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

July 30, 2019

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

RE: **Notice of Exempt Modification for T-Mobile:**
806352 - T-Mobile Site ID: CT11851C
126 Ledge Road, Darien, CT 06820
Latitude: 41° 4′ 20.75″ / Longitude: -73° 28′ 41.40″

Dear Ms. Bachman:

T-Mobile currently maintains six (6) total antennas at the 110-foot mount on the existing 117-foot Monopole Tower, located at 126 Ledge Road, Darien, CT. The tower is owned by Crown Castle and the property is owned by the Town of Darien. T-Mobile now intends to replace three (3) existing antennas with three (3) new 1900/2100 MHz antennas and three (3) new 600/700 MHz antennas. T-Mobile is also proposing mount modifications as shown on the enclosed mount analysis.

Planned Modifications:
Tower:

Remove:
(3) 1 5/8" Coax

Remove and Replace:
(3) AIR21_B4A_B12P Antenna **(REMOVE)** - (3) AIR32_B66A_B2A Antenna 1900/2100 MHz **(REPLACE)**

(3) RRUS11 B12 **(REMOVE) –** (3) Radio 4449 B71/B12 **(REPLACE)**

Install New:
(3) 1 5/8" Hybrid Fiber Line
(3) RFDS APXVAARR24_43-U-NA20 Antenna 600/700 MHz

Existing to Remain:
(6) 1 5/8" Coax
(1) 1 5/8" Hybrid Fiber
(3) AIR21 KRC118023-1_B2A_B4P Antenna 1900/2100 MHz
(3) TMA

Ground:

Upgrade: Internal upgrade to existing ground cabinet. Upgrade cabinet breaker

This facility was approved by the Connecticut Siting Council in Petition No. 155 on December 20, 1992. This approval included conditions that this exempt modification complies with.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Jayme Stevenson, First Selectman, Town of Darien, Jeremy Ginsburg, Planning and Zoning Director for the Town of Darien and Crown Castle as the tower owner. The First Selectman's notice shall serve as notification of the property owner in this instance.

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

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

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

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

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

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

Sincerely,

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

Attachments

cc:

Jayme Stevenson, First Selectman
Town of Darien
Room 202, Town Hall
2 Renshaw Road
Darien, CT 06820
203.656.7300

Jeremy Ginsberg, Planning & Zoning Director
Planning and Zoning Office
Room 211, Town Hall
2 Renshaw Road
Darien, CT 06820
203.656.7300

Crown Castle, Tower Owner

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

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ORIGIN ID:GFLA (518) 373-3523
ANNE MARIE ZSAMBA
CROWN CASTLE
3 CORPORATE PARK DRIVE
SUITE 101
CLIFTON PARK, NY 12065
UNITED STATES US

SHIP DATE: 13JUL19
ACTWGT: 4.00 LB
CAD: 104924194/INET4100

BILL SENDER

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

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

565J2/A6F9/23AD

FedEx Express

J191019010701uv

MON - 15 JUL 10:30A
PRIORITY OVERNIGHT

TRK# 0201 **7757 3390 5082**

XE BDLA

06051
BDL
CT-US

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Exhibit A

Original Facility Approval

DOCKET NO. 155 - An application of Metro Mobile CTS of Fairfield County, Inc., for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a cellular telephone telecommunications tower, antennas, associated equipment, and building on a 17-acre parcel of land used and owned by the Town of Darien as the Town waste transfer station off Ledge Road, with an alternative site on a 1 acre parcel owned by the Noroton Heights Fire Department, Inc., located immediately adjacent to the Noroton Heights Fire Department Building at 209 Noroton Avenue in the Town of Darien, Connecticut.

Connecticut

Siting

Council

December 30, 1992

DECISION AND ORDER

Pursuant to the foregoing Findings of Fact, and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a cellular telecommunications tower and equipment building at the proposed Darien, Connecticut, prime site including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need as provided by section 16-50k of the Connecticut General Statutes (CGS), be issued to Metro Mobile CTS of Fairfield County, Inc. (Metro Mobile), for the construction, operation, and maintenance of a cellular telecommunications tower, associated equipment, and building within property owned by the Town of Darien located on Ledge Road, Darien, Connecticut.

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

1. The self-supporting monopole tower shall be no taller than necessary to provide the proposed communications service and the tower shall not exceed a total height of 113 feet above ground level (AGL), with antennas and appurtenances.

2. The Certificate holder shall prepare a Development and Management (D&M) plan for this site in compliance with sections 16-50j-75 through 16-50j-77 of the Regulations of State Agencies. The D&M plan shall include detailed plans of the tower, tower foundation, equipment building, access road including all upgrades, utility connection, security fence, and detailed plans for drainage, erosion, and sedimentation controls consistent with the Connecticut Guidelines for Soil Erosion and Sedimentation Control. In addition, the D&M plan shall include detailed landscaping plans for the facility site, with options to provide landscaping on the Town property boundary north of the site and on the Middlesex Common Condominium property subject to their approval.

3. The Certificate Holder shall comply with any existing and future radio frequency (RF) standard promulgated by State or federal regulatory agencies. Upon the establishment of any new governmental RF standards, the facility granted herein shall be brought into compliance with such standards.

4. The Certificate Holder shall provide the Council a recalculated report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power density above the levels originally calculated and provided in the application.

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

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

7. Unless otherwise approved by the Council, this Decision and Order shall be void if all construction authorized herein is not completed within three years of the effective date of this Decision and Order or within three years after all appeals to this Decision and Order have been resolved.

Pursuant to CGS section 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in the Norwalk Hour, Stamford Advocate, and Darien News-Review.

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

The parties and intervenors to this proceeding are:

APPLICANT	ITS REPRESENTATIVES
Metro Mobile CTS of Fairfield County, Inc.	Metro Mobile CTS of Fairfield County, Inc. 20 Alexander Drive Wallingford, CT 06492 Attn: David S. Malko, P.E. Manager, Engineering and Regulatory Services Robinson & Cole One Commercial Plaza Hartford, CT 06103-3597 Attn: Earl W. Phillips, Jr., Esq. Charles R. Wolfe, Esq. Henry H. Sprague, III, Esq.
INTERVENOR	ITS REPRESENTATIVE
The Springwich Cellular Limited Partnership	Peter J. Tyrrell Senior Attorney SNET Cellular, Inc. 227 Church Street Room 1021 New Haven, CT 06506
PARTY	ITS REPRESENTATIVE
Middlesex Common Condominium Association, Inc.	Rebecca Oldfield Smith 53 Hale Lane Darien, Connecticut 06820
INTERVENOR	
Bruce Fletcher 236 Noroton Avenue Darien, Connecticut 06820	

Exhibit B

Property Card

Profile

Parcel:	29014	**Land Use Code:**	MUNICIPAL
Alternate ID:	39 20&21		
Address:	126 LEDGE ROAD	**NBHD:**	1032
Owner:	TOWN OF DARIEN PUBLIC WORKS GARAGE	**Land Acres:**	20.4
Mailing Address:	C/O DPW 2 RENSHAW ROAD DARIEN CT 06820		

Value Summary:

Appraised Land:	7,330,400	**Assessed Land:**	5,131,280
Appraised Building:	4,908,900	**Assessed Building:**	3,436,230
Appraised Total:	12,239,300	**Assessed Total:**	8,567,510

Primary Residential Card:

Card:	**Half Baths:**	**Fireplace Prefab:**
Stories:	**HT/AC:**	**Fireplace OP/ST:** /
Use:	**Fuel:**	**Basement Gar.:**
Type:	**System:**	**Grade:**
Year Built:	**Attic:**	**Cond (CDU):**
Year Remodeled:	**Basement:**	**% Complete:**
Total Rooms:	**RecRm-Not in Liv SF:**	**Family Room:**
Bedrooms:	**Finsh Bsmt-In Liv SF:**	**Ext. Material:**
Full Baths:	**Square Feet:**	

Commercial Card:

Year Built:	1980	**Stories:**	398 - WAREHOUSE
Eff. Yr. Built:	2010	**Gross Flr. Area:**	39102
Units:	1	**Grade:**	A-

Land:

Classification	Type:	Acres	SF
UNDEVELOPED	A-ACREAGE	10.4	453024
PRIMARY	A-ACREAGE	10	435600

Other Items:

Code	Description	Year Built	Square Ft.
TT4	TOWER	2016	110
SH3	FINISHED	2007	720
RS3	BRICK/STN	2000	90
PA1	ASPHALT OR	1985	35000

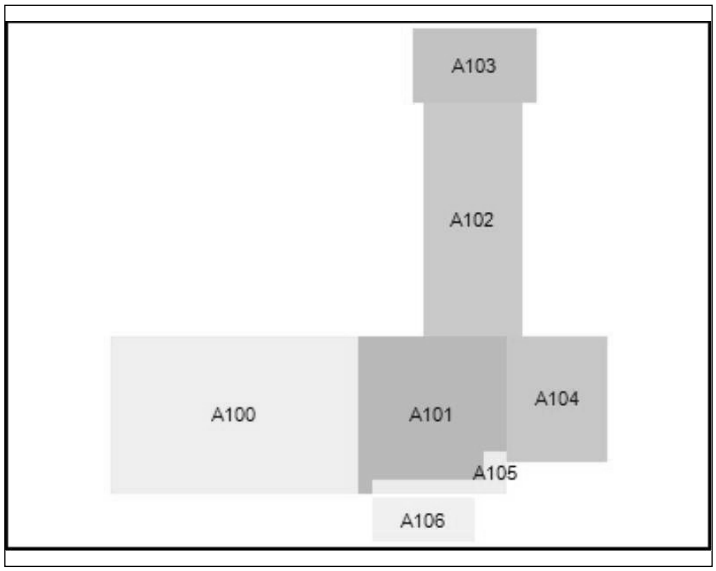
FN1	FENCE CHAIN	1980	4200
TT4	TOWER	2007	117
RG6	GARAGE-1S FIN	2013	1100

Sales History:

Date	Book-Page	Grantee	Amount
1800-JAN-01	0000--0000	TOWN OF DARIEN	

PHOTO

SKETCH



Sketch Legend

6 A100 - VB1:1S/B 7770 Sq. Ft.
7 A101 - VB1:1S/B 4130 Sq. Ft.
8 A102 - VB1:1S/B 4576 Sq. Ft.
9 A103 - VB1:1S/B 1815 Sq. Ft.
10 A104 - VS1:1S 2520 Sq. Ft.
11 CANPY RF/SLB - CP6:CANOPY ROOF/SLAB 490 Sq. Ft.
12 CANPY RF-AVG - CP8:CANOPY RF-AVERAGE 920 Sq. Ft.
1 AUTO PARTS/S - 047:AUTO PARTS/SERVICE 7770 Sq. Ft.
2 AUTO PARTS/S - 047:AUTO PARTS/SERVICE 7770 Sq. Ft.
3 AUTO PARTS/S - 047:AUTO PARTS/SERVICE 8706 Sq. Ft.
4 MULTI-USE OF - 082:MULTI-USE OFFICE 4130 Sq. Ft.
5 AUTO PARTS/S - 047:AUTO PARTS/SERVICE 4576 Sq. Ft.
6 AUTO PARTS/S - 047:AUTO PARTS/SERVICE 2520 Sq. Ft.
8 AUTO PARTS/S - 047:AUTO PARTS/SERVICE 1815 Sq. Ft.
9 AUTO PARTS/S - 047:AUTO PARTS/SERVICE 1815 Sq. Ft.
2 FENCE CHAI - FN1:FENCE CHAIN 4200 Sq. Ft.
3 BR/ST SHED - RS3:BRICK/STN UTILITY SHED 90 Sq. Ft.
4 GAR-1S FIN - RG6:GARAGE-1S FIN 1100 Sq. Ft.
5 TOWER CELL - TT4:TOWER CELLULAR 117 Sq. Ft.
6 METAL SHED - SH3:FINISHED METAL SHED 720 Sq. Ft.
2 OVRHD DR - OD1:OVERHEAD DR-WOOD/MTL 144 Sq. Ft.
1 ASPH PAVE - PA1:ASPHALT OR BLACKTOP PAVING 35000 Sq. Ft.
1 OVRHD DR - OD1:OVERHEAD DR-WOOD/MTL 196 Sq. Ft.
7 TOWER CELL - TT4:TOWER CELLULAR 110 Sq. Ft.

3 OVRHD DR - OD1:OVERHEAD DR-WOOD/MTL 120 Sq. Ft.
4 OVRHD DR - OD1:OVERHEAD DR-WOOD/MTL 160 Sq. Ft.

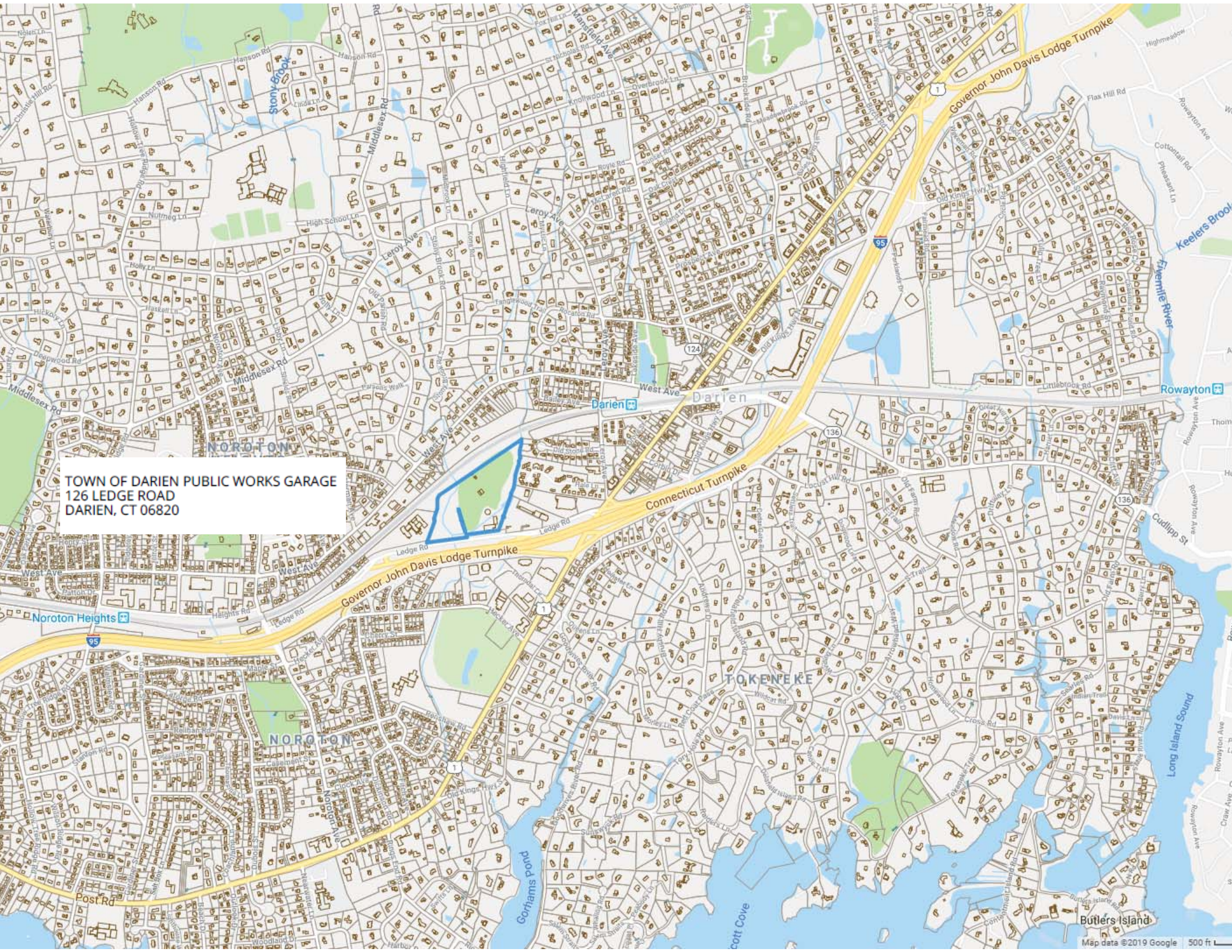

TOWN OF DARIEN PUBLIC WORKS GARAGE
126 LEDGE ROAD
DARIEN, CT 06820
Governor John Davis Lodge Turnpike
Connecticut Turnpike
Ledge Rd
West Ave
Darien
Noroton
Noroton Heights
Rowayton
Middlesex Rd
Stony Brook
Post Rd
Gorhams Pond
Long Island Sound
Butlers Island
Keelers Brook
Flax Hill Rd
Cudlipp St
Map data ©2019 Google
500 ft

Exhibit C

Construction Drawings

T-Mobile

T-MOBILE SITE NUMBER: CT11851C
T-MOBILE SITE NAME: CT851/CROWN DARIEN_MP
T-MOBILE PROJECT: L600

BUSINESS UNIT #: 806352
SITE ADDRESS: 126 LEDGE RD, DARIEN, CT 06820
COUNTY: FAIRFIELD
SITE TYPE: MONOPOLE
TOWER HEIGHT: 117'-0"

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	BRG 302 943052
SITE ADDRESS:	126 LEDGE RD DARIEN, CT 06820
COUNTY:	FAIRFIELD
MAP/PARCEL #:	----
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41°4'20.75"
LONGITUDE:	-73°28'41.40"
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	73'-0"
CURRENT ZONING:	CITY OF FAIRFIELD
JURISDICTION:	CT-CONNECTICUT SITING COUNCIL
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	---- ---- ----
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	T-MOBILE 12920 SE 38TH STREET BELLEVUE, WA 98006
ELECTRIC PROVIDER:	NORTHEAST UTILITIES 800-286-2000
TELCO PROVIDER:	ATT 866-620-6900

DRAWING INDEX

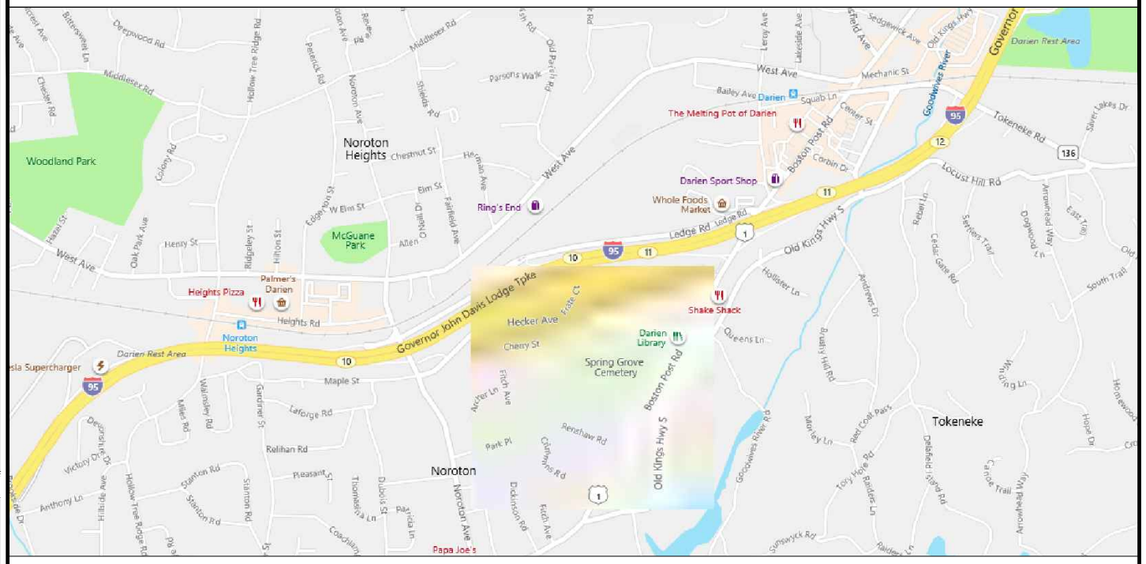
SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1.1	SITE PLAN
C-1.2	EXISTING & FINAL EQUIPMENT PLANS
C-2	FINAL ELEVATION & ANTENNA PLANS
C-3	EQUIPMENT DETAILS & COAX COLOR CODING
C-4	EQUIPMENT SPECS
G-1	TYPICAL FINAL GROUNDING SCHEMATIC
G-2	GROUNDING DETAILS
E-1	ELECTRICAL DETAILS
E-2	ELECTRICAL DETAILS

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 11X17. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

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

811

LOCATION MAP



NO SCALE

PROJECT TEAM

A&E FIRM:	KIMLEY-HORN AND ASSOCIATES, INC. COA #: PEC.0000738 4807 ROCKSIDE RD, SUITE 430 INDEPENDENCE, OH 44131 KEVIN.CLEMENTS@KIMLEY-HORN.COM
CROWN CASTLE USA INC. DISTRICT CONTACTS:	3 CORPORATE PARK DRIVE, SUITE 101 CLIFTON PARK, NY 12065 CATHERINE COVINGTON - PROJECT MANAGER CATHERINE.COVINGTON@CROWNCASTLE.COM ALLISON SQUIRES - A&E SPECIALIST 518-373-3523 ALLISON.SQUIRES.CONTRACTOR@CROWNCASTLE.COM

PROJECT DESCRIPTION

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

TOWER SCOPE OF WORK:
- REMOVE (3) ANTENNAS
- REMOVE (3) RRUS11 B12
- REMOVE (6) 1-5/8" LMU COAX 182 FT
- INSTALL (3) ERICCSON 6X12 HCS
- INSTALL (6) ANTENNAS
- INSTALL (3) RADIO 4449 B71-B12
- INSTALL (3) NEW PIPE 2 X-STRONG X 84" LONG (MAX.) WITH SITE PRO 1 SP219 CROSSOVER PLATES
- INSTALL SITE PRO 1 HRK12 HANDRAIL KIT

GROUND SCOPE OF WORK:
- REMOVE (1) DUS41
- REMOVE (1) XMU
- INSTALL (2) BB 6630

APPLICABLE CODES/REFERENCE DOCUMENTS

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

CODE TYPE	CODE
BUILDING	2015 IBC & 2018 CBC
MECHANICAL	2015 IMC & 2018 CMC
ELECTRICAL	2017 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	BY OTHERS
DATED:	
MOUNT ANALYSIS:	KIMLEY-HORN
DATED:	05/20/19
RFDS REVISION:	4.1
DATED:	04/02/19
ORDER ID:	----
REVISION:	0

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

T-Mobile
12920 SE 38TH STREET
BELLEVUE, WA 98006

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

Kimley»Horn
COA #PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

T-MOBILE SITE NUMBER:
CT11851C

BU #: **806352**
BRG 302 943052

126 LEDGE RD
DARIEN, CT 06820

EXISTING 117'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	06/13/19	JW	ISSUED FOR PERMITTING	MCK
0	07/22/19	KRB	ISSUED FOR CONSTRUCTION	MCK

STATE OF CONNECTICUT
BRIAN J. BREWER
29510
LICENSED
PROFESSIONAL ENGINEER
7-24-19

SHEET NUMBER: T-1
REVISION: 0

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED– NO WORK SHALL COMMENCE PRIOR TO CROWN CASTLE USA INC. WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN CASTLE USA INC. NOC AT 800–788–7011 & THE CROWN CASTLE USA INC. CONSTRUCTION MANAGER.
2. "LOOK UP" – CROWN CASTLE USA INC. SAFETY CLIMB REQUIREMENT:
   THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR CROWN CASTLE USA INC. POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.
3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND CROWN CASTLE USA INC. STANDARD CED–STD–10253, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA–322 (LATEST EDITION).
5. ALL SITE WORK TO COMPLY WITH QAS–STD–10068 "INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON CROWN CASTLE USA INC. TOWER SITE" AND LATEST VERSION OF ANSI/TIA–1019–A–2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY CROWN CASTLE USA INC. PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, TOWER OWNER, CROWN CASTLE USA INC., AND/OR LOCAL UTILITIES.
14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.
16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR: GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
   CARRIER: T–MOBILE
   TOWER OWNER: CROWN CASTLE USA INC.
2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CROWN CASTLE.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND CROWN CASTLE PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION AND IS TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF CROWN CASTLE USA INC.
13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST–IN–PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.
4. CONCRETE EXPOSED TO FREEZE–THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER–TO–CEMENT RATIO (W/C) OF 0.45.
5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
   #4 BARS AND SMALLER . . . . 40 ksi
   #5 BARS AND LARGER . . . . 60 ksi
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
   CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH . . . . 3"
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 BARS AND LARGER . . . . 2"
   #5 BARS AND SMALLER . . . . 1–1/2"
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
   SLAB AND WALLS . . . . 3/4"
   BEAMS AND COLUMNS . . . . 1–1/2"
7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
   4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
   4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 20,000 AIC MINIMUM. VERYIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).
7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
8. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI–CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI–CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP–STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
16. ELECTRICAL METALLIC TUBING (EMT) OR METAL–CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID–TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION–TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON–PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER–ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY–COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3R (OR BETTER) FOR EXTERIOR LOCATIONS.
25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY–COATED OR NON–CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR CROWN CASTLE USA INC. BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "T–MOBILE".
30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

CONDUCTOR COLOR CODE		
SYSTEM	CONDUCTOR	COLOR
120/240V, 1Ø	A PHASE	BLACK
	B PHASE	RED
	NEUTRAL	WHITE
	GROUND	GREEN
120/208V, 3Ø	A PHASE	BLACK
	B PHASE	RED
	C PHASE	BLUE
	NEUTRAL	WHITE
	GROUND	GREEN
277/480V, 3Ø	A PHASE	BROWN
	B PHASE	ORANGE OR PURPLE
	C PHASE	YELLOW
	NEUTRAL	GREY
	GROUND	GREEN
DC VOLTAGE	POS (+)	RED**
	NEG (–)	BLACK**

* SEE NEC 210.5(C)(1) AND (2)
** POLARITY MARKED AT TERMINATION

GREENFIELD GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL–OF–POTENTAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.
7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON–ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON–METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON–METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD–WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY).

ABBREVIATIONS:

ANT	ANTENNA
(E)	EXISTING
FIF	FACILITY INTERFACE FRAME
GEN	GENERATOR
GPS	GLOBAL POSITIONING SYSTEM
GSM	GLOBAL SYSTEM FOR MOBILE
LTE	LONG TERM EVOLUTION
MGB	MASTER GROUND BAR
MW	MICROWAVE
(N)	NEW
NEC	NATIONAL ELECTRIC CODE
(P)	PROPOSED
PP	POWER PLANT
QTY	QUANTITY
RECT	RECTIFIER
RBS	RADIO BASE STATION
RET	REMOTE ELECTRIC TILT
RFDS	RADIO FREQUENCY DATA SHEET
RRH	REMOTE RADIO HEAD
RRU	REMOTE RADIO UNIT
SIAD	SMART INTEGRATED DEVICE
TMA	TOWER MOUNTED AMPLIFIER
TYP	TYPICAL
UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
W.P.	WORK POINT

T-Mobile
12920 SE 38TH STREET
BELLEVUE, WA 98006

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

Kimley»Horn
COA #PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

T-MOBILE SITE NUMBER:
CT11851C

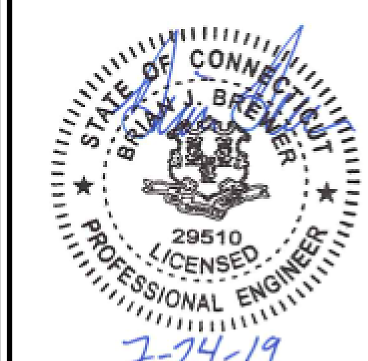
BU #: **806352**
BRG 302 943052

126 LEDGE RD
DARIEN, CT 06820

EXISTING 117'-0" MONOPOLE

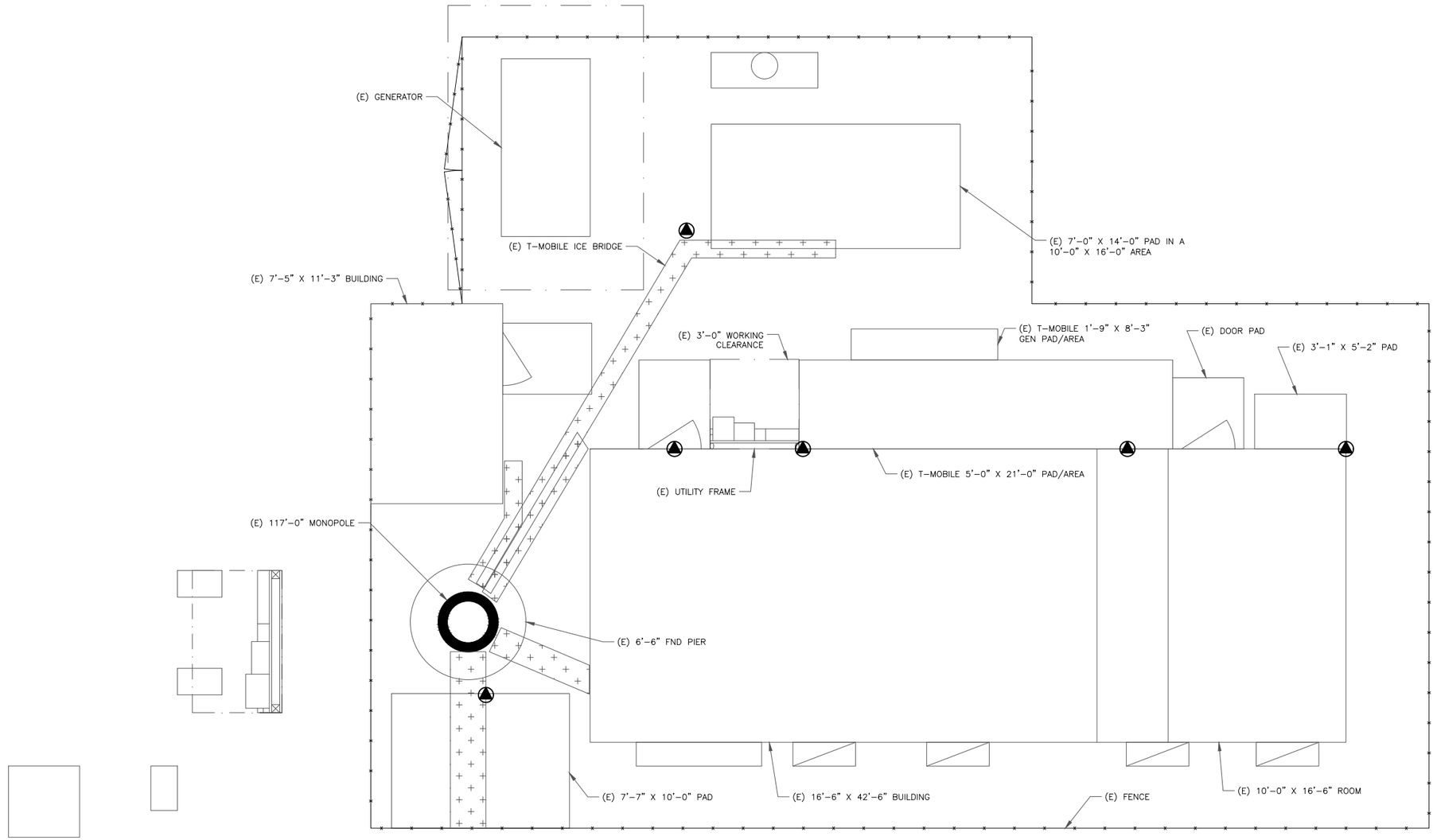
ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	06/13/19	JW	ISSUED FOR PERMITTING	MCK
0	07/22/19	KRB	ISSUED FOR CONSTRUCTION	MCK



SHEET NUMBER: T-2

REVISION: 0



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

N

T-Mobile
12920 SE 38TH STREET
BELLEVUE, WA 98006

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

Kimley»Horn
COA #PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

T-MOBILE SITE NUMBER:
CT11851C

BU #: **806352**
BRG 302 943052

126 LEDGE RD
DARIEN, CT 06820

EXISTING 117'-0" MONOPOLE

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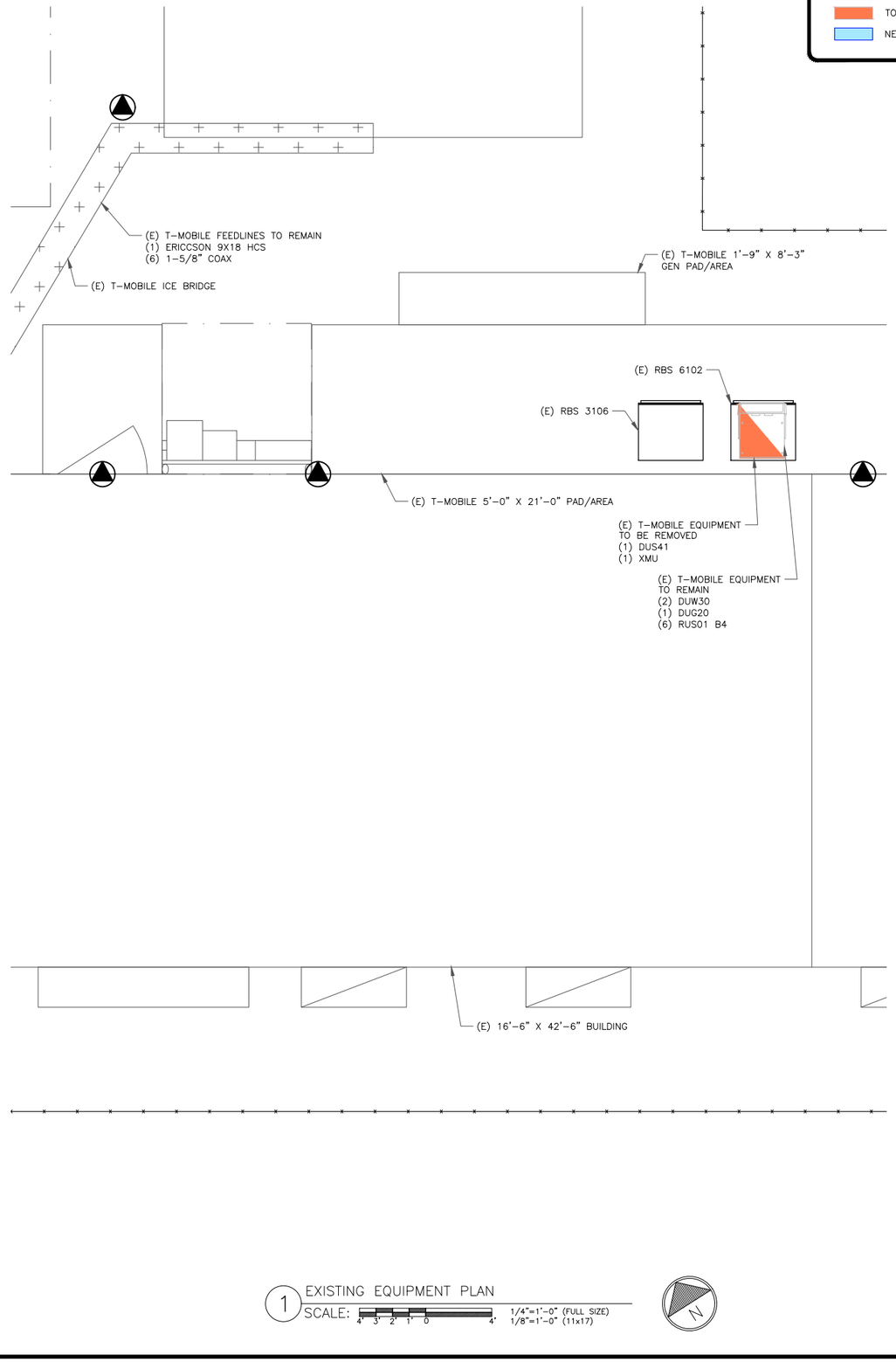
STATE OF CONNECTICUT
BRIAN J. BREWER
29510
LICENSED
PROFESSIONAL ENGINEER
7-24-19

SHEET NUMBER: C-1.1
REVISION: 0

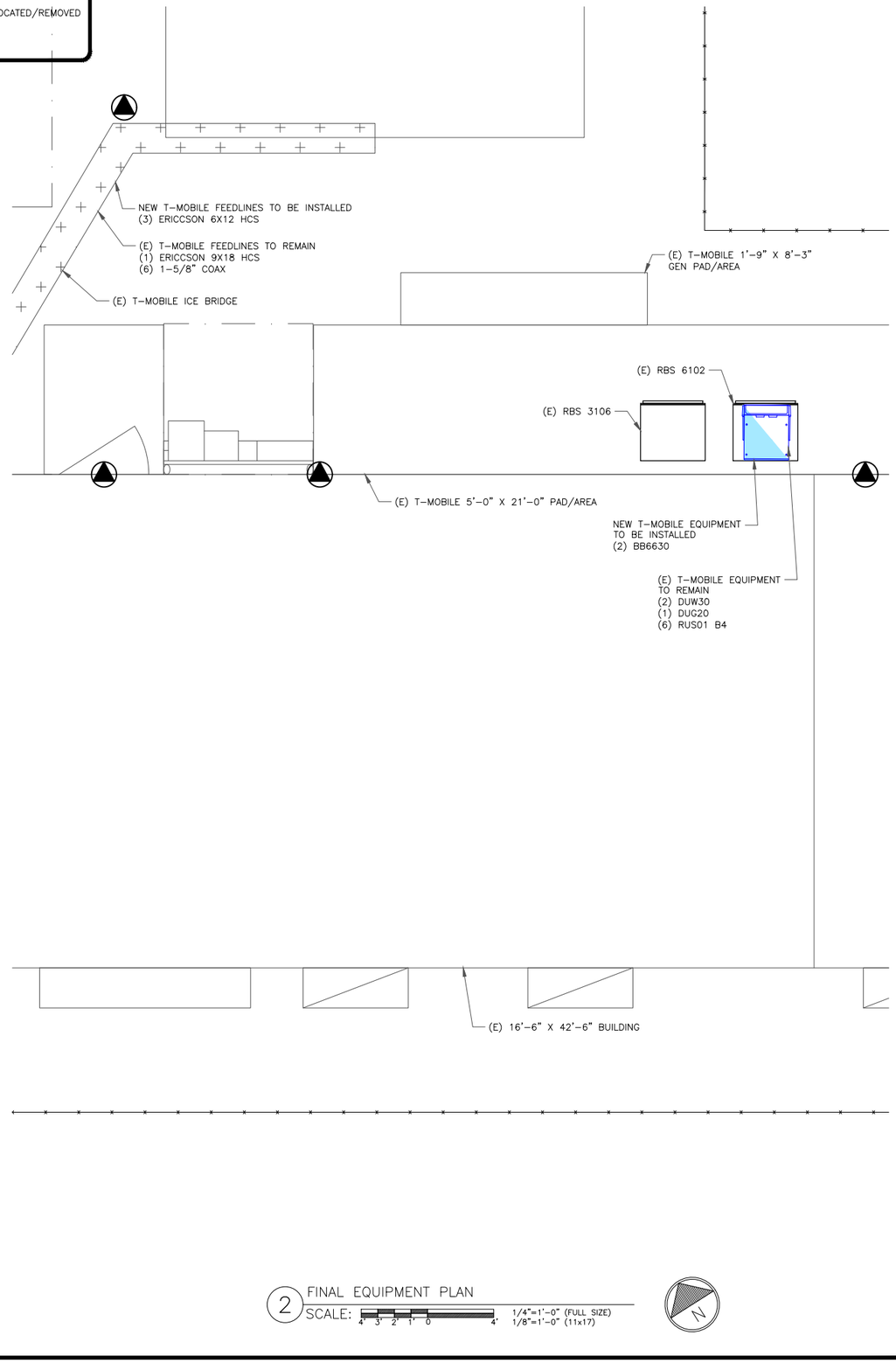
EQUIPMENT LEGEND:

- EXISTING
- TO BE RELOCATED/REMOVED
- NEW



1 EXISTING EQUIPMENT PLAN

SCALE: 4' 3' 2' 1' 0 4' — 1/4"=1'-0" (FULL SIZE) 1/8"=1'-0" (11x17)



2 FINAL EQUIPMENT PLAN

SCALE: 4' 3' 2' 1' 0 4' — 1/4"=1'-0" (FULL SIZE) 1/8"=1'-0" (11x17)

T-Mobile
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BELLEVUE, WA 98006

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T-MOBILE SITE NUMBER:
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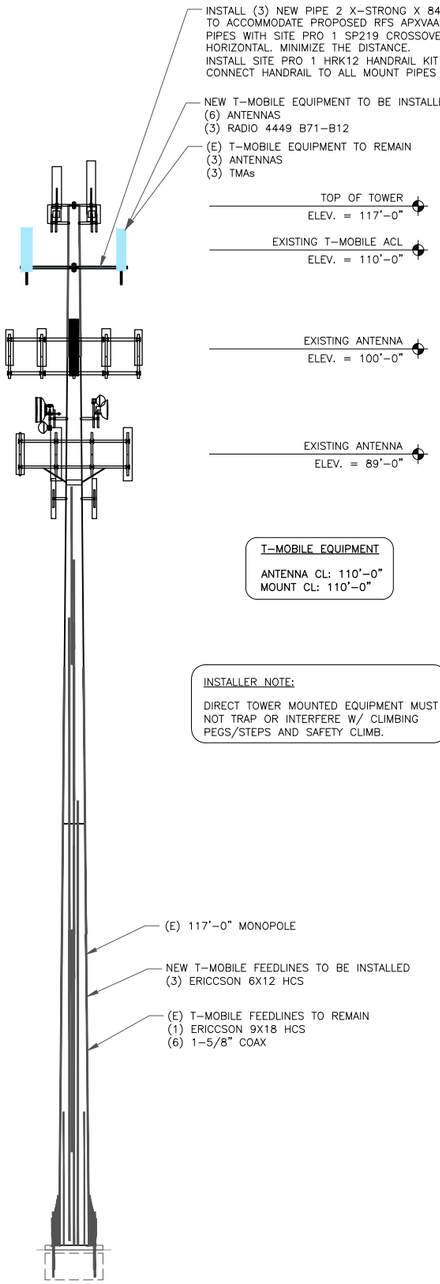
STATE OF CONNECTICUT
BRIAN J. BREWER
29510
LICENSED
PROFESSIONAL ENGINEER
7-24-19

SHEET NUMBER: C-1.2

REVISION: 0



1 FINAL ELEVATION
SCALE: NOT TO SCALE

EQUIPMENT LEGEND:

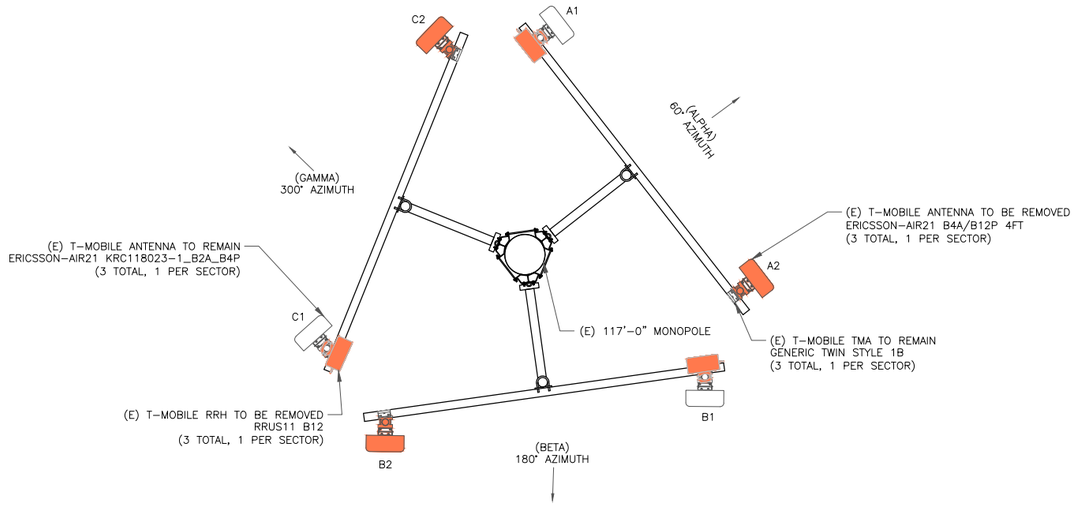
- EXISTING
- TO BE RELOCATED/REMOVED
- NEW

MOUNT ANALYSIS NOTES:

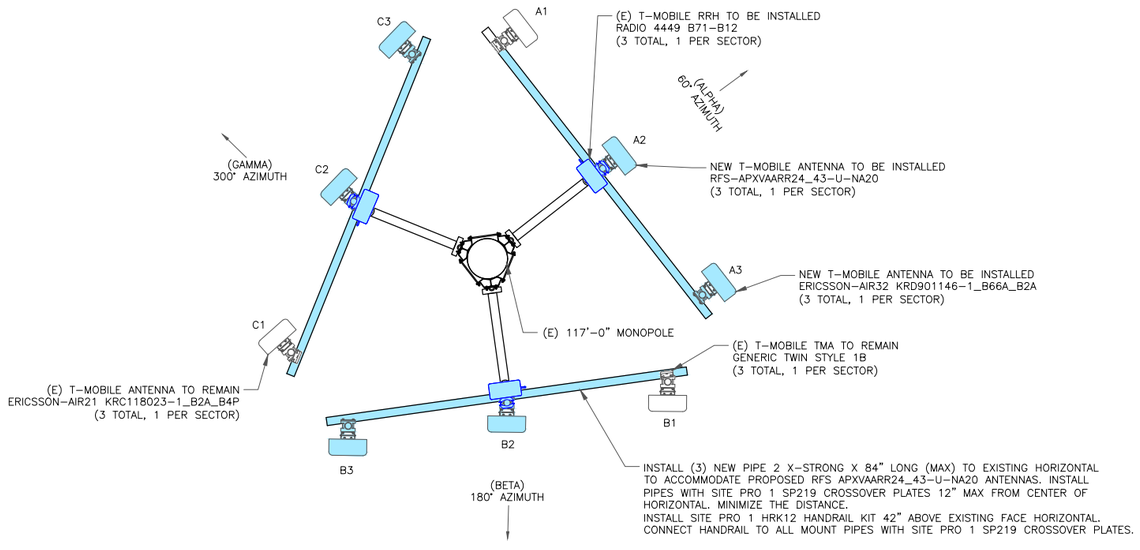
1. THE DESIGN DEPICTED IN THESE DRAWINGS IS VALID WHEN ACCOMPANIED BY A CORRESPONDING PASSING MOUNT ANALYSIS.
2. CONSTRUCTION MANAGER / GENERAL CONTRACTOR SHALL REVIEW THE MOUNT ANALYSIS FOR ANY CONDITIONS PRIOR TO INSTALLATION.
3. ANY REQUIRED MOUNT MODIFICATION DESIGN OR MOUNT REPLACEMENT SHALL BE APPROVED BY EOR.

"LOOK UP" – CROWN CASTLE USA INC. SAFETY CLIMB REQUIREMENT:

THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR CROWN CASTLE USA INC. POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.



