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

August 28, 2019

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

RE: **Notice of Exempt Modification for T-Mobile:**
876345 - T-Mobile Site ID: CT11025B
33 Janowski Road, Ashford, CT 06278
Latitude: 41° 57′ 7.70″ / Longitude: -72° 11′ 43.90″

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 153-foot mount on the existing 192-foot Self Support Tower, located at 33 Janowski Road, Ashford, CT. The tower is owned by Crown Castle and the property is owned by David H. Martin c/o Sprint Spectrum. T-Mobile now intends to replace six (6) existing antennas with three (3) new 1900 MHz antennas and three (3) new 600/700/2100 MHz antennas. The new antennas will be installed at the 153-ft level of the tower.

Planned Modifications:
Tower:

Remove:
(2) TMA
(8) Coax Cables

Remove and Replace:
(3) LNX 6515DS-VTM Antenna **(REMOVE)** - (3) RFS-APXVAARR24_43-U-NA20 Antenna 600/700/2100 MHz **(REPLACE)**

(3) APXV18-206516S-C-A20 Antenna **(REMOVE)** – (3) APX16DWV-S-E-A20 Antenna 1900 MHz **(REPLACE)**

Install New:
(3) 1 5/8" Hybrid Fiber Line
(3) Radio 4449 B71/B12
(3) Radio 4415 B25
(3) Radio 4415 B66A

Ground:

Relocate existing ground cabinet.
Replace existing ground cabinet and upgrade internally.

Upgrade existing breakers.

The facility was approved by the Town of Ashford Planning and Zoning Commission on November 12, 1996. The approval did not involve conditions that would be violated by this modification.

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 Michael J. Zambo, First Selectman for the Town of Ashford, Michael Gardner, Zoning Enforcement Officer, Crown Castle as the tower owner, and David H. Martin c/o Sprint Spectrum, the property owner.

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

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

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

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

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

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

Sincerely,

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

Attachments
cc:

Michael Zambo, First Selectman
Town of Ashford
5 Town Hall Road
Warrenville, CT 06278
860-487-4400

Michael Gardner, ZEO
Town of Ashford
Planning Department
5 Town Hall Road
Warrenville, CT 06278
860-487-4415

David H. Martin, Property Owner
C/O Sprint Spectrum
PO Box 8430
Kansas City, MO 64114-8430

Crown Castle, Tower Owner

ORIGIN ID:ONHA (585) 445-5896
RICHARD ZAJAC
CROWN CASTLE
300 MERIDIAN CENTRE

ROCHESTER, NY 14618
UNITED STATES US

SHIP DATE: 28AUG19
ACTWGT: 2.00 LB
CAD: 104924194/INET4160

BILL SENDER

TO **MICHAEL ZAMBO, FIRST SELECTMAN**
TOWN OF ASHFORD
5 TOWN HALL ROAD

WARRENVILLE CT 06278
(860) 487-4400 REF: 1734.7680
INV:
PO: DEPT:

567J3/E9E7/05A2

FedEx Express

J192019062401uv

THU - 29 AUG 4:30P
PRIORITY OVERNIGHT

TRK# 0201 **7760 9995 9727**

XE GONA

06278
CT-US BDL

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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.

ORIGIN ID:ONHA (585) 445-5896
RICHARD ZAJAC
CROWN CASTLE
300 MERIDIAN CENTRE

ROCHESTER, NY 14618
UNITED STATES US

SHIP DATE: 28AUG19
ACTWGT: 4.00 LB
CAD: 104924194/INET4160

BILL SENDER

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

NEW BRITAIN CT 06051
(860) 827-2951 REF: 1765.6880
INV:
PO: DEPT:

567J3/E9E7/05A2

FedEx Express

J192019062401uv

TRK# 0201 **7760 9997 1165**

THU - 29 AUG 10:30A
PRIORITY OVERNIGHT

XE BDLA

06051
CT-US **BDL**

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

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

SHIP DATE: 28AUG19
ACTWGT: 2.00 LB
CAD: 104924194/INET4160

BILL SENDER

TO **MICHAEL GARDNER, ZEO**
TOWN OF ASHFORD
5 TOWN HALL ROAD

WARRENVILLE CT 06278
(860) 487-4415 REF: 1734.7680
INV:
PO: DEPT:

567J3/E9E7/05A2

FedEx Express
J192019062401uv

THU - 29 AUG 4:30P
PRIORITY OVERNIGHT

TRK# 7760 9998 7040
0201

XE GONA

06278
BDL
CT-US

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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.

ORIGIN ID:ONHA (585) 445-5896
RICHARD ZAJAC
CROWN CASTLE
300 MERIDIAN CENTRE

ROCHESTER, NY 14618
UNITED STATES US

SHIP DATE: 28AUG19
ACTWGT: 2.00 LB
CAD: 104924194/INET4160

BILL SENDER

TO DAVID H MARTIN, PROPERTY OWNER
C/O SPRINT SPECTRUM
PO BOX 8430
KANSAS CITY MO 64114
(201) 236-9224 REF: 1734.7680
INV:
PO: DEPT:

567J3/E9E7/05A2

FedEx Express

J192019062401uv

TRK# 0201 7761 0000 4470

THU - 29 AUG 3:00P
STANDARD OVERNIGHT

XH OJCA

64114
MO-US MCI

After printing this label:
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Exhibit A

Original Facility Approval

FILE SITE #204
SKY HILL
ZONING

RECEIVED
11-13-96 bk.

MINUTES - ASHFORD PLANNING AND ZONING COMMISSION

Annual Meeting - November 12, 1996

Members present: Organ, Lawrence, Nagy, Levaur, Rossman, McCarthy & White.

Alternates present: Bartok & Specyalski.

The meeting was called to order at 9:55 p.m. after the public hearing (Sprint Spectrum, tower & Moratorium, Lake Chaffee).

Specyalski is the voting alternate for this meeting.

At the Annual Town meeting, Alex Hastillo and Kevin McCarthy were elected to 4 year terms on the Commission ending in the year 2000 and Bartok was elected to a 3 year term as Alternate ending in 1999.

Moved and seconded to consider Old and New Business first. Passed without dissent.

The Commission considered the Sprint Spectrum application for a communications tower to be located on Sky Hill. There were no objections at tonights public hearing. The tower will be able to hold three sets of antennas. Sprint Spectrum will operate a PCS digital system. It is regulated by the FCC. There will be no lights on the tower. Access will be off Frontage Road to Janowski Road to avoid the wetlands on the east end of Janowski Road. Moved and seconded to approve with conditions the application for a Special Exception under Section 5.2.3 by Sprint Spectrum L.P., Meriden, CT for a 200' communications tower to be located on land leased from David H. Martin off Janowski Road on Sky Hill.

The conditions are:
1. Utilities to the site which is approximately 2500' from Janowski Road will be located underground in the right of way.
2. Space and installation of fire, emergency and municipal communications equipment to meet present and future needs will be provided at no cost.
3. A copy of the liability insurance will be submitted to the Commission.
4. A site plan including driveway design and sedimentation and erosion control measures will be submitted to the Commission before the construction begins.
5. A copy of the lease will be part of the land records.

Motion passed without dissent.

The Commission considered the proposed Moratorium at Lake Chaffee. Tim Backus, Chairman of the Water Pollution Control Authority was the only person to speak at the public hearing. Moved and seconded to approve the following:

Moratorium at Lake Chaffee

WHEREAS, the Department of Environmental Protection has cited the Town of Ashford and the Lake Chaffee Improvement Association, Inc. to study and report upon potential pollution at Lake Chaffee resulting from construction around the lake; and

WHEREAS, the Department of Environmental Protection has found pollution in the tributaries leading to the lake, and

WHEREAS, there is a reasonable expectation that the recommendation of the study may be to limit new construction in that area, or as an alterative to require that homes in the area be connected to an alternative type of sewage disposal system, and

WHEREAS, this Commission does not want to allow any deterioration of the water in the lake or tributaries;

The Planning and Zoning Commission of the Town of Ashford, pursuant to the authority vested in it by Section 8-2 of Connecticut General Statutes, hereby amends the zoning regulations of the Town of Ashford by adoption of the following Moratorium:

"Until December 31, 1997, there shall be no new house construction allowed within the area of Lake Chaffee Improvement Association, Inc. nor any enclosed addition to any existing house in that area. The Zoning Enforcement Officer may not in that period certify that any new construction is in conformity with the zoning regulations of the town."

Motion passed without dissent.

The reasons for reinstating the moratorium include:
1. There is need for more testing of the water and septic systems in the area.
2. There have been minimal applications for construction since the last moratorium was lifted.
3. The WPCA is seeking on-site solutions.
4. There are several sets of vacant lots that may be valuable for sewage disposal systems.

Specyalski stepped down for the next item of business.

Brialee Campground - Brian Specyalski submitted a plan for a six additional campsites at the campground. It was noted that three of these butt onto adjoining property that is owned by the State of Connecticut. The others have a 100' setback that has been the minimum acceptable to the Commission. Moved and seconded to receive the plan and hold a public hearing on December 9th. Passed without dissent. A new map showing only the three sites that meet the setback requirements will be submitted. The Commission will walk the site a 7 a.m. on Saturday November 16th.

The Commission returned to the top of the agenda.

Moved and seconded to approve the minutes of the October 15th meeting. Passed without dissent.

Moved and seconded to send a letter of appreciation to George Quirk Sr., retiring member for his many years of service to the Commission. Passed without dissent.

There were no bills.

A copy of the revised Small Cities Housing Plan was received from the Office of the Selectmen. It will go to a public hearing in December. Copies will be distributed to the Commission members for review.

The revised fee schedule was approved by Town Meeting in October.

Moved and seconded to add to the agenda the election of officers and reappointment of employees. Passed without dissent.

Moved and seconded to reelect the following officers to serve until the next annual meeting of the Commission: Sidney E. Organ, Chairman, Alex Hastillo, Vice Chairman and John Bartok, Secretary. Passed without dissent. The Secretary will cast one ballot for each.

Moved and seconded to reappoint Rudolph Makray, Zoning Enforcement Officer and John Bartok, Recording Secretary for one year or until the next annual meeting. Passed without dissent.

The Commission agreed to hold a Special Meeting on Monday, December 16th at 7 p.m. to review the draft of the revised Plan of Development.

The meeting adjourned at 10:55 p.m.

Respectfully submitted.

John W. Bartok, Jr.
Recording Secretary

LEGAL NOTICE

Town of Ashford

The Ashford Planning and Zoning Commission at its meeting on November 12, 1996 took the following aotions:

APPROVED with oonditions the applioation of Sprint Speotrum, L.P., Meriden, CT for a 200' communioations tower to be built on the David Matin property looated off Route 89 on Sky Hill.

APPROVED a request by the Ashford Water Pollution Control Authority to reenstate the moratorium at Lake Chaffee until December 31, 1997 that prohibits oonstruction of new houses or enolosed additions to any existing house.

Dated in Ashford, Conneotiout this 14th day of November, 1996.

John W. Bartok,Jr.,Seo.
Ashford Planning and,
Zoning Commission

Exhibit B

Property Card


02-B-1.2
2.1 ac
02-B-2
75 ac
02-A-1
9.5 ac
02-B-1.3
3.7 ac
Ferrence Rd
01-D-1
1 ac
Janoski Rd
02-B-1.4
5.5 ac
-B-1
1 ac
02-E-1
5.4 ac
Hillside Rd
02-F-1
50.3 ac
02-F-2
9.87 ac
01-E-1
5.3 ac
02-F-2.1
2.97 ac
02-E-2
10 ac
1085 ft
02-F-3
11 ac
Mount Hope River
Sky Hill
04-B-1
57.9 ac
05-A-1.1
05-B-1.1

33 JANOSKI RD

Location	33 JANOSKI RD	**Mblu**	02/ F/ 1.1/ /
Acct#	00007410	**Owner**	MARTIN FAMILY LIV TR DTD 6/20/05,
Taxable Status		**Assessment**	$252,200
Appraisal	$360,200	**PID**	65
Building Count	1	**Legal Description**	
Lot Type		**topoTopo**	
Location			

Current Value

Appraisal					
Valuation Year	**Building**	**Extra Features**	**Outbuildings**	**Land**	**Total**
2018	$0	$0	$183,100	$177,100	$360,200
Assessment					
Valuation Year	**Building**	**Extra Features**	**Outbuildings**	**Land**	**Total**
2018	$0	$0	$128,200	$124,000	$252,200

Parcel Addreses

Additional Addresses		
Address	**City, State Zip**	**Type**
33 JANOSKI RD		Primary

Owner of Record

Owner	MARTIN FAMILY LIV TR DTD 6/20/05,
Co-Owner	MARTIN DAVID H + CAROLYN TRUSTEES
Care Of	
Address	C/O SPRINT SPECTRUM CT-03XC04 PO BOX 8430 KANSAS CITY, MO 64114-8430

Sale Price	$0
Certificate	
Book & Page	194/ 885
Sale Date	10/15/2018
Instrument	04
Qualified	U

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**

MARTIN DAVID H	$0	C	109/ 811		09/30/1996

Building Information

Building 1 : Section 1

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

Building Attributes	
Field	**Description**
Style	Outbuildings
Model	
Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Bsmt. Garages	

Building Photo

(http://images.vgsi.com/photos/AshfordCTPhotos//\00\00\25/30

Building Layout

Building Layout
(http://images.vgsi.com/photos/AshfordCTPhotos//Sketches/65_

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

Extra Features

Extra Features	Legend

No Data for Extra Features

Parcel Information

Use Code	201
Description	Commercial Vacant
Deeded Acres	0.7

Land

Land Use

Use Code	201
Description	Commercial Vacant
Zone	
Neighborhood	C3
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	0.7
Frontage	
Depth	
Assessed Value	$124,000
Appraised Value	$177,100

Outbuildings

Outbuildings								Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Assessed Value**	**Bldg #**	**Comment**
TWR1	Cell Tower			192 HEIGHT	$73,400	$51,400	1	
SHD2	Pre Cast Cell			240 S.F.	$34,400	$24,100	1	
FN3	Fence 6'			260 L.F.	$3,600	$2,500	1	
SHD2	Pre Cast Cell			360 S.F.	$34,400	$24,100	1	
SHD2	Pre Cast Cell			260 S.F.	$37,300	$26,100	1	

Valuation History

Appraisal					
Valuation Year	**Building**	**Extra Features**	**Outbuildings**	**Land**	**Total**
2017	$0	$0	$183,100	$177,100	$360,200
2016	$0	$0	$183,100	$177,100	$360,200
2015	$0	$0	$182,200	$189,000	$371,200

Assessment					
Valuation Year	**Building**	**Extra Features**	**Outbuildings**	**Land**	**Total**
2017	$0	$0	$128,200	$124,000	$252,200
2016	$0	$0	$128,200	$124,000	$252,200
2015	$0	$0	$127,600	$132,300	$259,900

Exhibit C

Construction Drawings

SCOPE OF WORK

ITEMS TO BE INSTALLED ON & REMOVED FROM EXISTING TOWER:

- REMOVE EXISTING ANTENNA MOUNTS, REMOVE (4) EXISTING ANTENNAS, AND REMOVE (2) EXISTING TMAS

- INSTALL T-MOBILE ANTENNA MOUNT (VFA12-HD) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- INSTALL T-MOBILE ANTENNA (APXVAARR24_43-U-NA20) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- INSTALL T-MOBILE RADIO (4449 B71+B12) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- INSTALL T-MOBILE RADIO (4415 B25) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- INSTALL T-MOBILE RADIO (4415 B66A) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- INSTALL T-MOBILE ANTENNA (APX16DWV-16DWV-S-E-A20)TYP. OF 1 PER SECTOR, TOTAL OF 3).
- INSTALL T-MOBILE COAX JUMPER CABLES (TYP. OF 12 PER SECTOR, TOTAL OF 36).
- INSTALL T-MOBILE 6x12 HCS HYBRID CABLE (TOTAL OF 3).

ITEMS TO BE INSTALLED ON EXISTING EQUIPMENT PAD:

- REMOVE (1) RBS 6201 ODE
- REMOVE (1) DUS 41
- REMOVE (2) RUS01 B2
- REMOVE (4) RUS01 B12
- REMOVE (8) COAX CABLES
- INSTALL (2) ERICSSON BASEBAND 6630 UNITS
- INSTALL (1) RBS 6102 MU AC EQUIPMENT CABINET

ITEMS TO REMAIN:

- (1) DUG20

SITE ADDRESS:	33 JANOWSKI ROAD ASHFORD, CT 06278
LATITUDE (NAD 83):	N 41° 57' 7.70"
LONGITUDE (NAD 83):	W 72° 11' 43.90"
COUNTY:	WINDHAM
JURISDICTION:	-
LANDLORD:	CROWN CASTLE INTERNATIONAL 500 W. CUMMINGS PARK, STE 3600 WOBURN, MA 01801
STRUCTURE TYPE:	SELF-SUPPORT
STRUCTURE HEIGHT:	192'
RAD CENTER:	158'
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

DRAWING INDEX

SHEET NO:	SHEET TITLE
T-1	TITLE SHEET
GN-1	GENERAL NOTES
C-1	SITE PLAN
S-1	PROPOSED TOWER ELEVATION & ANTENNA LAYOUT PLAN
S-2	EQUIPMENT DETAILS
S-3	MOUNT DETAIL
RF-1	ANTENNA INFORMATION CHART
RF-2	RF EQUIPMENT SCHEMATIC
E-1	ONE LINE DIAGRAM
G-1	GROUNDING RISER DIAGRAM

CROWN CASTLE SITE ID #: 876345
CROWN CASTLE SITE NAME: SKY HILL

ENGINEERING

2018 CONNECTICUT STATE BUILDING CODE
2018 AMENDMENT WITH 2015 INTERNATIONAL BUILDING CODE
2009 ICC/ANSI A117.1 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES
2015 INTERNATIONAL MECHANICAL CODE
2015 INTERNATIONAL ENERGY CONSERVATION CODE
2017 NATIONAL ELECTRICAL CODE (NFPA 70 2017)
ANSI/TIA-222-G

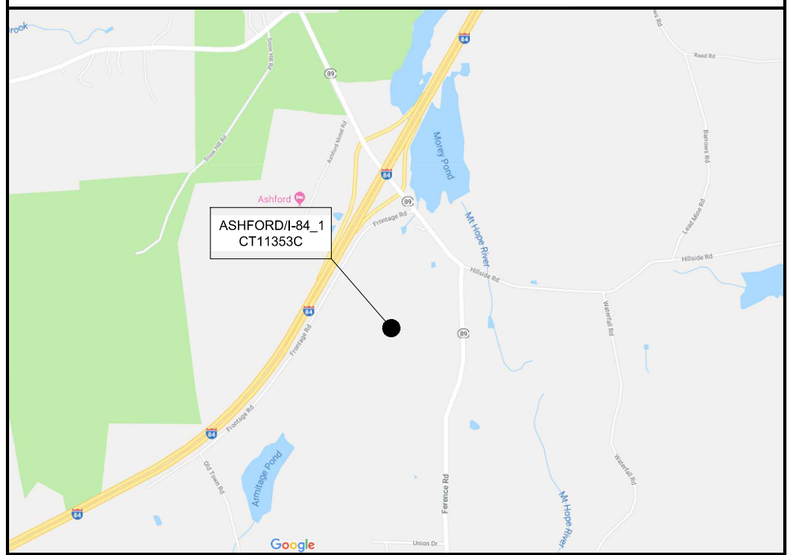
NOTE:

ALL CONSTRUCTION ACTIVITIES ARE TO BE COMPLETED DIRECTLY THROUGH CROWN. CONTRACTOR MUST HAVE CONSTRUCTION PO AND NTP FROM CROWN DIRECT IN ORDER TO BEGIN. PRE-APPROVAL TO ENTER THE PROPERTY MUST BE OBTAINED. FOR ACCESS AUTHORIZATION, PLEASE CONTACT CROWN.

L600 PROJECT
SITE NUMBER: CT11353C

SITE NAME: ASHFORD/I-84_1
CROWN SITE NAME: SKY HILL
BU#: 876345
T-MOBILE RAN TEMPLATE: 67D93D4 OUTDOOR

VICINITY MAP



84 EAST - EXIT 72, TURN RIGHT OFF RAMP, TURN RIGHT ON FRONTAGE ROAD. TURN LEFT ON JANOSKI. SELF SUPPORT TOWER IN BACK ABOUT 1/4 MILE. ACCESS RD: 41.57'19.9800", 072.11'44.9160"

GENERAL NOTES

1. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
2. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE T-MOBILE REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
3. HANDICAP REQUIREMENTS ARE NOT REQUIRED.
4. THIS FACILITY SHALL MEET OR EXCEED ALL FAA AND FCC REGULATORY REQUIREMENTS.
5. ALL NEW MATERIAL SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS NOTED OTHERWISE. EQUIPMENT, ANTENNAS/RADIOS AND CABLES FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR.
6. NO COMMERCIAL SIGNAGE IS PROPOSED.

