CROWN CASTLE

1 Cityplace Dr, Suite 490
Creve Coeur, MO 63141

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

December 2, 2021

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

RE: **Notice of Exempt Modification for Sprint**
Crown Site ID#876340; Sprint Site ID#CTHA399A
238 Meriden RD., MIDDLEFIELD, CT 06457
Latitude: 41° 32′ 45.60″/ Longitude: -72° 42′ 53.90″

Dear Ms. Bachman:

Sprint currently maintains (6) antennas at the 119-foot mounts on the existing 133-foot Monopole Tower located at **238 Meriden RD., MIDDLEFIELD.** The property is owned by James Kolman and the Tower by Crown Castle. Sprint now intends to replace six (6) 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
(3) RFS – APXVSPP18-C-A20 Antennas (**REMOVE**), (3) RFS – APXVAALL24_43_U_NA20 Antennas (**REPLACE**)
(3) RFS/Celwave – APXVTM14-C-120 Antennas **(REMOVE),** (3) Ericsson - AIR6449_B41 Antennas (**REPLACE**)
(3) Sprint Remote Radio Heads **(REMOVE)**
(3) Sprint Remote Radio Heads **(REMOVE),** (3) Ericsson Radio 4460 B25 + B66 Remote Radio heads (**REPLACE**)
(3) Sprint Remote Radio Heads **(REMOVE),** (3) Ericsson Radio 4480 B71+B85 Remote Radio heads (**REPLACE**)
(3) Hybrid Cable (**REMOVE**), (4) Hybrid Cable (**REPLACE**)

Ground:

REMOVE:
(1) MMBS Equipment Cabinet
(1) BBU Equipment Cabinet

INSTALL:
(1) 6160 & (1) B160 Battery Cabinets
(3) BB 6648
(1) PSU 4813

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Phone: (314) 513-0147

www.crowncastle.com

(1) CSR IXRe V2 (GEN2)
(*) Upgrade service to 200AMP
(*) New T-Mobile Conduits
(1) 2" LFTC BET. 6160 & B160
(2) 2" PVC BET. 6160 & Existing Cabinet
(1) 2" Underground PVC BET. 6160 & PPC
(1) 1" Underground PVC BET. 6160 & CIENA

The Facility was approved by the Connecticut Siting Council on July 11, 2002, Docket#223.
The approval was with conditions which this exempt modification complies with.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16-50j-72(b)(2). In accordance with R.C.S.A. §16-50j-73, a copy of this letter is being sent to Edward P. Bailey, First Selectman for The Town of Middlefield, Jerry Russ, Building Official/ Zoning Officer for The Town of Middlefield and James Kolman, property owner. Crown Castle is the tower owner.

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

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

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

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

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

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

For the foregoing reasons, Sprint 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).

Sincerely,

Ersilia Davis
Crown Castle, Agent for Applicant
1777 Sentry Parkway W | VEVA 17, Suite 400/Blue Bell, PA 19422
edavis@nbcllc.com/ 551-804-0667

CROWN CASTLE

1 Cityplace Dr, Suite 490
Creve Coeur, MO 63141

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

cc:

Edward P. Bailey, First Selectman
393 Jackson Hill Rd
P.O. Box 179
Middlefield, CT 06455
860-349-7114
(Via Fedex)

Jerry Russ, Building Official/ Zoning Officer
393 Jackson Hill Rd
P.O. Box 179
Middlefield, CT 06455
860-349-7114 Ext. 2
(Via Fedex)

James Kolman, Property owner
#15 Higby Road
Middlefield, CT 06455
860-680-5275
(Via Fedex)

TRACK ANOTHER SHIPMENT

775371998024

ADD NICKNAME

Delivered
Friday, 12/3/2021 at 10:53 am

DELIVERED

Signature not required

GET STATUS UPDATES

OBTAIN PROOF OF DELIVERY

FROM

Ersilia Davis

1777 Sentry Parkway
VEVA 17, Suite 210
Blue Bell, PA US 19422
551-804-0667

TO

Edward P. Bailey, First Selectman
Town of Middlefield

393 Jackson Hill Rd
P.O. Box 179
MIDDLEFIELD, CT US 06455
860-349-7114

MANAGE DELIVERY

Travel History

TIME ZONE
Local Scan Time

Friday, December 3, 2021		
10:53 AM	MIDDLEFIELD, CT	Delivered Package delivered to recipient address - release authorized
10:01 AM	NORTH HAVEN, CT	On FedEx vehicle for delivery
8:12 AM	NORTH HAVEN, CT	At local FedEx facility
4:06 AM	NEWARK, NJ	Departed FedEx hub
Thursday, December 2, 2021		
10:39 PM	NEWARK, NJ	Arrived at FedEx hub

FedEx

TRACK ANOTHER SHIPMENT

775372064304

ADD NICKNAME

Delivered
Friday, 12/3/2021 at 10:53 am

DELIVERED
Signature not required

GET STATUS UPDATES

OBTAIN PROOF OF DELIVERY

FROM
Ersilia Davis

1777 Sentry Parkway
VEVA 17, Suite 210
Blue Bell, PA US 19422
551-804-0667

TO
Jerry Russ, Building Dept.
Town of Middlefield

393 Jackson Hill Rd
P.O. Box 179
MIDDLEFIELD, CT US 06455
860-349-7114

MANAGE DELIVERY

Travel History

TIME ZONE
Local Scan Time

Friday, December 3, 2021		
10:53 AM	MIDDLEFIELD, CT	Delivered Package delivered to recipient address - release authorized
10:01 AM	NORTH HAVEN, CT	On FedEx vehicle for delivery
8:16 AM	NORTH HAVEN, CT	At local FedEx facility
4:06 AM	NEWARK, NJ	Departed FedEx hub
Thursday, December 2, 2021		
10:39 PM	NEWARK, NJ	Arrived at FedEx hub

TRACK ANOTHER SHIPMENT

775372113637

ADD NICKNAME

Delivered
Friday, 12/3/2021 at 12:00 pm

DELIVERED
Signature not required

GET STATUS UPDATES

OBTAIN PROOF OF DELIVERY

FROM
Ersilia Davis
1777 Sentry Parkway
VEVA 17, Suite 210
Blue Bell, PA US 19422
551-804-0667

TO
James Kolman
#15 Higby Road
MIDDLEFIELD, CT US 06455
860-680-5275

MANAGE DELIVERY

Travel History

TIME ZONE
Local Scan Time

Friday, December 3, 2021		
12:00 PM	MIDDLEFIELD, CT	Delivered Package delivered to recipient address - release authorized
10:01 AM	NORTH HAVEN, CT	On FedEx vehicle for delivery
8:13 AM	NORTH HAVEN, CT	At local FedEx facility
4:06 AM	NEWARK, NJ	Departed FedEx hub
Thursday, December 2, 2021		
10:39 PM	NEWARK, NJ	Arrived at FedEx hub
9:47 PM	NEWBURGH, NY	Left FedEx origin facility

Exhibit A

Original Facility Approval

DOCKET NO. 223 - Cellco Partnership d/b/a Verizon Wireless application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a cellular telecommunications facility at 484 Meriden Road, Middlefield, Connecticut.	}	Connecticut
	}	Siting
	}	Council
	}	July 11, 2002

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes **§** 16-50k, be issued to Crown Atlantic Company LLC and Cellco Partnership d/b/a Verizon Wireless (Cellco) for the construction, maintenance and operation of a wireless telecommunications facility at the proposed site located at 484 Meriden Road in Middlefield, Connecticut.

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

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of Cellco, AT&T Wireless LLC, and other entities, both public and private, but such tower shall not exceed a height of 150 feet above ground level.

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include: a final site plan(s) for site development to include the location and specifications for the tower, tower foundation, antennas,

equipment building, security fence, access road, utility line, and landscaping plan. The D&M Plan shall also include construction plans to be submitted prior to construction for site clearing, water drainage, and erosion and sedimentation control consistent with the Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

3. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall provide a recalculated report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

4. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

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

6. If the facility does not initially provide, or permanently ceases to provide wireless 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 reapply for any continued or new use to the Council before any such use is made.

7. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and ceases to function.

8. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in The Hartford Courant, and the Middletown Press.

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

The parties and intervenors to this proceeding are:

Applicant	**Its Representative**
Crown Atlantic Company LLC and Cellco Partnership d/b/a Verizon Wireless	Robert Stanford Crown Atlantic Company LLC 703 Hebron Avenue Glastonbury, CT 06033 Kenneth C. Baldwin, Esq. Joey Lee Miranda, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103-3597
Intervenor	**Its Representative**
AT&T Wireless	Christopher B. Fisher Cuddy & Feder & Worby 90 Maple Avenue White Plains, NY 10601 w: - (914) 761-1300 f: - (914) 761-6405

Exhibit B

Property Card

238 MERIDEN RD & RT 66

Location 238 MERIDEN RD & RT 66 **Mblu** 2/ / 1/ /

Acct# 00131600 **Owner** KOLMAN JAMES

Assessment $263,700 **PID** 1412

Building Count 1

Current Value

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$83,000	$180,700	$263,700

Owner of Record

Owner KOLMAN JAMES
Co-Owner NORA L/U
Address C/O 15 HIGBY RD
MIDDLEFIELD, CT 06455

Sale Price $0
Certificate
Book & Page 0084/0598
Sale Date 06/27/1994
Instrument UNKQ

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
KOLMAN JAMES	$0		0084/0598	UNKQ	06/27/1994

Building Information

Building 1 : Section 1

Year Built: 1850
Living Area: 2,390
Replacement Cost: $239,375
Building Percent Good: 33
Replacement Cost
Less Depreciation: $79,000

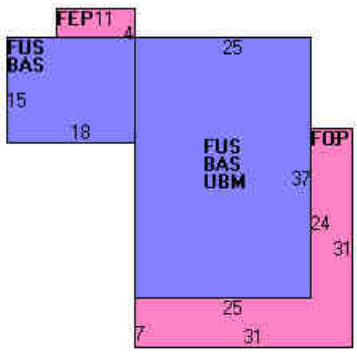
Building Attributes	
Field	**Description**
Style:	Old Style

Model	Residential
Grade:	Average +
Stories:	2 Stories
Occupancy	1
Exterior Wall 1	Clapboard
Exterior Wall 2	
Roof Structure:	Gable
Roof Cover	Asphalt Shingl
Interior Wall 1	Plastered
Interior Wall 2	
Interior Flr 1	Hardwood
Interior Flr 2	
Heat Fuel	Oil/Gas
Heat Type:	Hot Water
AC Type:	None
Total Bedrooms:	6 Bedrooms
Total Bthrms:	1
Total Half Baths:	0
Total Xtra Fixtrs:	
Total Rooms:	12 Rooms
Bath Style:	Old Style
Kitchen Style:	Below Average
Num Kitchens	01
Whirlpool	
Num Park	
Fireplaces	
Interior	
Solar Panels:	
Fndtn Cndtn	
Basement	
Inserts:	

Building Photo

(http://images.vgsi.com/photos/MiddlefieldCTPhotos//\01\00\11\04.jpg)

Building Layout



(http://images.vgsi.com/photos/MiddlefieldCTPhotos//Sketches/1412_1412

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	1,195	1,195
FUS	Upper Story, Finished	1,195	1,195
FEP	Porch, Enclosed	44	0
FOP	Porch, Open	361	0
UBM	Basement, Unfinished	925	0
		3,720	2,390

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	0101
Description	Single Fam MDL-01
Zone	DD1
Neighborhood	0300
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	24.54
Frontage	
Depth	
Assessed Value	$180,700

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
BRN1	BARN - 1 STORY			4032.00 S.F.	$24,200	1
BRN1	BARN - 1 STORY			2560.00 S.F.	$15,400	1

Exhibit C

Construction Drawings

T-Mobile

T-MOBILE SITE NUMBER: CTHA399A
T-MOBILE SITE NAME: CTHA399A
SITE TYPE: MONOPOLE
TOWER HEIGHT: 133'-0"

BUSINESS UNIT #: 876340
SITE ADDRESS: 238 MERIDEN RD. MIDDLEFIELD, CT 06455
COUNTY: MIDDLESEX
JURISDICTION: MIDDLESEX COUNTY

T-MOBILE SPRINT RETAIN SITE CONFIGURATION: 67E5998E_1XAIR+1OP

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	COE HILL
SITE ADDRESS:	238 MERIDEN RD. MIDDLEFIELD, CT 06455
COUNTY:	MIDDLESEX
MAP/PARCEL #:	2/1
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.54598611° (41° 32' 45.60")
LONGITUDE:	-72.71491666° (-72° 42' 53.90")
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	449.48 FT
CURRENT ZONING:	DD1
JURISDICTION:	MIDDLESEX COUNTY
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	KOLMAN JAMES -- --
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:	1500 CORPORATE DRIVE CANONSBURG, PA 15317
	TRICIA PELON - PROJECT MANAGER TRICAIS.PELON@CROWNCASTLE.COM
	JASON D'AMICO - CONSTRUCTION MANAGER JASON.DAMICO@CROWNCASTLE.COM

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 SCHEDULE & 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

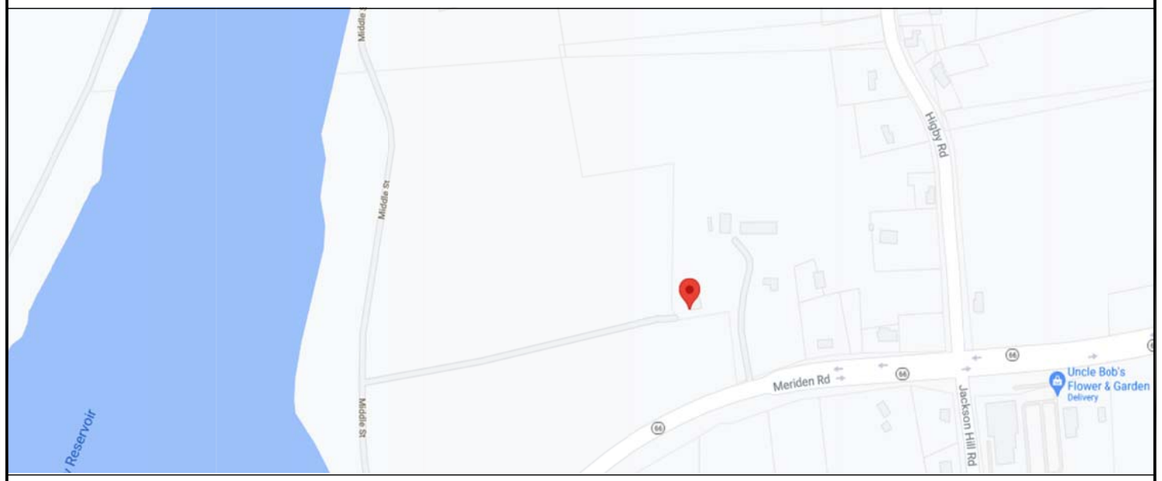
THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.

TOWER SCOPE OF WORK:
- REMOVE (6) ANTENNAS
- REMOVE (9) RRHs
- REMOVE (3) HYBRID CABLES
- INSTALL (6) ANTENNAS
- INSTALL (6) RRHs
- INSTALL (4) HYBRID CABLES
- MODIFY EXISTING PLATFORM

GROUND SCOPE OF WORK:
- REMOVE (1) MMBS EQUIPMENT CABINET
- REMOVE (1) BBU EQUIPMENT CABINET
- INSTALL (1) 6160 & (1) B160 BATTERY CABINETS
- INSTALL (3) BB 6648
- INSTALL (1) PSU 4813
- INSTALL (1) CSR IXRe V2 (GEN2)
- UPGRADE SERVICE TO 200AMP.

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:	B+T GROUP
DATED:	09/02/2021
MOUNT ANALYSIS:	B+T GROUP
DATED:	08/27/2021
RFDS REVISION:	1
DATED:	08/03/21
ORDER ID:	557896
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
1500 CORPORATE DRIVE
CANONSBURG, PA 15317

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:
CTHA399A

BU #: **876340**
COE HILL

238 MERIDEN RD.
MIDDLEFIELD, CT 06455

EXISTING 133'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	06/07/2021	RCD	FINAL	SS
1	10/08/2021	CB	FINAL	SS
2	10/29/2021	HL	FINAL	SS

STATE OF CONNECTICUT
YUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER

10/29/2021

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-POTENTIAL 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 PER 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

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T-MOBILE SITE NUMBER:
CTHA399A

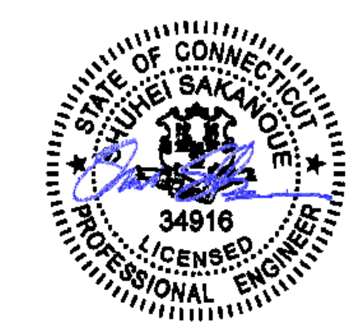
BU #: **876340**
COE HILL

238 MERIDEN RD.
MIDDLEFIELD, CT 06455

EXISTING 133'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	06/07/2021	RCD	FINAL	SS
1	10/08/2021	CB	FINAL	SS
2	10/29/2021	HL	FINAL	SS



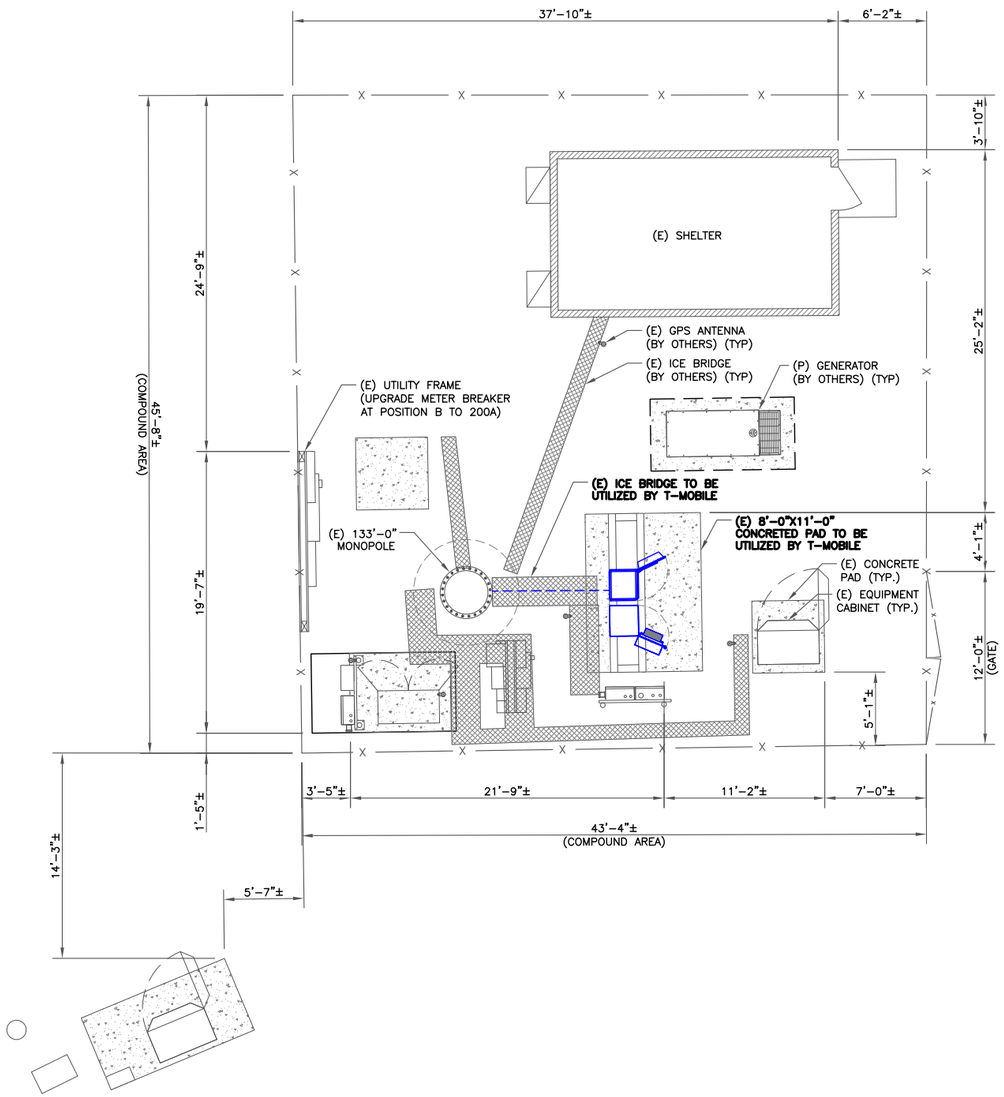
10/29/2021

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.

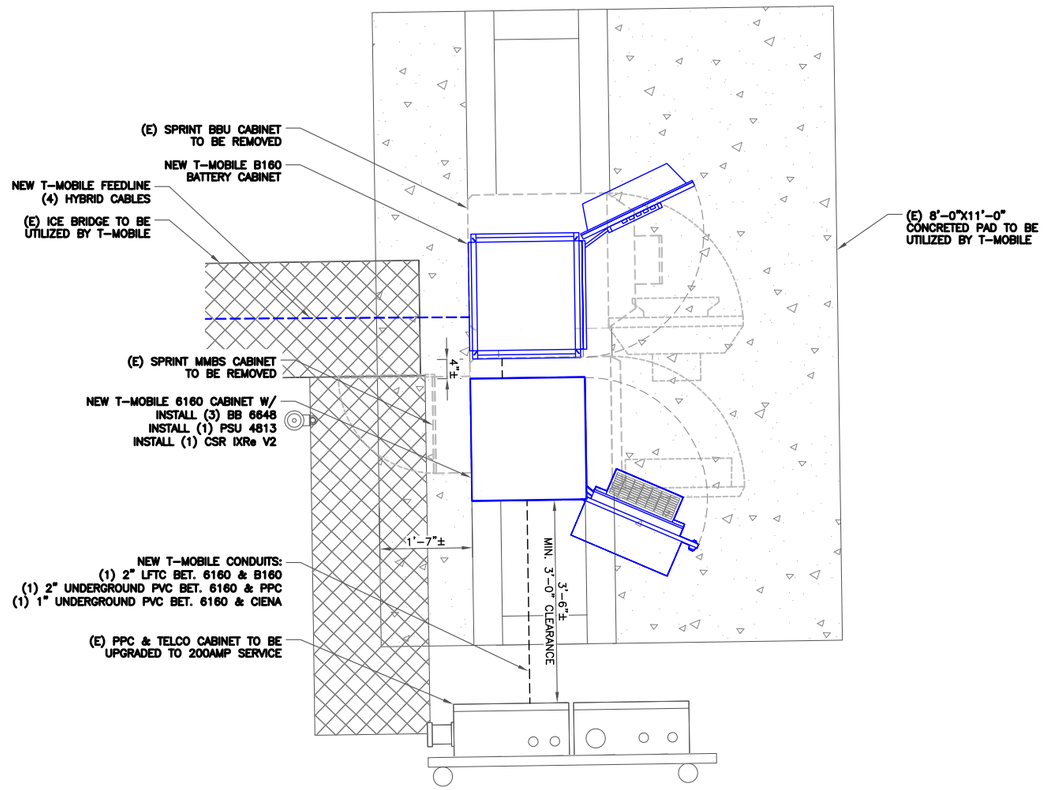


1 SITE PLAN
SCALE: 4' 2' 0 4' 3/16"=1'–0" (FULL SIZE) 3/32"=1'–0" (11x17)

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' 3/4"=1'–0" (FULL SIZE) 3/8"=1'–0" (11x17)

N

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T-MOBILE SITE NUMBER:
CTHA399A

BU #: **876340**
COE HILL

238 MERIDEN RD.
MIDDLEFIELD, CT 06455

EXISTING 133'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	06/07/2021	RCD	FINAL	SS
1	10/08/2021	CB	FINAL	SS
2	10/29/2021	HL	FINAL	SS

STATE OF CONNECTICUT
YUHEI SAKAMOTO
34916
LICENSED
PROFESSIONAL ENGINEER

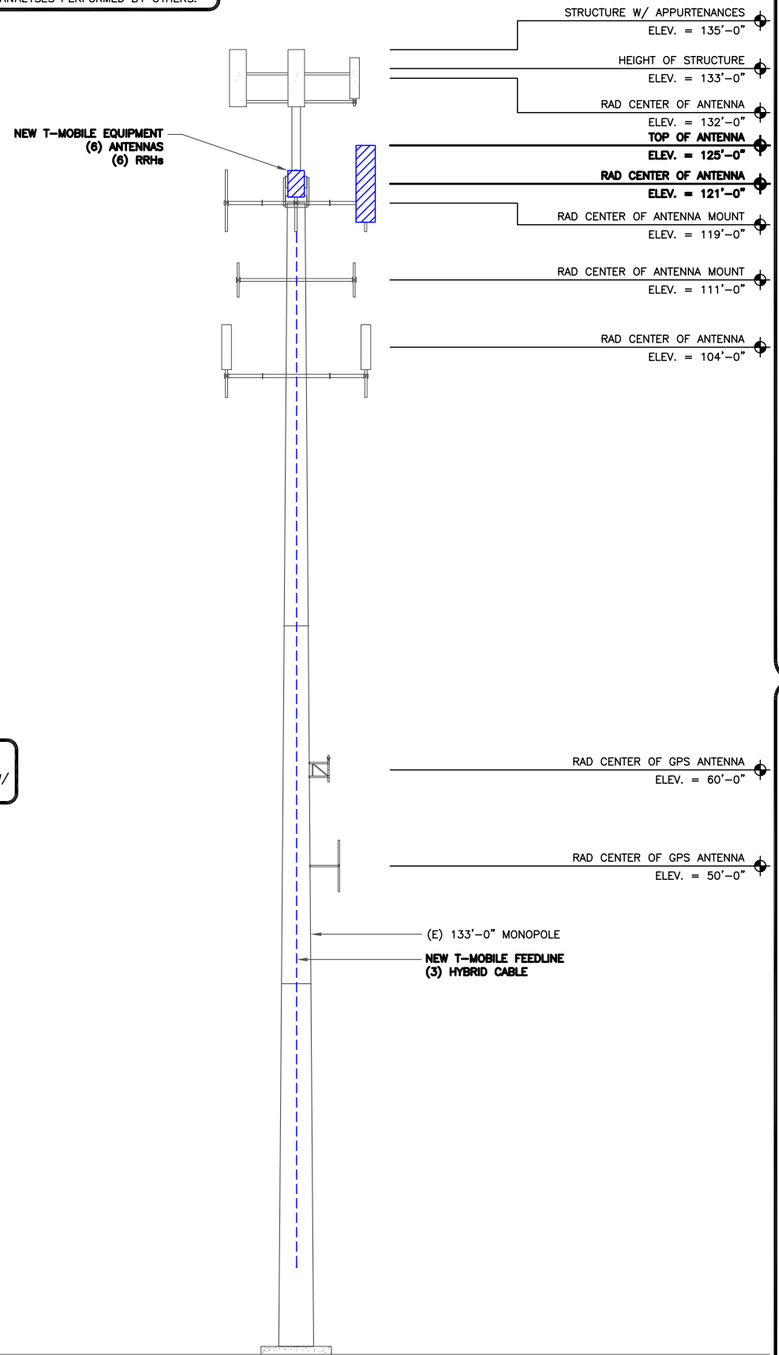
10/29/2021

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.

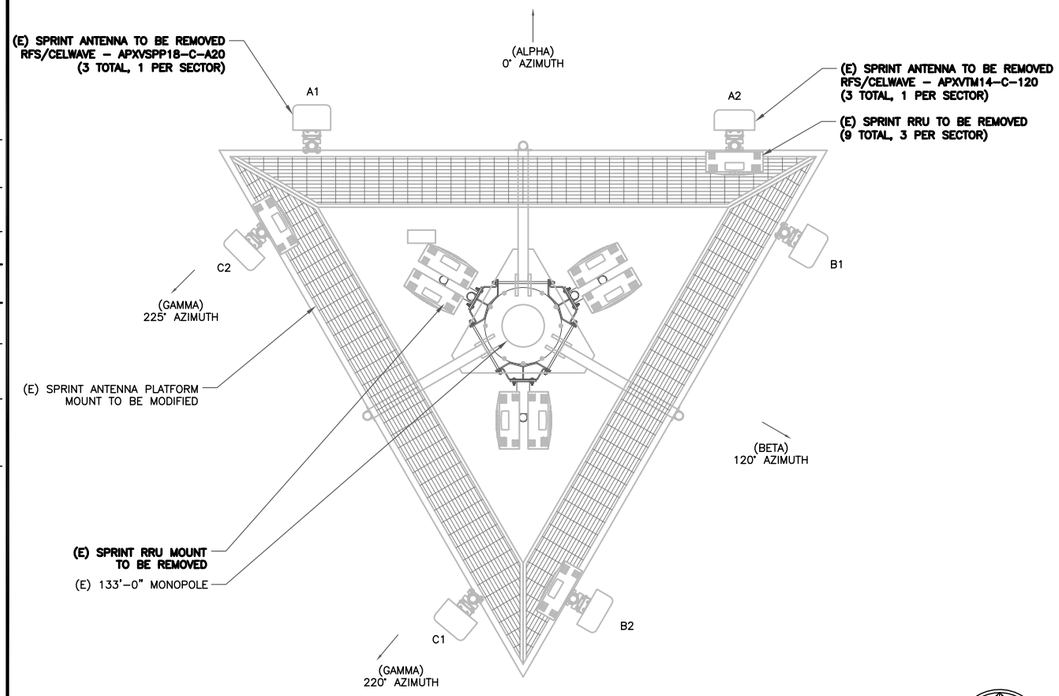


T-MOBILE EQUIPMENT

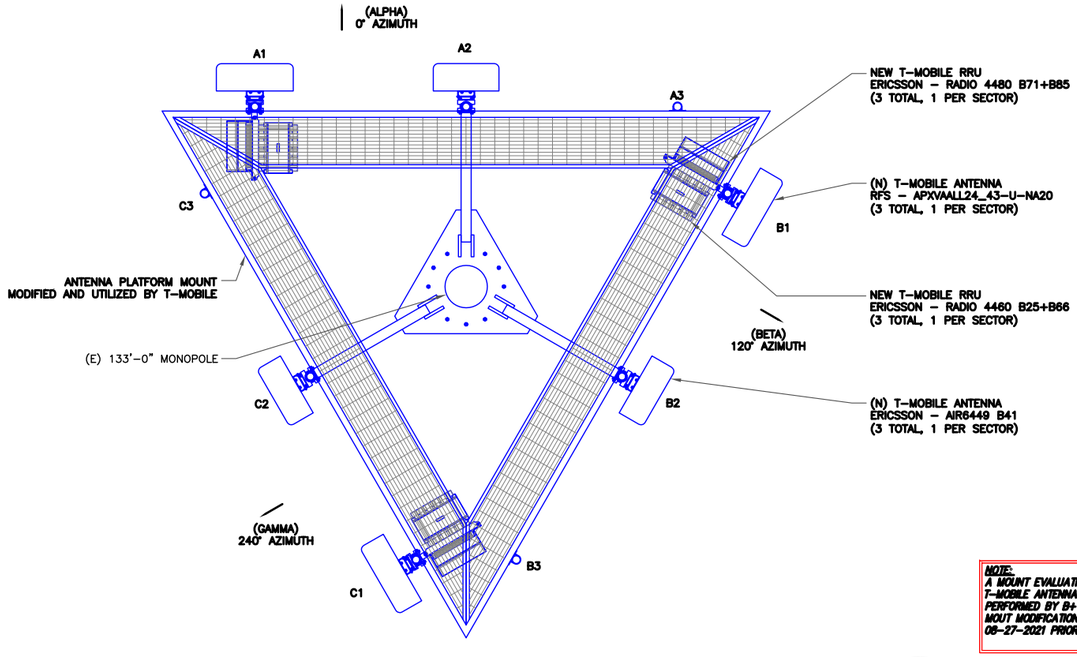
ANTENNA CL: 121'-0"
MOUNT CL: 119'-0"

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

NOTE:
A MOUNT EVALUATION OF THE T-MOBILE ANTENNA MOUNTS HAS BEEN PERFORMED BY B+T GROUP. REFER TO MOUT MODIFICATION REPORT DATED 08-27-2021 PRIOR TO CONSTRUCTION.

NOTE:
A STRUCTURAL EVALUATION OF THE T-MOBILE ANTENNA MOUNTS HAS BEEN PERFORMED BY B+T GROUP. REFER TO ANTENNA MOUNT STRUCTURAL ANALYSIS DATED 09-02-2021 PRIOR TO CONSTRUCTION.

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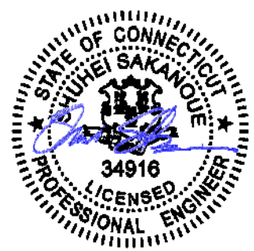


10/29/2021

SHEET NUMBER: C-2

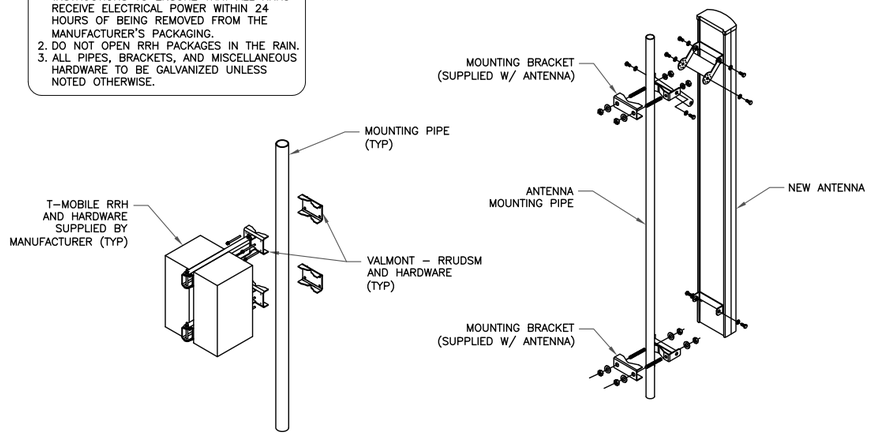
REVISION: 2

ANTENNA SCHEDULE									
SECTOR	POS.	TECHNOLOGY	RAD CENTER	AZIMUTH	ANTENNA MANUFACTURER	ANTENNA MODEL	MECH. TILT	ELECT. TILT	TOWER MOUNTED EQUIPMENT	FEEDLINE TYPE
ALPHA	A1	L700, L600, N600, L1900, G1900, L2100	121'-0"	0°	RFS	APXVAALL24_43-U-NA20	0°	--	(1) ERICSSON - RRUS 4480 B71+B85 (1) ERICSSON - RRUS 4460 B25+B66	(2) 6X12 HCS HYBRID (SHARED)
ALPHA	A2	L2500, N2500	121'-0"	0°	ERICSSON	AIR6449 B41	0°	--	--	
ALPHA	A3	--	--	--	--	--	--	--	--	
BETA	B1	L700, L600, N600, L1900, G1900, L2100	121'-0"	120°	RFS	APXVAALL24_43-U-NA20	0°	--	(1) ERICSSON - RRUS 4480 B71+B85 (1) ERICSSON - RRUS 4460 B25+B66	(2) 6X12 HCS HYBRID (SHARED)
BETA	B2	L2500, N2500	121'-0"	120°	ERICSSON	AIR6449 B41	0°	--	--	
BETA	B3	--	--	--	--	--	--	--	--	
GAMMA	C1	L700, L600, N600, L1900, G1900, L2100	121'-0"	240°	RFS	APXVAALL24_43-U-NA20	0°	--	(1) ERICSSON - RRUS 4480 B71+B85 (1) ERICSSON - RRUS 4460 B25+B66	(2) 6X12 HCS HYBRID (SHARED)
GAMMA	C2	L2500, N2500	121'-0"	240°	ERICSSON	AIR6449 B41	0°	--	--	
GAMMA	C3	--	--	--	--	--	--	--	--	

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.

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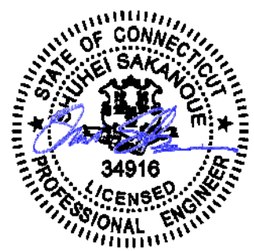
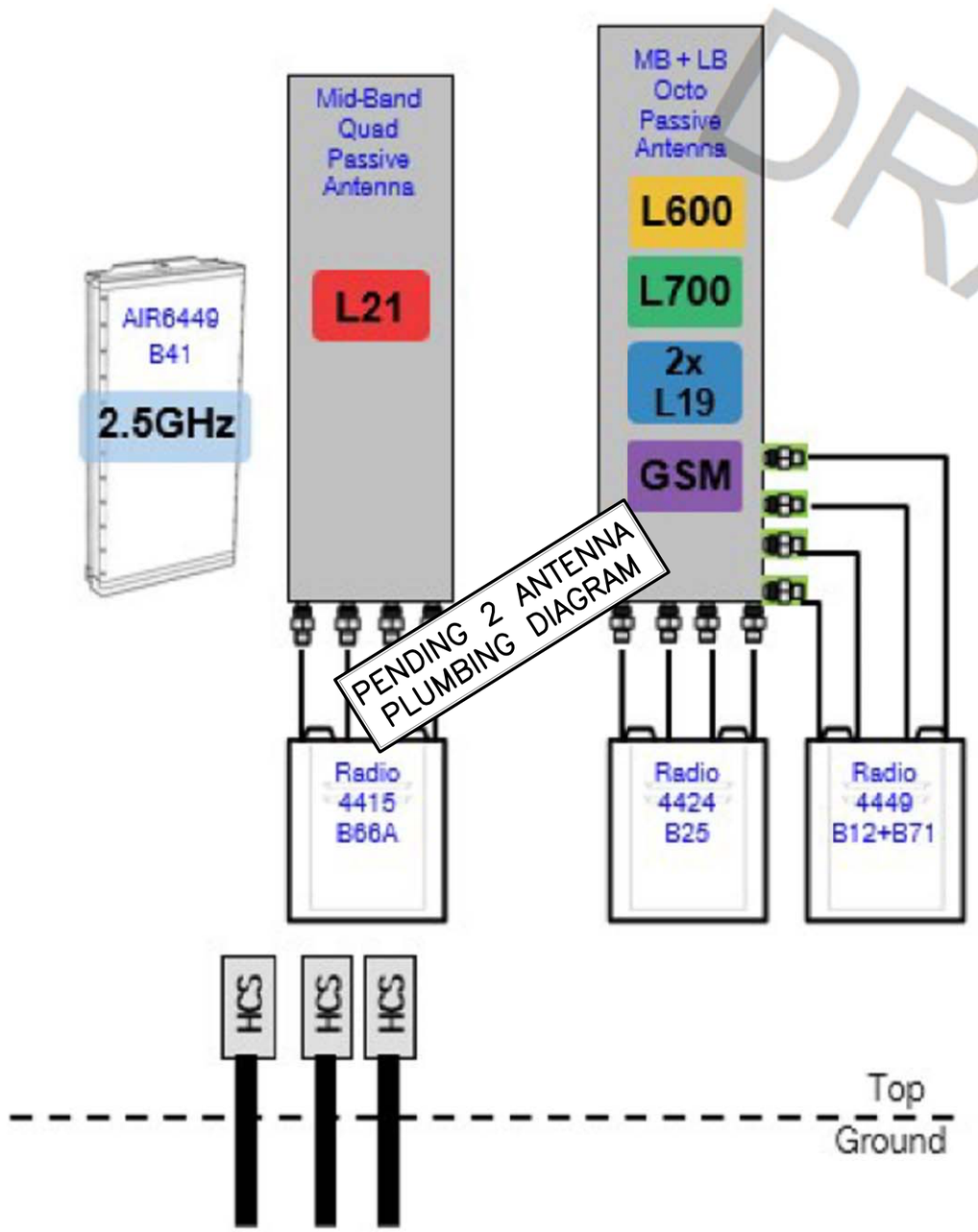


10/29/2021

SHEET NUMBER: C-3

REVISION: 2

67D5A998C_1xAIR+1xQP+1xOP.jpg



1 PENDING INFO
SCALE: NOT TO SCALE

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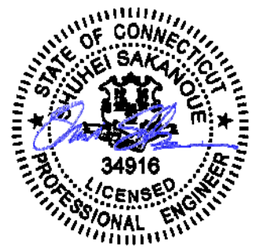
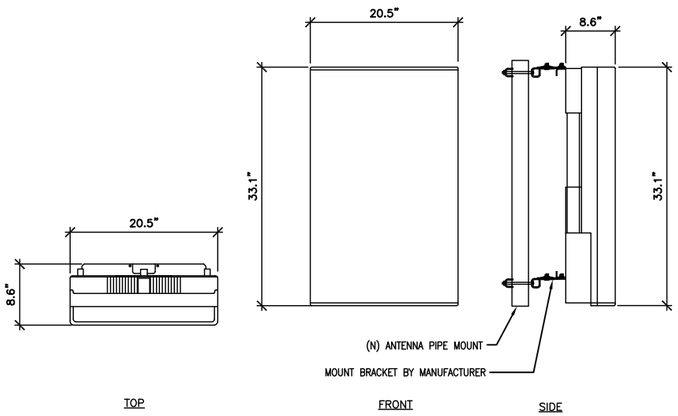


10/29/2021

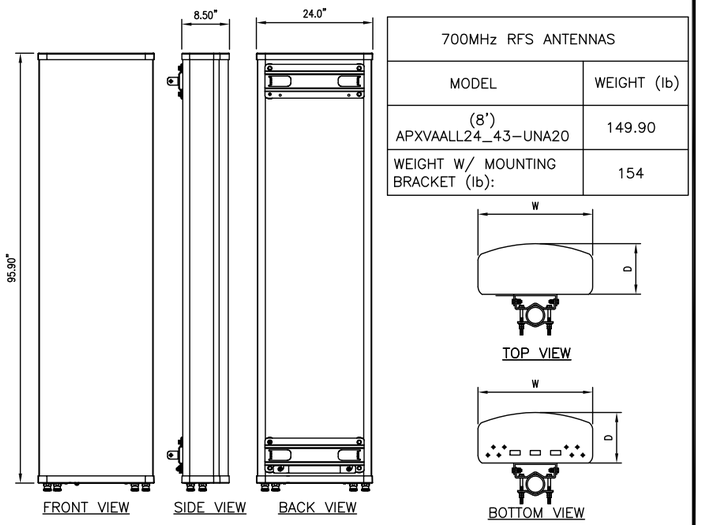
SHEET NUMBER: C-4

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



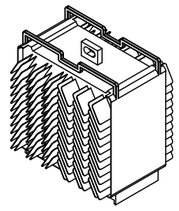
700MHz RFS ANTENNAS	
MODEL	WEIGHT (lb)
(8') APXVAALL24_43-UNA20	149.90
WEIGHT W/ MOUNTING BRACKET (lb):	154

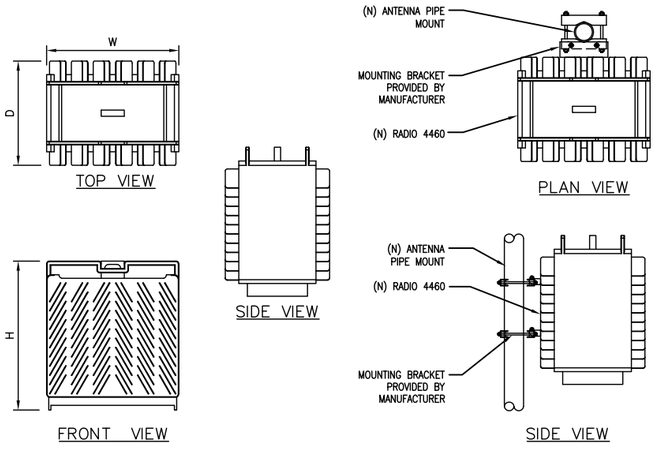
2 (N) APXVAALL24_43-UNA20 ANTENNA SPEC
SCALE: NOT TO SCALE

3 NOT USED
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

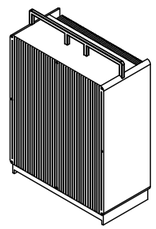


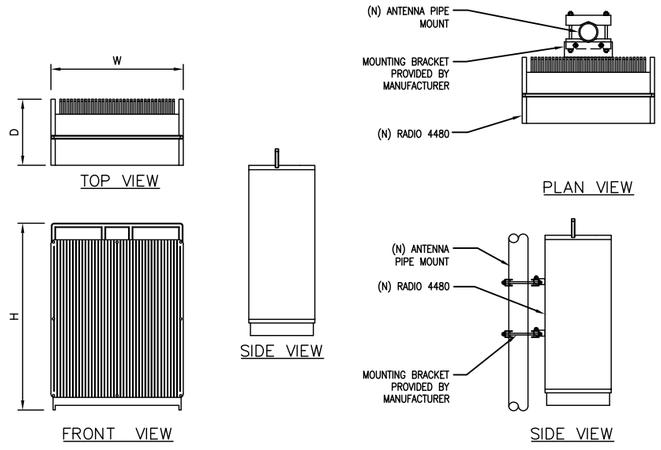


4 (N) RADIO 4460 SPEC
SCALE: NOT TO SCALE

ERICSSON RADIO-4480 B71 B85

DIMENSIONS, WxDxH:	21.8"x15.7"x7.5"
MAX OUTPUT POWER:	4x80W (2x(2x80W))
TOTAL WEIGHT:	93 lbs
TEMPERATURE:	-40° TO 55° C





5 (N) RADIO 4480 SPEC
SCALE: NOT TO SCALE

6 NOT USED
SCALE: NOT TO SCALE

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STATE OF CONNECTICUT
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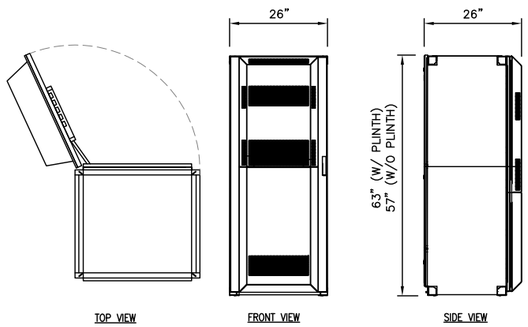
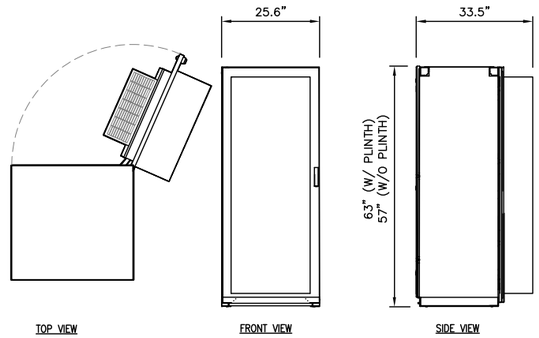
10/29/2021

SHEET NUMBER: C-5
REVISION: 2



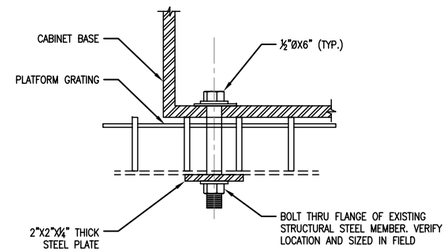
ERICSSON MODEL NO.:	B160
RACK SPACE:	19U
DIMENSIONS, HxWxD:	63"x26"x26" (W/ 6" PLINTH)
CABINET WEIGHT, EMPTY:	485 LBS
MAXIMUM WEIGHT:	2100± LBS