2 EXISTING ANTENNA PLAN
SCALE: NOT TO SCALE



3 FINAL ANTENNA PLAN
SCALE: NOT TO SCALE

T-Mobile
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BELLEVUE, WA 98006

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126 LEDGE RD
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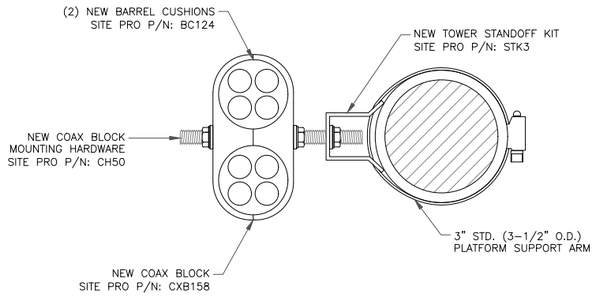
SHEET NUMBER: C-2

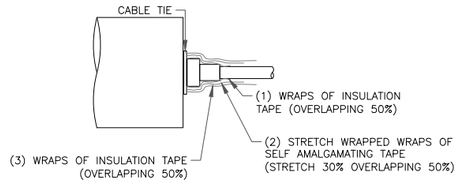
REVISION: 0



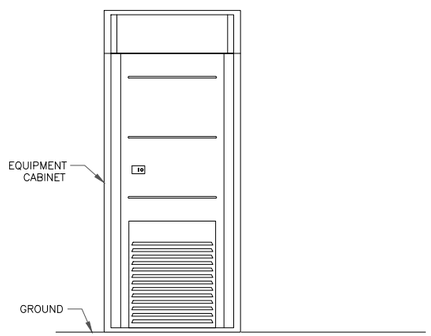
1 RF JUMPER DETAIL
SCALE: NOT TO SCALE

INSTALLER NOTE:

JUMPERS TO BE TORQUED TO 221.27 IN/LBS



2 RF JUMPER CONNECTION
SCALE: NOT TO SCALE

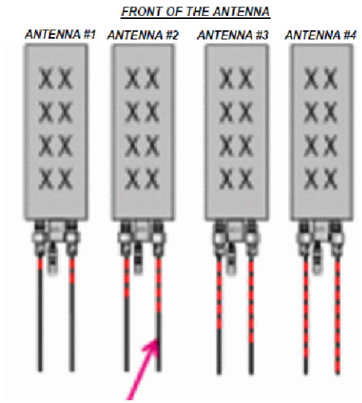


3 GROUND EQUIPMENT ELEVATION
SCALE: NOT TO SCALE

Coax Color Coding

- Antennas will be labeled (back of antenna view) Right to left 1 - X ports
- Coax/Jumper lines will be identified by sector color and by number of bands around the coax/jumper

SECTOR A	RED
SECTOR B	GREEN
SECTOR C	BLUE
SECTOR D	YELLOW
SECTOR E	WHITE
SECTOR F	PURPLE
LMU	BROWN + SECTOR COLOR BANDS (1 & 2)
FIBER ID	GRAY
UNUSED COAX	PINK
MICROWAVE	ORANGE
DWE T-1'S + GPS DOWNLINK CABLE	ID W/LABEL MAKER

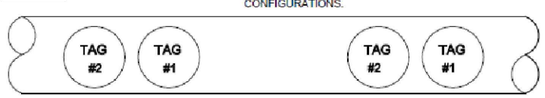


COLOR CODING NOTES:

color	GSM
color	UMTS 1900
color	UMTS AWS
color	LTE
color	FIBER CABLE

METALLIC TAG NOTES:

1. TWO METALLIC TAGS SHALL BE ATTACHED AT EACH END OF EVERY CABLE LONGER THAN (3) THREE FEET
2. CABLE LESS THAN (3) THREE FEET WILL HAVE TWO METALLIC TAGS ATTACHED AT THE CENTER OF THE CABLE.
3. TAGS WILL BE FASTENED WITH STAINLESS STEEL ZIP TIES APPROPRIATE FOR CABLE DIAMETER.
4. STANDARDIZED METALLIC TAG KIT WILL BE ASSEMBLED WITH TAGS ALREADY ENGRAVED TO ACCOMMODATE ALL CONFIGURATIONS.



ANTENNA AND COAXIAL CABLE SCHEDULE

1. ALL ANTENNAS SHALL BE FURNISHED WITH DOWNTILT BRACKETS. CONTRACTOR SHALL COORDINATE REQUIRED MECHANICAL DOWNTILT FOR EACH ANTENNA WITH RF ENGINEER. ANTENNA DOWNTILT SHALL BE SET AND VERIFIED BY A SMART LEVEL.
2. CONTRACTOR SHALL INSTALL COLOR CODE RINGS ON EACH OF THE HYBRID CABLES AND JUMPER CABLES WITH UV RESISTANT TAPE. ALL CABLE SHALL BE MARKED AT TOP AND BOTTOM WITH 2" COLOR TAPE OR STENCIL TAG. COLOR TAPE MAY BE OBTAINED FROM GRAYBAR ELECTRONICS.

4 COAX COLOR CODING
SCALE: NOT TO SCALE

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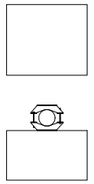
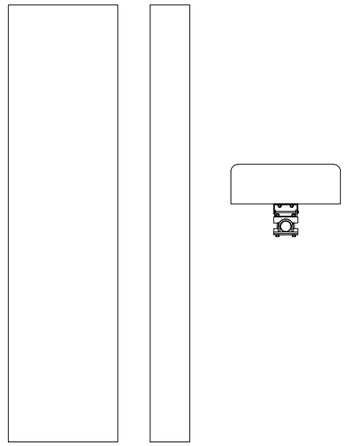
SHEET NUMBER: C-3

REVISION: 0



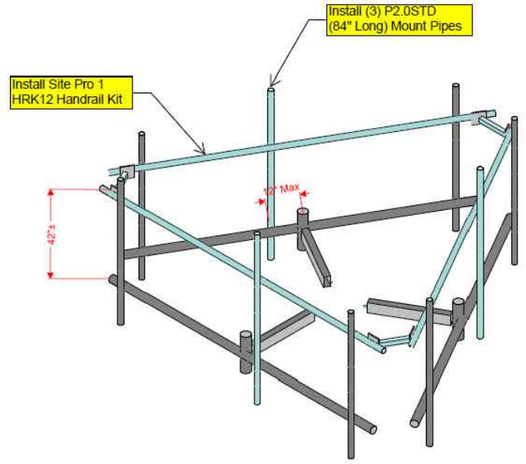
ERICSSON – 4449 B71 + B12
WEIGHT: 74 LBS.
SIZE (HxWxD): 13.1x14.9x9.2 IN.

1 ERICSSON – 4449 B71 + B12
SCALE: NOT TO SCALE



RFS – APXVAARR24_43-U-NA20
WEIGHT: 128 LBS.
SIZE (HxWxD): 95.9x24x8.7 IN.

2 RFS – APXVAARR24_43-U-NA20
SCALE: NOT TO SCALE



3 MOUNT MODIFICATION
SCALE: NOT TO SCALE

4 NOT USED
SCALE: NOT TO SCALE

5 NOT USED
SCALE: NOT TO SCALE

6 NOT USED
SCALE: NOT TO SCALE

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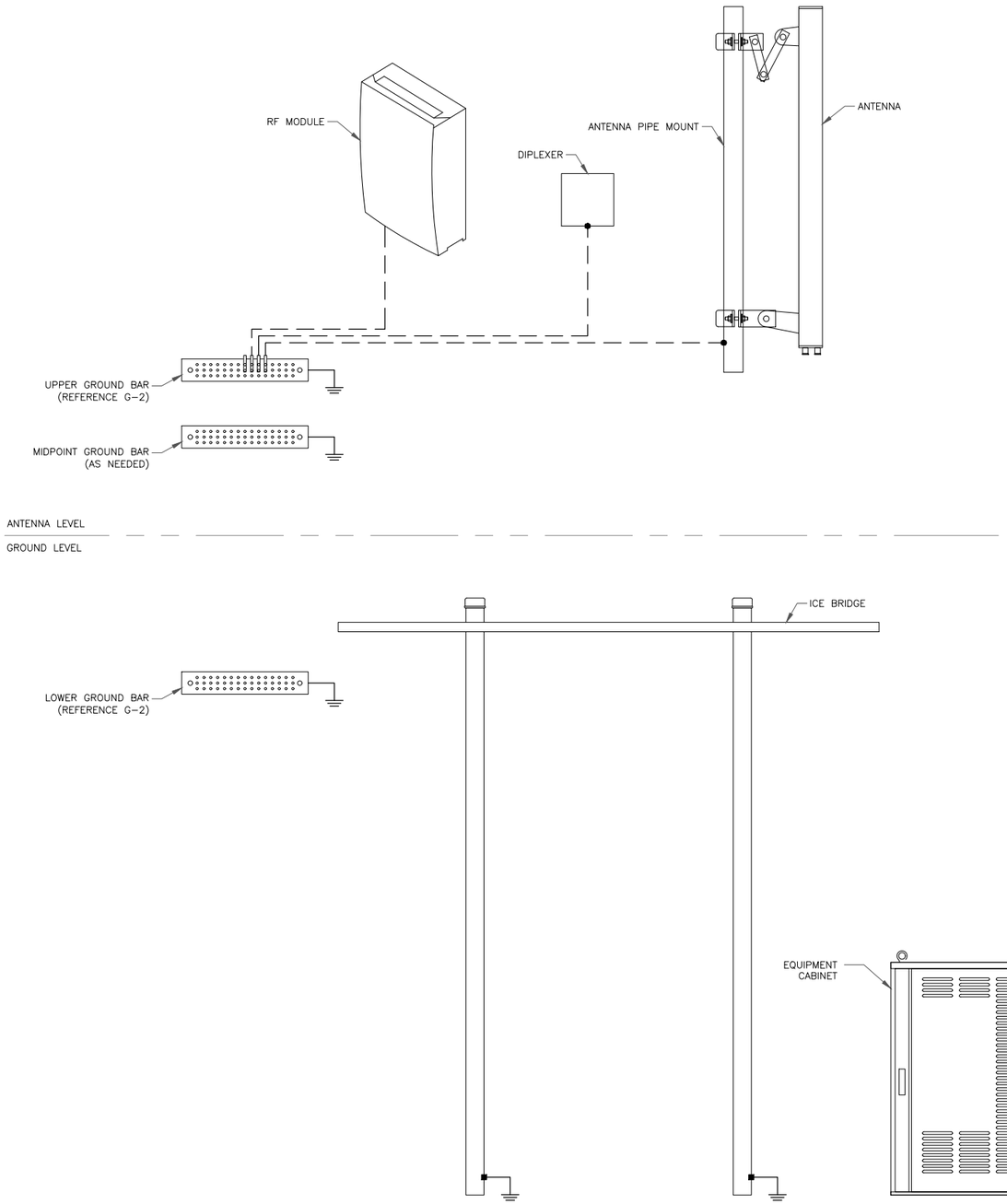
STATE OF CONNECTICUT
BRIAN J. BREWER
29510
LICENSED
PROFESSIONAL ENGINEER
7-24-19

SHEET NUMBER: C-4

REVISION: 0



NOTES:

1. DIAGRAMS PROVIDED BY T-MOBILE AND ARE FOR INFORMATIONAL PURPOSES ONLY.

1 TYPICAL FINAL GROUNDING SCHEMATIC
SCALE: NOT TO SCALE

GROUNDING PLAN LEGEND:

- #6 STRANDED COPPER WITH GREEN INSULATION GROUND WIRE
- #2 STRANDED COPPER WITH GREEN INSULATION GROUND WIRE
- #2 BARE, SOLID, TINNED COPPER GROUND WIRE
- EXOTHERMIC WELD
- MECHANICAL CONNECTION
- COPPER GROUND ROD
- GROUND ROD W/ TEST WELL

NOTE:

SEE FINAL EQUIPMENT PLAN FOR PROPOSED EQUIPMENT REQUIRING GROUNDING. CONTRACTOR TO VERIFY EXISTING EQUIPMENT GROUNDING IN FIELD. CONTRACTOR TO VERIFY IN FIELD AND INSTALL ANY MISSING T-MOBILE GROUND BARS ON SITE.

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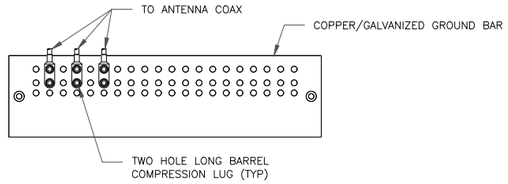
7-24-19

SHEET NUMBER: G-1

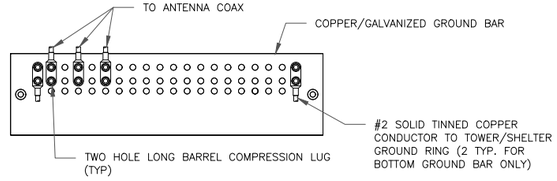
REVISION: 0



NOTES:

1. DOUBLING UP "OR STACKING" OF CONNECTIONS IS NOT PERMITTED.
2. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
3. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL.

1 ANTENNA GROUND BAR DETAIL
SCALE: NOT TO SCALE

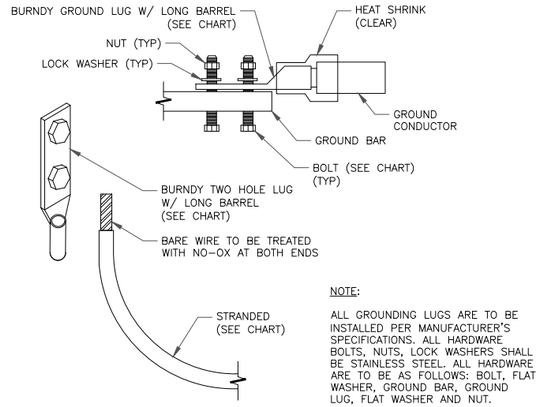


NOTES:

1. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
2. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL (TOWER ONLY).
3. GROUND BAR SHALL BE ISOLATED FROM BUILDING OR SHELTER.

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

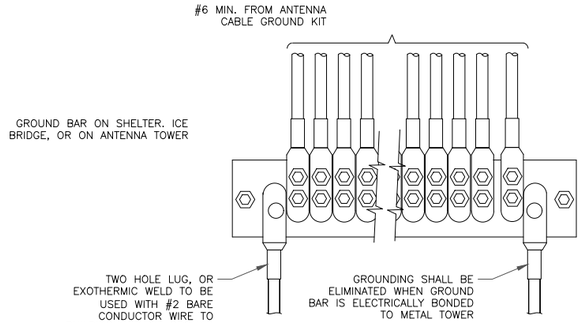
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 SOLID TINNED	YA3C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 STRANDED	YA2C-2TC38	3/8" - 16 NC SS 2 BOLT
#2/0 STRANDED	YA26-2TC38	3/8" - 16 NC SS 2 BOLT
#4/0 STRANDED	YA28-2N	1/2" - 16 NC SS 2 BOLT



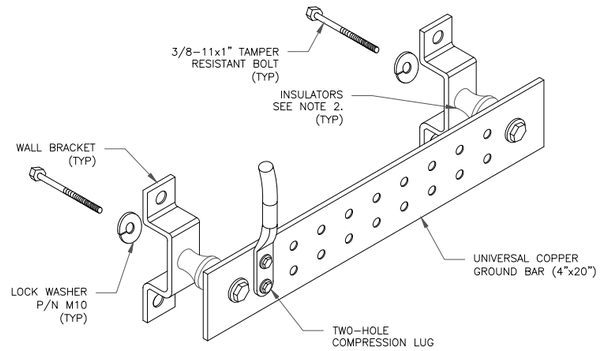
NOTE:

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

3 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



4 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE

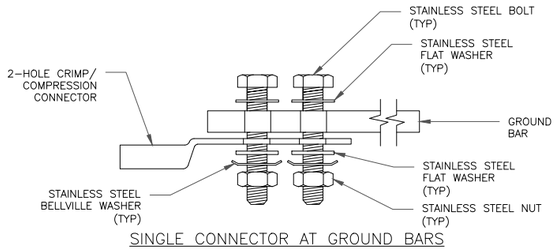


NOTES:

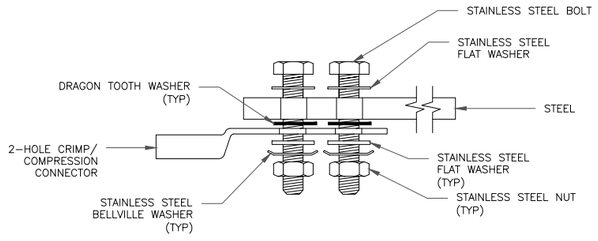
1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.

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

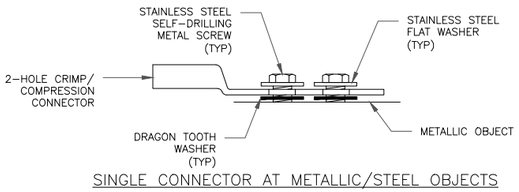
5 GROUND BAR DETAIL
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS

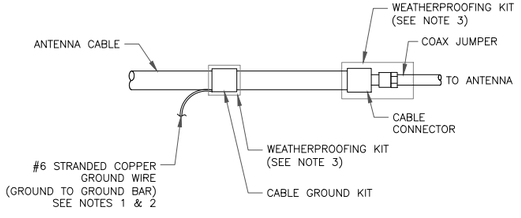


SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

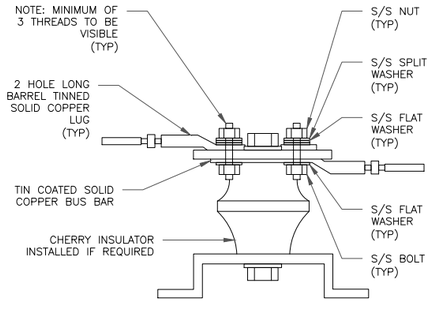
9 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



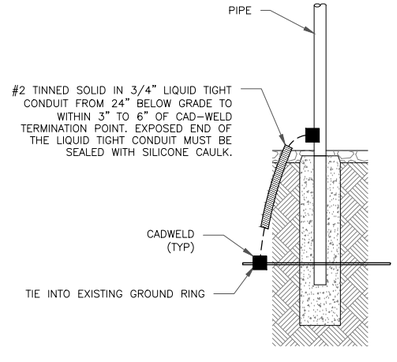
NOTES:

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

6 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE



8 TRANSITIONING GROUND DETAIL
SCALE: NOT TO SCALE

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RALEIGH, NC 27601

T-MOBILE SITE NUMBER:
CT11851C

BU #: **806352**
BRG 302 943052

126 LEDGE RD
DARIEN, CT 06820

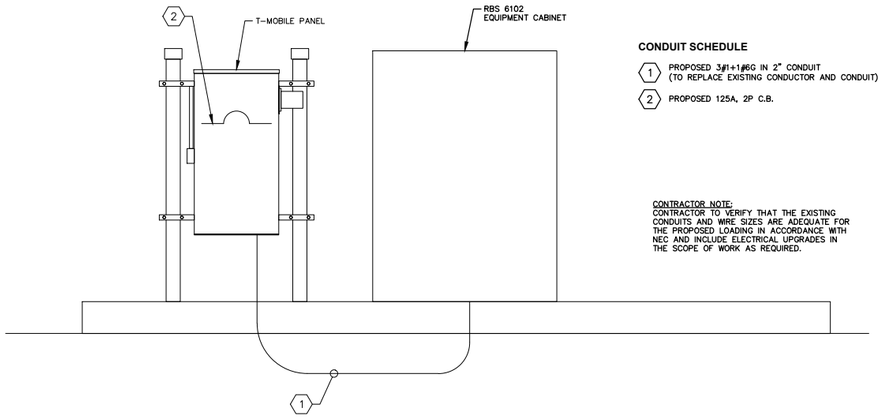
EXISTING 117'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	06/13/19	JW	ISSUED FOR PERMITTING	MCK
0	07/22/19	KRB	ISSUED FOR CONSTRUCTION	MCK

SHEET NUMBER: G-2

REVISION: 0



CONDUIT SCHEDULE

1. PROPOSED 3#1+1#6G IN 2" CONDUIT (TO REPLACE EXISTING CONDUCTOR AND CONDUIT)
2. PROPOSED 125A, 2P C.B.

CONTRACTOR NOTE:
CONTRACTOR TO VERIFY THAT THE EXISTING CONDUITS AND WIRE SIZES ARE ADEQUATE FOR THE PROPOSED LOADING IN ACCORDANCE WITH NEC AND INCLUDE ELECTRICAL UPGRADES IN THE SCOPE OF WORK AS REQUIRED.

1 ONE LINE DIAGRAM
SCALE: NOT TO SCALE

2 DETAIL NOT USED
SCALE: NOT TO SCALE

3 DETAIL NOT USED
SCALE: NOT TO SCALE

4 DETAIL NOT USED
SCALE: NOT TO SCALE

T-Mobile
12920 SE 38TH STREET
BELLEVUE, WA 98006

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

Kimley»Horn
COA #PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

T-MOBILE SITE NUMBER:
CT11851C

BU #: **806352**
BRG 302 943052

126 LEDGE RD
DARIEN, CT 06820

EXISTING 117'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	06/13/19	JW	ISSUED FOR PERMITTING	MCK
0	07/22/19	KRB	ISSUED FOR CONSTRUCTION	MCK

SHEET NUMBER: E-1

REVISION: 0

VOLTAGE	120/240V	**AIC RATING**	10,000 AMPS
MAIN BREAKER	200 AMP	**BUSS RATING**	200 AMPS
MOUNT	SURFACE	**NEUTRAL BAR**	YES
ENCLOSURE TYPE	NEMA 3R	**GROUND BAR**	YES
PANEL STATUS	EXISTING	**N TO GROUND BOND**	YES
PHASE, WIRES	SINGLE, 3	**INTERNAL TVSS**	TBD

CKT	LOAD DESCRIPTION	BREAKER AMPS	BREAKER POLES	BREAKER STATUS	SERVICE LOAD VA	USAGE FACTOR	PHASE A VA	PHASE B VA	USAGE FACTOR	SERVICE LOAD VA	BREAKER STATUS	BREAKER POLES	BREAKER AMPS	LOAD DESCRIPTION	CKT
1	SURGE ARRESTOR	60	2	ON	0	1.00	450		1.25	360	ON	1	20	PPC G.F.I.	2
3		60	2	ON	0	1.00		7200	1.25	5,760	ON	2	60	UMTS	4
5	MAIN BTS	125*	2	ON	12,000	1.25	22200		1.25	5,760	ON	2	60		6
7		125*	2	ON	12,000	1.25		15000	1.25	0	N/A	1	-	SPACE	8
9	SPACE	0	1	N/A	0	1.25	0		1.25	0	N/A	1	-	SPACE	10
11	SPACE	0	1	N/A	0	1.25		0	1.25	0	N/A	1	-	SPACE	12
13	SPACE	0	1	N/A	0	1.25	0		1.25	0	N/A	1	-	SPACE	14
15	SPACE	0	1	N/A	0	1.25		0	1.25	0	N/A	1	-	SPACE	16
17	SPACE	0	1	N/A	0	1.25	0		1.25	0	N/A	1	-	SPACE	18
19	SPACE	0	1	N/A	0	1.25		0	1.25	0	N/A	1	-	SPACE	20
21	SPACE	0	1	N/A	0	1.25	0		1.25	0	N/A	1	-	SPACE	22
23	SPACE	0	1	N/A	0	1.25		0	1.25	0	N/A	1	-	SPACE	24
							22650	22200							

OVERALL LOAD SUMMARY	
TOTAL SERVICE LOAD kVA	44.85
AMPS	186.88

= Assumed maximum load per breaker size.

* = New 125A Breaker

NOTE:

GC TO FIELD VERIFY INCOMING SERVICE MEETS OR EXCEEDS 200A. IF SITE DOES NOT MEET THIS CRITERIA, CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY FOR FURTHER DESIGN CONSIDERATION.

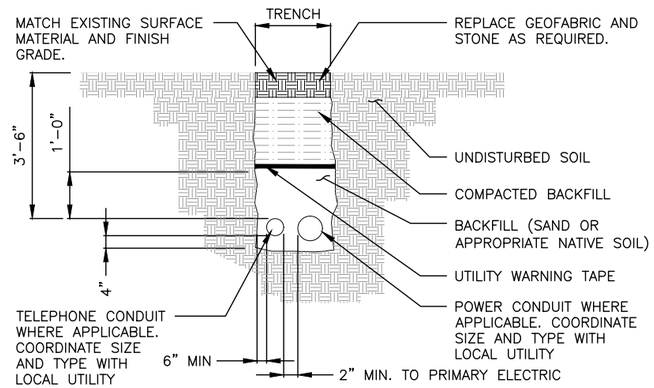
1 ELECTRICAL PANEL SCHEDULE
SCALE: NOT TO SCALE

3 DETAIL NOT USED
SCALE: NOT TO SCALE

ELECTRICAL NOTES:

1. CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTORS FUNCTIONS, THE SCOPE OF WORK ,OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.
2. LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO ROUGH-IN.
3. THE CONDUIT RUNS AS SHOWN ON THE PLANS ARE APPROXIMATE. EXACT LOCATION AND ROUTING SHALL BE PER EXISTING FIELD CONDITIONS.
4. PROVIDE PULL BOXES AND JUNCTION BOXES WHERE SHOWN OR REQUIRED BY NEC.
5. ALL CONDUITS SHALL BE MET WITH BENDS MADE IN ACCORDANCE WITH NEC TABLE 346-10. NO RIGHT ANGLE DEVICE OTHER THAN STANDARD CONDUIT ELBOWS WITH 12" MINIMUM INSIDE SWEEPS FOR ALL CONDUITS 2" OR LARGER.
6. ALL CONDUIT TERMINATION'S SHALL BE PROVIDED WITH PLASTIC THROAT INSULATING GROUNDING BUSHINGS.
7. ALL WIRE SHALL BE TYPE THHN/THWN, SOLID ANNEALED COPPER UP TO SIZE #10 (#8 AND LARGER SHALL BE CONCENTRIC STRANDED) 75 DEGREE C (164 DEGREES F), 98% CONDUCTIVITY, MINUMUM #12.
8. ALL WIRES SHALL BE TAGGED AT ALL PULL BOXES, J-BOXES, EQUIPMENT BOXES AND CABINETS WITH APPROVED PLASTIC TAGS, ACTION CRAFT, BRADY, OR APPROVED EQUAL.
9. ALL NEW MATERIAL SHALL HAVE A U.L. LABEL.
10. CONDUIT ROUGH-IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION TO CONFLICTS. VERIFY WITH MECHANICAL CONTRACTOR AND COMPLY AS REQUIRED.
11. ALL PANEL DIRECTORIES SHALL BE TYPEWRITTEN NOT HAND WRITTEN.
12. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS PER THE SPECIFICATIONS AND NEC. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULL BOXES, AND ALL DISCONNECT SWITCHES, STARTERS, AND EQUIPMENT CABINETS.
13. THE CONTRACTOR SHALL PREPARE AS-BUILT DRAWINGS, DOCUMENT ANY AND ALL WIRING AND EQUIPMENT CONDITIONS AND CHANGES WHILE COMPLETING THIS CONTRACT. SUBMIT AT SUBSTANTIAL COMPLETION.
14. ALL DISCONNECT SWITCHES AND OTHER CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED LAMICOID NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS INSTALLED ON, AND PANEL FIELD LOCATIONS FED FROM (NO EXCEPTIONS).
15. ALL ELECTRICAL DEVICES AND INSTALLATIONS OF THE DEVICES SHALL COMPLY WITH (ADA) AMERICANS WITH DISABILITIES ACT AS ADOPTED BY THE APPLICABLE STATE.
16. PROVIDE CORE DRILLING AS NECESSARY FOR PENETRATIONS OR RISERS THROUGH BUILDING. DO NOT PENETRATE STRUCTURAL MEMBERS WITHOUT CONSTRUCTIONS MANAGERS APPROVAL. SLEEVES AND/OR PENETRATIONS IN FIRE RATED CONSTRUCTION SHALL BE PACKED WITH FIRE RATED MATERIAL WHICH SHALL MAINTAIN THE FIRE RATING OF THE WALL OR STRUCTURE. FILL FOR FLOOR PENETRATIONS SHALL PREVENT PASSAGE OF WATER, SMOKE, FIRE AND FUMES. ALL MATERIAL SHALL BE UL APPROVED FOR THIS PURPOSE.
17. ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT (NEW AND EXISTING) SHALL BE FIELD VERIFIED WITH THE OWNER'S REPRESENTATIVE AND EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN OF CONDUIT AND WIRE. ALL EQUIPMENT SHALL BE PROPERLY CNNECTED ACCORDING TO THE NAMEPLATE DATA FURNISHED ON THE EQUIPMENT (THE DESIGN OF THESE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AT THE TIME OF DESIGN AND SOME EQUIPMENT CHARACTERISTICS MAY VARY FROM DESIGN AS SHOWN ON THESE DRAWINGS. LOCATION OF ALL OUTLET, BOXES, ETC., AND THE TYPE OF CONNECTION (PLUG OR DIRECT) SHALL BE CONFIRMED WITH THE OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.
18. FOR FLEXIBLE LIQUID TIGHT CONDUIT PROVIDE GLAND TYPE COMPRESSION FITTINGS. SET SCREW OR QUICK-CONNECT FITTINGS SHALL NOT BE ACCEPTABLE.
19. FLEXIBLE CONDUITS SHALL BE USED FOR CONNECTION OF EQUIPMENT SUBJECT TO VIBRATION, NOISE TRANSMISSION OR MOVEMENT AND ALL MOTORS, RECESSED AND SEMI-RECESSED LIGHT FIXTURES. MAXIMUM LENGTH OF FLEXIBLE CONDUIT SHALL NOT EXCEED 6-FEET, SUBJECT TO NEC LIMITATIONS. FLEXIBLE CONDUITS SHALL NOT BE USED WHERE SUBJECT TO MECHANICAL DAMAGE.
20. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
21. RIGID GALVANIZED STEEL (RGS) CONDUIT SHALL BE USED FOR EXTERIOR LOCATIONS ABOVE GROUND AND IN UNFINISHED INTERIOR LOCATIONS. RIGID CONDUIT SHALL BE STEEL, COATED WITH ZINC EXTERIOR AND INTERIOR BY THE HOT DIP GALVANIZED PROCESS. CONDUIT SHALL BE PRODUCED TO ANSI SPECIFICATIONS C80.1, FEDERAL SPECIFICATION WW-C-581 AND SHALL BE LISTED WITH THE UNDERWRITERS' LABORATORIES. EXTERIOR UNDERGROUND CONDUIT AND CONDUIT IN CONCRETE SHALL BE POLYVINYL CHLORIDE (PVC) SCHEDULE 40. JOINTS SHALL BE BELLED, AND FLUSH SOLVENT WELDED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. UNDERGROUND ELBOW SWEEPS, AND TRANSITIONS TO ABOVE GROUND SHALL BE SCHEDULE 80 PVC OR SCHEDULE 40 GALVANIZED.

2 ELECTRICAL NOTES
SCALE: NOT TO SCALE



NOTES:

1. CONTRACTOR TO HAND DIG ALL NEW TRENCHES INSIDE COMPOUND.
2. SEPARATION DIMENSION TO BE VERIFIED WITH LOCAL UTILITY COMPANY REQUIREMENTS.

4 TRENCH DETAIL
SCALE: NOT TO SCALE

T-Mobile
12920 SE 38TH STREET
BELLEVUE, WA 98006

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

Kimley»Horn
COA #PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

T-MOBILE SITE NUMBER:
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STATE OF CONNECTICUT
BRIAN J. BREWER
29510
LICENSED
PROFESSIONAL ENGINEER
7-24-19

SHEET NUMBER: E-2

REVISION: 0

Exhibit D

Structural Analysis Report

PAUL J. FORD & COMPANY

Date: **May 28, 2019**

Denice Nicholson
Crown Castle
46 Broadway
Albany, NY 12204

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

Subject:	**Structural Analysis Report**	
Carrier Designation:	***T-Mobile* Co-Locate**	
	Carrier Site Number:	CT11851C
	Carrier Site Name:	CT851/Crown Darien_MP
Crown Castle Designation:	**Crown Castle BU Number:**	806352
	Crown Castle Site Name:	BRG 302 943052
	Crown Castle JDE Job Number:	559167
	Crown Castle Work Order Number:	1728545
	Crown Castle Order Number:	479843 Rev. 1
Engineering Firm Designation:	**Paul J. Ford and Company Project Number:**	37519-0798.002.7805
Site Data:	**126 Ledge Road, DARIEN, Fairfield County, CT** **Latitude *41° 4' 20.75"*, Longitude *-73° 28' 41.4"*** **117 Foot - Monopole Tower**	

Dear Denice Nicholson,

Paul J. Ford and Company is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower.

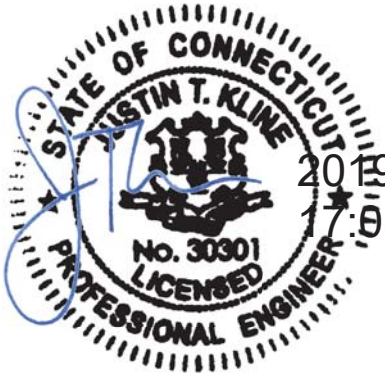
The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration **Sufficient Capacity (89.9%)**

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

Respectfully submitted by:

Grant J. Austin
Structural Designer
gaustin@pauljford.com RMF



2019.06.04
17:05:32-04'00'

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 117 ft Monopole tower designed by VALMONT in May of 1992.

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

2) ANALYSIS CRITERIA

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

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
110.0	111.0	3	ericsson	KRY 112 144/1	13	1-5/8
	110.0	3	ericsson	AIR 32 B2A B66AA w/ Mount Pipe		
		3	ericsson	ERICSSON AIR 21 B2A B4P w/ Mount Pipe		
		3	ericsson	RADIO 4449 B12/B71		
		3	rfs celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
		1	tower mounts	T-Arm Mount [TA 602-3]		
		1	site pro 1	HRK12		
		3	site pro 1	SP219		
		1	tower mounts	Mount Modification		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
117.0	119.0	3	alcatel lucent	TD-RRH8x20-25	1 3	5/8 1-1/4
		9	rfs celwave	ACU-A20-N		
		3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe		
		3	rfs celwave	APXVTM14-ALU-I20 w/ Mount Pipe		
	117.0	1	tower mounts	Stabalizer Bars		
		1	tower mounts	T-Arm Mount [TA 702-3]		
115.0	115.0	3	alcatel lucent	800 EXTERNAL NOTCH FILTER	--	--
		3	alcatel lucent	TME-800MHZ RRH		
		3	alcatel lucent	TME-PCS 1900MHz 4x45W-65MHz		
		1	tower mounts	Side Arm Mount [SO 102-3]		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
100.0	104.0	1	gps	GPS_A	12 2	7/8 1-5/8
	101.0	3	alcatel lucent	B13 RRH 4X30		
		3	alcatel lucent	B25 RRH4X30		
		3	alcatel lucent	B4 RRH2X60-4R		
		6	andrew	HBXX-6516DS-A2M w/ Mount Pipe		
		6	decibel	DB844G65ZAXY w/ Mount Pipe		
		3	kathrein	800 10735V01 w/ Mount Pipe		
		2	raycap	RRFDC-3315-PF-48		
		6	rfs celwave	FD9R6004/2C-3L		
	100.0	1	tower mounts	Platform Mount [LP 715-1]		
93.0	95.0	1	andrew	VHLP1-23	4	7983A
	94.0	1	andrew	VHLP2-11		
		1	andrew	VHLP800-11		
	93.0	1	tower mounts	Pipe Mount [PM 601-3]		
	92.0	1	andrew	VHLP1-23		
89.0	89.0	2	cci antennas	OPA-65R-LCUU-H6 w/ Mount Pipe	2 4 12 2	3/8 5/8 1-1/4 2” Conduit
		1	cci antennas	OPA-65R-LCUU-H8 w/ Mount Pipe		
		1	cci antennas	TPA-65R-LCUUUU-H8 w/ Mount Pipe		
		6	cci antennas	TPX-070821		
		3	ericsson	RRUS 11		
		3	ericsson	RRUS 32 B2		
		3	ericsson	RRUS 32 B30		
		3	ericsson	RRUS 4426 B66		
		6	powerwave tech.	7020.00		
		3	powerwave tech.	7770.00 w/ Mount Pipe		
		6	powerwave tech.	LGP21401		
		2	quintel tech.	QS66512-2 w/ Mount Pipe		
		2	raycap	DC6-48-60-18-8F		
		1	tower mounts	Miscellaneous [NA 509-3]		
		1	tower mounts	Platform Mount [LP 715-1]		
84.0	84.0	3	kathrein	800 10504 w/ Mount Pipe	6	1-5/8
		1	tower mounts	Pipe Mount [PM 601-3]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	FDH, 1307951600, 09/26/2013	217769	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	FDH, 1308201500, 06/7/2013	3907710	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Valmont, 10844-92, 05/19/1992	217772	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD, 2007178.68, 02/16/2007	1094732	CCISITES
4-POST-MODIFICATION INSPECTION	GPD, 2007278.24, 03/11/08	2218625	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	TEP, 102000.39, 11/04/2010	2743848	CCISITES
4-POST-MODIFICATION INSPECTION	Sabre, 11-1114, 12/07/2010	2785508	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	TEP, 127875, 12/10/2012	4062469	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 131001.806352, 11/07/2013	4069331	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	TEP, 25562.12516, 12/20/2013	4115809	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 25562, 05/12/2014	5077215	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	PJF, 37515-1078.005.7700, 11/12/2015	5969651	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 131001.806352, 11/07/2013	6122311	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	PJF, 37516-0051, 02/01/2016	6083070	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 25562, 04/06/2016	6232380	CCISITES

3.1) Analysis Method

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

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

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) Monopole was reinforced in conformance with the referenced modification drawings.
5) Base plate grout was not installed at the time of the analysis and has not been considered.

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
117 - 112	Pole	TP15.489x14.36x0.1875	Pole	9.1%	Pass
112 - 110	Pole	TP15.94x15.489x0.1875	Pole	11.8%	Pass
110 - 105	Pole	TP17.07x15.94x0.1875	Pole	27.8%	Pass
105 - 100	Pole	TP18.2x17.07x0.1875	Pole	40.7%	Pass
100 - 95	Pole	TP19.322x18.2x0.25	Pole	44.7%	Pass
95 - 90	Pole	TP20.444x19.322x0.25	Pole	56.3%	Pass
90 - 85	Pole	TP21.566x20.444x0.25	Pole	71.3%	Pass
85 - 81.88	Pole	TP22.266x21.566x0.25	Pole	80.3%	Pass
81.88 - 81.63	Pole + Reinf.	TP22.323x22.266x0.35	Reinf. 9 Tension Rupture	74.3%	Pass
81.63 - 76.63	Pole + Reinf.	TP23.445x22.323x0.3563	Reinf. 9 Tension Rupture	86.4%	Pass
76.63 - 76.08	Pole + Reinf.	TP23.568x23.445x0.3563	Reinf. 9 Tension Rupture	87.6%	Pass
76.08 - 75.83	Pole + Reinf.	TP23.624x23.568x0.4625	Reinf. 12 Tension Rupture	80.2%	Pass
75.83 - 71	Pole + Reinf.	TP24.708x23.624x0.4563	Reinf. 12 Tension Rupture	89.9%	Pass
71 - 70.75	Pole + Reinf.	TP24.764x24.708x0.675	Reinf. 3 Compression	73.0%	Pass
70.75 - 68.08	Pole + Reinf.	TP25.363x24.764x0.6625	Reinf. 3 Compression	77.2%	Pass
68.08 - 67.83	Pole + Reinf.	TP25.42x25.363x0.7125	Reinf. 3 Compression	68.1%	Pass
67.83 - 63.5	Pole + Reinf.	TP26.391x25.42x0.6875	Reinf. 3 Compression	73.9%	Pass
63.5 - 63.25	Pole + Reinf.	TP26.447x26.391x0.9	Reinf. 3 Compression	58.7%	Pass
63.25 - 58.25	Pole + Reinf.	TP27.57x26.447x0.85	Reinf. 3 Compression	63.8%	Pass
58.25 - 53.25	Pole + Reinf.	TP28.692x27.57x0.825	Reinf. 3 Compression	68.6%	Pass
53.25 - 52	Pole + Reinf.	TP30x28.692x0.825	Reinf. 3 Compression	69.8%	Pass
52 - 46.42	Pole + Reinf.	TP29.741x28.472x0.8438	Reinf. 5 Tension Rupture	74.0%	Pass
46.42 - 41.42	Pole + Reinf.	TP30.879x29.741x0.8188	Reinf. 5 Tension Rupture	77.6%	Pass
41.42 - 38.08	Pole + Reinf.	TP31.638x30.879x0.8063	Reinf. 5 Tension Rupture	79.9%	Pass
38.08 - 37.83	Pole + Reinf.	TP31.695x31.638x0.7563	Reinf. 5 Tension Rupture	85.5%	Pass
37.83 - 35	Pole + Reinf.	TP32.339x31.695x0.7438	Reinf. 5 Tension Rupture	87.4%	Pass
35 - 34.75	Pole + Reinf.	TP32.396x32.339x0.8438	Reinf. 6 Tension Rupture	74.1%	Pass
34.75 - 29.75	Pole + Reinf.	TP33.533x32.396x0.8313	Reinf. 6 Tension Rupture	76.9%	Pass
29.75 - 24.75	Pole + Reinf.	TP34.67x33.533x0.8063	Reinf. 6 Tension Rupture	79.6%	Pass
24.75 - 19.75	Pole + Reinf.	TP35.808x34.67x0.7938	Reinf. 6 Tension Rupture	82.0%	Pass
19.75 - 14.75	Pole + Reinf.	TP36.945x35.808x0.7688	Reinf. 6 Tension Rupture	84.3%	Pass
14.75 - 12.5	Pole + Reinf.	TP37.457x36.945x0.7688	Reinf. 6 Tension Rupture	85.2%	Pass
12.5 - 12.25	Pole + Reinf.	TP37.514x37.457x0.7688	Reinf. 4 Tension Rupture	86.3%	Pass
12.25 - 11	Pole + Reinf.	TP37.798x37.514x0.7688	Reinf. 4 Tension Rupture	86.8%	Pass
11 - 10.75	Pole + Reinf.	TP37.855x37.798x0.9688	Reinf. 4 Tension Rupture	69.4%	Pass
10.75 - 5.75	Pole + Reinf.	TP38.992x37.855x0.9438	Reinf. 4 Tension Rupture	71.3%	Pass
5.75 - 2.5	Pole + Reinf.	TP39.731x38.992x0.9438	Reinf. 4 Tension Rupture	72.5%	Pass
2.5 - 2.25	Pole + Reinf.	TP39.788x39.731x0.9688	Reinf. 4 Tension Rupture	67.9%	Pass
2.25 - 0	Pole + Reinf.	TP40.3x39.788x0.9688	Reinf. 4 Tension Rupture	68.7%	Pass
				Summary	
			Pole	80.3%	Pass
			Reinforcement	89.9%	Pass
			Overall	89.9%	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	67.5	Pass
1	Base Plate	0	42.3	Pass
1	Base Foundation Structural Steel	0	80.2	Pass
1	Base Foundation Soil Interaction	0	53.4	Pass
1	Flange Bolts	100	36.5	Pass
1	Flange Plate		27.1	Pass
1	Flange Bolts	110	11.5	Pass
1	Flange Plate		7.5	Pass

Structure Rating (max from all components) =	89.9%

Notes:

- All structural ratings are per TIA-222-H Section 15.5

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

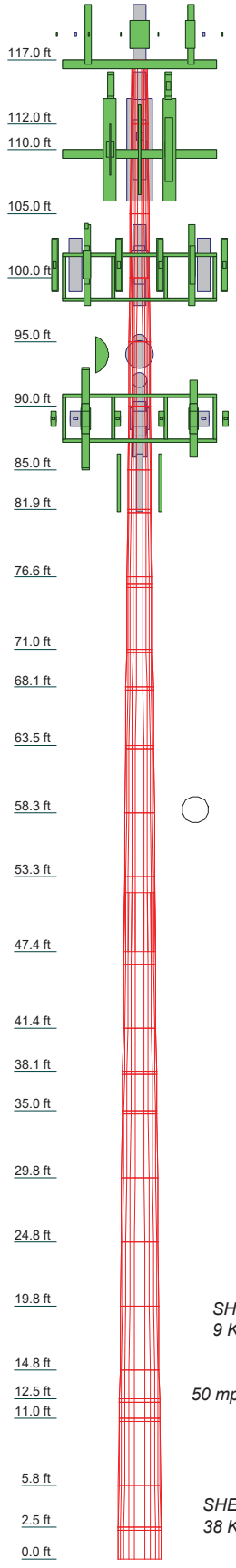
4.1) Recommendations

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

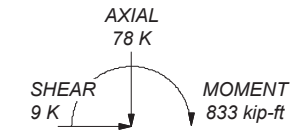
APPENDIX A

TNXTOWER OUTPUT

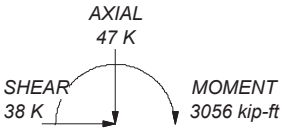
Section	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
Length (ft)	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	2.5000
Number of Sides	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Thickness (in)	0.1875	0.1875	0.1875	0.1875	0.2500	0.2500	0.2500	0.3500	0.3500	0.3750	0.4375	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.8500	0.8250	0.8250	0.8438	0.8187	0.8063	0.8063	0.8063	0.8063	0.8319	0.8063	0.7937	0.7688	0.7438	0.7188	0.6938	0.6688	0.6438	0.6188	0.5938	0.5688
Socket Length (ft)																					4.5800																		
Top Dia (in)	14.3600	15.9400	17.0700	18.2000	19.3221	20.4442	21.5663	22.6885	23.8106	24.9327	26.0548	27.1769	28.2990	29.4211	30.5432	31.6653	32.7874	33.9095	35.0316	36.1537	37.2758	38.3979	39.5200	40.6421	41.7642	42.8863	44.0084	45.1305	46.2526	47.3747	48.4968	49.6189	50.7410	51.8631	52.9852	54.1073	55.2294	56.3515	57.4736
Bot Dia (in)	15.4886	17.0700	18.2000	19.3221	20.4442	21.5663	22.6885	23.8106	24.9327	26.0548	27.1769	28.2990	29.4211	30.5432	31.6653	32.7874	33.9095	35.0316	36.1537	37.2758	38.3979	39.5200	40.6421	41.7642	42.8863	44.0084	45.1305	46.2526	47.3747	48.4968	49.6189	50.7410	51.8631	52.9852	54.1073	55.2294	56.3515	57.4736	58.5957
Grade	A572-65																																						
Weight (K)	0.2	0.1	0.2	0.2	0.3	0.3	0.3	0.2	0	0.5	0.1	0.7	0	0.5	0	0	0.8	0.1	1.1	1.1	1.4	1.4	1.2	0.8	0.7	0	1.4	1.4	1.4	1.4	0.7	0.4	1.8	1.2	0.3	0.1	0.1	0.1	0.1