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

T-MOBILE NORTHEAST LLC
103 MONARCH DRIVE
LIVERPOOL, NY 13088

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

JACOBS
JACOBS ENGINEERING GROUP, INC.
120 ST. JAMES AVENUE, 5TH FLOOR
BOSTON, MA 02116

STATE OF CONNECTICUT
DANIEL J. CORNING
31055
LICENSED PROFESSIONAL ENGINEER

PROJECT NO: ERCC0004
DRAWN BY: JT
CHECKED BY: DC

SUBMITTALS

1	08/21/19	ISSUED FOR CONSTRUCTION
0	07/18/19	ISSUED FOR PERMITTING

ASHFORD/I-84_1
CT11353C
SKY HILL
876345
33 JANOWSKI ROAD
ASHFORD, CT 06278

TITLE SHEET

T-1

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

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

GENERAL NOTES:

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

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
   4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
   4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 20,000 AIC MINIMUM. VERYIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).
7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
8. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3R (OR BETTER) FOR EXTERIOR LOCATIONS.
25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR CROWN CASTLE USA INC. BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW " CT11353C".
30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

GROUNDING NOTES:

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

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

T-MOBILE NORTHEAST LLC
103 MONARCH DRIVE
LIVERPOOL, NY 13088

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

JACOBS
JACOBS ENGINEERING GROUP, INC.
120 ST. JAMES AVENUE, 5TH FLOOR
BOSTON, MA 02116

STATE OF CONNECTICUT
DANIEL J. CORNING
34055
LICENSED
PROFESSIONAL ENGINEER

PROJECT NO:	ERCC0004
DRAWN BY:	JT
CHECKED BY:	DC

SUBMITTALS

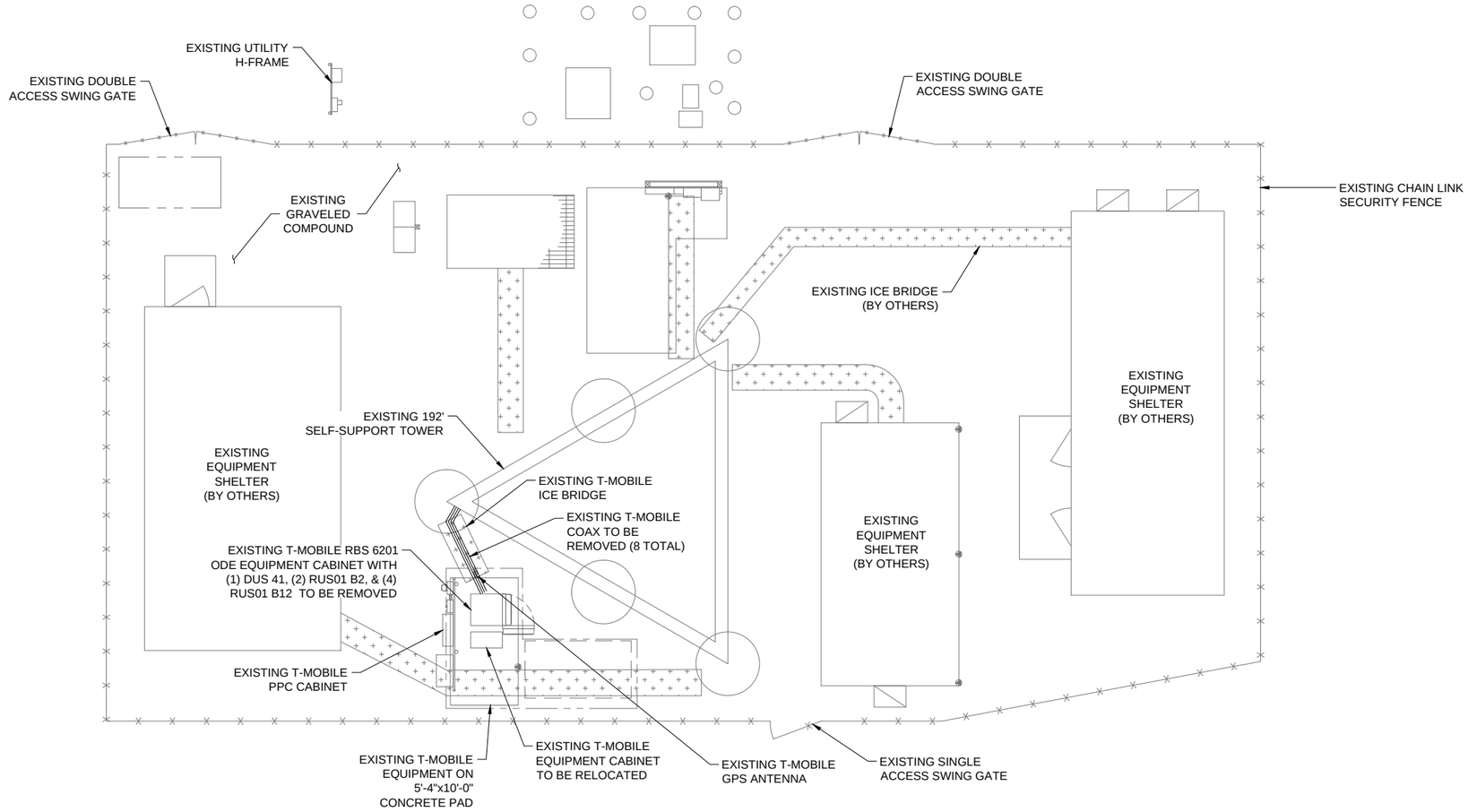
1	08/21/19	ISSUED FOR CONSTRUCTION
0	07/18/19	ISSUED FOR PERMITTING

ASHFORD/I-84_1
CT11353C
SKY HILL
876345
33 JANOWSKI ROAD
ASHFORD, CT 06278

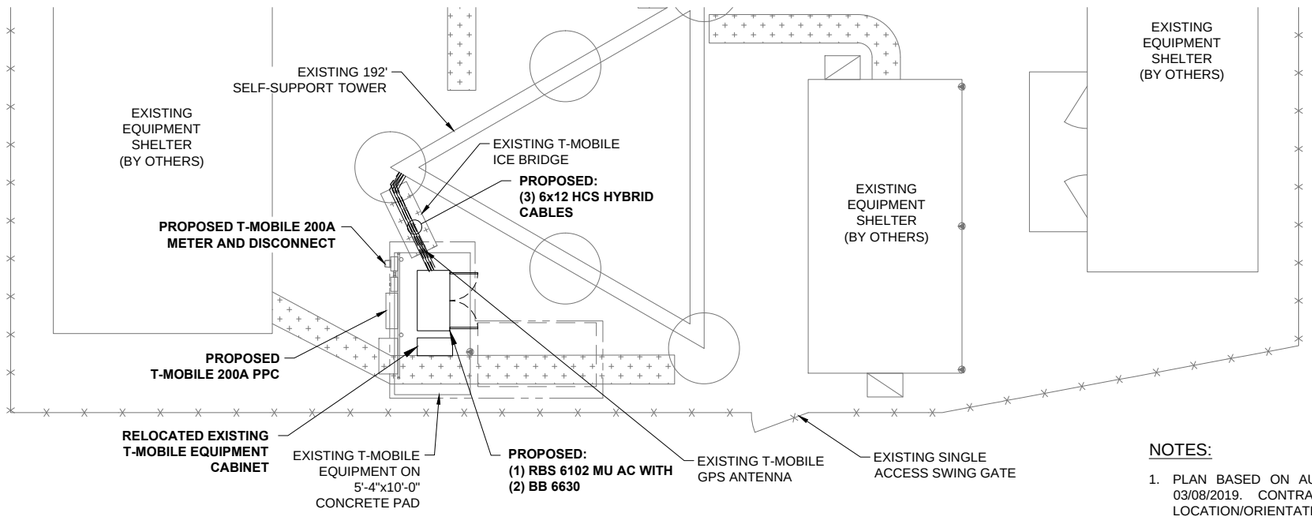
GENERAL NOTES

GN-1

TRUE NORTH



EXISTING SITE PLAN



PROPOSED SITE PLAN

NOTES:

1. PLAN BASED ON AUTOCAD DRAWINGS ISSUED BY CROWN CASTLE ON 03/08/2019. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND LOCATION/ORIENTATION OF EXISTING EQUIPMENT.

1 SITE PLAN

SCALE: 3/16" = 1'-0"

T-MOBILE NORTHEAST LLC
103 MONARCH DRIVE
LIVERPOOL, NY 13088

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

JACOBS
JACOBS ENGINEERING GROUP, INC.
120 ST. JAMES AVENUE, 5TH FLOOR
BOSTON, MA 02116

STATE OF CONNECTICUT
DANIEL J. CORNING
34055
LICENSED
PROFESSIONAL ENGINEER

PROJECT NO: ERCC0004

DRAWN BY: JT

CHECKED BY: DC

SUBMITTALS

1	08/21/19	ISSUED FOR CONSTRUCTION
0	07/18/19	ISSUED FOR PERMITTING

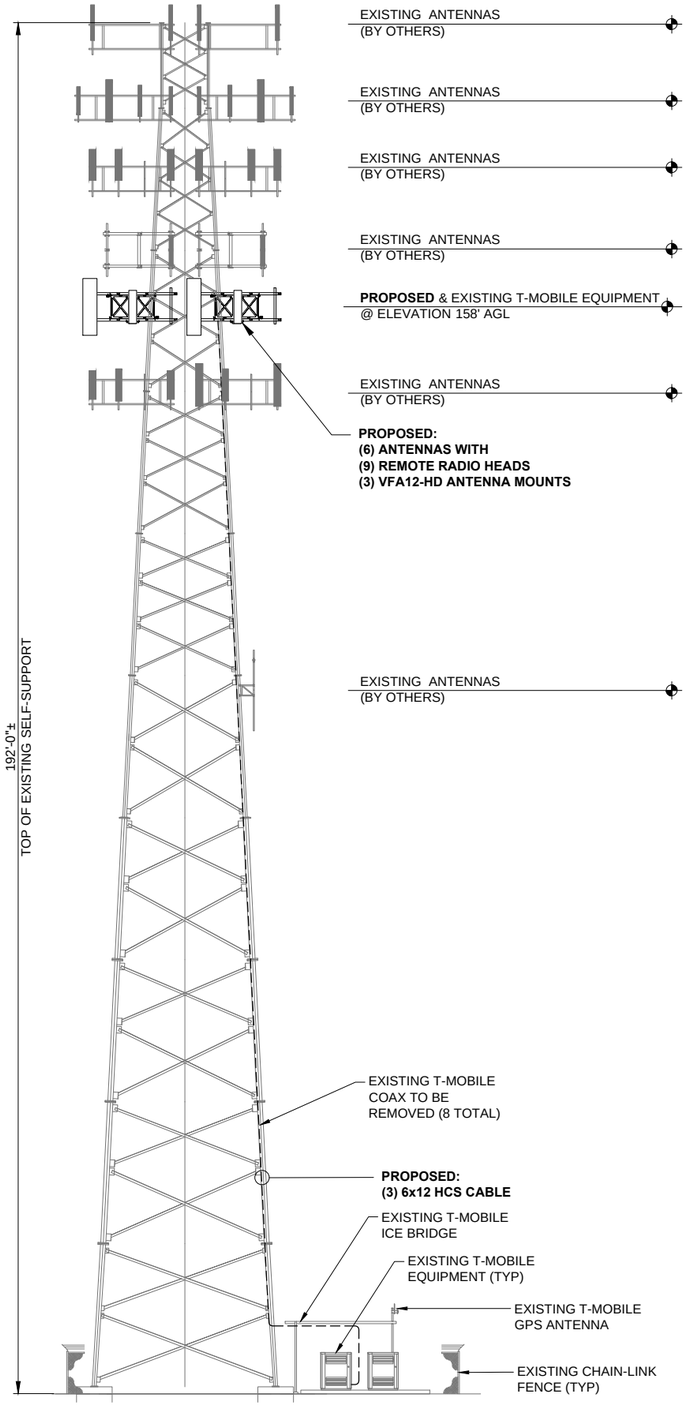
ASHFORD/I-84_1
CT11353C
SKY HILL
876345
33 JANOWSKI ROAD
ASHFORD, CT 06278

SITE PLAN

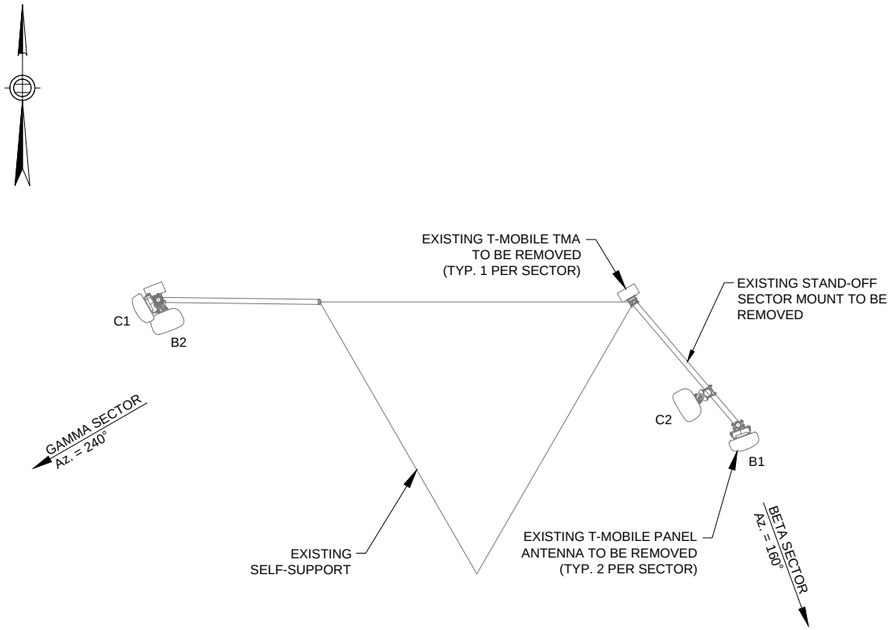
C-1

NOTES:

1. CONTRACTOR SHALL REFER TO THE STRUCTURAL ANALYSIS REPORT; SITE NUMBER: CT11353C; SITE NAME: ASHFORD/I-84_1; CROWN BU NUMBER: 876345; CROWN SITE NAME: SKY HILL; CROWN ORDER NUMBER: 495679; ISSUED BY B+T GROUP. DATED ON 06/19/19. PER THIS ANALYSIS NO MODIFICATIONS ARE REQUIRED. THE CONTRACTOR SHALL VERIFY ALL EXISTING MEMBERS AND HARDWARE ARE INSTALLED PROPERLY AS DESCRIBED IN THIS REPORT.

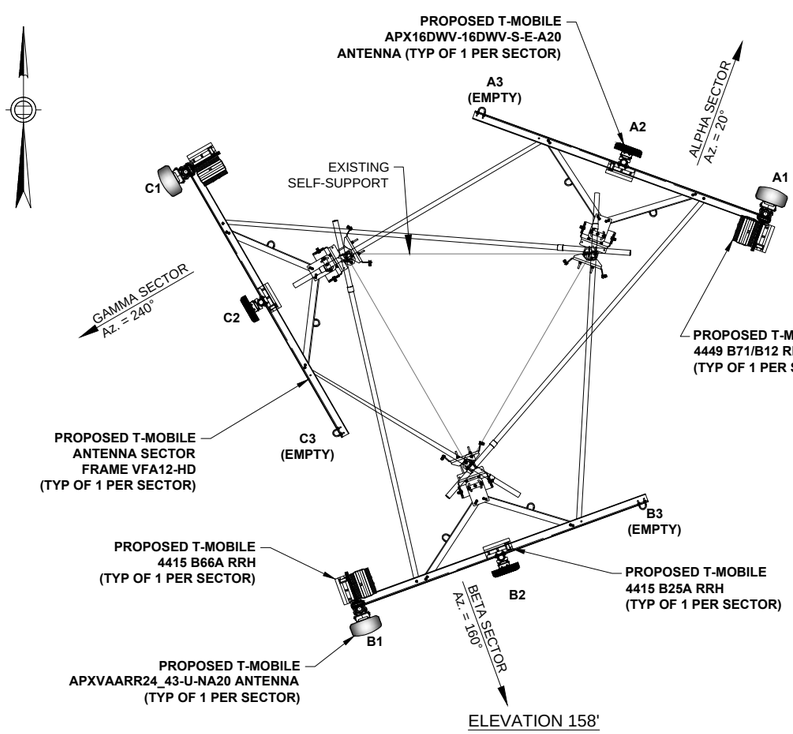


1 TOWER ELEVATION — SCALE: 3/32" = 1'-0"



ELEVATION 158'

2 EXISTING ANTENNA LAYOUT — SCALE: N.T.S.



ELEVATION 158'

3 PROPOSED ANTENNA LAYOUT — SCALE: N.T.S.

NOTES:

1. CONTRACTOR SHALL REFER TO THE MOUNT ANALYSIS REPORT; SITE NUMBER: CT11353C; SITE NAME: ASHFORD/I-84_1; CROWN BU NUMBER: 876345; CROWN SITE NAME: SKY HILL; CROWN ORDER NUMBER: 495679; ISSUED BY MASTEC NETWORK SOLUTIONS, DATED ON 06/13/2019. PER THIS ANALYSIS NO MODIFICATIONS ARE REQUIRED FOR THE PROPOSED EQUIPMENT. CONTRACTOR SHALL CONFIRM ALL T-MOBILE EXISTING AND PROPOSED EQUIPMENT ARE INSTALLED IN ACCORDANCE WITH THIS REPORT.
2. CONTRACTOR TO VERIFY FINAL RF CONFIGURATION AND NOTIFY CARRIER AND ENGINEER W/ ANY DISCREPANCIES PRIOR TO THE INSTALLATION.
3. CONTRACTOR SHALL NOT EXCEED MOUNTING MORE THAN (2) RRHS PER ANTENNA MOUNTING PIPE - RELOCATE TO AN ADJACENT ANTENNA MOUNTING PIPE AS NEEDED.

T-MOBILE NORTHEAST LLC
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LIVERPOOL, NY 13088

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

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120 ST. JAMES AVENUE, 5TH FLOOR
BOSTON, MA 02116

STATE OF CONNECTICUT
DANIEL J. CORNING
34005
LICENSED
PROFESSIONAL ENGINEER

PROJECT NO:	ERCC0004
DRAWN BY:	JT
CHECKED BY:	DC

SUBMITTALS

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0	07/18/19	ISSUED FOR PERMITTING

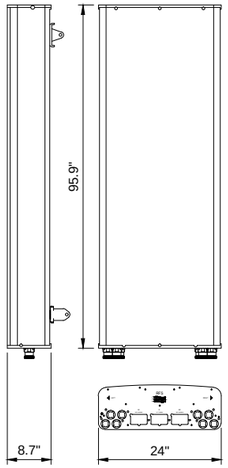
ASHFORD/I-84_1
CT11353C
SKY HILL
876345
33 JANOWSKI ROAD
ASHFORD, CT 06278

PROPOSED TOWER ELEVATION & ANTENNA LAYOUT PLAN

S-1

MANUFACTURER: RFS
MODEL NO.: APXVAARR24_43-U-NA20

COLOR: LIGHT GRAY
DIMENSIONS (LxWxD): 95.9" x 24" x 8.7"
2436mm x 609mm x 222mm
WEIGHT (lbs): 58
CONNECTOR: 8 x 4.3-10 FEMALE AT BOTTOM +
6 AISG CONNECTORS (3 MALE/3 FEMALE)
SURVIVAL/RATED WIND VELOCITY (KM/H): 241 (150)

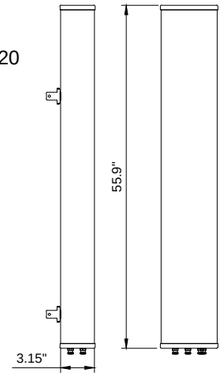


1 ANTENNA SPECIFICATIONS

SCALE: N.T.S.

MANUFACTURER: RFS
MODEL NO.: APX16DWV-16DWV-S-E-A20

COLOR: LIGHT GRAY
DIMENSIONS (LxWxD): 55.9" x 13" x 3.15"
WEIGHT (lbs): 40.7
CONNECTOR: (4) 7-16 Long Neck FEMALE/ BOTTOM
SURVIVAL/RATED WIND LOAD @ FRONT: 200km/h (125mph)
WIND LOAD @ FRONT: 756 N (170lbf)
WIND LOAD @ MAX: 756 N (170lbf)
WIND LOAD @ SIDE: 231 N (52lbf)
WIND LOAD @ REAR: 408 n (92lbf)

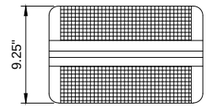


2 ANTENNA SPECIFICATIONS

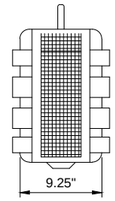
SCALE: N.T.S.

MANUFACTURER: ERICSSON
MODEL NO.: 4449 B71+B12

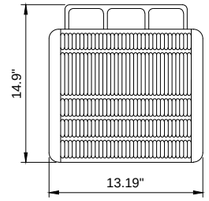
COLOR: LIGHT GRAY
DIMENSIONS (LxWxD): 14.9" x 13.19" x 9.25"
378mm x 335mm x 235mm
WEIGHT (lbs): 74



PLAN



SIDE



FRONT

3 RRUS SPECIFICATIONS

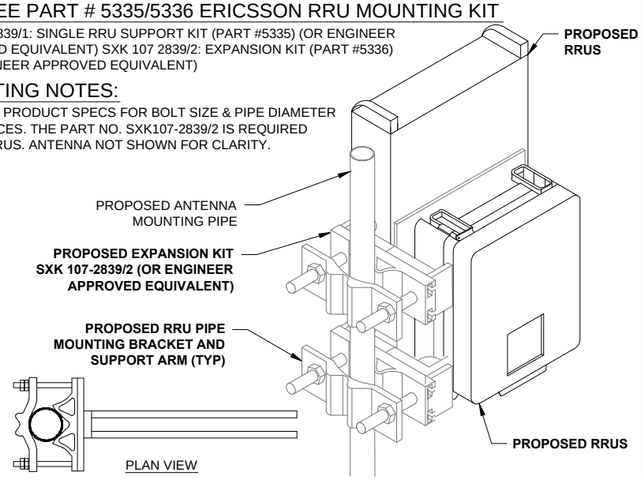
SCALE: N.T.S.

CUE DEE PART # 5335/5336 ERICSSON RRU MOUNTING KIT

SXK 107 2839/1: SINGLE RRU SUPPORT KIT (PART #5335) (OR ENGINEER APPROVED EQUIVALENT) SXK 107 2839/2: EXPANSION KIT (PART #5336) (OR ENGINEER APPROVED EQUIVALENT)

MOUNTING NOTES:

REFER TO PRODUCT SPECS FOR BOLT SIZE & PIPE DIAMETER TOLERANCES. THE PART NO. SXK107-2839/2 IS REQUIRED FOR (2) RRUS. ANTENNA NOT SHOWN FOR CLARITY.



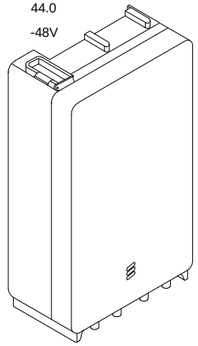
PLAN VIEW

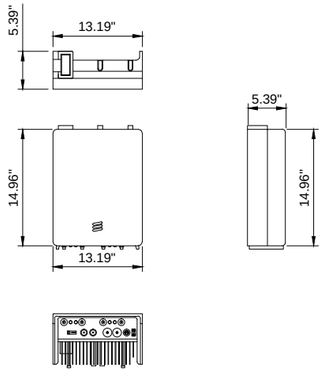
4 RRU MOUNTING DETAIL

SCALE: N.T.S.

MANUFACTURER: ERICSSON
MODEL NO.: RRUS-4415 B25
TECHNOLOGY: LTE 1900
DIMENSIONS (HxWxD): 14.96" x 13.19" x 5.39"
WEIGHT (lbs): 44.0
POWER SUPPLY: -48V

NOTE:
PENDING FINAL PRODUCT SPECIFICATION



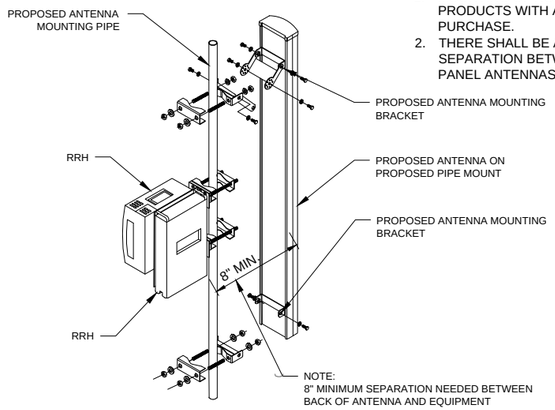


5 RRUS SPECIFICATIONS

SCALE: N.T.S.

