CROWN CASTLE

1 Cityplace Dr, Suite 490

Creve Coeur, MO 63141

Phone: (314) 513-0147

www.crowncastle.com

December 28, 2021

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

RE: **Notice of Exempt Modification for T-Mobile**
Crown Site ID# 806365; T-Mobile Site ID# CT11528C
Brendon & Quinn Streets Stafford, Connecticut 06076
Latitude: 41.964222 / Longitude: -72.304944

Ms. Bachman:

T-Mobile currently maintains twelve (12) antennas at the 125-foot mount on the existing 128-foot Monopole Tower located at Brendon & Quinn Streets Stafford, CT. The property is owned by TIZIANI LLC and the Tower by Crown Castle. T-Mobile now intends to replace four (4) antennas and remove four (4) antennas. This modification/proposal includes hardware that is both 4G(LTE) and 5G capable through remote software configuration and either or both services may be turned on or off at various times.

Planned Modifications:
Tower:

Remove and Replace:
(4) Ericsson AIR21 KRC118023 1_B2A_B4P Antennas **(REMOVE) –** (4) Ericsson AIR6449 B41 Antennas **(REPLACE)**

(4) RFS APXVAARR24_43-U-NA20 Antennas (**Remain)**

Remove:
(4) Ericsson AIR32 KRD901146-1_B66A_B2A Antennas

Install New:
(4) Ericsson RRU 4460 B25+B66 Radios
(1) Microwave – IBR 1300-CCIV2

CROWN CASTLE

1 Cityplace Dr, Suite 490

Creve Coeur, MO 63141

Phone: (314) 513-0147

www.crowncastle.com

Ground:

Install New:
(3) Microwave Cables ¼"
(3) Hybrid Cables (1 5/8")
(1) B160 Battery Cabinet
(1) 6160 Cabinet
(1) BB6648
(1) DUG20
(2) PSU 4813
(1) CSR IXRe V2

Remove:
(1) RBS 6102 ODE Cabinet

The facility was approved by The Connecticut Siting Council by way of a Certificate of Environmental Compatibility Docket No. 165 on December 5th 1994.

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 Mary Mitta, First Selectwoman of the Town of Stafford and Glenn T. Setzler - Building Official for the Town of Stafford. A copy will also be sent to the property owner.

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

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

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

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communication Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

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

For the foregoing reasons, T-Mobile respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. §16-50j-72(b)(2).

1 Cityplace Dr, Suite 490
Creve Coeur, MO 63141

Phone: (314) 513-0147
www.crowncastle.com

Sincerely,

Colin Robinson

Colin Robinson
Project Manager
NETWORK BUILDING + CONSULTING
100 Apollo Drive Suite 303
Chelmsford, MA 01824
crobinson@nbcllc.com
(360) 561-3311

cc:

Mary Mitta, First Selectwoman *(Via Federal Express)*
Warren Memorial Town Hall - Second Floor
1 Main Street
Stafford Springs, CT 06076
(860) 684-1777

Glenn T. Setzler - Building Official *(Via Federal Express)*
Warren Memorial Town Hall - First Floor
1 Main Street
Stafford Springs, CT 06076
860-684-1775

Tiziani LLC *(Via Federal Express)*
1014 Buckley Highway
Union, CT 06076
860-471-1574

Colin Robinson

From: TrackingUpdates@fedex.com
Sent: Wednesday, December 29, 2021 1:20 PM
To: Colin Robinson
Subject: FedEx Shipment 775615688490: Your package has been delivered

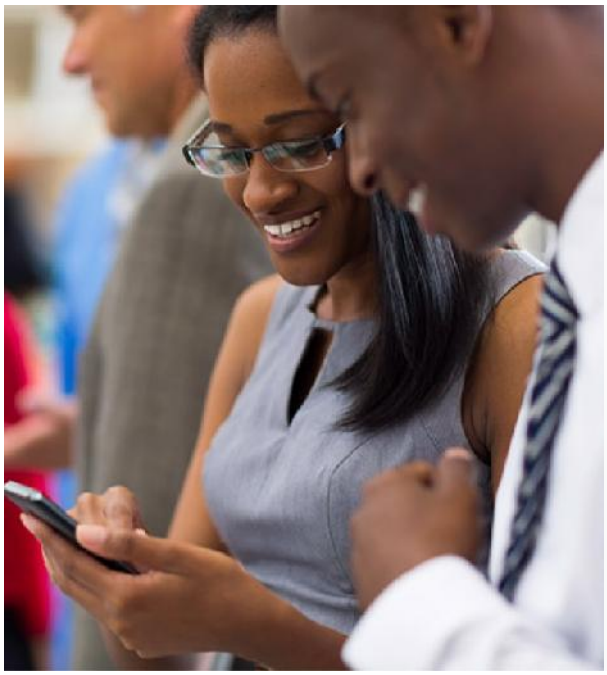
Hi. Your package was delivered Wed, 12/29/2021 at 1:19pm.

Delivered to 1 MAIN ST, STAFFORD SPRINGS, CT 06076
Received by M.MITTA

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER	775615688490
FROM	NB+C 100 Apollo Dr. Suite 303 CHELMSFORD, MA, US, 01824
TO	Warren Memorial Town Hall Mary Mitta, First Selectwoman

	1 Main Street 2nd Floor STAFFORD SPRINGS, CT, US, 06076
REFERENCE	100788 NB+C
SHIPPER REFERENCE	100788 NB+C
SHIP DATE	Tue 12/28/2021 06:40 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Envelope
ORIGIN	CHELMSFORD, MA, US, 01824
DESTINATION	STAFFORD SPRINGS, CT, US, 06076
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Priority Overnight



Download the FedEx® Mobile app

Get the flexibility you need to create shipments and request to customize your deliveries through the app.

LEARN MORE

FOLLOW FEDEX

Colin Robinson

From: TrackingUpdates@fedex.com
Sent: Wednesday, December 29, 2021 1:20 PM
To: Colin Robinson
Subject: FedEx Shipment 775615768116: Your package has been delivered

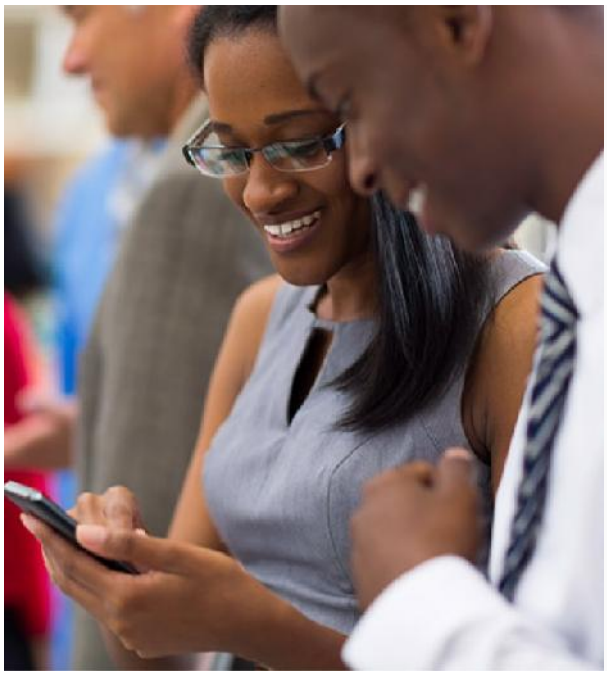
Hi. Your package was delivered Wed, 12/29/2021 at 1:19pm.

Delivered to 1 MAIN ST, STAFFORD SPRINGS, CT 06076
Received by M.MITTA

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER	775615768116
FROM	NB+C 100 Apollo Dr. Suite 303 CHELMSFORD, MA, US, 01824
TO	Warren Memorial Town Hall Glenn T. Setzler - Building Officia

	1 Main Street First Floor STAFFORD SPRINGS, CT, US, 06076
REFERENCE	100788 NB+C
SHIPPER REFERENCE	100788 NB+C
SHIP DATE	Tue 12/28/2021 06:40 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Envelope
ORIGIN	CHELMSFORD, MA, US, 01824
DESTINATION	STAFFORD SPRINGS, CT, US, 06076
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Priority Overnight



Download the FedEx® Mobile app

Get the flexibility you need to create shipments and request to customize your deliveries through the app.

LEARN MORE

FOLLOW FEDEX

Colin Robinson

From: TrackingUpdates@fedex.com
Sent: Wednesday, December 29, 2021 10:10 AM
To: Colin Robinson
Subject: FedEx Shipment 775615854590: Your package has been delivered

Hi. Your package was delivered Wed, 12/29/2021 at 10:09am.

Delivered to 1014 BUCKLEY HWY, UNION, CT 06076

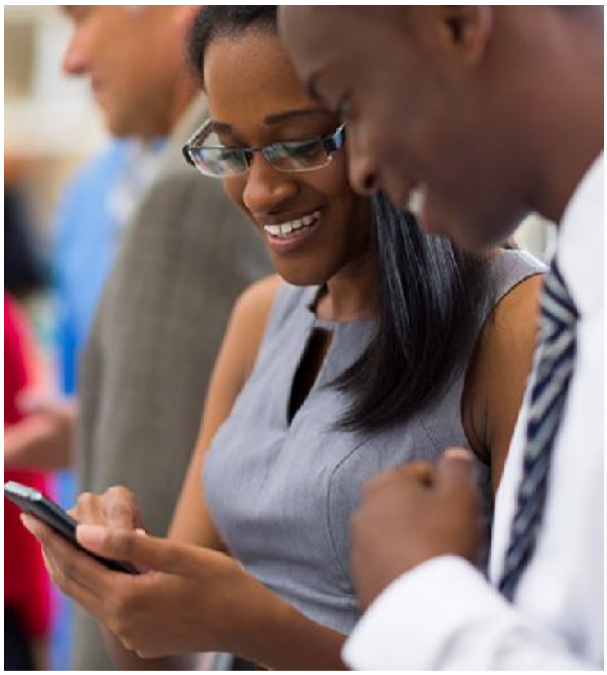
OBTAIN PROOF OF DELIVERY

TRACKING NUMBER 775615854590

FROM
NB+C
100 Apollo Dr.
Suite 303
CHELMSFORD, MA, US, 01824

TO
Tiziani LLC
1014 Buckley Highway
UNION, CT, US, 06076

REFERENCE	100788 NB+C
SHIPPER REFERENCE	100788 NB+C
SHIP DATE	Tue 12/28/2021 06:40 PM
DELIVERED TO	Residence
PACKAGING TYPE	FedEx Envelope
ORIGIN	CHELMSFORD, MA, US, 01824
DESTINATION	UNION, CT, US, 06076
SPECIAL HANDLING	Deliver Weekday Residential Delivery
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Priority Overnight



Download the FedEx® Mobile app

Get the flexibility you need to create shipments and request to customize your deliveries through the app.

LEARN MORE

FOLLOW FEDEX

Exhibit A

Original Facility Approval

DOCKET NO. 165 - An application of Metro Mobile CTS of Hartford, Inc., for a Certificate of Environmental Compatibility and Need for the construction, maintenance, and operation of a cellular telecommunications facility located at 46 Brendan Street, Stafford, Connecticut.	:	Connecticut Siting Council December 5, 1994

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 prime site in Stafford, Connecticut, 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 Hartford, Inc. (Metro Mobile), for the construction, operation, and maintenance of a cellular telecommunications tower, associated equipment, and building at the proposed prime site located off 46 Brendan Street, Stafford Springs, Connecticut. We find the effects on scenic resources and adjacent land uses of the alternate site to be significant, and therefore deny certification of this site.

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 115 feet above ground level, 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 Connecticut State Agencies (RCSA). The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include detailed plans for the tower location and tower foundation; the placement of all antennas to be attached to this tower; placement of the emergency generator, equipment building, fuel storage tank, access road, utility line, and security fence; site clearing and tree trimming; and water drainage and erosion and sedimentation controls consistent with the Connecticut Guidelines for Soil Erosion and Sedimentation Control (as amended).

3. The Certificate Holder shall acquire all regulatory permits and approvals prior to operation of the facility and submit copies upon receipt to the Council.

4. 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 State or federal RF standards, the facility granted herein shall be brought into compliance with such standards.

5. 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.

6. 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.

7. If the facility does not initially provide, or permanently ceases to provide, cellular 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.

8. 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.

9. The Certificate Holder shall notify the Council upon completion of construction.

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 Hartford Courant and The Journal Inquirer.

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 RCSA.

The parties and intervenors to this proceeding are:

APPLICANT	ITS REPRESENTATIVES
Metro Mobile CTS of Hartford, Inc.	Metro Mobile CTS of Hartford, Inc. 20 Alexander Drive Wallingford, CT 06492 Attn: David S. Malko, P.E., Manager Engineering & Regulatory Services Robinson & Cole One Commercial Plaza Hartford, CT 06103-3597 Attn: Brian C. S. Freeman, Esq.
INTERVENOR	ITS REPRESENTATIVE
Springwich Cellular Limited Partnership	Peter J. Tyrrell, Esq. Springwich Cellular Limited Partnership 227 Church Street New Haven, CT 06510

CERTIFICATION

The Undersigned members of the Connecticut Siting Council (Council) hereby certify that they have heard this case, or read the record thereof, in DOCKET NO. 165 - An application of Metro Mobile CTS of Hartford, Inc., for a Certificate of Environmental Compatibility and Need for the construction, maintenance, and operation of a cellular telecommunications facility located at 46 Brendan Street, Stafford, Connecticut, and voted as follows:

Council Members	Vote Cast
Mortimer A. Gelston Chairman	YES
Commissioner Reginald J. Smith Designee: Gerald J. Heffernan	YES
Commissioner Timothy R.E. Keeney Designee: Brian Emerick	YES
Harry E. Covey	YES
Daniel P. Lynch, Jr.	YES
Gloria Dibble Pond	YES
William H. Smith	YES
Colin C. Tait	ABSENT
Dana J. Wright	ABSENT

Dated at New Britain, Connecticut, December 5, 1994.

STATE OF CONNECTICUT)

ss. New Britain, Connecticut
COUNTY OF HARTFORD)

I hereby certify that the foregoing is a true and correct copy of the Findings of Fact, Opinion, and Decision and Order issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:

Joel M. Rinebold
Executive Director
Connecticut Siting Council

I certify that a copy of the Findings of Fact, Opinion, and Decision and Order in Docket No. 165 have been forwarded by Certified First Class Return Receipt Requested mail on December 8, 1994, to all parties and intervenors of record as listed on the attached service list, dated August 9, 1994.

ATTEST:

Stanley J. Modzelesky
Executive Secretary
Connecticut Siting Council

Exhibit B

Property Card

46 BRENDAN ST

Location	46 BRENDAN ST	**Mblu**	49/ / 4/ /
Acct#	00284400	**Owner**	TIZIANI LLC
Assessment	$206,990	**Appraisal**	$295,700
PID	3247	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$18,400	$277,300	$295,700
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$12,880	$194,110	$206,990

Owner of Record

Owner	TIZIANI LLC	**Sale Price**	$0
Co-Owner	C/O TIZIANI GLENN+PETER	**Certificate**	1
Address	1014 BUCKLEY HWY UNION, CT 06076	**Book & Page**	0334/0507
		Sale Date	02/26/1996
		Instrument	

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
TIZIANI LLC	$0	1	0334/0507		02/26/1996
TIZIANI GLENN+PETER	$60,000	2	0195/0177	25	04/20/1982

Building Information

Building 1 : Section 1

Year Built:	
Living Area:	0
Replacement Cost:	$0
Building Percent Good:	
Replacement Cost Less Depreciation:	$0

Building Attributes	
Field	**Description**
Style	Vacant
Model	
Grade:	
Stories	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Full Bthrms:	
Half Baths:	
Extra Fixtures	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Num Kitchens	
Fireplaces	
Extra Openings	
Prefab Fpl(s)	
Attic Type	
Bsmt Type	
Bsmt Garage(s)	
Fin Bsmnt	
Fn. Bmt. Qual.	
Unfin Area	

Building Photo

(http://images.vgsi.com/photos2/StaffordCTPhotos//\00\01\26\17.jpg)

Building Layout

(ParcelSketch.ashx?pid=3247&bid=3247)

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

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	300
Description	Ind Land
Zone	A
Neighborhood	502
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	14.50
Frontage	
Depth	
Assessed Value	$194,110
Appraised Value	$277,300

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
FN1	FENCE-4' CHAIN			1440.00 L.F.	$600	1
SHD1	Shed	MS	Masonry	600.00 S.F.	$4,800	1
SHD1	Shed	MS	Masonry	200.00 S.F.	$1,600	1
SHD1	Shed	MS	Masonry	200.00 S.F.	$1,600	1
PAV1	Paving Asphalt			10000.00 S.F.	$9,800	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$18,400	$254,000	$272,400
2018	$18,400	$254,000	$272,400
2017	$18,400	$254,000	$272,400

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$12,880	$177,800	$190,680
2018	$12,880	$177,800	$190,680
2017	$12,880	$177,800	$190,680

(c) 2021 Vision Government Solutions, Inc. All rights reserved.

Exhibit C

Construction Drawings

T-Mobile

T-MOBILE SITE NUMBER: CT11528C
T-MOBILE SITE NAME: CT11528C
SITE TYPE: MONOPOLE
TOWER HEIGHT: 128'-0"

BUSINESS UNIT #: 806365
SITE ADDRESS: BRENDON & QUINN STAFFORD, CT 06076
COUNTY: TOLLAND
JURISDICTION: TOLLAND COUNTY

T-MOBILE ANCHOR SITE CONFIGURATION: 4Sec-67D5998E_1xAIR+1OP

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	HRT 303 943203
SITE ADDRESS:	BRENDON & QUINN STAFFORD, CT 06076
COUNTY:	TOLLAND
MAP/PARCEL #:	0334/0507
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.964222° (41° 57' 51.20")
LONGITUDE:	-72.304944° (-72° 18' 17.80")
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	799.0 FT
CURRENT ZONING:	A
JURISDICTION:	TOLLAND COUNTY
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	TIZIANI LLC C/O TIZIANI GLENN+PETER 1014 BUCKLEY HWY UNION, CT 06076
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	T-MOBILE 35 GRIFFIN ROAD BLOOMFIELD, CT 06002
ELECTRIC PROVIDER:	TBD
TELCO PROVIDER:	TBD

PROJECT TEAM

A&E FIRM:	INFINIGY 1033 WATERVLIET SHAKER RD. ALBANY, NY 12205
CROWN CASTLE USA INC. DISTRICT CONTACTS:	3 CORPORATE PARK DRIVE, SUITE 101 CLIFTON PARK, NY 12065
	TRICIA PELON - PROJECT MANAGER (518) 373-3507
	JASON D'AMICO - CONSTRUCTION MANAGER (860) 209-0104

DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1	SITE PLAN & ENLARGED SITE PLAN
C-2	FINAL ELEVATION & ANTENNA PLANS
C-3	ANTENNA & CABLE SCHEDULE
C-4	PLUMBING DIAGRAM
C-5	EQUIPMENT SPECS
C-6	EQUIPMENT SPECS
E-1	AC PANEL SCHEDULES & ONE LINE DIAGRAM
G-1	ANTENNA GROUNDING DIAGRAM
G-2	GROUNDING DETAILS

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

PROJECT DESCRIPTION

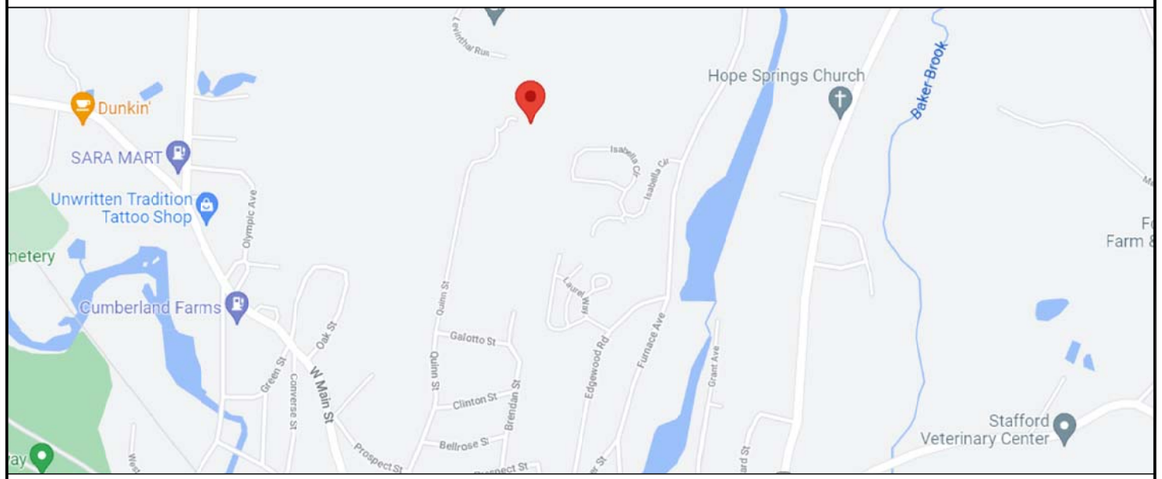
THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.

TOWER SCOPE OF WORK:
- REMOVE (4) ANTENNAS
- INSTALL (4) ANTENNAS
- INSTALL (1) MICROWAVE ANTENNA
- INSTALL (4) RRHs
- INSTALL (3) HYBRID CABLE
- INSTALL (2) MICROWAVE POWERLINES AND (1) MICROWAVE FIBER LINE

GROUND SCOPE OF WORK:
- REPLACE LOAD CENTER TO 200A RATED
- REMOVE (1) EXISTING BASE STATION 6102 CABINET
- IINSTALL (1) 6160 & (1) B160 BATTERY CABINETS
- INSTALL (1) BB6648 IN (P) CABINET
- INSTALL (1) CSR 7705 SAR M
- INSTALL (1) CSR IXRe V2 VOLTAGE BOOSTER

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

LOCATION MAP



NO SCALE

APPLICABLE CODES/REFERENCE DOCUMENTS

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

CODE TYPE	CODE
BUILDING	2018 CT STATE BUILDING CODE
MECHANICAL	2015 IMC
ELECTRICAL	2017 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	TRYLON
DATED:	09/16/2021
MOUNT ANALYSIS:	B+T GRP
DATED:	10/01/2021
RFDS REVISION:	5
DATED:	08/16/2021
ORDER ID:	81569
REVISION:	0

CALL CONNECTICUT ONE CALL (800) 922-4455 CBYD.COM CALL 2 WORKING DAYS BEFORE YOU DIG! 811

APPROVALS

APPROVAL	SIGNATURE	DATE
PROPERTY OWNER OR REP.		
LAND USE PLANNER		
T-MOBILE		
OPERATIONS		
RF		
NETWORK		
BACKHAUL		
CONSTRUCTION MANAGER		

THE PARTIES ABOVE HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL CONSTRUCTION DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND ANY CHANGES AND MODIFICATIONS THEY MAY IMPOSE.

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

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

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1033 Watervliet Shaker Rd | Albany, NY 12205
Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com

T-MOBILE SITE NUMBER:
CT11528C

BU #: **806365**
HRT 303 943203

BRENDON & QUINN
STAFFORD, CT 06076

EXISTING 128'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	10/29/2021	TJ	FINAL	SS
1	11/18/2021	HL	FINAL	SS
2	12/03/2021	HL	FINAL	SS

STATE OF CONNECTICUT
KUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER

12/03/2021

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: T-1
REVISION: 2

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," CED–STD–10294 "STANDARD FOR INSTALLATION OF MOUNTS AND APPURTENANCES," 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.

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).

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, 22,000 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

APWA UNIFORM COLOR CODE:

WHITE	PROPOSED EXCAVATION
PINK	TEMPORARY SURVEY MARKINGS
RED	ELECTRIC POWER LINES, CABLES, CONDUIT, AND LIGHTING CABLES
YELLOW	GAS, OIL, STEAM, PETROLEUM, OR GASEOUS MATERIALS
ORANGE	COMMUNICATION, ALARM OR SIGNAL LINES, CABLES, OR CONDUIT AND TRAFFIC LOOPS
BLUE	POTABLE WATER
PURPLE	RECLAIMED WATER, IRRIGATION, AND SLURRY LINES
GREEN	SEWERS AND DRAIN LINES

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
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

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

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1033 Watervliet Shaker Rd | Albany, NY 12205
Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com

T-MOBILE SITE NUMBER:
CT11528C

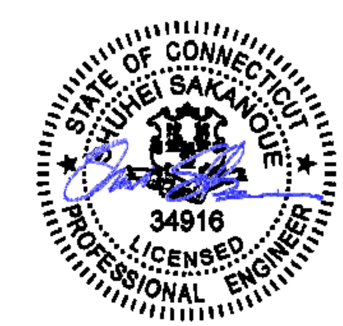
BU #: **806365**
HRT 303 943203

BRENDON & QUINN
STAFFORD, CT 06076

EXISTING 128'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	10/29/2021	TJ	FINAL	SS
1	11/18/2021	HL	FINAL	SS
2	12/03/2021	HL	FINAL	SS



12/03/2021

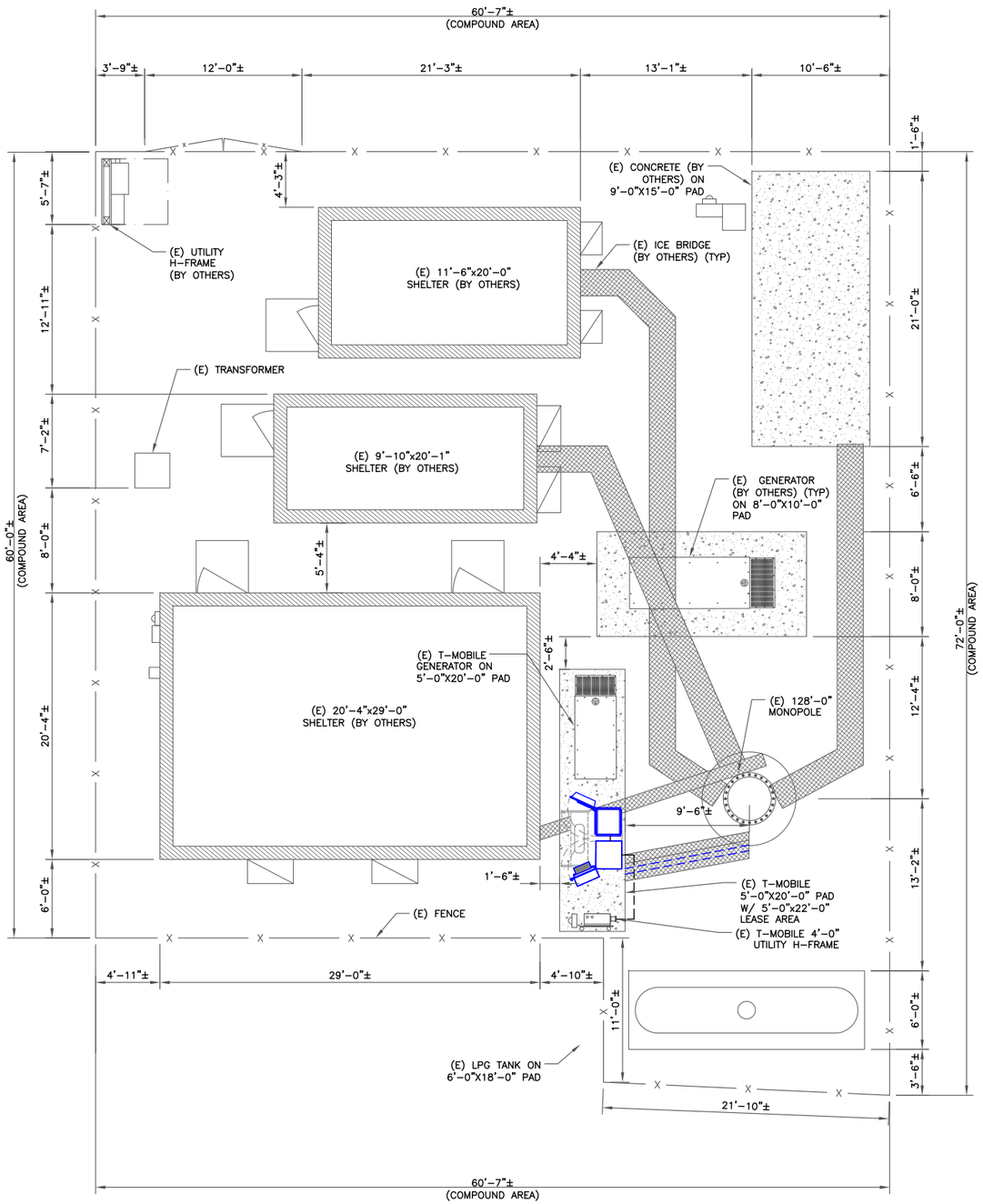
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: T-2

REVISION: 2

NOTE:

1. PLANS BASED ON SITE PLAN PROVIDED BY TOWER OWNER AND SITE VISIT PERFORMED BY INFINIGY. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LOCATION/ORIENTATION OF EXISTING T–MOBILE EQUIPMENT.

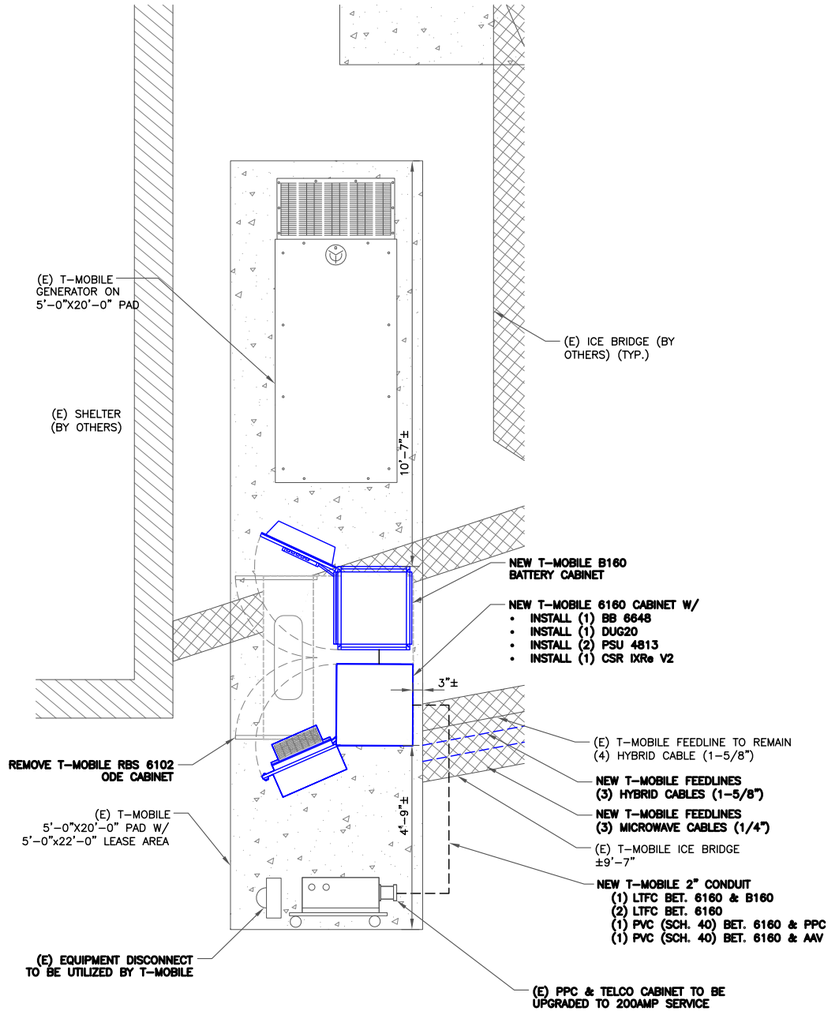


1 SITE PLAN
SCALE: 2' 1' 0 2' 3/8"=1'–0" (FULL SIZE) 3/16"=1'–0" (11x17)

N

NOTES:

THE POWER DESIGN FOR ANY AC ELECTRICAL POWER CHANGES IS TO BE PERFORMED BY OTHERS AND IS SHOWN HERE FOR REFERENCE PURPOSES ONLY. T–MOBILE IS SOLELY RESPONSIBLE FOR THE ELECTRICAL POWER DESIGN.



2 ENLARGED SITE PLAN
SCALE: 1' 6" 0 1' 1"=1'–0" (FULL SIZE) 1/2"=1'–0" (11x17)

N

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

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

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1033 Watervliet Shaker Rd | Albany, NY 12205
Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com

T-MOBILE SITE NUMBER:
CT11528C

BU #: **806365**
HRT 303 943203

BRENDON & QUINN
STAFFORD, CT 06076

EXISTING 128'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	10/29/2021	TJ	FINAL	SS
1	11/18/2021	HL	FINAL	SS
2	12/03/2021	HL	FINAL	SS

STATE OF CONNECTICUT
KUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER

12/03/2021

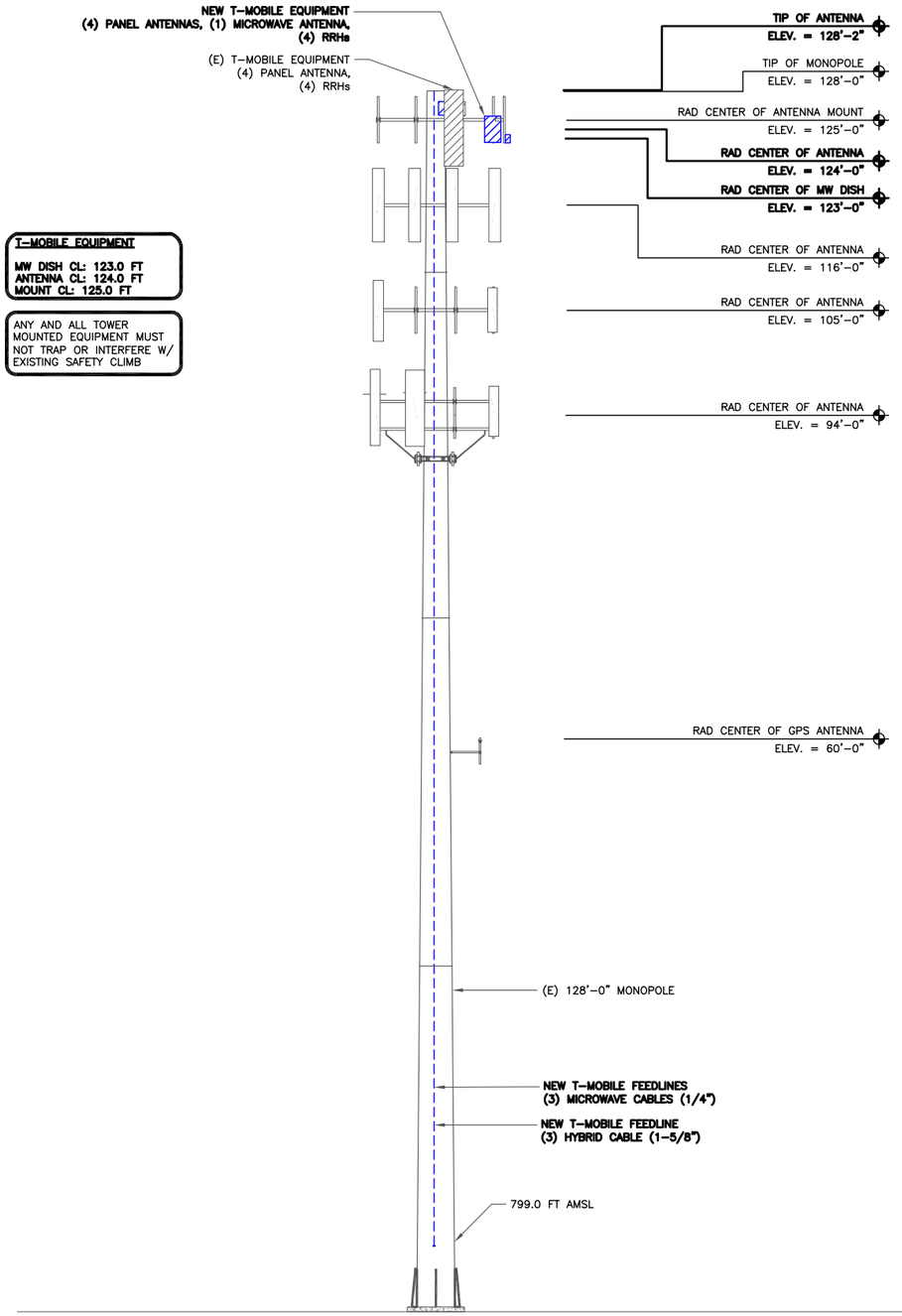
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: C-1

REVISION: 2

NOTES:

1. ELEVATION BASED ON DRAWING PROVIDED BY TOWER OWNER. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LOCATION/ORIENTATION OF EXISTING EQUIPMENT.
2. INFINIGY HAS NOT EVALUATED THE TOWER OR MOUNT STRUCTURE AND ASSUMES NO RESPONSIBILITY FOR THEIR STRUCTURAL INTEGRITY REGARDING PROPOSED LOADINGS. FINAL INSTALLATION SHALL COMPLY WITH RESULTS OF PASSING STRUCTURAL ANALYSES PERFORMED BY OTHERS.

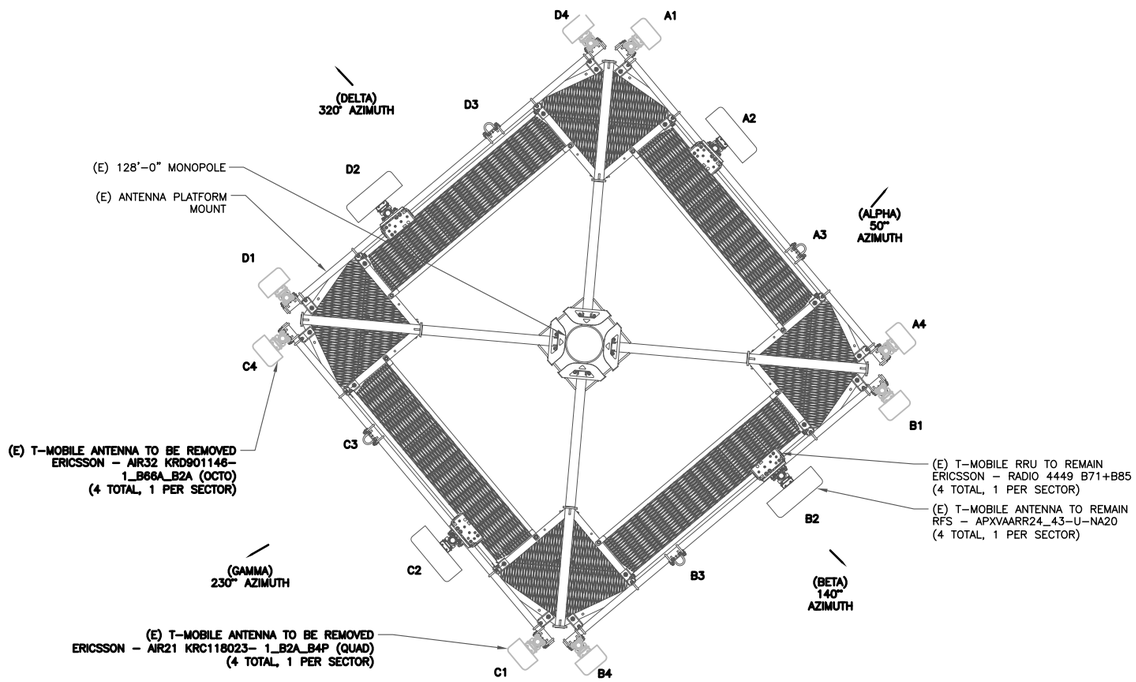


T-MOBILE EQUIPMENT

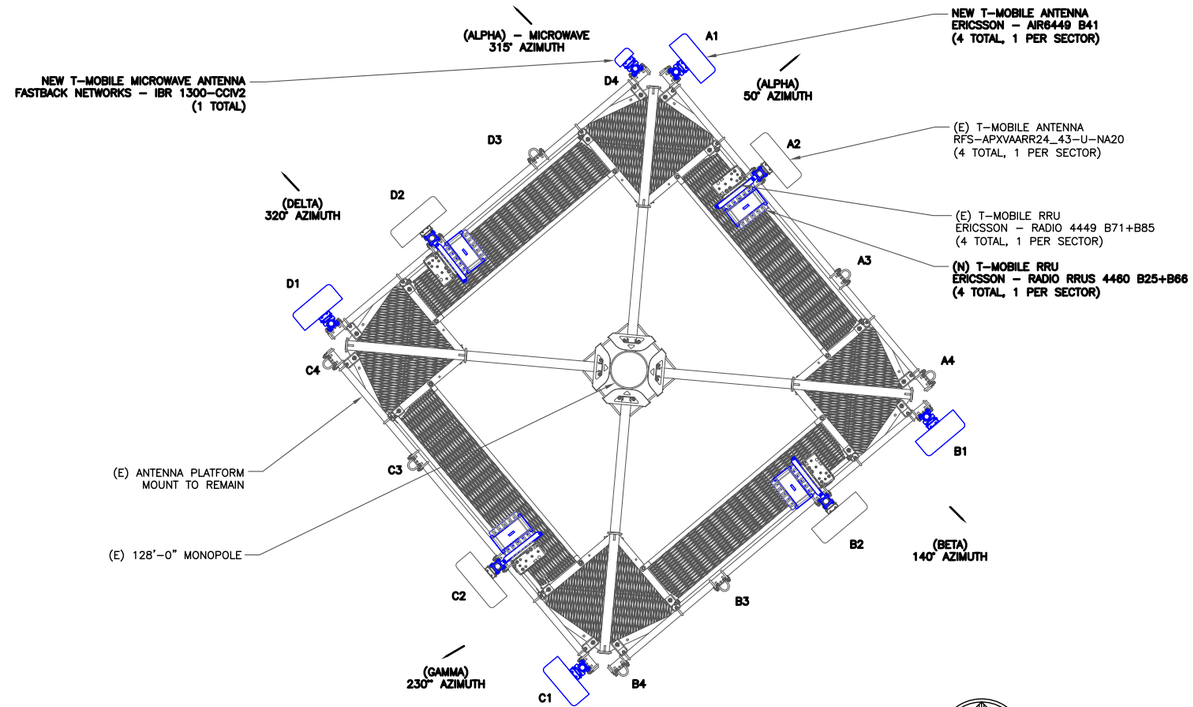
MW DISH CL: 123.0 FT
ANTENNA CL: 124.0 FT
MOUNT CL: 125.0 FT

ANY AND ALL TOWER MOUNTED EQUIPMENT MUST NOT TRAP OR INTERFERE W/ EXISTING SAFETY CLIMB

1 FINAL ELEVATION
SCALE: NOT TO SCALE



2 EXISTING ANTENNA LAYOUT
SCALE: NOT TO SCALE



3 FINAL ANTENNA LAYOUT
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

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

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1033 Watervliet Shaker Rd | Albany, NY 12205
Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com

T-MOBILE SITE NUMBER:
CT11528C

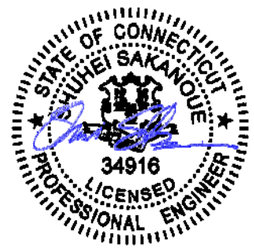
BU #: **806365**
HRT 303 943203

BRENDON & QUINN
STAFFORD, CT 06076

EXISTING 128'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	10/29/2021	TJ	FINAL	SS
1	11/18/2021	HL	FINAL	SS
2	12/03/2021	HL	FINAL	SS



12/03/2021

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: C-2

REVISION: 2

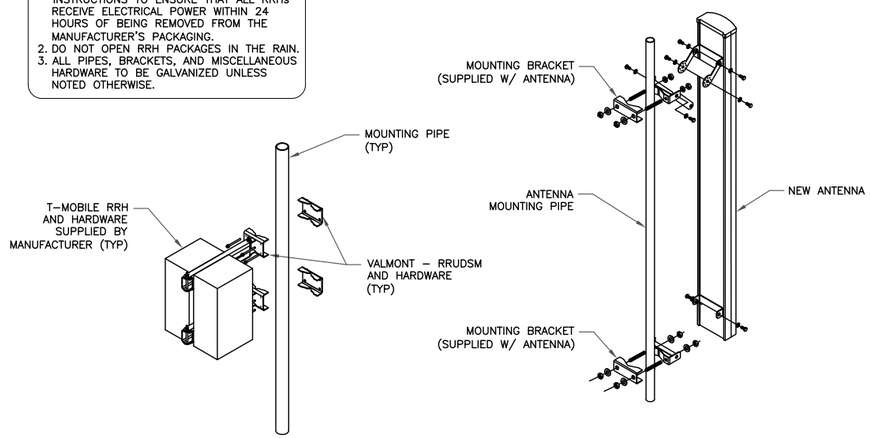
ANTENNA SCHEDULE

SECTOR	POS.	TECHNOLOGY	RAD CENTER	AZIMUTH	ANTENNA MANUFACTURER	ANTENNA MODEL	MECH. TILT	ELECT. TILT	TOWER MOUNTED EQUIPMENT	FEEDLINE TYPE
ALPHA	**A1**	**L2500, N2500**	**124.0 FT**	**50°**	**ERICSSON**	**AIR6449 B41**	**--**	**--**	**--**	**(3) 6X24 HCS HYBRID (SHARED)** (4) 6X12 4AWG HCS HYBRID (SHARED)
ALPHA	**A2**	**L700, L600, N600, L1900, G1900, L2100**	**124.0 FT**	**50°**	RFS	APXVAARR24_43-U-NA20	**--**	**--**	**(1) ERICSSON – RRUS 4460 B25+B66** (1) ERICSSON – RRUS 4449 B71+B85	
ALPHA	**A3**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
ALPHA	**A4**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
BETA	**B1**	**L2500, N2500**	**124.0 FT**	**140°**	**ERICSSON**	**AIR6449 B41**	**--**	**--**	**--**	**(3) 6X24 HCS HYBRID (SHARED)** (4) 6X12 4AWG HCS HYBRID (SHARED)
BETA	**B2**	**L700, L600, N600, L1900, G1900, L2100**	**124.0 FT**	**140°**	RFS	APXVAARR24_43-U-NA20	**--**	**--**	**(1) ERICSSON – RRUS 4460 B25+B66** (1) ERICSSON – RRUS 4449 B71+B85	
BETA	**B3**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
BETA	**B4**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
GAMMA	**C1**	**L2500, N2500**	**124.0 FT**	**230°**	**ERICSSON**	**AIR6449 B41**	**--**	**--**	**--**	**(3) 6X24 HCS HYBRID (SHARED)** (4) 6X12 4AWG HCS HYBRID (SHARED)
GAMMA	**C2**	**L700, L600, N600, L1900, G1900, L2100**	**124.0 FT**	**230°**	RFS	APXVAARR24_43-U-NA20	**--**	**--**	**(1) ERICSSON – RRUS 4460 B25+B66** (1) ERICSSON – RRUS 4449 B71+B85	
GAMMA	**C3**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
GAMMA	**C4**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
DELTA	**D1**	**L2500, N2500**	**124.0 FT**	**320°**	**ERICSSON**	**AIR6449 B41**	**--**	**--**	**--**	**(3) 6X24 HCS HYBRID (SHARED)** (4) 6X12 4AWG HCS HYBRID (SHARED) **(3) 1/4 MICROWAVE CABLES (SHARED)**
DELTA	**D2**	**L700, L600, N600, L1900, G1900, L2100**	**124.0 FT**	**320°**	RFS	APXVAARR24_43-U-NA20	**--**	**--**	**(1) ERICSSON – RRUS 4460 B25+B66** (1) ERICSSON – RRUS 4449 B71+B85	
DELTA	**D3**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
DELTA	**D4**	**--**	**123.0 FT**	**315°**	**FASTBACK NETWORKS**	**IBR 1300_CCIV2**	**--**	**--**	**--**	

1 ANTENNA AND CABLE SCHEDULE
SCALE: NOT TO SCALE

INSTALLER NOTES:

1. COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRHs RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING.
2. DO NOT OPEN RRH PACKAGES IN THE RAIN.
3. ALL PIPES, BRACKETS, AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE.



2 ANTENNA WITH RRHs MOUNTING DETAIL
SCALE: NOT TO SCALE

NOTE:

1. CONTRACTOR SHALL INSTALL 3RD DUAL RRH MOUNT TO ACCOMMODATE ALL RRH BRACKETS HOLES IF NECESSARY.

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

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

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1033 Watervliet Shaker Rd | Albany, NY 12205
Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com

T-MOBILE SITE NUMBER:
CT11528C

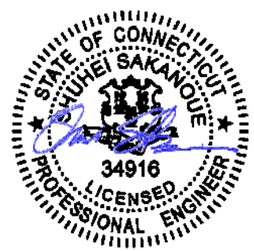
BU #: **806365**
HRT 303 943203

BRENDON & QUINN
STAFFORD, CT 06076

EXISTING 128'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	10/29/2021	TJ	FINAL	SS
1	11/18/2021	HL	FINAL	SS
2	12/03/2021	HL	FINAL	SS



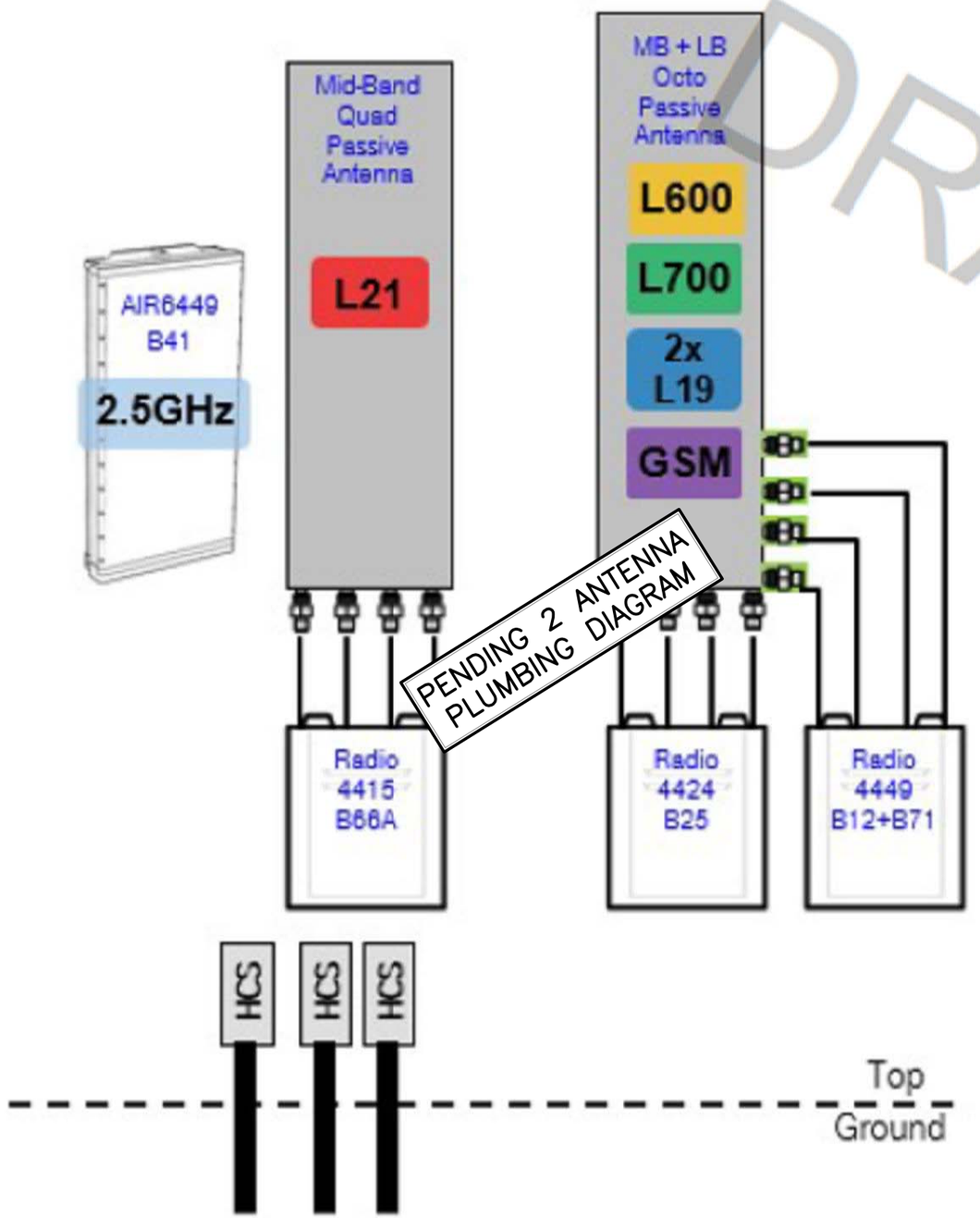
12/03/2021

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: C-3

REVISION: 2

67D5A998C_1xAIR+1xQP+1xOP.jpg



1 PLUMBING DIAGRAM
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

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

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1033 Watervliet Shaker Rd | Albany, NY 12205
Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com

T-MOBILE SITE NUMBER:
CT11528C

BU #: **806365**
HRT 303 943203

BRENDON & QUINN
STAFFORD, CT 06076

EXISTING 128'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	10/29/2021	TJ	FINAL	SS
1	11/18/2021	HL	FINAL	SS
2	12/03/2021	HL	FINAL	SS

STATE OF CONNECTICUT
YUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER

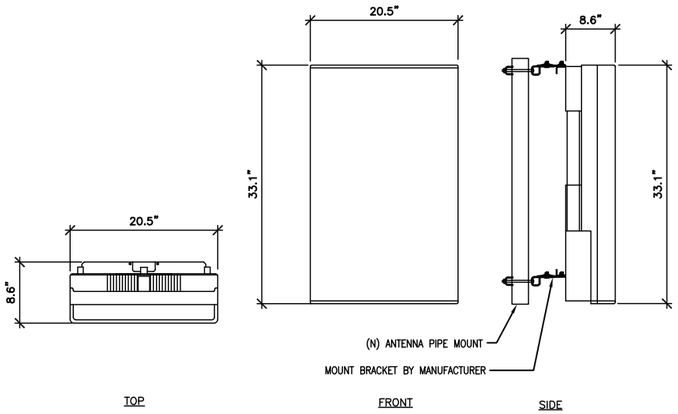
12/03/2021

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

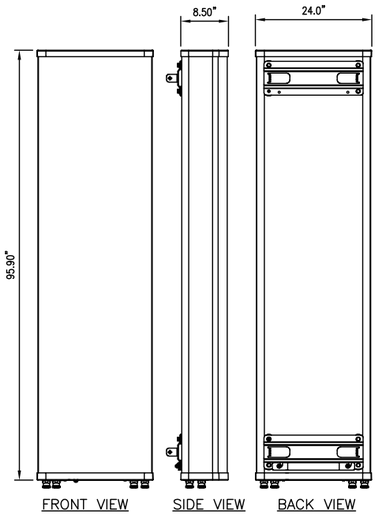
SHEET NUMBER: C-4

REVISION: 2

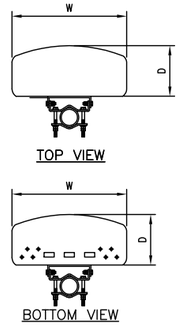
MANUFACTURER: ERICSSON
MODEL: AIR6449 B41
WEIGHT: 104 LBS (W/ MOUNT BRACKET 113)
DIMENSIONS: 33.1"H. X 20.5"W. X 8.6"D.
FREQUENCY: REFER TO RF DATA SHEET



1 (N) AIR6449 B41 ANTENNA SPEC
SCALE: NOT TO SCALE



700MHz RFS ANTENNAS	
MODEL	WEIGHT (lb)
(8') APXVAALL24_43-UNA20	149.90
WEIGHT W/ MOUNTING BRACKET (lb):	154



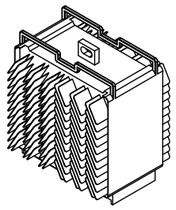
2 (N) APXVAALL24_43-UNA20 ANTENNA SPEC
SCALE: NOT TO SCALE

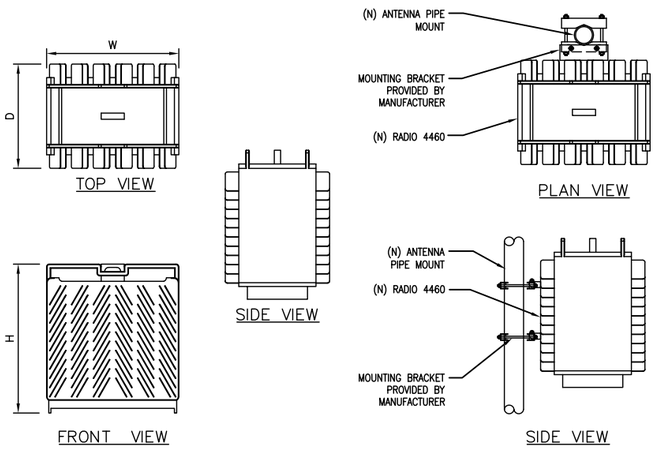
MANUFACTURER: FASTBACK
MODEL: IBR-1300-CIV2
WEIGHT: 8.82 LBS (W/ MOUNT BRACKET 113)
DIMENSIONS: 10.24"H. X 7.87"W. X 8.7"D.
FREQUENCY: REFER TO RF DATA SHEET

3 MICROWAVE ANTENNA
SCALE: NOT TO SCALE

ERICSSON RADIO-4460 B25 B66

DIMENSIONS, WxDxH:	17.0"x15.1"x11.9"
MAX OUTPUT POWER:	4x80W (2x(2x80W))
TOTAL WEIGHT:	109 lbs
TEMPERATURE:	-40° TO 55° C





4 (N) RADIO 4460 SPEC
SCALE: NOT TO SCALE

5 NOT USED
SCALE: NOT TO SCALE

6 NOT USED
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

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

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1033 Watervliet Shaker Rd | Albany, NY 12205
Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com

T-MOBILE SITE NUMBER:
CT11528C

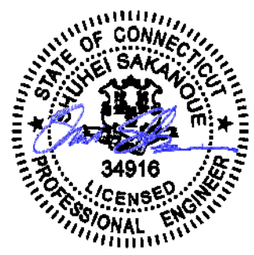
BU #: **806365**
HRT 303 943203

BRENDON & QUINN
STAFFORD, CT 06076

EXISTING 128'-0" MONOPOLE

ISSUED FOR:

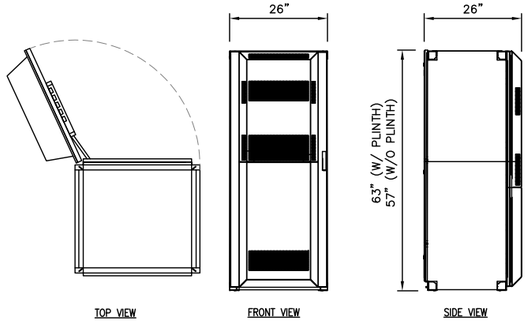
REV	DATE	DRWN	DESCRIPTION	DES./QA
0	10/29/2021	TJ	FINAL	SS
1	11/18/2021	HL	FINAL	SS
2	12/03/2021	HL	FINAL	SS



12/03/2021

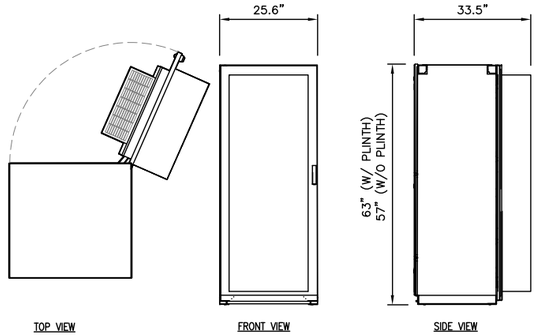
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: C-5
REVISION: 2



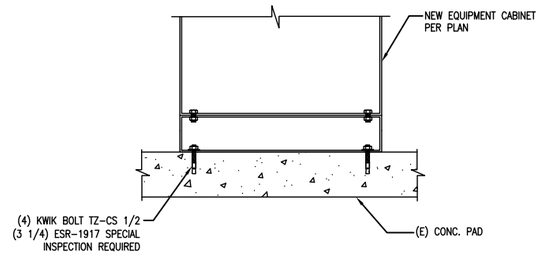
ERICSSON MODEL NO.:	B160
RACK SPACE:	19U
DIMENSIONS, HxWxD:	63"x26"x26" (W/ 6" PLINTH)
CABINET WEIGHT, EMPTY:	485 LBS
MAXIMUM WEIGHT:	2100± LBS

1 (N) B160 CABINET DETAIL
SCALE: NOT TO SCALE

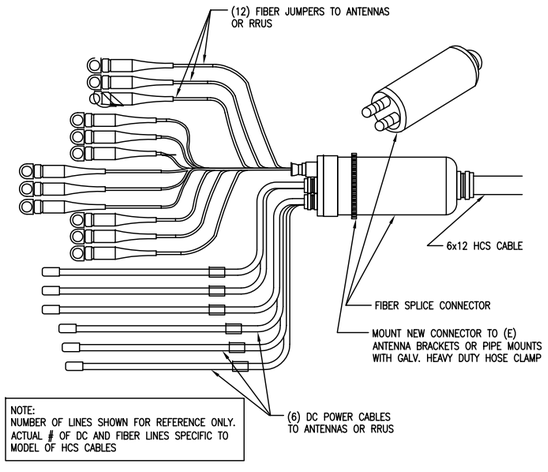


ERICSSON MODEL NO.:	6160
RACK SPACE:	19U
DIMENSIONS, HxWxD:	63"x25.6"x25.6" (W/ 6" PLINTH)
CABINET WEIGHT, EMPTY:	410 LBS
MAXIMUM WEIGHT:	770± LBS

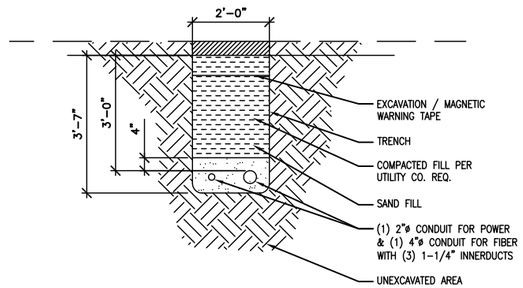
2 (N) 6160 CABINET DETAIL
SCALE: NOT TO SCALE



3 (N) EQUIPMENT CABINET MOUNTING DETAIL
SCALE: NOT TO SCALE



4 (N) 6X24 HCS CABLE DETAIL
SCALE: NOT TO SCALE



5 (N) CONDUIT TRENCH DETAIL
SCALE: NOT TO SCALE

6 NOT USED
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

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

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1033 Watervliet Shaker Rd | Albany, NY 12205
Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com

T-MOBILE SITE NUMBER:
CT11528C

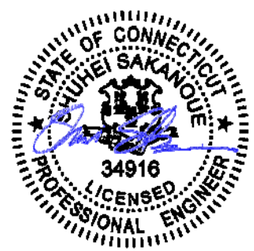
BU #: **806365**
HRT 303 943203

BRENDON & QUINN
STAFFORD, CT 06076

EXISTING 128'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	10/29/2021	TJ	FINAL	SS
1	11/18/2021	HL	FINAL	SS
2	12/03/2021	HL	FINAL	SS



12/03/2021

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: C-6
REVISION: 2

T-MOBILE PANEL SCHEDULE

MAIN: 200A MAIN BREAKER | **VOTAGE/PHASE:** 120/240V, 1-PHASE, 3-WIRE | **SHORT CIRCUIT CURRENT RATING:** --

MOUNTING: INSIDE PPC ENCLOSURE | **ENCLOSURE:** NEMA 3R | **SURGE PROTECTION DEVICE:** YES

DESCRIPTION	LOAD (VA)	C or NC	C/B	CIR No.	PHASE LOADS (VA) A	PHASE LOADS (VA) B	CIR No.	C/B	C or NC	LOAD (VA)	DESCRIPTION
				1	1921		2	30	NC	1	SURGE ARRESTOR
				3		1921	4		NC	1	
6160	7000	C	100	5	7200		6	100	NC	4800	BTS CABINET
	7000	C		7		7180	8		NC	4800	
6160 GFI	180	NC	20	9	360		10	125	C	5000	
				11		0	12		C	5000	RBS 6102
				13	0		14				BLANK
				15		0	16				
				17	0		18				
				19		0	20				
				21	0		22				
				23		0	24				
				BASE LOAD (VA) =	9481	9101					
				25% OF CONTINUOUS LOAD (VA) =	1750	1750					
				TOTAL LOAD (VA) =	11231	10851					
				TOTAL LOAD (A) =	94	90					

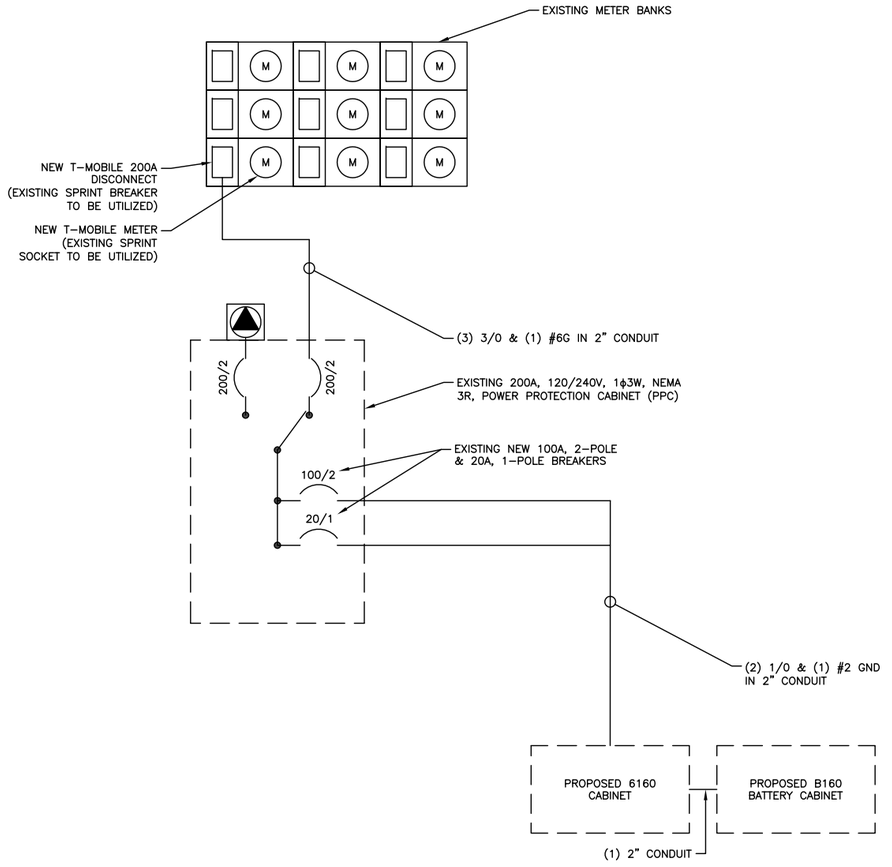
C = CONTINUOUS LOAD; NC = NON-CONTINUOUS LOAD

NEW BREAKER TO BE SAME TYPE AND HAVE SAME AIC RATING AS EXISTING. CUSTOMER HAS NOT PROVIDED LOADS FOR EQUIPMENT CABINETS THEREFORE THE CABINET LOADS SHOWN ARE ESTIMATED VALUES.