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

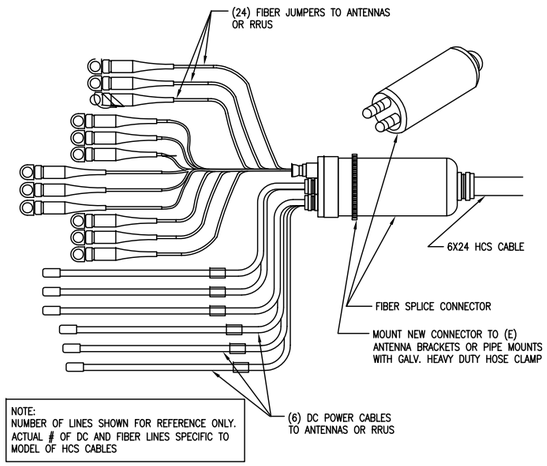


ERICSSON MODEL NO.:	6160
RACK SPACE:	19U
DIMENSIONS, HxWxD:	63"x25.6"x25.6" (W/ 6" PLINTH)
CABINET WEIGHT, EMPTY:	410 LBS
MAXIMUM WEIGHT:	770± LBS

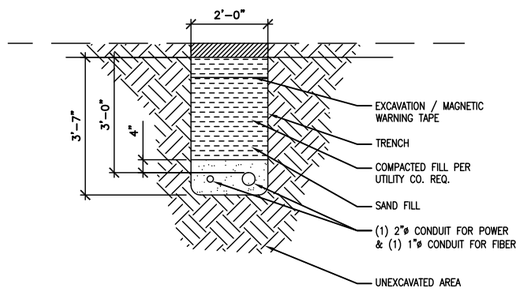
2 (N) 6160 CABINET DETAIL
SCALE: NOT TO SCALE



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



4 (N) 6X12 HCS CABLE DETAIL
SCALE: NOT TO SCALE



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

6 NOT USED
SCALE: NOT TO SCALE

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STATE OF CONNECTICUT
KUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER

10/29/2021

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
PWR CABINET (OFF)	0	NC	60	1	1		2	60	NC	1	SURGE ARRESTOR
	0	NC		3		1	4		NC	1	
6160	**7000**	**C**	**100**	**5**	7000		6	50	NC	0	TOWER LIGHT (OFF)
	7000	**C**		**7**		7000	8		NC	0	
GEN CHARGER (OFF)	0	NC	20	9	180		10	20	NC	180	TELCO GFI
FAN	900	NC	10	11		1080	**12**	**20**	**NC**	**180**	**6160 GRI**
					BASE LOAD (VA) =		7181				8081
					25% OF CONTINUOUS LOAD (VA) =		1750				1750
					TOTAL LOAD (VA) =		8931				9831
					TOTAL LOAD (A) =		74				82

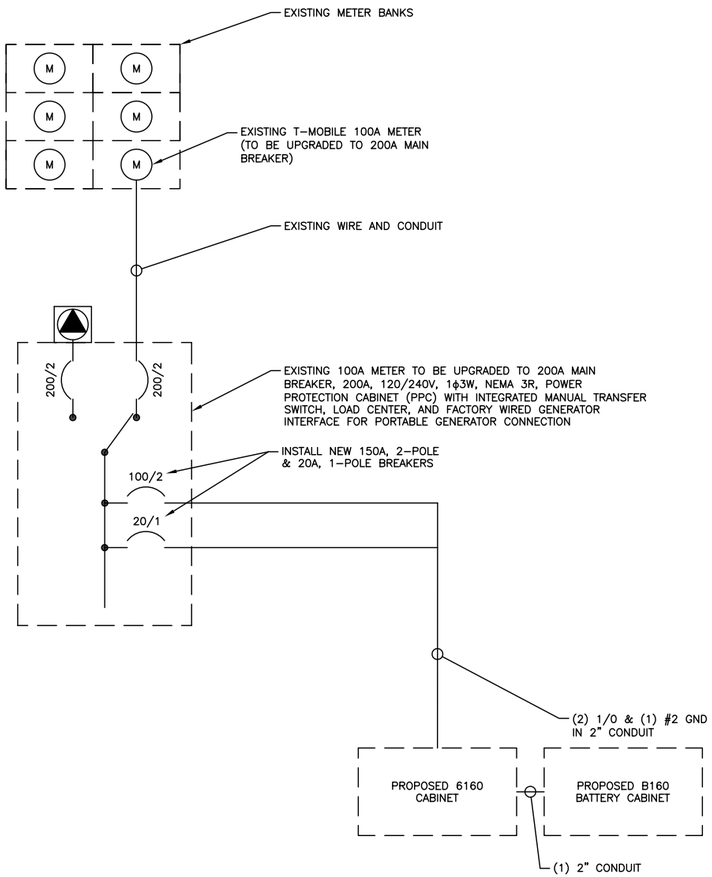
C = CONTINUOUS LOAD; NC = NON-CONTINUOUS LOAD

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

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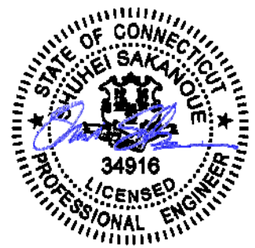
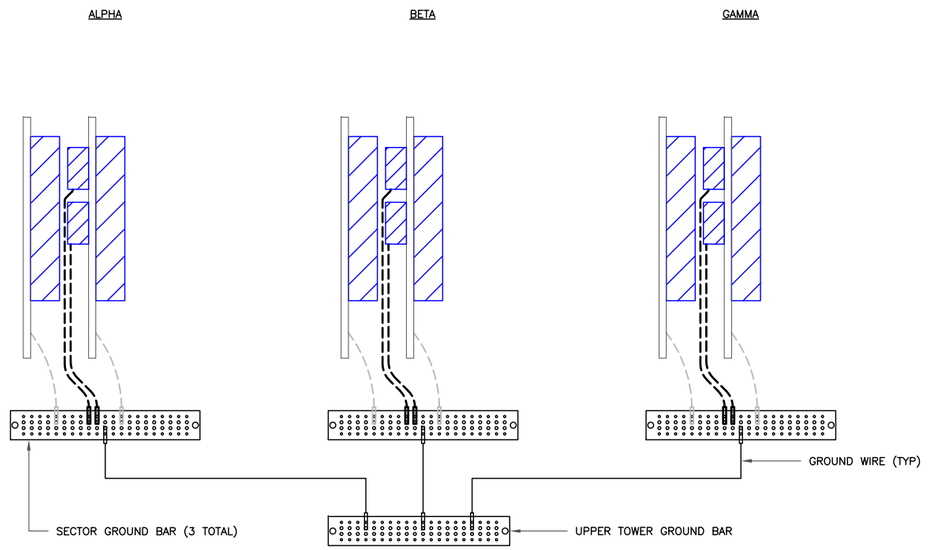


10/29/2021

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

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www.infinigy.com

T-MOBILE SITE NUMBER:
CTHA399A

BU #: **876340**
COE HILL

238 MERIDEN RD.
MIDDLEFIELD, CT 06455

EXISTING 133'-0" MONOPOLE

ISSUED FOR:

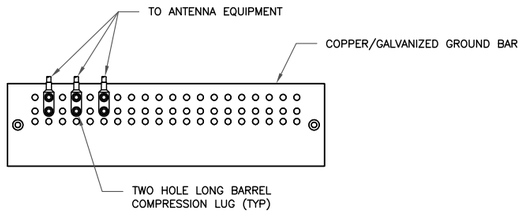
REV	DATE	DRWN	DESCRIPTION	DES./QA
0	06/07/2021	RCD	FINAL	SS
1	10/08/2021	CB	FINAL	SS
2	10/29/2021	HL	FINAL	SS

STATE OF CONNECTICUT
KUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER

10/29/2021

SHEET NUMBER: G-1

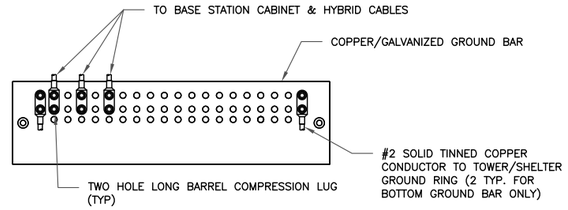
REVISION: 2



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.

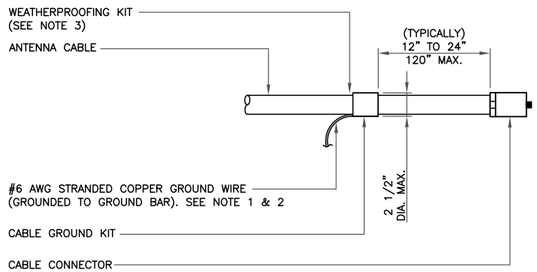
1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



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.

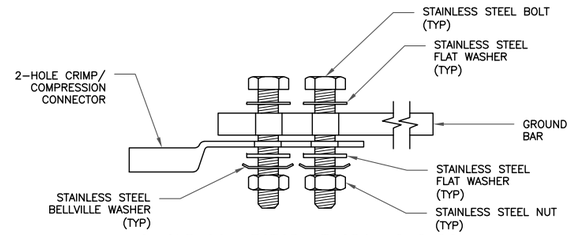
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



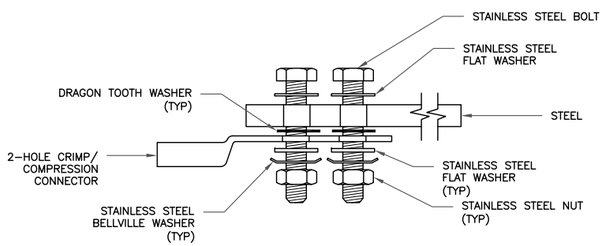
NOTES:

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.

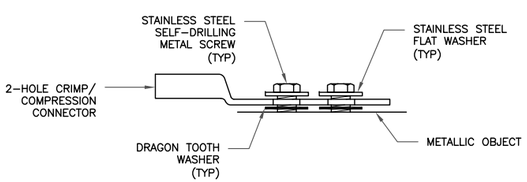
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS



SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

4 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
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
1500 CORPORATE DRIVE
CANONSBURG, PA 15317

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T-MOBILE SITE NUMBER:
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1	10/08/2021	CB	FINAL	SS
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STATE OF CONNECTICUT
KUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER

10/29/2021

SHEET NUMBER: G-2
REVISION: 2

Exhibit D

Structural Analysis Report

Date: **September 2, 2021**

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

Subject:	**Structural Analysis Report**	
Carrier Designation:	**Site Number:**	CTHA399A
	Site Name:	CT03XC160
Crown Castle Designation:	**BU Number:**	876340
	Site Name:	COE HILL
	JDE Job Number:	650643
	Work Order Number:	2015075
	Order Number:	557896 Rev. 1
Engineering Firm Designation:	**B+T Group Project Number:**	149862.007.01
Site Data:	**238 Meriden Rd., Middlefield, Middlesex County, CT** **Latitude *41° 32' 45.6"*, Longitude *-72° 42' 53.9"*** **133.5 Foot - Monopole**	

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

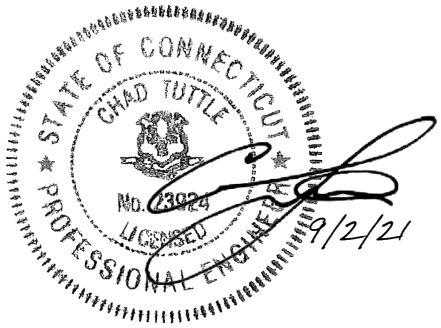
The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration **Sufficient Capacity**

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2018 Connecticut State Building Code (2015 IBC). Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Carlon Bethell II

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



Chad E. Tuttle, P.E.

tnxTower Report - version 8.1.1.0

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tnxTower Output

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7) APPENDIX C
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1) INTRODUCTION

This is a 133.5 ft. Monopole designed by Summit.

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:	125 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)
119.0	122.0	1	Site Pro1	HRK-12 Rail Kit	3 1	1-5/8 7/8
	121.0	3	Ericsson	AIR6449 B41_T-MOBILE		
		3	Ericsson	RADIO 4460 B2/B25 B66_TMO		
		3	Ericsson	Radio 4480_TMOV2		
		3	RFS Celwave	APXVAALL24_43-U-NA20_TMO		
	119.0	1	--	Platform Mount [LP 1201-1]		
	117.0	1	Site Pro1	PRK-1245LW Reinforcement Kit		
50.0	51.0	1	Lucent	KS24019-L112A	1	1/2
	50.0	1	--	Side Arm Mount [SO 701-1]		

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)
131.0	132.0	1	CCI Antennas	DMP65R-BU4D	6 4 2	1-1/4 3/4 3/8
		2	CCI Antennas	DMP65R-BU6D		
		1	CCI Antennas	OPA65R-BU4D		
		2	CCI Antennas	OPA65R-BU6D		
		3	Ericsson	RRUS 4449 B5/B12		
		3	Ericsson	RRUS 8843 B2/B66A		
		6	Kathrein	860 10025		
		6	Powerwave Tech.	CM1007-DBPXBC-003		
		3	Powerwave Tech.	P65-15-XLH-RR		
		3	Powerwave Tech.	TT19-08BP111-001		
		2	Raycap	DC6-48-60-18-8F		
		1	Site Pro1	HRK12-3HD Handrail Kit		
		1	--	Platform Mount [LP 601-1]		
111.0	111.0	1	--	Platform Mount [LP 1201-1]	--	--

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
101.0	104.0	3	Commscope	SDX1926Q-43	4 6	1-5/8 1-1/4
		3	Ericsson	AIR 32 B2A B66AA		
		3	Ericsson	AIR6449 B41_T-MOBILE		
		3	Ericsson	KRY 112 144/1		
		3	Ericsson	RADIO 4449 B71 B85A_T-MOBILE		
		3	Ericsson	RRUS 4415 B25		
		3	RFS Celwave	APXVAARR24_43-U-NA20		
	101.0	1	--	Platform Mount [LP 1201-1_HR-1]		
	99.0	1	Sabre	C10851202DP Reinforcement Kit		
95.0	95.0	1	Commscope	MC-PK8-DSH	1	1-1/2
	91.0	3	Fujitsu	TA08025-B604		
		3	Fujitsu	TA08025-B605		
		3	JMA Wireless	MX08FRO665-20		
		1	Raycap	RDIDC-9181-PF-48		
60.0	61.0	1	Symmetricom	58532A	1	1/2
	60.0	1	--	Side Arm Mount [SO 304-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
Tower Manufacturer Drawing	1533009	CCI Sites
Mount Analysis Report	9955051	CCI Sites
Tower Modification Drawing	2331830	CCI Sites
Post Modification Inspection	2427628	CCI Sites
Post Modification Inspection	2642501	CCI Sites
Foundation Drawing	1613597	CCI Sites
Geotech Report	1613531	CCI Sites
Crown CAD Package	Date: 08/25/2021	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	133.5 - 128.5	Pole	TP10.75x10.75x0.188	1	-2.748	--	19.8	Pass
L2	128.5 - 123.5	Pole	TP10.75x10.75x0.188	2	-2.963	--	50.6	Pass
L3	123.5 - 121.5	Pole	TP10.75x10.75x0.188	3	-3.065	--	63.1	Pass
L4	121.5 - 119	Pole	TP22x22x0.188	4	-3.222	--	20.3	Pass
L5	119 - 114	Pole	TP22.95x22x0.25	5	-8.853	--	22.4	Pass
L6	114 - 109	Pole	TP23.9x22.95x0.25	6	-11.911	--	30.8	Pass
L7	109 - 104	Pole	TP24.85x23.9x0.25	7	-12.423	--	38.7	Pass
L8	104 - 99	Pole	TP25.8x24.85x0.25	8	-17.991	--	48.9	Pass
L9	99 - 94	Pole	TP26.75x25.8x0.25	9	-21.552	--	58.7	Pass
L10	94 - 89	Pole	TP27.7x26.75x0.25	10	-22.317	--	69.6	Pass
L11	89 - 85.25	Pole	TP28.413x27.7x0.25	11	-22.914	--	77.2	Pass
L12	85.25 - 85	Pole + Reinf.	TP28.46x28.413x0.5125	12	-22.994	--	63.9	Pass
L13	85 - 80	Pole + Reinf.	TP29.41x28.46x0.5	13	-24.124	--	71.9	Pass
L14	80 - 78.75	Pole + Reinf.	TP30.36x29.41x0.5	14	-24.411	--	73.8	Pass
L15	78.75 - 74	Pole	TP30.05x29.148x0.3125	15	-25.898	--	73.4	Pass
L16	74 - 69	Pole	TP31.001x30.05x0.3125	16	-26.888	--	79.1	Pass
L17	69 - 68.25	Pole	TP31.143x31.001x0.3125	17	-27.045	--	79.9	Pass
L18	68.25 - 68	Pole + Reinf.	TP31.191x31.143x0.575	18	-27.127	--	60.0	Pass
L19	68 - 63	Pole + Reinf.	TP32.141x31.191x0.575	19	-28.501	--	64.0	Pass
L20	63 - 58	Pole + Reinf.	TP33.091x32.141x0.5625	20	-29.940	--	67.8	Pass
L21	58 - 53	Pole + Reinf.	TP34.042x33.091x0.55	21	-31.369	--	71.3	Pass
L22	53 - 48	Pole + Reinf.	TP34.992x34.042x0.5438	22	-32.921	--	74.6	Pass
L23	48 - 43	Pole + Reinf.	TP35.942x34.992x0.5375	23	-34.421	--	77.7	Pass
L24	43 - 42.5	Pole + Reinf.	TP36.94x35.942x0.5375	24	-34.580	--	78.0	Pass
L25	42.5 - 37.5	Pole + Reinf.	TP36.363x35.412x0.6	25	-37.319	--	74.6	Pass
L26	37.5 - 32.5	Pole + Reinf.	TP37.313x36.363x0.5875	26	-38.990	--	76.9	Pass
L27	32.5 - 27.5	Pole + Reinf.	TP38.263x37.313x0.5875	27	-40.702	--	79.1	Pass
L28	27.5 - 22.5	Pole + Reinf.	TP39.214x38.263x0.575	28	-42.444	--	81.1	Pass
L29	22.5 - 17.5	Pole + Reinf.	TP40.164x39.214x0.575	29	-44.213	--	82.9	Pass
L30	17.5 - 12.5	Pole + Reinf.	TP41.114x40.164x0.5688	30	-46.011	--	84.6	Pass
L31	12.5 - 7.5	Pole + Reinf.	TP42.065x41.114x0.5625	31	-47.836	--	86.2	Pass
L32	7.5 - 2.5	Pole + Reinf.	TP43.015x42.065x0.5625	32	-49.687	--	87.6	Pass
L33	2.5 - 0	Pole + Reinf.	TP43.49x43.015x0.5563	33	-50.620	--	88.3	Pass
							Summary	

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
						Pole (L17)	79.9	Pass
						Reinforcement	88.3	Pass
						Rating =	88.3	Pass

Table 5 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Flange Connection	119.0	35.0	Pass
1,2	Anchor Rods	Base	65.7	Pass
1,2	Base Plate	Base	62.3	Pass
1,2	Base Foundation (Structure)	Base	76.1	Pass
1,2	Base Foundation (Soil Interaction)	Base	64.1	Pass

Structure Rating (max from all components) =	**88.3%**

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.

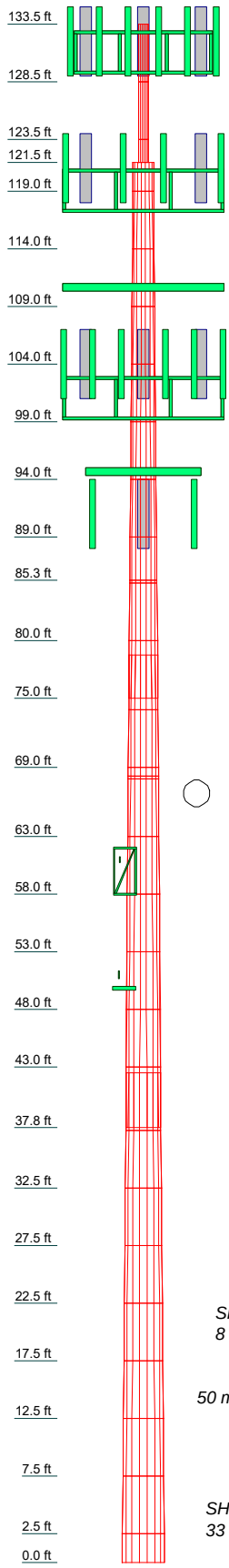
4.1) Recommendations

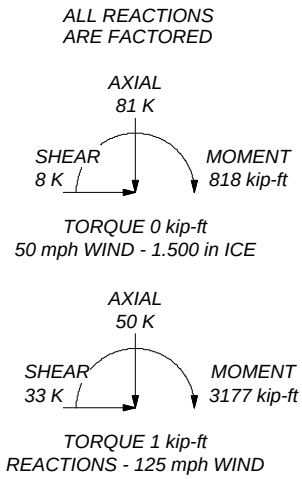
The tower and its foundation have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

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	0.188		10.750	10.750		0.1
2	5.000	0	0.188		10.750	10.750		0.1
3	2.000	0	0.188		10.750	10.750		0.0
4	2.500	0	0.188		22.000	22.000		0.1
5	5.000	12	0.250		22.000	22.950		0.3
6	5.000	12	0.250		22.950	23.900		0.3
7	5.000	12	0.250		23.900	24.850		0.3
8	5.000	12	0.250		24.850	25.800		0.3
9	5.000	12	0.250		25.800	26.750		0.4
10	5.000	12	0.250		26.750	27.700		0.4
11	5.000	12	0.250		27.700	28.650		0.3
12	5.000	12	0.500		28.650	29.410		0.7
13	5.000	12	0.500		28.650	29.410		0.7
14	4.750	12	0.500	3.750	29.410	30.360		0.8
15	5.000	12	0.313		29.142	30.055		0.5
16	5.000	12	0.313		30.055	31.000		0.5
17	5.000	12	0.313		30.968	31.943		0.5
18	5.000	12	0.313		31.881	32.886		0.5
19	5.000	12	0.563		32.886	33.829		0.9
20	5.000	12	0.563		32.141	33.091		0.9
21	5.000	12	0.550		33.091	34.042		0.9
22	5.000	12	0.544		34.042	34.992		1.0
23	5.000	12	0.537		34.992	35.942		1.0
24	5.000	12	0.537	4.750	35.942	36.940		1.1
25	5.000	12	0.600		36.940	37.938		1.1
26	5.000	12	0.588		36.363	37.313		1.1
27	5.000	12	0.588		37.313	38.263		1.1
28	5.000	12	0.575		38.263	39.214		1.2
29	5.000	12	0.575		39.214	40.164		1.2
30	5.000	12	0.569		40.164	41.114		1.2
31	5.000	12	0.563		41.114	42.065		1.2
32	5.000	12	0.563		42.065	43.015		1.2
33	2.500	12	0.556		43.015	43.490		0.6
							A572-65	21.2





MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Middlesex County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 125 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: 88.3%

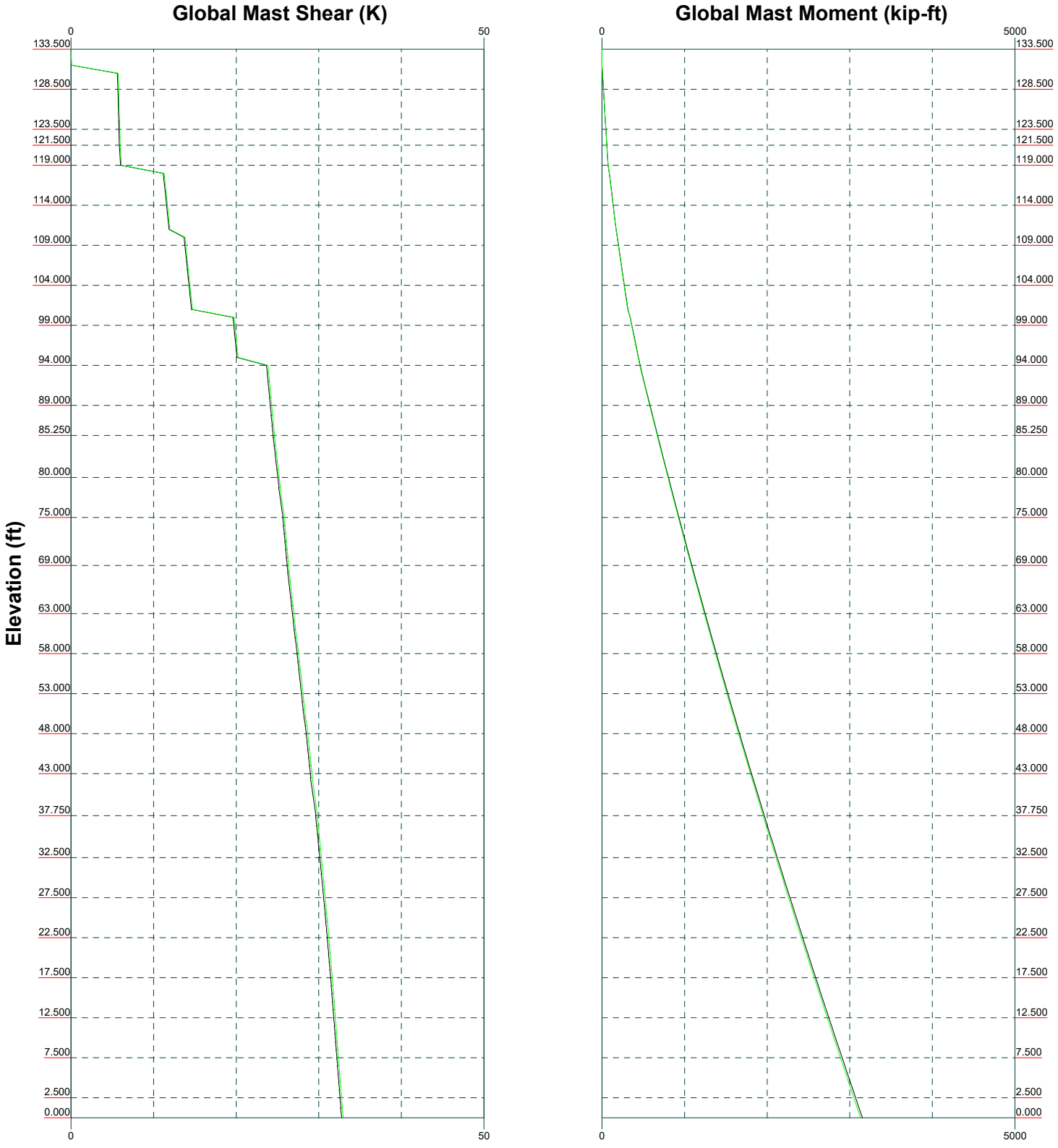
B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 149862.007.01 - COE HILL, CT (BU# 876340			
Project:			
Client: Crown Castle	Drawn by: V. RAO	App'd:	
Code: TIA-222-H	Date: 08/31/21	Scale: NTS	
Path:		Dwg No. E-1	

TIA-222-H - 125 mph/50 mph 1.500 in Ice Exposure C

Maximum Values

Vx Vz Mx Mz



B+T GRP

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1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
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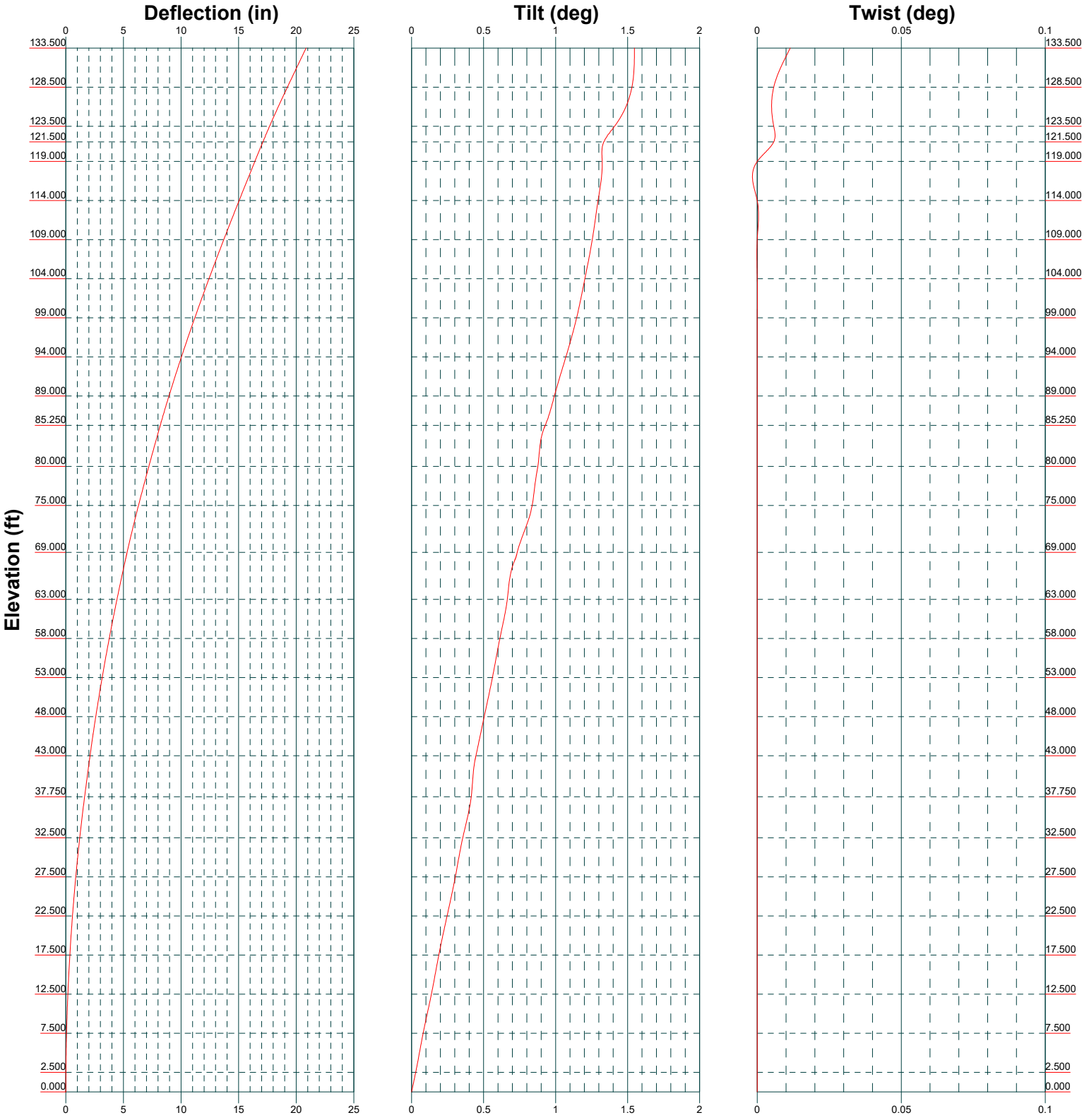
Job: *149862.007.01 - COE HILL, CT (BU# 876340*			
Project:			
Client: Crown Castle	Drawn by: V. RAO	App'd:	
Code: TIA-222-H	Date: 08/31/21	Scale: NTS	
Path:		Dwg No. E-4	

TIA-222-H - Service - 60 mph

Maximum Values



B+T GRP

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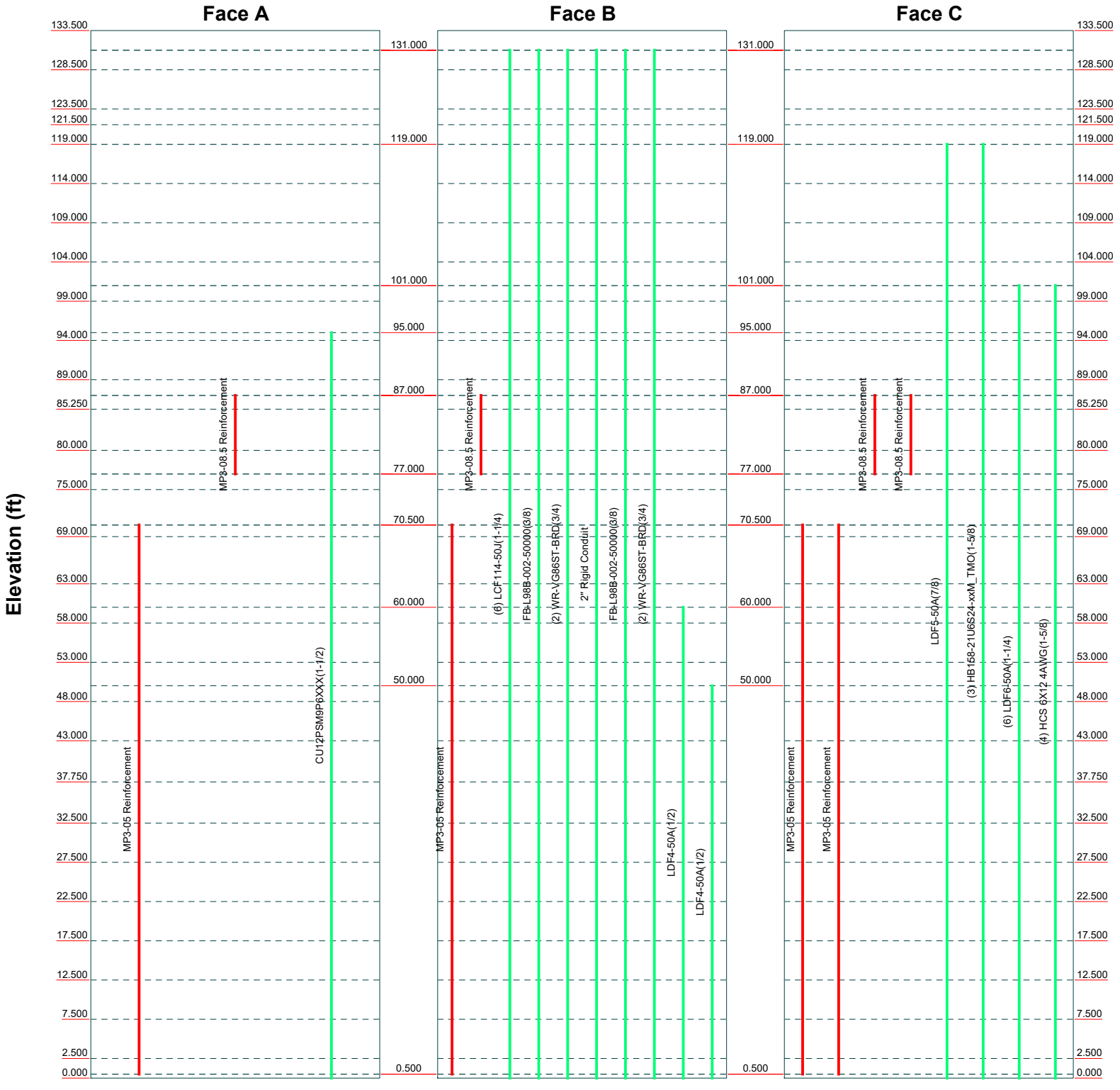
1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: *149862.007.01 - COE HILL, CT (BU# 876340*			
Project:			
Client: Crown Castle	Drawn by: V. RAO	App'd:	
Code: TIA-222-H	Date: 08/31/21	Scale: NTS	
Path:		Dwg No. E-5	

Feed Line Distribution Chart
0' - 133'6"

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



B+T Group
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Job: 149862.007.01 - COE HILL, CT (BU# 876340			
Project:			
Client: Crown Castle	Drawn by: V. RAO	App'd:	
Code: TIA-222-H	Date: 08/31/21	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 Middlesex County, Connecticut.
Tower base elevation above sea level: 444.000 ft.
Basic wind speed of 125 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: 88.3%.
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	133.500-128.500	5.000	0.000	Round	10.750	10.750	0.188		A572-65 (65 ksi)
L2	128.500-123.500	5.000	0.000	Round	10.750	10.750	0.188		A572-65 (65 ksi)
L3	123.500-121.500	2.000	0.000	Round	10.750	10.750	0.188		A572-65 (65 ksi)
L4	121.500-119.000	2.500	0.000	Round	22.000	22.000	0.188		A572-65 (65 ksi)
L5	119.000-114.000	5.000	0.000	12	22.000	22.950	0.250	1.000	A572-65 (65 ksi)
L6	114.000-109.000	5.000	0.000	12	22.950	23.900	0.250	1.000	A572-65 (65 ksi)
L7	109.000-104.000	5.000	0.000	12	23.900	24.850	0.250	1.000	A572-65 (65 ksi)
L8	104.000-99.000	5.000	0.000	12	24.850	25.800	0.250	1.000	A572-65 (65 ksi)
L9	99.000-94.000	5.000	0.000	12	25.800	26.750	0.250	1.000	A572-65 (65 ksi)
L10	94.000-89.000	5.000	0.000	12	26.750	27.700	0.250	1.000	A572-65 (65 ksi)
L11	89.000-85.250	3.750	0.000	12	27.700	28.413	0.250	1.000	A572-65 (65 ksi)
L12	85.250-85.000	0.250	0.000	12	28.413	28.460	0.512	2.050	A572-65 (65 ksi)
L13	85.000-80.000	5.000	0.000	12	28.460	29.410	0.500	2.000	A572-65 (65 ksi)
L14	80.000-75.000	5.000	3.750	12	29.410	30.360	0.500	2.000	A572-65 (65 ksi)
L15	75.000-74.000	4.750	0.000	12	29.148	30.050	0.313	1.250	A572-65 (65 ksi)
L16	74.000-69.000	5.000	0.000	12	30.050	31.001	0.313	1.250	A572-65 (65 ksi)
L17	69.000-68.250	0.750	0.000	12	31.001	31.143	0.313	1.250	A572-65 (65 ksi)
L18	68.250-68.000	0.250	0.000	12	31.143	31.191	0.575	2.300	A572-65 (65 ksi)
L19	68.000-63.000	5.000	0.000	12	31.191	32.141	0.575	2.300	A572-65 (65 ksi)
L20	63.000-58.000	5.000	0.000	12	32.141	33.091	0.563	2.250	A572-65 (65 ksi)
L21	58.000-53.000	5.000	0.000	12	33.091	34.042	0.550	2.200	A572-65 (65 ksi)
L22	53.000-48.000	5.000	0.000	12	34.042	34.992	0.544	2.175	A572-65 (65 ksi)
L23	48.000-43.000	5.000	0.000	12	34.992	35.942	0.537	2.150	A572-65 (65 ksi)
L24	43.000-37.750	5.250	4.750	12	35.942	36.940	0.537	2.150	A572-65 (65 ksi)
L25	37.750-37.500	5.000	0.000	12	35.412	36.363	0.600	2.400	A572-65 (65 ksi)
L26	37.500-32.500	5.000	0.000	12	36.363	37.313	0.588	2.350	A572-65 (65 ksi)
L27	32.500-27.500	5.000	0.000	12	37.313	38.263	0.588	2.350	A572-65 (65 ksi)
L28	27.500-22.500	5.000	0.000	12	38.263	39.214	0.575	2.300	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	22.500-17.500	5.000	0.000	12	39.214	40.164	0.575	2.300	A572-65 (65 ksi)
L30	17.500-12.500	5.000	0.000	12	40.164	41.114	0.569	2.275	A572-65 (65 ksi)
L31	12.500-7.500	5.000	0.000	12	41.114	42.065	0.563	2.250	A572-65 (65 ksi)
L32	7.500-2.500	5.000	0.000	12	42.065	43.015	0.563	2.250	A572-65 (65 ksi)
L33	2.500-0.000	2.500		12	43.015	43.490	0.556	2.225	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	10.750	6.238	87.015	3.735	5.375	16.189	174.030	3.117	0.000	0
	10.750	6.238	87.015	3.735	5.375	16.189	174.030	3.117	0.000	0
L2	10.750	6.238	87.015	3.735	5.375	16.189	174.030	3.117	0.000	0
	10.750	6.238	87.015	3.735	5.375	16.189	174.030	3.117	0.000	0
L3	10.750	6.238	87.015	3.735	5.375	16.189	174.030	3.117	0.000	0
	10.750	6.238	87.015	3.735	5.375	16.189	174.030	3.117	0.000	0
L4	22.000	12.883	766.190	7.712	11.000	69.654	1532.380	6.437	0.000	0
	22.000	12.883	766.190	7.712	11.000	69.654	1532.380	6.437	0.000	0
L5	22.688	17.509	1057.206	7.786	11.396	92.770	2142.186	8.617	5.226	20.904
	23.671	18.273	1201.875	8.127	11.888	101.099	2435.325	8.994	5.481	21.922
L6	23.671	18.273	1201.875	8.127	11.888	101.099	2435.325	8.994	5.481	21.922
	24.655	19.038	1359.175	8.467	12.380	109.786	2754.056	9.370	5.735	22.941
L7	24.655	19.038	1359.175	8.467	12.380	109.786	2754.056	9.370	5.735	22.941
	25.638	19.803	1529.633	8.807	12.872	118.831	3099.451	9.746	5.990	23.959
L8	25.638	19.803	1529.633	8.807	12.872	118.831	3099.451	9.746	5.990	23.959
	26.622	20.568	1713.778	9.147	13.364	128.235	3472.579	10.123	6.244	24.978
L9	26.622	20.568	1713.778	9.147	13.364	128.235	3472.579	10.123	6.244	24.978
	27.605	21.333	1912.139	9.487	13.857	137.996	3874.512	10.499	6.499	25.996
L10	27.605	21.333	1912.139	9.487	13.857	137.996	3874.512	10.499	6.499	25.996
	28.589	22.097	2125.244	9.827	14.349	148.115	4306.321	10.876	6.754	27.014
L11	28.589	22.097	2125.244	9.827	14.349	148.115	4306.321	10.876	6.754	27.014
	29.327	22.671	2295.067	10.082	14.718	155.940	4650.429	11.158	6.945	27.778
L12	29.234	46.042	4574.549	9.988	14.718	310.820	9269.277	22.660	6.241	12.178
	29.283	46.120	4597.954	10.005	14.742	311.889	9316.701	22.699	6.254	12.202
L13	29.288	45.016	4491.830	10.010	14.742	304.690	9101.666	22.155	6.287	12.575
	30.271	46.545	4965.421	10.350	15.234	325.935	10061.290	22.908	6.542	13.084
L14	30.271	46.545	4965.421	10.350	15.234	325.935	10061.290	22.908	6.542	13.084
	31.255	48.075	5471.183	10.690	15.726	347.896	11086.100	23.661	6.796	13.593
L15	30.803	29.015	3079.298	10.323	15.098	203.949	6239.492	14.280	6.974	22.317
	31.000	29.924	3377.675	10.646	15.566	216.990	6844.086	14.728	7.216	23.091
L16	31.000	29.924	3377.675	10.646	15.566	216.990	6844.086	14.728	7.216	23.091
	31.984	30.880	3711.945	10.986	16.058	231.154	7521.408	15.198	7.471	23.906
L17	31.984	30.880	3711.945	10.986	16.058	231.154	7521.408	15.198	7.471	23.906
	32.132	31.023	3763.912	11.037	16.132	233.317	7626.706	15.269	7.509	24.028
L18	32.039	56.597	6750.201	10.943	16.132	418.432	13677.737	27.855	6.805	11.835
	32.088	56.685	6781.727	10.960	16.157	419.746	13741.618	27.899	6.818	11.858
L19	32.088	56.685	6781.727	10.960	16.157	419.746	13741.618	27.899	6.818	11.858
	33.072	58.444	7433.043	11.301	16.649	446.455	15061.361	28.765	7.073	12.3
L20	33.076	57.196	7280.097	11.305	16.649	437.269	14751.451	28.150	7.106	12.633
	34.060	58.918	7957.325	11.645	17.141	464.220	16123.697	28.998	7.361	13.086
L21	34.065	57.631	7789.468	11.650	17.141	454.428	15783.574	28.364	7.394	13.444

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
	35.048	59.314	8492.020	11.990	17.634	481.584	17207.136	29.192	7.649	13.908
L22	35.051	58.650	8400.221	11.992	17.634	476.378	17021.126	28.866	7.666	14.098
	36.034	60.314	9135.616	12.332	18.126	504.012	18511.236	29.685	7.921	14.567
L23	36.037	59.632	9035.526	12.335	18.126	498.490	18308.424	29.349	7.937	14.767
	37.020	61.277	9803.978	12.675	18.618	526.585	19865.517	30.159	8.192	15.241
L24	37.020	61.277	9803.978	12.675	18.618	526.585	19865.517	30.159	8.192	15.241
	38.053	63.004	10656.484	13.032	19.135	556.913	21592.925	31.008	8.459	15.738
L25	37.384	67.257	10403.701	12.463	18.344	567.159	21080.719	33.102	7.882	13.137
	37.434	69.093	11279.195	12.803	18.836	598.817	22854.707	34.006	8.137	13.562
L26	37.438	67.677	11055.797	12.807	18.836	586.957	22402.041	33.309	8.171	13.908
	38.422	69.475	11960.467	13.148	19.328	618.813	24235.148	34.194	8.425	14.341
L27	38.422	69.475	11960.467	13.148	19.328	618.813	24235.148	34.194	8.425	14.341
	39.406	71.273	12913.189	13.488	19.820	651.512	26165.622	35.078	8.680	14.775
L28	39.410	69.780	12651.024	13.492	19.820	638.285	25634.405	34.343	8.714	15.154
	40.394	71.539	13632.365	13.833	20.313	671.128	27622.868	35.209	8.968	15.597
L29	40.394	71.539	13632.365	13.833	20.313	671.128	27622.868	35.209	8.968	15.597
	41.378	73.299	14663.186	14.173	20.805	704.796	29711.591	36.075	9.223	16.04
L30	41.380	72.513	14510.674	14.175	20.805	697.465	29402.560	35.689	9.240	16.246
	42.364	74.254	15580.771	14.515	21.297	731.590	31570.865	36.546	9.494	16.693
L31	42.366	73.449	15416.680	14.518	21.297	723.885	31238.374	36.149	9.511	16.909
	43.350	75.171	16526.150	14.858	21.789	758.449	33486.459	36.997	9.766	17.361
L32	43.350	75.171	16526.150	14.858	21.789	758.449	33486.459	36.997	9.766	17.361
	44.334	76.892	17687.609	15.198	22.282	793.818	35839.891	37.844	10.020	17.814
L33	44.336	76.049	17498.806	15.200	22.282	785.345	35457.326	37.429	10.037	18.044
	44.828	76.900	18092.906	15.370	22.528	803.136	36661.132	37.848	10.165	18.273

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 133.500-128.500				1	1	1			
L2 128.500-123.500				1	1	1			
L3 123.500-121.500				1	1	1			
L4 121.500-119.000				1	1	1			
L5 119.000-114.000				1	1	1			
L6 114.000-109.000				1	1	1			
L7 109.000-104.000				1	1	1			
L8 104.000-99.000				1	1	1			
L9 99.000-94.000				1	1	1			
L10 94.000-89.000				1	1	1			
L11 89.000-85.250				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
L12 85.250-85.000				1	1	0.930669			
L13 85.000-80.000				1	1	0.938606			
L14 80.000-75.000				1	1	0.935033			
L15 75.000-74.000				1	1	1			
L16 74.000-69.000				1	1	1			
L17 69.000-68.250				1	1	1			
L18 68.250-68.000				1	1	0.947405			
L19 68.000-63.000				1	1	0.935245			
L20 63.000-58.000				1	1	0.943961			
L21 58.000-53.000				1	1	0.953783			
L22 53.000-48.000				1	1	0.953811			
L23 48.000-43.000				1	1	0.954438			
L24 43.000-37.750				1	1	0.953439			
L25 37.750-37.500				1	1	0.956495			
L26 37.500-32.500				1	1	0.967753			
L27 32.500-27.500				1	1	0.959443			
L28 27.500-22.500				1	1	0.971913			
L29 22.500-17.500				1	1	0.964238			
L30 17.500-12.500				1	1	0.967289			
L31 12.500-7.500				1	1	0.970759			
L32 7.500-2.500				1	1	0.963952			
L33 2.500-0.000				1	1	0.971314			