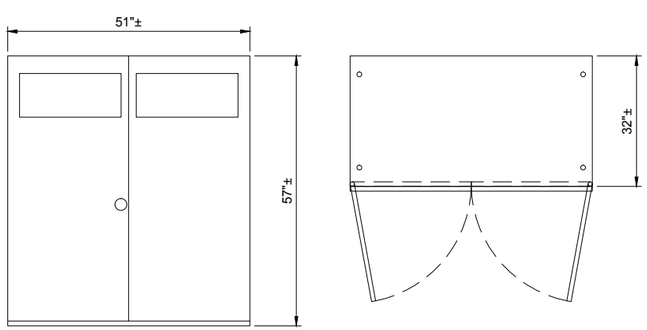
NOTES:

1. MOUNTING OPTIONS ARE INCLUDED PRODUCTS WITH ANTENNA PURCHASE.
2. THERE SHALL BE A MINIMUM 3'-0" SEPARATION BETWEEN ALL LTE PANEL ANTENNAS.



6 ANTENNA MOUNTING DETAIL

SCALE: N.T.S.



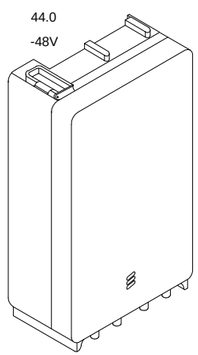
NOTES:
- INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
- FOR COMPLETE SPECIFICATIONS REFER TO ERICSSON'S WEB SITE.

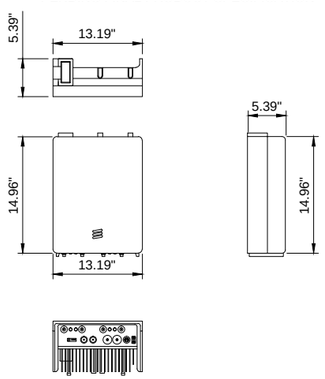
7 ERICSSON BBS 6102 CABINET

SCALE: N.T.S.

MANUFACTURER: ERICSSON
MODEL NO.: RRUS-4415 B66
TECHNOLOGY: LTE 1900
DIMENSIONS (HxWxD): 14.96" x 13.19" x 5.39"
WEIGHT (lbs): 44.0
POWER SUPPLY: -48V

NOTE:
PENDING FINAL PRODUCT SPECIFICATION





8 RRUS SPECIFICATIONS

SCALE: N.T.S.

9 DETAIL NOT USED

SCALE: N.T.S.

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STATE OF CONNECTICUT
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LICENSED PROFESSIONAL ENGINEER

PROJECT NO: ERCC0004
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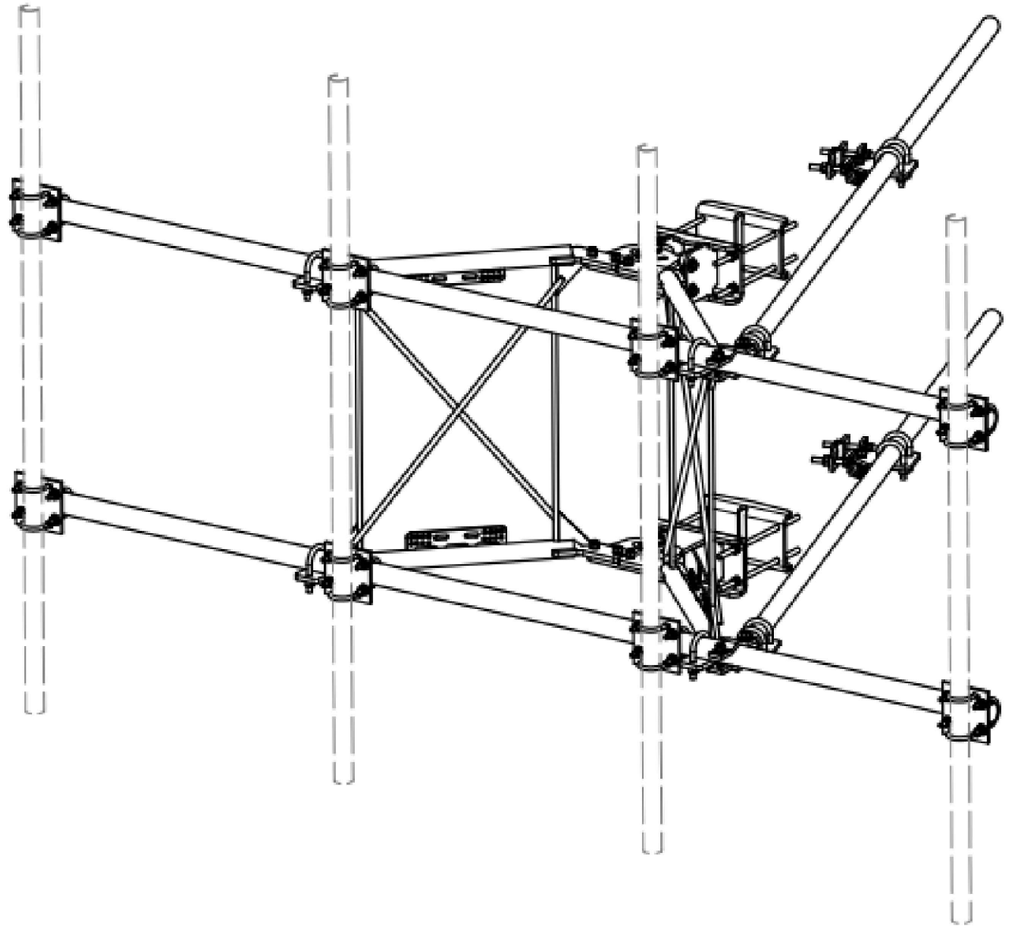
CT11353C
SKY HILL
876345
33 JANOWSKI ROAD
ASHFORD, CT 06278

EQUIPMENT DETAILS

S-2



PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	2	X-VFAW	SUPPORT ARM		71.41	142.81
2	1	X-HDCAMTBW	CLAMP WELDMENT FOR BCAM-HD		33.86	33.86
3	1	X-MHTPHD	MULTI-HOLE TAPER PLATE WELDMENT		36.24	36.24
4	2	X-VFAPL4	VFA-HD PIVOT PLATE	12 in	15.88	31.77
5	2	X-LCBP4	BENT BACKING PLATE	13 in	19.00	38.01
6	1	X-HDCAMSS	ANGLE ADJUSTMENT WELDMENT FOR BCAM-HD		16.39	16.39
7	4	X-SPTB	SLIDING PIPE TIE BACK PLATE	5 1/2 in	5.87	23.49
8	1	X-HDCAMSP	POSITIONING PLATE WELDMENT FOR BCAM-HD		2.58	2.58
9	4	X-TBCA	TIE BACK CLIP ANGLE		2.01	8.02
10	8	SCX2	CROSSOVER PLATE	7 in	4.80	38.37
11	4	MCP	CLAMP HALF 1/2" THICK, 11-5/8" LONG	12 1/16 in	3.59	14.37
12	8	DCP	1/2" THICK, 5-3/4" CNTER TO CENTER CLAMP HALF	8 1/8 in	2.36	18.90
13	2	P2126	2-3/8" X 126" (2" SCH. 40) GALVANIZED PIPE	126 in	40.75	81.50
14	2	P30150	2-7/8" X 150" (2-1/2" SCH. 40) GALVANIZED PIPE	150 in	76.94	153.87
15	4	A34212	3/4" x 2-1/2" UNC HEX BOLT (A325)	2 1/2 in	0.48	1.92
16	4	G34FW	3/4" HDG USS FLATWASHER		0.06	0.24
17	4	G34LW	3/4" HDG LOCKWASHER		0.04	0.17
18	4	G34NUT	3/4" HDG HEAVY 2H HEX NUT		0.21	0.85
19	8	G58R-18	5/8" x 18" THREADED ROD (HDG.)	18 in	0.40	3.19
20	4	G58R-12	5/8" x 12" THREADED ROD (HDG.)		1.05	4.18
21	4	G58R-8	5/8" x 8" THREADED ROD (HDG.)		0.70	2.79
22	4	X-UB5300	5/8" X 3" X 5-1/4" X 2-1/2" U-BOLT (HDG.)		1.15	4.60
23	8	X-UB5258	5/8" X 2-5/8" X 4-1/2" X 2" U-BOLT (HDG.)		1.00	8.00
24	2	G5807	5/8" x 7" HDG HEX BOLT GR5 FULL THREAD	7 in	0.70	1.41
25	1	G5806	5/8" x 6" HDG HEX BOLT GR5 FULL THREAD	6 in	0.62	0.62
26	8	G5804	5/8" x 4" HDG HEX BOLT GR5		0.44	3.55
27	4	G5802	5/8" x 2" HDG HEX BOLT GR5		0.27	1.08
28	8	A582114	5/8" x 2-1/4" HDG A325 HEX BOLT	2 1/4 in	0.31	2.50
29	25	G58FW	5/8" HDG USS FLATWASHER	1/8 in	0.07	1.76
30	66	G58LW	5/8" HDG LOCKWASHER		0.03	1.72
31	71	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	9.22
32	32	X-UB1300	1/2" X 3" X 5" X 2" GALV U-BOLT		0.74	23.64
33	16	X-UB1212	1/2" X 2" X 3" X 1-1/4" U-BOLT (HDG.)		0.60	9.56
34	64	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	2.18
35	64	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	0.89
36	64	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	4.58
					TOTAL WT. #	738.06

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
	REVISION HISTORY			
D	UPDATED BCAM VERSION 1 TO BCAM VERSION 2		CEK	6/29/2018
C	UPDATED PIN LEG CONNECTION TO B-CAM CONNECTION		CEK	12/7/2017
B	CHANGED TIE-BACK BACK CONNECTION		CEK	7/31/2017
A	CHANGED TIE-BACK FRONT CONNECTION		CEK	2/2/2017

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

DESCRIPTION:
12' 6" HEAVY DUTY
V-FRAME ASSEMBLY
WITH TWO STIFF ARMS

SITE PRO 1 — A valmont company
Engineering Support Team: 1-888-753-7446
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
	CEK 1/25/2017		VFA12-HD	1 OF 5
CLASS / SUB	DRAWING USAGE	CHECKED BY	DWG. NO.	
81 / 02	CUSTOMER	BMC 12/13/2017	VFA12-HD	

1 VFA12-HD MOUNT DETAIL — SCALE: N.T.S.

T-Mobile
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ASHFORD, CT 06278

MOUNT DETAIL

S-3

67D93D4 OUTDOOR - TOWER TOP EQUIPMENT SCHEDULE (RE: CT11353C_L600_3.1_DRAFT_2019-05-09)													
ANTENNA NUMBER (FROM L TO R)	ANTENNA MODEL	ANTENNA AZIMUTH	MECH. TILT	ELEC. TILT	ANTENNA CENTERLINE FROM GROUND	TMA/RRUS MODEL	TMA/RRUS QUANTITY	COAX/HYBRID CABLE			JUMPERS		
								SIZE/TYPE	QUANTITY	LENGTH	TYPE	QTY	LENGTH
A1	**APX16DWV-16DWV-S-E-A20**	**20°**	**0°**	**2°**	**158'**	**RADIO 4415 B25**	**1**	**6x12 HCS**	**1**	**203'**	**COAX**	**4**	**10'**
A2	**APXVAARR24_43-U-NA20**	**20°**	**0°**	**2°**	**158'**	**RADIO 4449 B71+B12** **RADIO 4415 B66A**	**1** **1**	-	-	-	**COAX** **COAX**	**4** **4**	**10'** **10'**
B1	**APX16DWV-16DWV-S-E-A20**	**160°**	**0°**	**2°**	**158'**	**RADIO 4415 B25**	**1**	**6x12 HCS**	**1**	**203'**	**COAX**	**4**	**10'**
B2	**APXVAARR24_43-U-NA20**	**160°**	**0°**	**2°**	**158'**	**RADIO 4449 B71+B12** **RADIO 4415 B66A**	 **1**	-	-	-	**COAX** **COAX**	**4** **4**	**10'** **10'**
C1	**APX16DWV-16DWV-S-E-A20**	**240°**	**0°**	**2°**	**158'**	**RADIO 4415 B25**	**1**	**6x12 HCS**	**1**	**203'**	**COAX**	**4**	**10'**
C2	**APXVAARR24_43-U-NA20**	**240°**	**0°**	**2°**	**158'**	**RADIO 4449 B71+B12** **RADIO 4415 B66A**	 **1**	-	-	-	**COAX** **COAX**	**4** **4**	**10'** **10'**

NOTES:

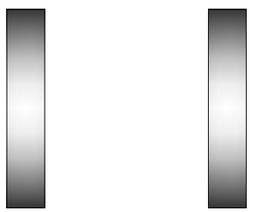
1. EQUIPMENT LISTED IN **BOLD**, DELINEATES THAT THE EQUIPMENT IS PROPOSED

1 EQUIPMENT INFORMATION CHART

SCALE: NONE

KEY
EXISTING
PROPOSED

KEY
ANTENNA POSITION AS VIEW FROM BEHIND



EQUIPMENT NOTES:

1. THE HYBRID CABLE LENGTH SHOW IS ONLY AN ESTIMATE AND SHOULD NOT BE USED FOR ORDERING MATERIALS. CONFIRM THE REQUIRED HYBRID CABLE LENGTH WITH T-MOBILE PRIOR TO ORDERING OR INSTALLATION.
2. THE CONTRACTOR SHALL TEST THE OPTICAL FIBER AFTER INSTALLATION IN ACCORDANCE WITH T-MOBILE STANDARDS AND SUPPLY THE RESULTS TO T-MOBILE.
3. THE CONTRACTOR SHALL CONFIRM THE TOWER TOP EQUIPMENT LIST ABOVE WITH THE FINAL T-MOBILE RFDS PRIOR TO INSTALLATION.
4. ALL EXISTING AND PROPOSED ANTENNA CABLES SHALL BE COLOR CODED PER T-MOBILE STANDARDS.
5. REFER TO EQUIPMENT INSTALLATION STANDARDS FOR ADDITIONAL INFORMATION.
6. REFER TO EQUIPMENT MANUFACTURER'S SPECIFICATION SHEETS FOR ADDITIONAL INFORMATION NOT LISTED ABOVE.

2 ANTENNA KEY

SCALE: NONE

67D93D4 OUTDOOR - TOWER LOADING SUMMARY				
EQUIPMENT TYPE	EXISTING QUANTITY	QUANTITY REMOVED	QUANTITY ADDED	TOTAL QUANTITY
PANEL ANTENNA	4	4	6	6
COAX CABLE	8	8	0	0
HYBRID CABLE	0	0	3	3
FIBER JUMPER	0	0	0	0
COAX JUMPER	0	0	36	36
TMA	2	2	0	0
RADIO	0	0	9	9

3 ANTENNA & CABLE SCHEDULE

SCALE: NONE

T-MOBILE NORTHEAST LLC
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JACOBS
JACOBS ENGINEERING GROUP, INC.
120 ST. JAMES AVENUE, 5TH FLOOR
BOSTON, MA 02116

STATE OF CONNECTICUT
DANIEL J. CORNING
31055
LICENSED
PROFESSIONAL ENGINEER

PROJECT NO: ERCC0004

DRAWN BY: JT

CHECKED BY: DC

SUBMITTALS

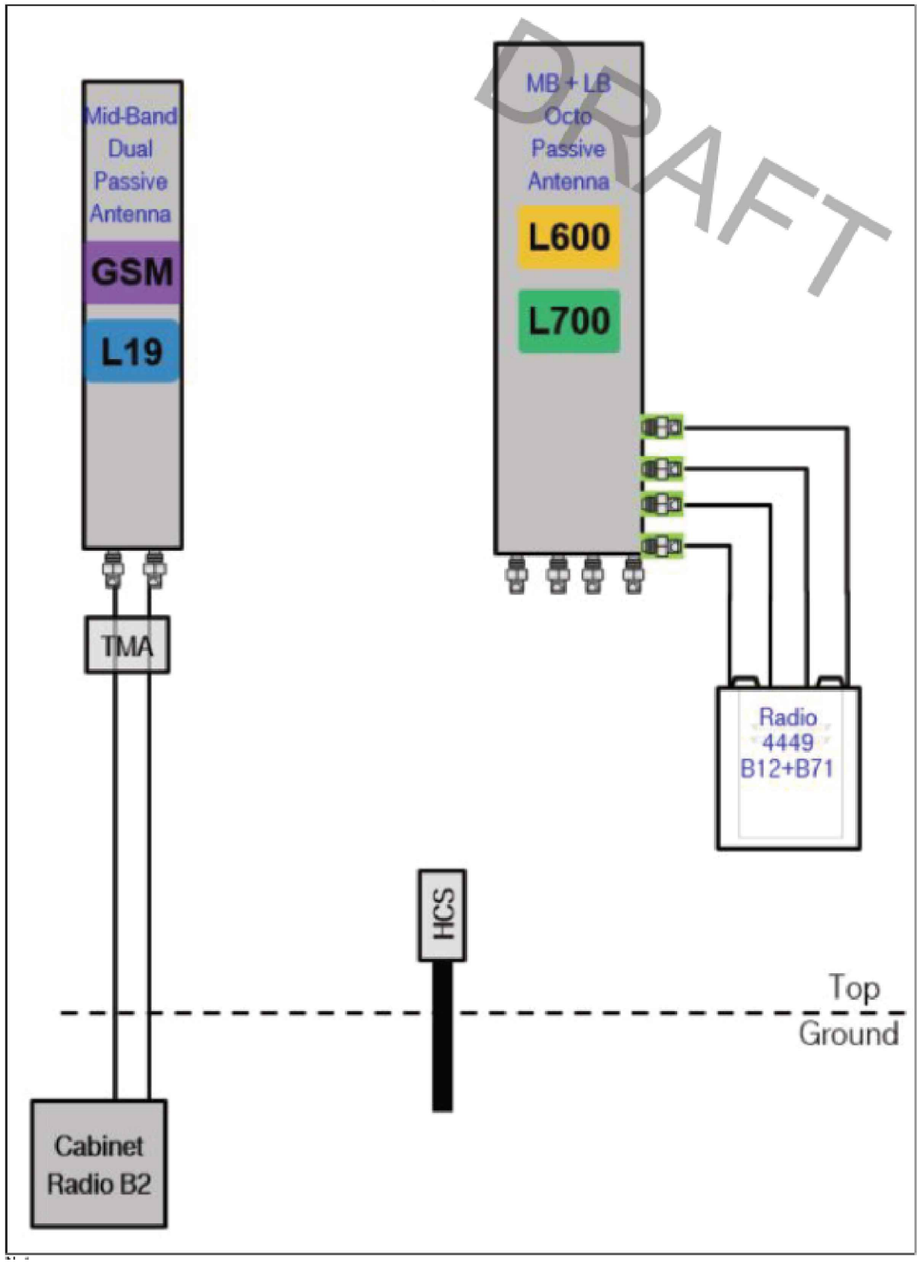
1	08/21/19	ISSUED FOR CONSTRUCTION
0	07/18/19	ISSUED FOR PERMITTING

ASHFORD/I-84_1
CT11353C
SKY HILL
876345
33 JANOWSKI ROAD
ASHFORD, CT 06278

ANTENNA
INFORMATION CHART

RF-1

SITE CONFIGURATION: 67D93D4 OUTDOOR



1 RF EQUIPMENT SCHEMATIC

SCALE: NONE

T-MOBILE NORTHEAST LLC
103 MONARCH DRIVE
LIVERPOOL, NY 13088

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

JACOBS
JACOBS ENGINEERING GROUP, INC.
120 ST. JAMES AVENUE, 5TH FLOOR
BOSTON, MA 02116

STATE OF CONNECTICUT
DANIEL J. CORNING
34055
LICENSED
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PROJECT NO: ERCC0004

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ASHFORD/I-84_1
CT11353C
SKY HILL
876345
33 JANOWSKI ROAD
ASHFORD, CT 06278

RF EQUIPMENT SCHEMATIC

RF-2

ONE LINE DIAGRAM NOTES:

1. ELECTRICAL SERVICE SHALL BE 200A, 240/120V, 1Ø, 3W

2. FOR COMPLETE INTERNAL WIRING AND ARRANGEMENT, REFER TO VENDOR PRINTS PROVIDED BY EQUIPMENT MANUFACTURER.

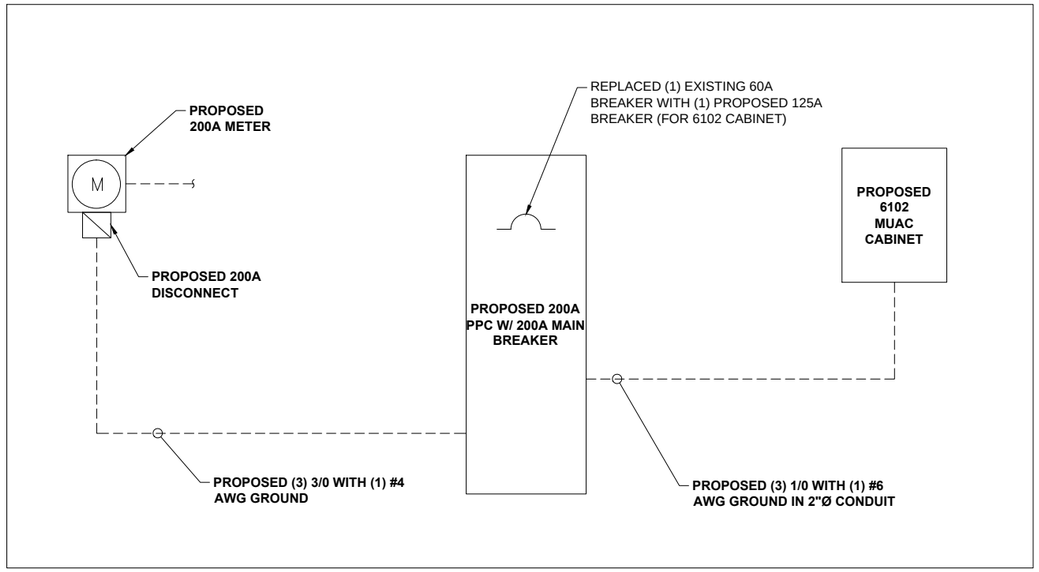
NOTES:

1. CONTRACTOR SHALL VERIFY AVAILABLE FAULT CURRENT WITH POWER COMPANY AND ENSURE ALL ELECTRICAL EQUIPMENT IS SUITABLE FOR AVAILABLE FAULT CURRENT.

