215	7.4790	0.14
			0.00			1" Ice	9.3462	8.3676	0.21
AM-X-CD-16-65-00T-RET w/ Mount Pipe	C	From Leg	4.0000	0.0000	105.0000	No Ice	8.2619	6.3042	0.07
			0.00			1/2" Ice	8.8215	7.4790	0.14
			0.00			1" Ice	9.3462	8.3676	0.21
OPA-65R-LCUU-H6 w/ Mount Pipe	A	From Leg	4.0000	0.0000	105.0000	No Ice	9.8953	7.1792	0.10
			0.00			1/2" Ice	10.4700	8.3621	0.18
			0.00			1" Ice	11.0098	9.2588	0.26
OPA-65R-LCUU-H6 w/ Mount Pipe	B	From Leg	4.0000	0.0000	105.0000	No Ice	9.8953	7.1792	0.10
			0.00			1/2" Ice	10.4700	8.3621	0.18
			0.00			1" Ice	11.0098	9.2588	0.26
OPA-65R-LCUU-H6 w/ Mount Pipe	C	From Leg	4.0000	0.0000	105.0000	No Ice	9.8953	7.1792	0.10
			0.00			1/2" Ice	10.4700	8.3621	0.18
			0.00			1" Ice	11.0098	9.2588	0.26
(2) LGP2140X	A	From Leg	4.0000	0.0000	105.0000	No Ice	1.0800	0.3580	0.01
			0.00			1/2" Ice	1.2137	0.4536	0.02
			0.00			1" Ice	1.3548	0.5563	0.03
(2) LGP2140X	B	From Leg	4.0000	0.0000	105.0000	No Ice	1.0800	0.3580	0.01
			0.00			1/2" Ice	1.2137	0.4536	0.02
			0.00			1" Ice	1.3548	0.5563	0.03
(2) LGP2140X	C	From Leg	4.0000	0.0000	105.0000	No Ice	1.0800	0.3580	0.01
			0.00			1/2" Ice	1.2137	0.4536	0.02
			0.00			1" Ice	1.3548	0.5563	0.03
(2) RRUS-11	A	From Leg	4.0000	0.0000	105.0000	No Ice	2.7908	1.1923	0.05
			0.00			1/2" Ice	2.9984	1.3395	0.07
			0.00			1" Ice	3.2134	1.4957	0.09
(2) RRUS-11	B	From Leg	4.0000	0.0000	105.0000	No Ice	2.7908	1.1923	0.05
			0.00			1/2" Ice	2.9984	1.3395	0.07
			0.00			1" Ice	3.2134	1.4957	0.09
(2) RRUS-11	C	From Leg	4.0000	0.0000	105.0000	No Ice	2.7908	1.1923	0.05
			0.00			1/2" Ice	2.9984	1.3395	0.07
			0.00			1" Ice	3.2134	1.4957	0.09
RRUS 32 B30	A	From Leg	4.0000	0.0000	105.0000	No Ice	2.7427	1.6681	0.05
			0.00			1/2" Ice	2.9647	1.8552	0.07
			0.00			1" Ice	3.1941	2.0493	0.10
RRUS 32 B30	B	From Leg	4.0000	0.0000	105.0000	No Ice	2.7427	1.6681	0.05
			0.00			1/2"	2.9647	1.8552	0.07

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight K
			0.00			Ice 1" Ice	3.1941	2.0493	0.10
RRUS 32 B30	C	From Leg	4.0000 0.00 0.00	0.0000	105.0000	No Ice 1/2" Ice 1" Ice	2.7427 2.9647 3.1941	1.6681 1.8552 2.0493	0.05 0.07 0.10
(2) DC6-48-60-18-8F	A	From Leg	4.0000 0.00 0.00	0.0000	105.0000	No Ice 1/2" Ice 1" Ice	0.9167 1.4583 1.6431	0.9167 1.4583 1.6431	0.02 0.04 0.06
HPA-45R-BUU-H6 w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.0000	105.0000	No Ice 1/2" Ice 1" Ice	12.1275 12.7229 13.2833	7.7042 8.8919 9.7936	0.11 0.20 0.30
HPA-45R-BUU-H6 w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.0000	105.0000	No Ice 1/2" Ice 1" Ice	12.1275 12.7229 13.2833	7.7042 8.8919 9.7936	0.11 0.20 0.30
HPA-45R-BUU-H6 w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.0000	105.0000	No Ice 1/2" Ice 1" Ice	12.1275 12.7229 13.2833	7.7042 8.8919 9.7936	0.11 0.20 0.30
RRUS 4478 B14	A	From Leg	4.0000 0.00 0.00	0.0000	105.0000	No Ice 1/2" Ice 1" Ice	1.8425 2.0123 2.1895	1.0588 1.1969 1.3425	0.06 0.08 0.09
RRUS 4478 B14	B	From Leg	4.0000 0.00 0.00	0.0000	105.0000	No Ice 1/2" Ice 1" Ice	1.8425 2.0123 2.1895	1.0588 1.1969 1.3425	0.06 0.08 0.09
RRUS 4478 B14	C	From Leg	4.0000 0.00 0.00	0.0000	105.0000	No Ice 1/2" Ice 1" Ice	1.8425 2.0123 2.1895	1.0588 1.1969 1.3425	0.06 0.08 0.09
Platform Mount [LP 712-1]	C	None		0.0000	105.0000	No Ice 1/2" Ice 1" Ice	24.5300 29.9400 35.3500	24.5300 29.9400 35.3500	1.34 1.65 1.96
***									
AIR -32 B2A/B66AA w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.0000	94.0000	No Ice 1/2" Ice 1" Ice	6.7474 7.2017 7.6475	6.0700 6.8671 7.5828	0.15 0.21 0.28
AIR -32 B2A/B66AA w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.0000	94.0000	No Ice 1/2" Ice 1" Ice	6.7474 7.2017 7.6475	6.0700 6.8671 7.5828	0.15 0.21 0.28
AIR -32 B2A/B66AA w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.0000	94.0000	No Ice 1/2" Ice 1" Ice	6.7474 7.2017 7.6475	6.0700 6.8671 7.5828	0.15 0.21 0.28
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.0000	94.0000	No Ice 1/2" Ice 1" Ice	6.3186 6.7646 7.2032	5.6334 6.4160 7.1208	0.11 0.17 0.23
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.0000	94.0000	No Ice 1/2" Ice 1" Ice	6.3186 6.7646 7.2032	5.6334 6.4160 7.1208	0.11 0.17 0.23
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.0000	94.0000	No Ice 1/2" Ice 1" Ice	6.3186 6.7646 7.2032	5.6334 6.4160 7.1208	0.11 0.17 0.23
KRY 112 144/1	A	From Leg	4.0000 0.00	0.0000	94.0000	No Ice 1/2"	0.3500 0.4259	0.1750 0.2343	0.01 0.01

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight K
			0.00			Ice 1" Ice	0.5093	0.3009	0.02
KRY 112 144/1	B	From Leg	4.0000 0.00 0.00	0.0000	94.0000	No Ice 1/2" Ice 1" Ice	0.3500 0.4259 0.5093	0.1750 0.2343 0.3009	0.01 0.01 0.02
KRY 112 144/1	C	From Leg	4.0000 0.00 0.00	0.0000	94.0000	No Ice 1/2" Ice 1" Ice	0.3500 0.4259 0.5093	0.1750 0.2343 0.3009	0.01 0.01 0.02
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.0000	94.0000	No Ice 1/2" Ice 1" Ice	20.4801 21.2306 21.9900	11.0240 12.5496 14.0992	0.16 0.30 0.44
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.0000	94.0000	No Ice 1/2" Ice 1" Ice	20.4801 21.2306 21.9900	11.0240 12.5496 14.0992	0.16 0.30 0.44
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.0000	94.0000	No Ice 1/2" Ice 1" Ice	20.4801 21.2306 21.9900	11.0240 12.5496 14.0992	0.16 0.30 0.44
RADIO 4449 B12/B71	A	From Leg	4.0000 0.00 1.00	0.0000	94.0000	No Ice 1/2" Ice 1" Ice	1.6500 1.8104 1.9781	1.1625 1.3012 1.4473	0.07 0.09 0.11
RADIO 4449 B12/B71	B	From Leg	4.0000 0.00 1.00	0.0000	94.0000	No Ice 1/2" Ice 1" Ice	1.6500 1.8104 1.9781	1.1625 1.3012 1.4473	0.07 0.09 0.11
RADIO 4449 B12/B71	C	From Leg	4.0000 0.00 1.00	0.0000	94.0000	No Ice 1/2" Ice 1" Ice	1.6500 1.8104 1.9781	1.1625 1.3012 1.4473	0.07 0.09 0.11
2.375" OD x 5' Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.0000	94.0000	No Ice 1/2" Ice 1" Ice	1.1875 1.4956 1.8071	1.1875 1.4956 1.8071	0.02 0.03 0.04
2.375" OD x 5' Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.0000	94.0000	No Ice 1/2" Ice 1" Ice	1.1875 1.4956 1.8071	1.1875 1.4956 1.8071	0.02 0.03 0.04
2.375" OD x 5' Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.0000	94.0000	No Ice 1/2" Ice 1" Ice	1.1875 1.4956 1.8071	1.1875 1.4956 1.8071	0.02 0.03 0.04
Platform Mount [LP 304-1]	C	None		0.0000	94.0000	No Ice 1/2" Ice 1" Ice	17.4600 22.4400 27.4200	17.4600 22.4400 27.4200	1.35 1.62 1.90
Miscellaneous [NA 510-1]	C	None		0.0000	94.0000	No Ice 1/2" Ice 1" Ice	6.0000 8.5000 11.0000	6.0000 8.5000 11.0000	0.26 0.34 0.42
***									
742 213 w/ Mount Pipe	A	From Leg	1.0000 0.00 0.00	0.0000	87.0000	No Ice 1/2" Ice 1" Ice	5.3729 5.9502 6.5014	4.6203 6.0004 6.9816	0.05 0.09 0.15
742 213 w/ Mount Pipe	B	From Leg	1.0000 0.00 0.00	0.0000	87.0000	No Ice 1/2" Ice 1" Ice	5.3729 5.9502 6.5014	4.6203 6.0004 6.9816	0.05 0.09 0.15
742 213 w/ Mount Pipe	C	From Leg	1.0000 0.00	0.0000	87.0000	No Ice 1/2"	5.3729 5.9502	4.6203 6.0004	0.05 0.09

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			Ice 1" Ice	6.5014	6.9816	0.15
Pipe Mount [PM 601-3]	C	None		0.0000	87.0000	No Ice 1/2" Ice 1" Ice	4.3900 5.4800 6.5700	4.3900 5.4800 6.5700	0.20 0.24 0.28
***									
58532A	A	From Leg	3.0000 0.00 0.00	0.0000	77.0000	No Ice 1/2" Ice 1" Ice	0.1893 0.2483 0.3147	0.1893 0.2483 0.3147	0.00 0.00 0.01
Side Arm Mount [SO 701-1]	A	None		0.0000	77.0000	No Ice 1/2" Ice 1" Ice	0.8500 1.1400 1.4300	1.6700 2.3400 3.0100	0.07 0.08 0.09

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
VHLP2.5-11	A	Paraboloid w/Shroud (HP)	From Leg	1.0000 0.00 6.00	0.0000		133.0000	2.9167	No Ice 1/2" Ice 1" Ice	6.6800 7.0700 7.4600	0.05 0.08 0.12
VHLP2.5-11	B	Paraboloid w/Shroud (HP)	From Leg	1.0000 0.00 6.00	0.0000		133.0000	2.9167	No Ice 1/2" Ice 1" Ice	6.6800 7.0700 7.4600	0.05 0.08 0.12

Tower Pressures - No Ice

G_H = 1.100

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg % 	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
L1 145.0000-140.0000	142.4843	1.364	31	10.338	A	0.000	10.338	10.338	100.00	0.000	0.000
					B	0.000	10.338		100.00	0.000	0.000
					C	0.000	10.338		100.00	0.000	0.000
L2 140.0000-135.0000	137.4848	1.353	31	10.728	A	0.000	10.728	10.728	100.00	0.000	0.000
					B	0.000	10.728		100.00	0.000	0.000
					C	0.000	10.728		100.00	0.000	0.000
L3 135.0000-130.0000	132.4854	1.343	31	11.119	A	0.000	11.119	11.119	100.00	0.000	0.000
					B	0.000	11.119		100.00	0.000	0.000
					C	0.000	11.119		100.00	0.000	0.000
L4 130.0000-125.0000	127.4856	1.332	30	11.509	A	0.000	11.509	11.509	100.00	0.000	0.000
					B	0.000	11.509		100.00	0.000	0.000
					C	0.000	11.509		100.00	0.000	0.000
L5 125.0000-120.0000	122.4861	1.321	30	11.906	A	0.000	11.906	11.906	100.00	0.000	0.000
					B	0.000	11.906		100.00	0.000	0.000
					C	0.000	11.906		100.00	0.000	0.000
L6 120.0000-115.0000	117.4866	1.309	30	12.304	A	0.000	12.304	12.304	100.00	0.000	0.000
					B	0.000	12.304		100.00	0.000	0.000
					C	0.000	12.304		100.00	0.000	0.000
L7 115.0000-110.0000	112.4870	1.297	30	12.701	A	0.000	12.701	12.701	100.00	0.000	0.000
					B	0.000	12.701		100.00	0.000	0.000
					C	0.000	12.701		100.00	0.000	0.792
L8 110.0000-105.0000	107.4874	1.285	29	13.098	A	0.000	13.098	13.098	100.00	0.000	0.000
					B	0.000	13.098		100.00	0.000	0.000