ALL REACTIONS ARE FACTORED



TORQUE 1 kip-ft
50 mph WIND - 1.5000 in ICE



TORQUE 3 kip-ft
REACTIONS - 120 mph WIND

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 120 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.0000 ft
8. TIA-222-H ANNEX S

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

Job:	***117' Monopole / Darien, CT***		
Project:	***PJF 37519-0798.001.7805 / BU 806352***		
Client: Crown Castle	Drawn by: gaustin		App'd:
Code: TIA-222-H	Date: 05/30/19		Scale: NTS
Path: G:\TOWER\375_Crown_Castle\2019\37519-0798_806352_BRG 302 943052\37519-0798.002.7805_SA_1728545\WO.1728545_BU 806352_CC\pole.eri			Dwg No. E-1

Tower Input Data

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

1) Tower is located in Fairfield County, Connecticut.
2) Tower base elevation above sea level: 42.2500 ft.
3) Basic wind speed of 120 mph.
4) Risk Category II.
5) Exposure Category C.
6) Simplified Topographic Factor Procedure for wind speed-up calculations is used.
7) Topographic Category: 1.
8) Crest Height: 0.0000 ft.
9) Nominal ice thickness of 1.5000 in.
10) Ice thickness is considered to increase with height.
11) Ice density of 56.00 pcf.
12) A wind speed of 50 mph is used in combination with ice.
13) Temperature drop of 50 °F.
14) Deflections calculated using a wind speed of 60 mph.
15) TIA-222-H ANNEX S.
16) A non-linear (P-delta) analysis was used.
17) Pressures are calculated at each section.
18) Stress ratio used in pole design is 1.05.
19) Tower analysis based on target reliabilities in accordance with Annex S.
20) Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
21) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	117.0000-112.0000	5.0000	0.00	12	14.3600	15.4886	0.1875	0.7500	A572-65 (65 ksi)
L2	112.0000-110.0000	2.0000	0.00	12	15.4886	15.9400	0.1875	0.7500	A572-65 (65 ksi)

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L3	110.0000-105.0000	5.0000	0.00	12	15.9400	17.0700	0.1875	0.7500	A572-65 (65 ksi)
L4	105.0000-100.0000	5.0000	0.00	12	17.0700	18.2000	0.1875	0.7500	A572-65 (65 ksi)
L5	100.0000-95.0000	5.0000	0.00	12	18.2000	19.3221	0.2500	1.0000	A572-65 (65 ksi)
L6	95.0000-90.0000	5.0000	0.00	12	19.3221	20.4442	0.2500	1.0000	A572-65 (65 ksi)
L7	90.0000-85.0000	5.0000	0.00	12	20.4442	21.5663	0.2500	1.0000	A572-65 (65 ksi)
L8	85.0000-81.8800	3.1200	0.00	12	21.5663	22.2665	0.2500	1.0000	A572-65 (65 ksi)
L9	81.8800-81.6300	0.2500	0.00	12	22.2665	22.3226	0.3500	1.4000	A572-65 (65 ksi)
L10	81.6300-76.6300	5.0000	0.00	12	22.3226	23.4447	0.3563	1.4250	A572-65 (65 ksi)
L11	76.6300-76.0800	0.5500	0.00	12	23.4447	23.5681	0.3563	1.4250	A572-65 (65 ksi)
L12	76.0800-75.8300	0.2500	0.00	12	23.5681	23.6242	0.4625	1.8500	A572-65 (65 ksi)
L13	75.8300-71.0000	4.8300	0.00	12	23.6242	24.7082	0.4562	1.8250	A572-65 (65 ksi)
L14	71.0000-70.7500	0.2500	0.00	12	24.7082	24.7643	0.6750	2.7000	A572-65 (65 ksi)
L15	70.7500-68.0800	2.6700	0.00	12	24.7643	25.3635	0.6625	2.6500	A572-65 (65 ksi)
L16	68.0800-67.8300	0.2500	0.00	12	25.3635	25.4196	0.7125	2.8500	A572-65 (65 ksi)
L17	67.8300-63.5000	4.3300	0.00	12	25.4196	26.3913	0.6875	2.7500	A572-65 (65 ksi)
L18	63.5000-63.2500	0.2500	0.00	12	26.3913	26.4474	0.9000	3.6000	A572-65 (65 ksi)
L19	63.2500-58.2500	5.0000	0.00	12	26.4474	27.5695	0.8500	3.4000	A572-65 (65 ksi)
L20	58.2500-53.2500	5.0000	0.00	12	27.5695	28.6916	0.8250	3.3000	A572-65 (65 ksi)
L21	53.2500-47.4200	5.8300	4.58	12	28.6916	30.0000	0.8250	3.3000	A572-65 (65 ksi)
L22	47.4200-46.4200	5.5800	0.00	12	28.4722	29.7414	0.8438	3.3750	A572-65 (65 ksi)
L23	46.4200-41.4200	5.0000	0.00	12	29.7414	30.8787	0.8187	3.2750	A572-65 (65 ksi)
L24	41.4200-38.0800	3.3400	0.00	12	30.8787	31.6384	0.8063	3.2250	A572-65 (65 ksi)
L25	38.0800-37.8300	0.2500	0.00	12	31.6384	31.6952	0.7562	3.0250	A572-65 (65 ksi)
L26	37.8300-35.0000	2.8300	0.00	12	31.6952	32.3390	0.7438	2.9750	A572-65 (65 ksi)
L27	35.0000-34.7500	0.2500	0.00	12	32.3390	32.3958	0.8438	3.3750	A572-65 (65 ksi)
L28	34.7500-29.7500	5.0000	0.00	12	32.3958	33.5331	0.8313	3.3250	A572-65 (65 ksi)
L29	29.7500-24.7500	5.0000	0.00	12	33.5331	34.6704	0.8063	3.2250	A572-65 (65 ksi)
L30	24.7500-19.7500	5.0000	0.00	12	34.6704	35.8077	0.7937	3.1750	A572-65 (65 ksi)
L31	19.7500-14.7500	5.0000	0.00	12	35.8077	36.9450	0.7688	3.0750	A572-65 (65 ksi)
L32	14.7500-12.5000	2.2500	0.00	12	36.9450	37.4568	0.7688	3.0750	A572-65 (65 ksi)
L33	12.5000-12.2500	0.2500	0.00	12	37.4568	37.5136	0.7688	3.0750	A572-65 (65 ksi)
L34	12.2500-11.0000	1.2500	0.00	12	37.5136	37.7980	0.7688	3.0750	A572-65 (65 ksi)
L35	11.0000-10.7500	0.2500	0.00	12	37.7980	37.8548	0.9688	3.8750	A572-65 (65 ksi)
L36	10.7500-5.7500	5.0000	0.00	12	37.8548	38.9921	0.9437	3.7750	A572-65 (65 ksi)
L37	5.7500-2.5000	3.2500	0.00	12	38.9921	39.7314	0.9437	3.7750	A572-65

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L38	2.5000-2.2500	0.2500	0.00	12	39.7314	39.7882	0.9688	3.8750	(65 ksi) A572-65 (65 ksi)
L39	2.2500-0.0000	2.2500		12	39.7882	40.3000	0.9688	3.8750	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	14.8004	8.5566	219.3727	5.0738	7.4385	29.4916	444.5085	4.2113	3.3460	17.845
	15.9688	9.2380	276.0632	5.4778	8.0231	34.4086	559.3790	4.5467	3.6484	19.458
L2	15.9688	9.2380	276.0632	5.4778	8.0231	34.4086	559.3790	4.5467	3.6484	19.458
	16.4362	9.5106	301.2254	5.6394	8.2569	36.4816	610.3643	4.6808	3.7694	20.104
L3	16.4362	9.5106	301.2254	5.6394	8.2569	36.4816	610.3643	4.6808	3.7694	20.104
	17.6060	10.1928	370.8116	6.0439	8.8423	41.9363	751.3649	5.0166	4.0723	21.719
L4	17.6060	10.1928	370.8116	6.0439	8.8423	41.9363	751.3649	5.0166	4.0723	21.719
	18.7759	10.8750	450.3655	6.4485	9.4276	47.7710	912.5625	5.3524	4.3751	23.334
L5	18.7538	14.4498	594.2582	6.4261	9.4276	63.0339	1204.1282	7.1117	4.2076	16.83
	19.9155	15.3530	712.8159	6.8278	10.0088	71.2186	1444.3583	7.5563	4.5083	18.033
L6	19.9155	15.3530	712.8159	6.8278	10.0088	71.2186	1444.3583	7.5563	4.5083	18.033
	21.0772	16.2563	846.1780	7.2295	10.5901	79.9028	1714.5860	8.0009	4.8090	19.236
L7	21.0772	16.2563	846.1780	7.2295	10.5901	79.9028	1714.5860	8.0009	4.8090	19.236
	22.2389	17.1596	995.2158	7.6312	11.1713	89.0865	2016.5769	8.4454	5.1098	20.439
L8	22.2389	17.1596	995.2158	7.6312	11.1713	89.0865	2016.5769	8.4454	5.1098	20.439
	22.9638	17.7233	1096.5439	7.8819	11.5340	95.0702	2221.8952	8.7229	5.2974	21.19
L9	22.9285	24.6999	1514.3380	7.8461	11.5340	131.2929	3068.4593	12.1565	5.0294	14.37
	22.9866	24.7631	1525.9976	7.8662	11.5631	131.9713	3092.0849	12.1877	5.0445	14.413
L10	22.9844	25.1981	1551.9225	7.8640	11.5631	134.2133	3144.6158	12.4018	5.0277	14.113
	24.1461	26.4853	1802.1075	8.2657	12.1444	148.3906	3651.5583	13.0353	5.3284	14.957
L11	24.1461	26.4853	1802.1075	8.2657	12.1444	148.3906	3651.5583	13.0353	5.3284	14.957
	24.2738	26.6269	1831.1645	8.3099	12.2083	149.9935	3710.4358	13.1050	5.3615	15.05
L12	24.2364	34.4101	2344.8049	8.2718	12.2083	192.0666	4751.2105	16.9356	5.0768	10.977
	24.2945	34.4936	2361.9274	8.2919	12.2374	193.0097	4785.9052	16.9767	5.0918	11.009
L13	24.2967	34.0367	2331.8962	8.2941	12.2374	190.5556	4725.0538	16.7518	5.1085	11.197
	25.4188	35.6291	2674.7519	8.6822	12.7988	208.9840	5419.7726	17.5356	5.3990	11.834
L14	25.3417	52.2361	3851.0504	8.6039	12.7988	300.8907	7803.2722	25.7090	4.8128	7.13
	25.3998	52.3581	3878.0840	8.6240	12.8279	302.3164	7858.0497	25.7690	4.8278	7.152
L15	25.4042	51.4151	3812.1960	8.6284	12.8279	297.1801	7724.5426	25.3050	4.8613	7.338
	26.0245	52.6934	4103.6515	8.8430	13.1383	312.3430	8315.1104	25.9341	5.0219	7.58
L16	26.0069	56.5555	4386.6145	8.8251	13.1383	333.8803	8888.4703	27.8349	4.8879	6.86
	26.0650	56.6842	4416.6342	8.8451	13.1673	335.4232	8949.2983	27.8983	4.9029	6.881
L17	26.0738	54.7507	4274.6142	8.8541	13.1673	324.6375	8661.5273	26.9466	4.9699	7.229
	27.0798	56.9018	4798.5264	9.2020	13.6707	351.0079	9723.1155	28.0054	5.2304	7.608
L18	27.0048	73.8739	6127.1945	9.1259	13.6707	448.1988	12415.3571	36.3585	4.6609	5.179
	27.0629	74.0365	6167.7404	9.1460	13.6998	450.2076	12497.5142	36.4385	4.6759	5.195
L19	27.0805	70.0602	5859.3568	9.1639	13.6998	427.6975	11872.6453	34.4815	4.8099	5.659
	28.2422	73.1314	6664.1887	9.5656	14.2810	466.6466	13503.4532	35.9930	5.1106	6.013
L20	28.2511	71.0468	6486.3560	9.5745	14.2810	454.1942	13143.1157	34.9671	5.1776	6.276
	29.4127	74.0277	7337.5186	9.9763	14.8623	493.7012	14867.8021	36.4342	5.4784	6.64
L21	29.4127	74.0277	7337.5186	9.9763	14.8623	493.7012	14867.8021	36.4342	5.4784	6.64
	30.7673	77.5034	8420.3155	10.4446	15.5400	541.8478	17061.8421	38.1448	5.8290	7.065
L22	30.2574	75.0629	7313.4643	9.8910	14.7486	495.8759	14819.0614	36.9437	5.3693	6.364
	30.4929	78.5112	8368.3929	10.3453	15.4060	543.1894	16956.6327	38.6408	5.7094	6.767
L23	30.5017	76.2509	8141.5343	10.3543	15.4060	528.4641	16496.9557	37.5284	5.7764	7.055
	31.6791	79.2492	9140.2171	10.7615	15.9952	571.4368	18520.557	39.0041	6.0812	7.427

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
							8			
L24	31.6835	78.0718	9011.9048	10.7659	15.9952	563.4148	18260.562	38.4245	6.1147	7.584
							5			
	32.4700	80.0441	9712.3001	11.0379	16.3887	592.6225	19679.753	39.3953	6.3183	7.837
							1			
L25	32.4877	75.2018	9154.3794	11.0558	16.3887	558.5794	18549.254	37.0121	6.4523	8.532
							5			
	32.5466	75.3403	9205.0420	11.0762	16.4181	560.6630	18651.910	37.0802	6.4676	8.552
							7			
L26	32.5510	74.1250	9063.8696	11.0806	16.4181	552.0645	18365.857	36.4821	6.5011	8.741
							2			
	33.2174	75.6666	9641.2248	11.3111	16.7516	575.5413	19535.735	37.2408	6.6736	8.973
							3			
L27	33.1821	85.5685	10833.999	11.2753	16.7516	646.7450	21952.619	42.1142	6.4056	7.592
			3				8			
	33.2410	85.7230	10892.787	11.2956	16.7810	649.1130	22071.739	42.1903	6.4208	7.61
			0				7			
L28	33.2454	84.4865	10744.171	11.3001	16.7810	640.2569	21770.605	41.5817	6.4543	7.765
			9				1			
	34.4228	87.5306	11947.878	11.7073	17.3702	687.8397	24209.641	43.0799	6.7591	8.131
			7				5			
L29	34.4316	84.9630	11615.142	11.7162	17.3702	668.6840	23535.426	41.8162	6.8261	8.467
			1				8			
	35.6090	87.9156	12868.625	12.1234	17.9593	716.5451	26075.324	43.2694	7.1309	8.845
			5				2			
L30	35.6134	86.5845	12683.146	12.1278	17.9593	706.2173	25699.493	42.6143	7.1644	9.026
			5				4			
	36.7908	89.4913	14003.889	12.5350	18.5484	754.9923	28375.675	44.0449	7.4692	9.41
			0				7			
L31	36.7997	86.7345	13591.894	12.5439	18.5484	732.7804	27540.862	42.6881	7.5362	9.803
			0				1			
	37.9771	89.5498	14958.812	12.9511	19.1375	781.6491	30310.609	44.0737	7.8410	10.2
			6				8			
L32	37.9771	89.5498	14958.812	12.9511	19.1375	781.6491	30310.609	44.0737	7.8410	10.2
			6				8			
	38.5069	90.8166	15602.698	13.1343	19.4026	804.1548	31615.296	44.6972	7.9782	10.378
			0				2			
L33	38.5069	90.8166	15602.698	13.1343	19.4026	804.1548	31615.296	44.6972	7.9782	10.378
			0				2			
	38.5658	90.9574	15675.361	13.1547	19.4321	806.6751	31762.531	44.7664	7.9934	10.398
			2				6			
L34	38.5658	90.9574	15675.361	13.1547	19.4321	806.6751	31762.531	44.7664	7.9934	10.398
			2				6			
	38.8601	91.6612	16042.060	13.2565	19.5793	819.3361	32505.563	45.1128	8.0696	10.497
			5				8			
L35	38.7896	114.8841	19889.808	13.1849	19.5793	1015.8569	40302.144	56.5425	7.5336	7.777
			7				8			
	38.8485	115.0615	19982.081	13.2052	19.6088	1019.0366	40489.115	56.6298	7.5488	7.792
			7				0			
L36	38.8573	112.1681	19506.022	13.2142	19.6088	994.7588	39524.490	55.2057	7.6158	8.07
			8				5			
	40.0347	115.6242	21365.187	13.6213	20.1979	1057.7918	43291.663	56.9067	7.9206	8.393
			8				0			
L37	40.0347	115.6242	21365.187	13.6213	20.1979	1057.7918	43291.663	56.9067	7.9206	8.393
			8				0			
	40.8000	117.8707	22634.851	13.8860	20.5808	1099.8020	45864.345	58.0124	8.1188	8.603
			3				3			
L38	40.7912	120.9151	23189.552	13.8770	20.5808	1126.7544	46988.320	59.5107	8.0518	8.311
			7				7			
	40.8501	121.0925	23291.758	13.8974	20.6103	1130.1030	47195.417	59.5980	8.0670	8.327
			3				1			
L39	40.8501	121.0925	23291.758	13.8974	20.6103	1130.1030	47195.417	59.5980	8.0670	8.327
			3				1			
	41.3799	122.6889	24225.167	14.0806	20.8754	1160.4648	49086.756	60.3838	8.2042	8.469
			3				7			

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 117.0000-112.0000				1	1	1			
L2 112.0000-110.0000				1	1	1			
L3 110.0000-105.0000				1	1	1			
L4 105.0000-100.0000				1	1	1			
L5 100.0000-95.0000				1	1	1			
L6 95.0000-90.0000				1	1	1			
L7 90.0000-85.0000				1	1	1			
L8 85.0000-81.8800				1	1	1			
L9 81.8800-81.6300				1	1	1.26348			
L10 81.6300-76.6300				1	1	1.21543			
L11 76.6300-76.0800				1	1	1.2127			
L12 76.0800-75.8300				1	1	1.19873			
L13 75.8300-71.0000				1	1	1.18502			
L14 71.0000-70.7500				1	1	1.06546			
L15 70.7500-68.0800				1	1	1.06784			
L16 68.0800-67.8300				1	1	0.913952			
L17 67.8300-63.5000				1	1	0.924204			
L18 63.5000-63.2500				1	1	0.893525			
L19 63.2500-58.2500				1	1	0.916935			
L20 58.2500-53.2500				1	1	0.918035			
L21 53.2500-47.4200				1	1	0.911906			
L22 47.4200-46.4200				1	1	0.931046			
L23 46.4200-41.4200				1	1	0.93826			
L24 41.4200-38.0800				1	1	0.939449			
L25 38.0800-37.8300				1	1	0.939123			
L26 37.8300-35.0000				1	1	0.94449			
L27 35.0000-34.7500				1	1	0.939563			
L28 34.7500-29.7500				1	1	0.934541			
L29 29.7500-24.7500				1	1	0.944768			
L30 24.7500-19.7500				1	1	0.9422			
L31 19.7500-14.7500				1	1	0.955642			
L32 14.7500-12.5000				1	1	0.948549			
L33 12.5000-12.2500				1	1	0.970481			
L34 12.2500-				1	1	0.966463			

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
11.0000									
L35 11.0000-10.7500				1	1	0.917329			
L36 10.7500-5.7500				1	1	0.923752			
L37 5.7500-2.5000				1	1	0.913088			
L38 2.5000-2.2500				1	1	0.923428			
L39 2.2500-0.0000				1	1	0.916029			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
*****Surface ArAf*****										
HCS 6X12 4AWG(1-5/8)	C	No	Surface Ar (CaAa)	110.0000 - 0.0000	4	4	0.083 0.242	1.6600		2.40
***										
7983A(ELLIPTICAL)	C	No	Surface Ar (CaAa)	93.0000 - 0.0000	4	4	-0.332 -0.220	0.5730		0.08
***										
AVA7-50(1-5/8)	C	No	Surface Ar (CaAa)	84.0000 - 0.0000	6	3	-0.450 -0.332	2.0100		0.70
**********										
MS-600	A	No	Surface Af (CaAa)	35.0000 - 0.0000	1	1	0.250 0.250	6.0000	14.0000	0.00
MS-600	C	No	Surface Af (CaAa)	35.0000 - 0.0000	1	1	0.250 0.250	6.0000	14.0000	0.00
MS-600	B	No	Surface Af (CaAa)	35.0000 - 0.0000	1	1	0.250 0.250	6.0000	14.0000	0.00
MS-450	A	No	Surface Af (CaAa)	65.0000 - 35.0000	1	1	0.250 0.250	4.5000	11.0000	0.00
MS-450	C	No	Surface Af (CaAa)	65.0000 - 35.0000	1	1	0.250 0.250	4.5000	11.0000	0.00
MS-450	B	No	Surface Af (CaAa)	65.0000 - 35.0000	1	1	0.250 0.250	4.5000	11.0000	0.00
***										
MS-450	B	No	Surface Af (CaAa)	70.0000 - 50.0000	1	1	-0.500 -0.500	4.5000	11.0000	0.00
MS-450	A	No	Surface Af (CaAa)	70.0000 - 50.0000	1	1	-0.500 -0.500	4.5000	11.0000	0.00
MS-450	C	No	Surface Af (CaAa)	70.0000 - 50.0000	1	1	-0.500 -0.500	4.5000	11.0000	0.00
***										
CCI-045100	A	No	Surface Af (CaAa)	35.0000 - 0.0000	1	1	0.000 0.000	4.5000	11.0000	0.00
CCI-045100	C	No	Surface Af (CaAa)	35.0000 - 0.0000	1	1	0.000 0.000	4.5000	11.0000	0.00
CCI-045100	B	No	Surface Af (CaAa)	35.0000 - 0.0000	1	1	0.000 0.000	4.5000	11.0000	0.00
CCI-040075	A	No	Surface Af (CaAa)	50.0000 - 35.0000	1	1	0.000 0.000	4.0000	9.5000	0.00
CCI-040075	C	No	Surface Af (CaAa)	50.0000 - 35.0000	1	1	0.000 0.000	4.0000	9.5000	0.00
CCI-040075	B	No	Surface Af (CaAa)	50.0000 - 35.0000	1	1	0.000 0.000	4.0000	9.5000	0.00
***										
CCI-045100	A	No	Surface Af (CaAa)	35.5000 - 10.5000	1	1	-0.250 -0.250	4.5000	11.0000	0.00
CCI-045100	C	No	Surface Af (CaAa)	35.5000 - 0.0000	1	1	-0.250 -0.250	4.5000	11.0000	0.00

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
CCI-045100	B	No	Surface Af (CaAa)	35.5000 - 0.0000	1	1	-0.250 -0.250	4.5000	11.0000	0.00
CCI-060100	A	No	Surface Af (CaAa)	70.5000 - 35.5000	1	1	-0.250 -0.250	6.0000	14.0000	0.00
CCI-060100	C	No	Surface Af (CaAa)	70.5000 - 35.5000	1	1	-0.250 -0.250	6.0000	14.0000	0.00
CCI-060100	B	No	Surface Af (CaAa)	70.5000 - 35.5000	1	1	-0.250 -0.250	6.0000	14.0000	0.00
CCI-045100	A	No	Surface Af (CaAa)	85.3300 - 65.3300	1	1	0.250 0.250	4.5000	11.0000	0.00
CCI-045100	C	No	Surface Af (CaAa)	85.6700 - 70.6700	1	1	-0.250 -0.250	4.5000	11.0000	0.00
CCI-045100	B	No	Surface Af (CaAa)	85.6700 - 70.6700	1	1	-0.250 -0.250	4.5000	11.0000	0.00
***										
CCI-040075	A	No	Surface Af (CaAa)	77.1000 - 67.1000	1	1	0.000 0.000	4.0000	9.5000	0.00
CCI-040075	C	No	Surface Af (CaAa)	77.1000 - 67.1000	1	1	0.000 0.000	4.0000	9.5000	0.00
CCI-040075	B	No	Surface Af (CaAa)	77.1000 - 67.1000	1	1	0.000 0.000	4.0000	9.5000	0.00

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
LDF6-50A(1-1/4)	C	No	No	Inside Pole	117.0000 - 0.0000	3	No Ice	0.0000	0.60
							1/2" Ice	0.0000	0.60
							1" Ice	0.0000	0.60
							2" Ice	0.0000	0.60
HB058-1-08U1-S2F(5/8)	C	No	No	Inside Pole	117.0000 - 0.0000	1	No Ice	0.0000	0.40
							1/2" Ice	0.0000	0.40
							1" Ice	0.0000	0.40
							2" Ice	0.0000	0.40
***									
LDF7-50A(1-5/8)	C	No	No	Inside Pole	110.0000 - 0.0000	12	No Ice	0.0000	0.82
							1/2" Ice	0.0000	0.82
							1" Ice	0.0000	0.82
							2" Ice	0.0000	0.82
***									
LDF5-50A(7/8)	C	No	No	Inside Pole	100.0000 - 0.0000	12	No Ice	0.0000	0.33
							1/2" Ice	0.0000	0.33
							1" Ice	0.0000	0.33
							2" Ice	0.0000	0.33
HB158-1-08U8-S8J18(1-5/8)	C	No	No	Inside Pole	100.0000 - 0.0000	2	No Ice	0.0000	1.30
							1/2" Ice	0.0000	1.30
							1" Ice	0.0000	1.30
							2" Ice	0.0000	1.30
***									
LDF6-50A(1-1/4)	C	No	No	Inside Pole	89.0000 - 0.0000	12	No Ice	0.0000	0.60
							1/2" Ice	0.0000	0.60
							1" Ice	0.0000	0.60
							2" Ice	0.0000	0.60
FB-L98-002-XXX(3/8)	C	No	No	Inside Pole	89.0000 - 0.0000	2	No Ice	0.0000	0.06
							1/2" Ice	0.0000	0.06
							1" Ice	0.0000	0.06
							2" Ice	0.0000	0.06
WR-VG82ST-BRDA(5/8)	C	No	No	Inside Pole	89.0000 - 0.0000	4	No Ice	0.0000	0.31
							1/2" Ice	0.0000	0.31
							1" Ice	0.0000	0.31
							2" Ice	0.0000	0.31
FB-L98-002-XXX(3/8)	C	No	No	Inside Pole	89.0000 - 0.0000	2	No Ice	0.0000	0.06
							1/2" Ice	0.0000	0.06
							1" Ice	0.0000	0.06

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft²/ft	Weight plf
WR-VG82ST-BRDA(5/8)	C	No	No	Inside Pole	89.0000 - 0.0000	4	2" Ice	0.0000	0.06
							No Ice	0.0000	0.31
							1/2" Ice	0.0000	0.31
							1" Ice	0.0000	0.31
							2" Ice	0.0000	0.31
2" (Nominal) Conduit	C	No	No	Inside Pole	89.0000 - 0.0000	2	No Ice	0.0000	0.72
							1/2" Ice	0.0000	0.72
							1" Ice	0.0000	0.72
							2" Ice	0.0000	0.72

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	117.0000-112.0000	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
L2	112.0000-110.0000	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	0.000	0.00
L3	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	3.320	0.000	0.11
L4	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	3.320	0.000	0.11
L5	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	3.320	0.000	0.14
L6	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	4.008	0.000	0.14
L7	90.0000-85.0000	A	0.000	0.000	0.248	0.000	0.00
		B	0.000	0.000	0.502	0.000	0.00
		C	0.000	0.000	4.968	0.000	0.19
L8	85.0000-81.8800	A	0.000	0.000	2.340	0.000	0.00
		B	0.000	0.000	2.340	0.000	0.00
		C	0.000	0.000	6.405	0.000	0.13
L9	81.8800-81.6300	A	0.000	0.000	0.188	0.000	0.00
		B	0.000	0.000	0.188	0.000	0.00
		C	0.000	0.000	0.562	0.000	0.01
L10	81.6300-76.6300	A	0.000	0.000	4.063	0.000	0.00
		B	0.000	0.000	4.063	0.000	0.00
		C	0.000	0.000	11.544	0.000	0.22
L11	76.6300-76.0800	A	0.000	0.000	0.779	0.000	0.00
		B	0.000	0.000	0.779	0.000	0.00
		C	0.000	0.000	1.602	0.000	0.02
L12	76.0800-75.8300	A	0.000	0.000	0.354	0.000	0.00
		B	0.000	0.000	0.354	0.000	0.00
		C	0.000	0.000	0.728	0.000	0.01
L13	75.8300-71.0000	A	0.000	0.000	6.843	0.000	0.00
		B	0.000	0.000	6.843	0.000	0.00
		C	0.000	0.000	14.069	0.000	0.21
L14	71.0000-70.7500	A	0.000	0.000	0.354	0.000	0.00
		B	0.000	0.000	0.354	0.000	0.00
		C	0.000	0.000	0.728	0.000	0.01
L15	70.7500-68.0800	A	0.000	0.000	7.643	0.000	0.00
		B	0.000	0.000	5.700	0.000	0.00
		C	0.000	0.000	9.695	0.000	0.12
L16	68.0800-67.8300	A	0.000	0.000	0.792	0.000	0.00
		B	0.000	0.000	0.604	0.000	0.00
		C	0.000	0.000	0.978	0.000	0.01
L17	67.8300-63.5000	A	0.000	0.000	11.064	0.000	0.00
		B	0.000	0.000	9.189	0.000	0.00
		C	0.000	0.000	15.668	0.000	0.19

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
L18	63.5000-63.2500	A	0.000	0.000	0.625	0.000	0.00
		B	0.000	0.000	0.625	0.000	0.00
		C	0.000	0.000	0.999	0.000	0.01
L19	63.2500-58.2500	A	0.000	0.000	12.500	0.000	0.00
		B	0.000	0.000	12.500	0.000	0.00
		C	0.000	0.000	19.981	0.000	0.22
L20	58.2500-53.2500	A	0.000	0.000	12.500	0.000	0.00
		B	0.000	0.000	12.500	0.000	0.00
		C	0.000	0.000	19.981	0.000	0.22
L21	53.2500-47.4200	A	0.000	0.000	14.360	0.000	0.00
		B	0.000	0.000	14.360	0.000	0.00
		C	0.000	0.000	23.083	0.000	0.26
L22	47.4200-46.4200	A	0.000	0.000	2.417	0.000	0.00
		B	0.000	0.000	2.417	0.000	0.00
		C	0.000	0.000	3.913	0.000	0.04
L23	46.4200-41.4200	A	0.000	0.000	12.083	0.000	0.00
		B	0.000	0.000	12.083	0.000	0.00
		C	0.000	0.000	19.564	0.000	0.22
L24	41.4200-38.0800	A	0.000	0.000	8.072	0.000	0.00
		B	0.000	0.000	8.072	0.000	0.00
		C	0.000	0.000	13.069	0.000	0.15
L25	38.0800-37.8300	A	0.000	0.000	0.604	0.000	0.00
		B	0.000	0.000	0.604	0.000	0.00
		C	0.000	0.000	0.978	0.000	0.01
L26	37.8300-35.0000	A	0.000	0.000	6.714	0.000	0.00
		B	0.000	0.000	6.714	0.000	0.00
		C	0.000	0.000	10.948	0.000	0.12
L27	35.0000-34.7500	A	0.000	0.000	0.625	0.000	0.00
		B	0.000	0.000	0.625	0.000	0.00
		C	0.000	0.000	0.999	0.000	0.01
L28	34.7500-29.7500	A	0.000	0.000	12.500	0.000	0.00
		B	0.000	0.000	12.500	0.000	0.00
		C	0.000	0.000	19.981	0.000	0.22
L29	29.7500-24.7500	A	0.000	0.000	12.500	0.000	0.00
		B	0.000	0.000	12.500	0.000	0.00
		C	0.000	0.000	19.981	0.000	0.22
L30	24.7500-19.7500	A	0.000	0.000	12.500	0.000	0.00
		B	0.000	0.000	12.500	0.000	0.00
		C	0.000	0.000	19.981	0.000	0.22
L31	19.7500-14.7500	A	0.000	0.000	12.500	0.000	0.00
		B	0.000	0.000	12.500	0.000	0.00
		C	0.000	0.000	19.981	0.000	0.22
L32	14.7500-12.5000	A	0.000	0.000	5.625	0.000	0.00
		B	0.000	0.000	5.625	0.000	0.00
		C	0.000	0.000	8.991	0.000	0.10
L33	12.5000-12.2500	A	0.000	0.000	0.625	0.000	0.00
		B	0.000	0.000	0.625	0.000	0.00
		C	0.000	0.000	0.999	0.000	0.01
L34	12.2500-11.0000	A	0.000	0.000	3.125	0.000	0.00
		B	0.000	0.000	3.125	0.000	0.00
		C	0.000	0.000	4.995	0.000	0.06
L35	11.0000-10.7500	A	0.000	0.000	0.625	0.000	0.00
		B	0.000	0.000	0.625	0.000	0.00
		C	0.000	0.000	0.999	0.000	0.01
L36	10.7500-5.7500	A	0.000	0.000	8.938	0.000	0.00
		B	0.000	0.000	12.500	0.000	0.00
		C	0.000	0.000	19.981	0.000	0.22
L37	5.7500-2.5000	A	0.000	0.000	5.688	0.000	0.00
		B	0.000	0.000	8.125	0.000	0.00
		C	0.000	0.000	12.988	0.000	0.14
L38	2.5000-2.2500	A	0.000	0.000	0.438	0.000	0.00
		B	0.000	0.000	0.625	0.000	0.00
		C	0.000	0.000	0.999	0.000	0.01
L39	2.2500-0.0000	A	0.000	0.000	3.938	0.000	0.00
		B	0.000	0.000	5.625	0.000	0.00
		C	0.000	0.000	8.991	0.000	0.10

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	117.0000-112.0000	A	1.444	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
L2	112.0000-110.0000	A	1.439	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	110.0000-105.0000	A	1.435	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	5.943	0.000	0.17
L4	105.0000-100.0000	A	1.428	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	5.935	0.000	0.17
L5	100.0000-95.0000	A	1.421	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	5.926	0.000	0.20
L6	95.0000-90.0000	A	1.413	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	7.836	0.000	0.22
L7	90.0000-85.0000	A	1.406	0.000	0.000	0.340	0.000	0.00
		B		0.000	0.000	0.690	0.000	0.01
		C		0.000	0.000	9.786	0.000	0.28
L8	85.0000-81.8800	A	1.399	0.000	0.000	3.213	0.000	0.03
		B		0.000	0.000	3.208	0.000	0.03
		C		0.000	0.000	11.213	0.000	0.26
L9	81.8800-81.6300	A	1.396	0.000	0.000	0.257	0.000	0.00
		B		0.000	0.000	0.257	0.000	0.00
		C		0.000	0.000	0.986	0.000	0.02
L10	81.6300-76.6300	A	1.391	0.000	0.000	5.545	0.000	0.05
		B		0.000	0.000	5.538	0.000	0.05
		C		0.000	0.000	20.108	0.000	0.46
L11	76.6300-76.0800	A	1.387	0.000	0.000	1.037	0.000	0.01
		B		0.000	0.000	1.037	0.000	0.01
		C		0.000	0.000	2.637	0.000	0.05
L12	76.0800-75.8300	A	1.386	0.000	0.000	0.471	0.000	0.00
		B		0.000	0.000	0.471	0.000	0.00
		C		0.000	0.000	1.199	0.000	0.02
L13	75.8300-71.0000	A	1.381	0.000	0.000	9.102	0.000	0.08
		B		0.000	0.000	9.096	0.000	0.08
		C		0.000	0.000	23.133	0.000	0.47
L14	71.0000-70.7500	A	1.376	0.000	0.000	0.471	0.000	0.00
		B		0.000	0.000	0.471	0.000	0.00
		C		0.000	0.000	1.196	0.000	0.02
L15	70.7500-68.0800	A	1.373	0.000	0.000	10.077	0.000	0.09
		B		0.000	0.000	7.423	0.000	0.06
		C		0.000	0.000	15.167	0.000	0.28
L16	68.0800-67.8300	A	1.371	0.000	0.000	1.045	0.000	0.01
		B		0.000	0.000	0.789	0.000	0.01
		C		0.000	0.000	1.513	0.000	0.03
L17	67.8300-63.5000	A	1.366	0.000	0.000	14.661	0.000	0.12
		B		0.000	0.000	12.103	0.000	0.10
		C		0.000	0.000	24.637	0.000	0.45
L18	63.5000-63.2500	A	1.361	0.000	0.000	0.829	0.000	0.01
		B		0.000	0.000	0.829	0.000	0.01
		C		0.000	0.000	1.552	0.000	0.03
L19	63.2500-58.2500	A	1.355	0.000	0.000	16.566	0.000	0.14
		B		0.000	0.000	16.566	0.000	0.14
		C		0.000	0.000	30.999	0.000	0.54
L20	58.2500-53.2500	A	1.344	0.000	0.000	16.531	0.000	0.13
		B		0.000	0.000	16.531	0.000	0.13
		C		0.000	0.000	30.921	0.000	0.54
L21	53.2500-47.4200	A	1.330	0.000	0.000	19.012	0.000	0.15
		B		0.000	0.000	19.012	0.000	0.15
		C		0.000	0.000	35.731	0.000	0.62
L22	47.4200-46.4200	A	1.321	0.000	0.000	3.215	0.000	0.03
		B		0.000	0.000	3.215	0.000	0.03

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
		C		0.000	0.000	6.082	0.000	0.11
L23	46.4200-41.4200	A	1.312	0.000	0.000	16.019	0.000	0.13
		B		0.000	0.000	16.019	0.000	0.13
		C		0.000	0.000	30.290	0.000	0.52
L24	41.4200-38.0800	A	1.299	0.000	0.000	10.675	0.000	0.08
		B		0.000	0.000	10.675	0.000	0.08
		C		0.000	0.000	20.175	0.000	0.35
L25	38.0800-37.8300	A	1.293	0.000	0.000	0.798	0.000	0.01
		B		0.000	0.000	0.798	0.000	0.01
		C		0.000	0.000	1.508	0.000	0.03
L26	37.8300-35.0000	A	1.288	0.000	0.000	8.901	0.000	0.07
		B		0.000	0.000	8.901	0.000	0.07
		C		0.000	0.000	16.926	0.000	0.29
L27	35.0000-34.7500	A	1.282	0.000	0.000	0.817	0.000	0.01
		B		0.000	0.000	0.817	0.000	0.01
		C		0.000	0.000	1.525	0.000	0.03
L28	34.7500-29.7500	A	1.272	0.000	0.000	16.316	0.000	0.12
		B		0.000	0.000	16.316	0.000	0.12
		C		0.000	0.000	30.437	0.000	0.52
L29	29.7500-24.7500	A	1.251	0.000	0.000	16.252	0.000	0.12
		B		0.000	0.000	16.252	0.000	0.12
		C		0.000	0.000	30.294	0.000	0.51
L30	24.7500-19.7500	A	1.226	0.000	0.000	16.177	0.000	0.12
		B		0.000	0.000	16.177	0.000	0.12
		C		0.000	0.000	30.124	0.000	0.50
L31	19.7500-14.7500	A	1.195	0.000	0.000	16.084	0.000	0.12
		B		0.000	0.000	16.084	0.000	0.12
		C		0.000	0.000	29.916	0.000	0.50
L32	14.7500-12.5000	A	1.167	0.000	0.000	7.200	0.000	0.05
		B		0.000	0.000	7.200	0.000	0.05
		C		0.000	0.000	13.378	0.000	0.22
L33	12.5000-12.2500	A	1.156	0.000	0.000	0.798	0.000	0.01
		B		0.000	0.000	0.798	0.000	0.01
		C		0.000	0.000	1.483	0.000	0.02
L34	12.2500-11.0000	A	1.149	0.000	0.000	3.987	0.000	0.03
		B		0.000	0.000	3.987	0.000	0.03
		C		0.000	0.000	7.401	0.000	0.12
L35	11.0000-10.7500	A	1.141	0.000	0.000	0.796	0.000	0.01
		B		0.000	0.000	0.796	0.000	0.01
		C		0.000	0.000	1.478	0.000	0.02
L36	10.7500-5.7500	A	1.110	0.000	0.000	11.213	0.000	0.07
		B		0.000	0.000	15.829	0.000	0.10
		C		0.000	0.000	29.342	0.000	0.48
L37	5.7500-2.5000	A	1.035	0.000	0.000	7.034	0.000	0.04
		B		0.000	0.000	10.144	0.000	0.06
		C		0.000	0.000	18.747	0.000	0.30
L38	2.5000-2.2500	A	0.980	0.000	0.000	0.535	0.000	0.00
		B		0.000	0.000	0.772	0.000	0.00
		C		0.000	0.000	1.423	0.000	0.02
L39	2.2500-0.0000	A	0.909	0.000	0.000	4.756	0.000	0.03
		B		0.000	0.000	6.852	0.000	0.04
		C		0.000	0.000	12.595	0.000	0.19

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	117.0000-112.0000	0.0000	0.0000	0.0000	0.0000
L2	112.0000-110.0000	0.0000	0.0000	0.0000	0.0000
L3	110.0000-105.0000	-1.0020	2.8258	-0.9637	2.7179
L4	105.0000-100.0000	-1.0175	2.8694	-0.9925	2.7989
L5	100.0000-95.0000	-1.0324	2.9116	-1.0199	2.8762

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L6	95.0000-90.0000	-0.6653	3.2719	-0.4430	3.2526
L7	90.0000-85.0000	-0.0282	2.8011	0.1384	3.0030
L8	85.0000-81.8800	2.0306	-0.0272	1.8495	0.7943
L9	81.8800-81.6300	2.3368	0.3031	2.1278	1.0913
L10	81.6300-76.6300	2.1139	0.2687	2.1132	1.0790
L11	76.6300-76.0800	1.6463	0.2049	1.7434	0.8861
L12	76.0800-75.8300	1.6509	0.2049	1.7486	0.8882
L13	75.8300-71.0000	1.6756	0.2041	1.7785	0.8996
L14	71.0000-70.7500	1.7014	0.2036	1.8091	0.9115
L15	70.7500-68.0800	0.4300	0.5434	0.6413	1.0706
L16	68.0800-67.8300	0.3767	0.5167	0.5804	1.0162
L17	67.8300-63.5000	0.4550	1.0016	0.6721	1.5145
L18	63.5000-63.2500	0.4714	1.4875	0.6778	1.9431
L19	63.2500-58.2500	0.4774	1.5100	0.6876	1.9753
L20	58.2500-53.2500	0.4888	1.5526	0.7060	2.0360
L21	53.2500-47.4200	0.5084	1.6214	0.7330	2.1225
L22	47.4200-46.4200	0.5208	1.6627	0.7476	2.1664
L23	46.4200-41.4200	0.5276	1.6881	0.7577	2.2013
L24	41.4200-38.0800	0.5370	1.7231	0.7725	2.2509
L25	38.0800-37.8300	0.5409	1.7378	0.7787	2.2718
L26	37.8300-35.0000	0.5506	1.7707	0.7903	2.3081
L27	35.0000-34.7500	0.5363	1.7263	0.7777	2.2737
L28	34.7500-29.7500	0.5419	1.7474	0.7864	2.3034
L29	29.7500-24.7500	0.5525	1.7870	0.8025	2.3587
L30	24.7500-19.7500	0.5630	1.8260	0.8179	2.4123
L31	19.7500-14.7500	0.5732	1.8642	0.8322	2.4638
L32	14.7500-12.5000	0.5806	1.8916	0.8417	2.4993
L33	12.5000-12.2500	0.5831	1.9010	0.8448	2.5111
L34	12.2500-11.0000	0.5846	1.9066	0.8465	2.5181
L35	11.0000-10.7500	0.5864	1.9132	0.8485	2.5258
L36	10.7500-5.7500	1.7543	1.4930	1.9689	2.1655
L37	5.7500-2.5000	1.8461	1.4902	2.0547	2.1646
L38	2.5000-2.2500	1.8579	1.4993	2.0612	2.1671
L39	2.2500-0.0000	1.8662	1.5057	2.0608	2.1610

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L3	17	HCS 6X12 4AWG(1-5/8)	105.00 - 110.00	1.0000	1.0000
L4	17	HCS 6X12 4AWG(1-5/8)	100.00 - 105.00	1.0000	1.0000
L5	17	HCS 6X12 4AWG(1-5/8)	95.00 - 100.00	1.0000	1.0000
L6	17	HCS 6X12 4AWG(1-5/8)	90.00 - 95.00	1.0000	1.0000
L6	19	7983A(ELLIPTICAL)	90.00 - 93.00	1.0000	1.0000
L7	17	HCS 6X12 4AWG(1-5/8)	85.00 - 90.00	1.0000	1.0000
L7	19	7983A(ELLIPTICAL)	85.00 - 90.00	1.0000	1.0000
L7	47	CCI-045100	85.00 - 85.33	1.0000	1.0000
L7	48	CCI-045100	85.00 - 85.67	1.0000	1.0000
L7	49	CCI-045100	85.00 - 85.67	1.0000	1.0000
L8	17	HCS 6X12 4AWG(1-5/8)	81.88 - 85.00	1.0000	1.0000
L8	19	7983A(ELLIPTICAL)	81.88 - 85.00	1.0000	1.0000
L8	21	AVA7-50(1-5/8)	81.88 - 84.00	1.0000	1.0000
L8	47	CCI-045100	81.88 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L8	48	CCI-045100	85.00 81.88 -	1.0000	1.0000
L8	49	CCI-045100	85.00 81.88 -	1.0000	1.0000
L9	17	HCS 6X12 4AWG(1-5/8)	85.00 81.63 -	1.0000	1.0000
L9	19	7983A(ELLIPTICAL)	81.88 81.63 -	1.0000	1.0000
L9	21	AVA7-50(1-5/8)	81.88 81.63 -	1.0000	1.0000
L9	47	CCI-045100	81.88 81.63 -	1.0000	1.0000
L9	48	CCI-045100	81.88 81.63 -	1.0000	1.0000
L9	49	CCI-045100	81.88 81.63 -	1.0000	1.0000
L10	17	HCS 6X12 4AWG(1-5/8)	81.88 76.63 -	1.0000	1.0000
L10	19	7983A(ELLIPTICAL)	81.63 76.63 -	1.0000	1.0000
L10	21	AVA7-50(1-5/8)	81.63 76.63 -	1.0000	1.0000
L10	47	CCI-045100	81.63 76.63 -	1.0000	1.0000
L10	48	CCI-045100	81.63 76.63 -	1.0000	1.0000
L10	49	CCI-045100	81.63 76.63 -	1.0000	1.0000
L10	51	CCI-040075	81.63 76.63 -	1.0000	1.0000
L10	52	CCI-040075	77.10 76.63 -	1.0000	1.0000
L10	53	CCI-040075	77.10 76.63 -	1.0000	1.0000
L11	17	HCS 6X12 4AWG(1-5/8)	77.10 76.08 -	1.0000	1.0000
L11	19	7983A(ELLIPTICAL)	76.63 76.08 -	1.0000	1.0000
L11	21	AVA7-50(1-5/8)	76.63 76.08 -	1.0000	1.0000
L11	47	CCI-045100	76.63 76.08 -	1.0000	1.0000
L11	48	CCI-045100	76.63 76.08 -	1.0000	1.0000
L11	49	CCI-045100	76.63 76.08 -	1.0000	1.0000
L11	51	CCI-040075	76.63 76.08 -	1.0000	1.0000
L11	52	CCI-040075	76.63 76.08 -	1.0000	1.0000
L11	53	CCI-040075	76.63 76.08 -	1.0000	1.0000
L12	17	HCS 6X12 4AWG(1-5/8)	76.63 75.83 -	1.0000	1.0000
L12	19	7983A(ELLIPTICAL)	76.08 75.83 -	1.0000	1.0000
L12	21	AVA7-50(1-5/8)	76.08 75.83 -	1.0000	1.0000
L12	47	CCI-045100	76.08 75.83 -	1.0000	1.0000
L12	48	CCI-045100	76.08 75.83 -	1.0000	1.0000
L12	49	CCI-045100	76.08 75.83 -	1.0000	1.0000
L12	51	CCI-040075	76.08 75.83 -	1.0000	1.0000
L12	52	CCI-040075	76.08 75.83 -	1.0000	1.0000
			76.08		