1 AC PANEL SCHEDULE
SCALE: NOT TO SCALE

NOTES:

1. ALL NEW CONDUCTORS TO BE INSTALLED SHALL BE COPPER. ALL CONDUCTORS SHALL BE THHW, THWN, THWN-2, XHHW, OR XHHW-2 UNLESS NOTED OTHERWISE.
2. CONTRACTOR IS TO FIELD VERIFY ALL EXISTING ITEMS SHOWN ON THE ELECTRICAL ONE-LINE DIAGRAM AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
3. ALL GROUNDING AND BONDING PER THE NEC.



2 ONE LINE DIAGRAM
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

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

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1033 Watervliet Shaker Rd | Albany, NY 12205
Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com

T-MOBILE SITE NUMBER:
CT11528C

BU #: **806365**
HRT 303 943203

BRENDON & QUINN
STAFFORD, CT 06076

EXISTING 128'-0" MONOPOLE

ISSUED FOR:

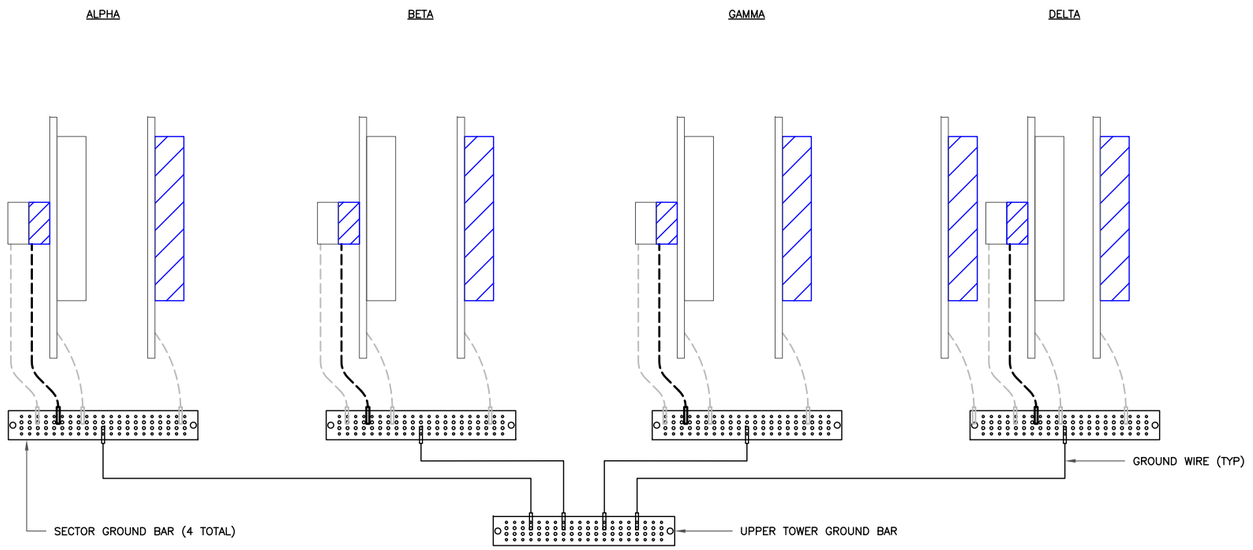
REV	DATE	DRWN	DESCRIPTION	DES./QA
0	10/29/2021	TJ	FINAL	SS
1	11/18/2021	HL	FINAL	SS
2	12/03/2021	HL	FINAL	SS

12/03/2021

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: E-1

REVISION: 2



NOTE:

ALL NEW GROUNDS TO BE #6 STRANDED COPPER WITH GREEN INSULATION UNLESS NOTED OTHERWISE.

1 ANTENNA GROUNDING DIAGRAM
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

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

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1033 Watervliet Shaker Rd | Albany, NY 12205
Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com

T-MOBILE SITE NUMBER:
CT11528C

BU #: **806365**
HRT 303 943203

BRENDON & QUINN
STAFFORD, CT 06076

EXISTING 128'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	10/29/2021	TJ	FINAL	SS
1	11/18/2021	HL	FINAL	SS
2	12/03/2021	HL	FINAL	SS

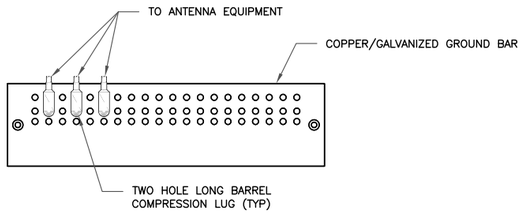
STATE OF CONNECTICUT
YUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER

12/03/2021

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: G-1

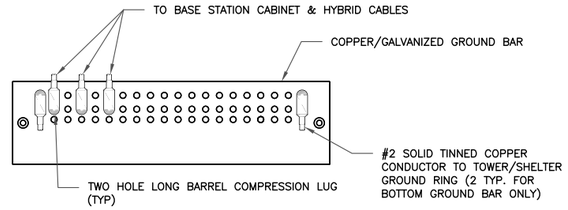
REVISION: 2



NOTES:

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

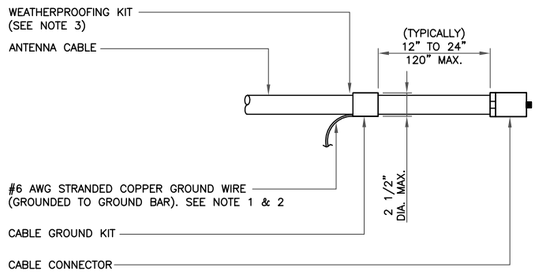
1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

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

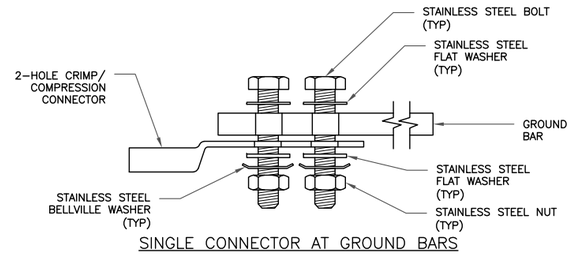
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



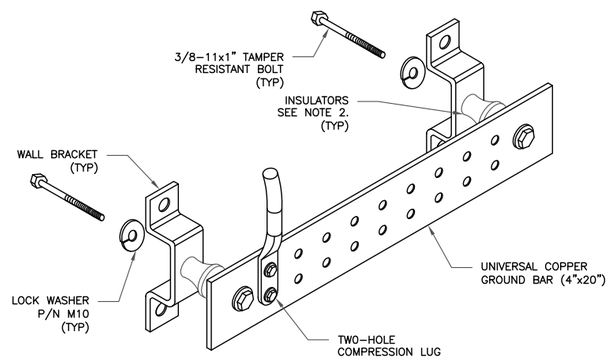
NOTES:

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

3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



4 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
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

6 NOT USED
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

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

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1033 Watervliet Shaker Rd | Albany, NY 12205
Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com

T-MOBILE SITE NUMBER:
CT11528C

BU #: **806365**
HRT 303 943203

BRENDON & QUINN
STAFFORD, CT 06076

EXISTING 128'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	10/29/2021	TJ	FINAL	SS
1	11/18/2021	HL	FINAL	SS
2	12/03/2021	HL	FINAL	SS

STATE OF CONNECTICUT
YUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER

12/03/2021

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: G-2
REVISION: 2

Exhibit D

Structural Analysis Report

Date: **October 1, 2021**

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

Subject:	**Structural Analysis Report**	
Carrier Designation:	***T-Mobile* Co-Locate**	
	Site Number:	CT11528C
	Site Name:	CT528/Crown Castle MP
Crown Castle Designation:	**BU Number:**	806365
	Site Name:	HRT 303 943203
	JDE Job Number:	680923
	Work Order Number:	2019284
	Order Number:	581569 Rev. 0
Engineering Firm Designation:	**B+T Group Project Number:**	131593.004.01
Site Data:	**Brendon & Quinn Streets, Stafford, Tolland County, CT** **Latitude *41° 57' 51.2"*, Longitude *-72° 18' 17.8"*** **129 Foot - Monopole Tower**	

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

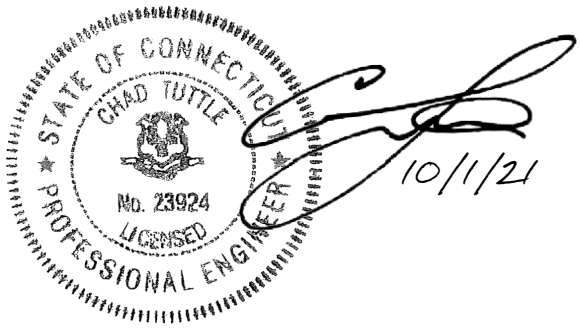
The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC5: Proposed Equipment Configuration **Sufficient Capacity – 89.3%**

This analysis utilizes an ultimate 3-second gust wind speed of 118 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Clint Coody

Respectfully submitted by: B+T Engineering, Inc.
COA: PEC.0001564; Expires: 10/02/2022



Chad E. Tuttle, P.E.

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 129 ft. Monopole tower designed by Valmont.

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:	118 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)
125.0	125.0	1	--	Platform Mount [LP 701-1_HR-1]	7 3	1-5/8 1/4
	124.0	4	Ericsson	AIR6449 B41_T-MOBILE		
		4	Ericsson	Radio 4449 B71 B85A_T-Mobile		
		4	Ericsson	Radio 4460 B2/B25 B66_TMO		
		4	Rfs Celwave	APXVAARR24_43-U-NA20		
	123.0	1	Fastback Networks	IBR 1300_CCIV2		

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)
116.0	117.0	3	Alcatel Lucent	AWS4 (B66) 4X45 RRH	2 12	1-1/4 7/8
		3	Alcatel Lucent	B13 RRH 4X30		
		3	Alcatel Lucent	PCS B25 RRH4X30		
		6	Andrew	LNX-8513DS-VTM		
		6	Andrew	SBNH-1D8585C		
		2	Rfs Celwave	DB-B1-6C-12AB-0Z		
	116.0	1	--	Platform Mount [LP 713-1]		
105.0	105.0	3	Alcatel Lucent	PCS 1900MHZ 4X45W-65MHZ	3 1	1-1/4 7/8
		6	Alcatel Lucent	RRH2X50-800		
		3	Commscope	NNVV-65B-R4		
		3	Nokia	FZHN		
		3	Rfs Celwave	APXVTM14-ALU-I20		
		1	--	Platform Mount [LP 1201-1_HR-1]		
94.0	95.0	3	CCI Antennas	HPA65R-BU8A	12 4 2	1-1/4 3/4 3/8
		3	Ericsson	RRUS 4449 B5/B12		
		5	Ericsson	RRUS 8843 B2/B66A		
		3	Kathrein	80010966		
		3	Powerwave Tech	7770.00		
		3	Powerwave Tech	LGP13519		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
94.0	95.0	2	Raycap	DC6-48-60-18-8F	--	--
	94.0	1	--	Miscellaneous [NA 510-1]		
		1	--	Platform Mount [LP 714-1_KCKR]		
60.0	60.0	1	Gps	GPS_A	1	1/2
		1	--	Side Arm Mount [SO 702-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
Tower Manufacturer Drawing	2046046	CCI Sites
Mount Analysis Report	9978319	CCI Sites
Tower Modification Drawing	5577072	CCI Sites
Post Modification Inspection	5734218	CCI Sites
Tower Modification Drawing	5664687	CCI Sites
Post Modification Inspection	6133277	CCI Sites
Tower Modification Drawing	7700293	CCI Sites
Post Modification Inspection	8353227	CCI Sites
Foundation Drawing	2294383	CCI Sites
Geotech Report	262167	CCI Sites
Crown CAD Package	Date: 09/13/2021	CCI Sites

3.1) Analysis Method

tnxTower (version 8.1.1.0), 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. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 standard.

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) The tower and structures were maintained in accordance with the - TIA-222 standard.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	129 - 124	Pole	TP16x16x0.375	1	-14.830	--	5.8	Pass
L2	124 - 119	Pole	TP16x16x0.375	2	-6.770	--	18.8	Pass
L3	119 - 115.5	Pole	TP16x16x0.375	3	-10.784	--	32.6	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L4	115.5 - 115	Pole	TP17.81x16x0.375	4	-10.790	--	28.4	Pass
L5	115 - 110	Pole	TP18.943x17.81x0.219	5	-12.783	--	41.7	Pass
L6	110 - 105	Pole	TP20.076x18.943x0.219	6	-13.722	--	56.2	Pass
L7	105 - 100	Pole	TP21.209x20.076x0.219	7	-18.950	--	73.6	Pass
L8	100 - 95	Pole	TP22.343x21.209x0.219	8	-19.586	--	88.0	Pass
L9	95 - 94.5	Pole	TP22.456x22.343x0.219	9	-19.663	--	89.3	Pass
L10	94.5 - 94.25	Pole + Reinf.	TP22.513x22.456x0.438	10	-19.713	--	72.9	Pass
L11	94.25 - 92.08	Pole + Reinf.	TP23.004x22.513x0.431	11	-24.293	--	80.1	Pass
L12	92.08 - 91.83	Pole + Reinf.	TP23.06x23.004x0.656	12	-24.368	--	54.7	Pass
L13	91.83 - 86.83	Pole + Reinf.	TP24.193x23.06x0.631	13	-25.548	--	64.7	Pass
L14	86.83 - 81.83	Pole + Reinf.	TP25.326x24.193x0.606	14	-26.774	--	73.7	Pass
L15	81.83 - 77.79	Pole + Reinf.	TP27.3x25.326x0.594	15	-27.792	--	80.4	Pass
L16	77.79 - 72.79	Pole + Reinf.	TP26.963x25.805x0.688	16	-30.039	--	77.3	Pass
L17	72.79 - 71.5	Pole + Reinf.	TP27.262x26.963x0.675	17	-30.399	--	78.8	Pass
L18	71.5 - 71.25	Pole + Reinf.	TP27.32x27.262x0.738	18	-30.492	--	72.6	Pass
L19	71.25 - 68.33	Pole + Reinf.	TP27.996x27.32x0.725	19	-31.375	--	75.7	Pass
L20	68.33 - 68.08	Pole + Reinf.	TP28.054x27.996x0.738	20	-31.479	--	75.8	Pass
L21	68.08 - 67.92	Pole + Reinf.	TP28.092x28.054x0.738	21	-31.538	--	76.0	Pass
L22	67.92 - 67.67	Pole + Reinf.	TP28.15x28.092x1.088	22	-31.638	--	53.2	Pass
L23	67.67 - 67.5	Pole + Reinf.	TP28.189x28.15x1.088	23	-31.706	--	53.3	Pass
L24	67.5 - 67.25	Pole + Reinf.	TP28.247x28.189x0.888	24	-31.793	--	58.4	Pass
L25	67.25 - 66.33	Pole + Reinf.	TP28.459x28.247x0.875	25	-32.108	--	59.2	Pass
L26	66.33 - 66.08	Pole + Reinf.	TP28.517x28.459x1.038	26	-32.227	--	55.3	Pass
L27	66.08 - 61.08	Pole + Reinf.	TP29.675x28.517x0.988	27	-34.401	--	58.9	Pass
L28	61.08 - 56.5	Pole + Reinf.	TP30.737x29.675x0.963	28	-36.495	--	62.0	Pass
L29	56.5 - 56.25	Pole + Reinf.	TP30.795x30.737x0.963	29	-36.618	--	62.2	Pass
L30	56.25 - 51.25	Pole + Reinf.	TP31.953x30.795x0.938	30	-38.855	--	65.3	Pass
L31	51.25 - 46.25	Pole + Reinf.	TP33.111x31.953x0.913	31	-41.133	--	68.2	Pass
L32	46.25 - 42	Pole + Reinf.	TP35.36x33.111x0.888	32	-43.096	--	70.5	Pass
L33	42 - 35.54	Pole + Reinf.	TP34.967x33.471x0.813	33	-47.956	--	75.2	Pass
L34	35.54 - 31.25	Pole + Reinf.	TP35.961x34.967x0.8	34	-49.809	--	76.9	Pass
L35	31.25 - 31	Pole + Reinf.	TP36.019x35.961x0.863	35	-49.941	--	72.3	Pass
L36	31 - 26	Pole + Reinf.	TP37.177x36.019x0.85	36	-52.323	--	74.1	Pass
L37	26 - 22	Pole + Reinf.	TP38.104x37.177x0.825	37	-54.265	--	75.5	Pass
L38	22 - 21.75	Pole + Reinf.	TP38.162x38.104x0.938	38	-54.406	--	71.5	Pass
L39	21.75 - 19.08	Pole + Reinf.	TP38.779x38.162x0.925	39	-55.780	--	72.3	Pass
L40	19.08 - 18.83	Pole + Reinf.	TP38.837x38.779x0.875	40	-55.917	--	72.7	Pass
L41	18.83 - 18	Pole + Reinf.	TP39.03x38.837x0.875	41	-56.320	--	73.0	Pass
L42	18 - 17.75	Pole + Reinf.	TP39.088x39.03x1	42	-56.469	--	64.8	Pass
L43	17.75 - 17	Pole + Reinf.	TP39.262x39.088x1	43	-56.886	--	65.0	Pass
L44	17 - 16.75	Pole + Reinf.	TP39.32x39.262x1	44	-57.033	--	65.1	Pass
L45	16.75 - 11.75	Pole + Reinf.	TP40.478x39.32x0.975	45	-59.848	--	66.4	Pass
L46	11.75 - 6.75	Pole + Reinf.	TP41.636x40.478x0.95	46	-62.150	--	67.7	Pass
L47	6.75 - 4	Pole + Reinf.	TP42.273x41.636x0.95	47	-62.731	--	68.3	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L48	4 - 3.75	Pole + Reinf.	TP42.331x42.273x0.975	48	-64.306	--	66.2	Pass
L49	3.75 - 3	Pole + Reinf.	TP42.505x42.331x0.963	49	-64.455	--	66.4	Pass
L50	3 - 2.75	Pole + Reinf.	TP42.563x42.505x1.075	50	-64.879	--	56.9	Pass
L51	2.75 - 0	Pole + Reinf.	TP43.2x42.563x1.075	51	-65.038	--	57.5	Pass
							Summary	
						Pole	89.3	Pass
						Reinforcement	80.4	Pass
						Overall	89.3	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	HSS	115	67.5	Pass
1,2	Anchor Rod Bracket	Base	73.1	Pass
1,2	Anchor Rods	Base	78.3	Pass
1,2	Base Plate	Base	47.5	Pass
1,2	Base Foundation (Structure)	Base	78.8	Pass
1,2	Base Foundation (Soil Interaction)	Base	29.3	Pass

Structure Rating (max from all components) =	**89.3%**

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

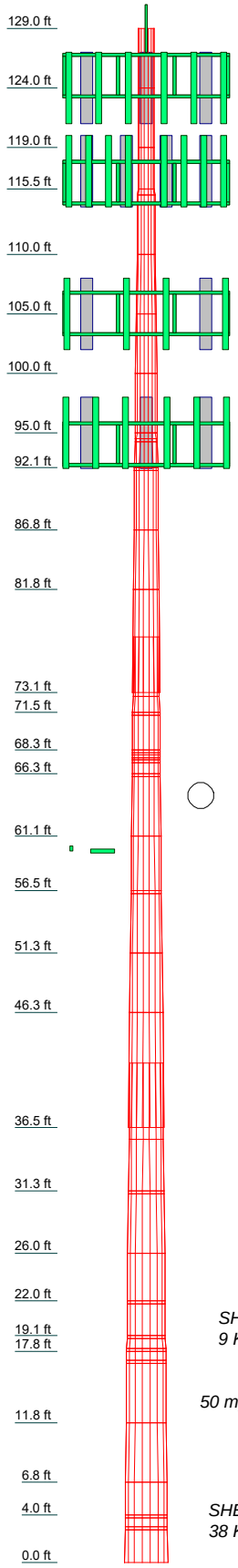
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.000	0	0.375		16.000	16.000	A53-B-35	0.3
2	5.000	0	0.375		16.000	16.000		0.3
3	5.500	0	0.375		16.000	16.000		0.2
4	5.500	0	0.375		16.000	16.000		0.0
5	5.000	12	0.219		17.811	18.943		0.2
6	5.000	12	0.219		18.943	20.076		0.2
7	5.000	12	0.219		20.076	21.209		0.2
8	5.000	12	0.219		21.209	22.343		0.3
12	5.000	12	0.219		22.343	23.060		0.2
13	5.000	12	0.631		23.060	24.193		0.7
14	5.000	12	0.606		24.193	25.326		0.7
15	5.000	12	0.594	4.667	25.326	27.300		1.3
27	5.000	12	0.988		28.512	29.675		1.6
28	4.583	12	0.963		29.675	30.737		1.4
29	0.250	12	0.963		30.737	30.795		0.1
30	5.000	12	0.938		30.795	31.953		1.6
31	5.000	12	0.912		31.953	33.111		1.6
32	6.458	12	0.887	5.458	33.111	35.360		3.2
33		12	.813		33.471	34.967		1.9
34	4.292	12	.800		34.963	35.963		1.3
35	0.250	12	.868		35.963	36.013		0.1
36	5.000	12	0.850		36.013	37.176		1.7
37	5.000	12	0.825		37.177	38.104		1.4
38	0.750	12	.825		38.104	38.289		0.1
39	1.000	12	.825		38.289	38.539		0.1
44	0.000	12	.825		38.539	38.539		0.0
45	5.000	12	0.975		39.328	40.478		2.1
46	5.000	12	0.950		40.478	41.636		2.1
47	0.750	12	.950		41.636	41.823		0.2
51	2.000	12	1.075		42.636	43.273	A572-65	1.2



ALL REACTIONS ARE FACTORED

AXIAL 111 K

SHEAR 9 K

MOMENT 912 kip-ft

TORQUE 1 kip-ft
50 mph WIND - 1.500 in ICE

AXIAL 67 K

SHEAR 38 K

MOMENT 3566 kip-ft

TORQUE 3 kip-ft
REACTIONS - 118 mph WIND

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-35	35 ksi	63 ksi	A572-65	65 ksi	80 ksi

TOWER DESIGN NOTES

1. Tower is located in Tolland County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 118 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 0.000 ft
8. TIA-222-H Annex S
9. Tower Rating: 89.3%

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

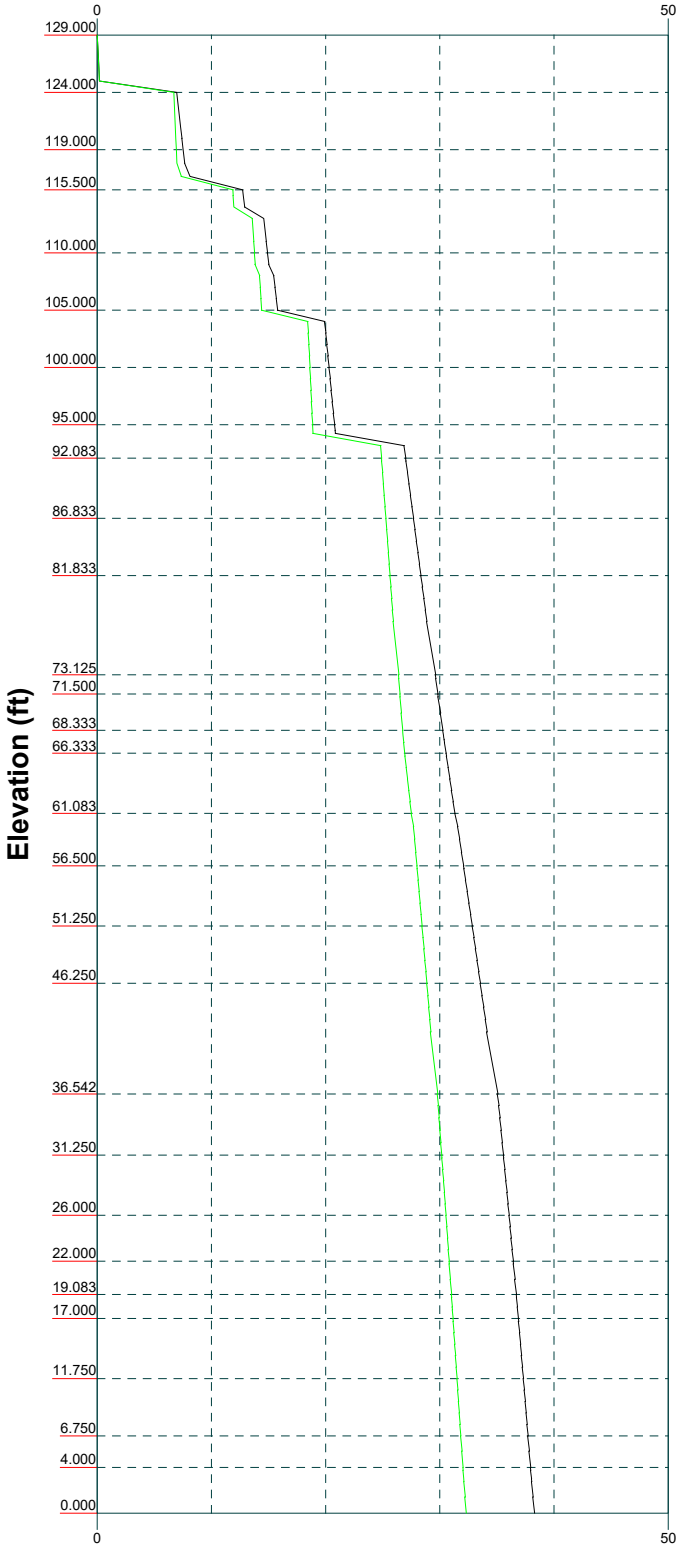
Job: 131593.004.01 - HRT 303 943203, CT (BU# 806365			
Project:			
Client: Crown Castle	Drawn by: Nithish Acharya	App'd:	
Code: TIA-222-H	Date: 09/22/21	Scale: NTS	
Path:		Dwg No. E-1	

TIA-222-H - 118 mph/50 mph 1.500 in Ice Exposure C

Maximum Values

Vx Vz Mx Mz

Global Mast Shear (K)



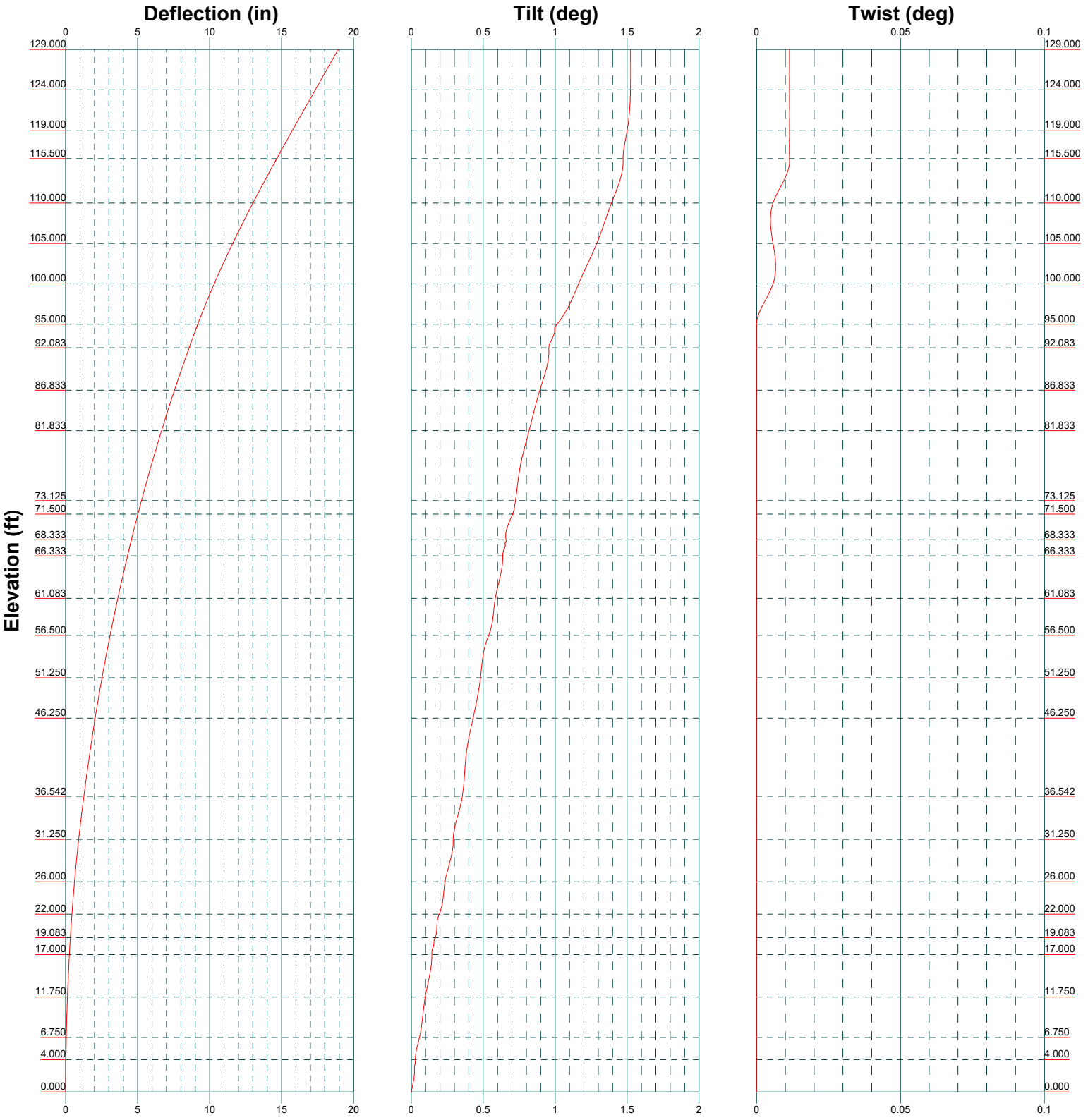
Global Mast Moment (kip-ft)

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

Job: 131593.004.01 - HRT 303 943203, CT (BU# 806365			
Project:			
Client: Crown Castle	Drawn by: Nithish Acharya	App'd:	
Code: TIA-222-H	Date: 09/22/21	Scale: NTS	
Path:		Dwg No. E-4	

TIA-222-H - Service - 60 mph

Maximum Values



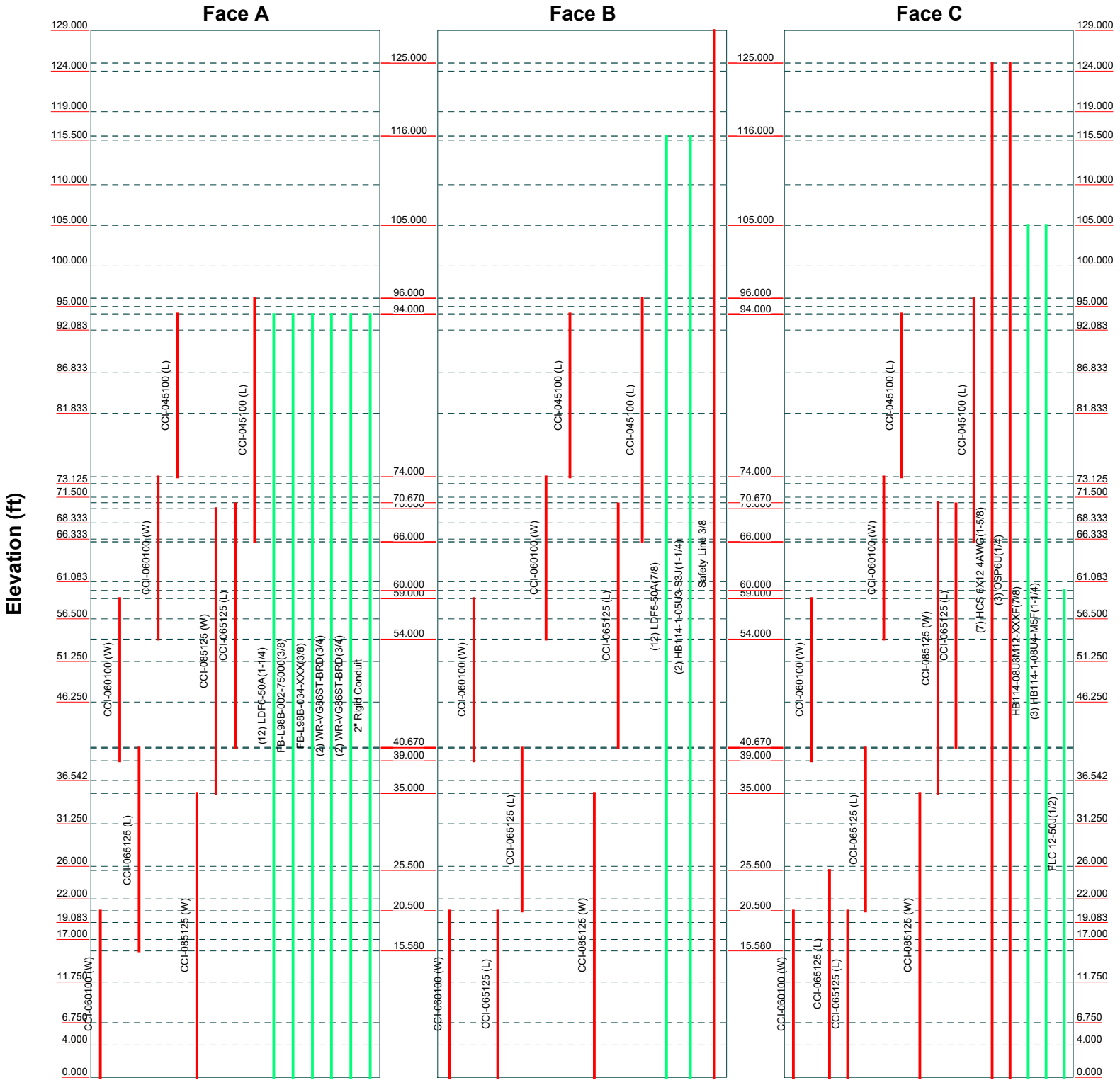
B+T GRP

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

Job: *131593.004.01 - HRT 303 943203, CT (BU# 806365*			
Project:			
Client: Crown Castle	Drawn by: Nithish Acharya	App'd:	
Code: TIA-222-H	Date: 09/22/21	Scale: NTS	
Path:		Dwg No. E-5	

Feed Line Distribution Chart
0' - 129'

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



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

Job:	131593.004.01 - HRT 303 943203, CT (BU# 806365		
Project:			
Client: Crown Castle	Drawn by: Nithish Acharya	App'd:	
Code: TIA-222-H	Date: 09/22/21	Scale: NTS	
Path:		Dwg No. E-7	

Tower Input Data

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

Tower is located in Tolland County, Connecticut.
Tower base elevation above sea level: 754.000 ft.
Basic wind speed of 118 mph.
Risk Category II.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.000 ft.
Nominal ice thickness of 1.500 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 60 mph.
TIA-222-H Annex S.
Tower Rating: 89.3%.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Tower analysis based on target reliabilities in accordance with Annex S.
Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
Maximum demand-capacity ratio is: 1.05.
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	129.000-124.000	5.000	0.000	Round	16.000	16.000	0.375		A53-B-35 (35 ksi)
L2	124.000-119.000	5.000	0.000	Round	16.000	16.000	0.375		A53-B-35 (35 ksi)
L3	119.000-115.500	3.500	0.000	Round	16.000	16.000	0.375		A53-B-35 (35 ksi)
L4	115.500-115.000	0.500	0.000	Round	16.000	17.810	0.375		A53-B-35 (35 ksi)
L5	115.000-110.000	5.000	0.000	12	17.810	18.943	0.219	0.875	A572-65 (65 ksi)
L6	110.000-105.000	5.000	0.000	12	18.943	20.076	0.219	0.875	A572-65 (65 ksi)
L7	105.000-100.000	5.000	0.000	12	20.076	21.209	0.219	0.875	A572-65 (65 ksi)
L8	100.000-95.000	5.000	0.000	12	21.209	22.343	0.219	0.875	A572-65 (65 ksi)
L9	95.000-94.500	0.500	0.000	12	22.343	22.456	0.219	0.875	A572-65 (65 ksi)
L10	94.500-94.250	0.250	0.000	12	22.456	22.513	0.438	1.750	A572-65 (65 ksi)
L11	94.250-92.083	2.167	0.000	12	22.513	23.004	0.431	1.725	A572-65 (65 ksi)
L12	92.083-91.833	0.250	0.000	12	23.004	23.060	0.656	2.625	A572-65 (65 ksi)
L13	91.833-86.833	5.000	0.000	12	23.060	24.193	0.631	2.525	A572-65 (65 ksi)
L14	86.833-81.833	5.000	0.000	12	24.193	25.326	0.606	2.425	A572-65 (65 ksi)
L15	81.833-73.125	8.708	4.667	12	25.326	27.300	0.594	2.375	A572-65 (65 ksi)
L16	73.125-72.792	5.000	0.000	12	25.805	26.963	0.688	2.750	A572-65 (65 ksi)
L17	72.792-71.500	1.292	0.000	12	26.963	27.262	0.675	2.700	A572-65 (65 ksi)
L18	71.500-71.250	0.250	0.000	12	27.262	27.320	0.738	2.950	A572-65 (65 ksi)
L19	71.250-68.333	2.917	0.000	12	27.320	27.996	0.725	2.900	A572-65 (65 ksi)
L20	68.333-68.083	0.250	0.000	12	27.996	28.054	0.738	2.950	A572-65 (65 ksi)
L21	68.083-67.917	0.167	0.000	12	28.054	28.092	0.738	2.950	A572-65 (65 ksi)
L22	67.917-67.667	0.250	0.000	12	28.092	28.150	1.087	4.350	A572-65 (65 ksi)
L23	67.667-67.500	0.167	0.000	12	28.150	28.189	1.087	4.350	A572-65 (65 ksi)
L24	67.500-67.250	0.250	0.000	12	28.189	28.247	0.887	3.550	A572-65 (65 ksi)
L25	67.250-66.333	0.917	0.000	12	28.247	28.459	0.875	3.500	A572-65 (65 ksi)
L26	66.333-66.083	0.250	0.000	12	28.459	28.517	1.038	4.150	A572-65 (65 ksi)
L27	66.083-61.083	5.000	0.000	12	28.517	29.675	0.988	3.950	A572-65 (65 ksi)
L28	61.083-56.500	4.583	0.000	12	29.675	30.737	0.963	3.850	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
L29	56.500-56.250	0.250	0.000	12	30.737	30.795	0.963	3.850	A572-65 (65 ksi)
L30	56.250-51.250	5.000	0.000	12	30.795	31.953	0.938	3.750	A572-65 (65 ksi)
L31	51.250-46.250	5.000	0.000	12	31.953	33.111	0.912	3.650	A572-65 (65 ksi)
L32	46.250-36.542	9.708	5.458	12	33.111	35.360	0.887	3.550	A572-65 (65 ksi)
L33	36.542-35.542	6.458	0.000	12	33.471	34.967	0.813	3.250	A572-65 (65 ksi)
L34	35.542-31.250	4.292	0.000	12	34.967	35.961	0.800	3.200	A572-65 (65 ksi)
L35	31.250-31.000	0.250	0.000	12	35.961	36.019	0.863	3.450	A572-65 (65 ksi)
L36	31.000-26.000	5.000	0.000	12	36.019	37.177	0.850	3.400	A572-65 (65 ksi)
L37	26.000-22.000	4.000	0.000	12	37.177	38.104	0.825	3.300	A572-65 (65 ksi)
L38	22.000-21.750	0.250	0.000	12	38.104	38.162	0.938	3.750	A572-65 (65 ksi)
L39	21.750-19.083	2.667	0.000	12	38.162	38.779	0.925	3.700	A572-65 (65 ksi)
L40	19.083-18.833	0.250	0.000	12	38.779	38.837	0.875	3.500	A572-65 (65 ksi)
L41	18.833-18.000	0.833	0.000	12	38.837	39.030	0.875	3.500	A572-65 (65 ksi)
L42	18.000-17.750	0.250	0.000	12	39.030	39.088	1.000	4.000	A572-65 (65 ksi)
L43	17.750-17.000	0.750	0.000	12	39.088	39.262	1.000	4.000	A572-65 (65 ksi)
L44	17.000-16.750	0.250	0.000	12	39.262	39.320	1.000	4.000	A572-65 (65 ksi)
L45	16.750-11.750	5.000	0.000	12	39.320	40.478	0.975	3.900	A572-65 (65 ksi)
L46	11.750-6.750	5.000	0.000	12	40.478	41.636	0.950	3.800	A572-65 (65 ksi)
L47	6.750-4.000	2.750	0.000	12	41.636	42.273	0.950	3.800	A572-65 (65 ksi)
L48	4.000-3.750	0.250	0.000	12	42.273	42.331	0.975	3.900	A572-65 (65 ksi)
L49	3.750-3.000	0.750	0.000	12	42.331	42.505	0.963	3.850	A572-65 (65 ksi)
L50	3.000-2.750	0.250	0.000	12	42.505	42.563	1.075	4.300	A572-65 (65 ksi)
L51	2.750-0.000	2.750		12	42.563	43.200	1.075	4.300	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	16.000	18.408	562.084	5.526	8.000	70.261	1124.168	9.198	0.000	0
	16.000	18.408	562.084	5.526	8.000	70.261	1124.168	9.198	0.000	0
L2	16.000	18.408	562.084	5.526	8.000	70.261	1124.168	9.198	0.000	0
	16.000	18.408	562.084	5.526	8.000	70.261	1124.168	9.198	0.000	0
L3	16.000	18.408	562.084	5.526	8.000	70.261	1124.168	9.198	0.000	0

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
	16.000	18.408	562.084	5.526	8.000	70.261	1124.168	9.198	0.000	0
L4	16.000	18.408	562.084	5.526	8.000	70.261	1124.168	9.198	0.000	0
	17.810	20.540	780.832	6.166	8.905	87.685	1561.665	10.264	0.000	0
L5	18.361	12.391	489.418	6.298	9.226	53.050	991.694	6.098	4.187	19.14
	19.534	13.189	590.218	6.703	9.813	60.149	1195.942	6.491	4.491	20.528
L6	19.534	13.189	590.218	6.703	9.813	60.149	1195.942	6.491	4.491	20.528
	20.707	13.987	703.987	7.109	10.400	67.694	1426.469	6.884	4.794	21.916
L7	20.707	13.987	703.987	7.109	10.400	67.694	1426.469	6.884	4.794	21.916
	21.880	14.785	831.510	7.515	10.986	75.685	1684.866	7.277	5.098	23.305
L8	21.880	14.785	831.510	7.515	10.986	75.685	1684.866	7.277	5.098	23.305
	23.054	15.583	973.572	7.920	11.573	84.121	1972.722	7.670	5.402	24.693
L9	23.054	15.583	973.572	7.920	11.573	84.121	1972.722	7.670	5.402	24.693
	23.171	15.663	988.609	7.961	11.632	84.989	2003.189	7.709	5.432	24.832
L10	23.094	31.018	1919.439	7.883	11.632	165.012	3889.303	15.266	4.846	11.076
	23.152	31.098	1934.294	7.903	11.661	165.870	3919.404	15.306	4.861	11.111
L11	23.155	30.663	1908.281	7.905	11.661	163.640	3866.695	15.091	4.878	11.31
	23.663	31.344	2038.437	8.081	11.916	171.070	4130.426	15.427	5.009	11.616
L12	23.584	47.223	3010.130	8.000	11.916	252.616	6099.340	23.242	4.406	6.714
	23.642	47.342	3033.083	8.021	11.945	253.917	6145.848	23.300	4.421	6.737
L13	23.651	45.590	2927.315	8.030	11.945	245.062	5931.533	22.438	4.488	7.11
	24.824	47.893	3393.780	8.435	12.532	270.806	6876.719	23.571	4.792	7.591
L14	24.833	46.045	3269.759	8.444	12.532	260.910	6625.418	22.662	4.859	8.015
	26.006	48.257	3764.003	8.850	13.119	286.910	7626.890	23.751	5.163	8.516
L15	26.010	47.286	3691.989	8.854	13.119	281.421	7480.972	23.273	5.196	8.752
	28.054	51.059	4648.193	9.561	14.141	328.694	9418.500	25.130	5.725	9.642
L16	27.592	55.603	4477.494	8.992	13.367	334.969	9072.617	27.366	5.073	7.379
	27.672	58.167	5125.889	9.407	13.967	367.004	10386.440	28.628	5.384	7.831
L17	27.676	57.137	5039.877	9.411	13.967	360.846	10212.157	28.121	5.417	8.025
	27.986	57.788	5213.976	9.518	14.122	369.213	10564.928	28.441	5.497	8.144
L18	27.964	62.990	5656.671	9.496	14.122	400.561	11461.948	31.002	5.330	7.227
	28.024	63.127	5693.801	9.517	14.152	402.335	11537.185	31.069	5.345	7.248
L19	28.028	62.087	5605.196	9.521	14.152	396.074	11357.646	30.557	5.379	7.419
	28.728	63.664	6043.318	9.763	14.502	416.728	12245.401	31.333	5.560	7.669
L20	28.723	64.732	6139.064	9.758	14.502	423.330	12439.408	31.859	5.526	7.493
	28.783	64.869	6178.274	9.779	14.532	425.154	12518.859	31.927	5.542	7.514
L21	28.783	64.869	6178.274	9.779	14.532	425.154	12518.859	31.927	5.542	7.514
	28.823	64.961	6204.507	9.793	14.552	426.373	12572.014	31.972	5.552	7.528
L22	28.700	94.564	8802.313	9.668	14.552	604.893	17835.873	46.542	4.614	4.243
	28.760	94.767	8859.063	9.688	14.582	607.541	17950.863	46.641	4.630	4.257
L23	28.760	94.767	8859.063	9.688	14.582	607.541	17950.863	46.641	4.630	4.257
	28.800	94.902	8897.031	9.702	14.602	609.309	18027.797	46.708	4.640	4.267
L24	28.870	78.021	7422.732	9.774	14.602	508.342	15040.468	38.399	5.176	5.832
	28.930	78.186	7470.066	9.795	14.632	510.535	15136.380	38.481	5.192	5.85
L25	28.935	77.120	7374.953	9.799	14.632	504.035	14943.655	37.956	5.225	5.972
	29.154	77.718	7547.922	9.875	14.742	512.007	15294.137	38.251	5.282	6.037
L26	29.097	91.609	8792.440	9.817	14.742	596.428	17815.866	45.087	4.847	4.671
	29.157	91.802	8848.262	9.838	14.772	598.996	17928.978	45.182	4.862	4.686
L27	29.175	87.537	8467.895	9.856	14.772	573.246	17158.251	43.083	4.996	5.059
	30.374	91.220	9582.255	10.270	15.372	623.367	19416.246	44.896	5.306	5.374
L28	30.383	88.988	9364.104	10.279	15.372	609.175	18974.214	43.797	5.373	5.583
	31.482	92.278	10441.731	10.659	15.922	655.817	21157.777	45.417	5.658	5.878
L29	31.482	92.278	10441.731	10.659	15.922	655.817	21157.777	45.417	5.658	5.878
	31.542	92.458	10502.777	10.680	15.952	658.410	21281.473	45.505	5.674	5.895
L30	31.550	90.132	10255.717	10.689	15.952	642.922	20780.864	44.360	5.741	6.123
	32.749	93.628	11496.108	11.104	16.552	694.559	23294.232	46.081	6.051	6.454
L31	32.758	91.205	11216.625	11.113	16.552	677.673	22727.923	44.888	6.118	6.705
	33.957	94.608	12519.619	11.527	17.152	729.938	25368.143	46.563	6.428	7.045
L32	33.966	92.087	12205.001	11.536	17.152	711.595	24730.641	45.323	6.495	7.319
	36.294	98.514	14942.681	12.341	18.316	815.805	30277.923	48.485	7.098	7.998
L33	35.674	85.442	11631.674	11.692	17.338	670.884	23568.924	42.052	6.793	8.36
	35.914	89.356	13304.470	12.227	18.113	734.536	26958.463	43.978	7.194	8.854
L34	35.918	88.013	13114.174	12.232	18.113	724.030	26572.872	43.318	7.227	9.034

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
	36.947	90.575	14292.668	12.588	18.628	767.278	28960.821	44.578	7.494	9.367
L35	36.925	97.477	15327.257	12.565	18.628	822.818	31057.178	47.975	7.326	8.494
	36.985	97.638	15403.253	12.586	18.658	825.568	31211.167	48.054	7.342	8.512
L36	36.990	96.257	15196.215	12.590	18.658	814.471	30791.652	47.375	7.375	8.677
	38.189	99.427	16747.619	13.005	19.258	869.657	33935.217	48.935	7.685	9.042
L37	38.198	96.569	16288.625	13.014	19.258	845.822	33005.170	47.529	7.752	9.397
	39.157	99.031	17566.213	13.346	19.738	889.982	35593.911	48.740	8.001	9.698
L38	39.117	112.195	19781.430	13.306	19.738	1002.215	40082.540	55.219	7.699	8.213
	39.177	112.370	19874.045	13.326	19.768	1005.379	40270.204	55.305	7.715	8.229
L39	39.182	110.909	19628.819	13.331	19.768	992.973	39773.309	54.586	7.748	8.377
	39.821	112.749	20622.006	13.552	20.088	1026.599	41785.774	55.492	7.914	8.556
L40	39.839	106.796	19584.704	13.570	20.088	974.960	39683.919	52.561	8.048	9.198
	39.899	106.959	19674.608	13.590	20.118	977.975	39866.090	52.642	8.063	9.215
L41	39.899	106.959	19674.608	13.590	20.118	977.975	39866.090	52.642	8.063	9.215
	40.098	107.503	19976.279	13.660	20.218	988.059	40477.357	52.909	8.115	9.274
L42	40.054	122.458	22606.388	13.615	20.218	1118.149	45806.671	60.270	7.780	7.78
	40.114	122.644	22709.819	13.636	20.248	1121.600	46016.251	60.362	7.796	7.796
L43	40.114	122.644	22709.819	13.636	20.248	1121.600	46016.251	60.362	7.796	7.796
	40.294	123.203	23022.009	13.698	20.338	1131.987	46648.832	60.637	7.842	7.842
L44	40.294	123.203	23022.009	13.698	20.338	1131.987	46648.832	60.637	7.842	7.842
	40.354	123.390	23126.704	13.719	20.368	1135.460	46860.971	60.729	7.858	7.858
L45	40.363	120.384	22592.697	13.727	20.368	1109.242	45778.929	59.249	7.925	8.128
	41.562	124.020	24702.473	14.142	20.968	1178.122	50053.908	61.039	8.235	8.446
L46	41.571	120.917	24114.802	14.151	20.968	1150.095	48863.127	59.511	8.302	8.739
	42.770	124.460	26297.355	14.566	21.568	1219.297	53285.571	61.255	8.613	9.066
L47	42.770	124.460	26297.355	14.566	21.568	1219.297	53285.571	61.255	8.613	9.066
	43.430	126.408	27552.030	14.794	21.898	1258.220	55827.882	62.214	8.783	9.246
L48	43.421	129.656	28225.793	14.785	21.898	1288.989	57193.108	63.813	8.716	8.94
	43.481	129.838	28344.701	14.806	21.928	1292.648	57434.049	63.902	8.732	8.956
L49	43.485	128.212	28006.687	14.810	21.928	1277.233	56749.141	63.102	8.765	9.107
	43.665	128.751	28361.033	14.872	22.018	1288.106	57467.142	63.367	8.812	9.155
L50	43.625	143.410	31419.313	14.832	22.018	1427.008	63664.047	70.582	8.510	7.917
	43.685	143.611	31551.254	14.853	22.048	1431.051	63931.394	70.681	8.526	7.931
L51	43.685	143.611	31551.254	14.853	22.048	1431.051	63931.394	70.681	8.526	7.931
	44.345	145.816	33027.069	15.081	22.378	1475.899	66921.795	71.766	8.697	8.09

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 129.000-124.000				1	1	1			
L2 124.000-119.000				1	1	1			
L3 119.000-115.500				1	1	1			
L4 115.500-115.000				1	1	1			
L5 115.000-110.000				1	1	1			
L6 110.000-105.000				1	1	1			
L7 105.000-100.0				1	1	1			

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
00									
L8				1	1	1			
100.000-95.000									
L9				1	1	1			
95.000-94.500									
L10				1	1	0.939686			
94.500-94.250									
L11				1	1	0.943338			
94.250-92.083									
L12				1	1	0.910974			
92.083-91.833									
L13				1	1	0.917168			
91.833-86.833									
L14				1	1	0.926788			
86.833-81.833									
L15				1	1	0.925203			
81.833-73.125									
L16				1	1	0.925875			
73.125-72.792									
L17				1	1	0.937174			
72.792-71.500									
L18				1	1	0.93021			
71.500-71.250									
L19				1	1	0.93305			
71.250-68.333									
L20				1	1	1.04204			
68.333-68.083									
L21				1	1	1.04117			
68.083-67.917									
L22				1	1	0.886034			
67.917-67.667									
L23				1	1	0.885181			
67.667-67.500									
L24				1	1	0.902267			
67.500-67.250									
L25				1	1	0.910446			
67.250-66.333									
L26				1	1	1.00321			
66.333-66.083									
L27				1	1	1.02239			
66.083-61.083									
L28				1	1	1.02224			
61.083-56.500									
L29				1	1	1.02089			
56.500-56.250									
L30				1	1	1.02058			
56.250-51.250									
L31				1	1	1.02232			
51.250-46.250									
L32				1	1	1.02961			
46.250-36.542									
L33				1	1	0.978781			
36.542-35.542									
L34				1	1	0.978867			
35.542-31.250									
L35				1	1	1.01774			
31.250-31.000									
L36				1	1	1.0135			

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
31.000-26.000									
L37				1	1	1.02885			
26.000-22.000									
L38				1	1	0.979748			
22.000-21.750									
L39				1	1	0.983072			
21.750-19.083									
L40				1	1	0.960874			
19.083-18.833									
L41				1	1	0.958181			
18.833-18.000									
L42				1	1	0.987432			
18.000-17.750									
L43				1	1	0.984651			
17.750-17.000									
L44				1	1	0.98373			
17.000-16.750									
L45				1	1	0.990009			
16.750-11.750									
L46				1	1	0.99775			
11.750-6.750									
L47				1	1	0.988454			
6.750-4.000									
L48				1	1	0.948419			
4.000-3.750									
L49				1	1	0.958059			
3.750-3.000									
L50				1	1	0.890792			
3.000-2.750									
L51				1	1	0.882596			
2.750-0.000									

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
******GEN 1********										
CCI-060100 (W)	A	No	Surface Af (CaAa)	20.500 - 0.000	1	1	-0.150 -0.100	6.000	14.000	0.000
CCI-060100 (W)	B	No	Surface Af (CaAa)	20.500 - 0.000	1	1	-0.150 -0.100	6.000	14.000	0.000
CCI-060100 (W)	C	No	Surface Af (CaAa)	20.500 - 0.000	1	1	-0.150 -0.100	6.000	14.000	0.000
CCI-060100 (W)	A	No	Surface Af (CaAa)	59.000 - 39.000	1	1	-0.150 -0.100	6.000	14.000	0.000
CCI-060100 (W)	B	No	Surface Af (CaAa)	59.000 - 39.000	1	1	-0.150 -0.100	6.000	14.000	0.000
CCI-060100 (W)	C	No	Surface Af (CaAa)	59.000 - 39.000	1	1	-0.150 -0.100	6.000	14.000	0.000
******GEN 2********										
CCI-065125 (L)	B	No	Surface Af (CaAa)	20.500 - 0.000	1	1	-0.400 -0.350	6.500	15.500	0.000
CCI-065125 (L)	C	No	Surface Af	25.500 -	1	1	0.350	6.500	15.500	0.000

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
			(CaAa)	0.000			0.400			
CCI-065125 (L)	C	No	Surface Af	20.500 -	1	1	-0.400	6.500	15.500	0.000
			(CaAa)	0.000			-0.350			
CCI-065125 (L)	B	No	Surface Af	40.580 -	1	1	-0.400	6.500	15.500	0.000
			(CaAa)	20.500			-0.350			
CCI-065125 (L)	A	No	Surface Af	40.580 -	1	1	0.350	6.500	15.500	0.000
			(CaAa)	15.580			0.400			
CCI-065125 (L)	C	No	Surface Af	40.580 -	1	1	-0.400	6.500	15.500	0.000
			(CaAa)	20.500			-0.350			
CCI-060100 (W)	A	No	Surface Af	74.000 -	1	1	0.350	6.000	14.000	0.000
			(CaAa)	54.000			0.400			
CCI-060100 (W)	B	No	Surface Af	74.000 -	1	1	0.350	6.000	14.000	0.000
			(CaAa)	54.000			0.400			
CCI-060100 (W)	C	No	Surface Af	74.000 -	1	1	0.350	6.000	14.000	0.000
			(CaAa)	54.000			0.400			
CCI-045100 (L)	A	No	Surface Af	94.080 -	1	1	0.350	4.500	11.000	0.000
			(CaAa)	74.000			0.400			
CCI-045100 (L)	B	No	Surface Af	94.080 -	1	1	0.350	4.500	11.000	0.000
			(CaAa)	74.000			0.400			
CCI-045100 (L)	C	No	Surface Af	94.080 -	1	1	0.350	4.500	11.000	0.000
			(CaAa)	74.000			0.400			
******GEN 3********										
CCI-085125 (W)	A	No	Surface Af	35.000 -	1	1	0.200	8.500	19.500	0.000
			(CaAa)	0.000			0.250			
CCI-085125 (W)	B	No	Surface Af	35.000 -	1	1	0.350	8.500	19.500	0.000
			(CaAa)	0.000			0.400			
CCI-085125 (W)	C	No	Surface Af	35.000 -	1	1	0.200	8.500	19.500	0.000
			(CaAa)	0.000			0.250			
CCI-085125 (W)	A	No	Surface Af	70.080 -	1	1	0.200	8.500	19.500	0.000
			(CaAa)	35.000			0.250			
CCI-085125 (W)	C	No	Surface Af	70.800 -	1	1	0.200	8.500	19.500	0.000
			(CaAa)	35.000			0.250			
CCI-065125 (L)	A	No	Surface Af	70.670 -	1	1	-0.400	6.500	15.500	0.000
			(CaAa)	40.670			-0.350			
CCI-065125 (L)	B	No	Surface Af	70.670 -	1	1	-0.400	6.500	15.500	0.000
			(CaAa)	40.670			-0.350			
CCI-065125 (L)	C	No	Surface Af	70.670 -	1	1	-0.400	6.500	15.500	0.000
			(CaAa)	40.670			-0.350			
CCI-045100 (L)	A	No	Surface Af	96.000 -	1	1	-0.150	4.500	11.000	0.000
			(CaAa)	66.000			-0.100			
CCI-045100 (L)	B	No	Surface Af	96.000 -	1	1	-0.150	4.500	11.000	0.000
			(CaAa)	66.000			-0.100			
CCI-045100 (L)	C	No	Surface Af	96.000 -	1	1	-0.150	4.500	11.000	0.000
			(CaAa)	66.000			-0.100			
*										
HCS 6X12 4AWG(1-5/8)	C	No	Surface Ar	125.000 -	7	6	-0.250	1.660		0.002
			(CaAa)	0.000			0.000			
OSP6U(1/4)	C	No	Surface Ar	125.000 -	3	3	-0.100	0.251		0.000
			(CaAa)	0.000			0.000			
*										
Safety Line 3/8	B	No	Surface Ar	129.000 -	1	1	0.240	0.375		0.000
			(CaAa)	0.000			0.250			
*										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
*									
LDF5-50A(7/8)	B	No	No	Inside Pole	116.000 - 0.000	12	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
HB114-1-05U3-S3J(1-1/4)	B	No	No	Inside Pole	116.000 - 0.000	2	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
*									
HB114-08U3M12-XXXF(7/8)	C	No	No	Inside Pole	105.000 - 0.000	1	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
HB114-1-08U4-M5F(1-1/4)	C	No	No	Inside Pole	105.000 - 0.000	3	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
*									
LDF6-50A(1-1/4)	A	No	No	Inside Pole	94.000 - 0.000	12	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
FB-L98B-002-75000(3/8)	A	No	No	Inside Pole	94.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
FB-L98B-034-XXX(3/8)	A	No	No	Inside Pole	94.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
WR-VG86ST-BRD(3/4)	A	No	No	Inside Pole	94.000 - 0.000	2	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
WR-VG86ST-BRD(3/4)	A	No	No	Inside Pole	94.000 - 0.000	2	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
2" Rigid Conduit	A	No	No	Inside Pole	94.000 - 0.000	1	No Ice	0.000	0.003
							1/2" Ice	0.000	0.003
							1" Ice	0.000	0.003
							2" Ice	0.000	0.003
*									
FLC 12-50J(1/2)	C	No	No	Inside Pole	60.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
*									