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
MP3-05 Reinforcement	A	No	Surface Af (CaAa)	70.500 - 0.500	1	1	0.000 0.000	5.330	14.840	0.000
MP3-05 Reinforcement	C	No	Surface Af (CaAa)	70.500 - 0.500	1	1	0.250 0.250	5.330	14.840	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
MP3-05 Reinforcement	C	No	Surface Af (CaAa)	70.500 - 0.500	1	1	-0.500 -0.500	5.330	14.840	0.000
MP3-05 Reinforcement	B	No	Surface Af (CaAa)	70.500 - 0.500	1	1	-0.250 -0.250	5.330	14.840	0.000
MP3-08.5 Reinforcement	A	No	Surface Af (CaAa)	87.000 - 77.000	1	1	0.000 0.000	3.842	13.290	0.000
MP3-08.5 Reinforcement	C	No	Surface Af (CaAa)	87.000 - 77.000	1	1	0.250 0.250	3.842	13.290	0.000
MP3-08.5 Reinforcement	C	No	Surface Af (CaAa)	87.000 - 77.000	1	1	-0.500 -0.500	3.842	13.290	0.000
MP3-08.5 Reinforcement	B	No	Surface Af (CaAa)	87.000 - 77.000	1	1	-0.250 -0.250	3.842	13.290	0.000
*										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
*									
LCF114-50J(1-1/4)	B	No	No	Inside Pole	131.000 - 0.000	6	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-002-50000 (3/8)	B	No	No	Inside Pole	131.000 - 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)	B	No	No	Inside Pole	131.000 - 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	B	No	No	Inside Pole	131.000 - 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
FB-L98B-002-50000 (3/8)	B	No	No	Inside Pole	131.000 - 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)	B	No	No	Inside Pole	131.000 - 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
*									
LDF5-50A(7/8)	C	No	No	Inside Pole	119.000 - 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
HB158-21U6S24-xx M_TMO(1-5/8)	C	No	No	Inside Pole	119.000 - 0.000	3	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
*									
LDF6-50A(1-1/4)	C	No	No	Inside Pole	101.000 - 0.000	6	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
HCS 6X12 4AWG(1-5/8)	C	No	No	Inside Pole	101.000 - 0.000	4	No Ice	0.000	0.002
							1/2" Ice	0.000	0.002
							1" Ice	0.000	0.002
							2" Ice	0.000	0.002
*									
CU12PSM9P6XXX(1-1/2)	A	No	No	Inside Pole	95.000 - 0.000	1	No Ice	0.000	0.002
							1/2" Ice	0.000	0.002
							1" Ice	0.000	0.002
							2" Ice	0.000	0.002
*									
LDF4-50A(1/2)	B	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
*									
LDF4-50A(1/2)	B	No	No	Inside Pole	50.000 - 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	133.500-128.500	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.024
		C	0.000	0.000	0.000	0.000	0.000
L2	128.500-123.500	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.047
		C	0.000	0.000	0.000	0.000	0.000
L3	123.500-121.500	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.019
		C	0.000	0.000	0.000	0.000	0.000
L4	121.500-119.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.024
		C	0.000	0.000	0.000	0.000	0.000
L5	119.000-114.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.047
		C	0.000	0.000	0.000	0.000	0.039
L6	114.000-109.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.047
		C	0.000	0.000	0.000	0.000	0.039
L7	109.000-104.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.047
		C	0.000	0.000	0.000	0.000	0.039
L8	104.000-99.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.047
		C	0.000	0.000	0.000	0.000	0.066
L9	99.000-94.000	A	0.000	0.000	0.000	0.000	0.002
		B	0.000	0.000	0.000	0.000	0.047

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	0.000	0.000	0.105
L10	94.000-89.000	A	0.000	0.000	0.000	0.000	0.012
		B	0.000	0.000	0.000	0.000	0.047
		C	0.000	0.000	0.000	0.000	0.105
L11	89.000-85.250	A	0.000	0.000	1.121	0.000	0.009
		B	0.000	0.000	1.121	0.000	0.035
		C	0.000	0.000	2.241	0.000	0.079
L12	85.250-85.000	A	0.000	0.000	0.160	0.000	0.001
		B	0.000	0.000	0.160	0.000	0.002
		C	0.000	0.000	0.320	0.000	0.005
L13	85.000-80.000	A	0.000	0.000	3.202	0.000	0.012
		B	0.000	0.000	3.202	0.000	0.047
		C	0.000	0.000	6.403	0.000	0.105
L14	80.000-75.000	A	0.000	0.000	1.921	0.000	0.012
		B	0.000	0.000	1.921	0.000	0.047
		C	0.000	0.000	3.842	0.000	0.105
L15	75.000-74.000	A	0.000	0.000	0.000	0.000	0.002
		B	0.000	0.000	0.000	0.000	0.009
		C	0.000	0.000	0.000	0.000	0.021
L16	74.000-69.000	A	0.000	0.000	1.333	0.000	0.012
		B	0.000	0.000	1.333	0.000	0.047
		C	0.000	0.000	2.665	0.000	0.105
L17	69.000-68.250	A	0.000	0.000	0.666	0.000	0.002
		B	0.000	0.000	0.666	0.000	0.007
		C	0.000	0.000	1.333	0.000	0.016
L18	68.250-68.000	A	0.000	0.000	0.222	0.000	0.001
		B	0.000	0.000	0.222	0.000	0.002
		C	0.000	0.000	0.444	0.000	0.005
L19	68.000-63.000	A	0.000	0.000	4.442	0.000	0.012
		B	0.000	0.000	4.442	0.000	0.047
		C	0.000	0.000	8.883	0.000	0.105
L20	63.000-58.000	A	0.000	0.000	4.442	0.000	0.012
		B	0.000	0.000	4.442	0.000	0.048
		C	0.000	0.000	8.883	0.000	0.105
L21	58.000-53.000	A	0.000	0.000	4.442	0.000	0.012
		B	0.000	0.000	4.442	0.000	0.048
		C	0.000	0.000	8.883	0.000	0.105
L22	53.000-48.000	A	0.000	0.000	4.442	0.000	0.012
		B	0.000	0.000	4.442	0.000	0.048
		C	0.000	0.000	8.883	0.000	0.105
L23	48.000-43.000	A	0.000	0.000	4.442	0.000	0.012
		B	0.000	0.000	4.442	0.000	0.049
		C	0.000	0.000	8.883	0.000	0.105
L24	43.000-37.750	A	0.000	0.000	4.664	0.000	0.012
		B	0.000	0.000	4.664	0.000	0.051
		C	0.000	0.000	9.328	0.000	0.110
L25	37.750-37.500	A	0.000	0.000	0.222	0.000	0.001
		B	0.000	0.000	0.222	0.000	0.002
		C	0.000	0.000	0.444	0.000	0.005
L26	37.500-32.500	A	0.000	0.000	4.442	0.000	0.012
		B	0.000	0.000	4.442	0.000	0.049
		C	0.000	0.000	8.883	0.000	0.105
L27	32.500-27.500	A	0.000	0.000	4.442	0.000	0.012
		B	0.000	0.000	4.442	0.000	0.049
		C	0.000	0.000	8.883	0.000	0.105
L28	27.500-22.500	A	0.000	0.000	4.442	0.000	0.012
		B	0.000	0.000	4.442	0.000	0.049
		C	0.000	0.000	8.883	0.000	0.105
L29	22.500-17.500	A	0.000	0.000	4.442	0.000	0.012
		B	0.000	0.000	4.442	0.000	0.049
		C	0.000	0.000	8.883	0.000	0.105

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
L30	17.500-12.500	A	0.000	0.000	4.442	0.000	0.012
		B	0.000	0.000	4.442	0.000	0.049
		C	0.000	0.000	8.883	0.000	0.105
L31	12.500-7.500	A	0.000	0.000	4.442	0.000	0.012
		B	0.000	0.000	4.442	0.000	0.049
		C	0.000	0.000	8.883	0.000	0.105
L32	7.500-2.500	A	0.000	0.000	4.442	0.000	0.012
		B	0.000	0.000	4.442	0.000	0.049
		C	0.000	0.000	8.883	0.000	0.105
L33	2.500-0.000	A	0.000	0.000	1.777	0.000	0.006
		B	0.000	0.000	1.777	0.000	0.024
		C	0.000	0.000	3.553	0.000	0.053

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	133.500-128.500	A	1.463	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.024
		C		0.000	0.000	0.000	0.000	0.000
L2	128.500-123.500	A	1.458	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.047
		C		0.000	0.000	0.000	0.000	0.000
L3	123.500-121.500	A	1.454	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.019
		C		0.000	0.000	0.000	0.000	0.000
L4	121.500-119.000	A	1.451	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.024
		C		0.000	0.000	0.000	0.000	0.000
L5	119.000-114.000	A	1.446	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.047
		C		0.000	0.000	0.000	0.000	0.039
L6	114.000-109.000	A	1.440	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.047
		C		0.000	0.000	0.000	0.000	0.039
L7	109.000-104.000	A	1.433	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.047
		C		0.000	0.000	0.000	0.000	0.039
L8	104.000-99.000	A	1.427	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.047
		C		0.000	0.000	0.000	0.000	0.066
L9	99.000-94.000	A	1.419	0.000	0.000	0.000	0.000	0.002
		B		0.000	0.000	0.000	0.000	0.047
		C		0.000	0.000	0.000	0.000	0.105
L10	94.000-89.000	A	1.412	0.000	0.000	0.000	0.000	0.012
		B		0.000	0.000	0.000	0.000	0.047
		C		0.000	0.000	0.000	0.000	0.105
L11	89.000-85.250	A	1.405	0.000	0.000	1.409	0.000	0.027
		B		0.000	0.000	1.409	0.000	0.053
		C		0.000	0.000	2.818	0.000	0.114
L12	85.250-85.000	A	1.402	0.000	0.000	0.201	0.000	0.003
		B		0.000	0.000	0.201	0.000	0.005
		C		0.000	0.000	0.402	0.000	0.010
L13	85.000-80.000	A	1.397	0.000	0.000	4.021	0.000	0.062
		B		0.000	0.000	4.021	0.000	0.098
		C		0.000	0.000	8.043	0.000	0.206
L14	80.000-75.000	A	1.389	0.000	0.000	2.410	0.000	0.042

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	2.410	0.000	0.077
		C		0.000	0.000	4.820	0.000	0.165
L15	75.000-74.000	A	1.383	0.000	0.000	0.000	0.000	0.002
		B		0.000	0.000	0.000	0.000	0.009
		C		0.000	0.000	0.000	0.000	0.021
L16	74.000-69.000	A	1.377	0.000	0.000	1.746	0.000	0.028
		B		0.000	0.000	1.746	0.000	0.063
		C		0.000	0.000	3.491	0.000	0.137
L17	69.000-68.250	A	1.372	0.000	0.000	0.872	0.000	0.010
		B		0.000	0.000	0.872	0.000	0.015
		C		0.000	0.000	1.744	0.000	0.032
L18	68.250-68.000	A	1.371	0.000	0.000	0.291	0.000	0.003
		B		0.000	0.000	0.291	0.000	0.005
		C		0.000	0.000	0.581	0.000	0.011
L19	68.000-63.000	A	1.365	0.000	0.000	5.807	0.000	0.065
		B		0.000	0.000	5.807	0.000	0.100
		C		0.000	0.000	11.614	0.000	0.211
L20	63.000-58.000	A	1.355	0.000	0.000	5.796	0.000	0.064
		B		0.000	0.000	5.796	0.000	0.100
		C		0.000	0.000	11.593	0.000	0.210
L21	58.000-53.000	A	1.343	0.000	0.000	5.785	0.000	0.064
		B		0.000	0.000	5.785	0.000	0.100
		C		0.000	0.000	11.569	0.000	0.209
L22	53.000-48.000	A	1.330	0.000	0.000	5.772	0.000	0.063
		B		0.000	0.000	5.772	0.000	0.100
		C		0.000	0.000	11.544	0.000	0.208
L23	48.000-43.000	A	1.317	0.000	0.000	5.758	0.000	0.062
		B		0.000	0.000	5.758	0.000	0.100
		C		0.000	0.000	11.517	0.000	0.207
L24	43.000-37.750	A	1.301	0.000	0.000	6.030	0.000	0.065
		B		0.000	0.000	6.030	0.000	0.104
		C		0.000	0.000	12.059	0.000	0.215
L25	37.750-37.500	A	1.292	0.000	0.000	0.287	0.000	0.003
		B		0.000	0.000	0.287	0.000	0.005
		C		0.000	0.000	0.574	0.000	0.010
L26	37.500-32.500	A	1.282	0.000	0.000	5.724	0.000	0.061
		B		0.000	0.000	5.724	0.000	0.098
		C		0.000	0.000	11.448	0.000	0.203
L27	32.500-27.500	A	1.263	0.000	0.000	5.705	0.000	0.060
		B		0.000	0.000	5.705	0.000	0.097
		C		0.000	0.000	11.409	0.000	0.202
L28	27.500-22.500	A	1.240	0.000	0.000	5.682	0.000	0.059
		B		0.000	0.000	5.682	0.000	0.096
		C		0.000	0.000	11.363	0.000	0.199
L29	22.500-17.500	A	1.213	0.000	0.000	5.654	0.000	0.058
		B		0.000	0.000	5.654	0.000	0.095
		C		0.000	0.000	11.309	0.000	0.197
L30	17.500-12.500	A	1.178	0.000	0.000	5.620	0.000	0.056
		B		0.000	0.000	5.620	0.000	0.093
		C		0.000	0.000	11.240	0.000	0.194
L31	12.500-7.500	A	1.131	0.000	0.000	5.573	0.000	0.054
		B		0.000	0.000	5.573	0.000	0.091
		C		0.000	0.000	11.146	0.000	0.189
L32	7.500-2.500	A	1.056	0.000	0.000	5.497	0.000	0.050
		B		0.000	0.000	5.497	0.000	0.087
		C		0.000	0.000	10.994	0.000	0.182
L33	2.500-0.000	A	0.919	0.000	0.000	2.144	0.000	0.019
		B		0.000	0.000	2.144	0.000	0.037
		C		0.000	0.000	4.288	0.000	0.079

Feed Line Center of Pressure

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L1	133.500-128.500	0.000	0.000	0.000	0.000
L2	128.500-123.500	0.000	0.000	0.000	0.000
L3	123.500-121.500	0.000	0.000	0.000	0.000
L4	121.500-119.000	0.000	0.000	0.000	0.000
L5	119.000-114.000	0.000	0.000	0.000	0.000
L6	114.000-109.000	0.000	0.000	0.000	0.000
L7	109.000-104.000	0.000	0.000	0.000	0.000
L8	104.000-99.000	0.000	0.000	0.000	0.000
L9	99.000-94.000	0.000	0.000	0.000	0.000
L10	94.000-89.000	0.000	0.000	0.000	0.000
L11	89.000-85.250	-0.443	-1.653	-0.415	-1.549
L12	85.250-85.000	-0.683	-2.550	-0.652	-2.433
L13	85.000-80.000	-0.689	-2.573	-0.658	-2.455
L14	80.000-75.000	-0.526	-1.962	-0.496	-1.851
L15	75.000-74.000	0.000	0.000	0.000	0.000
L16	74.000-69.000	-0.423	-1.578	-0.409	-1.526
L17	69.000-68.250	-0.829	-3.095	-0.813	-3.035
L18	68.250-68.000	-0.832	-3.104	-0.816	-3.044
L19	68.000-63.000	-0.839	-3.133	-0.823	-3.072
L20	63.000-58.000	-0.854	-3.186	-0.837	-3.125
L21	58.000-53.000	-0.868	-3.238	-0.851	-3.176
L22	53.000-48.000	-0.881	-3.289	-0.864	-3.225
L23	48.000-43.000	-0.895	-3.339	-0.877	-3.273
L24	43.000-37.750	-0.908	-3.389	-0.890	-3.321
L25	37.750-37.500	-0.907	-3.384	-0.889	-3.317
L26	37.500-32.500	-0.913	-3.409	-0.894	-3.338
L27	32.500-27.500	-0.926	-3.456	-0.906	-3.382
L28	27.500-22.500	-0.938	-3.502	-0.917	-3.423
L29	22.500-17.500	-0.950	-3.546	-0.928	-3.462
L30	17.500-12.500	-0.962	-3.590	-0.937	-3.498
L31	12.500-7.500	-0.973	-3.633	-0.946	-3.530
L32	7.500-2.500	-0.985	-3.675	-0.952	-3.552
L33	2.500-0.000	-0.882	-3.291	-0.840	-3.135

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
L11	5	MP3-08.5 Reinforcement	85.25 - 87.00	1.0000	1.0000
L11	6	MP3-08.5 Reinforcement	85.25 - 87.00	1.0000	1.0000
L11	7	MP3-08.5 Reinforcement	85.25 - 87.00	1.0000	1.0000
L11	8	MP3-08.5 Reinforcement	85.25 - 87.00	1.0000	1.0000
L12	5	MP3-08.5 Reinforcement	85.00 - 85.25	1.0000	1.0000
L12	6	MP3-08.5 Reinforcement	85.00 - 85.25	1.0000	1.0000
L12	7	MP3-08.5 Reinforcement	85.00 - 85.25	1.0000	1.0000
L12	8	MP3-08.5 Reinforcement	85.00 - 85.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L13	5	MP3-08.5 Reinforcement	80.00 - 85.00	1.0000	1.0000
L13	6	MP3-08.5 Reinforcement	80.00 - 85.00	1.0000	1.0000
L13	7	MP3-08.5 Reinforcement	80.00 - 85.00	1.0000	1.0000
L13	8	MP3-08.5 Reinforcement	80.00 - 85.00	1.0000	1.0000
L14	5	MP3-08.5 Reinforcement	77.00 - 80.00	1.0000	1.0000
L14	6	MP3-08.5 Reinforcement	77.00 - 80.00	1.0000	1.0000
L14	7	MP3-08.5 Reinforcement	77.00 - 80.00	1.0000	1.0000
L14	8	MP3-08.5 Reinforcement	77.00 - 80.00	1.0000	1.0000
L16	1	MP3-05 Reinforcement	69.00 - 70.50	1.0000	1.0000
L16	2	MP3-05 Reinforcement	69.00 - 70.50	1.0000	1.0000
L16	3	MP3-05 Reinforcement	69.00 - 70.50	1.0000	1.0000
L16	4	MP3-05 Reinforcement	69.00 - 70.50	1.0000	1.0000
L17	1	MP3-05 Reinforcement	68.25 - 69.00	1.0000	1.0000
L17	2	MP3-05 Reinforcement	68.25 - 69.00	1.0000	1.0000
L17	3	MP3-05 Reinforcement	68.25 - 69.00	1.0000	1.0000
L17	4	MP3-05 Reinforcement	68.25 - 69.00	1.0000	1.0000
L18	1	MP3-05 Reinforcement	68.00 - 68.25	1.0000	1.0000
L18	2	MP3-05 Reinforcement	68.00 - 68.25	1.0000	1.0000
L18	3	MP3-05 Reinforcement	68.00 - 68.25	1.0000	1.0000
L18	4	MP3-05 Reinforcement	68.00 - 68.25	1.0000	1.0000
L19	1	MP3-05 Reinforcement	63.00 - 68.00	1.0000	1.0000
L19	2	MP3-05 Reinforcement	63.00 - 68.00	1.0000	1.0000
L19	3	MP3-05 Reinforcement	63.00 - 68.00	1.0000	1.0000
L19	4	MP3-05 Reinforcement	63.00 - 68.00	1.0000	1.0000
L20	1	MP3-05 Reinforcement	58.00 - 63.00	1.0000	1.0000
L20	2	MP3-05 Reinforcement	58.00 - 63.00	1.0000	1.0000
L20	3	MP3-05 Reinforcement	58.00 - 63.00	1.0000	1.0000
L20	4	MP3-05 Reinforcement	58.00 - 63.00	1.0000	1.0000
L21	1	MP3-05 Reinforcement	53.00 - 58.00	1.0000	1.0000
L21	2	MP3-05 Reinforcement	53.00 - 58.00	1.0000	1.0000
L21	3	MP3-05 Reinforcement	53.00 - 58.00	1.0000	1.0000
L21	4	MP3-05 Reinforcement	53.00 - 58.00	1.0000	1.0000
L22	1	MP3-05 Reinforcement	48.00 - 53.00	1.0000	1.0000
L22	2	MP3-05 Reinforcement	48.00 - 53.00	1.0000	1.0000
L22	3	MP3-05 Reinforcement	48.00 - 53.00	1.0000	1.0000
L22	4	MP3-05 Reinforcement	48.00 - 53.00	1.0000	1.0000
L23	1	MP3-05 Reinforcement	43.00 - 48.00	1.0000	1.0000
L23	2	MP3-05 Reinforcement	43.00 - 48.00	1.0000	1.0000
L23	3	MP3-05 Reinforcement	43.00 - 48.00	1.0000	1.0000
L23	4	MP3-05 Reinforcement	43.00 - 48.00	1.0000	1.0000
L24	1	MP3-05 Reinforcement	37.75 - 43.00	1.0000	1.0000
L24	2	MP3-05 Reinforcement	37.75 - 43.00	1.0000	1.0000
L24	3	MP3-05 Reinforcement	37.75 - 43.00	1.0000	1.0000
L24	4	MP3-05 Reinforcement	37.75 - 43.00	1.0000	1.0000
L25	1	MP3-05 Reinforcement	37.50 - 37.75	1.0000	1.0000
L25	2	MP3-05 Reinforcement	37.50 - 37.75	1.0000	1.0000
L25	3	MP3-05 Reinforcement	37.50 - 37.75	1.0000	1.0000
L25	4	MP3-05 Reinforcement	37.50 - 37.75	1.0000	1.0000
L26	1	MP3-05 Reinforcement	32.50 - 37.50	1.0000	1.0000
L26	2	MP3-05 Reinforcement	32.50 - 37.50	1.0000	1.0000
L26	3	MP3-05 Reinforcement	32.50 - 37.50	1.0000	1.0000
L26	4	MP3-05 Reinforcement	32.50 - 37.50	1.0000	1.0000
L27	1	MP3-05 Reinforcement	27.50 - 32.50	1.0000	1.0000
L27	2	MP3-05 Reinforcement	27.50 - 32.50	1.0000	1.0000
L27	3	MP3-05 Reinforcement	27.50 - 32.50	1.0000	1.0000
L27	4	MP3-05 Reinforcement	27.50 - 32.50	1.0000	1.0000
L28	1	MP3-05 Reinforcement	22.50 - 27.50	1.0000	1.0000
L28	2	MP3-05 Reinforcement	22.50 - 27.50	1.0000	1.0000
L28	3	MP3-05 Reinforcement	22.50 - 27.50	1.0000	1.0000
L28	4	MP3-05 Reinforcement	22.50 - 27.50	1.0000	1.0000
L29	1	MP3-05 Reinforcement	17.50 - 22.50	1.0000	1.0000
L29	2	MP3-05 Reinforcement	17.50 - 22.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L29	3	MP3-05 Reinforcement	17.50 - 22.50	1.0000	1.0000
L29	4	MP3-05 Reinforcement	17.50 - 22.50	1.0000	1.0000
L30	1	MP3-05 Reinforcement	12.50 - 17.50	1.0000	1.0000
L30	2	MP3-05 Reinforcement	12.50 - 17.50	1.0000	1.0000
L30	3	MP3-05 Reinforcement	12.50 - 17.50	1.0000	1.0000
L30	4	MP3-05 Reinforcement	12.50 - 17.50	1.0000	1.0000
L31	1	MP3-05 Reinforcement	7.50 - 12.50	1.0000	1.0000
L31	2	MP3-05 Reinforcement	7.50 - 12.50	1.0000	1.0000
L31	3	MP3-05 Reinforcement	7.50 - 12.50	1.0000	1.0000
L31	4	MP3-05 Reinforcement	7.50 - 12.50	1.0000	1.0000
L32	1	MP3-05 Reinforcement	2.50 - 7.50	1.0000	1.0000
L32	2	MP3-05 Reinforcement	2.50 - 7.50	1.0000	1.0000
L32	3	MP3-05 Reinforcement	2.50 - 7.50	1.0000	1.0000
L32	4	MP3-05 Reinforcement	2.50 - 7.50	1.0000	1.0000
L33	1	MP3-05 Reinforcement	0.50 - 2.50	1.0000	1.0000
L33	2	MP3-05 Reinforcement	0.50 - 2.50	1.0000	1.0000
L33	3	MP3-05 Reinforcement	0.50 - 2.50	1.0000	1.0000
L33	4	MP3-05 Reinforcement	0.50 - 2.50	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
L11	5	MP3-08.5 Reinforcement	85.25 - 87.00	Auto	0.0000
L11	6	MP3-08.5 Reinforcement	85.25 - 87.00	Auto	0.0000
L11	7	MP3-08.5 Reinforcement	85.25 - 87.00	Auto	0.0000
L11	8	MP3-08.5 Reinforcement	85.25 - 87.00	Auto	0.0000
L12	5	MP3-08.5 Reinforcement	85.00 - 85.25	Auto	0.0000
L12	6	MP3-08.5 Reinforcement	85.00 - 85.25	Auto	0.0000
L12	7	MP3-08.5 Reinforcement	85.00 - 85.25	Auto	0.0000
L12	8	MP3-08.5 Reinforcement	85.00 - 85.25	Auto	0.0000
L13	5	MP3-08.5 Reinforcement	80.00 - 85.00	Auto	0.0000
L13	6	MP3-08.5 Reinforcement	80.00 - 85.00	Auto	0.0000
L13	7	MP3-08.5 Reinforcement	80.00 - 85.00	Auto	0.0000
L13	8	MP3-08.5 Reinforcement	80.00 - 85.00	Auto	0.0000
L14	5	MP3-08.5 Reinforcement	77.00 - 80.00	Auto	0.0000
L14	6	MP3-08.5 Reinforcement	77.00 - 80.00	Auto	0.0000
L14	7	MP3-08.5 Reinforcement	77.00 - 80.00	Auto	0.0000
L14	8	MP3-08.5 Reinforcement	77.00 - 80.00	Auto	0.0000
L16	1	MP3-05 Reinforcement	69.00 - 70.50	Auto	0.0000
L16	2	MP3-05 Reinforcement	69.00 - 70.50	Auto	0.0000
L16	3	MP3-05 Reinforcement	69.00 - 70.50	Auto	0.0000
L16	4	MP3-05 Reinforcement	69.00 - 70.50	Auto	0.0000
L17	1	MP3-05 Reinforcement	68.25 - 69.00	Auto	0.0000
L17	2	MP3-05 Reinforcement	68.25 - 69.00	Auto	0.0000
L17	3	MP3-05 Reinforcement	68.25 - 69.00	Auto	0.0000
L17	4	MP3-05 Reinforcement	68.25 - 69.00	Auto	0.0000
L18	1	MP3-05 Reinforcement	68.00 - 68.25	Auto	0.0000
L18	2	MP3-05 Reinforcement	68.00 - 68.25	Auto	0.0000
L18	3	MP3-05 Reinforcement	68.00 - 68.25	Auto	0.0000
L18	4	MP3-05 Reinforcement	68.00 - 68.25	Auto	0.0000
L19	1	MP3-05 Reinforcement	63.00 - 68.00	Auto	0.0000
L19	2	MP3-05 Reinforcement	63.00 - 68.00	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L19	3	MP3-05 Reinforcement	63.00 - 68.00	Auto	0.0000
L19	4	MP3-05 Reinforcement	63.00 - 68.00	Auto	0.0000
L20	1	MP3-05 Reinforcement	58.00 - 63.00	Auto	0.0000
L20	2	MP3-05 Reinforcement	58.00 - 63.00	Auto	0.0000
L20	3	MP3-05 Reinforcement	58.00 - 63.00	Auto	0.0000
L20	4	MP3-05 Reinforcement	58.00 - 63.00	Auto	0.0000
L21	1	MP3-05 Reinforcement	53.00 - 58.00	Auto	0.0000
L21	2	MP3-05 Reinforcement	53.00 - 58.00	Auto	0.0000
L21	3	MP3-05 Reinforcement	53.00 - 58.00	Auto	0.0000
L21	4	MP3-05 Reinforcement	53.00 - 58.00	Auto	0.0000
L22	1	MP3-05 Reinforcement	48.00 - 53.00	Auto	0.0000
L22	2	MP3-05 Reinforcement	48.00 - 53.00	Auto	0.0000
L22	3	MP3-05 Reinforcement	48.00 - 53.00	Auto	0.0000
L22	4	MP3-05 Reinforcement	48.00 - 53.00	Auto	0.0000
L23	1	MP3-05 Reinforcement	43.00 - 48.00	Auto	0.0000
L23	2	MP3-05 Reinforcement	43.00 - 48.00	Auto	0.0000
L23	3	MP3-05 Reinforcement	43.00 - 48.00	Auto	0.0000
L23	4	MP3-05 Reinforcement	43.00 - 48.00	Auto	0.0000
L24	1	MP3-05 Reinforcement	37.75 - 43.00	Auto	0.0000
L24	2	MP3-05 Reinforcement	37.75 - 43.00	Auto	0.0000
L24	3	MP3-05 Reinforcement	37.75 - 43.00	Auto	0.0000
L24	4	MP3-05 Reinforcement	37.75 - 43.00	Auto	0.0000
L25	1	MP3-05 Reinforcement	37.50 - 37.75	Auto	0.0000
L25	2	MP3-05 Reinforcement	37.50 - 37.75	Auto	0.0000
L25	3	MP3-05 Reinforcement	37.50 - 37.75	Auto	0.0000
L25	4	MP3-05 Reinforcement	37.50 - 37.75	Auto	0.0000
L26	1	MP3-05 Reinforcement	32.50 - 37.50	Auto	0.0000
L26	2	MP3-05 Reinforcement	32.50 - 37.50	Auto	0.0000
L26	3	MP3-05 Reinforcement	32.50 - 37.50	Auto	0.0000
L26	4	MP3-05 Reinforcement	32.50 - 37.50	Auto	0.0000
L27	1	MP3-05 Reinforcement	27.50 - 32.50	Auto	0.0000
L27	2	MP3-05 Reinforcement	27.50 - 32.50	Auto	0.0000
L27	3	MP3-05 Reinforcement	27.50 - 32.50	Auto	0.0000
L27	4	MP3-05 Reinforcement	27.50 - 32.50	Auto	0.0000
L28	1	MP3-05 Reinforcement	22.50 - 27.50	Auto	0.0000
L28	2	MP3-05 Reinforcement	22.50 - 27.50	Auto	0.0000
L28	3	MP3-05 Reinforcement	22.50 - 27.50	Auto	0.0000
L28	4	MP3-05 Reinforcement	22.50 - 27.50	Auto	0.0000
L29	1	MP3-05 Reinforcement	17.50 - 22.50	Auto	0.0000
L29	2	MP3-05 Reinforcement	17.50 - 22.50	Auto	0.0000
L29	3	MP3-05 Reinforcement	17.50 - 22.50	Auto	0.0000
L29	4	MP3-05 Reinforcement	17.50 - 22.50	Auto	0.0000
L30	1	MP3-05 Reinforcement	12.50 - 17.50	Auto	0.0000
L30	2	MP3-05 Reinforcement	12.50 - 17.50	Auto	0.0000
L30	3	MP3-05 Reinforcement	12.50 - 17.50	Auto	0.0000
L30	4	MP3-05 Reinforcement	12.50 - 17.50	Auto	0.0000
L31	1	MP3-05 Reinforcement	7.50 - 12.50	Auto	0.0000
L31	2	MP3-05 Reinforcement	7.50 - 12.50	Auto	0.0000
L31	3	MP3-05 Reinforcement	7.50 - 12.50	Auto	0.0000
L31	4	MP3-05 Reinforcement	7.50 - 12.50	Auto	0.0000
L32	1	MP3-05 Reinforcement	2.50 - 7.50	Auto	0.0000
L32	2	MP3-05 Reinforcement	2.50 - 7.50	Auto	0.0000
L32	3	MP3-05 Reinforcement	2.50 - 7.50	Auto	0.0000
L32	4	MP3-05 Reinforcement	2.50 - 7.50	Auto	0.0000
L33	1	MP3-05 Reinforcement	0.50 - 2.50	Auto	0.0000
L33	2	MP3-05 Reinforcement	0.50 - 2.50	Auto	0.0000
L33	3	MP3-05 Reinforcement	0.50 - 2.50	Auto	0.0000
L33	4	MP3-05 Reinforcement	0.50 - 2.50	Auto	0.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
P65-15-XLH-RR w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	131.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.930 4.330 4.730 5.590	2.800 3.170 3.550 4.360	0.059 0.103 0.155 0.285
P65-15-XLH-RR w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	131.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.930 4.330 4.730 5.590	2.800 3.170 3.550 4.360	0.059 0.103 0.155 0.285
P65-15-XLH-RR w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	131.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.930 4.330 4.730 5.590	2.800 3.170 3.550 4.360	0.059 0.103 0.155 0.285
DMP65R-BU6D w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	131.000	No Ice 1/2" Ice 1" Ice 2" Ice	11.960 12.700 13.460 15.020	5.970 6.630 7.300 8.690	0.115 0.201 0.298 0.529
DMP65R-BU6D w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	131.000	No Ice 1/2" Ice 1" Ice 2" Ice	11.960 12.700 13.460 15.020	5.970 6.630 7.300 8.690	0.115 0.201 0.298 0.529
DMP65R-BU4D w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	131.000	No Ice 1/2" Ice 1" Ice 2" Ice	7.530 8.040 8.570 9.680	3.790 4.230 4.680 5.630	0.095 0.156 0.225 0.391
OPA65R-BU6D w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	131.000	No Ice 1/2" Ice 1" Ice 2" Ice	12.250 13.000 13.760 15.340	6.050 6.710 7.390 8.790	0.089 0.176 0.275 0.508
OPA65R-BU6D w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	131.000	No Ice 1/2" Ice 1" Ice 2" Ice	12.250 13.000 13.760 15.340	6.050 6.710 7.390 8.790	0.089 0.176 0.275 0.508
OPA65R-BU4D w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	131.000	No Ice 1/2" Ice 1" Ice 2" Ice	8.100 8.650 9.210 10.390	4.030 4.500 4.980 5.980	0.081 0.142 0.212 0.380
TT19-08BP111-001	A	From Leg	4.000 0.000 0.000	0.000	131.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.545 0.641 0.743 0.971	0.442 0.530 0.626 0.840	0.016 0.022 0.029 0.049
TT19-08BP111-001	B	From Leg	4.000 0.000 0.000	0.000	131.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.545 0.641 0.743 0.971	0.442 0.530 0.626 0.840	0.016 0.022 0.029 0.049
TT19-08BP111-001	C	From Leg	4.000 0.000 0.000	0.000	131.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.545 0.641 0.743 0.971	0.442 0.530 0.626 0.840	0.016 0.022 0.029 0.049
(2) CM1007-DBPXBC-003	A	From Leg	4.000 0.000	0.000	131.000	No Ice 1/2" Ice	0.367 0.448	0.134 0.183	0.007 0.010

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			1.000			1" Ice	0.536	0.240	0.015
						2" Ice	0.735	0.375	0.029
(2) CM1007-DBPXBC-003	B	From Leg	4.000	0.000	131.000	No Ice	0.367	0.134	0.007
			0.000			1/2" Ice	0.448	0.183	0.010
			1.000			1" Ice	0.536	0.240	0.015
						2" Ice	0.735	0.375	0.029
(2) CM1007-DBPXBC-003	C	From Leg	4.000	0.000	131.000	No Ice	0.367	0.134	0.007
			0.000			1/2" Ice	0.448	0.183	0.010
			1.000			1" Ice	0.536	0.240	0.015
						2" Ice	0.735	0.375	0.029
(2) 860 10025	A	From Leg	4.000	0.000	131.000	No Ice	0.142	0.121	0.001
			0.000			1/2" Ice	0.196	0.173	0.003
			1.000			1" Ice	0.259	0.231	0.005
						2" Ice	0.408	0.376	0.014
(2) 860 10025	B	From Leg	4.000	0.000	131.000	No Ice	0.142	0.121	0.001
			0.000			1/2" Ice	0.196	0.173	0.003
			1.000			1" Ice	0.259	0.231	0.005
						2" Ice	0.408	0.376	0.014
(2) 860 10025	C	From Leg	4.000	0.000	131.000	No Ice	0.142	0.121	0.001
			0.000			1/2" Ice	0.196	0.173	0.003
			1.000			1" Ice	0.259	0.231	0.005
						2" Ice	0.408	0.376	0.014
RRUS 4449 B5/B12	A	From Leg	4.000	0.000	131.000	No Ice	1.968	1.408	0.071
			0.000			1/2" Ice	2.144	1.564	0.090
			1.000			1" Ice	2.328	1.727	0.111
						2" Ice	2.718	2.075	0.163
RRUS 4449 B5/B12	B	From Leg	4.000	0.000	131.000	No Ice	1.968	1.408	0.071
			0.000			1/2" Ice	2.144	1.564	0.090
			1.000			1" Ice	2.328	1.727	0.111
						2" Ice	2.718	2.075	0.163
RRUS 4449 B5/B12	C	From Leg	4.000	0.000	131.000	No Ice	1.968	1.408	0.071
			0.000			1/2" Ice	2.144	1.564	0.090
			1.000			1" Ice	2.328	1.727	0.111
						2" Ice	2.718	2.075	0.163
RRUS 8843 B2/B66A	A	From Leg	4.000	0.000	131.000	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	B	From Leg	4.000	0.000	131.000	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	131.000	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	B	From Leg	2.000	0.000	131.000	No Ice	1.212	1.212	0.033
			0.000			1/2" Ice	1.892	1.892	0.055
			0.000			1" Ice	2.105	2.105	0.080
						2" Ice	2.570	2.570	0.138
DC6-48-60-18-8F	C	From Leg	2.000	0.000	131.000	No Ice	1.212	1.212	0.033
			0.000			1/2" Ice	1.892	1.892	0.055
			0.000			1" Ice	2.105	2.105	0.080
						2" Ice	2.570	2.570	0.138
4' x 2" Pipe Mount	B	From Leg	2.000	0.000	131.000	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

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	1.814	1.814	0.072
4' x 2" Pipe Mount	C	From Leg	2.000 0.000 0.000	0.000	131.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.785 1.028 1.281 1.814	0.785 1.028 1.281 1.814	0.029 0.035 0.044 0.072
HRK12-3HD	C	None		0.000	131.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.560 6.390 8.180 11.660	4.560 6.390 8.180 11.660	0.245 0.311 0.402 0.657
Platform Mount [LP 601-1]	C	None		0.000	131.000	No Ice 1/2" Ice 1" Ice 2" Ice	28.500 31.690 34.870 41.230	28.500 31.690 34.870 41.230	1.122 1.676 2.282 3.653
*									
AIR6449 B41_T-MOBILE	A	From Leg	4.000 0.000 2.000	0.000	119.000	No Ice 1/2" Ice 1" Ice 2" Ice	5.270 5.700 6.140 7.060	2.030 2.360 2.700 3.430	0.115 0.154 0.197 0.296
AIR6449 B41_T-MOBILE	B	From Leg	4.000 0.000 2.000	0.000	119.000	No Ice 1/2" Ice 1" Ice 2" Ice	5.270 5.700 6.140 7.060	2.030 2.360 2.700 3.430	0.115 0.154 0.197 0.296
AIR6449 B41_T-MOBILE	C	From Leg	4.000 0.000 2.000	0.000	119.000	No Ice 1/2" Ice 1" Ice 2" Ice	5.270 5.700 6.140 7.060	2.030 2.360 2.700 3.430	0.115 0.154 0.197 0.296
APXVAALL24_43-U-NA20 _TMO w/ Mount Pipe	A	From Leg	4.000 0.000 2.000	0.000	119.000	No Ice 1/2" Ice 1" Ice 2" Ice	14.690 15.460 16.230 17.820	6.870 7.550 8.250 9.670	0.183 0.311 0.453 0.782
APXVAALL24_43-U-NA20 _TMO w/ Mount Pipe	B	From Leg	4.000 0.000 2.000	0.000	119.000	No Ice 1/2" Ice 1" Ice 2" Ice	14.690 15.460 16.230 17.820	6.870 7.550 8.250 9.670	0.183 0.311 0.453 0.782
APXVAALL24_43-U-NA20 _TMO w/ Mount Pipe	C	From Leg	4.000 0.000 2.000	0.000	119.000	No Ice 1/2" Ice 1" Ice 2" Ice	14.690 15.460 16.230 17.820	6.870 7.550 8.250 9.670	0.183 0.311 0.453 0.782
Radio 4480_TMOV2	A	From Leg	4.000 0.000 2.000	0.000	119.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.878 3.091 3.312 3.775	1.397 1.558 1.727 2.090	0.081 0.103 0.128 0.188
Radio 4480_TMOV2	B	From Leg	4.000 0.000 2.000	0.000	119.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.878 3.091 3.312 3.775	1.397 1.558 1.727 2.090	0.081 0.103 0.128 0.188
Radio 4480_TMOV2	C	From Leg	4.000 0.000 2.000	0.000	119.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.878 3.091 3.312 3.775	1.397 1.558 1.727 2.090	0.081 0.103 0.128 0.188
RADIO 4460 B2/B25 B66_TMO	A	From Leg	4.000 0.000 2.000	0.000	119.000	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 2.000	0.000	119.000	No Ice 1/2" Ice 1" Ice	2.139 2.321 2.511	1.686 1.850 2.022	0.109 0.131 0.156

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	2.912	2.387	0.217
RADIO 4460 B2/B25 B66_TMO	C	From Leg	4.000 0.000 2.000	0.000	119.000	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) 6' x 2" Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	119.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.425 1.925 2.294 3.060	1.425 1.925 2.294 3.060	0.022 0.033 0.048 0.090
(2) 6' x 2" Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	119.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.425 1.925 2.294 3.060	1.425 1.925 2.294 3.060	0.022 0.033 0.048 0.090
(2) 6' x 2" Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	119.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.425 1.925 2.294 3.060	1.425 1.925 2.294 3.060	0.022 0.033 0.048 0.090
Platform Mount [LP 1201-1_KCKR-HR-1]	C	None		0.000	119.000	No Ice 1/2" Ice 1" Ice 2" Ice	37.610 45.620 53.590 69.650	37.610 45.620 53.590 69.650	2.631 3.478 4.462 6.848
*									
*									
(3) 6' x 2" Mount Pipe	A	From Leg	4.000 0.000 2.000	0.000	111.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.425 1.925 2.294 3.060	1.425 1.925 2.294 3.060	0.022 0.033 0.048 0.090
(3) 6' x 2" Mount Pipe	B	From Leg	4.000 0.000 2.000	0.000	111.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.425 1.925 2.294 3.060	1.425 1.925 2.294 3.060	0.022 0.033 0.048 0.090
(3) 6' x 2" Mount Pipe	C	From Leg	4.000 0.000 2.000	0.000	111.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.425 1.925 2.294 3.060	1.425 1.925 2.294 3.060	0.022 0.033 0.048 0.090
Platform Mount [LP 1201-1]	C	None		0.000	111.000	No Ice 1/2" Ice 1" Ice 2" Ice	18.380 22.110 25.870 33.470	18.380 22.110 25.870 33.470	2.100 2.652 3.263 4.662
*									
(2) KRY 112 144/1	A	From Leg	4.000 0.000 3.000	0.000	101.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.350 0.426 0.509 0.698	0.175 0.234 0.301 0.456	0.011 0.014 0.019 0.032
KRY 112 144/1	B	From Leg	4.000 0.000 3.000	0.000	101.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.350 0.426 0.509 0.698	0.175 0.234 0.301 0.456	0.011 0.014 0.019 0.032
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	4.000 0.000 3.000	0.000	101.000	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 3.000	0.000	101.000	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	C	From Leg	4.000	0.000	101.000	No Ice	5.190	2.710	0.128

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
w/ Mount Pipe			0.000			1/2" Ice	5.590	3.040	0.174
			3.000			1" Ice	6.020	3.380	0.227
						2" Ice	6.900	4.120	0.354
APXVAARR24_43-U-NA20	A	From Leg	4.000	0.000	101.000	No Ice	14.690	6.870	0.186
w/ Mount Pipe			0.000			1/2" Ice	15.460	7.550	0.315
			3.000			1" Ice	16.230	8.250	0.458
						2" Ice	17.820	9.670	0.788
APXVAARR24_43-U-NA20	B	From Leg	4.000	0.000	101.000	No Ice	14.690	6.870	0.186
w/ Mount Pipe			0.000			1/2" Ice	15.460	7.550	0.315
			3.000			1" Ice	16.230	8.250	0.458
						2" Ice	17.820	9.670	0.788
APXVAARR24_43-U-NA20	C	From Leg	4.000	0.000	101.000	No Ice	14.690	6.870	0.186
w/ Mount Pipe			0.000			1/2" Ice	15.460	7.550	0.315
			3.000			1" Ice	16.230	8.250	0.458
						2" Ice	17.820	9.670	0.788
AIR 32 B2A B66AA w/	A	From Leg	4.000	0.000	101.000	No Ice	3.760	3.150	0.194
Mount Pipe			0.000			1/2" Ice	4.120	3.490	0.252
			3.000			1" Ice	4.480	3.840	0.320
						2" Ice	5.240	4.580	0.485
AIR 32 B2A B66AA w/	B	From Leg	4.000	0.000	101.000	No Ice	3.760	3.150	0.194
Mount Pipe			0.000			1/2" Ice	4.120	3.490	0.252
			3.000			1" Ice	4.480	3.840	0.320
						2" Ice	5.240	4.580	0.485
AIR 32 B2A B66AA w/	C	From Leg	4.000	0.000	101.000	No Ice	3.760	3.150	0.194
Mount Pipe			0.000			1/2" Ice	4.120	3.490	0.252
			3.000			1" Ice	4.480	3.840	0.320
						2" Ice	5.240	4.580	0.485
(2) RADIO 4449 B71	A	From Leg	4.000	0.000	101.000	No Ice	1.970	1.587	0.073
B85A_T-MOBILE			0.000			1/2" Ice	2.147	1.749	0.093
			3.000			1" Ice	2.331	1.918	0.116
						2" Ice	2.721	2.280	0.170
RADIO 4449 B71	B	From Leg	4.000	0.000	101.000	No Ice	1.970	1.587	0.073
B85A_T-MOBILE			0.000			1/2" Ice	2.147	1.749	0.093
			3.000			1" Ice	2.331	1.918	0.116
						2" Ice	2.721	2.280	0.170
RRUS 4415 B25	A	From Leg	4.000	0.000	101.000	No Ice	1.644	0.679	0.044
			0.000			1/2" Ice	1.804	0.791	0.056
			3.000			1" Ice	1.972	0.913	0.071
						2" Ice	2.329	1.183	0.109
RRUS 4415 B25	B	From Leg	4.000	0.000	101.000	No Ice	1.644	0.679	0.044
			0.000			1/2" Ice	1.804	0.791	0.056
			3.000			1" Ice	1.972	0.913	0.071
						2" Ice	2.329	1.183	0.109
RRUS 4415 B25	C	From Leg	4.000	0.000	101.000	No Ice	1.644	0.679	0.044
			0.000			1/2" Ice	1.804	0.791	0.056
			3.000			1" Ice	1.972	0.913	0.071
						2" Ice	2.329	1.183	0.109
SDX1926Q-43	B	From Leg	4.000	0.000	101.000	No Ice	0.241	0.101	0.006
			0.000			1/2" Ice	0.306	0.144	0.009
			3.000			1" Ice	0.379	0.195	0.012
						2" Ice	0.547	0.318	0.023
(2) SDX1926Q-43	C	From Leg	4.000	0.000	101.000	No Ice	0.241	0.101	0.006
			0.000			1/2" Ice	0.306	0.144	0.009
			3.000			1" Ice	0.379	0.195	0.012
						2" Ice	0.547	0.318	0.023
Platform Mount [LP	C	None		0.000	101.000	No Ice	37.610	37.610	2.631
1201-1_KCKR-HR-1]						1/2" Ice	45.620	45.620	3.478