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L12	53	CCI-040075	75.83 - 76.08	1.0000	1.0000
L13	17	HCS 6X12 4AWG(1-5/8)	71.00 - 75.83	1.0000	1.0000
L13	19	7983A(ELLIPTICAL)	71.00 - 75.83	1.0000	1.0000
L13	21	AVA7-50(1-5/8)	71.00 - 75.83	1.0000	1.0000
L13	47	CCI-045100	71.00 - 75.83	1.0000	1.0000
L13	48	CCI-045100	71.00 - 75.83	1.0000	1.0000
L13	49	CCI-045100	71.00 - 75.83	1.0000	1.0000
L13	51	CCI-040075	71.00 - 75.83	1.0000	1.0000
L13	52	CCI-040075	71.00 - 75.83	1.0000	1.0000
L13	53	CCI-040075	71.00 - 75.83	1.0000	1.0000
L14	17	HCS 6X12 4AWG(1-5/8)	70.75 - 71.00	1.0000	1.0000
L14	19	7983A(ELLIPTICAL)	70.75 - 71.00	1.0000	1.0000
L14	21	AVA7-50(1-5/8)	70.75 - 71.00	1.0000	1.0000
L14	47	CCI-045100	70.75 - 71.00	1.0000	1.0000
L14	48	CCI-045100	70.75 - 71.00	1.0000	1.0000
L14	49	CCI-045100	70.75 - 71.00	1.0000	1.0000
L14	51	CCI-040075	70.75 - 71.00	1.0000	1.0000
L14	52	CCI-040075	70.75 - 71.00	1.0000	1.0000
L14	53	CCI-040075	70.75 - 71.00	1.0000	1.0000
L15	17	HCS 6X12 4AWG(1-5/8)	68.08 - 70.75	1.0000	1.0000
L15	19	7983A(ELLIPTICAL)	68.08 - 70.75	1.0000	1.0000
L15	21	AVA7-50(1-5/8)	68.08 - 70.75	1.0000	1.0000
L15	30	MS-450	68.08 - 70.00	1.0000	1.0000
L15	31	MS-450	68.08 - 70.00	1.0000	1.0000
L15	32	MS-450	68.08 - 70.00	1.0000	1.0000
L15	44	CCI-060100	68.08 - 70.50	1.0000	1.0000
L15	45	CCI-060100	68.08 - 70.50	1.0000	1.0000
L15	46	CCI-060100	68.08 - 70.50	1.0000	1.0000
L15	47	CCI-045100	68.08 - 70.75	1.0000	1.0000
L15	48	CCI-045100	70.67 - 70.75	1.0000	1.0000
L15	49	CCI-045100	70.67 - 70.75	1.0000	1.0000
L15	51	CCI-040075	68.08 - 70.75	1.0000	1.0000
L15	52	CCI-040075	68.08 - 70.75	1.0000	1.0000
L15	53	CCI-040075	68.08 - 70.75	1.0000	1.0000
L16	17	HCS 6X12 4AWG(1-5/8)	67.83 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L16	19	7983A(ELLIPTICAL)	68.08 67.83 - 68.08	1.0000	1.0000
L16	21	AVA7-50(1-5/8)	67.83 - 68.08	1.0000	1.0000
L16	30	MS-450	67.83 - 68.08	1.0000	1.0000
L16	31	MS-450	67.83 - 68.08	1.0000	1.0000
L16	32	MS-450	67.83 - 68.08	1.0000	1.0000
L16	44	CCI-060100	67.83 - 68.08	1.0000	1.0000
L16	45	CCI-060100	67.83 - 68.08	1.0000	1.0000
L16	46	CCI-060100	67.83 - 68.08	1.0000	1.0000
L16	47	CCI-045100	67.83 - 68.08	1.0000	1.0000
L16	51	CCI-040075	67.83 - 68.08	1.0000	1.0000
L16	52	CCI-040075	67.83 - 68.08	1.0000	1.0000
L16	53	CCI-040075	67.83 - 68.08	1.0000	1.0000
L17	17	HCS 6X12 4AWG(1-5/8)	63.50 - 67.83	1.0000	1.0000
L17	19	7983A(ELLIPTICAL)	63.50 - 67.83	1.0000	1.0000
L17	21	AVA7-50(1-5/8)	63.50 - 67.83	1.0000	1.0000
L17	26	MS-450	63.50 - 65.00	1.0000	1.0000
L17	27	MS-450	63.50 - 65.00	1.0000	1.0000
L17	28	MS-450	63.50 - 65.00	1.0000	1.0000
L17	30	MS-450	63.50 - 67.83	1.0000	1.0000
L17	31	MS-450	63.50 - 67.83	1.0000	1.0000
L17	32	MS-450	63.50 - 67.83	1.0000	1.0000
L17	44	CCI-060100	63.50 - 67.83	1.0000	1.0000
L17	45	CCI-060100	63.50 - 67.83	1.0000	1.0000
L17	46	CCI-060100	63.50 - 67.83	1.0000	1.0000
L17	47	CCI-045100	65.33 - 67.83	1.0000	1.0000
L17	51	CCI-040075	67.10 - 67.83	1.0000	1.0000
L17	52	CCI-040075	67.10 - 67.83	1.0000	1.0000
L17	53	CCI-040075	67.10 - 67.83	1.0000	1.0000
L18	17	HCS 6X12 4AWG(1-5/8)	63.25 - 63.50	1.0000	1.0000
L18	19	7983A(ELLIPTICAL)	63.25 - 63.50	1.0000	1.0000
L18	21	AVA7-50(1-5/8)	63.25 - 63.50	1.0000	1.0000
L18	26	MS-450	63.25 - 63.50	1.0000	1.0000
L18	27	MS-450	63.25 - 63.50	1.0000	1.0000
L18	28	MS-450	63.25 - 63.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L18	30	MS-450	63.25 - 63.50	1.0000	1.0000
L18	31	MS-450	63.25 - 63.50	1.0000	1.0000
L18	32	MS-450	63.25 - 63.50	1.0000	1.0000
L18	44	CCI-060100	63.25 - 63.50	1.0000	1.0000
L18	45	CCI-060100	63.25 - 63.50	1.0000	1.0000
L18	46	CCI-060100	63.25 - 63.50	1.0000	1.0000
L19	17	HCS 6X12 4AWG(1-5/8)	58.25 - 63.25	1.0000	1.0000
L19	19	7983A(ELLIPTICAL)	58.25 - 63.25	1.0000	1.0000
L19	21	AVA7-50(1-5/8)	58.25 - 63.25	1.0000	1.0000
L19	26	MS-450	58.25 - 63.25	1.0000	1.0000
L19	27	MS-450	58.25 - 63.25	1.0000	1.0000
L19	28	MS-450	58.25 - 63.25	1.0000	1.0000
L19	30	MS-450	58.25 - 63.25	1.0000	1.0000
L19	31	MS-450	58.25 - 63.25	1.0000	1.0000
L19	32	MS-450	58.25 - 63.25	1.0000	1.0000
L19	44	CCI-060100	58.25 - 63.25	1.0000	1.0000
L19	45	CCI-060100	58.25 - 63.25	1.0000	1.0000
L19	46	CCI-060100	58.25 - 63.25	1.0000	1.0000
L20	17	HCS 6X12 4AWG(1-5/8)	53.25 - 58.25	1.0000	1.0000
L20	19	7983A(ELLIPTICAL)	53.25 - 58.25	1.0000	1.0000
L20	21	AVA7-50(1-5/8)	53.25 - 58.25	1.0000	1.0000
L20	26	MS-450	53.25 - 58.25	1.0000	1.0000
L20	27	MS-450	53.25 - 58.25	1.0000	1.0000
L20	28	MS-450	53.25 - 58.25	1.0000	1.0000
L20	30	MS-450	53.25 - 58.25	1.0000	1.0000
L20	31	MS-450	53.25 - 58.25	1.0000	1.0000
L20	32	MS-450	53.25 - 58.25	1.0000	1.0000
L20	44	CCI-060100	53.25 - 58.25	1.0000	1.0000
L20	45	CCI-060100	53.25 - 58.25	1.0000	1.0000
L20	46	CCI-060100	53.25 - 58.25	1.0000	1.0000
L21	17	HCS 6X12 4AWG(1-5/8)	47.42 - 53.25	1.0000	1.0000
L21	19	7983A(ELLIPTICAL)	47.42 - 53.25	1.0000	1.0000
L21	21	AVA7-50(1-5/8)	47.42 - 53.25	1.0000	1.0000
L21	26	MS-450	47.42 - 53.25	1.0000	1.0000
L21	27	MS-450	47.42 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L21	28	MS-450	53.25 47.42 -	1.0000	1.0000
L21	30	MS-450	53.25 50.00 -	1.0000	1.0000
L21	31	MS-450	53.25 50.00 -	1.0000	1.0000
L21	32	MS-450	53.25 50.00 -	1.0000	1.0000
L21	37	CCI-040075	53.25 47.42 -	1.0000	1.0000
L21	38	CCI-040075	50.00 47.42 -	1.0000	1.0000
L21	39	CCI-040075	50.00 47.42 -	1.0000	1.0000
L21	44	CCI-060100	50.00 47.42 -	1.0000	1.0000
L21	45	CCI-060100	53.25 47.42 -	1.0000	1.0000
L21	46	CCI-060100	53.25 47.42 -	1.0000	1.0000
L23	17	HCS 6X12 4AWG(1-5/8)	53.25 41.42 -	1.0000	1.0000
L23	19	7983A(ELLIPTICAL)	46.42 41.42 -	1.0000	1.0000
L23	21	AVA7-50(1-5/8)	46.42 41.42 -	1.0000	1.0000
L23	26	MS-450	46.42 41.42 -	1.0000	1.0000
L23	27	MS-450	46.42 41.42 -	1.0000	1.0000
L23	28	MS-450	46.42 41.42 -	1.0000	1.0000
L23	37	CCI-040075	46.42 41.42 -	1.0000	1.0000
L23	38	CCI-040075	46.42 41.42 -	1.0000	1.0000
L23	39	CCI-040075	46.42 41.42 -	1.0000	1.0000
L23	44	CCI-060100	46.42 41.42 -	1.0000	1.0000
L23	45	CCI-060100	46.42 41.42 -	1.0000	1.0000
L23	46	CCI-060100	46.42 41.42 -	1.0000	1.0000
L24	17	HCS 6X12 4AWG(1-5/8)	46.42 38.08 -	1.0000	1.0000
L24	19	7983A(ELLIPTICAL)	41.42 38.08 -	1.0000	1.0000
L24	21	AVA7-50(1-5/8)	41.42 38.08 -	1.0000	1.0000
L24	26	MS-450	41.42 38.08 -	1.0000	1.0000
L24	27	MS-450	41.42 38.08 -	1.0000	1.0000
L24	28	MS-450	41.42 38.08 -	1.0000	1.0000
L24	37	CCI-040075	41.42 38.08 -	1.0000	1.0000
L24	38	CCI-040075	41.42 38.08 -	1.0000	1.0000
L24	39	CCI-040075	41.42 38.08 -	1.0000	1.0000
L24	44	CCI-060100	41.42 38.08 -	1.0000	1.0000
L24	45	CCI-060100	41.42 38.08 -	1.0000	1.0000
L24	46	CCI-060100	41.42 38.08 -	1.0000	1.0000
			41.42		

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L25	17	HCS 6X12 4AWG(1-5/8)	37.83 - 38.08	1.0000	1.0000
L25	19	7983A(ELLIPTICAL)	37.83 - 38.08	1.0000	1.0000
L25	21	AVA7-50(1-5/8)	37.83 - 38.08	1.0000	1.0000
L25	26	MS-450	37.83 - 38.08	1.0000	1.0000
L25	27	MS-450	37.83 - 38.08	1.0000	1.0000
L25	28	MS-450	37.83 - 38.08	1.0000	1.0000
L25	37	CCI-040075	37.83 - 38.08	1.0000	1.0000
L25	38	CCI-040075	37.83 - 38.08	1.0000	1.0000
L25	39	CCI-040075	37.83 - 38.08	1.0000	1.0000
L25	44	CCI-060100	37.83 - 38.08	1.0000	1.0000
L25	45	CCI-060100	37.83 - 38.08	1.0000	1.0000
L25	46	CCI-060100	37.83 - 38.08	1.0000	1.0000
L26	17	HCS 6X12 4AWG(1-5/8)	35.00 - 37.83	1.0000	1.0000
L26	19	7983A(ELLIPTICAL)	35.00 - 37.83	1.0000	1.0000
L26	21	AVA7-50(1-5/8)	35.00 - 37.83	1.0000	1.0000
L26	26	MS-450	35.00 - 37.83	1.0000	1.0000
L26	27	MS-450	35.00 - 37.83	1.0000	1.0000
L26	28	MS-450	35.00 - 37.83	1.0000	1.0000
L26	37	CCI-040075	35.00 - 37.83	1.0000	1.0000
L26	38	CCI-040075	35.00 - 37.83	1.0000	1.0000
L26	39	CCI-040075	35.00 - 37.83	1.0000	1.0000
L26	41	CCI-045100	35.00 - 35.50	1.0000	1.0000
L26	42	CCI-045100	35.00 - 35.50	1.0000	1.0000
L26	43	CCI-045100	35.00 - 35.50	1.0000	1.0000
L26	44	CCI-060100	35.50 - 37.83	1.0000	1.0000
L26	45	CCI-060100	35.50 - 37.83	1.0000	1.0000
L26	46	CCI-060100	35.50 - 37.83	1.0000	1.0000
L27	17	HCS 6X12 4AWG(1-5/8)	34.75 - 35.00	1.0000	1.0000
L27	19	7983A(ELLIPTICAL)	34.75 - 35.00	1.0000	1.0000
L27	21	AVA7-50(1-5/8)	34.75 - 35.00	1.0000	1.0000
L27	23	MS-600	34.75 - 35.00	1.0000	1.0000
L27	24	MS-600	34.75 - 35.00	1.0000	1.0000
L27	25	MS-600	34.75 - 35.00	1.0000	1.0000
L27	34	CCI-045100	34.75 - 35.00	1.0000	1.0000
L27	35	CCI-045100	34.75 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L27	36	CCI-045100	35.00 - 34.75	1.0000	1.0000
L27	41	CCI-045100	35.00 - 34.75	1.0000	1.0000
L27	42	CCI-045100	35.00 - 34.75	1.0000	1.0000
L27	43	CCI-045100	35.00 - 34.75	1.0000	1.0000
L28	17	HCS 6X12 4AWG(1-5/8)	35.00 - 29.75	1.0000	1.0000
L28	19	7983A(ELLIPTICAL)	34.75 - 29.75	1.0000	1.0000
L28	21	AVA7-50(1-5/8)	34.75 - 29.75	1.0000	1.0000
L28	23	MS-600	34.75 - 29.75	1.0000	1.0000
L28	24	MS-600	34.75 - 29.75	1.0000	1.0000
L28	25	MS-600	34.75 - 29.75	1.0000	1.0000
L28	34	CCI-045100	34.75 - 29.75	1.0000	1.0000
L28	35	CCI-045100	34.75 - 29.75	1.0000	1.0000
L28	36	CCI-045100	34.75 - 29.75	1.0000	1.0000
L28	41	CCI-045100	34.75 - 29.75	1.0000	1.0000
L28	42	CCI-045100	34.75 - 29.75	1.0000	1.0000
L28	43	CCI-045100	34.75 - 29.75	1.0000	1.0000
L29	17	HCS 6X12 4AWG(1-5/8)	29.75 - 24.75	1.0000	1.0000
L29	19	7983A(ELLIPTICAL)	29.75 - 24.75	1.0000	1.0000
L29	21	AVA7-50(1-5/8)	29.75 - 24.75	1.0000	1.0000
L29	23	MS-600	29.75 - 24.75	1.0000	1.0000
L29	24	MS-600	29.75 - 24.75	1.0000	1.0000
L29	25	MS-600	29.75 - 24.75	1.0000	1.0000
L29	34	CCI-045100	29.75 - 24.75	1.0000	1.0000
L29	35	CCI-045100	29.75 - 24.75	1.0000	1.0000
L29	36	CCI-045100	29.75 - 24.75	1.0000	1.0000
L29	41	CCI-045100	29.75 - 24.75	1.0000	1.0000
L29	42	CCI-045100	29.75 - 24.75	1.0000	1.0000
L29	43	CCI-045100	29.75 - 24.75	1.0000	1.0000
L30	17	HCS 6X12 4AWG(1-5/8)	24.75 - 19.75	1.0000	1.0000
L30	19	7983A(ELLIPTICAL)	24.75 - 19.75	1.0000	1.0000
L30	21	AVA7-50(1-5/8)	24.75 - 19.75	1.0000	1.0000
L30	23	MS-600	24.75 - 19.75	1.0000	1.0000
L30	24	MS-600	24.75 - 19.75	1.0000	1.0000
L30	25	MS-600	24.75 - 19.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L30	34	CCI-045100	19.75 - 24.75	1.0000	1.0000
L30	35	CCI-045100	19.75 - 24.75	1.0000	1.0000
L30	36	CCI-045100	19.75 - 24.75	1.0000	1.0000
L30	41	CCI-045100	19.75 - 24.75	1.0000	1.0000
L30	42	CCI-045100	19.75 - 24.75	1.0000	1.0000
L30	43	CCI-045100	19.75 - 24.75	1.0000	1.0000
L31	17	HCS 6X12 4AWG(1-5/8)	14.75 - 19.75	1.0000	1.0000
L31	19	7983A(ELLIPTICAL)	14.75 - 19.75	1.0000	1.0000
L31	21	AVA7-50(1-5/8)	14.75 - 19.75	1.0000	1.0000
L31	23	MS-600	14.75 - 19.75	1.0000	1.0000
L31	24	MS-600	14.75 - 19.75	1.0000	1.0000
L31	25	MS-600	14.75 - 19.75	1.0000	1.0000
L31	34	CCI-045100	14.75 - 19.75	1.0000	1.0000
L31	35	CCI-045100	14.75 - 19.75	1.0000	1.0000
L31	36	CCI-045100	14.75 - 19.75	1.0000	1.0000
L31	41	CCI-045100	14.75 - 19.75	1.0000	1.0000
L31	42	CCI-045100	14.75 - 19.75	1.0000	1.0000
L31	43	CCI-045100	14.75 - 19.75	1.0000	1.0000
L32	17	HCS 6X12 4AWG(1-5/8)	12.50 - 14.75	1.0000	1.0000
L32	19	7983A(ELLIPTICAL)	12.50 - 14.75	1.0000	1.0000
L32	21	AVA7-50(1-5/8)	12.50 - 14.75	1.0000	1.0000
L32	23	MS-600	12.50 - 14.75	1.0000	1.0000
L32	24	MS-600	12.50 - 14.75	1.0000	1.0000
L32	25	MS-600	12.50 - 14.75	1.0000	1.0000
L32	34	CCI-045100	12.50 - 14.75	1.0000	1.0000
L32	35	CCI-045100	12.50 - 14.75	1.0000	1.0000
L32	36	CCI-045100	12.50 - 14.75	1.0000	1.0000
L32	41	CCI-045100	12.50 - 14.75	1.0000	1.0000
L32	42	CCI-045100	12.50 - 14.75	1.0000	1.0000
L32	43	CCI-045100	12.50 - 14.75	1.0000	1.0000
L33	17	HCS 6X12 4AWG(1-5/8)	12.25 - 12.50	1.0000	1.0000
L33	19	7983A(ELLIPTICAL)	12.25 - 12.50	1.0000	1.0000
L33	21	AVA7-50(1-5/8)	12.25 - 12.50	1.0000	1.0000
L33	23	MS-600	12.25 - 12.50	1.0000	1.0000
L33	24	MS-600	12.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L33	25	MS-600	12.50 12.25 - 12.50	1.0000	1.0000
L33	34	CCI-045100	12.25 - 12.50	1.0000	1.0000
L33	35	CCI-045100	12.25 - 12.50	1.0000	1.0000
L33	36	CCI-045100	12.25 - 12.50	1.0000	1.0000
L33	41	CCI-045100	12.25 - 12.50	1.0000	1.0000
L33	42	CCI-045100	12.25 - 12.50	1.0000	1.0000
L33	43	CCI-045100	12.25 - 12.50	1.0000	1.0000
L34	17	HCS 6X12 4AWG(1-5/8)	11.00 - 12.25	1.0000	1.0000
L34	19	7983A(ELLIPTICAL)	11.00 - 12.25	1.0000	1.0000
L34	21	AVA7-50(1-5/8)	11.00 - 12.25	1.0000	1.0000
L34	23	MS-600	11.00 - 12.25	1.0000	1.0000
L34	24	MS-600	11.00 - 12.25	1.0000	1.0000
L34	25	MS-600	11.00 - 12.25	1.0000	1.0000
L34	34	CCI-045100	11.00 - 12.25	1.0000	1.0000
L34	35	CCI-045100	11.00 - 12.25	1.0000	1.0000
L34	36	CCI-045100	11.00 - 12.25	1.0000	1.0000
L34	41	CCI-045100	11.00 - 12.25	1.0000	1.0000
L34	42	CCI-045100	11.00 - 12.25	1.0000	1.0000
L34	43	CCI-045100	11.00 - 12.25	1.0000	1.0000
L35	17	HCS 6X12 4AWG(1-5/8)	10.75 - 11.00	1.0000	1.0000
L35	19	7983A(ELLIPTICAL)	10.75 - 11.00	1.0000	1.0000
L35	21	AVA7-50(1-5/8)	10.75 - 11.00	1.0000	1.0000
L35	23	MS-600	10.75 - 11.00	1.0000	1.0000
L35	24	MS-600	10.75 - 11.00	1.0000	1.0000
L35	25	MS-600	10.75 - 11.00	1.0000	1.0000
L35	34	CCI-045100	10.75 - 11.00	1.0000	1.0000
L35	35	CCI-045100	10.75 - 11.00	1.0000	1.0000
L35	36	CCI-045100	10.75 - 11.00	1.0000	1.0000
L35	41	CCI-045100	10.75 - 11.00	1.0000	1.0000
L35	42	CCI-045100	10.75 - 11.00	1.0000	1.0000
L35	43	CCI-045100	10.75 - 11.00	1.0000	1.0000
L36	17	HCS 6X12 4AWG(1-5/8)	5.75 - 10.75	1.0000	1.0000
L36	19	7983A(ELLIPTICAL)	5.75 - 10.75	1.0000	1.0000
L36	21	AVA7-50(1-5/8)	5.75 - 10.75	1.0000	1.0000
L36	23	MS-600	5.75 - 10.75	1.0000	1.0000
L36	24	MS-600	5.75 - 10.75	1.0000	1.0000
L36	25	MS-600	5.75 - 10.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L36	34	CCI-045100	5.75 - 10.75	1.0000	1.0000
L36	35	CCI-045100	5.75 - 10.75	1.0000	1.0000
L36	36	CCI-045100	5.75 - 10.75	1.0000	1.0000
L36	41	CCI-045100	10.50 - 10.75	1.0000	1.0000
L36	42	CCI-045100	5.75 - 10.75	1.0000	1.0000
L36	43	CCI-045100	5.75 - 10.75	1.0000	1.0000
L37	17	HCS 6X12 4AWG(1-5/8)	2.50 - 5.75	1.0000	1.0000
L37	19	7983A(ELLIPTICAL)	2.50 - 5.75	1.0000	1.0000
L37	21	AVA7-50(1-5/8)	2.50 - 5.75	1.0000	1.0000
L37	23	MS-600	2.50 - 5.75	1.0000	1.0000
L37	24	MS-600	2.50 - 5.75	1.0000	1.0000
L37	25	MS-600	2.50 - 5.75	1.0000	1.0000
L37	34	CCI-045100	2.50 - 5.75	1.0000	1.0000
L37	35	CCI-045100	2.50 - 5.75	1.0000	1.0000
L37	36	CCI-045100	2.50 - 5.75	1.0000	1.0000
L37	42	CCI-045100	2.50 - 5.75	1.0000	1.0000
L37	43	CCI-045100	2.50 - 5.75	1.0000	1.0000
L38	17	HCS 6X12 4AWG(1-5/8)	2.25 - 2.50	1.0000	1.0000
L38	19	7983A(ELLIPTICAL)	2.25 - 2.50	1.0000	1.0000
L38	21	AVA7-50(1-5/8)	2.25 - 2.50	1.0000	1.0000
L38	23	MS-600	2.25 - 2.50	1.0000	1.0000
L38	24	MS-600	2.25 - 2.50	1.0000	1.0000
L38	25	MS-600	2.25 - 2.50	1.0000	1.0000
L38	34	CCI-045100	2.25 - 2.50	1.0000	1.0000
L38	35	CCI-045100	2.25 - 2.50	1.0000	1.0000
L38	36	CCI-045100	2.25 - 2.50	1.0000	1.0000
L38	42	CCI-045100	2.25 - 2.50	1.0000	1.0000
L38	43	CCI-045100	2.25 - 2.50	1.0000	1.0000
L39	17	HCS 6X12 4AWG(1-5/8)	0.00 - 2.25	1.0000	1.0000
L39	19	7983A(ELLIPTICAL)	0.00 - 2.25	1.0000	1.0000
L39	21	AVA7-50(1-5/8)	0.00 - 2.25	1.0000	1.0000
L39	23	MS-600	0.00 - 2.25	1.0000	1.0000
L39	24	MS-600	0.00 - 2.25	1.0000	1.0000
L39	25	MS-600	0.00 - 2.25	1.0000	1.0000
L39	34	CCI-045100	0.00 - 2.25	1.0000	1.0000
L39	35	CCI-045100	0.00 - 2.25	1.0000	1.0000
L39	36	CCI-045100	0.00 - 2.25	1.0000	1.0000
L39	42	CCI-045100	0.00 - 2.25	1.0000	1.0000
L39	43	CCI-045100	0.00 - 2.25	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.0000 0.00 2.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.6000 5.0500 5.5000 6.4400	4.0100 4.4500 4.8900 5.8200	0.09 0.15 0.23 0.41
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.0000 0.00 2.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.6000 5.0500 5.5000 6.4400	4.0100 4.4500 4.8900 5.8200	0.09 0.15 0.23 0.41
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.0000 0.00 2.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.6000 5.0500 5.5000 6.4400	4.0100 4.4500 4.8900 5.8200	0.09 0.15 0.23 0.41
APXVTM14-ALU-I20 w/ Mount Pipe	A	From Leg	4.0000 0.00	0.00	117.0000	No Ice 1/2"	6.5799 7.0306	4.9591 5.7544	0.08 0.13

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			2.00			Ice	7.4733	6.4723	0.19
						1" Ice	8.3846	7.9407	0.34
						2" Ice			
APXVTM14-ALU-I20 w/ Mount Pipe	B	From Leg	4.0000 0.00 2.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.5799 7.0306 7.4733 8.3846	4.9591 5.7544 6.4723 7.9407	0.08 0.13 0.19 0.34
APXVTM14-ALU-I20 w/ Mount Pipe	C	From Leg	4.0000 0.00 2.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.5799 7.0306 7.4733 8.3846	4.9591 5.7544 6.4723 7.9407	0.08 0.13 0.19 0.34
(3) ACU-A20-N	A	From Leg	4.0000 0.00 2.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0667 0.1037 0.1481 0.2593	0.1167 0.1620 0.2148 0.3426	0.00 0.00 0.00 0.01
(3) ACU-A20-N	B	From Leg	4.0000 0.00 2.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0667 0.1037 0.1481 0.2593	0.1167 0.1620 0.2148 0.3426	0.00 0.00 0.00 0.01
(3) ACU-A20-N	C	From Leg	4.0000 0.00 2.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0667 0.1037 0.1481 0.2593	0.1167 0.1620 0.2148 0.3426	0.00 0.00 0.00 0.01
TD-RRH8x20-25	A	From Leg	4.0000 0.00 2.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.0455 4.2975 4.5570 5.0981	1.5345 1.7142 1.9008 2.2951	0.07 0.10 0.13 0.20
TD-RRH8x20-25	B	From Leg	4.0000 0.00 2.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.0455 4.2975 4.5570 5.0981	1.5345 1.7142 1.9008 2.2951	0.07 0.10 0.13 0.20
TD-RRH8x20-25	C	From Face	4.0000 0.00 2.00	0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.0455 4.2975 4.5570 5.0981	1.5345 1.7142 1.9008 2.2951	0.07 0.10 0.13 0.20
T-Arm Mount [TA 702-3]	C	None		0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.6400 6.5500 7.4600 9.2800	5.6400 6.5500 7.4600 9.2800	0.34 0.43 0.52 0.70
Stabalizer Bars	C	None		0.00	117.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.6100 3.7000 4.7900 6.9700	2.6100 3.7000 4.7900 6.9700	0.04 0.05 0.06 0.08
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800 EXTERNAL NOTCH FILTER	A	From Leg	2.0000 0.00 0.00	0.00	115.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.6601 0.7627 0.8727 1.1149	0.3211 0.3983 0.4830 0.6744	0.01 0.02 0.02 0.04
800 EXTERNAL NOTCH FILTER	B	From Leg	2.0000 0.00 0.00	0.00	115.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.6601 0.7627 0.8727 1.1149	0.3211 0.3983 0.4830 0.6744	0.01 0.02 0.02 0.04
800 EXTERNAL NOTCH	C	From Leg	2.0000	0.00	115.0000	No Ice	0.6601	0.3211	0.01

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
FILTER			0.00 0.00			1/2" Ice 1" Ice 2" Ice	0.7627 0.8727 1.1149	0.3983 0.4830 0.6744	0.02 0.02 0.04
TME-PCS 1900MHz 4x45W-65MHz	A	From Leg	2.0000 0.00 0.00	0.00	115.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.3218 2.5266 2.7388 3.1855	2.2381 2.4407 2.6507 3.0929	0.06 0.08 0.11 0.17
TME-PCS 1900MHz 4x45W-65MHz	B	From Leg	2.0000 0.00 0.00	0.00	115.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.3218 2.5266 2.7388 3.1855	2.2381 2.4407 2.6507 3.0929	0.06 0.08 0.11 0.17
TME-PCS 1900MHz 4x45W-65MHz	C	From Leg	2.0000 0.00 0.00	0.00	115.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.3218 2.5266 2.7388 3.1855	2.2381 2.4407 2.6507 3.0929	0.06 0.08 0.11 0.17
TME-800MHZ RRH	A	From Leg	2.0000 0.00 0.00	0.00	115.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.1342 2.3195 2.5123 2.9201	1.7730 1.9461 2.1267 2.5100	0.05 0.07 0.10 0.16
TME-800MHZ RRH	B	From Leg	2.0000 0.00 0.00	0.00	115.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.1342 2.3195 2.5123 2.9201	1.7730 1.9461 2.1267 2.5100	0.05 0.07 0.10 0.16
TME-800MHZ RRH	C	From Leg	2.0000 0.00 0.00	0.00	115.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.1342 2.3195 2.5123 2.9201	1.7730 1.9461 2.1267 2.5100	0.05 0.07 0.10 0.16
Side Arm Mount [SO 102-3]	C	None		0.00	115.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.0000 3.4800 3.9600 4.9200	3.0000 3.4800 3.9600 4.9200	0.08 0.11 0.14 0.20
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ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	2.0000 0.00 0.00	0.00	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.3292 6.7751 7.2137 8.1168	5.6424 6.4259 7.1313 8.5907	0.11 0.17 0.23 0.38
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Leg	2.0000 0.00 0.00	0.00	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.3292 6.7751 7.2137 8.1168	5.6424 6.4259 7.1313 8.5907	0.11 0.17 0.23 0.38
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Leg	2.0000 0.00 0.00	0.00	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.3292 6.7751 7.2137 8.1168	5.6424 6.4259 7.1313 8.5907	0.11 0.17 0.23 0.38
KRY 112 144/1	A	From Leg	2.0000 0.00 1.00	0.00	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.3500 0.4259 0.5093 0.6981	0.1750 0.2343 0.3009 0.4565	0.01 0.01 0.02 0.03
KRY 112 144/1	B	From Leg	2.0000 0.00 1.00	0.00	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.3500 0.4259 0.5093 0.6981	0.1750 0.2343 0.3009 0.4565	0.01 0.01 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 ft^2	C_AA_A Side ft^2	Weight K
KRY 112 144/1	B	From Leg	2.0000 0.00 1.00	0.00	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.3500 0.4259 0.5093 0.6981	0.1750 0.2343 0.3009 0.4565	0.01 0.01 0.02 0.03
AIR 32 B2A B66AA w/ Mount Pipe	A	From Leg	2.0000 0.00 0.00	0.00	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.0872 7.5606 8.0206 8.9662	6.3736 7.2305 7.9731 9.5071	0.16 0.23 0.30 0.46
AIR 32 B2A B66AA w/ Mount Pipe	B	From Leg	2.0000 0.00 0.00	0.00	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.0872 7.5606 8.0206 8.9662	6.3736 7.2305 7.9731 9.5071	0.16 0.23 0.30 0.46
AIR 32 B2A B66AA w/ Mount Pipe	C	From Leg	2.0000 0.00 0.00	0.00	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.0872 7.5606 8.0206 8.9662	6.3736 7.2305 7.9731 9.5071	0.16 0.23 0.30 0.46
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	2.0000 0.00 0.00	0.00	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	20.4801 21.2306 21.9900 23.4441	11.0240 12.5496 14.0992 16.4509	0.16 0.30 0.44 0.78
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	2.0000 0.00 0.00	0.00	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	20.4801 21.2306 21.9900 23.4441	11.0240 12.5496 14.0992 16.4509	0.16 0.30 0.44 0.78
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	2.0000 0.00 0.00	0.00	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	20.4801 21.2306 21.9900 23.4441	11.0240 12.5496 14.0992 16.4509	0.16 0.30 0.44 0.78
RADIO 4449 B12/B71	A	From Leg	2.0000 0.00 0.00	0.00	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.6500 1.8104 1.9781 2.3359	1.1625 1.3012 1.4473 1.7618	0.07 0.09 0.11 0.16
RADIO 4449 B12/B71	B	From Leg	2.0000 0.00 0.00	0.00	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.6500 1.8104 1.9781 2.3359	1.1625 1.3012 1.4473 1.7618	0.07 0.09 0.11 0.16
RADIO 4449 B12/B71	C	From Leg	2.0000 0.00 0.00	0.00	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.6500 1.8104 1.9781 2.3359	1.1625 1.3012 1.4473 1.7618	0.07 0.09 0.11 0.16
T-Arm Mount [TA 602-3]	C	None		0.00	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	11.5900 15.4400 19.2900 26.9900	11.5900 15.4400 19.2900 26.9900	0.77 0.99 1.21 1.64
Miscellaneous [NA 507-1]	C	None		0.00	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.8000 6.7000 8.6000 12.4000	4.8000 6.7000 8.6000 12.4000	0.25 0.29 0.34 0.44
(2) 2.375" OD x 4' Mount Pipe	A	From Leg	2.0000 0.00 0.00	0.00	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.8657 1.1106 1.3648 1.9008	0.8657 1.1106 1.3648 1.9008	0.02 0.03 0.04 0.06

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) 2.375" OD x 4' Mount Pipe	B	From Leg	2.0000 0.00 0.00	0.00	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.8657 1.1106 1.3648 1.9008	0.8657 1.1106 1.3648 1.9008	0.02 0.03 0.04 0.06
(2) 2.375" OD x 4' Mount Pipe	C	From Leg	2.0000 0.00 0.00	0.00	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.8657 1.1106 1.3648 1.9008	0.8657 1.1106 1.3648 1.9008	0.02 0.03 0.04 0.06
7'x2" Antenna Mount Pipe	A	None		0.00	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.6625 2.3906 2.8252 3.7057	1.6625 2.3906 2.8252 3.7057	0.03 0.04 0.06 0.10
7'x2" Antenna Mount Pipe	B	None		0.00	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.6625 2.3906 2.8252 3.7057	1.6625 2.3906 2.8252 3.7057	0.03 0.04 0.06 0.10
7'x2" Antenna Mount Pipe	C	None		0.00	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.6625 2.3906 2.8252 3.7057	1.6625 2.3906 2.8252 3.7057	0.03 0.04 0.06 0.10
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(2) HBXX-6516DS-A2M w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.00	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.6672 7.5501 8.4493 9.8792	5.5365 6.8440 8.1652 10.1139	0.07 0.13 0.19 0.35
(2) HBXX-6516DS-A2M w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.00	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.6672 7.5501 8.4493 9.8792	5.5365 6.8440 8.1652 10.1139	0.07 0.13 0.19 0.35
(2) HBXX-6516DS-A2M w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.00	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.6672 7.5501 8.4493 9.8792	5.5365 6.8440 8.1652 10.1139	0.07 0.13 0.19 0.35
800 10735V01 w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.00	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.8727 9.4550 10.0100 11.1272	5.4888 6.7103 7.6880 9.5633	0.06 0.12 0.19 0.36
800 10735V01 w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.00	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.8727 9.4550 10.0100 11.1272	5.4888 6.7103 7.6880 9.5633	0.06 0.12 0.19 0.36
800 10735V01 w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.00	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.8727 9.4550 10.0100 11.1272	5.4888 6.7103 7.6880 9.5633	0.06 0.12 0.19 0.36
(2) DB844G65ZAXY w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.00	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.5782 4.9555 5.3404 6.1369	4.8023 5.4160 6.0401 7.3370	0.03 0.08 0.13 0.26
(2) DB844G65ZAXY w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.00	100.0000	No Ice 1/2" Ice 1" Ice	4.5782 4.9555 5.3404 6.1369	4.8023 5.4160 6.0401 7.3370	0.03 0.08 0.13 0.26

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice			
(2) DB844G65ZAXY w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.00	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.5782 4.9555 5.3404 6.1369	4.8023 5.4160 6.0401 7.3370	0.03 0.08 0.13 0.26
(2) FD9R6004/2C-3L	A	From Leg	4.0000 0.00 1.00	0.00	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.3142 0.3862 0.4656 0.6468	0.0762 0.1189 0.1685 0.2940	0.00 0.01 0.01 0.02
(2) FD9R6004/2C-3L	B	From Leg	4.0000 0.00 1.00	0.00	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.3142 0.3862 0.4656 0.6468	0.0762 0.1189 0.1685 0.2940	0.00 0.01 0.01 0.02
(2) FD9R6004/2C-3L	C	From Leg	4.0000 0.00 1.00	0.00	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.3142 0.3862 0.4656 0.6468	0.0762 0.1189 0.1685 0.2940	0.00 0.01 0.01 0.02
B4 RRH2X60-4R	A	From Leg	4.0000 0.00 1.00	0.00	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.3554 3.6120 3.8757 4.4240	2.0048 2.2369 2.4759 2.9750	0.06 0.08 0.11 0.18
B4 RRH2X60-4R	B	From Leg	4.0000 0.00 1.00	0.00	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.3554 3.6120 3.8757 4.4240	2.0048 2.2369 2.4759 2.9750	0.06 0.08 0.11 0.18
B4 RRH2X60-4R	C	From Leg	4.0000 0.00 1.00	0.00	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.3554 3.6120 3.8757 4.4240	2.0048 2.2369 2.4759 2.9750	0.06 0.08 0.11 0.18
B13 RRH 4X30	A	From Leg	4.0000 0.00 1.00	0.00	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.0552 2.2405 2.4333 2.8411	1.3201 1.4754 1.6376 1.9966	0.06 0.07 0.09 0.14
B13 RRH 4X30	B	From Leg	4.0000 0.00 1.00	0.00	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.0552 2.2405 2.4333 2.8411	1.3201 1.4754 1.6376 1.9966	0.06 0.07 0.09 0.14
B13 RRH 4X30	C	From Leg	4.0000 0.00 1.00	0.00	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.0552 2.2405 2.4333 2.8411	1.3201 1.4754 1.6376 1.9966	0.06 0.07 0.09 0.14
B25 RRH4X30	A	From Leg	4.0000 0.00 1.00	0.00	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.2000 2.3926 2.5926 3.0148	1.7417 1.9204 2.1065 2.5009	0.06 0.08 0.10 0.16
B25 RRH4X30	B	From Leg	4.0000 0.00 1.00	0.00	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.2000 2.3926 2.5926 3.0148	1.7417 1.9204 2.1065 2.5009	0.06 0.08 0.10 0.16
B25 RRH4X30	C	From Leg	4.0000 0.00 1.00	0.00	100.0000	No Ice 1/2" Ice 1" Ice	2.2000 2.3926 2.5926 3.0148	1.7417 1.9204 2.1065 2.5009	0.06 0.08 0.10 0.16

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice			
RRFDC-3315-PF-48	A	From Leg	4.0000 0.00 1.00	0.00	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.3636 3.5972 3.8383 4.3426	2.1921 2.3950 2.6056 3.0491	0.03 0.06 0.09 0.17
RRFDC-3315-PF-48	C	From Leg	4.0000 0.00 1.00	0.00	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.3636 3.5972 3.8383 4.3426	2.1921 2.3950 2.6056 3.0491	0.03 0.06 0.09 0.17
GPS_A	C	From Leg	4.0000 0.00 4.00	0.00	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.2550 0.3205 0.3934 0.5614	0.2550 0.3205 0.3934 0.5614	0.00 0.00 0.01 0.02
Platform Mount [LP 715-1]	C	None		0.00	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	44.2100 53.9700 63.7300 83.2500	44.2100 53.9700 63.7300 83.2500	1.77 2.32 2.87 3.97
***									
Pipe Mount [PM 601-3]	C	None		0.00	93.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.3900 5.4800 6.5700 8.7500	4.3900 5.4800 6.5700 8.7500	0.20 0.24 0.28 0.36
***									
7770.00 w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	89.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.7460 6.1791 6.6067 7.4880	4.2543 5.0137 5.7109 7.1553	0.06 0.10 0.16 0.29
7770.00 w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	89.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.7460 6.1791 6.6067 7.4880	4.2543 5.0137 5.7109 7.1553	0.06 0.10 0.16 0.29
7770.00 w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	89.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.7460 6.1791 6.6067 7.4880	4.2543 5.0137 5.7109 7.1553	0.06 0.10 0.16 0.29
RRUS 11	A	From Leg	4.0000 0.00 0.00	0.00	89.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7908 2.9984 3.2134 3.6656	1.1923 1.3395 1.4957 1.8390	0.05 0.07 0.10 0.15
RRUS 11	B	From Leg	4.0000 0.00 0.00	0.00	89.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7908 2.9984 3.2134 3.6656	1.1923 1.3395 1.4957 1.8390	0.05 0.07 0.10 0.15
RRUS 11	C	From Leg	4.0000 0.00 0.00	0.00	89.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7908 2.9984 3.2134 3.6656	1.1923 1.3395 1.4957 1.8390	0.05 0.07 0.10 0.15
DC6-48-60-18-8F	A	From Leg	4.0000 0.00 0.00	0.00	89.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.2117 1.8924 2.1051 2.5703	1.2117 1.8924 2.1051 2.5703	0.03 0.05 0.08 0.14
QS66512-2 w/ Mount Pipe	A	From Leg	4.0000 0.00	0.00	89.0000	No Ice 1/2"	2.6000 9.2903	5.0000 9.6573	0.14 0.21