2. CONTRACTOR SHALL COORDINATE UTILITY SERVICES WITH LOCAL UTILITY COMPANIES. VERIFY ALL REQUIREMENTS WITH UTILITY COMPANY STANDARDS.

3. ONE-LINE DIAGRAM IS SCHEMATIC ONLY AND NOT INDICATIVE OF ACTUAL EQUIPMENT LAYOUT.

4. CONTRACTOR SHALL LABEL METER SOCKET WITH SERVICE OWNER NAMEPLATE W/ 1/2" MINIMUM LETTERS.



1 ONE LINE DIAGRAM

SCALE: NONE

T-MOBILE NORTHEAST LLC
103 MONARCH DRIVE
LIVERPOOL, NY 13088

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

JACOBS
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STATE OF CONNECTICUT
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SUBMITTALS

1	08/21/19	ISSUED FOR CONSTRUCTION
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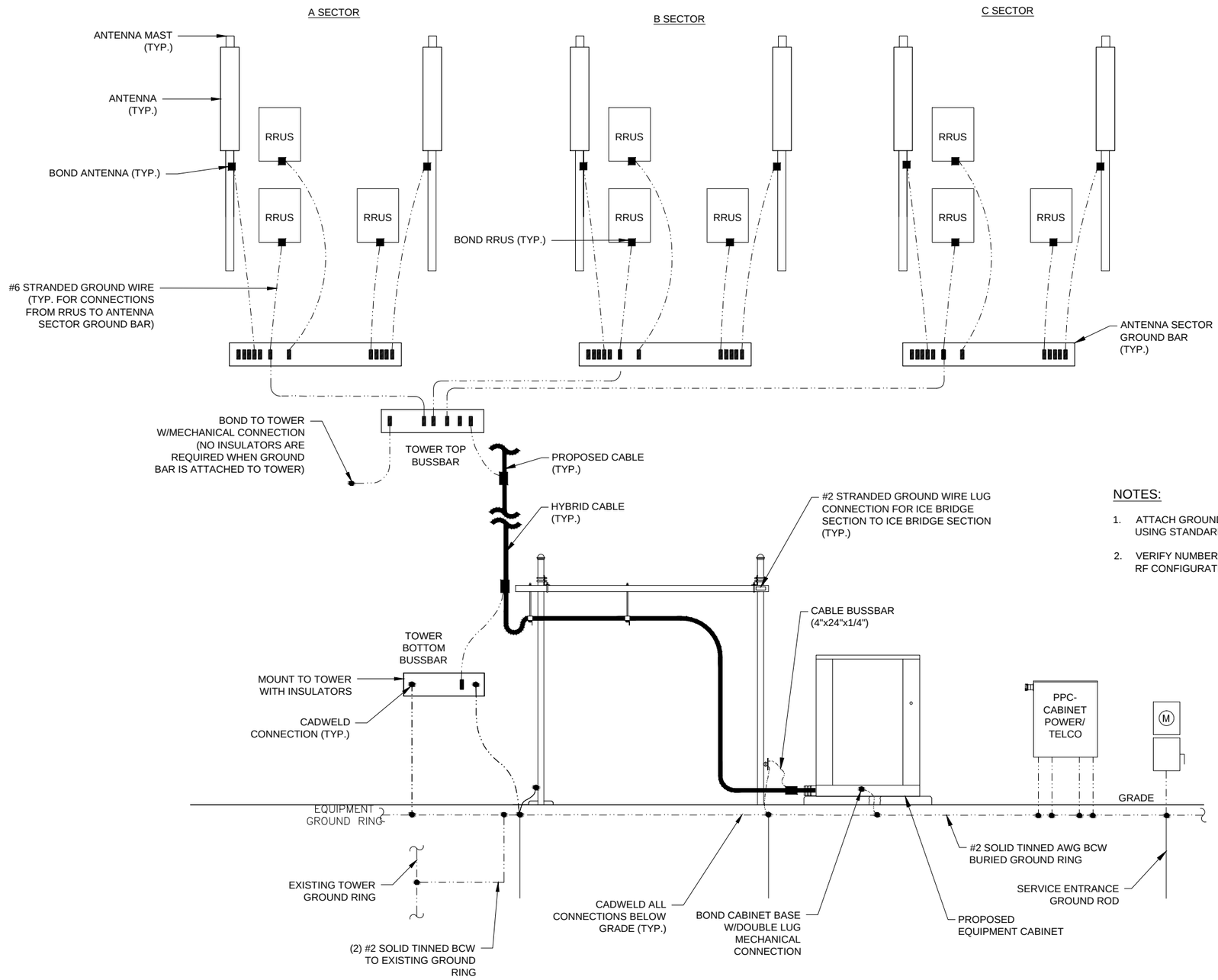
ASHFORD/I-84_1
CT11353C
SKY HILL
876345
33 JANOWSKI ROAD
ASHFORD, CT 06278

ONE LINE
DIAGRAM

E-1



NOTES:

1. ATTACH GROUND BAR DIRECTLY TO THE TOWER USING STANDARD ADAPTER.
2. VERIFY NUMBER OF CABLES/TMAS PER T-MOBILE RF CONFIGURATION.

GROUNDING NOTES:

1. BELOW GROUND ALL GROUNDING CONDUCTORS TO BE #2 AWG SOLID TINNED BARE COPPER WIRE (BCW) U.O.N.
2. ABOVE GROUND ALL GROUNDING CONDUCTORS TO BE #2 AWG STRANDED INSULATED COPPER WIRE U.O.N.
3. PROVIDE BONDING AND GROUNDING CONDUCTORS WITH GREEN TYPE THWN INSULATION, U.O.N.
4. LEAVE 4' EXCESS GROUND WIRE COILED UP ABOVE GRADE. SEAL/WEATHERPROOF CONDUIT.

1 GROUNDING RISER DIAGRAM

SCALE: N.T.S.

T-MOBILE NORTHEAST LLC
103 MONARCH DRIVE
LIVERPOOL, NY 13088

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

JACOBS
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120 ST. JAMES AVENUE, 5TH FLOOR
BOSTON, MA 02116

STATE OF CONNECTICUT
DANIEL J. CORNING
34055
LICENSED PROFESSIONAL ENGINEER

PROJECT NO:	ERCC0004
DRAWN BY:	JT
CHECKED BY:	DC

SUBMITTALS

1	08/21/19	ISSUED FOR CONSTRUCTION
0	07/18/19	ISSUED FOR PERMITTING

ASHFORD/I-84_1
CT11353C
SKY HILL
876345
33 JANOWSKI ROAD
ASHFORD, CT 06278

GROUNDING RISER DIAGRAM

G-1

Exhibit D

Structural Analysis Report

Date: **June 19, 2019**

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

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

Subject:	**Structural Analysis Report**	
Carrier Designation:	***T-Mobile* Co-Locate**	
	Carrier Site Number:	CT11353C
	Carrier Site Name:	Ashford/I-84_1
Crown Castle Designation:	**Crown Castle BU Number:**	876345
	Crown Castle Site Name:	Sky Hill
	Crown Castle JDE Job Number:	578226
	Crown Castle Work Order Number:	1751231
	Crown Castle Order Number:	495679 Rev. 0
Engineering Firm Designation:	**B+T Group Project Number:**	77921.007.01
Site Data:	**33 Janowski Road, Ashford, Windham County, CT** **Latitude *41° 57' 7.7"*, Longitude *-72° 11' 43.9"*** **192 Foot - Self Support Tower**	

Dear Denice Nicholson,

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

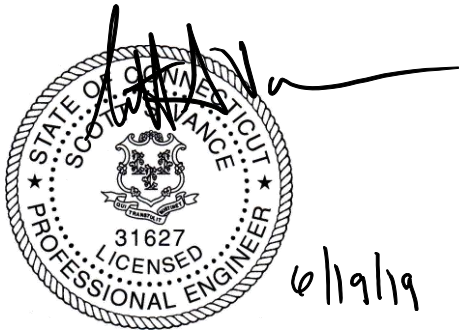
The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration **Sufficient Capacity - 79.0%**

This analysis utilizes an ultimate 3-second gust wind speed of 130 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Dhanush Manjunatha

Respectfully submitted by: B+T Engineering, Inc.
COA: PEC.0001564; Expires: 02/10/2020



Scott S. Vance, P.E.

tnxTower Report - version 8.0.5.0

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 192 ft. Self-Support tower designed by Rohn in December of 1996. The tower was originally designed for a wind speed of 90 mph per TIA/EIA-222-E.

2) ANALYSIS CRITERIA

TIA-222 Revision: TIA-222-H
Risk Category: II
Wind Speed: 130 mph
Exposure Category: B
Topographic Factor: 1
Ice Thickness: 2 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)
153.0	153.0	3	Ericsson	RADIO 4415 B66A	3	1-5/8
		3	Ericsson	RADIO 4449 B12/B71		
		3	Ericsson	RRUS 4415 B25		
		3	RFS Celwave	APX16DWV-16DWV-S-E-A20		
		3	RFS Celwave	APXVAARR24_43-U-NA20		
		3	Site Pro	VFA12-HD Sector Mount		

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)
190.0	192.0	3	Alcatel Lucent	PCS 1900MHz 4x45W-65MHz	4	1-1/4
		6	Alcatel Lucent	RRH2X50-800		
		3	Alcatel Lucent	TD-RRH8x20-25		
		3	Commscope	NNVV-65B-R4		
		3	RFS Celwave	APXVTM14-ALU-I20		
	190.0	1	--	Sector Mount [SM 504-3]		
180.0	184.0	1	Symmetricom	58532A	8 1	1-5/8 1/2
	181.0	3	Alcatel Lucent	RRH2X60-700		
		3	Alcatel Lucent	RRH4X45-AWS4 B66		
		6	Antel	LPA-80080/4CF		
		6	Commscope	JAHH-65B-R3B		
		3	Nokia	BAND 5 AHCA RRH4X40		
		2	Raycap	RC3DC-3315-PF-48		
	180.0	1	--	Sector Mount [SM 303-3]		
170.0	172.0	9	Allgon	7130.16.33.00	9	1-5/8
	170.0	1	--	Sector Mount [SM 504-3]		
160.0	162.0	3	Andrew	HBX-6516DS-VTM	6	1-5/8
	160.0	1	--	Sector Mount [SM 104-3]		

Mounting Level (ft.)	Center Line Elevation (ft.)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
140.0	141.0	3	Communication Components Inc.	DTMABP7819VG12A	12 2 1	7/8 3/4 3/8
		6	Ericsson	RRUS-11		
		3	Kathrein	800 10121		
		4	KMW Comm.	AM-X-CD-14-65-00T-RET		
		2	KMW Comm.	AM-X-CD-16-65-00T-RET		
		3	Powerwave Tech.	7020.00		
		3	Powerwave Tech.	LGP13519		
		1	Raycap	DC6-48-60-18-8F		
	140.0	1	--	Sector Mount [SM 502-3]		
98.0	102.0	1	Symmetricom	58532A	1	1/2
	98.0	1	--	Side Arm Mount [SO 306-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
Online Order Information	T-Mobile Co-Locate, Rev# 0	495679	CCI Sites
Tower Manufacturer Drawing	Rohn, File No. 34589PH	1631630	CCI Sites
Mount Analysis Report	MasTec, Date: 06/13/2019	8471761	CCI Sites
Foundation Drawing	Rohn, File No. 34589PH	1631622	CCI Sites
Geotech Report	FDH, Project No. 07-11436G	2189896	CCI Sites
Antenna Configuration	Crown CAD Package	Date: 06/03/2019	CCI Sites

3.1) Analysis Method

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

3.2) Assumptions

1) The tower and structures were built and have been maintained in accordance with the manufacturer's specification.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
3) Mount areas and weights are assumed based on photographs provided.
4) The existing base plate grout was considered in this analysis. Grout must be maintained and inspected periodically, and must be replaced if damaged or cracked. Refer to crown document ENG-STD-10323, Tower Base Plate Grout Inspection and Classification.

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
T1	192 - 180	Leg	ROHN 2.5 STD	1	-7.757	66.738	11.6	Pass
T2	180 - 160	Leg	ROHN 2.5 STD	27	-37.844	59.996	63.1	Pass
T3	160 - 140	Leg	ROHN 3 EH	56	-72.729	99.054	73.4	Pass
T4	140 - 120	Leg	ROHN 4 EH	77	-112.764	167.894	67.2	Pass
T5	120 - 100	Leg	ROHN 5 EH	98	-150.298	251.347	59.8	Pass
T6	100 - 80	Leg	ROHN 6 EHS	119	-183.017	256.249	71.4	Pass
T7	80 - 60	Leg	ROHN 6 EH	134	-218.772	318.945	68.6	Pass
T8	60 - 40	Leg	ROHN 8 EHS	149	-252.490	405.672	62.2	Pass
T9	40 - 20	Leg	ROHN 8 EHS	163	-286.488	405.729	70.6	Pass
T10	20 - 0	Leg	ROHN 8 EHS	178	-320.581	405.717	79.0	Pass
T1	192 - 180	Diagonal	L1 3/4x1 3/4x3/16	7	-1.693	11.895	14.2 22.5 (b)	Pass
T2	180 - 160	Diagonal	L2x2x3/16	36	-4.210	10.392	40.5 50.2 (b)	Pass
T3	160 - 140	Diagonal	L2 1/2x2 1/2x1/4	63	-6.296	16.480	38.2 56.7 (b)	Pass
T4	140 - 120	Diagonal	L2 1/2x2 1/2x1/4	81	-7.268	12.587	57.7 65.6 (b)	Pass
T5	120 - 100	Diagonal	L3x3x1/4	102	-7.815	17.432	44.8 52.8 (b)	Pass
T6	100 - 80	Diagonal	L3 1/2x3 1/2x1/4	123	-9.211	19.016	48.4 61.7 (b)	Pass
T7	80 - 60	Diagonal	L4x4x1/4	138	-10.160	24.136	42.1 67.5 (b)	Pass
T8	60 - 40	Diagonal	L4x4x5/16	153	-9.777	24.922	39.2 52.7 (b)	Pass
T9	40 - 20	Diagonal	L4x4x5/16	168	-11.637	21.484	54.2 61.2 (b)	Pass
T10	20 - 0	Diagonal	L4x4x3/8	183	-12.395	21.926	56.5 59.3 (b)	Pass
T1	192 - 180	Top Girt	L1 3/4x1 3/4x3/16	5	-0.108	4.122	2.6	Pass
T2	180 - 160	Top Girt	L2x2x3/16	28	-0.903	6.245	14.5	Pass
							Summary	
						Leg (T10)	79.0	Pass
						Diagonal (T7)	67.5	Pass
						Top Girt (T2)	14.5	Pass
						Bolt Checks	67.5	Pass
						Rating =	79.0	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation	% Capacity	Pass / Fail
1	Anchor Rod	Base	23.2	Pass
1	Base Foundation (Structure)	Base	10.7	Pass
1	Base Foundation (Soil Interaction)	Base	45.0	Pass

Structure Rating (max from all components) =	79.0%

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.

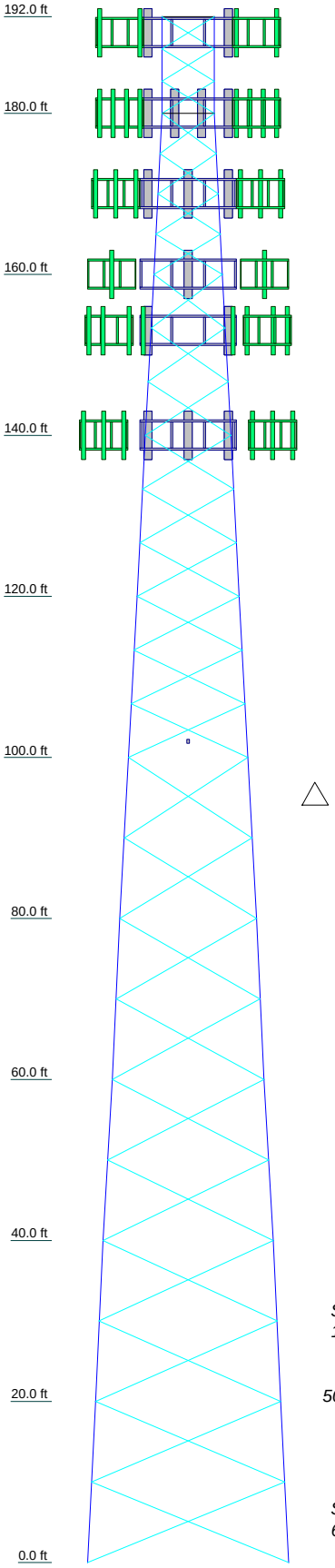
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section		T1	T2	T3	T4	T5	T6	T7	T8	T9	T10
Legs		ROHN 2.5 STD		ROHN 3 EH	ROHN 4 EH	ROHN 5 EH	ROHN 6 EHS	ROHN 6 EH		ROHN 8 EHS	
Leg Grade		A572-50									
Diagonals	A	L2x2x3/16		L2 1/2x2 1/2x1/4		L3x3x1/4	L3 1/2x3 1/2x1/4	L4x4x1/4		L4x4x5/16	L4x4x3/8
Diagonal Grade	A36					A572-50					
Top Girts	A	L2x2x3/16				N.A.					
Face Width (ft)	6.58	8.54	10.61	12.74	14.83	16.92	18.88	21.13	23.05	25.05	
# Panels @ (ft)	3 @ 4	4 @ 5	9 @ 6.66667				10 @ 10				
Weight (K)	0.6	1.0	1.5	2.0	2.7	2.8	3.5	4.4	4.6	5.3	28.4



SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L1 3/4x1 3/4x3/16		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

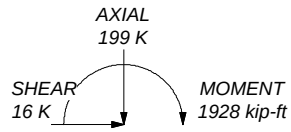
TOWER DESIGN NOTES

1. Tower is located in Windham County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 130 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 2.00 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: 79%

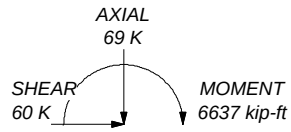
ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 329 K
SHEAR: 37 K

UPLIFT: -276 K
SHEAR: 32 K



TORQUE 16 kip-ft
50 mph WIND - 2.000 in ICE



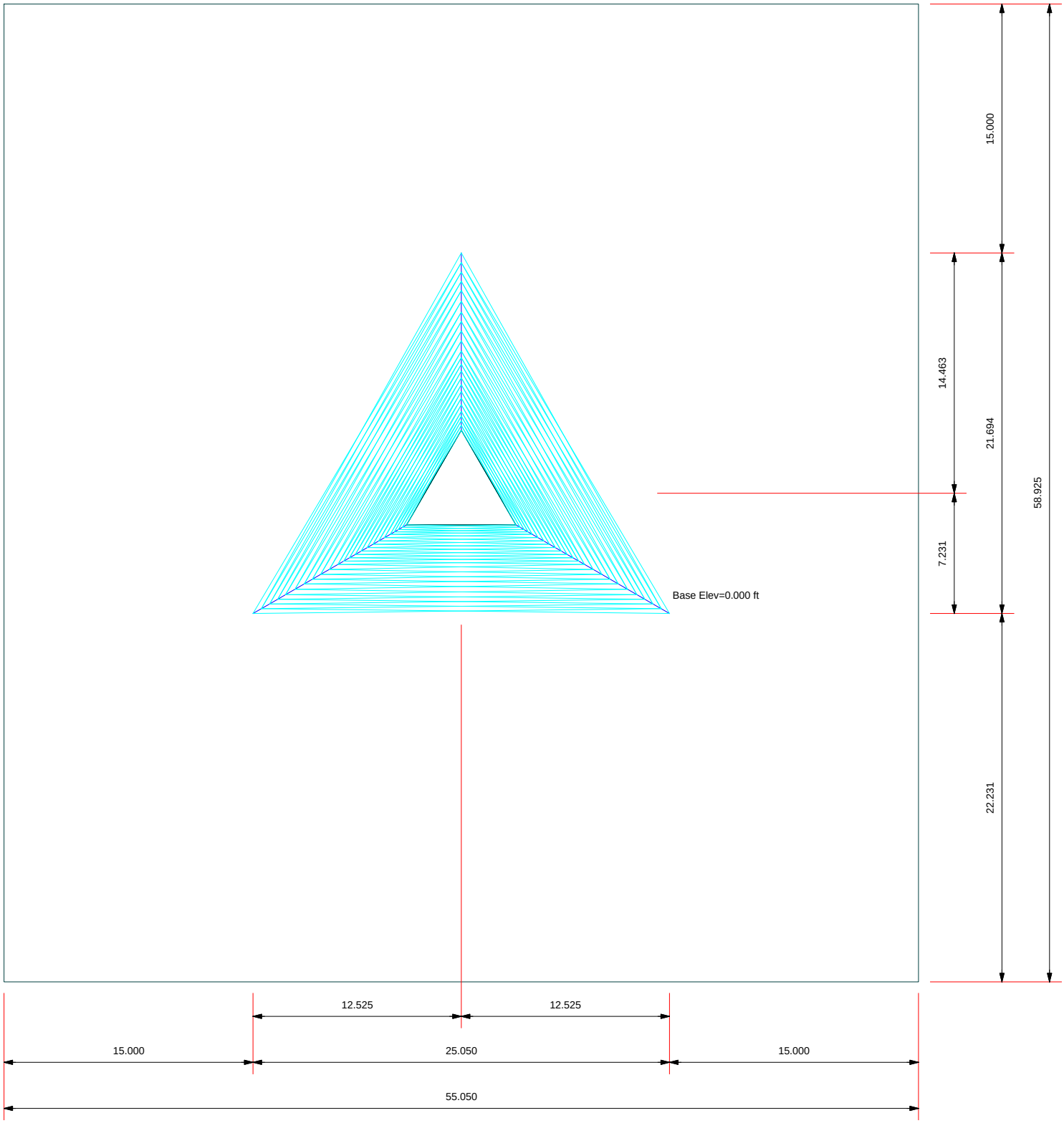
TORQUE 61 kip-ft
REACTIONS - 130 mph WIND

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

Job: 77921.007.01 - SKY HILL, CT (BU# 876345			
Project:			
Client: Crown Castle	Drawn by: Sampath	App'd:	
Code: TIA-222-H	Date: 06/19/19	Scale: NTS	
Path:		Dwg No. E-1	