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	129.000-124.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.188	0.000	0.001
		C	0.000	0.000	1.071	0.000	0.017
L2	124.000-119.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.188	0.000	0.001
		C	0.000	0.000	5.356	0.000	0.084
L3	119.000-115.500	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.131	0.000	0.004
		C	0.000	0.000	3.750	0.000	0.059
L4	115.500-115.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.019	0.000	0.003
		C	0.000	0.000	0.536	0.000	0.008
L5	115.000-110.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.188	0.000	0.030
		C	0.000	0.000	5.356	0.000	0.084
L6	110.000-105.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.188	0.000	0.030
		C	0.000	0.000	5.356	0.000	0.084
L7	105.000-100.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.188	0.000	0.030
		C	0.000	0.000	5.356	0.000	0.107
L8	100.000-95.000	A	0.000	0.000	0.750	0.000	0.000
		B	0.000	0.000	0.938	0.000	0.030
		C	0.000	0.000	6.106	0.000	0.107
L9	95.000-94.500	A	0.000	0.000	0.375	0.000	0.000
		B	0.000	0.000	0.394	0.000	0.003
		C	0.000	0.000	0.911	0.000	0.011
L10	94.500-94.250	A	0.000	0.000	0.188	0.000	0.000
		B	0.000	0.000	0.197	0.000	0.001
		C	0.000	0.000	0.455	0.000	0.005
L11	94.250-92.083	A	0.000	0.000	3.123	0.000	0.024
		B	0.000	0.000	3.204	0.000	0.013
		C	0.000	0.000	5.444	0.000	0.047
L12	92.083-91.833	A	0.000	0.000	0.375	0.000	0.003
		B	0.000	0.000	0.384	0.000	0.001
		C	0.000	0.000	0.643	0.000	0.005
L13	91.833-86.833	A	0.000	0.000	7.500	0.000	0.062
		B	0.000	0.000	7.688	0.000	0.030
		C	0.000	0.000	12.857	0.000	0.107
L14	86.833-81.833	A	0.000	0.000	7.500	0.000	0.062
		B	0.000	0.000	7.688	0.000	0.030
		C	0.000	0.000	12.857	0.000	0.107
L15	81.833-73.125	A	0.000	0.000	13.281	0.000	0.108
		B	0.000	0.000	13.608	0.000	0.052
		C	0.000	0.000	22.610	0.000	0.187
L16	73.125-72.792	A	0.000	0.000	0.583	0.000	0.004
		B	0.000	0.000	0.595	0.000	0.002
		C	0.000	0.000	0.939	0.000	0.007
L17	72.792-71.500	A	0.000	0.000	2.261	0.000	0.016
		B	0.000	0.000	2.309	0.000	0.008
		C	0.000	0.000	3.645	0.000	0.028
L18	71.500-71.250	A	0.000	0.000	0.438	0.000	0.003
		B	0.000	0.000	0.447	0.000	0.001
		C	0.000	0.000	0.705	0.000	0.005
L19	71.250-68.333	A	0.000	0.000	10.110	0.000	0.036
		B	0.000	0.000	7.745	0.000	0.017
		C	0.000	0.000	14.255	0.000	0.063
L20	68.333-68.083	A	0.000	0.000	1.063	0.000	0.003
		B	0.000	0.000	0.718	0.000	0.001
		C	0.000	0.000	1.330	0.000	0.005
L21	68.083-67.917	A	0.000	0.000	0.708	0.000	0.002

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B	0.000	0.000	0.478	0.000	0.001
		C	0.000	0.000	0.887	0.000	0.004
L22	67.917-67.667	A	0.000	0.000	1.062	0.000	0.003
		B	0.000	0.000	0.718	0.000	0.001
		C	0.000	0.000	1.330	0.000	0.005
L23	67.667-67.500	A	0.000	0.000	0.708	0.000	0.002
		B	0.000	0.000	0.478	0.000	0.001
		C	0.000	0.000	0.887	0.000	0.004
L24	67.500-67.250	A	0.000	0.000	1.063	0.000	0.003
		B	0.000	0.000	0.718	0.000	0.001
		C	0.000	0.000	1.330	0.000	0.005
L25	67.250-66.333	A	0.000	0.000	3.896	0.000	0.011
		B	0.000	0.000	2.632	0.000	0.005
		C	0.000	0.000	4.878	0.000	0.020
L26	66.333-66.083	A	0.000	0.000	1.063	0.000	0.003
		B	0.000	0.000	0.718	0.000	0.001
		C	0.000	0.000	1.330	0.000	0.005
L27	66.083-61.083	A	0.000	0.000	17.562	0.000	0.062
		B	0.000	0.000	10.667	0.000	0.030
		C	0.000	0.000	22.919	0.000	0.107
L28	61.083-56.500	A	0.000	0.000	18.542	0.000	0.057
		B	0.000	0.000	12.220	0.000	0.027
		C	0.000	0.000	23.452	0.000	0.099
L29	56.500-56.250	A	0.000	0.000	1.125	0.000	0.003
		B	0.000	0.000	0.780	0.000	0.001
		C	0.000	0.000	1.393	0.000	0.005
L30	56.250-51.250	A	0.000	0.000	19.750	0.000	0.062
		B	0.000	0.000	12.854	0.000	0.030
		C	0.000	0.000	25.107	0.000	0.108
L31	51.250-46.250	A	0.000	0.000	17.500	0.000	0.062
		B	0.000	0.000	10.604	0.000	0.030
		C	0.000	0.000	22.857	0.000	0.108
L32	46.250-36.542	A	0.000	0.000	31.422	0.000	0.121
		B	0.000	0.000	18.034	0.000	0.058
		C	0.000	0.000	41.823	0.000	0.210
L33	36.542-35.542	A	0.000	0.000	2.500	0.000	0.012
		B	0.000	0.000	1.121	0.000	0.006
		C	0.000	0.000	3.571	0.000	0.022
L34	35.542-31.250	A	0.000	0.000	10.730	0.000	0.053
		B	0.000	0.000	10.123	0.000	0.026
		C	0.000	0.000	15.328	0.000	0.093
L35	31.250-31.000	A	0.000	0.000	0.625	0.000	0.003
		B	0.000	0.000	0.634	0.000	0.001
		C	0.000	0.000	0.893	0.000	0.005
L36	31.000-26.000	A	0.000	0.000	12.500	0.000	0.062
		B	0.000	0.000	12.688	0.000	0.030
		C	0.000	0.000	17.857	0.000	0.108
L37	26.000-22.000	A	0.000	0.000	10.000	0.000	0.050
		B	0.000	0.000	10.150	0.000	0.024
		C	0.000	0.000	18.077	0.000	0.087
L38	22.000-21.750	A	0.000	0.000	0.625	0.000	0.003
		B	0.000	0.000	0.634	0.000	0.001
		C	0.000	0.000	1.164	0.000	0.005
L39	21.750-19.083	A	0.000	0.000	8.083	0.000	0.033
		B	0.000	0.000	8.183	0.000	0.016
		C	0.000	0.000	13.829	0.000	0.058
L40	19.083-18.833	A	0.000	0.000	0.875	0.000	0.003
		B	0.000	0.000	0.884	0.000	0.001
		C	0.000	0.000	1.414	0.000	0.005
L41	18.833-18.000	A	0.000	0.000	2.917	0.000	0.010
		B	0.000	0.000	2.948	0.000	0.005

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C	0.000	0.000	4.712	0.000	0.018
L42	18.000-17.750	A	0.000	0.000	0.875	0.000	0.003
		B	0.000	0.000	0.884	0.000	0.001
		C	0.000	0.000	1.414	0.000	0.005
L43	17.750-17.000	A	0.000	0.000	2.625	0.000	0.009
		B	0.000	0.000	2.653	0.000	0.004
		C	0.000	0.000	4.241	0.000	0.016
L44	17.000-16.750	A	0.000	0.000	0.875	0.000	0.003
		B	0.000	0.000	0.884	0.000	0.001
		C	0.000	0.000	1.414	0.000	0.005
L45	16.750-11.750	A	0.000	0.000	13.351	0.000	0.062
		B	0.000	0.000	17.688	0.000	0.030
		C	0.000	0.000	28.273	0.000	0.108
L46	11.750-6.750	A	0.000	0.000	12.083	0.000	0.062
		B	0.000	0.000	17.688	0.000	0.030
		C	0.000	0.000	28.273	0.000	0.108
L47	6.750-4.000	A	0.000	0.000	6.646	0.000	0.034
		B	0.000	0.000	9.728	0.000	0.016
		C	0.000	0.000	15.550	0.000	0.060
L48	4.000-3.750	A	0.000	0.000	0.604	0.000	0.003
		B	0.000	0.000	0.884	0.000	0.001
		C	0.000	0.000	1.414	0.000	0.005
L49	3.750-3.000	A	0.000	0.000	1.813	0.000	0.009
		B	0.000	0.000	2.653	0.000	0.004
		C	0.000	0.000	4.241	0.000	0.016
L50	3.000-2.750	A	0.000	0.000	0.604	0.000	0.003
		B	0.000	0.000	0.884	0.000	0.001
		C	0.000	0.000	1.414	0.000	0.005
L51	2.750-0.000	A	0.000	0.000	6.646	0.000	0.034
		B	0.000	0.000	9.728	0.000	0.016
		C	0.000	0.000	15.550	0.000	0.060

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	129.000-124.000	A	1.458	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	1.646	0.000	0.017
		C		0.000	0.000	2.068	0.000	0.038
L2	124.000-119.000	A	1.453	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	1.640	0.000	0.017
		C		0.000	0.000	10.327	0.000	0.191
L3	119.000-115.500	A	1.447	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	1.144	0.000	0.015
		C		0.000	0.000	7.220	0.000	0.133
L4	115.500-115.000	A	1.445	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.163	0.000	0.005
		C		0.000	0.000	1.031	0.000	0.019
L5	115.000-110.000	A	1.441	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	1.629	0.000	0.046
		C		0.000	0.000	10.299	0.000	0.190
L6	110.000-105.000	A	1.435	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	1.622	0.000	0.046
		C		0.000	0.000	10.283	0.000	0.190
L7	105.000-100.000	A	1.428	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	1.615	0.000	0.046
		C		0.000	0.000	10.266	0.000	0.212

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
L8	100.000-95.000	A	1.421	0.000	0.000	1.034	0.000	0.009
		B		0.000	0.000	2.643	0.000	0.055
		C		0.000	0.000	11.282	0.000	0.220
L9	95.000-94.500	A	1.417	0.000	0.000	0.517	0.000	0.005
		B		0.000	0.000	0.677	0.000	0.009
		C		0.000	0.000	1.540	0.000	0.026
L10	94.500-94.250	A	1.416	0.000	0.000	0.258	0.000	0.002
		B		0.000	0.000	0.339	0.000	0.005
		C		0.000	0.000	0.770	0.000	0.013
L11	94.250-92.083	A	1.414	0.000	0.000	4.300	0.000	0.061
		B		0.000	0.000	4.994	0.000	0.057
		C		0.000	0.000	8.734	0.000	0.129
L12	92.083-91.833	A	1.413	0.000	0.000	0.516	0.000	0.008
		B		0.000	0.000	0.596	0.000	0.007
		C		0.000	0.000	1.028	0.000	0.015
L13	91.833-86.833	A	1.408	0.000	0.000	10.317	0.000	0.152
		B		0.000	0.000	11.913	0.000	0.135
		C		0.000	0.000	20.534	0.000	0.300
L14	86.833-81.833	A	1.400	0.000	0.000	10.301	0.000	0.151
		B		0.000	0.000	11.889	0.000	0.134
		C		0.000	0.000	20.497	0.000	0.298
L15	81.833-73.125	A	1.389	0.000	0.000	18.118	0.000	0.263
		B		0.000	0.000	20.863	0.000	0.232
		C		0.000	0.000	35.825	0.000	0.517
L16	73.125-72.792	A	1.380	0.000	0.000	0.768	0.000	0.011
		B		0.000	0.000	0.873	0.000	0.009
		C		0.000	0.000	1.445	0.000	0.020
L17	72.792-71.500	A	1.379	0.000	0.000	2.974	0.000	0.041
		B		0.000	0.000	3.378	0.000	0.036
		C		0.000	0.000	5.594	0.000	0.078
L18	71.500-71.250	A	1.377	0.000	0.000	0.575	0.000	0.008
		B		0.000	0.000	0.653	0.000	0.007
		C		0.000	0.000	1.082	0.000	0.015
L19	71.250-68.333	A	1.374	0.000	0.000	12.835	0.000	0.140
		B		0.000	0.000	10.792	0.000	0.107
		C		0.000	0.000	19.963	0.000	0.235
L20	68.333-68.083	A	1.371	0.000	0.000	1.337	0.000	0.014
		B		0.000	0.000	0.992	0.000	0.010
		C		0.000	0.000	1.843	0.000	0.021
L21	68.083-67.917	A	1.371	0.000	0.000	0.891	0.000	0.009
		B		0.000	0.000	0.661	0.000	0.006
		C		0.000	0.000	1.228	0.000	0.014
L22	67.917-67.667	A	1.370	0.000	0.000	1.337	0.000	0.014
		B		0.000	0.000	0.992	0.000	0.010
		C		0.000	0.000	1.843	0.000	0.021
L23	67.667-67.500	A	1.370	0.000	0.000	0.891	0.000	0.009
		B		0.000	0.000	0.661	0.000	0.006
		C		0.000	0.000	1.228	0.000	0.014
L24	67.500-67.250	A	1.369	0.000	0.000	1.336	0.000	0.014
		B		0.000	0.000	0.992	0.000	0.010
		C		0.000	0.000	1.842	0.000	0.021
L25	67.250-66.333	A	1.368	0.000	0.000	4.899	0.000	0.051
		B		0.000	0.000	3.635	0.000	0.035
		C		0.000	0.000	6.754	0.000	0.077
L26	66.333-66.083	A	1.367	0.000	0.000	1.336	0.000	0.014
		B		0.000	0.000	0.991	0.000	0.010
		C		0.000	0.000	1.842	0.000	0.021
L27	66.083-61.083	A	1.361	0.000	0.000	21.669	0.000	0.234
		B		0.000	0.000	14.774	0.000	0.150
		C		0.000	0.000	31.768	0.000	0.378
L28	61.083-56.500	A	1.351	0.000	0.000	22.932	0.000	0.237

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B		0.000	0.000	16.610	0.000	0.161
		C		0.000	0.000	32.165	0.000	0.369
L29	56.500-56.250	A	1.345	0.000	0.000	1.394	0.000	0.014
		B		0.000	0.000	1.049	0.000	0.010
		C		0.000	0.000	1.897	0.000	0.021
L30	56.250-51.250	A	1.339	0.000	0.000	24.369	0.000	0.252
		B		0.000	0.000	17.473	0.000	0.169
		C		0.000	0.000	34.411	0.000	0.395
L31	51.250-46.250	A	1.326	0.000	0.000	21.477	0.000	0.227
		B		0.000	0.000	14.581	0.000	0.146
		C		0.000	0.000	31.487	0.000	0.369
L32	46.250-36.542	A	1.304	0.000	0.000	38.354	0.000	0.410
		B		0.000	0.000	24.965	0.000	0.253
		C		0.000	0.000	57.684	0.000	0.682
L33	36.542-35.542	A	1.286	0.000	0.000	3.022	0.000	0.035
		B		0.000	0.000	1.642	0.000	0.019
		C		0.000	0.000	5.013	0.000	0.063
L34	35.542-31.250	A	1.276	0.000	0.000	12.921	0.000	0.149
		B		0.000	0.000	13.272	0.000	0.125
		C		0.000	0.000	21.408	0.000	0.267
L35	31.250-31.000	A	1.268	0.000	0.000	0.752	0.000	0.009
		B		0.000	0.000	0.825	0.000	0.008
		C		0.000	0.000	1.245	0.000	0.015
L36	31.000-26.000	A	1.256	0.000	0.000	15.013	0.000	0.171
		B		0.000	0.000	16.457	0.000	0.151
		C		0.000	0.000	24.849	0.000	0.307
L37	26.000-22.000	A	1.235	0.000	0.000	11.976	0.000	0.135
		B		0.000	0.000	13.114	0.000	0.119
		C		0.000	0.000	24.459	0.000	0.276
L38	22.000-21.750	A	1.224	0.000	0.000	0.747	0.000	0.008
		B		0.000	0.000	0.818	0.000	0.007
		C		0.000	0.000	1.567	0.000	0.017
L39	21.750-19.083	A	1.215	0.000	0.000	9.724	0.000	0.101
		B		0.000	0.000	10.472	0.000	0.090
		C		0.000	0.000	18.452	0.000	0.198
L40	19.083-18.833	A	1.206	0.000	0.000	1.056	0.000	0.010
		B		0.000	0.000	1.126	0.000	0.009
		C		0.000	0.000	1.873	0.000	0.019
L41	18.833-18.000	A	1.203	0.000	0.000	3.518	0.000	0.035
		B		0.000	0.000	3.750	0.000	0.031
		C		0.000	0.000	6.238	0.000	0.065
L42	18.000-17.750	A	1.199	0.000	0.000	1.055	0.000	0.010
		B		0.000	0.000	1.124	0.000	0.009
		C		0.000	0.000	1.870	0.000	0.019
L43	17.750-17.000	A	1.196	0.000	0.000	3.163	0.000	0.031
		B		0.000	0.000	3.371	0.000	0.028
		C		0.000	0.000	5.608	0.000	0.058
L44	17.000-16.750	A	1.192	0.000	0.000	1.054	0.000	0.010
		B		0.000	0.000	1.123	0.000	0.009
		C		0.000	0.000	1.868	0.000	0.019
L45	16.750-11.750	A	1.172	0.000	0.000	15.970	0.000	0.169
		B		0.000	0.000	22.376	0.000	0.183
		C		0.000	0.000	37.232	0.000	0.379
L46	11.750-6.750	A	1.123	0.000	0.000	14.328	0.000	0.154
		B		0.000	0.000	22.178	0.000	0.175
		C		0.000	0.000	36.909	0.000	0.366
L47	6.750-4.000	A	1.063	0.000	0.000	7.815	0.000	0.081
		B		0.000	0.000	12.067	0.000	0.091
		C		0.000	0.000	20.088	0.000	0.192
L48	4.000-3.750	A	1.029	0.000	0.000	0.707	0.000	0.007
		B		0.000	0.000	1.090	0.000	0.008

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
		C		0.000	0.000	1.815	0.000	0.017
L49	3.750-3.000	A	1.015	0.000	0.000	2.117	0.000	0.022
		B		0.000	0.000	3.262	0.000	0.024
		C		0.000	0.000	5.432	0.000	0.051
L50	3.000-2.750	A	0.999	0.000	0.000	0.704	0.000	0.007
		B		0.000	0.000	1.084	0.000	0.008
		C		0.000	0.000	1.805	0.000	0.017
L51	2.750-0.000	A	0.928	0.000	0.000	7.666	0.000	0.074
		B		0.000	0.000	11.769	0.000	0.080
		C		0.000	0.000	19.603	0.000	0.173

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	129.000-124.000	0.781	1.908	1.272	1.379
L2	124.000-119.000	1.507	5.264	1.370	3.731
L3	119.000-115.500	1.507	5.264	1.369	3.731
L4	115.500-115.000	1.542	5.382	1.413	3.838
L5	115.000-110.000	1.241	4.324	1.465	3.962
L6	110.000-105.000	1.262	4.393	1.513	4.080
L7	105.000-100.000	1.281	4.457	1.558	4.194
L8	100.000-95.000	1.124	3.908	1.448	3.890
L9	95.000-94.500	0.741	2.576	1.066	2.860
L10	94.500-94.250	0.744	2.584	1.069	2.869
L11	94.250-92.083	0.535	1.860	0.818	2.196
L12	92.083-91.833	0.527	1.831	0.809	2.170
L13	91.833-86.833	0.536	1.860	0.824	2.207
L14	86.833-81.833	0.552	1.914	0.851	2.277
L15	81.833-73.125	0.567	1.967	0.881	2.355
L16	73.125-72.792	0.530	1.838	0.850	2.270
L17	72.792-71.500	0.533	1.846	0.853	2.279
L18	71.500-71.250	0.535	1.854	0.857	2.290
L19	71.250-68.333	-0.916	1.127	-0.452	1.543
L20	68.333-68.083	-1.119	0.574	-0.659	1.043
L21	68.083-67.917	-1.121	0.574	-0.660	1.044
L22	67.917-67.667	-1.075	0.551	-0.659	1.042
L23	67.667-67.500	-1.076	0.551	-0.660	1.044
L24	67.500-67.250	-1.082	0.554	-0.663	1.048
L25	67.250-66.333	-1.130	0.578	-0.666	1.051
L26	66.333-66.083	-1.088	0.556	-0.667	1.053
L27	66.083-61.083	-1.294	0.659	-0.797	1.251
L28	61.083-56.500	-1.241	0.628	-0.740	1.150
L29	56.500-56.250	-1.150	0.580	-0.693	1.071
L30	56.250-51.250	-1.306	0.656	-0.780	1.200
L31	51.250-46.250	-1.485	0.741	-0.883	1.345
L32	46.250-36.542	-0.829	-0.597	-0.259	0.222
L33	36.542-35.542	0.345	-3.115	0.869	-1.785
L34	35.542-31.250	1.877	-0.882	2.110	-0.029
L35	31.250-31.000	2.089	-0.605	2.291	0.198
L36	31.000-26.000	2.114	-0.615	2.317	0.195
L37	26.000-22.000	0.209	-0.300	0.608	0.430
L38	22.000-21.750	-0.044	-0.261	0.381	0.461
L39	21.750-19.083	-0.039	-0.235	0.342	0.414
L40	19.083-18.833	-0.036	-0.216	0.314	0.380
L41	18.833-18.000	-0.037	-0.217	0.315	0.380

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L42	18.000-17.750	-0.037	-0.218	0.315	0.380
L43	17.750-17.000	-0.037	-0.219	0.315	0.380
L44	17.000-16.750	-0.037	-0.220	0.315	0.380
L45	16.750-11.750	-0.543	1.072	-0.126	1.584
L46	11.750-6.750	-0.724	1.520	-0.285	2.001
L47	6.750-4.000	-0.737	1.543	-0.304	2.019
L48	4.000-3.750	-0.742	1.551	-0.314	2.024
L49	3.750-3.000	-0.743	1.554	-0.318	2.025
L50	3.000-2.750	-0.745	1.557	-0.322	2.026
L51	2.750-0.000	-0.750	1.566	-0.341	2.023

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	34	HCS 6X12 4AWG(1-5/8)	124.00 - 125.00	1.0000	1.0000
L1	35	OSP6U(1/4)	124.00 - 125.00	1.0000	1.0000
L1	53	Safety Line 3/8	124.00 - 129.00	1.0000	1.0000
L2	34	HCS 6X12 4AWG(1-5/8)	119.00 - 124.00	1.0000	1.0000
L2	35	OSP6U(1/4)	119.00 - 124.00	1.0000	1.0000
L2	53	Safety Line 3/8	119.00 - 124.00	1.0000	1.0000
L3	34	HCS 6X12 4AWG(1-5/8)	115.50 - 119.00	1.0000	1.0000
L3	35	OSP6U(1/4)	115.50 - 119.00	1.0000	1.0000
L3	53	Safety Line 3/8	115.50 - 119.00	1.0000	1.0000
L4	34	HCS 6X12 4AWG(1-5/8)	115.00 - 115.50	1.0000	1.0000
L4	35	OSP6U(1/4)	115.00 - 115.50	1.0000	1.0000
L4	53	Safety Line 3/8	115.00 - 115.50	1.0000	1.0000
L5	34	HCS 6X12 4AWG(1-5/8)	110.00 - 115.00	1.0000	1.0000
L5	35	OSP6U(1/4)	110.00 - 115.00	1.0000	1.0000
L5	53	Safety Line 3/8	110.00 - 115.00	1.0000	1.0000
L6	34	HCS 6X12 4AWG(1-5/8)	105.00 - 110.00	1.0000	1.0000
L6	35	OSP6U(1/4)	105.00 - 110.00	1.0000	1.0000
L6	53	Safety Line 3/8	105.00 - 110.00	1.0000	1.0000
L7	34	HCS 6X12 4AWG(1-5/8)	100.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			105.00		
L7	35	OSP6U(1/4)	100.00 - 105.00	1.0000	1.0000
L7	53	Safety Line 3/8	100.00 - 105.00	1.0000	1.0000
L8	30	CCI-045100 (L)	95.00 - 96.00	1.0000	1.0000
L8	31	CCI-045100 (L)	95.00 - 96.00	1.0000	1.0000
L8	32	CCI-045100 (L)	95.00 - 96.00	1.0000	1.0000
L8	34	HCS 6X12 4AWG(1-5/8)	95.00 - 100.00	1.0000	1.0000
L8	35	OSP6U(1/4)	95.00 - 100.00	1.0000	1.0000
L8	53	Safety Line 3/8	95.00 - 100.00	1.0000	1.0000
L9	30	CCI-045100 (L)	94.50 - 95.00	1.0000	1.0000
L9	31	CCI-045100 (L)	94.50 - 95.00	1.0000	1.0000
L9	32	CCI-045100 (L)	94.50 - 95.00	1.0000	1.0000
L9	34	HCS 6X12 4AWG(1-5/8)	94.50 - 95.00	1.0000	1.0000
L9	35	OSP6U(1/4)	94.50 - 95.00	1.0000	1.0000
L9	53	Safety Line 3/8	94.50 - 95.00	1.0000	1.0000
L10	30	CCI-045100 (L)	94.25 - 94.50	1.0000	1.0000
L10	31	CCI-045100 (L)	94.25 - 94.50	1.0000	1.0000
L10	32	CCI-045100 (L)	94.25 - 94.50	1.0000	1.0000
L10	34	HCS 6X12 4AWG(1-5/8)	94.25 - 94.50	1.0000	1.0000
L10	35	OSP6U(1/4)	94.25 - 94.50	1.0000	1.0000
L10	53	Safety Line 3/8	94.25 - 94.50	1.0000	1.0000
L11	18	CCI-045100 (L)	92.08 - 94.08	1.0000	1.0000
L11	19	CCI-045100 (L)	92.08 - 94.08	1.0000	1.0000
L11	20	CCI-045100 (L)	92.08 - 94.08	1.0000	1.0000
L11	30	CCI-045100 (L)	92.08 - 94.25	1.0000	1.0000
L11	31	CCI-045100 (L)	92.08 - 94.25	1.0000	1.0000
L11	32	CCI-045100 (L)	92.08 - 94.25	1.0000	1.0000
L11	34	HCS 6X12 4AWG(1-5/8)	92.08 - 94.25	1.0000	1.0000
L11	35	OSP6U(1/4)	92.08 - 94.25	1.0000	1.0000
L11	53	Safety Line 3/8	92.08 - 94.25	1.0000	1.0000
L12	18	CCI-045100 (L)	91.83 - 92.08	1.0000	1.0000
L12	19	CCI-045100 (L)	91.83 - 92.08	1.0000	1.0000
L12	20	CCI-045100 (L)	91.83 - 92.08	1.0000	1.0000
L12	30	CCI-045100 (L)	91.83 - 92.08	1.0000	1.0000
L12	31	CCI-045100 (L)	91.83 - 92.08	1.0000	1.0000
L12	32	CCI-045100 (L)	91.83 - 92.08	1.0000	1.0000
L12	34	HCS 6X12 4AWG(1-5/8)	91.83 - 92.08	1.0000	1.0000
L12	35	OSP6U(1/4)	91.83 - 92.08	1.0000	1.0000
L12	53	Safety Line 3/8	91.83 - 92.08	1.0000	1.0000
L13	18	CCI-045100 (L)	86.83 - 91.83	1.0000	1.0000
L13	19	CCI-045100 (L)	86.83 - 91.83	1.0000	1.0000
L13	20	CCI-045100 (L)	86.83 - 91.83	1.0000	1.0000
L13	30	CCI-045100 (L)	86.83 - 91.83	1.0000	1.0000
L13	31	CCI-045100 (L)	86.83 - 91.83	1.0000	1.0000
L13	32	CCI-045100 (L)	86.83 - 91.83	1.0000	1.0000
L13	34	HCS 6X12 4AWG(1-5/8)	86.83 - 91.83	1.0000	1.0000
L13	35	OSP6U(1/4)	86.83 - 91.83	1.0000	1.0000
L13	53	Safety Line 3/8	86.83 - 91.83	1.0000	1.0000
L14	18	CCI-045100 (L)	81.83 - 86.83	1.0000	1.0000
L14	19	CCI-045100 (L)	81.83 - 86.83	1.0000	1.0000
L14	20	CCI-045100 (L)	81.83 - 86.83	1.0000	1.0000
L14	30	CCI-045100 (L)	81.83 - 86.83	1.0000	1.0000
L14	31	CCI-045100 (L)	81.83 - 86.83	1.0000	1.0000
L14	32	CCI-045100 (L)	81.83 - 86.83	1.0000	1.0000
L14	34	HCS 6X12 4AWG(1-5/8)	81.83 - 86.83	1.0000	1.0000
L14	35	OSP6U(1/4)	81.83 - 86.83	1.0000	1.0000
L14	53	Safety Line 3/8	81.83 - 86.83	1.0000	1.0000
L15	15	CCI-060100 (W)	73.13 - 74.00	1.0000	1.0000
L15	16	CCI-060100 (W)	73.13 - 74.00	1.0000	1.0000
L15	17	CCI-060100 (W)	73.13 - 74.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L15	18	CCI-045100 (L)	74.00 - 81.83	1.0000	1.0000
L15	19	CCI-045100 (L)	74.00 - 81.83	1.0000	1.0000
L15	20	CCI-045100 (L)	74.00 - 81.83	1.0000	1.0000
L15	30	CCI-045100 (L)	73.13 - 81.83	1.0000	1.0000
L15	31	CCI-045100 (L)	73.13 - 81.83	1.0000	1.0000
L15	32	CCI-045100 (L)	73.13 - 81.83	1.0000	1.0000
L15	34	HCS 6X12 4AWG(1-5/8)	73.13 - 81.83	1.0000	1.0000
L15	35	OSP6U(1/4)	73.13 - 81.83	1.0000	1.0000
L15	53	Safety Line 3/8	73.13 - 81.83	1.0000	1.0000
L16	15	CCI-060100 (W)	72.79 - 73.13	1.0000	1.0000
L16	16	CCI-060100 (W)	72.79 - 73.13	1.0000	1.0000
L16	17	CCI-060100 (W)	72.79 - 73.13	1.0000	1.0000
L16	30	CCI-045100 (L)	72.79 - 73.13	1.0000	1.0000
L16	31	CCI-045100 (L)	72.79 - 73.13	1.0000	1.0000
L16	32	CCI-045100 (L)	72.79 - 73.13	1.0000	1.0000
L16	34	HCS 6X12 4AWG(1-5/8)	72.79 - 73.13	1.0000	1.0000
L16	35	OSP6U(1/4)	72.79 - 73.13	1.0000	1.0000
L16	53	Safety Line 3/8	72.79 - 73.13	1.0000	1.0000
L17	15	CCI-060100 (W)	71.50 - 72.79	1.0000	1.0000
L17	16	CCI-060100 (W)	71.50 - 72.79	1.0000	1.0000
L17	17	CCI-060100 (W)	71.50 - 72.79	1.0000	1.0000
L17	30	CCI-045100 (L)	71.50 - 72.79	1.0000	1.0000
L17	31	CCI-045100 (L)	71.50 - 72.79	1.0000	1.0000
L17	32	CCI-045100 (L)	71.50 - 72.79	1.0000	1.0000
L17	34	HCS 6X12 4AWG(1-5/8)	71.50 - 72.79	1.0000	1.0000
L17	35	OSP6U(1/4)	71.50 - 72.79	1.0000	1.0000
L17	53	Safety Line 3/8	71.50 - 72.79	1.0000	1.0000
L18	15	CCI-060100 (W)	71.25 - 71.50	1.0000	1.0000
L18	16	CCI-060100 (W)	71.25 - 71.50	1.0000	1.0000
L18	17	CCI-060100 (W)	71.25 - 71.50	1.0000	1.0000
L18	30	CCI-045100 (L)	71.25 - 71.50	1.0000	1.0000
L18	31	CCI-045100 (L)	71.25 - 71.50	1.0000	1.0000
L18	32	CCI-045100 (L)	71.25 - 71.50	1.0000	1.0000
L18	34	HCS 6X12 4AWG(1-5/8)	71.25 - 71.50	1.0000	1.0000
L18	35	OSP6U(1/4)	71.25 - 71.50	1.0000	1.0000
L18	53	Safety Line 3/8	71.25 - 71.50	1.0000	1.0000
L19	15	CCI-060100 (W)	68.33 - 71.25	1.0000	1.0000
L19	16	CCI-060100 (W)	68.33 - 71.25	1.0000	1.0000
L19	17	CCI-060100 (W)	68.33 - 71.25	1.0000	1.0000
L19	25	CCI-085125 (W)	68.33 - 70.08	1.0000	1.0000
L19	26	CCI-085125 (W)	68.33 - 70.80	1.0000	1.0000
L19	27	CCI-065125 (L)	68.33 - 70.67	1.0000	1.0000
L19	28	CCI-065125 (L)	68.33 - 70.67	1.0000	1.0000
L19	29	CCI-065125 (L)	68.33 - 70.67	1.0000	1.0000
L19	30	CCI-045100 (L)	68.33 - 71.25	1.0000	1.0000
L19	31	CCI-045100 (L)	68.33 - 71.25	1.0000	1.0000
L19	32	CCI-045100 (L)	68.33 - 71.25	1.0000	1.0000
L19	34	HCS 6X12 4AWG(1-5/8)	68.33 - 71.25	1.0000	1.0000
L19	35	OSP6U(1/4)	68.33 - 71.25	1.0000	1.0000
L19	53	Safety Line 3/8	68.33 - 71.25	1.0000	1.0000
L20	15	CCI-060100 (W)	68.08 - 68.33	1.0000	1.0000
L20	16	CCI-060100 (W)	68.08 - 68.33	1.0000	1.0000
L20	17	CCI-060100 (W)	68.08 - 68.33	1.0000	1.0000
L20	25	CCI-085125 (W)	68.08 - 68.33	1.0000	1.0000
L20	26	CCI-085125 (W)	68.08 - 68.33	1.0000	1.0000
L20	27	CCI-065125 (L)	68.08 - 68.33	1.0000	1.0000
L20	28	CCI-065125 (L)	68.08 - 68.33	1.0000	1.0000
L20	29	CCI-065125 (L)	68.08 - 68.33	1.0000	1.0000
L20	30	CCI-045100 (L)	68.08 - 68.33	1.0000	1.0000
L20	31	CCI-045100 (L)	68.08 - 68.33	1.0000	1.0000
L20	32	CCI-045100 (L)	68.08 - 68.33	1.0000	1.0000
L20	34	HCS 6X12 4AWG(1-5/8)	68.08 - 68.33	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L20	35	OSP6U(1/4)	68.08 - 68.33	1.0000	1.0000
L20	53	Safety Line 3/8	68.08 - 68.33	1.0000	1.0000
L21	15	CCI-060100 (W)	67.92 - 68.08	1.0000	1.0000
L21	16	CCI-060100 (W)	67.92 - 68.08	1.0000	1.0000
L21	17	CCI-060100 (W)	67.92 - 68.08	1.0000	1.0000
L21	25	CCI-085125 (W)	67.92 - 68.08	1.0000	1.0000
L21	26	CCI-085125 (W)	67.92 - 68.08	1.0000	1.0000
L21	27	CCI-065125 (L)	67.92 - 68.08	1.0000	1.0000
L21	28	CCI-065125 (L)	67.92 - 68.08	1.0000	1.0000
L21	29	CCI-065125 (L)	67.92 - 68.08	1.0000	1.0000
L21	30	CCI-045100 (L)	67.92 - 68.08	1.0000	1.0000
L21	31	CCI-045100 (L)	67.92 - 68.08	1.0000	1.0000
L21	32	CCI-045100 (L)	67.92 - 68.08	1.0000	1.0000
L21	34	HCS 6X12 4AWG(1-5/8)	67.92 - 68.08	1.0000	1.0000
L21	35	OSP6U(1/4)	67.92 - 68.08	1.0000	1.0000
L21	53	Safety Line 3/8	67.92 - 68.08	1.0000	1.0000
L22	15	CCI-060100 (W)	67.67 - 67.92	1.0000	1.0000
L22	16	CCI-060100 (W)	67.67 - 67.92	1.0000	1.0000
L22	17	CCI-060100 (W)	67.67 - 67.92	1.0000	1.0000
L22	25	CCI-085125 (W)	67.67 - 67.92	1.0000	1.0000
L22	26	CCI-085125 (W)	67.67 - 67.92	1.0000	1.0000
L22	27	CCI-065125 (L)	67.67 - 67.92	1.0000	1.0000
L22	28	CCI-065125 (L)	67.67 - 67.92	1.0000	1.0000
L22	29	CCI-065125 (L)	67.67 - 67.92	1.0000	1.0000
L22	30	CCI-045100 (L)	67.67 - 67.92	1.0000	1.0000
L22	31	CCI-045100 (L)	67.67 - 67.92	1.0000	1.0000
L22	32	CCI-045100 (L)	67.67 - 67.92	1.0000	1.0000
L22	34	HCS 6X12 4AWG(1-5/8)	67.67 - 67.92	1.0000	1.0000
L22	35	OSP6U(1/4)	67.67 - 67.92	1.0000	1.0000
L22	53	Safety Line 3/8	67.67 - 67.92	1.0000	1.0000
L23	15	CCI-060100 (W)	67.50 - 67.67	1.0000	1.0000
L23	16	CCI-060100 (W)	67.50 - 67.67	1.0000	1.0000
L23	17	CCI-060100 (W)	67.50 - 67.67	1.0000	1.0000
L23	25	CCI-085125 (W)	67.50 - 67.67	1.0000	1.0000
L23	26	CCI-085125 (W)	67.50 - 67.67	1.0000	1.0000
L23	27	CCI-065125 (L)	67.50 - 67.67	1.0000	1.0000
L23	28	CCI-065125 (L)	67.50 - 67.67	1.0000	1.0000
L23	29	CCI-065125 (L)	67.50 - 67.67	1.0000	1.0000
L23	30	CCI-045100 (L)	67.50 - 67.67	1.0000	1.0000
L23	31	CCI-045100 (L)	67.50 - 67.67	1.0000	1.0000
L23	32	CCI-045100 (L)	67.50 - 67.67	1.0000	1.0000
L23	34	HCS 6X12 4AWG(1-5/8)	67.50 - 67.67	1.0000	1.0000
L23	35	OSP6U(1/4)	67.50 - 67.67	1.0000	1.0000
L23	53	Safety Line 3/8	67.50 - 67.67	1.0000	1.0000
L24	15	CCI-060100 (W)	67.25 - 67.50	1.0000	1.0000
L24	16	CCI-060100 (W)	67.25 - 67.50	1.0000	1.0000
L24	17	CCI-060100 (W)	67.25 - 67.50	1.0000	1.0000
L24	25	CCI-085125 (W)	67.25 - 67.50	1.0000	1.0000
L24	26	CCI-085125 (W)	67.25 - 67.50	1.0000	1.0000
L24	27	CCI-065125 (L)	67.25 - 67.50	1.0000	1.0000
L24	28	CCI-065125 (L)	67.25 - 67.50	1.0000	1.0000
L24	29	CCI-065125 (L)	67.25 - 67.50	1.0000	1.0000
L24	30	CCI-045100 (L)	67.25 - 67.50	1.0000	1.0000
L24	31	CCI-045100 (L)	67.25 - 67.50	1.0000	1.0000
L24	32	CCI-045100 (L)	67.25 - 67.50	1.0000	1.0000
L24	34	HCS 6X12 4AWG(1-5/8)	67.25 - 67.50	1.0000	1.0000
L24	35	OSP6U(1/4)	67.25 - 67.50	1.0000	1.0000
L24	53	Safety Line 3/8	67.25 - 67.50	1.0000	1.0000
L25	15	CCI-060100 (W)	66.33 - 67.25	1.0000	1.0000
L25	16	CCI-060100 (W)	66.33 - 67.25	1.0000	1.0000
L25	17	CCI-060100 (W)	66.33 - 67.25	1.0000	1.0000
L25	25	CCI-085125 (W)	66.33 - 67.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L25	26	CCI-085125 (W)	66.33 - 67.25	1.0000	1.0000
L25	27	CCI-065125 (L)	66.33 - 67.25	1.0000	1.0000
L25	28	CCI-065125 (L)	66.33 - 67.25	1.0000	1.0000
L25	29	CCI-065125 (L)	66.33 - 67.25	1.0000	1.0000
L25	30	CCI-045100 (L)	66.33 - 67.25	1.0000	1.0000
L25	31	CCI-045100 (L)	66.33 - 67.25	1.0000	1.0000
L25	32	CCI-045100 (L)	66.33 - 67.25	1.0000	1.0000
L25	34	HCS 6X12 4AWG(1-5/8)	66.33 - 67.25	1.0000	1.0000
L25	35	OSP6U(1/4)	66.33 - 67.25	1.0000	1.0000
L25	53	Safety Line 3/8	66.33 - 67.25	1.0000	1.0000
L26	15	CCI-060100 (W)	66.08 - 66.33	1.0000	1.0000
L26	16	CCI-060100 (W)	66.08 - 66.33	1.0000	1.0000
L26	17	CCI-060100 (W)	66.08 - 66.33	1.0000	1.0000
L26	25	CCI-085125 (W)	66.08 - 66.33	1.0000	1.0000
L26	26	CCI-085125 (W)	66.08 - 66.33	1.0000	1.0000
L26	27	CCI-065125 (L)	66.08 - 66.33	1.0000	1.0000
L26	28	CCI-065125 (L)	66.08 - 66.33	1.0000	1.0000
L26	29	CCI-065125 (L)	66.08 - 66.33	1.0000	1.0000
L26	30	CCI-045100 (L)	66.08 - 66.33	1.0000	1.0000
L26	31	CCI-045100 (L)	66.08 - 66.33	1.0000	1.0000
L26	32	CCI-045100 (L)	66.08 - 66.33	1.0000	1.0000
L26	34	HCS 6X12 4AWG(1-5/8)	66.08 - 66.33	1.0000	1.0000
L26	35	OSP6U(1/4)	66.08 - 66.33	1.0000	1.0000
L26	53	Safety Line 3/8	66.08 - 66.33	1.0000	1.0000
L27	15	CCI-060100 (W)	61.08 - 66.08	1.0000	1.0000
L27	16	CCI-060100 (W)	61.08 - 66.08	1.0000	1.0000
L27	17	CCI-060100 (W)	61.08 - 66.08	1.0000	1.0000
L27	25	CCI-085125 (W)	61.08 - 66.08	1.0000	1.0000
L27	26	CCI-085125 (W)	61.08 - 66.08	1.0000	1.0000
L27	27	CCI-065125 (L)	61.08 - 66.08	1.0000	1.0000
L27	28	CCI-065125 (L)	61.08 - 66.08	1.0000	1.0000
L27	29	CCI-065125 (L)	61.08 - 66.08	1.0000	1.0000
L27	30	CCI-045100 (L)	66.00 - 66.08	1.0000	1.0000
L27	31	CCI-045100 (L)	66.00 - 66.08	1.0000	1.0000
L27	32	CCI-045100 (L)	66.00 - 66.08	1.0000	1.0000
L27	34	HCS 6X12 4AWG(1-5/8)	61.08 - 66.08	1.0000	1.0000
L27	35	OSP6U(1/4)	61.08 - 66.08	1.0000	1.0000
L27	53	Safety Line 3/8	61.08 - 66.08	1.0000	1.0000
L28	5	CCI-060100 (W)	56.50 - 59.00	1.0000	1.0000
L28	6	CCI-060100 (W)	56.50 - 59.00	1.0000	1.0000
L28	7	CCI-060100 (W)	56.50 - 59.00	1.0000	1.0000
L28	15	CCI-060100 (W)	56.50 - 61.08	1.0000	1.0000
L28	16	CCI-060100 (W)	56.50 - 61.08	1.0000	1.0000
L28	17	CCI-060100 (W)	56.50 - 61.08	1.0000	1.0000
L28	25	CCI-085125 (W)	56.50 - 61.08	1.0000	1.0000
L28	26	CCI-085125 (W)	56.50 - 61.08	1.0000	1.0000
L28	27	CCI-065125 (L)	56.50 - 61.08	1.0000	1.0000
L28	28	CCI-065125 (L)	56.50 - 61.08	1.0000	1.0000
L28	29	CCI-065125 (L)	56.50 - 61.08	1.0000	1.0000
L28	34	HCS 6X12 4AWG(1-5/8)	56.50 - 61.08	1.0000	1.0000
L28	35	OSP6U(1/4)	56.50 - 61.08	1.0000	1.0000
L28	53	Safety Line 3/8	56.50 - 61.08	1.0000	1.0000
L29	5	CCI-060100 (W)	56.25 - 56.50	1.0000	1.0000
L29	6	CCI-060100 (W)	56.25 - 56.50	1.0000	1.0000
L29	7	CCI-060100 (W)	56.25 - 56.50	1.0000	1.0000
L29	15	CCI-060100 (W)	56.25 - 56.50	1.0000	1.0000
L29	16	CCI-060100 (W)	56.25 - 56.50	1.0000	1.0000
L29	17	CCI-060100 (W)	56.25 - 56.50	1.0000	1.0000
L29	25	CCI-085125 (W)	56.25 - 56.50	1.0000	1.0000
L29	26	CCI-085125 (W)	56.25 - 56.50	1.0000	1.0000
L29	27	CCI-065125 (L)	56.25 - 56.50	1.0000	1.0000
L29	28	CCI-065125 (L)	56.25 - 56.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L29	29	CCI-065125 (L)	56.25 - 56.50	1.0000	1.0000
L29	34	HCS 6X12 4AWG(1-5/8)	56.25 - 56.50	1.0000	1.0000
L29	35	OSP6U(1/4)	56.25 - 56.50	1.0000	1.0000
L29	53	Safety Line 3/8	56.25 - 56.50	1.0000	1.0000
L30	5	CCI-060100 (W)	51.25 - 56.25	1.0000	1.0000
L30	6	CCI-060100 (W)	51.25 - 56.25	1.0000	1.0000
L30	7	CCI-060100 (W)	51.25 - 56.25	1.0000	1.0000
L30	15	CCI-060100 (W)	54.00 - 56.25	1.0000	1.0000
L30	16	CCI-060100 (W)	54.00 - 56.25	1.0000	1.0000
L30	17	CCI-060100 (W)	54.00 - 56.25	1.0000	1.0000
L30	25	CCI-085125 (W)	51.25 - 56.25	1.0000	1.0000
L30	26	CCI-085125 (W)	51.25 - 56.25	1.0000	1.0000
L30	27	CCI-065125 (L)	51.25 - 56.25	1.0000	1.0000
L30	28	CCI-065125 (L)	51.25 - 56.25	1.0000	1.0000
L30	29	CCI-065125 (L)	51.25 - 56.25	1.0000	1.0000
L30	34	HCS 6X12 4AWG(1-5/8)	51.25 - 56.25	1.0000	1.0000
L30	35	OSP6U(1/4)	51.25 - 56.25	1.0000	1.0000
L30	53	Safety Line 3/8	51.25 - 56.25	1.0000	1.0000
L31	5	CCI-060100 (W)	46.25 - 51.25	1.0000	1.0000
L31	6	CCI-060100 (W)	46.25 - 51.25	1.0000	1.0000
L31	7	CCI-060100 (W)	46.25 - 51.25	1.0000	1.0000
L31	25	CCI-085125 (W)	46.25 - 51.25	1.0000	1.0000
L31	26	CCI-085125 (W)	46.25 - 51.25	1.0000	1.0000
L31	27	CCI-065125 (L)	46.25 - 51.25	1.0000	1.0000
L31	28	CCI-065125 (L)	46.25 - 51.25	1.0000	1.0000
L31	29	CCI-065125 (L)	46.25 - 51.25	1.0000	1.0000
L31	34	HCS 6X12 4AWG(1-5/8)	46.25 - 51.25	1.0000	1.0000
L31	35	OSP6U(1/4)	46.25 - 51.25	1.0000	1.0000
L31	53	Safety Line 3/8	46.25 - 51.25	1.0000	1.0000
L32	5	CCI-060100 (W)	39.00 - 46.25	1.0000	1.0000
L32	6	CCI-060100 (W)	39.00 - 46.25	1.0000	1.0000
L32	7	CCI-060100 (W)	39.00 - 46.25	1.0000	1.0000
L32	12	CCI-065125 (L)	36.54 - 40.58	1.0000	1.0000
L32	13	CCI-065125 (L)	36.54 - 40.58	1.0000	1.0000
L32	14	CCI-065125 (L)	36.54 - 40.58	1.0000	1.0000
L32	25	CCI-085125 (W)	36.54 - 46.25	1.0000	1.0000
L32	26	CCI-085125 (W)	36.54 - 46.25	1.0000	1.0000
L32	27	CCI-065125 (L)	40.67 - 46.25	1.0000	1.0000
L32	28	CCI-065125 (L)	40.67 - 46.25	1.0000	1.0000
L32	29	CCI-065125 (L)	40.67 - 46.25	1.0000	1.0000
L32	34	HCS 6X12 4AWG(1-5/8)	36.54 - 46.25	1.0000	1.0000
L32	35	OSP6U(1/4)	36.54 - 46.25	1.0000	1.0000
L32	53	Safety Line 3/8	36.54 - 46.25	1.0000	1.0000
L33	12	CCI-065125 (L)	35.54 - 36.54	1.0000	1.0000
L33	13	CCI-065125 (L)	35.54 - 36.54	1.0000	1.0000
L33	14	CCI-065125 (L)	35.54 - 36.54	1.0000	1.0000
L33	25	CCI-085125 (W)	35.54 - 36.54	1.0000	1.0000
L33	26	CCI-085125 (W)	35.54 - 36.54	1.0000	1.0000
L33	34	HCS 6X12 4AWG(1-5/8)	35.54 - 36.54	1.0000	1.0000
L33	35	OSP6U(1/4)	35.54 - 36.54	1.0000	1.0000
L33	53	Safety Line 3/8	35.54 - 36.54	1.0000	1.0000
L34	12	CCI-065125 (L)	31.25 - 35.54	1.0000	1.0000
L34	13	CCI-065125 (L)	31.25 - 35.54	1.0000	1.0000
L34	14	CCI-065125 (L)	31.25 - 35.54	1.0000	1.0000
L34	22	CCI-085125 (W)	31.25 - 35.00	1.0000	1.0000
L34	23	CCI-085125 (W)	31.25 - 35.00	1.0000	1.0000
L34	24	CCI-085125 (W)	31.25 - 35.00	1.0000	1.0000
L34	25	CCI-085125 (W)	35.00 - 35.54	1.0000	1.0000
L34	26	CCI-085125 (W)	35.00 - 35.54	1.0000	1.0000
L34	34	HCS 6X12 4AWG(1-5/8)	31.25 - 35.54	1.0000	1.0000
L34	35	OSP6U(1/4)	31.25 - 35.54	1.0000	1.0000
L34	53	Safety Line 3/8	31.25 - 35.54	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L35	12	CCI-065125 (L)	31.00 - 31.25	1.0000	1.0000
L35	13	CCI-065125 (L)	31.00 - 31.25	1.0000	1.0000
L35	14	CCI-065125 (L)	31.00 - 31.25	1.0000	1.0000
L35	22	CCI-085125 (W)	31.00 - 31.25	1.0000	1.0000
L35	23	CCI-085125 (W)	31.00 - 31.25	1.0000	1.0000
L35	24	CCI-085125 (W)	31.00 - 31.25	1.0000	1.0000
L35	34	HCS 6X12 4AWG(1-5/8)	31.00 - 31.25	1.0000	1.0000
L35	35	OSP6U(1/4)	31.00 - 31.25	1.0000	1.0000
L35	53	Safety Line 3/8	31.00 - 31.25	1.0000	1.0000
L36	12	CCI-065125 (L)	26.00 - 31.00	1.0000	1.0000
L36	13	CCI-065125 (L)	26.00 - 31.00	1.0000	1.0000
L36	14	CCI-065125 (L)	26.00 - 31.00	1.0000	1.0000
L36	22	CCI-085125 (W)	26.00 - 31.00	1.0000	1.0000
L36	23	CCI-085125 (W)	26.00 - 31.00	1.0000	1.0000
L36	24	CCI-085125 (W)	26.00 - 31.00	1.0000	1.0000
L36	34	HCS 6X12 4AWG(1-5/8)	26.00 - 31.00	1.0000	1.0000
L36	35	OSP6U(1/4)	26.00 - 31.00	1.0000	1.0000
L36	53	Safety Line 3/8	26.00 - 31.00	1.0000	1.0000
L37	10	CCI-065125 (L)	22.00 - 25.50	1.0000	1.0000
L37	12	CCI-065125 (L)	22.00 - 26.00	1.0000	1.0000
L37	13	CCI-065125 (L)	22.00 - 26.00	1.0000	1.0000
L37	14	CCI-065125 (L)	22.00 - 26.00	1.0000	1.0000
L37	22	CCI-085125 (W)	22.00 - 26.00	1.0000	1.0000
L37	23	CCI-085125 (W)	22.00 - 26.00	1.0000	1.0000
L37	24	CCI-085125 (W)	22.00 - 26.00	1.0000	1.0000
L37	34	HCS 6X12 4AWG(1-5/8)	22.00 - 26.00	1.0000	1.0000
L37	35	OSP6U(1/4)	22.00 - 26.00	1.0000	1.0000
L37	53	Safety Line 3/8	22.00 - 26.00	1.0000	1.0000
L38	10	CCI-065125 (L)	21.75 - 22.00	1.0000	1.0000
L38	12	CCI-065125 (L)	21.75 - 22.00	1.0000	1.0000
L38	13	CCI-065125 (L)	21.75 - 22.00	1.0000	1.0000
L38	14	CCI-065125 (L)	21.75 - 22.00	1.0000	1.0000
L38	22	CCI-085125 (W)	21.75 - 22.00	1.0000	1.0000
L38	23	CCI-085125 (W)	21.75 - 22.00	1.0000	1.0000
L38	24	CCI-085125 (W)	21.75 - 22.00	1.0000	1.0000
L38	34	HCS 6X12 4AWG(1-5/8)	21.75 - 22.00	1.0000	1.0000
L38	35	OSP6U(1/4)	21.75 - 22.00	1.0000	1.0000
L38	53	Safety Line 3/8	21.75 - 22.00	1.0000	1.0000
L39	2	CCI-060100 (W)	19.08 - 20.50	1.0000	1.0000
L39	3	CCI-060100 (W)	19.08 - 20.50	1.0000	1.0000
L39	4	CCI-060100 (W)	19.08 - 20.50	1.0000	1.0000
L39	9	CCI-065125 (L)	19.08 - 20.50	1.0000	1.0000
L39	10	CCI-065125 (L)	19.08 - 21.75	1.0000	1.0000
L39	11	CCI-065125 (L)	19.08 - 20.50	1.0000	1.0000
L39	12	CCI-065125 (L)	20.50 - 21.75	1.0000	1.0000
L39	13	CCI-065125 (L)	19.08 - 21.75	1.0000	1.0000
L39	14	CCI-065125 (L)	20.50 - 21.75	1.0000	1.0000
L39	22	CCI-085125 (W)	19.08 - 21.75	1.0000	1.0000
L39	23	CCI-085125 (W)	19.08 - 21.75	1.0000	1.0000
L39	24	CCI-085125 (W)	19.08 - 21.75	1.0000	1.0000
L39	34	HCS 6X12 4AWG(1-5/8)	19.08 - 21.75	1.0000	1.0000
L39	35	OSP6U(1/4)	19.08 - 21.75	1.0000	1.0000
L39	53	Safety Line 3/8	19.08 - 21.75	1.0000	1.0000
L40	2	CCI-060100 (W)	18.83 - 19.08	1.0000	1.0000
L40	3	CCI-060100 (W)	18.83 - 19.08	1.0000	1.0000
L40	4	CCI-060100 (W)	18.83 - 19.08	1.0000	1.0000
L40	9	CCI-065125 (L)	18.83 - 19.08	1.0000	1.0000
L40	10	CCI-065125 (L)	18.83 - 19.08	1.0000	1.0000
L40	11	CCI-065125 (L)	18.83 - 19.08	1.0000	1.0000
L40	13	CCI-065125 (L)	18.83 - 19.08	1.0000	1.0000
L40	22	CCI-085125 (W)	18.83 - 19.08	1.0000	1.0000
L40	23	CCI-085125 (W)	18.83 - 19.08	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L40	24	CCI-085125 (W)	18.83 - 19.08	1.0000	1.0000
L40	34	HCS 6X12 4AWG(1-5/8)	18.83 - 19.08	1.0000	1.0000
L40	35	OSP6U(1/4)	18.83 - 19.08	1.0000	1.0000
L40	53	Safety Line 3/8	18.83 - 19.08	1.0000	1.0000
L41	2	CCI-060100 (W)	18.00 - 18.83	1.0000	1.0000
L41	3	CCI-060100 (W)	18.00 - 18.83	1.0000	1.0000
L41	4	CCI-060100 (W)	18.00 - 18.83	1.0000	1.0000
L41	9	CCI-065125 (L)	18.00 - 18.83	1.0000	1.0000
L41	10	CCI-065125 (L)	18.00 - 18.83	1.0000	1.0000
L41	11	CCI-065125 (L)	18.00 - 18.83	1.0000	1.0000
L41	13	CCI-065125 (L)	18.00 - 18.83	1.0000	1.0000
L41	22	CCI-085125 (W)	18.00 - 18.83	1.0000	1.0000
L41	23	CCI-085125 (W)	18.00 - 18.83	1.0000	1.0000
L41	24	CCI-085125 (W)	18.00 - 18.83	1.0000	1.0000
L41	34	HCS 6X12 4AWG(1-5/8)	18.00 - 18.83	1.0000	1.0000
L41	35	OSP6U(1/4)	18.00 - 18.83	1.0000	1.0000
L41	53	Safety Line 3/8	18.00 - 18.83	1.0000	1.0000
L42	2	CCI-060100 (W)	17.75 - 18.00	1.0000	1.0000
L42	3	CCI-060100 (W)	17.75 - 18.00	1.0000	1.0000
L42	4	CCI-060100 (W)	17.75 - 18.00	1.0000	1.0000
L42	9	CCI-065125 (L)	17.75 - 18.00	1.0000	1.0000
L42	10	CCI-065125 (L)	17.75 - 18.00	1.0000	1.0000
L42	11	CCI-065125 (L)	17.75 - 18.00	1.0000	1.0000
L42	13	CCI-065125 (L)	17.75 - 18.00	1.0000	1.0000
L42	22	CCI-085125 (W)	17.75 - 18.00	1.0000	1.0000
L42	23	CCI-085125 (W)	17.75 - 18.00	1.0000	1.0000
L42	24	CCI-085125 (W)	17.75 - 18.00	1.0000	1.0000
L42	34	HCS 6X12 4AWG(1-5/8)	17.75 - 18.00	1.0000	1.0000
L42	35	OSP6U(1/4)	17.75 - 18.00	1.0000	1.0000
L42	53	Safety Line 3/8	17.75 - 18.00	1.0000	1.0000
L43	2	CCI-060100 (W)	17.00 - 17.75	1.0000	1.0000
L43	3	CCI-060100 (W)	17.00 - 17.75	1.0000	1.0000
L43	4	CCI-060100 (W)	17.00 - 17.75	1.0000	1.0000
L43	9	CCI-065125 (L)	17.00 - 17.75	1.0000	1.0000
L43	10	CCI-065125 (L)	17.00 - 17.75	1.0000	1.0000
L43	11	CCI-065125 (L)	17.00 - 17.75	1.0000	1.0000
L43	13	CCI-065125 (L)	17.00 - 17.75	1.0000	1.0000
L43	22	CCI-085125 (W)	17.00 - 17.75	1.0000	1.0000
L43	23	CCI-085125 (W)	17.00 - 17.75	1.0000	1.0000
L43	24	CCI-085125 (W)	17.00 - 17.75	1.0000	1.0000
L43	34	HCS 6X12 4AWG(1-5/8)	17.00 - 17.75	1.0000	1.0000
L43	35	OSP6U(1/4)	17.00 - 17.75	1.0000	1.0000
L43	53	Safety Line 3/8	17.00 - 17.75	1.0000	1.0000
L44	2	CCI-060100 (W)	16.75 - 17.00	1.0000	1.0000
L44	3	CCI-060100 (W)	16.75 - 17.00	1.0000	1.0000
L44	4	CCI-060100 (W)	16.75 - 17.00	1.0000	1.0000
L44	9	CCI-065125 (L)	16.75 - 17.00	1.0000	1.0000
L44	10	CCI-065125 (L)	16.75 - 17.00	1.0000	1.0000
L44	11	CCI-065125 (L)	16.75 - 17.00	1.0000	1.0000
L44	13	CCI-065125 (L)	16.75 - 17.00	1.0000	1.0000
L44	22	CCI-085125 (W)	16.75 - 17.00	1.0000	1.0000
L44	23	CCI-085125 (W)	16.75 - 17.00	1.0000	1.0000
L44	24	CCI-085125 (W)	16.75 - 17.00	1.0000	1.0000
L44	34	HCS 6X12 4AWG(1-5/8)	16.75 - 17.00	1.0000	1.0000
L44	35	OSP6U(1/4)	16.75 - 17.00	1.0000	1.0000
L44	53	Safety Line 3/8	16.75 - 17.00	1.0000	1.0000
L45	2	CCI-060100 (W)	11.75 - 16.75	1.0000	1.0000
L45	3	CCI-060100 (W)	11.75 - 16.75	1.0000	1.0000
L45	4	CCI-060100 (W)	11.75 - 16.75	1.0000	1.0000
L45	9	CCI-065125 (L)	11.75 - 16.75	1.0000	1.0000
L45	10	CCI-065125 (L)	11.75 - 16.75	1.0000	1.0000
L45	11	CCI-065125 (L)	11.75 - 16.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L45	13	CCI-065125 (L)	15.58 - 16.75	1.0000	1.0000
L45	22	CCI-085125 (W)	11.75 - 16.75	1.0000	1.0000
L45	23	CCI-085125 (W)	11.75 - 16.75	1.0000	1.0000
L45	24	CCI-085125 (W)	11.75 - 16.75	1.0000	1.0000
L45	34	HCS 6X12 4AWG(1-5/8)	11.75 - 16.75	1.0000	1.0000
L45	35	OSP6U(1/4)	11.75 - 16.75	1.0000	1.0000
L45	53	Safety Line 3/8	11.75 - 16.75	1.0000	1.0000
L46	2	CCI-060100 (W)	6.75 - 11.75	1.0000	1.0000
L46	3	CCI-060100 (W)	6.75 - 11.75	1.0000	1.0000
L46	4	CCI-060100 (W)	6.75 - 11.75	1.0000	1.0000
L46	9	CCI-065125 (L)	6.75 - 11.75	1.0000	1.0000
L46	10	CCI-065125 (L)	6.75 - 11.75	1.0000	1.0000
L46	11	CCI-065125 (L)	6.75 - 11.75	1.0000	1.0000
L46	22	CCI-085125 (W)	6.75 - 11.75	1.0000	1.0000
L46	23	CCI-085125 (W)	6.75 - 11.75	1.0000	1.0000
L46	24	CCI-085125 (W)	6.75 - 11.75	1.0000	1.0000
L46	34	HCS 6X12 4AWG(1-5/8)	6.75 - 11.75	1.0000	1.0000
L46	35	OSP6U(1/4)	6.75 - 11.75	1.0000	1.0000
L46	53	Safety Line 3/8	6.75 - 11.75	1.0000	1.0000
L47	2	CCI-060100 (W)	4.00 - 6.75	1.0000	1.0000
L47	3	CCI-060100 (W)	4.00 - 6.75	1.0000	1.0000
L47	4	CCI-060100 (W)	4.00 - 6.75	1.0000	1.0000
L47	9	CCI-065125 (L)	4.00 - 6.75	1.0000	1.0000
L47	10	CCI-065125 (L)	4.00 - 6.75	1.0000	1.0000
L47	11	CCI-065125 (L)	4.00 - 6.75	1.0000	1.0000
L47	22	CCI-085125 (W)	4.00 - 6.75	1.0000	1.0000
L47	23	CCI-085125 (W)	4.00 - 6.75	1.0000	1.0000
L47	24	CCI-085125 (W)	4.00 - 6.75	1.0000	1.0000
L47	34	HCS 6X12 4AWG(1-5/8)	4.00 - 6.75	1.0000	1.0000
L47	35	OSP6U(1/4)	4.00 - 6.75	1.0000	1.0000
L47	53	Safety Line 3/8	4.00 - 6.75	1.0000	1.0000
L48	2	CCI-060100 (W)	3.75 - 4.00	1.0000	1.0000
L48	3	CCI-060100 (W)	3.75 - 4.00	1.0000	1.0000
L48	4	CCI-060100 (W)	3.75 - 4.00	1.0000	1.0000
L48	9	CCI-065125 (L)	3.75 - 4.00	1.0000	1.0000
L48	10	CCI-065125 (L)	3.75 - 4.00	1.0000	1.0000
L48	11	CCI-065125 (L)	3.75 - 4.00	1.0000	1.0000
L48	22	CCI-085125 (W)	3.75 - 4.00	1.0000	1.0000
L48	23	CCI-085125 (W)	3.75 - 4.00	1.0000	1.0000
L48	24	CCI-085125 (W)	3.75 - 4.00	1.0000	1.0000
L48	34	HCS 6X12 4AWG(1-5/8)	3.75 - 4.00	1.0000	1.0000
L48	35	OSP6U(1/4)	3.75 - 4.00	1.0000	1.0000
L48	53	Safety Line 3/8	3.75 - 4.00	1.0000	1.0000
L49	2	CCI-060100 (W)	3.00 - 3.75	1.0000	1.0000
L49	3	CCI-060100 (W)	3.00 - 3.75	1.0000	1.0000
L49	4	CCI-060100 (W)	3.00 - 3.75	1.0000	1.0000
L49	9	CCI-065125 (L)	3.00 - 3.75	1.0000	1.0000
L49	10	CCI-065125 (L)	3.00 - 3.75	1.0000	1.0000
L49	11	CCI-065125 (L)	3.00 - 3.75	1.0000	1.0000
L49	22	CCI-085125 (W)	3.00 - 3.75	1.0000	1.0000
L49	23	CCI-085125 (W)	3.00 - 3.75	1.0000	1.0000
L49	24	CCI-085125 (W)	3.00 - 3.75	1.0000	1.0000
L49	34	HCS 6X12 4AWG(1-5/8)	3.00 - 3.75	1.0000	1.0000
L49	35	OSP6U(1/4)	3.00 - 3.75	1.0000	1.0000
L49	53	Safety Line 3/8	3.00 - 3.75	1.0000	1.0000
L50	2	CCI-060100 (W)	2.75 - 3.00	1.0000	1.0000
L50	3	CCI-060100 (W)	2.75 - 3.00	1.0000	1.0000
L50	4	CCI-060100 (W)	2.75 - 3.00	1.0000	1.0000
L50	9	CCI-065125 (L)	2.75 - 3.00	1.0000	1.0000
L50	10	CCI-065125 (L)	2.75 - 3.00	1.0000	1.0000
L50	11	CCI-065125 (L)	2.75 - 3.00	1.0000	1.0000
L50	22	CCI-085125 (W)	2.75 - 3.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L50	23	CCI-085125 (W)	2.75 - 3.00	1.0000	1.0000
L50	24	CCI-085125 (W)	2.75 - 3.00	1.0000	1.0000
L50	34	HCS 6X12 4AWG(1-5/8)	2.75 - 3.00	1.0000	1.0000
L50	35	OSP6U(1/4)	2.75 - 3.00	1.0000	1.0000
L50	53	Safety Line 3/8	2.75 - 3.00	1.0000	1.0000
L51	2	CCI-060100 (W)	0.00 - 2.75	1.0000	1.0000
L51	3	CCI-060100 (W)	0.00 - 2.75	1.0000	1.0000
L51	4	CCI-060100 (W)	0.00 - 2.75	1.0000	1.0000
L51	9	CCI-065125 (L)	0.00 - 2.75	1.0000	1.0000
L51	10	CCI-065125 (L)	0.00 - 2.75	1.0000	1.0000
L51	11	CCI-065125 (L)	0.00 - 2.75	1.0000	1.0000
L51	22	CCI-085125 (W)	0.00 - 2.75	1.0000	1.0000
L51	23	CCI-085125 (W)	0.00 - 2.75	1.0000	1.0000
L51	24	CCI-085125 (W)	0.00 - 2.75	1.0000	1.0000
L51	34	HCS 6X12 4AWG(1-5/8)	0.00 - 2.75	1.0000	1.0000
L51	35	OSP6U(1/4)	0.00 - 2.75	1.0000	1.0000
L51	53	Safety Line 3/8	0.00 - 2.75	1.0000	1.0000