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	9.9098	10.6203	0.30
						1" Ice	11.1763	12.6104	0.49
						2" Ice			
QS66512-2 w/ Mount Pipe	B	From Leg	4.0000	0.00	89.0000	No Ice	2.6000	5.0000	0.14
			0.00			1/2"	9.2903	9.6573	0.21
			0.00			Ice	9.9098	10.6203	0.30
						1" Ice	11.1763	12.6104	0.49
						2" Ice			
OPA-65R-LCUU-H6 w/ Mount Pipe	A	From Leg	4.0000	0.00	89.0000	No Ice	9.8953	7.1792	0.10
			0.00			1/2"	10.4700	8.3621	0.18
			0.00			Ice	11.0098	9.2588	0.26
						1" Ice	12.1119	11.0860	0.46
						2" Ice			
OPA-65R-LCUU-H6 w/ Mount Pipe	B	From Leg	4.0000	0.00	89.0000	No Ice	9.8953	7.1792	0.10
			0.00			1/2"	10.4700	8.3621	0.18
			0.00			Ice	11.0098	9.2588	0.26
						1" Ice	12.1119	11.0860	0.46
						2" Ice			
TPA-65R-LCUUUU-H8 w/ Mount Pipe	C	From Leg	4.0000	0.00	89.0000	No Ice	13.5353	10.9597	0.11
			0.00			1/2"	14.2380	12.4861	0.22
			0.00			Ice	14.9495	14.0367	0.33
						1" Ice	16.3081	16.3910	0.59
						2" Ice			
OPA-65R-LCUU-H8 w/ Mount Pipe	C	From Leg	4.0000	0.00	89.0000	No Ice	12.9838	9.3187	0.12
			0.00			1/2"	13.6685	10.7901	0.21
			0.00			Ice	14.3572	12.2416	0.32
						1" Ice	15.6789	14.4988	0.56
						2" Ice			
RRUS 32 B2	A	From Leg	4.0000	0.00	89.0000	No Ice	2.7427	1.6681	0.05
			0.00			1/2"	2.9647	1.8552	0.07
			0.00			Ice	3.1941	2.0493	0.10
						1" Ice	3.6753	2.4585	0.16
						2" Ice			
RRUS 32 B2	B	From Leg	4.0000	0.00	89.0000	No Ice	2.7427	1.6681	0.05
			0.00			1/2"	2.9647	1.8552	0.07
			0.00			Ice	3.1941	2.0493	0.10
						1" Ice	3.6753	2.4585	0.16
						2" Ice			
RRUS 32 B2	C	From Leg	4.0000	0.00	89.0000	No Ice	2.7427	1.6681	0.05
			0.00			1/2"	2.9647	1.8552	0.07
			0.00			Ice	3.1941	2.0493	0.10
						1" Ice	3.6753	2.4585	0.16
						2" Ice			
RRUS 32 B30	A	From Leg	4.0000	0.00	89.0000	No Ice	2.7427	1.6681	0.05
			0.00			1/2"	2.9647	1.8552	0.07
			0.00			Ice	3.1941	2.0493	0.10
						1" Ice	3.6753	2.4585	0.16
						2" Ice			
RRUS 32 B30	B	From Leg	4.0000	0.00	89.0000	No Ice	2.7427	1.6681	0.05
			0.00			1/2"	2.9647	1.8552	0.07
			0.00			Ice	3.1941	2.0493	0.10
						1" Ice	3.6753	2.4585	0.16
						2" Ice			
RRUS 32 B30	C	From Leg	4.0000	0.00	89.0000	No Ice	2.7427	1.6681	0.05
			0.00			1/2"	2.9647	1.8552	0.07
			0.00			Ice	3.1941	2.0493	0.10
						1" Ice	3.6753	2.4585	0.16
						2" Ice			
(2) TPX-070821	A	From Leg	4.0000	0.00	89.0000	No Ice	0.4688	0.1009	0.01
			0.00			1/2"	0.5585	0.1471	0.01
			0.00			Ice	0.6556	0.2020	0.02
						1" Ice	0.8721	0.3340	0.03
						2" Ice			
(2) TPX-070821	B	From Leg	4.0000	0.00	89.0000	No Ice	0.4688	0.1009	0.01
			0.00			1/2"	0.5585	0.1471	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	0.6556	0.2020	0.02
						1" Ice	0.8721	0.3340	0.03
						2" Ice			
(2) TPX-070821	C	From Leg	4.0000	0.00	89.0000	No Ice	0.4688	0.1009	0.01
			0.00			1/2"	0.5585	0.1471	0.01
			0.00			Ice	0.6556	0.2020	0.02
						1" Ice	0.8721	0.3340	0.03
						2" Ice			
DC6-48-60-18-8F	A	From Leg	4.0000	0.00	89.0000	No Ice	1.2117	1.2117	0.03
			0.00			1/2"	1.8924	1.8924	0.05
			0.00			Ice	2.1051	2.1051	0.08
						1" Ice	2.5703	2.5703	0.14
						2" Ice			
RRUS 4426 B66	A	From Leg	4.0000	0.00	89.0000	No Ice	1.6444	0.7252	0.05
			0.00			1/2"	1.8044	0.8421	0.06
			0.00			Ice	1.9719	0.9685	0.08
						1" Ice	2.3292	1.2437	0.11
						2" Ice			
RRUS 4426 B66	B	From Leg	4.0000	0.00	89.0000	No Ice	1.6444	0.7252	0.05
			0.00			1/2"	1.8044	0.8421	0.06
			0.00			Ice	1.9719	0.9685	0.08
						1" Ice	2.3292	1.2437	0.11
						2" Ice			
RRUS 4426 B66	C	From Leg	4.0000	0.00	89.0000	No Ice	1.6444	0.7252	0.05
			0.00			1/2"	1.8044	0.8421	0.06
			0.00			Ice	1.9719	0.9685	0.08
						1" Ice	2.3292	1.2437	0.11
						2" Ice			
(2) LGP21401	A	From Leg	4.0000	0.00	89.0000	No Ice	1.1040	0.3471	0.01
			0.00			1/2"	1.2388	0.4422	0.02
			0.00			Ice	1.3810	0.5444	0.03
						1" Ice	1.6877	0.7696	0.05
						2" Ice			
(2) LGP21401	B	From Leg	4.0000	0.00	89.0000	No Ice	1.1040	0.3471	0.01
			0.00			1/2"	1.2388	0.4422	0.02
			0.00			Ice	1.3810	0.5444	0.03
						1" Ice	1.6877	0.7696	0.05
						2" Ice			
(2) LGP21401	C	From Leg	4.0000	0.00	89.0000	No Ice	1.1040	0.3471	0.01
			0.00			1/2"	1.2388	0.4422	0.02
			0.00			Ice	1.3810	0.5444	0.03
						1" Ice	1.6877	0.7696	0.05
						2" Ice			
(2) 7020.00	A	From Leg	4.0000	0.00	89.0000	No Ice	0.1021	0.1750	0.00
			0.00			1/2"	0.1469	0.2393	0.01
			0.00			Ice	0.1991	0.3109	0.01
						1" Ice	0.3258	0.4765	0.02
						2" Ice			
(2) 7020.00	B	From Leg	4.0000	0.00	89.0000	No Ice	0.1021	0.1750	0.00
			0.00			1/2"	0.1469	0.2393	0.01
			0.00			Ice	0.1991	0.3109	0.01
						1" Ice	0.3258	0.4765	0.02
						2" Ice			
(2) 7020.00	C	From Leg	4.0000	0.00	89.0000	No Ice	0.1021	0.1750	0.00
			0.00			1/2"	0.1469	0.2393	0.01
			0.00			Ice	0.1991	0.3109	0.01
						1" Ice	0.3258	0.4765	0.02
						2" Ice			
Platform Mount [LP 715-1]	C	None		0.00	89.0000	No Ice	44.2100	44.2100	1.77
						1/2"	53.9700	53.9700	2.32
						Ice	63.7300	63.7300	2.87
						1" Ice	83.2500	83.2500	3.97
						2" Ice			
Miscellaneous [NA 509-3]	C	None		0.00	89.0000	No Ice	11.8400	11.8400	0.28
						1/2"	16.9600	16.9600	0.30

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
						Ice	22.0800	22.0800	0.32
						1" Ice	32.3200	32.3200	0.36
						2" Ice			
***									
800 10504 w/ Mount Pipe	A	From Leg	1.0000 0.00 0.00	0.00	84.0000	No Ice	3.5887	3.1779	0.04
						1/2" Ice	4.0069	3.9053	0.07
						1" Ice	4.4217	4.5808	0.11
						2" Ice	5.2585	5.9816	0.21
800 10504 w/ Mount Pipe	B	From Leg	1.0000 0.00 0.00	0.00	84.0000	No Ice	3.5887	3.1779	0.04
						1/2" Ice	4.0069	3.9053	0.07
						1" Ice	4.4217	4.5808	0.11
						2" Ice	5.2585	5.9816	0.21
800 10504 w/ Mount Pipe	C	From Leg	1.0000 0.00 0.00	0.00	84.0000	No Ice	3.5887	3.1779	0.04
						1/2" Ice	4.0069	3.9053	0.07
						1" Ice	4.4217	4.5808	0.11
						2" Ice	5.2585	5.9816	0.21
Pipe Mount [PM 601-3]	C	None		0.00	84.0000	No Ice	4.3900	4.3900	0.20
						1/2" Ice	5.4800	5.4800	0.24
						1" Ice	6.5700	6.5700	0.28
						2" Ice	8.7500	8.7500	0.36

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
VHLP2-11	A	Paraboloid w/o Radome	From Leg	2.0000 0.00 1.00	48.00		93.0000	2.1750	No Ice	3.7200	0.03
									1/2" Ice	4.0100	0.05
									1" Ice	4.3000	0.07
									2" Ice	4.8800	0.11
VHLP1-23	A	Paraboloid w/o Radome	From Leg	2.0000 0.00 2.00	68.00		93.0000	1.2750	No Ice	1.2800	0.01
									1/2" Ice	1.4500	0.02
									1" Ice	1.6200	0.03
									2" Ice	1.9700	0.04
VHLP800-11	C	Paraboloid w/o Radome	From Leg	2.0000 0.00 1.00	-2.00		93.0000	2.8000	No Ice	6.1600	0.02
									1/2" Ice	6.5300	0.06
									1" Ice	6.9000	0.09
									2" Ice	7.6400	0.17
VHLP1-23	A	Paraboloid w/o Radome	From Leg	2.0000 0.00 -1.00	68.00		93.0000	1.2750	No Ice	1.2800	0.01
									1/2" Ice	1.4500	0.02
									1" Ice	1.6200	0.03
									2" Ice	1.9700	0.04
**											

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 117.0000-112.0000	114.4685	1.302	43.256	6.410	A	0.000	6.410	6.410	100.00	0.000	0.000
					B	0.000	6.410		100.00	0.000	0.000
					C	0.000	6.410		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
L2 112.0000-110.0000	110.9952	1.294	42.976	2.700	A	0.000	2.700	2.700	100.00	0.000	0.000
					B	0.000	2.700		100.00	0.000	0.000
					C	0.000	2.700		100.00	0.000	0.000
L3 110.0000-105.0000	107.4715	1.285	42.685	7.092	A	0.000	7.092	7.092	100.00	0.000	0.000
					B	0.000	7.092		100.00	0.000	0.000
					C	0.000	7.092		100.00	3.320	0.000
L4 105.0000-100.0000	102.4733	1.272	42.259	7.580	A	0.000	7.580	7.580	100.00	0.000	0.000
					B	0.000	7.580		100.00	0.000	0.000
					C	0.000	7.580		100.00	3.320	0.000
L5 100.0000-95.0000	97.4751	1.259	41.817	8.056	A	0.000	8.056	8.056	100.00	0.000	0.000
					B	0.000	8.056		100.00	0.000	0.000
					C	0.000	8.056		100.00	3.320	0.000
L6 95.0000-90.0000	92.4765	1.245	41.356	8.540	A	0.000	8.540	8.540	100.00	0.000	0.000
					B	0.000	8.540		100.00	0.000	0.000
					C	0.000	8.540		100.00	4.008	0.000
L7 90.0000-85.0000	87.4777	1.23	40.875	9.024	A	0.000	9.024	9.024	100.00	0.248	0.000
					B	0.000	9.024		100.00	0.502	0.000
					C	0.000	9.024		100.00	4.968	0.000
L8 85.0000-81.8800	83.4317	1.218	40.469	5.876	A	0.000	5.876	5.876	100.00	2.340	0.000
					B	0.000	5.876		100.00	2.340	0.000
					C	0.000	5.876		100.00	6.405	0.000
L9 81.8800-81.6300	81.7549	1.213	40.297	0.478	A	0.000	0.478	0.478	100.00	0.188	0.000
					B	0.000	0.478		100.00	0.188	0.000
					C	0.000	0.478		100.00	0.562	0.000
L10 81.6300-76.6300	79.1096	1.205	40.019	9.819	A	0.000	9.819	9.819	100.00	4.063	0.000
					B	0.000	9.819		100.00	4.063	0.000
					C	0.000	9.819		100.00	11.544	0.000
L11 76.6300-76.0800	76.3548	1.196	39.721	1.110	A	0.000	1.110	1.110	100.00	0.779	0.000
					B	0.000	1.110		100.00	0.779	0.000
					C	0.000	1.110		100.00	1.602	0.000
L12 76.0800-75.8300	75.9550	1.194	39.677	0.506	A	0.000	0.506	0.506	100.00	0.354	0.000
					B	0.000	0.506		100.00	0.354	0.000
					C	0.000	0.506		100.00	0.728	0.000
L13 75.8300-71.0000	73.3969	1.186	39.392	10.005	A	0.000	10.005	10.005	100.00	6.843	0.000
					B	0.000	10.005		100.00	6.843	0.000
					C	0.000	10.005		100.00	14.069	0.000
L14 71.0000-70.7500	70.8750	1.177	39.103	0.529	A	0.000	0.529	0.529	100.00	0.354	0.000
					B	0.000	0.529		100.00	0.354	0.000
					C	0.000	0.529		100.00	0.728	0.000
L15 70.7500-68.0800	69.4097	1.172	38.932	5.721	A	0.000	5.721	5.721	100.00	7.643	0.000
					B	0.000	5.721		100.00	5.700	0.000
					C	0.000	5.721		100.00	9.695	0.000
L16 68.0800-67.8300	67.9550	1.167	38.758	0.542	A	0.000	0.542	0.542	100.00	0.792	0.000
					B	0.000	0.542		100.00	0.604	0.000
					C	0.000	0.542		100.00	0.978	0.000
L17 67.8300-63.5000	65.6515	1.158	38.478	9.590	A	0.000	9.590	9.590	100.00	11.064	0.000
					B	0.000	9.590		100.00	9.189	0.000
					C	0.000	9.590		100.00	15.668	0.000
L18 63.5000-63.2500	63.3750	1.15	38.193	0.563	A	0.000	0.563	0.563	100.00	0.625	0.000
					B	0.000	0.563		100.00	0.625	0.000
					C	0.000	0.563		100.00	0.999	0.000
L19 63.2500-58.2500	60.7327	1.139	37.852	11.526	A	0.000	11.526	11.526	100.00	12.500	0.000
					B	0.000	11.526		100.00	12.500	0.000
					C	0.000	11.526		100.00	19.981	0.000
L20 58.2500-53.2500	55.7334	1.119	37.174	12.013	A	0.000	12.013	12.013	100.00	12.500	0.000
					B	0.000	12.013		100.00	12.500	0.000
					C	0.000	12.013		100.00	19.981	0.000
L21 53.2500-47.4200	50.3133	1.095	36.382	14.619	A	0.000	14.619	14.619	100.00	14.360	0.000
					B	0.000	14.619		100.00	14.360	0.000
					C	0.000	14.619		100.00	23.083	0.000
L22 47.4200-46.4200	46.9194	1.079	35.851	2.531	A	0.000	2.531	2.531	100.00	2.417	0.000
					B	0.000	2.531		100.00	2.417	0.000
					C	0.000	2.531		100.00	3.913	0.000
L23 46.4200-41.4200	43.9044	1.064	35.353	12.954	A	0.000	12.954	12.954	100.00	12.083	0.000
					B	0.000	12.954		100.00	12.083	0.000
					C	0.000	12.954		100.00	19.564	0.000
L24 41.4200-38.0800	39.7432	1.042	34.620	8.928	A	0.000	8.928	8.928	100.00	8.072	0.000
					B	0.000	8.928		100.00	8.072	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
					C	0.000	8.928		100.00	13.069	0.000
L25 38.0800-37.8300	37.9550	1.032	34.286	0.677	A	0.000	0.677	0.677	100.00	0.604	0.000
					B	0.000	0.677		100.00	0.604	0.000
					C	0.000	0.677		100.00	0.978	0.000
L26 37.8300-35.0000	36.4103	1.023	33.987	7.755	A	0.000	7.755	7.755	100.00	6.714	0.000
					B	0.000	7.755		100.00	6.714	0.000
					C	0.000	7.755		100.00	10.948	0.000
L27 35.0000-34.7500	34.8750	1.014	33.680	0.692	A	0.000	0.692	0.692	100.00	0.625	0.000
					B	0.000	0.692		100.00	0.625	0.000
					C	0.000	0.692		100.00	0.999	0.000
L28 34.7500-29.7500	32.2356	0.997	33.127	14.098	A	0.000	14.098	14.098	100.00	12.500	0.000
					B	0.000	14.098		100.00	12.500	0.000
					C	0.000	14.098		100.00	19.981	0.000
L29 29.7500-24.7500	27.2361	0.962	31.972	14.592	A	0.000	14.592	14.592	100.00	12.500	0.000
					B	0.000	14.592		100.00	12.500	0.000
					C	0.000	14.592		100.00	19.981	0.000
L30 24.7500-19.7500	22.2366	0.922	30.636	15.084	A	0.000	15.084	15.084	100.00	12.500	0.000
					B	0.000	15.084		100.00	12.500	0.000
					C	0.000	15.084		100.00	19.981	0.000
L31 19.7500-14.7500	17.2370	0.874	29.036	15.578	A	0.000	15.578	15.578	100.00	12.500	0.000
					B	0.000	15.578		100.00	12.500	0.000
					C	0.000	15.578		100.00	19.981	0.000
L32 14.7500-12.5000	13.6224	0.85	28.236	7.170	A	0.000	7.170	7.170	100.00	5.625	0.000
					B	0.000	7.170		100.00	5.625	0.000
					C	0.000	7.170		100.00	8.991	0.000
L33 12.5000-12.2500	12.3750	0.85	28.236	0.803	A	0.000	0.803	0.803	100.00	0.625	0.000
					B	0.000	0.803		100.00	0.625	0.000
					C	0.000	0.803		100.00	0.999	0.000
L34 12.2500-11.0000	11.6242	0.85	28.236	4.033	A	0.000	4.033	4.033	100.00	3.125	0.000
					B	0.000	4.033		100.00	3.125	0.000
					C	0.000	4.033		100.00	4.995	0.000
L35 11.0000-10.7500	10.8750	0.85	28.236	0.809	A	0.000	0.809	0.809	100.00	0.625	0.000
					B	0.000	0.809		100.00	0.625	0.000
					C	0.000	0.809		100.00	0.999	0.000
L36 10.7500-5.7500	8.2377	0.85	28.236	16.436	A	0.000	16.436	16.436	100.00	8.938	0.000
					B	0.000	16.436		100.00	12.500	0.000
					C	0.000	16.436		100.00	19.981	0.000
L37 5.7500-2.5000	4.1199	0.85	28.236	10.946	A	0.000	10.946	10.946	100.00	5.688	0.000
					B	0.000	10.946		100.00	8.125	0.000
					C	0.000	10.946		100.00	12.988	0.000
L38 2.5000-2.2500	2.3750	0.85	28.236	0.850	A	0.000	0.850	0.850	100.00	0.438	0.000
					B	0.000	0.850		100.00	0.625	0.000
					C	0.000	0.850		100.00	0.999	0.000
L39 2.2500-0.0000	1.1226	0.85	28.236	7.709	A	0.000	7.709	7.709	100.00	3.938	0.000
					B	0.000	7.709		100.00	5.625	0.000
					C	0.000	7.709		100.00	8.991	0.000

Tower Pressure - With Ice

G_H = 1.100

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G 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 117.0000-112.0000	114.4685	1.302	7.510	1.4439	7.613	A	0.000	7.613	7.613	100.00	0.000	0.000
						B	0.000	7.613		100.00	0.000	0.000
						C	0.000	7.613		100.00	0.000	0.000
L2 112.0000-110.0000	110.9952	1.294	7.461	1.4394	3.180	A	0.000	3.180	3.180	100.00	0.000	0.000
						B	0.000	3.180		100.00	0.000	0.000
						C	0.000	3.180		100.00	0.000	0.000
L3 110.0000-105.0000	107.4715	1.285	7.411	1.4348	8.288	A	0.000	8.288	8.288	100.00	0.000	0.000
						B	0.000	8.288		100.00	0.000	0.000
						C	0.000	8.288		100.00	5.943	0.000
L4 105.0000-100.0000	102.4733	1.272	7.337	1.4280	8.770	A	0.000	8.770	8.770	100.00	0.000	0.000
						B	0.000	8.770		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
						C	0.000	8.770		100.00	5.935	0.000
L5 100.0000-95.0000	97.4751	1.259	7.260	1.4208	9.240	A	0.000	9.240	9.240	100.00	0.000	0.000
						B	0.000	9.240		100.00	0.000	0.000
						C	0.000	9.240		100.00	5.926	0.000
L6 95.0000-90.0000	92.4765	1.245	7.180	1.4134	9.718	A	0.000	9.718	9.718	100.00	0.000	0.000
						B	0.000	9.718		100.00	0.000	0.000
						C	0.000	9.718		100.00	7.836	0.000
L7 90.0000-85.0000	87.4777	1.23	7.096	1.4056	10.195	A	0.000	10.195	10.195	100.00	0.340	0.000
						B	0.000	10.195		100.00	0.690	0.000
						C	0.000	10.195		100.00	9.786	0.000
L8 85.0000-81.8800	83.4317	1.218	7.026	1.3989	6.604	A	0.000	6.604	6.604	100.00	3.213	0.000
						B	0.000	6.604		100.00	3.208	0.000
						C	0.000	6.604		100.00	11.213	0.000
L9 81.8800-81.6300	81.7549	1.213	6.996	1.3961	0.536	A	0.000	0.536	0.536	100.00	0.257	0.000
						B	0.000	0.536		100.00	0.257	0.000
						C	0.000	0.536		100.00	0.986	0.000
L10 81.6300-76.6300	79.1096	1.205	6.948	1.3915	10.978	A	0.000	10.978	10.978	100.00	5.545	0.000
						B	0.000	10.978		100.00	5.538	0.000
						C	0.000	10.978		100.00	20.108	0.000
L11 76.6300-76.0800	76.3548	1.196	6.896	1.3866	1.237	A	0.000	1.237	1.237	100.00	1.037	0.000
						B	0.000	1.237		100.00	1.037	0.000
						C	0.000	1.237		100.00	2.637	0.000
L12 76.0800-75.8300	75.9550	1.194	6.888	1.3858	0.563	A	0.000	0.563	0.563	100.00	0.471	0.000
						B	0.000	0.563		100.00	0.471	0.000
						C	0.000	0.563		100.00	1.199	0.000
L13 75.8300-71.0000	73.3969	1.186	6.839	1.3811	11.117	A	0.000	11.117	11.117	100.00	9.102	0.000
						B	0.000	11.117		100.00	9.096	0.000
						C	0.000	11.117		100.00	23.133	0.000
L14 71.0000-70.7500	70.8750	1.177	6.789	1.3763	0.586	A	0.000	0.586	0.586	100.00	0.471	0.000
						B	0.000	0.586		100.00	0.471	0.000
						C	0.000	0.586		100.00	1.196	0.000
L15 70.7500-68.0800	69.4097	1.172	6.759	1.3734	6.333	A	0.000	6.333	6.333	100.00	10.077	0.000
						B	0.000	6.333		100.00	7.423	0.000
						C	0.000	6.333		100.00	15.167	0.000
L16 68.0800-67.8300	67.9550	1.167	6.729	1.3705	0.600	A	0.000	0.600	0.600	100.00	1.045	0.000
						B	0.000	0.600		100.00	0.789	0.000
						C	0.000	0.600		100.00	1.513	0.000
L17 67.8300-63.5000	65.6515	1.158	6.680	1.3658	10.575	A	0.000	10.575	10.575	100.00	14.661	0.000
						B	0.000	10.575		100.00	12.103	0.000
						C	0.000	10.575		100.00	24.637	0.000
L18 63.5000-63.2500	63.3750	1.15	6.631	1.3610	0.620	A	0.000	0.620	0.620	100.00	0.829	0.000
						B	0.000	0.620		100.00	0.829	0.000
						C	0.000	0.620		100.00	1.552	0.000
L19 63.2500-58.2500	60.7327	1.139	6.572	1.3552	12.655	A	0.000	12.655	12.655	100.00	16.566	0.000
						B	0.000	12.655		100.00	16.566	0.000
						C	0.000	12.655		100.00	30.999	0.000
L20 58.2500-53.2500	55.7334	1.119	6.454	1.3436	13.133	A	0.000	13.133	13.133	100.00	16.531	0.000
						B	0.000	13.133		100.00	16.531	0.000
						C	0.000	13.133		100.00	30.921	0.000
L21 53.2500-47.4200	50.3133	1.095	6.316	1.3299	15.911	A	0.000	15.911	15.911	100.00	19.012	0.000
						B	0.000	15.911		100.00	19.012	0.000
						C	0.000	15.911		100.00	35.731	0.000
L22 47.4200-46.4200	46.9194	1.079	6.224	1.3207	2.753	A	0.000	2.753	2.753	100.00	3.215	0.000
						B	0.000	2.753		100.00	3.215	0.000
						C	0.000	2.753		100.00	6.082	0.000
L23 46.4200-41.4200	43.9044	1.064	6.138	1.3119	14.048	A	0.000	14.048	14.048	100.00	16.019	0.000
						B	0.000	14.048		100.00	16.019	0.000
						C	0.000	14.048		100.00	30.290	0.000
L24 41.4200-38.0800	39.7432	1.042	6.010	1.2989	9.651	A	0.000	9.651	9.651	100.00	10.675	0.000
						B	0.000	9.651		100.00	10.675	0.000
						C	0.000	9.651		100.00	20.175	0.000
L25 38.0800-37.8300	37.9550	1.032	5.952	1.2930	0.731	A	0.000	0.731	0.731	100.00	0.798	0.000
						B	0.000	0.731		100.00	0.798	0.000
						C	0.000	0.731		100.00	1.508	0.000
L26 37.8300-35.0000	36.4103	1.023	5.901	1.2876	8.363	A	0.000	8.363	8.363	100.00	8.901	0.000
						B	0.000	8.363		100.00	8.901	0.000
						C	0.000	8.363		100.00	16.926	0.000
L27 35.0000-	34.8750	1.014	5.847	1.2821	0.745	A	0.000	0.745	0.745	100.00	0.817	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
34.7500						B	0.000	0.745		100.00	0.817	0.000
						C	0.000	0.745		100.00	1.525	0.000
L28 34.7500-29.7500	32.2356	0.997	5.751	1.2720	15.158	A	0.000	15.158	15.158	100.00	16.316	0.000
						B	0.000	15.158		100.00	16.316	0.000
						C	0.000	15.158		100.00	30.437	0.000
L29 29.7500-24.7500	27.2361	0.962	5.551	1.2508	15.634	A	0.000	15.634	15.634	100.00	16.252	0.000
						B	0.000	15.634		100.00	16.252	0.000
						C	0.000	15.634		100.00	30.294	0.000
L30 24.7500-19.7500	22.2366	0.922	5.319	1.2256	16.106	A	0.000	16.106	16.106	100.00	16.177	0.000
						B	0.000	16.106		100.00	16.177	0.000
						C	0.000	16.106		100.00	30.124	0.000
L31 19.7500-14.7500	17.2370	0.874	5.041	1.1948	16.574	A	0.000	16.574	16.574	100.00	16.084	0.000
						B	0.000	16.574		100.00	16.084	0.000
						C	0.000	16.574		100.00	29.916	0.000
L32 14.7500-12.5000	13.6224	0.85	4.902	1.1670	7.608	A	0.000	7.608	7.608	100.00	7.200	0.000
						B	0.000	7.608		100.00	7.200	0.000
						C	0.000	7.608		100.00	13.378	0.000
L33 12.5000-12.2500	12.3750	0.85	4.902	1.1559	0.851	A	0.000	0.851	0.851	100.00	0.798	0.000
						B	0.000	0.851		100.00	0.798	0.000
						C	0.000	0.851		100.00	1.483	0.000
L34 12.2500-11.0000	11.6242	0.85	4.902	1.1487	4.272	A	0.000	4.272	4.272	100.00	3.987	0.000
						B	0.000	4.272		100.00	3.987	0.000
						C	0.000	4.272		100.00	7.401	0.000
L35 11.0000-10.7500	10.8750	0.85	4.902	1.1410	0.856	A	0.000	0.856	0.856	100.00	0.796	0.000
						B	0.000	0.856		100.00	0.796	0.000
						C	0.000	0.856		100.00	1.478	0.000
L36 10.7500-5.7500	8.2377	0.85	4.902	1.1098	17.361	A	0.000	17.361	17.361	100.00	11.213	0.000
						B	0.000	17.361		100.00	15.829	0.000
						C	0.000	17.361		100.00	29.342	0.000
L37 5.7500-2.5000	4.1199	0.85	4.902	1.0355	11.507	A	0.000	11.507	11.507	100.00	7.034	0.000
						B	0.000	11.507		100.00	10.144	0.000
						C	0.000	11.507		100.00	18.747	0.000
L38 2.5000-2.2500	2.3750	0.85	4.902	0.9800	0.891	A	0.000	0.891	0.891	100.00	0.535	0.000
						B	0.000	0.891		100.00	0.772	0.000
						C	0.000	0.891		100.00	1.423	0.000
L39 2.2500-0.0000	1.1226	0.85	4.902	0.9092	8.050	A	0.000	8.050	8.050	100.00	4.756	0.000
						B	0.000	8.050		100.00	6.852	0.000
						C	0.000	8.050		100.00	12.595	0.000

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 117.0000-112.0000	114.4685	1.302	10.185	6.410	A	0.000	6.410	6.410	100.00	0.000	0.000
					B	0.000	6.410		100.00	0.000	0.000
					C	0.000	6.410		100.00	0.000	0.000
L2 112.0000-110.0000	110.9952	1.294	10.119	2.700	A	0.000	2.700	2.700	100.00	0.000	0.000
					B	0.000	2.700		100.00	0.000	0.000
					C	0.000	2.700		100.00	0.000	0.000
L3 110.0000-105.0000	107.4715	1.285	10.051	7.092	A	0.000	7.092	7.092	100.00	0.000	0.000
					B	0.000	7.092		100.00	0.000	0.000
					C	0.000	7.092		100.00	3.320	0.000
L4 105.0000-100.0000	102.4733	1.272	9.950	7.580	A	0.000	7.580	7.580	100.00	0.000	0.000
					B	0.000	7.580		100.00	0.000	0.000
					C	0.000	7.580		100.00	3.320	0.000
L5 100.0000-95.0000	97.4751	1.259	9.846	8.056	A	0.000	8.056	8.056	100.00	0.000	0.000
					B	0.000	8.056		100.00	0.000	0.000
					C	0.000	8.056		100.00	3.320	0.000
L6 95.0000-90.0000	92.4765	1.245	9.738	8.540	A	0.000	8.540	8.540	100.00	0.000	0.000
					B	0.000	8.540		100.00	0.000	0.000
					C	0.000	8.540		100.00	4.008	0.000
L7 90.0000-	87.4777	1.23	9.624	9.024	A	0.000	9.024	9.024	100.00	0.248	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
85.0000					B	0.000	9.024		100.00	0.502	0.000
					C	0.000	9.024		100.00	4.968	0.000
L8 85.0000-81.8800	83.4317	1.218	9.529	5.876	A	0.000	5.876	5.876	100.00	2.340	0.000
					B	0.000	5.876		100.00	2.340	0.000
					C	0.000	5.876		100.00	6.405	0.000
L9 81.8800-81.6300	81.7549	1.213	9.488	0.478	A	0.000	0.478	0.478	100.00	0.188	0.000
					B	0.000	0.478		100.00	0.188	0.000
					C	0.000	0.478		100.00	0.562	0.000
L10 81.6300-76.6300	79.1096	1.205	9.423	9.819	A	0.000	9.819	9.819	100.00	4.063	0.000
					B	0.000	9.819		100.00	4.063	0.000
					C	0.000	9.819		100.00	11.544	0.000
L11 76.6300-76.0800	76.3548	1.196	9.353	1.110	A	0.000	1.110	1.110	100.00	0.779	0.000
					B	0.000	1.110		100.00	0.779	0.000
					C	0.000	1.110		100.00	1.602	0.000
L12 76.0800-75.8300	75.9550	1.194	9.342	0.506	A	0.000	0.506	0.506	100.00	0.354	0.000
					B	0.000	0.506		100.00	0.354	0.000
					C	0.000	0.506		100.00	0.728	0.000
L13 75.8300-71.0000	73.3969	1.186	9.275	10.005	A	0.000	10.005	10.005	100.00	6.843	0.000
					B	0.000	10.005		100.00	6.843	0.000
					C	0.000	10.005		100.00	14.069	0.000
L14 71.0000-70.7500	70.8750	1.177	9.207	0.529	A	0.000	0.529	0.529	100.00	0.354	0.000
					B	0.000	0.529		100.00	0.354	0.000
					C	0.000	0.529		100.00	0.728	0.000
L15 70.7500-68.0800	69.4097	1.172	9.167	5.721	A	0.000	5.721	5.721	100.00	7.643	0.000
					B	0.000	5.721		100.00	5.700	0.000
					C	0.000	5.721		100.00	9.695	0.000
L16 68.0800-67.8300	67.9550	1.167	9.126	0.542	A	0.000	0.542	0.542	100.00	0.792	0.000
					B	0.000	0.542		100.00	0.604	0.000
					C	0.000	0.542		100.00	0.978	0.000
L17 67.8300-63.5000	65.6515	1.158	9.060	9.590	A	0.000	9.590	9.590	100.00	11.064	0.000
					B	0.000	9.590		100.00	9.189	0.000
					C	0.000	9.590		100.00	15.668	0.000
L18 63.5000-63.2500	63.3750	1.15	8.993	0.563	A	0.000	0.563	0.563	100.00	0.625	0.000
					B	0.000	0.563		100.00	0.625	0.000
					C	0.000	0.563		100.00	0.999	0.000
L19 63.2500-58.2500	60.7327	1.139	8.913	11.526	A	0.000	11.526	11.526	100.00	12.500	0.000
					B	0.000	11.526		100.00	12.500	0.000
					C	0.000	11.526		100.00	19.981	0.000
L20 58.2500-53.2500	55.7334	1.119	8.753	12.013	A	0.000	12.013	12.013	100.00	12.500	0.000
					B	0.000	12.013		100.00	12.500	0.000
					C	0.000	12.013		100.00	19.981	0.000
L21 53.2500-47.4200	50.3133	1.095	8.566	14.619	A	0.000	14.619	14.619	100.00	14.360	0.000
					B	0.000	14.619		100.00	14.360	0.000
					C	0.000	14.619		100.00	23.083	0.000
L22 47.4200-46.4200	46.9194	1.079	8.441	2.531	A	0.000	2.531	2.531	100.00	2.417	0.000
					B	0.000	2.531		100.00	2.417	0.000
					C	0.000	2.531		100.00	3.913	0.000
L23 46.4200-41.4200	43.9044	1.064	8.324	12.954	A	0.000	12.954	12.954	100.00	12.083	0.000
					B	0.000	12.954		100.00	12.083	0.000
					C	0.000	12.954		100.00	19.564	0.000
L24 41.4200-38.0800	39.7432	1.042	8.151	8.928	A	0.000	8.928	8.928	100.00	8.072	0.000
					B	0.000	8.928		100.00	8.072	0.000
					C	0.000	8.928		100.00	13.069	0.000
L25 38.0800-37.8300	37.9550	1.032	8.073	0.677	A	0.000	0.677	0.677	100.00	0.604	0.000
					B	0.000	0.677		100.00	0.604	0.000
					C	0.000	0.677		100.00	0.978	0.000
L26 37.8300-35.0000	36.4103	1.023	8.003	7.755	A	0.000	7.755	7.755	100.00	6.714	0.000
					B	0.000	7.755		100.00	6.714	0.000
					C	0.000	7.755		100.00	10.948	0.000
L27 35.0000-34.7500	34.8750	1.014	7.930	0.692	A	0.000	0.692	0.692	100.00	0.625	0.000
					B	0.000	0.692		100.00	0.625	0.000
					C	0.000	0.692		100.00	0.999	0.000
L28 34.7500-29.7500	32.2356	0.997	7.800	14.098	A	0.000	14.098	14.098	100.00	12.500	0.000
					B	0.000	14.098		100.00	12.500	0.000
					C	0.000	14.098		100.00	19.981	0.000
L29 29.7500-24.7500	27.2361	0.962	7.528	14.592	A	0.000	14.592	14.592	100.00	12.500	0.000
					B	0.000	14.592		100.00	12.500	0.000
					C	0.000	14.592		100.00	19.981	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
L30 24.7500-19.7500	22.2366	0.922	7.213	15.084	A	0.000	15.084	15.084	100.00	12.500	0.000
					B	0.000	15.084		100.00	12.500	0.000
					C	0.000	15.084		100.00	19.981	0.000
L31 19.7500-14.7500	17.2370	0.874	6.837	15.578	A	0.000	15.578	15.578	100.00	12.500	0.000
					B	0.000	15.578		100.00	12.500	0.000
					C	0.000	15.578		100.00	19.981	0.000
L32 14.7500-12.5000	13.6224	0.85	6.648	7.170	A	0.000	7.170	7.170	100.00	5.625	0.000
					B	0.000	7.170		100.00	5.625	0.000
					C	0.000	7.170		100.00	8.991	0.000
L33 12.5000-12.2500	12.3750	0.85	6.648	0.803	A	0.000	0.803	0.803	100.00	0.625	0.000
					B	0.000	0.803		100.00	0.625	0.000
					C	0.000	0.803		100.00	0.999	0.000
L34 12.2500-11.0000	11.6242	0.85	6.648	4.033	A	0.000	4.033	4.033	100.00	3.125	0.000
					B	0.000	4.033		100.00	3.125	0.000
					C	0.000	4.033		100.00	4.995	0.000
L35 11.0000-10.7500	10.8750	0.85	6.648	0.809	A	0.000	0.809	0.809	100.00	0.625	0.000
					B	0.000	0.809		100.00	0.625	0.000
					C	0.000	0.809		100.00	0.999	0.000
L36 10.7500-5.7500	8.2377	0.85	6.648	16.436	A	0.000	16.436	16.436	100.00	8.938	0.000
					B	0.000	16.436		100.00	12.500	0.000
					C	0.000	16.436		100.00	19.981	0.000
L37 5.7500-2.5000	4.1199	0.85	6.648	10.946	A	0.000	10.946	10.946	100.00	5.688	0.000
					B	0.000	10.946		100.00	8.125	0.000
					C	0.000	10.946		100.00	12.988	0.000
L38 2.5000-2.2500	2.3750	0.85	6.648	0.850	A	0.000	0.850	0.850	100.00	0.438	0.000
					B	0.000	0.850		100.00	0.625	0.000
					C	0.000	0.850		100.00	0.999	0.000
L39 2.2500-0.0000	1.1226	0.85	6.648	7.709	A	0.000	7.709	7.709	100.00	3.938	0.000
					B	0.000	7.709		100.00	5.625	0.000
					C	0.000	7.709		100.00	8.991	0.000

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp

Comb. No.	Description
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	117 - 112	Pole	Max Tension	48	0.00	-0.00	0.00
			Max. Compression	26	-4.63	-0.70	-0.41
			Max. Mx	8	-1.69	-18.55	-0.53
			Max. My	14	-1.66	-0.65	-19.68
			Max. Vy	20	-3.37	17.88	0.19
			Max. Vx	14	3.56	-0.65	-19.68
			Max. Torque	16			0.40
L2	112 - 110	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-4.78	-0.70	-0.41
			Max. Mx	8	-1.76	-25.43	-0.64
			Max. My	14	-1.73	-0.75	-26.92
			Max. Vy	20	-3.50	24.76	0.29
			Max. Vx	14	3.68	-0.75	-26.92
			Max. Torque	16			0.40
L3	110 - 105	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-12.42	-0.82	-0.50
			Max. Mx	8	-4.86	-68.86	-0.96
			Max. My	14	-4.83	-1.06	-71.27
			Max. Vy	20	-8.84	68.08	0.53
			Max. Vx	14	9.02	-1.06	-71.27
			Max. Torque	16			0.43
L4	105 - 100	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-12.99	-0.82	-0.60
			Max. Mx	8	-5.22	-113.89	-1.28
			Max. My	14	-5.19	-1.31	-117.27
			Max. Vy	20	-9.18	113.11	0.75
			Max. Vx	14	9.37	-1.31	-117.27
			Max. Torque	16			0.43
L5	100 - 95	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-22.62	-0.21	-0.44
			Max. Mx	8	-8.91	-197.40	-1.40
			Max. My	14	-8.88	-1.30	-201.98
			Max. Vy	20	-16.08	196.94	0.92
			Max. Vx	14	16.29	-1.30	-201.98
			Max. Torque	16			0.43
L6	95 - 90	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-24.02	0.11	-0.27
			Max. Mx	8	-9.74	-281.56	-0.56
			Max. My	14	-9.72	-0.05	-286.71
			Max. Vy	20	-17.25	281.24	0.08
			Max. Vx	14	17.34	-0.05	-286.71
			Max. Torque	15			-1.47
L7	90 - 85	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	-34.23	0.68	0.33
			Max. Mx	8	-14.40	-394.07	1.25
			Max. My	2	-14.39	-2.90	399.10
			Max. Vy	20	-23.95	393.71	-1.13
			Max. Vx	14	23.92	1.94	-398.91
			Max. Torque	15			-2.69
L8	85 - 81.88	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-35.74	0.67	0.20
			Max. Mx	8	-15.25	-470.22	2.17
			Max. My	14	-15.23	3.34	-475.21
			Max. Vy	20	-24.80	470.04	-2.20
			Max. Vx	14	24.78	3.34	-475.21
			Max. Torque	15			-2.69
L9	81.88 - 81.63	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-35.81	0.66	0.19
			Max. Mx	8	-15.32	-476.40	2.24
			Max. My	14	-15.31	3.46	-481.41
			Max. Vy	20	-24.82	476.24	-2.29
			Max. Vx	14	24.79	3.46	-481.41
			Max. Torque	15			-2.69
L10	81.63 - 76.63	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-37.26	0.64	-0.07
			Max. Mx	20	-16.36	601.49	-4.03
			Max. My	14	-16.36	5.70	-606.63
			Max. Vy	20	-25.31	601.49	-4.03
			Max. Vx	14	25.28	5.70	-606.63
			Max. Torque	15			-2.69
L11	76.63 - 76.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-37.43	0.64	-0.10
			Max. Mx	20	-16.49	615.41	-4.22
			Max. My	14	-16.49	5.94	-620.55
			Max. Vy	20	-25.36	615.41	-4.22
			Max. Vx	14	25.34	5.94	-620.55
			Max. Torque	15			-2.69
L12	76.08 - 75.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-37.52	0.64	-0.12
			Max. Mx	20	-16.56	621.75	-4.31
			Max. My	14	-16.56	6.06	-626.89
			Max. Vy	20	-25.38	621.75	-4.31
			Max. Vx	14	25.36	6.06	-626.89
			Max. Torque	15			-2.69
L13	75.83 - 71	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.22	0.62	-0.38
			Max. Mx	20	-17.74	745.57	-5.99
			Max. My	14	-17.74	8.21	-750.78
			Max. Vy	20	-25.91	745.57	-5.99
			Max. Vx	14	25.92	8.21	-750.78
			Max. Torque	15			-2.69
L14	71 - 70.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.33	0.62	-0.40
			Max. Mx	20	-17.84	752.05	-6.08
			Max. My	14	-17.83	8.32	-757.27
			Max. Vy	20	-25.93	752.05	-6.08
			Max. Vx	14	25.94	8.32	-757.27
			Max. Torque	15			-2.69
L15	70.75 - 68.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-40.50	0.63	-0.54
			Max. Mx	20	-18.62	821.71	-7.01
			Max. My	14	-18.61	9.52	-827.02
			Max. Vy	20	-26.27	821.71	-7.01
			Max. Vx	14	26.29	9.52	-827.02
			Max. Torque	15			-2.69
L16	68.08 - 67.83	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	-40.61	0.63	-0.56
			Max. Mx	20	-18.70	828.28	-7.10
			Max. My	14	-18.70	9.63	-833.60
			Max. Vy	20	-26.30	828.28	-7.10
			Max. Vx	14	26.31	9.63	-833.60
			Max. Torque	15			-2.68
L17	67.83 - 63.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.44	0.65	-0.82
			Max. Mx	20	-19.92	943.29	-8.62
			Max. My	14	-19.91	11.56	-948.75
			Max. Vy	20	-26.84	943.29	-8.62
			Max. Vx	14	26.85	11.56	-948.75
			Max. Torque	15			-2.68
L18	63.5 - 63.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.56	0.65	-0.84
			Max. Mx	20	-20.01	950.00	-8.71
			Max. My	14	-20.01	11.67	-955.47
			Max. Vy	20	-26.87	950.00	-8.71
			Max. Vx	14	26.87	11.67	-955.47
			Max. Torque	15			-2.68
L19	63.25 - 58.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44.99	0.65	-1.17
			Max. Mx	20	-21.68	1085.98	-10.46
			Max. My	14	-21.68	13.90	-1091.47
			Max. Vy	20	-27.54	1085.98	-10.46
			Max. Vx	14	27.50	13.90	-1091.47
			Max. Torque	15			-2.68
L20	58.25 - 53.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.45	0.65	-1.52
			Max. Mx	20	-23.39	1225.28	-12.22
			Max. My	14	-23.39	16.12	-1230.59
			Max. Vy	20	-28.20	1225.28	-12.22
			Max. Vx	14	28.13	16.12	-1230.59
			Max. Torque	15			-2.68
L21	53.25 - 47.42	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-48.07	0.65	-1.61
			Max. Mx	20	-23.83	1260.62	-12.66
			Max. My	14	-23.83	16.68	-1265.86
			Max. Vy	20	-28.37	1260.62	-12.66
			Max. Vx	14	28.28	16.68	-1265.86
			Max. Torque	15			-2.68
L22	47.42 - 46.42	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.44	0.64	-2.02
			Max. Mx	20	-27.10	1421.19	-14.62
			Max. My	14	-27.10	19.16	-1426.03
			Max. Vy	20	-29.19	1421.19	-14.62
			Max. Vx	14	29.08	19.16	-1426.03
			Max. Torque	15			-2.68
L23	46.42 - 41.42	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-55.01	0.64	-2.38
			Max. Mx	20	-28.95	1568.66	-16.39
			Max. My	14	-28.96	21.39	-1573.04
			Max. Vy	20	-29.82	1568.66	-16.39
			Max. Vx	14	29.70	21.39	-1573.04
			Max. Torque	15			-2.68
L24	41.42 - 38.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56.74	0.64	-2.63
			Max. Mx	20	-30.21	1668.91	-17.57
			Max. My	14	-30.22	22.87	-1672.96
			Max. Vy	20	-30.24	1668.91	-17.57
			Max. Vx	14	30.11	22.87	-1672.96
			Max. Torque	15			-2.68
L25	38.08 -	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
	37.83						
			Max. Compression	26	-56.87	0.64	-2.65
			Max. Mx	20	-30.32	1676.47	-17.66
			Max. My	14	-30.32	22.98	-1680.49
			Max. Vy	20	-30.27	1676.47	-17.66
			Max. Vx	14	30.13	22.98	-1680.49
			Max. Torque	15			-2.68
L26	37.83 - 35	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.29	0.64	-2.87
			Max. Mx	20	-31.33	1762.58	-18.66
			Max. My	14	-31.34	24.23	-1766.28
			Max. Vy	20	-30.61	1762.58	-18.66
			Max. Vx	14	30.48	24.23	-1766.28
			Max. Torque	15			-2.68
L27	35 - 34.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.43	0.64	-2.89
			Max. Mx	20	-31.45	1770.23	-18.75
			Max. My	14	-31.45	24.35	-1773.91
			Max. Vy	20	-30.64	1770.23	-18.75
			Max. Vx	14	30.49	24.35	-1773.91
			Max. Torque	15			-2.68
L28	34.75 - 29.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-61.15	0.64	-3.28
			Max. Mx	20	-33.46	1924.86	-20.51
			Max. My	14	-33.46	26.55	-1927.98
			Max. Vy	20	-31.24	1924.86	-20.51
			Max. Vx	14	31.11	26.55	-1927.98
			Max. Torque	15			-2.68
L29	29.75 - 24.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-63.90	0.64	-3.67
			Max. Mx	20	-35.50	2082.45	-22.28
			Max. My	14	-35.50	28.75	-2085.03
			Max. Vy	20	-31.83	2082.45	-22.28
			Max. Vx	14	31.69	28.75	-2085.03
			Max. Torque	15			-2.68
L30	24.75 - 19.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.66	0.64	-4.07
			Max. Mx	20	-37.58	2242.90	-24.04
			Max. My	14	-37.58	30.95	-2244.93
			Max. Vy	20	-32.38	2242.90	-24.04
			Max. Vx	14	32.25	30.95	-2244.93
			Max. Torque	15			-2.68
L31	19.75 - 14.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-69.43	0.64	-4.48
			Max. Mx	20	-39.69	2406.05	-25.80
			Max. My	14	-39.69	33.13	-2407.54
			Max. Vy	20	-32.91	2406.05	-25.80
			Max. Vx	14	32.77	33.13	-2407.54
			Max. Torque	15			-2.68
L32	14.75 - 12.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70.68	0.64	-4.67
			Max. Mx	20	-40.65	2480.32	-26.59
			Max. My	14	-40.65	34.11	-2481.56
			Max. Vy	20	-33.14	2480.32	-26.59
			Max. Vx	14	33.00	34.11	-2481.56
			Max. Torque	15			-2.68
L33	12.5 - 12.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70.83	0.64	-4.69
			Max. Mx	20	-40.77	2488.60	-26.68
			Max. My	14	-40.77	34.22	-2489.82
			Max. Vy	20	-33.16	2488.60	-26.68
			Max. Vx	14	33.02	34.22	-2489.82
			Max. Torque	15			-2.68
L34	12.25 - 11	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71.53	0.64	-4.79