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
						1" Ice	53.590	53.590	4.462
						2" Ice	69.650	69.650	6.848
*									
MX08FRO665-20 w/ Mount Pipe	A	From Leg	4.000 0.000 -4.000	0.000	95.000	No Ice 1/2" Ice 1" Ice 2" Ice	8.010 8.520 9.040 10.110	4.230 4.690 5.160 6.120	0.098 0.184 0.281 0.512
MX08FRO665-20 w/ Mount Pipe	B	From Leg	4.000 0.000 -4.000	0.000	95.000	No Ice 1/2" Ice 1" Ice 2" Ice	8.010 8.520 9.040 10.110	4.230 4.690 5.160 6.120	0.098 0.184 0.281 0.512
MX08FRO665-20 w/ Mount Pipe	C	From Leg	4.000 0.000 -4.000	0.000	95.000	No Ice 1/2" Ice 1" Ice 2" Ice	8.010 8.520 9.040 10.110	4.230 4.690 5.160 6.120	0.098 0.184 0.281 0.512
TA08025-B604	A	From Leg	4.000 0.000 -4.000	0.000	95.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.964 2.138 2.320 2.705	0.981 1.112 1.250 1.548	0.064 0.081 0.100 0.148
TA08025-B604	B	From Leg	4.000 0.000 -4.000	0.000	95.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.964 2.138 2.320 2.705	0.981 1.112 1.250 1.548	0.064 0.081 0.100 0.148
TA08025-B604	C	From Leg	4.000 0.000 -4.000	0.000	95.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.964 2.138 2.320 2.705	0.981 1.112 1.250 1.548	0.064 0.081 0.100 0.148
TA08025-B605	A	From Leg	4.000 0.000 -4.000	0.000	95.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.964 2.138 2.320 2.705	1.129 1.267 1.411 1.723	0.075 0.093 0.114 0.164
TA08025-B605	B	From Leg	4.000 0.000 -4.000	0.000	95.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.964 2.138 2.320 2.705	1.129 1.267 1.411 1.723	0.075 0.093 0.114 0.164
TA08025-B605	C	From Leg	4.000 0.000 -4.000	0.000	95.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.964 2.138 2.320 2.705	1.129 1.267 1.411 1.723	0.075 0.093 0.114 0.164
RDIDC-9181-PF-48	A	From Leg	4.000 0.000 -4.000	0.000	95.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.012 2.189 2.373 2.763	1.168 1.311 1.461 1.784	0.022 0.040 0.060 0.110
(2) 8' x 2" Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	95.000	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	95.000	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	95.000	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
Commscope MC-PK8-DSH	C	None		0.000	95.000	No Ice 1/2" Ice	34.240 62.950	34.240 62.950	1.749 2.099

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
						1" Ice	91.660	91.660	2.450
						2" Ice	149.080	149.080	3.151
*									
58532A	C	From Leg	1.000 0.000 1.000	0.000	60.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.189 0.248 0.315 0.470	0.189 0.248 0.315 0.470	0.000 0.003 0.006 0.017
Side Arm Mount [SO 304-1]	C	From Leg	0.500 0.000 0.000	0.000	60.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.310 0.500 0.730 1.290	0.880 1.260 1.670 2.580	0.023 0.032 0.046 0.090
*									
KS24019-L112A	C	From Leg	1.000 0.000 1.000	0.000	50.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.141 0.198 0.262 0.415	0.141 0.198 0.262 0.415	0.005 0.007 0.009 0.018
Side Arm Mount [SO 701-1]	C	From Leg	0.500 0.000 0.000	0.000	50.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.850 1.140 1.430 2.010	1.670 2.340 3.010 4.350	0.065 0.079 0.093 0.121
*									

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

Comb. No.	Description
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	133.5 - 128.5	Pole	Max Tension	39	0.000	0.000	-0.000
			Max. Compression	26	-8.504	-0.790	0.020
			Max. Mx	8	-2.818	-17.455	-0.452
			Max. My	14	-2.799	-0.368	-17.799
			Max. Vy	8	5.670	-17.455	-0.452
			Max. Vx	2	-5.776	0.273	17.586
			Max. Torque	25			-0.771
L2	128.5 - 123.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-8.797	-0.809	0.027
			Max. Mx	8	-3.032	-46.144	-0.908
			Max. My	14	-3.015	-0.841	-47.015
			Max. Vy	8	5.806	-46.144	-0.908
			Max. Vx	2	-5.912	0.723	46.804
			Max. Torque	25			-0.771
L3	123.5 - 121.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-8.914	-0.813	0.029
			Max. Mx	8	-3.132	-57.794	-1.090
			Max. My	14	-3.116	-1.027	-58.876
			Max. Vy	8	5.852	-57.794	-1.090
			Max. Vx	2	-5.958	0.905	58.666
			Max. Torque	25			-0.770
L4	121.5 - 119	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-9.178	-0.818	0.033
			Max. Mx	8	-3.290	-72.605	-1.318
			Max. My	14	-3.274	-1.259	-73.950
			Max. Vy	8	6.002	-72.605	-1.318
			Max. Vx	2	-6.108	1.132	73.741
			Max. Torque	25			-0.769

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L5	119 - 114	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-20.189	-0.837	0.047
			Max. Mx	8	-8.294	-133.772	-1.785
			Max. My	14	-8.274	-1.747	-135.662
			Max. Vy	8	11.571	-133.772	-1.785
			Max. Vx	2	-11.682	1.596	135.457
			Max. Torque	25			-0.769
L6	114 - 109	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-25.834	-0.857	0.063
			Max. Mx	8	-11.362	-197.352	-2.254
			Max. My	14	-11.341	-2.237	-199.791
			Max. Vy	8	13.794	-197.352	-2.254
			Max. Vx	2	-13.907	2.065	199.592
			Max. Torque	13			0.769
L7	109 - 104	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-26.566	-0.878	0.081
			Max. Mx	8	-11.866	-267.548	-2.728
			Max. My	14	-11.846	-2.731	-270.541
			Max. Vy	8	14.295	-267.548	-2.728
			Max. Vx	2	-14.407	2.539	270.350
			Max. Torque	13			0.769
L8	104 - 99	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-38.360	-1.611	1.332
			Max. Mx	8	-17.470	-358.200	-2.579
			Max. My	2	-17.443	2.671	361.995
			Max. Vy	8	19.714	-358.200	-2.579
			Max. Vx	2	-19.855	2.671	361.995
			Max. Torque	24			-1.335
L9	99 - 94	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-44.984	-1.636	1.789
			Max. Mx	8	-21.040	-456.982	-2.984
			Max. My	2	-21.009	3.192	461.519
			Max. Vy	8	23.688	-456.982	-2.984
			Max. Vx	2	-23.863	3.192	461.519
			Max. Torque	12			1.457
L10	94 - 89	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-45.877	-1.659	1.812
			Max. Mx	8	-21.783	-576.499	-3.508
			Max. My	2	-21.755	3.717	581.909
			Max. Vy	8	24.145	-576.499	-3.508
			Max. Vx	2	-24.319	3.717	581.909
			Max. Torque	12			1.457
L11	89 - 85.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-46.633	-1.679	1.812
			Max. Mx	8	-22.362	-667.614	-3.899
			Max. My	2	-22.336	4.109	673.676
			Max. Vy	8	24.484	-667.614	-3.899
			Max. Vx	2	-24.658	4.109	673.676
			Max. Torque	12			1.456
L12	85.25 - 85	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-46.710	-1.683	1.812
			Max. Mx	8	-22.438	-673.733	-3.924
			Max. My	2	-22.412	4.135	679.839
			Max. Vy	8	24.497	-673.733	-3.924
			Max. Vx	2	-24.670	4.135	679.839
			Max. Torque	12			1.455
L13	85 - 80	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-48.252	-1.707	1.780
			Max. Mx	8	-23.557	-797.554	-4.445
			Max. My	2	-23.532	4.657	804.527
			Max. Vy	8	25.048	-797.554	-4.445

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	2	-25.221	4.657	804.527
			Max. Torque	12			1.455
L14	80 - 75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-48.622	-1.710	1.774
			Max. Mx	8	-23.841	-828.936	-4.575
			Max. My	2	-23.816	4.788	836.126
			Max. Vy	8	25.186	-828.936	-4.575
			Max. Vx	2	-25.359	4.788	836.126
			Max. Torque	12			1.454
L15	75 - 74	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-50.613	-1.716	1.755
			Max. Mx	8	-25.319	-949.903	-5.070
			Max. My	2	-25.295	5.283	957.918
			Max. Vy	8	25.749	-949.903	-5.070
			Max. Vx	2	-25.923	5.283	957.918
			Max. Torque	12			1.454
L16	74 - 69	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-51.770	-1.722	1.742
			Max. Mx	8	-26.283	-1079.661	-5.590
			Max. My	2	-26.262	5.805	1088.541
			Max. Vy	8	26.191	-1079.661	-5.590
			Max. Vx	2	-26.364	5.805	1088.541
			Max. Torque	12			1.454
L17	69 - 68.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-51.968	-1.724	1.736
			Max. Mx	8	-26.435	-1099.315	-5.668
			Max. My	2	-26.414	5.883	1108.324
			Max. Vy	8	26.252	-1099.315	-5.668
			Max. Vx	2	-26.425	5.883	1108.324
			Max. Torque	12			1.453
L18	68.25 - 68	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-52.058	-1.727	1.735
			Max. Mx	8	-26.515	-1105.878	-5.693
			Max. My	2	-26.494	5.909	1114.930
			Max. Vy	8	26.271	-1105.878	-5.693
			Max. Vx	2	-26.443	5.909	1114.930
			Max. Torque	12			1.452
L19	68 - 63	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-53.849	-1.743	1.689
			Max. Mx	8	-27.877	-1238.556	-6.211
			Max. My	2	-27.858	6.428	1248.468
			Max. Vy	8	26.819	-1238.556	-6.211
			Max. Vx	2	-26.991	6.428	1248.468
			Max. Torque	12			1.452
L20	63 - 58	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-55.740	-1.633	1.571
			Max. Mx	8	-29.303	-1373.953	-6.773
			Max. My	2	-29.284	7.009	1384.770
			Max. Vy	8	27.386	-1373.953	-6.773
			Max. Vx	2	-27.570	7.009	1384.770
			Max. Torque	12			1.452
L21	58 - 53	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-57.578	-1.651	1.525
			Max. Mx	8	-30.731	-1512.135	-7.343
			Max. My	2	-30.714	7.580	1523.872
			Max. Vy	8	27.914	-1512.135	-7.343
			Max. Vx	2	-28.098	7.580	1523.872
			Max. Torque	10			1.367
L22	53 - 48	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-59.567	-1.449	1.351
			Max. Mx	8	-32.269	-1652.902	-8.022

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	2	-32.252	8.318	1665.652
			Max. Vy	8	28.488	-1652.902	-8.022
			Max. Vx	2	-28.689	8.318	1665.652
			Max. Torque	10			1.366
L23	48 - 43	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-61.450	-1.467	1.304
			Max. Mx	8	-33.752	-1796.535	-8.665
			Max. My	2	-33.737	8.962	1810.287
			Max. Vy	8	28.996	-1796.535	-8.665
			Max. Vx	2	-29.196	8.962	1810.287
			Max. Torque	10			1.227
L24	43 - 37.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-61.640	-1.469	1.299
			Max. Mx	8	-33.909	-1811.037	-8.729
			Max. My	2	-33.895	9.026	1824.889
			Max. Vy	8	29.038	-1811.037	-8.729
			Max. Vx	2	-29.238	9.026	1824.889
			Max. Torque	10			1.226
L25	37.75 - 37.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-65.117	-1.489	1.252
			Max. Mx	8	-36.639	-1957.745	-9.370
			Max. My	2	-36.626	9.668	1972.597
			Max. Vy	8	29.653	-1957.745	-9.370
			Max. Vx	2	-29.853	9.668	1972.597
			Max. Torque	10			1.226
L26	37.5 - 32.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-67.174	-1.507	1.204
			Max. Mx	8	-38.295	-2107.168	-10.010
			Max. My	2	-38.283	10.309	2123.018
			Max. Vy	8	30.141	-2107.168	-10.010
			Max. Vx	2	-30.340	10.309	2123.018
			Max. Torque	10			1.226
L27	32.5 - 27.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-69.253	-1.526	1.157
			Max. Mx	8	-39.989	-2258.940	-10.648
			Max. My	2	-39.978	10.947	2275.784
			Max. Vy	8	30.603	-2258.940	-10.648
			Max. Vx	2	-30.801	10.947	2275.784
			Max. Torque	10			1.226
L28	27.5 - 22.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-71.352	-1.545	1.110
			Max. Mx	8	-41.712	-2412.961	-11.283
			Max. My	2	-41.704	11.582	2430.794
			Max. Vy	8	31.042	-2412.961	-11.283
			Max. Vx	2	-31.239	11.582	2430.794
			Max. Torque	10			1.225
L29	22.5 - 17.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-73.471	-1.564	1.063
			Max. Mx	8	-43.463	-2569.107	-11.914
			Max. My	2	-43.456	12.214	2587.923
			Max. Vy	8	31.454	-2569.107	-11.914
			Max. Vx	2	-31.651	12.214	2587.923
			Max. Torque	10			1.225
L30	17.5 - 12.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-75.604	-1.582	1.017
			Max. Mx	8	-45.242	-2727.229	-12.542
			Max. My	2	-45.237	12.842	2747.022
			Max. Vy	8	31.833	-2727.229	-12.542
			Max. Vx	2	-32.028	12.842	2747.022
			Max. Torque	10			1.225
L31	12.5 - 7.5	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	-77.747	-1.601	0.971
			Max. Mx	8	-47.048	-2887.237	-13.166
			Max. My	2	-47.045	13.466	2908.001
			Max. Vy	8	32.210	-2887.237	-13.166
			Max. Vx	2	-32.404	13.466	2908.001
			Max. Torque	10			1.225
L32	7.5 - 2.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-79.884	-1.618	0.929
			Max. Mx	8	-48.880	-3049.129	-13.786
			Max. My	2	-48.879	14.086	3070.856
			Max. Vy	8	32.588	-3049.129	-13.786
			Max. Vx	2	-32.780	14.086	3070.856
			Max. Torque	10			1.225
L33	2.5 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-80.922	-1.623	0.915
			Max. Mx	8	-49.804	-3130.780	-14.094
			Max. My	2	-49.804	14.395	3152.987
			Max. Vy	8	32.781	-3130.780	-14.094
			Max. Vx	2	-32.973	14.395	3152.987
			Max. Torque	10			1.225

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	27	80.922	0.024	8.012
	Max. H_x	20	49.822	32.754	0.123
	Max. H_z	2	49.822	0.123	32.946
	Max. M_x	2	3152.987	0.123	32.946
	Max. M_z	8	3130.780	-32.754	-0.123
	Max. Torsion	10	1.225	-28.805	-16.797
	Min. Vert	7	37.366	-28.305	16.366
	Min. H_x	8	49.822	-32.754	-0.123
	Min. H_z	14	49.822	-0.123	-32.946
	Min. M_x	14	-3151.608	-0.123	-32.946
	Min. M_z	20	-3129.997	32.754	0.123
	Min. Torsion	22	-1.204	28.805	16.797

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	41.518	0.000	0.000	-0.524	-0.292	-0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	49.822	-0.123	-32.946	-3152.987	14.395	0.853
0.9 Dead+1.0 Wind 0 deg - No Ice	37.366	-0.123	-32.946	-3112.595	14.284	0.848
1.2 Dead+1.0 Wind 30 deg - No Ice	49.822	16.489	-28.848	-2748.100	-1567.077	0.287
0.9 Dead+1.0 Wind 30 deg - No Ice	37.366	16.489	-28.848	-2712.988	-1547.084	0.292

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 60 deg - No Ice	49.822	28.305	-16.366	-1564.098	-2704.029	-0.364
0.9 Dead+1.0 Wind 60 deg - No Ice	37.366	28.305	-16.366	-1543.992	-2669.466	-0.350
1.2 Dead+1.0 Wind 90 deg - No Ice	49.822	32.754	0.123	14.094	-3130.780	-0.920
0.9 Dead+1.0 Wind 90 deg - No Ice	37.366	32.754	0.123	14.062	-3090.767	-0.900
1.2 Dead+1.0 Wind 120 deg - No Ice	49.822	28.805	16.797	1602.567	-2743.470	-1.225
0.9 Dead+1.0 Wind 120 deg - No Ice	37.366	28.805	16.797	1582.338	-2708.491	-1.204
1.2 Dead+1.0 Wind 150 deg - No Ice	49.822	16.484	28.593	2736.649	-1578.315	-1.193
0.9 Dead+1.0 Wind 150 deg - No Ice	37.366	16.484	28.593	2701.905	-1558.074	-1.178
1.2 Dead+1.0 Wind 180 deg - No Ice	49.822	0.123	32.946	3151.608	-15.156	-0.839
0.9 Dead+1.0 Wind 180 deg - No Ice	37.366	0.123	32.946	3111.586	-14.837	-0.834
1.2 Dead+1.0 Wind 210 deg - No Ice	49.822	-16.489	28.848	2746.715	1566.303	-0.266
0.9 Dead+1.0 Wind 210 deg - No Ice	37.366	-16.489	28.848	2711.975	1546.521	-0.272
1.2 Dead+1.0 Wind 240 deg - No Ice	49.822	-28.305	16.366	1562.721	2703.244	0.371
0.9 Dead+1.0 Wind 240 deg - No Ice	37.366	-28.305	16.366	1542.985	2668.896	0.356
1.2 Dead+1.0 Wind 270 deg - No Ice	49.822	-32.754	-0.123	-15.458	3129.997	0.906
0.9 Dead+1.0 Wind 270 deg - No Ice	37.366	-32.754	-0.123	-15.060	3090.198	0.886
1.2 Dead+1.0 Wind 300 deg - No Ice	49.822	-28.805	-16.797	-1603.925	2742.699	1.204
0.9 Dead+1.0 Wind 300 deg - No Ice	37.366	-28.805	-16.797	-1583.332	2707.931	1.184
1.2 Dead+1.0 Wind 330 deg - No Ice	49.822	-16.484	-28.593	-2738.015	1577.555	1.186
0.9 Dead+1.0 Wind 330 deg - No Ice	37.366	-16.484	-28.593	-2702.905	1557.522	1.171
1.2 Dead+1.0 Ice+1.0 Temp	80.922	0.000	-0.000	-0.915	-1.623	-0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	80.922	-0.024	-8.012	-817.190	1.027	0.147
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	80.922	3.966	-6.926	-706.455	-405.374	0.038
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	80.922	6.894	-3.985	-406.696	-703.626	-0.082
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	80.922	7.975	0.024	1.763	-813.810	-0.180
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	80.922	6.919	4.027	409.475	-706.409	-0.230
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	80.922	4.008	6.950	707.194	-410.196	-0.218
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	80.922	0.024	8.012	815.145	-4.543	-0.147
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	80.922	-3.966	6.926	704.408	401.855	-0.037
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	80.922	-6.894	3.985	404.651	700.106	0.082
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	80.922	-7.975	-0.024	-3.807	810.293	0.180

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	80.922	-6.919	-4.027	-411.519	702.893	0.229
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	80.922	-4.008	-6.950	-709.238	406.680	0.217
Dead+Wind 0 deg - Service	41.518	-0.027	-7.171	-682.727	2.858	0.187
Dead+Wind 30 deg - Service	41.518	3.589	-6.279	-595.104	-339.374	0.064
Dead+Wind 60 deg - Service	41.518	6.161	-3.562	-338.895	-585.404	-0.076
Dead+Wind 90 deg - Service	41.518	7.129	0.027	2.614	-677.748	-0.195
Dead+Wind 120 deg - Service	41.518	6.270	3.656	346.361	-593.939	-0.263
Dead+Wind 150 deg - Service	41.518	3.588	6.224	591.794	-341.792	-0.259
Dead+Wind 180 deg - Service	41.518	0.027	7.171	681.591	-3.505	-0.186
Dead+Wind 210 deg - Service	41.518	-3.589	6.279	593.968	338.727	-0.063
Dead+Wind 240 deg - Service	41.518	-6.161	3.562	337.759	584.755	0.076
Dead+Wind 270 deg - Service	41.518	-7.129	-0.027	-3.749	677.100	0.195
Dead+Wind 300 deg - Service	41.518	-6.270	-3.656	-347.497	593.291	0.262
Dead+Wind 330 deg - Service	41.518	-3.588	-6.224	-592.929	341.145	0.259

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.000	-41.518	0.000	0.000	41.518	0.000	0.000%
2	-0.123	-49.822	-32.946	0.123	49.822	32.946	0.000%
3	-0.123	-37.366	-32.946	0.123	37.366	32.946	0.000%
4	16.489	-49.822	-28.848	-16.489	49.822	28.848	0.000%
5	16.489	-37.366	-28.848	-16.489	37.366	28.848	0.000%
6	28.305	-49.822	-16.366	-28.305	49.822	16.366	0.000%
7	28.305	-37.366	-16.366	-28.305	37.366	16.366	0.000%
8	32.754	-49.822	0.123	-32.754	49.822	-0.123	0.000%
9	32.754	-37.366	0.123	-32.754	37.366	-0.123	0.000%
10	28.805	-49.822	16.797	-28.805	49.822	-16.797	0.000%
11	28.805	-37.366	16.797	-28.805	37.366	-16.797	0.000%
12	16.484	-49.822	28.593	-16.484	49.822	-28.593	0.000%
13	16.484	-37.366	28.593	-16.484	37.366	-28.593	0.000%
14	0.123	-49.822	32.946	-0.123	49.822	-32.946	0.000%
15	0.123	-37.366	32.946	-0.123	37.366	-32.946	0.000%
16	-16.489	-49.822	28.848	16.489	49.822	-28.848	0.000%
17	-16.489	-37.366	28.848	16.489	37.366	-28.848	0.000%
18	-28.305	-49.822	16.366	28.305	49.822	-16.366	0.000%
19	-28.305	-37.366	16.366	28.305	37.366	-16.366	0.000%
20	-32.754	-49.822	-0.123	32.754	49.822	0.123	0.000%
21	-32.754	-37.366	-0.123	32.754	37.366	0.123	0.000%
22	-28.805	-49.822	-16.797	28.805	49.822	16.797	0.000%
23	-28.805	-37.366	-16.797	28.805	37.366	16.797	0.000%
24	-16.484	-49.822	-28.593	16.484	49.822	28.593	0.000%
25	-16.484	-37.366	-28.593	16.484	37.366	28.593	0.000%
26	0.000	-80.922	0.000	-0.000	80.922	0.000	0.000%
27	-0.024	-80.922	-8.012	0.024	80.922	8.012	0.000%
28	3.966	-80.922	-6.926	-3.966	80.922	6.926	0.000%
29	6.894	-80.922	-3.985	-6.894	80.922	3.985	0.000%
30	7.975	-80.922	0.024	-7.975	80.922	-0.024	0.000%
31	6.918	-80.922	4.027	-6.919	80.922	-4.027	0.000%
32	4.008	-80.922	6.950	-4.008	80.922	-6.950	0.000%
33	0.024	-80.922	8.012	-0.024	80.922	-8.012	0.000%
34	-3.966	-80.922	6.926	3.966	80.922	-6.926	0.000%
35	-6.894	-80.922	3.985	6.894	80.922	-3.985	0.000%
36	-7.975	-80.922	-0.024	7.975	80.922	0.024	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
37	-6.918	-80.922	-4.027	6.919	80.922	4.027	0.000%
38	-4.008	-80.922	-6.950	4.008	80.922	6.950	0.000%
39	-0.027	-41.518	-7.171	0.027	41.518	7.171	0.000%
40	3.589	-41.518	-6.279	-3.589	41.518	6.279	0.000%
41	6.161	-41.518	-3.562	-6.161	41.518	3.562	0.000%
42	7.129	-41.518	0.027	-7.129	41.518	-0.027	0.000%
43	6.270	-41.518	3.656	-6.270	41.518	-3.656	0.000%
44	3.588	-41.518	6.224	-3.588	41.518	-6.224	0.000%
45	0.027	-41.518	7.171	-0.027	41.518	-7.171	0.000%
46	-3.589	-41.518	6.279	3.589	41.518	-6.279	0.000%
47	-6.161	-41.518	3.562	6.161	41.518	-3.562	0.000%
48	-7.129	-41.518	-0.027	7.129	41.518	0.027	0.000%
49	-6.270	-41.518	-3.656	6.270	41.518	3.656	0.000%
50	-3.588	-41.518	-6.224	3.588	41.518	6.224	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00000001	0.00034745
3	Yes	5	0.00000001	0.00015288
4	Yes	7	0.00000001	0.00006359
5	Yes	6	0.00000001	0.00034919
6	Yes	7	0.00000001	0.00006295
7	Yes	6	0.00000001	0.00034620
8	Yes	5	0.00000001	0.00035811
9	Yes	5	0.00000001	0.00015494
10	Yes	7	0.00000001	0.00006271
11	Yes	6	0.00000001	0.00034396
12	Yes	7	0.00000001	0.00006513
13	Yes	6	0.00000001	0.00035807
14	Yes	5	0.00000001	0.00075391
15	Yes	5	0.00000001	0.00034589
16	Yes	7	0.00000001	0.00006264
17	Yes	6	0.00000001	0.00034395
18	Yes	7	0.00000001	0.00006200
19	Yes	6	0.00000001	0.00034121
20	Yes	5	0.00000001	0.00076335
21	Yes	5	0.00000001	0.00034702
22	Yes	7	0.00000001	0.00006563
23	Yes	6	0.00000001	0.00036034
24	Yes	7	0.00000001	0.00006227
25	Yes	6	0.00000001	0.00034179
26	Yes	4	0.00000001	0.00023098
27	Yes	6	0.00000001	0.00079524
28	Yes	7	0.00000001	0.00013130
29	Yes	7	0.00000001	0.00013110
30	Yes	6	0.00000001	0.00079199
31	Yes	7	0.00000001	0.00013092
32	Yes	7	0.00000001	0.00013201
33	Yes	6	0.00000001	0.00078890
34	Yes	6	0.00000001	0.00098485
35	Yes	6	0.00000001	0.00098278
36	Yes	6	0.00000001	0.00078380
37	Yes	7	0.00000001	0.00013152

38	Yes	7	0.00000001	0.00013090
39	Yes	4	0.00000001	0.00082261
40	Yes	5	0.00000001	0.00023927
41	Yes	5	0.00000001	0.00023490
42	Yes	4	0.00000001	0.00081540
43	Yes	5	0.00000001	0.00022756
44	Yes	5	0.00000001	0.00025348
45	Yes	4	0.00000001	0.00086495
46	Yes	5	0.00000001	0.00022846
47	Yes	5	0.00000001	0.00022461
48	Yes	4	0.00000001	0.00085774
49	Yes	5	0.00000001	0.00025627
50	Yes	5	0.00000001	0.00022503

Maximum Tower Deflections - Service Wind

Section No.	*Elevation*	*Horz. Deflection*	*Gov. Load Comb.*	*Tilt*	*Twist*
	ft	*in*		°	°
L1	133.5 - 128.5	20.850	43	1.550	0.010
L2	128.5 - 123.5	19.232	43	1.529	0.008
L3	123.5 - 121.5	17.684	43	1.412	0.004
L4	121.5 - 119	17.108	43	1.336	0.003
L5	119 - 114	16.412	43	1.323	0.003
L6	114 - 109	15.042	43	1.293	0.002
L7	109 - 104	13.709	43	1.253	0.002
L8	104 - 99	12.424	43	1.203	0.002
L9	99 - 94	11.196	43	1.143	0.002
L10	94 - 89	10.035	43	1.073	0.001
L11	89 - 85.25	8.953	43	0.993	0.001
L12	85.25 - 85	8.198	43	0.928	0.001
L13	85 - 80	8.150	43	0.925	0.001
L14	80 - 75	7.206	43	0.877	0.001
L15	78.75 - 74	6.978	43	0.865	0.001
L16	74 - 69	6.134	43	0.823	0.001
L17	69 - 68.25	5.318	43	0.734	0.001
L18	68.25 - 68	5.204	43	0.721	0.001
L19	68 - 63	5.166	43	0.718	0.001
L20	63 - 58	4.441	49	0.667	0.001
L21	58 - 53	3.770	49	0.614	0.000
L22	53 - 48	3.156	49	0.559	0.000
L23	48 - 43	2.600	49	0.503	0.000
L24	43 - 37.75	2.103	49	0.446	0.000
L25	42.5 - 37.5	2.057	49	0.440	0.000
L26	37.5 - 32.5	1.610	49	0.411	0.000
L27	32.5 - 27.5	1.209	49	0.356	0.000
L28	27.5 - 22.5	0.864	49	0.301	0.000
L29	22.5 - 17.5	0.578	49	0.246	0.000
L30	17.5 - 12.5	0.349	49	0.191	0.000
L31	12.5 - 7.5	0.178	49	0.136	0.000
L32	7.5 - 2.5	0.064	49	0.081	0.000
L33	2.5 - 0	0.007	49	0.027	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
131.000	P65-15-XLH-RR w/ Mount Pipe	43	20.038	1.545	0.009	4317
119.000	AIR6449 B41_T-MOBILE	43	16.412	1.323	0.003	5932
111.000	(3) 6' x 2" Mount Pipe	43	14.237	1.269	0.002	6752
101.000	(2) KRY 112 144/1	43	11.679	1.168	0.002	4697
95.000	MX08FRO665-20 w/ Mount Pipe	43	10.261	1.087	0.002	3924
60.000	58532A	49	4.032	0.635	0.000	5354
50.000	KS24019-L112A	49	2.815	0.525	0.000	5111

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	133.5 - 128.5	96.155	10	7.142	0.044
L2	128.5 - 123.5	88.737	10	7.054	0.036
L3	123.5 - 121.5	81.625	10	6.519	0.020
L4	121.5 - 119	78.976	10	6.172	0.014
L5	119 - 114	75.772	10	6.110	0.013
L6	114 - 109	69.464	10	5.975	0.011
L7	109 - 104	63.321	10	5.789	0.010
L8	104 - 99	57.394	10	5.557	0.009
L9	99 - 94	51.729	10	5.283	0.008
L10	94 - 89	46.375	10	4.961	0.007
L11	89 - 85.25	41.378	10	4.594	0.006
L12	85.25 - 85	37.894	10	4.291	0.005
L13	85 - 80	37.670	10	4.281	0.005
L14	80 - 75	33.309	10	4.058	0.004
L15	78.75 - 74	32.256	10	4.000	0.004
L16	74 - 69	28.357	10	3.808	0.004
L17	69 - 68.25	24.587	10	3.397	0.003
L18	68.25 - 68	24.059	10	3.335	0.003
L19	68 - 63	23.885	10	3.323	0.003
L20	63 - 58	20.531	22	3.086	0.002
L21	58 - 53	17.430	22	2.840	0.002
L22	53 - 48	14.591	22	2.585	0.002
L23	48 - 43	12.021	22	2.326	0.002
L24	43 - 37.75	9.724	22	2.062	0.001
L25	42.5 - 37.5	9.510	22	2.036	0.001
L26	37.5 - 32.5	7.445	22	1.901	0.001
L27	32.5 - 27.5	5.588	22	1.647	0.001
L28	27.5 - 22.5	3.996	22	1.394	0.001
L29	22.5 - 17.5	2.671	22	1.138	0.001
L30	17.5 - 12.5	1.613	22	0.884	0.000
L31	12.5 - 7.5	0.821	22	0.630	0.000
L32	7.5 - 2.5	0.295	22	0.376	0.000
L33	2.5 - 0	0.033	22	0.125	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
131.000	P65-15-XLH-RR w/ Mount Pipe	10	92.431	7.125	0.041	994
119.000	AIR6449 B41_T-MOBILE	10	75.772	6.110	0.013	1338
111.000	(3) 6' x 2" Mount Pipe	10	65.754	5.865	0.011	1508
101.000	(2) KRY 112 144/1	10	53.961	5.398	0.009	1040
95.000	MX08FRO665-20 w/ Mount Pipe	10	47.419	5.027	0.007	867
60.000	58532A	22	18.640	2.939	0.002	1165
50.000	KS24019-L112A	22	13.017	2.430	0.002	1109

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	133.5 - 128.5 (1)	TP10.75x10.75x0.188	5.000	0.000	0.0	6.238	-2.790	353.123	0.008
L2	128.5 - 123.5 (2)	TP10.75x10.75x0.188	5.000	0.000	0.0	6.238	-3.006	353.123	0.009
L3	123.5 - 121.5 (3)	TP10.75x10.75x0.188	2.000	0.000	0.0	6.238	-3.107	353.123	0.009
L4	121.5 - 119 (4)	TP22x22x0.188	2.500	0.000	0.0	12.883	-3.266	612.257	0.005
L5	119 - 114 (5)	TP22.95x22x0.25	5.000	0.000	0.0	18.274	-8.264	1069.000	0.008
L6	114 - 109 (6)	TP23.9x22.95x0.25	5.000	0.000	0.0	19.038	-11.331	1113.740	0.010
L7	109 - 104 (7)	TP24.85x23.9x0.25	5.000	0.000	0.0	19.803	-11.836	1158.480	0.010
L8	104 - 99 (8)	TP25.8x24.85x0.25	5.000	0.000	0.0	20.568	-17.434	1203.210	0.014
L9	99 - 94 (9)	TP26.75x25.8x0.25	5.000	0.000	0.0	21.333	-21.000	1247.950	0.017
L10	94 - 89 (10)	TP27.7x26.75x0.25	5.000	0.000	0.0	22.097	-21.746	1292.690	0.017
L11	89 - 85.25 (11)	TP28.413x27.7x0.25	3.750	0.000	0.0	22.671	-22.328	1326.240	0.017
L12	85.25 - 85 (12)	TP28.46x28.413x0.513	0.250	0.000	0.0	46.120	-22.404	2698.040	0.008
L13	85 - 80 (13)	TP29.41x28.46x0.5	5.000	0.000	0.0	46.545	-23.524	2722.890	0.009
L14	80 - 75 (14)	TP30.36x29.41x0.5	5.000	0.000	0.0	46.928	-23.809	2745.260	0.009
L15	75 - 74 (15)	TP30.05x29.148x0.313	4.750	0.000	0.0	29.924	-25.288	1750.530	0.014
L16	74 - 69 (16)	TP31.001x30.05x0.313	5.000	0.000	0.0	30.880	-26.256	1806.470	0.015
L17	69 - 68.25 (17)	TP31.143x31.001x0.313	0.750	0.000	0.0	31.023	-26.408	1814.860	0.015
L18	68.25 - 68 (18)	TP31.191x31.143x0.575	0.250	0.000	0.0	56.685	-26.488	3316.070	0.008
L19	68 - 63 (19)	TP32.141x31.191x0.575	5.000	0.000	0.0	58.444	-27.852	3419.000	0.008
L20	63 - 58 (20)	TP33.091x32.141x0.563	5.000	0.000	0.0	58.918	-29.279	3446.690	0.008
L21	58 - 53 (21)	TP34.042x33.091x0.55	5.000	0.000	0.0	59.314	-30.694	3469.840	0.009
L22	53 - 48 (22)	TP34.992x34.042x0.544	5.000	0.000	0.0	60.314	-32.233	3528.390	0.009
L23	48 - 43 (23)	TP35.942x34.992x0.538	5.000	0.000	0.0	61.277	-33.719	3584.680	0.009
L24	43 - 37.75 (24)	TP36.94x35.942x0.538	5.250	0.000	0.0	61.441	-33.876	3594.310	0.009
L25	37.75 - 37.5 (25)	TP36.363x35.412x0.6	5.000	0.000	0.0	69.093	-36.607	4041.950	0.009
L26	37.5 - 32.5 (26)	TP37.313x36.363x0.588	5.000	0.000	0.0	69.475	-38.266	4064.300	0.009
L27	32.5 - 27.5 (27)	TP38.263x37.313x0.588	5.000	0.000	0.0	71.273	-39.964	4169.470	0.010
L28	27.5 - 22.5 (28)	TP39.214x38.263x0.575	5.000	0.000	0.0	71.539	-41.691	4185.040	0.010
L29	22.5 - 17.5 (29)	TP40.164x39.214x0.575	5.000	0.000	0.0	73.299	-43.446	4287.980	0.010
L30	17.5 - 12.5 (30)	TP41.114x40.164x0.569	5.000	0.000	0.0	74.254	-45.230	4343.850	0.010
L31	12.5 - 7.5 (31)	TP42.065x41.114x0.563	5.000	0.000	0.0	75.171	-47.041	4397.480	0.011
L32	7.5 - 2.5 (32)	TP43.015x42.065x0.563	5.000	0.000	0.0	76.892	-48.877	4498.170	0.011
L33	2.5 - 0 (33)	TP43.49x43.015x0.556	2.500	0.000	0.0	76.900	-49.804	4498.630	0.011

Pole Bending Design Data

Section No.	Elevation	Size	M_{ux}	ϕM_{nx}	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy}	ϕM_{ny}	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	ft		kip-ft	kip-ft		kip-ft	kip-ft	
L1	133.5 - 128.5 (1)	TP10.75x10.75x0.188	18.031	91.668	0.197	0.000	91.668	0.000
L2	128.5 - 123.5 (2)	TP10.75x10.75x0.188	47.513	91.668	0.518	0.000	91.668	0.000
L3	123.5 - 121.5 (3)	TP10.75x10.75x0.188	59.479	91.668	0.649	0.000	91.668	0.000
L4	121.5 - 119 (4)	TP22x22x0.188	74.685	366.360	0.204	0.000	366.360	0.000
L5	119 - 114 (5)	TP22.95x22x0.25	136.669	601.617	0.227	0.000	601.617	0.000
L6	114 - 109 (6)	TP23.9x22.95x0.25	201.073	644.167	0.312	0.000	644.167	0.000
L7	109 - 104 (7)	TP24.85x23.9x0.25	272.100	687.340	0.396	0.000	687.340	0.000
L8	104 - 99 (8)	TP25.8x24.85x0.25	363.418	731.048	0.497	0.000	731.048	0.000
L9	99 - 94 (9)	TP26.75x25.8x0.25	463.227	775.199	0.598	0.000	775.199	0.000
L10	94 - 89 (10)	TP27.7x26.75x0.25	583.856	819.706	0.712	0.000	819.706	0.000
L11	89 - 85.25 (11)	TP28.413x27.7x0.25	675.802	853.267	0.792	0.000	853.267	0.000
L12	85.25 - 85 (12)	TP28.46x28.413x0.513	681.977	1915.775	0.356	0.000	1915.775	0.000
L13	85 - 80 (13)	TP29.41x28.46x0.5	806.903	2002.058	0.403	0.000	2002.058	0.000
L14	80 - 75 (14)	TP30.36x29.41x0.5	838.558	2035.367	0.412	0.000	2035.367	0.000
L15	75 - 74 (15)	TP30.05x29.148x0.313	960.575	1270.517	0.756	0.000	1270.517	0.000
L16	74 - 69 (16)	TP31.001x30.05x0.313	1091.442	1338.042	0.816	0.000	1338.042	0.000
L17	69 - 68.25 (17)	TP31.143x31.001x0.313	1111.258	1348.225	0.824	0.000	1348.225	0.000
L18	68.25 - 68 (18)	TP31.191x31.143x0.575	1117.875	2578.283	0.434	0.000	2578.283	0.000
L19	68 - 63 (19)	TP32.141x31.191x0.575	1251.650	2742.350	0.456	0.000	2742.350	0.000
L20	63 - 58 (20)	TP33.091x32.141x0.563	1388.225	2851.475	0.487	0.000	2851.475	0.000
L21	58 - 53 (21)	TP34.042x33.091x0.55	1528.225	2958.125	0.517	0.000	2958.125	0.000
L22	53 - 48 (22)	TP34.992x34.042x0.544	1671.517	3095.892	0.540	0.000	3095.892	0.000
L23	48 - 43 (23)	TP35.942x34.992x0.538	1817.792	3234.542	0.562	0.000	3234.542	0.000
L24	43 - 37.75 (24)	TP36.94x35.942x0.538	1832.567	3252.067	0.564	0.000	3252.067	0.000
L25	37.75 - 37.5 (25)	TP36.363x35.412x0.6	1982.033	3678.233	0.539	0.000	3678.233	0.000
L26	37.5 - 32.5 (26)	TP37.313x36.363x0.588	2134.317	3801.058	0.562	0.000	3801.058	0.000
L27	32.5 - 27.5 (27)	TP38.263x37.313x0.588	2289.025	4001.917	0.572	0.000	4001.917	0.000
L28	27.5 - 22.5 (28)	TP39.214x38.263x0.575	2446.017	4122.408	0.593	0.000	4122.408	0.000
L29	22.5 - 17.5 (29)	TP40.164x39.214x0.575	2605.158	4329.208	0.602	0.000	4329.208	0.000
L30	17.5 - 12.5 (30)	TP41.114x40.164x0.569	2766.275	4493.792	0.616	0.000	4493.792	0.000
L31	12.5 - 7.5 (31)	TP42.065x41.114x0.563	2929.267	4658.767	0.629	0.000	4658.767	0.000
L32	7.5 - 2.5 (32)	TP43.015x42.065x0.563	3094.125	4876.025	0.635	0.000	4876.025	0.000
L33	2.5 - 0 (33)	TP43.49x43.015x0.556	3177.258	4933.267	0.644	0.000	4933.267	0.000

Pole Shear Design Data

Section No.	Elevation	Size	Actual V_u	ϕV_n	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u	ϕT_n	Ratio $\frac{T_u}{\phi T_n}$
	ft		K	K		kip-ft	kip-ft	
L1	133.5 - 128.5 (1)	TP10.75x10.75x0.188	5.829	109.479	0.053	0.769	101.662	0.008
L2	128.5 - 123.5 (2)	TP10.75x10.75x0.188	5.964	109.479	0.054	0.769	101.662	0.008
L3	123.5 - 121.5 (3)	TP10.75x10.75x0.188	6.010	109.479	0.055	0.768	101.662	0.008
L4	121.5 - 119 (4)	TP22x22x0.188	6.160	103.588	0.059	0.768	152.807	0.005
L5	119 - 114 (5)	TP22.95x22x0.25	11.735	320.700	0.037	0.768	640.361	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 $\frac{T_u}{\phi T_n}$
L6	114 - 109 (6)	TP23.9x22.95x0.25	13.961	334.121	0.042	0.767	695.081	0.001
L7	109 - 104 (7)	TP24.85x23.9x0.25	14.461	347.543	0.042	0.767	752.043	0.001
L8	104 - 99 (8)	TP25.8x24.85x0.25	19.911	360.964	0.055	1.334	811.250	0.002
L9	99 - 94 (9)	TP26.75x25.8x0.25	23.911	374.385	0.064	1.450	872.700	0.002
L10	94 - 89 (10)	TP27.7x26.75x0.25	24.367	387.807	0.063	1.449	936.392	0.002
L11	89 - 85.25 (11)	TP28.413x27.7x0.25	24.705	397.873	0.062	1.448	985.633	0.001
L12	85.25 - 85 (12)	TP28.46x28.413x0.513	24.715	809.412	0.031	1.448	1989.817	0.001
L13	85 - 80 (13)	TP29.41x28.46x0.5	25.269	816.867	0.031	1.448	2077.300	0.001
L14	80 - 75 (14)	TP30.36x29.41x0.5	25.407	823.577	0.031	1.448	2111.567	0.001
L15	75 - 74 (15)	TP30.05x29.148x0.313	25.970	525.160	0.049	1.447	1373.725	0.001
L16	74 - 69 (16)	TP31.001x30.05x0.313	26.411	541.942	0.049	1.446	1462.925	0.001
L17	69 - 68.25 (17)	TP31.143x31.001x0.313	26.471	544.460	0.049	1.446	1476.550	0.001
L18	68.25 - 68 (18)	TP31.191x31.143x0.575	26.488	994.820	0.027	1.446	2679.092	0.001
L19	68 - 63 (19)	TP32.141x31.191x0.575	27.038	1025.700	0.026	1.445	2847.992	0.001
L20	63 - 58 (20)	TP33.091x32.141x0.563	27.623	1034.010	0.027	1.349	2958.625	0.000
L21	58 - 53 (21)	TP34.042x33.091x0.55	28.381	1040.950	0.027	1.366	3066.667	0.000
L22	53 - 48 (22)	TP34.992x34.042x0.544	29.003	1058.520	0.027	1.206	3207.475	0.000
L23	48 - 43 (23)	TP35.942x34.992x0.538	29.537	1075.410	0.027	1.205	3349.133	0.000
L24	43 - 37.75 (24)	TP36.94x35.942x0.538	29.580	1078.290	0.027	1.205	3367.142	0.000
L25	37.75 - 37.5 (25)	TP36.363x35.412x0.6	30.214	1212.590	0.025	1.205	3814.525	0.000
L26	37.5 - 32.5 (26)	TP37.313x36.363x0.588	30.721	1219.290	0.025	1.205	3938.883	0.000
L27	32.5 - 27.5 (27)	TP38.263x37.313x0.588	31.195	1250.840	0.025	1.205	4145.367	0.000
L28	27.5 - 22.5 (28)	TP39.214x38.263x0.575	31.640	1255.510	0.025	1.204	4267.183	0.000
L29	22.5 - 17.5 (29)	TP40.164x39.214x0.575	32.055	1286.390	0.025	1.204	4479.675	0.000
L30	17.5 - 12.5 (30)	TP41.114x40.164x0.569	32.431	1303.160	0.025	1.204	4647.700	0.000
L31	12.5 - 7.5 (31)	TP42.065x41.114x0.563	32.806	1319.240	0.025	1.204	4816.075	0.000
L32	7.5 - 2.5 (32)	TP43.015x42.065x0.563	33.180	1349.450	0.025	1.204	5039.167	0.000
L33	2.5 - 0 (33)	TP43.49x43.015x0.556	33.372	1349.590	0.025	1.204	5096.833	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	133.5 - 128.5 (1)	0.008	0.197	0.000	0.053	0.008	0.208 ✔	1.050	4.8.2 ✔
L2	128.5 - 123.5 (2)	0.009	0.518	0.000	0.054	0.008	0.531 ✔	1.050	4.8.2 ✔
L3	123.5 - 121.5 (3)	0.009	0.649	0.000	0.055	0.008	0.662 ✔	1.050	4.8.2 ✔
L4	121.5 - 119 (4)	0.005	0.204	0.000	0.059	0.005	0.213 ✔	1.050	4.8.2 ✔
L5	119 - 114 (5)	0.008	0.227	0.000	0.037	0.001	0.236 ✔	1.050	4.8.2 ✔
L6	114 - 109 (6)	0.010	0.312	0.000	0.042	0.001	0.324 ✔	1.050	4.8.2 ✔
L7	109 - 104 (7)	0.010	0.396	0.000	0.042	0.001	0.408 ✔	1.050	4.8.2 ✔
L8	104 - 99 (8)	0.014	0.497	0.000	0.055	0.002	0.515 ✔	1.050	4.8.2 ✔
L9	99 - 94 (9)	0.017	0.598	0.000	0.064	0.002	0.619	1.050	4.8.2 ✔