Plot Plan

Total Area - 0.07 Acres



B+T Group
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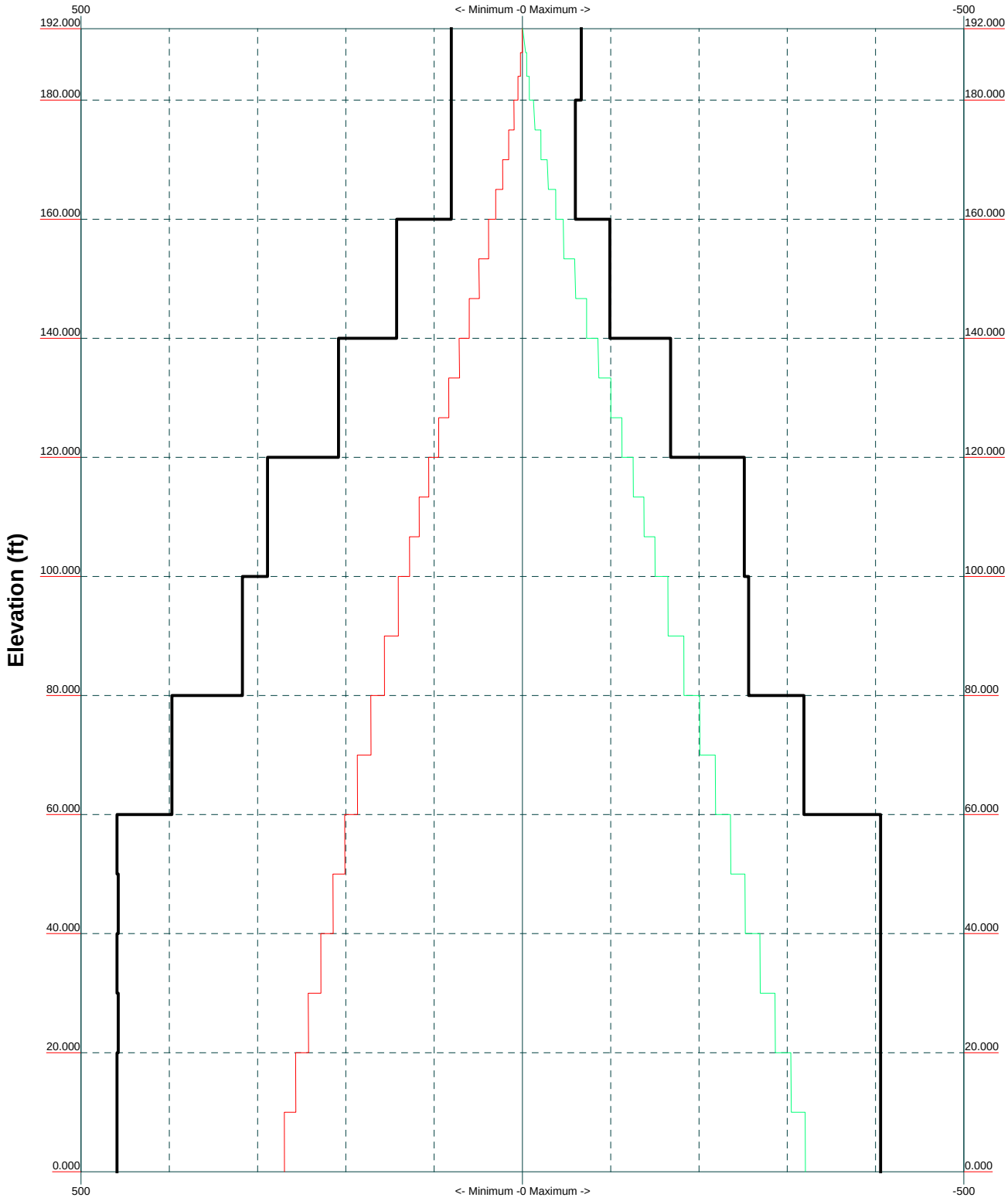
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 77921.007.01 - SKY HILL, CT (BU# 876345		
Project:		
Client: Crown Castle	Drawn by: Sampath	App'd:
Code: TIA-222-H	Date: 06/19/19	Scale: NTS
Path:		Dwg No. E-2

TIA-222-H - 130 mph/50 mph 2.000 in Ice Exposure B

Leg Capacity ——— **Leg Compression (K)**



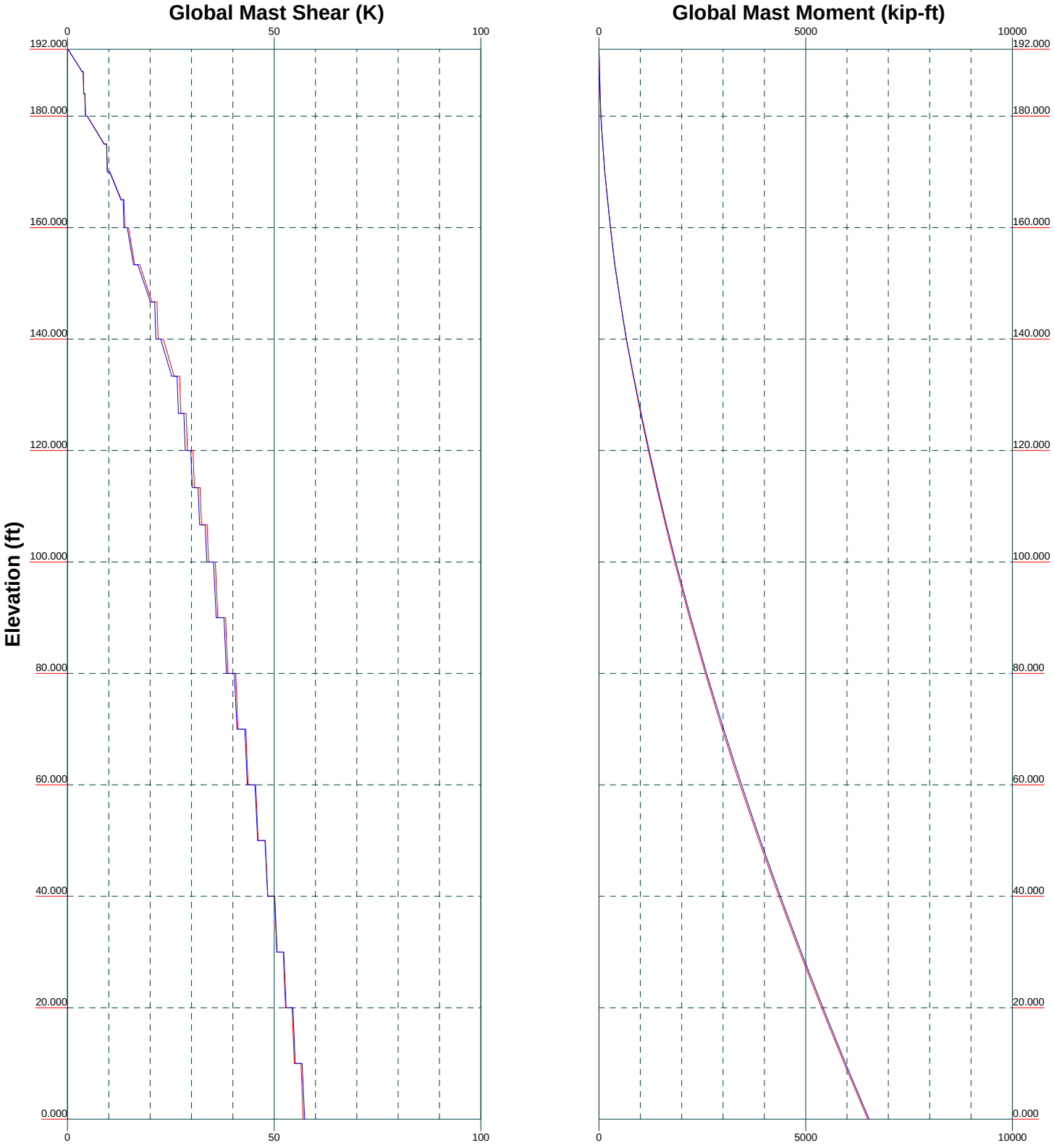
B+T Group
1717 S Boulder Ave, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job:	***77921.007.01 - SKY HILL, CT (BU# 876345***		
Project:			
Client: Crown Castle		Drawn by: Sampath	App'd:
Code: TIA-222-H		Date: 06/19/19	Scale: NTS
Path:			Dwg No. E-3

TIA-222-H - 130 mph/50 mph 2.000 in Ice Exposure B

Maximum Values

Vx Vz Mx Mz



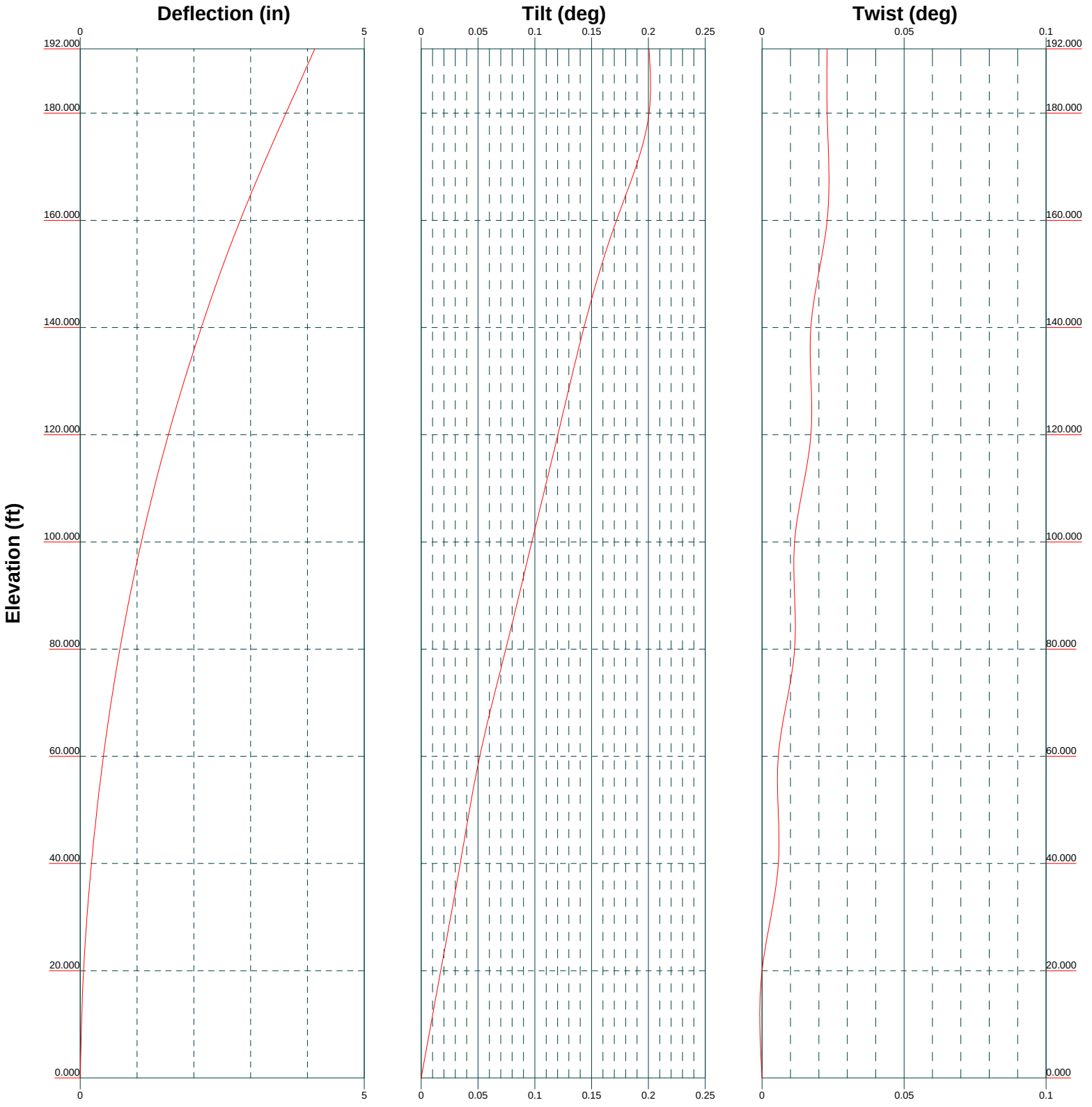
B+T GRP

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

Job:	***77921.007.01 - SKY HILL, CT (BU# 876345***		
Project:			
Client: Crown Castle	Drawn by: Sampath	App'd:	
Code: TIA-222-H	Date: 06/19/19	Scale: NTS	
Path:		Dwg No. E-4	

TIA-222-H - Service - 60 mph

Maximum Values



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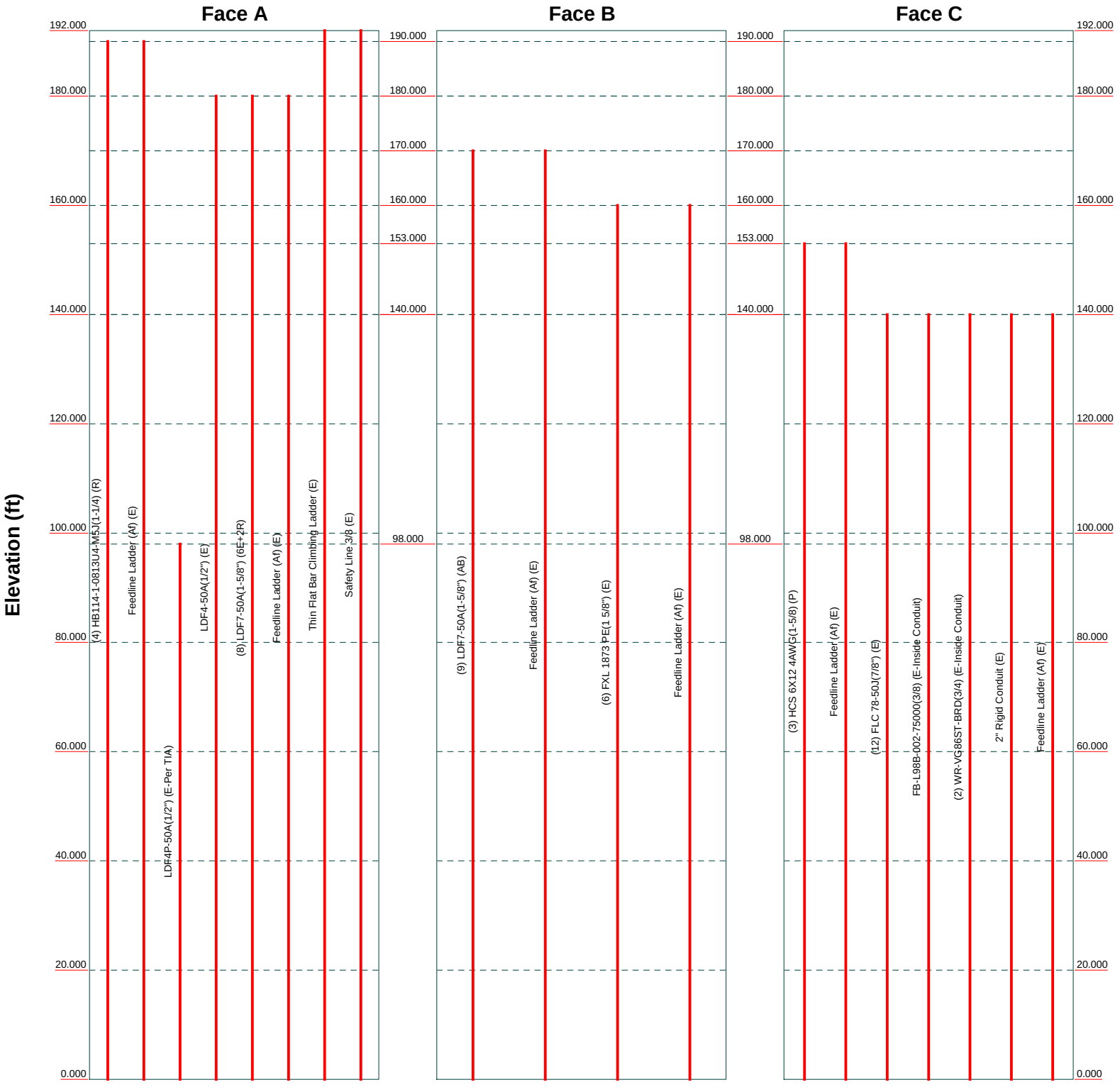
1717 S Boulder Ave, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 77921.007.01 - SKY HILL, CT (BU# 876345			
Project:			
Client: Crown Castle	Drawn by: Sampath	App'd:	
Code: TIA-222-H	Date: 06/19/19	Scale: NTS	
Path:		Dwg No. E-5	

Feed Line Distribution Chart
0' - 192'

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



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

Job: 77921.007.01 - SKY HILL, CT (BU# 876345			
Project:			
Client: Crown Castle	Drawn by: Sampath	App'd:	
Code: TIA-222-H	Date: 06/19/19	Scale: NTS	
Path:		Dwg No. E-7	

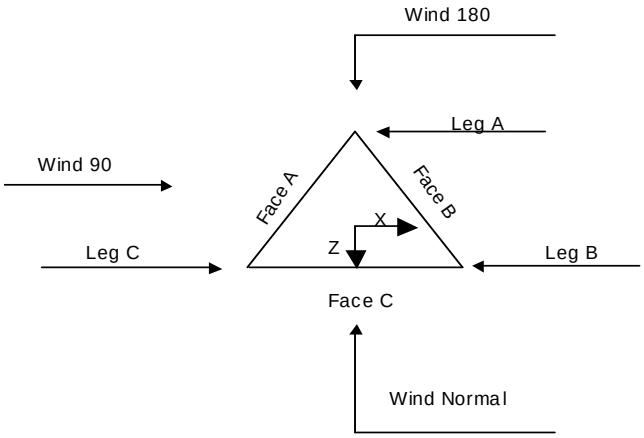
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 192.000 ft above the ground line.
The base of the tower is set at an elevation of 0.000 ft above the ground line.
The face width of the tower is 6.580 ft at the top and 25.050 ft at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower is located in Windham County, Connecticut.
Tower base elevation above sea level: 1068.000 ft.
Basic wind speed of 130 mph.
Risk Category II.
Exposure Category B.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.000 ft.
Nominal ice thickness of 2.000 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.
Pressures are calculated at each section.
Tower analysis based on target reliabilities in accordance with Annex S.
Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
Stress ratio used in tower member design 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



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	192.000-180.000			6.580	1	12.000
T2	180.000-160.000			6.580	1	20.000
T3	160.000-140.000			8.540	1	20.000
T4	140.000-120.000			10.610	1	20.000
T5	120.000-100.000			12.740	1	20.000
T6	100.000-80.000			14.830	1	20.000
T7	80.000-60.000			16.920	1	20.000
T8	60.000-40.000			18.880	1	20.000
T9	40.000-20.000			21.130	1	20.000
T10	20.000-0.000			23.050	1	20.000

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	192.000-180.000	4.000	X Brace	No	No	0.000	0.000
T2	180.000-160.000	5.000	X Brace	No	No	0.000	0.000
T3	160.000-140.000	6.667	X Brace	No	No	0.000	0.000
T4	140.000-120.000	6.667	X Brace	No	No	0.000	0.000
T5	120.000-100.000	6.667	X Brace	No	No	0.000	0.000

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T6	100.000-80.000	10.000	X Brace	No	No	0.000	0.000
T7	80.000-60.000	10.000	X Brace	No	No	0.000	0.000
T8	60.000-40.000	10.000	X Brace	No	No	0.000	0.000
T9	40.000-20.000	10.000	X Brace	No	No	0.000	0.000
T10	20.000-0.000	10.000	X Brace	No	No	0.000	0.000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 192.000-180.000	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T2 180.000-160.000	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T3 160.000-140.000	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T4 140.000-120.000	Pipe	ROHN 4 EH	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T5 120.000-100.000	Pipe	ROHN 5 EH	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A572-50 (50 ksi)
T6 100.000-80.000	Pipe	ROHN 6 EHS	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A572-50 (50 ksi)
T7 80.000-60.000	Pipe	ROHN 6 EH	A572-50 (50 ksi)	Equal Angle	L4x4x1/4	A572-50 (50 ksi)
T8 60.000-40.000	Pipe	ROHN 8 EHS	A572-50 (50 ksi)	Equal Angle	L4x4x5/16	A572-50 (50 ksi)
T9 40.000-20.000	Pipe	ROHN 8 EHS	A572-50 (50 ksi)	Equal Angle	L4x4x5/16	A572-50 (50 ksi)
T10 20.000-0.000	Pipe	ROHN 8 EHS	A572-50 (50 ksi)	Equal Angle	L4x4x3/8	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 192.000-180.000	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)	Single Angle		A36 (36 ksi)
T2 180.000-160.000	Equal Angle	L2x2x3/16	A36 (36 ksi)	Single Angle		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

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
T1 192.000-180.000	0.000	0.250	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T2 180.000-160.000	0.000	0.250	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T3 160.000-140.000	0.000	0.250	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T4 140.000-120.000	0.000	0.250	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T5 120.000-100.000	0.000	0.375	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T6 100.000-80.000	0.000	0.375	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T7 80.000-60.000	0.000	0.375	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T8 60.000-40.000	0.000	0.375	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T9 40.000-20.000	0.000	0.375	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T10 20.000-0.000	0.000	0.375	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 192.000-180.000	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 180.000-160.000	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 160.000-140.000	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 140.000-120.000	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5 120.000-100.000	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T6 100.000-80.000	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T7 80.000-60.000	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X	X Brace Diags Y	K Brace Diags X	K Brace Diags Y	Single Diags X	Single Diags Y	Girts X	Girts Y	Horiz. X	Horiz. Y	Sec. Horiz. X	Sec. Horiz. Y	Inner Brace X	Inner Brace Y
T8	Yes	No	1	1		1		1		1		1		1		1	
60.000-40.000				1		1		1		1		1		1		1	
T9	Yes	No	1	1		1		1		1		1		1		1	
40.000-20.000				1		1		1		1		1		1		1	
T10	Yes	No	1	1		1		1		1		1		1		1	
20.000-0.000				1		1		1		1		1		1		1	

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Net Width Deduct in	Leg U	Diagonal Net Width Deduct in	Diagonal U	Top Girt Net Width Deduct in	Top Girt U	Bottom Girt Net Width Deduct in	Bottom Girt U	Mid Girt Net Width Deduct in	Mid Girt U	Long Horizontal Net Width Deduct in	Long Horizontal U	Short Horizontal Net Width Deduct in	Short Horizontal U
T1	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
192.000-180.000														
T2	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
180.000-160.000														
T3	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
160.000-140.000														
T4	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
140.000-120.000														
T5	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
120.000-100.000														
T6	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
100.000-80.000														
T7	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
80.000-60.000														
T8	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
60.000-40.000														
T9	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
40.000-20.000														
T10	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
20.000-0.000														