Section Elevation	z	K_Z	q_z	A_G	Face	A_F	A_R	A_{leg}	Leg %	C_AA_A In Face	C_AA_A Out Face
ft	ft		psf	ft^2		ft^2	ft^2	ft^2		ft^2	ft^2
					C	0.000	13.098		100.00	0.000	0.990
L9 105.0000-100.0000	102.4877	1.272	29	13.496	A	0.000	13.496	13.496	100.00	0.000	0.000
					B	0.000	13.496		100.00	0.000	0.000
					C	0.000	13.496		100.00	0.000	0.990
L10 100.0000-95.0000	97.4881	1.259	29	13.893	A	0.000	13.893	13.893	100.00	0.000	0.000
					B	0.000	13.893		100.00	0.000	0.000
					C	0.000	13.893		100.00	0.000	0.990
L11 95.0000-90.0000	92.4884	1.245	28	14.291	A	0.000	14.291	14.291	100.00	0.000	0.000
					B	0.000	14.291		100.00	0.000	0.000
					C	0.000	14.291		100.00	0.000	2.446
L12 90.0000-84.7500	87.3626	1.23	28	15.433	A	0.000	15.433	15.433	100.00	0.000	0.000
					B	0.000	15.433		100.00	0.000	0.000
					C	0.000	15.433		100.00	0.000	2.950
L13 84.7500-84.2500	84.4999	1.222	28	1.471	A	0.000	1.471	1.471	100.00	0.000	0.000
					B	0.000	1.471		100.00	0.000	0.000
					C	0.000	1.471		100.00	0.000	0.281
L14 84.2500-79.2500	81.7391	1.213	28	14.921	A	0.000	14.921	14.921	100.00	0.000	0.000
					B	0.000	14.921		100.00	0.000	0.000
					C	0.000	14.921		100.00	0.000	2.810
L15 79.2500-74.2500	76.7394	1.197	27	15.313	A	0.000	15.313	15.313	100.00	0.000	0.000
					B	0.000	15.313		100.00	0.000	0.000
					C	0.000	15.313		100.00	0.000	2.810
L16 74.2500-69.2500	71.7396	1.18	27	15.705	A	0.000	15.705	15.705	100.00	0.000	0.000
					B	0.000	15.705		100.00	0.000	0.000
					C	0.000	15.705		100.00	0.000	2.810
L17 69.2500-64.2500	66.7399	1.162	27	16.097	A	0.000	16.097	16.097	100.00	0.000	0.000
					B	0.000	16.097		100.00	0.000	0.000
					C	0.000	16.097		100.00	0.000	2.810
L18 64.2500-59.2500	61.7401	1.143	26	16.488	A	0.000	16.488	16.488	100.00	0.000	0.000
					B	0.000	16.488		100.00	0.000	0.000
					C	0.000	16.488		100.00	0.000	3.032
L19 59.2500-58.0800	58.6645	1.131	26	3.915	A	0.000	3.915	3.915	100.00	0.000	0.000
					B	0.000	3.915		100.00	0.000	0.000
					C	0.000	3.915		100.00	0.000	0.853
L20 58.0800-57.8300	57.9550	1.128	26	0.839	A	0.000	0.839	0.839	100.00	0.000	0.000
					B	0.000	0.839		100.00	0.000	0.000
					C	0.000	0.839		100.00	0.000	0.182
L21 57.8300-52.8300	55.3204	1.117	26	16.985	A	0.000	16.985	16.985	100.00	0.000	0.000
					B	0.000	16.985		100.00	0.000	0.000
					C	0.000	16.985		100.00	0.000	3.643
L22 52.8300-44.2500	48.5126	1.087	25	30.060	A	0.000	30.060	30.060	100.00	0.000	0.000
					B	0.000	30.060		100.00	0.000	0.000
					C	0.000	30.060		100.00	0.000	6.252
L23 44.2500-43.2500	43.7496	1.063	24	3.525	A	0.000	3.525	3.525	100.00	0.000	0.000
					B	0.000	3.525		100.00	0.000	0.000
					C	0.000	3.525		100.00	0.000	0.729
L24 43.2500-38.2500	40.7409	1.048	24	17.859	A	0.000	17.859	17.859	100.00	0.000	0.000
					B	0.000	17.859		100.00	0.000	0.000
					C	0.000	17.859		100.00	0.000	3.643
L25 38.2500-33.2500	35.7411	1.019	23	18.251	A	0.000	18.251	18.251	100.00	0.000	0.000
					B	0.000	18.251		100.00	0.000	0.000
					C	0.000	18.251		100.00	0.000	3.737
L26 33.2500-31.2500	32.2486	0.997	23	7.410	A	0.000	7.410	7.410	100.00	0.000	0.000
					B	0.000	7.410		100.00	0.000	0.000
					C	0.000	7.410		100.00	0.000	1.541
L27 31.2500-31.0000	31.1250	0.99	23	0.930	A	0.000	0.930	0.930	100.00	0.000	0.000
					B	0.000	0.930		100.00	0.000	0.000
					C	0.000	0.930		100.00	0.000	0.193
L28 31.0000-26.0000	28.4913	0.972	22	18.815	A	0.000	18.815	18.815	100.00	0.000	0.000
					B	0.000	18.815		100.00	0.000	0.000
					C	0.000	18.815		100.00	0.000	3.852
L29 26.0000-21.0000	23.4915	0.933	21	19.208	A	0.000	19.208	19.208	100.00	0.000	0.000
					B	0.000	19.208		100.00	0.000	0.000
					C	0.000	19.208		100.00	0.000	3.852
L30 21.0000-16.0000	18.4917	0.887	20	19.599	A	0.000	19.599	19.599	100.00	0.000	0.000
					B	0.000	19.599		100.00	0.000	0.000
					C	0.000	19.599		100.00	0.000	3.852
L31 16.0000-	13.4918	0.85	19	19.991	A	0.000	19.991	19.991	100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
11.0000					B	0.000	19.991		100.00	0.000	0.000
					C	0.000	19.991		100.00	0.000	3.852
L32 11.0000-6.0000	8.4920	0.85	19	20.383	A	0.000	20.383	20.383	100.00	0.000	0.000
					B	0.000	20.383		100.00	0.000	0.000
					C	0.000	20.383		100.00	0.000	3.852
L33 6.0000-4.7500	5.3745	0.85	19	5.157	A	0.000	5.157	5.157	100.00	0.000	0.000
					B	0.000	5.157		100.00	0.000	0.000
					C	0.000	5.157		100.00	0.000	0.963
L34 4.7500-4.5000	4.6250	0.85	19	1.034	A	0.000	1.034	1.034	100.00	0.000	0.000
					B	0.000	1.034		100.00	0.000	0.000
					C	0.000	1.034		100.00	0.000	0.193
L35 4.5000-0.0000	2.2437	0.85	19	18.783	A	0.000	18.783	18.783	100.00	0.000	0.000
					B	0.000	18.783		100.00	0.000	0.000
					C	0.000	18.783		100.00	0.000	3.466

Tower Pressure - With Ice

G_H = 1.100

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 145.0000-140.0000	142.4843	1.364	8	2.3150	12.267	A	0.000	12.267	12.267	100.00	0.000	0.000
						B	0.000	12.267		100.00	0.000	0.000
						C	0.000	12.267		100.00	0.000	0.000
L2 140.0000-135.0000	137.4848	1.353	8	2.3068	12.651	A	0.000	12.651	12.651	100.00	0.000	0.000
						B	0.000	12.651		100.00	0.000	0.000
						C	0.000	12.651		100.00	0.000	0.000
L3 135.0000-130.0000	132.4854	1.343	8	2.2982	13.034	A	0.000	13.034	13.034	100.00	0.000	0.000
						B	0.000	13.034		100.00	0.000	0.000
						C	0.000	13.034		100.00	0.000	0.000
L4 130.0000-125.0000	127.4856	1.332	8	2.2894	13.417	A	0.000	13.417	13.417	100.00	0.000	0.000
						B	0.000	13.417		100.00	0.000	0.000
						C	0.000	13.417		100.00	0.000	0.000
L5 125.0000-120.0000	122.4861	1.321	8	2.2803	13.806	A	0.000	13.806	13.806	100.00	0.000	0.000
						B	0.000	13.806		100.00	0.000	0.000
						C	0.000	13.806		100.00	0.000	0.000
L6 120.0000-115.0000	117.4866	1.309	8	2.2708	14.196	A	0.000	14.196	14.196	100.00	0.000	0.000
						B	0.000	14.196		100.00	0.000	0.000
						C	0.000	14.196		100.00	0.000	0.000
L7 115.0000-110.0000	112.4870	1.297	8	2.2609	14.585	A	0.000	14.585	14.585	100.00	0.000	0.000
						B	0.000	14.585		100.00	0.000	0.000
						C	0.000	14.585		100.00	0.000	2.601
L8 110.0000-105.0000	107.4874	1.285	8	2.2507	14.974	A	0.000	14.974	14.974	100.00	0.000	0.000
						B	0.000	14.974		100.00	0.000	0.000
						C	0.000	14.974		100.00	0.000	3.241
L9 105.0000-100.0000	102.4877	1.272	8	2.2400	15.362	A	0.000	15.362	15.362	100.00	0.000	0.000
						B	0.000	15.362		100.00	0.000	0.000
						C	0.000	15.362		100.00	0.000	3.230
L10 100.0000-95.0000	97.4881	1.259	8	2.2288	15.750	A	0.000	15.750	15.750	100.00	0.000	0.000
						B	0.000	15.750		100.00	0.000	0.000
						C	0.000	15.750		100.00	0.000	3.219
L11 95.0000-90.0000	92.4884	1.245	8	2.2171	16.138	A	0.000	16.138	16.138	100.00	0.000	0.000
						B	0.000	16.138		100.00	0.000	0.000
						C	0.000	16.138		100.00	0.000	8.210
L12 90.0000-84.7500	87.3626	1.23	7	2.2045	17.362	A	0.000	17.362	17.362	100.00	0.000	0.000
						B	0.000	17.362		100.00	0.000	0.000
						C	0.000	17.362		100.00	0.000	9.895
L13 84.7500-84.2500	84.4999	1.222	7	2.1972	1.654	A	0.000	1.654	1.654	100.00	0.000	0.000
						B	0.000	1.654		100.00	0.000	0.000
						C	0.000	1.654		100.00	0.000	0.942
L14 84.2500-79.2500	81.7391	1.213	7	2.1899	16.746	A	0.000	16.746	16.746	100.00	0.000	0.000
						B	0.000	16.746		100.00	0.000	0.000
						C	0.000	16.746		100.00	0.000	9.380
L15 79.2500-	76.7394	1.197	7	2.1761	17.126	A	0.000	17.126	17.126	100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
74.2500						B	0.000	17.126		100.00	0.000	0.000
						C	0.000	17.126		100.00	0.000	9.338
L16 74.2500-69.2500	71.7396	1.18	7	2.1615	17.506	A	0.000	17.506	17.506	100.00	0.000	0.000
						B	0.000	17.506		100.00	0.000	0.000
						C	0.000	17.506		100.00	0.000	9.294
L17 69.2500-64.2500	66.7399	1.162	7	2.1459	17.885	A	0.000	17.885	17.885	100.00	0.000	0.000
						B	0.000	17.885		100.00	0.000	0.000
						C	0.000	17.885		100.00	0.000	9.248
L18 64.2500-59.2500	61.7401	1.143	7	2.1293	18.263	A	0.000	18.263	18.263	100.00	0.000	0.000
						B	0.000	18.263		100.00	0.000	0.000
						C	0.000	18.263		100.00	0.000	10.049
L19 59.2500-58.0800	58.6645	1.131	7	2.1184	4.328	A	0.000	4.328	4.328	100.00	0.000	0.000
						B	0.000	4.328		100.00	0.000	0.000
						C	0.000	4.328		100.00	0.000	2.890
L20 58.0800-57.8300	57.9550	1.128	7	2.1159	0.927	A	0.000	0.927	0.927	100.00	0.000	0.000
						B	0.000	0.927		100.00	0.000	0.000
						C	0.000	0.927		100.00	0.000	0.617
L21 57.8300-52.8300	55.3204	1.117	7	2.1060	18.740	A	0.000	18.740	18.740	100.00	0.000	0.000
						B	0.000	18.740		100.00	0.000	0.000
						C	0.000	18.740		100.00	0.000	12.301
L22 52.8300-44.2500	48.5126	1.087	7	2.0786	33.032	A	0.000	33.032	33.032	100.00	0.000	0.000
						B	0.000	33.032		100.00	0.000	0.000
						C	0.000	33.032		100.00	0.000	20.916
L23 44.2500-43.2500	43.7496	1.063	6	2.0572	3.871	A	0.000	3.871	3.871	100.00	0.000	0.000
						B	0.000	3.871		100.00	0.000	0.000
						C	0.000	3.871		100.00	0.000	2.438
L24 43.2500-38.2500	40.7409	1.048	6	2.0426	19.561	A	0.000	19.561	19.561	100.00	0.000	0.000
						B	0.000	19.561		100.00	0.000	0.000
						C	0.000	19.561		100.00	0.000	12.041
L25 38.2500-33.2500	35.7411	1.019	6	2.0160	19.931	A	0.000	19.931	19.931	100.00	0.000	0.000
						B	0.000	19.931		100.00	0.000	0.000
						C	0.000	19.931		100.00	0.000	12.025
L26 33.2500-31.2500	32.2486	0.997	6	1.9954	8.075	A	0.000	8.075	8.075	100.00	0.000	0.000
						B	0.000	8.075		100.00	0.000	0.000
						C	0.000	8.075		100.00	0.000	4.822
L27 31.2500-31.0000	31.1250	0.99	6	1.9883	1.013	A	0.000	1.013	1.013	100.00	0.000	0.000
						B	0.000	1.013		100.00	0.000	0.000
						C	0.000	1.013		100.00	0.000	0.601
L28 31.0000-26.0000	28.4913	0.972	6	1.9708	20.457	A	0.000	20.457	20.457	100.00	0.000	0.000
						B	0.000	20.457		100.00	0.000	0.000
						C	0.000	20.457		100.00	0.000	11.954
L29 26.0000-21.0000	23.4915	0.933	6	1.9332	20.819	A	0.000	20.819	20.819	100.00	0.000	0.000
						B	0.000	20.819		100.00	0.000	0.000
						C	0.000	20.819		100.00	0.000	11.799
L30 21.0000-16.0000	18.4917	0.887	5	1.8875	21.172	A	0.000	21.172	21.172	100.00	0.000	0.000
						B	0.000	21.172		100.00	0.000	0.000
						C	0.000	21.172		100.00	0.000	11.611
L31 16.0000-11.0000	13.4918	0.85	5	1.8289	21.515	A	0.000	21.515	21.515	100.00	0.000	0.000
						B	0.000	21.515		100.00	0.000	0.000
						C	0.000	21.515		100.00	0.000	11.370
L32 11.0000-6.0000	8.4920	0.85	5	1.7461	21.839	A	0.000	21.839	21.839	100.00	0.000	0.000
						B	0.000	21.839		100.00	0.000	0.000
						C	0.000	21.839		100.00	0.000	11.030
L33 6.0000-4.7500	5.3745	0.85	5	1.6681	5.505	A	0.000	5.505	5.505	100.00	0.000	0.000
						B	0.000	5.505		100.00	0.000	0.000
						C	0.000	5.505		100.00	0.000	2.677
L34 4.7500-4.5000	4.6250	0.85	5	1.6432	1.103	A	0.000	1.103	1.103	100.00	0.000	0.000
						B	0.000	1.103		100.00	0.000	0.000
						C	0.000	1.103		100.00	0.000	0.530
L35 4.5000-0.0000	2.2437	0.85	5	1.5285	19.929	A	0.000	19.929	19.929	100.00	0.000	0.000
						B	0.000	19.929		100.00	0.000	0.000
						C	0.000	19.929		100.00	0.000	9.122