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
L10	94 - 89 (10)	0.017	0.712	0.000	0.063	0.002	0.733	1.050	4.8.2
L11	89 - 85.25 (11)	0.017	0.792	0.000	0.062	0.001	0.813	1.050	4.8.2
L12	85.25 - 85 (12)	0.008	0.356	0.000	0.031	0.001	0.365	1.050	4.8.2
L13	85 - 80 (13)	0.009	0.403	0.000	0.031	0.001	0.413	1.050	4.8.2
L14	80 - 75 (14)	0.009	0.412	0.000	0.031	0.001	0.422	1.050	4.8.2
L15	75 - 74 (15)	0.014	0.756	0.000	0.049	0.001	0.773	1.050	4.8.2
L16	74 - 69 (16)	0.015	0.816	0.000	0.049	0.001	0.833	1.050	4.8.2
L17	69 - 68.25 (17)	0.015	0.824	0.000	0.049	0.001	0.841	1.050	4.8.2
L18	68.25 - 68 (18)	0.008	0.434	0.000	0.027	0.001	0.442	1.050	4.8.2
L19	68 - 63 (19)	0.008	0.456	0.000	0.026	0.001	0.465	1.050	4.8.2
L20	63 - 58 (20)	0.008	0.487	0.000	0.027	0.000	0.496	1.050	4.8.2
L21	58 - 53 (21)	0.009	0.517	0.000	0.027	0.000	0.526	1.050	4.8.2
L22	53 - 48 (22)	0.009	0.540	0.000	0.027	0.000	0.550	1.050	4.8.2
L23	48 - 43 (23)	0.009	0.562	0.000	0.027	0.000	0.572	1.050	4.8.2
L24	43 - 37.75 (24)	0.009	0.564	0.000	0.027	0.000	0.574	1.050	4.8.2
L25	37.75 - 37.5 (25)	0.009	0.539	0.000	0.025	0.000	0.549	1.050	4.8.2
L26	37.5 - 32.5 (26)	0.009	0.562	0.000	0.025	0.000	0.572	1.050	4.8.2
L27	32.5 - 27.5 (27)	0.010	0.572	0.000	0.025	0.000	0.582	1.050	4.8.2
L28	27.5 - 22.5 (28)	0.010	0.593	0.000	0.025	0.000	0.604	1.050	4.8.2
L29	22.5 - 17.5 (29)	0.010	0.602	0.000	0.025	0.000	0.613	1.050	4.8.2
L30	17.5 - 12.5 (30)	0.010	0.616	0.000	0.025	0.000	0.627	1.050	4.8.2
L31	12.5 - 7.5 (31)	0.011	0.629	0.000	0.025	0.000	0.640	1.050	4.8.2
L32	7.5 - 2.5 (32)	0.011	0.635	0.000	0.025	0.000	0.646	1.050	4.8.2
L33	2.5 - 0 (33)	0.011	0.644	0.000	0.025	0.000	0.656	1.050	4.8.2

Section Capacity Table

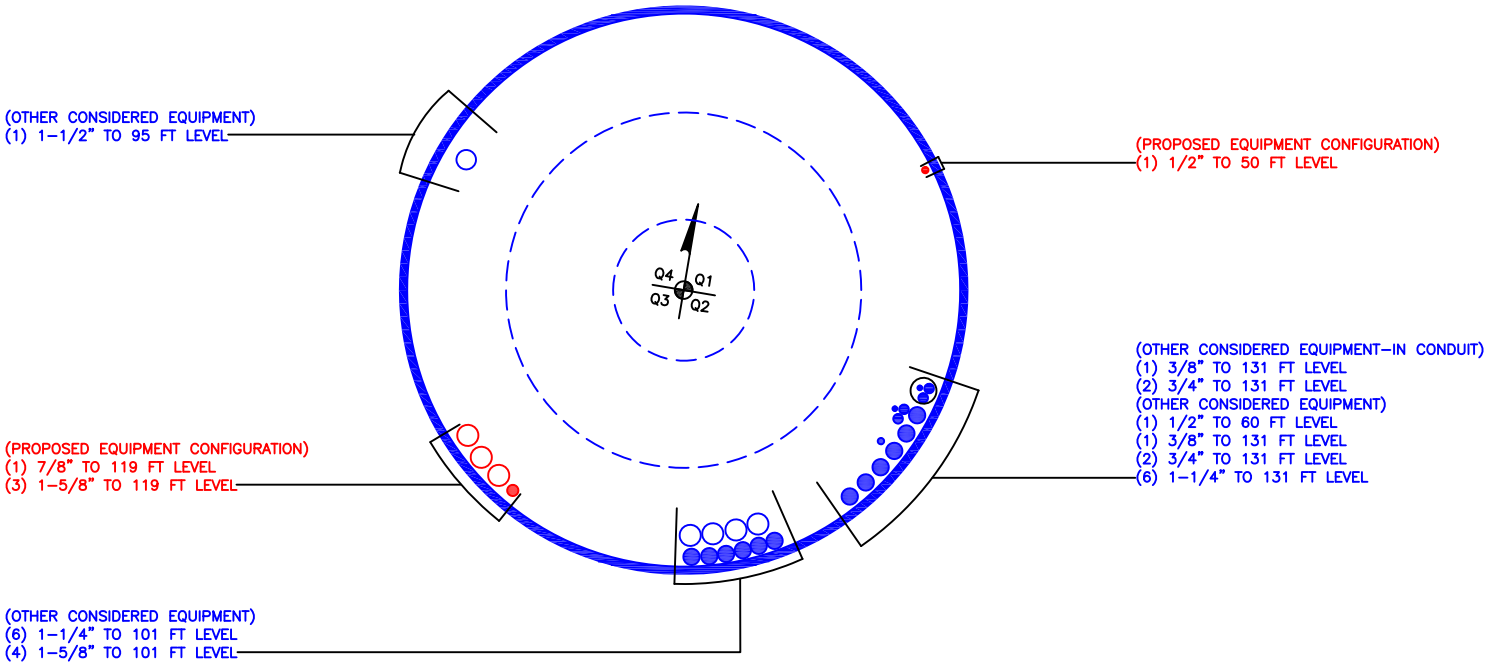
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	133.5 - 128.5	Pole	TP10.75x10.75x0.188	1	-2.790	--	**	**
L2	128.5 - 123.5	Pole	TP10.75x10.75x0.188	2	-3.006	--	**	**
L3	123.5 - 121.5	Pole	TP10.75x10.75x0.188	3	-3.107	--	**	**
L4	121.5 - 119	Pole	TP22x22x0.188	4	-3.266	--	**	**
L5	119 - 114	Pole	TP22.95x22x0.25	5	-8.264	--	**	**
L6	114 - 109	Pole	TP23.9x22.95x0.25	6	-11.331	--	**	**
L7	109 - 104	Pole	TP24.85x23.9x0.25	7	-11.836	--	**	**
L8	104 - 99	Pole	TP25.8x24.85x0.25	8	-17.434	--	**	**
L9	99 - 94	Pole	TP26.75x25.8x0.25	9	-21.000	--	**	**
L10	94 - 89	Pole	TP27.7x26.75x0.25	10	-21.746	--	**	**
L11	89 - 85.25	Pole	TP28.413x27.7x0.25	11	-22.328	--	**	**
L12	85.25 - 85	Pole + Reinf.	TP28.46x28.413x0.5125	12	-22.404	--	**	**
L13	85 - 80	Pole + Reinf.	TP29.41x28.46x0.5	13	-23.524	--	**	**
L14	80 - 78.75	Pole + Reinf.	TP30.36x29.41x0.5	14	-23.809	--	**	**
L15	78.75 - 74	Pole	TP30.05x29.148x0.3125	15	-25.288	--	**	**
L16	74 - 69	Pole	TP31.001x30.05x0.3125	16	-26.256	--	**	**
L17	69 - 68.25	Pole	TP31.143x31.001x0.3125	17	-26.408	--	**	**
L18	68.25 - 68	Pole + Reinf.	TP31.191x31.143x0.575	18	-26.488	--	**	**
L19	68 - 63	Pole + Reinf.	TP32.141x31.191x0.575	19	-27.852	--	**	**
L20	63 - 58	Pole + Reinf.	TP33.091x32.141x0.5625	20	-29.279	--	**	**
L21	58 - 53	Pole + Reinf.	TP34.042x33.091x0.55	21	-30.694	--	**	**
L22	53 - 48	Pole + Reinf.	TP34.992x34.042x0.5438	22	-32.233	--	**	**
L23	48 - 43	Pole + Reinf.	TP35.942x34.992x0.5375	23	-33.719	--	**	**
L24	43 - 42.5	Pole + Reinf.	TP36.94x35.942x0.5375	24	-33.876	--	**	**
L25	42.5 - 37.5	Pole + Reinf.	TP36.363x35.412x0.6	25	-36.607	--	**	**
L26	37.5 - 32.5	Pole + Reinf.	TP37.313x36.363x0.5875	26	-38.266	--	**	**
L27	32.5 - 27.5	Pole + Reinf.	TP38.263x37.313x0.5875	27	-39.964	--	**	**
L28	27.5 - 22.5	Pole + Reinf.	TP39.214x38.263x0.575	28	-41.691	--	**	**
L29	22.5 - 17.5	Pole + Reinf.	TP40.164x39.214x0.575	29	-43.446	--	**	**
L30	17.5 - 12.5	Pole + Reinf.	TP41.114x40.164x0.5688	30	-45.230	--	**	**
L31	12.5 - 7.5	Pole + Reinf.	TP42.065x41.114x0.5625	31	-47.041	--	**	**
L32	7.5 - 2.5	Pole + Reinf.	TP43.015x42.065x0.5625	32	-48.877	--	**	**
L33	2.5 - 0	Pole + Reinf.	TP43.49x43.015x0.5563	33	-49.804	--	**	**
							Summary	
						Pole (--)	**	**
						RATING =	**	**

** - Check Additional Calculations

Program Version 8.1.1.0

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876340

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 876340

Work Order: 2015075

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	133.5	12	0	0	10.75	10.75	0.1875		A572-65
2	121.5	2.5	0	0	22.00	22	0.1875		A572-65
3	119	44	3.75	12	22.00	30.36	0.25	Auto	A572-65
4	78.75	41	4.75	12	29.15	36.94	0.3125	Auto	A572-65
5	42.5	42.5	0	12	35.41	43.49	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	0	68.25	channel	MP3-05 (1.1875in)	4			E			E			E			E
2	78.75	85.25	plate	MP3-08.5 (1.1875'')	4			E			E			E			E
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

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	5.33	2.09	5.65	0.79	PC 8.8 - M20 (100)	29	PC 8.8 - M20 (100)	29.000	18.000	5.025	1.1875	A572-65
2	3.82714	1.31853	5.0462	0.659265	PC 8.8 - M20 (100)	23	PC 8.8 - M20 (100)	23.000	18.000	3.398	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)
MP3-08.5	Top	8	N	3	2	-	-	-	-	-	-	-	-	-
(1.1875'')	Bottom	8	N	3	2	-	-	-	-	-	-	-	-	-

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	133.5 - 128.5	5		0	10.750	10.750	0.188	A572-65	1.000
2	128.5 - 123.5	5		0	10.750	10.750	0.188	A572-65	1.000
3	123.5 - 121.5	2	0	0	10.750	10.750	0.188	A572-65	1.000
4	121.5 - 119	2.5	0	0	22.000	22.000	0.188	A572-65	1.000
5	119 - 114	5		12	22.000	22.950	0.25	A572-65	1.000
6	114 - 109	5		12	22.950	23.900	0.25	A572-65	1.000
7	109 - 104	5		12	23.900	24.850	0.25	A572-65	1.000
8	104 - 99	5		12	24.850	25.800	0.25	A572-65	1.000
9	99 - 94	5		12	25.800	26.750	0.25	A572-65	1.000
10	94 - 89	5		12	26.750	27.700	0.25	A572-65	1.000
11	89 - 85.25	3.75		12	27.700	28.413	0.25	A572-65	1.000
12	85.25 - 85	0.25		12	28.413	28.460	0.5125	A572-65	0.931
13	85 - 80	5		12	28.460	29.410	0.5	A572-65	0.939
14	80 - 78.75	5	3.75	12	29.410	30.360	0.5	A572-65	0.935
15	78.75 - 74	4.75		12	29.148	30.050	0.3125	A572-65	1.000
16	74 - 69	5		12	30.050	31.001	0.3125	A572-65	1.000
17	69 - 68.25	0.75		12	31.001	31.143	0.3125	A572-65	1.000
18	68.25 - 68	0.25		12	31.143	31.191	0.575	A572-65	0.947
19	68 - 63	5		12	31.191	32.141	0.575	A572-65	0.935
20	63 - 58	5		12	32.141	33.091	0.5625	A572-65	0.944
21	58 - 53	5		12	33.091	34.042	0.55	A572-65	0.954
22	53 - 48	5		12	34.042	34.992	0.54375	A572-65	0.954
23	48 - 43	5		12	34.992	35.942	0.5375	A572-65	0.954
24	43 - 42.5	5.25	4.75	12	35.942	36.940	0.5375	A572-65	0.953
25	42.5 - 37.5	5		12	35.412	36.363	0.6	A572-65	0.956
26	37.5 - 32.5	5		12	36.363	37.313	0.5875	A572-65	0.968
27	32.5 - 27.5	5		12	37.313	38.263	0.5875	A572-65	0.959
28	27.5 - 22.5	5		12	38.263	39.214	0.575	A572-65	0.972
29	22.5 - 17.5	5		12	39.214	40.164	0.575	A572-65	0.964
30	17.5 - 12.5	5		12	40.164	41.114	0.56875	A572-65	0.967
31	12.5 - 7.5	5		12	41.114	42.065	0.5625	A572-65	0.971
32	7.5 - 2.5	5		12	42.065	43.015	0.5625	A572-65	0.964
33	2.5 - 0	2.5		12	43.015	43.490	0.55625	A572-65	0.971

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	133.5 - 128.5	2.79	18.03	5.83
2	128.5 - 123.5	3.01	47.51	5.96
3	123.5 - 121.5	3.11	59.48	6.01
4	121.5 - 119	3.27	74.68	6.16
5	119 - 114	8.26	136.67	11.74
6	114 - 109	11.33	201.07	13.96
7	109 - 104	11.84	272.10	14.46
8	104 - 99	17.43	363.42	19.91
9	99 - 94	21.00	463.23	23.91
10	94 - 89	21.75	583.86	24.37
11	89 - 85.25	22.33	675.80	24.71
12	85.25 - 85	22.40	681.98	24.72
13	85 - 80	23.52	806.90	25.27
14	80 - 78.75	23.81	838.56	25.41
15	78.75 - 74	25.29	960.58	25.97
16	74 - 69	26.26	1091.44	26.41
17	69 - 68.25	26.41	1111.26	26.47
18	68.25 - 68	26.49	1117.87	26.49
19	68 - 63	27.85	1251.65	27.04
20	63 - 58	29.28	1388.22	27.62
21	58 - 53	30.69	1528.22	28.38
22	53 - 48	32.23	1671.52	29.00
23	48 - 43	33.72	1817.79	29.54
24	43 - 42.5	33.88	1832.56	29.58
25	42.5 - 37.5	36.61	1982.04	30.21
26	37.5 - 32.5	38.27	2134.32	30.72
27	32.5 - 27.5	39.96	2289.02	31.20
28	27.5 - 22.5	41.69	2446.02	31.64
29	22.5 - 17.5	43.45	2605.16	32.05
30	17.5 - 12.5	45.23	2766.28	32.43
31	12.5 - 7.5	47.04	2929.27	32.81
32	7.5 - 2.5	48.88	3094.13	33.18
33	2.5 - 0	49.80	3177.26	33.37

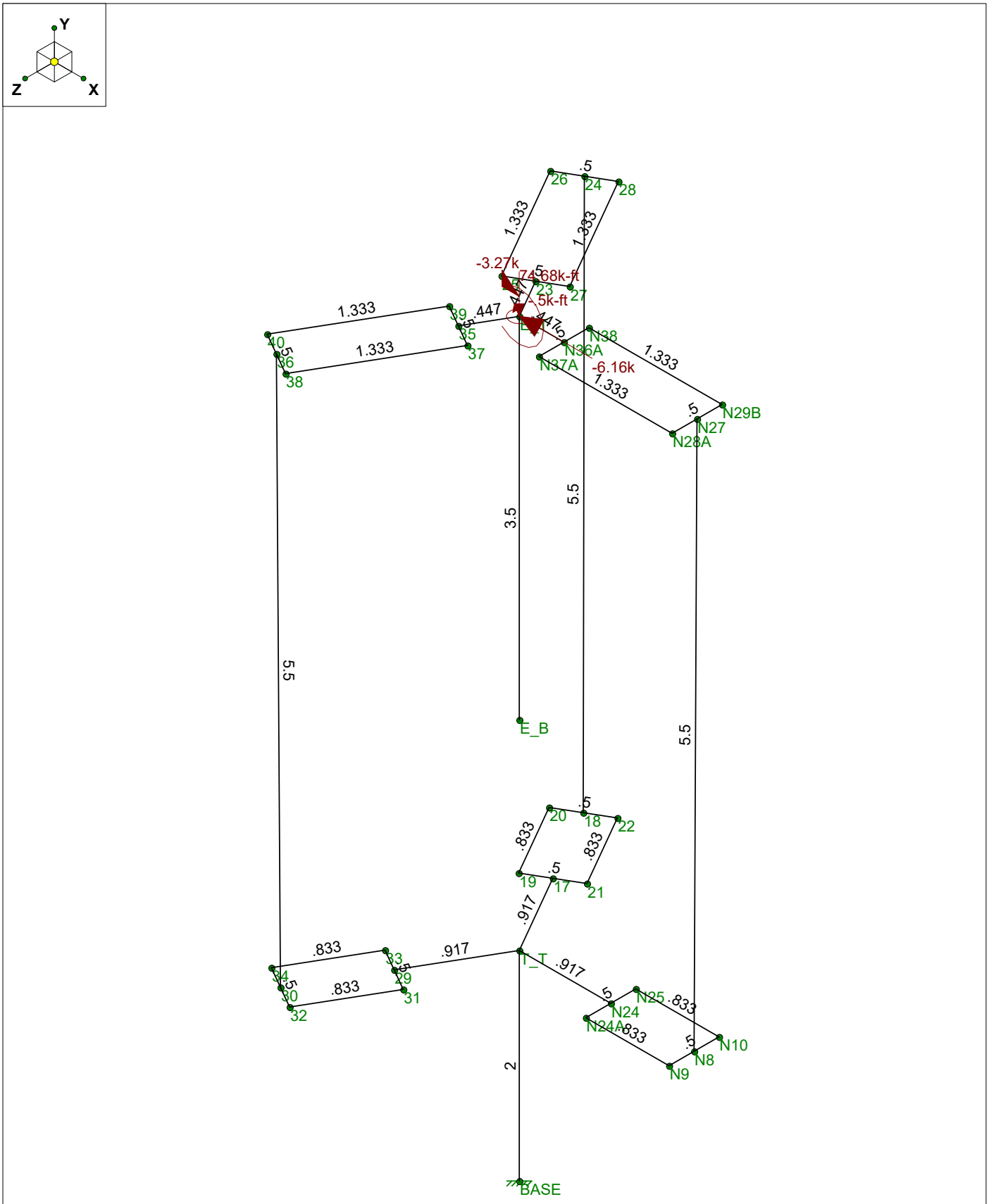
Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
133.5 - 128.5	Pole	TP10.75x10.75x0.188	Pole	19.8%	Pass
128.5 - 123.5	Pole	TP10.75x10.75x0.188	Pole	50.6%	Pass
123.5 - 121.5	Pole	TP10.75x10.75x0.188	Pole	63.1%	Pass
121.5 - 119	Pole	TP22x22x0.188	Pole	20.3%	Pass
119 - 114	Pole	TP22.95x22x0.25	Pole	22.4%	Pass
114 - 109	Pole	TP23.9x22.95x0.25	Pole	30.8%	Pass
109 - 104	Pole	TP24.85x23.9x0.25	Pole	38.7%	Pass
104 - 99	Pole	TP25.8x24.85x0.25	Pole	48.9%	Pass
99 - 94	Pole	TP26.75x25.8x0.25	Pole	58.7%	Pass
94 - 89	Pole	TP27.7x26.75x0.25	Pole	69.6%	Pass
89 - 85.25	Pole	TP28.413x27.7x0.25	Pole	77.2%	Pass
85.25 - 85	Pole + Reinf.	TP28.46x28.413x0.5125	Reinf. 2 Tension Rupture	63.9%	Pass
85 - 80	Pole + Reinf.	TP29.41x28.46x0.5	Reinf. 2 Tension Rupture	71.9%	Pass
80 - 78.75	Pole + Reinf.	TP30.36x29.41x0.5	Reinf. 2 Tension Rupture	73.8%	Pass
78.75 - 74	Pole	TP30.05x29.148x0.3125	Pole	73.4%	Pass
74 - 69	Pole	TP31.001x30.05x0.3125	Pole	79.1%	Pass
69 - 68.25	Pole	TP31.143x31.001x0.3125	Pole	79.9%	Pass
68.25 - 68	Pole + Reinf.	TP31.191x31.143x0.575	Reinf. 1 Tension Rupture	60.0%	Pass
68 - 63	Pole + Reinf.	TP32.141x31.191x0.575	Reinf. 1 Tension Rupture	64.0%	Pass
63 - 58	Pole + Reinf.	TP33.091x32.141x0.5625	Reinf. 1 Tension Rupture	67.8%	Pass
58 - 53	Pole + Reinf.	TP34.042x33.091x0.55	Reinf. 1 Tension Rupture	71.3%	Pass
53 - 48	Pole + Reinf.	TP34.992x34.042x0.5438	Reinf. 1 Tension Rupture	74.6%	Pass
48 - 43	Pole + Reinf.	TP35.942x34.992x0.5375	Reinf. 1 Tension Rupture	77.7%	Pass
43 - 42.5	Pole + Reinf.	TP36.94x35.942x0.5375	Reinf. 1 Tension Rupture	78.0%	Pass
42.5 - 37.5	Pole + Reinf.	TP36.363x35.412x0.6	Reinf. 1 Tension Rupture	74.6%	Pass
37.5 - 32.5	Pole + Reinf.	TP37.313x36.363x0.5875	Reinf. 1 Tension Rupture	76.9%	Pass
32.5 - 27.5	Pole + Reinf.	TP38.263x37.313x0.5875	Reinf. 1 Tension Rupture	79.1%	Pass
27.5 - 22.5	Pole + Reinf.	TP39.214x38.263x0.575	Reinf. 1 Tension Rupture	81.1%	Pass
22.5 - 17.5	Pole + Reinf.	TP40.164x39.214x0.575	Reinf. 1 Tension Rupture	82.9%	Pass
17.5 - 12.5	Pole + Reinf.	TP41.114x40.164x0.5688	Reinf. 1 Tension Rupture	84.6%	Pass
12.5 - 7.5	Pole + Reinf.	TP42.065x41.114x0.5625	Reinf. 1 Tension Rupture	86.2%	Pass
7.5 - 2.5	Pole + Reinf.	TP43.015x42.065x0.5625	Reinf. 1 Tension Rupture	87.6%	Pass
2.5 - 0	Pole + Reinf.	TP43.49x43.015x0.5563	Reinf. 1 Tension Rupture	88.3%	Pass
				Summary	
			Pole	79.9%	Pass
			Reinforcement	88.3%	Pass
			Overall	88.3%	Pass

Additional Calculations

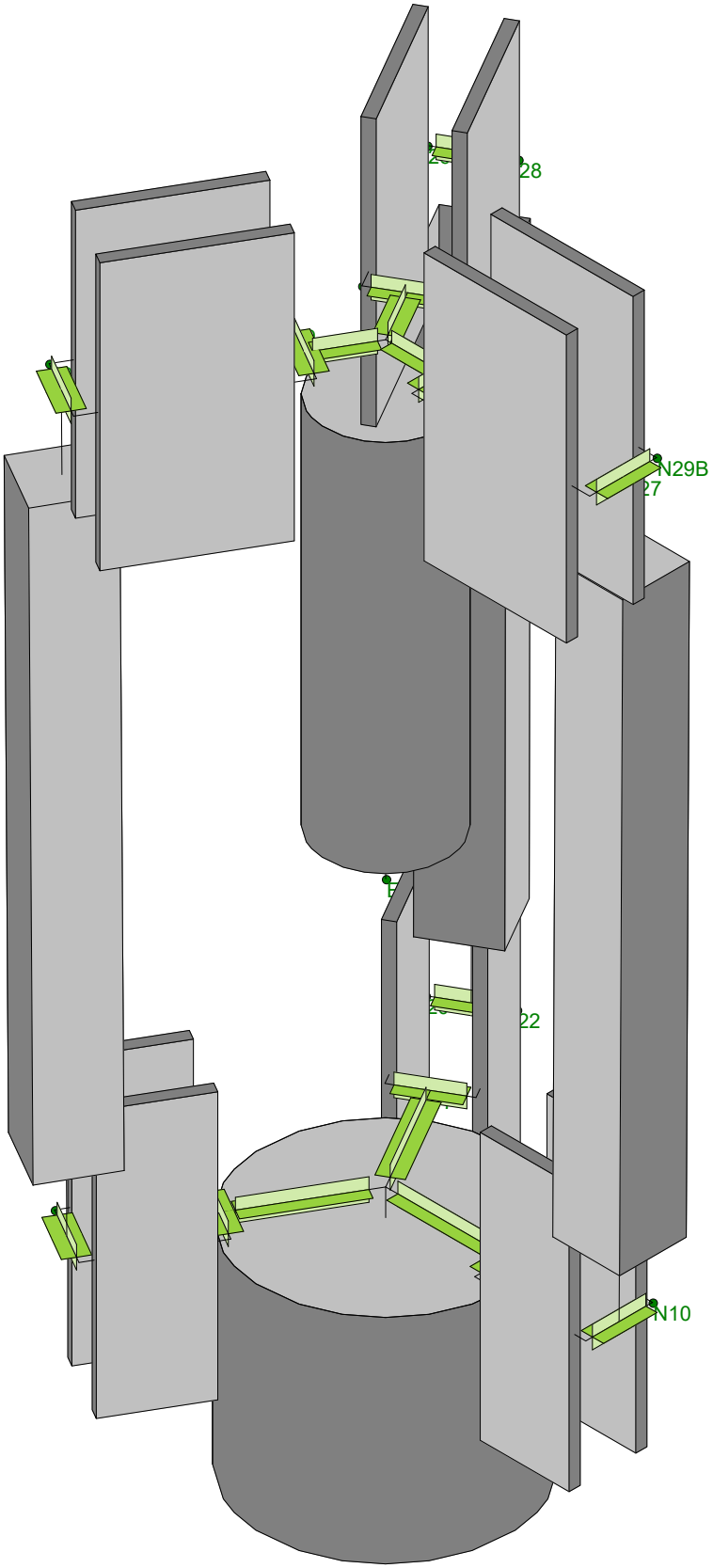
Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity*		
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2
133.5 - 128.5	87	n/a	87	6.22	n/a	6.22	19.8%		
128.5 - 123.5	87	n/a	87	6.22	n/a	6.22	50.6%		
123.5 - 121.5	87	n/a	87	6.22	n/a	6.22	63.1%		
121.5 - 119	764	n/a	764	12.85	n/a	12.85	20.3%		
119 - 114	1204	n/a	1204	18.25	n/a	18.25	22.4%		
114 - 109	1361	n/a	1361	19.01	n/a	19.01	30.8%		
109 - 104	1532	n/a	1532	19.77	n/a	19.77	38.7%		
104 - 99	1716	n/a	1716	20.54	n/a	20.54	48.9%		
99 - 94	1915	n/a	1915	21.30	n/a	21.30	58.7%		
94 - 89	2128	n/a	2128	22.07	n/a	22.07	69.6%		
89 - 85.25	2298	n/a	2298	22.64	n/a	22.64	77.2%		
85.25 - 85	2310	2251	4561	22.68	20.18	42.86	38.0%		63.9%
85 - 80	2551	2396	4947	23.44	20.18	43.62	43.4%		71.9%
80 - 78.75	2614	2433	5047	23.63	20.18	43.82	44.7%		73.8%
78.75 - 74	3382	n/a	3382	29.88	n/a	29.88	73.4%		
74 - 69	3717	n/a	3717	30.84	n/a	30.84	79.1%		
69 - 68.25	3769	n/a	3769	30.98	n/a	30.98	79.9%		
68.25 - 68	3786	3048	6835	31.03	22.60	53.63	42.9%	60.0%	
68 - 63	4147	3227	7374	31.98	22.60	54.58	46.4%	64.0%	
63 - 58	4530	3410	7940	32.94	22.60	55.54	49.8%	67.8%	
58 - 53	4935	3599	8534	33.89	22.60	56.49	53.0%	71.3%	
53 - 48	5364	3793	9157	34.85	22.60	57.45	56.2%	74.6%	
48 - 43	5817	3992	9809	35.80	22.60	58.40	59.3%	77.7%	
43 - 42.5	5864	4012	9876	35.90	22.60	58.50	59.6%	78.0%	
42.5 - 37.5	7193	4081	11274	43.39	22.60	65.99	53.1%	74.6%	
37.5 - 32.5	7778	4288	12066	44.54	22.60	67.14	55.4%	76.9%	
32.5 - 27.5	8394	4499	12893	45.68	22.60	68.28	57.5%	79.1%	
27.5 - 22.5	9042	4716	13757	46.83	22.60	69.43	59.6%	81.1%	
22.5 - 17.5	9722	4937	14659	47.98	22.60	70.58	61.6%	82.9%	
17.5 - 12.5	10435	5164	15599	49.12	22.60	71.72	63.5%	84.6%	
12.5 - 7.5	11182	5396	16578	50.27	22.60	72.87	65.4%	86.2%	
7.5 - 2.5	11965	5632	17597	51.41	22.60	74.01	67.2%	87.6%	
2.5 - 0	12369	5753	18122	51.99	22.60	74.59	68.1%	88.3%	

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

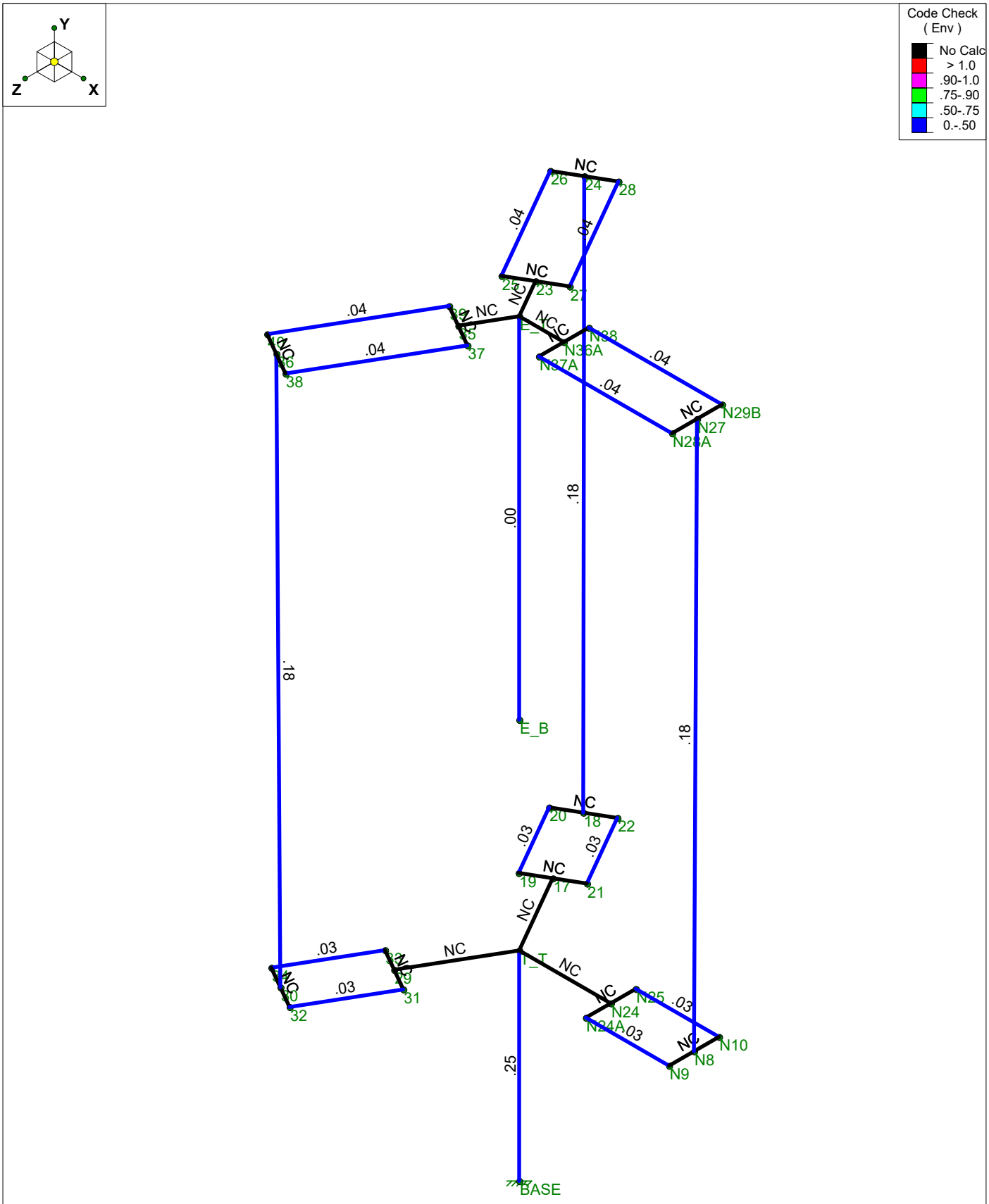


Member Length (ft) Displayed
Loads: LC 1, 1

B+T Group	876340 - Coe Hill	SK - 1
VR		Aug 31, 2021 at 6:35 PM
149862.007.01		149862_007_01_Coe Hill_CT.r3d



B+T Group	876340 - Coe Hill	SK - 2
VR		Aug 31, 2021 at 6:36 PM
149862.007.01		149862_007_01_Coe Hill_CT.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	876340 - Coe Hill	SK - 3
VR		Aug 31, 2021 at 6:36 PM
149862.007.01		149862_007_01_Coe Hill_CT.r3d

(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	Existing Pole	Column	Pipe	A572 Gr. 65	Typical	17.082	1010.264	1010.264	2020.529
2	Extension pole	Pipe 10.75x0...	Column	Pipe	A53 Gr.B	Typical	11.908	160.734	160.734	321.468
3	HSS	HSS6X6X8	Column	Tube	A500 Gr.B R...	Typical	9.74	48.3	48.3	81.1
4	Plate Top	Bracket Plat...	Beam	RECT	A572 Gr. 65	Typical	24	2	1152	7.79
5	Plate Bottom	Bracket Plat...	Beam	RECT	A572 Gr. 65	Typical	24	2	1152	7.79

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	7.5	0	0	
4	E_B	0	4	0	0	
5	N8	1.74967	2	0	0	
6	N9	1.74967	2	.25	0	
7	N10	1.74967	2	-.25	0	
8	N24	0.91667	2	0	0	
9	N24A	0.91667	2	.25	0	
10	N25	0.91667	2	-.25	0	
11	N27	1.77967	7.5	0	0	
12	N28A	1.77967	7.5	.25	0	
13	N29B	1.77967	7.5	-.25	0	
14	N36A	0.44667	7.5	0	0	
15	N37A	0.44667	7.5	.25	0	
16	N38	0.44667	7.5	-.25	0	
17	17	-0.458335	2	-0.79386	0	
18	18	-0.874835	2	-1.515259	0	
19	19	-0.674841	2	-0.66886	0	
20	20	-1.091341	2	-1.390259	0	
21	21	-0.241829	2	-0.91886	0	
22	22	-0.658329	2	-1.640259	0	
23	23	-0.223335	7.5	-0.386828	0	
24	24	-0.889835	7.5	-1.541239	0	
25	25	-0.439841	7.5	-0.261828	0	
26	26	-1.106341	7.5	-1.416239	0	
27	27	-0.006829	7.5	-0.511828	0	
28	28	-0.673329	7.5	-1.666239	0	
29	29	-0.458335	2	0.79386	0	
30	30	-0.874835	2	1.515259	0	
31	31	-0.241829	2	0.91886	0	
32	32	-0.658329	2	1.640259	0	
33	33	-0.674841	2	0.66886	0	
34	34	-1.091341	2	1.390259	0	
35	35	-0.223335	7.5	0.386828	0	
36	36	-0.889835	7.5	1.541239	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
37	37	-0.006829	7.5	0.511828	0	
38	38	-0.673329	7.5	1.666239	0	
39	39	-0.439841	7.5	0.261828	0	
40	40	-1.106341	7.5	1.416239	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...	3.5									Lateral
2	M2	Existing pole	2									Lateral
3	M35	HSS	5.5	4.5	4.5							Lateral
4	M14	Plate Bottom	.833			Lbyy						Lateral
5	M15A	Plate Bottom	.833			Lbyy						Lateral
6	M30	Plate Top	1.333			Lbyy						Lateral
7	M31	Plate Top	1.333			Lbyy						Lateral
8	16	Plate Bottom	.833			Lbyy						Lateral
9	19	Plate Bottom	.833			Lbyy						Lateral
10	21	Plate Top	1.333			Lbyy						Lateral
11	23	Plate Top	1.333			Lbyy						Lateral
12	24	HSS	5.5	4.5	4.5							Lateral
13	27	Plate Bottom	.833			Lbyy						Lateral
14	30	Plate Bottom	.833			Lbyy						Lateral
15	32	Plate Top	1.333			Lbyy						Lateral
16	34	Plate Top	1.333			Lbyy						Lateral
17	35	HSS	5.5	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	-3.27
2	E_T	L	X	-6.16
3	E_T	L	Mz	74.68
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	-3.27
2	E_T	L	X	-5.335
3	E_T	L	Z	-3.08
4	E_T	L	Mz	64.675
5	E_T	L	Mx	-37.34
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	-3.27
2	E_T	L	X	-4.356
3	E_T	L	Z	-4.356
4	E_T	L	Mz	52.807
5	E_T	L	Mx	-52.807
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	-3.27
2	E_T	L	X	-3.08
3	E_T	L	Z	-5.335
4	E_T	L	Mz	37.34
5	E_T	L	Mx	-64.675
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	-3.27
2	E_T	L	Z	-6.16
3	E_T	L	Mx	-74.68
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	-3.27
2	E_T	L	X	3.08
3	E_T	L	Z	-5.335
4	E_T	L	Mz	-37.34
5	E_T	L	Mx	-64.675
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	-3.27
2	E_T	L	X	4.356
3	E_T	L	Z	-4.356
4	E_T	L	Mz	-52.807
5	E_T	L	Mx	-52.807
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	-3.27
2	E_T	L	X	5.335
3	E_T	L	Z	-3.08
4	E_T	L	Mz	-64.675
5	E_T	L	Mx	-37.34
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	-3.27
2	E_T	L	X	6.16
3	E_T	L	Mz	-74.68
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	6.16	1	5.178	9	6.16	5	120.949	5	.5	5	120.968	9
2		min	-6.16	9	5.178	1	0	9	-.006	9	.5	8	-120.93	1
3	Totals:	max	6.16	1	5.178	9	6.16	5						
4		min	-6.16	9	5.178	1	0	9						