Effective Width of Flat Linear Attachments / Feed Lines

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L8	30	CCI-045100 (L)	95.00 - 96.00	Auto	0.0000
L8	31	CCI-045100 (L)	95.00 - 96.00	Auto	0.0000
L8	32	CCI-045100 (L)	95.00 - 96.00	Auto	0.0000
L9	30	CCI-045100 (L)	94.50 - 95.00	Auto	0.0000
L9	31	CCI-045100 (L)	94.50 - 95.00	Auto	0.0000
L9	32	CCI-045100 (L)	94.50 - 95.00	Auto	0.0000
L10	30	CCI-045100 (L)	94.25 - 94.50	Auto	0.0000
L10	31	CCI-045100 (L)	94.25 - 94.50	Auto	0.0000
L10	32	CCI-045100 (L)	94.25 - 94.50	Auto	0.0000
L11	18	CCI-045100 (L)	92.08 - 94.08	Auto	0.0000
L11	19	CCI-045100 (L)	92.08 - 94.08	Auto	0.0000
L11	20	CCI-045100 (L)	92.08 - 94.08	Auto	0.0000
L11	30	CCI-045100 (L)	92.08 - 94.25	Auto	0.0000
L11	31	CCI-045100 (L)	92.08 - 94.25	Auto	0.0000
L11	32	CCI-045100 (L)	92.08 - 94.25	Auto	0.0000
L12	18	CCI-045100 (L)	91.83 - 92.08	Auto	0.0192
L12	19	CCI-045100 (L)	91.83 - 92.08	Auto	0.0192
L12	20	CCI-045100 (L)	91.83 - 92.08	Auto	0.0192
L12	30	CCI-045100 (L)	91.83 - 92.08	Auto	0.0192
L12	31	CCI-045100 (L)	91.83 - 92.08	Auto	0.0192
L12	32	CCI-045100 (L)	91.83 - 92.08	Auto	0.0192
L13	18	CCI-045100 (L)	86.83 - 91.83	Auto	0.0000
L13	19	CCI-045100 (L)	86.83 - 91.83	Auto	0.0000
L13	20	CCI-045100 (L)	86.83 - 91.83	Auto	0.0000
L13	30	CCI-045100 (L)	86.83 - 91.83	Auto	0.0000
L13	31	CCI-045100 (L)	86.83 - 91.83	Auto	0.0000
L13	32	CCI-045100 (L)	86.83 - 91.83	Auto	0.0000
L14	18	CCI-045100 (L)	81.83 - 86.83	Auto	0.0000
L14	19	CCI-045100 (L)	81.83 - 86.83	Auto	0.0000
L14	20	CCI-045100 (L)	81.83 - 86.83	Auto	0.0000
L14	30	CCI-045100 (L)	81.83 - 86.83	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L14	31	CCI-045100 (L)	81.83 - 86.83	Auto	0.0000
L14	32	CCI-045100 (L)	81.83 - 86.83	Auto	0.0000
L15	15	CCI-060100 (W)	73.13 - 74.00	Auto	0.0502
L15	16	CCI-060100 (W)	73.13 - 74.00	Auto	0.0502
L15	17	CCI-060100 (W)	73.13 - 74.00	Auto	0.0502
L15	18	CCI-045100 (L)	74.00 - 81.83	Auto	0.0000
L15	19	CCI-045100 (L)	74.00 - 81.83	Auto	0.0000
L15	20	CCI-045100 (L)	74.00 - 81.83	Auto	0.0000
L15	30	CCI-045100 (L)	73.13 - 81.83	Auto	0.0000
L15	31	CCI-045100 (L)	73.13 - 81.83	Auto	0.0000
L15	32	CCI-045100 (L)	73.13 - 81.83	Auto	0.0000
L16	15	CCI-060100 (W)	72.79 - 73.13	Auto	0.1045
L16	16	CCI-060100 (W)	72.79 - 73.13	Auto	0.1045
L16	17	CCI-060100 (W)	72.79 - 73.13	Auto	0.1045
L16	30	CCI-045100 (L)	72.79 - 73.13	Auto	0.0000
L16	31	CCI-045100 (L)	72.79 - 73.13	Auto	0.0000
L16	32	CCI-045100 (L)	72.79 - 73.13	Auto	0.0000
L17	15	CCI-060100 (W)	71.50 - 72.79	Auto	0.0905
L17	16	CCI-060100 (W)	71.50 - 72.79	Auto	0.0905
L17	17	CCI-060100 (W)	71.50 - 72.79	Auto	0.0905
L17	30	CCI-045100 (L)	71.50 - 72.79	Auto	0.0000
L17	31	CCI-045100 (L)	71.50 - 72.79	Auto	0.0000
L17	32	CCI-045100 (L)	71.50 - 72.79	Auto	0.0000
L18	15	CCI-060100 (W)	71.25 - 71.50	Auto	0.1104
L18	16	CCI-060100 (W)	71.25 - 71.50	Auto	0.1104
L18	17	CCI-060100 (W)	71.25 - 71.50	Auto	0.1104
L18	30	CCI-045100 (L)	71.25 - 71.50	Auto	0.0000
L18	31	CCI-045100 (L)	71.25 - 71.50	Auto	0.0000
L18	32	CCI-045100 (L)	71.25 - 71.50	Auto	0.0000
L19	15	CCI-060100 (W)	68.33 - 71.25	Auto	0.0884
L19	16	CCI-060100 (W)	68.33 - 71.25	Auto	0.0884
L19	17	CCI-060100 (W)	68.33 - 71.25	Auto	0.0884
L19	25	CCI-085125 (W)	68.33 - 70.08	Auto	0.3523
L19	26	CCI-085125 (W)	68.33 - 70.80	Auto	0.3549
L19	27	CCI-065125 (L)	68.33 - 70.67	Auto	0.1558
L19	28	CCI-065125 (L)	68.33 - 70.67	Auto	0.1558
L19	29	CCI-065125 (L)	68.33 - 70.67	Auto	0.1558
L19	30	CCI-045100 (L)	68.33 - 71.25	Auto	0.0000
L19	31	CCI-045100 (L)	68.33 - 71.25	Auto	0.0000
L19	32	CCI-045100 (L)	68.33 - 71.25	Auto	0.0000
L20	15	CCI-060100 (W)	68.08 - 68.33	Auto	0.0776
L20	16	CCI-060100 (W)	68.08 - 68.33	Auto	0.0776
L20	17	CCI-060100 (W)	68.08 - 68.33	Auto	0.0776
L20	25	CCI-085125 (W)	68.08 - 68.33	Auto	0.3489
L20	26	CCI-085125 (W)	68.08 - 68.33	Auto	0.3489
L20	27	CCI-065125 (L)	68.08 - 68.33	Auto	0.1486
L20	28	CCI-065125 (L)	68.08 - 68.33	Auto	0.1486
L20	29	CCI-065125 (L)	68.08 - 68.33	Auto	0.1486
L20	30	CCI-045100 (L)	68.08 - 68.33	Auto	0.0000
L20	31	CCI-045100 (L)	68.08 - 68.33	Auto	0.0000
L20	32	CCI-045100 (L)	68.08 - 68.33	Auto	0.0000
L21	15	CCI-060100 (W)	67.92 - 68.08	Auto	0.0755
L21	16	CCI-060100 (W)	67.92 - 68.08	Auto	0.0755
L21	17	CCI-060100 (W)	67.92 - 68.08	Auto	0.0755
L21	25	CCI-085125 (W)	67.92 - 68.08	Auto	0.3474
L21	26	CCI-085125 (W)	67.92 - 68.08	Auto	0.3474
L21	27	CCI-065125 (L)	67.92 - 68.08	Auto	0.1466
L21	28	CCI-065125 (L)	67.92 - 68.08	Auto	0.1466
L21	29	CCI-065125 (L)	67.92 - 68.08	Auto	0.1466
L21	30	CCI-045100 (L)	67.92 - 68.08	Auto	0.0000
L21	31	CCI-045100 (L)	67.92 - 68.08	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L21	32	CCI-045100 (L)	67.92 - 68.08	Auto	0.0000
L22	15	CCI-060100 (W)	67.67 - 67.92	Auto	0.2297
L22	16	CCI-060100 (W)	67.67 - 67.92	Auto	0.2297
L22	17	CCI-060100 (W)	67.67 - 67.92	Auto	0.2297
L22	25	CCI-085125 (W)	67.67 - 67.92	Auto	0.4562
L22	26	CCI-085125 (W)	67.67 - 67.92	Auto	0.4562
L22	27	CCI-065125 (L)	67.67 - 67.92	Auto	0.2889
L22	28	CCI-065125 (L)	67.67 - 67.92	Auto	0.2889
L22	29	CCI-065125 (L)	67.67 - 67.92	Auto	0.2889
L22	30	CCI-045100 (L)	67.67 - 67.92	Auto	0.0000
L22	31	CCI-045100 (L)	67.67 - 67.92	Auto	0.0000
L22	32	CCI-045100 (L)	67.67 - 67.92	Auto	0.0000
L23	15	CCI-060100 (W)	67.50 - 67.67	Auto	0.2275
L23	16	CCI-060100 (W)	67.50 - 67.67	Auto	0.2275
L23	17	CCI-060100 (W)	67.50 - 67.67	Auto	0.2275
L23	25	CCI-085125 (W)	67.50 - 67.67	Auto	0.4547
L23	26	CCI-085125 (W)	67.50 - 67.67	Auto	0.4547
L23	27	CCI-065125 (L)	67.50 - 67.67	Auto	0.2869
L23	28	CCI-065125 (L)	67.50 - 67.67	Auto	0.2869
L23	29	CCI-065125 (L)	67.50 - 67.67	Auto	0.2869
L23	30	CCI-045100 (L)	67.50 - 67.67	Auto	0.0000
L23	31	CCI-045100 (L)	67.50 - 67.67	Auto	0.0000
L23	32	CCI-045100 (L)	67.50 - 67.67	Auto	0.0000
L24	15	CCI-060100 (W)	67.25 - 67.50	Auto	0.1360
L24	16	CCI-060100 (W)	67.25 - 67.50	Auto	0.1360
L24	17	CCI-060100 (W)	67.25 - 67.50	Auto	0.1360
L24	25	CCI-085125 (W)	67.25 - 67.50	Auto	0.3901
L24	26	CCI-085125 (W)	67.25 - 67.50	Auto	0.3901
L24	27	CCI-065125 (L)	67.25 - 67.50	Auto	0.2025
L24	28	CCI-065125 (L)	67.25 - 67.50	Auto	0.2025
L24	29	CCI-065125 (L)	67.25 - 67.50	Auto	0.2025
L24	30	CCI-045100 (L)	67.25 - 67.50	Auto	0.0000
L24	31	CCI-045100 (L)	67.25 - 67.50	Auto	0.0000
L24	32	CCI-045100 (L)	67.25 - 67.50	Auto	0.0000
L25	15	CCI-060100 (W)	66.33 - 67.25	Auto	0.1244
L25	16	CCI-060100 (W)	66.33 - 67.25	Auto	0.1244
L25	17	CCI-060100 (W)	66.33 - 67.25	Auto	0.1244
L25	25	CCI-085125 (W)	66.33 - 67.25	Auto	0.3819
L25	26	CCI-085125 (W)	66.33 - 67.25	Auto	0.3819
L25	27	CCI-065125 (L)	66.33 - 67.25	Auto	0.1918
L25	28	CCI-065125 (L)	66.33 - 67.25	Auto	0.1918
L25	29	CCI-065125 (L)	66.33 - 67.25	Auto	0.1918
L25	30	CCI-045100 (L)	66.33 - 67.25	Auto	0.0000
L25	31	CCI-045100 (L)	66.33 - 67.25	Auto	0.0000
L25	32	CCI-045100 (L)	66.33 - 67.25	Auto	0.0000
L26	15	CCI-060100 (W)	66.08 - 66.33	Auto	0.1909
L26	16	CCI-060100 (W)	66.08 - 66.33	Auto	0.1909
L26	17	CCI-060100 (W)	66.08 - 66.33	Auto	0.1909
L26	25	CCI-085125 (W)	66.08 - 66.33	Auto	0.4289
L26	26	CCI-085125 (W)	66.08 - 66.33	Auto	0.4289
L26	27	CCI-065125 (L)	66.08 - 66.33	Auto	0.2532
L26	28	CCI-065125 (L)	66.08 - 66.33	Auto	0.2532
L26	29	CCI-065125 (L)	66.08 - 66.33	Auto	0.2532
L26	30	CCI-045100 (L)	66.08 - 66.33	Auto	0.0000
L26	31	CCI-045100 (L)	66.08 - 66.33	Auto	0.0000
L26	32	CCI-045100 (L)	66.08 - 66.33	Auto	0.0000
L27	15	CCI-060100 (W)	61.08 - 66.08	Auto	0.1415
L27	16	CCI-060100 (W)	61.08 - 66.08	Auto	0.1415
L27	17	CCI-060100 (W)	61.08 - 66.08	Auto	0.1415
L27	25	CCI-085125 (W)	61.08 - 66.08	Auto	0.3940
L27	26	CCI-085125 (W)	61.08 - 66.08	Auto	0.3940

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L27	27	CCI-065125 (L)	61.08 - 66.08	Auto	0.2075
L27	28	CCI-065125 (L)	61.08 - 66.08	Auto	0.2075
L27	29	CCI-065125 (L)	61.08 - 66.08	Auto	0.2075
L27	30	CCI-045100 (L)	66.00 - 66.08	Auto	0.0000
L27	31	CCI-045100 (L)	66.00 - 66.08	Auto	0.0000
L27	32	CCI-045100 (L)	66.00 - 66.08	Auto	0.0000
L28	5	CCI-060100 (W)	56.50 - 59.00	Auto	0.0699
L28	6	CCI-060100 (W)	56.50 - 59.00	Auto	0.0699
L28	7	CCI-060100 (W)	56.50 - 59.00	Auto	0.0699
L28	15	CCI-060100 (W)	56.50 - 61.08	Auto	0.0807
L28	16	CCI-060100 (W)	56.50 - 61.08	Auto	0.0807
L28	17	CCI-060100 (W)	56.50 - 61.08	Auto	0.0807
L28	25	CCI-085125 (W)	56.50 - 61.08	Auto	0.3511
L28	26	CCI-085125 (W)	56.50 - 61.08	Auto	0.3511
L28	27	CCI-065125 (L)	56.50 - 61.08	Auto	0.1514
L28	28	CCI-065125 (L)	56.50 - 61.08	Auto	0.1514
L28	29	CCI-065125 (L)	56.50 - 61.08	Auto	0.1514
L29	5	CCI-060100 (W)	56.25 - 56.50	Auto	0.0557
L29	6	CCI-060100 (W)	56.25 - 56.50	Auto	0.0557
L29	7	CCI-060100 (W)	56.25 - 56.50	Auto	0.0557
L29	15	CCI-060100 (W)	56.25 - 56.50	Auto	0.0557
L29	16	CCI-060100 (W)	56.25 - 56.50	Auto	0.0557
L29	17	CCI-060100 (W)	56.25 - 56.50	Auto	0.0557
L29	25	CCI-085125 (W)	56.25 - 56.50	Auto	0.3334
L29	26	CCI-085125 (W)	56.25 - 56.50	Auto	0.3334
L29	27	CCI-065125 (L)	56.25 - 56.50	Auto	0.1283
L29	28	CCI-065125 (L)	56.25 - 56.50	Auto	0.1283
L29	29	CCI-065125 (L)	56.25 - 56.50	Auto	0.1283
L30	5	CCI-060100 (W)	51.25 - 56.25	Auto	0.0181
L30	6	CCI-060100 (W)	51.25 - 56.25	Auto	0.0181
L30	7	CCI-060100 (W)	51.25 - 56.25	Auto	0.0181
L30	15	CCI-060100 (W)	54.00 - 56.25	Auto	0.0316
L30	16	CCI-060100 (W)	54.00 - 56.25	Auto	0.0316
L30	17	CCI-060100 (W)	54.00 - 56.25	Auto	0.0316
L30	25	CCI-085125 (W)	51.25 - 56.25	Auto	0.3064
L30	26	CCI-085125 (W)	51.25 - 56.25	Auto	0.3064
L30	27	CCI-065125 (L)	51.25 - 56.25	Auto	0.0930
L30	28	CCI-065125 (L)	51.25 - 56.25	Auto	0.0930
L30	29	CCI-065125 (L)	51.25 - 56.25	Auto	0.0930
L31	5	CCI-060100 (W)	46.25 - 51.25	Auto	0.0000
L31	6	CCI-060100 (W)	46.25 - 51.25	Auto	0.0000
L31	7	CCI-060100 (W)	46.25 - 51.25	Auto	0.0000
L31	25	CCI-085125 (W)	46.25 - 51.25	Auto	0.2620
L31	26	CCI-085125 (W)	46.25 - 51.25	Auto	0.2620
L31	27	CCI-065125 (L)	46.25 - 51.25	Auto	0.0349
L31	28	CCI-065125 (L)	46.25 - 51.25	Auto	0.0349
L31	29	CCI-065125 (L)	46.25 - 51.25	Auto	0.0349
L32	5	CCI-060100 (W)	39.00 - 46.25	Auto	0.0000
L32	6	CCI-060100 (W)	39.00 - 46.25	Auto	0.0000
L32	7	CCI-060100 (W)	39.00 - 46.25	Auto	0.0000
L32	12	CCI-065125 (L)	36.54 - 40.58	Auto	0.0000
L32	13	CCI-065125 (L)	36.54 - 40.58	Auto	0.0000
L32	14	CCI-065125 (L)	36.54 - 40.58	Auto	0.0000
L32	25	CCI-085125 (W)	36.54 - 46.25	Auto	0.2004
L32	26	CCI-085125 (W)	36.54 - 46.25	Auto	0.2004
L32	27	CCI-065125 (L)	40.67 - 46.25	Auto	0.0000
L32	28	CCI-065125 (L)	40.67 - 46.25	Auto	0.0000
L32	29	CCI-065125 (L)	40.67 - 46.25	Auto	0.0000
L33	12	CCI-065125 (L)	35.54 - 36.54	Auto	0.0000
L33	13	CCI-065125 (L)	35.54 - 36.54	Auto	0.0000
L33	14	CCI-065125 (L)	35.54 - 36.54	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L33	25	CCI-085125 (W)	35.54 - 36.54	Auto	0.1573
L33	26	CCI-085125 (W)	35.54 - 36.54	Auto	0.1573
L34	12	CCI-065125 (L)	31.25 - 35.54	Auto	0.0000
L34	13	CCI-065125 (L)	31.25 - 35.54	Auto	0.0000
L34	14	CCI-065125 (L)	31.25 - 35.54	Auto	0.0000
L34	22	CCI-085125 (W)	31.25 - 35.00	Auto	0.1321
L34	23	CCI-085125 (W)	31.25 - 35.00	Auto	0.1321
L34	24	CCI-085125 (W)	31.25 - 35.00	Auto	0.1321
L34	25	CCI-085125 (W)	35.00 - 35.54	Auto	0.1478
L34	26	CCI-085125 (W)	35.00 - 35.54	Auto	0.1478
L35	12	CCI-065125 (L)	31.00 - 31.25	Auto	0.0000
L35	13	CCI-065125 (L)	31.00 - 31.25	Auto	0.0000
L35	14	CCI-065125 (L)	31.00 - 31.25	Auto	0.0000
L35	22	CCI-085125 (W)	31.00 - 31.25	Auto	0.1372
L35	23	CCI-085125 (W)	31.00 - 31.25	Auto	0.1372
L35	24	CCI-085125 (W)	31.00 - 31.25	Auto	0.1372
L36	12	CCI-065125 (L)	26.00 - 31.00	Auto	0.0000
L36	13	CCI-065125 (L)	26.00 - 31.00	Auto	0.0000
L36	14	CCI-065125 (L)	26.00 - 31.00	Auto	0.0000
L36	22	CCI-085125 (W)	26.00 - 31.00	Auto	0.1141
L36	23	CCI-085125 (W)	26.00 - 31.00	Auto	0.1141
L36	24	CCI-085125 (W)	26.00 - 31.00	Auto	0.1141
L37	10	CCI-065125 (L)	22.00 - 25.50	Auto	0.0000
L37	12	CCI-065125 (L)	22.00 - 26.00	Auto	0.0000
L37	13	CCI-065125 (L)	22.00 - 26.00	Auto	0.0000
L37	14	CCI-065125 (L)	22.00 - 26.00	Auto	0.0000
L37	22	CCI-085125 (W)	22.00 - 26.00	Auto	0.0733
L37	23	CCI-085125 (W)	22.00 - 26.00	Auto	0.0733
L37	24	CCI-085125 (W)	22.00 - 26.00	Auto	0.0733
L38	10	CCI-065125 (L)	21.75 - 22.00	Auto	0.0000
L38	12	CCI-065125 (L)	21.75 - 22.00	Auto	0.0000
L38	13	CCI-065125 (L)	21.75 - 22.00	Auto	0.0000
L38	14	CCI-065125 (L)	21.75 - 22.00	Auto	0.0000
L38	22	CCI-085125 (W)	21.75 - 22.00	Auto	0.0933
L38	23	CCI-085125 (W)	21.75 - 22.00	Auto	0.0933
L38	24	CCI-085125 (W)	21.75 - 22.00	Auto	0.0933
L39	2	CCI-060100 (W)	19.08 - 20.50	Auto	0.0000
L39	3	CCI-060100 (W)	19.08 - 20.50	Auto	0.0000
L39	4	CCI-060100 (W)	19.08 - 20.50	Auto	0.0000
L39	9	CCI-065125 (L)	19.08 - 20.50	Auto	0.0000
L39	10	CCI-065125 (L)	19.08 - 21.75	Auto	0.0000
L39	11	CCI-065125 (L)	19.08 - 20.50	Auto	0.0000
L39	12	CCI-065125 (L)	20.50 - 21.75	Auto	0.0000
L39	13	CCI-065125 (L)	19.08 - 21.75	Auto	0.0000
L39	14	CCI-065125 (L)	20.50 - 21.75	Auto	0.0000
L39	22	CCI-085125 (W)	19.08 - 21.75	Auto	0.0787
L39	23	CCI-085125 (W)	19.08 - 21.75	Auto	0.0787
L39	24	CCI-085125 (W)	19.08 - 21.75	Auto	0.0787
L40	2	CCI-060100 (W)	18.83 - 19.08	Auto	0.0000
L40	3	CCI-060100 (W)	18.83 - 19.08	Auto	0.0000
L40	4	CCI-060100 (W)	18.83 - 19.08	Auto	0.0000
L40	9	CCI-065125 (L)	18.83 - 19.08	Auto	0.0000
L40	10	CCI-065125 (L)	18.83 - 19.08	Auto	0.0000
L40	11	CCI-065125 (L)	18.83 - 19.08	Auto	0.0000
L40	13	CCI-065125 (L)	18.83 - 19.08	Auto	0.0000
L40	22	CCI-085125 (W)	18.83 - 19.08	Auto	0.0523
L40	23	CCI-085125 (W)	18.83 - 19.08	Auto	0.0523
L40	24	CCI-085125 (W)	18.83 - 19.08	Auto	0.0523
L41	2	CCI-060100 (W)	18.00 - 18.83	Auto	0.0000
L41	3	CCI-060100 (W)	18.00 - 18.83	Auto	0.0000
L41	4	CCI-060100 (W)	18.00 - 18.83	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L41	9	CCI-065125 (L)	18.00 - 18.83	Auto	0.0000
L41	10	CCI-065125 (L)	18.00 - 18.83	Auto	0.0000
L41	11	CCI-065125 (L)	18.00 - 18.83	Auto	0.0000
L41	13	CCI-065125 (L)	18.00 - 18.83	Auto	0.0000
L41	22	CCI-085125 (W)	18.00 - 18.83	Auto	0.0483
L41	23	CCI-085125 (W)	18.00 - 18.83	Auto	0.0483
L41	24	CCI-085125 (W)	18.00 - 18.83	Auto	0.0483
L42	2	CCI-060100 (W)	17.75 - 18.00	Auto	0.0000
L42	3	CCI-060100 (W)	17.75 - 18.00	Auto	0.0000
L42	4	CCI-060100 (W)	17.75 - 18.00	Auto	0.0000
L42	9	CCI-065125 (L)	17.75 - 18.00	Auto	0.0000
L42	10	CCI-065125 (L)	17.75 - 18.00	Auto	0.0000
L42	11	CCI-065125 (L)	17.75 - 18.00	Auto	0.0000
L42	13	CCI-065125 (L)	17.75 - 18.00	Auto	0.0000
L42	22	CCI-085125 (W)	17.75 - 18.00	Auto	0.0838
L42	23	CCI-085125 (W)	17.75 - 18.00	Auto	0.0838
L42	24	CCI-085125 (W)	17.75 - 18.00	Auto	0.0838
L43	2	CCI-060100 (W)	17.00 - 17.75	Auto	0.0000
L43	3	CCI-060100 (W)	17.00 - 17.75	Auto	0.0000
L43	4	CCI-060100 (W)	17.00 - 17.75	Auto	0.0000
L43	9	CCI-065125 (L)	17.00 - 17.75	Auto	0.0000
L43	10	CCI-065125 (L)	17.00 - 17.75	Auto	0.0000
L43	11	CCI-065125 (L)	17.00 - 17.75	Auto	0.0000
L43	13	CCI-065125 (L)	17.00 - 17.75	Auto	0.0000
L43	22	CCI-085125 (W)	17.00 - 17.75	Auto	0.0801
L43	23	CCI-085125 (W)	17.00 - 17.75	Auto	0.0801
L43	24	CCI-085125 (W)	17.00 - 17.75	Auto	0.0801
L44	2	CCI-060100 (W)	16.75 - 17.00	Auto	0.0000
L44	3	CCI-060100 (W)	16.75 - 17.00	Auto	0.0000
L44	4	CCI-060100 (W)	16.75 - 17.00	Auto	0.0000
L44	9	CCI-065125 (L)	16.75 - 17.00	Auto	0.0000
L44	10	CCI-065125 (L)	16.75 - 17.00	Auto	0.0000
L44	11	CCI-065125 (L)	16.75 - 17.00	Auto	0.0000
L44	13	CCI-065125 (L)	16.75 - 17.00	Auto	0.0000
L44	22	CCI-085125 (W)	16.75 - 17.00	Auto	0.0765
L44	23	CCI-085125 (W)	16.75 - 17.00	Auto	0.0765
L44	24	CCI-085125 (W)	16.75 - 17.00	Auto	0.0765
L45	2	CCI-060100 (W)	11.75 - 16.75	Auto	0.0000
L45	3	CCI-060100 (W)	11.75 - 16.75	Auto	0.0000
L45	4	CCI-060100 (W)	11.75 - 16.75	Auto	0.0000
L45	9	CCI-065125 (L)	11.75 - 16.75	Auto	0.0000
L45	10	CCI-065125 (L)	11.75 - 16.75	Auto	0.0000
L45	11	CCI-065125 (L)	11.75 - 16.75	Auto	0.0000
L45	13	CCI-065125 (L)	15.58 - 16.75	Auto	0.0000
L45	22	CCI-085125 (W)	11.75 - 16.75	Auto	0.0494
L45	23	CCI-085125 (W)	11.75 - 16.75	Auto	0.0494
L45	24	CCI-085125 (W)	11.75 - 16.75	Auto	0.0494
L46	2	CCI-060100 (W)	6.75 - 11.75	Auto	0.0000
L46	3	CCI-060100 (W)	6.75 - 11.75	Auto	0.0000
L46	4	CCI-060100 (W)	6.75 - 11.75	Auto	0.0000
L46	9	CCI-065125 (L)	6.75 - 11.75	Auto	0.0000
L46	10	CCI-065125 (L)	6.75 - 11.75	Auto	0.0000
L46	11	CCI-065125 (L)	6.75 - 11.75	Auto	0.0000
L46	22	CCI-085125 (W)	6.75 - 11.75	Auto	0.0074
L46	23	CCI-085125 (W)	6.75 - 11.75	Auto	0.0074
L46	24	CCI-085125 (W)	6.75 - 11.75	Auto	0.0074
L47	2	CCI-060100 (W)	4.00 - 6.75	Auto	0.0000
L47	3	CCI-060100 (W)	4.00 - 6.75	Auto	0.0000
L47	4	CCI-060100 (W)	4.00 - 6.75	Auto	0.0000
L47	9	CCI-065125 (L)	4.00 - 6.75	Auto	0.0000
L47	10	CCI-065125 (L)	4.00 - 6.75	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L47	11	CCI-065125 (L)	4.00 - 6.75	Auto	0.0000
L47	22	CCI-085125 (W)	4.00 - 6.75	Auto	0.0000
L47	23	CCI-085125 (W)	4.00 - 6.75	Auto	0.0000
L47	24	CCI-085125 (W)	4.00 - 6.75	Auto	0.0000
L48	2	CCI-060100 (W)	3.75 - 4.00	Auto	0.0000
L48	3	CCI-060100 (W)	3.75 - 4.00	Auto	0.0000
L48	4	CCI-060100 (W)	3.75 - 4.00	Auto	0.0000
L48	9	CCI-065125 (L)	3.75 - 4.00	Auto	0.0000
L48	10	CCI-065125 (L)	3.75 - 4.00	Auto	0.0000
L48	11	CCI-065125 (L)	3.75 - 4.00	Auto	0.0000
L48	22	CCI-085125 (W)	3.75 - 4.00	Auto	0.0000
L48	23	CCI-085125 (W)	3.75 - 4.00	Auto	0.0000
L48	24	CCI-085125 (W)	3.75 - 4.00	Auto	0.0000
L49	2	CCI-060100 (W)	3.00 - 3.75	Auto	0.0000
L49	3	CCI-060100 (W)	3.00 - 3.75	Auto	0.0000
L49	4	CCI-060100 (W)	3.00 - 3.75	Auto	0.0000
L49	9	CCI-065125 (L)	3.00 - 3.75	Auto	0.0000
L49	10	CCI-065125 (L)	3.00 - 3.75	Auto	0.0000
L49	11	CCI-065125 (L)	3.00 - 3.75	Auto	0.0000
L49	22	CCI-085125 (W)	3.00 - 3.75	Auto	0.0000
L49	23	CCI-085125 (W)	3.00 - 3.75	Auto	0.0000
L49	24	CCI-085125 (W)	3.00 - 3.75	Auto	0.0000
L50	2	CCI-060100 (W)	2.75 - 3.00	Auto	0.0000
L50	3	CCI-060100 (W)	2.75 - 3.00	Auto	0.0000
L50	4	CCI-060100 (W)	2.75 - 3.00	Auto	0.0000
L50	9	CCI-065125 (L)	2.75 - 3.00	Auto	0.0000
L50	10	CCI-065125 (L)	2.75 - 3.00	Auto	0.0000
L50	11	CCI-065125 (L)	2.75 - 3.00	Auto	0.0000
L50	22	CCI-085125 (W)	2.75 - 3.00	Auto	0.0000
L50	23	CCI-085125 (W)	2.75 - 3.00	Auto	0.0000
L50	24	CCI-085125 (W)	2.75 - 3.00	Auto	0.0000
L51	2	CCI-060100 (W)	0.00 - 2.75	Auto	0.0000
L51	3	CCI-060100 (W)	0.00 - 2.75	Auto	0.0000
L51	4	CCI-060100 (W)	0.00 - 2.75	Auto	0.0000
L51	9	CCI-065125 (L)	0.00 - 2.75	Auto	0.0000
L51	10	CCI-065125 (L)	0.00 - 2.75	Auto	0.0000
L51	11	CCI-065125 (L)	0.00 - 2.75	Auto	0.0000
L51	22	CCI-085125 (W)	0.00 - 2.75	Auto	0.0000
L51	23	CCI-085125 (W)	0.00 - 2.75	Auto	0.0000
L51	24	CCI-085125 (W)	0.00 - 2.75	Auto	0.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
*									
HSS Extension Connection									
HSS - 6x6x5/8 - 11'	A	From Leg	1.000 0.000	0.000	113.170	No Ice 1/2" Ice	10.450 11.240	10.450 11.240	0.465 0.522

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1" Ice	12.037	12.037	0.589
						2" Ice	13.654	13.654	0.752
HSS - 6x6x5/8 - 11'	B	From Leg	1.000	0.000	113.170	No Ice	10.450	10.450	0.465
			0.000			1/2" Ice	11.240	11.240	0.522
			0.000			1" Ice	12.037	12.037	0.589
						2" Ice	13.654	13.654	0.752
HSS - 6x6x5/8 - 11'	C	From Leg	1.000	0.000	113.170	No Ice	10.450	10.450	0.465
			0.000			1/2" Ice	11.240	11.240	0.522
			0.000			1" Ice	12.037	12.037	0.589
						2" Ice	13.654	13.654	0.752
*									
(2) Weldment - 27"x1."x10"	A	From Leg	0.500	0.000	109.000	No Ice	0.375	2.267	0.077
			0.000			1/2" Ice	0.551	2.468	0.088
			0.000			1" Ice	0.721	2.676	0.102
						2" Ice	1.085	3.131	0.138
(2) Weldment - 27"x1."x10"	B	From Leg	0.500	0.000	109.000	No Ice	0.375	2.267	0.077
			0.000			1/2" Ice	0.551	2.468	0.088
			0.000			1" Ice	0.721	2.676	0.102
						2" Ice	1.085	3.131	0.138
(2) Weldment - 27"x1."x10"	C	From Leg	0.500	0.000	109.000	No Ice	0.375	2.267	0.077
			0.000			1/2" Ice	0.551	2.468	0.088
			0.000			1" Ice	0.721	2.676	0.102
						2" Ice	1.085	3.131	0.138
*									
(2) Weldment - 27"x1."x10"	A	From Leg	0.500	0.000	117.000	No Ice	0.375	2.267	0.077
			0.000			1/2" Ice	0.551	2.468	0.088
			0.000			1" Ice	0.721	2.676	0.102
						2" Ice	1.085	3.131	0.138
(2) Weldment - 27"x1."x10"	B	From Leg	0.500	0.000	117.000	No Ice	0.375	2.267	0.077
			0.000			1/2" Ice	0.551	2.468	0.088
			0.000			1" Ice	0.721	2.676	0.102
						2" Ice	1.085	3.131	0.138
(2) Weldment - 27"x1."x10"	C	From Leg	0.500	0.000	117.000	No Ice	0.375	2.267	0.077
			0.000			1/2" Ice	0.551	2.468	0.088
			0.000			1" Ice	0.721	2.676	0.102
						2" Ice	1.085	3.131	0.138
*									
Lightning Rod 5/8" x 4'	C	None		0.000	129.000	No Ice	0.250	0.250	0.031
						1/2" Ice	0.664	0.664	0.034
						1" Ice	0.973	0.973	0.039
						2" Ice	1.494	1.494	0.059
*									
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.000	0.000	125.000	No Ice	14.690	6.870	0.186
			0.000			1/2" Ice	15.460	7.550	0.315
			-1.000			1" Ice	16.230	8.250	0.458
						2" Ice	17.820	9.670	0.788
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.000	0.000	125.000	No Ice	14.690	6.870	0.186
			0.000			1/2" Ice	15.460	7.550	0.315
			-1.000			1" Ice	16.230	8.250	0.458
						2" Ice	17.820	9.670	0.788
(2) APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.000	0.000	125.000	No Ice	14.690	6.870	0.186
			0.000			1/2" Ice	15.460	7.550	0.315
			-1.000			1" Ice	16.230	8.250	0.458
						2" Ice	17.820	9.670	0.788
IBR 1300_CCIV2 w/ Mount Pipe	A	From Leg	4.000	0.000	125.000	No Ice	0.840	0.619	0.016
			0.000			1/2" Ice	1.010	0.818	0.026
			-2.000			1" Ice	1.193	1.035	0.039

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	1.595	1.522	0.074
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	4.000 0.000 -1.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	5.190 5.590 6.020 6.900	2.710 3.040 3.380 4.120	0.128 0.174 0.227 0.354
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Leg	4.000 0.000 -1.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	5.190 5.590 6.020 6.900	2.710 3.040 3.380 4.120	0.128 0.174 0.227 0.354
(2) AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Leg	4.000 0.000 -1.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	5.190 5.590 6.020 6.900	2.710 3.040 3.380 4.120	0.128 0.174 0.227 0.354
RADIO 4449 B71 B85A_T-MOBILE	A	From Leg	4.000 0.000 -1.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.970 2.147 2.331 2.721	1.587 1.749 1.918 2.280	0.073 0.093 0.116 0.170
RADIO 4449 B71 B85A_T-MOBILE	B	From Leg	4.000 0.000 -1.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.970 2.147 2.331 2.721	1.587 1.749 1.918 2.280	0.073 0.093 0.116 0.170
(2) RADIO 4449 B71 B85A_T-MOBILE	C	From Leg	4.000 0.000 -1.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.970 2.147 2.331 2.721	1.587 1.749 1.918 2.280	0.073 0.093 0.116 0.170
RADIO 4460 B2/B25 B66_TMO	A	From Leg	4.000 0.000 -1.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.139 2.321 2.511 2.912	1.686 1.850 2.022 2.387	0.109 0.131 0.156 0.217
RADIO 4460 B2/B25 B66_TMO	B	From Leg	4.000 0.000 -1.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.139 2.321 2.511 2.912	1.686 1.850 2.022 2.387	0.109 0.131 0.156 0.217
(2) RADIO 4460 B2/B25 B66_TMO	C	From Leg	4.000 0.000 -1.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.139 2.321 2.511 2.912	1.686 1.850 2.022 2.387	0.109 0.131 0.156 0.217
(2) 8' x 2" Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.900 2.728 3.401 4.396	1.900 2.728 3.401 4.396	0.029 0.044 0.063 0.119
(2) 8' x 2" Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.900 2.728 3.401 4.396	1.900 2.728 3.401 4.396	0.029 0.044 0.063 0.119
(4) 8' x 2" Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.900 2.728 3.401 4.396	1.900 2.728 3.401 4.396	0.029 0.044 0.063 0.119
Side Arm Mount [SO 701-3]	C	None		0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.020 4.180 5.330 7.630	3.020 4.180 5.330 7.630	0.195 0.237 0.279 0.363
Platform Mount [LP 701-1_HR-1]	C	None		0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	55.580 62.440 69.140 82.180	55.580 62.440 69.140 82.180	3.082 4.291 5.677 8.984

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
*									
(2) LNX-8513DS-VTM w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.090 4.490 4.890 5.710	3.300 3.680 4.060 4.870	0.065 0.128 0.202 0.384
(2) LNX-8513DS-VTM w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.090 4.490 4.890 5.710	3.300 3.680 4.060 4.870	0.065 0.128 0.202 0.384
(2) LNX-8513DS-VTM w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.090 4.490 4.890 5.710	3.300 3.680 4.060 4.870	0.065 0.128 0.202 0.384
(2) SBNH-1D8585C w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice	5.310 5.800 6.300 7.320	4.270 4.750 5.240 6.240	0.090 0.172 0.268 0.501
(2) SBNH-1D8585C w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice	5.310 5.800 6.300 7.320	4.270 4.750 5.240 6.240	0.090 0.172 0.268 0.501
(2) SBNH-1D8585C w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice	5.310 5.800 6.300 7.320	4.270 4.750 5.240 6.240	0.090 0.172 0.268 0.501
AWS4 (B66) 4X45 RRH	A	From Leg	4.000 0.000 1.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.580 2.794 3.015 3.479	1.630 1.811 1.999 2.396	0.067 0.087 0.111 0.168
AWS4 (B66) 4X45 RRH	B	From Leg	4.000 0.000 1.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.580 2.794 3.015 3.479	1.630 1.811 1.999 2.396	0.067 0.087 0.111 0.168
AWS4 (B66) 4X45 RRH	C	From Leg	4.000 0.000 1.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.580 2.794 3.015 3.479	1.630 1.811 1.999 2.396	0.067 0.087 0.111 0.168
PCS B25 RRH4X30	A	From Leg	4.000 0.000 1.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.200 2.393 2.593 3.015	1.742 1.920 2.106 2.501	0.055 0.075 0.099 0.156
PCS B25 RRH4X30	B	From Leg	4.000 0.000 1.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.200 2.393 2.593 3.015	1.742 1.920 2.106 2.501	0.055 0.075 0.099 0.156
PCS B25 RRH4X30	C	From Leg	4.000 0.000 1.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.200 2.393 2.593 3.015	1.742 1.920 2.106 2.501	0.055 0.075 0.099 0.156
B13 RRH 4X30	A	From Leg	4.000 0.000 1.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.055 2.241 2.433 2.841	1.320 1.475 1.638 1.997	0.056 0.073 0.093 0.142
B13 RRH 4X30	B	From Leg	4.000 0.000 1.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.055 2.241 2.433 2.841	1.320 1.475 1.638 1.997	0.056 0.073 0.093 0.142

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
B13 RRH 4X30	C	From Leg	4.000 0.000 1.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.055 2.241 2.433 2.841	1.320 1.475 1.638 1.997	0.056 0.073 0.093 0.142
DB-B1-6C-12AB-0Z	A	From Leg	4.000 0.000 1.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.364 3.597 3.838 4.343	2.192 2.395 2.606 3.049	0.021 0.050 0.082 0.158
DB-B1-6C-12AB-0Z	B	From Leg	4.000 0.000 1.000	0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.364 3.597 3.838 4.343	2.192 2.395 2.606 3.049	0.021 0.050 0.082 0.158
Platform Mount [LP 713-1]	C	None		0.000	116.000	No Ice 1/2" Ice 1" Ice 2" Ice	32.890 35.760 38.760 45.260	32.890 35.760 38.760 45.260	1.510 2.228 3.026 4.865
*									
NNVV-65B-R4 w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	7.550 8.040 8.530 9.560	4.230 4.670 5.120 6.050	0.110 0.197 0.296 0.529
NNVV-65B-R4 w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	7.550 8.040 8.530 9.560	4.230 4.670 5.120 6.050	0.110 0.197 0.296 0.529
NNVV-65B-R4 w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	7.550 8.040 8.530 9.560	4.230 4.670 5.120 6.050	0.110 0.197 0.296 0.529
APXVTM14-ALU-I20 w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.090 4.480 4.880 5.710	2.860 3.230 3.610 4.400	0.077 0.127 0.185 0.331
APXVTM14-ALU-I20 w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.090 4.480 4.880 5.710	2.860 3.230 3.610 4.400	0.077 0.127 0.185 0.331
APXVTM14-ALU-I20 w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.090 4.480 4.880 5.710	2.860 3.230 3.610 4.400	0.077 0.127 0.185 0.331
PCS 1900MHZ 4X45W-65MHZ	A	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.322 2.527 2.739 3.185	2.238 2.441 2.651 3.093	0.060 0.083 0.110 0.173
PCS 1900MHZ 4X45W-65MHZ	B	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.322 2.527 2.739 3.185	2.238 2.441 2.651 3.093	0.060 0.083 0.110 0.173
PCS 1900MHZ 4X45W-65MHZ	C	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.322 2.527 2.739 3.185	2.238 2.441 2.651 3.093	0.060 0.083 0.110 0.173
(2) RRH2X50-800	A	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.701 1.864 2.035 2.398	1.282 1.428 1.580 1.908	0.053 0.070 0.090 0.138

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) RRH2X50-800	B	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.701 1.864 2.035 2.398	1.282 1.428 1.580 1.908	0.053 0.070 0.090 0.138
(2) RRH2X50-800	C	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.701 1.864 2.035 2.398	1.282 1.428 1.580 1.908	0.053 0.070 0.090 0.138
FZHN	A	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.020 2.197 2.381 2.772	0.607 0.715 0.829 1.089	0.044 0.058 0.075 0.116
FZHN	B	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.020 2.197 2.381 2.772	0.607 0.715 0.829 1.089	0.044 0.058 0.075 0.116
FZHN	C	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.020 2.197 2.381 2.772	0.607 0.715 0.829 1.089	0.044 0.058 0.075 0.116
(2) 8' x 2" Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.900 2.728 3.401 4.396	1.900 2.728 3.401 4.396	0.029 0.044 0.063 0.119
(2) 8' x 2" Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.900 2.728 3.401 4.396	1.900 2.728 3.401 4.396	0.029 0.044 0.063 0.119
(2) 8' x 2" Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.900 2.728 3.401 4.396	1.900 2.728 3.401 4.396	0.029 0.044 0.063 0.119
10' x 2.375" Horizontal Mount Pipe	A	From Leg	2.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.380 3.410 4.450 5.910	0.010 0.050 0.100 0.240	0.037 0.054 0.079 0.147
10' x 2.375" Horizontal Mount Pipe	B	From Leg	2.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.380 3.410 4.450 5.910	0.010 0.050 0.100 0.240	0.037 0.054 0.079 0.147
10' x 2.375" Horizontal Mount Pipe	C	From Leg	2.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.380 3.410 4.450 5.910	0.010 0.050 0.100 0.240	0.037 0.054 0.079 0.147
T-Arm Mount [TA 702-3]	C	None		0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.750 5.820 6.980 9.720	4.750 5.820 6.980 9.720	0.339 0.432 0.550 0.868
Platform Mount [LP 1201-1_HR-1]	C	None		0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	26.390 31.400 36.200 45.400	26.390 31.400 36.200 45.400	2.356 3.061 3.864 5.764
* 7770.00 w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	94.000	No Ice 1/2" Ice 1" Ice 2" Ice	5.746 6.179 6.607 7.488	4.254 5.014 5.711 7.155	0.055 0.103 0.157 0.287

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
7770.00 w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	94.000	No Ice 1/2" Ice 1" Ice 2" Ice	5.746 6.179 6.607 7.488	4.254 5.014 5.711 7.155	0.055 0.103 0.157 0.287
7770.00 w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	94.000	No Ice 1/2" Ice 1" Ice 2" Ice	5.746 6.179 6.607 7.488	4.254 5.014 5.711 7.155	0.055 0.103 0.157 0.287
HPA65R-BU8A w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	94.000	No Ice 1/2" Ice 1" Ice 2" Ice	8.100 8.860 9.640 11.240	6.940 7.690 8.450 10.030	0.087 0.170 0.266 0.500
HPA65R-BU8A w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	94.000	No Ice 1/2" Ice 1" Ice 2" Ice	8.100 8.860 9.640 11.240	6.940 7.690 8.450 10.030	0.087 0.170 0.266 0.500
HPA65R-BU8A w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	94.000	No Ice 1/2" Ice 1" Ice 2" Ice	8.100 8.860 9.640 11.240	6.940 7.690 8.450 10.030	0.087 0.170 0.266 0.500
80010966 w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	94.000	No Ice 1/2" Ice 1" Ice 2" Ice	14.610 15.470 16.350 18.140	6.840 7.630 8.420 10.060	0.159 0.267 0.389 0.677
80010966 w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	94.000	No Ice 1/2" Ice 1" Ice 2" Ice	14.610 15.470 16.350 18.140	6.840 7.630 8.420 10.060	0.159 0.267 0.389 0.677
80010966 w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	94.000	No Ice 1/2" Ice 1" Ice 2" Ice	14.610 15.470 16.350 18.140	6.840 7.630 8.420 10.060	0.159 0.267 0.389 0.677
LGP13519	A	From Leg	4.000 0.000 1.000	0.000	94.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.290 0.362 0.441 0.622	0.181 0.241 0.310 0.473	0.005 0.008 0.012 0.024
LGP13519	B	From Leg	4.000 0.000 1.000	0.000	94.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.290 0.362 0.441 0.622	0.181 0.241 0.310 0.473	0.005 0.008 0.012 0.024
LGP13519	C	From Leg	4.000 0.000 1.000	0.000	94.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.290 0.362 0.441 0.622	0.181 0.241 0.310 0.473	0.005 0.008 0.012 0.024
RRUS 4449 B5/B12	A	From Leg	4.000 0.000 1.000	0.000	94.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.968 2.144 2.328 2.718	1.408 1.564 1.727 2.075	0.071 0.090 0.111 0.163
RRUS 4449 B5/B12	B	From Leg	4.000 0.000 1.000	0.000	94.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.968 2.144 2.328 2.718	1.408 1.564 1.727 2.075	0.071 0.090 0.111 0.163
RRUS 4449 B5/B12	C	From Leg	4.000 0.000 1.000	0.000	94.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.968 2.144 2.328 2.718	1.408 1.564 1.727 2.075	0.071 0.090 0.111 0.163
(2) RRUS 8843 B2/B66A	A	From Leg	4.000	0.000	94.000	No Ice	1.639	1.353	0.072

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1/2" Ice	1.799	1.500	0.090
			1.000			1" Ice	1.966	1.655	0.110
						2" Ice	2.323	1.986	0.159
(2) RRUS 8843 B2/B66A	B	From Leg	4.000	0.000	94.000	No Ice	1.639	1.353	0.072
			0.000			1/2" Ice	1.799	1.500	0.090
			1.000			1" Ice	1.966	1.655	0.110
						2" Ice	2.323	1.986	0.159
RRUS 8843 B2/B66A	C	From Leg	4.000	0.000	94.000	No Ice	1.639	1.353	0.072
			0.000			1/2" Ice	1.799	1.500	0.090
			1.000			1" Ice	1.966	1.655	0.110
						2" Ice	2.323	1.986	0.159
DC6-48-60-18-8F	A	From Leg	1.000	0.000	94.000	No Ice	0.917	0.917	0.019
			0.000			1/2" Ice	1.458	1.458	0.037
			1.000			1" Ice	1.643	1.643	0.057
						2" Ice	2.042	2.042	0.105
DC6-48-60-18-8F	B	From Leg	1.000	0.000	94.000	No Ice	0.917	0.917	0.019
			0.000			1/2" Ice	1.458	1.458	0.037
			1.000			1" Ice	1.643	1.643	0.057
						2" Ice	2.042	2.042	0.105
4' x 2" Pipe Mount	A	From Leg	1.000	0.000	94.000	No Ice	0.785	0.785	0.029
			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
4' x 2" Pipe Mount	B	From Leg	1.000	0.000	94.000	No Ice	0.785	0.785	0.029
			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
4' x 2" Pipe Mount	C	From Leg	1.000	0.000	94.000	No Ice	0.785	0.785	0.029
			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
8' x 2" Mount Pipe	A	From Leg	4.000	0.000	94.000	No Ice	1.900	1.900	0.029
			0.000			1/2" Ice	2.728	2.728	0.044
			0.000			1" Ice	3.401	3.401	0.063
						2" Ice	4.396	4.396	0.119
8' x 2" Mount Pipe	B	From Leg	4.000	0.000	94.000	No Ice	1.900	1.900	0.029
			0.000			1/2" Ice	2.728	2.728	0.044
			0.000			1" Ice	3.401	3.401	0.063
						2" Ice	4.396	4.396	0.119
8' x 2" Mount Pipe	C	From Leg	4.000	0.000	94.000	No Ice	1.900	1.900	0.029
			0.000			1/2" Ice	2.728	2.728	0.044
			0.000			1" Ice	3.401	3.401	0.063
						2" Ice	4.396	4.396	0.119
Miscellaneous [NA 510-1]	C	None		0.000	94.000	No Ice	6.360	6.360	0.256
						1/2" Ice	8.520	8.520	0.344
						1" Ice	10.620	10.620	0.459
						2" Ice	14.640	14.640	0.769
Platform Mount [LP 714-1_KCKR]	C	None		0.000	94.000	No Ice	48.730	48.730	1.875
						1/2" Ice	55.920	55.920	2.913
						1" Ice	63.280	63.280	4.056
						2" Ice	78.530	78.530	6.667
*									
GPS_A	C	From Leg	6.000	0.000	60.000	No Ice	0.255	0.255	0.001
			0.000			1/2" Ice	0.320	0.320	0.005
			0.000			1" Ice	0.393	0.393	0.010
						2" Ice	0.561	0.561	0.025
4' x 2" Pipe Mount	C	From Leg	6.000	0.000	60.000	No Ice	0.785	0.785	0.029

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Side Arm Mount [SO 702-1]	C	From Leg	0.000 0.000 3.000 0.000 0.000	0.000	60.000	1/2" Ice 1" Ice 2" Ice No Ice 1/2" Ice 1" Ice 2" Ice	1.028 1.281 1.814 0.620 0.740 0.890 1.250	1.028 1.281 1.814 1.490 2.070 2.540 3.550	0.035 0.044 0.072 0.027 0.042 0.063 0.122
*									

Load Combinations

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

Comb. No.	Description
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	129 - 124	Pole	Max Tension	26	0.000	-0.000	0.000
			Max. Compression	26	-14.885	6.102	-3.289
			Max. Mx	36	-14.830	7.670	-3.281
			Max. My	14	-6.420	2.453	-5.933
			Max. Vy	20	-6.964	7.219	-1.345
			Max. Vx	14	6.706	2.453	-5.933
			Max. Torque	24			3.069
L2	124 - 119	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-15.641	6.212	-3.538
			Max. Mx	20	-6.758	43.450	-2.364
			Max. My	14	-6.884	3.414	-40.101
			Max. Vy	20	-7.528	43.450	-2.364
			Max. Vx	14	6.928	3.414	-40.101
			Max. Torque	24			3.069
L3	119 - 115.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-26.713	5.803	-3.433
			Max. Mx	20	-10.755	75.748	-3.014
			Max. My	14	-10.951	3.991	-69.997
			Max. Vy	20	-12.741	75.748	-3.014
			Max. Vx	14	11.889	3.991	-69.997
			Max. Torque	24			3.069
L4	115.5 - 115	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-26.795	5.819	-3.462
			Max. Mx	20	-10.809	82.131	-3.110
			Max. My	14	-11.008	4.081	-75.953
			Max. Vy	20	-12.795	82.131	-3.110
			Max. Vx	14	11.908	4.081	-75.953
			Max. Torque	24			2.708
L5	115 - 110	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-29.756	5.964	-3.765
			Max. Mx	20	-12.733	152.450	-4.083
			Max. My	14	-12.966	4.986	-141.284
			Max. Vy	20	-14.922	152.450	-4.083
			Max. Vx	14	13.777	4.986	-141.284
			Max. Torque	24			2.708
L6	110 - 105	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-31.278	6.082	-4.061
			Max. Mx	20	-13.722	229.700	-5.055
			Max. My	14	-13.969	5.880	-212.288
			Max. Vy	20	-15.797	229.700	-5.055
			Max. Vx	14	14.405	5.880	-212.288

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	24			2.706
L7	105 - 100	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-42.392	6.201	-4.376
			Max. Mx	20	-18.950	330.008	-6.046
			Max. My	14	-19.232	6.785	-304.932
			Max. Vy	20	-20.324	330.008	-6.046
			Max. Vx	14	18.648	6.785	-304.932
			Max. Torque	24			2.705
L8	100 - 95	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-43.219	6.284	-4.673
			Max. Mx	20	-19.585	432.719	-7.023
			Max. My	14	-19.858	7.664	-398.765
			Max. Vy	20	-20.801	432.719	-7.023
			Max. Vx	14	18.879	7.664	-398.765
			Max. Torque	24			2.703
L9	95 - 94.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-43.314	6.290	-4.702
			Max. Mx	20	-19.663	443.121	-7.120
			Max. My	14	-19.932	7.751	-408.210
			Max. Vy	20	-20.839	443.121	-7.120
			Max. Vx	14	18.891	7.751	-408.210
			Max. Torque	24			2.701
L10	94.5 - 94.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-43.376	6.293	-4.717
			Max. Mx	20	-19.713	448.332	-7.168
			Max. My	14	-19.981	7.794	-412.938
			Max. Vy	20	-20.861	448.332	-7.168
			Max. Vx	14	18.901	7.794	-412.938
			Max. Torque	24			2.700
L11	94.25 - 92.0833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-55.419	5.569	-4.411
			Max. Mx	20	-24.293	507.593	-7.360
			Max. My	14	-24.605	7.772	-467.996
			Max. Vy	20	-27.020	507.593	-7.360
			Max. Vx	14	24.909	7.772	-467.996
			Max. Torque	24			2.700
L12	92.0833 - 91.8333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-55.505	5.573	-4.427
			Max. Mx	20	-24.368	514.348	-7.409
			Max. My	14	-24.677	7.815	-474.227
			Max. Vy	20	-27.039	514.348	-7.409
			Max. Vx	14	24.915	7.815	-474.227
			Max. Torque	24			2.410
L13	91.8333 - 86.8333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-57.227	5.639	-4.733
			Max. Mx	20	-25.548	651.173	-8.378
			Max. My	14	-25.863	8.670	-599.819
			Max. Vy	20	-27.708	651.173	-8.378
			Max. Vx	14	25.291	8.670	-599.819
			Max. Torque	24			2.410
L14	86.8333 - 81.8333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-58.972	5.695	-5.040
			Max. Mx	20	-26.774	791.279	-9.345
			Max. My	14	-27.087	9.519	-727.236
			Max. Vy	20	-28.363	791.279	-9.345
			Max. Vx	14	25.654	9.519	-727.236
			Max. Torque	24			2.409

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L15	81.8333 - 73.125	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-60.404	5.734	-5.291
			Max. Mx	20	-27.792	906.888	-10.127
			Max. My	14	-28.099	10.198	-831.536
			Max. Vy	20	-28.882	906.888	-10.127
			Max. Vx	14	25.941	10.198	-831.536
			Max. Torque	24			2.408
L16	73.125 - 72.792	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-63.454	5.777	-5.600
			Max. Mx	20	-30.039	1053.201	-11.093
			Max. My	14	-30.349	11.037	-962.510
			Max. Vy	20	-29.657	1053.201	-11.093
			Max. Vx	14	26.410	11.037	-962.510
			Max. Torque	24			2.407
L17	72.792 - 71.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-63.967	5.787	-5.680
			Max. Mx	20	-30.399	1091.621	-11.343
			Max. My	14	-30.709	11.253	-996.720
			Max. Vy	20	-29.841	1091.621	-11.343
			Max. Vx	14	26.519	11.253	-996.720
			Max. Torque	24			2.407
L18	71.5 - 71.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-64.071	5.789	-5.696
			Max. Mx	20	-30.492	1099.080	-11.391
			Max. My	14	-30.799	11.295	-1003.354
			Max. Vy	20	-29.859	1099.080	-11.391
			Max. Vx	14	26.522	11.295	-1003.354
			Max. Torque	24			2.407
L19	71.25 - 68.3333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-65.421	5.845	-5.893
			Max. Mx	20	-31.375	1186.737	-11.955
			Max. My	14	-31.679	11.781	-1081.097
			Max. Vy	20	-30.277	1186.737	-11.955
			Max. Vx	14	26.760	11.781	-1081.097
			Max. Torque	24			2.407
L20	68.3333 - 68.0833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-65.549	5.852	-5.909
			Max. Mx	20	-31.479	1194.305	-12.003
			Max. My	14	-31.779	11.823	-1087.791
			Max. Vy	20	-30.293	1194.305	-12.003
			Max. Vx	14	26.762	11.823	-1087.791
			Max. Torque	24			2.406
L21	68.0833 - 67.9167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-65.634	5.857	-5.921
			Max. Mx	20	-31.538	1199.355	-12.036
			Max. My	14	-31.838	11.851	-1092.256
			Max. Vy	20	-30.315	1199.355	-12.036
			Max. Vx	14	26.774	11.851	-1092.256
			Max. Torque	24			2.406
L22	67.9167 - 67.6667	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-65.779	5.863	-5.937
			Max. Mx	20	-31.638	1206.938	-12.084
			Max. My	14	-31.938	11.892	-1098.959
			Max. Vy	20	-30.353	1206.938	-12.084
			Max. Vx	14	26.802	11.892	-1098.959