Tower Pressure - Service

G_H = 1.100

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 145.0000-140.0000	142.4843	1.364	11	10.338	A	0.000	10.338	10.338	100.00	0.000	0.000
					B	0.000	10.338		100.00	0.000	0.000
					C	0.000	10.338		100.00	0.000	0.000
L2 140.0000-135.0000	137.4848	1.353	11	10.728	A	0.000	10.728	10.728	100.00	0.000	0.000
					B	0.000	10.728		100.00	0.000	0.000
					C	0.000	10.728		100.00	0.000	0.000
L3 135.0000-130.0000	132.4854	1.343	11	11.119	A	0.000	11.119	11.119	100.00	0.000	0.000
					B	0.000	11.119		100.00	0.000	0.000
					C	0.000	11.119		100.00	0.000	0.000
L4 130.0000-125.0000	127.4856	1.332	10	11.509	A	0.000	11.509	11.509	100.00	0.000	0.000
					B	0.000	11.509		100.00	0.000	0.000
					C	0.000	11.509		100.00	0.000	0.000
L5 125.0000-120.0000	122.4861	1.321	10	11.906	A	0.000	11.906	11.906	100.00	0.000	0.000
					B	0.000	11.906		100.00	0.000	0.000
					C	0.000	11.906		100.00	0.000	0.000
L6 120.0000-115.0000	117.4866	1.309	10	12.304	A	0.000	12.304	12.304	100.00	0.000	0.000
					B	0.000	12.304		100.00	0.000	0.000
					C	0.000	12.304		100.00	0.000	0.000
L7 115.0000-110.0000	112.4870	1.297	10	12.701	A	0.000	12.701	12.701	100.00	0.000	0.000
					B	0.000	12.701		100.00	0.000	0.000
					C	0.000	12.701		100.00	0.000	0.792
L8 110.0000-105.0000	107.4874	1.285	10	13.098	A	0.000	13.098	13.098	100.00	0.000	0.000
					B	0.000	13.098		100.00	0.000	0.000
					C	0.000	13.098		100.00	0.000	0.990
L9 105.0000-100.0000	102.4877	1.272	10	13.496	A	0.000	13.496	13.496	100.00	0.000	0.000
					B	0.000	13.496		100.00	0.000	0.000
					C	0.000	13.496		100.00	0.000	0.990
L10 100.0000-95.0000	97.4881	1.259	10	13.893	A	0.000	13.893	13.893	100.00	0.000	0.000
					B	0.000	13.893		100.00	0.000	0.000
					C	0.000	13.893		100.00	0.000	0.990
L11 95.0000-90.0000	92.4884	1.245	10	14.291	A	0.000	14.291	14.291	100.00	0.000	0.000
					B	0.000	14.291		100.00	0.000	0.000
					C	0.000	14.291		100.00	0.000	2.446
L12 90.0000-84.7500	87.3626	1.23	10	15.433	A	0.000	15.433	15.433	100.00	0.000	0.000
					B	0.000	15.433		100.00	0.000	0.000
					C	0.000	15.433		100.00	0.000	2.950
L13 84.7500-84.2500	84.4999	1.222	10	1.471	A	0.000	1.471	1.471	100.00	0.000	0.000
					B	0.000	1.471		100.00	0.000	0.000
					C	0.000	1.471		100.00	0.000	0.281
L14 84.2500-79.2500	81.7391	1.213	10	14.921	A	0.000	14.921	14.921	100.00	0.000	0.000
					B	0.000	14.921		100.00	0.000	0.000
					C	0.000	14.921		100.00	0.000	2.810
L15 79.2500-74.2500	76.7394	1.197	9	15.313	A	0.000	15.313	15.313	100.00	0.000	0.000
					B	0.000	15.313		100.00	0.000	0.000
					C	0.000	15.313		100.00	0.000	2.810
L16 74.2500-69.2500	71.7396	1.18	9	15.705	A	0.000	15.705	15.705	100.00	0.000	0.000
					B	0.000	15.705		100.00	0.000	0.000
					C	0.000	15.705		100.00	0.000	2.810
L17 69.2500-64.2500	66.7399	1.162	9	16.097	A	0.000	16.097	16.097	100.00	0.000	0.000
					B	0.000	16.097		100.00	0.000	0.000
					C	0.000	16.097		100.00	0.000	2.810
L18 64.2500-59.2500	61.7401	1.143	9	16.488	A	0.000	16.488	16.488	100.00	0.000	0.000
					B	0.000	16.488		100.00	0.000	0.000
					C	0.000	16.488		100.00	0.000	3.032
L19 59.2500-58.0800	58.6645	1.131	9	3.915	A	0.000	3.915	3.915	100.00	0.000	0.000
					B	0.000	3.915		100.00	0.000	0.000
					C	0.000	3.915		100.00	0.000	0.853
L20 58.0800-57.8300	57.9550	1.128	9	0.839	A	0.000	0.839	0.839	100.00	0.000	0.000
					B	0.000	0.839		100.00	0.000	0.000
					C	0.000	0.839		100.00	0.000	0.182
L21 57.8300-	55.3204	1.117	9	16.985	A	0.000	16.985	16.985	100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
52.8300					B	0.000	16.985		100.00	0.000	0.000
					C	0.000	16.985		100.00	0.000	3.643
L22 52.8300-44.2500	48.5126	1.087	9	30.060	A	0.000	30.060	30.060	100.00	0.000	0.000
					B	0.000	30.060		100.00	0.000	0.000
					C	0.000	30.060		100.00	0.000	6.252
L23 44.2500-43.2500	43.7496	1.063	8	3.525	A	0.000	3.525	3.525	100.00	0.000	0.000
					B	0.000	3.525		100.00	0.000	0.000
					C	0.000	3.525		100.00	0.000	0.729
L24 43.2500-38.2500	40.7409	1.048	8	17.859	A	0.000	17.859	17.859	100.00	0.000	0.000
					B	0.000	17.859		100.00	0.000	0.000
					C	0.000	17.859		100.00	0.000	3.643
L25 38.2500-33.2500	35.7411	1.019	8	18.251	A	0.000	18.251	18.251	100.00	0.000	0.000
					B	0.000	18.251		100.00	0.000	0.000
					C	0.000	18.251		100.00	0.000	3.737
L26 33.2500-31.2500	32.2486	0.997	8	7.410	A	0.000	7.410	7.410	100.00	0.000	0.000
					B	0.000	7.410		100.00	0.000	0.000
					C	0.000	7.410		100.00	0.000	1.541
L27 31.2500-31.0000	31.1250	0.99	8	0.930	A	0.000	0.930	0.930	100.00	0.000	0.000
					B	0.000	0.930		100.00	0.000	0.000
					C	0.000	0.930		100.00	0.000	0.193
L28 31.0000-26.0000	28.4913	0.972	8	18.815	A	0.000	18.815	18.815	100.00	0.000	0.000
					B	0.000	18.815		100.00	0.000	0.000
					C	0.000	18.815		100.00	0.000	3.852
L29 26.0000-21.0000	23.4915	0.933	7	19.208	A	0.000	19.208	19.208	100.00	0.000	0.000
					B	0.000	19.208		100.00	0.000	0.000
					C	0.000	19.208		100.00	0.000	3.852
L30 21.0000-16.0000	18.4917	0.887	7	19.599	A	0.000	19.599	19.599	100.00	0.000	0.000
					B	0.000	19.599		100.00	0.000	0.000
					C	0.000	19.599		100.00	0.000	3.852
L31 16.0000-11.0000	13.4918	0.85	7	19.991	A	0.000	19.991	19.991	100.00	0.000	0.000
					B	0.000	19.991		100.00	0.000	0.000
					C	0.000	19.991		100.00	0.000	3.852
L32 11.0000-6.0000	8.4920	0.85	7	20.383	A	0.000	20.383	20.383	100.00	0.000	0.000
					B	0.000	20.383		100.00	0.000	0.000
					C	0.000	20.383		100.00	0.000	3.852
L33 6.0000-4.7500	5.3745	0.85	7	5.157	A	0.000	5.157	5.157	100.00	0.000	0.000
					B	0.000	5.157		100.00	0.000	0.000
					C	0.000	5.157		100.00	0.000	0.963
L34 4.7500-4.5000	4.6250	0.85	7	1.034	A	0.000	1.034	1.034	100.00	0.000	0.000
					B	0.000	1.034		100.00	0.000	0.000
					C	0.000	1.034		100.00	0.000	0.193
L35 4.5000-0.0000	2.2437	0.85	7	18.783	A	0.000	18.783	18.783	100.00	0.000	0.000
					B	0.000	18.783		100.00	0.000	0.000
					C	0.000	18.783		100.00	0.000	3.466

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice

Comb. No.	Description
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 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	145 - 140	Pole	Max Tension	26	0.00	-0.00	0.00
			Max. Compression	26	-0.68	0.00	-0.00
			Max. Mx	20	-0.26	0.98	0.00
			Max. My	14	-0.26	-0.00	-0.98
			Max. Vy	20	-0.39	0.98	0.00
			Max. Vx	14	0.39	-0.00	-0.98
			Max. Torque	21			0.00
L2	140 - 135	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-1.82	-0.40	0.23
			Max. Mx	20	-0.59	6.50	0.77
			Max. My	14	-0.58	-0.65	-6.84
			Max. Vy	20	-1.46	6.50	0.77
			Max. Vx	14	1.54	-0.65	-6.84
			Max. Torque	16			0.46
L3	135 - 130	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-7.24	-0.67	0.49
			Max. Mx	20	-2.66	23.35	1.78
			Max. My	14	-2.65	-1.46	-24.35
			Max. Vy	20	-4.22	23.35	1.78
			Max. Vx	14	4.30	-1.46	-24.35
			Max. Torque	22			-0.55
L4	130 - 125	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-8.10	-0.67	0.49
			Max. Mx	20	-3.08	45.52	2.77
			Max. My	14	-3.07	-2.24	-46.94
			Max. Vy	20	-4.65	45.52	2.77
			Max. Vx	14	4.74	-2.24	-46.94
			Max. Torque	22			-0.55
L5	125 - 120	Pole	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	26	-17.93	-0.67	0.49
			Max. Mx	20	-6.43	86.31	3.77
			Max. My	14	-6.42	-3.02	-88.16
			Max. Vy	20	-9.87	86.31	3.77
			Max. Vx	14	9.96	-3.02	-88.16
			Max. Torque	22			-0.55
L6	120 - 115	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-18.88	-0.67	0.49
			Max. Mx	20	-6.91	136.80	4.78
			Max. My	14	-6.89	-3.81	-139.09
			Max. Vy	20	-10.33	136.80	4.78
			Max. Vx	14	10.42	-3.81	-139.09
			Max. Torque	22			-0.55
L7	115 - 110	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-29.40	-1.74	0.86
			Max. Mx	20	-10.03	214.19	6.08
			Max. My	14	-10.01	-5.04	-217.45
			Max. Vy	20	-16.07	214.19	6.08
			Max. Vx	14	16.24	-5.04	-217.45
			Max. Torque	14			0.88
L8	110 - 105	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-30.51	-1.65	0.81
			Max. Mx	20	-10.61	295.85	7.39
			Max. My	14	-10.59	-6.12	-299.92
			Max. Vy	20	-16.59	295.85	7.39
			Max. Vx	14	16.75	-6.12	-299.92
			Max. Torque	14			0.86
L9	105 - 100	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.44	-1.54	2.11
			Max. Mx	20	-14.47	412.83	8.92
			Max. My	14	-14.44	-7.20	-417.46
			Max. Vy	20	-23.66	412.83	8.92
			Max. Vx	14	23.82	-7.20	-417.46
			Max. Torque	22			-1.10
L10	100 - 95	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44.68	-1.44	2.06
			Max. Mx	20	-15.20	532.39	10.24
			Max. My	14	-15.18	-8.28	-537.83
			Max. Vy	20	-24.17	532.39	10.24
			Max. Vx	14	24.34	-8.28	-537.83
			Max. Torque	22			-1.06
L11	95 - 90	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56.42	-0.88	1.75
			Max. Mx	20	-19.44	679.26	11.54
			Max. My	14	-19.42	-9.33	-685.51
			Max. Vy	20	-30.02	679.26	11.54
			Max. Vx	14	30.18	-9.33	-685.51
			Max. Torque	22			-1.00
L12	90 - 84.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56.69	-0.78	1.69
			Max. Mx	20	-19.58	701.82	11.73
			Max. My	14	-19.56	-9.49	-708.19
			Max. Vy	20	-30.11	701.82	11.73
			Max. Vx	14	30.28	-9.49	-708.19
			Max. Torque	20			-0.86
L13	84.75 - 84.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.96	-0.10	1.32
			Max. Mx	20	-21.42	856.63	13.03
			Max. My	14	-21.39	-10.53	-863.79
			Max. Vy	20	-31.71	856.63	13.03
			Max. Vx	14	31.87	-10.53	-863.79
			Max. Torque	20			-0.75
L14	84.25 - 79.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.89	0.58	0.94
			Max. Mx	20	-22.48	1016.85	14.32
			Max. My	14	-22.46	-11.56	-1024.81
			Max. Vy	20	-32.37	1016.85	14.32

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	14	32.54	-11.56	-1024.81
			Max. Torque	20			-0.74
L15	79.25 - 74.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-65.04	1.31	0.63
			Max. Mx	20	-23.67	1180.60	15.61
			Max. My	14	-23.64	-12.59	-1189.35
			Max. Vy	20	-33.11	1180.60	15.61
			Max. Vx	14	33.28	-12.59	-1189.35
			Max. Torque	20			-0.64
L16	74.25 - 69.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-67.06	2.06	0.20
			Max. Mx	20	-24.82	1347.75	16.89
			Max. My	14	-24.79	-13.61	-1357.30
			Max. Vy	20	-33.74	1347.75	16.89
			Max. Vx	14	33.91	-13.61	-1357.30
			Max. Torque	20			-0.57
L17	69.25 - 64.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-69.10	2.83	-0.23
			Max. Mx	20	-26.00	1518.00	18.16
			Max. My	14	-25.98	-14.63	-1528.34
			Max. Vy	20	-34.35	1518.00	18.16
			Max. Vx	14	34.52	-14.63	-1528.34
			Max. Torque	3			0.56
L18	64.25 - 59.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71.16	3.59	-0.67
			Max. Mx	20	-27.21	1691.32	19.43
			Max. My	14	-27.20	-15.64	-1702.44
			Max. Vy	20	-34.97	1691.32	19.43
			Max. Vx	14	35.14	-15.64	-1702.44
			Max. Torque	3			0.75
L19	59.25 - 58.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71.65	3.77	-0.77
			Max. Mx	20	-27.50	1732.33	19.72
			Max. My	14	-27.48	-15.88	-1743.64
			Max. Vy	20	-35.13	1732.33	19.72
			Max. Vx	14	35.30	-15.88	-1743.64
			Max. Torque	3			0.81
L20	58.08 - 57.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71.77	3.83	-0.80
			Max. Mx	20	-27.60	1741.12	19.79
			Max. My	14	-27.58	-15.92	-1752.47
			Max. Vy	20	-35.17	1741.12	19.79
			Max. Vx	14	35.33	-15.92	-1752.47
			Max. Torque	3			0.82
L21	57.83 - 52.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.22	4.59	-1.23
			Max. Mx	20	-29.15	1918.75	21.05
			Max. My	14	-29.14	-16.93	-1930.88
			Max. Vy	20	-35.88	1918.75	21.05
			Max. Vx	14	36.05	-16.93	-1930.88
			Max. Torque	3			1.06
L22	52.83 - 44.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.86	5.10	-1.53
			Max. Mx	20	-30.21	2039.01	21.88
			Max. My	14	-30.20	-17.59	-2051.66
			Max. Vy	20	-36.34	2039.01	21.88
			Max. Vx	14	36.50	-17.59	-2051.66
			Max. Torque	3			1.21
L23	44.25 - 43.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.00	6.08	-2.08