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	-41.30	2530.12	-27.12
			Max. My	14	-41.30	34.76	-2531.20
			Max. Vy	20	-33.30	2530.12	-27.12
			Max. Vx	14	33.16	34.76	-2531.20
			Max. Torque	15			-2.68
L35	11 - 10.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71.69	0.64	-4.81
			Max. Mx	20	-41.44	2538.44	-27.21
			Max. My	14	-41.44	34.87	-2539.49
			Max. Vy	20	-33.31	2538.44	-27.21
			Max. Vx	14	33.17	34.87	-2539.49
			Max. Torque	15			-2.68
L36	10.75 - 5.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.81	0.58	-5.23
			Max. Mx	20	-43.95	2706.32	-28.96
			Max. My	14	-43.95	37.04	-2706.84
			Max. Vy	20	-33.86	2706.32	-28.96
			Max. Vx	14	33.73	37.04	-2706.84
			Max. Torque	15			-2.68
L37	5.75 - 2.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-76.83	0.54	-5.49
			Max. Mx	20	-45.60	2816.91	-30.10
			Max. My	14	-45.60	38.44	-2817.08
			Max. Vy	20	-34.22	2816.91	-30.10
			Max. Vx	14	34.09	38.44	-2817.08
			Max. Torque	15			-2.68
L38	2.5 - 2.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-76.99	0.54	-5.51
			Max. Mx	20	-45.74	2825.47	-30.19
			Max. My	14	-45.74	38.55	-2825.61
			Max. Vy	20	-34.24	2825.47	-30.19
			Max. Vx	14	34.10	38.55	-2825.61
			Max. Torque	15			-2.68
L39	2.25 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-78.39	0.52	-5.68
			Max. Mx	20	-46.93	2902.77	-30.98
			Max. My	14	-46.93	39.51	-2902.68
			Max. Vy	20	-34.50	2902.77	-30.98
			Max. Vx	14	34.36	39.51	-2902.68
			Max. Torque	15			-2.68

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	78.39	-0.00	0.00
	Max. H_x	21	35.20	34.49	-0.32
	Max. H_z	3	35.20	-0.46	33.98
	Max. M_x	2	2880.07	-0.46	33.98
	Max. M_z	8	2886.42	-34.26	0.30
	Max. Torsion	3	1.45	-0.46	33.98
	Min. Vert	21	35.20	34.49	-0.32
	Min. H_x	9	35.20	-34.26	0.30
	Min. H_z	15	35.20	0.43	-34.35
	Min. M_x	14	-2902.68	0.43	-34.35
	Min. M_z	20	-2902.77	34.48	-0.32
	Min. Torsion	15	-2.68	0.43	-34.35

Tower Mast Reaction Summary

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 Only	39.11	-0.00	-0.00	1.56	-0.19	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	46.94	0.46	-33.98	-2880.07	-42.60	-1.45
0.9 Dead+1.0 Wind 0 deg - No Ice	35.20	0.46	-33.98	-2857.07	-42.21	-1.45
1.2 Dead+1.0 Wind 30 deg - No Ice	46.94	18.31	-31.31	-2599.85	-1521.70	-1.00
0.9 Dead+1.0 Wind 30 deg - No Ice	35.20	18.31	-31.31	-2579.44	-1509.45	-1.00
1.2 Dead+1.0 Wind 60 deg - No Ice	46.94	32.56	-18.90	-1533.44	-2639.63	-0.52
0.9 Dead+1.0 Wind 60 deg - No Ice	35.20	32.56	-18.90	-1521.68	-2618.55	-0.51
1.2 Dead+1.0 Wind 90 deg - No Ice	46.94	34.26	-0.30	-25.42	-2886.42	-0.52
0.9 Dead+1.0 Wind 90 deg - No Ice	35.20	34.26	-0.30	-25.71	-2862.91	-0.52
1.2 Dead+1.0 Wind 120 deg - No Ice	46.94	29.50	16.57	1405.13	-2502.22	0.43
0.9 Dead+1.0 Wind 120 deg - No Ice	35.20	29.50	16.57	1393.17	-2481.79	0.45
1.2 Dead+1.0 Wind 150 deg - No Ice	46.94	16.90	29.66	2504.72	-1422.12	1.58
0.9 Dead+1.0 Wind 150 deg - No Ice	35.20	16.90	29.66	2483.86	-1410.50	1.59
1.2 Dead+1.0 Wind 180 deg - No Ice	46.94	-0.43	34.35	2902.68	39.51	2.67
0.9 Dead+1.0 Wind 180 deg - No Ice	35.20	-0.43	34.35	2878.57	39.29	2.68
1.2 Dead+1.0 Wind 210 deg - No Ice	46.94	-18.38	31.43	2609.65	1523.86	2.10
0.9 Dead+1.0 Wind 210 deg - No Ice	35.20	-18.38	31.43	2588.22	1511.74	2.11
1.2 Dead+1.0 Wind 240 deg - No Ice	46.94	-32.49	18.88	1539.37	2639.70	0.76
0.9 Dead+1.0 Wind 240 deg - No Ice	35.20	-32.49	18.88	1526.61	2618.74	0.75
1.2 Dead+1.0 Wind 270 deg - No Ice	46.94	-34.48	0.32	30.98	2902.77	0.39
0.9 Dead+1.0 Wind 270 deg - No Ice	35.20	-34.49	0.32	30.28	2879.31	0.38
1.2 Dead+1.0 Wind 300 deg - No Ice	46.94	-29.63	-16.69	-1404.96	2499.85	-0.17
0.9 Dead+1.0 Wind 300 deg - No Ice	35.20	-29.63	-16.69	-1393.95	2479.58	-0.18
1.2 Dead+1.0 Wind 330 deg - No Ice	46.94	-16.88	-29.43	-2477.98	1419.03	-1.30
0.9 Dead+1.0 Wind 330 deg - No Ice	35.20	-16.88	-29.43	-2458.24	1407.54	-1.31
1.2 Dead+1.0 Ice+1.0 Temp	78.39	0.00	-0.00	5.68	0.52	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	78.39	0.08	-8.43	-777.14	-7.19	-0.26
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	78.39	4.52	-7.77	-699.36	-409.34	-0.20
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	78.39	8.14	-4.72	-410.43	-716.54	-0.11
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	78.39	8.47	-0.05	1.43	-782.04	-0.24
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	78.39	7.31	4.14	390.43	-678.14	-0.04
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	78.39	4.19	7.34	684.78	-386.50	0.23
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	78.39	-0.08	8.49	791.78	8.40	0.53
1.2 Dead+1.0 Wind 210	78.39	-4.54	7.80	712.41	411.56	0.45

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
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	78.39	-8.13	4.72	422.93	718.17	0.17
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	78.39	-8.50	0.06	11.27	785.71	0.21
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	78.39	-7.34	-4.16	-378.84	679.41	0.10
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	78.39	-4.20	-7.30	-669.17	388.04	-0.17
Dead+Wind 0 deg - Service	39.11	0.11	-8.00	-674.03	-10.13	-0.34
Dead+Wind 30 deg - Service	39.11	4.31	-7.37	-608.41	-356.92	-0.23
Dead+Wind 60 deg - Service	39.11	7.67	-4.45	-358.40	-619.05	-0.12
Dead+Wind 90 deg - Service	39.11	8.06	-0.07	-4.82	-676.70	-0.13
Dead+Wind 120 deg - Service	39.11	6.95	3.90	330.54	-586.74	0.10
Dead+Wind 150 deg - Service	39.11	3.98	6.98	588.33	-333.54	0.38
Dead+Wind 180 deg - Service	39.11	-0.10	8.09	681.60	9.12	0.64
Dead+Wind 210 deg - Service	39.11	-4.33	7.40	613.00	357.15	0.51
Dead+Wind 240 deg - Service	39.11	-7.65	4.44	362.07	618.78	0.18
Dead+Wind 270 deg - Service	39.11	-8.12	0.08	8.40	680.27	0.09
Dead+Wind 300 deg - Service	39.11	-6.98	-3.93	-328.22	585.90	-0.05
Dead+Wind 330 deg - Service	39.11	-3.98	-6.93	-579.77	332.52	-0.31

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	-39.11	0.00	0.00	39.11	0.00	0.000%
2	0.46	-46.94	-33.98	-0.46	46.94	33.98	0.002%
3	0.46	-35.20	-33.98	-0.46	35.20	33.98	0.001%
4	18.31	-46.94	-31.31	-18.31	46.94	31.31	0.000%
5	18.31	-35.20	-31.31	-18.31	35.20	31.31	0.000%
6	32.56	-46.94	-18.90	-32.56	46.94	18.90	0.000%
7	32.56	-35.20	-18.90	-32.56	35.20	18.90	0.000%
8	34.26	-46.94	-0.30	-34.26	46.94	0.30	0.001%
9	34.26	-35.20	-0.30	-34.26	35.20	0.30	0.001%
10	29.50	-46.94	16.57	-29.50	46.94	-16.57	0.000%
11	29.50	-35.20	16.57	-29.50	35.20	-16.57	0.000%
12	16.90	-46.94	29.66	-16.90	46.94	-29.66	0.000%
13	16.90	-35.20	29.66	-16.90	35.20	-29.66	0.000%
14	-0.43	-46.94	34.35	0.43	46.94	-34.35	0.000%
15	-0.43	-35.20	34.35	0.43	35.20	-34.35	0.000%
16	-18.38	-46.94	31.43	18.38	46.94	-31.43	0.000%
17	-18.38	-35.20	31.43	18.38	35.20	-31.43	0.000%
18	-32.49	-46.94	18.88	32.49	46.94	-18.88	0.000%
19	-32.49	-35.20	18.88	32.49	35.20	-18.88	0.000%
20	-34.49	-46.94	0.32	34.48	46.94	-0.32	0.002%
21	-34.49	-35.20	0.32	34.49	35.20	-0.32	0.001%
22	-29.63	-46.94	-16.69	29.63	46.94	16.69	0.000%
23	-29.63	-35.20	-16.69	29.63	35.20	16.69	0.000%
24	-16.88	-46.94	-29.43	16.88	46.94	29.43	0.000%
25	-16.88	-35.20	-29.43	16.88	35.20	29.43	0.000%
26	0.00	-78.39	0.00	-0.00	78.39	0.00	0.001%
27	0.08	-78.39	-8.43	-0.08	78.39	8.43	0.000%
28	4.52	-78.39	-7.77	-4.52	78.39	7.77	0.000%
29	8.14	-78.39	-4.72	-8.14	78.39	4.72	0.000%
30	8.47	-78.39	-0.05	-8.47	78.39	0.05	0.000%
31	7.31	-78.39	4.14	-7.31	78.39	-4.14	0.000%
32	4.19	-78.39	7.34	-4.19	78.39	-7.34	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
33	-0.08	-78.39	8.49	0.08	78.39	-8.49	0.000%
34	-4.54	-78.39	7.80	4.54	78.39	-7.80	0.000%
35	-8.13	-78.39	4.72	8.13	78.39	-4.72	0.000%
36	-8.50	-78.39	0.06	8.50	78.39	-0.06	0.000%
37	-7.34	-78.39	-4.16	7.34	78.39	4.16	0.000%
38	-4.20	-78.39	-7.30	4.20	78.39	7.30	0.000%
39	0.11	-39.11	-8.00	-0.11	39.11	8.00	0.001%
40	4.31	-39.11	-7.37	-4.31	39.11	7.37	0.001%
41	7.67	-39.11	-4.45	-7.67	39.11	4.45	0.001%
42	8.07	-39.11	-0.07	-8.06	39.11	0.07	0.004%
43	6.95	-39.11	3.90	-6.95	39.11	-3.90	0.001%
44	3.98	-39.11	6.98	-3.98	39.11	-6.98	0.001%
45	-0.10	-39.11	8.09	0.10	39.11	-8.09	0.001%
46	-4.33	-39.11	7.40	4.33	39.11	-7.40	0.000%
47	-7.65	-39.11	4.44	7.65	39.11	-4.44	0.001%
48	-8.12	-39.11	0.08	8.12	39.11	-0.08	0.004%
49	-6.98	-39.11	-3.93	6.98	39.11	3.93	0.001%
50	-3.98	-39.11	-6.93	3.98	39.11	6.93	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	14	0.00000001	0.00014170
3	Yes	14	0.00000001	0.00010969
4	Yes	18	0.00000001	0.00012194
5	Yes	18	0.00000001	0.00008566
6	Yes	18	0.00000001	0.00012704
7	Yes	18	0.00000001	0.00008916
8	Yes	15	0.00000001	0.00010067
9	Yes	15	0.00000001	0.00007593
10	Yes	18	0.00000001	0.00011555
11	Yes	18	0.00000001	0.00008187
12	Yes	18	0.00000001	0.00011195
13	Yes	18	0.00000001	0.00007914
14	Yes	16	0.00000001	0.00012064
15	Yes	16	0.00000001	0.00009120
16	Yes	18	0.00000001	0.00013016
17	Yes	18	0.00000001	0.00009161
18	Yes	18	0.00000001	0.00012324
19	Yes	18	0.00000001	0.00008636
20	Yes	14	0.00000001	0.00009644
21	Yes	14	0.00000001	0.00006457
22	Yes	18	0.00000001	0.00011373
23	Yes	18	0.00000001	0.00008057
24	Yes	18	0.00000001	0.00011723
25	Yes	18	0.00000001	0.00008323
26	Yes	6	0.00000001	0.00006199
27	Yes	17	0.00000001	0.00009102
28	Yes	17	0.00000001	0.00010912
29	Yes	17	0.00000001	0.00011049
30	Yes	17	0.00000001	0.00009093
31	Yes	17	0.00000001	0.00010644
32	Yes	17	0.00000001	0.00010647
33	Yes	17	0.00000001	0.00009224
34	Yes	17	0.00000001	0.00011148
35	Yes	17	0.00000001	0.00011159
36	Yes	17	0.00000001	0.00009140
37	Yes	17	0.00000001	0.00010587
38	Yes	17	0.00000001	0.00010581
39	Yes	13	0.00000001	0.00006929
40	Yes	14	0.00000001	0.00012098
41	Yes	14	0.00000001	0.00013673
42	Yes	12	0.00013880	0.00012375
43	Yes	14	0.00000001	0.00011952
44	Yes	14	0.00000001	0.00010762

45	Yes	13	0.00000001	0.00012742
46	Yes	15	0.00000001	0.00005909
47	Yes	14	0.00000001	0.00012328
48	Yes	12	0.00013870	0.00011156
49	Yes	14	0.00000001	0.00011334
50	Yes	14	0.00000001	0.00012619

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	117 - 112	17.36	47	1.53	0.00
L2	112 - 110	15.77	47	1.51	0.00
L3	110 - 105	15.14	47	1.50	0.00
L4	105 - 100	13.60	47	1.45	0.01
L5	100 - 95	12.11	47	1.38	0.01
L6	95 - 90	10.71	47	1.30	0.01
L7	90 - 85	9.40	47	1.20	0.00
L8	85 - 81.88	8.21	47	1.08	0.00
L9	81.88 - 81.63	7.53	47	0.99	0.00
L10	81.63 - 76.63	7.48	47	0.98	0.00
L11	76.63 - 76.08	6.51	47	0.88	0.00
L12	76.08 - 75.83	6.41	47	0.86	0.00
L13	75.83 - 71	6.36	47	0.86	0.00
L14	71 - 70.75	5.54	47	0.77	0.00
L15	70.75 - 68.08	5.50	47	0.77	0.00
L16	68.08 - 67.83	5.08	47	0.73	0.00
L17	67.83 - 63.5	5.04	47	0.73	0.00
L18	63.5 - 63.25	4.40	47	0.67	0.00
L19	63.25 - 58.25	4.37	47	0.67	0.00
L20	58.25 - 53.25	3.69	47	0.61	0.00
L21	53.25 - 47.42	3.08	47	0.56	0.00
L22	52 - 46.42	2.94	47	0.54	0.00
L23	46.42 - 41.42	2.32	47	0.51	0.00
L24	41.42 - 38.08	1.82	47	0.45	0.00
L25	38.08 - 37.83	1.53	47	0.41	0.00
L26	37.83 - 35	1.50	47	0.40	0.00
L27	35 - 34.75	1.28	47	0.37	0.00
L28	34.75 - 29.75	1.26	47	0.36	0.00
L29	29.75 - 24.75	0.90	47	0.31	0.00
L30	24.75 - 19.75	0.61	47	0.25	0.00
L31	19.75 - 14.75	0.38	47	0.20	0.00
L32	14.75 - 12.5	0.20	47	0.14	0.00
L33	12.5 - 12.25	0.14	47	0.11	0.00
L34	12.25 - 11	0.14	47	0.11	0.00
L35	11 - 10.75	0.11	47	0.10	0.00
L36	10.75 - 5.75	0.11	47	0.09	0.00
L37	5.75 - 2.5	0.03	47	0.05	0.00
L38	2.5 - 2.25	0.01	47	0.02	0.00
L39	2.25 - 0	0.00	47	0.02	0.00

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
117.0000	APXVSPP18-C-A20 w/ Mount Pipe	47	17.36	1.53	0.00	11268
115.0000	800 EXTERNAL NOTCH FILTER	47	16.72	1.52	0.00	11268
110.0000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	47	15.14	1.50	0.00	8186
100.0000	(2) HBXX-6516DS-A2M w/ Mount Pipe	47	12.11	1.38	0.01	3607
95.0000	VHLP1-23	47	10.71	1.30	0.01	3052
94.0000	VHLP2-11	47	10.44	1.28	0.01	2941
93.0000	Pipe Mount [PM 601-3]	47	10.17	1.26	0.01	2831
92.0000	VHLP1-23	47	9.91	1.24	0.01	2726

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
89.0000	7770.00 w/ Mount Pipe	47	9.15	1.17	0.00	2445
84.0000	800 10504 w/ Mount Pipe	47	7.99	1.05	0.00	2211

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	117 - 112	74.00	18	6.52	0.02
L2	112 - 110	67.24	18	6.46	0.02
L3	110 - 105	64.56	18	6.41	0.02
L4	105 - 100	57.98	18	6.21	0.02
L5	100 - 95	51.66	18	5.89	0.02
L6	95 - 90	45.67	18	5.55	0.02
L7	90 - 85	40.10	18	5.11	0.02
L8	85 - 81.88	35.01	18	4.59	0.02
L9	81.88 - 81.63	32.14	18	4.23	0.01
L10	81.63 - 76.63	31.92	18	4.20	0.01
L11	76.63 - 76.08	27.76	18	3.74	0.01
L12	76.08 - 75.83	27.33	18	3.69	0.01
L13	75.83 - 71	27.14	18	3.67	0.01
L14	71 - 70.75	23.61	18	3.29	0.01
L15	70.75 - 68.08	23.44	18	3.28	0.01
L16	68.08 - 67.83	21.65	18	3.13	0.01
L17	67.83 - 63.5	21.49	18	3.11	0.01
L18	63.5 - 63.25	18.78	18	2.87	0.01
L19	63.25 - 58.25	18.63	18	2.86	0.01
L20	58.25 - 53.25	15.76	18	2.62	0.00
L21	53.25 - 47.42	13.14	18	2.38	0.00
L22	52 - 46.42	12.53	18	2.32	0.00
L23	46.42 - 41.42	9.90	18	2.16	0.00
L24	41.42 - 38.08	7.78	18	1.90	0.00
L25	38.08 - 37.83	6.50	18	1.73	0.00
L26	37.83 - 35	6.41	18	1.72	0.00
L27	35 - 34.75	5.44	18	1.57	0.00
L28	34.75 - 29.75	5.36	18	1.56	0.00
L29	29.75 - 24.75	3.86	18	1.31	0.00
L30	24.75 - 19.75	2.61	18	1.07	0.00
L31	19.75 - 14.75	1.61	18	0.83	0.00
L32	14.75 - 12.5	0.86	18	0.59	0.00
L33	12.5 - 12.25	0.61	18	0.48	0.00
L34	12.25 - 11	0.59	18	0.47	0.00
L35	11 - 10.75	0.47	18	0.41	0.00
L36	10.75 - 5.75	0.45	18	0.40	0.00
L37	5.75 - 2.5	0.13	18	0.21	0.00
L38	2.5 - 2.25	0.02	18	0.09	0.00
L39	2.25 - 0	0.02	18	0.08	0.00

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
117.0000	APXVSPP18-C-A20 w/ Mount Pipe	18	74.00	6.52	0.02	2832
115.0000	800 EXTERNAL NOTCH FILTER	18	71.29	6.50	0.02	2832
110.0000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	18	64.56	6.41	0.02	2032
100.0000	(2) HBXX-6516DS-A2M w/ Mount Pipe	18	51.66	5.89	0.02	869
95.0000	VHLP1-23	18	45.67	5.55	0.02	729
94.0000	VHLP2-11	18	44.52	5.47	0.02	701
93.0000	Pipe Mount [PM 601-3]	18	43.39	5.39	0.02	675
92.0000	VHLP1-23	18	42.27	5.30	0.02	649
89.0000	7770.00 w/ Mount Pipe	18	39.04	5.02	0.02	580

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
84.0000	800 10504 w/ Mount Pipe	18	34.07	4.47	0.01	523

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K
L1	117 - 112 (1)	TP15.4886x14.36x0.1875	5.0000	0.0000	0.0	9.2380	-1.67
L2	112 - 110 (2)	TP15.94x15.4886x0.1875	2.0000	0.0000	0.0	9.5106	-1.74
L3	110 - 105 (3)	TP17.07x15.94x0.1875	5.0000	0.0000	0.0	10.1928	-4.84
L4	105 - 100 (4)	TP18.2x17.07x0.1875	5.0000	0.0000	0.0	10.8750	-5.20
L5	100 - 95 (5)	TP19.3221x18.2x0.25	5.0000	0.0000	0.0	15.3530	-8.88
L6	95 - 90 (6)	TP20.4442x19.3221x0.25	5.0000	0.0000	0.0	16.2563	-9.72
L7	90 - 85 (7)	TP21.5663x20.4442x0.25	5.0000	0.0000	0.0	17.1596	-14.39
L8	85 - 81.88 (8)	TP22.2665x21.5663x0.25	3.1200	0.0000	0.0	17.7233	-15.23
L9	81.88 - 81.63 (9)	TP22.3226x22.2665x0.35	0.2500	0.0000	0.0	24.7631	-15.31
L10	81.63 - 76.63 (10)	TP23.4447x22.3226x0.3563	5.0000	0.0000	0.0	26.4853	-16.30
L11	76.63 - 76.08 (11)	TP23.5681x23.4447x0.3563	0.5500	0.0000	0.0	26.6269	-16.43
L12	76.08 - 75.83 (12)	TP23.6242x23.5681x0.4625	0.2500	0.0000	0.0	34.4936	-16.50
L13	75.83 - 71 (13)	TP24.7082x23.6242x0.4563	4.8300	0.0000	0.0	35.6291	-17.67
L14	71 - 70.75 (14)	TP24.7643x24.7082x0.675	0.2500	0.0000	0.0	52.3581	-17.77
L15	70.75 - 68.08 (15)	TP25.3635x24.7643x0.6625	2.6700	0.0000	0.0	52.6934	-18.53
L16	68.08 - 67.83 (16)	TP25.4196x25.3635x0.7125	0.2500	0.0000	0.0	56.6842	-18.61
L17	67.83 - 63.5 (17)	TP26.3913x25.4196x0.6875	4.3300	0.0000	0.0	56.9018	-19.82
L18	63.5 - 63.25 (18)	TP26.4474x26.3913x0.9	0.2500	0.0000	0.0	74.0365	-19.91
L19	63.25 - 58.25 (19)	TP27.5695x26.4474x0.85	5.0000	0.0000	0.0	73.1314	-21.58
L20	58.25 - 53.25 (20)	TP28.6916x27.5695x0.825	5.0000	0.0000	0.0	74.0277	-23.29
L21	53.25 - 47.42 (21)	TP30x28.6916x0.825	5.8300	0.0000	0.0	74.7729	-23.72
L22	47.42 - 46.42 (22)	TP29.7414x28.4722x0.8438	5.5800	0.0000	0.0	78.5112	-26.99
L23	46.42 - 41.42 (23)	TP30.8787x29.7414x0.8188	5.0000	0.0000	0.0	79.2492	-28.85
L24	41.42 - 38.08 (24)	TP31.6384x30.8787x0.8063	3.3400	0.0000	0.0	80.0441	-30.12
L25	38.08 - 37.83 (25)	TP31.6952x31.6384x0.7563	0.2500	0.0000	0.0	75.3403	-30.22
L26	37.83 - 35 (26)	TP32.339x31.6952x0.7438	2.8300	0.0000	0.0	75.6666	-31.24
L27	35 - 34.75 (27)	TP32.3958x32.339x0.8438	0.2500	0.0000	0.0	85.7230	-31.36
L28	34.75 - 29.75 (28)	TP33.5331x32.3958x0.8313	5.0000	0.0000	0.0	87.5306	-33.37
L29	29.75 - 24.75 (29)	TP34.6704x33.5331x0.8063	5.0000	0.0000	0.0	87.9156	-35.43
L30	24.75 - 19.75	TP35.8077x34.6704x0.79	5.0000	0.0000	0.0	89.491	-37.52

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u
	ft		ft	ft		in^2	K
	(30)	38				3	
L31	19.75 - 14.75	TP36.945x35.8077x0.768	5.0000	0.0000	0.0	89.549	-39.64
	(31)	8				8	
L32	14.75 - 12.5	TP37.4568x36.945x0.768	2.2500	0.0000	0.0	90.816	-40.61
	(32)	8				6	
L33	12.5 - 12.25	TP37.5136x37.4568x0.76	0.2500	0.0000	0.0	90.957	-40.73
	(33)	88				4	
L34	12.25 - 11	TP37.798x37.5136x0.768	1.2500	0.0000	0.0	91.661	-41.27
	(34)	8				2	
L35	11 - 10.75	TP37.8548x37.798x0.968	0.2500	0.0000	0.0	115.06	-41.41
	(35)	8				10	
L36	10.75 - 5.75	TP38.9921x37.8548x0.94	5.0000	0.0000	0.0	115.62	-43.93
	(36)	38				40	
L37	5.75 - 2.5 (37)	TP39.7314x38.9921x0.94	3.2500	0.0000	0.0	117.87	-45.59
		38				10	
L38	2.5 - 2.25 (38)	TP39.7882x39.7314x0.96	0.2500	0.0000	0.0	121.09	-45.74
		88				20	
L39	2.25 - 0 (39)	TP40.3x39.7882x0.9688	2.2500	0.0000	0.0	122.68	-46.92
						90	

Pole Bending Design Data

Section No.	Elevation	Size	M_{ux}	M_{uy}
	ft		kip-ft	kip-ft
L1	117 - 112 (1)	TP15.4886x14.36x0.1875	19.82	0.00
L2	112 - 110 (2)	TP15.94x15.4886x0.1875	27.06	0.00
L3	110 - 105 (3)	TP17.07x15.94x0.1875	71.44	0.00
L4	105 - 100 (4)	TP18.2x17.07x0.1875	117.44	0.00
L5	100 - 95 (5)	TP19.3221x18.2x0.25	201.98	0.00
L6	95 - 90 (6)	TP20.4442x19.3221x0.25	286.71	0.00
L7	90 - 85 (7)	TP21.5663x20.4442x0.25	399.11	0.00
L8	85 - 81.88 (8)	TP22.2665x21.5663x0.25	475.22	0.00
L9	81.88 - 81.63	TP22.3226x22.2665x0.35	481.42	0.00
	(9)			
L10	81.63 - 76.63	TP23.4447x22.3226x0.35	607.71	0.00
	(10)	63		
L11	76.63 - 76.08	TP23.5681x23.4447x0.35	621.84	0.00
	(11)	63		
L12	76.08 - 75.83	TP23.6242x23.5681x0.46	628.28	0.00
	(12)	25		
L13	75.83 - 71	TP24.7082x23.6242x0.45	754.43	0.00
	(13)	63		
L14	71 - 70.75	TP24.7643x24.7082x0.67	761.05	0.00
	(14)	5		
L15	70.75 - 68.08	TP25.3635x24.7643x0.66	832.59	0.00
	(15)	25		
L16	68.08 - 67.83	TP25.4196x25.3635x0.71	839.38	0.00
	(16)	25		
L17	67.83 - 63.5	TP26.3913x25.4196x0.68	958.57	0.00
	(17)	75		
L18	63.5 - 63.25	TP26.4474x26.3913x0.9	965.55	0.00
	(18)			
L19	63.25 - 58.25	TP27.5695x26.4474x0.85	1107.38	0.00
	(19)			
L20	58.25 - 53.25	TP28.6916x27.5695x0.82	1253.57	0.00
	(20)	5		
L21	53.25 - 47.42	TP30x28.6916x0.825	1290.78	0.00
	(21)			
L22	47.42 - 46.42	TP29.7414x28.4722x0.84	1460.46	0.00
	(22)	38		
L23	46.42 - 41.42	TP30.8787x29.7414x0.81	1617.00	0.00
	(23)	88		
L24	41.42 - 38.08	TP31.6384x30.8787x0.80	1723.78	0.00
	(24)	63		
L25	38.08 - 37.83	TP31.6952x31.6384x0.75	1731.84	0.00

Section No.	Elevation ft	Size	M_{ux} kip-ft	M_{uy} kip-ft
	(25)	63		
L26	37.83 - 35	TP32.339x31.6952x0.743	1823.77	0.00
	(26)	8		
L27	35 - 34.75	TP32.3958x32.339x0.843	1831.94	0.00
	(27)	8		
L28	34.75 - 29.75	TP33.5331x32.3958x0.83	1997.53	0.00
	(28)	13		
L29	29.75 - 24.75	TP34.6704x33.5331x0.80	2166.86	0.00
	(29)	63		
L30	24.75 - 19.75	TP35.8077x34.6704x0.79	2339.80	0.00
	(30)	38		
L31	19.75 - 14.75	TP36.945x35.8077x0.768	2516.16	0.00
	(31)	8		
L32	14.75 - 12.5	TP37.4568x36.945x0.768	2596.59	0.00
	(32)	8		
L33	12.5 - 12.25	TP37.5136x37.4568x0.76	2605.57	0.00
	(33)	88		
L34	12.25 - 11	TP37.798x37.5136x0.768	2650.58	0.00
	(34)	8		
L35	11 - 10.75	TP37.8548x37.798x0.968	2659.61	0.00
	(35)	8		
L36	10.75 - 5.75	TP38.9921x37.8548x0.94	2841.90	0.00
	(36)	38		
L37	5.75 - 2.5 (37)	TP39.7314x38.9921x0.94	2962.22	0.00
		38		
L38	2.5 - 2.25 (38)	TP39.7882x39.7314x0.96	2971.54	0.00
		88		
L39	2.25 - 0 (39)	TP40.3x39.7882x0.9688	3055.76	0.00

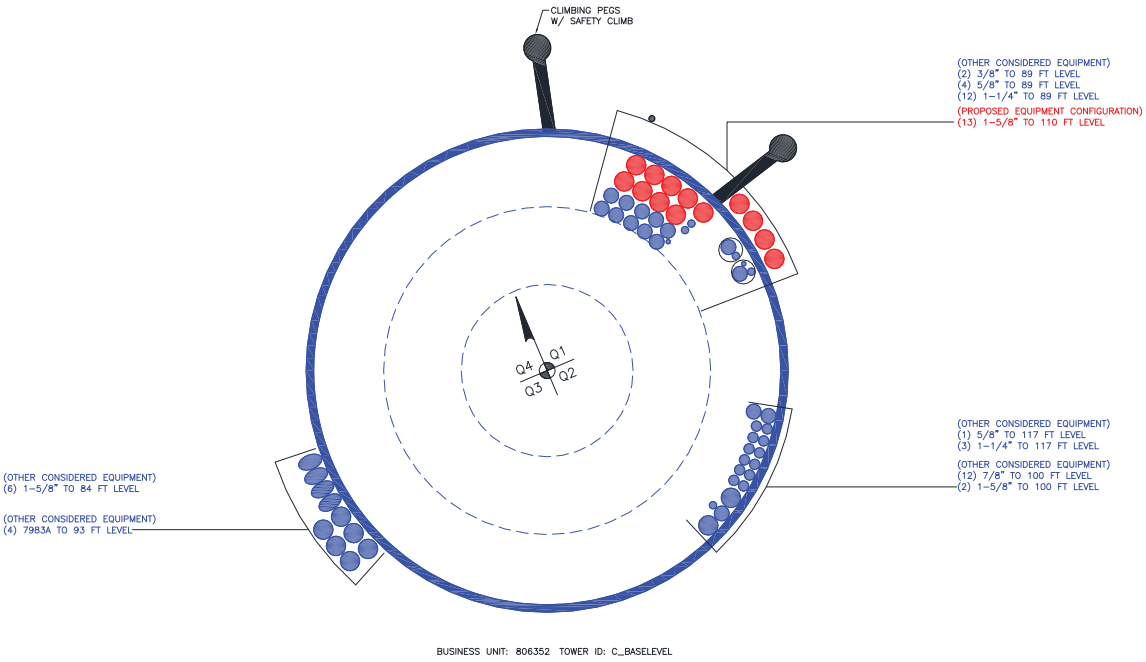
Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	Actual T_u kip-ft
L1	117 - 112 (1)	TP15.4886x14.36x0.1875	3.56	0.18
L2	112 - 110 (2)	TP15.94x15.4886x0.1875	3.68	0.18
L3	110 - 105 (3)	TP17.07x15.94x0.1875	9.03	0.21
L4	105 - 100 (4)	TP18.2x17.07x0.1875	9.37	0.21
L5	100 - 95 (5)	TP19.3221x18.2x0.25	16.29	0.00
L6	95 - 90 (6)	TP20.4442x19.3221x0.25	17.34	1.47
L7	90 - 85 (7)	TP21.5663x20.4442x0.25	23.92	1.46
L8	85 - 81.88 (8)	TP22.2665x21.5663x0.25	24.78	2.68
L9	81.88 - 81.63	TP22.3226x22.2665x0.35	24.79	2.68
	(9)			
L10	81.63 - 76.63	TP23.4447x22.3226x0.35	25.66	2.35
	(10)	63		
L11	76.63 - 76.08	TP23.5681x23.4447x0.35	25.73	2.34
	(11)	63		
L12	76.08 - 75.83	TP23.6242x23.5681x0.46	25.77	2.34
	(12)	25		
L13	75.83 - 71	TP24.7082x23.6242x0.45	26.47	2.31
	(13)	63		
L14	71 - 70.75	TP24.7643x24.7082x0.67	26.50	2.30
	(14)	5		
L15	70.75 - 68.08	TP25.3635x24.7643x0.66	27.13	1.30
	(15)	25		
L16	68.08 - 67.83	TP25.4196x25.3635x0.71	27.17	1.29
	(16)	25		
L17	67.83 - 63.5	TP26.3913x25.4196x0.68	27.89	1.27
	(17)	75		
L18	63.5 - 63.25	TP26.4474x26.3913x0.9	27.94	1.27
	(18)			
L19	63.25 - 58.25	TP27.5695x26.4474x0.85	28.81	1.23
	(19)			
L20	58.25 - 53.25	TP28.6916x27.5695x0.82	29.67	1.20
	(20)	5		

Section No.	Elevation ft	Size	Actual V_u K	Actual T_u kip-ft
L21	53.25 - 47.42 (21)	TP30x28.6916x0.825	29.88	1.19
L22	47.42 - 46.42 (22)	TP29.7414x28.4722x0.8438	30.91	1.14
L23	46.42 - 41.42 (23)	TP30.8787x29.7414x0.8188	31.71	1.10
L24	41.42 - 38.08 (24)	TP31.6384x30.8787x0.8063	32.23	1.07
L25	38.08 - 37.83 (25)	TP31.6952x31.6384x0.7563	32.26	1.07
L26	37.83 - 35 (26)	TP32.339x31.6952x0.7438	32.71	1.05
L27	35 - 34.75 (27)	TP32.3958x32.339x0.8438	32.73	1.04
L28	34.75 - 29.75 (28)	TP33.5331x32.3958x0.8313	33.50	1.01
L29	29.75 - 24.75 (29)	TP34.6704x33.5331x0.8063	34.24	0.97
L30	24.75 - 19.75 (30)	TP35.8077x34.6704x0.7938	34.94	0.93
L31	19.75 - 14.75 (31)	TP36.945x35.8077x0.7688	35.61	0.89
L32	14.75 - 12.5 (32)	TP37.4568x36.945x0.7688	35.90	0.87
L33	12.5 - 12.25 (33)	TP37.5136x37.4568x0.7688	35.92	0.87
L34	12.25 - 11 (34)	TP37.798x37.5136x0.7688	36.09	0.86
L35	11 - 10.75 (35)	TP37.8548x37.798x0.9688	36.11	0.85
L36	10.75 - 5.75 (36)	TP38.9921x37.8548x0.9438	36.80	0.82
L37	5.75 - 2.5 (37)	TP39.7314x38.9921x0.9438	37.24	0.79
L38	2.5 - 2.25 (38)	TP39.7882x39.7314x0.9688	37.27	0.78
L39	2.25 - 0 (39)	TP40.3x39.7882x0.9688	37.59	0.77

APPENDIX B

BASE LEVEL DRAWING


CLIMBING PEGS
W/ SAFETY CLIMB
(OTHER CONSIDERED EQUIPMENT)
(2) 3/8" TO 89 FT LEVEL
(4) 5/8" TO 89 FT LEVEL
(12) 1-1/4" TO 89 FT LEVEL
(PROPOSED EQUIPMENT CONFIGURATION)
(13) 1-5/8" TO 110 FT LEVEL
Q1
Q2
Q3
Q4
(OTHER CONSIDERED EQUIPMENT)
(1) 5/8" TO 117 FT LEVEL
(3) 1-1/4" TO 117 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(12) 7/8" TO 100 FT LEVEL
(2) 1-5/8" TO 100 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(6) 1-5/8" TO 84 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(4) 7983A TO 93 FT LEVEL
BUSINESS UNIT: 806352 TOWER ID: C_BASELEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 806352

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	117	7	0	12	14.36	15.94	0.1875	Auto	A572-65
2	110	10	0	12	15.94	18.2	0.1875	Auto	A572-65
3	100	52.58	4.58	12	18.20	30	0.25	Auto	A572-65
4	52	52	0	12	28.47	40.3	0.34375	Auto	A572-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12
1	0	35	plate	MS-600; (1) (1.1875)_1	3		o				o				o		
2	35	63.5	plate	MS-450; (1) (1.1875)_1	3		o				o				o		
3	51.5	71	plate	MS-450; (1) (1.1875)_2	3	o				o				o			
4	0	35	plate	I-045100; (1) (1.1875)	3			o				o				o	
5	35	49	plate	I-040075; (1) (1.1875)	3			o				o				o	
6	12.5	38.08	plate	I-045100; (1) (1.1875)	1				o								
7	2.5	38.08	plate	I-045100; (1) (1.1875)	2								o				o
8	38.08	68.08	plate	I-060100; (1) (1.1875)	3				o				o				o
9	68.08	81.88	plate	I-045100; (1) (1.1875)	3		o						o				o
10	0	12.5	plate	FP 1.25 x 5.25_1	1			c									
11	0	2.5	plate	FP 1.25 x 5.25_1	2								c				c
12	68.08	76.08	plate	I-040075; (1) (1.1875)	3			o				o				o	
13	0	11	plate	FP 1.25 x 4.5_1	3		c				c				c		
14																	

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Length (in)	Top Termination Length (in)	L_u (in)	Net Area (in^2)	Bolt Hole Size (in)	Reinforcement Material
1	6	1	6	0.5	n/a	n/a	16.250	4.750	1.1875	A572-65
2	4.5	1	4.5	0.5	n/a	n/a	12.000	3.250	1.1875	A572-65
3	4.5	1	4.5	0.5	n/a	n/a	21.000	3.250	1.1875	A572-65
4	4.5	1	4.5	0.5	n/a	n/a	19.250	3.250	1.1875	A572-65
5	4	0.75	3	0.375	n/a	n/a	16.000	2.063	1.1875	A572-65
6	4.5	1	4.5	0.5	n/a	n/a	19.250	3.250	1.1875	A572-65
7	4.5	1	4.5	0.5	n/a	n/a	19.250	3.250	1.1875	A572-65
8	6	1	6	0.5	n/a	n/a	16.000	4.750	1.1875	A572-65
9	4.5	1	4.5	0.5	n/a	n/a	19.250	3.250	1.1875	A572-65
10	1.25	5.25	6.5625	2.625	n/a	n/a	0.000	6.563	0.0000	A572-65
11	1.25	5.25	6.5625	2.625	n/a	n/a	0.000	6.563	0.0000	A572-65
12	4	0.75	3	0.375	n/a	n/a	16.000	2.063	1.1875	A572-65
13	1.25	4.5	5.625	2.25	n/a	n/a	0.000	5.625	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	117 - 112	5		12	14.360	15.489	0.1875	A572-65	1.000
2	112 - 110	2	0	12	15.489	15.940	0.1875	A572-65	1.000
3	110 - 105	5		12	15.940	17.070	0.1875	A572-65	1.000
4	105 - 100	5	0	12	17.070	18.200	0.1875	A572-65	1.000
5	100 - 95	5		12	18.200	19.322	0.25	A572-65	1.000
6	95 - 90	5		12	19.322	20.444	0.25	A572-65	1.000
7	90 - 85	5		12	20.444	21.566	0.25	A572-65	1.000
8	85 - 81.88	3.12		12	21.566	22.266	0.25	A572-65	1.000
9	81.88 - 81.63	0.25		12	22.266	22.323	0.35	A572-65	1.263
10	81.63 - 76.63	5		12	22.323	23.445	0.35625	A572-65	1.215
11	76.63 - 76.08	0.55		12	23.445	23.568	0.35625	A572-65	1.213
12	76.08 - 75.83	0.25		12	23.568	23.624	0.4625	A572-65	1.199
13	75.83 - 71	4.83		12	23.624	24.708	0.45625	A572-65	1.185
14	71 - 70.75	0.25		12	24.708	24.764	0.675	A572-65	1.065
15	70.75 - 68.08	2.67		12	24.764	25.363	0.6625	A572-65	1.068
16	68.08 - 67.83	0.25		12	25.363	25.420	0.7125	A572-65	0.914
17	67.83 - 63.5	4.33		12	25.420	26.391	0.6875	A572-65	0.924
18	63.5 - 63.25	0.25		12	26.391	26.447	0.9	A572-65	0.894
19	63.25 - 58.25	5		12	26.447	27.570	0.85	A572-65	0.917
20	58.25 - 53.25	5		12	27.570	28.692	0.825	A572-65	0.918
21	53.25 - 52	5.83	4.58	12	28.692	30.000	0.825	A572-65	0.912
22	52 - 46.42	5.58		12	28.472	29.741	0.84375	A572-65	0.931
23	46.42 - 41.42	5		12	29.741	30.879	0.81875	A572-65	0.938
24	41.42 - 38.08	3.34		12	30.879	31.638	0.80625	A572-65	0.939
25	38.08 - 37.83	0.25		12	31.638	31.695	0.75625	A572-65	0.939
26	37.83 - 35	2.83		12	31.695	32.339	0.74375	A572-65	0.944
27	35 - 34.75	0.25		12	32.339	32.396	0.84375	A572-65	0.940
28	34.75 - 29.75	5		12	32.396	33.533	0.83125	A572-65	0.935
29	29.75 - 24.75	5		12	33.533	34.670	0.80625	A572-65	0.945
30	24.75 - 19.75	5		12	34.670	35.808	0.79375	A572-65	0.942
31	19.75 - 14.75	5		12	35.808	36.945	0.76875	A572-65	0.956
32	14.75 - 12.5	2.25		12	36.945	37.457	0.76875	A572-65	0.949
33	12.5 - 12.25	0.25		12	37.457	37.514	0.76875	A572-65	0.970
34	12.25 - 11	1.25		12	37.514	37.798	0.76875	A572-65	0.966
35	11 - 10.75	0.25		12	37.798	37.855	0.96875	A572-65	0.917
36	10.75 - 5.75	5		12	37.855	38.992	0.94375	A572-65	0.924
37	5.75 - 2.5	3.25		12	38.992	39.731	0.94375	A572-65	0.913
38	2.5 - 2.25	0.25		12	39.731	39.788	0.96875	A572-65	0.923
39	2.25 - 0	2.25		12	39.788	40.300	0.96875	A572-65	0.916

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	117 - 112	1.67	19.82	3.56
2	112 - 110	1.74	27.06	3.68
3	110 - 105	4.84	71.44	9.03
4	105 - 100	5.20	117.44	9.37
5	100 - 95	8.88	201.98	16.29
6	95 - 90	9.72	286.71	17.34
7	90 - 85	14.39	399.11	23.92
8	85 - 81.88	15.23	475.22	24.78
9	81.88 - 81.63	15.31	481.42	24.79
10	81.63 - 76.63	16.30	607.71	25.66
11	76.63 - 76.08	16.43	621.84	25.73
12	76.08 - 75.83	16.50	628.28	25.77
13	75.83 - 71	17.67	754.43	26.47
14	71 - 70.75	17.77	761.05	26.50
15	70.75 - 68.08	18.53	832.59	27.13
16	68.08 - 67.83	18.61	839.37	27.17
17	67.83 - 63.5	19.82	958.57	27.89
18	63.5 - 63.25	19.91	965.55	27.94
19	63.25 - 58.25	21.58	1107.38	28.81
20	58.25 - 53.25	23.29	1253.57	29.67
21	53.25 - 52	23.72	1290.79	29.88
22	52 - 46.42	26.99	1460.46	30.91
23	46.42 - 41.42	28.85	1617.00	31.71
24	41.42 - 38.08	30.12	1723.78	32.23
25	38.08 - 37.83	30.22	1731.84	32.26
26	37.83 - 35	31.24	1823.76	32.71
27	35 - 34.75	31.36	1831.94	32.73
28	34.75 - 29.75	33.37	1997.52	33.50
29	29.75 - 24.75	35.43	2166.86	34.24
30	24.75 - 19.75	37.52	2339.80	34.94
31	19.75 - 14.75	39.64	2516.16	35.61
32	14.75 - 12.5	40.61	2596.59	35.90
33	12.5 - 12.25	40.73	2605.57	35.92
34	12.25 - 11	41.27	2650.58	36.09
35	11 - 10.75	41.41	2659.61	36.11
36	10.75 - 5.75	43.93	2841.90	36.80
37	5.75 - 2.5	45.59	2962.22	37.24
38	2.5 - 2.25	45.74	2971.54	37.27
39	2.25 - 0	46.92	3055.76	37.59