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	24			2.406
L23	67.6667 - 67.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-65.876	5.867	-5.948
			Max. Mx	20	-31.707	1211.999	-12.116
			Max. My	14	-32.006	11.920	-1103.432
			Max. Vy	20	-30.378	1211.999	-12.116
			Max. Vx	14	26.820	11.920	-1103.432
			Max. Torque	24			2.406
L24	67.5 - 67.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-66.007	5.873	-5.964
			Max. Mx	20	-31.793	1219.597	-12.165
			Max. My	14	-32.092	11.961	-1110.146
			Max. Vy	20	-30.415	1219.597	-12.165
			Max. Vx	2	-26.846	-7.244	1105.039
			Max. Torque	24			2.406
L25	67.25 - 66.3333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-66.489	5.894	-6.022
			Max. Mx	20	-32.108	1247.535	-12.342
			Max. My	14	-32.408	12.114	-1134.807
			Max. Vy	20	-30.557	1247.535	-12.342
			Max. Vx	2	-26.929	-7.390	1129.655
			Max. Torque	24			2.406
L26	66.3333 - 66.0833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-66.642	5.901	-6.039
			Max. Mx	20	-32.226	1255.176	-12.390
			Max. My	14	-32.524	12.155	-1141.546
			Max. Vy	20	-30.586	1255.176	-12.390
			Max. Vx	2	-26.949	-7.430	1136.381
			Max. Torque	24			2.406
L27	66.0833 - 61.0833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-69.569	6.020	-6.367
			Max. Mx	20	-34.401	1409.920	-13.360
			Max. My	14	-34.692	12.984	-1277.482
			Max. Vy	8	31.335	-1405.180	7.844
			Max. Vx	2	-27.518	-8.231	1272.373
			Max. Torque	24			2.406
L28	61.0833 - 56.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-72.515	6.928	-7.132
			Max. Mx	20	-36.495	1555.618	-14.385
			Max. My	14	-36.778	14.016	-1404.531
			Max. Vy	8	32.090	-1550.209	8.205
			Max. Vx	2	-28.011	-8.586	1399.352
			Max. Torque	24			2.958
L29	56.5 - 56.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-72.672	6.934	-7.150
			Max. Mx	20	-36.618	1563.641	-14.430
			Max. My	14	-36.898	14.053	-1411.508
			Max. Vy	8	32.116	-1558.232	8.234
			Max. Vx	2	-28.022	-8.623	1406.346
			Max. Torque	24			2.957
L30	56.25 - 51.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-75.716	7.050	-7.486
			Max. Mx	20	-38.855	1725.993	-15.328
			Max. My	14	-39.124	14.801	-1552.173
			Max. Vy	8	32.855	-1720.607	8.809
			Max. Vx	2	-28.460	-9.348	1547.360
			Max. Torque	24			2.957
L31	51.25 - 46.25	Pole	Max Tension	1	0.000	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	26	-78.719	7.164	-7.826
			Max. Mx	20	-41.133	1891.941	-16.226
			Max. My	14	-41.385	15.543	-1694.964
			Max. Vy	8	33.566	-1886.579	9.378
			Max. Vx	2	-28.882	-10.073	1690.493
			Max. Torque	24			2.956
L32	46.25 - 36.542	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-81.259	7.240	-8.087
			Max. Mx	20	-43.096	2035.751	-16.992
			Max. My	14	-43.332	16.171	-1817.971
			Max. Vy	8	34.153	-2030.410	9.854
			Max. Vx	2	-29.229	-10.688	1813.779
			Max. Torque	24			2.956
L33	36.542 - 35.542	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-87.353	7.345	-8.469
			Max. Mx	20	-47.956	2259.598	-18.155
			Max. My	14	-48.179	17.123	-2008.174
			Max. Vy	8	35.186	-2254.291	10.575
			Max. Vx	2	-29.875	-11.620	2004.406
			Max. Torque	24			2.955
L34	35.542 - 31.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-89.712	7.288	-8.672
			Max. Mx	20	-49.809	2411.370	-18.927
			Max. My	14	-50.004	17.750	-2136.560
			Max. Vy	8	35.591	-2406.087	11.050
			Max. Vx	2	-30.182	-12.240	2133.066
			Max. Torque	24			2.955
L35	31.25 - 31	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-89.862	7.284	-8.684
			Max. Mx	20	-49.941	2420.264	-18.971
			Max. My	14	-50.132	17.787	-2144.079
			Max. Vy	8	35.598	-2414.983	11.078
			Max. Vx	2	-30.185	-12.276	2140.601
			Max. Torque	24			2.955
L36	31 - 26	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-92.854	7.195	-8.917
			Max. Mx	20	-52.323	2599.380	-19.868
			Max. My	14	-52.484	18.511	-2295.398
			Max. Vy	8	36.086	-2594.128	11.623
			Max. Vx	2	-30.557	-12.994	2292.231
			Max. Torque	24			2.955
L37	26 - 22	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-95.300	7.163	-9.163
			Max. Mx	20	-54.265	2744.336	-20.584
			Max. My	14	-54.399	19.086	-2417.718
			Max. Vy	8	36.446	-2739.109	12.054
			Max. Vx	2	-30.830	-13.566	2414.794
			Max. Torque	24			2.954
L38	22 - 21.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-95.462	7.162	-9.180
			Max. Mx	20	-54.406	2753.443	-20.629
			Max. My	14	-54.536	19.122	-2425.400
			Max. Vy	8	36.453	-2748.218	12.081
			Max. Vx	2	-30.834	-13.602	2422.491
			Max. Torque	24			2.954
L39	21.75 - 19.0833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-97.231	7.144	-9.351
			Max. Mx	20	-55.780	2850.947	-21.106
			Max. My	14	-55.898	19.503	-2507.606

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	8	36.718	-2845.738	12.365
			Max. Vx	2	-31.037	-13.981	2504.856
			Max. Torque	24			2.954
L40	19.0833 - 18.8333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-97.392	7.143	-9.367
			Max. Mx	20	-55.917	2860.121	-21.150
			Max. My	14	-56.030	19.539	-2515.338
			Max. Vy	8	36.719	-2854.914	12.392
			Max. Vx	2	-31.036	-14.017	2512.603
			Max. Torque	24			2.954
L41	18.8333 - 18	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-97.930	7.137	-9.421
			Max. Mx	20	-56.320	2890.741	-21.299
			Max. My	14	-56.429	19.657	-2541.142
			Max. Vy	8	36.803	-2885.540	12.480
			Max. Vx	2	-31.101	-14.135	2538.455
			Max. Torque	24			2.954
L42	18 - 17.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-98.110	7.136	-9.437
			Max. Mx	20	-56.469	2899.939	-21.344
			Max. My	14	-56.575	19.693	-2548.892
			Max. Vy	8	36.814	-2894.739	12.507
			Max. Vx	2	-31.108	-14.171	2546.220
			Max. Torque	24			2.954
L43	17.75 - 17	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-98.649	7.131	-9.485
			Max. Mx	20	-56.886	2927.567	-21.478
			Max. My	14	-56.989	19.799	-2572.169
			Max. Vy	8	36.892	-2922.373	12.586
			Max. Vx	2	-31.168	-14.277	2569.541
			Max. Torque	24			2.954
L44	17 - 16.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-98.828	7.130	-9.502
			Max. Mx	20	-57.033	2936.788	-21.522
			Max. My	14	-57.133	19.835	-2579.937
			Max. Vy	8	36.905	-2931.595	12.612
			Max. Vx	2	-31.177	-14.313	2577.323
			Max. Torque	24			2.954
L45	16.75 - 11.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-102.372	7.068	-9.895
			Max. Mx	20	-59.848	3122.298	-22.414
			Max. My	14	-59.921	20.542	-2736.164
			Max. Vy	8	37.335	-3117.139	13.135
			Max. Vx	2	-31.522	-15.021	2733.836
			Max. Torque	24			2.954
L46	11.75 - 6.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-105.902	6.999	-10.309
			Max. Mx	20	-62.703	3309.851	-23.304
			Max. My	14	-62.745	21.243	-2894.054
			Max. Vy	8	37.739	-3304.728	13.650
			Max. Vx	2	-31.854	-15.725	2892.004
			Max. Torque	24			2.954
L47	6.75 - 4	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-107.838	6.963	-10.534
			Max. Mx	20	-64.287	3413.862	-23.793
			Max. My	14	-64.313	21.626	-2981.605
			Max. Vy	8	37.967	-3408.759	13.929
			Max. Vx	2	-32.045	-16.110	2979.704
			Max. Torque	24			2.954
L48	4 - 3.75	Pole	Max Tension	1	0.000	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	26	-108.012	6.960	-10.555
			Max. Mx	20	-64.443	3423.347	-23.837
			Max. My	14	-64.465	21.660	-2989.590
			Max. Vy	8	37.964	-3418.246	13.955
			Max. Vx	2	-32.042	-16.146	2987.702
			Max. Torque	24			2.954
L49	3.75 - 3	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-108.533	6.950	-10.615
			Max. Mx	20	-64.867	3451.834	-23.970
			Max. My	14	-64.886	21.764	-3013.569
			Max. Vy	8	38.035	-3446.739	14.031
			Max. Vx	2	-32.102	-16.251	3011.720
			Max. Torque	24			2.954
L50	3 - 2.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-108.710	6.947	-10.635
			Max. Mx	20	-65.021	3461.340	-24.015
			Max. My	14	-65.037	21.799	-3021.570
			Max. Vy	8	38.045	-3456.247	14.056
			Max. Vx	2	-32.111	-16.286	3019.735
			Max. Torque	24			2.954
L51	2.75 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-110.633	6.916	-10.847
			Max. Mx	20	-66.632	3566.251	-24.503
			Max. My	14	-66.636	22.179	-3109.882
			Max. Vy	8	38.297	-3561.179	14.332
			Max. Vx	2	-32.324	-16.669	3108.192
			Max. Torque	24			2.954

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	110.633	0.000	-0.000
	Max. H_x	21	49.985	38.265	-0.139
	Max. H_z	3	49.985	-0.139	32.303
	Max. M_x	2	3108.192	-0.139	32.303
	Max. M_z	8	3561.179	-38.272	0.139
	Max. Torsion	24	2.954	16.039	27.788
	Min. Vert	25	49.985	16.039	27.788
	Min. H_x	9	49.985	-38.272	0.139
	Min. H_z	15	49.985	0.139	-32.173
	Min. M_x	14	-3109.882	0.139	-32.173
	Min. M_z	20	-3566.251	38.265	-0.139
	Min. Torsion	12	-2.953	-16.107	-27.906

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	55.539	-0.000	0.000	4.125	2.213	0.000
1.2 Dead+1.0 Wind 0 deg - No	66.647	0.139	-32.303	-3108.192	-16.670	-2.618

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Ice						
0.9 Dead+1.0 Wind 0 deg - No Ice	49.985	0.139	-32.303	-3074.167	-17.137	-2.545
1.2 Dead+1.0 Wind 30 deg - No Ice	66.647	16.351	-28.051	-2701.177	-1581.621	-1.571
0.9 Dead+1.0 Wind 30 deg - No Ice	49.985	16.351	-28.051	-2671.753	-1564.292	-1.528
1.2 Dead+1.0 Wind 60 deg - No Ice	66.647	31.490	-18.185	-1705.068	-2958.432	0.119
0.9 Dead+1.0 Wind 60 deg - No Ice	49.985	31.490	-18.185	-1687.258	-2926.027	0.120
1.2 Dead+1.0 Wind 90 deg - No Ice	66.647	38.272	-0.139	-14.332	-3561.179	2.364
0.9 Dead+1.0 Wind 90 deg - No Ice	49.985	38.272	-0.139	-15.387	-3522.361	2.321
1.2 Dead+1.0 Wind 120 deg - No Ice	66.647	28.173	16.110	1549.469	-2710.117	2.520
0.9 Dead+1.0 Wind 120 deg - No Ice	49.985	28.173	16.110	1530.665	-2680.066	2.450
1.2 Dead+1.0 Wind 150 deg - No Ice	66.647	16.107	27.906	2691.590	-1547.770	2.953
0.9 Dead+1.0 Wind 150 deg - No Ice	49.985	16.107	27.906	2659.767	-1530.923	2.871
1.2 Dead+1.0 Wind 180 deg - No Ice	66.647	-0.139	32.173	3109.882	22.179	2.595
0.9 Dead+1.0 Wind 180 deg - No Ice	49.985	-0.139	32.173	3073.237	21.153	2.522
1.2 Dead+1.0 Wind 210 deg - No Ice	66.647	-16.282	27.930	2703.490	1582.577	1.550
0.9 Dead+1.0 Wind 210 deg - No Ice	49.985	-16.282	27.930	2671.439	1563.784	1.507
1.2 Dead+1.0 Wind 240 deg - No Ice	66.647	-31.488	18.184	1715.200	2963.838	-0.117
0.9 Dead+1.0 Wind 240 deg - No Ice	49.985	-31.488	18.184	1694.713	2929.936	-0.119
1.2 Dead+1.0 Wind 270 deg - No Ice	66.647	-38.265	0.139	24.503	3566.251	-2.338
0.9 Dead+1.0 Wind 270 deg - No Ice	49.985	-38.265	0.139	22.890	3525.938	-2.295
1.2 Dead+1.0 Wind 300 deg - No Ice	66.647	-28.088	-16.060	-1536.044	2710.038	-2.497
0.9 Dead+1.0 Wind 300 deg - No Ice	49.985	-28.088	-16.060	-1519.934	2678.525	-2.427
1.2 Dead+1.0 Wind 330 deg - No Ice	66.647	-16.039	-27.788	-2673.670	1548.822	-2.954
0.9 Dead+1.0 Wind 330 deg - No Ice	49.985	-16.039	-27.788	-2644.571	1530.509	-2.871
1.2 Dead+1.0 Ice+1.0 Temp	110.633	-0.000	0.000	10.847	6.916	0.002
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	110.633	0.023	-8.067	-810.847	3.302	-0.848
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	110.633	4.066	-6.997	-702.589	-409.187	-0.512
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	110.633	7.428	-4.289	-422.778	-744.173	0.051
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	110.633	9.048	-0.023	7.267	-897.884	0.695
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	110.633	6.997	4.013	418.667	-706.465	0.812
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	110.633	4.026	6.974	720.823	-402.787	0.959
1.2 Dead+1.0 Wind 180	110.633	-0.023	8.066	832.757	10.692	0.850

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 210 deg+1.0 Ice+1.0 Temp	110.633	-4.066	6.997	724.498	423.170	0.514
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	110.633	-7.427	4.289	444.692	758.146	-0.047
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	110.633	-9.047	0.023	14.657	911.789	-0.689
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	110.633	-6.996	-4.013	-396.730	720.441	-0.807
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	110.633	-4.026	-6.974	-698.881	416.773	-0.955
Dead+Wind 0 deg - Service	55.539	0.034	-7.868	-748.981	-2.415	-0.628
Dead+Wind 30 deg - Service	55.539	3.983	-6.832	-650.521	-381.028	-0.376
Dead+Wind 60 deg - Service	55.539	7.670	-4.429	-409.610	-714.277	0.030
Dead+Wind 90 deg - Service	55.539	9.322	-0.034	-0.474	-860.216	0.572
Dead+Wind 120 deg - Service	55.539	6.862	3.924	377.859	-654.054	0.604
Dead+Wind 150 deg - Service	55.539	3.923	6.797	654.160	-372.842	0.711
Dead+Wind 180 deg - Service	55.539	-0.034	7.836	755.351	6.967	0.627
Dead+Wind 210 deg - Service	55.539	-3.966	6.803	657.041	384.474	0.375
Dead+Wind 240 deg - Service	55.539	-7.669	4.429	418.029	718.800	-0.029
Dead+Wind 270 deg - Service	55.539	-9.320	0.034	8.908	864.658	-0.570
Dead+Wind 300 deg - Service	55.539	-6.841	-3.912	-368.638	657.245	-0.603
Dead+Wind 330 deg - Service	55.539	-3.907	-6.768	-643.848	376.311	-0.710

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	0.000	-55.539	0.000	0.000	55.539	-0.000	0.000%
2	0.139	-66.647	-32.303	-0.139	66.647	32.303	0.000%
3	0.139	-49.985	-32.303	-0.139	49.985	32.303	0.000%
4	16.351	-66.647	-28.051	-16.351	66.647	28.051	0.000%
5	16.351	-49.985	-28.051	-16.351	49.985	28.051	0.000%
6	31.490	-66.647	-18.185	-31.490	66.647	18.185	0.000%
7	31.490	-49.985	-18.185	-31.490	49.985	18.185	0.000%
8	38.272	-66.647	-0.139	-38.272	66.647	0.139	0.000%
9	38.272	-49.985	-0.139	-38.272	49.985	0.139	0.000%
10	28.173	-66.647	16.110	-28.173	66.647	-16.110	0.000%
11	28.173	-49.985	16.110	-28.173	49.985	-16.110	0.000%
12	16.107	-66.647	27.906	-16.107	66.647	-27.906	0.000%
13	16.107	-49.985	27.906	-16.107	49.985	-27.906	0.000%
14	-0.139	-66.647	32.173	0.139	66.647	-32.173	0.000%
15	-0.139	-49.985	32.173	0.139	49.985	-32.173	0.000%
16	-16.282	-66.647	27.930	16.282	66.647	-27.930	0.000%
17	-16.282	-49.985	27.930	16.282	49.985	-27.930	0.000%
18	-31.488	-66.647	18.184	31.488	66.647	-18.184	0.000%
19	-31.488	-49.985	18.184	31.488	49.985	-18.184	0.000%
20	-38.265	-66.647	0.139	38.265	66.647	-0.139	0.000%
21	-38.265	-49.985	0.139	38.265	49.985	-0.139	0.000%
22	-28.088	-66.647	-16.060	28.088	66.647	16.060	0.000%
23	-28.088	-49.985	-16.060	28.088	49.985	16.060	0.000%
24	-16.039	-66.647	-27.788	16.039	66.647	27.788	0.000%
25	-16.039	-49.985	-27.788	16.039	49.985	27.788	0.000%
26	0.000	-110.633	0.000	0.000	110.633	-0.000	0.000%
27	0.023	-110.633	-8.067	-0.023	110.633	8.067	0.000%
28	4.066	-110.633	-6.997	-4.066	110.633	6.997	0.000%
29	7.428	-110.633	-4.289	-7.428	110.633	4.289	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
30	9.048	-110.633	-0.023	-9.048	110.633	0.023	0.000%
31	6.997	-110.633	4.013	-6.997	110.633	-4.013	0.000%
32	4.026	-110.633	6.974	-4.026	110.633	-6.974	0.000%
33	-0.023	-110.633	8.066	0.023	110.633	-8.066	0.000%
34	-4.066	-110.633	6.997	4.066	110.633	-6.997	0.000%
35	-7.427	-110.633	4.289	7.427	110.633	-4.289	0.000%
36	-9.047	-110.633	0.023	9.047	110.633	-0.023	0.000%
37	-6.996	-110.633	-4.013	6.996	110.633	4.013	0.000%
38	-4.026	-110.633	-6.974	4.026	110.633	6.974	0.000%
39	0.034	-55.539	-7.868	-0.034	55.539	7.868	0.000%
40	3.983	-55.539	-6.832	-3.983	55.539	6.832	0.000%
41	7.670	-55.539	-4.429	-7.670	55.539	4.429	0.000%
42	9.322	-55.539	-0.034	-9.322	55.539	0.034	0.000%
43	6.862	-55.539	3.924	-6.862	55.539	-3.924	0.000%
44	3.923	-55.539	6.797	-3.923	55.539	-6.797	0.000%
45	-0.034	-55.539	7.836	0.034	55.539	-7.836	0.000%
46	-3.966	-55.539	6.803	3.966	55.539	-6.803	0.000%
47	-7.669	-55.539	4.429	7.669	55.539	-4.429	0.000%
48	-9.320	-55.539	0.034	9.320	55.539	-0.034	0.000%
49	-6.841	-55.539	-3.912	6.841	55.539	3.912	0.000%
50	-3.907	-55.539	-6.768	3.907	55.539	6.768	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00001032
2	Yes	6	0.00000001	0.00007587
3	Yes	5	0.00000001	0.00058677
4	Yes	6	0.00000001	0.00083204
5	Yes	6	0.00000001	0.00028744
6	Yes	6	0.00000001	0.00098296
7	Yes	6	0.00000001	0.00033260
8	Yes	6	0.00000001	0.00006983
9	Yes	5	0.00000001	0.00053445
10	Yes	6	0.00000001	0.00088657
11	Yes	6	0.00000001	0.00030835
12	Yes	6	0.00000001	0.00078849
13	Yes	6	0.00000001	0.00027277
14	Yes	6	0.00000001	0.00010338
15	Yes	5	0.00000001	0.00080352
16	Yes	6	0.00000001	0.00089461
17	Yes	6	0.00000001	0.00030901
18	Yes	7	0.00000001	0.00005917
19	Yes	6	0.00000001	0.00033768
20	Yes	6	0.00000001	0.00010105
21	Yes	5	0.00000001	0.00077727
22	Yes	6	0.00000001	0.00079552
23	Yes	6	0.00000001	0.00027510
24	Yes	6	0.00000001	0.00088562
25	Yes	6	0.00000001	0.00030886
26	Yes	5	0.00000001	0.00039621
27	Yes	7	0.00000001	0.00016748
28	Yes	7	0.00000001	0.00018696
29	Yes	7	0.00000001	0.00019568
30	Yes	7	0.00000001	0.00017936

31	Yes	7	0.00000001	0.00019293
32	Yes	7	0.00000001	0.00019247
33	Yes	7	0.00000001	0.00017601
34	Yes	7	0.00000001	0.00020426
35	Yes	7	0.00000001	0.00021281
36	Yes	7	0.00000001	0.00018911
37	Yes	7	0.00000001	0.00019391
38	Yes	7	0.00000001	0.00019348
39	Yes	5	0.00000001	0.00008765
40	Yes	5	0.00000001	0.00021423
41	Yes	5	0.00000001	0.00026922
42	Yes	5	0.00000001	0.00009213
43	Yes	5	0.00000001	0.00026356
44	Yes	5	0.00000001	0.00020374
45	Yes	5	0.00000001	0.00009436
46	Yes	5	0.00000001	0.00026169
47	Yes	5	0.00000001	0.00028854
48	Yes	5	0.00000001	0.00009986
49	Yes	5	0.00000001	0.00020417
50	Yes	5	0.00000001	0.00026699

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	129 - 124	18.937	48	1.523	0.014
L2	124 - 119	17.342	48	1.521	0.013
L3	119 - 115.5	15.757	48	1.502	0.011
L4	115.5 - 115	14.666	48	1.475	0.009
L5	115 - 110	14.512	48	1.471	0.009
L6	110 - 105	13.009	48	1.394	0.007
L7	105 - 100	11.603	48	1.289	0.005
L8	100 - 95	10.317	48	1.162	0.004
L9	95 - 94.5	9.176	48	1.015	0.003
L10	94.5 - 94.25	9.070	48	0.999	0.003
L11	94.25 - 92.0833	9.018	48	0.995	0.002
L12	92.0833 - 91.8333	8.575	48	0.959	0.002
L13	91.8333 - 86.8333	8.525	48	0.956	0.002
L14	86.8333 - 81.8333	7.556	48	0.892	0.002
L15	81.8333 - 73.125	6.658	48	0.822	0.002
L16	77.792 - 72.792	5.989	48	0.761	0.001
L17	72.792 - 71.5	5.211	48	0.722	0.001
L18	71.5 - 71.25	5.018	48	0.704	0.001
L19	71.25 - 68.3333	4.981	48	0.700	0.001
L20	68.3333 - 68.0833	4.565	48	0.661	0.001
L21	68.0833 - 67.9167	4.531	48	0.658	0.001
L22	67.9167 - 67.6667	4.508	48	0.655	0.001
L23	67.6667 - 67.5	4.474	48	0.653	0.001
L24	67.5 - 67.25	4.451	48	0.651	0.001
L25	67.25 - 66.3333	4.417	48	0.649	0.001
L26	66.3333 - 66.0833	4.293	48	0.638	0.001
L27	66.0833 - 61.0833	4.260	48	0.636	0.001
L28	61.0833 - 56.5	3.621	48	0.585	0.001
L29	56.5 - 56.25	3.082	48	0.538	0.001
L30	56.25 - 51.25	3.054	48	0.535	0.001
L31	51.25 - 46.25	2.521	48	0.483	0.001
L32	46.25 - 36.542	2.043	48	0.430	0.001
L33	42 - 35.542	1.680	48	0.385	0.001
L34	35.542 - 31.25	1.183	48	0.343	0.000

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L35	31.25 - 31	0.898	48	0.293	0.000
L36	31 - 26	0.882	48	0.290	0.000
L37	26 - 22	0.607	48	0.236	0.000
L38	22 - 21.75	0.428	48	0.192	0.000
L39	21.75 - 19.0833	0.418	48	0.190	0.000
L40	19.0833 - 18.8333	0.319	48	0.164	0.000
L41	18.8333 - 18	0.310	48	0.162	0.000
L42	18 - 17.75	0.282	48	0.154	0.000
L43	17.75 - 17	0.274	48	0.151	0.000
L44	17 - 16.75	0.251	48	0.145	0.000
L45	16.75 - 11.75	0.244	48	0.143	0.000
L46	11.75 - 6.75	0.117	48	0.099	0.000
L47	6.75 - 4	0.037	48	0.055	0.000
L48	4 - 3.75	0.013	48	0.031	0.000
L49	3.75 - 3	0.011	48	0.029	0.000
L50	3 - 2.75	0.007	48	0.023	0.000
L51	2.75 - 0	0.006	48	0.021	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
129.000	Lightning Rod 5/8" x 4'	48	18.937	1.523	0.014	29903
125.000	APXVAARR24_43-U-NA20 w/ Mount Pipe	48	17.661	1.523	0.013	29903
117.000	(2) Weldment - 27"x1."x10"	48	15.131	1.487	0.010	6650
116.000	(2) LNX-8513DS-VTM w/ Mount Pipe	48	14.820	1.479	0.010	5769
113.170	HSS - 6x6x5/8 - 11'	48	13.953	1.450	0.009	4030
109.000	(2) Weldment - 27"x1."x10"	48	12.719	1.374	0.007	2941
105.000	NNVV-65B-R4 w/ Mount Pipe	48	11.603	1.289	0.005	2476
94.000	7770.00 w/ Mount Pipe	48	8.966	0.992	0.002	2685
60.000	GPS_A	48	3.489	0.574	0.001	5571

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	129 - 124	77.804	20	6.209	0.056
L2	124 - 119	71.315	20	6.207	0.054
L3	119 - 115.5	64.853	20	6.144	0.045
L4	115.5 - 115	60.392	20	6.042	0.039
L5	115 - 110	59.761	20	6.027	0.038
L6	110 - 105	53.609	20	5.722	0.029
L7	105 - 100	47.836	20	5.304	0.022
L8	100 - 95	42.551	20	4.786	0.016
L9	95 - 94.5	37.852	20	4.185	0.011
L10	94.5 - 94.25	37.418	20	4.122	0.010
L11	94.25 - 92.0833	37.202	20	4.106	0.010
L12	92.0833 - 91.8333	35.374	20	3.957	0.009

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L13	91.8333 - 86.8333	35.168	20	3.945	0.009
L14	86.8333 - 81.8333	31.175	20	3.682	0.008
L15	81.8333 - 73.125	27.473	20	3.391	0.007
L16	77.792 - 72.792	24.710	20	3.140	0.006
L17	72.792 - 71.5	21.500	20	2.980	0.005
L18	71.5 - 71.25	20.705	20	2.904	0.005
L19	71.25 - 68.3333	20.553	20	2.890	0.005
L20	68.3333 - 68.0833	18.838	20	2.728	0.005
L21	68.0833 - 67.9167	18.695	20	2.714	0.005
L22	67.9167 - 67.6667	18.601	20	2.705	0.005
L23	67.6667 - 67.5	18.459	20	2.695	0.005
L24	67.5 - 67.25	18.366	20	2.689	0.005
L25	67.25 - 66.3333	18.225	20	2.677	0.005
L26	66.3333 - 66.0833	17.715	20	2.634	0.004
L27	66.0833 - 61.0833	17.578	20	2.624	0.004
L28	61.0833 - 56.5	14.941	20	2.414	0.004
L29	56.5 - 56.25	12.718	20	2.219	0.004
L30	56.25 - 51.25	12.602	20	2.208	0.004
L31	51.25 - 46.25	10.403	20	1.993	0.003
L32	46.25 - 36.542	8.430	20	1.776	0.003
L33	42 - 35.542	6.932	20	1.590	0.002
L34	35.542 - 31.25	4.883	20	1.417	0.002
L35	31.25 - 31	3.703	20	1.209	0.002
L36	31 - 26	3.641	20	1.197	0.002
L37	26 - 22	2.504	20	0.974	0.001
L38	22 - 21.75	1.764	20	0.794	0.001
L39	21.75 - 19.0833	1.723	20	0.784	0.001
L40	19.0833 - 18.8333	1.314	20	0.679	0.001
L41	18.8333 - 18	1.279	20	0.668	0.001
L42	18 - 17.75	1.165	20	0.634	0.001
L43	17.75 - 17	1.132	20	0.625	0.001
L44	17 - 16.75	1.036	20	0.598	0.001
L45	16.75 - 11.75	1.005	20	0.589	0.001
L46	11.75 - 6.75	0.484	20	0.407	0.000
L47	6.75 - 4	0.154	20	0.225	0.000
L48	4 - 3.75	0.052	20	0.127	0.000
L49	3.75 - 3	0.046	20	0.119	0.000
L50	3 - 2.75	0.029	20	0.093	0.000
L51	2.75 - 0	0.025	20	0.085	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
129.000	Lightning Rod 5/8" x 4'	20	77.804	6.209	0.056	10934
125.000	APXVAARR24_43-U-NA20 w/ Mount Pipe	20	72.612	6.210	0.055	10934
117.000	(2) Weldment - 27"x1."x10"	20	62.295	6.086	0.041	1837
116.000	(2) LNX-8513DS-VTM w/ Mount Pipe	20	61.025	6.056	0.039	1568
113.170	HSS - 6x6x5/8 - 11'	20	57.474	5.944	0.035	1061
109.000	(2) Weldment - 27"x1."x10"	20	52.420	5.645	0.028	754
105.000	NNVV-65B-R4 w/ Mount Pipe	20	47.836	5.304	0.022	623
94.000	7770.00 w/ Mount Pipe	20	36.988	4.090	0.010	662
60.000	GPS_A	20	14.398	2.368	0.004	1354

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	129 - 124 (1)	TP16x16x0.375	5.000	0.000	0.0	18.408	-14.830	579.845	0.026
L2	124 - 119 (2)	TP16x16x0.375	5.000	0.000	0.0	18.408	-6.770	579.845	0.012
L3	119 - 115.5 (3)	TP16x16x0.375	3.500	0.000	0.0	18.408	-10.784	579.845	0.019
L4	115.5 - 115 (4)	TP17.81x16x0.375	0.500	0.000	0.0	18.408	-10.790	579.845	0.019
L5	115 - 110 (5)	TP18.943x17.81x0.219	5.000	0.000	0.0	13.189	-12.783	771.556	0.017
L6	110 - 105 (6)	TP20.076x18.943x0.219	5.000	0.000	0.0	13.987	-13.722	818.248	0.017
L7	105 - 100 (7)	TP21.209x20.076x0.219	5.000	0.000	0.0	14.785	-18.950	864.940	0.022
L8	100 - 95 (8)	TP22.343x21.209x0.219	5.000	0.000	0.0	15.583	-19.586	911.631	0.021
L9	95 - 94.5 (9)	TP22.456x22.343x0.219	0.500	0.000	0.0	15.663	-19.663	916.301	0.021
L10	94.5 - 94.25 (10)	TP22.513x22.456x0.438	0.250	0.000	0.0	31.098	-19.713	1819.240	0.011
L11	94.25 - 92.0833 (11)	TP23.004x22.513x0.431	2.167	0.000	0.0	31.344	-24.293	1833.650	0.013
L12	92.0833 - 91.8333 (12)	TP23.06x23.004x0.656	0.250	0.000	0.0	47.342	-24.368	2769.530	0.009
L13	91.8333 - 86.8333 (13)	TP24.193x23.06x0.631	5.000	0.000	0.0	47.893	-25.548	2801.730	0.009
L14	86.8333 - 81.8333 (14)	TP25.326x24.193x0.606	5.000	0.000	0.0	48.257	-26.774	2823.030	0.009
L15	81.8333 - 73.125 (15)	TP27.3x25.326x0.594	8.708	0.000	0.0	49.037	-27.792	2868.660	0.010
L16	73.125 - 72.792 (16)	TP26.963x25.805x0.688	5.000	0.000	0.0	58.167	-30.039	3402.800	0.009
L17	72.792 - 71.5 (17)	TP27.262x26.963x0.675	1.292	0.000	0.0	57.787	-30.399	3380.570	0.009
L18	71.5 - 71.25 (18)	TP27.32x27.262x0.738	0.250	0.000	0.0	63.127	-30.492	3692.950	0.008
L19	71.25 - 68.3333 (19)	TP27.996x27.32x0.725	2.917	0.000	0.0	63.664	-31.375	3724.330	0.008
L20	68.3333 - 68.0833 (20)	TP28.054x27.996x0.738	0.250	0.000	0.0	64.869	-31.479	3794.850	0.008
L21	68.0833 - 67.9167 (21)	TP28.092x28.054x0.738	0.167	0.000	0.0	64.961	-31.538	3800.220	0.008
L22	67.9167 - 67.6667 (22)	TP28.15x28.092x1.088	0.250	0.000	0.0	94.767	-31.638	5543.870	0.006
L23	67.6667 - 67.5 (23)	TP28.189x28.15x1.088	0.167	0.000	0.0	94.902	-31.706	5551.780	0.006
L24	67.5 - 67.25 (24)	TP28.247x28.189x0.888	0.250	0.000	0.0	78.186	-31.793	4573.880	0.007
L25	67.25 - 66.3333 (25)	TP28.459x28.247x0.875	0.917	0.000	0.0	77.718	-32.108	4546.520	0.007
L26	66.3333 - 66.0833 (26)	TP28.517x28.459x1.038	0.250	0.000	0.0	91.802	-32.227	5370.430	0.006
L27	66.0833 - 61.0833 (27)	TP29.675x28.517x0.988	5.000	0.000	0.0	91.220	-34.401	5336.360	0.006
L28	61.0833 - 56.5 (28)	TP30.737x29.675x0.963	4.583	0.000	0.0	92.278	-36.495	5398.290	0.007
L29	56.5 - 56.25 (29)	TP30.795x30.737x0.963	0.250	0.000	0.0	92.458	-36.618	5408.780	0.007

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L30	56.25 - 51.25 (30)	TP31.953x30.795x0.938	5.000	0.000	0.0	93.628	-38.855	5477.250	0.007
L31	51.25 - 46.25 (31)	TP33.111x31.953x0.913	5.000	0.000	0.0	94.608	-41.133	5534.560	0.007
L32	46.25 - 36.542 (32)	TP35.36x33.111x0.888	9.708	0.000	0.0	94.901	-43.096	5551.690	0.008
L33	36.542 - 35.542 (33)	TP34.967x33.471x0.813	6.458	0.000	0.0	89.356	-47.956	5227.320	0.009
L34	35.542 - 31.25 (34)	TP35.961x34.967x0.8	4.292	0.000	0.0	90.575	-49.809	5298.610	0.009
L35	31.25 - 31 (35)	TP36.019x35.961x0.863	0.250	0.000	0.0	97.638	-49.941	5711.820	0.009
L36	31 - 26 (36)	TP37.177x36.019x0.85	5.000	0.000	0.0	99.427	-52.323	5816.500	0.009
L37	26 - 22 (37)	TP38.104x37.177x0.825	4.000	0.000	0.0	99.031	-54.265	5793.310	0.009
L38	22 - 21.75 (38)	TP38.162x38.104x0.938	0.250	0.000	0.0	112.370	-54.406	6573.660	0.008
L39	21.75 - 19.0833 (39)	TP38.779x38.162x0.925	2.667	0.000	0.0	112.749	-55.780	6595.830	0.008
L40	19.0833 - 18.8333 (40)	TP38.837x38.779x0.875	0.250	0.000	0.0	106.959	-55.917	6257.080	0.009
L41	18.8333 - 18 (41)	TP39.03x38.837x0.875	0.833	0.000	0.0	107.503	-56.320	6288.900	0.009
L42	18 - 17.75 (42)	TP39.088x39.03x1	0.250	0.000	0.0	122.644	-56.469	7174.680	0.008
L43	17.75 - 17 (43)	TP39.262x39.088x1	0.750	0.000	0.0	123.203	-56.886	7207.400	0.008
L44	17 - 16.75 (44)	TP39.32x39.262x1	0.250	0.000	0.0	123.390	-57.033	7218.310	0.008
L45	16.75 - 11.75 (45)	TP40.478x39.32x0.975	5.000	0.000	0.0	124.020	-59.848	7255.170	0.008
L46	11.75 - 6.75 (46)	TP41.636x40.478x0.95	5.000	0.000	0.0	123.751	-62.150	7239.430	0.009
L47	6.75 - 4 (47)	TP42.273x41.636x0.95	2.750	0.000	0.0	124.460	-62.731	7280.890	0.009
L48	4 - 3.75 (48)	TP42.331x42.273x0.975	0.250	0.000	0.0	129.656	-64.306	7584.900	0.008
L49	3.75 - 3 (49)	TP42.505x42.331x0.963	0.750	0.000	0.0	128.212	-64.455	7500.420	0.009
L50	3 - 2.75 (50)	TP42.563x42.505x1.075	0.250	0.000	0.0	143.410	-64.879	8389.490	0.008
L51	2.75 - 0 (51)	TP43.2x42.563x1.075	2.750	0.000	0.0	143.611	-65.038	8401.220	0.008

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	129 - 124 (1)	TP16x16x0.375	8.489	240.372	0.035	0.000	240.372	0.000
L2	124 - 119 (2)	TP16x16x0.375	44.162	240.372	0.184	0.000	240.372	0.000
L3	119 - 115.5 (3)	TP16x16x0.375	76.513	240.372	0.318	0.000	240.372	0.000
L4	115.5 - 115 (4)	TP17.81x16x0.375	76.513	240.372	0.318	0.000	240.372	0.000
L5	115 - 110 (5)	TP18.943x17.81x0.219	152.729	364.796	0.419	0.000	364.796	0.000
L6	110 - 105 (6)	TP20.076x18.943x0.219	229.755	402.868	0.570	0.000	402.868	0.000
L7	105 - 100 (7)	TP21.209x20.076x0.219	330.063	441.827	0.747	0.000	441.827	0.000
L8	100 - 95 (8)	TP22.343x21.209x0.219	432.777	481.523	0.899	0.000	481.523	0.000
L9	95 - 94.5 (9)	TP22.456x22.343x0.219	443.178	485.527	0.913	0.000	485.527	0.000
L10	94.5 - 94.25 (10)	TP22.513x22.456x0.438	448.389	1018.858	0.440	0.000	1018.858	0.000
L11	94.25 - 92.0833 (11)	TP23.004x22.513x0.431	507.647	1050.792	0.483	0.000	1050.792	0.000
L12	92.0833 - 91.8333 (12)	TP23.06x23.004x0.656	514.402	1559.683	0.330	0.000	1559.683	0.000
L13	91.8333 - 86.8333 (13)	TP24.193x23.06x0.631	651.227	1663.425	0.391	0.000	1663.425	0.000
L14	86.8333 -	TP25.326x24.193x0.606	791.334	1762.342	0.449	0.000	1762.342	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L15	81.8333 (14) 81.8333 - 73.125 (15)	TP27.3x25.326x0.594	906.942	1860.583	0.487	0.000	1860.583	0.000
L16	73.125 - 72.792 (16)	TP26.963x25.805x0.688	1053.258	2254.325	0.467	0.000	2254.325	0.000
L17	72.792 - 71.5 (17)	TP27.262x26.963x0.675	1091.683	2267.892	0.481	0.000	2267.892	0.000
L18	71.5 - 71.25 (18)	TP27.32x27.262x0.738	1099.142	2471.342	0.445	0.000	2471.342	0.000
L19	71.25 - 68.3333 (19)	TP27.996x27.32x0.725	1186.800	2559.750	0.464	0.000	2559.750	0.000
L20	68.3333 - 68.0833 (20)	TP28.054x27.996x0.738	1194.367	2611.508	0.457	0.000	2611.508	0.000
L21	68.0833 - 67.9167 (21)	TP28.092x28.054x0.738	1199.417	2618.992	0.458	0.000	2618.992	0.000
L22	67.9167 - 67.6667 (22)	TP28.15x28.092x1.088	1207.000	3731.817	0.323	0.000	3731.817	0.000
L23	67.6667 - 67.5 (23)	TP28.189x28.15x1.088	1212.058	3742.683	0.324	0.000	3742.683	0.000
L24	67.5 - 67.25 (24)	TP28.247x28.189x0.888	1219.658	3135.958	0.389	0.000	3135.958	0.000
L25	67.25 - 66.3333 (25)	TP28.459x28.247x0.875	1247.600	3145.008	0.397	0.000	3145.008	0.000
L26	66.3333 - 66.0833 (26)	TP28.517x28.459x1.038	1255.233	3679.333	0.341	0.000	3679.333	0.000
L27	66.0833 - 61.0833 (27)	TP29.675x28.517x0.988	1409.983	3829.033	0.368	0.000	3829.033	0.000
L28	61.0833 - 56.5 (28)	TP30.737x29.675x0.963	1555.683	4028.350	0.386	0.000	4028.350	0.000
L29	56.5 - 56.25 (29)	TP30.795x30.737x0.963	1563.708	4044.283	0.387	0.000	4044.283	0.000
L30	56.25 - 51.25 (30)	TP31.953x30.795x0.938	1726.058	4266.325	0.405	0.000	4266.325	0.000
L31	51.25 - 46.25 (31)	TP33.111x31.953x0.913	1892.008	4483.642	0.422	0.000	4483.642	0.000
L32	46.25 - 36.542 (32)	TP35.36x33.111x0.888	2035.825	4645.817	0.438	0.000	4645.817	0.000
L33	36.542 - 35.542 (33)	TP34.967x33.471x0.813	2259.667	4511.892	0.501	0.000	4511.892	0.000
L34	35.542 - 31.25 (34)	TP35.961x34.967x0.8	2411.442	4713.000	0.512	0.000	4713.000	0.000
L35	31.25 - 31 (35)	TP36.019x35.961x0.863	2420.342	5071.050	0.477	0.000	5071.050	0.000
L36	31 - 26 (36)	TP37.177x36.019x0.85	2599.458	5341.867	0.487	0.000	5341.867	0.000
L37	26 - 22 (37)	TP38.104x37.177x0.825	2744.417	5466.717	0.502	0.000	5466.717	0.000
L38	22 - 21.75 (38)	TP38.162x38.104x0.938	2753.517	6175.541	0.446	0.000	6175.541	0.000
L39	21.75 - 19.0833 (39)	TP38.779x38.162x0.925	2851.025	6305.883	0.452	0.000	6305.883	0.000
L40	19.0833 - 18.8333 (40)	TP38.837x38.779x0.875	2860.200	6007.208	0.476	0.000	6007.208	0.000
L41	18.8333 - 18 (41)	TP39.03x38.837x0.875	2890.817	6069.150	0.476	0.000	6069.150	0.000
L42	18 - 17.75 (42)	TP39.088x39.03x1	2900.017	6889.433	0.421	0.000	6889.433	0.000
L43	17.75 - 17 (43)	TP39.262x39.088x1	2927.650	6953.233	0.421	0.000	6953.233	0.000
L44	17 - 16.75 (44)	TP39.32x39.262x1	2936.867	6974.567	0.421	0.000	6974.567	0.000
L45	16.75 - 11.75 (45)	TP40.478x39.32x0.975	3122.375	7236.617	0.431	0.000	7236.617	0.000
L46	11.75 - 6.75 (46)	TP41.636x40.478x0.95	3272.258	7403.525	0.442	0.000	7403.525	0.000
L47	6.75 - 4 (47)	TP42.273x41.636x0.95	3309.933	7489.533	0.442	0.000	7489.533	0.000
L48	4 - 3.75 (48)	TP42.331x42.273x0.975	3413.942	7917.617	0.431	0.000	7917.617	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L49	3.75 - 3 (49)	TP42.505x42.331x0.963	3423.433	7845.408	0.436	0.000	7845.408	0.000
L50	3 - 2.75 (50)	TP42.563x42.505x1.075	3451.917	8765.417	0.394	0.000	8765.417	0.000
L51	2.75 - 0 (51)	TP43.2x42.563x1.075	3461.425	8790.250	0.394	0.000	8790.250	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	129 - 124 (1)	TP16x16x0.375	2.053	173.953	0.012	0.042	238.964	0.000
L2	124 - 119 (2)	TP16x16x0.375	7.564	173.953	0.043	0.035	238.964	0.000
L3	119 - 115.5 (3)	TP16x16x0.375	12.721	173.953	0.073	0.036	238.964	0.000
L4	115.5 - 115 (4)	TP17.81x16x0.375	12.770	194.104	0.066	0.045	238.964	0.000
L5	115 - 110 (5)	TP18.943x17.81x0.219	14.737	231.467	0.064	0.045	381.238	0.000
L6	110 - 105 (6)	TP20.076x18.943x0.219	15.798	245.474	0.064	1.745	428.777	0.004
L7	105 - 100 (7)	TP21.209x20.076x0.219	20.325	259.482	0.078	1.886	479.108	0.004
L8	100 - 95 (8)	TP22.343x21.209x0.219	20.802	273.489	0.076	1.991	532.231	0.004
L9	95 - 94.5 (9)	TP22.456x22.343x0.219	20.840	274.890	0.076	1.997	537.697	0.004
L10	94.5 - 94.25 (10)	TP22.513x22.456x0.438	20.862	545.773	0.038	1.999	1059.775	0.002
L11	94.25 - 92.0833 (11)	TP23.004x22.513x0.431	27.020	550.095	0.049	1.872	1092.225	0.002
L12	92.0833 - 91.8333 (12)	TP23.06x23.004x0.656	27.040	830.858	0.033	1.873	1637.383	0.001
L13	91.8333 - 86.8333 (13)	TP24.193x23.06x0.631	27.709	840.520	0.033	1.911	1742.050	0.001
L14	86.8333 - 81.8333 (14)	TP25.326x24.193x0.606	28.364	846.909	0.033	1.950	1841.575	0.001
L15	81.8333 - 73.125 (15)	TP27.3x25.326x0.594	28.882	860.597	0.034	1.981	1941.617	0.001
L16	73.125 - 72.792 (16)	TP26.963x25.805x0.688	29.657	1020.840	0.029	2.022	2359.442	0.001
L17	72.792 - 71.5 (17)	TP27.262x26.963x0.675	29.842	1014.170	0.029	2.031	2371.842	0.001
L18	71.5 - 71.25 (18)	TP27.32x27.262x0.738	29.859	1107.880	0.027	2.033	2590.558	0.001
L19	71.25 - 68.3333 (19)	TP27.996x27.32x0.725	30.277	1117.300	0.027	2.045	2680.208	0.001
L20	68.3333 - 68.0833 (20)	TP28.054x27.996x0.738	30.294	1138.460	0.027	2.045	2735.500	0.001
L21	68.0833 - 67.9167 (21)	TP28.092x28.054x0.738	30.316	1140.060	0.027	2.046	2743.242	0.001
L22	67.9167 - 67.6667 (22)	TP28.15x28.092x1.088	30.354	1663.160	0.018	2.046	3959.192	0.001
L23	67.6667 - 67.5 (23)	TP28.189x28.15x1.088	30.378	1665.530	0.018	2.047	3970.500	0.001
L24	67.5 - 67.25 (24)	TP28.247x28.189x0.888	30.416	1372.160	0.022	2.047	3302.258	0.001
L25	67.25 - 66.3333 (25)	TP28.459x28.247x0.875	30.557	1363.960	0.022	2.049	3309.475	0.001
L26	66.3333 - 66.0833 (26)	TP28.517x28.459x1.038	30.586	1611.130	0.019	2.050	3894.392	0.001
L27	66.0833 - 61.0833 (27)	TP29.675x28.517x0.988	31.332	1600.910	0.020	2.061	4039.825	0.001
L28	61.0833 - 56.5 (28)	TP30.737x29.675x0.963	32.087	1619.490	0.020	2.348	4241.508	0.001

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L29	56.5 - 56.25 (29)	TP30.795x30.737x0.963	32.112	1622.640	0.020	2.349	4258.025	0.001
L30	56.25 - 51.25 (30)	TP31.953x30.795x0.938	32.851	1643.170	0.020	2.360	4482.933	0.001
L31	51.25 - 46.25 (31)	TP33.111x31.953x0.913	33.562	1660.370	0.020	2.372	4702.658	0.001
L32	46.25 - 36.542 (32)	TP35.36x33.111x0.888	34.149	1665.510	0.021	2.365	4865.100	0.000
L33	36.542 - 35.542 (33)	TP34.967x33.471x0.813	35.182	1568.200	0.022	2.351	4711.342	0.000
L34	35.542 - 31.25 (34)	TP35.961x34.967x0.8	35.587	1589.580	0.022	2.339	4916.358	0.000
L35	31.25 - 31 (35)	TP36.019x35.961x0.863	35.593	1713.550	0.021	2.339	5299.067	0.000
L36	31 - 26 (36)	TP37.177x36.019x0.85	36.081	1744.950	0.021	2.338	5575.875	0.000
L37	26 - 22 (37)	TP38.104x37.177x0.825	36.441	1737.990	0.021	2.338	5699.125	0.000
L38	22 - 21.75 (38)	TP38.162x38.104x0.938	36.447	1972.100	0.018	2.338	6457.325	0.000
L39	21.75 - 19.0833 (39)	TP38.779x38.162x0.925	36.712	1978.750	0.019	2.338	6588.800	0.000
L40	19.0833 - 18.8333 (40)	TP38.837x38.779x0.875	36.713	1877.120	0.020	2.338	6268.233	0.000
L41	18.8333 - 18 (41)	TP39.03x38.837x0.875	36.798	1886.670	0.020	2.338	6332.141	0.000
L42	18 - 17.75 (42)	TP39.088x39.03x1	36.809	2152.400	0.017	2.338	7211.308	0.000
L43	17.75 - 17 (43)	TP39.262x39.088x1	36.886	2162.220	0.017	2.338	7277.250	0.000
L44	17 - 16.75 (44)	TP39.32x39.262x1	36.900	2165.490	0.017	2.338	7299.291	0.000
L45	16.75 - 11.75 (45)	TP40.478x39.32x0.975	37.330	2176.550	0.017	2.338	7563.108	0.000
L46	11.75 - 6.75 (46)	TP41.636x40.478x0.95	37.732	2184.270	0.017	2.338	7728.491	0.000
L47	6.75 - 4 (47)	TP42.273x41.636x0.95	37.850	2201.370	0.017	2.338	7817.250	0.000
L48	4 - 3.75 (48)	TP42.331x42.273x0.975	37.958	2278.660	0.017	2.338	8266.158	0.000
L49	3.75 - 3 (49)	TP42.505x42.331x0.963	38.028	2259.580	0.017	2.338	8188.033	0.000
L50	3 - 2.75 (50)	TP42.563x42.505x1.075	38.039	2520.370	0.015	2.338	9172.167	0.000
L51	2.75 - 0 (51)	TP43.2x42.563x1.075	38.175	2539.720	0.015	2.338	9197.833	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	129 - 124 (1)	0.026	0.035	0.000	0.012	0.000	0.061 ✔	1.050	4.8.2 ✔
L2	124 - 119 (2)	0.012	0.184	0.000	0.043	0.000	0.197 ✔	1.050	4.8.2 ✔
L3	119 - 115.5 (3)	0.019	0.318	0.000	0.073	0.000	0.342 ✔	1.050	4.8.2 ✔
L4	115.5 - 115 (4)	0.019	0.318	0.000	0.066	0.000	0.341 ✔	1.050	4.8.2 ✔
L5	115 - 110 (5)	0.017	0.419	0.000	0.064	0.000	0.439 ✔	1.050	4.8.2 ✔
L6	110 - 105 (6)	0.017	0.570	0.000	0.064	0.004	0.592 ✔	1.050	4.8.2 ✔

Section No.	Elevation ft	Ratio $P_u/\phi P_n$	Ratio $M_{ux}/\phi M_{nx}$	Ratio $M_{uy}/\phi M_{ny}$	Ratio $V_u/\phi V_n$	Ratio $T_u/\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L7	105 - 100 (7)	0.022	0.747	0.000	0.078	0.004	0.776 ✔	1.050	4.8.2 ✔
L8	100 - 95 (8)	0.021	0.899	0.000	0.076	0.004	0.927 ✔	1.050	4.8.2 ✔
L9	95 - 94.5 (9)	0.021	0.913	0.000	0.076	0.004	0.941 ✔	1.050	4.8.2 ✔
L10	94.5 - 94.25 (10)	0.011	0.440	0.000	0.038	0.002	0.453 ✔	1.050	4.8.2 ✔
L11	94.25 - 92.0833 (11)	0.013	0.483	0.000	0.049	0.002	0.499 ✔	1.050	4.8.2 ✔
L12	92.0833 - 91.8333 (12)	0.009	0.330	0.000	0.033	0.001	0.340 ✔	1.050	4.8.2 ✔
L13	91.8333 - 86.8333 (13)	0.009	0.391	0.000	0.033	0.001	0.402 ✔	1.050	4.8.2 ✔
L14	86.8333 - 81.8333 (14)	0.009	0.449	0.000	0.033	0.001	0.460 ✔	1.050	4.8.2 ✔
L15	81.8333 - 73.125 (15)	0.010	0.487	0.000	0.034	0.001	0.498 ✔	1.050	4.8.2 ✔
L16	73.125 - 72.792 (16)	0.009	0.467	0.000	0.029	0.001	0.477 ✔	1.050	4.8.2 ✔
L17	72.792 - 71.5 (17)	0.009	0.481	0.000	0.029	0.001	0.491 ✔	1.050	4.8.2 ✔
L18	71.5 - 71.25 (18)	0.008	0.445	0.000	0.027	0.001	0.454 ✔	1.050	4.8.2 ✔
L19	71.25 - 68.3333 (19)	0.008	0.464	0.000	0.027	0.001	0.473 ✔	1.050	4.8.2 ✔
L20	68.3333 - 68.0833 (20)	0.008	0.457	0.000	0.027	0.001	0.466 ✔	1.050	4.8.2 ✔
L21	68.0833 - 67.9167 (21)	0.008	0.458	0.000	0.027	0.001	0.467 ✔	1.050	4.8.2 ✔
L22	67.9167 - 67.6667 (22)	0.006	0.323	0.000	0.018	0.001	0.329 ✔	1.050	4.8.2 ✔
L23	67.6667 - 67.5 (23)	0.006	0.324	0.000	0.018	0.001	0.330 ✔	1.050	4.8.2 ✔
L24	67.5 - 67.25 (24)	0.007	0.389	0.000	0.022	0.001	0.396 ✔	1.050	4.8.2 ✔
L25	67.25 - 66.3333 (25)	0.007	0.397	0.000	0.022	0.001	0.404 ✔	1.050	4.8.2 ✔
L26	66.3333 - 66.0833 (26)	0.006	0.341	0.000	0.019	0.001	0.348 ✔	1.050	4.8.2 ✔
L27	66.0833 - 61.0833 (27)	0.006	0.368	0.000	0.020	0.001	0.375 ✔	1.050	4.8.2 ✔
L28	61.0833 - 56.5 (28)	0.007	0.386	0.000	0.020	0.001	0.393 ✔	1.050	4.8.2 ✔
L29	56.5 - 56.25 (29)	0.007	0.387	0.000	0.020	0.001	0.394 ✔	1.050	4.8.2 ✔
L30	56.25 - 51.25 (30)	0.007	0.405	0.000	0.020	0.001	0.412 ✔	1.050	4.8.2 ✔
L31	51.25 - 46.25 (31)	0.007	0.422	0.000	0.020	0.001	0.430 ✔	1.050	4.8.2 ✔
L32	46.25 - 36.542 (32)	0.008	0.438	0.000	0.021	0.000	0.446 ✔	1.050	4.8.2 ✔

Section No.	Elevation ft	Ratio $P_u/\phi P_n$	Ratio $M_{ux}/\phi M_{nx}$	Ratio $M_{uy}/\phi M_{ny}$	Ratio $V_u/\phi V_n$	Ratio $T_u/\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L33	36.542 - 35.542 (33)	0.009	0.501	0.000	0.022	0.000	0.511 ✔	1.050	4.8.2 ✔
L34	35.542 - 31.25 (34)	0.009	0.512	0.000	0.022	0.000	0.522 ✔	1.050	4.8.2 ✔
L35	31.25 - 31 (35)	0.009	0.477	0.000	0.021	0.000	0.486 ✔	1.050	4.8.2 ✔
L36	31 - 26 (36)	0.009	0.487	0.000	0.021	0.000	0.496 ✔	1.050	4.8.2 ✔
L37	26 - 22 (37)	0.009	0.502	0.000	0.021	0.000	0.512 ✔	1.050	4.8.2 ✔
L38	22 - 21.75 (38)	0.008	0.446	0.000	0.018	0.000	0.455 ✔	1.050	4.8.2 ✔
L39	21.75 - 19.0833 (39)	0.008	0.452	0.000	0.019	0.000	0.461 ✔	1.050	4.8.2 ✔
L40	19.0833 - 18.8333 (40)	0.009	0.476	0.000	0.020	0.000	0.485 ✔	1.050	4.8.2 ✔
L41	18.8333 - 18 (41)	0.009	0.476	0.000	0.020	0.000	0.486 ✔	1.050	4.8.2 ✔
L42	18 - 17.75 (42)	0.008	0.421	0.000	0.017	0.000	0.429 ✔	1.050	4.8.2 ✔
L43	17.75 - 17 (43)	0.008	0.421	0.000	0.017	0.000	0.429 ✔	1.050	4.8.2 ✔
L44	17 - 16.75 (44)	0.008	0.421	0.000	0.017	0.000	0.429 ✔	1.050	4.8.2 ✔
L45	16.75 - 11.75 (45)	0.008	0.431	0.000	0.017	0.000	0.440 ✔	1.050	4.8.2 ✔
L46	11.75 - 6.75 (46)	0.009	0.442	0.000	0.017	0.000	0.451 ✔	1.050	4.8.2 ✔
L47	6.75 - 4 (47)	0.009	0.442	0.000	0.017	0.000	0.451 ✔	1.050	4.8.2 ✔
L48	4 - 3.75 (48)	0.008	0.431	0.000	0.017	0.000	0.440 ✔	1.050	4.8.2 ✔
L49	3.75 - 3 (49)	0.009	0.436	0.000	0.017	0.000	0.445 ✔	1.050	4.8.2 ✔
L50	3 - 2.75 (50)	0.008	0.394	0.000	0.015	0.000	0.402 ✔	1.050	4.8.2 ✔
L51	2.75 - 0 (51)	0.008	0.394	0.000	0.015	0.000	0.402 ✔	1.050	4.8.2 ✔

Section Capacity Table

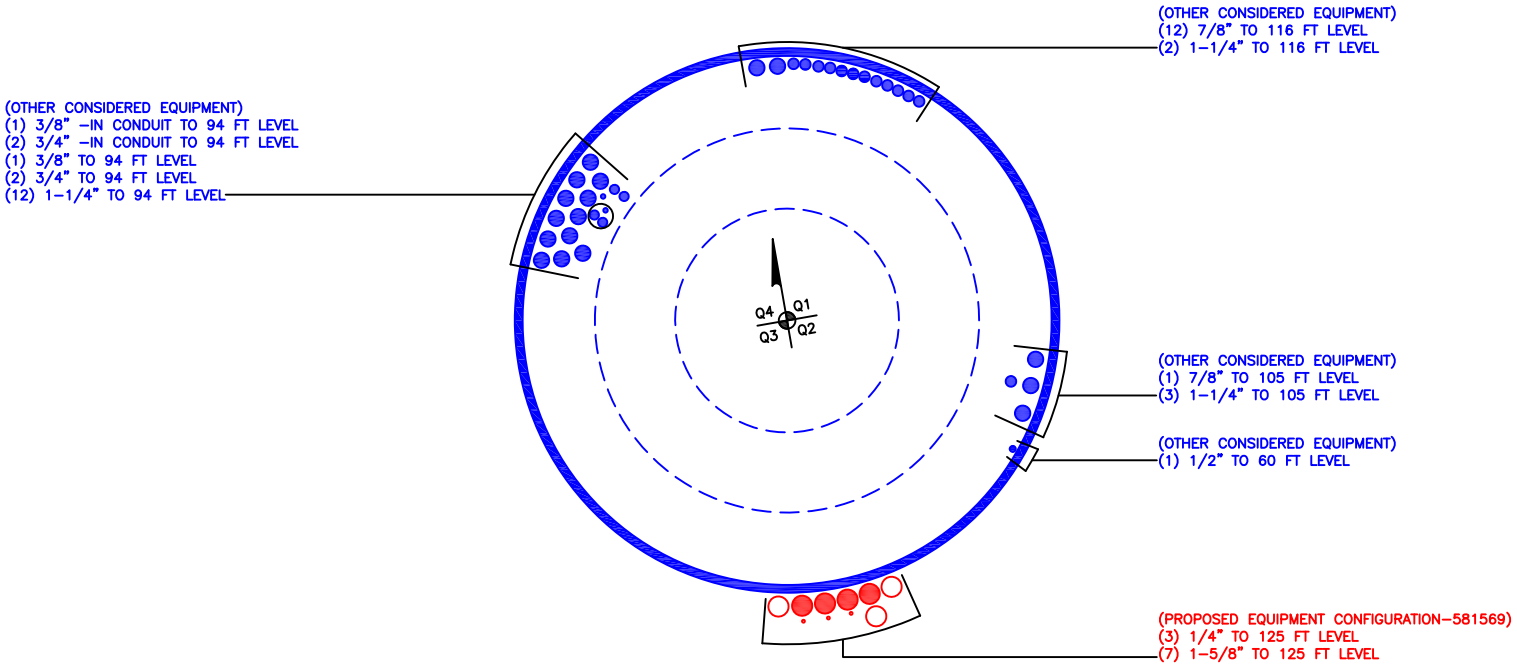
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	129 - 124	Pole	TP16x16x0.375	1	-14.830	608.837	**	**
L2	124 - 119	Pole	TP16x16x0.375	2	-6.770	608.837	**	**
L3	119 - 115.5	Pole	TP16x16x0.375	3	-10.784	608.837	**	**
L4	115.5 - 115	Pole	TP17.81x16x0.375	4	-10.790	608.837	**	**
L5	115 - 110	Pole	TP18.943x17.81x0.219	5	-12.783	810.134	**	**
L6	110 - 105	Pole	TP20.076x18.943x0.219	6	-13.722	859.160	**	**
L7	105 - 100	Pole	TP21.209x20.076x0.219	7	-18.950	908.187	**	**
L8	100 - 95	Pole	TP22.343x21.209x0.219	8	-19.586	957.213	**	**
L9	95 - 94.5	Pole	TP22.456x22.343x0.219	9	-19.663	962.116	**	**