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	20	-33.61	2269.29	23.45
			Max. My	14	-33.59	-18.84	-2282.91
			Max. Vy	20	-37.32	2269.29	23.45
			Max. Vx	14	37.48	-18.84	-2282.91
			Max. Torque	13			-1.55
L24	43.25 - 38.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-83.64	6.83	-2.52
			Max. Mx	20	-35.40	2457.54	24.69
			Max. My	14	-35.39	-19.83	-2471.94
			Max. Vy	20	-37.98	2457.54	24.69
			Max. Vx	14	38.14	-19.83	-2471.94
			Max. Torque	13			-1.82
L25	38.25 - 33.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-86.30	7.56	-2.94
			Max. Mx	20	-37.23	2649.02	25.94
			Max. My	14	-37.22	-20.82	-2664.19
			Max. Vy	20	-38.61	2649.02	25.94
			Max. Vx	14	38.77	-20.82	-2664.19
			Max. Torque	13			-2.10
L26	33.25 - 31.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-87.37	7.85	-3.10
			Max. Mx	20	-37.96	2726.50	26.43
			Max. My	14	-37.96	-21.21	-2741.98
			Max. Vy	20	-38.86	2726.50	26.43
			Max. Vx	14	39.03	-21.21	-2741.98
			Max. Torque	13			-2.21
L27	31.25 - 31	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-87.52	7.90	-3.13
			Max. Mx	20	-38.08	2736.22	26.49
			Max. My	14	-38.07	-21.26	-2751.74
			Max. Vy	20	-38.90	2736.22	26.49
			Max. Vx	14	39.06	-21.26	-2751.74
			Max. Torque	13			-2.23
L28	31 - 26	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-90.47	8.61	-3.55
			Max. Mx	20	-40.20	2932.27	27.72
			Max. My	14	-40.19	-22.23	-2948.55
			Max. Vy	20	-39.52	2932.27	27.72
			Max. Vx	14	39.68	-22.23	-2948.55
			Max. Torque	13			-2.51
L29	26 - 21	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-93.45	9.33	-3.96
			Max. Mx	20	-42.36	3131.34	28.95
			Max. My	14	-42.36	-23.21	-3148.38
			Max. Vy	20	-40.10	3131.34	28.95
			Max. Vx	14	40.26	-23.21	-3148.38
			Max. Torque	13			-2.78
L30	21 - 16	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-96.42	10.05	-4.38
			Max. Mx	20	-44.55	3333.21	30.17
			Max. My	14	-44.55	-24.17	-3351.01
			Max. Vy	20	-40.64	3333.21	30.17
			Max. Vx	14	40.80	-24.17	-3351.01
			Max. Torque	13			-3.04
L31	16 - 11	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-99.40	10.76	-4.79
			Max. Mx	20	-46.77	3537.67	31.38
			Max. My	14	-46.77	-25.12	-3556.23
			Max. Vy	20	-41.14	3537.67	31.38
			Max. Vx	14	41.30	-25.12	-3556.23
			Max. Torque	13			-3.30
L32	11 - 6	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-102.37	11.44	-5.19
			Max. Mx	20	-49.02	3744.59	32.58
			Max. My	14	-49.02	-26.07	-3763.90
			Max. Vy	20	-41.63	3744.59	32.58

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	14	41.78	-26.07	-3763.90
			Max. Torque	13			-3.57
L33	6 - 4.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-103.10	11.61	-5.28
			Max. Mx	20	-49.58	3796.70	32.88
			Max. My	14	-49.58	-26.31	-3816.19
			Max. Vy	20	-41.75	3796.70	32.88
			Max. Vx	14	41.91	-26.31	-3816.19
			Max. Torque	13			-3.64
L34	4.75 - 4.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-103.25	11.64	-5.30
			Max. Mx	20	-49.71	3807.14	32.94
			Max. My	14	-49.71	-26.36	-3826.67
			Max. Vy	20	-41.76	3807.14	32.94
			Max. Vx	14	41.92	-26.36	-3826.67
			Max. Torque	13			-3.65
L35	4.5 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-105.79	12.18	-5.62
			Max. Mx	20	-51.69	3996.12	34.01
			Max. My	14	-51.69	-27.20	-4016.31
			Max. Vy	20	-42.22	3996.12	34.01
			Max. Vx	14	42.37	-27.20	-4016.31
			Max. Torque	13			-3.89

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	105.79	-0.00	0.00
	Max. H_x	20	51.70	42.19	0.25
	Max. H_z	2	51.70	0.29	42.28
	Max. M_x	2	4005.23	0.29	42.28
	Max. M_z	8	3980.17	-42.10	-0.14
	Max. Torsion	25	3.88	21.23	36.72
	Min. Vert	15	38.78	-0.21	-42.35
	Min. H_x	9	38.78	-42.10	-0.14
	Min. H_z	14	51.70	-0.21	-42.35
	Min. M_x	14	-4016.31	-0.21	-42.35
	Min. M_z	20	-3996.12	42.19	0.25
	Min. Torsion	13	-3.89	-21.18	-36.75

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	43.09	-0.00	0.00	0.48	1.08	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	51.70	-0.29	-42.28	-4005.23	42.41	-3.53
0.9 Dead+1.6 Wind 0 deg - No Ice	38.78	-0.29	-42.28	-3970.10	41.64	-3.54
1.2 Dead+1.6 Wind 30 deg - No Ice	51.70	20.93	-36.54	-3458.54	-1973.15	-2.02
0.9 Dead+1.6 Wind 30 deg - No Ice	38.78	20.93	-36.54	-3428.27	-1956.16	-2.03
1.2 Dead+1.6 Wind 60 deg - No Ice	51.70	36.41	-21.03	-1986.97	-3439.96	-0.34
0.9 Dead+1.6 Wind 60 deg - No Ice	38.78	36.41	-21.03	-1969.66	-3410.07	-0.34
1.2 Dead+1.6 Wind 90 deg - No Ice	51.70	42.10	0.14	19.57	-3980.17	1.44
0.9 Dead+1.6 Wind 90 deg - No Ice	38.78	42.10	0.14	19.23	-3945.63	1.45

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.6 Wind 120 deg - No Ice	51.70	36.46	21.40	2039.12	-3446.07	3.20
0.9 Dead+1.6 Wind 120 deg - No Ice	38.78	36.46	21.40	2020.97	-3416.12	3.22
1.2 Dead+1.6 Wind 150 deg - No Ice	51.70	21.18	36.75	3488.15	-2006.86	3.88
0.9 Dead+1.6 Wind 150 deg - No Ice	38.78	21.18	36.75	3457.29	-1989.51	3.89
1.2 Dead+1.6 Wind 180 deg - No Ice	51.70	0.21	42.35	4016.31	-27.20	3.36
0.9 Dead+1.6 Wind 180 deg - No Ice	38.78	0.21	42.35	3980.75	-27.23	3.37
1.2 Dead+1.6 Wind 210 deg - No Ice	51.70	-20.88	36.68	3478.88	1968.83	1.93
0.9 Dead+1.6 Wind 210 deg - No Ice	38.78	-20.88	36.68	3448.11	1951.26	1.93
1.2 Dead+1.6 Wind 240 deg - No Ice	51.70	-36.45	21.05	1991.11	3447.73	0.33
0.9 Dead+1.6 Wind 240 deg - No Ice	38.78	-36.45	21.05	1973.47	3417.11	0.32
1.2 Dead+1.6 Wind 270 deg - No Ice	51.70	-42.19	-0.25	-34.01	3996.12	-1.36
0.9 Dead+1.6 Wind 270 deg - No Ice	38.78	-42.19	-0.25	-33.78	3960.58	-1.37
1.2 Dead+1.6 Wind 300 deg - No Ice	51.70	-36.57	-21.36	-2032.06	3463.65	-3.02
0.9 Dead+1.6 Wind 300 deg - No Ice	38.78	-36.57	-21.36	-2014.27	3432.87	-3.03
1.2 Dead+1.6 Wind 330 deg - No Ice	51.70	-21.23	-36.72	-3482.96	2016.46	-3.87
0.9 Dead+1.6 Wind 330 deg - No Ice	38.78	-21.23	-36.72	-3452.44	1998.37	-3.88
1.2 Dead+1.0 Ice+1.0 Temp	105.79	0.00	-0.00	5.62	12.18	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	105.79	-0.06	-12.76	-1248.10	21.61	-2.03
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	105.79	6.34	-11.03	-1077.91	-608.21	-1.22
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	105.79	11.01	-6.35	-617.85	-1067.27	-0.16
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	105.79	12.72	0.03	9.84	-1236.06	0.93
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	105.79	11.02	6.43	640.51	-1068.50	1.86
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	105.79	6.39	11.07	1095.61	-615.56	2.24
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	105.79	0.04	12.77	1261.78	6.20	1.99
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	105.79	-6.33	11.06	1093.66	631.62	1.20
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	105.79	-11.01	6.36	629.93	1093.41	0.16
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	105.79	-12.74	-0.05	-1.95	1264.02	-0.92
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	105.79	-11.04	-6.42	-627.77	1096.86	-1.82
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	105.79	-6.40	-11.07	-1083.29	642.11	-2.24
Dead+Wind 0 deg - Service	43.09	-0.06	-9.05	-852.47	9.84	-0.76
Dead+Wind 30 deg - Service	43.09	4.48	-7.82	-736.04	-419.32	-0.43
Dead+Wind 60 deg - Service	43.09	7.79	-4.50	-422.71	-731.63	-0.07
Dead+Wind 90 deg - Service	43.09	9.01	0.03	4.53	-846.73	0.31
Dead+Wind 120 deg - Service	43.09	7.80	4.58	434.57	-733.00	0.69
Dead+Wind 150 deg - Service	43.09	4.53	7.86	743.09	-426.50	0.83
Dead+Wind 180 deg - Service	43.09	0.04	9.06	855.58	-4.97	0.72
Dead+Wind 210 deg - Service	43.09	-4.47	7.85	741.10	420.04	0.42

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead+Wind 240 deg - Service	43.09	-7.80	4.50	424.31	734.92	0.07
Dead+Wind 270 deg - Service	43.09	-9.03	-0.05	-6.87	851.72	-0.29
Dead+Wind 300 deg - Service	43.09	-7.82	-4.57	-432.31	738.33	-0.65
Dead+Wind 330 deg - Service	43.09	-4.54	-7.86	-741.32	430.21	-0.83