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	-.142	9	0	9	0	9	0	9	0	5	0	9
2			min	-.142	1	0	1	0	5	0	1	0	9	0	1
3		2	max	-.106	9	0	9	0	9	0	9	0	5	0	9
4			min	-.106	1	0	1	0	5	0	1	0	9	0	1
5		3	max	-.071	9	0	9	0	9	0	9	0	5	0	9
6			min	-.071	1	0	1	0	5	0	1	0	9	0	1
7		4	max	-.035	9	0	9	0	9	0	9	0	5	0	9
8			min	-.035	1	0	1	0	5	0	1	0	9	0	1
9		5	max	0	9	0	9	0	9	0	9	0	9	0	9
10			min	0	1	0	1	0	5	0	1	0	1	0	1
11	M2	1	max	5.061	9	6.164	1	6.164	5	.5	5	108.621	5	108.64	9
12			min	5.061	1	-6.164	9	0	9	.5	8	-.006	9	-108.602	1
13		2	max	5.09	9	6.164	1	6.164	5	.5	5	111.703	5	111.722	9
14			min	5.09	1	-6.164	9	0	9	.5	8	-.006	9	-111.684	1
15		3	max	5.119	9	6.164	1	6.164	5	.5	5	114.785	5	114.804	9
16			min	5.119	1	-6.164	9	0	9	.5	8	-.006	9	-114.766	1
17		4	max	5.149	9	6.164	1	6.164	5	.5	5	117.867	5	117.886	9
18			min	5.149	1	-6.164	9	0	9	.5	8	-.006	9	-117.848	1
19		5	max	5.178	9	6.164	1	6.164	5	.5	5	120.949	5	120.968	9
20			min	5.178	1	-6.164	9	0	9	.5	8	-.006	9	-120.93	1
21	M5	1	max	.023	1	17.881	9	1.458	1	4.032	1	.341	5	.119	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	-.824	5	-18.895	2	-1.57	7	-5.831	7	-.009	1	-.003	9
23		2	max	.023	1	17.881	9	1.458	1	4.032	1	.255	3	2.42	2
24			min	-.824	5	-18.895	2	-1.57	7	-5.831	7	-.128	9	-2.238	9
25		3	max	-.023	9	17.881	9	.566	2	4.048	9	.355	1	4.782	2
26			min	-.824	5	-20.469	8	-1.184	5	-5.831	7	-.333	9	-5.175	8
27		4	max	.824	5	16.32	1	1.369	9	4.048	9	.14	1	2.043	1
28			min	-.023	1	-20.469	8	-1.681	3	-5.819	3	-.241	7	-2.617	8
29		5	max	.824	5	16.32	1	1.369	9	4.048	9	.009	1	.003	9
30			min	-.023	1	-20.469	8	-1.681	3	-5.819	3	-.341	5	-.119	5
31	M35	1	max	35.044	9	2.593	1	1.652	5	.121	5	.125	9	6.402	1
32			min	-32.322	1	-2.606	9	-.047	9	.085	1	-3.632	5	-6.452	9
33		2	max	35.093	9	2.593	1	1.652	5	.121	5	.06	9	2.837	1
34			min	-32.273	1	-2.606	9	-.047	9	.085	1	-1.36	5	-2.869	9
35		3	max	35.142	9	2.592	1	1.652	5	.121	5	.911	5	.715	9
36			min	-32.224	1	-2.607	9	-.047	9	.085	1	-.004	9	-.728	1
37		4	max	35.191	9	2.592	1	1.652	5	.121	5	3.182	5	4.299	9
38			min	-32.175	1	-2.607	9	-.047	9	.085	1	-.069	9	-4.292	1
39		5	max	35.24	9	2.592	1	1.652	5	.121	5	5.454	5	7.884	9
40			min	-32.126	1	-2.607	9	-.047	9	.085	1	-.133	9	-7.856	1
41	M12	1	max	2.5	1	35.386	9	1.648	5	5.454	5	.167	1	69.74	9
42			min	-2.323	9	-32.007	1	-.047	1	-.133	9	-2.792	5	-63.915	1
43		2	max	2.5	1	35.386	9	1.648	5	5.454	5	.157	1	61.631	9
44			min	-2.323	9	-32.007	1	-.047	1	-.133	9	-2.415	5	-56.58	1
45		3	max	2.5	1	35.386	9	1.648	5	5.454	5	.146	1	53.522	9
46			min	-2.323	9	-32.007	1	-.047	1	-.133	9	-2.037	5	-49.245	1
47		4	max	2.5	1	35.386	9	1.648	5	5.454	5	.135	1	45.412	9
48			min	-2.323	9	-32.007	1	-.047	1	-.133	9	-1.659	5	-41.91	1
49		5	max	2.5	1	35.386	9	1.648	5	5.454	5	.124	1	37.303	9
50			min	-2.323	9	-32.007	1	-.047	1	-.133	9	-1.281	5	-34.575	1
51	M13	1	max	.824	5	18.827	2	1.57	7	18.758	9	.346	5	.003	9
52			min	-.023	1	-17.949	9	-1.458	1	-17.184	1	-.01	1	-.119	5
53		2	max	.824	5	18.827	2	1.57	7	18.758	9	.493	5	2.246	9
54			min	-.023	1	-17.949	9	-1.458	1	-17.184	1	-.192	1	-2.411	2
55		3	max	.824	5	20.537	8	1.184	5	18.758	9	.68	6	5.192	8
56			min	.023	9	-17.949	9	-.566	2	-18.366	8	-.715	4	-4.765	2
57		4	max	.023	1	20.537	8	1.681	3	17.392	1	.181	9	2.625	8
58			min	-.824	5	-16.252	1	-1.369	9	-18.546	9	-.51	4	-2.034	1
59		5	max	.023	1	20.537	8	1.681	3	17.392	1	.01	1	.119	5
60			min	-.824	5	-16.252	1	-1.369	9	-18.546	9	-.346	5	-.003	9
61	M14	1	max	1.458	1	17.947	9	.824	5	.119	5	.01	1	18.758	9
62			min	-1.57	7	-18.828	2	-.023	1	-.003	9	-.346	5	-17.184	1
63		2	max	1.458	1	17.93	9	.824	5	.119	5	.005	1	15.022	9
64			min	-1.57	7	-18.845	2	-.023	1	-.003	9	-.174	5	-13.901	1
65		3	max	1.458	1	17.913	9	.824	5	.119	5	0	1	11.29	9
66			min	-1.57	7	-18.862	2	-.023	1	-.003	9	-.003	5	-10.615	1
67		4	max	1.458	1	17.896	9	.824	5	.119	5	.169	5	7.676	8
68			min	-1.57	7	-18.879	2	-.023	1	-.003	9	-.004	1	-7.325	1
69		5	max	1.458	1	17.879	9	.824	5	.119	5	.341	5	5.831	7
70			min	-1.57	7	-18.896	2	-.023	1	-.003	9	-.009	1	-4.032	1
71	M15A	1	max	1.681	3	20.537	8	.824	5	.119	5	.01	1	18.546	9
72			min	-1.369	9	-16.254	1	-.023	1	-.003	9	-.346	5	-17.392	1
73		2	max	1.681	3	20.52	8	.824	5	.119	5	.005	1	14.916	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	-1.369	9	-16.271	1	-.023	1	-.003	9	-.174	5	-14.005	1
75		3	max	1.681	3	20.503	8	.824	5	.119	5	0	1	11.29	9
76			min	-1.369	9	-16.288	1	-.023	1	-.003	9	-.003	5	-10.615	1
77		4	max	1.681	3	20.486	8	.824	5	.119	5	.169	5	7.667	9
78			min	-1.369	9	-16.305	1	-.023	1	-.003	9	-.004	1	-7.337	2
79		5	max	1.681	3	20.469	8	.824	5	.119	5	.341	5	4.048	9
80			min	-1.369	9	-16.322	1	-.023	1	-.003	9	-.009	1	-5.819	3
81	M25	1	max	.823	5	16.403	1	2.158	6	3.358	1	.015	1	.087	5
82			min	-.023	1	-18.62	8	-1.479	1	-5.587	6	-.545	5	-.003	9
83		2	max	.823	5	16.403	1	2.158	6	3.358	1	.132	9	2.369	8
84			min	-.023	1	-18.62	8	-1.479	1	-5.587	6	-.351	4	-2.053	1
85		3	max	.023	1	17.767	9	2.273	4	3.385	9	.332	9	4.697	8
86			min	-.825	5	-18.62	8	-1.479	1	-5.587	6	-.354	1	-4.352	2
87		4	max	.023	1	17.767	9	2.273	4	3.385	9	.336	6	2.224	9
88			min	-.825	5	-17.242	2	-1.388	9	-5.568	4	-.143	1	-2.197	2
89		5	max	.023	1	17.767	9	2.273	4	3.385	9	.545	5	.003	9
90			min	-.825	5	-17.242	2	-1.388	9	-5.568	4	-.015	1	-.087	5
91	M29	1	max	.023	1	18.511	8	1.479	1	18.583	1	.016	1	.003	9
92			min	-.823	5	-16.512	1	-2.158	6	-19.905	9	-.554	5	-.087	5
93		2	max	.023	1	18.511	8	1.479	1	18.583	1	.201	1	2.067	1
94			min	-.823	5	-16.512	1	-2.158	6	-19.905	9	-.79	5	-2.356	8
95		3	max	.825	5	18.511	8	1.479	1	20.222	9	1.057	4	4.379	2
96			min	-.023	1	-17.658	9	-2.273	4	-19.719	8	-1.006	6	-4.67	8
97		4	max	.825	5	17.35	2	1.389	9	20.222	9	.791	5	2.211	2
98			min	-.023	1	-17.658	9	-2.273	4	-18.27	1	-.189	9	-2.21	9
99		5	max	.825	5	17.35	2	1.389	9	20.222	9	.554	5	.087	5
100			min	-.023	1	-17.658	9	-2.273	4	-18.27	1	-.016	1	-.003	9
101	M30	1	max	2.158	6	16.515	1	.024	1	.087	5	.554	5	18.583	1
102			min	-1.479	1	-18.508	8	-.824	5	-.003	9	-.016	1	-19.905	9
103		2	max	2.158	6	16.487	1	.024	1	.087	5	.279	5	13.085	1
104			min	-1.479	1	-18.535	8	-.824	5	-.003	9	-.008	1	-14.176	9
105		3	max	2.158	6	16.46	1	.024	1	.087	5	.004	5	7.595	1
106			min	-1.479	1	-18.563	8	-.824	5	-.003	9	0	1	-8.437	9
107		4	max	2.158	6	16.433	1	.024	1	.087	5	.007	1	3.086	3
108			min	-1.479	1	-18.59	8	-.824	5	-.003	9	-.27	5	-2.689	9
109		5	max	2.158	6	16.406	1	.024	1	.087	5	.015	1	5.587	6
110			min	-1.479	1	-18.617	8	-.824	5	-.003	9	-.545	5	-3.358	1
111	M31	1	max	1.388	9	17.353	2	.024	1	.087	5	.554	5	18.27	1
112			min	-2.273	4	-17.656	9	-.824	5	-.003	9	-.016	1	-20.222	9
113		2	max	1.388	9	17.326	2	.024	1	.087	5	.279	5	12.928	1
114			min	-2.273	4	-17.683	9	-.824	5	-.003	9	-.008	1	-14.334	9
115		3	max	1.388	9	17.299	2	.024	1	.087	5	.004	5	7.595	1
116			min	-2.273	4	-17.71	9	-.824	5	-.003	9	0	1	-8.437	9
117		4	max	1.388	9	17.272	2	.024	1	.087	5	.007	1	2.271	1
118			min	-2.273	4	-17.737	9	-.824	5	-.003	9	-.27	5	-3.522	7
119		5	max	1.388	9	17.244	2	.024	1	.087	5	.015	1	3.385	9
120			min	-2.273	4	-17.764	9	-.824	5	-.003	9	-.545	5	-5.568	4
121	M37A	1	max	2.323	9	32.559	1	.047	1	3.631	5	2.792	5	51.396	1
122			min	-2.5	1	-34.835	9	-1.648	5	-.125	9	-.168	1	-55.687	9
123		2	max	2.323	9	32.559	1	.047	1	3.631	5	2.608	5	47.761	1
124			min	-2.5	1	-34.835	9	-1.648	5	-.125	9	-.162	1	-51.797	9
125		3	max	2.323	9	32.559	1	.047	1	3.631	5	2.424	5	44.125	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	-2.5	1	-34.835	9	-1.648	5	-.125	9	-.157	1	-47.907	9
127		4	max	2.323	9	32.559	1	.047	1	3.631	5	2.24	5	40.489	1
128			min	-2.5	1	-34.835	9	-1.648	5	-.125	9	-.152	1	-44.017	9
129		5	max	2.323	9	32.559	1	.047	1	3.631	5	2.056	5	36.853	1
130			min	-2.5	1	-34.835	9	-1.648	5	-.125	9	-.147	1	-40.128	9
131	14	1	max	.693	1	14.168	9	2.158	1	5.883	9	.575	8	.075	1
132			min	-.871	8	-18.62	2	-2.729	9	-5.587	1	-.459	1	-.093	8
133		2	max	.693	1	14.168	9	2.158	1	5.883	9	.309	6	2.369	2
134			min	-.871	8	-18.62	2	-2.729	9	-5.587	1	-.189	1	-1.851	9
135		3	max	.023	4	19.095	5	2.158	1	5.903	6	.332	4	4.822	5
136			min	-.871	8	-18.62	2	-2.729	9	-5.587	1	-.171	9	-3.622	9
137		4	max	.87	8	19.095	5	.982	1	5.903	6	.336	1	2.435	5
138			min	-.694	1	-1.332	9	-2.613	6	-2.366	1	-.324	9	-.086	9
139		5	max	.87	8	19.095	5	.982	1	5.903	6	.459	1	.093	8
140			min	-.694	1	-1.332	9	-2.613	6	-2.366	1	-.575	8	-.075	1
141	15	1	max	1.236	9	35.386	4	1.387	1	4.711	1	3.126	8	69.741	4
142			min	-2.323	4	-15.166	9	-1.741	8	-5.718	8	-2.337	1	-30.533	9
143		2	max	1.236	9	35.386	4	1.387	1	4.711	1	2.727	8	61.632	4
144			min	-2.323	4	-15.166	9	-1.741	8	-5.718	8	-2.019	1	-27.058	9
145		3	max	1.236	9	35.386	4	1.387	1	4.711	1	2.328	8	53.522	4
146			min	-2.323	4	-15.166	9	-1.741	8	-5.718	8	-1.702	1	-23.582	9
147		4	max	1.236	9	35.386	4	1.387	1	4.711	1	1.929	8	45.413	4
148			min	-2.323	4	-15.166	9	-1.741	8	-5.718	8	-1.384	1	-20.107	9
149		5	max	1.236	9	35.386	4	1.387	1	4.711	1	1.53	8	37.304	4
150			min	-2.323	4	-15.166	9	-1.741	8	-5.718	8	-1.066	1	-16.631	9
151	16	1	max	.378	1	20.537	2	.694	1	.102	1	.366	8	19.088	3
152			min	-1.969	6	-17.076	9	-.871	8	-.124	8	-.291	1	-12.27	9
153		2	max	.378	1	20.52	2	.694	1	.102	1	.185	8	15	3
154			min	-1.969	6	-17.093	9	-.871	8	-.124	8	-.147	1	-8.712	9
155		3	max	.378	1	20.503	2	.694	1	.102	1	.004	8	11.29	4
156			min	-1.969	6	-17.11	9	-.871	8	-.124	8	-.002	1	-5.15	9
157		4	max	.378	1	20.486	2	.694	1	.102	1	.142	1	7.781	5
158			min	-1.969	6	-17.127	9	-.871	8	-.124	8	-.178	8	-1.585	9
159		5	max	.378	1	20.469	2	.694	1	.102	1	.287	1	5.93	6
160			min	-1.969	6	-17.144	9	-.871	8	-.124	8	-.359	8	-1.789	1
161	17	1	max	.694	1	-.253	1	1.555	1	18.758	4	.291	1	.124	8
162			min	-.87	8	-21.044	5	-2.053	9	-4.362	9	-.366	8	-.102	1
163		2	max	.694	1	-.253	1	1.555	1	18.758	4	.485	1	2.694	5
164			min	-.87	8	-21.044	5	-2.053	9	-4.362	9	-.582	9	-.071	1
165		3	max	.871	8	20.538	2	.955	4	18.758	4	.809	7	5.325	5
166			min	.023	4	-21.044	5	-1.599	8	-19.088	3	-.839	9	-4.377	9
167		4	max	.871	8	20.538	2	.378	1	12.27	9	.579	7	2.625	2
168			min	-.694	1	-17.077	9	-1.969	6	-19.088	3	-.338	1	-2.243	9
169		5	max	.871	8	20.538	2	.378	1	12.27	9	.366	8	.102	1
170			min	-.694	1	-17.077	9	-1.969	6	-19.088	3	-.291	1	-.124	8
171	18	1	max	.87	8	20.976	5	2.053	9	5.925	9	.287	1	.102	1
172			min	-.694	1	.185	1	-1.555	1	-5.719	1	-.359	8	-.124	8
173		2	max	.87	8	20.976	5	2.053	9	5.925	9	.092	1	.079	1
174			min	-.694	1	.185	1	-1.555	1	-5.719	1	-.206	6	-2.686	5
175		3	max	-.023	4	20.976	5	1.599	8	5.93	6	.194	9	4.394	9
176			min	-.871	8	-20.469	2	-.955	4	-5.719	1	-.333	4	-5.308	5
177		4	max	.694	1	17.146	9	1.969	6	5.93	6	.217	9	2.251	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
178			min	-.871	8	-20.469	2	-.378	1	-1.789	1	-.239	1	-2.617	2
179		5	max	.694	1	17.146	9	1.969	6	5.93	6	.359	8	.124	8
180			min	-.871	8	-20.469	2	-.378	1	-1.789	1	-.287	1	-.102	1
181	19	1	max	2.053	9	21.045	5	.694	1	.102	1	.366	8	18.758	4
182			min	-1.555	1	.252	1	-.871	8	-.124	8	-.291	1	-4.362	9
183		2	max	2.053	9	21.028	5	.694	1	.102	1	.185	8	15.022	4
184			min	-1.555	1	.235	1	-.871	8	-.124	8	-.147	1	-4.758	9
185		3	max	2.053	9	21.011	5	.694	1	.102	1	.004	8	11.29	4
186			min	-1.555	1	.218	1	-.871	8	-.124	8	-.002	1	-5.15	9
187		4	max	2.053	9	20.994	5	.694	1	.102	1	.142	1	7.884	3
188			min	-1.555	1	.201	1	-.871	8	-.124	8	-.178	8	-5.539	9
189		5	max	2.053	9	20.976	5	.694	1	.102	1	.287	1	5.719	1
190			min	-1.555	1	.184	1	-.871	8	-.124	8	-.359	8	-5.925	9
191	20	1	max	2.323	4	15.716	9	1.741	8	3.134	1	2.337	1	24.615	9
192			min	-1.236	9	-34.835	4	-1.388	1	-3.88	8	-3.126	8	-55.687	4
193		2	max	2.323	4	15.716	9	1.741	8	3.134	1	2.182	1	22.86	9
194			min	-1.236	9	-34.835	4	-1.388	1	-3.88	8	-2.931	8	-51.797	4
195		3	max	2.323	4	15.716	9	1.741	8	3.134	1	2.027	1	21.106	9
196			min	-1.236	9	-34.835	4	-1.388	1	-3.88	8	-2.737	8	-47.907	4
197		4	max	2.323	4	15.716	9	1.741	8	3.134	1	1.872	1	19.351	9
198			min	-1.236	9	-34.835	4	-1.388	1	-3.88	8	-2.542	8	-44.018	4
199		5	max	2.323	4	15.716	9	1.741	8	3.134	1	1.717	1	17.596	9
200			min	-1.236	9	-34.835	4	-1.388	1	-3.88	8	-2.348	8	-40.128	4
201	21	1	max	2.613	6	1.438	9	.871	8	.075	1	.466	1	4.519	9
202			min	-.982	1	-18.983	5	-.694	1	-.093	8	-.586	8	-20.223	4
203		2	max	2.613	6	1.411	9	.871	8	.075	1	.235	1	4.044	9
204			min	-.982	1	-19.011	5	-.694	1	-.093	8	-.296	8	-14.334	4
205		3	max	2.613	6	1.384	9	.871	8	.075	1	.004	1	3.579	9
206			min	-.982	1	-19.038	5	-.694	1	-.093	8	-.005	8	-8.437	4
207		4	max	2.613	6	1.357	9	.871	8	.075	1	.285	8	3.122	9
208			min	-.982	1	-19.065	5	-.694	1	-.093	8	-.228	1	-3.407	2
209		5	max	2.613	6	1.329	9	.871	8	.075	1	.575	8	5.903	6
210			min	-.982	1	-19.092	5	-.694	1	-.093	8	-.459	1	-2.366	1
211	22	1	max	.871	8	18.511	2	2.729	9	13.076	9	.586	8	.093	8
212			min	-.693	1	-14.276	9	-2.158	1	-20.488	3	-.466	1	-.075	1
213		2	max	.871	8	18.511	2	2.729	9	13.076	9	.881	8	1.865	9
214			min	-.693	1	-14.276	9	-2.158	1	-20.488	3	-.736	1	-2.356	2
215		3	max	.871	8	18.511	2	2.729	9	20.223	4	1.203	9	3.65	9
216			min	-.023	4	-18.987	5	-2.158	1	-20.488	3	-1.2	7	-4.795	5
217		4	max	.694	1	1.441	9	2.613	6	20.223	4	.589	1	.1	9
218			min	-.87	8	-18.987	5	-.982	1	-4.519	9	-.88	7	-2.421	5
219		5	max	.694	1	1.441	9	2.613	6	20.223	4	.466	1	.075	1
220			min	-.87	8	-18.987	5	-.982	1	-4.519	9	-.586	8	-.093	8
221	23	1	max	2.158	1	14.278	9	.871	8	.075	1	.466	1	13.076	9
222			min	-2.729	9	-18.508	2	-.694	1	-.093	8	-.586	8	-20.488	3
223		2	max	2.158	1	14.25	9	.871	8	.075	1	.235	1	8.323	9
224			min	-2.729	9	-18.536	2	-.694	1	-.093	8	-.296	8	-14.331	3
225		3	max	2.158	1	14.223	9	.871	8	.075	1	.004	1	3.579	9
226			min	-2.729	9	-18.563	2	-.694	1	-.093	8	-.005	8	-8.437	4
227		4	max	2.158	1	14.196	9	.871	8	.075	1	.285	8	.571	1
228			min	-2.729	9	-18.59	2	-.694	1	-.093	8	-.228	1	-3.566	5
229		5	max	2.158	1	14.169	9	.871	8	.075	1	.575	8	5.587	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	-2.729	9	-18.617	2	-.694	1	-.093	8	-.459	1	-5.883	9
231	24	1	max	35.044	4	1.301	9	1.426	1	.116	1	3.88	8	3.208	9
232			min	-15.49	9	-2.606	4	-1.745	8	.048	8	-3.134	1	-6.453	4
233		2	max	35.093	4	1.3	9	1.426	1	.116	1	1.48	8	1.42	9
234			min	-15.441	9	-2.606	4	-1.745	8	.048	8	-1.173	1	-2.869	4
235		3	max	35.142	4	1.3	9	1.426	1	.116	1	.788	1	.715	4
236			min	-15.392	9	-2.607	4	-1.745	8	.048	8	-.919	8	-.367	9
237		4	max	35.191	4	1.3	9	1.426	1	.116	1	2.75	1	4.299	4
238			min	-15.343	9	-2.607	4	-1.745	8	.048	8	-3.319	8	-2.155	9
239		5	max	35.24	4	1.299	9	1.426	1	.116	1	4.711	1	7.884	4
240			min	-15.294	9	-2.607	4	-1.745	8	.048	8	-5.718	8	-3.942	9
241	25	1	max	.727	9	17.712	5	1.038	9	5.883	4	.575	2	.075	9
242			min	-.871	2	-2.655	1	-2.729	4	-2.361	9	-.481	9	-.093	2
243		2	max	.727	9	17.712	5	1.038	9	5.883	4	.309	1	.251	1
244			min	-.871	2	-2.655	1	-2.729	4	-2.361	9	-.351	9	-2.262	5
245		3	max	.023	6	17.712	5	2.273	9	5.903	1	.164	1	3.966	1
246			min	-.871	2	-17.242	8	-2.729	4	-5.567	9	-.354	6	-4.476	5
247		4	max	.87	2	15.542	1	2.273	9	5.903	1	.197	9	2.023	1
248			min	-.728	9	-17.242	8	-2.612	1	-5.567	9	-.324	4	-2.197	8
249		5	max	.87	2	15.542	1	2.273	9	5.903	1	.481	9	.093	2
250			min	-.728	9	-17.242	8	-2.612	1	-5.567	9	-.575	2	-.075	9
251	26	1	max	2.501	6	18.531	1	1.455	9	4.7	9	3.126	2	36.294	1
252			min	-1.176	1	-32.008	6	-1.741	2	-5.718	2	-2.455	9	-63.916	6
253		2	max	2.501	6	18.531	1	1.455	9	4.7	9	2.727	2	32.048	1
254			min	-1.176	1	-32.008	6	-1.741	2	-5.718	2	-2.121	9	-56.581	6
255		3	max	2.501	6	18.531	1	1.455	9	4.7	9	2.328	2	27.801	1
256			min	-1.176	1	-32.008	6	-1.741	2	-5.718	2	-1.788	9	-49.246	6
257		4	max	2.501	6	18.531	1	1.455	9	4.7	9	1.929	2	23.554	1
258			min	-1.176	1	-32.008	6	-1.741	2	-5.718	2	-1.454	9	-41.911	6
259		5	max	2.501	6	18.531	1	1.455	9	4.7	9	1.53	2	19.308	1
260			min	-1.176	1	-32.008	6	-1.741	2	-5.718	2	-1.121	9	-34.576	6
261	27	1	max	1.638	9	1.409	9	.728	9	.102	9	.366	2	5.688	1
262			min	-1.969	1	-19.329	5	-.871	2	-.124	2	-.305	9	-17.392	6
263		2	max	1.638	9	1.392	9	.728	9	.102	9	.185	2	5.743	1
264			min	-1.969	1	-19.346	5	-.871	2	-.124	2	-.154	9	-14.005	6
265		3	max	1.638	9	1.375	9	.728	9	.102	9	.004	2	5.802	1
266			min	-1.969	1	-19.363	5	-.871	2	-.124	2	-.002	9	-10.615	6
267		4	max	1.638	9	1.358	9	.728	9	.102	9	.149	9	5.864	1
268			min	-1.969	1	-19.38	5	-.871	2	-.124	2	-.178	2	-7.543	7
269		5	max	1.638	9	1.341	9	.728	9	.102	9	.301	9	5.929	1
270			min	-1.969	1	-19.397	5	-.871	2	-.124	2	-.359	2	-5.715	9
271	28	1	max	.728	9	18.828	8	.402	9	13.619	1	.305	9	.124	2
272			min	-.87	2	-18.785	1	-2.053	4	-17.721	7	-.366	2	-.102	9
273		2	max	.728	9	18.828	8	.402	9	13.619	1	.356	9	2.456	1
274			min	-.87	2	-18.785	1	-2.053	4	-17.721	7	-.594	3	-2.411	8
275		3	max	.871	2	18.828	8	1.043	6	17.392	6	.804	1	4.804	1
276			min	.023	6	-19.329	5	-1.599	2	-17.721	7	-.839	4	-4.896	5
277		4	max	.871	2	1.409	9	1.638	9	17.392	6	.565	2	.278	9
278			min	-.727	9	-19.329	5	-1.969	1	-5.688	1	-.51	9	-2.48	5
279		5	max	.871	2	1.409	9	1.638	9	17.392	6	.366	2	.102	9
280			min	-.727	9	-19.329	5	-1.969	1	-5.688	1	-.305	9	-.124	2
281	29	1	max	.87	2	18.716	1	2.053	4	5.925	4	.301	9	.102	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
282			min	-.728	9	-18.896	8	-.402	9	-1.775	9	-.359	2	-.124	2
283		2	max	.87	2	18.716	1	2.053	4	5.925	4	.25	9	2.42	8
284			min	-.728	9	-18.896	8	-.402	9	-1.775	9	-.206	1	-2.448	1
285		3	max	-.023	6	19.397	5	1.599	2	5.929	1	.355	6	4.913	5
286			min	-.871	2	-18.896	8	-1.043	6	-5.715	9	-.187	1	-4.787	1
287		4	max	.727	9	19.397	5	1.969	1	5.929	1	.217	4	2.488	5
288			min	-.871	2	-1.341	9	-1.638	9	-5.715	9	-.096	9	-.27	9
289		5	max	.727	9	19.397	5	1.969	1	5.929	1	.359	2	.124	2
290			min	-.871	2	-1.341	9	-1.638	9	-5.715	9	-.301	9	-.102	9
291	30	1	max	2.053	4	18.786	1	.728	9	.102	9	.366	2	13.619	1
292			min	-.402	9	-18.828	8	-.871	2	-.124	2	-.305	9	-17.721	7
293		2	max	2.053	4	18.769	1	.728	9	.102	9	.185	2	9.709	1
294			min	-.402	9	-18.845	8	-.871	2	-.124	2	-.154	9	-13.984	7
295		3	max	2.053	4	18.752	1	.728	9	.102	9	.004	2	5.802	1
296			min	-.402	9	-18.862	8	-.871	2	-.124	2	-.002	9	-10.615	6
297		4	max	2.053	4	18.735	1	.728	9	.102	9	.149	9	1.899	1
298			min	-.402	9	-18.879	8	-.871	2	-.124	2	-.178	2	-7.442	5
299		5	max	2.053	4	18.718	1	.728	9	.102	9	.301	9	1.775	9
300			min	-.402	9	-18.896	8	-.871	2	-.124	2	-.359	2	-5.925	4
301	31	1	max	1.176	1	32.559	6	1.741	2	3.122	9	2.455	9	51.396	6
302			min	-2.501	6	-17.981	1	-1.455	9	-3.88	2	-3.126	2	-28.926	1
303		2	max	1.176	1	32.559	6	1.741	2	3.122	9	2.292	9	47.761	6
304			min	-2.501	6	-17.981	1	-1.455	9	-3.88	2	-2.931	2	-26.918	1
305		3	max	1.176	1	32.559	6	1.741	2	3.122	9	2.13	9	44.125	6
306			min	-2.501	6	-17.981	1	-1.455	9	-3.88	2	-2.737	2	-24.91	1
307		4	max	1.176	1	32.559	6	1.741	2	3.122	9	1.967	9	40.489	6
308			min	-2.501	6	-17.981	1	-1.455	9	-3.88	2	-2.542	2	-22.903	1
309		5	max	1.176	1	32.559	6	1.741	2	3.122	9	1.805	9	36.853	6
310			min	-2.501	6	-17.981	1	-1.455	9	-3.88	2	-2.348	2	-20.895	1
311	32	1	max	2.612	1	17.353	8	.871	2	.075	9	.489	9	18.843	7
312			min	-2.273	9	-15.432	1	-.727	9	-.093	2	-.586	2	-14.741	1
313		2	max	2.612	1	17.326	8	.871	2	.075	9	.246	9	13.078	7
314			min	-2.273	9	-15.459	1	-.727	9	-.093	2	-.296	2	-9.593	1
315		3	max	2.612	1	17.299	8	.871	2	.075	9	.004	9	7.595	6
316			min	-2.273	9	-15.486	1	-.727	9	-.093	2	-.005	2	-4.437	1
317		4	max	2.612	1	17.272	8	.871	2	.075	9	.285	2	3.134	5
318			min	-2.273	9	-15.513	1	-.727	9	-.093	2	-.239	9	-.999	9
319		5	max	2.612	1	17.245	8	.871	2	.075	9	.575	2	5.903	1
320			min	-2.273	9	-15.541	1	-.727	9	-.093	2	-.481	9	-5.567	9
321	33	1	max	.871	2	2.546	1	2.729	4	18.584	6	.586	2	.093	2
322			min	-.727	9	-17.821	5	-1.038	9	-6.154	1	-.489	9	-.075	9
323		2	max	.871	2	2.546	1	2.729	4	18.584	6	.901	3	2.275	5
324			min	-.727	9	-17.821	5	-1.038	9	-6.154	1	-.618	9	-.238	1
325		3	max	.871	2	17.351	8	2.729	4	18.584	6	1.229	3	4.503	5
326			min	-.023	6	-17.821	5	-2.273	9	-18.843	7	-1.151	1	-3.939	1
327		4	max	.728	9	17.351	8	2.612	1	14.741	1	.773	9	2.211	8
328			min	-.87	2	-15.433	1	-2.273	9	-18.843	7	-.879	2	-2.01	1
329		5	max	.728	9	17.351	8	2.612	1	14.741	1	.489	9	.075	9
330			min	-.87	2	-15.433	1	-2.273	9	-18.843	7	-.586	2	-.093	2
331	34	1	max	1.038	9	17.824	5	.871	2	.075	9	.489	9	18.584	6
332			min	-2.729	4	-2.549	1	-.727	9	-.093	2	-.586	2	-6.154	1
333		2	max	1.038	9	17.797	5	.871	2	.075	9	.246	9	13.085	6

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	-2.729	4	-2.576	1	-.727	9	-.093	2	-.296	2	-5.3	1
335		3	max	1.038	9	17.77	5	.871	2	.075	9	.004	9	7.595	6
336			min	-2.729	4	-2.603	1	-.727	9	-.093	2	-.005	2	-4.437	1
337		4	max	1.038	9	17.743	5	.871	2	.075	9	.285	2	2.978	8
338			min	-2.729	4	-2.631	1	-.727	9	-.093	2	-.239	9	-3.565	1
339		5	max	1.038	9	17.716	5	.871	2	.075	9	.575	2	2.361	9
340			min	-2.729	4	-2.658	1	-.727	9	-.093	2	-.481	9	-5.883	4
341	35	1	max	18.193	1	2.593	6	1.422	9	.117	9	3.88	2	6.402	6
342			min	-32.322	6	-1.299	1	-1.745	2	.048	2	-3.123	9	-3.219	1
343		2	max	18.242	1	2.593	6	1.422	9	.117	9	1.48	2	2.837	6
344			min	-32.273	6	-1.299	1	-1.745	2	.048	2	-1.167	9	-1.433	1
345		3	max	18.291	1	2.592	6	1.422	9	.117	9	.788	9	.354	1
346			min	-32.224	6	-1.299	1	-1.745	2	.048	2	-.919	2	-.728	6
347		4	max	18.34	1	2.592	6	1.422	9	.117	9	2.744	9	2.141	1
348			min	-32.175	6	-1.3	1	-1.745	2	.048	2	-3.319	2	-4.292	6
349		5	max	18.389	1	2.592	6	1.422	9	.117	9	4.7	9	3.928	1
350			min	-32.126	6	-1.3	1	-1.745	2	.048	2	-5.718	2	-7.856	6

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 10.75x0...	.000	0	9	.000	0		9	372.61	375.111	103.375	103.375	1....	H1-1b
2	M2	Existing Pole	.247	2	4	.021	0		3	857.946	999.321	495.4	495.4	1....	H1-1b
3	M35	HSS6X6X8	.179	5.5	8	.026	5.5	y	9	387.597	403.236	68.31	68.31	2....	H1-1b
4	M14	Bracket Plate...	.030	0	2	.036	.833	y	3	1252.766	1404	29.25	702	1....	H1-1b
5	M15A	Bracket Plate...	.032	0	8	.039	0	y	7	1252.766	1404	29.25	702	1....	H1-1b
6	M30	Bracket Plate...	.039	0	7	.035	1.333	y	8	1048.615	1404	29.25	702	2.1	H1-1b
7	M31	Bracket Plate...	.037	0	3	.033	0	y	2	1048.615	1404	29.25	702	2....	H1-1b
8	16	Bracket Plate...	.032	0	2	.039	0	y	2	1252.766	1404	29.25	702	1....	H1-1b
9	19	Bracket Plate...	.033	0	5	.040	0	y	5	1252.766	1404	29.25	702	1....	H1-1b
10	21	Bracket Plate...	.040	0	5	.036	1.333	y	5	1048.615	1404	29.25	702	2....	H1-1b
11	23	Bracket Plate...	.038	0	2	.035	1.333	y	2	1048.615	1404	29.25	702	2....	H1-1b
12	24	HSS6X6X8	.182	5.5	5	.026	5.5	y	4	387.597	403.236	68.31	68.31	2....	H1-1b
13	27	Bracket Plate...	.031	0	5	.037	.833	y	5	1252.766	1404	29.25	702	1....	H1-1b
14	30	Bracket Plate...	.030	0	8	.038	0	y	1	1252.766	1404	29.25	702	1....	H1-1b
15	32	Bracket Plate...	.039	0	1	.033	0	y	8	1048.615	1404	29.25	702	2....	H1-1b
16	34	Bracket Plate...	.038	0	5	.034	0	y	5	1048.615	1404	29.25	702	2....	H1-1b
17	35	HSS6X6X8	.177	5.5	5	.026	0	y	6	387.597	403.236	68.31	68.31	2....	H1-1b

PROJECT	**149862.007.01 - COE HILL, CT**
SUBJECT	**Bolted Bridge Stiffeners at 119'**
DATE	**08-31-21**

v2.4.1

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

General		
TIA-222 Rev.		H
Apply TIA-222-H Section 15.5?		Yes
Analysis/Design		Analysis
Modification Qty		1
Loads	Moment	74.9 k-ft
	Axial	3.2 k
	Shear	6.2 k

Pole Properties	
Upper Diameter	10.8 in
Upper Thickness	0.188 in
Lower Diameter	22.0 in
Lower Thickness	0.250 in
Grade	A572-65
Fy	65 ksi
Fu	80 ksi

Flange Bolt Properties	
Qty	12
Diameter	3/4 in
Circle	14.0 in

Bridge Stiffener Properties				
Mod ID #		Mod 1	N/A	N/A
Type		Plate		
Qty		3		
Configuration		Symmetric		
Thickness		0.50 in		
Width		6.00 in		
Channel Part Number				
Diameter to Mod Centroid		38.5 in		
Unbraced Length		66.0 in		
Plate Grade		Custom		
Fy	46	46 ksi		
Fu	58	58 ksi		
Eccentric Bolt Qty		7		
Shear-Only Bolt Qty		7		
Bolt Spacing		3.00 in		
Eccentricity		13.85 in		
Bolt Diameter		20 mm		
Shim Plate Length		26.0 in		
Shim Thickness		1 3/4 in		
Shim Weld Electrode		E70XX		
Shim Fillet Weld Size		5/16 in		

Results Summary

Checks		Capacity	Demand	Rating	Result
Mod 1	Plate Compression	380.2	11.1	2.8%	Pass
	Plate Tension	395.1	11.1	2.7%	Pass
Blind Bolts	Shear Only	37.0	1.6	4.1%	Pass
	Eccentric Shear	37.0	1.6	4.1%	Pass
	Tension	32.9	4.3	12.4%	Pass
	Combined Shear & Tens.	--	--	1.8%	Pass
	Bearing in Pole	30.2	1.6	5.0%	Pass
	Pull Out	31.2	4.3	13.1%	Pass
Shim Weld Strength		333.3	11.1	3.2%	Pass

Considered Loads at 119 ft

Load Type	Flange*	Bridge Stiffeners		
		Mod 1		
Moment	0.5 k-ft	74.4 k-ft		
Axial	3.2 k	0.0 k		
Shear	6.2 k	0.0 k		

*See flange tool for flange bolt and plate capacities

HSS Through BOLT CAPACITY- AISC 15th Edition pg. 7-13

$$\phi R_t = \phi\ (1.8)\ n\ F_y\ d\ t_{des}$$

Fy=46ksi n=7, t_{des}=1/2" d= 1"

(HSS)

= 0.75x1.8x7x46x1x1/2

=217.35> 35.335----------→ Risa Max member force

Total Bolt Shear = 7x 70.686

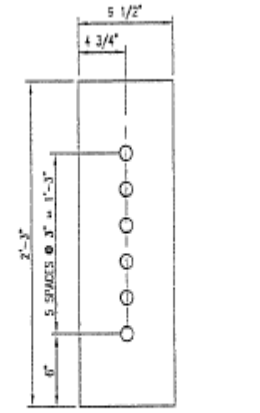
= 494.802 > 35.335

CHECK FOR TENSION/SHEAR

AISC 15TH EDITION Pg. 7-11

$$r_{ut} = \left(\frac{P_u\ e\ C}{h_2}\right) A_b$$

A trial NA is selected as per Pg. 7-11
i.e, 1/6th of total depth of bracket



BACKER PLATE 4 S-2
(ASTM A572 OR 65)

= 1/6x27= 4.5

Effective width of Compression block, bff= 8tf<Bf (Eq 7-10) 24> 5.5

= 8x3=24 bff= 5.5

Pu = 35.335K (From Risa)

e= distance from centroid of bolt group to Pu= 19.625”

C= distance from N.A the most remote bolt in group = 27-(6+4.5) = 16.5

Abolt= 0.7854

Icy bolt = 0.04908

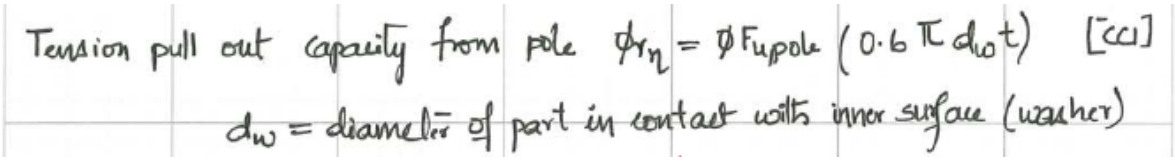
Icy comp = 5.5*4.5^3/12=41.75625

I na = [41.75625+4.5*5.5(4.5/2) ^2] +[6*0.04908+0.7854*(1.5^2+4.5^2+7.5^2+10.5^2+13.5^2+16.5^2)]

= [41.75625+125.296]+1340.235=1507.288

= (35.335*11.5*14.5/1507.288)*(0.442)= 8.844k

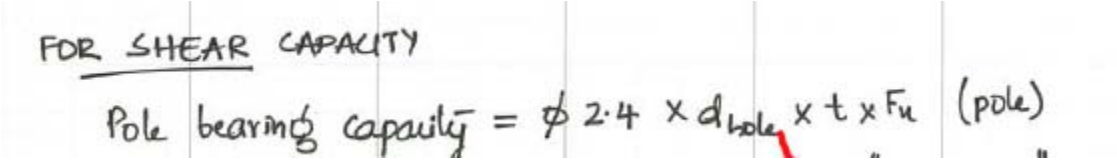
For A325N 1” QFnv = 31.8k Fnt = 53k



= 0.67x80(0.6x3.14159x2x0.25)

= 25.25

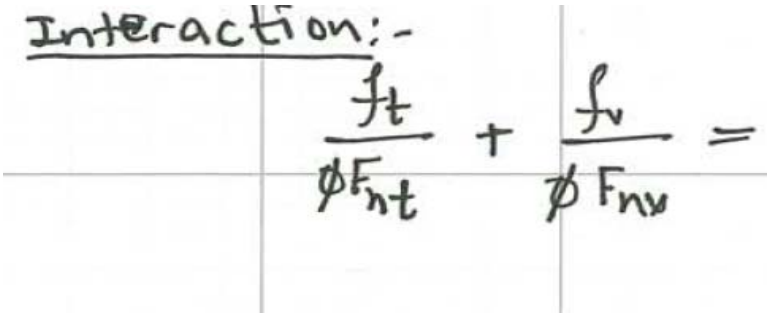
Rut/Qrn= 8.844/25.25= 0.3501(35.01%)



= 0.8x2.4x1.25x0.25x80

= 48 Controls over Blind bolts capacity

Fv= 35.335/6 = 5.889k



8.844/28.4+2.9445/34.2= 0.311+0.0860

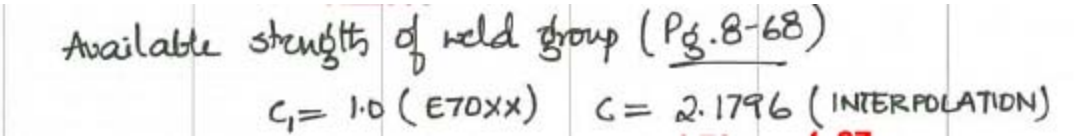
=0.3970/ 1.3=0.3054=30.54%

Weld Capacity

Existing tower Proposing fillet weld 0.25”

Kl= 6.125

K=6.125/27=0.22685



Pu= QC1Cdl = 0.75x1x1.79x4x27

= 144.99> 35.335

(As the considered eccentricity is from proposed tower capacity is enough with same weld)

All through bolt Capacity

Shear= 35.335/494.802=0.0714*100= 7.14%

Bearing= 35.335/217.35=0.1625*100=16.2%

Bracket Capacity (Bolts)

Tension Pull out = 35.01%

Shear= 17.2%

Weld Capacity = 35.335/144.99= 0.2437= 24.3%

HSS member Capacity = 18.3% (from Risa 3-D)

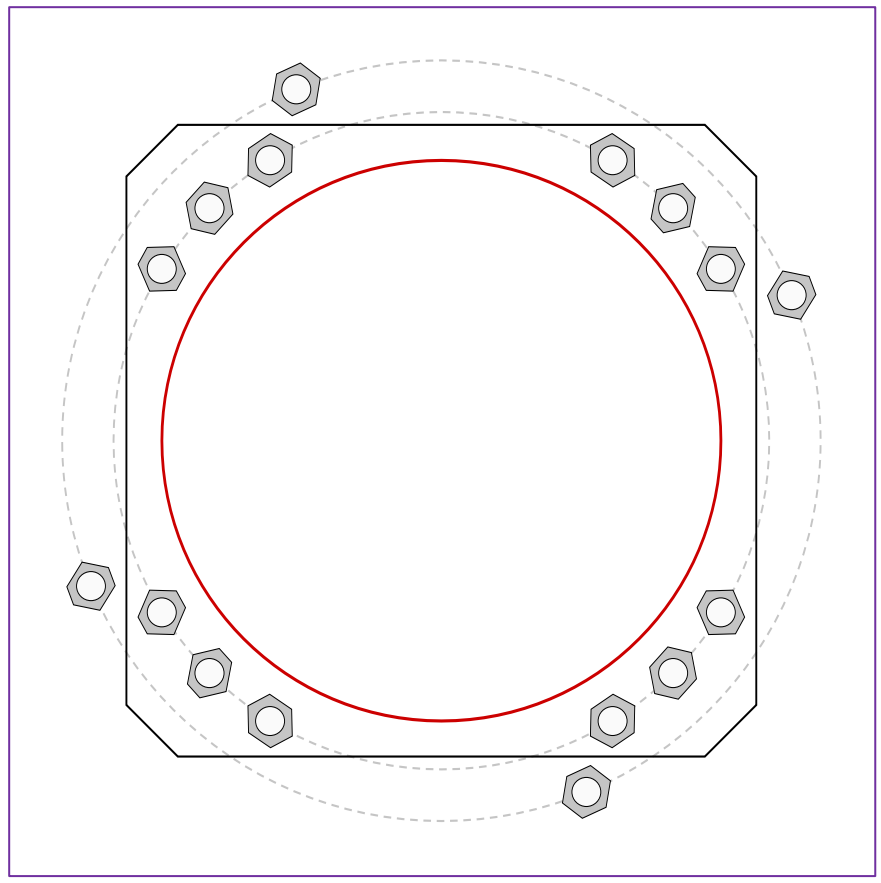
Monopole Base Plate Connection

Site Info	
BU #	876340
Site Name	COE HILL, CT
Order #	557896, Rev# 1

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

Applied Loads	
Moment (kip-ft)	3177.26
Axial Force (kips)	49.80
Shear Force (kips)	33.37

**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" BC

Anchor Spacing: 6 in

GROUP 2: (4) 2-1/4" ø bolts (Dywidag N; Fy=120 ksi, Fu=125 ksi) on 58.99" BC

Base Plate Data

49" W x 3" Plate (A572-50; Fy=50 ksi, Fu=65 ksi); Clip: 4 in

Stiffener Data

N/A

Pole Data

43.49" 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 = 168.06	ϕPn_t = 243.75	**Stress Rating**
Vu = 2.78	ϕVn = 149.1	**65.7%**
Mu = n/a	ϕMn = n/a	**Pass**

GROUP 2:

Pu_t = 199	ϕPn_t = 304.69	**Stress Rating**
Vu = 0	ϕVn = 186.38	**62.2%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	29.43	(Flexural)
Allowable Stress (ksi):	45	
Stress Rating:	**62.3%**	**Pass**

CCIplate

Elevation (ft)	0	*(Base)*

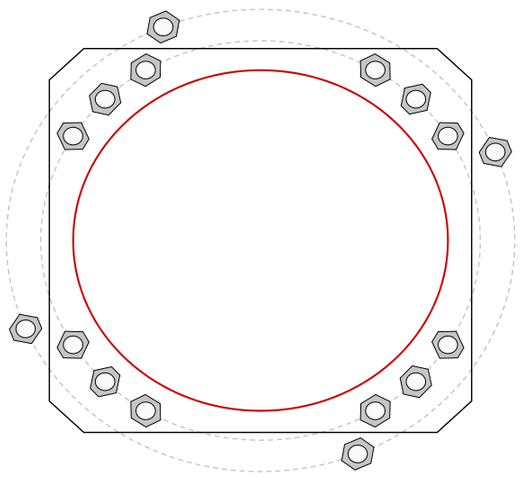
note: Bending interaction not considered when Grout Considered = "Yes"

Bolt Group	Resist Axial	Resist Shear	Induce Plate Bending	Grout Considered	Apply at BARB Elevation	BARB CL Elevation (ft)
1	Yes	Yes	Yes	Yes	No	
2	No	No	No	Yes	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	31.487346	2.25	A615-75	51	0.55	0	N-Included		No
2	1	45	2.25	A615-75	51	0.55	0	N-Included		No
3	1	58.512654	2.25	A615-75	51	0.55	0	N-Included		No
4	1	121.48735	2.25	A615-75	51	0.55	0	N-Included		No
5	1	135	2.25	A615-75	51	0.55	0	N-Included		No
6	1	148.51265	2.25	A615-75	51	0.55	0	N-Included		No
7	1	211.48735	2.25	A615-75	51	0.55	0	N-Included		No
8	1	225	2.25	A615-75	51	0.55	0	N-Included		No
9	1	238.51265	2.25	A615-75	51	0.55	0	N-Included		No
10	1	301.48735	2.25	A615-75	51	0.55	0	N-Included		No
11	1	315	2.25	A615-75	51	0.55	0	N-Included		No
12	1	328.51265	2.25	A615-75	51	0.55	0	N-Included		No
13	2	22.5	2.25	Dywidag	58.99	0.55	0	N-Included		No
14	2	112.5	2.25	Dywidag	58.99	0.55	0	N-Included		No
15	2	202.5	2.25	Dywidag	58.99	0.55	0	N-Included		No
16	2	292.5	2.25	Dywidag	58.99	0.55	0	N-Included		No

Plot Graphic



Drilled Pier Foundation

BU # :	876340
Site Name:	COE HILL, CT
Order Number:	557896, Rev# 1
TIA-222 Revison:	H
Tower Type:	Monopole

Applied Loads	Comp.	Uplift
Moment (kip-ft)	3177	
Axial Force (kips)	50	
Shear Force (kips)	33	

Material Properties		
Concrete Strength, f'c:	3	ksi
Rebar Strength, Fy:	60	ksi
Tie Yield Strength, Fyt:	40	ksi

Pier Design Data		
Depth	21	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
From 0.5' above grade to 21' below grade		
Pier Diameter	7	ft
Rebar Quantity	24	
Rebar Size	11	
Clear Cover to Ties	4	in
Tie Size	5	
Tie Spacing	18	in

Rebar & Pier Options
Embedded Pole Inputs
Belled Pier Inputs

Analysis Results		
Soil Lateral Check	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	6.05	-
Soil Safety Factor	1.98	-
Max Moment (kip-ft)	3371.16	-
Rating*	*64.1%*	-
Soil Vertical Check	*Compression*	*Uplift*
Skin Friction (kips)	321.62	-
End Bearing (kips)	432.95	-
Weight of Concrete (kips)	148.94	-
Total Capacity (kips)	754.57	-
Axial (kips)	198.94	-
Rating*	*25.1%*	-
Reinforced Concrete Flexure	*Compression*	*Uplift*
Critical Depth (ft from TOC)	5.73	-
Critical Moment (kip-ft)	3370.11	-
Critical Moment Capacity	5862.62	-
Rating*	*54.7%*	-
Reinforced Concrete Shear	*Compression*	*Uplift*
Critical Depth (ft from TOC)	15.95	-
Critical Shear (kip)	480.07	-
Critical Shear Capacity	600.51	-
Rating*	*76.1%*	-

Structural Foundation Rating*	**76.1%**
Soil Interaction Rating*	**64.1%**

*Rating per TIA-222-H Section 15.5

Check Limitation	
Apply TIA-222-H Section 15.5:	☑
N/A	☐
Additional Longitudinal Rebar	
Input Effective Depths (else Actual):	☐
Shear Design Options	
Check Shear along Depth of Pier:	☑
Utilize Shear-Friction Methodology:	☐
Override Critical Depth:	☐

Go to Soil Calculations

Soil Profile

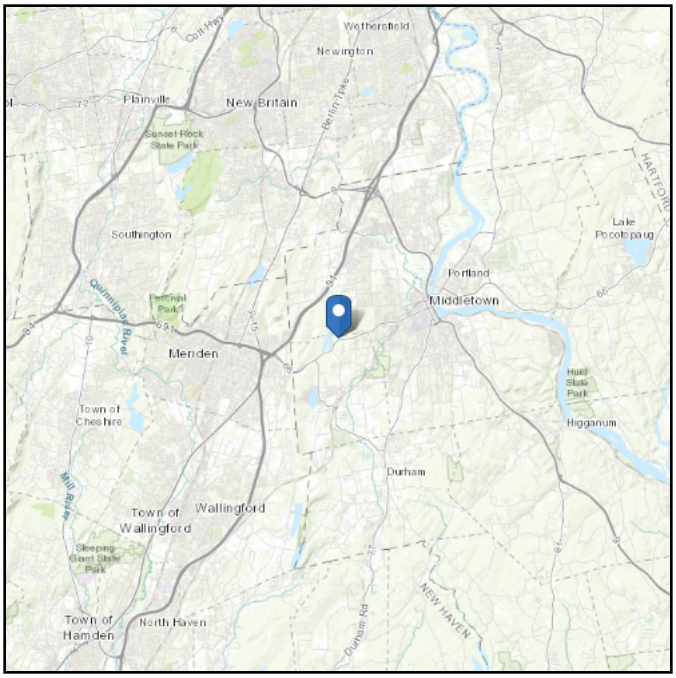
Groundwater Depth	N/A	# of Layers	4

Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	2	2	100	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	2	3.5	1.5	120	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
3	3.5	6	2.5	120	150	0	30	0.000	0.000	0.00	0.00			Cohesionless
4	6	21	15	125	150	0	35	0.000	0.000	1.30	1.30	15		Cohesionless

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-10	**Elevation:**	444.26 ft (NAVD 88)
Risk Category:	II	**Latitude:**	41.546
Soil Class:	D - Stiff Soil	**Longitude:**	-72.714972



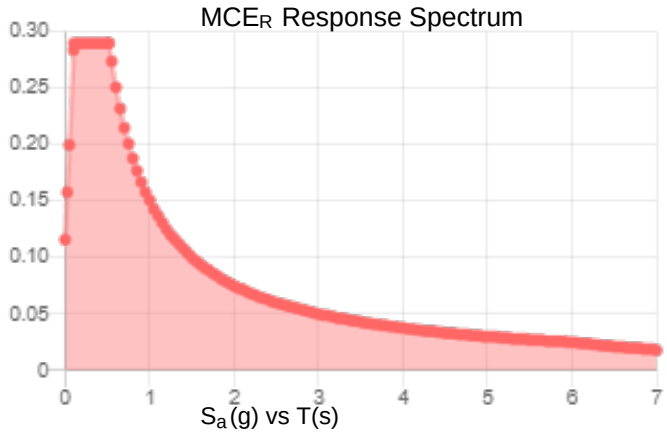
Seismic

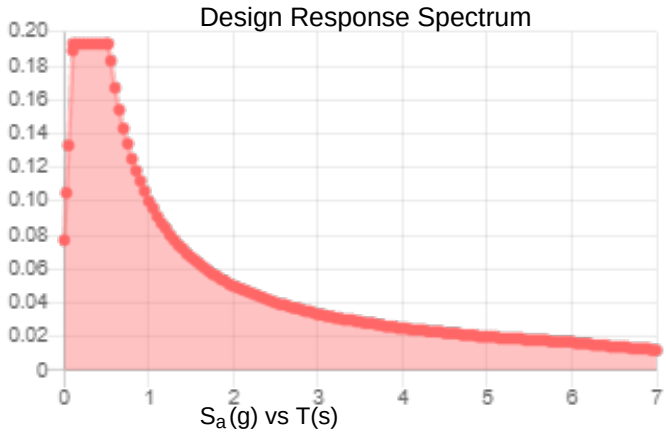
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.181	S_{DS} :	0.193
S_1 :	0.063	S_{D1} :	0.1
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.093
S_{MS} :	0.29	PGA_M :	0.148
S_{M1} :	0.151	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Tue Aug 31 2021

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Tue Aug 31 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.