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L10	94.5 - 94.25	Pole	TP22.513x22.456x0.438	10	-19.713	1910.202	**	**
L11	94.25 - 92.0833	Pole	TP23.004x22.513x0.431	11	-24.293	1925.332	**	**
L12	92.0833 - 91.8333	Pole	TP23.06x23.004x0.656	12	-24.368	2908.006	**	**
L13	91.8333 - 86.8333	Pole	TP24.193x23.06x0.631	13	-25.548	2941.816	**	**
L14	86.8333 - 81.8333	Pole	TP25.326x24.193x0.606	14	-26.774	2964.181	**	**
L15	81.8333 - 73.125	Pole	TP27.3x25.326x0.594	15	-27.792	3012.093	**	**
L16	73.125 - 72.792	Pole	TP26.963x25.805x0.688	16	-30.039	3572.940	**	**
L17	72.792 - 71.5	Pole	TP27.262x26.963x0.675	17	-30.399	3549.598	**	**
L18	71.5 - 71.25	Pole	TP27.32x27.262x0.738	18	-30.492	3877.597	**	**
L19	71.25 - 68.3333	Pole	TP27.996x27.32x0.725	19	-31.375	3910.546	**	**
L20	68.3333 - 68.0833	Pole	TP28.054x27.996x0.738	20	-31.479	3984.592	**	**
L21	68.0833 - 67.9167	Pole	TP28.092x28.054x0.738	21	-31.538	3990.231	**	**
L22	67.9167 - 67.6667	Pole	TP28.15x28.092x1.088	22	-31.638	5821.063	**	**
L23	67.6667 - 67.5	Pole	TP28.189x28.15x1.088	23	-31.706	5829.369	**	**
L24	67.5 - 67.25	Pole	TP28.247x28.189x0.888	24	-31.793	4802.574	**	**
L25	67.25 - 66.3333	Pole	TP28.459x28.247x0.875	25	-32.108	4773.846	**	**
L26	66.3333 - 66.0833	Pole	TP28.517x28.459x1.038	26	-32.227	5638.951	**	**
L27	66.0833 - 61.0833	Pole	TP29.675x28.517x0.988	27	-34.401	5603.178	**	**
L28	61.0833 - 56.5	Pole	TP30.737x29.675x0.963	28	-36.495	5668.204	**	**
L29	56.5 - 56.25	Pole	TP30.795x30.737x0.963	29	-36.618	5679.219	**	**
L30	56.25 - 51.25	Pole	TP31.953x30.795x0.938	30	-38.855	5751.112	**	**
L31	51.25 - 46.25	Pole	TP33.111x31.953x0.913	31	-41.133	5811.288	**	**
L32	46.25 - 36.542	Pole	TP35.36x33.111x0.888	32	-43.096	5829.274	**	**
L33	36.542 - 35.542	Pole	TP34.967x33.471x0.813	33	-47.956	5488.686	**	**
L34	35.542 - 31.25	Pole	TP35.961x34.967x0.8	34	-49.809	5563.540	**	**
L35	31.25 - 31	Pole	TP36.019x35.961x0.863	35	-49.941	5997.411	**	**
L36	31 - 26	Pole	TP37.177x36.019x0.85	36	-52.323	6107.325	**	**
L37	26 - 22	Pole	TP38.104x37.177x0.825	37	-54.265	6082.975	**	**
L38	22 - 21.75	Pole	TP38.162x38.104x0.938	38	-54.406	6902.343	**	**
L39	21.75 - 19.0833	Pole	TP38.779x38.162x0.925	39	-55.780	6925.621	**	**
L40	19.0833 - 18.8333	Pole	TP38.837x38.779x0.875	40	-55.917	6569.934	**	**
L41	18.8333 - 18	Pole	TP39.03x38.837x0.875	41	-56.320	6603.345	**	**
L42	18 - 17.75	Pole	TP39.088x39.03x1	42	-56.469	7533.414	**	**
L43	17.75 - 17	Pole	TP39.262x39.088x1	43	-56.886	7567.770	**	**
L44	17 - 16.75	Pole	TP39.32x39.262x1	44	-57.033	7579.225	**	**
L45	16.75 - 11.75	Pole	TP40.478x39.32x0.975	45	-59.848	7617.928	**	**
L46	11.75 - 6.75	Pole	TP41.636x40.478x0.95	46	-62.150	7601.401	**	**
L47	6.75 - 4	Pole	TP42.273x41.636x0.95	47	-62.731	7644.934	**	**
L48	4 - 3.75	Pole	TP42.331x42.273x0.975	48	-64.306	7964.145	**	**
L49	3.75 - 3	Pole	TP42.505x42.331x0.963	49	-64.455	7875.441	**	**
L50	3 - 2.75	Pole	TP42.563x42.505x1.075	50	-64.879	8808.964	**	**
L51	2.75 - 0	Pole	TP43.2x42.563x1.075	51	-65.038	8821.281	**	**
							Summary	
						Pole (L9)	**	**
						RATING =	**	**

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

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 806395

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 806365

Work Order: 2019284

Copyright © 2019 Crown Castle

Pole Geometry

	Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1	129	13.5	0	0	16	16	0.375		A53-B-35
2	115.5	0.5	0	0	16.00	17.81	0.375		A53-B-35
3	115	41.875	4.667	12	17.81	27.3	0.21875	Auto	A572-65
4	77.792	41.25	5.458	12	25.80	35.36	0.3125	Auto	A572-65
5	42	42	0	12	33.47	43.2	0.375	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	3	18	plate	CCI-AFP-060100	3		E1				E1				E1		
2	41.5	56.5	plate	CCI-AFP-060100	3		E1				E1				E1		
3	0	3	plate	TS-6x1.25	3		c				c				c		
4	4	17	plate	CCI-AFP-065125	2			E2								E2	
5	4	22	plate	CCI-AFP-065125	1								E2				
6	19.08333333	41	plate	CCI-AFP-065125	1							E2					
7	17	40.58333333	plate	CCI-AFP-065125	2			E2								E2	
8	56.5	71.5	plate	CCI-AFP-060100	3				E2				E2				E2
9	71.5	92.08333333	plate	CCI-AFP-045100	3				E2				E2				E2
10	0	4	plate	ARB-6x1.25	3			c				c				c	
11	0	31.25	plate	CCI-WSFP-085125	3					E3				E3			E3
12	31.25	66.33333333	plate	CCI-SFP-085125	2					E3				E3			
13	40.58333333	67.91666667	plate	CCI-SFP-065125	2			E3								E3	
14	67.5	94.5	plate	CCI-SFP-045100	3		E3				E3				E3		
15	41	68.33333333	plate	CCI-SFP-065125	1							E3					
16																	

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Type	Bottom Termination Length (in)	Top Termination Type	Top Termination Length (in)	Lu (in)	Net Area (in2)	Bolt Hole Size (in)	Reinforcement Material
1	6	1	6	0.5	PC 8.8 - M20 (100)	30	PC 8.8 - M20 (100)	30.000	16.000	4.750	1.1875	A572-65
2	6	1	6	0.5	PC 8.8 - M20 (100)	30	PC 8.8 - M20 (100)	30.000	16.000	4.750	1.1875	A572-65
3	1.25	6	7.5	3.75	Welded	n/a	Welded	n/a	0.750	7.500	0.0000	A572-65
4	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	42	PC 8.8 - M20 (100)	42.000	19.000	6.563	1.1875	A572-65
5	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	42	PC 8.8 - M20 (100)	42.000	19.000	6.563	1.1875	A572-65
6	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	42	PC 8.8 - M20 (100)	42.000	19.000	6.563	1.1875	A572-65
7	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	42	PC 8.8 - M20 (100)	42.000	19.000	6.563	1.1875	A572-65
8	6	1	6	0.5	PC 8.8 - M20 (100)	30	PC 8.8 - M20 (100)	30.000	16.000	4.750	1.1875	A572-65
9	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	20.000	3.250	1.1875	A572-65
10	1.25	6	7.5	3.75	Welded	n/a	Welded	n/a	0.750	7.500	0.0000	A572-65
11	8.5	1.25	10.625	0.625	Welded	n/a	PC 8.8 - M20 (100)	45.000	17.000	9.063	1.1875	A572-65
12	8.5	1.25	10.625	0.625	PC 8.8 - M20 (100)	45	PC 8.8 - M20 (100)	45.000	17.000	9.063	1.1875	A572-65
13	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	33	PC 8.8 - M20 (100)	33.000	19.000	6.563	1.1875	A572-65
14	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	20.000	3.250	1.1875	A572-65
15	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	33	PC 8.8 - M20 (100)	33.000	19.000	6.563	1.1875	A572-65

Connection Details for Custom Reinforcements

Reinforcement	End	# Bolts	N or X	Bolt Spacing (in)	Edge Dist (in)	Weld Grade (ksi)	Transverse (Horiz.) Weld Type	Horiz. Weld Length (in)	Horiz. Groove Depth (in)	Horiz. Groove Angle (deg)	Horiz. Fillet Size (in)	Vertical Weld Length (in)	Vertical Fillet Size (in)	Rev H Connection Capacity (kip)
TS-6x1.25	Top	-	-	-	-	70	None	-	-	-	-	65.25	0.375	-
	Bottom	-	-	-	-	70	CJP Groove	10.5	0.625	45	0.625	-	-	-
ARB-6x1.25	Top	-	-	-	-	70	None	-	-	-	-	83.25	0.375	-
	Bottom	-	-	-	-	70	CJP Groove	10.5	0.625	45	0.625	-	-	-

TNX Geometry Input

Increment (ft): 5 Export to TNX

	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	129 - 124	5		0	16.000	16.000	0.375	A53-B-35	1.000
2	124 - 119	5		0	16.000	16.000	0.375	A53-B-35	1.000
3	119 - 115.5	3.5	0	0	16.000	16.000	0.375	A53-B-35	1.000
4	115.5 - 115	0.5	0	0	16.000	17.810	0.375	A53-B-35	1.000
5	115 - 110	5		12	17.810	18.943	0.21875	A572-65	1.000
6	110 - 105	5		12	18.943	20.076	0.21875	A572-65	1.000
7	105 - 100	5		12	20.076	21.209	0.21875	A572-65	1.000
8	100 - 95	5		12	21.209	22.343	0.21875	A572-65	1.000
9	95 - 94.5	0.5		12	22.343	22.456	0.21875	A572-65	1.000
10	94.5 - 94.25	0.25		12	22.456	22.513	0.4375	A572-65	0.940
11	94.25 - 92.08333	2.166666667		12	22.513	23.004	0.43125	A572-65	0.943
12	92.08333 - 91.83333	0.25		12	23.004	23.060	0.65625	A572-65	0.911
13	91.83333 - 86.83333	5		12	23.060	24.193	0.63125	A572-65	0.917
14	86.83333 - 81.83333	5		12	24.193	25.326	0.60625	A572-65	0.927
15	81.83333 - 77.792	8.708333333	4.667	12	25.326	27.300	0.59375	A572-65	0.925
16	77.792 - 72.792	5		12	25.805	26.963	0.6875	A572-65	0.926
17	72.792 - 71.5	1.292		12	26.963	27.262	0.675	A572-65	0.937
18	71.5 - 71.25	0.25		12	27.262	27.320	0.7375	A572-65	0.930
19	71.25 - 68.33333	2.916666667		12	27.320	27.996	0.725	A572-65	0.933
20	68.33333 - 68.08333	0.25		12	27.996	28.054	0.7375	A572-65	1.042
21	68.08333 - 67.91667	0.166666667		12	28.054	28.092	0.7375	A572-65	1.041
22	67.91667 - 67.66667	0.25		12	28.092	28.150	1.0875	A572-65	0.886
23	67.66667 - 67.5	0.166666667		12	28.150	28.189	1.0875	A572-65	0.885
24	67.5 - 67.25	0.25		12	28.189	28.247	0.8875	A572-65	0.902
25	67.25 - 66.33333	0.916666667		12	28.247	28.459	0.875	A572-65	0.910
26	66.33333 - 66.08333	0.25		12	28.459	28.517	1.0375	A572-65	1.003
27	66.08333 - 61.08333	5		12	28.517	29.675	0.9875	A572-65	1.022
28	61.08333 - 56.5	4.583333333		12	29.675	30.737	0.9625	A572-65	1.022
29	56.5 - 56.25	0.25		12	30.737	30.795	0.9625	A572-65	1.021
30	56.25 - 51.25	5		12	30.795	31.953	0.9375	A572-65	1.021
31	51.25 - 46.25	5		12	31.953	33.111	0.9125	A572-65	1.022
32	46.25 - 42	9.708	5.458	12	33.111	35.360	0.8875	A572-65	1.030
33	42 - 35.542	6.458		12	33.471	34.967	0.8125	A572-65	0.979
34	35.542 - 31.25	4.292		12	34.967	35.961	0.8	A572-65	0.979
35	31.25 - 31	0.25		12	35.961	36.019	0.8625	A572-65	1.018
36	31 - 26	5		12	36.019	37.177	0.85	A572-65	1.013
37	26 - 22	4		12	37.177	38.104	0.825	A572-65	1.029
38	22 - 21.75	0.25		12	38.104	38.162	0.9375	A572-65	0.980
39	21.75 - 19.08333	2.666666667		12	38.162	38.779	0.925	A572-65	0.983
40	19.08333 - 18.83333	0.25		12	38.779	38.837	0.875	A572-65	0.961
41	18.83333 - 18	0.833333333		12	38.837	39.030	0.875	A572-65	0.958
42	18 - 17.75	0.25		12	39.030	39.088	1	A572-65	0.987
43	17.75 - 17	0.75		12	39.088	39.262	1	A572-65	0.985
44	17 - 16.75	0.25		12	39.262	39.320	1	A572-65	0.984
45	16.75 - 11.75	5		12	39.320	40.478	0.975	A572-65	0.990
46	11.75 - 6.75	5		12	40.478	41.636	0.95	A572-65	0.998
47	6.75 - 4	2.75		12	41.636	42.273	0.95	A572-65	0.988
48	4 - 3.75	0.25		12	42.273	42.331	0.975	A572-65	0.948
49	3.75 - 3	0.75		12	42.331	42.505	0.9625	A572-65	0.958
50	3 - 2.75	0.25		12	42.505	42.563	1.075	A572-65	0.891
51	2.75 - 0	2.75		12	42.563	43.200	1.075	A572-65	0.883

TNX Section Forces

Increment (ft): 5		TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	129 - 124	14.83	8.49	2.05
2	124 - 119	6.77	44.16	7.56
3	119 - 115.5	10.78	76.51	12.72
4	115.5 - 115	10.84	82.89	12.77
5	115 - 110	12.78	152.73	14.74
6	110 - 105	13.72	229.76	15.80
7	105 - 100	18.95	330.06	20.32
8	100 - 95	19.59	432.78	20.80
9	95 - 94.5	19.66	443.18	20.84
10	94.5 - 94.25	19.71	448.39	20.86
11	94.25 - 92.08333	24.29	507.65	27.02
12	92.08333 - 91.83333	24.37	514.40	27.04
13	91.83333 - 86.83333	25.55	651.23	27.71
14	86.83333 - 81.83333	26.77	791.33	28.36
15	81.83333 - 77.792	27.79	906.94	28.88
16	77.792 - 72.792	30.04	1053.26	29.66
17	72.792 - 71.5	30.40	1091.68	29.84
18	71.5 - 71.25	30.49	1099.14	29.86
19	71.25 - 68.33333	31.37	1186.80	30.28
20	68.33333 - 68.08333	31.48	1194.37	30.29
21	68.08333 - 67.91667	31.54	1199.42	30.32
22	67.91667 - 67.66667	31.64	1207.00	30.35
23	67.66667 - 67.5	31.71	1212.06	30.38
24	67.5 - 67.25	31.79	1219.66	30.42
25	67.25 - 66.33333	32.11	1247.60	30.56
26	66.33333 - 66.08333	32.23	1255.24	30.59
27	66.08333 - 61.08333	34.40	1409.98	31.33
28	61.08333 - 56.5	36.50	1555.68	32.09
29	56.5 - 56.25	36.62	1563.71	32.11
30	56.25 - 51.25	38.86	1726.06	32.85
31	51.25 - 46.25	41.13	1892.01	33.56
32	46.25 - 42	43.10	2035.82	34.15
33	42 - 35.542	47.96	2259.67	35.18
34	35.542 - 31.25	49.81	2411.44	35.59
35	31.25 - 31	49.94	2420.34	35.59
36	31 - 26	52.32	2599.46	36.08
37	26 - 22	54.26	2744.41	36.44
38	22 - 21.75	54.41	2753.52	36.45
39	21.75 - 19.08333	55.78	2851.02	36.71
40	19.08333 - 18.83333	55.92	2860.20	36.71
41	18.83333 - 18	56.32	2890.82	36.80
42	18 - 17.75	56.47	2900.02	36.81
43	17.75 - 17	56.89	2927.65	36.89
44	17 - 16.75	57.03	2936.87	36.90
45	16.75 - 11.75	59.85	3122.38	37.33
46	11.75 - 6.75	62.70	3309.93	37.73
47	6.75 - 4	64.29	3413.94	37.96
48	4 - 3.75	64.44	3423.43	37.96
49	3.75 - 3	64.87	3451.92	38.03
50	3 - 2.75	65.02	3461.42	38.04
51	2.75 - 0	66.63	3566.34	38.29

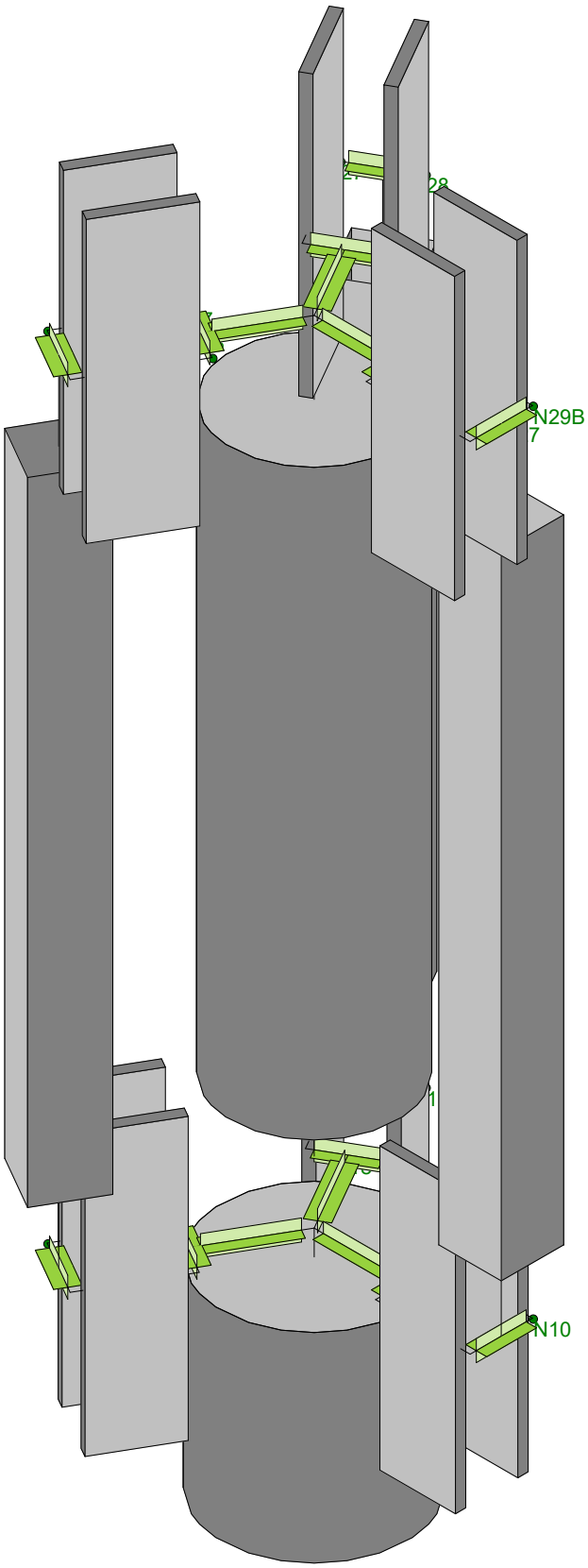
Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
129 - 124	Pole	TP16x16x0.375	Pole	5.8%	Pass
124 - 119	Pole	TP16x16x0.375	Pole	18.8%	Pass
119 - 115.5	Pole	TP16x16x0.375	Pole	32.6%	Pass
115.5 - 115	Pole	TP17.81x16x0.375	Pole	28.4%	Pass
115 - 110	Pole	TP18.943x17.81x0.2188	Pole	41.7%	Pass
110 - 105	Pole	TP20.076x18.943x0.2188	Pole	56.2%	Pass
105 - 100	Pole	TP21.209x20.076x0.2188	Pole	73.6%	Pass
100 - 95	Pole	TP22.343x21.209x0.2188	Pole	88.0%	Pass
95 - 94.5	Pole	TP22.456x22.343x0.2188	Pole	89.3%	Pass
94.5 - 94.25	Pole + Reinf.	TP22.513x22.456x0.4375	Reinf. 14 Tension Rupture	72.9%	Pass
94.25 - 92.08	Pole + Reinf.	TP23.004x22.513x0.4313	Reinf. 14 Tension Rupture	80.1%	Pass
92.08 - 91.83	Pole + Reinf.	TP23.06x23.004x0.6563	Reinf. 9 Tension Rupture	54.7%	Pass
91.83 - 86.83	Pole + Reinf.	TP24.193x23.06x0.6313	Reinf. 9 Tension Rupture	64.7%	Pass
86.83 - 81.83	Pole + Reinf.	TP25.326x24.193x0.6063	Reinf. 9 Tension Rupture	73.7%	Pass
81.83 - 77.79	Pole + Reinf.	TP27.3x25.326x0.5938	Reinf. 9 Tension Rupture	80.4%	Pass
77.79 - 72.79	Pole + Reinf.	TP26.963x25.805x0.6875	Reinf. 9 Tension Rupture	77.3%	Pass
72.79 - 71.5	Pole + Reinf.	TP27.262x26.963x0.675	Reinf. 9 Tension Rupture	78.8%	Pass
71.5 - 71.25	Pole + Reinf.	TP27.32x27.262x0.7375	Reinf. 14 Tension Rupture	72.6%	Pass
71.25 - 68.33	Pole + Reinf.	TP27.996x27.32x0.725	Reinf. 14 Tension Rupture	75.7%	Pass
68.33 - 68.08	Pole + Reinf.	TP28.054x27.996x0.7375	Reinf. 14 Tension Rupture	75.8%	Pass
68.08 - 67.92	Pole + Reinf.	TP28.092x28.054x0.7375	Reinf. 14 Tension Rupture	76.0%	Pass
67.92 - 67.67	Pole + Reinf.	TP28.15x28.092x1.0875	Reinf. 14 Tension Rupture	53.2%	Pass
67.67 - 67.5	Pole + Reinf.	TP28.189x28.15x1.0875	Reinf. 14 Tension Rupture	53.3%	Pass
67.5 - 67.25	Pole + Reinf.	TP28.247x28.189x0.8875	Reinf. 8 Tension Rupture	58.4%	Pass
67.25 - 66.33	Pole + Reinf.	TP28.459x28.247x0.875	Reinf. 8 Tension Rupture	59.2%	Pass
66.33 - 66.08	Pole + Reinf.	TP28.517x28.459x1.0375	Reinf. 8 Tension Rupture	55.3%	Pass
66.08 - 61.08	Pole + Reinf.	TP29.675x28.517x0.9875	Reinf. 8 Tension Rupture	58.9%	Pass
61.08 - 56.5	Pole + Reinf.	TP30.737x29.675x0.9625	Reinf. 8 Tension Rupture	62.0%	Pass
56.5 - 56.25	Pole + Reinf.	TP30.795x30.737x0.9625	Reinf. 2 Tension Rupture	62.2%	Pass
56.25 - 51.25	Pole + Reinf.	TP31.953x30.795x0.9375	Reinf. 2 Tension Rupture	65.3%	Pass
51.25 - 46.25	Pole + Reinf.	TP33.111x31.953x0.9125	Reinf. 2 Tension Rupture	68.2%	Pass
46.25 - 42	Pole + Reinf.	TP35.36x33.111x0.8875	Reinf. 2 Tension Rupture	70.5%	Pass
42 - 35.54	Pole + Reinf.	TP34.967x33.471x0.8125	Reinf. 7 Tension Rupture	75.2%	Pass
35.54 - 31.25	Pole + Reinf.	TP35.961x34.967x0.8	Reinf. 7 Tension Rupture	76.9%	Pass
31.25 - 31	Pole + Reinf.	TP36.019x35.961x0.8625	Reinf. 7 Tension Rupture	72.3%	Pass
31 - 26	Pole + Reinf.	TP37.177x36.019x0.85	Reinf. 7 Tension Rupture	74.1%	Pass
26 - 22	Pole + Reinf.	TP38.104x37.177x0.825	Reinf. 7 Tension Rupture	75.5%	Pass
22 - 21.75	Pole + Reinf.	TP38.162x38.104x0.9375	Reinf. 7 Tension Rupture	71.5%	Pass
21.75 - 19.08	Pole + Reinf.	TP38.779x38.162x0.925	Reinf. 7 Tension Rupture	72.3%	Pass
19.08 - 18.83	Pole + Reinf.	TP38.837x38.779x0.875	Reinf. 7 Tension Rupture	72.7%	Pass
18.83 - 18	Pole + Reinf.	TP39.03x38.837x0.875	Reinf. 7 Tension Rupture	73.0%	Pass
18 - 17.75	Pole + Reinf.	TP39.088x39.03x1	Reinf. 1 Tension Rupture	64.8%	Pass
17.75 - 17	Pole + Reinf.	TP39.262x39.088x1	Reinf. 1 Tension Rupture	65.0%	Pass
17 - 16.75	Pole + Reinf.	TP39.32x39.262x1	Reinf. 1 Tension Rupture	65.1%	Pass
16.75 - 11.75	Pole + Reinf.	TP40.478x39.32x0.975	Reinf. 1 Tension Rupture	66.4%	Pass
11.75 - 6.75	Pole + Reinf.	TP41.636x40.478x0.95	Reinf. 1 Tension Rupture	67.7%	Pass
6.75 - 4	Pole + Reinf.	TP42.273x41.636x0.95	Reinf. 1 Tension Rupture	68.3%	Pass
4 - 3.75	Pole + Reinf.	TP42.331x42.273x0.975	Reinf. 1 Tension Rupture	66.2%	Pass
3.75 - 3	Pole + Reinf.	TP42.505x42.331x0.9625	Reinf. 1 Tension Rupture	66.4%	Pass
3 - 2.75	Pole + Reinf.	TP42.563x42.505x1.075	Reinf. 3 Compression	56.9%	Pass
2.75 - 0	Pole + Reinf.	TP43.2x42.563x1.075	Reinf. 3 Compression	57.5%	Pass
				Summary	
			Pole	89.3%	Pass
			Reinforcement	80.4%	Pass
			Overall	89.3%	Pass

Additional Calculations

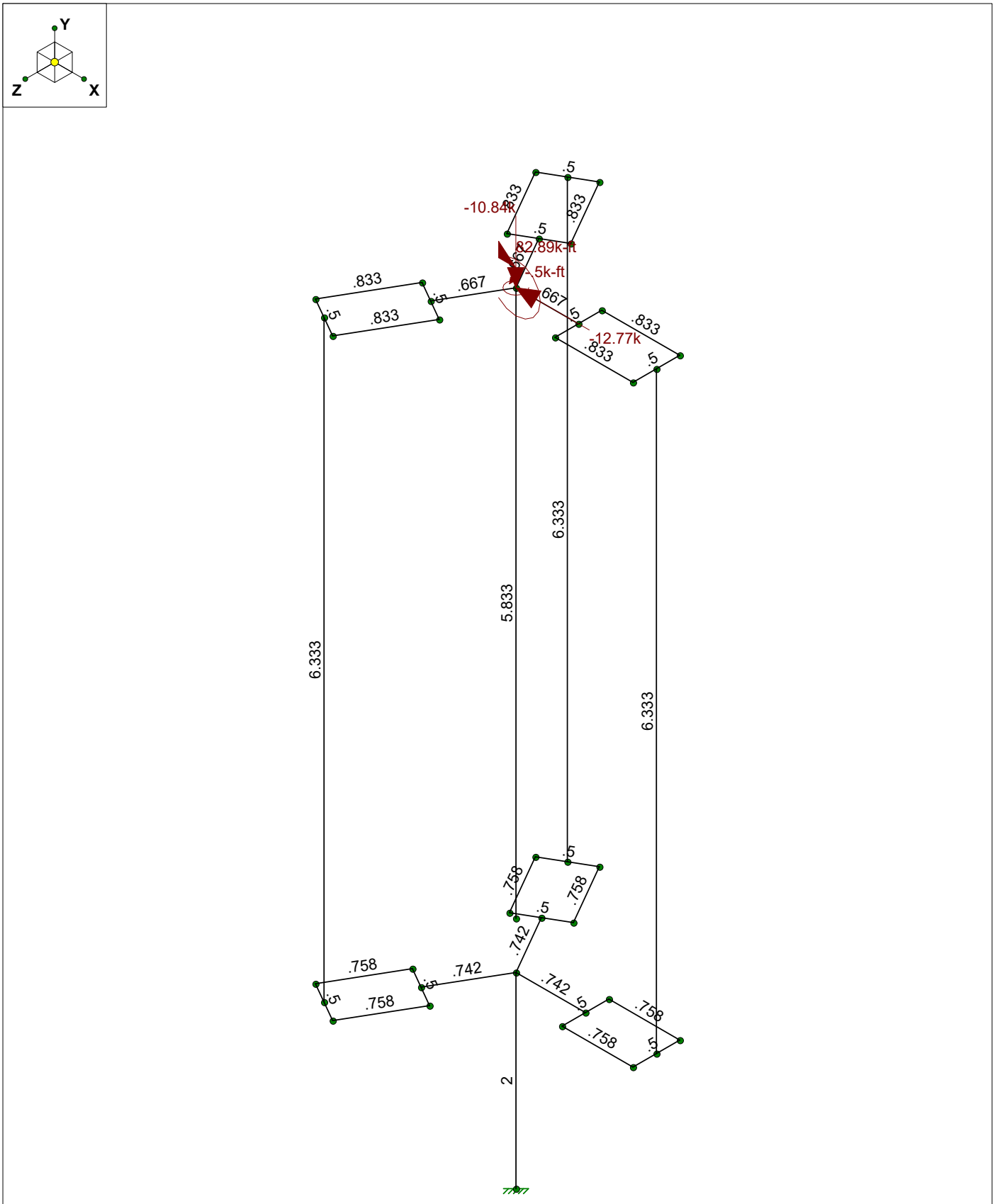
Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity*														
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
129 - 124	562	n/a	562	18.41	n/a	18.41	5.8%															
124 - 119	562	n/a	562	18.41	n/a	18.41	18.8%															
119 - 115.5	562	n/a	562	18.41	n/a	18.41	32.6%															
115.5 - 115	781	n/a	781	20.54	n/a	20.54	28.4%															
115 - 110	591	n/a	591	13.17	n/a	13.17	41.7%															
110 - 105	705	n/a	705	13.97	n/a	13.97	56.2%															
105 - 100	833	n/a	833	14.76	n/a	14.76	73.6%															
100 - 95	975	n/a	975	15.56	n/a	15.56	88.0%															
95 - 94.5	990	n/a	990	15.64	n/a	15.64	89.3%															
94.5 - 94.25	998	945	1942	15.68	13.50	29.18	44.7%														72.9%	
94.25 - 92.08	1065	984	2049	16.03	13.50	29.53	49.6%														80.1%	
92.08 - 91.83	1073	1978	3051	16.07	27.00	43.07	33.9%									54.7%					54.7%	
91.83 - 86.83	1241	2166	3407	16.86	27.00	43.86	40.9%									64.7%					64.7%	
86.83 - 81.83	1425	2363	3788	17.66	27.00	44.66	47.7%									73.7%					73.7%	
81.83 - 77.79	1587	2529	4115	18.30	27.00	45.30	52.9%									80.4%					80.4%	
77.79 - 72.79	2434	2663	5097	26.78	27.00	53.78	44.8%									77.3%					77.3%	
72.79 - 71.5	2517	2720	5237	27.08	27.00	54.08	45.8%									78.8%					78.8%	
71.5 - 71.25	2534	3198	5731	27.14	31.50	58.64	42.3%								66.3%						72.6%	
71.25 - 68.33	2729	3350	6079	27.82	31.50	59.32	44.4%								69.1%						75.7%	
68.33 - 68.08	2746	3403	6149	27.87	39.63	67.50	45.5%								69.2%						75.8%	48.4%
68.08 - 67.92	2758	3412	6170	27.91	39.63	67.54	45.6%								69.4%						76.0%	48.5%
67.92 - 67.67	2775	6064	8838	27.97	55.88	83.85	31.3%								48.6%					48.1%	53.2%	48.1%
67.67 - 67.5	2786	6079	8866	28.01	55.88	83.89	31.4%								48.7%					48.2%	53.3%	48.2%
67.5 - 67.25	2803	4648	7451	28.07	42.38	70.44	37.6%								58.4%					57.8%		57.8%
67.25 - 66.33	2868	4714	7582	28.28	42.38	70.66	38.2%								59.2%					58.5%		58.5%
66.33 - 66.08	2960	5960	8919	28.34	63.63	91.97	37.3%								55.3%				39.7%	47.5%		45.9%
66.08 - 61.08	3337	6423	9760	29.50	63.63	93.13	40.3%								58.9%				40.9%	50.6%		49.0%
61.08 - 56.5	3710	6864	10573	30.57	63.63	94.20	43.0%								62.0%				43.1%	53.3%		51.6%
56.5 - 56.25	3731	6888	10619	30.63	63.63	94.25	43.2%		62.2%										43.3%	53.4%		51.8%
56.25 - 51.25	4170	7387	11557	31.79	63.63	95.42	46.0%		65.3%										45.6%	56.2%		54.5%
51.25 - 46.25	4642	7903	12545	32.96	63.63	96.58	48.8%		68.2%										47.8%	58.7%		57.0%
46.25 - 42	5070	8357	13427	33.95	63.63	97.57	51.1%		70.5%										49.5%	60.7%		59.0%
42 - 35.54	6507	6926	13433	41.71	45.63	87.33	54.3%						72.6%	75.2%					59.8%			
35.54 - 31.25	7081	7308	14389	42.91	45.63	88.53	56.1%						74.3%	76.9%					63.8%			
31.25 - 31	7027	8395	15422	42.98	56.25	99.23	50.7%						67.0%	72.3%				64.5%				
31 - 26	7733	8915	16648	44.37	56.25	100.62	52.6%						68.8%	74.1%				63.7%				
26 - 22	8331	9343	17674	45.49	56.25	101.74	54.1%						70.1%	75.5%				64.9%				
22 - 21.75	8557	11571	20128	45.56	64.38	109.94	50.2%					57.9%	58.5%	71.5%				60.3%				
21.75 - 19.08	8980	11934	20914	46.31	64.38	110.68	51.1%					58.6%	59.3%	72.3%				61.1%				
19.08 - 18.83	8878	11040	19919	46.38	56.25	102.63	52.5%					70.5%		72.7%				66.1%				
18.83 - 18	9012	11146	20158	46.61	56.25	102.86	52.8%					70.8%		73.0%				66.4%				
18 - 17.75	8987	13801	22788	46.68	74.25	120.93	44.3%	64.8%				59.6%		61.3%				56.1%				
17.75 - 17	9108	13919	23027	46.89	74.25	121.14	44.6%	65.0%				59.8%		61.5%				56.3%				
17 - 16.75	9149	13958	23107	46.96	74.25	121.21	44.6%	65.1%			61.6%	59.9%						56.4%				
16.75 - 11.75	9989	14758	24746	48.36	74.25	122.61	46.2%	66.4%			62.9%	61.2%						57.6%				
11.75 - 6.75	10878	15580	26458	49.75	74.25	124.00	47.6%	67.7%			64.1%	62.4%						58.7%				
6.75 - 4	11389	16041	27431	50.52	74.25	124.77	48.4%	68.3%			64.7%	63.0%						59.3%				
4 - 3.75	11423	16788	28211	50.59	72.38	122.96	46.9%	66.2%									59.9%	55.7%				
3.75 - 3	11565	16914	28479	50.80	72.38	123.17	47.2%	66.4%									60.0%	55.9%				
3 - 2.75	11619	20300	31919	50.87	76.88	127.74	43.7%			56.9%							54.2%	50.5%				
2.75 - 0	12153	20836	32989	51.64	76.88	128.51	44.5%			57.5%							54.7%	51.1%				

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



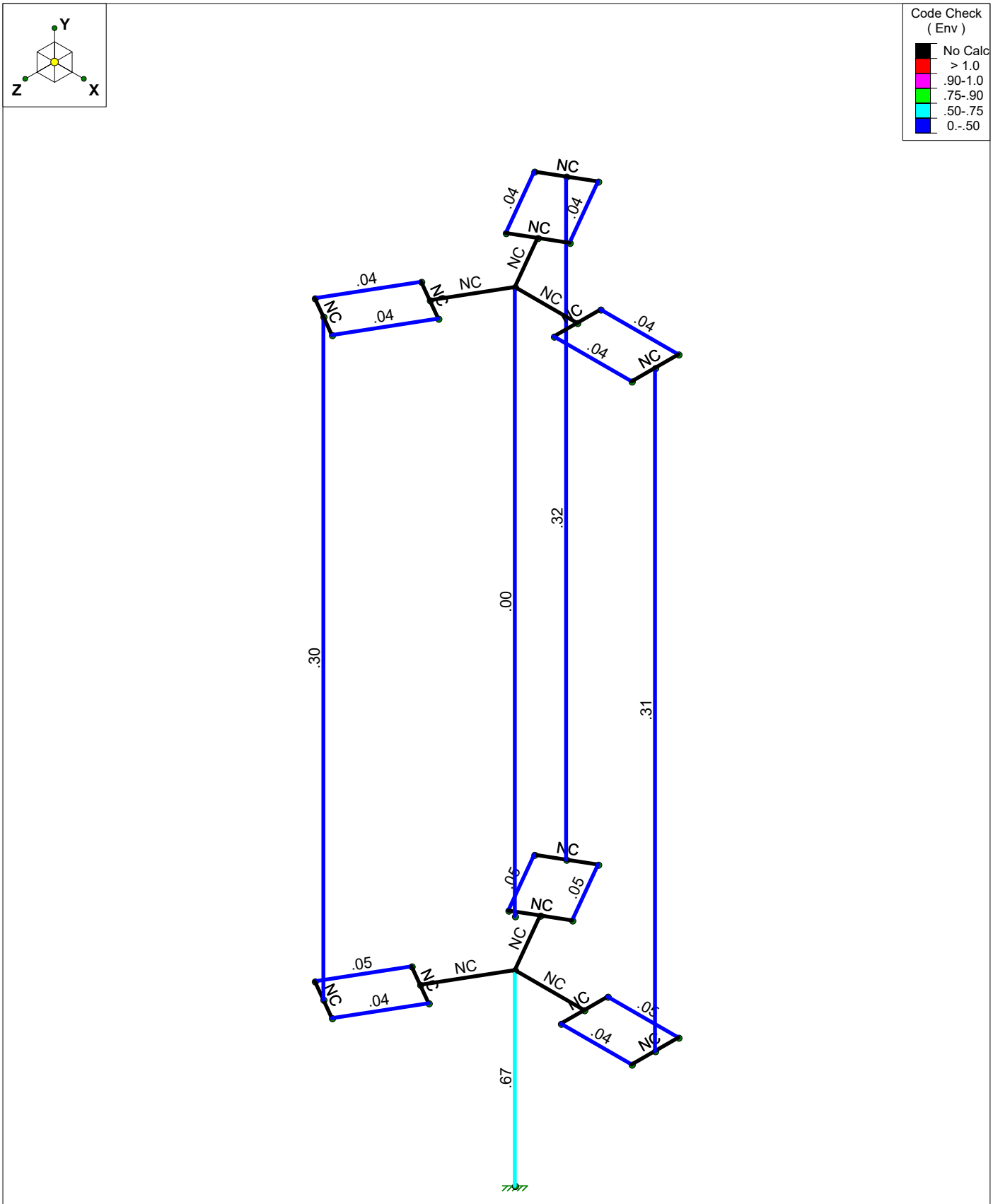
Envelope Only Solution

B+T Group	806365 - HRT 303 943203	SK - 2
NA		Sept 22, 2021 at 7:43 PM
131593.001.01		131593_001_01_HRT 303 94320...



Member Length (ft) Displayed
Loads: BLC 1, 1
Envelope Only Solution

B+T Group	806365 - HRT 303 943203	SK - 3
NA		Sept 22, 2021 at 7:43 PM
131593.001.01		131593_001_01_HRT 303 94320...



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	806365 - HRT 303 943203	SK - 4
NA		Sept 22, 2021 at 7:43 PM
131593.001.01		131593_001_01_HRT 303 94320...

(Global) Model Settings

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

Hot Rolled Steel Code	AISC 15th(360-16): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 14th(360-10): LRFD
Cold Formed Steel Code	AISI S100-16: LRFD
Wood Code	AWC NDS-18: ASD
Wood Temperature	< 100F
Concrete Code	ACI 318-14
Masonry Code	ACI 530-13: ASD
Aluminum Code	AA ADM1-15: ASD - Building
Stainless Steel Code	AISC 14th(360-10): ASD
Adjust Stiffness?	Yes(Iterative)

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

(Global) Model Settings, Continued

Seismic Code	ASCE 7-10
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	1
Cd X	1
Rho Z	1
Rho X	1
Footing Overturning Safety Factor	1
Optimize for OTM/Sliding	No
Check Concrete Bearing	No
Footing Concrete Weight (k/ft^3)	.145
Footing Concrete f'c (ksi)	4
Footing Concrete Ec (ksi)	3644
Lambda	1
Footing Steel fy (ksi)	60
Minimum Steel	0.0018
Maximum Steel	0.0075
Footing Top Bar	#6
Footing Top Bar Cover (in)	1.5
Footing Bottom Bar	#6
Footing Bottom Bar Cover (in)	3
Pedestal Bar	#6
Pedestal Bar Cover (in)	1.5
Pedestal Ties	#4

Hot Rolled Steel Properties

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

Hot Rolled Steel Properties (Continued)

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E..	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
8	A572 Gr. 65	29000	11154	.3	.65	.49	65	1.5	80	1.2
9	A607-60	29000	11154	.3	.65	.49	60	1.5	75	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Existing pole	Pipe 17.81x0...	Column	Pipe	A572 Gr. 65	Typical	12.103	468.212	468.212	936.425
2	Extension pole	Pipe 16x0.375	Column	Pipe	A53 Gr.B	Typical	18.408	562.084	562.084	1124.168
3	HSS	HSS6X6X10	Column	Tube	A500 Gr.B R...	Typical	11.7	55.2	55.2	94.9
4	Plate Top	Bracket plate...	Beam	RECT	A572 Gr. 65	Typical	27	2.25	1640.25	8.79
5	Plate Bottom	Bracket plate...	Beam	RECT	A572 Gr. 65	Typical	27	2.25	1640.25	8.79

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	BASE	0	0	0	0	
2	T_T	0	2	0	0	
3	E_T	0	8.333	0	0	
4	E_B	0	2.5	0	0	
5	N8	1.4999	2	0	0	
6	N9	1.4999	2	.25	0	
7	N10	1.4999	2	-.25	0	
8	N24	0.742083	2	0	0	
9	N24A	0.742083	2	.25	0	
10	N25	0.742083	2	-.25	0	
11	N27	1.4999	8.333	0	0	
12	N28A	1.4999	8.333	.25	0	
13	N29B	1.4999	8.333	-.25	0	
14	N36A	0.66667	8.333	0	0	
15	N37A	0.66667	8.333	.25	0	
16	N38	0.66667	8.333	-.25	0	
17	17	-0.533444	2	-1.423952	0	
18	18	-0.371042	2	-0.642663	0	
19	19	-0.587548	2	-0.517663	0	
20	20	-0.154535	2	-0.767663	0	
21	21	-0.74995	2	-1.298952	0	
22	22	-0.966456	2	-1.173952	0	
23	23	-0.333335	8.333	-0.577353	0	
24	24	-0.549841	8.333	-0.452353	0	
25	25	-0.116829	8.333	-0.702353	0	
26	26	-0.74995	8.333	-1.298952	0	
27	27	-0.966456	8.333	-1.173952	0	
28	28	-0.533444	8.333	-1.423952	0	
29	29	-0.966456	2	1.173952	0	
30	30	-0.371042	2	0.642663	0	
31	31	-0.154535	2	0.767663	0	
32	32	-0.587548	2	0.517663	0	
33	33	-0.74995	2	1.298952	0	
34	34	-0.533444	2	1.423952	0	
35	35	-0.333335	8.333	0.577353	0	
36	36	-0.116829	8.333	0.702353	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
37	37	-0.549841	8.333	0.452353	0	
38	38	-0.74995	8.333	1.298952	0	
39	39	-0.533444	8.333	1.423952	0	
40	40	-0.966456	8.333	1.173952	0	

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	BASE	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	Extension p...	5.833									Lateral
2	M2	Existing pole	2									Lateral
3	M35	HSS	6.333	4.5	4.5							Lateral
4	M14	Plate Bottom	.758			Lbyy						Lateral
5	M15A	Plate Bottom	.758			Lbyy						Lateral
6	M30	Plate Top	.833			Lbyy						Lateral
7	M31	Plate Top	.833			Lbyy						Lateral
8	17	Plate Bottom	.758			Lbyy						Lateral
9	18	Plate Bottom	.758			Lbyy						Lateral
10	22	Plate Top	.833			Lbyy						Lateral
11	23	Plate Top	.833			Lbyy						Lateral
12	24	HSS	6.333	4.5	4.5							Lateral
13	28	Plate Bottom	.758			Lbyy						Lateral
14	29	Plate Bottom	.758			Lbyy						Lateral
15	33	Plate Top	.833			Lbyy						Lateral
16	34	Plate Top	.833			Lbyy						Lateral
17	35	HSS	6.333	4.5	4.5							Lateral

Joint Loads and Enforced Displacements (BLC 1 : 1)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/f...
1	E_T	L	Y	-10.84
2	E_T	L	X	-12.77
3	E_T	L	Mz	82.89
4	E_T	L	My	-.5

Joint Loads and Enforced Displacements (BLC 2 : 2)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/f...
1	E_T	L	Y	-10.84
2	E_T	L	X	-11.059
3	E_T	L	Z	-6.385
4	E_T	L	Mz	71.785
5	E_T	L	Mx	-41.445
6	E_T	L	My	-.5

Joint Loads and Enforced Displacements (BLC 3 : 3)

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

Joint Loads and Enforced Displacements (BLC 3 : 3) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/f...
1	E_T	L	Y	-10.84
2	E_T	L	X	-9.03
3	E_T	L	Z	-9.03
4	E_T	L	Mz	58.612
5	E_T	L	Mx	-58.612
6	E_T	L	My	-.5

Joint Loads and Enforced Displacements (BLC 4 : 4)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/f...
1	E_T	L	Y	-10.84
2	E_T	L	X	-6.385
3	E_T	L	Z	-11.059
4	E_T	L	Mz	41.445
5	E_T	L	Mx	-71.785
6	E_T	L	My	-.5

Joint Loads and Enforced Displacements (BLC 5 : 5)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/f...
1	E_T	L	Y	-10.84
2	E_T	L	Z	-12.77
3	E_T	L	Mx	-82.89
4	E_T	L	My	-.5

Joint Loads and Enforced Displacements (BLC 6 : 6)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/f...
1	E_T	L	Y	-10.84
2	E_T	L	X	6.385
3	E_T	L	Z	-11.059
4	E_T	L	Mz	-41.445
5	E_T	L	Mx	-71.785
6	E_T	L	My	-.5

Joint Loads and Enforced Displacements (BLC 7 : 7)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/f...
1	E_T	L	Y	-10.48
2	E_T	L	X	9.03
3	E_T	L	Z	-9.03
4	E_T	L	Mz	-58.612
5	E_T	L	Mx	-58.612
6	E_T	L	My	-.5

Joint Loads and Enforced Displacements (BLC 8 : 8)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/f...
1	E_T	L	Y	-10.84
2	E_T	L	X	11.059
3	E_T	L	Z	-6.385
4	E_T	L	Mz	-71.785
5	E_T	L	Mx	-41.445
6	E_T	L	My	-.5

Joint Loads and Enforced Displacements (BLC 9 : 9)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/f...
1	E_T	L	Y	-10.84
2	E_T	L	X	12.77
3	E_T	L	Mz	-82.89
4	E_T	L	My	-.5

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	1	None		-1		4				
2	2	None		-1		6				
3	3	None		-1		6				
4	4	None		-1		6				
5	5	None		-1		4				
6	6	None		-1		6				
7	7	None		-1		6				
8	8	None		-1		6				
9	9	None		-1		4				

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	BASE	max	12.77	1	12.978	3	12.77	5	189.896	5	.501	5	189.921	9
2		min	-12.77	9	12.618	7	0	1	-.01	9	.5	9	-189.876	1
3	Totals:	max	12.77	1	12.978	3	12.77	5						
4		min	-12.77	9	12.618	7	0	1						

Envelope Member Section Forces

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
1	M1	1	max	-.365	9	.001	9	0	9	0	9	.006	5	.006	9
2			min	-.365	1	-.001	1	-.001	5	0	1	0	9	-.006	1
3		2	max	-.274	9	.001	9	0	9	0	9	.005	5	.005	9
4			min	-.274	1	-.001	1	-.001	5	0	1	0	9	-.005	1
5		3	max	-.183	9	.001	9	0	9	0	9	.003	5	.003	9
6			min	-.183	1	-.001	1	-.001	5	0	1	0	9	-.003	1
7		4	max	-.091	9	.001	9	0	9	0	9	.002	5	.002	9
8			min	-.091	1	-.001	1	-.001	5	0	1	0	9	-.002	1
9		5	max	0	9	.001	9	0	9	0	9	0	9	0	9
10			min	0	1	-.001	1	-.001	5	0	1	0	1	0	1
11	M2	1	max	12.896	3	12.803	1	12.803	5	.501	5	164.29	5	164.315	9
12			min	12.536	7	-12.803	9	0	1	.5	9	-.01	9	-164.269	1
13		2	max	12.917	3	12.803	1	12.803	5	.501	5	170.691	5	170.717	9
14			min	12.557	7	-12.803	9	0	1	.5	9	-.01	9	-170.671	1
15		3	max	12.937	3	12.803	1	12.803	5	.501	5	177.093	5	177.118	9
16			min	12.577	7	-12.803	9	0	1	.5	9	-.01	9	-177.072	1
17		4	max	12.958	3	12.803	1	12.803	5	.501	5	183.494	5	183.52	9
18			min	12.598	7	-12.803	9	0	1	.5	9	-.01	9	-183.474	1
19		5	max	12.978	3	12.803	1	12.803	5	.501	5	189.896	5	189.921	9
20			min	12.618	7	-12.803	9	0	1	.5	9	-.01	9	-189.876	1
21	M5	1	max	.022	1	28.967	9	2.775	1	8.224	1	.706	5	.283	5

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
22			min	-1.88	5	-34.648	3	-3.193	6	-12.545	7	-.008	1	-.003	9
23		2	max	.022	1	28.967	9	2.775	1	8.224	1	.518	3	4.53	3
24			min	-1.88	5	-34.648	3	-3.193	6	-12.545	7	-.25	9	-3.624	9
25		3	max	-.021	9	28.967	9	.904	2	8.239	9	.686	1	8.861	3
26			min	-1.88	5	-38.768	7	-2.554	5	-12.545	7	-.593	9	-9.892	7
27		4	max	1.879	5	24.784	1	2.404	9	8.239	9	.296	1	3.101	1
28			min	-.022	1	-38.768	7	-3.629	3	-12.534	3	-.464	6	-5.046	7
29		5	max	1.879	5	24.784	1	2.404	9	8.239	9	.008	1	.003	9
30			min	-.022	1	-38.768	7	-3.629	3	-12.534	3	-.706	5	-.283	5
31	M35	1	max	57.129	9	4.733	1	3.787	5	.137	5	.138	9	13.725	1
32			min	-49.319	1	-4.745	9	-.044	9	.102	1	-10.691	5	-13.773	9
33		2	max	57.197	9	4.733	1	3.787	5	.137	5	.069	9	6.231	1
34			min	-49.251	1	-4.745	9	-.044	9	.102	1	-4.695	5	-6.261	9
35		3	max	57.265	9	4.733	1	3.787	5	.137	5	1.301	5	1.251	9
36			min	-49.183	1	-4.745	9	-.044	9	.102	1	0	9	-1.264	1
37		4	max	57.332	9	4.733	1	3.787	5	.137	5	7.298	5	8.763	9
38			min	-49.116	1	-4.745	9	-.044	9	.102	1	-.07	9	-8.758	1
39		5	max	57.4	9	4.733	1	3.787	5	.137	5	13.294	5	16.274	9
40			min	-49.048	1	-4.745	9	-.044	9	.102	1	-.139	9	-16.252	1
41	M12	1	max	5.08	1	57.519	9	3.759	5	13.294	5	.168	1	102.494	9
42			min	-4.341	9	-48.932	1	-.044	1	-.139	9	-5.502	5	-89.699	1
43		2	max	5.08	1	57.519	9	3.759	5	13.294	5	.159	1	91.823	9
44			min	-4.341	9	-48.932	1	-.044	1	-.139	9	-4.805	5	-80.621	1
45		3	max	5.08	1	57.519	9	3.759	5	13.294	5	.151	1	81.152	9
46			min	-4.341	9	-48.932	1	-.044	1	-.139	9	-4.107	5	-71.543	1
47		4	max	5.08	1	57.519	9	3.759	5	13.294	5	.143	1	70.481	9
48			min	-4.341	9	-48.932	1	-.044	1	-.139	9	-3.41	5	-62.465	1
49		5	max	5.08	1	57.519	9	3.759	5	13.294	5	.135	1	59.81	9
50			min	-4.341	9	-48.932	1	-.044	1	-.139	9	-2.712	5	-53.387	1
51	M13	1	max	1.88	5	34.578	3	3.193	6	30.007	9	.718	5	.003	9
52			min	-.022	1	-29.036	9	-2.775	1	-27.672	2	-.009	1	-.283	5
53		2	max	1.88	5	34.578	3	3.193	6	30.007	9	1.037	5	3.633	9
54			min	-.022	1	-29.036	9	-2.775	1	-27.672	2	-.356	1	-4.522	3
55		3	max	1.88	5	38.838	7	2.554	5	30.007	9	1.389	6	9.909	7
56			min	.021	9	-29.036	9	-.904	2	-30.888	8	-1.531	4	-8.844	3
57		4	max	.022	1	38.838	7	3.629	3	26.792	1	.309	9	5.054	7
58			min	-1.879	5	-24.715	1	-2.404	9	-30.888	8	-1.091	4	-3.092	1
59		5	max	.022	1	38.838	7	3.629	3	26.792	1	.009	1	.283	5
60			min	-1.879	5	-24.715	1	-2.404	9	-30.888	8	-.718	5	-.003	9
61	M14	1	max	2.775	1	29.027	9	1.88	5	.283	5	.009	1	30.007	9
62			min	-3.193	6	-34.573	3	-.022	1	-.003	9	-.718	5	-27.672	2
63		2	max	2.775	1	29.01	9	1.88	5	.283	5	.005	1	24.509	9
64			min	-3.193	6	-34.591	3	-.022	1	-.003	9	-.362	5	-22.007	1
65		3	max	2.775	1	28.992	9	1.88	5	.283	5	0	1	19.015	9
66			min	-3.193	6	-34.608	3	-.022	1	-.003	9	-.006	5	-17.416	1
67		4	max	2.775	1	28.975	9	1.88	5	.283	5	.35	5	14.195	8
68			min	-3.193	6	-34.626	3	-.022	1	-.003	9	-.004	1	-12.822	1
69		5	max	2.775	1	28.957	9	1.88	5	.283	5	.706	5	12.545	7
70			min	-3.193	6	-34.643	3	-.022	1	-.003	9	-.008	1	-8.224	1
71	M15A	1	max	3.629	3	38.842	7	1.88	5	.283	5	.009	1	30.888	8
72			min	-2.404	9	-24.726	1	-.022	1	-.003	9	-.718	5	-26.792	1
73		2	max	3.629	3	38.824	7	1.88	5	.283	5	.005	1	24.407	9

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
74			min	-2.404	9	-24.743	1	-.022	1	-.003	9	-.362	5	-22.106	1
75		3	max	3.629	3	38.807	7	1.88	5	.283	5	0	1	19.015	9
76			min	-2.404	9	-24.761	1	-.022	1	-.003	9	-.006	5	-17.416	1
77		4	max	3.629	3	38.789	7	1.88	5	.283	5	.35	5	13.625	9
78			min	-2.404	9	-24.778	1	-.022	1	-.003	9	-.004	1	-13.394	2
79		5	max	3.629	3	38.772	7	1.88	5	.283	5	.706	5	8.239	9
80			min	-2.404	9	-24.795	1	-.022	1	-.003	9	-.008	1	-12.534	3
81	M25	1	max	1.879	5	24.918	1	3.425	6	6.971	1	.009	1	.23	5
82			min	-.022	1	-35.109	8	-2.778	1	-10.864	7	-.777	5	-.003	9
83		2	max	1.879	5	24.918	1	3.425	6	6.971	1	.25	9	4.55	7
84			min	-.022	1	-35.109	8	-2.778	1	-10.864	7	-.544	3	-3.118	1
85		3	max	.022	1	28.829	9	3.839	3	6.996	9	.593	9	8.938	7
86			min	-1.881	5	-35.109	8	-2.778	1	-10.864	7	-.686	1	-7.975	3
87		4	max	.022	1	28.829	9	3.839	3	6.996	9	.493	6	3.607	9
88			min	-1.881	5	-31.253	3	-2.407	9	-10.848	3	-.296	1	-4.068	3
89		5	max	.022	1	28.829	9	3.839	3	6.996	9	.777	5	.003	9
90			min	-1.881	5	-31.253	3	-2.407	9	-10.848	3	-.009	1	-.23	5
91	M29	1	max	.022	1	35.033	8	2.778	1	13.837	1	.01	1	.003	9
92			min	-1.879	5	-24.995	1	-3.425	6	-19.038	8	-.79	5	-.23	5
93		2	max	.022	1	35.033	8	2.778	1	13.837	1	.357	1	3.127	1
94			min	-1.879	5	-24.995	1	-3.425	6	-19.038	8	-1.144	5	-4.54	7
95		3	max	1.881	5	35.033	8	2.778	1	16.982	9	1.659	4	7.994	3
96			min	-.022	1	-28.753	9	-3.839	3	-19.038	8	-1.506	6	-8.919	7
97		4	max	1.881	5	31.329	3	2.407	9	16.982	9	1.187	4	4.078	3
98			min	-.022	1	-28.753	9	-3.839	3	-15.879	2	-.31	9	-3.597	9
99		5	max	1.881	5	31.329	3	2.407	9	16.982	9	.79	5	.23	5
100			min	-.022	1	-28.753	9	-3.839	3	-15.879	2	-.01	1	-.003	9
101	M30	1	max	3.425	6	25.01	1	.022	1	.23	5	.79	5	13.837	1
102			min	-2.778	1	-35.021	8	-1.88	5	-.003	9	-.01	1	-19.038	8
103		2	max	3.425	6	24.991	1	.022	1	.23	5	.398	5	8.629	1
104			min	-2.778	1	-35.04	8	-1.88	5	-.003	9	-.005	1	-11.741	8
105		3	max	3.425	6	24.972	1	.022	1	.23	5	.007	5	3.425	1
106			min	-2.778	1	-35.059	8	-1.88	5	-.003	9	0	1	-5.001	9
107		4	max	3.425	6	24.953	1	.022	1	.23	5	.004	1	3.951	6
108			min	-2.778	1	-35.078	8	-1.88	5	-.003	9	-.385	5	-1.775	1
109		5	max	3.425	6	24.933	1	.022	1	.23	5	.009	1	10.864	7
110			min	-2.778	1	-35.097	8	-1.88	5	-.003	9	-.777	5	-6.971	1
111	M31	1	max	2.407	9	31.338	3	.022	1	.23	5	.79	5	15.879	2
112			min	-3.839	3	-28.739	9	-1.88	5	-.003	9	-.01	1	-16.982	9
113		2	max	2.407	9	31.319	3	.022	1	.23	5	.398	5	9.366	2
114			min	-3.839	3	-28.759	9	-1.88	5	-.003	9	-.005	1	-10.994	9
115		3	max	2.407	9	31.3	3	.022	1	.23	5	.007	5	3.425	1
116			min	-3.839	3	-28.778	9	-1.88	5	-.003	9	0	1	-5.001	9
117		4	max	2.407	9	31.281	3	.022	1	.23	5	.004	1	.996	9
118			min	-3.839	3	-28.797	9	-1.88	5	-.003	9	-.385	5	-4.748	4
119		5	max	2.407	9	31.262	3	.022	1	.23	5	.009	1	6.996	9
120			min	-3.839	3	-28.816	9	-1.88	5	-.003	9	-.777	5	-10.848	3
121	M37A	1	max	4.341	9	49.501	1	.044	1	10.691	5	5.503	5	60.457	1
122			min	-5.08	1	-56.951	9	-3.76	5	-.138	9	-.168	1	-71.713	9
123		2	max	4.341	9	49.501	1	.044	1	10.691	5	4.876	5	52.207	1
124			min	-5.08	1	-56.951	9	-3.76	5	-.138	9	-.161	1	-62.221	9
125		3	max	4.341	9	49.501	1	.044	1	10.691	5	4.249	5	43.957	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
126			min	-5.08	1	-56.951	9	-3.76	5	-.138	9	-.153	1	-52.729	9
127		4	max	4.341	9	49.501	1	.044	1	10.691	5	3.623	5	35.707	1
128			min	-5.08	1	-56.951	9	-3.76	5	-.138	9	-.146	1	-43.237	9
129		5	max	4.341	9	49.501	1	.044	1	10.691	5	2.996	5	27.457	1
130			min	-5.08	1	-56.951	9	-3.76	5	-.138	9	-.139	1	-33.745	9
131	14	1	max	1.922	8	38.269	5	3.99	9	12.604	9	.581	1	.245	1
132			min	-1.547	1	-6.648	1	-3.193	1	-12.407	1	-.722	8	-.289	8
133		2	max	1.922	8	38.269	5	3.99	9	12.604	9	.182	1	1.076	1
134			min	-1.547	1	-6.648	1	-3.193	1	-12.407	1	-.421	6	-4.992	6
135		3	max	-.021	4	38.269	5	3.024	8	12.606	6	.342	9	8.69	9
136			min	-1.924	8	-37.738	2	-1.936	4	-12.407	1	-.594	4	-9.733	6
137		4	max	1.546	1	33.758	9	3.661	6	12.606	6	.464	9	4.47	9
138			min	-1.924	8	-37.738	2	-.933	1	-4.287	1	-.464	1	-4.92	1
139		5	max	1.546	1	33.758	9	3.661	6	12.606	6	.722	8	.289	8
140			min	-1.924	8	-37.738	2	-.933	1	-4.287	1	-.581	1	-.245	1
141	15	1	max	1.547	1	6.578	1	3.193	1	31.089	5	.591	1	.289	8
142			min	-1.922	8	-38.339	5	-3.99	9	-4.03	9	-.736	8	-.245	1
143		2	max	1.547	1	6.578	1	3.193	1	31.089	5	.99	1	5.001	6
144			min	-1.922	8	-38.339	5	-3.99	9	-4.03	9	-1.167	9	-1.068	1
145		3	max	1.924	8	37.808	2	1.936	4	31.089	5	1.557	7	9.751	6
146			min	.021	4	-38.339	5	-3.024	8	-31.365	3	-1.666	9	-8.673	9
147		4	max	1.924	8	37.808	2	.933	1	21.091	9	1.125	7	4.929	1
148			min	-1.546	1	-33.688	9	-3.661	6	-31.365	3	-.707	1	-4.462	9
149		5	max	1.924	8	37.808	2	.933	1	21.091	9	.736	8	.245	1
150			min	-1.546	1	-33.688	9	-3.661	6	-31.365	3	-.591	1	-.289	8
151	16	1	max	2.452	9	57.519	4	3.092	1	11.503	1	5.836	8	102.493	4
152			min	-4.341	4	-22.329	9	-3.846	8	-13.57	8	-4.508	1	-41.692	9
153		2	max	2.452	9	57.519	4	3.092	1	11.503	1	5.122	8	91.822	4
154			min	-4.341	4	-22.329	9	-3.846	8	-13.57	8	-3.934	1	-37.549	9
155		3	max	2.452	9	57.519	4	3.092	1	11.503	1	4.409	8	81.151	4
156			min	-4.341	4	-22.329	9	-3.846	8	-13.57	8	-3.36	1	-33.406	9
157		4	max	2.452	9	57.519	4	3.092	1	11.503	1	3.695	8	70.48	4
158			min	-4.341	4	-22.329	9	-3.846	8	-13.57	8	-2.786	1	-29.264	9
159		5	max	2.452	9	57.519	4	3.092	1	11.503	1	2.982	8	59.81	4
160			min	-4.341	4	-22.329	9	-3.846	8	-13.57	8	-2.213	1	-25.121	9
161	17	1	max	3.99	9	38.34	5	1.546	1	.245	1	.736	8	31.089	5
162			min	-3.193	1	-6.579	1	-1.923	8	-.289	8	-.591	1	-4.03	9
163		2	max	3.99	9	38.322	5	1.546	1	.245	1	.371	8	24.509	4
164			min	-3.193	1	-6.597	1	-1.923	8	-.289	8	-.298	1	-6.179	9
165		3	max	3.99	9	38.305	5	1.546	1	.245	1	.007	8	19.014	4
166			min	-3.193	1	-6.614	1	-1.923	8	-.289	8	-.005	1	-8.324	9
167		4	max	3.99	9	38.287	5	1.546	1	.245	1	.288	1	14.337	3
168			min	-3.193	1	-6.632	1	-1.923	8	-.289	8	-.357	8	-10.465	9
169		5	max	3.99	9	38.27	5	1.546	1	.245	1	.581	1	12.407	1
170			min	-3.193	1	-6.649	1	-1.923	8	-.289	8	-.722	8	-12.604	9
171	18	1	max	.933	1	37.806	2	1.546	1	.245	1	.736	8	31.365	3
172			min	-3.661	6	-33.677	9	-1.923	8	-.289	8	-.591	1	-21.091	9
173		2	max	.933	1	37.789	2	1.546	1	.245	1	.371	8	24.877	3
174			min	-3.661	6	-33.695	9	-1.923	8	-.289	8	-.298	1	-14.709	9
175		3	max	.933	1	37.772	2	1.546	1	.245	1	.007	8	19.014	4
176			min	-3.661	6	-33.712	9	-1.923	8	-.289	8	-.005	1	-8.324	9
177		4	max	.933	1	37.754	2	1.546	1	.245	1	.288	1	14.295	5