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-43.09	0.00	0.00	43.09	0.00	0.000%
2	-0.29	-51.70	-42.28	0.29	51.70	42.28	0.001%
3	-0.29	-38.78	-42.28	0.29	38.78	42.28	0.002%
4	20.93	-51.70	-36.54	-20.93	51.70	36.54	0.000%
5	20.93	-38.78	-36.54	-20.93	38.78	36.54	0.000%
6	36.41	-51.70	-21.03	-36.41	51.70	21.03	0.000%
7	36.41	-38.78	-21.03	-36.41	38.78	21.03	0.000%
8	42.11	-51.70	0.14	-42.10	51.70	-0.14	0.004%
9	42.11	-38.78	0.14	-42.10	38.78	-0.14	0.003%
10	36.46	-51.70	21.40	-36.46	51.70	-21.40	0.000%
11	36.46	-38.78	21.40	-36.46	38.78	-21.40	0.000%
12	21.18	-51.70	36.75	-21.18	51.70	-36.75	0.000%
13	21.18	-38.78	36.75	-21.18	38.78	-36.75	0.000%
14	0.21	-51.70	42.35	-0.21	51.70	-42.35	0.002%
15	0.21	-38.78	42.35	-0.21	38.78	-42.35	0.003%
16	-20.88	-51.70	36.68	20.88	51.70	-36.68	0.000%
17	-20.88	-38.78	36.68	20.88	38.78	-36.68	0.000%
18	-36.45	-51.70	21.05	36.45	51.70	-21.05	0.000%
19	-36.45	-38.78	21.05	36.45	38.78	-21.05	0.000%
20	-42.20	-51.70	-0.25	42.19	51.70	0.25	0.002%
21	-42.20	-38.78	-0.25	42.19	38.78	0.25	0.003%
22	-36.57	-51.70	-21.36	36.57	51.70	21.36	0.000%
23	-36.57	-38.78	-21.36	36.57	38.78	21.36	0.000%
24	-21.23	-51.70	-36.72	21.23	51.70	36.72	0.000%
25	-21.23	-38.78	-36.72	21.23	38.78	36.72	0.000%
26	0.00	-105.79	0.00	-0.00	105.79	0.00	0.001%
27	-0.06	-105.79	-12.76	0.06	105.79	12.76	0.000%
28	6.34	-105.79	-11.03	-6.34	105.79	11.03	0.000%
29	11.01	-105.79	-6.35	-11.01	105.79	6.35	0.000%
30	12.72	-105.79	0.03	-12.72	105.79	-0.03	0.000%
31	11.02	-105.79	6.43	-11.02	105.79	-6.43	0.000%
32	6.39	-105.79	11.07	-6.39	105.79	-11.07	0.000%
33	0.04	-105.79	12.77	-0.04	105.79	-12.77	0.000%
34	-6.33	-105.79	11.06	6.33	105.79	-11.06	0.000%
35	-11.01	-105.79	6.36	11.01	105.79	-6.36	0.000%
36	-12.74	-105.79	-0.05	12.74	105.79	0.05	0.000%
37	-11.04	-105.79	-6.42	11.04	105.79	6.42	0.000%
38	-6.40	-105.79	-11.07	6.40	105.79	11.07	0.000%
39	-0.06	-43.09	-9.05	0.06	43.09	9.05	0.002%
40	4.48	-43.09	-7.82	-4.48	43.09	7.82	0.002%
41	7.79	-43.09	-4.50	-7.79	43.09	4.50	0.002%
42	9.01	-43.09	0.03	-9.01	43.09	-0.03	0.002%
43	7.80	-43.09	4.58	-7.80	43.09	-4.58	0.001%
44	4.53	-43.09	7.86	-4.53	43.09	-7.86	0.002%
45	0.04	-43.09	9.06	-0.04	43.09	-9.06	0.002%
46	-4.47	-43.09	7.85	4.47	43.09	-7.85	0.002%
47	-7.80	-43.09	4.50	7.80	43.09	-4.50	0.002%
48	-9.03	-43.09	-0.05	9.03	43.09	0.05	0.002%
49	-7.82	-43.09	-4.57	7.82	43.09	4.57	0.002%
50	-4.54	-43.09	-7.86	4.54	43.09	7.86	0.001%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	18	0.00000001	0.00008163
3	Yes	17	0.00000001	0.00012653
4	Yes	21	0.00000001	0.00012677
5	Yes	21	0.00000001	0.00009105
6	Yes	21	0.00000001	0.00012852
7	Yes	21	0.00000001	0.00009238
8	Yes	16	0.00005099	0.00013257
9	Yes	16	0.00003483	0.00009598
10	Yes	21	0.00000001	0.00013422
11	Yes	21	0.00000001	0.00009641
12	Yes	21	0.00000001	0.00013042
13	Yes	21	0.00000001	0.00009349
14	Yes	17	0.00002435	0.00007798
15	Yes	16	0.00003478	0.00011522
16	Yes	21	0.00000001	0.00012995
17	Yes	21	0.00000001	0.00009336
18	Yes	21	0.00000001	0.00012812
19	Yes	21	0.00000001	0.00009204
20	Yes	17	0.00002437	0.00007592
21	Yes	16	0.00003481	0.00010904
22	Yes	21	0.00000001	0.00013183
23	Yes	21	0.00000001	0.00009454
24	Yes	21	0.00000001	0.00013540
25	Yes	21	0.00000001	0.00009721
26	Yes	10	0.00000001	0.00006992
27	Yes	20	0.00000001	0.00010561
28	Yes	20	0.00000001	0.00012247
29	Yes	20	0.00000001	0.00012275
30	Yes	20	0.00000001	0.00010424
31	Yes	20	0.00000001	0.00012517
32	Yes	20	0.00000001	0.00012432
33	Yes	20	0.00000001	0.00010606
34	Yes	20	0.00000001	0.00012575
35	Yes	20	0.00000001	0.00012493
36	Yes	20	0.00000001	0.00010596
37	Yes	20	0.00000001	0.00012568
38	Yes	20	0.00000001	0.00012708
39	Yes	15	0.00000001	0.00005215
40	Yes	15	0.00000001	0.00013876
41	Yes	15	0.00000001	0.00014489
42	Yes	15	0.00000001	0.00004508
43	Yes	16	0.00000001	0.00008129
44	Yes	15	0.00000001	0.00014161
45	Yes	15	0.00000001	0.00004918
46	Yes	15	0.00000001	0.00014893
47	Yes	15	0.00000001	0.00014191
48	Yes	15	0.00000001	0.00004524
49	Yes	15	0.00000001	0.00014495
50	Yes	16	0.00000001	0.00008342

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	145 - 140	20.650	50	1.1152	0.0011
L2	140 - 135	19.482	50	1.1151	0.0011
L3	135 - 130	18.315	50	1.1142	0.0009
L4	130 - 125	17.150	50	1.1110	0.0008
L5	125 - 120	15.989	50	1.1055	0.0007
L6	120 - 115	14.836	50	1.0964	0.0006
L7	115 - 110	13.695	50	1.0821	0.0005
L8	110 - 105	12.571	50	1.0620	0.0005

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L9	105 - 100	11.473	50	1.0351	0.0004
L10	100 - 95	10.406	50	1.0009	0.0004
L11	95 - 90	9.380	50	0.9593	0.0005
L12	90 - 84.75	8.400	50	0.9104	0.0006
L13	89.25 - 84.25	8.258	50	0.9024	0.0006
L14	84.25 - 79.25	7.326	50	0.8740	0.0006
L15	79.25 - 74.25	6.438	50	0.8207	0.0006
L16	74.25 - 69.25	5.609	50	0.7630	0.0006
L17	69.25 - 64.25	4.842	50	0.7014	0.0006
L18	64.25 - 59.25	4.141	50	0.6367	0.0006
L19	59.25 - 58.08	3.509	50	0.5693	0.0006
L20	58.08 - 57.83	3.372	50	0.5533	0.0006
L21	57.83 - 52.83	3.343	50	0.5507	0.0006
L22	52.83 - 44.25	2.794	50	0.4979	0.0005
L23	49.5 - 43.25	2.459	50	0.4615	0.0005
L24	43.25 - 38.25	1.877	50	0.4233	0.0005
L25	38.25 - 33.25	1.461	50	0.3715	0.0004
L26	33.25 - 31.25	1.099	50	0.3191	0.0004
L27	31.25 - 31	0.970	50	0.2981	0.0003
L28	31 - 26	0.954	50	0.2957	0.0003
L29	26 - 21	0.669	50	0.2487	0.0003
L30	21 - 16	0.434	50	0.2003	0.0002
L31	16 - 11	0.250	50	0.1518	0.0002
L32	11 - 6	0.116	50	0.1033	0.0001
L33	6 - 4.75	0.034	50	0.0542	0.0001
L34	4.75 - 4.5	0.021	50	0.0421	0.0001
L35	4.5 - 0	0.019	50	0.0399	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
139.0000	VHLP2.5-11	50	19.249	1.1151	0.0010	506184
133.0000	LLPX310R-V1 w/ Mount Pipe	50	17.848	1.1132	0.0009	100696
124.0000	APXVSPP18-C-A20 w/ Mount Pipe	50	15.758	1.1040	0.0007	36343
122.0000	800MHz 2X50W RRH W/FILTER	50	15.296	1.1006	0.0006	29587
114.0000	BXA-80063/4CFX5 w/ Mount Pipe	50	13.468	1.0786	0.0005	15652
105.0000	7770.00 w/ Mount Pipe	50	11.473	1.0351	0.0004	9450
94.0000	AIR -32 B2A/B66AA w/ Mount Pipe	50	9.180	0.9502	0.0006	6147
87.0000	742 213 w/ Mount Pipe	50	7.834	0.8875	0.0006	8102
77.0000	58532A	50	6.057	0.7945	0.0006	4930

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	145 - 140	96.923	24	5.2436	0.0037
L2	140 - 135	91.445	24	5.2432	0.0037
L3	135 - 130	85.970	24	5.2391	0.0032
L4	130 - 125	80.503	24	5.2239	0.0026
L5	125 - 120	75.058	24	5.1981	0.0023
L6	120 - 115	69.648	24	5.1553	0.0020
L7	115 - 110	64.295	24	5.0881	0.0017
L8	110 - 105	59.025	24	4.9930	0.0018
L9	105 - 100	53.871	24	4.8664	0.0019
L10	100 - 95	48.866	24	4.7059	0.0021
L11	95 - 90	44.047	24	4.5101	0.0024
L12	90 - 84.75	39.449	24	4.2802	0.0027
L13	89.25 - 84.25	38.781	24	4.2427	0.0027
L14	84.25 - 79.25	34.408	24	4.1090	0.0028

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L15	79.25 - 74.25	30.240	24	3.8584	0.0029
L16	74.25 - 69.25	26.345	24	3.5867	0.0029
L17	69.25 - 64.25	22.743	24	3.2972	0.0029
L18	64.25 - 59.25	19.451	24	2.9927	0.0028
L19	59.25 - 58.08	16.484	24	2.6757	0.0027
L20	58.08 - 57.83	15.838	24	2.6006	0.0026
L21	57.83 - 52.83	15.702	24	2.5882	0.0026
L22	52.83 - 44.25	13.123	24	2.3400	0.0025
L23	49.5 - 43.25	11.551	24	2.1687	0.0023
L24	43.25 - 38.25	8.817	24	1.9893	0.0022
L25	38.25 - 33.25	6.861	24	1.7458	0.0020
L26	33.25 - 31.25	5.162	24	1.4995	0.0017
L27	31.25 - 31	4.555	24	1.4004	0.0016
L28	31 - 26	4.482	24	1.3894	0.0016
L29	26 - 21	3.143	24	1.1683	0.0014
L30	21 - 16	2.039	24	0.9411	0.0011
L31	16 - 11	1.172	24	0.7132	0.0009
L32	11 - 6	0.545	24	0.4852	0.0006
L33	6 - 4.75	0.158	24	0.2546	0.0003
L34	4.75 - 4.5	0.098	24	0.1975	0.0002
L35	4.5 - 0	0.088	24	0.1873	0.0002

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
139.0000	VHLP2.5-11	24	90.350	5.2429	0.0050	110677
133.0000	LLPX310R-V1 w/ Mount Pipe	24	83.781	5.2344	0.0043	21858
124.0000	APXVSPP18-C-A20 w/ Mount Pipe	24	73.972	5.1912	0.0034	7870
122.0000	800MHz 2X50W RRH W/FILTER	24	71.806	5.1750	0.0033	6405
114.0000	BXA-80063/4CFX5 w/ Mount Pipe	24	63.233	5.0715	0.0026	3386
105.0000	7770.00 w/ Mount Pipe	24	53.871	4.8664	0.0019	2041
94.0000	AIR -32 B2A/B66AA w/ Mount Pipe	24	43.108	4.4675	0.0024	1325
87.0000	742 213 w/ Mount Pipe	24	36.794	4.1723	0.0028	1744
77.0000	58532A	24	28.452	3.7350	0.0029	1058

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K
L1	145 - 140 (1)	TP24.9233x24x0.1875	5.0000	0.0000	0.0	14.7209	-0.26
L2	140 - 135 (2)	TP25.8467x24.9233x0.1875	5.0000	0.0000	0.0	15.2704	-0.58
L3	135 - 130 (3)	TP26.77x25.8467x0.1875	5.0000	0.0000	0.0	15.8199	-2.65
L4	130 - 125 (4)	TP27.7092x26.77x0.25	5.0000	0.0000	0.0	21.7889	-3.06
L5	125 - 120 (5)	TP28.6485x27.7092x0.25	5.0000	0.0000	0.0	22.5342	-6.41
L6	120 - 115 (6)	TP29.5877x28.6485x0.25	5.0000	0.0000	0.0	23.2794	-6.89
L7	115 - 110 (7)	TP30.5269x29.5877x0.25	5.0000	0.0000	0.0	24.0247	-10.00
L8	110 - 105 (8)	TP31.4661x30.5269x0.25	5.0000	0.0000	0.0	24.7700	-10.58
L9	105 - 100 (9)	TP32.4054x31.4661x0.25	5.0000	0.0000	0.0	25.515	-14.43

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u
	ft		ft	ft		in^2	K
L10	100 - 95 (10)	TP33.3446x32.4054x0.25	5.0000	0.0000	0.0	26.2603	-15.17
L11	95 - 90 (11)	TP34.2838x33.3446x0.25	5.0000	0.0000	0.0	27.0058	-19.41
L12	90 - 84.75 (12)	TP35.27x34.2838x0.25	5.2500	0.0000	0.0	27.1176	-19.54
L13	84.75 - 84.25 (13)	TP34.8508x33.9247x0.3125	5.0000	0.0000	0.0	34.2577	-21.38
L14	84.25 - 79.25 (14)	TP35.777x34.8508x0.3125	5.0000	0.0000	0.0	35.1763	-22.45
L15	79.25 - 74.25 (15)	TP36.7031x35.777x0.3125	5.0000	0.0000	0.0	36.0950	-23.64
L16	74.25 - 69.25 (16)	TP37.6293x36.7031x0.3125	5.0000	0.0000	0.0	37.0136	-24.79
L17	69.25 - 64.25 (17)	TP38.5554x37.6293x0.3125	5.0000	0.0000	0.0	37.9322	-25.97
L18	64.25 - 59.25 (18)	TP39.4816x38.5554x0.3125	5.0000	0.0000	0.0	38.8508	-27.19
L19	59.25 - 58.08 (19)	TP39.6983x39.4816x0.3125	1.1700	0.0000	0.0	39.0658	-27.47
L20	58.08 - 57.83 (20)	TP39.7446x39.6983x0.4125	0.2500	0.0000	0.0	51.4965	-27.57
L21	57.83 - 52.83 (21)	TP40.6707x39.7446x0.4188	5.0000	0.0000	0.0	53.4994	-29.13
L22	52.83 - 44.25 (22)	TP42.26x40.6707x0.4125	8.5800	0.0000	0.0	53.5167	-30.19
L23	44.25 - 43.25 (23)	TP41.82x40.6625x0.475	6.2500	0.0000	0.0	62.3338	-33.59
L24	43.25 - 38.25 (24)	TP42.746x41.82x0.475	5.0000	0.0000	0.0	63.7299	-35.39
L25	38.25 - 33.25 (25)	TP43.672x42.746x0.475	5.0000	0.0000	0.0	65.1260	-37.21
L26	33.25 - 31.25 (26)	TP44.0424x43.672x0.475	2.0000	0.0000	0.0	65.6844	-37.95
L27	31.25 - 31 (27)	TP44.0887x44.0424x0.5375	0.2500	0.0000	0.0	74.2995	-38.07
L28	31 - 26 (28)	TP45.0147x44.0887x0.5375	5.0000	0.0000	0.0	75.8793	-40.19
L29	26 - 21 (29)	TP45.9408x45.0147x0.525	5.0000	0.0000	0.0	75.6786	-42.36
L30	21 - 16 (30)	TP46.8668x45.9408x0.525	5.0000	0.0000	0.0	77.2216	-44.55
L31	16 - 11 (31)	TP47.7928x46.8668x0.525	5.0000	0.0000	0.0	78.7647	-46.77
L32	11 - 6 (32)	TP48.7188x47.7928x0.5188	5.0000	0.0000	0.0	79.3620	-49.02
L33	6 - 4.75 (33)	TP48.9503x48.7188x0.5188	1.2500	0.0000	0.0	79.7431	-49.58
L34	4.75 - 4.5 (34)	TP48.9966x48.9503x0.5875	0.2500	0.0000	0.0	90.2696	-49.71
L35	4.5 - 0 (35)	TP49.83x48.9966x0.575	4.5000	0.0000	0.0	89.8928	-51.69