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
117 - 112	Pole	TP15.489x14.36x0.1875	Pole	9.1%	Pass
112 - 110	Pole	TP15.94x15.489x0.1875	Pole	11.8%	Pass
110 - 105	Pole	TP17.07x15.94x0.1875	Pole	27.8%	Pass
105 - 100	Pole	TP18.2x17.07x0.1875	Pole	40.7%	Pass
100 - 95	Pole	TP19.322x18.2x0.25	Pole	44.7%	Pass
95 - 90	Pole	TP20.444x19.322x0.25	Pole	56.3%	Pass
90 - 85	Pole	TP21.566x20.444x0.25	Pole	71.3%	Pass
85 - 81.88	Pole	TP22.266x21.566x0.25	Pole	80.3%	Pass
81.88 - 81.63	Pole + Reinf.	TP22.323x22.266x0.35	Reinf. 9 Tension Rupture	74.3%	Pass
81.63 - 76.63	Pole + Reinf.	TP23.445x22.323x0.3563	Reinf. 9 Tension Rupture	86.4%	Pass
76.63 - 76.08	Pole + Reinf.	TP23.568x23.445x0.3563	Reinf. 9 Tension Rupture	87.6%	Pass
76.08 - 75.83	Pole + Reinf.	TP23.624x23.568x0.4625	Reinf. 12 Tension Rupture	80.2%	Pass
75.83 - 71	Pole + Reinf.	TP24.708x23.624x0.4563	Reinf. 12 Tension Rupture	89.9%	Pass
71 - 70.75	Pole + Reinf.	TP24.764x24.708x0.675	Reinf. 3 Compression	73.0%	Pass
70.75 - 68.08	Pole + Reinf.	TP25.363x24.764x0.6625	Reinf. 3 Compression	77.2%	Pass
68.08 - 67.83	Pole + Reinf.	TP25.42x25.363x0.7125	Reinf. 3 Compression	68.1%	Pass
67.83 - 63.5	Pole + Reinf.	TP26.391x25.42x0.6875	Reinf. 3 Compression	73.9%	Pass
63.5 - 63.25	Pole + Reinf.	TP26.447x26.391x0.9	Reinf. 3 Compression	58.7%	Pass
63.25 - 58.25	Pole + Reinf.	TP27.57x26.447x0.85	Reinf. 3 Compression	63.8%	Pass
58.25 - 53.25	Pole + Reinf.	TP28.692x27.57x0.825	Reinf. 3 Compression	68.6%	Pass
53.25 - 52	Pole + Reinf.	TP30x28.692x0.825	Reinf. 3 Compression	69.8%	Pass
52 - 46.42	Pole + Reinf.	TP29.741x28.472x0.8438	Reinf. 5 Tension Rupture	74.0%	Pass
46.42 - 41.42	Pole + Reinf.	TP30.879x29.741x0.8188	Reinf. 5 Tension Rupture	77.6%	Pass
41.42 - 38.08	Pole + Reinf.	TP31.638x30.879x0.8063	Reinf. 5 Tension Rupture	79.9%	Pass
38.08 - 37.83	Pole + Reinf.	TP31.695x31.638x0.7563	Reinf. 5 Tension Rupture	85.5%	Pass
37.83 - 35	Pole + Reinf.	TP32.339x31.695x0.7438	Reinf. 5 Tension Rupture	87.4%	Pass
35 - 34.75	Pole + Reinf.	TP32.396x32.339x0.8438	Reinf. 6 Tension Rupture	74.1%	Pass
34.75 - 29.75	Pole + Reinf.	TP33.533x32.396x0.8313	Reinf. 6 Tension Rupture	76.9%	Pass
29.75 - 24.75	Pole + Reinf.	TP34.67x33.533x0.8063	Reinf. 6 Tension Rupture	79.6%	Pass
24.75 - 19.75	Pole + Reinf.	TP35.808x34.67x0.7938	Reinf. 6 Tension Rupture	82.0%	Pass
19.75 - 14.75	Pole + Reinf.	TP36.945x35.808x0.7688	Reinf. 6 Tension Rupture	84.3%	Pass
14.75 - 12.5	Pole + Reinf.	TP37.457x36.945x0.7688	Reinf. 6 Tension Rupture	85.2%	Pass
12.5 - 12.25	Pole + Reinf.	TP37.514x37.457x0.7688	Reinf. 4 Tension Rupture	86.3%	Pass
12.25 - 11	Pole + Reinf.	TP37.798x37.514x0.7688	Reinf. 4 Tension Rupture	86.8%	Pass
11 - 10.75	Pole + Reinf.	TP37.855x37.798x0.9688	Reinf. 4 Tension Rupture	69.4%	Pass
10.75 - 5.75	Pole + Reinf.	TP38.992x37.855x0.9438	Reinf. 4 Tension Rupture	71.3%	Pass
5.75 - 2.5	Pole + Reinf.	TP39.731x38.992x0.9438	Reinf. 4 Tension Rupture	72.5%	Pass
2.5 - 2.25	Pole + Reinf.	TP39.788x39.731x0.9688	Reinf. 4 Tension Rupture	67.9%	Pass
2.25 - 0	Pole + Reinf.	TP40.3x39.788x0.9688	Reinf. 4 Tension Rupture	68.7%	Pass
				Summary	
			Pole	80.3%	Pass
			Reinforcement	89.9%	Pass
			Overall	89.9%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity*													
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13
117 - 112	276	n/a	276	9.22	n/a	9.22	9.1%													
112 - 110	302	n/a	302	9.50	n/a	9.50	11.8%													
110 - 105	371	n/a	371	10.18	n/a	10.18	27.8%													
105 - 100	451	n/a	451	10.86	n/a	10.86	40.7%													
100 - 95	714	n/a	714	15.33	n/a	15.33	44.7%													
95 - 90	847	n/a	847	16.23	n/a	16.23	56.3%													
90 - 85	997	n/a	997	17.14	n/a	17.14	71.3%													
85 - 81.88	1098	n/a	1098	17.70	n/a	17.70	80.3%													
81.88 - 81.63	1148	415	1563	17.74	13.50	31.24	63.8%									74.3%				
81.63 - 76.63	1332	519	1851	18.64	13.50	32.14	73.3%									86.4%				
76.63 - 76.08	1353	524	1877	18.74	13.50	32.24	74.5%									87.6%				
76.08 - 75.83	1334	1071	2404	18.79	22.50	41.29	56.5%									66.9%			80.2%	
75.83 - 71	1527	1166	2693	19.66	22.50	42.16	64.2%									75.1%			89.9%	
71 - 70.75	1530	2346	3876	19.71	36.00	55.71	44.1%			73.0%						56.0%			65.1%	
70.75 - 68.08	1645	2455	4100	20.19	36.00	56.19	47.1%			77.2%						59.4%			68.9%	
68.08 - 67.83	1641	2788	4429	20.23	31.50	51.73	40.7%			68.1%					60.9%					
67.83 - 63.5	1838	2994	4832	21.01	31.50	52.51	44.8%			73.9%					66.1%					
63.5 - 63.25	1850	4289	6139	21.06	45.00	66.06	35.6%		57.5%	58.7%					52.5%					
63.25 - 58.25	2098	4643	6741	21.96	45.00	66.96	39.5%		62.5%	63.8%					57.0%					
58.25 - 53.25	2367	5011	7378	22.86	45.00	67.86	43.2%		67.2%	68.6%					61.3%					
53.25 - 52	2438	5105	7543	23.09	45.00	68.09	44.2%		68.3%	69.8%					62.3%					
52 - 46.42	3594	4813	8407	32.49	40.50	72.99	41.2%		71.0%			74.0%			64.9%					
46.42 - 41.42	4028	5173	9201	33.75	40.50	74.25	43.8%		74.5%			77.6%			68.0%					
41.42 - 38.08	4336	5421	9756	34.59	40.50	75.09	45.4%		76.7%			79.9%			70.0%					
38.08 - 37.83	4360	4822	9182	34.65	36.00	70.65	48.6%		82.0%			85.5%	82.0%	82.0%						
37.83 - 35	4634	5013	9647	35.36	36.00	71.36	50.1%		83.8%			87.4%	83.8%	83.8%						
35 - 34.75	4658	6325	10984	35.43	45.00	80.43	44.3%	67.7%			74.1%		74.1%	74.1%						
34.75 - 29.75	5172	6760	11932	36.68	45.00	81.68	46.6%	70.2%			76.9%		76.9%	76.9%						
29.75 - 24.75	5722	7209	12931	37.94	45.00	82.94	48.8%	72.6%			79.6%		79.6%	79.6%						
24.75 - 19.75	6310	7672	13982	39.20	45.00	84.20	51.0%	74.9%			82.0%		82.0%	82.0%						
19.75 - 14.75	6937	8151	15087	40.45	45.00	85.45	53.1%	76.9%			84.3%		84.3%	84.3%						
14.75 - 12.5	7232	8371	15602	41.02	45.00	86.02	54.1%	77.8%			85.2%		85.2%	85.2%						
12.5 - 12.25	7271	8455	15725	41.08	47.06	88.15	56.1%	79.3%			86.3%			86.2%			63.9%			
12.25 - 11	7439	8579	16018	41.40	47.06	88.46	56.6%	79.7%			86.8%			86.7%			64.3%			
11 - 10.75	7471	12650	20121	41.46	63.94	105.40	45.3%	63.7%			69.4%			69.3%			52.8%			58.4%
10.75 - 5.75	8171	13378	21549	42.72	63.94	106.66	47.2%	65.4%			71.3%			71.2%			54.2%			59.8%
5.75 - 2.5	8649	13862	22511	43.53	63.94	107.47	48.4%	66.5%			72.5%			72.4%			55.0%			60.7%
2.5 - 2.25	8688	14784	23471	43.60	68.06	111.66	46.0%	65.1%			67.9%						53.3%	55.8%		58.1%
2.25 - 0	9030	15138	24168	44.16	68.06	112.23	46.8%	65.8%			68.7%						53.9%	56.3%		58.7%

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

Monopole Flange Plate Connection

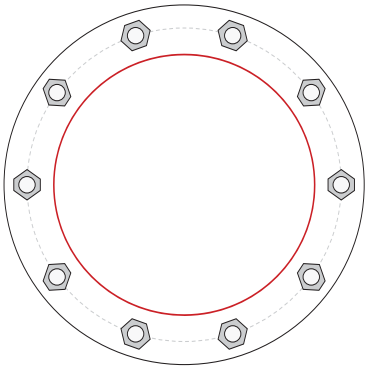
Elevation = 110 ft.

BU #	806352
Site Name	
Order #	
TIA-222 Revision	H

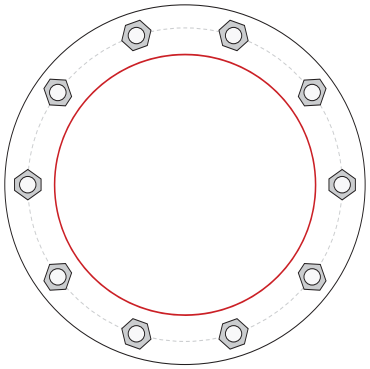
Applied Loads	
Moment (kip-ft)	27.06
Axial Force (kips)	1.74
Shear Force (kips)	3.68

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(10) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 19.2" BC

Top Plate Data

22" OD x 1.5" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Plate Data

22" OD x 1.5" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

15.94" x 0.1875" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Bottom Pole Data

15.94" x 0.1875" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	6.58	
Allowable (kips)	54.54	
Stress Rating:	**11.5%**	**Pass**

Top Plate Capacity

Max Stress (ksi):	2.54	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**7.5%**	**Pass**
Tension Side Stress Rating:	**2.7%**	**Pass**

Bottom Plate Capacity

Max Stress (ksi):	2.54	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**7.5%**	**Pass**
Tension Side Stress Rating:	**2.7%**	**Pass**

Monopole Flange Plate Connection

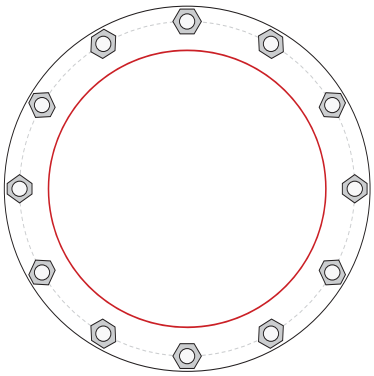
Elevation = 100 ft.

BU #	806352
Site Name	
Order #	
TIA-222 Revision	H

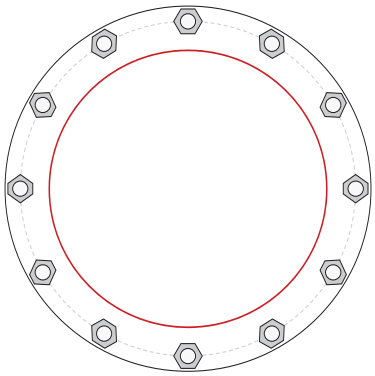
Applied Loads	
Moment (kip-ft)	117.44
Axial Force (kips)	5.20
Shear Force (kips)	9.37

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(12) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 22" BC

Top Plate Data

24" OD x 1.5" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Plate Data

24" OD x 1.5" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

18.2" x 0.1875" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Bottom Pole Data

18.2" x 0.25" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	20.90	
Allowable (kips)	54.53	
Stress Rating:	**36.5%**	**Pass**

Top Plate Capacity

Max Stress (ksi):	9.23	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**27.1%**	**Pass**
Tension Side Stress Rating:	**11.2%**	**Pass**

Bottom Plate Capacity

Max Stress (ksi):	9.23	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**27.1%**	**Pass**
Tension Side Stress Rating:	**11.2%**	**Pass**

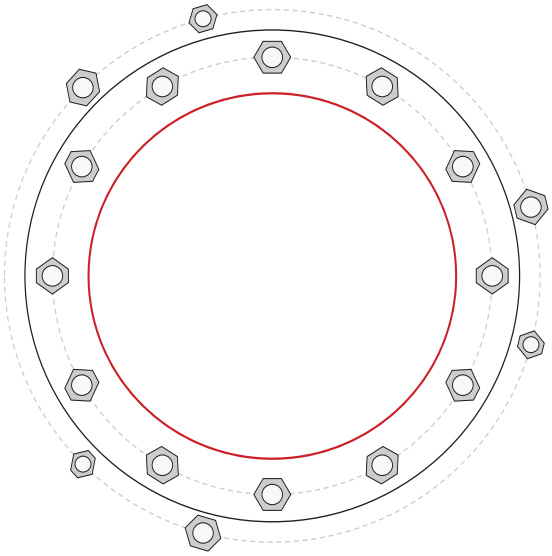
Monopole Base Plate Connection

Site Info	
BU #	806352
Site Name	
Order #	

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

Applied Loads	
Moment (kip-ft)	3055.76
Axial Force (kips)	46.92
Shear Force (kips)	37.59

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

GROUP 1: (12) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 48.22" BC
GROUP 2: (3) 1-3/4" ø bolts (A193 Gr. B7 N; Fy=105 ksi, Fu=125 ksi) on 58.72" BC
GROUP 3: (3) 2-1/4" ø bolts (A193 Gr. B7 N; Fy=105 ksi, Fu=125 ksi) on 58.72" BC

Base Plate Data

54.22" OD x 2.5" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Stiffener Data

N/A

Pole Data

40.3" x 0.34375" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

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

GROUP 1:		
Pu_c = 163.47	ϕPn_c = 243.75	**Stress Rating**
Vu = 3.13	ϕVn = 73.13	**64.0%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 2:		
Pu_c = 113.59	ϕPn_c = 160.19	**Stress Rating**
Vu = 0	ϕVn = 59.85	**67.5%**
Mu = 0	ϕMn = 59.26	**Pass**
GROUP 3:		
Pu_c = 194.3	ϕPn_c = 300.16	**Stress Rating**
Vu = 0	ϕVn = 102.38	**61.7%**
Mu = 0	ϕMn = 132.58	**Pass**

Base Plate Summary

Max Stress (ksi):	23.98	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	**42.3%**	**Pass**

Drilled Pier Foundation

BU # :	806352
Site Name:	BRG 302 943052
Order Number:	

TIA-222 Revison:	H
Tower Type:	Monopole

Applied Loads	Comp.	Uplift
Moment (kip-ft)	3056	
Axial Force (kips)	47	
Shear Force (kips)	38	

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

Pier Design Data		
Depth	16.4	ft
Ext. Above Grade	0.2	ft
Pier Section 1		
From 0.2' above grade to 16.4' below grade		
Pier Diameter	6.5	ft
Rebar Quantity	22	
Rebar Size	10	
Clear Cover to Ties	5	in
Tie Size	5	

Analysis Results		
Soil Lateral Capacity	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	6.04	-
Soil Safety Factor	2.37	-
Max Moment (kip-ft)	3440.24	-
Rating*	*53.4%*	-
Soil Vertical Capacity	*Compression*	*Uplift*
Skin Friction (kips)	569.51	-
End Bearing (kips)	918.34	-
Weight of Concrete (kips)	99.15	-
Total Capacity (kips)	1487.85	-
Axial (kips)	146.15	-
Rating*	*9.4%*	-
Reinforced Concrete Capacity	*Compression*	*Uplift*
Critical Depth (ft from TOC)	5.77	-
Critical Moment (kip-ft)	3439.32	-
Critical Moment Capacity	4082.34	-
Rating*	*80.2%*	-

Soil Interaction Rating*	**53.4%**
Structural Foundation Rating*	**80.2%**

*Rating per TIA-222-H Section 15.5

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

Soil Profile

Groundwater Depth	n/a	ft	# of Layers: 4

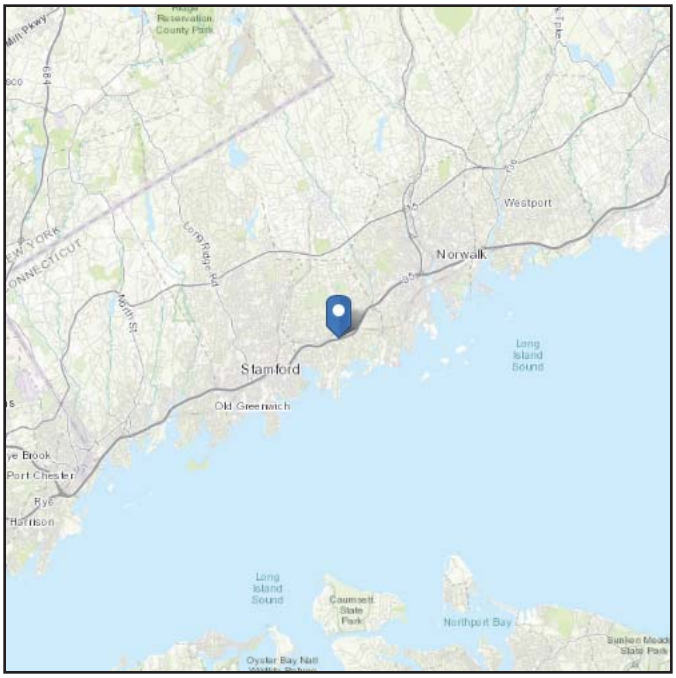
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	4	4	115	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	4	6	2	120	150	0	39	0.000	0.000	0.42	0.42			Cohesionless
3	6	11	5	135	150	0	45	0.000	0.000	2.15	2.15			Cohesionless
4	11	16.4	5.4	155	150	14	0	6.300	6.300	4.74	4.74	36.9		Cohesive

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 42.25 ft (NAVD 88)
Latitude: 41.072
Longitude: -73.4782



Wind

Results:

Wind Speed:	119 Vmph
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	91 Vmph
100-year MRI	98 Vmph

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

Date Accessed: Tue Mar 05 2019

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

Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Tue Mar 05 2019

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Exhibit E

Mount Analysis

Date: **May 20, 2019**

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

Kimley-Horn and Associates, Inc.
421 Fayetteville Street, Suite 600
Raleigh, NC 27601
(919) 677-2000
CrownMounts@kimley-horn.com

Subject:	**Mount Analysis Report**	
Carrier Designation:	**T-Mobile Equipment Change-Out**	
	Carrier Site Number:	CT11851C
	Carrier Site Name:	CT851/Crown Darien_MP
Crown Castle Designation:	**Crown Castle BU Number:**	806352
	Crown Castle Site Name:	BRG 302 943052
	Crown Castle JDE Job Number:	559167
	Crown Castle Order Number:	479843, Rev. 1
Engineering Firm Designation:	**Kimley-Horn Report Designation:**	019558041
Site Data:	**126 Ledge Road, Darien, Fairfield County, CT 06820** **Latitude 41° 4′ 20.75″ Longitude -73° 28′ 41.40″**	
Structure Information:	**Tower Height & Type:**	**117 ft Monopole**
	Mount Elevation:	**110 ft**
	Mount Type:	**12.5 ft T-Arms**

Dear Charles McGuirt,

Kimley-Horn is pleased to submit this **"Mount Analysis Report"** to determine the structural integrity of T-Mobile's antenna mounting system with the proposed appurtenance and equipment addition on the abovementioned supporting tower structure. Analysis of the existing supporting tower structure is to be completed by others and therefore is not part of this analysis. Analysis of the antenna mounting system as a tie-off point for fall protection or rigging is not part of this document.

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

T-Arms **Sufficient ***

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

This analysis utilizes an ultimate 3-second gust wind speed of 120 mph as required by the 2015 International Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Ryan Doolittle, PE under the supervision of Steven C. Ball, PE, SE.

Respectfully Submitted by:

Steven C. Ball, PE, SE

5.21.19

TABLE OF CONTENTS

1) INTRODUCTION

The mounting configuration consists of existing 12.5 ft T-Arms.

2) ANALYSIS CRITERIA

Building Code:	2015 IBC and 2018 Connecticut State Building Code
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	120 mph
Exposure Category:	C
Topographic Factor at Base:	1.0
Topographic Factor at Mount:	1.0
Ice Thickness:	0.75 in
Wind Speed with Ice:	50 mph
Live Loading Wind Speed:	30 mph
Man Live Load at Mount Pipes:	500 lb

Table 1 – Proposed Equipment Configuration

Elevation (ft)		Antennas	
Mount	**Centerline**	**#**	**Name**
110	110	3	RFS APXVAARR24_43-U-NA20
		3	Ericsson AIR 32 B2A B66AA
		3	Ericsson AIR 21 B2A B4P
		3	Ericsson RADIO 4449 B12/B71
		3	Ericsson KRY 112 144/1

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Photos	-	-	CCI Sites
Tenant Application	T-Mobile	479843	CCI Sites
Mount Analysis	Kimley-Horn	8371812	CCI Sites

3.1) Analysis Method

RISA-3D (version 16.01.00), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

A proprietary tool internally developed by Kimley-Horn and Associates, Inc. was used to calculate wind loading on all appurtenances, dishes and mount members for various load cases. Selected output from the analysis is included in Appendix B.

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

3.2) Assumptions

1) The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design and manufacturer's specifications.
2) The configuration of antennas, mounts, and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
4) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (Gr. 36)
HSS (Rectangular)	ASTM A36 (Gr. 36)
Pipe	ASTM A53 (Gr. B-35)
Threaded Rods	ASTM A36 (Gr. 36)
Connection Bolts	ASTM A325

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

4) ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity

Component	% Capacity	Pass / Fail
Collar Reactions	94%	Pass
Mount Pipes	72%	Pass
Connections	70%	Pass
Stand Off Horizontals	64%	Pass
Face Horizontals	57%	Pass
Reinforcements	48%	Pass
Support Rails	48%	Pass
Corner Plates	34%	Pass

Structure Rating (max from all components) =	94%

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

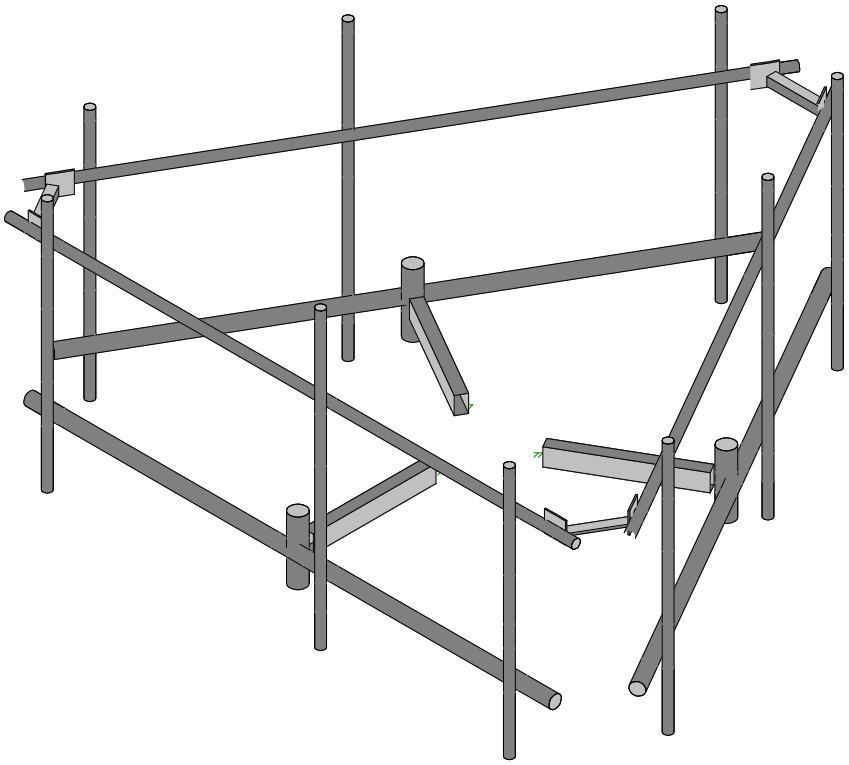
4.1) Recommendations

According to our structural analysis, the mounting configuration has been found to **CONDITIONALLY PASS**. The mounting configuration considered in this analysis will have sufficient design capacity to support the referenced loading pursuant to referenced standards once the following scope is executed:

- **Install (3) new Pipe 2 x-Strong x 84" long (max.) to existing horizontal to accommodate proposed RFS APXVAARR24_43-U-NA20 antennas. Install pipes with Site Pro 1 SP219 crossover plates 12" max from center of horizontal. Minimize this distance.**
- **Install Site Pro 1 HRK12 handrail kit 42" above existing face horizontal. Connect handrail to all mount pipes with Site Pro 1 SP219 crossover plates.**
- **See appendix A for additional notes and configuration details**

APPENDIX A

WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

KHA	806352	SK - 1
MRD		May 17, 2019 at 4:56 PM
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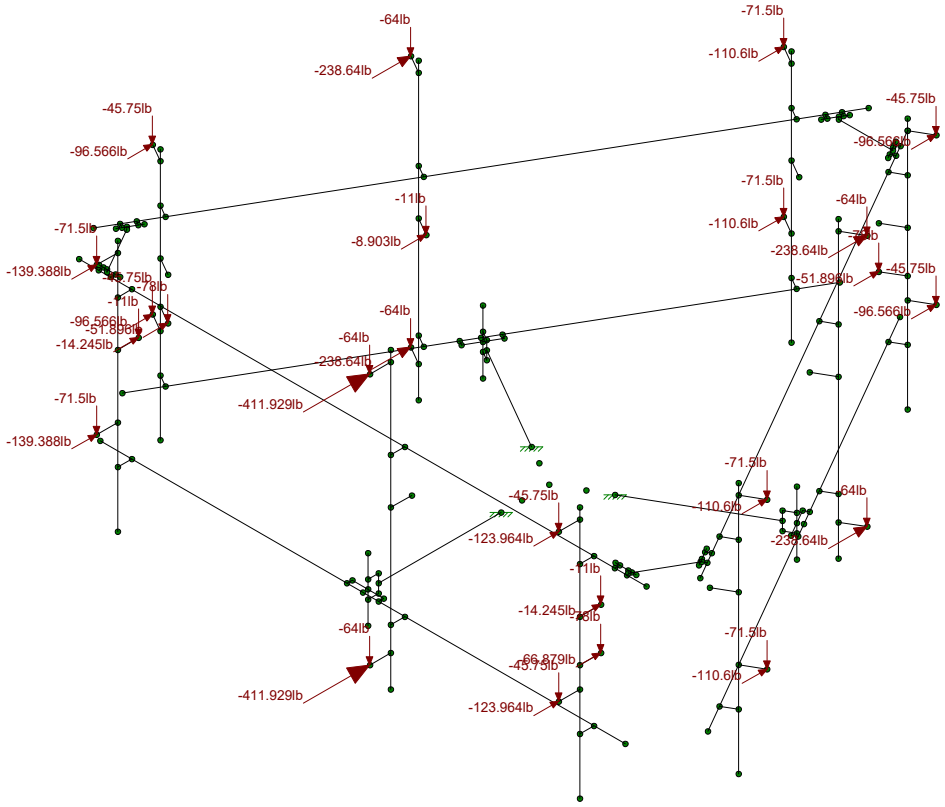

Loads: LC 1, Summary: 1.0D + 1.0W
Envelope Only Solution

KHA	806352	SK - 2
MRD		May 17, 2019 at 4:56 PM
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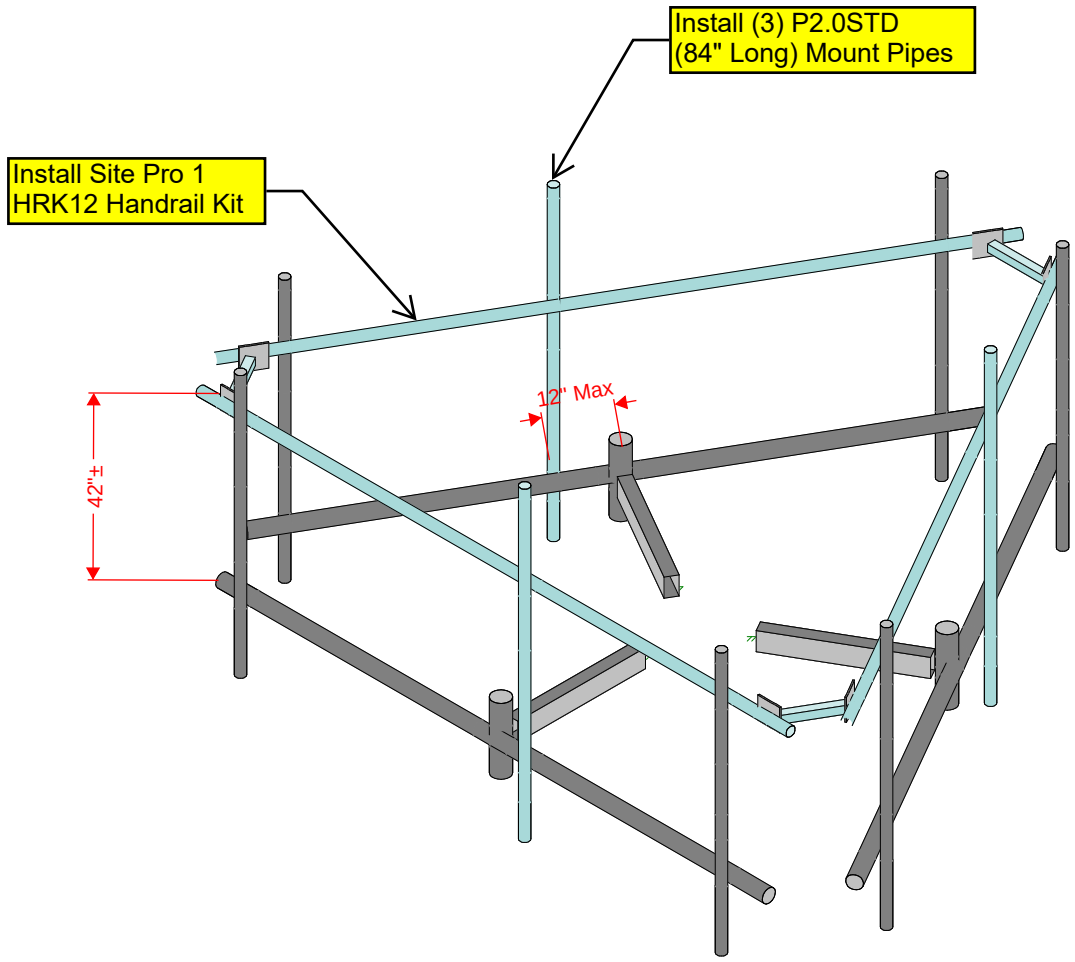

KHA	806352	SK - 1
MRD		May 17, 2019 at 5:01 PM
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APPENDIX B

SOFTWARE INPUT CALCULATIONS

General Criteria	
TIA Standard	H
IBC Edition	2015
Structure Class	-
Risk Category	II

Site-Specific Criteria	
Exposure Category	C
Topographic Factor, K_{zt}	1.00
Structure Base Elev. (AMSL), z_s (ft)	66.00
Ground Effect Factor, K_e	1.00

Mount & Structure Criteria	
Mount Elevation (AGL) (ft)	110.00
Structure Height (ft)	117.00
Structure Type	Monopole

Constants	
Wind Direction Probability Factor, K_d	0.95
Gust Effect Factor, G_h	1
Shielding Factor, K_a **(antenna)**	0.9
Shielding Factor, K_a **(mount)**	0.9

Wind Summary	
Basic Wind Speed w/o Ice, **V** (mph)	120.00
Velocity Pressure Coeff., K_z	1.29
Velocity Pressure, q_z **(w/o Ice)** (psf)	45.11

Ice Load Summary	
Basic Wind Speed w/ Ice, V_i (mph)	50.00
Design Ice Thick. (ASCE 7-10) , t_i (in)	0.75
Velocity Pressure, q_z **(w/ Ice)** (psf)	7.83
Escalated Ice Thick. @ Mount, t_{iz} (in)	1.69

Seismic Load Summary	
Spectral Response (Short Periods), S_s	-
Spectral Response (1-Sec. Period), S_1	-
Site Class	-
Seismic Design Category	-
Seismic Risk Category	-

Snow Load Summary	
Ground Snow Load, p_g (psf)	-
Snow Load on Flat Roofs, p_f (psf)	-

Kimley»Horn

Date	May 17, 2019
Client	Crown Castle
Site #	806352
Site Name	BRG 302 943052
Project #	19558041

Antenna Name	Qty	Shape	Dimensions (in)			Weight (lb)	Joint Labels								EPA (ft^2)		Wind Force, F_A (lb)			
																	No Ice		With Ice	
			H	W	D		Alpha		Beta		Gamma		Delta		Front	Side	Front	Side	Front	Side
AIR 21 B2A B4P	3	Flat	56	12.1	7.9	91.5	N38	N41	N132	N135	N85	N88	0	0	6.09	4.3	247.93	174.87	56.82	43.4
APXVAARR24_43-U-NA20	3	Flat	95.9	24	8.7	128	N39	N42	N133	N136	N86	N89	0	0	20.24	8.89	823.86	361.76	166.76	84.8
AIR 32 B2A B66AA	3	Flat	59.3	12.9	8.7	143	N37	N40	N131	N134	N84	N87	0	0	6.85	4.96	278.78	202.01	62.95	48.86
KRY 112 144/1	3	Flat	7	6	3	11	N47	N46	N142	0	0	0	0	0	0.35	0.18	14.24	7.12	5.74	3.9
RADIO 4449 B12/B71	3	Flat	15	13.2	9.3	78	N228	0	N232	0	N230	0	0	0	1.64	1.15	66.88	46.9	17.89	13.64

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E...	Density[lb/f...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	490	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	490	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	490	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	490	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	490	50	1.4	65	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Ru...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Offset Arm	HSS5x3x5	Beam	None	A36 Gr.36	Typical	4.1	5.6	12.6	13.1
2	Pivot Pipe	PIPE_4.0	Beam	None	A53 Gr.B	Typical	2.96	6.82	6.82	13.6
3	Horizontal	PIPE_3.0	Beam	None	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
4	Mount Pipe	PIPE_2.0	Beam	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
5	MOD - Pipe	PIPE_2.0X	Beam	None	A53 Gr.B	Typical	1.4	.827	.827	1.65
6	MOD - Brace	PIPE_2.0	Beam	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
7	MOD - Support Rail	PIPE_2.0	Beam	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
8	MOD - Connector ...	PL6x3/8	Beam	None	A36 Gr.36	Typical	2.25	.026	6.75	.101
9	MOD - Connector ...	L2.5x2.5x4	Beam	None	A36 Gr.36	Typical	1.19	.692	.692	.026

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[...	Lcomp bot[...	L-torque[in]	Kyy	Kzz	Cb	Functi...
1	M1	Offset Arm	35			Lbyy						Lateral
2	M5	Pivot Pipe	18			Lbyy						Lateral
3	M9	Horizontal	150			Lbyy						Lateral
4	M13	Mount Pipe	72			Lbyy						Lateral
5	M14	MOD - Pipe	84			Lbyy						Lateral
6	M15	Mount Pipe	72			Lbyy						Lateral
7	M25	Offset Arm	35			Lbyy						Lateral
8	M29	Pivot Pipe	18			Lbyy						Lateral
9	M33	Horizontal	150			Lbyy						Lateral
10	M37	Mount Pipe	72			Lbyy						Lateral
11	M38	MOD - Pipe	84			Lbyy						Lateral
12	M39	Mount Pipe	72			Lbyy						Lateral
13	M49	Offset Arm	35			Lbyy						Lateral
14	M53	Pivot Pipe	18			Lbyy						Lateral
15	M57	Horizontal	150			Lbyy						Lateral
16	M61	Mount Pipe	72			Lbyy						Lateral
17	M62	MOD - Pipe	84			Lbyy						Lateral
18	M63	Mount Pipe	72			Lbyy						Lateral
19	HM1	MOD - Sup...	162									Lateral
20	HM2	MOD - Con...	6									Lateral
21	HM3	MOD - Con...	6									Lateral
22	HM10	MOD - Sup...	162									Lateral
23	HM11	MOD - Con...	6									Lateral
24	HM12	MOD - Con...	6									Lateral
25	HM19	MOD - Sup...	162									Lateral
26	HM20	MOD - Con...	6									Lateral
27	HM21	MOD - Con...	6									Lateral
28	HM28	MOD - Con...	15.408									Lateral
29	HM29	MOD - Con...	15.408									Lateral
30	HM30	MOD - Con...	15.408									Lateral

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
1	Dead	DL			-1	24				
2	Dead of Ice	RL				24		30		
4	Structure Wind (0)	None						60		
5	Structure Wind (30)	None						60		
6	Structure Wind (45)	None						60		
7	Structure Wind (60)	None						60		
8	Structure Wind (90)	None						60		
9	Structure Wind (120)	None						60		
10	Structure Wind (135)	None						60		
11	Structure Wind (150)	None						60		
12	Structure Wind w/ Ice (0)	None						60		
13	Structure Wind w/ Ice (30)	None						60		
14	Structure Wind w/ Ice (45)	None						60		
15	Structure Wind w/ Ice (60)	None						60		
16	Structure Wind w/ Ice (90)	None						60		
17	Structure Wind w/ Ice (120)	None						60		
18	Structure Wind w/ Ice (135)	None						60		
19	Structure Wind w/ Ice (150)	None						60		
20	Antenna Wind (0)	None				48				
21	Antenna Wind (30)	None				48				
22	Antenna Wind (45)	None				48				
23	Antenna Wind (60)	None				48				
24	Antenna Wind (90)	None				48				
25	Antenna Wind (120)	None				48				
26	Antenna Wind (135)	None				48				
27	Antenna Wind (150)	None				48				
28	Antenna Wind w/ Ice (0)	None				48				
29	Antenna Wind w/ Ice (30)	None				48				
30	Antenna Wind w/ Ice (45)	None				48				
31	Antenna Wind w/ Ice (60)	None				48				
32	Antenna Wind w/ Ice (90)	None				48				
33	Antenna Wind w/ Ice (120)	None				48				
34	Antenna Wind w/ Ice (135)	None				48				
35	Antenna Wind w/ Ice (150)	None				48				
36	Maintenance Live Lm (1)	OL1				1				
37	Maintenance Live Lm (2)	OL2				1				
38	Maintenance Live Lm (3)	OL3				1				

Load Combinations

	Description	Solve	PDelta	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	Summary: 1.0D + 1.0W	Yes	Y		DL	1	20	1																		
2	1.4D	Yes	Y		DL	1.4																				
3	1.2D + 1.0W(0)	Yes	Y		DL	1.2	4	1	20	1																
4	1.2D + 1.0W(30)	Yes	Y		DL	1.2	5	1	21	1																
5	1.2D + 1.0W(45)	Yes	Y		DL	1.2	6	1	22	1																
6	1.2D + 1.0W(60)	Yes	Y		DL	1.2	7	1	23	1																
7	1.2D + 1.0W(90)	Yes	Y		DL	1.2	8	1	24	1																
8	1.2D + 1.0W(120)	Yes	Y		DL	1.2	9	1	25	1																
9	1.2D + 1.0W(135)	Yes	Y		DL	1.2	10	1	26	1																
10	1.2D + 1.0W(150)	Yes	Y		DL	1.2	11	1	27	1																
11	1.2D + 1.0W(180)	Yes	Y		DL	1.2	4	-1	20	-1																
12	1.2D + 1.0W(210)	Yes	Y		DL	1.2	5	-1	21	-1																
13	1.2D + 1.0W(225)	Yes	Y		DL	1.2	6	-1	22	-1																
14	1.2D + 1.0W(240)	Yes	Y		DL	1.2	7	-1	23	-1																

Load Combinations (Continued)

	Description	Solve	PDelta	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
15	1.2D + 1.0W(270)	Yes	Y		DL	1.2	8	-1	24	-1																
16	1.2D + 1.0W(300)	Yes	Y		DL	1.2	9	-1	25	-1																
17	1.2D + 1.0W(315)	Yes	Y		DL	1.2	10	-1	26	-1																
18	1.2D + 1.0W(330)	Yes	Y		DL	1.2	11	-1	27	-1																
19	1.2D + 1.0Di + 1.0Wi(0)	Yes	Y		DL	1.2	RL	1	12	1	28	1														
20	1.2D + 1.0Di + 1.0Wi(...	Yes	Y		DL	1.2	RL	1	13	1	29	1														
21	1.2D + 1.0Di + 1.0Wi(...	Yes	Y		DL	1.2	RL	1	14	1	30	1														
22	1.2D + 1.0Di + 1.0Wi(...	Yes	Y		DL	1.2	RL	1	15	1	31	1														
23	1.2D + 1.0Di + 1.0Wi(...	Yes	Y		DL	1.2	RL	1	16	1	32	1														
24	1.2D + 1.0Di + 1.0Wi(...	Yes	Y		DL	1.2	RL	1	17	1	33	1														
25	1.2D + 1.0Di + 1.0Wi(...	Yes	Y		DL	1.2	RL	1	18	1	34	1														
26	1.2D + 1.0Di + 1.0Wi(...	Yes	Y		DL	1.2	RL	1	19	1	35	1														
27	1.2D + 1.0Di + 1.0Wi(...	Yes	Y		DL	1.2	RL	1	12	-1	28	-1														
28	1.2D + 1.0Di + 1.0Wi(...	Yes	Y		DL	1.2	RL	1	13	-1	39	-1														
29	1.2D + 1.0Di + 1.0Wi(...	Yes	Y		DL	1.2	RL	1	14	-1	30	-1														
30	1.2D + 1.0Di + 1.0Wi(...	Yes	Y		DL	1.2	RL	1	15	-1	31	-1														
31	1.2D + 1.0Di + 1.0Wi(...	Yes	Y		DL	1.2	RL	1	16	-1	32	-1														
32	1.2D + 1.0Di + 1.0Wi(...	Yes	Y		DL	1.2	RL	1	17	-1	33	-1														
33	1.2D + 1.0Di + 1.0Wi(...	Yes	Y		DL	1.2	RL	1	18	-1	34	-1														
34	1.2D + 1.0Di + 1.0Wi(...	Yes	Y		DL	1.2	RL	1	19	-1	35	-1														
35	1.2D + 1.5Lm(1) + 1.0...	Yes	Y		DL	1.2	4	.063	20	.063	O...	1.5														
36	1.2D + 1.5Lm(1) + 1.0...	Yes	Y		DL	1.2	5	.063	21	.063	O...	1.5														
37	1.2D + 1.5Lm(1) + 1.0...	Yes	Y		DL	1.2	6	.063	22	.063	O...	1.5														
38	1.2D + 1.5Lm(1) + 1.0...	Yes	Y		DL	1.2	7	.063	23	.063	O...	1.5														
39	1.2D + 1.5Lm(1) + 1.0...	Yes	Y		DL	1.2	8	.063	24	.063	O...	1.5														
40	1.2D + 1.5Lm(1) + 1.0...	Yes	Y		DL	1.2	9	.063	25	.063	O...	1.5														
41	1.2D + 1.5Lm(1) + 1.0...	Yes	Y		DL	1.2	10	.063	26	.063	O...	1.5														
42	1.2D + 1.5Lm(1) + 1.0...	Yes	Y		DL	1.2	11	.063	27	.063	O...	1.5														
43	1.2D + 1.5Lm(1) + 1.0...	Yes	Y		DL	1.2	4	-.0...	20	-.0...	O...	1.5														
44	1.2D + 1.5Lm(1) + 1.0...	Yes	Y		DL	1.2	5	-.0...	21	-.0...	O...	1.5														
45	1.2D + 1.5Lm(1) + 1.0...	Yes	Y		DL	1.2	6	-.0...	22	-.0...	O...	1.5														
46	1.2D + 1.5Lm(1) + 1.0...	Yes	Y		DL	1.2	7	-.0...	23	-.0...	O...	1.5														
47	1.2D + 1.5Lm(1) + 1.0...	Yes	Y		DL	1.2	8	-.0...	24	-.0...	O...	1.5														
48	1.2D + 1.5Lm(1) + 1.0...	Yes	Y		DL	1.2	9	-.0...	25	-.0...	O...	1.5														
49	1.2D + 1.5Lm(1) + 1.0...	Yes	Y		DL	1.2	10	-.0...	26	-.0...	O...	1.5														
50	1.2D + 1.5Lm(1) + 1.0...	Yes	Y		DL	1.2	11	-.0...	27	-.0...	O...	1.5														
51	1.2D + 1.5Lm(2) + 1.0...	Yes	Y		DL	1.2	4	.063	20	.063	O...	1.5														
52	1.2D + 1.5Lm(2) + 1.0...	Yes	Y		DL	1.2	5	.063	21	.063	O...	1.5														
53	1.2D + 1.5Lm(2) + 1.0...	Yes	Y		DL	1.2	6	.063	22	.063	O...	1.5														
54	1.2D + 1.5Lm(2) + 1.0...	Yes	Y		DL	1.2	7	.063	23	.063	O...	1.5														
55	1.2D + 1.5Lm(2) + 1.0...	Yes	Y		DL	1.2	8	.063	24	.063	O...	1.5														
56	1.2D + 1.5Lm(2) + 1.0...	Yes	Y		DL	1.2	9	.063	25	.063	O...	1.5														
57	1.2D + 1.5Lm(2) + 1.0...	Yes	Y		DL	1.2	10	.063	26	.063	O...	1.5														
58	1.2D + 1.5Lm(2) + 1.0...	Yes	Y		DL	1.2	11	.063	27	.063	O...	1.5														
59	1.2D + 1.5Lm(2) + 1.0...	Yes	Y		DL	1.2	4	-.0...	20	-.0...	O...	1.5														
60	1.2D + 1.5Lm(2) + 1.0...	Yes	Y		DL	1.2	5	-.0...	21	-.0...	O...	1.5														
61	1.2D + 1.5Lm(2) + 1.0...	Yes	Y		DL	1.2	6	-.0...	22	-.0...	O...	1.5														
62	1.2D + 1.5Lm(2) + 1.0...	Yes	Y		DL	1.2	7	-.0...	23	-.0...	O...	1.5														
63	1.2D + 1.5Lm(2) + 1.0...	Yes	Y		DL	1.2	8	-.0...	24	-.0...	O...	1.5														
64	1.2D + 1.5Lm(2) + 1.0...	Yes	Y		DL	1.2	9	-.0...	25	-.0...	O...	1.5														
65	1.2D + 1.5Lm(2) + 1.0...	Yes	Y		DL	1.2	10	-.0...	26	-.0...	O...	1.5														
66	1.2D + 1.5Lm(2) + 1.0...	Yes	Y		DL	1.2	11	-.0...	27	-.0...	O...	1.5														
67	1.2D + 1.5Lm(3) + 1.0...	Yes	Y		DL	1.2	4	.063	20	.063	O...	1.5														
68	1.2D + 1.5Lm(3) + 1.0...	Yes	Y		DL	1.2	5	.063	21	.063	O...	1.5														
69	1.2D + 1.5Lm(3) + 1.0...	Yes	Y		DL	1.2	6	.063	22	.063	O...	1.5														
70	1.2D + 1.5Lm(3) + 1.0...	Yes	Y		DL	1.2	7	.063	23	.063	O...	1.5														
71	1.2D + 1.5Lm(3) + 1.0...	Yes	Y		DL	1.2	8	.063	24	.063	O...	1.5														