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
178			min	-3.661	6	-33.729	9	-1.923	8	-.289	8	-.357	8	-1.935	9
179		5	max	.933	1	37.737	2	1.546	1	.245	1	.581	1	12.606	6
180			min	-3.661	6	-33.747	9	-1.923	8	-.289	8	-.722	8	-4.287	1
181	19	1	max	4.341	4	22.894	9	3.846	8	9.25	1	4.509	1	27.399	9
182			min	-2.452	9	-56.951	4	-3.093	1	-10.965	8	-5.836	8	-71.713	4
183		2	max	4.341	4	22.894	9	3.846	8	9.25	1	3.993	1	23.583	9
184			min	-2.452	9	-56.951	4	-3.093	1	-10.965	8	-5.195	8	-62.221	4
185		3	max	4.341	4	22.894	9	3.846	8	9.25	1	3.478	1	19.767	9
186			min	-2.452	9	-56.951	4	-3.093	1	-10.965	8	-4.554	8	-52.729	4
187		4	max	4.341	4	22.894	9	3.846	8	9.25	1	2.962	1	15.952	9
188			min	-2.452	9	-56.951	4	-3.093	1	-10.965	8	-3.913	8	-43.237	4
189		5	max	4.341	4	22.894	9	3.846	8	9.25	1	2.447	1	12.136	9
190			min	-2.452	9	-56.951	4	-3.093	1	-10.965	8	-3.272	8	-33.745	4
191	20	1	max	1.924	8	35.033	2	4.25	9	13.65	9	.809	8	.236	8
192			min	-1.545	1	-29.642	9	-3.425	1	-19.038	2	-.65	1	-.199	1
193		2	max	1.924	8	35.033	2	4.25	9	13.65	9	1.266	9	3.91	9
194			min	-1.545	1	-29.642	9	-3.425	1	-19.038	2	-1.078	1	-4.493	2
195		3	max	1.924	8	35.033	2	4.25	9	19.258	5	1.797	9	7.615	9
196			min	-.021	4	-35.561	5	-3.425	1	-19.038	2	-1.694	7	-9.01	5
197		4	max	1.547	1	2.541	1	3.899	6	19.258	5	.795	1	.517	1
198			min	-1.922	8	-35.561	5	-1.166	1	1.514	9	-1.228	7	-4.565	5
199		5	max	1.547	1	2.541	1	3.899	6	19.258	5	.65	1	.199	1
200			min	-1.922	8	-35.561	5	-1.166	1	1.514	9	-.809	8	-.236	8
201	21	1	max	1.545	1	29.566	9	3.425	1	11.02	9	.793	8	.199	1
202			min	-1.924	8	-35.11	2	-4.25	9	-10.811	1	-.639	1	-.236	8
203		2	max	1.545	1	29.566	9	3.425	1	11.02	9	.451	6	4.502	2
204			min	-1.924	8	-35.11	2	-4.25	9	-10.811	1	-.211	1	-3.9	9
205		3	max	.021	4	35.637	5	3.425	1	11.028	6	.594	4	9.029	5
206			min	-1.924	8	-35.11	2	-4.25	9	-10.811	1	-.342	9	-7.596	9
207		4	max	1.922	8	35.637	5	1.166	1	11.028	6	.493	1	4.574	5
208			min	-1.547	1	-2.465	1	-3.899	6	-3.935	1	-.496	9	-.507	1
209		5	max	1.922	8	35.637	5	1.166	1	11.028	6	.639	1	.236	8
210			min	-1.547	1	-2.465	1	-3.899	6	-3.935	1	-.793	8	-.199	1
211	22	1	max	3.899	6	2.53	1	1.923	8	.199	1	.65	1	-1.514	9
212			min	-1.165	1	-35.546	5	-1.547	1	-.236	8	-.809	8	-19.258	5
213		2	max	3.899	6	2.511	1	1.923	8	.199	1	.327	1	-.105	9
214			min	-1.165	1	-35.565	5	-1.547	1	-.236	8	-.408	8	-11.851	5
215		3	max	3.899	6	2.492	1	1.923	8	.199	1	.005	1	1.307	9
216			min	-1.165	1	-35.585	5	-1.547	1	-.236	8	-.008	8	-5.001	4
217		4	max	3.899	6	2.473	1	1.923	8	.199	1	.393	8	4.177	7
218			min	-1.165	1	-35.604	5	-1.547	1	-.236	8	-.317	1	-3.422	1
219		5	max	3.899	6	2.453	1	1.923	8	.199	1	.793	8	11.028	6
220			min	-1.165	1	-35.623	5	-1.547	1	-.236	8	-.639	1	-3.935	1
221	23	1	max	3.425	1	29.645	9	1.923	8	.199	1	.65	1	13.65	9
222			min	-4.25	9	-35.021	2	-1.547	1	-.236	8	-.809	8	-19.038	2
223		2	max	3.425	1	29.626	9	1.923	8	.199	1	.327	1	7.476	9
224			min	-4.25	9	-35.04	2	-1.547	1	-.236	8	-.408	8	-11.741	2
225		3	max	3.425	1	29.607	9	1.923	8	.199	1	.005	1	1.307	9
226			min	-4.25	9	-35.059	2	-1.547	1	-.236	8	-.008	8	-5.001	4
227		4	max	3.425	1	29.588	9	1.923	8	.199	1	.393	8	3.951	1
228			min	-4.25	9	-35.078	2	-1.547	1	-.236	8	-.317	1	-4.858	9
229		5	max	3.425	1	29.569	9	1.923	8	.199	1	.793	8	10.811	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
230			min	-4.25	9	-35.098	2	-1.547	1	-.236	8	-.639	1	-11.02	9
231	24	1	max	57.129	4	3.277	1	4.744	4	.13	1	6.876	9	9.25	1
232			min	-22.734	9	-3.874	8	-2.372	9	.067	8	-13.772	4	-10.965	8
233		2	max	57.197	4	3.277	1	4.744	4	.13	1	3.12	9	4.062	1
234			min	-22.666	9	-3.874	8	-2.372	9	.067	8	-6.261	4	-4.831	8
235		3	max	57.264	4	3.277	1	4.744	4	.13	1	1.251	4	1.302	8
236			min	-22.599	9	-3.874	8	-2.372	9	.067	8	-.636	9	-1.127	1
237		4	max	57.332	4	3.277	1	4.744	4	.13	1	8.762	4	7.436	8
238			min	-22.531	9	-3.874	8	-2.372	9	.067	8	-4.391	9	-6.315	1
239		5	max	57.4	4	3.277	1	4.744	4	.13	1	16.274	4	13.57	8
240			min	-22.463	9	-3.874	8	-2.372	9	.067	8	-8.147	9	-11.503	1
241	25	1	max	1.922	2	37.928	1	3.99	4	12.604	4	.64	9	.245	9
242			min	-1.704	9	-33.548	8	-1.07	9	-4.26	9	-.722	2	-.289	2
243		2	max	1.922	2	37.928	1	3.99	4	12.604	4	.507	9	4.399	9
244			min	-1.704	9	-33.548	8	-1.07	9	-4.26	9	-.421	1	-4.992	1
245		3	max	-.022	6	37.928	1	3.024	2	12.606	1	.686	6	8.69	4
246			min	-1.924	2	-33.548	8	-2.305	6	-12.404	9	-.319	1	-9.733	1
247		4	max	1.703	9	34.07	5	3.661	1	12.606	1	.464	4	4.47	4
248			min	-1.924	2	-10.758	9	-3.521	9	-12.404	9	-.2	9	-1.59	9
249		5	max	1.703	9	34.07	5	3.661	1	12.606	1	.722	2	.289	2
250			min	-1.924	2	-10.758	9	-3.521	9	-12.404	9	-.64	9	-.245	9
251	26	1	max	1.704	9	33.478	8	1.07	9	24.286	1	.651	9	.289	2
252			min	-1.922	2	-37.998	1	-3.99	4	-28.191	7	-.736	2	-.245	9
253		2	max	1.704	9	33.478	8	1.07	9	24.286	1	.785	9	5.001	1
254			min	-1.922	2	-37.998	1	-3.99	4	-28.191	7	-1.181	3	-4.39	9
255		3	max	1.924	2	33.478	8	2.305	6	27.87	5	1.523	1	9.751	1
256			min	.022	6	-37.998	1	-3.024	2	-28.191	7	-1.666	4	-8.673	4
257		4	max	1.924	2	10.829	9	3.521	9	27.87	5	1.113	2	1.598	9
258			min	-1.703	9	-34.001	5	-3.661	1	-7.19	1	-1.091	9	-4.462	4
259		5	max	1.924	2	10.829	9	3.521	9	27.87	5	.736	2	.245	9
260			min	-1.703	9	-34.001	5	-3.661	1	-7.19	1	-.651	9	-.289	2
261	27	1	max	5.08	6	30.895	1	3.408	9	11.487	9	5.836	2	54.403	1
262			min	-2.259	1	-48.932	6	-3.846	2	-13.57	2	-4.978	9	-89.698	6
263		2	max	5.08	6	30.895	1	3.408	9	11.487	9	5.122	2	48.671	1
264			min	-2.259	1	-48.932	6	-3.846	2	-13.57	2	-4.346	9	-80.62	6
265		3	max	5.08	6	30.895	1	3.408	9	11.487	9	4.409	2	42.94	1
266			min	-2.259	1	-48.932	6	-3.846	2	-13.57	2	-3.714	9	-71.542	6
267		4	max	5.08	6	30.895	1	3.408	9	11.487	9	3.695	2	37.208	1
268			min	-2.259	1	-48.932	6	-3.846	2	-13.57	2	-3.082	9	-62.464	6
269		5	max	5.08	6	30.895	1	3.408	9	11.487	9	2.982	2	31.476	1
270			min	-2.259	1	-48.932	6	-3.846	2	-13.57	2	-2.45	9	-53.386	6
271	28	1	max	3.99	4	38.008	1	1.704	9	.245	9	.736	2	24.286	1
272			min	-1.07	9	-33.479	8	-1.923	2	-.289	2	-.651	9	-28.191	7
273		2	max	3.99	4	37.99	1	1.704	9	.245	9	.371	2	17.087	1
274			min	-1.07	9	-33.497	8	-1.923	2	-.289	2	-.328	9	-22.506	7
275		3	max	3.99	4	37.973	1	1.704	9	.245	9	.007	2	9.891	1
276			min	-1.07	9	-33.514	8	-1.923	2	-.289	2	-.005	9	-17.416	6
277		4	max	3.99	4	37.956	1	1.704	9	.245	9	.318	9	2.699	1
278			min	-1.07	9	-33.531	8	-1.923	2	-.289	2	-.357	2	-13.494	5
279		5	max	3.99	4	37.938	1	1.704	9	.245	9	.64	9	4.26	9
280			min	-1.07	9	-33.549	8	-1.923	2	-.289	2	-.722	2	-12.604	4
281	29	1	max	3.521	9	10.827	9	1.704	9	.245	9	.736	2	7.19	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
282			min	-3.661	1	-34	5	-1.923	2	-.289	2	-.651	9	-27.87	5
283		2	max	3.521	9	10.81	9	1.704	9	.245	9	.371	2	8.539	1
284			min	-3.661	1	-34.017	5	-1.923	2	-.289	2	-.328	9	-22.105	6
285		3	max	3.521	9	10.793	9	1.704	9	.245	9	.007	2	9.891	1
286			min	-3.661	1	-34.035	5	-1.923	2	-.289	2	-.005	9	-17.416	6
287		4	max	3.521	9	10.775	9	1.704	9	.245	9	.318	9	11.247	1
288			min	-3.661	1	-34.052	5	-1.923	2	-.289	2	-.357	2	-13.544	7
289		5	max	3.521	9	10.758	9	1.704	9	.245	9	.64	9	12.606	1
290			min	-3.661	1	-34.07	5	-1.923	2	-.289	2	-.722	2	-12.404	9
291	30	1	max	2.259	1	49.5	6	3.846	2	9.232	9	4.977	9	60.457	6
292			min	-5.08	6	-30.33	1	-3.408	9	-10.965	2	-5.836	2	-38.684	1
293		2	max	2.259	1	49.5	6	3.846	2	9.232	9	4.409	9	52.207	6
294			min	-5.08	6	-30.33	1	-3.408	9	-10.965	2	-5.195	2	-33.629	1
295		3	max	2.259	1	49.5	6	3.846	2	9.232	9	3.841	9	43.957	6
296			min	-5.08	6	-30.33	1	-3.408	9	-10.965	2	-4.554	2	-28.574	1
297		4	max	2.259	1	49.5	6	3.846	2	9.232	9	3.273	9	35.707	6
298			min	-5.08	6	-30.33	1	-3.408	9	-10.965	2	-3.913	2	-23.519	1
299		5	max	2.259	1	49.5	6	3.846	2	9.232	9	2.705	9	27.457	6
300			min	-5.08	6	-30.33	1	-3.408	9	-10.965	2	-3.272	2	-18.464	1
301	31	1	max	1.924	2	6.22	9	4.25	4	16.096	5	.809	2	.236	2
302			min	-1.703	9	-31.782	5	-1.323	9	-1.64	1	-.716	9	-.199	9
303		2	max	1.924	2	6.22	9	4.25	4	16.096	5	1.288	3	4.092	5
304			min	-1.703	9	-31.782	5	-1.323	9	-1.64	1	-.881	9	-.976	9
305		3	max	1.924	2	31.263	8	4.25	4	16.824	1	1.797	4	8.065	5
306			min	-.022	6	-33.391	1	-3.774	9	-15.88	8	-1.643	1	-8.552	1
307		4	max	1.705	9	31.263	8	3.899	1	16.824	1	1.187	9	4.021	8
308			min	-1.922	2	-33.391	1	-3.774	9	-15.88	8	-1.222	2	-4.379	1
309		5	max	1.705	9	31.263	8	3.899	1	16.824	1	.716	9	.199	9
310			min	-1.922	2	-33.391	1	-3.774	9	-15.88	8	-.809	2	-.236	2
311	32	1	max	1.703	9	31.705	5	1.323	9	11.02	4	.793	2	.199	9
312			min	-1.924	2	-6.296	9	-4.25	4	-3.928	9	-.704	9	-.236	2
313		2	max	1.703	9	31.705	5	1.323	9	11.02	4	.451	1	.986	9
314			min	-1.924	2	-6.296	9	-4.25	4	-3.928	9	-.538	9	-4.082	5
315		3	max	.022	6	33.467	1	3.774	9	11.028	1	.319	1	8.571	1
316			min	-1.924	2	-31.186	8	-4.25	4	-10.801	9	-.686	6	-8.046	5
317		4	max	1.922	2	33.467	1	3.774	9	11.028	1	.232	9	4.388	1
318			min	-1.705	9	-31.186	8	-3.899	1	-10.801	9	-.496	4	-4.012	8
319		5	max	1.922	2	33.467	1	3.774	9	11.028	1	.704	9	.236	2
320			min	-1.705	9	-31.186	8	-3.899	1	-10.801	9	-.793	2	-.199	9
321	33	1	max	3.899	1	31.277	8	1.923	2	.199	9	.716	9	15.88	8
322			min	-3.774	9	-33.388	1	-1.703	9	-.236	2	-.809	2	-16.824	1
323		2	max	3.899	1	31.258	8	1.923	2	.199	9	.361	9	9.366	8
324			min	-3.774	9	-33.407	1	-1.703	9	-.236	2	-.408	2	-9.867	1
325		3	max	3.899	1	31.239	8	1.923	2	.199	9	.006	9	3.425	6
326			min	-3.774	9	-33.426	1	-1.703	9	-.236	2	-.008	2	-2.906	1
327		4	max	3.899	1	31.219	8	1.923	2	.199	9	.393	2	4.059	1
328			min	-3.774	9	-33.445	1	-1.703	9	-.236	2	-.349	9	-4.749	9
329		5	max	3.899	1	31.2	8	1.923	2	.199	9	.793	2	11.028	1
330			min	-3.774	9	-33.464	1	-1.703	9	-.236	2	-.704	9	-10.801	9
331	34	1	max	1.323	9	31.798	5	1.923	2	.199	9	.716	9	16.096	5
332			min	-4.25	4	-6.232	9	-1.703	9	-.236	2	-.809	2	-1.64	1
333		2	max	1.323	9	31.779	5	1.923	2	.199	9	.361	9	9.475	5

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
334			min	-4.25	4	-6.251	9	-1.703	9	-.236	2	-.408	2	-2.275	1
335		3	max	1.323	9	31.76	5	1.923	2	.199	9	.006	9	3.425	6
336			min	-4.25	4	-6.271	9	-1.703	9	-.236	2	-.008	2	-2.906	1
337		4	max	1.323	9	31.741	5	1.923	2	.199	9	.393	2	2.616	9
338			min	-4.25	4	-6.29	9	-1.703	9	-.236	2	-.349	9	-4.973	3
339		5	max	1.323	9	31.722	5	1.923	2	.199	9	.793	2	3.928	9
340			min	-4.25	4	-6.309	9	-1.703	9	-.236	2	-.704	9	-11.02	4
341	35	1	max	30.49	1	3.874	2	4.733	6	.133	9	6.873	1	10.965	2
342			min	-49.319	6	-3.272	9	-2.367	1	.067	2	-13.724	6	-9.232	9
343		2	max	30.558	1	3.874	2	4.733	6	.133	9	3.126	1	4.831	2
344			min	-49.251	6	-3.272	9	-2.367	1	.067	2	-6.23	6	-4.052	9
345		3	max	30.625	1	3.874	2	4.733	6	.133	9	1.264	6	1.128	9
346			min	-49.183	6	-3.272	9	-2.367	1	.067	2	-.622	1	-1.302	2
347		4	max	30.693	1	3.874	2	4.733	6	.133	9	8.757	6	6.307	9
348			min	-49.115	6	-3.272	9	-2.367	1	.067	2	-4.369	1	-7.436	2
349		5	max	30.761	1	3.874	2	4.733	6	.133	9	16.251	6	11.487	9
350			min	-49.047	6	-3.272	9	-2.367	1	.067	2	-8.116	1	-13.57	2

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

	Member	Shape	Code C...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-...	phi*Mn z-...	Cb	Eqn
1	M1	Pipe 16x0.375	.000	0	9	.000	0		9	575.102	579.845	240.372	240.372	1....	H1-1b
2	M2	Pipe 17.81x0...	.675	2	9	.062	0		5	618.732	708.012	285.851	285.851	1....	H1-1b
3	M35	HSS6X6X10	.312	6.333	8	.040	0	y	9	464.654	484.38	80.04	80.04	2....	H1-1b
4	M14	Bracket plate ...	.045	0	3	.063	.758	y	3	1437.322	1579.5	32.906	888.469	1....	H1-1b
5	M15A	Bracket plate ...	.046	0	7	.069	0	y	7	1437.322	1579.5	32.906	888.469	1....	H1-1b
6	M30	Bracket plate ...	.040	0	6	.062	.833	y	7	1409.273	1579.5	32.906	888.469	2....	H1-1b
7	M31	Bracket plate ...	.038	0	4	.056	0	y	3	1409.273	1579.5	32.906	888.469	2....	H1-1b
8	17	Bracket plate ...	.046	0	6	.070	0	y	6	1437.322	1579.5	32.906	888.469	1....	H1-1b
9	18	Bracket plate ...	.045	0	1	.069	0	y	1	1437.322	1579.5	32.906	888.469	1....	H1-1b
10	22	Bracket plate ...	.041	0	6	.061	.833	y	5	1409.273	1579.5	32.906	888.469	2....	H1-1b
11	23	Bracket plate ...	.040	0	1	.060	.833	y	2	1409.273	1579.5	32.906	888.469	2....	H1-1b
12	24	HSS6X6X10	.316	6.333	5	.040	0	z	4	464.654	484.38	80.04	80.04	2....	H1-1b
13	28	Bracket plate ...	.046	0	1	.070	0	y	1	1437.322	1579.5	32.906	888.469	1....	H1-1b
14	29	Bracket plate ...	.045	0	4	.063	.758	y	4	1437.322	1579.5	32.906	888.469	1....	H1-1b
15	33	Bracket plate ...	.041	0	1	.061	.833	y	1	1409.273	1579.5	32.906	888.469	2....	H1-1b
16	34	Bracket plate ...	.039	0	4	.055	0	y	5	1409.273	1579.5	32.906	888.469	2....	H1-1b
17	35	HSS6X6X10	.305	6.333	5	.040	0	z	6	464.654	484.38	80.04	80.04	2....	H1-1b

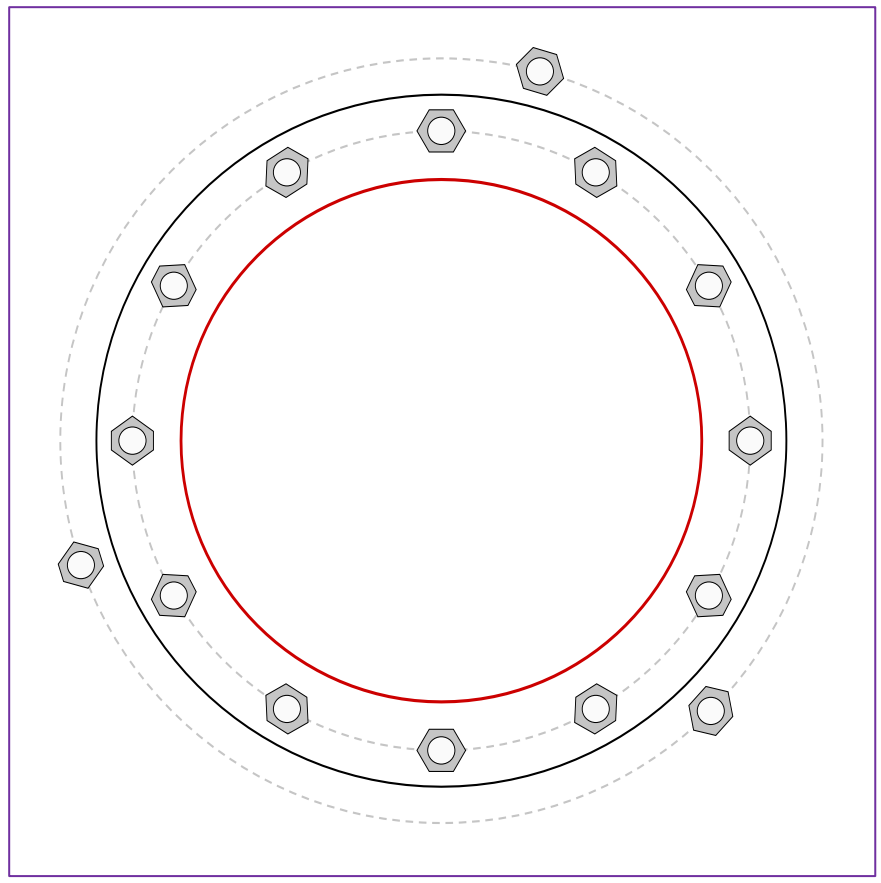
Monopole Base Plate Connection

Site Info	
BU #	806365
Site Name	HRT 303 943203, CT
Order #	581569 Rev. 0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	See Custom Sheet
l_{ar} (in)	See Custom Sheet

Applied Loads	
Moment (kip-ft)	3566.34
Axial Force (kips)	66.63
Shear Force (kips)	38.29

**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 51.23" BC

GROUP 2: (3) 2-1/4" ø bolts (A193 Gr. B7 N; Fy=105 ksi, Fu=125 ksi) on 63.22" BC

pos. (deg): 75, 199, 315

Base Plate Data

57.23" OD x 2.625" Plate (S-128; Fy=60 ksi, Fu=80 ksi)

Stiffener Data

N/A

Pole Data

43.2" x 0.375" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

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

GROUP 1:		
Pu_t = 199.45	ϕPn_t = 243.75	**Stress Rating**
Vu = 3.19	ϕVn = 149.1	**77.9%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 2:		
Pu_t = 250.35	ϕPn_t = 304.69	**Stress Rating**
Vu = 0	ϕVn = 186.38	**78.3%**
Mu = 0	ϕMn = 179.4	**Pass**

Base Plate Summary

Max Stress (ksi):	26.94	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	**47.5%**	**Pass**

CCIplate

Elevation (ft)	0	*(Base)*

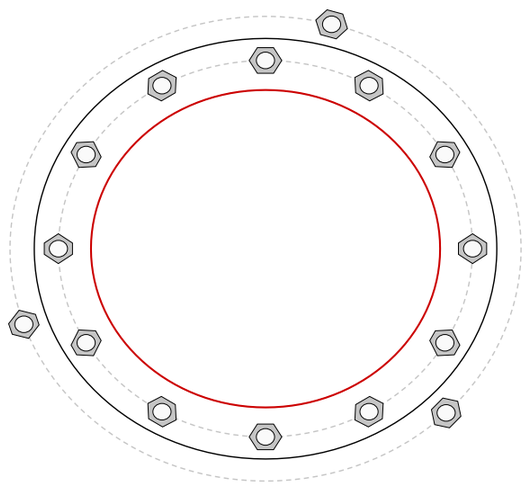
note: Bending interaction not considered when Grout Considered = "Yes"

Bolt Group	Resist Axial	Resist Shear	Induce Plate Bending	Grout Considered	Apply at BARB Elevation	BARB CL Elevation (ft)
1	Yes	Yes	Yes	No	No	
2	No	No	No	No	No	

Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η:	l_{ar} (in):	Thread Type	Area Override, in^2	Tension Only
1	1	0	2.25	A615-75	51.23	0.5	1.25	N-Included		No
2	1	30	2.25	A615-75	51.23	0.5	1.25	N-Included		No
3	1	60	2.25	A615-75	51.23	0.5	1.25	N-Included		No
4	1	90	2.25	A615-75	51.23	0.5	1.25	N-Included		No
5	1	120	2.25	A615-75	51.23	0.5	1.25	N-Included		No
6	1	150	2.25	A615-75	51.23	0.5	1.25	N-Included		No
7	1	180	2.25	A615-75	51.23	0.5	1.25	N-Included		No
8	1	210	2.25	A615-75	51.23	0.5	1.25	N-Included		No
9	1	240	2.25	A615-75	51.23	0.5	1.25	N-Included		No
10	1	270	2.25	A615-75	51.23	0.5	1.25	N-Included		No
11	1	300	2.25	A615-75	51.23	0.5	1.25	N-Included		No
12	1	330	2.25	A615-75	51.23	0.5	1.25	N-Included		No
13	2	75	2.25	A193 Gr. B7	63.22	0.5	14	N-Included		No
14	2	199	2.25	A193 Gr. B7	63.22	0.5	14	N-Included		No
15	2	315	2.25	A193 Gr. B7	63.22	0.5	14	N-Included		No

Plot Graphic



PROJECT	**131593.004.01 - HRT 303 943203, CT**
SUBJECT	**Anchor Rod Bracket Analysis**
DATE	**09-22-21**
v4.6.1	

TIA-222 Rev.	H	
Apply TIA-222-H Section 15.5?	Yes	

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

Analysis Criteria		
Design/Analysis	Analysis	
Load Type	Current Load	
Current load	250.35	kips
AR Capacity	375.7	kips

Tower Type	Monopole	

Manufacturers Tower Prop.		
Pole Thickness	0.375	in
Pole Grade	A572-65	
Fy	65	ksi
Fu	80	ksi
Base Plate Gr.	A572-60	
Fy	60	ksi
Fu	75	ksi

Post-Installed Adhesive AR Mod.		
ARB Type	Welded	
Size	2.25	in
Grade	A193 Gr B7	
Fy	105	ksi
Fu	125	ksi

Anchor Rod Bracket Analysis Checks		
Tube Bearing	48.7%	-
Tube Compression	73.1%	-
Gusset Shear	7.4%	-
Gusset Flexure	N/A	-
Welds: Gusset to Tower and BP	20.5%	-
Welds: Gusset to Tube	14.9%	-
Welds: Geometry	N/A	
Tower Punching	6.4%	-
Tube Punching	2.6%	-
Utilization	**73.1%**	

Bracket Properties

Gusset			Pipe/Tube			Weld - Gusset to Pipe/Tube		
Thickness	1.25	in	Size	HSS5x5x1/2		FEXX	70	ksi
Width at Tube	6	in	Total Length	24	in	Weld Type	Double Fillet	
Height at Pole	84	in	Length above Gusset	-36	in	Fillet Size	1/2	in
Height at Tube	72	in	Length below Gusset	-12	in			
Grade	A572-65		Grade	A500 Grade B (Square)				
Fy	65	ksi	Fy	46	ksi			
Fu	80	ksi	Fu	58	ksi			

Weld - Gusset to Tower			Weld - Gusset to Base Plate		
FEXX	70	ksi	FEXX	70	ksi
Weld Type	Double Fillet		Weld Type	CJP - Double Bevel	
Fillet Size	3/8	in	Fillet Size	5/8	in
			Bevel Depth	5/8	in
			Gap	0	in
			Notch (horiz)	0.75	in
			Notch (vert)	0.75	in
			Pipe/Tube Welded to Base/Footpad?	No	

Pier and Pad Foundation

BU # :	806365
Site Name:	HRT 303 943203, C
App. Number:	581569, Rev. 0

TIA-222 Revision:	H
Tower Type:	Monopole

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

Superstructure Analysis Reactions

Compression, P_{comp}:	66.63	kips
Base Shear, Vu_comp:	38.29	kips
Moment, M_u:	3566.34	ft-kips
Tower Height, **H**:	129	ft
BP Dist. Above Fdn, bp_{dist}:	2.5	in

Pier Properties

Pier Shape:	Circular	
Pier Diameter, **dpier**:	7	ft
Ext. Above Grade, **E**:	0.67	ft
Pier Rebar Size, **Sc**:	10	
Pier Rebar Quantity, **mc**:	22	
Pier Tie/Spiral Size, **St**:	3	
Pier Tie/Spiral Quantity, **mt**:	6	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties

Depth, **D**:	10.33	ft
Pad Width, W_1:	28	ft
Pad Thickness, **T**:	5.08	ft
Pad Rebar Size (Bottom dir. 2), Sp_2:	11	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	28	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties

Rebar Grade, **Fy**:	60	ksi
Concrete Compressive Strength, **F'c**:	3	ksi
Dry Concrete Density, δ**c**:	150	pcf

Soil Properties

Total Soil Unit Weight, γ:	125	pcf
Ultimate Gross Bearing, Qult:	20.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	36	degrees
SPT Blow Count, N_{blows}:	60	
Base Friction, μ:	0.6	
Neglected Depth, **N**:	3.50	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	N/A	ft

<--Toggle between Gross and Net

Foundation Analysis Checks

	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	895.90	38.29	**4.1%**	**Pass**
Bearing Pressure (ksf)	15.00	2.55	**16.2%**	**Pass**
*Overturning (kip*ft)*	13622.97	3995.51	**29.3%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	4584.47	3793.02	**78.8%**	**Pass**
Pier Compression (kip)	18370.97	107.64	**0.6%**	**Pass**
*Pad Flexure (kip*ft)*	10676.27	1416.45	**12.6%**	**Pass**
Pad Shear - 1-way (kips)	1541.61	157.59	**9.7%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.164	0.016	**9.3%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	16729.69	2275.81	**13.0%**	**Pass**

**Rating per TIA-222-H Section 15.5*

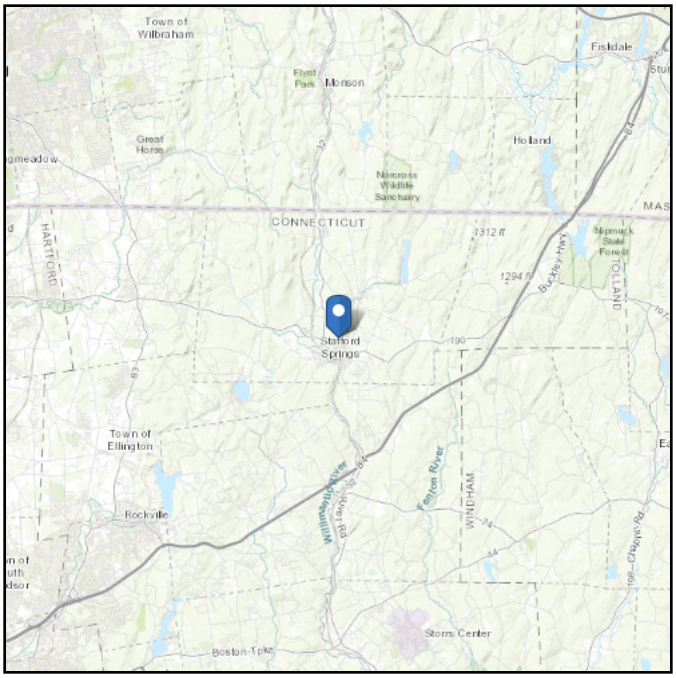
Structural Rating*:	**78.8%**
Soil Rating*:	**29.3%**

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see Section 11.4.3)

Elevation: 754.15 ft (NAVD 88)
Latitude: 41.964222
Longitude: -72.304944



Wind

Results:

Wind Speed:	118 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	98 Vmph

Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed:	Tue Sep 21 2021

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 7-16 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 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

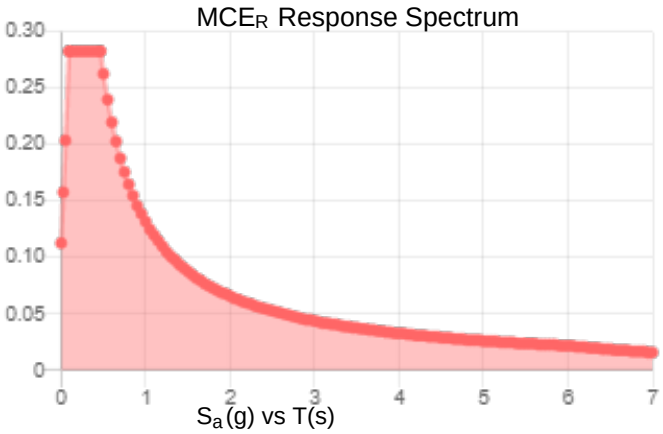
Seismic

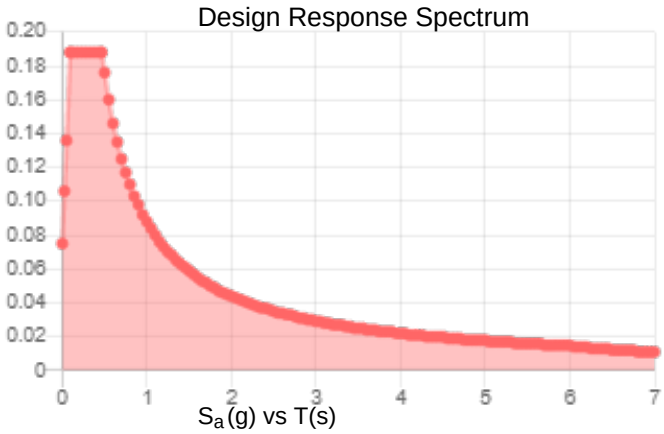
Site Soil Class: D - Default (see Section 11.4.3)

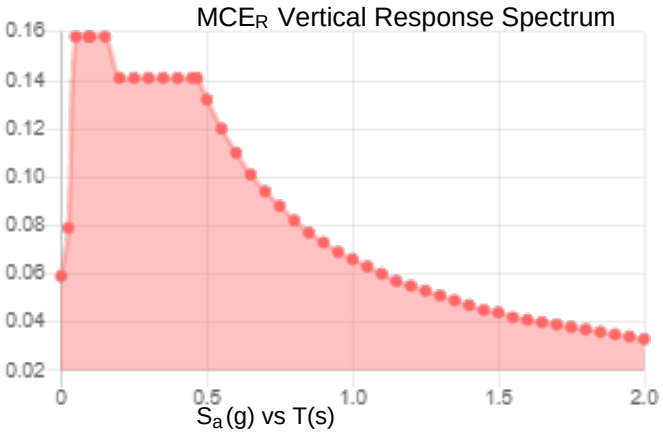
Results:

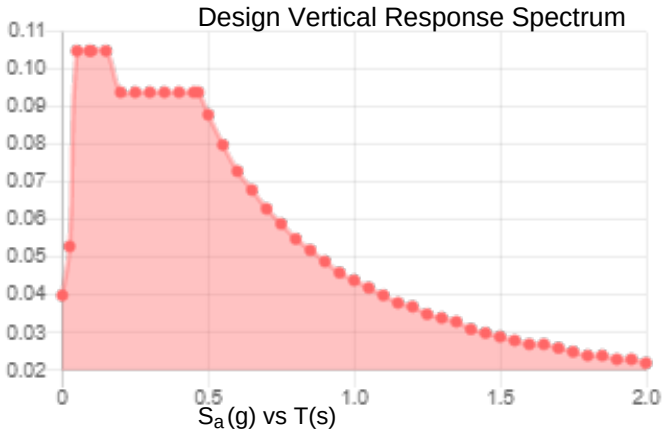
S_S :	0.177	S_{D1} :	0.088
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.093
F_v :	2.4	PGA_M :	0.149
S_{MS} :	0.283	F_{PGA} :	1.6
S_{M1} :	0.132	I_e :	1
S_{DS} :	0.188	C_v :	0.7

Seismic Design Category B









Data Accessed: Tue Sep 21 2021

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	1.50 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Tue Sep 21 2021

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

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

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

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

Exhibit E

Mount Analysis

Date: **September 16, 2021**

Darcy Tarr
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277
(704) 405-6589

Trylon
1825 W. Walnut Hill Lane,
Suite 302
Irving, TX 75038
214-930-1730

Subject:	**Mount Analysis Report**	
Carrier Designation:	**T-Mobile Anchor**	
	Carrier Site Number:	CT11528C
	Carrier Site Name:	CT528/Crown Castle MP
Crown Castle Designation:	**Crown Castle BU Number:**	806365
	Crown Castle Site Name:	HRT 303 943203
	Crown Castle JDE Job Number:	680923
	Crown Castle Order Number:	581569 Rev. 0
Engineering Firm Designation:	**Trylon Report Designation:**	191979
Site Data:	**Brendon & Quinn Streets, Stafford, Tolland County, CT, 06076**	
	Latitude 41°57'51.20" Longitude -72°18'17.80"	
Structure Information:	**Tower Height & Type:**	**129.0 ft Monopole**
	Mount Elevation:	**125.0 ft**
	Mount Type:	**14.0 ft Platform**

Dear Darcy Tarr,

Trylon 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:

Platform	**Sufficient**

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

Mount analysis prepared by: Ionela Neamtu

Respectfully Submitted by:
Jinshan Wang, P.E.

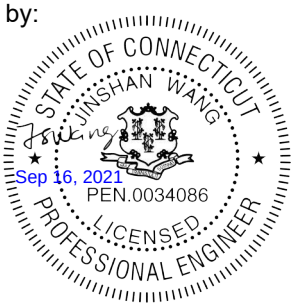


TABLE OF CONTENTS

1) INTRODUCTION

This is an existing 4 sector 14.0 ft Platform, designed by Perfect Vision.

2) ANALYSIS CRITERIA

Building Code:	2015 IBC / 2018 CTSBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	125 mph
Exposure Category:	C
Topographic Factor at Base:	1.00
Topographic Factor at Mount:	1.00
Ice Thickness:	2.00 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.173
Seismic S_1:	0.064
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb
Man Live Load at Mount Pipes:	500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
125.0	124.0	4	ERICSSON	AIR6449 B41_T-MOBILE	14.0 ft Platform
		4	RFS/CELWAVE	APXVAARR24_43-UNA20	
		4	ERICSSON	RADIO 4449 B71 B85A_T-MOBILE	
		4	ERICSSON	RADIO 4460 B2/B25 B66_TMO	
	123.0	1	FASTBACK NETWORKS	IBR 1300_CCIV2	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	T-Mobile Application	581569, Rev.0	CCI Sites
Mount Manufacturer Drawings	Perfect Vision	PV-SLPP Square Monopole Platform	Trylon

3.1) Analysis Method

RISA-3D (Version 17.0.4), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

A tool internally developed, using Microsoft Excel, by Trylon 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 Table 1 and the referenced drawings.
3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
4) The analysis will be required to be revised if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.
5) Prior structural modifications to the tower mounting system are assumed to be installed as shown per available data.
6) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM A500 (GR B-46)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325

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

4) ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity (Platform, All Sectors)

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1,2	Mount Pipe(s)	MP10	125.0	74.2	Pass
	Horizontal(s)	H1		48.9	Pass
	Standoff(s)	M4		81.4	Pass
	Internal horizontal(s)	M5		55.1	Pass
	Handrail(s)	M93		26.6	Pass
	Mount Connection(s)	--		70.3	Pass

Structure Rating (max from all components) =	81.4%

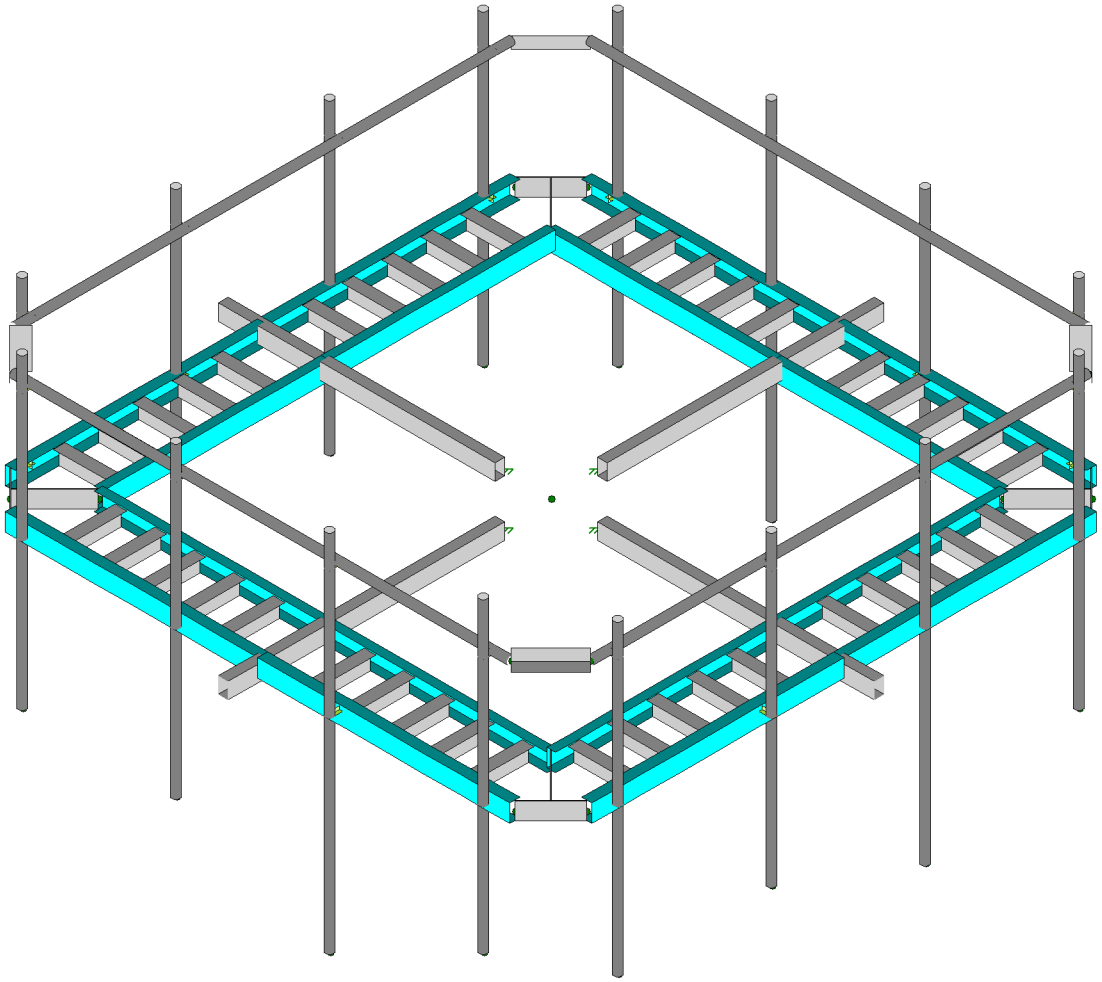
Notes:
1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
2) Rating per TIA-222-H, Section 15.5

4.1) Recommendations

The mount has sufficient capacity to carry the proposed loading configuration. No modifications are required at this time.

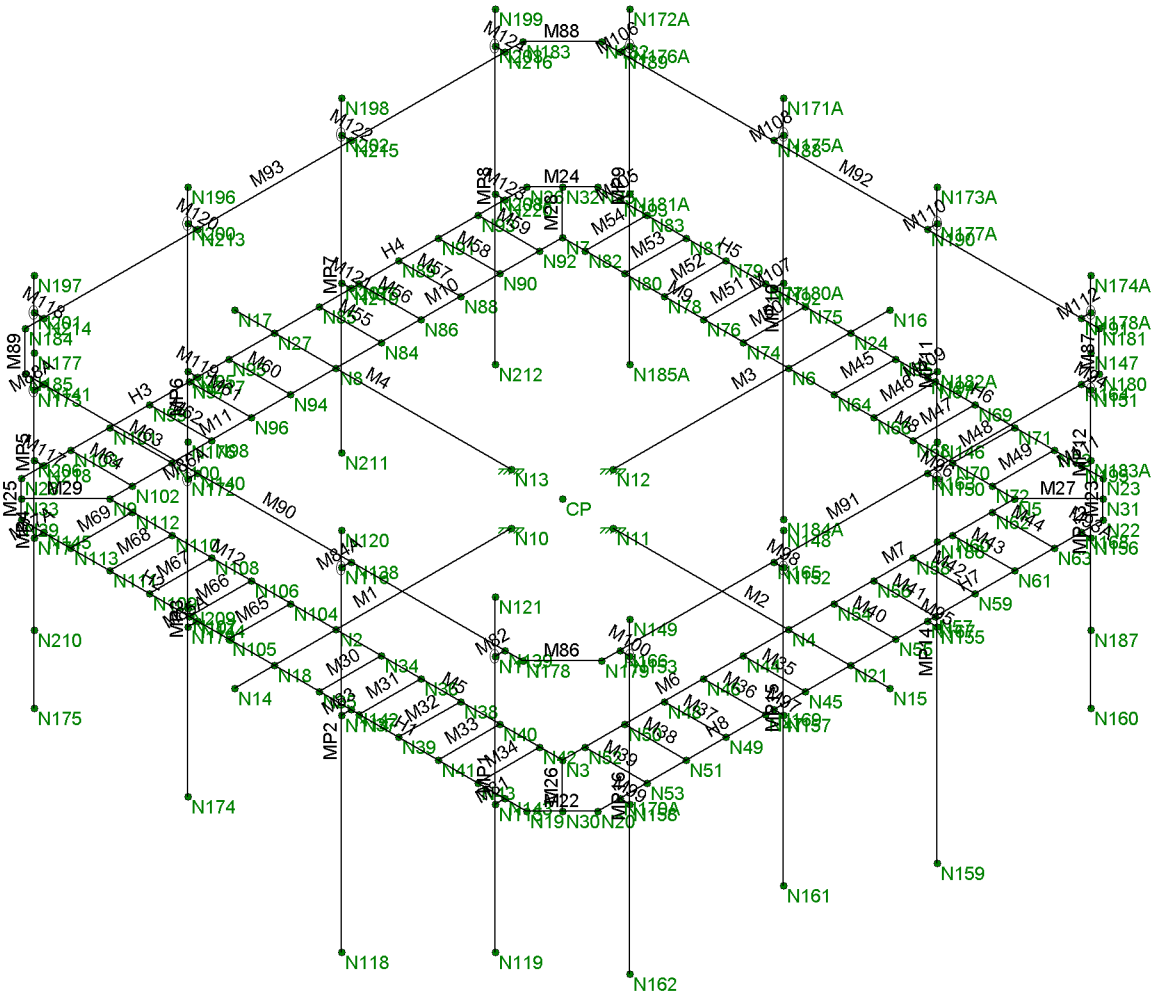
APPENDIX A

WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

Trylon	806365	SK - 1
IN		Sept 16, 2021 at 1:43 PM
191979		806365_loaded.r3d



Envelope Only Solution

Trylon	806365	SK - 2
IN		Sept 16, 2021 at 1:43 PM
191979		806365_loaded.r3d

APPENDIX B

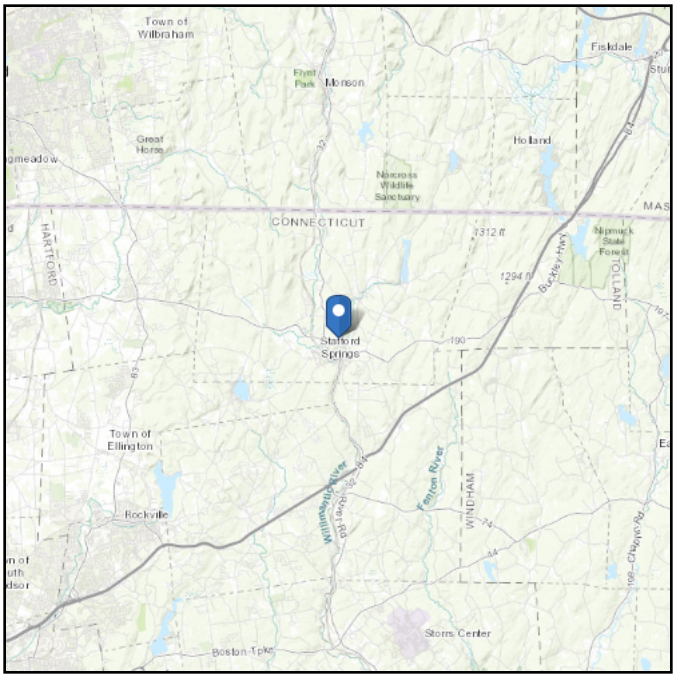
SOFTWARE INPUT CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 754.15 ft (NAVD 88)
Latitude: 41.964222
Longitude: -72.304944



Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph

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

Date Accessed: Thu Sep 16 2021

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

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

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

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

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

Trylon
1825 W. Walnut Hill Lane Suite 120
Irving, TX 75038

TIA LOAD CALCULATOR 2.1

PROJECT DATA	
Job Code:	191979
Carrier Site ID:	806365
Carrier Site Name:	HRT 303 943203

CODES AND STANDARDS	
Building Code:	2015 IBC
Local Building Code:	Connecticut State Building
Design Standard:	TIA-222-H

STRUCTURE DETAILS		
Mount Type:	Platform	--
Mount Elevation:	125.0	ft.
Number of Sectors:	4	--
Structure Type:	Monopole	--
Structure Height:	129.0	ft.

ANALYSIS CRITERIA		
Structure Risk Category:	II	--
Exposure Category:	C	--
Site Class:	D - Stiff Soil	--
Ground Elevation:	754.15	ft.

TOPOGRAPHIC DATA		
Topographic Category:	1.00	--
Topographic Feature:	N/A	--
Crest Point Elevation:	0.00	ft.
Base Point Elevation:	0.00	ft.
Crest to Mid-Height (L/2):	0.00	ft.
Distance from Crest (x):	0.00	ft.
Base Topo Factor (K_{zt}):	1.00	--
Mount Topo Factor (K_{zt}):	1.00	--

WIND PARAMETERS		
Design Wind Speed:	125	mph
Wind Escalation Factor (K_s):	1.00	--
Velocity Coefficient (K_z):	1.33	--
Directionality Factor (K_d):	0.95	--
Gust Effect Factor (Gh):	1.00	--
Shielding Factor (K_a):	0.90	--
Velocity Pressure (q_z):	49.05	psf
Ground Elevation Factor (K_e):	0.97	--

ICE PARAMETERS		
Design Ice Wind Speed:	50	mph
Design Ice Thickness (t_i):	2.00	in
Importance Factor (I_i):	1.00	--
Ice Velocity Pressure (q_{zi}):	49.05	psf
Mount Ice Thickness (t_{iz}):	2.28	in

WIND STRUCTURE CALCULATIONS		
Flat Member Pressure:	88.29	psf
Round Member Pressure:	52.97	psf
Ice Wind Pressure:	7.30	psf

SEISMIC PARAMETERS		
Importance Factor (I_e):	1.00	--
Short Period Accel .(S_s):	0.173	g
1 Second Accel (S_1):	0.064	g
Short Period Des. (S_{DS}):	0.18	g
1 Second Des. (S_{D1}):	0.10	g
Short Period Coeff. (F_a):	1.60	--
1 Second Coeff. (F_v):	2.40	--
Response Coefficient (Cs):	0.09	--
Amplification Factor (A_S):	1.20	--

LOAD COMBINATIONS [LRFD]

#	Description
1	1.4DL
2	1.2DL + 1WL 0 AZI
3	1.2DL + 1WL 30 AZI
4	1.2DL + 1WL 45 AZI
5	1.2DL + 1WL 60 AZI
6	1.2DL + 1WL 90 AZI
7	1.2DL + 1WL 120 AZI
8	1.2DL + 1WL 135 AZI
9	1.2DL + 1WL 150 AZI
10	1.2DL + 1WL 180 AZI
11	1.2DL + 1WL 210 AZI
12	1.2DL + 1WL 225 AZI
13	1.2DL + 1WL 240 AZI
14	1.2DL + 1WL 270 AZI
15	1.2DL + 1WL 300 AZI
16	1.2DL + 1WL 315 AZI
17	1.2DL + 1WL 330 AZI
18	0.9DL + 1WL 0 AZI
19	0.9DL + 1WL 30 AZI
20	0.9DL + 1WL 45 AZI
21	0.9DL + 1WL 60 AZI
22	0.9DL + 1WL 90 AZI
23	0.9DL + 1WL 120 AZI
24	0.9DL + 1WL 135 AZI
25	0.9DL + 1WL 150 AZI
26	0.9DL + 1WL 180 AZI
27	0.9DL + 1WL 210 AZI
28	0.9DL + 1WL 225 AZI
29	0.9DL + 1WL 240 AZI
30	0.9DL + 1WL 270 AZI
31	0.9DL + 1WL 300 AZI
32	0.9DL + 1WL 315 AZI
33	0.9DL + 1WL 330 AZI
34	1.2DL + 1DLi + 1WLi 0 AZI
35	1.2DL + 1DLi + 1WLi 30 AZI
36	1.2DL + 1DLi + 1WLi 45 AZI
37	1.2DL + 1DLi + 1WLi 60 AZI
38	1.2DL + 1DLi + 1WLi 90 AZI
39	1.2DL + 1DLi + 1WLi 120 AZI
40	1.2DL + 1DLi + 1WLi 135 AZI
41	1.2DL + 1DLi + 1WLi 150 AZI

#	Description
42	1.2DL + 1DLi + 1WLi 180 AZI
43	1.2DL + 1DLi + 1WLi 210 AZI
44	1.2DL + 1DLi + 1WLi 225 AZI
45	1.2DL + 1DLi + 1WLi 240 AZI
46	1.2DL + 1DLi + 1WLi 270 AZI
47	1.2DL + 1DLi + 1WLi 300 AZI
48	1.2DL + 1DLi + 1WLi 315 AZI
49	1.2DL + 1DLi + 1WLi 330 AZI
50	(1.2+0.2Sds) + 1.0E 0 AZI
51	(1.2+0.2Sds) + 1.0E 30 AZI
52	(1.2+0.2Sds) + 1.0E 45 AZI
53	(1.2+0.2Sds) + 1.0E 60 AZI
54	(1.2+0.2Sds) + 1.0E 90 AZI
55	(1.2+0.2Sds) + 1.0E 120 AZI
56	(1.2+0.2Sds) + 1.0E 135 AZI
57	(1.2+0.2Sds) + 1.0E 150 AZI
58	(1.2+0.2Sds) + 1.0E 180 AZI
59	(1.2+0.2Sds) + 1.0E 210 AZI
60	(1.2+0.2Sds) + 1.0E 225 AZI
61	(1.2+0.2Sds) + 1.0E 240 AZI
62	(1.2+0.2Sds) + 1.0E 270 AZI
63	(1.2+0.2Sds) + 1.0E 300 AZI
64	(1.2+0.2Sds) + 1.0E 315 AZI
65	(1.2+0.2Sds) + 1.0E 330 AZI
66	(0.9-0.2Sds) + 1.0E 0 AZI
67	(0.9-0.2Sds) + 1.0E 30 AZI
68	(0.9-0.2Sds) + 1.0E 45 AZI
69	(0.9-0.2Sds) + 1.0E 60 AZI
70	(0.9-0.2Sds) + 1.0E 90 AZI
71	(0.9-0.2Sds) + 1.0E 120 AZI
72	(0.9-0.2Sds) + 1.0E 135 AZI
73	(0.9-0.2Sds) + 1.0E 150 AZI
74	(0.9-0.2Sds) + 1.0E 180 AZI
75	(0.9-0.2Sds) + 1.0E 210 AZI
76	(0.9-0.2Sds) + 1.0E 225 AZI
77	(0.9-0.2Sds) + 1.0E 240 AZI
78	(0.9-0.2Sds) + 1.0E 270 AZI
79	(0.9-0.2Sds) + 1.0E 300 AZI
80	(0.9-0.2Sds) + 1.0E 315 AZI
81	(0.9-0.2Sds) + 1.0E 330 AZI
82-88	1.2D + 1.5 Lv1

#	Description
89	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP1
90	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP1
91	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP1
92	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP1
93	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP1
94	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP1
95	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP1
96	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP1
97	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP1
98	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP1
99	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP1
100	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP1
101	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP1
102	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP1
103	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP1
104	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP1
105	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP2
106	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP2
107	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP2
108	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP2
109	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP2
110	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP2
111	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP2
112	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP2
113	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP2
114	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP2
115	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP2
116	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP2
117	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP2
118	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP2
119	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP2
120	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP2

#	Description
121	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP3
122	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP3
123	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP3
124	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP3
125	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP3
126	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP3
127	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP3
128	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP3
129	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP3
130	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP3
131	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP3
132	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP3
133	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP3
134	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP3
135	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP3
136	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP3
137	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP4
138	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP4
139	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP4
140	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP4
141	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP4
142	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP4
143	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP4
144	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP4
145	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP4
146	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP4
147	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP4
148	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP4
149	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP4
150	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP4
151	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP4
152	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP4

*This page shows an example of maintenance loads for (4) pipes, the number of mount pipe LCs may vary per site

EQUIPMENT LOADING

Appurtenance Name	Qty.	Elevation [ft]	--	EPA $_N$ (ft2)	EPA $_T$ (ft2)	Weight (lbs)
IBR 1300_CCIV2	1	123	No Ice	0.67	0.31	8.82
--	--	--	w/ Ice	1.04	0.61	39.08
APXVAARR24_43-U-NA20	4	124	No Ice	14.67	5.32	128.00
--	--	--	w/ Ice	17.86	8.13	584.92
AIR6449 B41_T-MOBILE	4	124	No Ice	5.27	2.03	114.63
--	--	--	w/ Ice	7.12	3.49	213.34
RADIO 4449 B71 B85A_T-MOBILE	4	124	No Ice	1.97	1.59	73.21
--	--	--	w/ Ice	2.56	2.13	115.21
RADIO 4460 B2/B25 B66_TMO	4	124	No Ice	2.14	1.69	109.00
--	--	--	w/ Ice	2.74	2.24	127.33
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			

EQUIPMENT LOADING [CONT.]

Appurtenance Name	Qty.	Elevation [ft]	--	EPA $_N$ (ft2)	EPA $_T$ (ft2)	Weight (lbs)
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			

EQUIPMENT WIND CALCULATIONS

Appurtenance Name	Qty.	Elevation [ft]	K_{zt}	K_z	K_d	t_d	q_z [psf]	q_{zi} [psf]
IBR 1300_CCIV2	1	123	1.00	1.32	0.95	2.28	48.88	7.82
APXVAARR24_43-U-NA20	4	124	1.00	1.32	0.95	2.28	48.97	7.83
AIR6449 B41_T-MOBILE	4	124	1.00	1.32	0.95	2.28	48.97	7.83
IO 4449 B71 B85A_T-MO	4	124	1.00	1.32	0.95	2.28	48.97	7.83
ADIO 4460 B2/B25 B66_TM	4	124	1.00	1.32	0.95	2.28	48.97	7.83

EQUIPMENT LATERAL WIND FORCE CALCULATIONS

Appurtenance Name	Qty.	--	0° 180°	30° 210°	60° 240°	90° 270°	120° 300°	150° 330°
IBR 1300_CCIV2	1	No Ice	29.55	17.50	25.53	13.48	25.53	17.50
--	--	w/ Ice	7.35	5.06	6.59	4.30	6.59	5.06
APXVAARR24_43-U-NA20	4	No Ice	646.50	337.46	543.49	234.45	543.49	337.46
--	--	w/ Ice	125.92	74.46	108.77	57.31	108.77	74.46
AIR6449 B41_T-MOBILE	4	No Ice	232.25	125.16	196.55	89.46	196.55	125.16
--	--	w/ Ice	50.22	31.01	43.82	24.61	43.82	31.01
ADIO 4449 B71 B85A_T-MOBIL	4	No Ice	86.82	74.14	82.60	69.92	82.60	74.14
--	--	w/ Ice	18.03	15.79	17.28	15.04	17.28	15.79
RADIO 4460 B2/B25 B66_TMO	4	No Ice	94.27	79.29	89.28	74.29	89.28	79.29
--	--	w/ Ice	19.33	16.66	18.44	15.77	18.44	16.66
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						

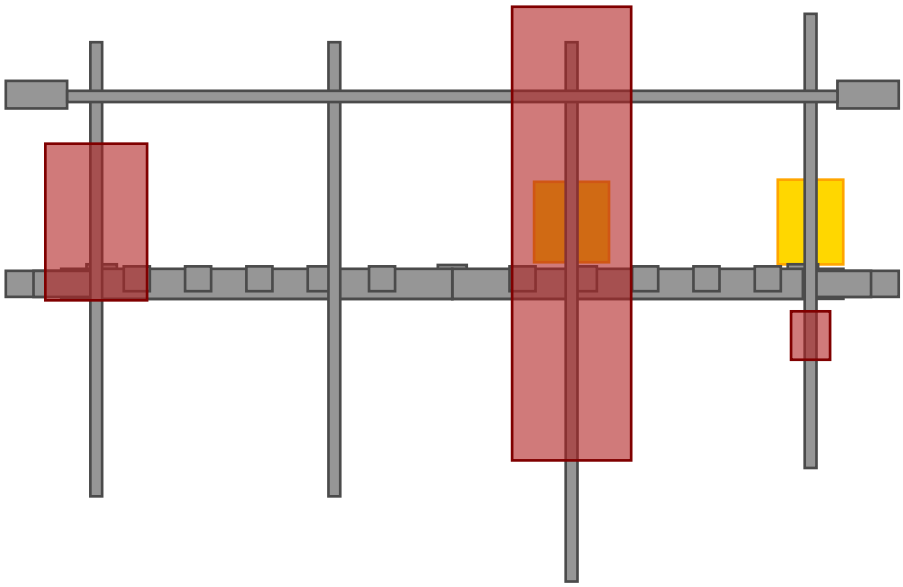
EQUIPMENT LATERAL WIND FORCE CALCULATIONS [CONT.]