Pole Bending Design Data

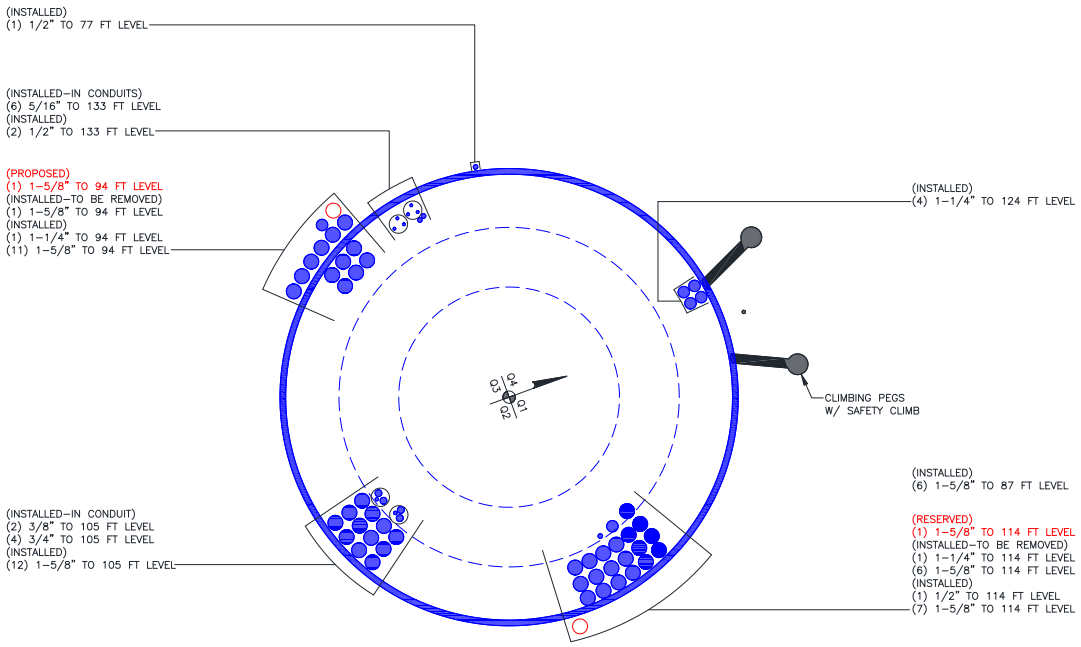
Section No.	Elevation	Size	M_{ux}	M_{uy}
	ft		kip-ft	kip-ft
L1	145 - 140 (1)	TP24.9233x24x0.1875	0.98	0.00
L2	140 - 135 (2)	TP25.8467x24.9233x0.1875	7.03	0.00
L3	135 - 130 (3)	TP26.77x25.8467x0.1875	24.70	0.00
L4	130 - 125 (4)	TP27.7092x26.77x0.25	47.48	0.00
L5	125 - 120 (5)	TP28.6485x27.7092x0.25	88.88	0.00
L6	120 - 115 (6)	TP29.5877x28.6485x0.25	140.00	0.00
L7	115 - 110 (7)	TP30.5269x29.5877x0.25	218.79	0.00
L8	110 - 105 (8)	TP31.4661x30.5269x0.25	301.59	0.00
L9	105 - 100 (9)	TP32.4054x31.4661x0.25	419.80	0.00
L10	100 - 95 (10)	TP33.3446x32.4054x0.25	540.51	0.00
L11	95 - 90 (11)	TP34.2838x33.3446x0.25	688.50	0.00
L12	90 - 84.75 (12)	TP35.27x34.2838x0.25	711.22	0.00
L13	84.75 - 84.25 (13)	TP34.8508x33.9247x0.3125	867.13	0.00
L14	84.25 - 79.25 (14)	TP35.777x34.8508x0.3125	1028.46	0.00
L15	79.25 - 74.25 (15)	TP36.7031x35.777x0.3125	1193.32	0.00
L16	74.25 - 69.25 (16)	TP37.6293x36.7031x0.3125	1361.56	0.00
L17	69.25 - 64.25 (17)	TP38.5554x37.6293x0.3125	1532.90	0.00
L18	64.25 - 59.25 (18)	TP39.4816x38.5554x0.3125	1707.31	0.00
L19	59.25 - 58.08 (19)	TP39.6983x39.4816x0.3125	1748.58	0.00
L20	58.08 - 57.83 (20)	TP39.7446x39.6983x0.4125	1757.42	0.00
L21	57.83 - 52.83 (21)	TP40.6707x39.7446x0.4188	1936.13	0.00
L22	52.83 - 44.25 (22)	TP42.26x40.6707x0.4125	2057.10	0.00
L23	44.25 - 43.25 (23)	TP41.82x40.6625x0.475	2288.72	0.00
L24	43.25 - 38.25 (24)	TP42.746x41.82x0.475	2478.04	0.00
L25	38.25 - 33.25 (25)	TP43.672x42.746x0.475	2670.58	0.00
L26	33.25 - 31.25 (26)	TP44.0424x43.672x0.475	2748.48	0.00
L27	31.25 - 31 (27)	TP44.0887x44.0424x0.5375	2758.26	0.00
L28	31 - 26 (28)	TP45.0147x44.0887x0.5375	2955.36	0.00
L29	26 - 21 (29)	TP45.9408x45.0147x0.525	3155.47	0.00
L30	21 - 16 (30)	TP46.8668x45.9408x0.525	3358.38	0.00
L31	16 - 11 (31)	TP47.7928x46.8668x0.525	3563.88	0.00
L32	11 - 6 (32)	TP48.7188x47.7928x0.5188	3771.82	0.00
L33	6 - 4.75 (33)	TP48.9503x48.7188x0.5188	3824.19	0.00
L34	4.75 - 4.5 (34)	TP48.9966x48.9503x0.5875	3834.68	0.00
L35	4.5 - 0 (35)	TP49.83x48.9966x0.575	4024.57	0.00

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	Actual T_u kip-ft
L1	145 - 140 (1)	TP24.9233x24x0.1875	0.40	0.00
L2	140 - 135 (2)	TP25.8467x24.9233x0.1875	1.57	0.33
L3	135 - 130 (3)	TP26.77x25.8467x0.1875	4.34	0.43
L4	130 - 125 (4)	TP27.7092x26.77x0.25	4.78	0.43
L5	125 - 120 (5)	TP28.6485x27.7092x0.25	10.00	0.43
L6	120 - 115 (6)	TP29.5877x28.6485x0.25	10.46	0.43
L7	115 - 110 (7)	TP30.5269x29.5877x0.25	16.31	0.77
L8	110 - 105 (8)	TP31.4661x30.5269x0.25	16.83	0.70
L9	105 - 100 (9)	TP32.4054x31.4661x0.25	23.89	0.87
L10	100 - 95 (10)	TP33.3446x32.4054x0.25	24.41	0.80
L11	95 - 90 (11)	TP34.2838x33.3446x0.25	30.25	0.65
L12	90 - 84.75 (12)	TP35.27x34.2838x0.25	30.35	0.61
L13	84.75 - 84.25 (13)	TP34.8508x33.9247x0.3125	31.95	0.40
L14	84.25 - 79.25 (14)	TP35.777x34.8508x0.3125	32.61	0.22
L15	79.25 - 74.25 (15)	TP36.7031x35.777x0.3125	33.35	0.03
L16	74.25 - 69.25 (16)	TP37.6293x36.7031x0.3125	33.98	0.21
L17	69.25 - 64.25 (17)	TP38.5554x37.6293x0.3125	34.59	0.42
L18	64.25 - 59.25 (18)	TP39.4816x38.5554x0.3125	35.21	0.65
L19	59.25 - 58.08 (19)	TP39.6983x39.4816x0.3125	35.37	0.71
L20	58.08 - 57.83 (20)	TP39.7446x39.6983x0.4125	35.42	0.73
L21	57.83 - 52.83 (21)	TP40.6707x39.7446x0.4188	36.12	1.00
L22	52.83 - 44.25 (22)	TP42.26x40.6707x0.4125	36.57	1.18
L23	44.25 - 43.25 (23)	TP41.82x40.6625x0.475	37.55	1.53
L24	43.25 - 38.25 (24)	TP42.746x41.82x0.475	38.21	1.80
L25	38.25 - 33.25 (25)	TP43.672x42.746x0.475	38.84	2.07
L26	33.25 - 31.25 (26)	TP44.0424x43.672x0.475	39.09	2.18
L27	31.25 - 31 (27)	TP44.0887x44.0424x0.5375	39.12	2.20
L28	31 - 26 (28)	TP45.0147x44.0887x0.5375	39.75	2.48
L29	26 - 21 (29)	TP45.9408x45.0147x0.525	40.33	2.75
L30	21 - 16 (30)	TP46.8668x45.9408x0.525	40.87	3.02
L31	16 - 11 (31)	TP47.7928x46.8668x0.525	41.37	3.28
L32	11 - 6 (32)	TP48.7188x47.7928x0.5188	41.85	3.54
L33	6 - 4.75 (33)	TP48.9503x48.7188x0.5188	41.98	3.61
L34	4.75 - 4.5 (34)	TP48.9966x48.9503x0.5875	41.98	3.62
L35	4.5 - 0 (35)	TP49.83x48.9966x0.575	42.44	3.87

APPENDIX B

BASE LEVEL DRAWING


(INSTALLED)
(1) 1/2" TO 77 FT LEVEL
(INSTALLED-IN CONDUITS)
(6) 5/16" TO 133 FT LEVEL
(INSTALLED)
(2) 1/2" TO 133 FT LEVEL
(PROPOSED)
(1) 1-5/8" TO 94 FT LEVEL
(INSTALLED-TO BE REMOVED)
(1) 1-5/8" TO 94 FT LEVEL
(INSTALLED)
(1) 1-1/4" TO 94 FT LEVEL
(11) 1-5/8" TO 94 FT LEVEL
(INSTALLED)
(4) 1-1/4" TO 124 FT LEVEL
CLIMBING PEGS
W/ SAFETY CLIMB
(INSTALLED)
(6) 1-5/8" TO 87 FT LEVEL
(RESERVED)
(1) 1-5/8" TO 114 FT LEVEL
(INSTALLED-TO BE REMOVED)
(1) 1-1/4" TO 114 FT LEVEL
(6) 1-5/8" TO 114 FT LEVEL
(INSTALLED)
(1) 1/2" TO 114 FT LEVEL
(7) 1-5/8" TO 114 FT LEVEL
(INSTALLED-IN CONDUIT)
(2) 3/8" TO 105 FT LEVEL
(4) 3/4" TO 105 FT LEVEL
(INSTALLED)
(12) 1-5/8" TO 105 FT LEVEL
Q4
Q3
Q1
Q2

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- G

Site BU: 881364

Work Order:

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	145	15	0	18	24	26.77	0.1875	Auto	A607-65
2	130	45.25	4.5	18	26.77	35.27	0.25	Auto	A607-65
3	89.25	45	5.25	18	33.92	42.26	0.3125	Auto	A607-65
4	49.5	49.5	0	18	40.66	49.83	0.375	Auto	A607-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	4.75	31.25	plate	CCI-AFP-085125	3			o						o				o					
2	31.25	58.08	plate	CCI-AFP-060100	3			o						o				o					
3	0	4.75	plate	FP 1.25 x 7.75_1	3		c							c					o				
4																							
5																							
6																							
7																							
8																							
9																							
10																							

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Length (in)	Top Termination Length (in)	L_u (in)	Net Area (in^2)	Bolt Hole Size (in)	Reinforcement Material
1	8.5	1.25	10.625	0.625	51.000	51.000	17.000	9.063	1.1875	A572-65
2	6	1	6	0.5	30.000	30.000	16.000	4.750	1.1875	A572-65
3	1.25	7.75	9.6875	3.875	n/a	n/a	0.000	9.688	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	145 - 140	5		18	24.000	24.923	0.1875	A607-65	1.000
2	140 - 135	5		18	24.923	25.847	0.1875	A607-65	1.000
3	135 - 130	5	0	18	25.847	26.770	0.1875	A607-65	1.000
4	130 - 125	5		18	26.770	27.709	0.25	A607-65	1.000
5	125 - 120	5		18	27.709	28.648	0.25	A607-65	1.000
6	120 - 115	5		18	28.648	29.588	0.25	A607-65	1.000
7	115 - 110	5		18	29.588	30.527	0.25	A607-65	1.000
8	110 - 105	5		18	30.527	31.466	0.25	A607-65	1.000
9	105 - 100	5		18	31.466	32.405	0.25	A607-65	1.000
10	100 - 95	5		18	32.405	33.345	0.25	A607-65	1.000
11	95 - 90	5		18	33.345	34.284	0.25	A607-65	1.000
12	90 - 89.25	5.25	4.5	18	34.284	35.270	0.25	A607-65	1.000
13	89.25 - 84.25	5		18	33.925	34.851	0.3125	A607-65	1.000
14	84.25 - 79.25	5		18	34.851	35.777	0.3125	A607-65	1.000
15	79.25 - 74.25	5		18	35.777	36.703	0.3125	A607-65	1.000
16	74.25 - 69.25	5		18	36.703	37.629	0.3125	A607-65	1.000
17	69.25 - 64.25	5		18	37.629	38.555	0.3125	A607-65	1.000
18	64.25 - 59.25	5		18	38.555	39.482	0.3125	A607-65	1.000
19	59.25 - 58.08	1.17		18	39.482	39.698	0.3125	A607-65	1.000
20	58.08 - 57.83	0.25		18	39.698	39.745	0.4125	A607-65	1.109
21	57.83 - 52.83	5		18	39.745	40.671	0.41875	A607-65	1.085
22	52.83 - 49.5	8.58	5.25	18	40.671	42.260	0.4125	A607-65	1.096
23	49.5 - 43.25	6.25		18	40.663	41.820	0.475	A607-65	1.080
24	43.25 - 38.25	5		18	41.820	42.746	0.475	A607-65	1.074
25	38.25 - 33.25	5		18	42.746	43.672	0.475	A607-65	1.068
26	33.25 - 31.25	2		18	43.672	44.042	0.475	A607-65	1.065
27	31.25 - 31	0.25		18	44.042	44.089	0.5375	A607-65	1.129
28	31 - 26	5		18	44.089	45.015	0.5375	A607-65	1.120
29	26 - 21	5		18	45.015	45.941	0.525	A607-65	1.138
30	21 - 16	5		18	45.941	46.867	0.525	A607-65	1.129
31	16 - 11	5		18	46.867	47.793	0.525	A607-65	1.121
32	11 - 6	5		18	47.793	48.719	0.51875	A607-65	1.127
33	6 - 4.75	1.25		18	48.719	48.950	0.51875	A607-65	1.125
34	4.75 - 4.5	0.25		18	48.950	48.997	0.5875	A607-65	0.963
35	4.5 - 0	4.5		18	48.997	49.830	0.575	A607-65	0.978