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 192.000-180.000	Flange	0.625 A325N	4	0.625 A325N	1	0.625 A325N	1	0.000 A325N	0	0.625 A325X	0	0.000 A325N	0	0.625 A325X	0
T2 180.000-160.000	Flange	0.625 A325N	4	0.625 A325N	1	0.625 A325N	1	0.000 A325N	0	0.625 A325X	0	0.000 A325N	0	0.625 A325X	0
T3 160.000-140.000	Flange	0.875 A325N	4	0.625 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325X	0	0.000 A325N	0	0.625 A325X	0
T4 140.000-120.000	Flange	1.000 A325N	4	0.625 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325X	0	0.000 A325N	0	0.625 A325X	0
T5 120.000-100.000	Flange	1.000 A325N	6	0.750 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325X	0	0.000 A325N	0	0.625 A325X	0
T6 100.000-80.000	Flange	1.000 A325N	6	0.750 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325X	0	0.000 A325N	0	0.625 A325X	0
T7 80.000-60.000	Flange	1.000 A325N	8	0.750 A325N	1	0.000 A325N	0	0.000 A325N	0	0.625 A325X	0	0.000 A325N	0	0.625 A325X	0
T8 60.000-40.000	Flange	1.000 A325N	8	0.750 A325X	1	0.000 A325N	0	0.000 A325N	0	0.625 A325X	0	0.000 A325N	0	0.625 A325X	0
T9 40.000-20.000	Flange	1.000 A325N	8	0.750 A325X	1	0.000 A325N	0	0.000 A325N	0	0.625 A325X	0	0.000 A325N	0	0.625 A325X	0
T10 20.000-0.000	Flange	0.000 A354-BC	0	0.750 A325X	1	0.000 A325N	0	0.000 A325N	0	0.625 A325X	0	0.000 A325N	0	0.625 A325X	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
HB114-1-0813U4-M5J(1-1/4) (R)	A	No	No	Ar (CaAa)	190.000 - 0.000	0.000	-0.45	4	4	0.850 0.750	1.540		0.001
Feedline Ladder (Af) (E) **********	A	No	No	Af (CaAa)	190.000 - 0.000	0.000	-0.45	1	1	3.000	3.000		0.008
LDF4P-50A(1/2") (E-Per TIA) **********	A	No	No	Ar (CaAa)	98.000 - 0.000	0.000	-0.43	1	1	0.500	0.630		0.000
LDF4-50A(1/2") (E)	A	No	No	Ar (CaAa)	180.000 - 0.000	0.000	0.47	1	1	0.500	0.630		0.000
LDF7-50A(1-5/8") (6E+2R)	A	No	No	Ar (CaAa)	180.000 - 0.000	0.000	0.43	8	8	0.850 0.750	1.980		0.001
Feedline Ladder (Af) (E)	A	No	No	Af (CaAa)	180.000 - 0.000	0.000	0.43	1	1	3.000	3.000		0.008

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
**********													
LDF7-50A(1-5/8") (AB)	B	No	No	Ar (CaAa)	170.000 - 0.000	0.000	-0.42	9	9	0.850 0.750	1.980		0.001
Feedline Ladder (Af) (E)	B	No	No	Af (CaAa)	170.000 - 0.000	0.000	-0.42	1	1	3.000	3.000		0.008
**********													
FXL 1873 PE(1 5/8") (E)	B	No	No	Ar (CaAa)	160.000 - 0.000	-3.000	0.45	6	3	0.850 0.750	1.980		0.000
Feedline Ladder (Af) (E)	B	No	No	Af (CaAa)	160.000 - 0.000	-1.000	0.45	1	1	3.000	3.000		0.008
**********													
HCS 6X12 4AWG(1-5/8) (P)	C	No	No	Ar (CaAa)	153.000 - 0.000	0.000	0.45	3	3	0.850 0.750	1.660		0.002
Feedline Ladder (Af) (E)	C	No	No	Af (CaAa)	153.000 - 0.000	0.000	0.44	1	1	3.000	3.000		0.008
**********													
FLC 78-50J(7/8") (E)	C	No	No	Ar (CaAa)	140.000 - 0.000	0.000	-0.45	12	12	1.000 0.750	1.112		0.000
FB-L98B-002-75000(3/8) (E-Inside Conduit)	C	No	No	Ar (CaAa)	140.000 - 0.000	1.500	-0.41	1	1	0.300	0.394		0.000
WR-VG86ST-BRD(3/4) (E-Inside Conduit)	C	No	No	Ar (CaAa)	140.000 - 0.000	1.500	-0.41	2	2	0.300	0.795		0.001
2" Rigid Conduit (E)	C	No	No	Ar (CaAa)	140.000 - 0.000	0.000	-0.41	1	1	2.000	2.000		0.003
Feedline Ladder (Af) (E)	C	No	No	Af (CaAa)	140.000 - 0.000	0.000	-0.45	1	1	3.000	3.000		0.008
**********													
Thin Flat Bar Climbing Ladder (E)	A	No	No	Af (CaAa)	192.000 - 0.000	-6.000	0.45	1	1	2.000	2.000		0.004
Safety Line 3/8 (E)	A	No	No	Ar (CaAa)	192.000 - 0.000	-6.000	0.45	1	1	0.375	0.375		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

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C_AA_A ft^2/ft	Weight klf
**********								

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
T1	192.000-180.000	A	0.000	0.000	15.610	0.000	0.183
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.000
T2	180.000-160.000	A	0.000	0.000	72.677	0.000	0.651
		B	0.000	0.000	22.820	0.000	0.158
		C	0.000	0.000	0.000	0.000	0.000
T3	160.000-140.000	A	0.000	0.000	72.677	0.000	0.651
		B	0.000	0.000	79.400	0.000	0.484
		C	0.000	0.000	12.974	0.000	0.203
T4	140.000-120.000	A	0.000	0.000	72.677	0.000	0.651
		B	0.000	0.000	79.400	0.000	0.484
		C	0.000	0.000	64.615	0.000	0.657
T5	120.000-100.000	A	0.000	0.000	72.677	0.000	0.651
		B	0.000	0.000	79.400	0.000	0.484
		C	0.000	0.000	64.615	0.000	0.657
T6	100.000-80.000	A	0.000	0.000	73.811	0.000	0.653
		B	0.000	0.000	79.400	0.000	0.484
		C	0.000	0.000	64.615	0.000	0.657
T7	80.000-60.000	A	0.000	0.000	73.937	0.000	0.654
		B	0.000	0.000	79.400	0.000	0.484
		C	0.000	0.000	64.615	0.000	0.657
T8	60.000-40.000	A	0.000	0.000	73.937	0.000	0.654
		B	0.000	0.000	79.400	0.000	0.484
		C	0.000	0.000	64.615	0.000	0.657
T9	40.000-20.000	A	0.000	0.000	73.937	0.000	0.654
		B	0.000	0.000	79.400	0.000	0.484
		C	0.000	0.000	64.615	0.000	0.657
T10	20.000-0.000	A	0.000	0.000	73.937	0.000	0.654
		B	0.000	0.000	79.400	0.000	0.484
		C	0.000	0.000	64.615	0.000	0.657

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
T1	192.000-180.000	A	2.021	0.000	0.000	40.592	0.000	0.777
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.000
T2	180.000-160.000	A	2.003	0.000	0.000	169.616	0.000	3.137
		B		0.000	0.000	45.562	0.000	0.839
		C		0.000	0.000	0.000	0.000	0.000
T3	160.000-140.000	A	1.978	0.000	0.000	168.805	0.000	3.099
		B		0.000	0.000	144.978	0.000	2.708

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C		0.000	0.000	31.187	0.000	0.633
T4	140.000-120.000	A	1.950	0.000	0.000	167.890	0.000	3.057
		B		0.000	0.000	144.391	0.000	2.675
		C		0.000	0.000	176.210	0.000	3.035
T5	120.000-100.000	A	1.918	0.000	0.000	166.838	0.000	3.009
		B		0.000	0.000	143.716	0.000	2.636
		C		0.000	0.000	175.060	0.000	2.987
T6	100.000-80.000	A	1.879	0.000	0.000	173.498	0.000	3.058
		B		0.000	0.000	142.920	0.000	2.592
		C		0.000	0.000	173.706	0.000	2.930
T7	80.000-60.000	A	1.833	0.000	0.000	172.673	0.000	2.997
		B		0.000	0.000	141.946	0.000	2.537
		C		0.000	0.000	172.048	0.000	2.862
T8	60.000-40.000	A	1.772	0.000	0.000	170.459	0.000	2.903
		B		0.000	0.000	140.680	0.000	2.467
		C		0.000	0.000	169.894	0.000	2.775
T9	40.000-20.000	A	1.684	0.000	0.000	167.241	0.000	2.768
		B		0.000	0.000	138.840	0.000	2.367
		C		0.000	0.000	166.762	0.000	2.650
T10	20.000-0.000	A	1.509	0.000	0.000	160.864	0.000	2.511
		B		0.000	0.000	135.193	0.000	2.172
		C		0.000	0.000	160.556	0.000	2.411

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	192.000-180.000	-4.733	0.916	-4.787	-0.936
T2	180.000-160.000	-4.835	-17.023	-5.462	-17.229
T3	160.000-140.000	-1.628	-16.161	-3.239	-16.317
T4	140.000-120.000	6.034	-14.392	7.115	-12.803
T5	120.000-100.000	6.378	-15.385	7.845	-14.208
T6	100.000-80.000	6.971	-17.401	7.699	-15.561
T7	80.000-60.000	7.183	-18.173	8.183	-16.778
T8	60.000-40.000	7.617	-19.311	8.803	-17.982
T9	40.000-20.000	8.088	-20.582	9.596	-19.502
T10	20.000-0.000	8.502	-21.713	10.526	-21.069

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	2	HB114-1-0813U4-M5J(1-1/4)	180.00 - 190.00	0.6000	0.5487
T1	3	Feedline Ladder (Af)	180.00 - 190.00	0.6000	0.5487
T1	28	Thin Flat Bar Climbing Ladder	180.00 - 192.00	0.6000	0.5487
T1	29	Safety Line 3/8	180.00 - 192.00	0.6000	0.5487

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T2	2	HB114-1-0813U4-M5J(1-1/4)	160.00 - 180.00	0.6000	0.6000
T2	3	Feedline Ladder (Af)	160.00 - 180.00	0.6000	0.6000
T2	8	LDF4-50A(1/2")	160.00 - 180.00	0.6000	0.6000
T2	9	LDF7-50A(1-5/8")	160.00 - 180.00	0.6000	0.6000
T2	10	Feedline Ladder (Af)	160.00 - 180.00	0.6000	0.6000
T2	12	LDF7-50A(1-5/8")	160.00 - 170.00	0.6000	0.6000
T2	13	Feedline Ladder (Af)	160.00 - 170.00	0.6000	0.6000
T2	28	Thin Flat Bar Climbing Ladder	160.00 - 180.00	0.6000	0.6000
T2	29	Safety Line 3/8	160.00 - 180.00	0.6000	0.6000
T3	2	HB114-1-0813U4-M5J(1-1/4)	140.00 - 160.00	0.6000	0.6000
T3	3	Feedline Ladder (Af)	140.00 - 160.00	0.6000	0.6000
T3	8	LDF4-50A(1/2")	140.00 - 160.00	0.6000	0.6000
T3	9	LDF7-50A(1-5/8")	140.00 - 160.00	0.6000	0.6000
T3	10	Feedline Ladder (Af)	140.00 - 160.00	0.6000	0.6000
T3	12	LDF7-50A(1-5/8")	140.00 - 160.00	0.6000	0.6000
T3	13	Feedline Ladder (Af)	140.00 - 160.00	0.6000	0.6000
T3	15	FXL 1873 PE(1 5/8")	140.00 - 160.00	0.6000	0.6000
T3	16	Feedline Ladder (Af)	140.00 - 160.00	0.6000	0.6000
T3	19	HCS 6X12 4AWG(1-5/8)	140.00 - 153.00	0.6000	0.6000
T3	20	Feedline Ladder (Af)	140.00 - 153.00	0.6000	0.6000
T3	28	Thin Flat Bar Climbing Ladder	140.00 - 160.00	0.6000	0.6000
T3	29	Safety Line 3/8	140.00 - 160.00	0.6000	0.6000
T4	2	HB114-1-0813U4-M5J(1-1/4)	120.00 - 140.00	0.6000	0.6000
T4	3	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T4	8	LDF4-50A(1/2")	120.00 - 140.00	0.6000	0.6000
T4	9	LDF7-50A(1-5/8")	120.00 - 140.00	0.6000	0.6000
T4	10	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T4	12	LDF7-50A(1-5/8")	120.00 - 140.00	0.6000	0.6000
T4	13	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T4	15	FXL 1873 PE(1 5/8")	120.00 - 140.00	0.6000	0.6000
T4	16	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T4	19	HCS 6X12 4AWG(1-5/8)	120.00 - 140.00	0.6000	0.6000
T4	20	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T4	22	FLC 78-50J(7/8")	120.00 - 140.00	0.6000	0.6000
T4	23	FB-L98B-002-75000(3/8)	120.00 - 140.00	0.0000	0.0000
T4	24	WR-VG86ST-BRD(3/4)	120.00 - 140.00	0.0000	0.0000
T4	25	2" Rigid Conduit	120.00 - 140.00	0.6000	0.6000
T4	26	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T4	28	Thin Flat Bar Climbing Ladder	120.00 - 140.00	0.6000	0.6000
T4	29	Safety Line 3/8	120.00 - 140.00	0.6000	0.6000
T5	2	HB114-1-0813U4-M5J(1-1/4)	100.00 - 120.00	0.6000	0.6000
T5	3	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	8	LDF4-50A(1/2")	100.00 - 120.00	0.6000	0.6000
T5	9	LDF7-50A(1-5/8")	100.00 - 120.00	0.6000	0.6000
T5	10	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	12	LDF7-50A(1-5/8")	100.00 - 120.00	0.6000	0.6000
T5	13	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	15	FXL 1873 PE(1 5/8")	100.00 - 120.00	0.6000	0.6000
T5	16	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	19	HCS 6X12 4AWG(1-5/8)	100.00 - 120.00	0.6000	0.6000
T5	20	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	22	FLC 78-50J(7/8")	100.00 - 120.00	0.6000	0.6000
T5	23	FB-L98B-002-75000(3/8)	100.00 - 120.00	0.0000	0.0000
T5	24	WR-VG86ST-BRD(3/4)	100.00 - 120.00	0.0000	0.0000
T5	25	2" Rigid Conduit	100.00 - 120.00	0.6000	0.6000
T5	26	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	28	Thin Flat Bar Climbing Ladder	100.00 - 120.00	0.6000	0.6000
T5	29	Safety Line 3/8	100.00 - 120.00	0.6000	0.6000
T6	2	HB114-1-0813U4-M5J(1-1/4)	80.00 - 100.00	0.6000	0.6000
T6	3	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T6	5	LDF4P-50A(1/2")	80.00 - 98.00	0.6000	0.6000
T6	8	LDF4-50A(1/2")	80.00 - 100.00	0.6000	0.6000
T6	9	LDF7-50A(1-5/8")	80.00 - 100.00	0.6000	0.6000
T6	10	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T6	12	LDF7-50A(1-5/8")	80.00 - 100.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T6	13	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T6	15	FXL 1873 PE(1 5/8")	80.00 - 100.00	0.6000	0.6000
T6	16	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T6	19	HCS 6X12 4AWG(1-5/8)	80.00 - 100.00	0.6000	0.6000
T6	20	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T6	22	FLC 78-50J(7/8")	80.00 - 100.00	0.6000	0.6000
T6	23	FB-L98B-002-75000(3/8)	80.00 - 100.00	0.0000	0.0000
T6	24	WR-VG86ST-BRD(3/4)	80.00 - 100.00	0.0000	0.0000
T6	25	2" Rigid Conduit	80.00 - 100.00	0.6000	0.6000
T6	26	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T6	28	Thin Flat Bar Climbing Ladder	80.00 - 100.00	0.6000	0.6000
T6	29	Safety Line 3/8	80.00 - 100.00	0.6000	0.6000
T7	2	HB114-1-0813U4-M5J(1-1/4)	60.00 - 80.00	0.6000	0.6000
T7	3	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T7	5	LDF4P-50A(1/2")	60.00 - 80.00	0.6000	0.6000
T7	8	LDF4-50A(1/2")	60.00 - 80.00	0.6000	0.6000
T7	9	LDF7-50A(1-5/8")	60.00 - 80.00	0.6000	0.6000
T7	10	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T7	12	LDF7-50A(1-5/8")	60.00 - 80.00	0.6000	0.6000
T7	13	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T7	15	FXL 1873 PE(1 5/8")	60.00 - 80.00	0.6000	0.6000
T7	16	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T7	19	HCS 6X12 4AWG(1-5/8)	60.00 - 80.00	0.6000	0.6000
T7	20	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T7	22	FLC 78-50J(7/8")	60.00 - 80.00	0.6000	0.6000
T7	23	FB-L98B-002-75000(3/8)	60.00 - 80.00	0.0000	0.0000
T7	24	WR-VG86ST-BRD(3/4)	60.00 - 80.00	0.0000	0.0000
T7	25	2" Rigid Conduit	60.00 - 80.00	0.6000	0.6000
T7	26	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T7	28	Thin Flat Bar Climbing Ladder	60.00 - 80.00	0.6000	0.6000
T7	29	Safety Line 3/8	60.00 - 80.00	0.6000	0.6000
T8	2	HB114-1-0813U4-M5J(1-1/4)	40.00 - 60.00	0.6000	0.6000
T8	3	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T8	5	LDF4P-50A(1/2")	40.00 - 60.00	0.6000	0.6000
T8	8	LDF4-50A(1/2")	40.00 - 60.00	0.6000	0.6000
T8	9	LDF7-50A(1-5/8")	40.00 - 60.00	0.6000	0.6000
T8	10	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T8	12	LDF7-50A(1-5/8")	40.00 - 60.00	0.6000	0.6000
T8	13	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T8	15	FXL 1873 PE(1 5/8")	40.00 - 60.00	0.6000	0.6000
T8	16	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T8	19	HCS 6X12 4AWG(1-5/8)	40.00 - 60.00	0.6000	0.6000
T8	20	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T8	22	FLC 78-50J(7/8")	40.00 - 60.00	0.6000	0.6000
T8	23	FB-L98B-002-75000(3/8)	40.00 - 60.00	0.0000	0.0000
T8	24	WR-VG86ST-BRD(3/4)	40.00 - 60.00	0.0000	0.0000
T8	25	2" Rigid Conduit	40.00 - 60.00	0.6000	0.6000
T8	26	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T8	28	Thin Flat Bar Climbing Ladder	40.00 - 60.00	0.6000	0.6000
T8	29	Safety Line 3/8	40.00 - 60.00	0.6000	0.6000
T9	2	HB114-1-0813U4-M5J(1-1/4)	20.00 - 40.00	0.6000	0.6000
T9	3	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T9	5	LDF4P-50A(1/2")	20.00 - 40.00	0.6000	0.6000
T9	8	LDF4-50A(1/2")	20.00 - 40.00	0.6000	0.6000
T9	9	LDF7-50A(1-5/8")	20.00 - 40.00	0.6000	0.6000
T9	10	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T9	12	LDF7-50A(1-5/8")	20.00 - 40.00	0.6000	0.6000
T9	13	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T9	15	FXL 1873 PE(1 5/8")	20.00 - 40.00	0.6000	0.6000
T9	16	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T9	19	HCS 6X12 4AWG(1-5/8)	20.00 - 40.00	0.6000	0.6000
T9	20	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T9	22	FLC 78-50J(7/8")	20.00 - 40.00	0.6000	0.6000
T9	23	FB-L98B-002-75000(3/8)	20.00 - 40.00	0.0000	0.0000
T9	24	WR-VG86ST-BRD(3/4)	20.00 - 40.00	0.0000	0.0000
T9	25	2" Rigid Conduit	20.00 - 40.00	0.6000	0.6000
T9	26	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T9	28	Thin Flat Bar Climbing Ladder	20.00 - 40.00	0.6000	0.6000
T9	29	Safety Line 3/8	20.00 - 40.00	0.6000	0.6000
T10	2	HB114-1-0813U4-M5J(1-1/4)	0.00 - 20.00	0.6000	0.6000
T10	3	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000
T10	5	LDF4P-50A(1/2")	0.00 - 20.00	0.6000	0.6000
T10	8	LDF4-50A(1/2")	0.00 - 20.00	0.6000	0.6000
T10	9	LDF7-50A(1-5/8")	0.00 - 20.00	0.6000	0.6000
T10	10	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000
T10	12	LDF7-50A(1-5/8")	0.00 - 20.00	0.6000	0.6000
T10	13	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000
T10	15	FXL 1873 PE(1 5/8")	0.00 - 20.00	0.6000	0.6000
T10	16	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000
T10	19	HCS 6X12 4AWG(1-5/8)	0.00 - 20.00	0.6000	0.6000
T10	20	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000
T10	22	FLC 78-50J(7/8")	0.00 - 20.00	0.6000	0.6000
T10	23	FB-L98B-002-75000(3/8)	0.00 - 20.00	0.0000	0.0000
T10	24	WR-VG86ST-BRD(3/4)	0.00 - 20.00	0.0000	0.0000
T10	25	2" Rigid Conduit	0.00 - 20.00	0.6000	0.6000
T10	26	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000
T10	28	Thin Flat Bar Climbing Ladder	0.00 - 20.00	0.6000	0.6000
T10	29	Safety Line 3/8	0.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

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
NNVV-65B-R4 w/ Mount Pipe (R)	A	From Leg	4.000 0.000 2.000	0.000	190.000	No Ice 1/2" Ice 1" Ice 2" Ice	12.509 13.108 13.672 14.822	7.413 8.598 9.496 11.328	0.103 0.194 0.293 0.520
NNVV-65B-R4 w/ Mount Pipe (R)	B	From Leg	4.000 0.000 2.000	0.000	190.000	No Ice 1/2" Ice 1" Ice 2" Ice	12.509 13.108 13.672 14.822	7.413 8.598 9.496 11.328	0.103 0.194 0.293 0.520
NNVV-65B-R4 w/ Mount Pipe	C	From Leg	4.000 0.000	0.000	190.000	No Ice 1/2" Ice	12.509 13.108	7.413 8.598	0.103 0.194