Appurtenance Name	*Qty.*	*--*	*0° 180°*	*30° 210°*	*60° 240°*	*90° 270°*	*120° 300°*	*150° 330°*
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						

EQUIPMENT SEISMIC FORCE CALCULATIONS

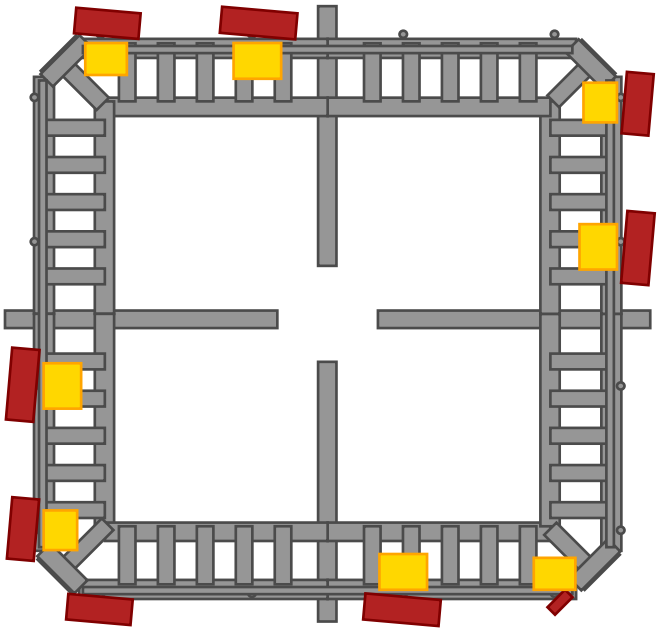
Appurtenance Name	*Qty.*	*Elevation [ft]*	*Weight [lbs]*	F_p [lbs]
IBR 1300_CCIV2	1	123	8.82	0.98
APXVAARR24_43-U-NA20	4	124	128	14.17
AIR6449 B41_T-MOBILE	4	124	114.63	12.69
RADIO 4449 B71 B85A_T-MOBILE	4	124	73.21	8.11
RADIO 4460 B2/B25 B66_TMO	4	124	109	12.07

ELEVATION VIEW



*Elevation View Shows Alpha Sector Only

PLAN VIEW



1825 W. Walnut Hill Lane, Suite 120
Irving, Texas 75038

Equipment Name	Total Quantity	Antenna Centerline	Mount Pipe Positions	Equipment Azimuths
IBR 1300_CCIV2	1	123	MP1	315
APXVAARR24_43-U-NA20	4	124	MP2/MP6/MP10/MP14	5/95/185/275
AIR6449 B41_T-MOBILE	4	124	MP4/MP5/MP9/MP13	5/95/185/275
RADIO 4449 B71 B85A_T-MOBILE	4	124	MP1/MP5/MP9/MP13	0/90/180/270
RADIO 4460 B2/B25 B66_TMO	4	124	MP2/MP6/MP10/MP14	0/90/180/270

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (in/sec^2)	386.4
Wall Mesh Size (in)	24
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Z
Global Member Orientation Plane	XY
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 15th(360-16): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 15th(360-16): LRFD
Cold Formed Steel Code	AISI S100-16: LRFD
Wood Code	None
Wood Temperature	< 100F
Concrete Code	None
Masonry Code	None
Aluminum Code	None - Building
Stainless Steel Code	AISC 14th(360-10): LRFD
Adjust Stiffness?	Yes(Iterative)

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

(Global) Model Settings, Continued

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

Hot Rolled Steel Properties

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

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E5 F)	Density[k/ft^3]	Yield[ksi]	Fu[ksi]
1	A36	29500	11346	.3	.65	.49	36	58

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	T-Arm	HSS5X3X8	Beam	Tube	A500 Gr.B R...	Typical	6.02	7.18	16.4	17.6
2	Corner	1/4X5-1/2	Beam	RECT	A36 Gr.36	Typical	1.375	.007	3.466	.028
3	Stiffener	T5.25x3.75x0.25	Beam	Channel	A36 Gr.36	Typical	2.188	1.105	6.3	.046
4	Antenna Pipe	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
5	Handrail	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
6	Handrail Corner	L5X3X4	Beam	Single Angle	A36 Gr.36	Typical	1.94	1.41	5.09	.044

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Outer	Outer Face	Beam	None	A36	Typical	2.703	2.493	12.791	.056
2	Inner	Inner Face	Beam	None	A36	Typical	2.453	1.507	11.027	.051

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N10	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N13	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N12	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N11	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(...
1	Self Weight	DL			-1		26		4	
2	Structure Wind X	WLX						124		
3	Structure Wind Y	WLY						124		
4	Wind Load 0 AZI	WLX					52			
5	Wind Load 30 AZI	None					52			
6	Wind Load 45 AZI	None					52			
7	Wind Load 60 AZI	None					52			
8	Wind Load 90 AZI	WLY					52			
9	Wind Load 120 AZI	None					52			
10	Wind Load 135 AZI	None					52			
11	Wind Load 150 AZI	None					52			
12	Ice Weight	OL1					26	124	4	
13	Ice Structure Wind X	OL2						124		
14	Ice Structure Wind Y	OL3						124		
15	Ice Wind Load 0 AZI	OL2					52			
16	Ice Wind Load 30 AZI	None					52			
17	Ice Wind Load 45 AZI	None					52			
18	Ice Wind Load 60 AZI	None					52			
19	Ice Wind Load 90 AZI	OL3					52			
20	Ice Wind Load 120 AZI	None					52			
21	Ice Wind Load 135 AZI	None					52			
22	Ice Wind Load 150 AZI	None					52			
23	Seismic Load X	ELX	-.111				26			
24	Seismic Load Y	ELY		-.111			26			
25	Live Load 1 (Lv)	None					1			
26	Live Load 2 (Lv)	None					1			
27	Live Load 3 (Lv)	None					1			
28	Live Load 4 (Lv)	None					1			
29	Live Load 5 (Lv)	None					1			
30	Live Load 6 (Lv)	None					1			
31	Live Load 7 (Lv)	None					1			
32	Live Load 8 (Lv)	None					1			
33	Live Load 9 (Lv)	None					1			
34	Live Load 10 (Lv)	None					1			
35	Live Load 11 (Lv)	None					1			
36	Live Load 12 (Lv)	None					1			

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(...
37	Live Load 13 (Lv)	None					1			
38	Live Load 14 (Lv)	None					1			
39	Live Load 15 (Lv)	None					1			
40	Live Load 16 (Lv)	None					1			
41	Live Load 17 (Lv)	None					1			
42	Live Load 18 (Lv)	None					1			
43	Live Load 19 (Lv)	None					1			
44	Live Load 20 (Lv)	None					1			
45	Live Load 21 (Lv)	None					1			
46	Live Load 22 (Lv)	None					1			
47	Live Load 23 (Lv)	None					1			
48	Live Load 24 (Lv)	None					1			
49	Maintenance Load 1 (Lm)	None					1			
50	Maintenance Load 2 (Lm)	None					1			
51	Maintenance Load 3 (Lm)	None					1			
52	Maintenance Load 4 (Lm)	None					1			
53	Maintenance Load 5 (Lm)	None					1			
54	Maintenance Load 6 (Lm)	None					1			
55	Maintenance Load 7 (Lm)	None					1			
56	Maintenance Load 8 (Lm)	None					1			
57	Maintenance Load 9 (Lm)	None					1			
58	Maintenance Load 10 (Lm)	None					1			
59	Maintenance Load 11 (Lm)	None					1			
60	Maintenance Load 12 (Lm)	None					1			
61	Maintenance Load 13 (Lm)	None					1			
62	Maintenance Load 14 (Lm)	None					1			
63	Maintenance Load 15 (Lm)	None					1			
64	Maintenance Load 16 (Lm)	None					1			
65	BLC 1 Transient Area Loads	None						268		
66	BLC 12 Transient Area Loads	None						268		

Load Combinations

	Description	S...	P...	S...	B...	Factor	B...	Fac...	B...	Fac...	BLC	Fac...	BLC	Fac...	B...	Fac...	B...	Fac...	B...	Fac...	B...	Fac...	B...	Fac...
1	1.4DL	Yes	Y		DL	1.4																		
2	1.2DL + 1WL 0 AZI	Yes	Y		DL	1.2	2	1	3		4	1												
3	1.2DL + 1WL 30 AZI	Yes	Y		DL	1.2	2	.866	3	.5	5	1												
4	1.2DL + 1WL 45 AZI	Yes	Y		DL	1.2	2	.707	3	.707	6	1												
5	1.2DL + 1WL 60 AZI	Yes	Y		DL	1.2	2	.5	3	.866	7	1												
6	1.2DL + 1WL 90 AZI	Yes	Y		DL	1.2	2		3	1	8	1												
7	1.2DL + 1WL 120 AZI	Yes	Y		DL	1.2	2	-.5	3	.866	9	1												
8	1.2DL + 1WL 135 AZI	Yes	Y		DL	1.2	2	-.707	3	.707	10	1												
9	1.2DL + 1WL 150 AZI	Yes	Y		DL	1.2	2	-.866	3	.5	11	1												
10	1.2DL + 1WL 180 AZI	Yes	Y		DL	1.2	2	-1	3		4	-1												
11	1.2DL + 1WL 210 AZI	Yes	Y		DL	1.2	2	-.866	3	-.5	5	-1												
12	1.2DL + 1WL 225 AZI	Yes	Y		DL	1.2	2	-.707	3	-.707	6	-1												
13	1.2DL + 1WL 240 AZI	Yes	Y		DL	1.2	2	-.5	3	-.866	7	-1												
14	1.2DL + 1WL 270 AZI	Yes	Y		DL	1.2	2		3	-1	8	-1												
15	1.2DL + 1WL 300 AZI	Yes	Y		DL	1.2	2	.5	3	-.866	9	-1												
16	1.2DL + 1WL 315 AZI	Yes	Y		DL	1.2	2	.707	3	-.707	10	-1												
17	1.2DL + 1WL 330 AZI	Yes	Y		DL	1.2	2	.866	3	-.5	11	-1												

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Factor	B...	Fac...	B...	Fac...	BLC	Fac...	BLC	Fac...	B...	Fac...	B...	Fac...	B...	Fac...	B...	Fac...	B...	Fac...
18	0.9DL + 1WL 0 AZI	Yes	Y		DL	.9	2	1	3		4	1												
19	0.9DL + 1WL 30 AZI	Yes	Y		DL	.9	2	.866	3	.5	5	1												
20	0.9DL + 1WL 45 AZI	Yes	Y		DL	.9	2	.707	3	.707	6	1												
21	0.9DL + 1WL 60 AZI	Yes	Y		DL	.9	2	.5	3	.866	7	1												
22	0.9DL + 1WL 90 AZI	Yes	Y		DL	.9	2		3	1	8	1												
23	0.9DL + 1WL 120 AZI	Yes	Y		DL	.9	2	-.5	3	.866	9	1												
24	0.9DL + 1WL 135 AZI	Yes	Y		DL	.9	2	-.707	3	.707	10	1												
25	0.9DL + 1WL 150 AZI	Yes	Y		DL	.9	2	-.866	3	.5	11	1												
26	0.9DL + 1WL 180 AZI	Yes	Y		DL	.9	2	-1	3		4	-1												
27	0.9DL + 1WL 210 AZI	Yes	Y		DL	.9	2	-.866	3	-.5	5	-1												
28	0.9DL + 1WL 225 AZI	Yes	Y		DL	.9	2	-.707	3	-.707	6	-1												
29	0.9DL + 1WL 240 AZI	Yes	Y		DL	.9	2	-.5	3	-.866	7	-1												
30	0.9DL + 1WL 270 AZI	Yes	Y		DL	.9	2		3	-1	8	-1												
31	0.9DL + 1WL 300 AZI	Yes	Y		DL	.9	2	.5	3	-.866	9	-1												
32	0.9DL + 1WL 315 AZI	Yes	Y		DL	.9	2	.707	3	-.707	10	-1												
33	0.9DL + 1WL 330 AZI	Yes	Y		DL	.9	2	.866	3	-.5	11	-1												
34	1.2DL + 1DLi + 1WLi 0 A...	Yes	Y		DL	1.2	O...	1	13	1	14		15	1										
35	1.2DL + 1DLi + 1WLi 30 ...	Yes	Y		DL	1.2	O...	1	13	.866	14	.5	16	1										
36	1.2DL + 1DLi + 1WLi 45 ...	Yes	Y		DL	1.2	O...	1	13	.707	14	.707	17	1										
37	1.2DL + 1DLi + 1WLi 60 ...	Yes	Y		DL	1.2	O...	1	13	.5	14	.866	18	1										
38	1.2DL + 1DLi + 1WLi 90 ...	Yes	Y		DL	1.2	O...	1	13		14	1	19	1										
39	1.2DL + 1DLi + 1WLi 12...	Yes	Y		DL	1.2	O...	1	13	-.5	14	.866	20	1										
40	1.2DL + 1DLi + 1WLi 13...	Yes	Y		DL	1.2	O...	1	13	-.707	14	.707	21	1										
41	1.2DL + 1DLi + 1WLi 15...	Yes	Y		DL	1.2	O...	1	13	-.866	14	.5	22	1										
42	1.2DL + 1DLi + 1WLi 18...	Yes	Y		DL	1.2	O...	1	13	-1	14		15	-1										
43	1.2DL + 1DLi + 1WLi 21...	Yes	Y		DL	1.2	O...	1	13	-.866	14	-.5	16	-1										
44	1.2DL + 1DLi + 1WLi 22...	Yes	Y		DL	1.2	O...	1	13	-.707	14	-.707	17	-1										
45	1.2DL + 1DLi + 1WLi 24...	Yes	Y		DL	1.2	O...	1	13	-.5	14	-.866	18	-1										
46	1.2DL + 1DLi + 1WLi 27...	Yes	Y		DL	1.2	O...	1	13		14	-1	19	-1										
47	1.2DL + 1DLi + 1WLi 30...	Yes	Y		DL	1.2	O...	1	13	.5	14	-.866	20	-1										
48	1.2DL + 1DLi + 1WLi 31...	Yes	Y		DL	1.2	O...	1	13	.707	14	-.707	21	-1										
49	1.2DL + 1DLi + 1WLi 33...	Yes	Y		DL	1.2	O...	1	13	.866	14	-.5	22	-1										
50	(1.2+0.2Sds)DL + 1E 0 ...	Yes	Y		DL	1.237	23	1	24															
51	(1.2+0.2Sds)DL + 1E 30 ...	Yes	Y		DL	1.237	23	.866	24	.5														
52	(1.2+0.2Sds)DL + 1E 45 ...	Yes	Y		DL	1.237	23	.707	24	.707														
53	(1.2+0.2Sds)DL + 1E 60 ...	Yes	Y		DL	1.237	23	.5	24	.866														
54	(1.2+0.2Sds)DL + 1E 90 ...	Yes	Y		DL	1.237	23		24	1														
55	(1.2+0.2Sds)DL + 1E 12...	Yes	Y		DL	1.237	23	-.5	24	.866														
56	(1.2+0.2Sds)DL + 1E 13...	Yes	Y		DL	1.237	23	-.707	24	.707														
57	(1.2+0.2Sds)DL + 1E 15...	Yes	Y		DL	1.237	23	-.866	24	.5														
58	(1.2+0.2Sds)DL + 1E 18...	Yes	Y		DL	1.237	23	-1	24															
59	(1.2+0.2Sds)DL + 1E 21...	Yes	Y		DL	1.237	23	-.866	24	-.5														
60	(1.2+0.2Sds)DL + 1E 22...	Yes	Y		DL	1.237	23	-.707	24	-.707														
61	(1.2+0.2Sds)DL + 1E 24...	Yes	Y		DL	1.237	23	-.5	24	-.866														
62	(1.2+0.2Sds)DL + 1E 27...	Yes	Y		DL	1.237	23		24	-1														
63	(1.2+0.2Sds)DL + 1E 30...	Yes	Y		DL	1.237	23	.5	24	-.866														
64	(1.2+0.2Sds)DL + 1E 31...	Yes	Y		DL	1.237	23	.707	24	-.707														
65	(1.2+0.2Sds)DL + 1E 33...	Yes	Y		DL	1.237	23	.866	24	-.5														
66	(0.9-0.2Sds)DL + 1E 0 AZI	Yes	Y		DL	.863	23	1	24															
67	(0.9-0.2Sds)DL + 1E 30 ...	Yes	Y		DL	.863	23	.866	24	.5														
68	(0.9-0.2Sds)DL + 1E 45 ...	Yes	Y		DL	.863	23	.707	24	.707														
69	(0.9-0.2Sds)DL + 1E 60 ...	Yes	Y		DL	.863	23	.5	24	.866														

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Factor	B...	Fac...	B...	Fac...	BLC	Fac...	BLC	Fac...	B...	Fac...	B...	Fac...	B...	Fac...	B...	Fac...	B...	Fac...
70	(0.9-0.2Sds)DL + 1E 90 ...	Yes	Y		DL	.863	23		24	1														
71	(0.9-0.2Sds)DL + 1E 120..	Yes	Y		DL	.863	23	-.5	24	.866														
72	(0.9-0.2Sds)DL + 1E 135..	Yes	Y		DL	.863	23	-.707	24	.707														
73	(0.9-0.2Sds)DL + 1E 150..	Yes	Y		DL	.863	23	-.866	24	.5														
74	(0.9-0.2Sds)DL + 1E 180..	Yes	Y		DL	.863	23	-1	24															
75	(0.9-0.2Sds)DL + 1E 210..	Yes	Y		DL	.863	23	-.866	24	-.5														
76	(0.9-0.2Sds)DL + 1E 225..	Yes	Y		DL	.863	23	-.707	24	-.707														
77	(0.9-0.2Sds)DL + 1E 240..	Yes	Y		DL	.863	23	-.5	24	-.866														
78	(0.9-0.2Sds)DL + 1E 270..	Yes	Y		DL	.863	23		24	-1														
79	(0.9-0.2Sds)DL + 1E 300..	Yes	Y		DL	.863	23	.5	24	-.866														
80	(0.9-0.2Sds)DL + 1E 315..	Yes	Y		DL	.863	23	.707	24	-.707														
81	(0.9-0.2Sds)DL + 1E 330..	Yes	Y		DL	.863	23	.866	24	-.5														
82	1.2DL + 1Lv1	Yes	Y		DL	1.2	25	1.5																
83	1.2DL + 1Lv2	Yes	Y		DL	1.2	26	1.5																
84	1.2DL + 1Lv3	Yes	Y		DL	1.2	27	1.5																
85	1.2DL + 1Lv4	Yes	Y		DL	1.2	28	1.5																
86	1.2DL + 1Lv5	Yes	Y		DL	1.2	29	1.5																
87	1.2DL + 1Lv6	Yes	Y		DL	1.2	30	1.5																
88	1.2DL + 1Lv7	Yes	Y		DL	1.2	31	1.5																
89	1.2DL + 1Lv8	Yes	Y		DL	1.2	32	1.5																
90	1.2DL + 1Lv9	Yes	Y		DL	1.2	33	1.5																
91	1.2DL + 1Lv10	Yes	Y		DL	1.2	34	1.5																
92	1.2DL + 1Lv11	Yes	Y		DL	1.2	35	1.5																
93	1.2DL + 1Lv12	Yes	Y		DL	1.2	36	1.5																
94	1.2DL + 1Lv13	Yes	Y		DL	1.2	37	1.5																
95	1.2DL + 1Lv14	Yes	Y		DL	1.2	38	1.5																
96	1.2DL + 1Lv15	Yes	Y		DL	1.2	39	1.5																
97	1.2DL + 1Lv16	Yes	Y		DL	1.2	40	1.5																
98	1.2DL + 1Lv17	Yes	Y		DL	1.2	41	1.5																
99	1.2DL + 1Lv18	Yes	Y		DL	1.2	42	1.5																
100	1.2DL + 1Lv19	Yes	Y		DL	1.2	43	1.5																
101	1.2DL + 1Lv20	Yes	Y		DL	1.2	44	1.5																
102	1.2DL + 1Lv21	Yes	Y		DL	1.2	45	1.5																
103	1.2DL + 1Lv22	Yes	Y		DL	1.2	46	1.5																
104	1.2DL + 1Lv23	Yes	Y		DL	1.2	47	1.5																
105	1.2DL + 1Lv24	Yes	Y		DL	1.2	48	1.5																
106	1.2DL + 1.5Lm + 1Wm 0..	Yes	Y		DL	1.2	49	1.5	2	.058	3		4	.058										
107	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	49	1.5	2	.05	3	.029	5	.058										
108	1.2DL + 1.5Lm + 1Wm 4..	Yes	Y		DL	1.2	49	1.5	2	.041	3	.041	6	.058										
109	1.2DL + 1.5Lm + 1Wm 6..	Yes	Y		DL	1.2	49	1.5	2	.029	3	.05	7	.058										
110	1.2DL + 1.5Lm + 1Wm 9..	Yes	Y		DL	1.2	49	1.5	2		3	.058	8	.058										
111	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	49	1.5	2	-.029	3	.05	9	.058										
112	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	49	1.5	2	-.041	3	.041	10	.058										
113	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	49	1.5	2	-.05	3	.029	11	.058										
114	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	49	1.5	2	-.058	3		4	-.058										
115	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	49	1.5	2	-.05	3	-.029	5	-.058										
116	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	49	1.5	2	-.041	3	-.041	6	-.058										
117	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	49	1.5	2	-.029	3	-.05	7	-.058										
118	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	49	1.5	2		3	-.058	8	-.058										
119	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	49	1.5	2	.029	3	-.05	9	-.058										
120	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	49	1.5	2	.041	3	-.041	10	-.058										
121	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	49	1.5	2	.05	3	-.029	11	-.058										

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Factor	B...	Fac...	B...	Fac...	BLC	Fac...	BLC	Fac...	B...	Fac...	B...	Fac...	B...	Fac...	B...	Fac...	B...	Fac...
122	1.2DL + 1.5Lm + 1Wm 0..	Yes	Y		DL	1.2	50	1.5	2	.058	3		4	.058										
123	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	50	1.5	2	.05	3	.029	5	.058										
124	1.2DL + 1.5Lm + 1Wm 4..	Yes	Y		DL	1.2	50	1.5	2	.041	3	.041	6	.058										
125	1.2DL + 1.5Lm + 1Wm 6..	Yes	Y		DL	1.2	50	1.5	2	.029	3	.05	7	.058										
126	1.2DL + 1.5Lm + 1Wm 9..	Yes	Y		DL	1.2	50	1.5	2		3	.058	8	.058										
127	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	50	1.5	2	-.029	3	.05	9	.058										
128	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	50	1.5	2	-.041	3	.041	10	.058										
129	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	50	1.5	2	-.05	3	.029	11	.058										
130	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	50	1.5	2	-.058	3		4	-.058										
131	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	50	1.5	2	-.05	3	-.029	5	-.058										
132	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	50	1.5	2	-.041	3	-.041	6	-.058										
133	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	50	1.5	2	-.029	3	-.05	7	-.058										
134	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	50	1.5	2		3	-.058	8	-.058										
135	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	50	1.5	2	.029	3	-.05	9	-.058										
136	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	50	1.5	2	.041	3	-.041	10	-.058										
137	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	50	1.5	2	.05	3	-.029	11	-.058										
138	1.2DL + 1.5Lm + 1Wm 0..	Yes	Y		DL	1.2	51	1.5	2	.058	3		4	.058										
139	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	51	1.5	2	.05	3	.029	5	.058										
140	1.2DL + 1.5Lm + 1Wm 4..	Yes	Y		DL	1.2	51	1.5	2	.041	3	.041	6	.058										
141	1.2DL + 1.5Lm + 1Wm 6..	Yes	Y		DL	1.2	51	1.5	2	.029	3	.05	7	.058										
142	1.2DL + 1.5Lm + 1Wm 9..	Yes	Y		DL	1.2	51	1.5	2		3	.058	8	.058										
143	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	51	1.5	2	-.029	3	.05	9	.058										
144	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	51	1.5	2	-.041	3	.041	10	.058										
145	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	51	1.5	2	-.05	3	.029	11	.058										
146	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	51	1.5	2	-.058	3		4	-.058										
147	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	51	1.5	2	-.05	3	-.029	5	-.058										
148	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	51	1.5	2	-.041	3	-.041	6	-.058										
149	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	51	1.5	2	-.029	3	-.05	7	-.058										
150	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	51	1.5	2		3	-.058	8	-.058										
151	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	51	1.5	2	.029	3	-.05	9	-.058										
152	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	51	1.5	2	.041	3	-.041	10	-.058										
153	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	51	1.5	2	.05	3	-.029	11	-.058										
154	1.2DL + 1.5Lm + 1Wm 0..	Yes	Y		DL	1.2	52	1.5	2	.058	3		4	.058										
155	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	52	1.5	2	.05	3	.029	5	.058										
156	1.2DL + 1.5Lm + 1Wm 4..	Yes	Y		DL	1.2	52	1.5	2	.041	3	.041	6	.058										
157	1.2DL + 1.5Lm + 1Wm 6..	Yes	Y		DL	1.2	52	1.5	2	.029	3	.05	7	.058										
158	1.2DL + 1.5Lm + 1Wm 9..	Yes	Y		DL	1.2	52	1.5	2		3	.058	8	.058										
159	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	52	1.5	2	-.029	3	.05	9	.058										
160	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	52	1.5	2	-.041	3	.041	10	.058										
161	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	52	1.5	2	-.05	3	.029	11	.058										
162	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	52	1.5	2	-.058	3		4	-.058										
163	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	52	1.5	2	-.05	3	-.029	5	-.058										
164	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	52	1.5	2	-.041	3	-.041	6	-.058										
165	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	52	1.5	2	-.029	3	-.05	7	-.058										
166	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	52	1.5	2		3	-.058	8	-.058										
167	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	52	1.5	2	.029	3	-.05	9	-.058										
168	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	52	1.5	2	.041	3	-.041	10	-.058										
169	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	52	1.5	2	.05	3	-.029	11	-.058										
170	1.2DL + 1.5Lm + 1Wm 0..	Yes	Y		DL	1.2	53	1.5	2	.058	3		4	.058										
171	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	53	1.5	2	.05	3	.029	5	.058										
172	1.2DL + 1.5Lm + 1Wm 4..	Yes	Y		DL	1.2	53	1.5	2	.041	3	.041	6	.058										
173	1.2DL + 1.5Lm + 1Wm 6..	Yes	Y		DL	1.2	53	1.5	2	.029	3	.05	7	.058										

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Factor	B...	Fac..	B...	Fac...	BLC	Fac..	BLC	Fac..	B...	Fac..	B...	Fac..	B...	Fac..	B...	Fac..	B...	Fac...
174	1.2DL + 1.5Lm + 1Wm 9..	Yes	Y		DL	1.2	53	1.5	2		3	.058	8	.058										
175	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	53	1.5	2	-.029	3	.05	9	.058										
176	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	53	1.5	2	-.041	3	.041	10	.058										
177	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	53	1.5	2	-.05	3	.029	11	.058										
178	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	53	1.5	2	-.058	3		4	-.058										
179	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	53	1.5	2	-.05	3	-.029	5	-.058										
180	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	53	1.5	2	-.041	3	-.041	6	-.058										
181	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	53	1.5	2	-.029	3	-.05	7	-.058										
182	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	53	1.5	2		3	-.058	8	-.058										
183	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	53	1.5	2	.029	3	-.05	9	-.058										
184	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	53	1.5	2	.041	3	-.041	10	-.058										
185	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	53	1.5	2	.05	3	-.029	11	-.058										
186	1.2DL + 1.5Lm + 1Wm 0..	Yes	Y		DL	1.2	54	1.5	2	.058	3		4	.058										
187	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	54	1.5	2	.05	3	.029	5	.058										
188	1.2DL + 1.5Lm + 1Wm 4..	Yes	Y		DL	1.2	54	1.5	2	.041	3	.041	6	.058										
189	1.2DL + 1.5Lm + 1Wm 6..	Yes	Y		DL	1.2	54	1.5	2	.029	3	.05	7	.058										
190	1.2DL + 1.5Lm + 1Wm 9..	Yes	Y		DL	1.2	54	1.5	2		3	.058	8	.058										
191	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	54	1.5	2	-.029	3	.05	9	.058										
192	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	54	1.5	2	-.041	3	.041	10	.058										
193	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	54	1.5	2	-.05	3	.029	11	.058										
194	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	54	1.5	2	-.058	3		4	-.058										
195	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	54	1.5	2	-.05	3	-.029	5	-.058										
196	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	54	1.5	2	-.041	3	-.041	6	-.058										
197	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	54	1.5	2	-.029	3	-.05	7	-.058										
198	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	54	1.5	2		3	-.058	8	-.058										
199	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	54	1.5	2	.029	3	-.05	9	-.058										
200	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	54	1.5	2	.041	3	-.041	10	-.058										
201	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	54	1.5	2	.05	3	-.029	11	-.058										
202	1.2DL + 1.5Lm + 1Wm 0..	Yes	Y		DL	1.2	55	1.5	2	.058	3		4	.058										
203	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	55	1.5	2	.05	3	.029	5	.058										
204	1.2DL + 1.5Lm + 1Wm 4..	Yes	Y		DL	1.2	55	1.5	2	.041	3	.041	6	.058										
205	1.2DL + 1.5Lm + 1Wm 6..	Yes	Y		DL	1.2	55	1.5	2	.029	3	.05	7	.058										
206	1.2DL + 1.5Lm + 1Wm 9..	Yes	Y		DL	1.2	55	1.5	2		3	.058	8	.058										
207	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	55	1.5	2	-.029	3	.05	9	.058										
208	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	55	1.5	2	-.041	3	.041	10	.058										
209	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	55	1.5	2	-.05	3	.029	11	.058										
210	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	55	1.5	2	-.058	3		4	-.058										
211	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	55	1.5	2	-.05	3	-.029	5	-.058										
212	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	55	1.5	2	-.041	3	-.041	6	-.058										
213	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	55	1.5	2	-.029	3	-.05	7	-.058										
214	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	55	1.5	2		3	-.058	8	-.058										
215	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	55	1.5	2	.029	3	-.05	9	-.058										
216	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	55	1.5	2	.041	3	-.041	10	-.058										
217	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	55	1.5	2	.05	3	-.029	11	-.058										
218	1.2DL + 1.5Lm + 1Wm 0..	Yes	Y		DL	1.2	56	1.5	2	.058	3		4	.058										
219	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	56	1.5	2	.05	3	.029	5	.058										
220	1.2DL + 1.5Lm + 1Wm 4..	Yes	Y		DL	1.2	56	1.5	2	.041	3	.041	6	.058										
221	1.2DL + 1.5Lm + 1Wm 6..	Yes	Y		DL	1.2	56	1.5	2	.029	3	.05	7	.058										
222	1.2DL + 1.5Lm + 1Wm 9..	Yes	Y		DL	1.2	56	1.5	2		3	.058	8	.058										
223	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	56	1.5	2	-.029	3	.05	9	.058										
224	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	56	1.5	2	-.041	3	.041	10	.058										
225	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	56	1.5	2	-.05	3	.029	11	.058										

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Factor	B...	Fac..	B...	Fac...	BLC	Fac..	BLC	Fac..	B...	Fac..	B...	Fac..	B...	Fac..	B...	Fac..	B...	Fac..	B...	Fac...
226	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	56	1.5	2	-.058	3		4	-.058												
227	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	56	1.5	2	-.05	3	-.029	5	-.058												
228	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	56	1.5	2	-.041	3	-.041	6	-.058												
229	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	56	1.5	2	-.029	3	-.05	7	-.058												
230	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	56	1.5	2		3	-.058	8	-.058												
231	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	56	1.5	2	.029	3	-.05	9	-.058												
232	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	56	1.5	2	.041	3	-.041	10	-.058												
233	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	56	1.5	2	.05	3	-.029	11	-.058												
234	1.2DL + 1.5Lm + 1Wm 0..	Yes	Y		DL	1.2	57	1.5	2	.058	3		4	.058												
235	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	57	1.5	2	.05	3	.029	5	.058												
236	1.2DL + 1.5Lm + 1Wm 4..	Yes	Y		DL	1.2	57	1.5	2	.041	3	.041	6	.058												
237	1.2DL + 1.5Lm + 1Wm 6..	Yes	Y		DL	1.2	57	1.5	2	.029	3	.05	7	.058												
238	1.2DL + 1.5Lm + 1Wm 9..	Yes	Y		DL	1.2	57	1.5	2		3	.058	8	.058												
239	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	57	1.5	2	-.029	3	.05	9	.058												
240	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	57	1.5	2	-.041	3	.041	10	.058												
241	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	57	1.5	2	-.05	3	.029	11	.058												
242	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	57	1.5	2	-.058	3		4	-.058												
243	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	57	1.5	2	-.05	3	-.029	5	-.058												
244	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	57	1.5	2	-.041	3	-.041	6	-.058												
245	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	57	1.5	2	-.029	3	-.05	7	-.058												
246	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	57	1.5	2		3	-.058	8	-.058												
247	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	57	1.5	2	.029	3	-.05	9	-.058												
248	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	57	1.5	2	.041	3	-.041	10	-.058												
249	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	57	1.5	2	.05	3	-.029	11	-.058												
250	1.2DL + 1.5Lm + 1Wm 0..	Yes	Y		DL	1.2	58	1.5	2	.058	3		4	.058												
251	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	58	1.5	2	.05	3	.029	5	.058												
252	1.2DL + 1.5Lm + 1Wm 4..	Yes	Y		DL	1.2	58	1.5	2	.041	3	.041	6	.058												
253	1.2DL + 1.5Lm + 1Wm 6..	Yes	Y		DL	1.2	58	1.5	2	.029	3	.05	7	.058												
254	1.2DL + 1.5Lm + 1Wm 9..	Yes	Y		DL	1.2	58	1.5	2		3	.058	8	.058												
255	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	58	1.5	2	-.029	3	.05	9	.058												
256	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	58	1.5	2	-.041	3	.041	10	.058												
257	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	58	1.5	2	-.05	3	.029	11	.058												
258	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	58	1.5	2	-.058	3		4	-.058												
259	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	58	1.5	2	-.05	3	-.029	5	-.058												
260	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	58	1.5	2	-.041	3	-.041	6	-.058												
261	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	58	1.5	2	-.029	3	-.05	7	-.058												
262	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	58	1.5	2		3	-.058	8	-.058												
263	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	58	1.5	2	.029	3	-.05	9	-.058												
264	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	58	1.5	2	.041	3	-.041	10	-.058												
265	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	58	1.5	2	.05	3	-.029	11	-.058												
266	1.2DL + 1.5Lm + 1Wm 0..	Yes	Y		DL	1.2	59	1.5	2	.058	3		4	.058												
267	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	59	1.5	2	.05	3	.029	5	.058												
268	1.2DL + 1.5Lm + 1Wm 4..	Yes	Y		DL	1.2	59	1.5	2	.041	3	.041	6	.058												
269	1.2DL + 1.5Lm + 1Wm 6..	Yes	Y		DL	1.2	59	1.5	2	.029	3	.05	7	.058												
270	1.2DL + 1.5Lm + 1Wm 9..	Yes	Y		DL	1.2	59	1.5	2		3	.058	8	.058												
271	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	59	1.5	2	-.029	3	.05	9	.058												
272	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	59	1.5	2	-.041	3	.041	10	.058												
273	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	59	1.5	2	-.05	3	.029	11	.058												
274	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	59	1.5	2	-.058	3		4	-.058												
275	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	59	1.5	2	-.05	3	-.029	5	-.058												
276	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	59	1.5	2	-.041	3	-.041	6	-.058												
277	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	59	1.5	2	-.029	3	-.05	7	-.058												

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Factor	B...	Fac..	B...	Fac...	BLC	Fac..	BLC	Fac..	B...	Fac..	B...	Fac..	B...	Fac..	B...	Fac..	B...	Fac..	B...	Fac...
278	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	59	1.5	2		3	-.058	8	-.058												
279	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	59	1.5	2	.029	3	-.05	9	-.058												
280	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	59	1.5	2	.041	3	-.041	10	-.058												
281	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	59	1.5	2	.05	3	-.029	11	-.058												
282	1.2DL + 1.5Lm + 1Wm 0..	Yes	Y		DL	1.2	60	1.5	2	.058	3		4	.058												
283	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	60	1.5	2	.05	3	.029	5	.058												
284	1.2DL + 1.5Lm + 1Wm 4..	Yes	Y		DL	1.2	60	1.5	2	.041	3	.041	6	.058												
285	1.2DL + 1.5Lm + 1Wm 6..	Yes	Y		DL	1.2	60	1.5	2	.029	3	.05	7	.058												
286	1.2DL + 1.5Lm + 1Wm 9..	Yes	Y		DL	1.2	60	1.5	2		3	.058	8	.058												
287	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	60	1.5	2	-.029	3	.05	9	.058												
288	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	60	1.5	2	-.041	3	.041	10	.058												
289	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	60	1.5	2	-.05	3	.029	11	.058												
290	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	60	1.5	2	-.058	3		4	-.058												
291	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	60	1.5	2	-.05	3	-.029	5	-.058												
292	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	60	1.5	2	-.041	3	-.041	6	-.058												
293	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	60	1.5	2	-.029	3	-.05	7	-.058												
294	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	60	1.5	2		3	-.058	8	-.058												
295	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	60	1.5	2	.029	3	-.05	9	-.058												
296	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	60	1.5	2	.041	3	-.041	10	-.058												
297	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	60	1.5	2	.05	3	-.029	11	-.058												
298	1.2DL + 1.5Lm + 1Wm 0..	Yes	Y		DL	1.2	61	1.5	2	.058	3		4	.058												
299	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	61	1.5	2	.05	3	.029	5	.058												
300	1.2DL + 1.5Lm + 1Wm 4..	Yes	Y		DL	1.2	61	1.5	2	.041	3	.041	6	.058												
301	1.2DL + 1.5Lm + 1Wm 6..	Yes	Y		DL	1.2	61	1.5	2	.029	3	.05	7	.058												
302	1.2DL + 1.5Lm + 1Wm 9..	Yes	Y		DL	1.2	61	1.5	2		3	.058	8	.058												
303	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	61	1.5	2	-.029	3	.05	9	.058												
304	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	61	1.5	2	-.041	3	.041	10	.058												
305	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	61	1.5	2	-.05	3	.029	11	.058												
306	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	61	1.5	2	-.058	3		4	-.058												
307	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	61	1.5	2	-.05	3	-.029	5	-.058												
308	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	61	1.5	2	-.041	3	-.041	6	-.058												
309	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	61	1.5	2	-.029	3	-.05	7	-.058												
310	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	61	1.5	2		3	-.058	8	-.058												
311	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	61	1.5	2	.029	3	-.05	9	-.058												
312	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	61	1.5	2	.041	3	-.041	10	-.058												
313	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	61	1.5	2	.05	3	-.029	11	-.058												
314	1.2DL + 1.5Lm + 1Wm 0..	Yes	Y		DL	1.2	62	1.5	2	.058	3		4	.058												
315	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	62	1.5	2	.05	3	.029	5	.058												
316	1.2DL + 1.5Lm + 1Wm 4..	Yes	Y		DL	1.2	62	1.5	2	.041	3	.041	6	.058												
317	1.2DL + 1.5Lm + 1Wm 6..	Yes	Y		DL	1.2	62	1.5	2	.029	3	.05	7	.058												
318	1.2DL + 1.5Lm + 1Wm 9..	Yes	Y		DL	1.2	62	1.5	2		3	.058	8	.058												
319	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	62	1.5	2	-.029	3	.05	9	.058												
320	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	62	1.5	2	-.041	3	.041	10	.058												
321	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	62	1.5	2	-.05	3	.029	11	.058												
322	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	62	1.5	2	-.058	3		4	-.058												
323	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	62	1.5	2	-.05	3	-.029	5	-.058												
324	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	62	1.5	2	-.041	3	-.041	6	-.058												
325	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	62	1.5	2	-.029	3	-.05	7	-.058												
326	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	62	1.5	2		3	-.058	8	-.058												
327	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	62	1.5	2	.029	3	-.05	9	-.058												
328	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	62	1.5	2	.041	3	-.041	10	-.058												
329	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	62	1.5	2	.05	3	-.029	11	-.058												

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Factor	B...	Fac..	B...	Fac...	BLC	Fac..	BLC	Fac..	B...	Fac..	B...	Fac..	B...	Fac..	B...	Fac..	B...	Fac...
330	1.2DL + 1.5Lm + 1Wm 0..	Yes	Y		DL	1.2	63	1.5	2	.058	3		4	.058										
331	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	63	1.5	2	.05	3	.029	5	.058										
332	1.2DL + 1.5Lm + 1Wm 4..	Yes	Y		DL	1.2	63	1.5	2	.041	3	.041	6	.058										
333	1.2DL + 1.5Lm + 1Wm 6..	Yes	Y		DL	1.2	63	1.5	2	.029	3	.05	7	.058										
334	1.2DL + 1.5Lm + 1Wm 9..	Yes	Y		DL	1.2	63	1.5	2		3	.058	8	.058										
335	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	63	1.5	2	-.029	3	.05	9	.058										
336	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	63	1.5	2	-.041	3	.041	10	.058										
337	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	63	1.5	2	-.05	3	.029	11	.058										
338	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	63	1.5	2	-.058	3		4	-.058										
339	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	63	1.5	2	-.05	3	-.029	5	-.058										
340	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	63	1.5	2	-.041	3	-.041	6	-.058										
341	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	63	1.5	2	-.029	3	-.05	7	-.058										
342	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	63	1.5	2		3	-.058	8	-.058										
343	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	63	1.5	2	.029	3	-.05	9	-.058										
344	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	63	1.5	2	.041	3	-.041	10	-.058										
345	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	63	1.5	2	.05	3	-.029	11	-.058										
346	1.2DL + 1.5Lm + 1Wm 0..	Yes	Y		DL	1.2	64	1.5	2	.058	3		4	.058										
347	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	64	1.5	2	.05	3	.029	5	.058										
348	1.2DL + 1.5Lm + 1Wm 4..	Yes	Y		DL	1.2	64	1.5	2	.041	3	.041	6	.058										
349	1.2DL + 1.5Lm + 1Wm 6..	Yes	Y		DL	1.2	64	1.5	2	.029	3	.05	7	.058										
350	1.2DL + 1.5Lm + 1Wm 9..	Yes	Y		DL	1.2	64	1.5	2		3	.058	8	.058										
351	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	64	1.5	2	-.029	3	.05	9	.058										
352	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	64	1.5	2	-.041	3	.041	10	.058										
353	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	64	1.5	2	-.05	3	.029	11	.058										
354	1.2DL + 1.5Lm + 1Wm 1..	Yes	Y		DL	1.2	64	1.5	2	-.058	3		4	-.058										
355	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	64	1.5	2	-.05	3	-.029	5	-.058										
356	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	64	1.5	2	-.041	3	-.041	6	-.058										
357	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	64	1.5	2	-.029	3	-.05	7	-.058										
358	1.2DL + 1.5Lm + 1Wm 2..	Yes	Y		DL	1.2	64	1.5	2		3	-.058	8	-.058										
359	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	64	1.5	2	.029	3	-.05	9	-.058										
360	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	64	1.5	2	.041	3	-.041	10	-.058										
361	1.2DL + 1.5Lm + 1Wm 3..	Yes	Y		DL	1.2	64	1.5	2	.05	3	-.029	11	-.058										

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	N10	max	3683.787	2	857.059	22	4653.643	42	883.284	230	-4083.624	18	1998.557	22
2		min	-3604.897	26	-862.314	14	840.649	18	-1733.372	318	-24310.554	42	-2010.568	14
3	N13	max	1041.504	2	3613.321	22	4878.538	38	-4379.356	30	959.201	265	2523.002	2
4		min	-1035.545	26	-3692.684	14	896.668	30	-25490.146	38	-1656.494	161	-2509.536	26
5	N12	max	3631.018	18	840.775	6	4608.162	34	1477.993	198	24018.707	34	1933.355	30
6		min	-3709.904	10	-834.764	30	819.039	26	-1127.853	350	4147.923	26	-1947.449	6
7	N11	max	649.27	18	3694.347	6	4381.895	46	22851.338	46	1639.823	283	1417.632	10
8		min	-655.263	10	-3615.765	30	745.805	22	3563.162	22	-966.509	131	-1404.1	18
9	Totals:	max	8993.702	18	8993.579	22	18309.486	46						
10		min	-8993.715	10	-8993.615	14	3932.488	69						

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

	Member	Shape	Code Check	Loc[in]	LC	Shea..	Loc.....		L..	phi*Pn..	phi*Pn..	phi*M...	phi*M...	...	Eqn
1	M4	HSS5X3X8	.855	0	35	.101	0	y	41	16358..	249228	21045	30463.5	2..	H1-1b
2	M1	HSS5X3X8	.815	0	45	.105	0	y	38	16358..	249228	21045	30463.5	2..	H1-1b
3	M3	HSS5X3X8	.803	0	37	.089	0	y	2..	16358..	249228	21045	30463.5	2..	H1-1b
4	MP10	PIPE_2.0	.779	49.875	10	.090	49....		40	10899..	32130	1871....	1871....	3..	H1-1b
5	M2	HSS5X3X8	.761	0	44	.095	0	y	1..	16358..	249228	21045	30463.5	2..	H1-1b
6	MP6	PIPE_2.0	.626	49.875	14	.077	49....		14	10899..	32130	1871....	1871....	1..	H1-1b
7	MP14	PIPE_2.0	.623	49.875	6	.081	49....		6	10899..	32130	1871....	1871....	1	H1-1b
8	MP2	PIPE_2.0	.619	49.875	2	.098	49....		10	10899..	32130	1871....	1871....	1	H1-1b
9	MP5	PIPE_2.0	.341	50	2	.102	50		5	14916..	32130	1871....	1871....	2..	H1-1b
10	MP9	PIPE_2.0	.326	50	14	.083	10		49	14916..	32130	1871....	1871....	1..	H1-1b
11	MP13	PIPE_2.0	.307	50	10	.103	50		14	14916..	32130	1871....	1871....	1	H1-1b
12	MP1	PIPE_2.0	.304	56	6	.089	56		9	14916..	32130	1871....	1871....	1	H1-1b
13	M56	T5.25x3.75x0....	.300	19.32	13	.055	0	z	13	48451..	70875	2546....	4692....	1	H1-1b
14	MP4	PIPE_2.0	.299	50	14	.079	50		13	14916..	32130	1871....	1871....	1..	H1-1b
15	M66	T5.25x3.75x0....	.298	19.32	17	.050	0	z	17	48451..	70875	2546....	4692....	1	H1-1b
16	M36	T5.25x3.75x0....	.294	19.32	5	.054	0	z	5	48451..	70875	2546....	4692....	1	H1-1b
17	MP3	PIPE_2.0	.289	50	14	.061	50		10	14916..	32130	1871....	1871....	1..	H1-1b
18	M51	T5.25x3.75x0....	.287	19.32	2	.051	0	z	3	48451..	70875	2546....	4692....	1	H1-1b
19	M61	T5.25x3.75x0....	.287	19.32	15	.049	0	z	15	48451..	70875	2546....	4692....	1	H1-1b
20	M46	T5.25x3.75x0....	.287	19.32	9	.051	0	z	9	48451..	70875	2546....	4692....	1	H1-1b
21	M50	T5.25x3.75x0....	.286	19.32	26	.051	0	z	10	48451..	70875	2546....	4692....	1..	H1-1b
22	MP15	PIPE_2.0	.285	50	9	.118	10		46	14916..	32130	1871....	1871....	1	H1-1b
23	M31	T5.25x3.75x0....	.284	19.32	3	.053	0	z	3	48451..	70875	2546....	4692....	1	H1-1b
24	M60	T5.25x3.75x0....	.284	19.32	14	.048	0	z	15	48451..	70875	2546....	4692....	1	H1-1b
25	M40	T5.25x3.75x0....	.283	19.32	6	.048	0	z	7	48451..	70875	2546....	4692....	1	H1-1b
26	M41	T5.25x3.75x0....	.282	19.32	7	.047	0	z	7	48451..	70875	2546....	4692....	1	H1-1b
27	MP7	PIPE_2.0	.282	50	17	.118	10		38	14916..	32130	1871....	1871....	1..	H1-1b
28	MP11	PIPE_2.0	.280	50	6	.061	10		2..	14916..	32130	1871....	1871....	1	H1-1b
29	M93	PIPE_2.0	.280	0	35	.134	148..		14	5874....	32130	1871....	1871....	2..	H1-1b
30	M30	T5.25x3.75x0....	.278	19.32	2	.051	0	z	3	48451..	70875	2546....	4692....	1	H1-1b
31	MP12	PIPE_2.0	.273	50	6	.062	50		6	14916..	32130	1871....	1871....	1	H1-1b
32	M91	PIPE_2.0	.272	0	42	.141	155..		1..	5874....	32130	1871....	1871....	3..	H1-1b
33	M29	1/4X5-1/2	.271	0	41	.078	0	y	37	4284....	44550	232.033	5104....	1..	H1-1b
34	MP8	PIPE_2.0	.265	50	10	.055	50		7	14916..	32130	1871....	1871....	1..	H1-1b
35	M57	T5.25x3.75x0....	.257	19.32	5	.055	0	z	13	48451..	70875	2546....	4692....	1	H1-1b
36	M67	T5.25x3.75x0....	.253	19.32	9	.051	0	z	17	48451..	70875	2546....	4692....	1	H1-1b
37	M37	T5.25x3.75x0....	.252	19.32	13	.054	0	z	5	48451..	70875	2546....	4692....	1	H1-1b
38	M47	T5.25x3.75x0....	.251	19.32	17	.051	0	z	9	48451..	70875	2546....	4692....	1	H1-1b
39	M28	1/4X5-1/2	.246	0	38	.090	0	y	48	4284....	44550	232.033	5104....	1..	H1-1b
40	M65	T5.25x3.75x0....	.244	19.32	17	.044	0	z	17	48451..	70875	2546....	4692....	1	H1-1b
41	M55	T5.25x3.75x0....	.243	19.32	13	.048	0	z	13	48451..	70875	2546....	4692....	1	H1-1b
42	M35	T5.25x3.75x0....	.239	19.32	5	.047	0	z	5	48451..	70875	2546....	4692....	1	H1-1b
43	M62	T5.25x3.75x0....	.239	19.32	7	.047	0	z	15	48451..	70875	2546....	4692....	1	H1-1b
44	M32	T5.25x3.75x0....	.237	19.32	11	.050	0	z	3	48451..	70875	2546....	4692....	1	H1-1b
45	M27	1/4X5-1/2	.237	0	49	.089	0	y	45	4284....	44550	232.033	5104....	1..	H1-1b
46	M52	T5.25x3.75x0....	.236	19.32	3	.049	0	z	3	48451..	70875	2546....	4692....	1	H1-1b
47	M45	T5.25x3.75x0....	.235	19.32	9	.044	0	z	9	48451..	70875	2546....	4692....	1	H1-1b
48	M58	T5.25x3.75x0....	.234	19.32	5	.052	0	z	5	48451..	70875	2546....	4692....	1	H1-1b
49	M42	T5.25x3.75x0....	.233	19.32	7	.045	0	z	7	48451..	70875	2546....	4692....	1	H1-1b
50	M48	T5.25x3.75x0....	.229	19.32	17	.049	0	z	9	48451..	70875	2546....	4692....	1	H1-1b
51	M38	T5.25x3.75x0....	.229	19.32	13	.051	0	z	5	48451..	70875	2546....	4692....	1	H1-1b

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

	Member	Shape	Code Check	Loc[in]	LC	Shea...	Loc.....	L..	phi*Pn...	phi*Pn...	phi*M...	phi*M...	...	Eqn
52	MP16	PIPE_2.0	.228	50	10	.066	50	17	14916...	32130	1871....	1871....	1	H1-1b
53	M90	PIPE_2.0	.228	155.28	46	.149	148...	10	5874....	32130	1871....	1871....	1	H1-1b
54	M68	T5.25x3.75x0....	.228	19.32	9	.048	0 z	17	48451...	70875	2546....	4692....	1	H1-1b
55	M92	PIPE_2.0	.217	155.28	38	.135	155...	2..	5874....	32130	1871....	1871....	1	H1-1b
56	M26	1/4X5-1/2	.214	0	45	.070	0 y	41	4284....	44550	232.033	5104....	1..	H1-1b
57	M33	T5.25x3.75x0....	.207	19.32	11	.047	0 z	3	48451...	70875	2546....	4692....	1	H1-1b
58	M63	T5.25x3.75x0....	.206	19.32	7	.044	0 z	15	48451...	70875	2546....	4692....	1	H1-1b
59	M53	T5.25x3.75x0....	.203	19.32	3	.045	0 z	3	48451...	70875	2546....	4692....	1	H1-1b
60	M43	T5.25x3.75x0....	.201	19.32	7	.042	0 z	7	48451...	70875	2546....	4692....	1	H1-1b
61	M88	L5X3X4	.192	17.48	42	.076	0 z	8	51206...	62856	1938....	6808....	1...	H2-1
62	M59	T5.25x3.75x0....	.184	0	5	.051	0 z	37	48451...	70875	2546....	4692....	1..	H1-1b
63	M49	T5.25x3.75x0....	.183	0	17	.042	0 z	49	48451...	70875	2546....	4692....	1..	H1-1b
64	M39	T5.25x3.75x0....	.179	0	13	.048	0 z	45	48451...	70875	2546....	4692....	1..	H1-1b
65	M69	T5.25x3.75x0....	.170	0	9	.038	0 z	17	48451...	70875	2546....	4692....	1..	H1-1b
66	M86	L5X3X4	.158	17.48	35	.075	0 z	17	51206...	62856	1938....	6808....	1...	H2-1
67	M87	L5X3X4	.154	17.48	39	.076	0 z	5	51206...	62856	1938....	6808....	1...	H2-1
68	M34	T5.25x3.75x0....	.152	0	11	.046	0 z	43	48451...	70875	2546....	4692....	1..	H1-1b
69	M64	T5.25x3.75x0....	.151	19.32	15	.037	0 z	47	48451...	70875	2546....	4692....	1	H1-1b
70	M44	T5.25x3.75x0....	.149	19.32	7	.034	0 z	39	48451...	70875	2546....	4692....	1	H1-1b
71	M89	L5X3X4	.148	17.48	46	.073	0 z	13	51206...	62856	1938....	6808....	1...	H2-1
72	M54	T5.25x3.75x0....	.147	19.32	11	.042	0 z	35	48451...	70875	2546....	4692....	1	H1-1b
73	M24	1/4X5-1/2	.079	7.891	44	.350	7.8... y	47	6494....	44550	232.033	4558.11	1..	H1-1b
74	M25	1/4X5-1/2	.079	7.891	39	.263	7.8... y	36	6494....	44550	232.033	4543....	1..	H1-1b
75	M23	1/4X5-1/2	.074	7.891	49	.313	7.8... y	44	6494....	44550	232.033	4529.69	1..	H1-1b
76	M22	1/4X5-1/2	.072	7.891	43	.292	7.8... y	40	6494....	44550	232.033	4463....	1..	H1-1b

Envelope AISI S100-16: LRFD Cold Formed Steel Code Checks

	Member	Shape	Code Check	Loc[in]	LC	Shea...	Loc[i...	Dir	LC	phi*Pn[...	phi*Tn[...	phi*Mn...	phi*Mn...	phi*...	phi*...	Cb	Eqn
1	M5	Inner F...	.578	0	3	.148	64.0...	y	40	49277....	79476....	2224.28	10702....	227...	20520	1.842	H1.2-1
2	M6	Inner F...	.534	0	37	.101	64.0...	y	47	49277....	79476....	2224.28	10702....	227...	20520	1.722	H1.2-1
3	M7	Inner F...	.558	0	7	.138	64.0...	y	45	49277....	79476....	2224.28	10702....	227...	20520	1.849	H1.2-1
4	M8	Inner F...	.598	0	41	.082	64.0...	y	35	49277....	79476....	2224.28	10702....	227...	20520	1.694	H1.2-1
5	M9	Inner F...	.564	0	11	.156	64.0...	y	47	49277....	79476....	2224.28	10702....	227...	20520	1.681	H1.2-1
6	M10	Inner F...	.619	0	45	.102	64.0...	y	39	49277....	79476....	2224.28	10702....	227...	20520	1.692	H1.2-1
7	M11	Inner F...	.627	0	47	.137	64.0...	y	36	49277....	79476....	2224.28	10702....	227...	20520	1.666	H1.2-1
8	M12	Inner F...	.608	0	49	.095	64.0...	y	43	49277....	79476....	2224.28	10702....	227...	20520	1.673	H1.2-1
9	H1	Outer F...	.514	24.638	49	.511	26.28	z	48	58357....	87577.2	3150.9...	12417....	227...	25650	3.509	H2-1
10	H8	Outer F...	.648	24.638	38	.645	24.6...	y	38	58357....	87577.2	3150.9...	12417....	227...	25650	2.317	H2-1
11	H7	Outer F...	.512	0	14	.484	24.6...	y	39	58357....	87577.2	3149.7...	12416....	227...	25650	3.092	H1.2-1
12	H6	Outer F...	.616	24.638	42	.609	24.6...	y	42	58357....	87577.2	3150.9...	12417....	227...	25650	2.163	H2-1
13	H5	Outer F...	.531	24.638	34	.531	24.6...	z	34	58357....	87577.2	3150.9...	12417....	227...	25650	3.433	H2-1
14	H4	Outer F...	.677	24.638	46	.671	24.6...	y	46	58357....	87577.2	3150.9...	12417....	227...	25650	2.1	H2-1
15	H3	Outer F...	.539	0	6	.512	24.6...	y	45	58357....	87577.2	3149.7...	12416....	227...	25650	2.812	H1.2-1
16	H2	Outer F...	.652	24.638	34	.643	24.6...	y	34	58357....	87577.2	3150.9...	12417....	227...	25650	2.262	H2-1

APPENDIX D

ADDITIONAL CALCUATIONS

Trylon

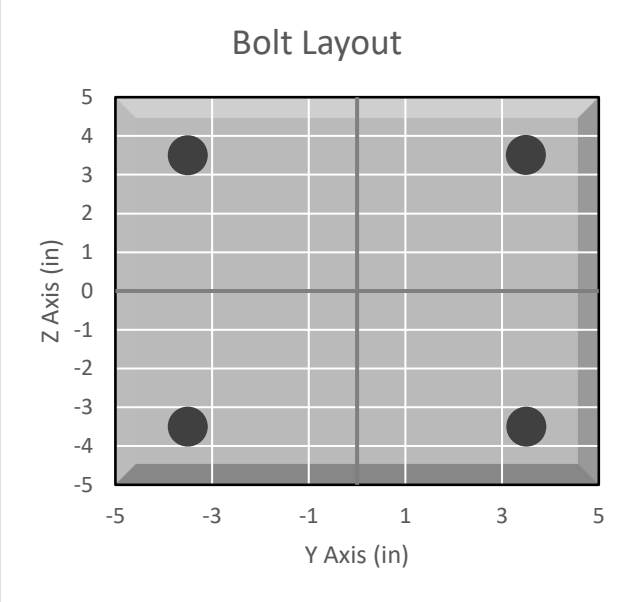
Analysis date: 9/16/2021

BOLT TOOL 1.5.2

Project Data	
Job Code:	191979
Carrier Site ID:	806365
Carrier Site Name:	HRT 303 943203

Code	
Design Standard:	TIA-222-H
Slip Check:	No
Pretension Standard:	AISC

Bolt Properties		
Connection Type:	Bolt	
Diameter:	0.75	in
Grade:	A325	--
Yield Strength (Fy):	92	ksi
Ultimate Strength (Fu):	120	ksi
Number of Bolts:	4	--
Threads Included:	No	--
Double Shear:	No	--
Connection Pipe Size:	-	in



Connection Description
Standoff to Monopole Collar

Bolt Check*		
Tensile Capacity (ϕT_n):	30101.4	lbs
Shear Capacity (ϕV_n):	24850.5	lbs
Tension Force (T_u):	22206.8	lbs
Shear Force (V_u):	1633.4	lbs
Tension Usage:	70.3%	--
Shear Usage:	6.3%	--
Interaction:	70.3%	Pass
Controlling Member:	M4	--
Controlling LC:	36	--

**Rating per TIA-222-H Section 15.5*

1825 W. Walnut Hill Lane, Suite 120
Irving, Texas 75038

Exhibit F

Power Density/RF Emissions Report

EBI Consulting

environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CT11528C

806365
Brendon & Quinn
Stafford, Connecticut 06076

December 23, 2021

EBI Project Number: 6221008008

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**38.88%**

December 23, 2021

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

Emissions Analysis for Site: CT11528C - 806365

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **Brendon & Quinn** in **Stafford, Connecticut** 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 ($\mu W/cm^2$). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits; therefore, it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at Brendon & Quinn in Stafford, Connecticut 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 manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower. For power density calculations, the broadcast footprint of the AIR6449 antenna has been considered. Due to the beamforming nature of this antenna, the actual beam locations vary depending on demand and are narrow in nature. Using the broadcast footprint accounts for the potential location of beams at any given time.

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

1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.

3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

5) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

6) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

7) 1 LTE Traffic channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 60 Watts.

8) 1 LTE Broadcast channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 20 Watts.

9) 1 NR Traffic channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.

10) 1 NR Broadcast channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts.

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

12) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

13) The antennas used in this modeling are the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector A, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector B, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector C, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector D. This is based on feedback from the carrier with regard to

anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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.

14) The antenna mounting height centerline of the proposed antennas is 124 feet above ground level (AGL).

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

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

EBI Consulting

environmental | engineering | due diligence

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C	Sector:	D
Antenna #:	1	Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd
Height (AGL):	124 feet	Height (AGL):	124 feet	Height (AGL):	124 feet	Height (AGL):	124 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	36,356.09	ERP (W):	36,356.09	ERP (W):	36,356.09	ERP (W):	36,356.09
Antenna A1 MPE %:	**9.39%**	Antenna B1 MPE %:	**9.39%**	Antenna C1 MPE %:	**9.39%**	Antenna D1 MPE %:	**9.39%**
Antenna #:	2	Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd / 16.35 dBd
Height (AGL):	124 feet	Height (AGL):	124 feet	Height (AGL):	124 feet	Height (AGL):	124 feet
Channel Count:	13	Channel Count:	13	Channel Count:	13	Channel Count:	13
Total TX Power (W):	560 Watts	Total TX Power (W):	560 Watts	Total TX Power (W):	560 Watts	Total TX Power (W):	560 Watts
ERP (W):	18,052.03	ERP (W):	18,052.03	ERP (W):	18,052.03	ERP (W):	18,052.03
Antenna A2 MPE %:	**6.11%**	Antenna B2 MPE %:	**6.11%**	Antenna C2 MPE %:	**6.11%**	Antenna D2 MPE %:	**6.11%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	15.50%
AT&T	10.14%
Verizon	5.84%
Sprint	6.24%
Nextel	1.16%
Site Total MPE % :	38.88%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	15.50%
T-Mobile Sector B Total:	15.50%
T-Mobile Sector C Total:	15.50%
T-Mobile Sector D Total:	15.50%
Site Total MPE % :	38.88%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 2500 MHz LTE 1C & 2C Traffic	1	11044.63	124.0	28.52	2500 MHz LTE 1C & 2C Traffic	1000	2.85%
T-Mobile 2500 MHz LTE 1C & 2C Broadcast	1	1074.06	124.0	2.77	2500 MHz LTE 1C & 2C Broadcast	1000	0.28%
T-Mobile 2500 MHz NR Traffic	1	22089.26	124.0	57.03	2500 MHz NR Traffic	1000	5.70%
T-Mobile 2500 MHz NR Broadcast	1	2148.13	124.0	5.55	2500 MHz NR Broadcast	1000	0.55%
T-Mobile 600 MHz LTE	2	591.73	124.0	3.06	600 MHz LTE	400	0.76%
T-Mobile 600 MHz NR	1	1577.94	124.0	4.07	600 MHz NR	400	1.02%
T-Mobile 700 MHz LTE	2	648.82	124.0	3.35	700 MHz LTE	467	0.72%
T-Mobile 1900 MHz GSM	4	1101.85	124.0	11.38	1900 MHz GSM	1000	1.14%
T-Mobile 1900 MHz LTE	2	2203.69	124.0	11.38	1900 MHz LTE	1000	1.14%
T-Mobile 2100 MHz LTE	2	2589.11	124.0	13.37	2100 MHz LTE	1000	1.34%
						Total:	**15.50%**

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

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:	15.50%
Sector B:	15.50%
Sector C:	15.50%
Sector D:	15.50%
T-Mobile Maximum MPE % (Sector A):	15.50%
Site Total:	38.88%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **38.88%** 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.