Exhibit E

Mount Analysis

Date: August 27, 2021

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

Subject:	**Mount Analysis Report**	
Carrier Designation:	**T-Mobile Equipment Change-Out**	
	Carrier Site Number:	CTHA399A
	Carrier Site Name:	ctha399a_crown_876340_coe_hill
Crown Castle Designation:	**BU Number:**	876340
	Site Name:	Coe Hill
	JDE Job Number:	650643
	Order Number:	557896, Rev. 1
Engineering Firm Designation:	**B+T Group Report Designation:**	149862.006.01
Site Data:	**238 Meriden Rd., Middlefield, CT, Middlesex County, 06457** **Latitude 41° 32' 45.60" Longitude -72° 42' 53.90"**	
Structure Information:	**Tower Height & Type:**	**133.5 ft. Monopole**
	Mount Elevation:	**119 ft.**
	Mount Type:	**14 ft. Platform Mount**

B+T Group 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.

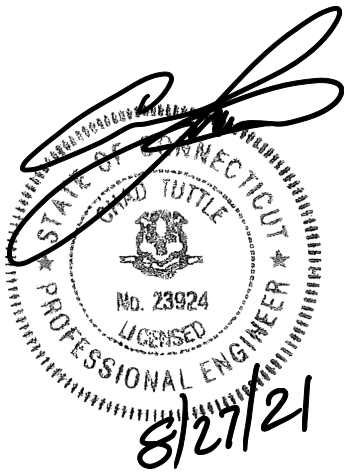
The purpose of the analysis is to determine acceptability of the mount's stress level. Based on our analysis we have determined the stress level to be:

Platform Mount **Sufficient**

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2018 Connecticut State Building Code (2015 IBC). Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount structural analysis prepared by: Isaac Fulton

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



Chad E. Tuttle, P.E.

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7) APPENDIX C
Software Analysis Output

8) APPENDIX D
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1) INTRODUCTION

This is an existing 3 - sector 14' Platform Mount, mapped & analyzed by B+T Group w/ proposed SitePro Part# HRK-12.

The mount has been modified per reinforcement drawings prepared by B+T Group, in June of 2021. Reinforcement consists of SitePro1 Part# PRK-1245-LW.

2) ANALYSIS CRITERIA

Building Code:	2015 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	125 mph
Exposure Category:	C
Topographic Factor at Base:	1
Topographic Factor at Mount:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.181
Seismic S_1:	0.063
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)	Qty.	Manufacturer	Model / Type	Mount / Modification Details
119	121	3	Ericsson	AIR6449 B41_T-Mobile	14' Platform Mount
		3	Rfs/Celwave	APXVAALL24_43-U-NA20_TMO	
		3	Ericsson	RADIO 4460 B2/B25 B66_TMO	
		3	Ericsson	Radio 4480_TMOV2	
50	51	1	Lucent	KS24019-L112A	-

Table 2 – Documents Provided

Document	Remarks	Reference	Source
CCI Order	Existing Loading Proposed Loading	Date: 04/21/2021	Crown Castle
RFDS		Date: 08/02/2021	
Mount Mapping	B+T Group	Date: 05/06/2021	On File
Previous MA		Date: 05/10/2021	
Mount Modification		Date: 06/01/2021	

3) ANALYSIS PROCEDURE

3.1) Analysis Method

RISA-3D (Version 19.0.1), 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 by B+T Group, was used to calculate wind loading on all appurtenances, dishes and mount members for various loading cases. Selected output from the analysis is included in Appendix B “Software Input Calculations”.

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

3.2) Assumptions

1. The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design, TIA Standards, and/or manufacturer's specifications.
2. The mount has been maintained in accordance with the manufacturer’s specifications and is free of damage.
3. The configuration of antennas, mounts, and other appurtenances are as specified in Table-1.
4. All mount components have been assumed to be in sufficient condition to carry their full design capacity for the analysis.
5. Mount areas and weights are determined from field measurements, standard material properties, and/or manufacturer product data.
6. Serviceability with respect to antenna twist, tilt, roll or lateral translation is not checked and is left to the carrier or tower owner to ensure conformance.
7. All prior structural modifications, if any are assumed to be correctly installed and fully effective.
8. 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.
9. 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.
10. The following material grades were assumed (Unless Noted Otherwise):
    (a) Connection Bolts : ASTM A325
    (b) Steel Pipe : ASTM A53 (GR. 35)
    (c) HSS (Round) : ASTM 500 (GR. B-42)
    (d) HSS (Rectangular) : ASTM 500 (GR. B-46)
    (e) Channel : ASTM A36 (GR. 36)
    (f) Steel Solid Rod : ASTM A36 (GR. 36)
    (g) Steel Plate : ASTM A36 (GR. 36)
    (h) Steel Angle : ASTM A36 (GR. 36)
    (i) UNISTRUT : ASTM A570 (GR. 33)

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 antenna mounting system.

4) ANALYSIS RESULTS

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

Notes	Component	Centerline (ft)	Critical Member	% Capacity	Pass / Fail
1	Main Horizontals	119	3	62.2	Pass
	Support Angles	119	8	26.3	Pass
	Support Rails	119	48	24.2	Pass
	Mount Pipes	119	20	88.6	Pass
	Support Tubes	119	13	31.3	Pass
	Connection Angles	119	38	14.2	Pass
	Kickers	119	52	10.4	Pass
2	Connection Bolts	119	-	37.0	Pass

Structure Rating (max from all components) =	88.6%

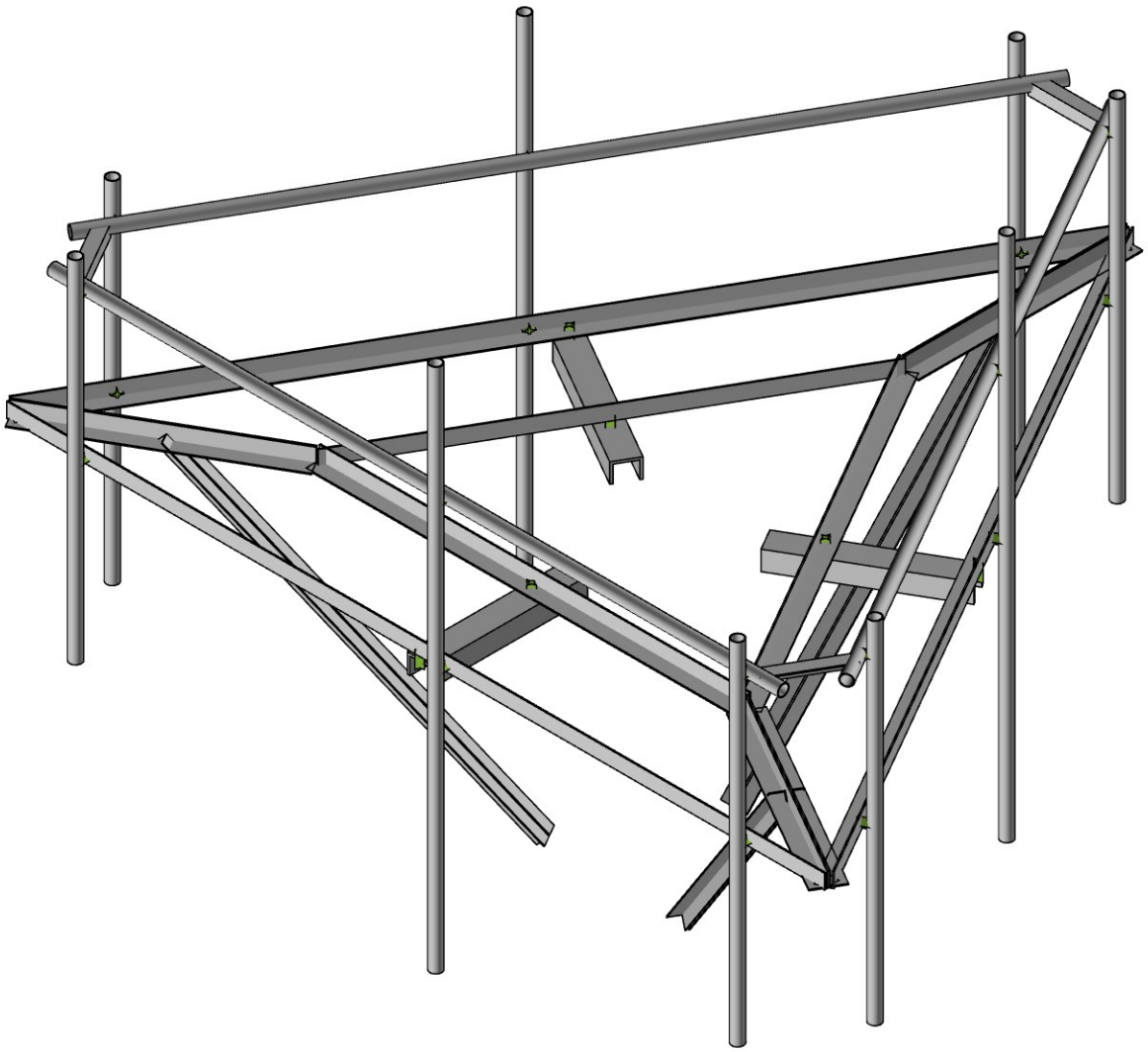
Notes:
1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
2) See additional documentation in "Appendix D - Additional Calculations" for calculations supporting the % capacity reported.

4.1) Recommendations

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

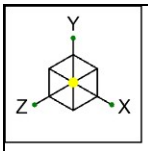
APPENDIX A

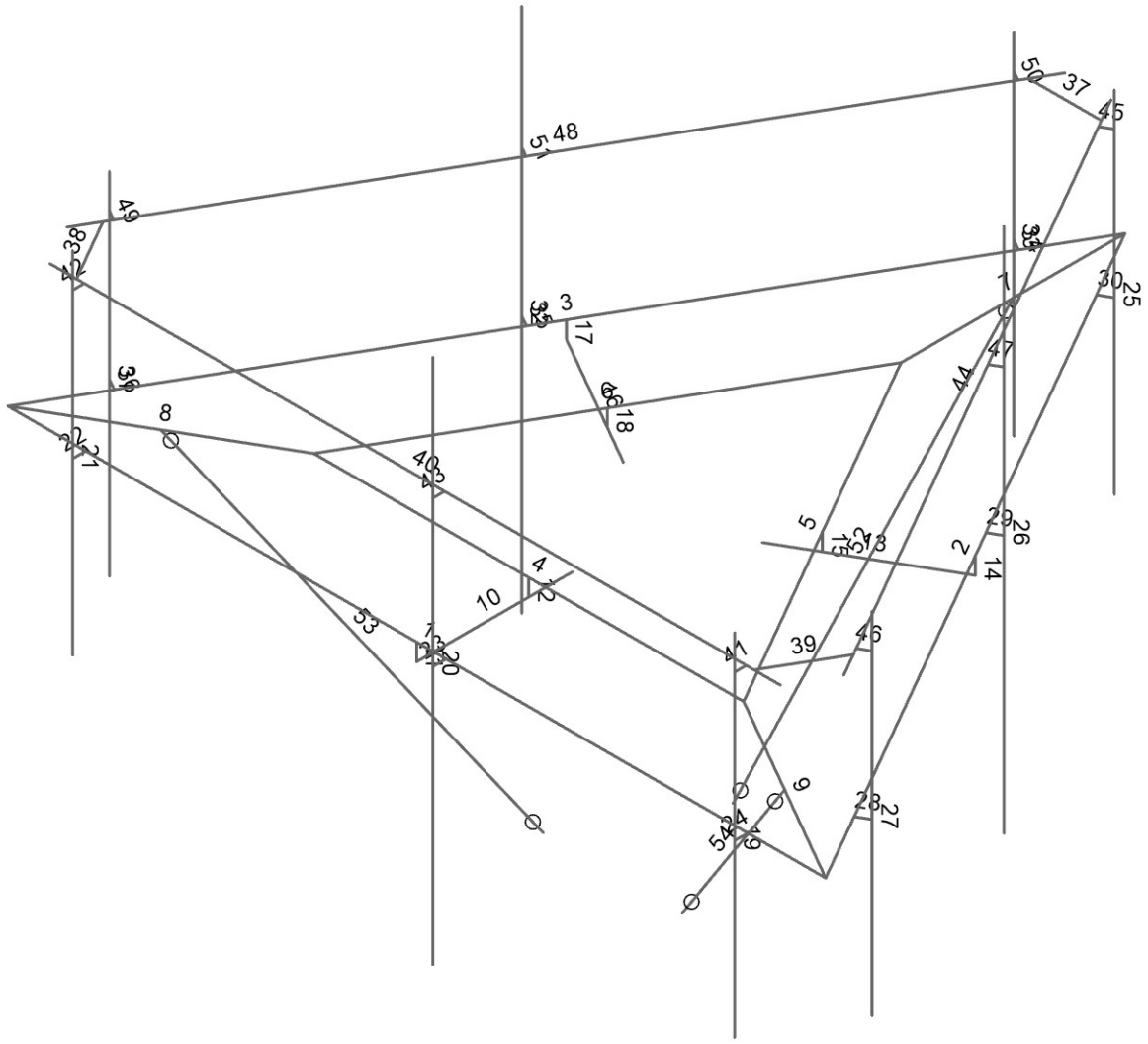
WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

B+T Group	876340 - Coe Hill	SK-1
APK		Aug 26, 2021
149862.006.01		149862_006_01_Coe Hill_CT.r3d





Envelope Only Solution

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APK		Aug 26, 2021
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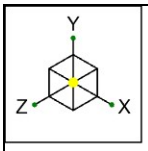

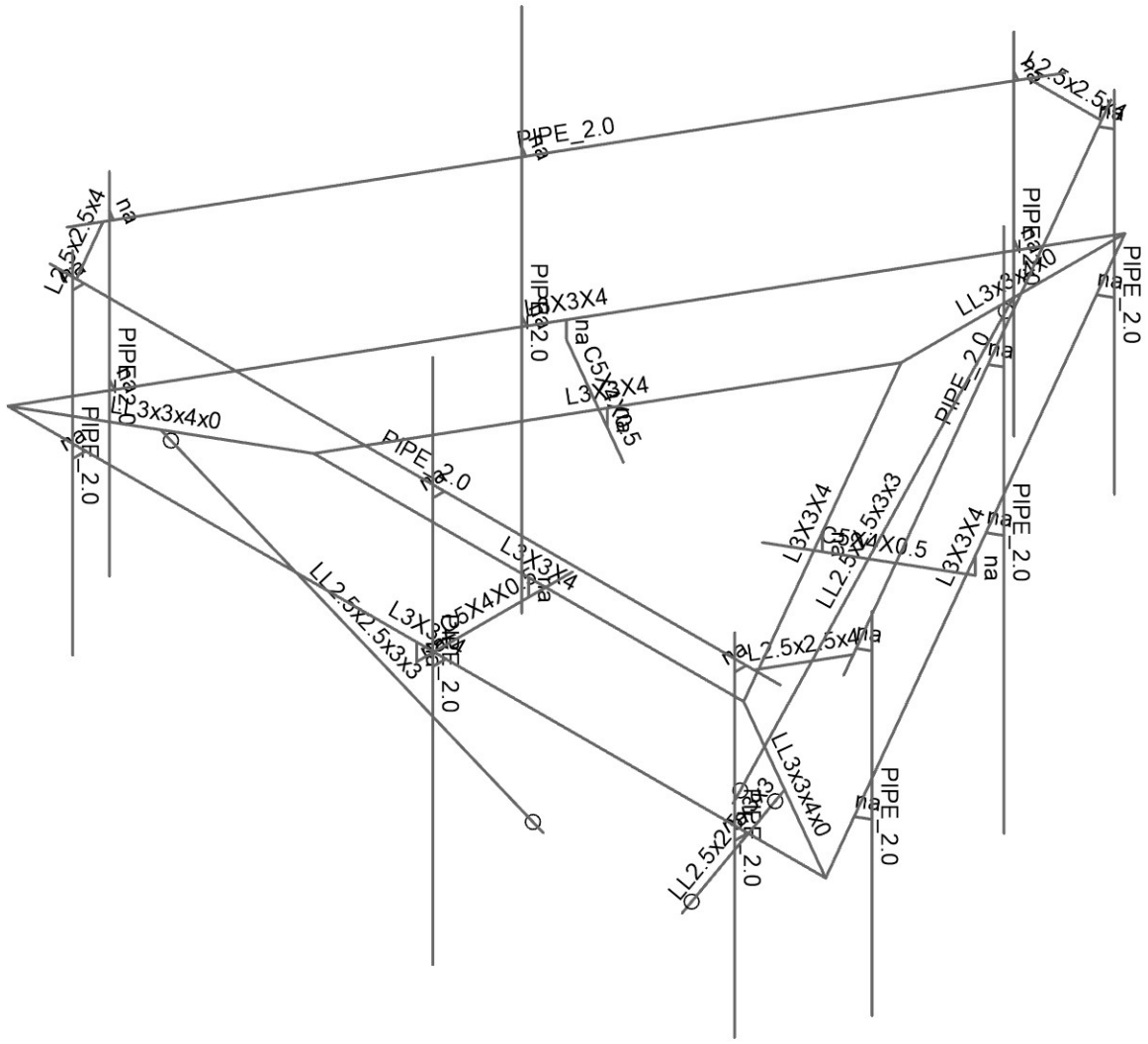

Envelope Only Solution

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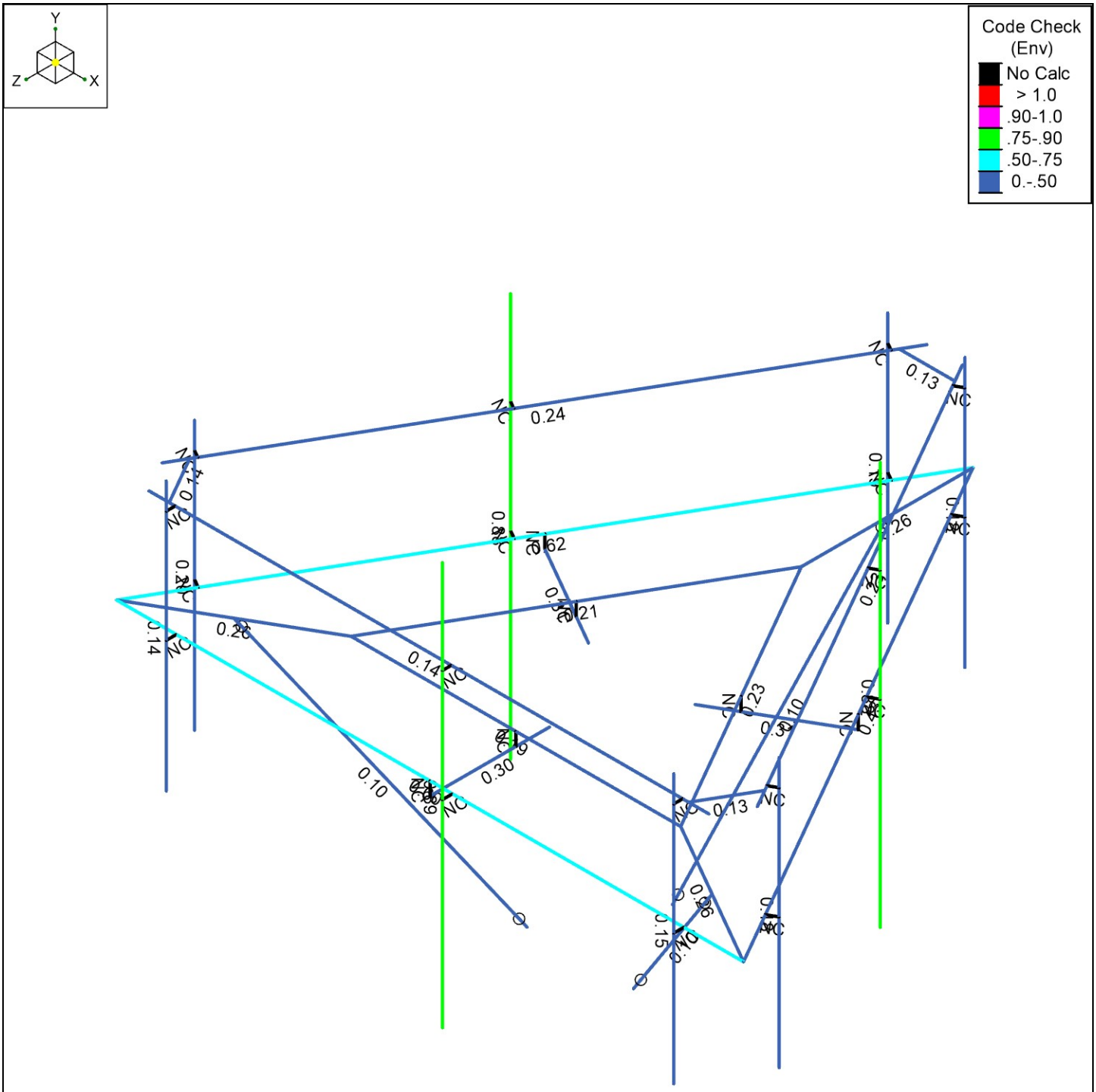
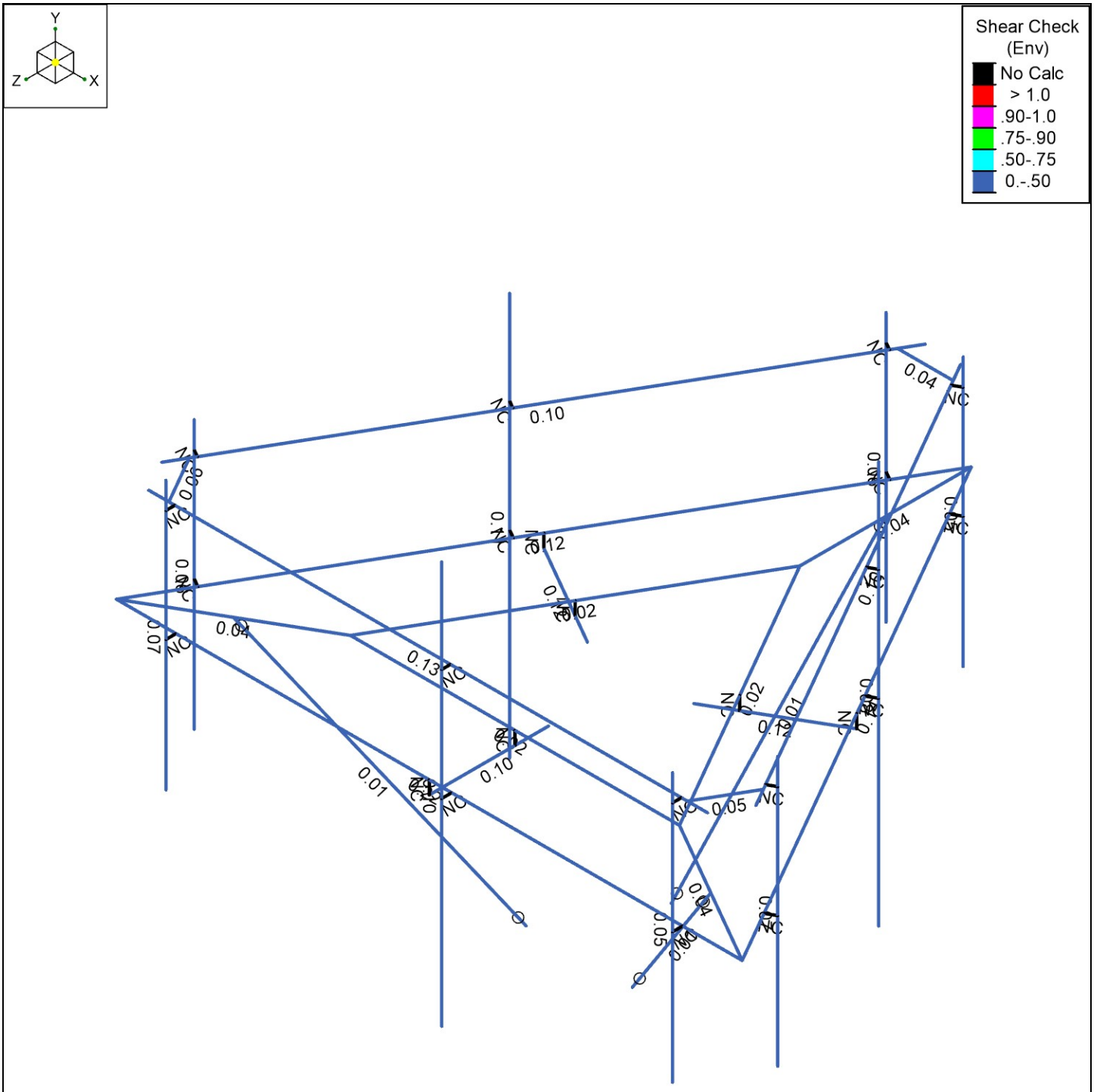
APK		Aug 26, 2021
149862.006.01		149862_006_01_Coe Hill_CT.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	876340 - Coe Hill	SK-4
APK		Aug 26, 2021
149862.006.01		149862_006_01_Coe Hill_CT.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	876340 - Coe Hill	SK-5
APK		Aug 26, 2021
149862.006.01		149862_006_01_Coe Hill_CT.r3d

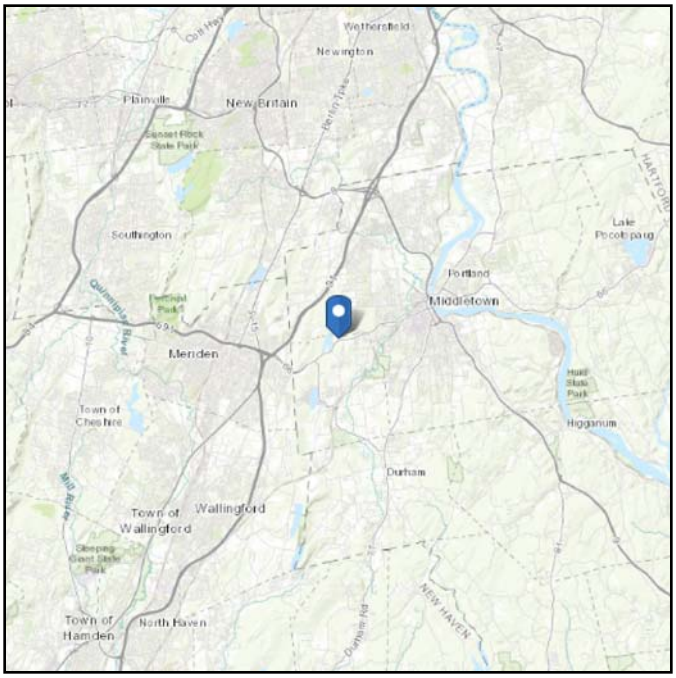
APPENDIX B

SOFTWARE INPUT CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-10	**Elevation:**	444.26 ft (NAVD 88)
Risk Category:	II	**Latitude:**	41.546
Soil Class:	D - Stiff Soil	**Longitude:**	-72.714972



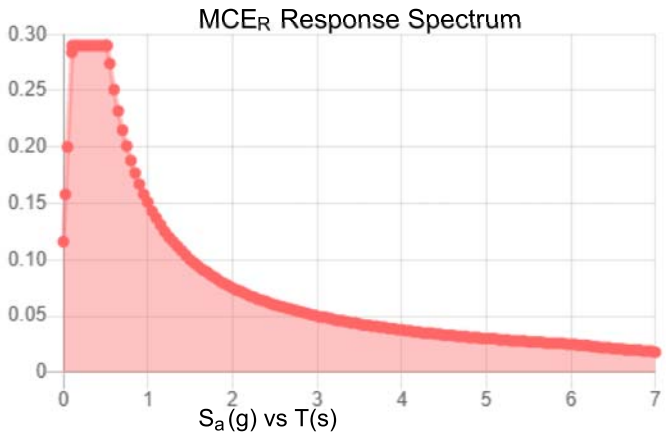
Seismic

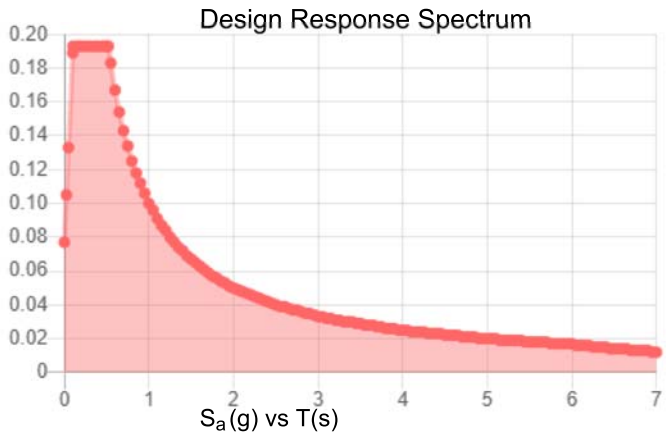
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.181	S_{DS} :	0.193
S_1 :	0.063	S_{D1} :	0.1
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.093
S_{MS} :	0.29	PGA_M :	0.148
S_{M1} :	0.151	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Thu Aug 26 2021

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Thu Aug 26 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.

PROJECT	**149862.006.01 - Coe Hill, CT**		**KSC**
SUBJECT	**Platform Mount Analysis**		
DATE	**08-26-21**	PAGE	OF

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

Tower Type		:	Monopole		
Ground Elevation	z_s	:	444	ft	[ASCE7 Hazard Tool]
Tower Height		:	133.50	ft	
Mount Elevation		:	119.00	ft	
Antenna Elevation		:	121.00	ft	
Crest Height		:	0	ft	
Risk Category		:	II		[Table 2-1]
Exposure Category		:	C		[Sec. 2.6.5.1.2]
Topography Category		:	1.00		[Sec. 2.6.6.2]
Wind Velocity	V	:	125	mph	[ASCE7 Hazard Tool]
Ice wind Velocity	V_i	:	50	mph	[ASCE7 Hazard Tool]
Service Velocity	V_s	:	30	mph	[ASCE7 Hazard Tool]
Base Ice thickness	t_i	:	1.50	in	[ASCE7 Hazard Tool]
Seismic Design Cat.		:	B		[ASCE7 Hazard Tool]
	S_S	:	0.18		
	S_1	:	0.06		
	S_{DS}	:	0.19		
	S_{D1}	:	0.10		

Gust Factor	G_h	:	1.00		[Sec. 16.6]
Pressure Coefficient	K_z	:	1.32		[Sec. 2.6.5.2]
Topography Factor	K_{zt}	:	1.00		[Sec. 2.6.6]
Elevation Factor	K_e	:	0.98		[Sec. 2.6.8]
Directionality Factor	K_d	:	0.95		[Sec. 16.6]
Shielding Factor	K_a	:	0.90		[Sec. 16.6]
Design Ice Thickness	t_{iz}	:	1.71	in	[Sec. 2.6.10]

Importance Factor	I_e	:	1		[Table 2-3]
Response Coefficient	C_s	:	0.097		[Sec. 2.7.7.1]
Amplification	A_s	:	2.565543		[Sec. 16.7]

	q_z	:	49.09	psf

PROJECT	**149862.006.01 - Coe Hill, CT**		**KSC**
SUBJECT	**Platform Mount Analysis**		
DATE	**08-26-21**	PAGE	OF

B+T GRP
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Tulsa, OK 74119
(918) 587-4630

Manufacturer	Model	Qty	Aspect Ratio	C_a flat/round	EPA_N (ft^2)	EPA_T (ft^2)	$EPA_{N\text{-}Ice}$ (ft^2)	$EPA_{T\text{-}Ice}$ (ft^2)	$F_{A\ No\ Ice\ (N)}$	$F_{A\ No\ Ice\ (T)}$	$F_{A\ Ice\ (N)}$	$F_{A\ Ice\ (T)}$
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMC	0.5	4.00	1.27	7.34	2.66	8.51	3.69	0.36	0.13	0.07	0.03
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMC	0.5	4.00	1.27	7.34	2.66	8.51	3.69	0.36	0.13	0.07	0.03
ERICSSON	RADIO 4460 B2/B25 B66_TMC	1	1.13	1.20	1.78	1.40	2.62	2.17	0.09	0.07	0.02	0.01
ERICSSON	Radio 4480_TM0V2	1	1.40	1.20	2.40	1.15	3.37	1.93	0.13	0.06	0.02	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.64	1.02	3.30	1.53	0.13	0.05	0.03	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.64	1.02	3.30	1.53	0.13	0.05	0.03	0.01
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMC	0.5	4.00	1.27	7.34	2.66	8.51	3.69	0.36	0.13	0.07	0.03
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMC	0.5	4.00	1.27	7.34	2.66	8.51	3.69	0.36	0.13	0.07	0.03
ERICSSON	RADIO 4460 B2/B25 B66_TMC	1	1.13	1.20	1.78	1.40	2.62	2.17	0.09	0.07	0.02	0.01
ERICSSON	Radio 4480_TM0V2	1	1.40	1.20	2.40	1.15	3.37	1.93	0.13	0.06	0.02	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.64	1.02	3.30	1.53	0.13	0.05	0.03	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.64	1.02	3.30	1.53	0.13	0.05	0.03	0.01
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMC	0.5	4.00	1.27	7.34	2.66	8.51	3.69	0.36	0.13	0.07	0.03
RFS/CELWAVE	APXVAALL24_43-U-NA20_TMC	0.5	4.00	1.27	7.34	2.66	8.51	3.69	0.36	0.13	0.07	0.03
ERICSSON	RADIO 4460 B2/B25 B66_TMC	1	1.13	1.20	1.78	1.40	2.62	2.17	0.09	0.07	0.02	0.01
ERICSSON	Radio 4480_TM0V2	1	1.40	1.20	2.40	1.15	3.37	1.93	0.13	0.06	0.02	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.64	1.02	3.30	1.53	0.13	0.05	0.03	0.01
ERICSSON	AIR6449 B41_T-MOBILE	0.5	1.61	1.20	2.64	1.02	3.30	1.53	0.13	0.05	0.03	0.01

PROJECT	**149862.006.01 - Coe Hill, CT**		**KSC**
SUBJECT	**Platform Mount Analysis**		
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B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Manufacturer	Model	Qty	Aspect Ratio	C_a flat/round	EPA_N (ft^2)	EPA_T (ft^2)	$EPA_{N\text{-}Ice}$ (ft^2)	$EPA_{T\text{-}Ice}$ (ft^2)	$F_{A\ No\ Ice\ (N)}$	$F_{A\ No\ Ice\ (T)}$	$F_{A\ Ice\ (N)}$	$F_{A\ Ice\ (T)}$

PROJECT	**149862.006.01 - Coe Hill, CT**		**KSC**
SUBJECT	**Platform Mount Analysis**		
DATE	**08-26-21**	PAGE 4	OF

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74159
(918) 587-4630

Manufacturer	Model	Qty	Aspect Ratio	C_a flat/round	EPA_N (ft^2)	EPA_T (ft^2)	$EPA_{N\text{-}Ice}$ (ft^2)	$EPA_{T\text{-}Ice}$ (ft^2)	$F_{A\ No\ Ice\ (N)}$	$F_{A\ No\ Ice\ (T)}$	$F_{A\ Ice\ (N)}$	$F_{A\ Ice\ (T)}$

PROJECT	**149862.006.01 - Coe Hill, CT**		**KSC**
SUBJECT	**Platform Mount Analysis**		
DATE	**08-26-21**	PAGE 4	OF

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74159
(918) 587-4630

Manufacturer	Model	Qty	Aspect Ratio	C_a flat/round	EPA_N (ft^2)	EPA_T (ft^2)	$EPA_{N\text{-}Ice}$ (ft^2)	$EPA_{T\text{-}Ice}$ (ft^2)	$F_{A\ No\ Ice\ (N)}$	$F_{A\ No\ Ice\ (T)}$	$F_{A\ Ice\ (N)}$	$F_{A\ Ice\ (T)}$

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	1	0	0	0	
2	2	0	0	-8.082904	
3	3	0	0	-4.24957	
4	4	-7	0	4.041452	
5	5	-3.680236	0	2.124785	
6	6	7	0	4.041452	
7	7	3.680236	0	2.124785	
8	8	0	-0.291667	1.374785	
9	9	0	0	4.041452	
10	10	0	-0.291667	4.041452	
11	11	0	0	2.124785	
12	12	0	-0.291667	2.124785	
13	13	1.190599	-0.291667	-0.687393	
14	14	3.5	0	-2.020726	
15	15	3.5	-0.291667	-2.020726	
16	16	1.840118	0	-1.062393	
17	17	1.840118	-0.291667	-1.062393	
18	18	-1.190599	-0.291667	-0.687393	
19	19	-3.5	0	-2.020726	
20	20	-3.5	-0.291667	-2.020726	
21	21	-1.840118	0	-1.062393	
22	22	-1.840118	-0.291667	-1.062393	
23	23	5.666667	3.083333	4.265619	
24	24	5.666667	-2.916667	4.265619	
25	25	0.5	4.583333	4.265619	
26	26	0.5	-4.416667	4.265619	
27	27	-5.666667	3.083333	4.265619	
28	28	-5.666667	-2.916667	4.265619	
29	29	-5.666667	0	4.041452	
30	30	-5.666667	0	4.265619	
31	31	0.5	0	4.041452	
32	32	0.5	0	4.265619	
33	33	5.666667	0	4.041452	
34	34	5.666667	0	4.265619	
35	35	0.860801	3.083333	-7.040287	
36	36	0.860801	-2.916667	-7.040287	
37	37	3.444134	4.583333	-2.565822	
38	38	3.444134	-4.416667	-2.565822	
39	39	6.527467	3.083333	2.774668	
40	40	6.527467	-2.916667	2.774668	
41	41	6.333333	0	2.886751	
42	42	6.527467	0	2.774668	
43	43	3.25	0	-2.453739	
44	44	3.444134	0	-2.565822	
45	45	0.666667	0	-6.928203	
46	46	0.860801	0	-7.040287	
47	47	-6.527467	3.083333	2.774668	
48	48	-6.527467	-2.916667	2.774668	
49	49	-3.944134	4.583333	-1.699797	
50	50	-3.944134	-4.416667	-1.699797	
51	51	-0.860801	3.083333	-7.040287	
52	52	-0.860801	-2.916667	-7.040287	
53	53	-0.666667	0	-6.928203	
54	54	-0.860801	0	-7.040287	
55	55	-3.75	0	-1.587713	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
56	56	-3.944134	0	-1.699797	
57	57	-6.333333	0	2.886751	
58	58	-6.527467	0	2.774668	
59	59	-0.62255	2.5	-7.056282	
60	60	0.62255	2.5	-7.056282	
61	61	-5.799645	2.5	4.067285	
62	62	-6.422195	2.5	2.988997	
63	63	6.422195	2.5	2.988997	
64	64	5.799645	2.5	4.067285	
65	65	-6.25	2.5	4.067285	
66	66	6.25	2.5	4.067285	
67	67	5.666667	2.5	4.265619	
68	68	5.666667	2.5	4.067285	
69	69	-5.666667	2.5	4.265619	
70	70	-5.666667	2.5	4.067285	
71	71	0.5	2.5	4.265619	
72	72	0.5	2.5	4.067285	
73	73	6.647372	2.5	3.379016	
74	74	0.397372	2.5	-7.446301	
75	75	0.860801	2.5	-7.040287	
76	76	0.689039	2.5	-6.94112	
77	77	6.527467	2.5	2.774668	
78	78	6.355706	2.5	2.873835	
79	79	3.444134	2.5	-2.565822	
80	80	3.272372	2.5	-2.466655	
81	81	-0.397372	2.5	-7.446301	
82	82	-6.647372	2.5	3.379016	
83	83	-6.527467	2.5	2.774668	
84	84	-6.355706	2.5	2.873835	
85	85	-0.860801	2.5	-7.040287	
86	86	-0.689039	2.5	-6.94112	
87	87	-3.944134	2.5	-1.699797	
88	88	-3.772372	2.5	-1.60063	
89	89	0	-5.1	-1.374785	
90	90	0	0	-6.166237	
91	91	-5.340118	0	3.083119	
92	92	-1.190599	-5.1	0.687393	
93	93	5.340118	0	3.083119	
94	94	1.190599	-5.1	0.687393	

Node Boundary Conditions

	Node 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	89	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	8	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	18	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	13	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	92	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	94	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e^{5}°F^{-1}]	Density [k/ft^{3}]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2

Hot Rolled Steel Properties (Continued)

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	Yield [ksi]	Ry	Fu [ksi]	Rt
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	MF-H1	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical	1.44	1.23	1.23	0.031
2	MF-SA1	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical	1.44	1.23	1.23	0.031
3	MF-SA2	LL3x3x4x0	Beam	Double Angle (No Gap)	A36 Gr.36	Typical	2.88	4.5	2.46	0.063
4	MF-SR1	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
5	MF-P1	PIPE_2.0	Column	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
6	MF-C1	C5X4X0.5	Beam	Channel	A36 Gr.36	Typical	6	9.458	23	0.461
7	MF-CA1	L2.5x2.5x4	Beam	Single Angle	A36 Gr.36	Typical	1.19	0.692	0.692	0.026
8	Kicker	LL2.5x2.5x3x3	Beam	Double Angle (3/8 Gap)	A36 Gr.36	Typical	1.8	2.46	1.07	0.023

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	4	6	270	MF-H1	Beam	Single Angle	A36 Gr.36	Typical
2	2	6	2	270	MF-H1	Beam	Single Angle	A36 Gr.36	Typical
3	3	2	4	270	MF-H1	Beam	Single Angle	A36 Gr.36	Typical
4	4	5	7		MF-SA1	Beam	Single Angle	A36 Gr.36	Typical
5	5	7	3		MF-SA1	Beam	Single Angle	A36 Gr.36	Typical
6	6	3	5		MF-SA1	Beam	Single Angle	A36 Gr.36	Typical
7	7	2	3	180	MF-SA2	Beam	Double Angle (No Gap)	A36 Gr.36	Typical
8	8	4	5	180	MF-SA2	Beam	Double Angle (No Gap)	A36 Gr.36	Typical
9	9	6	7	180	MF-SA2	Beam	Double Angle (No Gap)	A36 Gr.36	Typical
10	10	10	8	90	MF-C1	Beam	Channel	A36 Gr.36	Typical
11	11	9	10		RIGID	None	None	RIGID	Typical
12	12	11	12		RIGID	None	None	RIGID	Typical
13	13	15	13	90	MF-C1	Beam	Channel	A36 Gr.36	Typical
14	14	14	15		RIGID	None	None	RIGID	Typical
15	15	16	17		RIGID	None	None	RIGID	Typical
16	16	20	18	90	MF-C1	Beam	Channel	A36 Gr.36	Typical
17	17	19	20		RIGID	None	None	RIGID	Typical
18	18	21	22		RIGID	None	None	RIGID	Typical
19	19	23	24		MF-P1	Column	Pipe	A53 Gr.B	Typical
20	20	25	26		MF-P1	Column	Pipe	A53 Gr.B	Typical
21	21	27	28		MF-P1	Column	Pipe	A53 Gr.B	Typical
22	22	29	30		RIGID	None	None	RIGID	Typical
23	23	31	32		RIGID	None	None	RIGID	Typical
24	24	33	34		RIGID	None	None	RIGID	Typical
25	25	35	36		MF-P1	Column	Pipe	A53 Gr.B	Typical
26	26	37	38		MF-P1	Column	Pipe	A53 Gr.B	Typical
27	27	39	40		MF-P1	Column	Pipe	A53 Gr.B	Typical
28	28	41	42		RIGID	None	None	RIGID	Typical
29	29	43	44		RIGID	None	None	RIGID	Typical
30	30	45	46		RIGID	None	None	RIGID	Typical
31	31	47	48		MF-P1	Column	Pipe	A53 Gr.B	Typical
32	32	49	50		MF-P1	Column	Pipe	A53 Gr.B	Typical
33	33	51	52		MF-P1	Column	Pipe	A53 Gr.B	Typical
34	34	53	54		RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
35	35	55	56		RIGID	None	None	RIGID	Typical
36	36	57	58		RIGID	None	None	RIGID	Typical
37	37	59	60	180	MF-CA1	Beam	Single Angle	A36 Gr.36	Typical
38	38	61	62	180	MF-CA1	Beam	Single Angle	A36 Gr.36	Typical
39	39	63	64	180	MF-CA1	Beam	Single Angle	A36 Gr.36	Typical
40	40	65	66		MF-SR1	Beam	Pipe	A53 Gr.B	Typical
41	41	67	68		RIGID	None	None	RIGID	Typical
42	42	69	70		RIGID	None	None	RIGID	Typical
43	43	71	72		RIGID	None	None	RIGID	Typical
44	44	73	74		MF-SR1	Beam	Pipe	A53 Gr.B	Typical
45	45	75	76		RIGID	None	None	RIGID	Typical
46	46	77	78		RIGID	None	None	RIGID	Typical
47	47	79	80		RIGID	None	None	RIGID	Typical
48	48	81	82		MF-SR1	Beam	Pipe	A53 Gr.B	Typical
49	49	83	84		RIGID	None	None	RIGID	Typical
50	50	85	86		RIGID	None	None	RIGID	Typical
51	51	87	88		RIGID	None	None	RIGID	Typical
52	52	90	89		Kicker	Beam	Double Angle (3/8 Gap)	A36 Gr.36	Typical
53	53	91	92		Kicker	Beam	Double Angle (3/8 Gap)	A36 Gr.36	Typical
54	54	93	94		Kicker	Beam	Double Angle (3/8 Gap)	A36 Gr.36	Typical