Load Combinations (Continued)

	Description	Solve	PDelta	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
72	1.2D + 1.5Lm(3) + 1.0...	Yes	Y		DL	1.2	9	.063	25	.063	O...	1.5														
73	1.2D + 1.5Lm(3) + 1.0...	Yes	Y		DL	1.2	10	.063	26	.063	O...	1.5														
74	1.2D + 1.5Lm(3) + 1.0...	Yes	Y		DL	1.2	11	.063	27	.063	O...	1.5														
75	1.2D + 1.5Lm(3) + 1.0...	Yes	Y		DL	1.2	4	-.0...	20	-.0...	O...	1.5														
76	1.2D + 1.5Lm(3) + 1.0...	Yes	Y		DL	1.2	5	-.0...	21	-.0...	O...	1.5														
77	1.2D + 1.5Lm(3) + 1.0...	Yes	Y		DL	1.2	6	-.0...	22	-.0...	O...	1.5														
78	1.2D + 1.5Lm(3) + 1.0...	Yes	Y		DL	1.2	7	-.0...	23	-.0...	O...	1.5														
79	1.2D + 1.5Lm(3) + 1.0...	Yes	Y		DL	1.2	8	-.0...	24	-.0...	O...	1.5														
80	1.2D + 1.5Lm(3) + 1.0...	Yes	Y		DL	1.2	9	-.0...	25	-.0...	O...	1.5														
81	1.2D + 1.5Lm(3) + 1.0...	Yes	Y		DL	1.2	10	-.0...	26	-.0...	O...	1.5														
82	1.2D + 1.5Lm(3) + 1.0...	Yes	Y		DL	1.2	11	-.0...	27	-.0...	O...	1.5														

Joint Loads and Enforced Displacements (BLC 1 : Dead)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N38	L	Z	-45.75
2	N41	L	Z	-45.75
3	N132	L	Z	-45.75
4	N135	L	Z	-45.75
5	N85	L	Z	-45.75
6	N88	L	Z	-45.75
7	N39	L	Z	-64
8	N42	L	Z	-64
9	N133	L	Z	-64
10	N136	L	Z	-64
11	N86	L	Z	-64
12	N89	L	Z	-64
13	N37	L	Z	-71.5
14	N40	L	Z	-71.5
15	N131	L	Z	-71.5
16	N134	L	Z	-71.5
17	N84	L	Z	-71.5
18	N87	L	Z	-71.5
19	N47	L	Z	-11
20	N46	L	Z	-11
21	N142	L	Z	-11
22	N228	L	Z	-78
23	N232	L	Z	-78
24	N230	L	Z	-78

Joint Loads and Enforced Displacements (BLC 2 : Dead of Ice)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N38	L	Z	-77.61
2	N41	L	Z	-77.61
3	N132	L	Z	-77.61
4	N135	L	Z	-77.61
5	N85	L	Z	-77.61
6	N88	L	Z	-77.61
7	N39	L	Z	-202.133
8	N42	L	Z	-202.133
9	N133	L	Z	-202.133
10	N136	L	Z	-202.133
11	N86	L	Z	-202.133
12	N89	L	Z	-202.133
13	N37	L	Z	-87.827
14	N40	L	Z	-87.827

Joint Loads and Enforced Displacements (BLC 2 : Dead of Ice) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
15	N131	L	Z	-87.827
16	N134	L	Z	-87.827
17	N84	L	Z	-87.827
18	N87	L	Z	-87.827
19	N47	L	Z	-13.546
20	N46	L	Z	-13.546
21	N142	L	Z	-13.546
22	N228	L	Z	-61.065
23	N232	L	Z	-61.065
24	N230	L	Z	-61.065

Joint Loads and Enforced Displacements (BLC 20 : Antenna Wind (0))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N38	L	X	-123.964
2	N38	L	Y	0
3	N41	L	X	-123.964
4	N41	L	Y	0
5	N132	L	X	-96.566
6	N132	L	Y	0
7	N135	L	X	-96.566
8	N135	L	Y	0
9	N85	L	X	-96.566
10	N85	L	Y	0
11	N88	L	X	-96.566
12	N88	L	Y	0
13	N39	L	X	-411.929
14	N39	L	Y	0
15	N42	L	X	-411.929
16	N42	L	Y	0
17	N133	L	X	-238.64
18	N133	L	Y	0
19	N136	L	X	-238.64
20	N136	L	Y	0
21	N86	L	X	-238.64
22	N86	L	Y	0
23	N89	L	X	-238.64
24	N89	L	Y	0
25	N37	L	X	-139.388
26	N37	L	Y	0
27	N40	L	X	-139.388
28	N40	L	Y	0
29	N131	L	X	-110.6
30	N131	L	Y	0
31	N134	L	X	-110.6
32	N134	L	Y	0
33	N84	L	X	-110.6
34	N84	L	Y	0
35	N87	L	X	-110.6
36	N87	L	Y	0
37	N47	L	X	-14.245
38	N47	L	Y	0
39	N46	L	X	-14.245
40	N46	L	Y	0
41	N142	L	X	-8.903
42	N142	L	Y	0
43	N228	L	X	-66.879

Joint Loads and Enforced Displacements (BLC 20 : Antenna Wind (0)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
44	N228	L	Y	0
45	N232	L	X	-51.896
46	N232	L	Y	0
47	N230	L	X	-51.896
48	N230	L	Y	0

Joint Loads and Enforced Displacements (BLC 21 : Antenna Wind (30))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N38	L	X	-99.447
2	N38	L	Y	57.416
3	N41	L	X	-99.447
4	N41	L	Y	57.416
5	N132	L	X	-75.72
6	N132	L	Y	43.717
7	N135	L	X	-75.72
8	N135	L	Y	43.717
9	N85	L	X	-99.447
10	N85	L	Y	57.416
11	N88	L	X	-99.447
12	N88	L	Y	57.416
13	N39	L	X	-306.717
14	N39	L	Y	177.083
15	N42	L	X	-306.717
16	N42	L	Y	177.083
17	N133	L	X	-156.645
18	N133	L	Y	90.439
19	N136	L	X	-156.645
20	N136	L	Y	90.439
21	N86	L	X	-306.717
22	N86	L	Y	177.083
23	N89	L	X	-306.717
24	N89	L	Y	177.083
25	N37	L	X	-112.403
26	N37	L	Y	64.896
27	N40	L	X	-112.403
28	N40	L	Y	64.896
29	N131	L	X	-87.473
30	N131	L	Y	50.502
31	N134	L	X	-87.473
32	N134	L	Y	50.502
33	N84	L	X	-112.403
34	N84	L	Y	64.896
35	N87	L	X	-112.403
36	N87	L	Y	64.896
37	N47	L	X	-10.794
38	N47	L	Y	6.232
39	N46	L	X	-10.794
40	N46	L	Y	6.232
41	N142	L	X	-6.168
42	N142	L	Y	3.561
43	N228	L	X	-53.594
44	N228	L	Y	30.942
45	N232	L	X	-40.618
46	N232	L	Y	23.451
47	N230	L	X	-53.594
48	N230	L	Y	30.942

Joint Loads and Enforced Displacements (BLC 22 : Antenna Wind (45))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N38	L	X	-74.74
2	N38	L	Y	74.74
3	N41	L	X	-74.74
4	N41	L	Y	74.74
5	N132	L	X	-63.555
6	N132	L	Y	63.555
7	N135	L	X	-63.555
8	N135	L	Y	63.555
9	N85	L	X	-85.926
10	N85	L	Y	85.926
11	N88	L	X	-85.926
12	N88	L	Y	85.926
13	N39	L	X	-209.589
14	N39	L	Y	209.589
15	N42	L	X	-209.589
16	N42	L	Y	209.589
17	N133	L	X	-138.844
18	N133	L	Y	138.844
19	N136	L	X	-138.844
20	N136	L	Y	138.844
21	N86	L	X	-280.333
22	N86	L	Y	280.333
23	N89	L	X	-280.333
24	N89	L	Y	280.333
25	N37	L	X	-84.992
26	N37	L	Y	84.992
27	N40	L	X	-84.992
28	N40	L	Y	84.992
29	N131	L	X	-73.239
30	N131	L	Y	73.239
31	N134	L	X	-73.239
32	N134	L	Y	73.239
33	N84	L	X	-96.744
34	N84	L	Y	96.744
35	N87	L	X	-96.744
36	N87	L	Y	96.744
37	N47	L	X	-7.554
38	N47	L	Y	7.554
39	N46	L	X	-7.554
40	N46	L	Y	7.554
41	N142	L	X	-5.374
42	N142	L	Y	5.374
43	N228	L	X	-40.228
44	N228	L	Y	40.228
45	N232	L	X	-34.111
46	N232	L	Y	34.111
47	N230	L	X	-46.344
48	N230	L	Y	46.344

Joint Loads and Enforced Displacements (BLC 23 : Antenna Wind (60))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N38	L	X	-48.283
2	N38	L	Y	83.629
3	N41	L	X	-48.283
4	N41	L	Y	83.629
5	N132	L	X	-48.283

Joint Loads and Enforced Displacements (BLC 23 : Antenna Wind (60)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
6	N132	L	Y	83.629
7	N135	L	X	-48.283
8	N135	L	Y	83.629
9	N85	L	X	-61.982
10	N85	L	Y	107.356
11	N88	L	X	-61.982
12	N88	L	Y	107.356
13	N39	L	X	-119.32
14	N39	L	Y	206.669
15	N42	L	X	-119.32
16	N42	L	Y	206.669
17	N133	L	X	-119.32
18	N133	L	Y	206.669
19	N136	L	X	-119.32
20	N136	L	Y	206.669
21	N86	L	X	-205.964
22	N86	L	Y	356.741
23	N89	L	X	-205.964
24	N89	L	Y	356.741
25	N37	L	X	-55.3
26	N37	L	Y	95.783
27	N40	L	X	-55.3
28	N40	L	Y	95.783
29	N131	L	X	-55.3
30	N131	L	Y	95.783
31	N134	L	X	-55.3
32	N134	L	Y	95.783
33	N84	L	X	-69.694
34	N84	L	Y	120.714
35	N87	L	X	-69.694
36	N87	L	Y	120.714
37	N47	L	X	-4.451
38	N47	L	Y	7.71
39	N46	L	X	-4.451
40	N46	L	Y	7.71
41	N142	L	X	-4.451
42	N142	L	Y	7.71
43	N228	L	X	-25.948
44	N228	L	Y	44.943
45	N232	L	X	-25.948
46	N232	L	Y	44.943
47	N230	L	X	-33.44
48	N230	L	Y	57.919

Joint Loads and Enforced Displacements (BLC 24 : Antenna Wind (90))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N38	L	X	-1.983e-5
2	N38	L	Y	87.434
3	N41	L	X	-1.983e-5
4	N41	L	Y	87.434
5	N132	L	X	-2.604e-5
6	N132	L	Y	114.832
7	N135	L	X	-2.604e-5
8	N135	L	Y	114.832
9	N85	L	X	-2.604e-5
10	N85	L	Y	114.832

Joint Loads and Enforced Displacements (BLC 24 : Antenna Wind (90)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
11	N88	L	X	-2.604e-5
12	N88	L	Y	114.832
13	N39	L	X	-4.102e-5
14	N39	L	Y	180.878
15	N42	L	X	-4.102e-5
16	N42	L	Y	180.878
17	N133	L	X	-8.032e-5
18	N133	L	Y	354.166
19	N136	L	X	-8.032e-5
20	N136	L	Y	354.166
21	N86	L	X	-8.032e-5
22	N86	L	Y	354.166
23	N89	L	X	-8.032e-5
24	N89	L	Y	354.166
25	N37	L	X	-2.291e-5
26	N37	L	Y	101.005
27	N40	L	X	-2.291e-5
28	N40	L	Y	101.005
29	N131	L	X	-2.944e-5
30	N131	L	Y	129.792
31	N134	L	X	-2.944e-5
32	N134	L	Y	129.792
33	N84	L	X	-2.944e-5
34	N84	L	Y	129.792
35	N87	L	X	-2.944e-5
36	N87	L	Y	129.792
37	N47	L	X	-1.615e-6
38	N47	L	Y	7.122
39	N46	L	X	-1.615e-6
40	N46	L	Y	7.122
41	N142	L	X	-2.827e-6
42	N142	L	Y	12.464
43	N228	L	X	-1.064e-5
44	N228	L	Y	46.902
45	N232	L	X	-1.404e-5
46	N232	L	Y	61.885
47	N230	L	X	-1.404e-5
48	N230	L	Y	61.885

Joint Loads and Enforced Displacements (BLC 25 : Antenna Wind (120))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N38	L	X	48.283
2	N38	L	Y	83.629
3	N41	L	X	48.283
4	N41	L	Y	83.629
5	N132	L	X	61.982
6	N132	L	Y	107.356
7	N135	L	X	61.982
8	N135	L	Y	107.356
9	N85	L	X	48.283
10	N85	L	Y	83.629
11	N88	L	X	48.283
12	N88	L	Y	83.629
13	N39	L	X	119.32
14	N39	L	Y	206.669
15	N42	L	X	119.32

Joint Loads and Enforced Displacements (BLC 25 : Antenna Wind (120)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
16	N42	L	Y	206.669
17	N133	L	X	205.964
18	N133	L	Y	356.741
19	N136	L	X	205.964
20	N136	L	Y	356.741
21	N86	L	X	119.32
22	N86	L	Y	206.669
23	N89	L	X	119.32
24	N89	L	Y	206.669
25	N37	L	X	55.3
26	N37	L	Y	95.783
27	N40	L	X	55.3
28	N40	L	Y	95.783
29	N131	L	X	69.694
30	N131	L	Y	120.714
31	N134	L	X	69.694
32	N134	L	Y	120.714
33	N84	L	X	55.3
34	N84	L	Y	95.783
35	N87	L	X	55.3
36	N87	L	Y	95.783
37	N47	L	X	4.451
38	N47	L	Y	7.71
39	N46	L	X	4.451
40	N46	L	Y	7.71
41	N142	L	X	7.122
42	N142	L	Y	12.336
43	N228	L	X	25.948
44	N228	L	Y	44.943
45	N232	L	X	33.44
46	N232	L	Y	57.919
47	N230	L	X	25.948
48	N230	L	Y	44.943

Joint Loads and Enforced Displacements (BLC 26 : Antenna Wind (135))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N38	L	X	74.74
2	N38	L	Y	74.74
3	N41	L	X	74.74
4	N41	L	Y	74.74
5	N132	L	X	85.926
6	N132	L	Y	85.926
7	N135	L	X	85.926
8	N135	L	Y	85.926
9	N85	L	X	63.555
10	N85	L	Y	63.555
11	N88	L	X	63.555
12	N88	L	Y	63.555
13	N39	L	X	209.588
14	N39	L	Y	209.589
15	N42	L	X	209.588
16	N42	L	Y	209.589
17	N133	L	X	280.333
18	N133	L	Y	280.333
19	N136	L	X	280.333
20	N136	L	Y	280.333

Joint Loads and Enforced Displacements (BLC 26 : Antenna Wind (135)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
21	N86	L	X	138.844
22	N86	L	Y	138.844
23	N89	L	X	138.844
24	N89	L	Y	138.844
25	N37	L	X	84.992
26	N37	L	Y	84.992
27	N40	L	X	84.992
28	N40	L	Y	84.992
29	N131	L	X	96.744
30	N131	L	Y	96.744
31	N134	L	X	96.744
32	N134	L	Y	96.744
33	N84	L	X	73.239
34	N84	L	Y	73.239
35	N87	L	X	73.239
36	N87	L	Y	73.239
37	N47	L	X	7.554
38	N47	L	Y	7.554
39	N46	L	X	7.554
40	N46	L	Y	7.554
41	N142	L	X	9.735
42	N142	L	Y	9.735
43	N228	L	X	40.228
44	N228	L	Y	40.228
45	N232	L	X	46.344
46	N232	L	Y	46.344
47	N230	L	X	34.111
48	N230	L	Y	34.111

Joint Loads and Enforced Displacements (BLC 27 : Antenna Wind (150))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N38	L	X	99.447
2	N38	L	Y	57.416
3	N41	L	X	99.447
4	N41	L	Y	57.416
5	N132	L	X	99.447
6	N132	L	Y	57.416
7	N135	L	X	99.447
8	N135	L	Y	57.416
9	N85	L	X	75.72
10	N85	L	Y	43.717
11	N88	L	X	75.72
12	N88	L	Y	43.717
13	N39	L	X	306.716
14	N39	L	Y	177.083
15	N42	L	X	306.716
16	N42	L	Y	177.083
17	N133	L	X	306.717
18	N133	L	Y	177.083
19	N136	L	X	306.717
20	N136	L	Y	177.083
21	N86	L	X	156.645
22	N86	L	Y	90.439
23	N89	L	X	156.645
24	N89	L	Y	90.439
25	N37	L	X	112.403

Joint Loads and Enforced Displacements (BLC 27 : Antenna Wind (150)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
26	N37	L	Y	64.896
27	N40	L	X	112.403
28	N40	L	Y	64.896
29	N131	L	X	112.403
30	N131	L	Y	64.896
31	N134	L	X	112.403
32	N134	L	Y	64.896
33	N84	L	X	87.472
34	N84	L	Y	50.502
35	N87	L	X	87.472
36	N87	L	Y	50.502
37	N47	L	X	10.794
38	N47	L	Y	6.232
39	N46	L	X	10.794
40	N46	L	Y	6.232
41	N142	L	X	10.794
42	N142	L	Y	6.232
43	N228	L	X	53.594
44	N228	L	Y	30.942
45	N232	L	X	53.594
46	N232	L	Y	30.942
47	N230	L	X	40.618
48	N230	L	Y	23.451

Joint Loads and Enforced Displacements (BLC 28 : Antenna Wind w/ Ice (0))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N38	L	X	-28.409
2	N38	L	Y	0
3	N41	L	X	-28.409
4	N41	L	Y	0
5	N132	L	X	-23.376
6	N132	L	Y	0
7	N135	L	X	-23.376
8	N135	L	Y	0
9	N85	L	X	-23.376
10	N85	L	Y	0
11	N88	L	X	-23.376
12	N88	L	Y	0
13	N39	L	X	-83.38
14	N39	L	Y	0
15	N42	L	X	-83.38
16	N42	L	Y	0
17	N133	L	X	-52.646
18	N133	L	Y	0
19	N136	L	X	-52.646
20	N136	L	Y	0
21	N86	L	X	-52.646
22	N86	L	Y	0
23	N89	L	X	-52.646
24	N89	L	Y	0
25	N37	L	X	-31.475
26	N37	L	Y	0
27	N40	L	X	-31.475
28	N40	L	Y	0
29	N131	L	X	-26.191
30	N131	L	Y	0

Joint Loads and Enforced Displacements (BLC 28 : Antenna Wind w/ Ice (0)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
31	N134	L	X	-26.191
32	N134	L	Y	0
33	N84	L	X	-26.191
34	N84	L	Y	0
35	N87	L	X	-26.191
36	N87	L	Y	0
37	N47	L	X	-5.737
38	N47	L	Y	0
39	N46	L	X	-5.737
40	N46	L	Y	0
41	N142	L	X	-4.362
42	N142	L	Y	0
43	N228	L	X	-17.892
44	N228	L	Y	0
45	N232	L	X	-14.702
46	N232	L	Y	0
47	N230	L	X	-14.702
48	N230	L	Y	0

Joint Loads and Enforced Displacements (BLC 29 : Antenna Wind w/ Ice (30))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N38	L	X	-23.15
2	N38	L	Y	13.366
3	N41	L	X	-23.15
4	N41	L	Y	13.366
5	N132	L	X	-18.792
6	N132	L	Y	10.849
7	N135	L	X	-18.792
8	N135	L	Y	10.849
9	N85	L	X	-23.15
10	N85	L	Y	13.366
11	N88	L	X	-23.15
12	N88	L	Y	13.366
13	N39	L	X	-63.337
14	N39	L	Y	36.568
15	N42	L	X	-63.337
16	N42	L	Y	36.568
17	N133	L	X	-36.721
18	N133	L	Y	21.201
19	N136	L	X	-36.721
20	N136	L	Y	21.201
21	N86	L	X	-63.337
22	N86	L	Y	36.568
23	N89	L	X	-63.337
24	N89	L	Y	36.568
25	N37	L	X	-25.733
26	N37	L	Y	14.857
27	N40	L	X	-25.733
28	N40	L	Y	14.857
29	N131	L	X	-21.157
30	N131	L	Y	12.215
31	N134	L	X	-21.157
32	N134	L	Y	12.215
33	N84	L	X	-25.733
34	N84	L	Y	14.857
35	N87	L	X	-25.733

Joint Loads and Enforced Displacements (BLC 29 : Antenna Wind w/ Ice (30)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
36	N87	L	Y	14.857
37	N47	L	X	-4.572
38	N47	L	Y	2.639
39	N46	L	X	-4.572
40	N46	L	Y	2.639
41	N142	L	X	-3.38
42	N142	L	Y	1.952
43	N228	L	X	-14.574
44	N228	L	Y	8.414
45	N232	L	X	-11.811
46	N232	L	Y	6.819
47	N230	L	X	-14.574
48	N230	L	Y	8.414

Joint Loads and Enforced Displacements (BLC 30 : Antenna Wind w/ Ice (45))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N38	L	X	-17.716
2	N38	L	Y	17.716
3	N41	L	X	-17.716
4	N41	L	Y	17.716
5	N132	L	X	-15.661
6	N132	L	Y	15.661
7	N135	L	X	-15.661
8	N135	L	Y	15.661
9	N85	L	X	-19.771
10	N85	L	Y	19.771
11	N88	L	X	-19.771
12	N88	L	Y	19.771
13	N39	L	X	-44.471
14	N39	L	Y	44.471
15	N42	L	X	-44.471
16	N42	L	Y	44.471
17	N133	L	X	-31.923
18	N133	L	Y	31.923
19	N136	L	X	-31.923
20	N136	L	Y	31.923
21	N86	L	X	-57.018
22	N86	L	Y	57.018
23	N89	L	X	-57.018
24	N89	L	Y	57.018
25	N37	L	X	-19.765
26	N37	L	Y	19.765
27	N40	L	X	-19.765
28	N40	L	Y	19.765
29	N131	L	X	-17.608
30	N131	L	Y	17.608
31	N134	L	X	-17.608
32	N134	L	Y	17.608
33	N84	L	X	-21.922
34	N84	L	Y	21.922
35	N87	L	X	-21.922
36	N87	L	Y	21.922
37	N47	L	X	-3.408
38	N47	L	Y	3.408
39	N46	L	X	-3.408
40	N46	L	Y	3.408

Joint Loads and Enforced Displacements (BLC 30 : Antenna Wind w/ Ice (45)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
41	N142	L	X	-2.847
42	N142	L	Y	2.847
43	N228	L	X	-11.148
44	N228	L	Y	11.148
45	N232	L	X	-9.845
46	N232	L	Y	9.845
47	N230	L	X	-12.45
48	N230	L	Y	12.45

Joint Loads and Enforced Displacements (BLC 31 : Antenna Wind w/ Ice (60))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N38	L	X	-11.688
2	N38	L	Y	20.245
3	N41	L	X	-11.688
4	N41	L	Y	20.245
5	N132	L	X	-11.688
6	N132	L	Y	20.245
7	N135	L	X	-11.688
8	N135	L	Y	20.245
9	N85	L	X	-14.205
10	N85	L	Y	24.603
11	N88	L	X	-14.205
12	N88	L	Y	24.603
13	N39	L	X	-26.323
14	N39	L	Y	45.593
15	N42	L	X	-26.323
16	N42	L	Y	45.593
17	N133	L	X	-26.323
18	N133	L	Y	45.593
19	N136	L	X	-26.323
20	N136	L	Y	45.593
21	N86	L	X	-41.69
22	N86	L	Y	72.209
23	N89	L	X	-41.69
24	N89	L	Y	72.209
25	N37	L	X	-13.096
26	N37	L	Y	22.682
27	N40	L	X	-13.096
28	N40	L	Y	22.682
29	N131	L	X	-13.096
30	N131	L	Y	22.682
31	N134	L	X	-13.096
32	N134	L	Y	22.682
33	N84	L	X	-15.737
34	N84	L	Y	27.258
35	N87	L	X	-15.737
36	N87	L	Y	27.258
37	N47	L	X	-2.181
38	N47	L	Y	3.777
39	N46	L	X	-2.181
40	N46	L	Y	3.777
41	N142	L	X	-2.181
42	N142	L	Y	3.777
43	N228	L	X	-7.351
44	N228	L	Y	12.732
45	N232	L	X	-7.351

Joint Loads and Enforced Displacements (BLC 31 : Antenna Wind w/ Ice (60)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
46	N232	L	Y	12.732
47	N230	L	X	-8.946
48	N230	L	Y	15.495

Joint Loads and Enforced Displacements (BLC 32 : Antenna Wind w/ Ice (90))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N38	L	X	-4.921e-6
2	N38	L	Y	21.699
3	N41	L	X	-4.921e-6
4	N41	L	Y	21.699
5	N132	L	X	-6.063e-6
6	N132	L	Y	26.732
7	N135	L	X	-6.063e-6
8	N135	L	Y	26.732
9	N85	L	X	-6.063e-6
10	N85	L	Y	26.732
11	N88	L	X	-6.063e-6
12	N88	L	Y	26.732
13	N39	L	X	-9.616e-6
14	N39	L	Y	42.401
15	N42	L	X	-9.616e-6
16	N42	L	Y	42.401
17	N133	L	X	-1.659e-5
18	N133	L	Y	73.136
19	N136	L	X	-1.659e-5
20	N136	L	Y	73.136
21	N86	L	X	-1.659e-5
22	N86	L	Y	73.136
23	N89	L	X	-1.659e-5
24	N89	L	Y	73.136
25	N37	L	X	-5.541e-6
26	N37	L	Y	24.43
27	N40	L	X	-5.541e-6
28	N40	L	Y	24.43
29	N131	L	X	-6.739e-6
30	N131	L	Y	29.713
31	N134	L	X	-6.739e-6
32	N134	L	Y	29.713
33	N84	L	X	-6.739e-6
34	N84	L	Y	29.713
35	N87	L	X	-6.739e-6
36	N87	L	Y	29.713
37	N47	L	X	-8.852e-7
38	N47	L	Y	3.903
39	N46	L	X	-8.852e-7
40	N46	L	Y	3.903
41	N142	L	X	-1.197e-6
42	N142	L	Y	5.279
43	N228	L	X	-3.093e-6
44	N228	L	Y	13.639
45	N232	L	X	-3.817e-6
46	N232	L	Y	16.829
47	N230	L	X	-3.817e-6
48	N230	L	Y	16.829

Joint Loads and Enforced Displacements (BLC 33 : Antenna Wind w/ Ice (120))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N38	L	X	11.688
2	N38	L	Y	20.245
3	N41	L	X	11.688
4	N41	L	Y	20.245
5	N132	L	X	14.205
6	N132	L	Y	24.603
7	N135	L	X	14.205
8	N135	L	Y	24.603
9	N85	L	X	11.688
10	N85	L	Y	20.245
11	N88	L	X	11.688
12	N88	L	Y	20.245
13	N39	L	X	26.323
14	N39	L	Y	45.593
15	N42	L	X	26.323
16	N42	L	Y	45.593
17	N133	L	X	41.69
18	N133	L	Y	72.209
19	N136	L	X	41.69
20	N136	L	Y	72.209
21	N86	L	X	26.323
22	N86	L	Y	45.593
23	N89	L	X	26.323
24	N89	L	Y	45.593
25	N37	L	X	13.096
26	N37	L	Y	22.682
27	N40	L	X	13.096
28	N40	L	Y	22.682
29	N131	L	X	15.737
30	N131	L	Y	27.258
31	N134	L	X	15.737
32	N134	L	Y	27.258
33	N84	L	X	13.096
34	N84	L	Y	22.682
35	N87	L	X	13.096
36	N87	L	Y	22.682
37	N47	L	X	2.181
38	N47	L	Y	3.777
39	N46	L	X	2.181
40	N46	L	Y	3.777
41	N142	L	X	2.869
42	N142	L	Y	4.969
43	N228	L	X	7.351
44	N228	L	Y	12.732
45	N232	L	X	8.946
46	N232	L	Y	15.495
47	N230	L	X	7.351
48	N230	L	Y	12.732

Joint Loads and Enforced Displacements (BLC 34 : Antenna Wind w/ Ice (135))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N38	L	X	17.716
2	N38	L	Y	17.716
3	N41	L	X	17.716
4	N41	L	Y	17.716
5	N132	L	X	19.771

Joint Loads and Enforced Displacements (BLC 34 : Antenna Wind w/ Ice (135)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
6	N132	L	Y	19.771
7	N135	L	X	19.771
8	N135	L	Y	19.771
9	N85	L	X	15.661
10	N85	L	Y	15.661
11	N88	L	X	15.661
12	N88	L	Y	15.661
13	N39	L	X	44.471
14	N39	L	Y	44.471
15	N42	L	X	44.471
16	N42	L	Y	44.471
17	N133	L	X	57.018
18	N133	L	Y	57.018
19	N136	L	X	57.018
20	N136	L	Y	57.018
21	N86	L	X	31.923
22	N86	L	Y	31.923
23	N89	L	X	31.923
24	N89	L	Y	31.923
25	N37	L	X	19.765
26	N37	L	Y	19.765
27	N40	L	X	19.765
28	N40	L	Y	19.765
29	N131	L	X	21.922
30	N131	L	Y	21.922
31	N134	L	X	21.922
32	N134	L	Y	21.922
33	N84	L	X	17.608
34	N84	L	Y	17.608
35	N87	L	X	17.608
36	N87	L	Y	17.608
37	N47	L	X	3.408
38	N47	L	Y	3.408
39	N46	L	X	3.408
40	N46	L	Y	3.408
41	N142	L	X	3.97
42	N142	L	Y	3.97
43	N228	L	X	11.148
44	N228	L	Y	11.148
45	N232	L	X	12.45
46	N232	L	Y	12.45
47	N230	L	X	9.845
48	N230	L	Y	9.845

Joint Loads and Enforced Displacements (BLC 35 : Antenna Wind w/ Ice (150))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N38	L	X	23.15
2	N38	L	Y	13.366
3	N41	L	X	23.15
4	N41	L	Y	13.366
5	N132	L	X	23.15
6	N132	L	Y	13.366
7	N135	L	X	23.15
8	N135	L	Y	13.366
9	N85	L	X	18.792
10	N85	L	Y	10.849

Joint Loads and Enforced Displacements (BLC 35 : Antenna Wind w/ Ice (150)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
11	N88	L	X	18.792
12	N88	L	Y	10.849
13	N39	L	X	63.337
14	N39	L	Y	36.568
15	N42	L	X	63.337
16	N42	L	Y	36.568
17	N133	L	X	63.337
18	N133	L	Y	36.568
19	N136	L	X	63.337
20	N136	L	Y	36.568
21	N86	L	X	36.721
22	N86	L	Y	21.201
23	N89	L	X	36.721
24	N89	L	Y	21.201
25	N37	L	X	25.733
26	N37	L	Y	14.857
27	N40	L	X	25.733
28	N40	L	Y	14.857
29	N131	L	X	25.733
30	N131	L	Y	14.857
31	N134	L	X	25.733
32	N134	L	Y	14.857
33	N84	L	X	21.157
34	N84	L	Y	12.215
35	N87	L	X	21.157
36	N87	L	Y	12.215
37	N47	L	X	4.572
38	N47	L	Y	2.639
39	N46	L	X	4.572
40	N46	L	Y	2.639
41	N142	L	X	4.572
42	N142	L	Y	2.639
43	N228	L	X	14.574
44	N228	L	Y	8.414
45	N232	L	X	14.574
46	N232	L	Y	8.414
47	N230	L	X	11.811
48	N230	L	Y	6.819

Joint Loads and Enforced Displacements (BLC 36 : Maintenance Live Lm (1))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N19	L	Z	-500

Joint Loads and Enforced Displacements (BLC 37 : Maintenance Live Lm (2))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N21	L	Z	-500

Joint Loads and Enforced Displacements (BLC 38 : Maintenance Live Lm (3))

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N20	L	Z	-500

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N3	max	1717.827	3	1433.169	16	2379.842	27	1409.298	7	1979.434	3	3685.588	13
2		min	-1516.535	11	-1412.437	8	162.427	1	-1288.479	15	-8418.265	27	-3721.399	5
3	N97	max	1474.753	18	1581.227	15	2364.321	32	1656.281	8	4061.281	18	3672.622	3
4		min	-1563.103	10	-1767.758	7	167.5	8	-7359.207	32	-1394.34	10	-3696.905	11
5	N50	max	1509.222	3	1697.844	15	2338.068	22	7068.868	22	4358.989	20	3639.912	11
6		min	-1627.589	12	-1528.362	7	153.771	14	-1839.977	14	-1126.074	12	-3661.373	16
7	Totals:	max	4682.262	3	4671.128	15	6534.487	34						
8		min	-4682.255	11	-4671.141	7	2190.297	1						

Envelope AISC 14th(360-10): LRFD Steel Code Checks

	Member	Shape	Code ...	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pnc [...	phi*Pnt [lb]	phi*Mn y...	phi*Mn z...	Cb	Eqn
1	M62	PIPE_2.0X	.759	16.121	8	.102	16.121		18	23929.137	44100	2530.5	2530.5	1....	H1-1b
2	M14	PIPE_2.0X	.751	16.121	3	.102	16.121		12	23929.137	44100	2530.5	2530.5	1....	H1-1b
3	M38	PIPE_2.0X	.748	16.121	14	.101	16.121		7	23929.137	44100	2530.5	2530.5	1....	H1-1b
4	M49	HSS5x3x5	.668	0	18	.177	0	z	12	126713.6...	132840	12096	17334	1....	H1-1b
5	M1	HSS5x3x5	.667	0	12	.174	0	z	7	126713.6...	132840	12096	17334	1....	H1-1b
6	M25	HSS5x3x5	.660	0	7	.174	0	z	18	126713.6...	132840	12096	17334	1....	H1-1b
7	M13	PIPE_2.0	.628	16	9	.263	27.636		10	20866.733	32130	1871.625	1871.625	1....	H1-1b
8	M37	PIPE_2.0	.620	16	4	.260	27.636		4	20866.733	32130	1871.625	1871.625	1....	H1-1b
9	M61	PIPE_2.0	.617	16	15	.260	27.636		15	20866.733	32130	1871.625	1871.625	1....	H1-1b
10	M33	PIPE_3.0	.596	80.303	5	.463	80.303		6	28250.554	65205	5748.75	5748.75	3....	H3-6
11	M9	PIPE_3.0	.594	80.303	10	.466	80.303		11	28250.554	65205	5748.75	5748.75	3....	H3-6
12	M57	PIPE_3.0	.590	80.303	15	.468	80.303		16	28250.554	65205	5748.75	5748.75	3....	H3-6
13	M63	PIPE_2.0	.511	57.455	17	.269	27.636		17	20866.733	32130	1871.625	1871.625	1....	H3-6
14	M15	PIPE_2.0	.503	16	13	.269	27.636		12	20866.733	32130	1871.625	1871.625	1....	H1-1b
15	HM1	PIPE_2.0	.495	93.273	12	.283	14.727		11	5397.31	32130	1871.625	1871.625	3....	H3-6
16	HM19	PIPE_2.0	.491	93.273	18	.285	14.727		16	5397.31	32130	1871.625	1871.625	3....	H3-6
17	HM10	PIPE_2.0	.489	93.273	7	.288	14.727		5	5397.31	32130	1871.625	1871.625	3....	H3-6
18	M39	PIPE_2.0	.481	16	7	.266	27.636		7	20866.733	32130	1871.625	1871.625	1....	H1-1b
19	HM30	L2.5x2.5x4	.360	15.408	16	.100	0	z	7	36536.53	38556	1113.554	2537.388	2....	H2-1
20	HM29	L2.5x2.5x4	.360	15.408	6	.100	0	z	12	36536.53	38556	1113.554	2537.388	2....	H2-1
21	HM28	L2.5x2.5x4	.355	15.408	11	.100	0	z	18	36536.53	38556	1113.554	2537.388	2....	H2-1
22	HM2	PL6x3/8	.335	2.303	17	.563	2.242	y	11	61901.829	72900	569.533	9112.5	1....	H1-1b
23	HM11	PL6x3/8	.331	2.303	11	.570	2.242	y	6	61901.829	72900	569.533	9112.5	1....	H1-1b
24	HM20	PL6x3/8	.325	2.303	6	.568	2.242	y	16	61901.829	72900	569.533	9112.5	1....	H1-1b
25	HM3	PL6x3/8	.267	3.697	5	.446	4.667	y	3	61901.829	72900	569.533	9112.5	1....	H1-1b
26	HM21	PL6x3/8	.259	3.697	11	.448	4.667	y	8	61901.829	72900	569.533	9112.5	1....	H1-1b
27	HM12	PL6x3/8	.257	3.697	16	.446	4.667	y	14	61901.829	72900	569.533	9112.5	1....	H1-1b
28	M53	PIPE_4.0	.137	9.091	16	.114	11.455		8	92571.332	93240	10631.25	10631.25	1....	H1-1b
29	M5	PIPE_4.0	.137	9.091	11	.113	11.455		3	92571.332	93240	10631.25	10631.25	1....	H1-1b
30	M29	PIPE_4.0	.136	9.091	6	.115	11.455		13	92571.332	93240	10631.25	10631.25	1....	H1-1b

APPENDIX D

ADDITIONAL CALCULATIONS

CCI Mount Analysis Square Plate Connection 1.0.1

Location:	A	*Select*

TIA Revision:	TIA-222-H	*Select*

Applying TIA-222-H Section 15.5

SITE DATA	
BU Number:	806352
Project Number:	019558041
Order Number:	479843

REACTIONS		
Moment:	8.420	kip-ft
Axial:	0.170	kips
Shear:	2.380	kips

BOLT DATA		
Quantity:	4	
Diameter:	0.625	in
Material:	A325 (1/2 to 1)	*Select*
Fy:	92	ksi
Fu:	120	ksi
Bolt Circle:	9.899494937	in

Load Combination	27

BOLT RESULTS		
Max Bolt (Cu+ Vu/η):	10.25	kips
Axial Design Strength:	21.70	kips
Stress Ratio	44.99%	

PLATE DATA		
Width:	10	in
Thickness:	0.75	in
Fy:	36	ksi

PLATE RESULTS		
Base Plate Stress:	23.74	ksi
Bending Strength:	32.40	ksi
Stress Ratio:	69.79%	

Controlling Load Combination	27

SUPPORT ARM DATA		
Type:	HSST	*Select*
Diameter/Width:	4	in
Thickness	0.1875	in
Fy:	36	ksi
Number of Sides:	4	

Exhibit F

Power Density/RF Emissions Report

Transcom Engineering, Inc.

Wireless Network Design and Deployment

Radio Frequency Emissions Analysis Report

T-MOBILE Existing Facility

Site ID: CT11851C

CT851/Crown Darien_MP
130 Ledge Road
Darien, CT 06820

May 24, 2019

Transcom Engineering Project Number: 737001-0038

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**34.30 %**

May 24, 2019

T-MOBILE
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, CT 6009

Emissions Analysis for Site: **CT11851C – CT851/Crown Darien_MP**

Transcom Engineering, Inc ("Transcom") was directed to analyze the proposed upgrades to the T-MOBILE facility located at **130 Ledge Road, Darien, 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.

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed upgrades to the T-MOBILE antenna facility located at **130 Ledge Road, Darien, 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.

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

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

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

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
LTE	1900 MHz (PCS)	4	40
LTE	2100 MHz (AWS)	2	60
GSM	1900 MHz (PCS)	1	15
UMTS	2100 MHz (AWS)	1	40
LTE / 5G NR	600 MHz	2	40
LTE	700 MHz	2	20

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 600, 700 MHz, 1900 MHz (PCS) and 2100 MHz (AWS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Ericsson AIR32 B66A / B2A	110
A	2	Ericsson AIR21 B2A/B4P	110
A	3	RFS APXVAARR24_43-U-NA20	110
B	1	Ericsson AIR32 B66A / B2A	110
B	2	Ericsson AIR21 B2A/B4P	110
B	3	RFS APXVAARR24_43-U-NA20	110
C	1	Ericsson AIR32 B66A / B2A	110
C	2	Ericsson AIR21 B2A/B4P	110
C	3	RFS APXVAARR24_43-U-NA20	110

Table 2: Antenna Data

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

Cable losses were factored in the calculations for this site. Since all **2100 MHz (AWS) UMTS** radios are ground mounted the following cable loss values were used. For each ground mounted **2100 MHz (AWS) UMTS** radio there was **1.93 dB** of cable loss calculated into the system gains / losses for this site. These values were calculated based upon the manufacturers specifications for **182 feet** of **1-5/8"** coax.

RESULTS

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

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Ericsson AIR32 B66A / B2A	1900 MHz (PCS) / 2100 MHz (AWS)	15.85	6	280	10,768.57	3.58
Antenna A2	Ericsson AIR21 B2A/B4P	1900 MHz (PCS) / 2100 MHz (AWS)	15.9	2	55	1,581.41	0.52
Antenna A3	RFS APXVAARR24_43-U-NA20	600 MHz / 700 MHz	12.95 / 13.35	4	120	2,443.03	1.93
						Sector A Composite MPE%	**6.03**
Antenna B1	Ericsson AIR32 B66A / B2A	1900 MHz (PCS) / 2100 MHz (AWS)	15.85	6	280	10,768.57	3.58
Antenna B2	Ericsson AIR21 B2A/B4P	1900 MHz (PCS) / 2100 MHz (AWS)	15.9	2	55	1,581.41	0.52
Antenna B3	RFS APXVAARR24_43-U-NA20	600 MHz / 700 MHz	12.95 / 13.35	4	120	2,443.03	1.93
						Sector B Composite MPE%	**6.03**
Antenna C1	Ericsson AIR32 B66A / B2A	1900 MHz (PCS) / 2100 MHz (AWS)	15.85	6	280	10,768.57	3.58
Antenna C2	Ericsson AIR21 B2A/B4P	1900 MHz (PCS) / 2100 MHz (AWS)	15.9	2	55	1,581.41	0.52
Antenna C3	RFS APXVAARR24_43-U-NA20	600 MHz / 700 MHz	12.95 / 13.35	4	120	2,443.03	1.93
						Sector C Composite MPE%	**6.03**

Table 3: T-MOBILE Emissions Levels

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

Site Composite MPE%	
Carrier	**MPE%**
T-MOBILE – Max Per Sector Value	**6.03 %**
AT&T	14.00 %
Verizon Wireless	3.98 %
Clearwire	0.39 %
Sprint	5.95 %
MetroPCS	3.95 %
Site Total MPE %:	**34.30 %**

Table 4: All Carrier MPE Contributions

T-MOBILE Sector A Total:	6.03 %
T-MOBILE Sector B Total:	6.03 %
T-MOBILE Sector C Total:	6.03 %
Site Total:	34.30 %

Table 5: Site MPE Summary

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

T-MOBILE _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile 1900 MHz (PCS) LTE	4	1,538.37	110	20.45	1900 MHz (PCS)	1000	2.05%
T-Mobile 2100 MHz (AWS) LTE	2	2,307.55	110	15.34	2100 MHz (AWS)	1000	1.53%
T-Mobile 1900 MHz (PCS) GSM	1	583.57	110	1.94	1900 MHz (PCS)	1000	0.19%
T-Mobile 2100 MHz (AWS) UMTS	1	997.84	110	3.32	2100 MHz (AWS)	1000	0.33%
T-Mobile 600 MHz LTE / 5G NR	2	788.97	110	5.24	600 MHz	400	1.31%
T-Mobile 700 MHz LTE	2	432.54	110	2.88	700 MHz	467	0.62%
						Total:	**6.03%**

Table 6: T-MOBILE Maximum Sector MPE Power Values

Summary

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

The anticipated maximum composite contributions from the 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:	6.03 %
Sector B:	6.03 %
Sector C:	6.03 %
T-MOBILE Maximum Total (per sector):	6.03 %
Site Total:	34.30 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **34.30 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

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