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
(R)			2.000			1" Ice	13.672	9.496	0.293
						2" Ice	14.822	11.328	0.520
APXVTM14-ALU-I20 w/ Mount Pipe	A	From Leg	4.000 0.000	0.000	190.000	No Ice 1/2" Ice	4.090 4.480	2.860 3.230	0.077 0.127
(R)			2.000			1" Ice	4.880	3.610	0.185
						2" Ice	5.710	4.400	0.331
APXVTM14-ALU-I20 w/ Mount Pipe	B	From Leg	4.000 0.000	0.000	190.000	No Ice 1/2" Ice	4.090 4.480	2.860 3.230	0.077 0.127
(R)			2.000			1" Ice	4.880	3.610	0.185
						2" Ice	5.710	4.400	0.331
APXVTM14-ALU-I20 w/ Mount Pipe	C	From Leg	4.000 0.000	0.000	190.000	No Ice 1/2" Ice	4.090 4.480	2.860 3.230	0.077 0.127
(R)			2.000			1" Ice	4.880	3.610	0.185
						2" Ice	5.710	4.400	0.331
TD-RRH8x20-25	A	From Leg	4.000	0.000	190.000	No Ice	4.045	1.535	0.070
(R)			0.000 2.000			1/2" Ice 1" Ice	4.298 4.557	1.714 1.901	0.097 0.128
						2" Ice	5.098	2.295	0.201
TD-RRH8x20-25	B	From Leg	4.000	0.000	190.000	No Ice	4.045	1.535	0.070
(R)			0.000 2.000			1/2" Ice 1" Ice	4.298 4.557	1.714 1.901	0.097 0.128
						2" Ice	5.098	2.295	0.201
TD-RRH8x20-25	C	From Leg	4.000	0.000	190.000	No Ice	4.045	1.535	0.070
(R)			0.000 2.000			1/2" Ice 1" Ice	4.298 4.557	1.714 1.901	0.097 0.128
						2" Ice	5.098	2.295	0.201
PCS 1900MHz 4x45W-65MHz	A	From Leg	4.000 0.000	0.000	190.000	No Ice 1/2" Ice	2.322 2.527	2.238 2.441	0.060 0.083
(R)			2.000			1" Ice	2.739	2.651	0.110
						2" Ice	3.185	3.093	0.173
PCS 1900MHz 4x45W-65MHz	B	From Leg	4.000 0.000	0.000	190.000	No Ice 1/2" Ice	2.322 2.527	2.238 2.441	0.060 0.083
(R)			2.000			1" Ice	2.739	2.651	0.110
						2" Ice	3.185	3.093	0.173
PCS 1900MHz 4x45W-65MHz	C	From Leg	4.000 0.000	0.000	190.000	No Ice 1/2" Ice	2.322 2.527	2.238 2.441	0.060 0.083
(R)			2.000			1" Ice	2.739	2.651	0.110
						2" Ice	3.185	3.093	0.173
(2) RRH2X50-800	A	From Leg	4.000	0.000	190.000	No Ice	1.701	1.282	0.053
(R)			0.000 2.000			1/2" Ice 1" Ice	1.864 2.035	1.428 1.580	0.070 0.090
						2" Ice	2.398	1.908	0.138
(2) RRH2X50-800	B	From Leg	4.000	0.000	190.000	No Ice	1.701	1.282	0.053
(R)			0.000 2.000			1/2" Ice 1" Ice	1.864 2.035	1.428 1.580	0.070 0.090
						2" Ice	2.398	1.908	0.138
(2) RRH2X50-800	C	From Leg	4.000	0.000	190.000	No Ice	1.701	1.282	0.053
(R)			0.000 2.000			1/2" Ice 1" Ice	1.864 2.035	1.428 1.580	0.070 0.090
						2" Ice	2.398	1.908	0.138
6' x 2" Mount Pipe	A	From Leg	4.000	0.000	190.000	No Ice	1.425	1.425	0.022
(E)			0.000 0.000			1/2" Ice 1" Ice	1.925 2.294	1.925 2.294	0.033 0.048
						2" Ice	3.060	3.060	0.090
6' x 2" Mount Pipe	B	From Leg	4.000	0.000	190.000	No Ice	1.425	1.425	0.022
(E)			0.000 0.000			1/2" Ice 1" Ice	1.925 2.294	1.925 2.294	0.033 0.048

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	3.060	3.060	0.090
6' x 2" Mount Pipe	C	From Leg	4.000		0.000	190.000	No Ice	1.425	1.425	0.022
(E)			0.000				1/2" Ice	1.925	1.925	0.033
			0.000				1" Ice	2.294	2.294	0.048
							2" Ice	3.060	3.060	0.090
Sector Mount [SM 504-3]	C	None			0.000	190.000	No Ice	34.250	34.250	1.708
(E)							1/2" Ice	48.980	48.980	2.286
							1" Ice	63.710	63.710	2.864
							2" Ice	93.170	93.170	4.020
**********										
(2) JAHH-65B-R3B	A	From Leg	4.000		0.000	180.000	No Ice	9.113	5.983	0.061
(R)			0.000				1/2" Ice	9.579	6.442	0.119
			1.000				1" Ice	10.052	6.909	0.183
							2" Ice	11.018	7.856	0.331
(2) JAHH-65B-R3B	B	From Leg	4.000		0.000	180.000	No Ice	9.113	5.983	0.061
(R)			0.000				1/2" Ice	9.579	6.442	0.119
			1.000				1" Ice	10.052	6.909	0.183
							2" Ice	11.018	7.856	0.331
(2) JAHH-65B-R3B	C	From Leg	4.000		0.000	180.000	No Ice	9.113	5.983	0.061
(R)			0.000				1/2" Ice	9.579	6.442	0.119
			1.000				1" Ice	10.052	6.909	0.183
							2" Ice	11.018	7.856	0.331
BAND 5 AHCA RRH4X40	A	From Leg	4.000		0.000	180.000	No Ice	1.313	0.746	0.040
(R)			0.000				1/2" Ice	1.456	0.860	0.052
			1.000				1" Ice	1.607	0.982	0.066
							2" Ice	1.931	1.247	0.102
BAND 5 AHCA RRH4X40	B	From Leg	4.000		0.000	180.000	No Ice	1.313	0.746	0.040
(R)			0.000				1/2" Ice	1.456	0.860	0.052
			1.000				1" Ice	1.607	0.982	0.066
							2" Ice	1.931	1.247	0.102
BAND 5 AHCA RRH4X40	C	From Leg	4.000		0.000	180.000	No Ice	1.313	0.746	0.040
(R)			0.000				1/2" Ice	1.456	0.860	0.052
			1.000				1" Ice	1.607	0.982	0.066
							2" Ice	1.931	1.247	0.102
RRH2X60-700	A	From Leg	4.000		0.000	180.000	No Ice	3.500	1.816	0.060
(R)			0.000				1/2" Ice	3.761	2.052	0.083
			1.000				1" Ice	4.029	2.289	0.109
							2" Ice	4.585	2.785	0.173
RRH2X60-700	B	From Leg	4.000		0.000	180.000	No Ice	3.500	1.816	0.060
(R)			0.000				1/2" Ice	3.761	2.052	0.083
			1.000				1" Ice	4.029	2.289	0.109
							2" Ice	4.585	2.785	0.173
RRH2X60-700	C	From Leg	4.000		0.000	180.000	No Ice	3.500	1.816	0.060
(R)			0.000				1/2" Ice	3.761	2.052	0.083
			1.000				1" Ice	4.029	2.289	0.109
							2" Ice	4.585	2.785	0.173
RRH4X45-AWS4 B66	A	From Leg	4.000		0.000	180.000	No Ice	2.660	1.586	0.064
(R)			0.000				1/2" Ice	2.878	1.769	0.084
			1.000				1" Ice	3.104	1.959	0.108
							2" Ice	3.577	2.359	0.165
RRH4X45-AWS4 B66	B	From Leg	4.000		0.000	180.000	No Ice	2.660	1.586	0.064
(R)			0.000				1/2" Ice	2.878	1.769	0.084
			1.000				1" Ice	3.104	1.959	0.108
							2" Ice	3.577	2.359	0.165
RRH4X45-AWS4 B66	C	From Leg	4.000		0.000	180.000	No Ice	2.660	1.586	0.064
(R)			0.000				1/2" Ice	2.878	1.769	0.084
			1.000				1" Ice	3.104	1.959	0.108

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	3.577	2.359	0.165
(2) RC3DC-3315-PF-48	A	From Leg	0.500	0.000	180.000	No Ice	3.012	1.963	0.021
(R)			0.000			1/2" Ice	3.231	2.151	0.048
			1.000			1" Ice	3.457	2.347	0.077
						2" Ice	3.932	2.761	0.147
(2) LPA-80080/4CF	A	From Leg	4.000	0.000	180.000	No Ice	2.619	5.399	0.012
(E)			0.000			1/2" Ice	2.922	5.726	0.045
			1.000			1" Ice	3.232	6.061	0.083
						2" Ice	3.847	6.750	0.172
(2) LPA-80080/4CF	B	From Leg	4.000	0.000	180.000	No Ice	2.619	5.399	0.012
(E)			0.000			1/2" Ice	2.922	5.726	0.045
			1.000			1" Ice	3.232	6.061	0.083
						2" Ice	3.847	6.750	0.172
(2) LPA-80080/4CF	C	From Leg	4.000	0.000	180.000	No Ice	2.619	5.399	0.012
(E)			0.000			1/2" Ice	2.922	5.726	0.045
			1.000			1" Ice	3.232	6.061	0.083
						2" Ice	3.847	6.750	0.172
58532A	C	From Leg	4.000	0.000	180.000	No Ice	0.189	0.189	0.000
(E)			0.000			1/2" Ice	0.248	0.248	0.003
			4.000			1" Ice	0.315	0.315	0.006
						2" Ice	0.470	0.470	0.017
Sector Mount [SM 303-3]	C	None		0.000	180.000	No Ice	43.570	43.570	1.879
(E-4 M.P./Sector)						1/2" Ice	61.820	61.820	2.704
						1" Ice	80.070	80.070	3.529
						2" Ice	116.570	116.570	5.179
**********									
(3) 7130.16.33.00 w/ Mount Pipe	A	From Leg	4.000	0.000	170.000	No Ice	5.555	6.584	0.037
			0.000			1/2" Ice	5.968	7.295	0.096
(AB)			2.000			1" Ice	6.382	7.978	0.162
						2" Ice	7.235	9.391	0.316
(3) 7130.16.33.00 w/ Mount Pipe	B	From Leg	4.000	0.000	170.000	No Ice	5.555	6.584	0.037
			0.000			1/2" Ice	5.968	7.295	0.096
(AB)			2.000			1" Ice	6.382	7.978	0.162
						2" Ice	7.235	9.391	0.316
(3) 7130.16.33.00 w/ Mount Pipe	C	From Leg	4.000	0.000	170.000	No Ice	5.555	6.584	0.037
			0.000			1/2" Ice	5.968	7.295	0.096
(AB)			2.000			1" Ice	6.382	7.978	0.162
						2" Ice	7.235	9.391	0.316
Sector Mount [SM 504-3]	C	None		0.000	170.000	No Ice	34.250	34.250	1.708
(AB)						1/2" Ice	48.980	48.980	2.286
						1" Ice	63.710	63.710	2.864
						2" Ice	93.170	93.170	4.020
**********									
HBX-6516DS-VTM w/ Mount Pipe	A	From Leg	4.000	0.000	160.000	No Ice	2.220	1.940	0.029
			0.000			1/2" Ice	2.580	2.290	0.058
(E-CL Per Photo)			2.000			1" Ice	2.960	2.660	0.094
						2" Ice	3.740	3.430	0.191
HBX-6516DS-VTM w/ Mount Pipe	B	From Leg	4.000	0.000	160.000	No Ice	2.220	1.940	0.029
			0.000			1/2" Ice	2.580	2.290	0.058
(E-CL Per Photo)			2.000			1" Ice	2.960	2.660	0.094
						2" Ice	3.740	3.430	0.191
HBX-6516DS-VTM w/ Mount Pipe	C	From Leg	4.000	0.000	160.000	No Ice	2.220	1.940	0.029
			0.000			1/2" Ice	2.580	2.290	0.058
(E-CL Per Photo)			2.000			1" Ice	2.960	2.660	0.094
						2" Ice	3.740	3.430	0.191
6' x 2" Mount Pipe	A	From Leg	4.000	0.000	160.000	No Ice	1.425	1.425	0.022
(E)			0.000			1/2" Ice	1.925	1.925	0.033

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			2.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
6' x 2" Mount Pipe	B	From Leg	4.000	0.000	160.000	No Ice	1.425	1.425	0.022
(E)			0.000			1/2" Ice	1.925	1.925	0.033
			2.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
6' x 2" Mount Pipe	C	From Leg	4.000	0.000	160.000	No Ice	1.425	1.425	0.022
(E)			0.000			1/2" Ice	1.925	1.925	0.033
			2.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
Sector Mount [SM 104-3]	C	None		0.000	160.000	No Ice	30.020	30.020	0.953
(E)						1/2" Ice	40.480	40.480	1.405
						1" Ice	50.940	50.940	1.857
						2" Ice	71.860	71.860	2.761
**********									
APX16DWV-16DWV-S-E-A	A	From Leg	4.000	0.000	153.000	No Ice	6.290	2.760	0.061
20 w/ Mount Pipe			0.000			1/2" Ice	6.860	3.270	0.105
(P)			0.000			1" Ice	7.450	3.790	0.157
						2" Ice	8.680	4.900	0.290
APX16DWV-16DWV-S-E-A	B	From Leg	4.000	0.000	153.000	No Ice	6.290	2.760	0.061
20 w/ Mount Pipe			0.000			1/2" Ice	6.860	3.270	0.105
(P)			0.000			1" Ice	7.450	3.790	0.157
						2" Ice	8.680	4.900	0.290
APX16DWV-16DWV-S-E-A	C	From Leg	4.000	0.000	153.000	No Ice	6.290	2.760	0.061
20 w/ Mount Pipe			0.000			1/2" Ice	6.860	3.270	0.105
(P)			0.000			1" Ice	7.450	3.790	0.157
						2" Ice	8.680	4.900	0.290
APXVAARR24_43-U-NA20	A	From Leg	4.000	0.000	153.000	No Ice	14.690	6.870	0.186
w/ Mount Pipe			0.000			1/2" Ice	15.460	7.550	0.315
(P)			0.000			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	153.000	No Ice	14.690	6.870	0.186
w/ Mount Pipe			0.000			1/2" Ice	15.460	7.550	0.315
(P)			0.000			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	153.000	No Ice	14.690	6.870	0.186
w/ Mount Pipe			0.000			1/2" Ice	15.460	7.550	0.315
(P)			0.000			1" Ice	16.230	8.250	0.458
						2" Ice	17.820	9.670	0.788
(2) RRUS 4415 B25	A	From Leg	4.000	0.000	153.000	No Ice	1.644	0.679	0.044
(P)			0.000			1/2" Ice	1.804	0.791	0.056
			0.000			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	153.000	No Ice	1.644	0.679	0.044
(P)			0.000			1/2" Ice	1.804	0.791	0.056
			0.000			1" Ice	1.972	0.913	0.071
						2" Ice	2.329	1.183	0.109
(2) RADIO 4415 B66A	A	From Leg	4.000	0.000	153.000	No Ice	1.856	0.870	0.050
(P)			0.000			1/2" Ice	2.027	0.997	0.064
			0.000			1" Ice	2.204	1.134	0.081
						2" Ice	2.582	1.432	0.124
RADIO 4415 B66A	B	From Leg	4.000	0.000	153.000	No Ice	1.856	0.870	0.050
(P)			0.000			1/2" Ice	2.027	0.997	0.064
			0.000			1" Ice	2.204	1.134	0.081
						2" Ice	2.582	1.432	0.124
RADIO 4449 B12/B71	B	From Leg	4.000	0.000	153.000	No Ice	1.650	1.300	0.075
(P)			0.000			1/2" Ice	1.810	1.445	0.092

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1" Ice	1.978	1.597	0.112
						2" Ice	2.336	1.924	0.161
(2) RADIO 4449 B12/B71 (P)	C	From Leg	4.000 0.000 0.000	0.000	153.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.650 1.810 1.978 2.336	1.300 1.445 1.597 1.924	0.075 0.092 0.112 0.161
10.5' x 2.375" horizontal mount pipe (P- Tieback)	A	From Leg	4.000 0.000 0.000	0.000	153.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.494 3.572 4.667 6.317	2.494 3.572 4.667 6.317	0.035 0.054 0.079 0.151
10.5' x 2.375" horizontal mount pipe (P- Tieback)	B	From Leg	4.000 0.000 0.000	0.000	153.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.494 3.572 4.667 6.317	2.494 3.572 4.667 6.317	0.035 0.054 0.079 0.151
10.5' x 2.375" horizontal mount pipe (P- Tieback)	C	From Leg	4.000 0.000 0.000	0.000	153.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.494 3.572 4.667 6.317	2.494 3.572 4.667 6.317	0.035 0.054 0.079 0.151
Sector Mount [SM 502-3] (P-VFA12-HD)	C	None		0.000	153.000	No Ice 1/2" Ice 1" Ice 2" Ice	33.020 47.360 61.700 90.380	33.020 47.360 61.700 90.380	1.673 2.224 2.775 3.876
**********									
(2) AM-X-CD-16-65-00T-RET w/ Mount Pipe (E)	A	From Leg	4.000 0.000 1.000	0.000	140.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.630 5.060 5.510 6.430	3.270 3.690 4.120 5.000	0.074 0.133 0.203 0.376
(2) AM-X-CD-14-65-00T-RET w/ Mount Pipe (E)	B	From Leg	4.000 0.000 1.000	0.000	140.000	No Ice 1/2" Ice 1" Ice 2" Ice	5.232 5.618 6.012 6.827	4.015 4.633 5.257 6.532	0.035 0.080 0.131 0.254
(2) AM-X-CD-14-65-00T-RET w/ Mount Pipe (E)	C	From Leg	4.000 0.000 1.000	0.000	140.000	No Ice 1/2" Ice 1" Ice 2" Ice	5.232 5.618 6.012 6.827	4.015 4.633 5.257 6.532	0.035 0.080 0.131 0.254
800 10121 w/ Mount Pipe (E)	A	From Leg	4.000 0.000 1.000	0.000	140.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.600 4.000 4.420 5.290	2.950 3.340 3.740 4.590	0.072 0.115 0.166 0.297
800 10121 w/ Mount Pipe (E)	B	From Leg	4.000 0.000 1.000	0.000	140.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.600 4.000 4.420 5.290	2.950 3.340 3.740 4.590	0.072 0.115 0.166 0.297
800 10121 w/ Mount Pipe (E)	C	From Leg	4.000 0.000 1.000	0.000	140.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.600 4.000 4.420 5.290	2.950 3.340 3.740 4.590	0.072 0.115 0.166 0.297
DC6-48-60-18-8F (E)	A	From Leg	4.000 0.000 1.000	0.000	140.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.212 1.892 2.105 2.570	1.212 1.892 2.105 2.570	0.033 0.055 0.080 0.138
(2) RRUS-11 (E)	A	From Leg	4.000 0.000 1.000	0.000	140.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.784 2.992 3.207 3.658	1.187 1.334 1.490 1.833	0.048 0.068 0.092 0.150
(2) RRUS-11 (E)	B	From Leg	4.000 0.000	0.000	140.000	No Ice 1/2" Ice	2.784 2.992	1.187 1.334	0.048 0.068

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	3.207	1.490	0.092
						2" Ice	3.658	1.833	0.150
(2) RRUS-11	C	From Leg	4.000	0.000	140.000	No Ice	2.784	1.187	0.048
(E)			0.000			1/2" Ice	2.992	1.334	0.068
			1.000			1" Ice	3.207	1.490	0.092
						2" Ice	3.658	1.833	0.150
7020.00	A	From Leg	4.000	0.000	140.000	No Ice	0.102	0.175	0.002
(E)			0.000			1/2" Ice	0.147	0.239	0.005
			1.000			1" Ice	0.199	0.311	0.009
						2" Ice	0.326	0.476	0.022
7020.00	B	From Leg	4.000	0.000	140.000	No Ice	0.102	0.175	0.002
(E)			0.000			1/2" Ice	0.147	0.239	0.005
			1.000			1" Ice	0.199	0.311	0.009
						2" Ice	0.326	0.476	0.022
7020.00	C	From Leg	4.000	0.000	140.000	No Ice	0.102	0.175	0.002
(E)			0.000			1/2" Ice	0.147	0.239	0.005
			1.000			1" Ice	0.199	0.311	0.009
						2" Ice	0.326	0.476	0.022
LGP13519	A	From Leg	4.000	0.000	140.000	No Ice	0.290	0.181	0.005
(E)			0.000			1/2" Ice	0.362	0.241	0.008
			1.000			1" Ice	0.441	0.310	0.012
						2" Ice	0.622	0.473	0.024
LGP13519	B	From Leg	4.000	0.000	140.000	No Ice	0.290	0.181	0.005
(E)			0.000			1/2" Ice	0.362	0.241	0.008
			1.000			1" Ice	0.441	0.310	0.012
						2" Ice	0.622	0.473	0.024
LGP13519	C	From Leg	4.000	0.000	140.000	No Ice	0.290	0.181	0.005
(E)			0.000			1/2" Ice	0.362	0.241	0.008
			1.000			1" Ice	0.441	0.310	0.012
						2" Ice	0.622	0.473	0.024
DTMABP7819VG12A	A	From Leg	4.000	0.000	140.000	No Ice	0.976	0.339	0.019
(E)			0.000			1/2" Ice	1.100	0.419	0.026
			1.000			1" Ice	1.232	0.510	0.036
						2" Ice	1.517	0.714	0.060
DTMABP7819VG12A	B	From Leg	4.000	0.000	140.000	No Ice	0.976	0.339	0.019
(E)			0.000			1/2" Ice	1.100	0.419	0.026
			1.000			1" Ice	1.232	0.510	0.036
						2" Ice	1.517	0.714	0.060
DTMABP7819VG12A	C	From Leg	4.000	0.000	140.000	No Ice	0.976	0.339	0.019
(E)			0.000			1/2" Ice	1.100	0.419	0.026
			1.000			1" Ice	1.232	0.510	0.036
						2" Ice	1.517	0.714	0.060
Sector Mount [SM 502-3]	C	None		0.000	140.000	No Ice	33.020	33.020	1.673
(E)						1/2" Ice	47.360	47.360	2.224
						1" Ice	61.700	61.700	2.775
						2" Ice	90.380	90.380	3.876
**********									
58532A	A	From Leg	4.000	0.000	98.000	No Ice	0.189	0.189	0.000
(E)			0.000			1/2" Ice	0.248	0.248	0.003
			4.000			1" Ice	0.315	0.315	0.006
						2" Ice	0.470	0.470	0.017
Side Arm Mount [SO 306-1]	A	From Leg	2.000	0.000	98.000	No Ice	0.980	2.180	0.042
(E)			0.000			1/2" Ice	1.700	3.800	0.062
			0.000			1" Ice	2.420	5.420	0.083
						2" Ice	3.860	8.660	0.123
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Load Combinations