Member Advanced Data

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
1	1			Yes	N/A	None
2	2			Yes	N/A	None
3	3			Yes	N/A	None
4	4			Yes	N/A	None
5	5			Yes	N/A	None
6	6			Yes	N/A	None
7	7			Yes	N/A	None
8	8			Yes	N/A	None
9	9			Yes	N/A	None
10	10			Yes	N/A	None
11	11			Yes	** NA **	None
12	12			Yes	** NA **	None
13	13			Yes	N/A	None
14	14			Yes	** NA **	None
15	15			Yes	** NA **	None
16	16			Yes	N/A	None
17	17			Yes	** NA **	None
18	18			Yes	** NA **	None
19	19			Yes	** NA **	None
20	20			Yes	** NA **	None
21	21			Yes	** NA **	None
22	22			Yes	** NA **	None
23	23			Yes	** NA **	None
24	24			Yes	** NA **	None
25	25			Yes	** NA **	None
26	26			Yes	** NA **	None
27	27			Yes	** NA **	None
28	28			Yes	** NA **	None
29	29			Yes	** NA **	None
30	30			Yes	** NA **	None
31	31			Yes	** NA **	None
32	32			Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
33	33			Yes	** NA **	None
34	34			Yes	** NA **	None
35	35			Yes	** NA **	None
36	36			Yes	** NA **	None
37	37			Yes	N/A	None
38	38			Yes	N/A	None
39	39			Yes	N/A	None
40	40			Yes	N/A	None
41	41			Yes	** NA **	None
42	42			Yes	** NA **	None
43	43			Yes	** NA **	None
44	44			Yes	N/A	None
45	45			Yes	** NA **	None
46	46			Yes	** NA **	None
47	47			Yes	** NA **	None
48	48			Yes	N/A	None
49	49			Yes	** NA **	None
50	50			Yes	** NA **	None
51	51			Yes	** NA **	None
52	52	BenPIN	BenPIN	Yes	Default	None
53	53	BenPIN	BenPIN	Yes	Default	None
54	54	BenPIN	BenPIN	Yes	Default	None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
1	1	MF-H1	14	Lbyy	Lateral
2	2	MF-H1	14	Lbyy	Lateral
3	3	MF-H1	14	Lbyy	Lateral
4	4	MF-SA1	7.36	Lbyy	Lateral
5	5	MF-SA1	7.36	Lbyy	Lateral
6	6	MF-SA1	7.36	Lbyy	Lateral
7	7	MF-SA2	3.833	Lbyy	Lateral
8	8	MF-SA2	3.833	Lbyy	Lateral
9	9	MF-SA2	3.833	Lbyy	Lateral
10	10	MF-C1	2.667	Lbyy	Lateral
11	13	MF-C1	2.667	Lbyy	Lateral
12	16	MF-C1	2.667	Lbyy	Lateral
13	19	MF-P1	6	Lbyy	Lateral
14	20	MF-P1	9	Lbyy	Lateral
15	21	MF-P1	6	Lbyy	Lateral
16	25	MF-P1	6	Lbyy	Lateral
17	26	MF-P1	9	Lbyy	Lateral
18	27	MF-P1	6	Lbyy	Lateral
19	31	MF-P1	6	Lbyy	Lateral
20	32	MF-P1	9	Lbyy	Lateral
21	33	MF-P1	6	Lbyy	Lateral
22	37	MF-CA1	1.245	Lbyy	Lateral
23	38	MF-CA1	1.245	Lbyy	Lateral
24	39	MF-CA1	1.245	Lbyy	Lateral
25	40	MF-SR1	12.5	Lbyy	Lateral
26	44	MF-SR1	12.5	Lbyy	Lateral
27	48	MF-SR1	12.5	Lbyy	Lateral
28	52	Kicker	6.998	Lbyy	Lateral
29	53	Kicker	6.998	Lbyy	Lateral
30	54	Kicker	6.998	Lbyy	Lateral

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	Y	-0.075	%5
2	20	Y	-0.075	%90
3	20	Y	-0.109	%35
4	20	Y	-0.081	%75
5	20	Y	0	0
6	21	Y	-0.057	%5
7	21	Y	-0.057	%50
8	21	Y	0	0
9	21	Y	0	0
10	21	Y	0	0
11	32	Y	-0.075	%5
12	32	Y	-0.075	%90
13	32	Y	-0.109	%35
14	32	Y	-0.081	%75
15	32	Y	0	0
16	33	Y	-0.057	%5
17	33	Y	-0.057	%50
18	33	Y	0	0
19	33	Y	0	0
20	33	Y	0	0
21	26	Y	-0.075	%5
22	26	Y	-0.075	%90
23	26	Y	-0.109	%35
24	26	Y	-0.081	%75
25	26	Y	0	0
26	27	Y	-0.057	%5
27	27	Y	-0.057	%50
28	27	Y	0	0
29	27	Y	0	0
30	27	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	Z	-0.361	%5
2	20	Z	-0.361	%90
3	20	Z	-0.095	%35
4	20	Z	-0.128	%75
5	20	Z	0	0
6	21	Z	-0.13	%5
7	21	Z	-0.13	%50
8	21	Z	0	0
9	21	Z	0	0
10	21	Z	0	0
11	32	Z	-0.361	%5
12	32	Z	-0.361	%90
13	32	Z	-0.095	%35
14	32	Z	-0.128	%75
15	32	Z	0	0
16	33	Z	-0.13	%5
17	33	Z	-0.13	%50
18	33	Z	0	0
19	33	Z	0	0
20	33	Z	0	0
21	26	Z	-0.361	%5

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
22	26	Z	-0.361	%90
23	26	Z	-0.095	%35
24	26	Z	-0.128	%75
25	26	Z	0	0
26	27	Z	-0.13	%5
27	27	Z	-0.13	%50
28	27	Z	0	0
29	27	Z	0	0
30	27	Z	0	0

Member Point Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	X	-0.131	%5
2	20	X	-0.131	%90
3	20	X	-0.075	%35
4	20	X	-0.061	%75
5	20	X	0	0
6	21	X	-0.05	%5
7	21	X	-0.05	%50
8	21	X	0	0
9	21	X	0	0
10	21	X	0	0
11	32	X	-0.131	%5
12	32	X	-0.131	%90
13	32	X	-0.075	%35
14	32	X	-0.061	%75
15	32	X	0	0
16	33	X	-0.05	%5
17	33	X	-0.05	%50
18	33	X	0	0
19	33	X	0	0
20	33	X	0	0
21	26	X	-0.131	%5
22	26	X	-0.131	%90
23	26	X	-0.075	%35
24	26	X	-0.061	%75
25	26	X	0	0
26	27	X	-0.05	%5
27	27	X	-0.05	%50
28	27	X	0	0
29	27	X	0	0
30	27	X	0	0

Member Point Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	Z	-0.067	%5
2	20	Z	-0.067	%90
3	20	Z	-0.015	%35
4	20	Z	-0.02	%75
5	20	Z	0	0
6	21	Z	-0.026	%5
7	21	Z	-0.026	%50
8	21	Z	0	0

Member Point Loads (BLC 4 : 0 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
9	21	Z	0	0
10	21	Z	0	0
11	32	Z	-0.067	%5
12	32	Z	-0.067	%90
13	32	Z	-0.015	%35
14	32	Z	-0.02	%75
15	32	Z	0	0
16	33	Z	-0.026	%5
17	33	Z	-0.026	%50
18	33	Z	0	0
19	33	Z	0	0
20	33	Z	0	0
21	26	Z	-0.067	%5
22	26	Z	-0.067	%90
23	26	Z	-0.015	%35
24	26	Z	-0.02	%75
25	26	Z	0	0
26	27	Z	-0.026	%5
27	27	Z	-0.026	%50
28	27	Z	0	0
29	27	Z	0	0
30	27	Z	0	0

Member Point Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	X	-0.029	%5
2	20	X	-0.029	%90
3	20	X	-0.012	%35
4	20	X	-0.01	%75
5	20	X	0	0
6	21	X	-0.012	%5
7	21	X	-0.012	%50
8	21	X	0	0
9	21	X	0	0
10	21	X	0	0
11	32	X	-0.029	%5
12	32	X	-0.029	%90
13	32	X	-0.012	%35
14	32	X	-0.01	%75
15	32	X	0	0
16	33	X	-0.012	%5
17	33	X	-0.012	%50
18	33	X	0	0
19	33	X	0	0
20	33	X	0	0
21	26	X	-0.029	%5
22	26	X	-0.029	%90
23	26	X	-0.012	%35
24	26	X	-0.01	%75
25	26	X	0	0
26	27	X	-0.012	%5
27	27	X	-0.012	%50
28	27	X	0	0
29	27	X	0	0
30	27	X	0	0

Member Point Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	Z	-0.021	%5
2	20	Z	-0.021	%90
3	20	Z	-0.006	%35
4	20	Z	-0.007	%75
5	20	Z	0	0
6	21	Z	-0.008	%5
7	21	Z	-0.008	%50
8	21	Z	0	0
9	21	Z	0	0
10	21	Z	0	0
11	32	Z	-0.021	%5
12	32	Z	-0.021	%90
13	32	Z	-0.006	%35
14	32	Z	-0.007	%75
15	32	Z	0	0
16	33	Z	-0.008	%5
17	33	Z	-0.008	%50
18	33	Z	0	0
19	33	Z	0	0
20	33	Z	0	0
21	26	Z	-0.021	%5
22	26	Z	-0.021	%90
23	26	Z	-0.006	%35
24	26	Z	-0.007	%75
25	26	Z	0	0
26	27	Z	-0.008	%5
27	27	Z	-0.008	%50
28	27	Z	0	0
29	27	Z	0	0
30	27	Z	0	0

Member Point Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	X	-0.008	%5
2	20	X	-0.008	%90
3	20	X	-0.004	%35
4	20	X	-0.004	%75
5	20	X	0	0
6	21	X	-0.003	%5
7	21	X	-0.003	%50
8	21	X	0	0
9	21	X	0	0
10	21	X	0	0
11	32	X	-0.008	%5
12	32	X	-0.008	%90
13	32	X	-0.004	%35
14	32	X	-0.004	%75
15	32	X	0	0
16	33	X	-0.003	%5
17	33	X	-0.003	%50
18	33	X	0	0
19	33	X	0	0
20	33	X	0	0
21	26	X	-0.008	%5

Member Point Loads (BLC 7 : 90 Wind - Service) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
22	26	X	-0.008	%90
23	26	X	-0.004	%35
24	26	X	-0.004	%75
25	26	X	0	0
26	27	X	-0.003	%5
27	27	X	-0.003	%50
28	27	X	0	0
29	27	X	0	0
30	27	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	Y	-0.258	%5
2	20	Y	-0.258	%90
3	20	Y	-0.062	%35
4	20	Y	-0.073	%75
5	20	Y	0	0
6	21	Y	-0.123	%5
7	21	Y	-0.123	%50
8	21	Y	0	0
9	21	Y	0	0
10	21	Y	0	0
11	32	Y	-0.258	%5
12	32	Y	-0.258	%90
13	32	Y	-0.062	%35
14	32	Y	-0.073	%75
15	32	Y	0	0
16	33	Y	-0.123	%5
17	33	Y	-0.123	%50
18	33	Y	0	0
19	33	Y	0	0
20	33	Y	0	0
21	26	Y	-0.258	%5
22	26	Y	-0.258	%90
23	26	Y	-0.062	%35
24	26	Y	-0.073	%75
25	26	Y	0	0
26	27	Y	-0.123	%5
27	27	Y	-0.123	%50
28	27	Y	0	0
29	27	Y	0	0
30	27	Y	0	0

Member Point Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	Z	-0.037	%5
2	20	Z	-0.037	%90
3	20	Z	-0.027	%35
4	20	Z	-0.02	%75
5	20	Z	0	0
6	21	Z	-0.028	%5
7	21	Z	-0.028	%50
8	21	Z	0	0

Member Point Loads (BLC 9 : 0 Seismic) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
9	21	Z	0	0
10	21	Z	0	0
11	32	Z	-0.037	%5
12	32	Z	-0.037	%90
13	32	Z	-0.027	%35
14	32	Z	-0.02	%75
15	32	Z	0	0
16	33	Z	-0.028	%5
17	33	Z	-0.028	%50
18	33	Z	0	0
19	33	Z	0	0
20	33	Z	0	0
21	26	Z	-0.037	%5
22	26	Z	-0.037	%90
23	26	Z	-0.027	%35
24	26	Z	-0.02	%75
25	26	Z	0	0
26	27	Z	-0.028	%5
27	27	Z	-0.028	%50
28	27	Z	0	0
29	27	Z	0	0
30	27	Z	0	0

Member Point Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	X	-0.037	%5
2	20	X	-0.037	%90
3	20	X	-0.027	%35
4	20	X	-0.02	%75
5	20	X	0	0
6	21	X	-0.028	%5
7	21	X	-0.028	%50
8	21	X	0	0
9	21	X	0	0
10	21	X	0	0
11	32	X	-0.037	%5
12	32	X	-0.037	%90
13	32	X	-0.027	%35
14	32	X	-0.02	%75
15	32	X	0	0
16	33	X	-0.028	%5
17	33	X	-0.028	%50
18	33	X	0	0
19	33	X	0	0
20	33	X	0	0
21	26	X	-0.037	%5
22	26	X	-0.037	%90
23	26	X	-0.027	%35
24	26	X	-0.02	%75
25	26	X	0	0
26	27	X	-0.028	%5
27	27	X	-0.028	%50
28	27	X	0	0
29	27	X	0	0
30	27	X	0	0

Member Point Loads (BLC 15 : Maint LL 1)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	1	Y	-0.25	%5

Member Point Loads (BLC 16 : Maint LL 2)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	40	Y	-0.25	%5

Member Point Loads (BLC 17 : Maint LL 3)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	2	Y	-0.25	%5

Member Point Loads (BLC 18 : Maint LL 4)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	44	Y	-0.25	%5

Member Point Loads (BLC 19 : Maint LL 5)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	3	Y	-0.25	%5

Member Point Loads (BLC 20 : Maint LL 6)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	48	Y	-0.25	%5

Member Point Loads (BLC 21 : Maint LL 7)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	1	Y	-0.25	%95

Member Point Loads (BLC 22 : Maint LL 8)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	40	Y	-0.25	%95

Member Point Loads (BLC 23 : Maint LL 9)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	2	Y	-0.25	%95

Member Point Loads (BLC 24 : Maint LL 10)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	44	Y	-0.25	%95

Member Point Loads (BLC 25 : Maint LL 11)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	3	Y	-0.25	%95

Member Point Loads (BLC 26 : Maint LL 12)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	48	Y	-0.25	%95

Member Point Loads (BLC 27 : Maint LL 13)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	10	Y	-0.25	%10

Member Point Loads (BLC 28 : Maint LL 14)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	16	Y	-0.25	%10

Member Point Loads (BLC 29 : Maint LL 15)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	13	Y	-0.25	%10

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.022	-0.022	0	%100
2	2	Z	-0.022	-0.022	0	%100
3	3	Z	-0.022	-0.022	0	%100
4	4	Z	-0.022	-0.022	0	%100
5	5	Z	-0.022	-0.022	0	%100
6	6	Z	-0.022	-0.022	0	%100
7	7	Z	-0.018	-0.018	0	%100
8	8	Z	-0.018	-0.018	0	%100
9	9	Z	-0.018	-0.018	0	%100
10	10	Z	-0.021	-0.021	0	%100
11	13	Z	-0.021	-0.021	0	%100
12	16	Z	-0.021	-0.021	0	%100
13	19	Z	-0.011	-0.011	0	%100
14	20	Z	-0.011	-0.011	0	%100
15	21	Z	-0.011	-0.011	0	%100
16	25	Z	-0.011	-0.011	0	%100
17	26	Z	-0.011	-0.011	0	%100
18	27	Z	-0.011	-0.011	0	%100
19	31	Z	-0.011	-0.011	0	%100
20	32	Z	-0.011	-0.011	0	%100
21	33	Z	-0.011	-0.011	0	%100
22	37	Z	-0.012	-0.012	0	%100
23	38	Z	-0.012	-0.012	0	%100
24	39	Z	-0.012	-0.012	0	%100
25	40	Z	-0.011	-0.011	0	%100
26	44	Z	-0.011	-0.011	0	%100
27	48	Z	-0.011	-0.011	0	%100
28	52	Z	-0.032	-0.032	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
29	53	Z	-0.032	-0.032	0	%100
30	54	Z	-0.032	-0.032	0	%100

Member Distributed Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.022	-0.022	0	%100
2	2	X	-0.022	-0.022	0	%100
3	3	X	-0.022	-0.022	0	%100
4	4	X	-0.022	-0.022	0	%100
5	5	X	-0.022	-0.022	0	%100
6	6	X	-0.022	-0.022	0	%100
7	7	X	-0.018	-0.018	0	%100
8	8	X	-0.018	-0.018	0	%100
9	9	X	-0.018	-0.018	0	%100
10	10	X	-0.021	-0.021	0	%100
11	13	X	-0.021	-0.021	0	%100
12	16	X	-0.021	-0.021	0	%100
13	19	X	-0.011	-0.011	0	%100
14	20	X	-0.011	-0.011	0	%100
15	21	X	-0.011	-0.011	0	%100
16	25	X	-0.011	-0.011	0	%100
17	26	X	-0.011	-0.011	0	%100
18	27	X	-0.011	-0.011	0	%100
19	31	X	-0.011	-0.011	0	%100
20	32	X	-0.011	-0.011	0	%100
21	33	X	-0.011	-0.011	0	%100
22	37	X	-0.012	-0.012	0	%100
23	38	X	-0.012	-0.012	0	%100
24	39	X	-0.012	-0.012	0	%100
25	40	X	-0.011	-0.011	0	%100
26	44	X	-0.011	-0.011	0	%100
27	48	X	-0.011	-0.011	0	%100
28	52	X	-0.032	-0.032	0	%100
29	53	X	-0.032	-0.032	0	%100
30	54	X	-0.032	-0.032	0	%100

Member Distributed Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.008	-0.008	0	%100
2	2	Z	-0.008	-0.008	0	%100
3	3	Z	-0.008	-0.008	0	%100
4	4	Z	-0.008	-0.008	0	%100
5	5	Z	-0.008	-0.008	0	%100
6	6	Z	-0.008	-0.008	0	%100
7	7	Z	-0.007	-0.007	0	%100
8	8	Z	-0.007	-0.007	0	%100
9	9	Z	-0.007	-0.007	0	%100
10	10	Z	-0.007	-0.007	0	%100
11	13	Z	-0.007	-0.007	0	%100
12	16	Z	-0.007	-0.007	0	%100
13	19	Z	-0.002	-0.002	0	%100
14	20	Z	-0.002	-0.002	0	%100
15	21	Z	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 4 : 0 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
16	25	Z	-0.002	-0.002	0	%100
17	26	Z	-0.002	-0.002	0	%100
18	27	Z	-0.002	-0.002	0	%100
19	31	Z	-0.002	-0.002	0	%100
20	32	Z	-0.002	-0.002	0	%100
21	33	Z	-0.002	-0.002	0	%100
22	37	Z	-0.006	-0.006	0	%100
23	38	Z	-0.006	-0.006	0	%100
24	39	Z	-0.006	-0.006	0	%100
25	40	Z	-0.002	-0.002	0	%100
26	44	Z	-0.002	-0.002	0	%100
27	48	Z	-0.002	-0.002	0	%100
28	52	Z	-0.009	-0.009	0	%100
29	53	Z	-0.009	-0.009	0	%100
30	54	Z	-0.009	-0.009	0	%100

Member Distributed Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.008	-0.008	0	%100
2	2	X	-0.008	-0.008	0	%100
3	3	X	-0.008	-0.008	0	%100
4	4	X	-0.008	-0.008	0	%100
5	5	X	-0.008	-0.008	0	%100
6	6	X	-0.008	-0.008	0	%100
7	7	X	-0.007	-0.007	0	%100
8	8	X	-0.007	-0.007	0	%100
9	9	X	-0.007	-0.007	0	%100
10	10	X	-0.007	-0.007	0	%100
11	13	X	-0.007	-0.007	0	%100
12	16	X	-0.007	-0.007	0	%100
13	19	X	-0.002	-0.002	0	%100
14	20	X	-0.002	-0.002	0	%100
15	21	X	-0.002	-0.002	0	%100
16	25	X	-0.002	-0.002	0	%100
17	26	X	-0.002	-0.002	0	%100
18	27	X	-0.002	-0.002	0	%100
19	31	X	-0.002	-0.002	0	%100
20	32	X	-0.002	-0.002	0	%100
21	33	X	-0.002	-0.002	0	%100
22	37	X	-0.006	-0.006	0	%100
23	38	X	-0.006	-0.006	0	%100
24	39	X	-0.006	-0.006	0	%100
25	40	X	-0.002	-0.002	0	%100
26	44	X	-0.002	-0.002	0	%100
27	48	X	-0.002	-0.002	0	%100
28	52	X	-0.009	-0.009	0	%100
29	53	X	-0.009	-0.009	0	%100
30	54	X	-0.009	-0.009	0	%100

Member Distributed Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.001	-0.001	0	%100
2	2	Z	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 6 : 0 Wind - Service) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
3	3	Z	-0.001	-0.001	0	%100
4	4	Z	-0.001	-0.001	0	%100
5	5	Z	-0.001	-0.001	0	%100
6	6	Z	-0.001	-0.001	0	%100
7	7	Z	-0.001	-0.001	0	%100
8	8	Z	-0.001	-0.001	0	%100
9	9	Z	-0.001	-0.001	0	%100
10	10	Z	-0.001	-0.001	0	%100
11	13	Z	-0.001	-0.001	0	%100
12	16	Z	-0.001	-0.001	0	%100
13	19	Z	-0.0003	-0.0003	0	%100
14	20	Z	-0.0003	-0.0003	0	%100
15	21	Z	-0.0003	-0.0003	0	%100
16	25	Z	-0.0003	-0.0003	0	%100
17	26	Z	-0.0003	-0.0003	0	%100
18	27	Z	-0.0003	-0.0003	0	%100
19	31	Z	-0.0003	-0.0003	0	%100
20	32	Z	-0.0003	-0.0003	0	%100
21	33	Z	-0.0003	-0.0003	0	%100
22	37	Z	-0.0007	-0.0007	0	%100
23	38	Z	-0.0007	-0.0007	0	%100
24	39	Z	-0.0007	-0.0007	0	%100
25	40	Z	-0.0003	-0.0003	0	%100
26	44	Z	-0.0003	-0.0003	0	%100
27	48	Z	-0.0003	-0.0003	0	%100
28	52	Z	-0.002	-0.002	0	%100
29	53	Z	-0.002	-0.002	0	%100
30	54	Z	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.001	-0.001	0	%100
2	2	X	-0.001	-0.001	0	%100
3	3	X	-0.001	-0.001	0	%100
4	4	X	-0.001	-0.001	0	%100
5	5	X	-0.001	-0.001	0	%100
6	6	X	-0.001	-0.001	0	%100
7	7	X	-0.001	-0.001	0	%100
8	8	X	-0.001	-0.001	0	%100
9	9	X	-0.001	-0.001	0	%100
10	10	X	-0.001	-0.001	0	%100
11	13	X	-0.001	-0.001	0	%100
12	16	X	-0.001	-0.001	0	%100
13	19	X	-0.0003	-0.0003	0	%100
14	20	X	-0.0003	-0.0003	0	%100
15	21	X	-0.0003	-0.0003	0	%100
16	25	X	-0.0003	-0.0003	0	%100
17	26	X	-0.0003	-0.0003	0	%100
18	27	X	-0.0003	-0.0003	0	%100
19	31	X	-0.0003	-0.0003	0	%100
20	32	X	-0.0003	-0.0003	0	%100
21	33	X	-0.0003	-0.0003	0	%100
22	37	X	-0.0007	-0.0007	0	%100
23	38	X	-0.0007	-0.0007	0	%100
24	39	X	-0.0007	-0.0007	0	%100

Member Distributed Loads (BLC 7 : 90 Wind - Service) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
25	40	X	-0.0003	-0.0003	0	%100
26	44	X	-0.0003	-0.0003	0	%100
27	48	X	-0.0003	-0.0003	0	%100
28	52	X	-0.002	-0.002	0	%100
29	53	X	-0.002	-0.002	0	%100
30	54	X	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 8 : Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.012	-0.012	0	%100
2	2	Y	-0.012	-0.012	0	%100
3	3	Y	-0.012	-0.012	0	%100
4	4	Y	-0.012	-0.012	0	%100
5	5	Y	-0.012	-0.012	0	%100
6	6	Y	-0.012	-0.012	0	%100
7	7	Y	-0.018	-0.018	0	%100
8	8	Y	-0.018	-0.018	0	%100
9	9	Y	-0.018	-0.018	0	%100
10	10	Y	-0.017	-0.017	0	%100
11	13	Y	-0.017	-0.017	0	%100
12	16	Y	-0.017	-0.017	0	%100
13	19	Y	-0.009	-0.009	0	%100
14	20	Y	-0.009	-0.009	0	%100
15	21	Y	-0.009	-0.009	0	%100
16	25	Y	-0.009	-0.009	0	%100
17	26	Y	-0.009	-0.009	0	%100
18	27	Y	-0.009	-0.009	0	%100
19	31	Y	-0.009	-0.009	0	%100
20	32	Y	-0.009	-0.009	0	%100
21	33	Y	-0.009	-0.009	0	%100
22	37	Y	-0.011	-0.011	0	%100
23	38	Y	-0.011	-0.011	0	%100
24	39	Y	-0.011	-0.011	0	%100
25	40	Y	-0.009	-0.009	0	%100
26	44	Y	-0.009	-0.009	0	%100
27	48	Y	-0.009	-0.009	0	%100
28	52	Y	-0.016	-0.016	0	%100
29	53	Y	-0.016	-0.016	0	%100
30	54	Y	-0.016	-0.016	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.001	-0.001	0	%100
2	2	Z	-0.001	-0.001	0	%100
3	3	Z	-0.001	-0.001	0	%100
4	4	Z	-0.001	-0.001	0	%100
5	5	Z	-0.001	-0.001	0	%100
6	6	Z	-0.001	-0.001	0	%100
7	7	Z	-0.002	-0.002	0	%100
8	8	Z	-0.002	-0.002	0	%100
9	9	Z	-0.002	-0.002	0	%100
10	10	Z	-0.005	-0.005	0	%100
11	13	Z	-0.005	-0.005	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
12	16	Z	-0.005	-0.005	0	%100
13	19	Z	-0.0009	-0.0009	0	%100
14	20	Z	-0.0009	-0.0009	0	%100
15	21	Z	-0.0009	-0.0009	0	%100
16	25	Z	-0.0009	-0.0009	0	%100
17	26	Z	-0.0009	-0.0009	0	%100
18	27	Z	-0.0009	-0.0009	0	%100
19	31	Z	-0.0009	-0.0009	0	%100
20	32	Z	-0.0009	-0.0009	0	%100
21	33	Z	-0.0009	-0.0009	0	%100
22	37	Z	-0.001	-0.001	0	%100
23	38	Z	-0.001	-0.001	0	%100
24	39	Z	-0.001	-0.001	0	%100
25	40	Z	-0.0009	-0.0009	0	%100
26	44	Z	-0.0009	-0.0009	0	%100
27	48	Z	-0.0009	-0.0009	0	%100
28	52	Z	-0.002	-0.002	0	%100
29	53	Z	-0.002	-0.002	0	%100
30	54	Z	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.001	-0.001	0	%100
2	2	X	-0.001	-0.001	0	%100
3	3	X	-0.001	-0.001	0	%100
4	4	X	-0.001	-0.001	0	%100
5	5	X	-0.001	-0.001	0	%100
6	6	X	-0.001	-0.001	0	%100
7	7	X	-0.002	-0.002	0	%100
8	8	X	-0.002	-0.002	0	%100
9	9	X	-0.002	-0.002	0	%100
10	10	X	-0.005	-0.005	0	%100
11	13	X	-0.005	-0.005	0	%100
12	16	X	-0.005	-0.005	0	%100
13	19	X	-0.0009	-0.0009	0	%100
14	20	X	-0.0009	-0.0009	0	%100
15	21	X	-0.0009	-0.0009	0	%100
16	25	X	-0.0009	-0.0009	0	%100
17	26	X	-0.0009	-0.0009	0	%100
18	27	X	-0.0009	-0.0009	0	%100
19	31	X	-0.0009	-0.0009	0	%100
20	32	X	-0.0009	-0.0009	0	%100
21	33	X	-0.0009	-0.0009	0	%100
22	37	X	-0.001	-0.001	0	%100
23	38	X	-0.001	-0.001	0	%100
24	39	X	-0.001	-0.001	0	%100
25	40	X	-0.0009	-0.0009	0	%100
26	44	X	-0.0009	-0.0009	0	%100
27	48	X	-0.0009	-0.0009	0	%100
28	52	X	-0.002	-0.002	0	%100
29	53	X	-0.002	-0.002	0	%100
30	54	X	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 30 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.0001953	-0.006	0	2
2	1	Y	-0.006	-0.009	2	4
3	1	Y	-0.009	-0.009	4	6
4	1	Y	-0.009	-0.009	6	8
5	1	Y	-0.009	-0.009	8	10
6	1	Y	-0.009	-0.006	10	12
7	1	Y	-0.006	-0.0001953	12	14
8	4	Y	-0.01	-0.01	0.013	7.347
9	8	Y	-0.002	-0.009	0	1.917
10	8	Y	-0.009	-0.017	1.917	3.833
11	9	Y	-0.002	-0.009	0	1.917
12	9	Y	-0.009	-0.017	1.917	3.833
13	2	Y	-0.002	-0.005	0	2.333
14	2	Y	-0.005	-0.009	2.333	4.667
15	2	Y	-0.009	-0.012	4.667	7
16	2	Y	-0.012	-0.009	7	9.333
17	2	Y	-0.009	-0.005	9.333	11.667
18	2	Y	-0.005	-0.002	11.667	14
19	5	Y	-0.01	-0.01	0.013	7.347
20	7	Y	-0.002	-0.009	0	1.917
21	7	Y	-0.009	-0.017	1.917	3.833
22	3	Y	-0.002	-0.005	0	2.333
23	3	Y	-0.005	-0.009	2.333	4.667
24	3	Y	-0.009	-0.012	4.667	7
25	3	Y	-0.012	-0.009	7	9.333
26	3	Y	-0.009	-0.005	9.333	11.667
27	3	Y	-0.005	-0.002	11.667	14
28	6	Y	-0.01	-0.01	0.013	7.347

Member Distributed Loads (BLC 31 : BLC 8 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	2	Y	-0.002	-0.004	0	2.333
2	2	Y	-0.004	-0.007	2.333	4.667
3	2	Y	-0.007	-0.009	4.667	7
4	2	Y	-0.009	-0.007	7	9.333
5	2	Y	-0.007	-0.004	9.333	11.667
6	2	Y	-0.004	-0.002	11.667	14
7	5	Y	-0.008	-0.008	0.013	7.347
8	7	Y	-0.002	-0.007	0	1.917
9	7	Y	-0.007	-0.013	1.917	3.833
10	3	Y	-0.002	-0.004	0	2.333
11	3	Y	-0.004	-0.007	2.333	4.667
12	3	Y	-0.007	-0.009	4.667	7
13	3	Y	-0.009	-0.007	7	9.333
14	3	Y	-0.007	-0.004	9.333	11.667
15	3	Y	-0.004	-0.002	11.667	14
16	6	Y	-0.008	-0.008	0.013	7.347
17	1	Y	-0.0001592	-0.005	0	2
18	1	Y	-0.005	-0.008	2	4
19	1	Y	-0.008	-0.007	4	6
20	1	Y	-0.007	-0.007	6	8
21	1	Y	-0.007	-0.008	8	10
22	1	Y	-0.008	-0.005	10	12
23	1	Y	-0.005	-0.0001592	12	14

Member Distributed Loads (BLC 31 : BLC 8 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
24	4	Y	-0.008	-0.008	0.013	7.347
25	8	Y	-0.002	-0.008	0	1.917
26	8	Y	-0.008	-0.014	1.917	3.833
27	9	Y	-0.002	-0.008	0	1.917
28	9	Y	-0.008	-0.014	1.917	3.833

Member Area Loads (BLC 1 : Dead)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	4	5	7	6	Y	Two Way	-0.01
2	6	2	3	7	Y	Two Way	-0.01
3	4	2	3	5	Y	Two Way	-0.01

Member Area Loads (BLC 8 : Ice)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	4	5	7	6	Y	Two Way	-0.008
2	6	2	3	7	Y	Two Way	-0.008
3	4	2	3	5	Y	Two Way	-0.008

Node Loads and Enforced Displacements (BLC 11 : Live Load a)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	29	L	Y	-0.5
2	41	L	Y	-0.5
3	53	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 12 : Live Load b)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	31	L	Y	-0.5
2	43	L	Y	-0.5
3	55	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 13 : Live Load c)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	33	L	Y	-0.5
2	45	L	Y	-0.5
3	57	L	Y	-0.5

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
1	Dead	DL	-1		30		3
2	0 Wind - No Ice	WLZ			30	30	
3	90 Wind - No Ice	WLX			30	30	
4	0 Wind - Ice	WLZ			30	30	
5	90 Wind - Ice	WLX			30	30	
6	0 Wind - Service	WLZ			30	30	
7	90 Wind - Service	WLX			30	30	
8	Ice	OL1			30	30	3
9	0 Seismic	ELZ			30	30	

Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
10	90 Seismic	ELX			30	30	
11	Live Load a	LL		3			
12	Live Load b	LL		3			
13	Live Load c	LL		3			
14	Live Load d	LL					
15	Maint LL 1	LL			1		
16	Maint LL 2	LL			1		
17	Maint LL 3	LL			1		
18	Maint LL 4	LL			1		
19	Maint LL 5	LL			1		
20	Maint LL 6	LL			1		
21	Maint LL 7	LL			1		
22	Maint LL 8	LL			1		
23	Maint LL 9	LL			1		
24	Maint LL 10	LL			1		
25	Maint LL 11	LL			1		
26	Maint LL 12	LL			1		
27	Maint LL 13	LL			1		
28	Maint LL 14	LL			1		
29	Maint LL 15	LL			1		
30	BLC 1 Transient Area Loads	None				28	
31	BLC 8 Transient Area Loads	None				28	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	1.2 D + 1.0 - 0 W	Yes	Y	1	1.2	2	1				
3	1.2 D + 1.0 - 30 W	Yes	Y	1	1.2	2	0.866	3	0.5		
4	1.2 D + 1.0 - 60 W	Yes	Y	1	1.2	3	0.866	2	0.5		
5	1.2 D + 1.0 - 90 W	Yes	Y	1	1.2	3	1				
6	1.2 D + 1.0 - 120 W	Yes	Y	1	1.2	3	0.866	2	-0.5		
7	1.2 D + 1.0 - 150 W	Yes	Y	1	1.2	2	-0.866	3	0.5		
8	1.2 D + 1.0 - 180 W	Yes	Y	1	1.2	2	-1				
9	1.2 D + 1.0 - 210 W	Yes	Y	1	1.2	2	-0.866	3	-0.5		
10	1.2 D + 1.0 - 240 W	Yes	Y	1	1.2	3	-0.866	2	-0.5		
11	1.2 D + 1.0 - 270 W	Yes	Y	1	1.2	3	-1				
12	1.2 D + 1.0 - 300 W	Yes	Y	1	1.2	3	-0.866	2	0.5		
13	1.2 D + 1.0 - 330 W	Yes	Y	1	1.2	2	0.866	3	-0.5		
14	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
15	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
16	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
17	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
18	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
19	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
20	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
21	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
22	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
23	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
24	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
25	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
26	1.2 D + 1.0 E - 0	Yes	Y	1	1.2	9	1				
27	1.2 D + 1.0 E - 30	Yes	Y	1	1.2	9	0.866	10	0.5		
28	1.2 D + 1.0 E - 60	Yes	Y	1	1.2	10	0.866	9	0.5		
29	1.2 D + 1.0 E - 90	Yes	Y	1	1.2	10	1				
30	1.2 D + 1.0 E - 120	Yes	Y	1	1.2	10	0.866	9	-0.5		

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
31	1.2 D + 1.0 E - 150	Yes	Y	1	1.2	9	-0.866	10	0.5		
32	1.2 D + 1.0 E - 180	Yes	Y	1	1.2	9	-1				
33	1.2 D + 1.0 E - 210	Yes	Y	1	1.2	9	-0.866	10	-0.5		
34	1.2 D + 1.0 E - 240	Yes	Y	1	1.2	10	-0.866	9	-0.5		
35	1.2 D + 1.0 E - 270	Yes	Y	1	1.2	10	-1				
36	1.2 D + 1.0 E - 300	Yes	Y	1	1.2	10	-0.866	9	0.5		
37	1.2 D + 1.0 E - 330	Yes	Y	1	1.2	9	0.866	10	-0.5		
38	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
39	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5
40	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
41	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5
42	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
43	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
44	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
45	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
46	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
47	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
48	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5
49	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
50	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
51	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
52	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
53	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
54	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
55	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5
56	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
57	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
58	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5
59	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5
60	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
61	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5
62	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			13	1.5
63	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	13	1.5
64	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	13	1.5
65	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			13	1.5
66	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	13	1.5
67	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	13	1.5
68	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			13	1.5
69	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	13	1.5
70	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	13	1.5
71	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			13	1.5
72	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	13	1.5
73	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	13	1.5
74	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			14	1.5
75	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	14	1.5
76	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	14	1.5
77	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			14	1.5
78	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	14	1.5
79	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	14	1.5
80	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			14	1.5
81	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	14	1.5
82	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	14	1.5
83	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			14	1.5
84	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	14	1.5
85	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	14	1.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
86	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					15	1.5
87	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					16	1.5
88	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					17	1.5
89	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					18	1.5
90	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					19	1.5
91	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					20	1.5
92	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					21	1.5
93	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					22	1.5
94	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					23	1.5
95	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					24	1.5
96	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					25	1.5
97	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					26	1.5
98	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					27	1.5
99	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					28	1.5
100	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					29	1.5

Envelope Node Reactions

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	89	max	0.11	5	1.604	14	-0.286	8	0	100	0	40	0	70
2		min	-0.11	11	0.212	8	-1.4	14	0	1	0	70	0	40
3	8	max	2.498	5	1.569	20	1.494	2	-1.009	2	2.541	5	0.212	11
4		min	-2.533	11	0.587	38	-1.393	8	-4.052	20	-2.494	11	-0.193	5
5	18	max	1.518	6	1.567	16	2.906	2	2.029	14	3.501	13	-1.073	10
6		min	-1.585	12	0.592	46	-2.989	8	0.467	8	-3.455	7	-3.499	16
7	13	max	1.599	4	1.57	25	2.953	2	2.072	14	3.466	9	3.481	24
8		min	-1.498	10	0.59	43	-2.977	8	0.471	8	-3.416	3	1.018	6
9	92	max	-0.293	13	1.593	18	0.706	16	0	62	0	44	0	44
10		min	-1.21	19	0.299	12	0.153	10	0	44	0	62	0	62
11	94	max	1.212	21	1.594	22	0.706	24	0	49	0	49	0	49
12		min	0.277	3	0.287	4	0.153	5	0	67	0	67	0	67
13	Totals:	max	5.056	5	9.251	23	7.178	2						
14		min	-5.056	11	3.673	5	-7.178	8						

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	1	L3X3X4	0.603	7	8	0.224	7	y	2	3.945	46.656	1.688	2.646	1.5	H2-1
2	2	L3X3X4	0.433	7	9	0.141	7	y	8	3.945	46.656	1.688	2.54	1.363	H2-1
3	3	L3X3X4	0.623	7	3	0.125	7	z	18	3.945	46.656	1.688	2.646	1.5	H2-1
4	4	L3X3X4	0.195	3.68	12	0.015	7.36	y	22	14.271	46.656	1.688	3.197	1.419	H2-1
5	5	L3X3X4	0.227	3.68	8	0.015	7.36	y	14	14.271	46.656	1.688	3.24	1.5	H2-1
6	6	L3X3X4	0.206	3.604	7	0.015	7.36	y	19	14.271	46.656	1.688	3.183	1.395	H2-1
7	7	LL3x3x4x0	0.262	0	41	0.044	1.917	y	39	76.456	93.312	6.48	4.364	1.662	H1-1b
8	8	LL3x3x4x0	0.263	0	45	0.045	1.917	y	44	76.456	93.312	6.48	4.364	1.67	H1-1b
9	9	LL3x3x4x0	0.263	0	49	0.044	1.917	y	48	76.456	93.312	6.48	4.364	1.667	H1-1b
10	10	C5X4X0.5	0.301	2.667	23	0.099	1.917	y	11	176.561	194.4	15.817	29.7	3	H1-1b
11	13	C5X4X0.5	0.313	2.667	3	0.118	1.917	y	3	176.561	194.4	15.817	29.7	2.727	H1-1b
12	16	C5X4X0.5	0.308	2.667	19	0.12	1.917	y	7	176.561	194.4	15.817	29.7	3	H1-1b
13	19	PIPE_2.0	0.146	3.062	10	0.048	3.062		13	20.867	32.13	1.872	1.872	1.894	H1-1b
14	20	PIPE_2.0	0.886	4.5	2	0.1	4.5		8	12.144	32.13	1.872	1.872	1.762	H1-1b
15	21	PIPE_2.0	0.136	3.062	6	0.067	3.062		3	20.867	32.13	1.872	1.872	1.946	H1-1b
16	25	PIPE_2.0	0.176	3.062	2	0.05	3.062		4	20.867	32.13	1.872	1.872	1.756	H1-1b
17	26	PIPE_2.0	0.876	4.594	2	0.081	4.5		9	12.144	32.13	1.872	1.872	1.486	H1-1b
18	27	PIPE_2.0	0.185	0.625	8	0.068	3.062		7	20.867	32.13	1.872	1.872	2.164	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
19	31	PIPE_2.0	0.2	0.625	8	0.059	3.062		8	20.867	32.13	1.872	1.872	2.304	H1-1b
20	32	PIPE_2.0	0.876	4.594	2	0.108	4.5		2	12.144	32.13	1.872	1.872	1.588	H1-1b
21	33	PIPE_2.0	0.187	3.062	2	0.065	3.062		9	20.867	32.13	1.872	1.872	1.801	H1-1b
22	37	L2.5x2.5x4	0.131	0	45	0.038	1.245	z	4	36.654	38.556	1.114	2.537	1.5	H2-1
23	38	L2.5x2.5x4	0.142	1.245	8	0.058	1.245	z	8	36.654	38.556	1.114	2.537	1.5	H2-1
24	39	L2.5x2.5x4	0.13	0	41	0.051	1.245	z	7	36.654	38.556	1.114	2.537	1.5	H2-1
25	40	PIPE_2.0	0.141	11.849	11	0.133	11.849		8	6.295	32.13	1.872	1.872	2.03	H1-1b
26	44	PIPE_2.0	0.229	6.641	2	0.104	11.849		13	6.295	32.13	1.872	1.872	1.931	H1-1b
27	48	PIPE_2.0	0.242	6.771	8	0.102	0.521		46	6.295	32.13	1.872	1.872	2.172	H1-1b
28	52	LL2.5x2.5x3x3	0.104	3.499	3	0.007	6.998	z	5	31.233	58.32	3.954	2.511	1.136	H1-1b
29	53	LL2.5x2.5x3x3	0.103	3.499	7	0.007	6.998	z	9	31.233	58.32	3.954	2.511	1.136	H1-1b
30	54	LL2.5x2.5x3x3	0.104	3.499	9	0.007	6.998	z	13	31.233	58.32	3.954	2.511	1.136	H1-1b

APPENDIX D

ADDITIONAL CALCUATIONS

PROJECT	**149862.006.01 - Coe Hill, CT**				**KSC**
SUBJECT	**Platform Mount Analysis**				
DATE	**08/27/21**	PAGE	1	OF	1

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

[REF: AISC 360-05]

Reactions at Bolted Connection

Tension	:	1.494	k
Vertical Shear	:	1.569	k
Horizontal Shear	:	2.498	k
Torsion	:	0.212	k.ft
Moment from Horizontal Forces	:	2.541	k.ft
Moment from Vertical Forces	:	-1.009	k.ft

Bolt Parameters

Bolt Grade	:	A325	
Bolt Diameter	:	0.75	in
Nominal Bolt Area	:	0.4417865	in^2
Bolt spacing, Horizontal	:	6	in
Bolt spacing, Vertical	:	0	in
Bolt edge distance, plate height	:	1.5	in
Bolt edge distance, plate width	:	1.5	in
Total Number of Bolts	:	4	bolts

Summary of Forces

Shear Resultant Force	:	2.95	k
Force from Horz. Moment	:	4.52	k
Force from Vert. Moment	:	-16.14	k
Shear Load / Bolt	:	0.74	k
Tension Load / Bolt	:	0.37	k
Resultant from Moments / Bolt	:	8.38	k

Bolt Checks

Nominal Tensile Stress, F_{nt}	:	90.00	ksi	[AISC Table J3.2]
Available Tensile Stress, ΦR_{nt}	:	29.82	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	**29.36%**		**OKAY**
Nominal Shear Stress, F_{nv}	:	48.00	ksi	[AISC Table J3.2]
Available Shear Stress, ΦR_{nv}	:	15.90	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	**6.99%**		**OKAY**
Unity Check, Combined	:	**36.35%**		**OKAY**
Available Bearing Strength, ΦR_n	:	32.63	k/bolt	
Unity Check, Bolt Bearing	:	**2.26%**		**OKAY**

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: CTHA399A

876340
238 Meriden Road
Middlefield, Connecticut 06455

November 29, 2021

EBI Project Number: 6221007147

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**29.65%**

November 29, 2021

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

Emissions Analysis for Site: CTHA399A - 876340

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **238 Meriden Road** in **Middlefield, 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 238 Meriden Road in Middlefield, 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 RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector A, the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector B, the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector C. 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 121 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.

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_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
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd
Height (AGL):	121 feet	Height (AGL):	121 feet	Height (AGL):	121 feet
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
ERP (W):	17,868.72	ERP (W):	17,868.72	ERP (W):	17,868.72
Antenna A1 MPE %:	**6.41%**	Antenna B1 MPE %:	**6.41%**	Antenna C1 MPE %:	**6.41%**
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 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
Height (AGL):	121 feet	Height (AGL):	121 feet	Height (AGL):	121 feet
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
ERP (W):	36,356.09	ERP (W):	36,356.09	ERP (W):	36,356.09
Antenna A2 MPE %:	**9.88%**	Antenna B2 MPE %:	**9.88%**	Antenna C2 MPE %:	**9.88%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	16.30%
AT&T	5.7%
Metro PCS	1.54%
Nextel	0.53%
T-Mobile (Existing)	5.58%
Site Total MPE % :	29.65%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	16.30%
T-Mobile Sector B Total:	16.30%
T-Mobile Sector C Total:	16.30%
Site Total MPE % :	29.65%

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 600 MHz LTE	2	591.73	121.0	3.22	600 MHz LTE	400	0.80%
T-Mobile 600 MHz NR	1	1577.94	121.0	4.29	600 MHz NR	400	1.07%
T-Mobile 700 MHz LTE	2	695.22	121.0	3.78	700 MHz LTE	467	0.81%
T-Mobile 1900 MHz GSM	4	1052.26	121.0	11.44	1900 MHz GSM	1000	1.14%
T-Mobile 1900 MHz LTE	2	2104.51	121.0	11.44	1900 MHz LTE	1000	1.14%
T-Mobile 2100 MHz LTE	2	2649.42	121.0	14.40	2100 MHz LTE	1000	1.44%
T-Mobile 2500 MHz LTE 1C & 2C Traffic	1	11044.63	121.0	30.02	2500 MHz LTE 1C & 2C Traffic	1000	3.00%
T-Mobile 2500 MHz LTE 1C & 2C Broadcast	1	1074.06	121.0	2.92	2500 MHz LTE 1C & 2C Broadcast	1000	0.29%
T-Mobile 2500 MHz NR Traffic	1	22089.26	121.0	60.05	2500 MHz NR Traffic	1000	6.00%
T-Mobile 2500 MHz NR Broadcast	1	2148.13	121.0	5.84	2500 MHz NR Broadcast	1000	0.58%
						Total:	**16.30%**

• 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:	16.30%
Sector B:	16.30%
Sector C:	16.30%
T-Mobile Maximum MPE % (Sector A):	16.30%
Site Total:	29.65%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **29.65%** 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.

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

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
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