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	145 - 140	0.26	0.98	0.40
2	140 - 135	0.58	7.03	1.57
3	135 - 130	2.65	24.70	4.34
4	130 - 125	3.06	47.48	4.78
5	125 - 120	6.41	88.88	10.00
6	120 - 115	6.89	140.00	10.46
7	115 - 110	10.00	218.79	16.31
8	110 - 105	10.58	301.59	16.83
9	105 - 100	14.43	419.80	23.89
10	100 - 95	15.17	540.51	24.41
11	95 - 90	19.41	688.50	30.25
12	90 - 89.25	19.54	711.22	30.35
13	89.25 - 84.25	21.38	867.14	31.95
14	84.25 - 79.25	22.45	1028.46	32.61
15	79.25 - 74.25	23.64	1193.31	33.35
16	74.25 - 69.25	24.79	1361.56	33.98
17	69.25 - 64.25	25.97	1532.90	34.59
18	64.25 - 59.25	27.19	1707.31	35.21
19	59.25 - 58.08	27.47	1748.57	35.37
20	58.08 - 57.83	27.57	1757.42	35.42
21	57.83 - 52.83	29.13	1936.13	36.12
22	52.83 - 49.5	30.19	2057.10	36.57
23	49.5 - 43.25	33.59	2288.72	37.55
24	43.25 - 38.25	35.39	2478.04	38.21
25	38.25 - 33.25	37.21	2670.58	38.84
26	33.25 - 31.25	37.95	2748.48	39.09
27	31.25 - 31	38.07	2758.26	39.12
28	31 - 26	40.19	2955.36	39.75
29	26 - 21	42.36	3155.47	40.33
30	21 - 16	44.55	3358.38	40.87
31	16 - 11	46.77	3563.88	41.37
32	11 - 6	49.02	3771.83	41.85
33	6 - 4.75	49.58	3824.19	41.98
34	4.75 - 4.5	49.71	3834.68	41.98
35	4.5 - 0	51.69	4024.57	42.44

Analysis Results

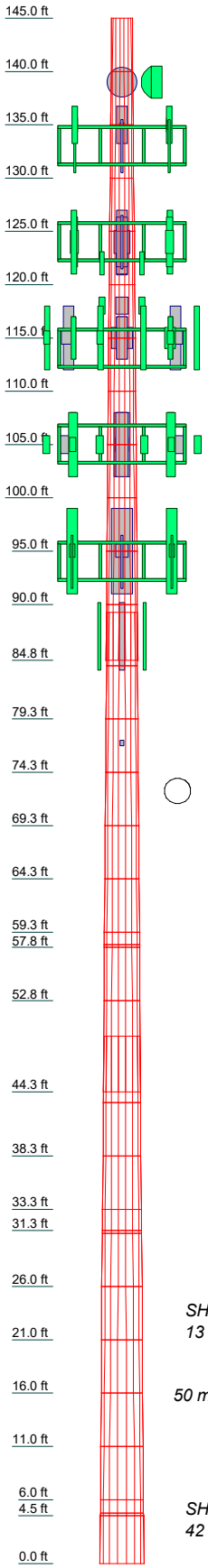
Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
145 - 140	Pole	TP24.923x24x0.1875	Pole	0.2%	Pass
140 - 135	Pole	TP25.847x24.923x0.1875	Pole	1.4%	Pass
135 - 130	Pole	TP26.77x25.847x0.1875	Pole	4.6%	Pass
130 - 125	Pole	TP27.709x26.77x0.25	Pole	5.5%	Pass
125 - 120	Pole	TP28.648x27.709x0.25	Pole	9.8%	Pass
120 - 115	Pole	TP29.588x28.648x0.25	Pole	14.5%	Pass
115 - 110	Pole	TP30.527x29.588x0.25	Pole	21.4%	Pass
110 - 105	Pole	TP31.466x30.527x0.25	Pole	27.9%	Pass
105 - 100	Pole	TP32.405x31.466x0.25	Pole	37.0%	Pass
100 - 95	Pole	TP33.345x32.405x0.25	Pole	45.2%	Pass
95 - 90	Pole	TP34.284x33.345x0.25	Pole	55.1%	Pass
90 - 89.25	Pole	TP35.27x34.284x0.25	Pole	56.5%	Pass
89.25 - 84.25	Pole	TP34.851x33.925x0.3125	Pole	50.3%	Pass
84.25 - 79.25	Pole	TP35.777x34.851x0.3125	Pole	56.9%	Pass
79.25 - 74.25	Pole	TP36.703x35.777x0.3125	Pole	63.0%	Pass
74.25 - 69.25	Pole	TP37.629x36.703x0.3125	Pole	68.9%	Pass
69.25 - 64.25	Pole	TP38.555x37.629x0.3125	Pole	74.3%	Pass
64.25 - 59.25	Pole	TP39.482x38.555x0.3125	Pole	79.5%	Pass
59.25 - 58.08	Pole	TP39.698x39.482x0.3125	Pole	80.7%	Pass
58.08 - 57.83	Pole + Reinf.	TP39.745x39.698x0.4125	Reinf. 2 Tension Rupture	81.3%	Pass
57.83 - 52.83	Pole + Reinf.	TP40.671x39.745x0.4188	Reinf. 2 Tension Rupture	86.0%	Pass
52.83 - 49.5	Pole + Reinf.	TP42.26x40.671x0.4125	Reinf. 2 Tension Rupture	89.0%	Pass
49.5 - 43.25	Pole + Reinf.	TP41.82x40.663x0.475	Reinf. 2 Tension Rupture	85.1%	Pass
43.25 - 38.25	Pole + Reinf.	TP42.746x41.82x0.475	Reinf. 2 Tension Rupture	88.6%	Pass
38.25 - 33.25	Pole + Reinf.	TP43.672x42.746x0.475	Reinf. 2 Tension Rupture	91.9%	Pass
33.25 - 31.25	Pole + Reinf.	TP44.042x43.672x0.475	Reinf. 2 Tension Rupture	93.2%	Pass
31.25 - 31	Pole + Reinf.	TP44.089x44.042x0.5375	Reinf. 1 Compression	73.4%	Pass
31 - 26	Pole + Reinf.	TP45.015x44.089x0.5375	Reinf. 1 Compression	76.0%	Pass
26 - 21	Pole + Reinf.	TP45.941x45.015x0.525	Reinf. 1 Compression	78.4%	Pass
21 - 16	Pole + Reinf.	TP46.867x45.941x0.525	Reinf. 1 Compression	80.7%	Pass
16 - 11	Pole + Reinf.	TP47.793x46.867x0.525	Reinf. 1 Compression	82.9%	Pass
11 - 6	Pole + Reinf.	TP48.719x47.793x0.5188	Reinf. 1 Compression	84.9%	Pass
6 - 4.75	Pole + Reinf.	TP48.95x48.719x0.5188	Reinf. 1 Compression	85.4%	Pass
4.75 - 4.5	Pole + Reinf.	TP48.997x48.95x0.5875	Reinf. 3 Compression	79.6%	Pass
4.5 - 0	Pole + Reinf.	TP49.83x48.997x0.575	Reinf. 3 Compression	81.2%	Pass
				Summary	
			Pole	80.7%	Pass
			Reinforcement	93.2%	Pass
			Overall	93.2%	Pass

Additional Calculations

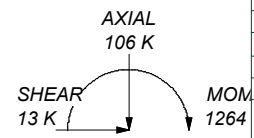
Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity			
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3
145 - 140	1138	n/a	1138	14.72	n/a	14.72	0.2%			
140 - 135	1270	n/a	1270	15.27	n/a	15.27	1.4%			
135 - 130	1412	n/a	1412	15.82	n/a	15.82	4.6%			
130 - 125	2075	n/a	2075	21.79	n/a	21.79	5.5%			
125 - 120	2295	n/a	2295	22.53	n/a	22.53	9.8%			
120 - 115	2531	n/a	2531	23.28	n/a	23.28	14.5%			
115 - 110	2781	n/a	2781	24.02	n/a	24.02	21.4%			
110 - 105	3048	n/a	3048	24.77	n/a	24.77	27.9%			
105 - 100	3332	n/a	3332	25.51	n/a	25.51	37.0%			
100 - 95	3632	n/a	3632	26.26	n/a	26.26	45.2%			
95 - 90	3951	n/a	3951	27.00	n/a	27.00	55.1%			
90 - 89.25	4000	n/a	4000	27.12	n/a	27.12	56.5%			
89.25 - 84.25	5161	n/a	5161	34.26	n/a	34.26	50.3%			
84.25 - 79.25	5588	n/a	5588	35.18	n/a	35.18	56.9%			
79.25 - 74.25	6037	n/a	6037	36.09	n/a	36.09	63.0%			
74.25 - 69.25	6510	n/a	6510	37.01	n/a	37.01	68.9%			
69.25 - 64.25	7006	n/a	7006	37.93	n/a	37.93	74.3%			
64.25 - 59.25	7528	n/a	7528	38.85	n/a	38.85	79.5%			
59.25 - 58.08	7653	n/a	7653	39.06	n/a	39.06	80.7%			
58.08 - 57.83	7749	2376	10125	39.11	18.00	57.11	65.1%		81.3%	
57.83 - 52.83	8311	2678	10989	40.03	18.00	58.03	68.5%		86.0%	
52.83 - 49.5	8696	2758	11455	40.64	18.00	58.64	71.2%		89.0%	
49.5 - 43.25	10776	2849	13624	49.33	18.00	67.33	63.4%		85.1%	
43.25 - 38.25	11511	2974	14486	50.43	18.00	68.43	66.3%		88.6%	
38.25 - 33.25	12280	3102	15383	51.53	18.00	69.53	69.1%		91.9%	
33.25 - 31.25	12597	3155	15751	51.97	18.00	69.97	70.2%		93.2%	
31.25 - 31	12721	5200	17921	52.03	31.88	83.90	63.2%	73.4%		
31 - 26	13542	5414	18956	53.13	31.88	85.01	65.7%	76.0%		
26 - 21	14398	5632	20030	54.23	31.88	86.11	68.2%	78.4%		
21 - 16	15289	5855	21143	55.33	31.88	87.21	70.5%	80.7%		
16 - 11	16215	6082	22297	56.44	31.88	88.31	72.8%	82.9%		
11 - 6	17179	6314	23493	57.54	31.88	89.41	75.0%	84.9%		
6 - 4.75	17426	6372	23798	57.81	31.88	89.69	75.5%	85.4%		
4.75 - 4.5	17322	9193	26515	57.87	29.06	86.93	65.7%			79.6%
4.5 - 0	18227	9464	27691	58.86	29.06	87.92	67.5%			81.2%

Note: Section capacity checked in 5 degree increments.

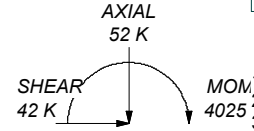
Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.0000	18	0.1875		24.0000	24.9233		0.2
2	5.0000	18	0.1875		24.9233	25.8467		0.3
3	5.0000	18	0.1875		25.8467	26.7700		0.3
4	5.0000	18	0.2500		26.7700	27.7092		0.4
5	5.0000	18	0.2500		27.7092	28.6485		0.4
6	5.0000	18	0.2500		28.6485	29.5877		0.4
7	5.0000	18	0.2500		29.5877	30.5269		0.4
8	5.0000	18	0.2500		30.5269	31.4661		0.4
9	5.0000	18	0.2500		31.4661	32.4054		0.4
10	5.0000	18	0.2500		32.4054	33.3446		0.4
11	5.0000	18	0.2500		33.3446	34.2838		0.5
12	5.0000	18	0.2500		34.2838	35.2700		0.5
13	5.0000	18	0.2500		35.2700	35.7770		0.6
14	5.0000	18	0.3125		34.8538	35.7770		0.6
15	5.0000	18	0.3125		35.7770	36.7031		0.6
16	5.0000	18	0.3125		36.7031	37.6293		0.6
17	5.0000	18	0.3125		37.6293	38.5554		0.6
18	5.0000	18	0.3125		38.5554	39.4816		0.7
19	5.0000	18	0.3125		39.4816	40.4077		0.7
20	5.0000	18	0.3125		40.4077	41.3339		0.7
21	5.0000	18	0.4125		39.7460	40.6707		1.0
22	6.2500	18	0.4125	5.2500	40.6707	42.2600	A607-65	1.7
23	5.0000	18	0.4750		41.8200	42.7460		1.4
24	5.0000	18	0.4750		42.7460	43.6720		1.2
25	5.0000	18	0.4750		43.6720	44.5980		1.2
26	5.0000	18	0.4750		44.5980	45.5240		1.2
27	5.0000	18	0.4750		45.5240	46.4500		1.2
28	5.0000	18	0.5313		44.0834	45.0147		1.4
29	5.0000	18	0.5250		45.0147	45.9408		1.5
30	5.0000	18	0.5250		45.9408	46.8668		1.5
31	5.0000	18	0.5250		46.8668	47.7928		1.5
32	5.0000	18	0.5188		47.7928	48.7188		1.5
33	4.5000	18	0.5750		48.9946	49.9206		1.3
Total	145.0000			4.5000				24.5



ALL REACTIONS ARE FACTORED



TORQUE 2 kip-ft
50 mph WIND - 1.0000 in ICE



TORQUE 4 kip-ft
REACTIONS - 97 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
LLPX310R-V1 w/ Mount Pipe	133	AM-X-CD-16-65-00T-RET w/ Mount Pipe	105
LLPX310R-V1 w/ Mount Pipe	133	AM-X-CD-16-65-00T-RET w/ Mount Pipe	105
LLPX310R-V1 w/ Mount Pipe	133	OPA-65R-LCUU-H6 w/ Mount Pipe	105
WIMAX DAP HEAD	133	OPA-65R-LCUU-H6 w/ Mount Pipe	105
WIMAX DAP HEAD	133	OPA-65R-LCUU-H6 w/ Mount Pipe	105
WIMAX DAP HEAD	133	(2) LGP2140X	105
TIMING 2000	133	(2) LGP2140X	105
HORIZON COMPACT	133	(2) LGP2140X	105
HORIZON COMPACT	133	(2) RRUS-11	105
2.375" OD x 5' Mount Pipe	133	(2) RRUS-11	105
2.375" OD x 5' Mount Pipe	133	(2) RRUS-11	105
2.375" OD x 5' Mount Pipe	133	RRUS 32 B30	105
Platform Mount [LP 712-1]	133	RRUS 32 B30	105
VHLP2.5-11	133	RRUS 32 B30	105
VHLP2.5-11	133	RRUS 32 B30	105
APXVSPP18-C-A20 w/ Mount Pipe	124	(2) DC6-48-60-18-8F	105
APXVTM14-C-120 w/ Mount Pipe	124	HPA-45R-BUU-H6 w/ Mount Pipe	105
APXVTM14-C-120 w/ Mount Pipe	124	HPA-45R-BUU-H6 w/ Mount Pipe	105
APXVTM14-C-120 w/ Mount Pipe	124	HPA-45R-BUU-H6 w/ Mount Pipe	105
IBC1900BB-1	124	RRUS 4478 B14	105
IBC1900BB-1	124	RRUS 4478 B14	105
IBC1900BB-1	124	RRUS 4478 B14	105
IBC1900HG-2A	124	Platform Mount [LP 712-1]	105
IBC1900HG-2A	124	7770.00 w/ Mount Pipe	105
IBC1900HG-2A	124	7770.00 w/ Mount Pipe	105
TD-RRH8X20-25	124	AIR -32 B2A/B66AA w/ Mount Pipe	94
TD-RRH8X20-25	124	ERICSSON AIR 21 B4A B2P w/ Mount Pipe	94
TD-RRH8X20-25	124	ERICSSON AIR 21 B4A B2P w/ Mount Pipe	94
2.375" OD x 5' Mount Pipe	124	ERICSSON AIR 21 B4A B2P w/ Mount Pipe	94
2.375" OD x 5' Mount Pipe	124	KRY 112 144/1	94
2.375" OD x 5' Mount Pipe	124	KRY 112 144/1	94
Platform Mount [LP 712-1]	124	KRY 112 144/1	94
APXVSPP18-C-A20 w/ Mount Pipe	124	APXVAARR24_43-U-NA20 w/ Mount Pipe	94
APXVSPP18-C-A20 w/ Mount Pipe	124	APXVAARR24_43-U-NA20 w/ Mount Pipe	94
800MHz 2X50W RRH W/FILTER	122	APXVAARR24_43-U-NA20 w/ Mount Pipe	94
PCS 1900MHz 4x45W-65MHz	122	RADIO 4449 B12/B71	94
PCS 1900MHz 4x45W-65MHz	122	RADIO 4449 B12/B71	94
PCS 1900MHz 4x45W-65MHz	122	RADIO 4449 B12/B71	94
Pipe Mount [PM 601-3]	122	2.375" OD x 5' Mount Pipe	94
800MHz 2X50W RRH W/FILTER	122	2.375" OD x 5' Mount Pipe	94
800MHz 2X50W RRH W/FILTER	122	2.375" OD x 5' Mount Pipe	94
BXA-80063/4CFX5 w/ Mount Pipe	114	Platform Mount [LP 304-1]	94
KS24019-L112A	114	Miscellaneous [NA 510-1]	94
DB-T1-6Z-8AB-0Z	114	AIR -32 B2A/B66AA w/ Mount Pipe	94
BXA-80063/4CFX5 w/ Mount Pipe	114	AIR -32 B2A/B66AA w/ Mount Pipe	94
BXA-80063/4CFX5 w/ Mount Pipe	114	742 213 w/ Mount Pipe	87
BXA-80063/4CFX5 w/ Mount Pipe	114	Pipe Mount [PM 601-3]	87
(2) SBNHH-1D65B w/ Mount Pipe	114	742 213 w/ Mount Pipe	87
(2) SBNHH-1D65B w/ Mount Pipe	114	742 213 w/ Mount Pipe	87
(2) SBNHH-1D65B w/ Mount Pipe	114	58532A	77
DB-T1-6Z-8AB-0Z	114	Side Arm Mount [SO 701-1]	77
(2) RFV01U-D2A	114		
RFV01U-D2A	114		
RFV01U-D1A	114		
(2) RFV01U-D1A	114		
Platform Mount [LP 712-1]	114		
BXA-80063/4CFX5 w/ Mount Pipe	114		
BXA-80063/4CFX5 w/ Mount Pipe	114		
7770.00 w/ Mount Pipe	105		
AM-X-CD-16-65-00T-RET w/ Mount Pipe	105		

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 97 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.0000 ft

Paul J. Ford and Company
250 East Broad st., Suite 600
Columbus, OH 43215
Phone: (614) 221-6679
FAX:

Job: ***145-Ft Monopole / Newington***			
Project: ***PJF 37518-2864.001.7805 / BU# 881364***			
Client: Crown Castle	Drawn by: gaustin	App'd:	
Code: TIA-222-G	Date: 08/21/18	Scale: NTS	
Path: G:\TOWER\375_Crown_Castle\2018\37518-2864_881364_Newington\37518-2864.001.7805_SA_160044\37518-2864.001.7805_CCIpole.eri		Dwg No. E-1	

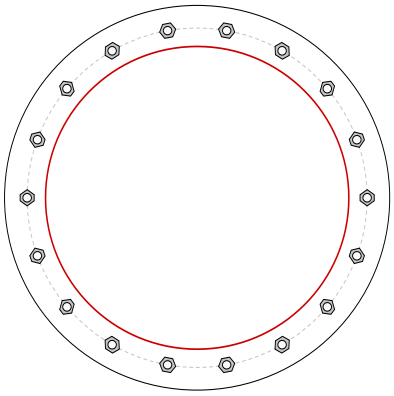
Monopole Flange Plate Connection

Elevation = 130 ft.

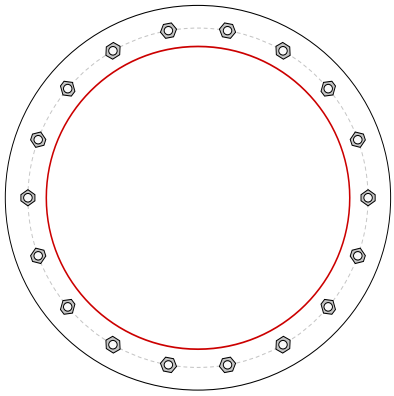
BU #	881364
Site Name	Newington
Order #	
TIA-222 Revision	G

Applied Loads	
Moment (kip-ft)	24.70
Axial Force (kips)	2.65
Shear Force (kips)	4.34

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(18) 3/4" ø bolts (A325; Fy=92 ksi, Fu=120 ksi) on 30" BC

Top Plate Data

34" OD x 1.5" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Bottom Plate Data

34" OD x 1.5" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

26.77" x 0.1875" 18-sided pole (A607-65; Fy=65 ksi, Fu=80 ksi)

Bottom Pole Data

26.77" x 0.25" 18-sided pole (A607-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	2.05	
Allowable (kips)	30.06	
Stress Ratio:	6.8%	Pass

Top Plate Capacity

Max Stress (ksi):	0.91	
Allowable Stress (ksi):	45.00	
Stress Ratio:	2.0%	Pass
Tension Side Stress Ratio:	0.9%	Pass

Bottom Plate Capacity

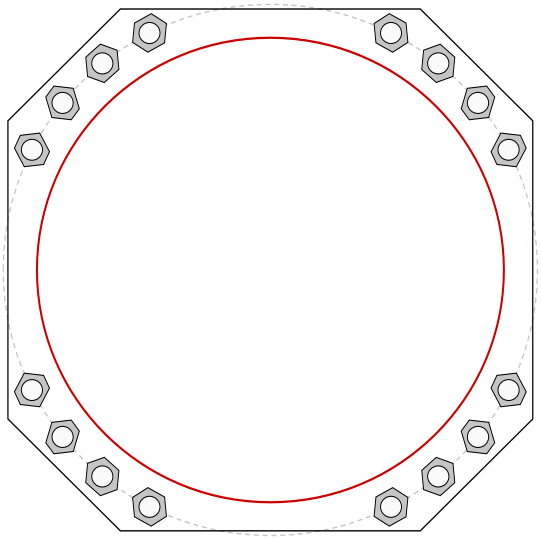
Max Stress (ksi):	0.91	
Allowable Stress (ksi):	45.00	
Stress Ratio:	2.0%	Pass
Tension Side Stress Ratio:	0.9%	Pass

Monopole Base Plate Connection

Site Info	
BU #	881364
Site Name	Newington
Order #	

Analysis Considerations	
TIA-222 Revision	G
Grout Considered:	No
l_{ar} (in)	0
Eta Factor, η	0.5

Applied Loads	
Moment (kip-ft)	4024.57
Axial Force (kips)	51.69
Shear Force (kips)	42.44



Connection Properties

Anchor Rod Data

(16) 2-1/4" ø bolts (A615-75; Fy=75 ksi, Fu=100 ksi) on 57" BC

Base Plate Data

56" OD x 3" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Stiffener Data

N/A

Pole Data

49.83" x 0.375" 18-sided pole (A607-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

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

Pu = 214.92	ϕPn = 260	**Stress Rating**
Vu = 2.65	ϕVn = n/a	**84.7%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	35.6	
Allowable Stress (ksi):	45	
Stress Ratio:	**79.1%**	**Pass**

Drilled Pier Foundation

BU # :	881364
Site Name:	Newington
App. Number:	

TIA-222 Revison:	G
Tower Type:	Monopole

Applied Loads	Comp.	Uplift
Moment (kip-ft)	4025	
Axial Force (kips)	52	
Shear Force (kips)	42	

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

Pier Design Data		
Depth	25	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
From 0.5' above grade to 25' below grade		
Pier Diameter	7	ft
Rebar Quantity	28	
Rebar Size	11	
Clear Cover to Ties	4	in
Tie Size	5	

Analysis Results		
Soil Lateral Capacity	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	6.43	-
Soil Safety Factor	2.12	-
Max Moment (kip-ft)	4278.15	-
Rating	*62.7%*	-
Soil Vertical Capacity	*Compression*	*Uplift*
Skin Friction (kips)	184.54	-
End Bearing (kips)	173.18	-
Weight of Concrete (kips)	133.42	-
Total Capacity (kips)	357.72	-
Axial (kips)	185.42	-
Rating	*51.8%*	-
Reinforced Concrete Capacity	*Compression*	*Uplift*
Critical Depth (ft from TOC)	6.36	-
Critical Moment (kip-ft)	4278.10	-
Critical Moment Capacity	6697.33	-
Rating	*63.9%*	-

Soil Interaction Rating	**62.7%**
Structural Foundation Rating	**63.9%**

Soil Profile

Groundwater Depth	10	ft	
# of Layers	4		

Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	4	4	125	150	0	0	0.000	0.000					Cohesionless
2	4	10	6	125	150	0	34	0.467	0.467				7	Cohesionless
3	10	12	2	62.6	87.6	0	34	0.645	0.645				7	Cohesionless
4	12	25	13	62.6	87.6	0	30	0.546	0.546			6	5	Cohesionless

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RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

T-Mobile Existing Facility

Site ID: CT11782A

CT782/Costello MP
123 Costello Road
Newington, CT 06111

October 5, 2018

EBI Project Number: 6218006520

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	22.82 %

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October 5, 2018

T-Mobile USA
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, CT 06002

Emissions Analysis for Site: **CT11782A – CT782/Costello MP**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **123 Costello Road, Newington, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (AWS) frequency bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **123 Costello Road, Newington, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

1) 1 GSM channels (PCS Band - 1900 MHz) was considered for each sector of the proposed installation. These Channels have a transmit power of 15 Watts per Channel.

2) 1 UMTS channel (AWS Band – 2100 MHz) was considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

3) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

4) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

5) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

6) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.

7) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

8) For the following calculations the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

9) The antennas used in this modeling are the **Ericsson AIR32 B66AA/B2A** & **Ericsson AIR21 B4A/B2P** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **RFS APXVAARR24_43-U-NA20** for 600 MHz and 700 MHz channels. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

10) The antenna mounting height centerline of the proposed antennas is **95 feet** above ground level (AGL).

11) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

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T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Ericsson AIR32 B66AA/B2A	Make / Model:	Ericsson AIR32 B66AA/B2A	Make / Model:	Ericsson AIR32 B66AA/B2A
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	95 feet	Height (AGL):	95 feet	Height (AGL):	95 feet
Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	200	Total TX Power(W):	200	Total TX Power(W):	200
ERP (W):	7,780.90	ERP (W):	7,780.90	ERP (W):	7,780.90
Antenna A1 MPE%	**3.53**	Antenna B1 MPE%	**3.53**	Antenna C1 MPE%	**3.53**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	95 feet	Height (AGL):	95 feet	Height (AGL):	95 feet
Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)
Channel Count	2	Channel Count	2	Channel Count	2
Total TX Power(W):	55	Total TX Power(W):	55	Total TX Power(W):	55
ERP (W):	2,139.75	ERP (W):	2,139.75	ERP (W):	2,139.75
Antenna A2 MPE%	**0.97**	Antenna B2 MPE%	**0.97**	Antenna C2 MPE%	**0.97**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Gain:	12.95 / 13.35 dBd	Gain:	12.95 / 13.35 dBd	Gain:	12.95 / 13.35 dBd
Height (AGL):	95 feet	Height (AGL):	95 feet	Height (AGL):	95 feet
Frequency Bands	600 MHz / 700 MHz	Frequency Bands	600 MHz / 700 MHz	Frequency Bands	600 MHz / 700 MHz
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	2,443.03	ERP (W):	2,443.03	ERP (W):	2,443.03
Antenna A3 MPE%	**2.63**	Antenna B3 MPE%	**2.63**	Antenna C3 MPE%	**2.63**

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Per Sector Max)	**7.13 %**
Verizon Wireless	**6.61** %
MetroPCS	**1.85** %
Clearwire	**0.12** %
Sprint	**0.14** %
Nextel	**0.34** %
AT&T	**6.63** %
Site Total MPE %:	**22.82 %**

T-Mobile Sector A Total:	7.13 %
T-Mobile Sector B Total:	7.13 %
T-Mobile Sector C Total:	7.13 %
Site Total:	22.82 %

T-Mobile Maximum MPE Power Values (Per Sector)

T-Mobile _Frequency Band / Technology (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile PCS - 1900 MHz LTE	2	1,556.18	95	14.13	PCS - 1900 MHz	1000.00	1.41%
T-Mobile AWS - 2100 MHz LTE	2	2,334.27	95	21.19	AWS - 2100 MHz	1000.00	2.12%
T-Mobile PCS - 1900 MHz GSM	1	583.57	95	2.65	PCS - 1900 MHz	1000.00	0.26%
T-Mobile AWS - 2100 MHz UMTS	1	1,556.18	95	7.06	AWS - 2100 MHz	1000.00	0.71%
T-Mobile 600 MHz LTE	2	788.97	95	7.16	600 MHz	400.00	1.79%
T-Mobile 700 MHz LTE	2	432.54	95	3.93	700 MHz	467.00	0.84%
						Total:	**7.13%**

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	7.13 %
Sector B:	7.13 %
Sector C:	7.13 %
T-Mobile Maximum MPE % (Per Sector):	7.13 %
Site Total:	22.82 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **22.82%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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