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	192 - 180	Leg	Max Tension	23	5.126	-0.093	-0.063
			Max. Compression	18	-7.757	0.066	-0.063
			Max. Mx	20	-1.264	-0.918	0.002
			Max. My	2	-0.807	-0.031	-0.916
			Max. Vy	20	-0.677	0.443	-0.038
			Max. Vx	2	-0.685	-0.006	0.466
		Diagonal	Max Tension	8	1.683	0.000	0.000
			Max. Compression	20	-1.693	0.000	0.000
			Max. Mx	36	0.195	0.026	0.000
			Max. My	16	1.659	0.004	-0.002
			Max. Vy	36	-0.029	0.026	0.000
			Max. Vx	16	-0.001	0.004	-0.002
		Top Girt	Max Tension	14	0.120	0.000	0.000
			Max. Compression	19	-0.108	0.000	0.000
			Max. Mx	26	-0.003	-0.074	0.000
			Max. Vy	26	0.045	0.000	0.000
T2	180 - 160	Leg	Max Tension	23	30.207	-0.069	-0.030
			Max. Compression	2	-37.844	0.086	0.009
			Max. Mx	10	-37.593	0.092	0.029
			Max. My	20	-2.815	-0.016	-0.157
			Max. Vy	14	-1.390	-0.064	-0.006
			Max. Vx	8	1.373	0.010	-0.003
		Diagonal	Max Tension	16	4.285	0.000	0.000
			Max. Compression	16	-4.327	0.000	0.000
			Max. Mx	27	1.265	0.047	-0.005
			Max. My	28	-1.471	0.024	0.006
			Max. Vy	27	-0.040	0.047	-0.005
			Max. Vx	28	-0.002	0.000	0.000
		Top Girt	Max Tension	3	0.878	0.000	0.000
			Max. Compression	14	-0.903	0.000	0.000
			Max. Mx	26	-0.042	-0.081	0.000
			Max. My	26	-0.040	0.000	0.002
			Max. Vy	26	0.049	0.000	0.000
			Max. Vx	26	-0.001	0.000	0.000
T3	160 - 140	Leg	Max Tension	23	60.176	-0.166	-0.034
			Max. Compression	10	-72.729	0.142	0.039
			Max. Mx	14	35.661	-0.290	-0.004
			Max. My	20	-7.183	-0.014	-0.370
			Max. Vy	14	-1.007	-0.290	-0.004
			Max. Vx	20	-0.939	-0.016	-0.236
		Diagonal	Max Tension	16	6.214	0.000	0.000
			Max. Compression	16	-6.296	0.000	0.000
			Max. Mx	27	1.448	0.093	-0.011
			Max. My	36	1.604	0.088	-0.012
			Max. Vy	27	-0.061	0.093	-0.011
			Max. Vx	36	0.004	0.000	0.000
T4	140 - 120	Leg	Max Tension	23	94.859	-0.235	-0.027
			Max. Compression	10	-112.764	0.366	0.033
			Max. Mx	10	-112.764	0.366	0.033
			Max. My	20	-10.005	0.005	-0.408
			Max. Vy	14	-0.883	-0.166	0.001
			Max. Vx	20	-0.825	0.002	-0.073
		Diagonal	Max Tension	12	7.187	0.000	0.000
			Max. Compression	12	-7.268	0.000	0.000
			Max. Mx	27	1.662	0.110	-0.014
			Max. My	30	-1.482	0.103	0.015
			Max. Vy	37	0.073	0.107	0.013
			Max. Vx	30	-0.004	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
T5	120 - 100	Leg	Max Tension	23	127.881	-0.353	-0.015
			Max. Compression	10	-150.298	0.778	0.069
			Max. Mx	10	-150.298	0.778	0.069
			Max. My	20	-11.849	0.001	-0.728
			Max. Vy	11	-0.121	0.777	0.069
			Max. Vx	20	0.167	0.001	-0.728
		Diagonal	Max Tension	12	7.838	0.000	0.000
			Max. Compression	12	-7.815	0.000	0.000
			Max. Mx	27	2.097	0.155	-0.019
			Max. My	30	-1.008	0.138	0.021
			Max. Vy	37	0.095	0.153	-0.020
			Max. Vx	30	-0.005	0.000	0.000
T6	100 - 80	Leg	Max Tension	23	156.348	-0.645	-0.062
			Max. Compression	10	-183.017	0.936	0.061
			Max. Mx	10	-183.017	0.936	0.061
			Max. My	20	-12.681	-0.060	-1.150
			Max. Vy	11	0.132	0.777	0.069
			Max. Vx	20	0.209	-0.060	-1.150
		Diagonal	Max Tension	12	9.164	0.000	0.000
			Max. Compression	12	-9.211	0.000	0.000
			Max. Mx	27	2.254	0.250	-0.033
			Max. My	36	2.512	0.244	-0.034
			Max. Vy	29	0.122	0.244	-0.031
			Max. Vx	36	0.007	0.000	0.000
T7	80 - 60	Leg	Max Tension	23	186.966	-0.604	-0.045
			Max. Compression	10	-218.772	1.254	0.074
			Max. Mx	10	-218.772	1.254	0.074
			Max. My	20	-15.701	0.036	-1.121
			Max. Vy	10	-0.164	1.254	0.074
			Max. Vx	20	0.176	-0.064	-0.902
		Diagonal	Max Tension	12	10.021	0.000	0.000
			Max. Compression	12	-10.160	0.000	0.000
			Max. Mx	27	2.424	0.323	-0.040
			Max. My	36	2.242	0.315	-0.041
			Max. Vy	29	0.148	0.317	-0.038
			Max. Vx	36	0.008	0.000	0.000
T8	60 - 40	Leg	Max Tension	23	214.689	-1.361	-0.038
			Max. Compression	10	-252.490	1.167	0.036
			Max. Mx	37	14.054	-2.015	-0.030
			Max. My	20	-16.876	-0.070	-1.336
			Max. Vy	33	0.308	-2.001	0.016
			Max. Vx	20	0.175	-0.070	-1.336
		Diagonal	Max Tension	12	9.779	0.000	0.000
			Max. Compression	12	-9.777	0.000	0.000
			Max. Mx	29	2.228	0.392	0.056
			Max. My	30	-1.300	0.368	0.058
			Max. Vy	29	0.173	0.392	0.056
			Max. Vx	30	-0.010	0.000	0.000
T9	40 - 20	Leg	Max Tension	23	242.551	-1.215	-0.032
			Max. Compression	18	-286.488	1.959	-0.034
			Max. Mx	37	15.395	-4.043	-0.021
			Max. My	20	-20.195	-0.119	-1.636
			Max. Vy	33	0.663	-4.019	0.013
			Max. Vx	20	-0.236	-0.119	-1.636
		Diagonal	Max Tension	12	11.351	0.000	0.000
			Max. Compression	10	-11.637	0.000	0.000
			Max. Mx	29	1.474	0.461	-0.048
			Max. My	30	3.588	0.413	0.056
			Max. Vy	29	0.179	0.415	-0.053
			Max. Vx	30	-0.009	0.000	0.000
T10	20 - 0	Leg	Max Tension	23	269.721	-1.266	-0.045

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	18	-320.581	0.000	0.000
			Max. Mx	35	-136.120	4.095	0.017
			Max. My	20	-22.998	-0.200	-2.957
			Max. Vy	33	-0.790	-4.019	0.013
			Max. Vx	20	-0.432	-0.200	-2.957
		Diagonal	Max Tension	12	11.785	0.000	0.000
			Max. Compression	10	-12.395	0.000	0.000
			Max. Mx	29	-0.587	0.591	0.059
			Max. My	30	5.043	0.418	0.069
			Max. Vy	29	0.198	0.591	0.059
			Max. Vx	30	-0.010	0.000	0.000

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	18	329.078	32.132	-19.157
	Max. H_x	18	329.078	32.132	-19.157
	Max. H_z	7	-275.624	-27.551	16.481
	Min. Vert	7	-275.624	-27.551	16.481
	Min. H_x	7	-275.624	-27.551	16.481
	Min. H_z	18	329.078	32.132	-19.157
Leg B	Max. Vert	10	328.690	-31.901	-19.354
	Max. H_x	23	-276.380	27.332	16.699
	Max. H_z	23	-276.380	27.332	16.699
	Min. Vert	23	-276.380	27.332	16.699
	Min. H_x	10	328.690	-31.901	-19.354
	Min. H_z	10	328.690	-31.901	-19.354
Leg A	Max. Vert	2	322.928	0.414	36.537
	Max. H_x	21	18.048	5.565	1.501
	Max. H_z	2	322.928	0.414	36.537
	Min. Vert	15	-268.115	-0.426	-31.206
	Min. H_x	8	23.774	-5.577	1.975
	Min. H_z	15	-268.115	-0.426	-31.206

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	57.907	0.000	0.000	-13.297	6.822	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	69.488	-0.018	-58.210	-6503.082	10.892	18.225
0.9 Dead+1.0 Wind 0 deg - No Ice	52.116	-0.018	-58.210	-6499.093	8.846	18.225
1.2 Dead+1.0 Wind 30 deg - No Ice	69.488	27.930	-48.473	-5448.770	-3118.263	15.195
0.9 Dead+1.0 Wind 30 deg - No Ice	52.116	27.930	-48.473	-5444.781	-3120.310	15.195
1.2 Dead+1.0 Wind 60 deg - No Ice	69.488	48.904	-28.270	-3199.041	-5492.845	-22.108
0.9 Dead+1.0 Wind 60 deg - No	52.116	48.904	-28.270	-3195.051	-5494.892	-22.108

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Ice						
1.2 Dead+1.0 Wind 90 deg - No Ice	69.488	57.845	0.018	-13.250	-6516.878	-61.079
0.9 Dead+1.0 Wind 90 deg - No Ice	52.116	57.845	0.018	-9.261	-6518.925	-61.079
1.2 Dead+1.0 Wind 120 deg - No Ice	69.488	51.535	29.810	3313.260	-5740.541	-34.764
0.9 Dead+1.0 Wind 120 deg - No Ice	52.116	51.535	29.810	3317.249	-5742.588	-34.764
1.2 Dead+1.0 Wind 150 deg - No Ice	69.488	28.138	48.798	5481.726	-3158.841	-16.068
0.9 Dead+1.0 Wind 150 deg - No Ice	52.116	28.138	48.798	5485.716	-3160.887	-16.068
1.2 Dead+1.0 Wind 180 deg - No Ice	69.488	0.018	54.972	6189.354	5.479	-18.225
0.9 Dead+1.0 Wind 180 deg - No Ice	52.116	0.018	54.972	6193.343	3.433	-18.225
1.2 Dead+1.0 Wind 210 deg - No Ice	69.488	-27.930	48.473	5416.857	3134.635	-15.195
0.9 Dead+1.0 Wind 210 deg - No Ice	52.116	-27.930	48.473	5420.846	3132.588	-15.195
1.2 Dead+1.0 Wind 240 deg - No Ice	69.488	-51.709	29.889	3308.035	5753.276	22.108
0.9 Dead+1.0 Wind 240 deg - No Ice	52.116	-51.709	29.889	3312.024	5751.229	22.108
1.2 Dead+1.0 Wind 270 deg - No Ice	69.488	-57.845	-0.018	-18.663	6533.250	61.079
0.9 Dead+1.0 Wind 270 deg - No Ice	52.116	-57.845	-0.018	-14.674	6531.204	61.079
1.2 Dead+1.0 Wind 300 deg - No Ice	69.488	-48.731	-28.190	-3204.265	5512.854	34.764
0.9 Dead+1.0 Wind 300 deg - No Ice	52.116	-48.731	-28.190	-3200.276	5510.808	34.764
1.2 Dead+1.0 Wind 330 deg - No Ice	69.488	-28.138	-48.798	-5513.640	3175.212	16.068
0.9 Dead+1.0 Wind 330 deg - No Ice	52.116	-28.138	-48.798	-5509.650	3173.166	16.068
1.2 Dead+1.0 Ice+1.0 Temp	199.401	0.000	0.000	-90.519	-42.962	0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	199.401	-0.003	-16.143	-1927.968	-42.492	5.622
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	199.401	7.902	-13.698	-1659.207	-947.076	1.945
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	199.401	13.704	-7.915	-1002.738	-1621.194	-9.913
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	199.401	16.064	0.003	-90.049	-1896.444	-15.815
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	199.401	14.194	8.201	850.833	-1670.714	-9.821
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	199.401	7.984	13.833	1497.888	-959.004	-4.494
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	199.401	0.003	15.733	1712.519	-43.432	-5.622
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	199.401	-7.902	13.698	1478.169	861.151	-1.945
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	199.401	-14.059	8.120	838.905	1565.070	9.913
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	199.401	-16.064	-0.003	-90.989	1810.520	15.815
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	199.401	-13.839	-7.996	-1014.666	1554.989	9.821
1.2 Dead+1.0 Wind 330	199.401	-7.984	-13.833	-1678.926	873.079	4.494

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
deg+1.0 Ice+1.0 Temp						
Dead+Wind 0 deg - Service	57.907	-0.004	-13.052	-1467.900	7.428	4.087
Dead+Wind 30 deg - Service	57.907	6.263	-10.869	-1231.493	-694.220	3.407
Dead+Wind 60 deg - Service	57.907	10.966	-6.339	-727.038	-1226.670	-4.957
Dead+Wind 90 deg - Service	57.907	12.971	0.004	-12.690	-1456.288	-13.696
Dead+Wind 120 deg - Service	57.907	11.556	6.684	733.210	-1282.211	-7.795
Dead+Wind 150 deg - Service	57.907	6.309	10.942	1219.444	-703.318	-3.603
Dead+Wind 180 deg - Service	57.907	0.004	12.326	1378.115	6.215	-4.087
Dead+Wind 210 deg - Service	57.907	-6.263	10.869	1204.898	707.863	-3.407
Dead+Wind 240 deg - Service	57.907	-11.595	6.702	732.039	1295.039	4.957
Dead+Wind 270 deg - Service	57.907	-12.971	-0.004	-13.904	1469.932	13.696
Dead+Wind 300 deg - Service	57.907	-10.927	-6.321	-728.209	1241.129	7.795
Dead+Wind 330 deg - Service	57.907	-6.309	-10.942	-1246.038	716.961	3.603

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	-57.907	0.000	0.000	57.907	-0.000	0.000%
2	-0.018	-69.488	-58.210	0.018	69.488	58.210	0.000%
3	-0.018	-52.116	-58.210	0.018	52.116	58.210	0.000%
4	27.930	-69.488	-48.473	-27.930	69.488	48.473	0.000%
5	27.930	-52.116	-48.473	-27.930	52.116	48.473	0.000%
6	48.904	-69.488	-28.270	-48.904	69.488	28.270	0.000%
7	48.904	-52.116	-28.270	-48.904	52.116	28.270	0.000%
8	57.845	-69.488	0.018	-57.845	69.488	-0.018	0.000%
9	57.845	-52.116	0.018	-57.845	52.116	-0.018	0.000%
10	51.535	-69.488	29.810	-51.535	69.488	-29.810	0.000%
11	51.535	-52.116	29.810	-51.535	52.116	-29.810	0.000%
12	28.138	-69.488	48.798	-28.138	69.488	-48.798	0.000%
13	28.138	-52.116	48.798	-28.138	52.116	-48.798	0.000%
14	0.018	-69.488	54.972	-0.018	69.488	-54.972	0.000%
15	0.018	-52.116	54.972	-0.018	52.116	-54.972	0.000%
16	-27.930	-69.488	48.473	27.930	69.488	-48.473	0.000%
17	-27.930	-52.116	48.473	27.930	52.116	-48.473	0.000%
18	-51.709	-69.488	29.889	51.709	69.488	-29.889	0.000%
19	-51.709	-52.116	29.889	51.709	52.116	-29.889	0.000%
20	-57.845	-69.488	-0.018	57.845	69.488	0.018	0.000%
21	-57.845	-52.116	-0.018	57.845	52.116	0.018	0.000%
22	-48.731	-69.488	-28.190	48.731	69.488	28.190	0.000%
23	-48.731	-52.116	-28.190	48.731	52.116	28.190	0.000%
24	-28.138	-69.488	-48.798	28.138	69.488	48.798	0.000%
25	-28.138	-52.116	-48.798	28.138	52.116	48.798	0.000%
26	0.000	-199.401	0.000	0.000	199.401	-0.000	0.000%
27	-0.003	-199.401	-16.143	0.003	199.401	16.143	0.000%
28	7.902	-199.401	-13.698	-7.902	199.401	13.698	0.000%
29	13.704	-199.401	-7.915	-13.704	199.401	7.915	0.000%
30	16.064	-199.401	0.003	-16.064	199.401	-0.003	0.000%
31	14.194	-199.401	8.201	-14.194	199.401	-8.201	0.000%
32	7.984	-199.401	13.833	-7.984	199.401	-13.833	0.000%
33	0.003	-199.401	15.733	-0.003	199.401	-15.733	0.000%
34	-7.902	-199.401	13.698	7.902	199.401	-13.698	0.000%
35	-14.059	-199.401	8.120	14.059	199.401	-8.120	0.000%
36	-16.064	-199.401	-0.003	16.064	199.401	0.003	0.000%
37	-13.839	-199.401	-7.996	13.839	199.401	7.996	0.000%
38	-7.984	-199.401	-13.833	7.984	199.401	13.833	0.000%
39	-0.004	-57.907	-13.052	0.004	57.907	13.052	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
40	6.263	-57.907	-10.869	-6.263	57.907	10.869	0.000%
41	10.966	-57.907	-6.339	-10.966	57.907	6.339	0.000%
42	12.971	-57.907	0.004	-12.971	57.907	-0.004	0.000%
43	11.556	-57.907	6.684	-11.556	57.907	-6.684	0.000%
44	6.309	-57.907	10.942	-6.309	57.907	-10.942	0.000%
45	0.004	-57.907	12.326	-0.004	57.907	-12.326	0.000%
46	-6.263	-57.907	10.869	6.263	57.907	-10.869	0.000%
47	-11.595	-57.907	6.702	11.595	57.907	-6.702	0.000%
48	-12.971	-57.907	-0.004	12.971	57.907	0.004	0.000%
49	-10.927	-57.907	-6.321	10.927	57.907	6.321	0.000%
50	-6.309	-57.907	-10.942	6.309	57.907	10.942	0.000%

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	192 - 180	4.130	48	0.201	0.025
T2	180 - 160	3.622	48	0.198	0.026
T3	160 - 140	2.816	47	0.173	0.023
T4	140 - 120	2.131	47	0.145	0.020
T5	120 - 100	1.552	47	0.119	0.016
T6	100 - 80	1.076	47	0.096	0.012
T7	80 - 60	0.698	47	0.074	0.009
T8	60 - 40	0.408	47	0.054	0.006
T9	40 - 20	0.198	47	0.037	0.004
T10	20 - 0	0.059	47	0.019	0.002

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
190.000	NNVV-65B-R4 w/ Mount Pipe	48	4.045	0.201	0.026	465097
180.000	(2) JAHH-65B-R3B	48	3.622	0.198	0.026	169936
170.000	(3) 7130.16.33.00 w/ Mount Pipe	47	3.207	0.188	0.024	54819
160.000	HBX-6516DS-VTM w/ Mount Pipe	47	2.816	0.173	0.023	33506
153.000	APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	47	2.562	0.163	0.022	36120
140.000	(2) AM-X-CD-16-65-00T-RET w/ Mount Pipe	47	2.131	0.145	0.020	46919
98.000	58532A	47	1.034	0.094	0.012	48649

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	192 - 180	18.433	11	0.891	0.114
T2	180 - 160	16.181	11	0.879	0.114

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T3	160 - 140	12.588	11	0.769	0.102
T4	140 - 120	9.521	11	0.646	0.087
T5	120 - 100	6.932	11	0.530	0.069
T6	100 - 80	4.803	11	0.430	0.053
T7	80 - 60	3.113	19	0.329	0.040
T8	60 - 40	1.818	19	0.242	0.028
T9	40 - 20	0.884	19	0.164	0.018
T10	20 - 0	0.264	19	0.083	0.008

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
190.000	NNVV-65B-R4 w/ Mount Pipe	11	18.057	0.891	0.114	111784
180.000	(2) JAHH-65B-R3B	11	16.181	0.879	0.114	40339
170.000	(3) 7130.16.33.00 w/ Mount Pipe	11	14.337	0.833	0.109	12626
160.000	HBX-6516DS-VTM w/ Mount Pipe	11	12.588	0.769	0.102	7682
153.000	APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	11	11.451	0.725	0.097	8292
140.000	(2) AM-X-CD-16-65-00T-RET w/ Mount Pipe	11	9.521	0.646	0.087	10707
98.000	58532A	11	4.615	0.420	0.052	10956

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	192	Leg	A325N	0.625	4	1.281	20.340	0.063 ✔	1.05	Bolt Tension
		Diagonal	A325N	0.625	1	1.683	7.116	0.236 ✔	1.05	Member Block Shear
		Top Girt	A325N	0.625	1	0.120	7.116	0.017 ✔	1.05	Member Block Shear
T2	180	Leg	A325N	0.625	4	7.552	20.340	0.371 ✔	1.05	Bolt Tension
		Diagonal	A325N	0.625	1	4.285	8.135	0.527 ✔	1.05	Member Block Shear
		Top Girt	A325N	0.625	1	0.878	8.135	0.108 ✔	1.05	Member Block Shear
T3	160	Leg	A325N	0.875	4	15.044	41.556	0.362 ✔	1.05	Bolt Tension
		Diagonal	A325N	0.625	1	6.214	10.440	0.595 ✔	1.05	Gusset Bearing
T4	140	Leg	A325N	1.000	4	23.715	54.517	0.435 ✔	1.05	Bolt Tension
		Diagonal	A325N	0.625	1	7.187	10.440	0.688 ✔	1.05	Gusset Bearing
T5	120	Leg	A325N	1.000	6	21.314	54.517	0.391 ✔	1.05	Bolt Tension
		Diagonal	A325N	0.750	1	7.838	14.137	0.554 ✔	1.05	Member Bearing
T6	100	Leg	A325N	1.000	6	26.058	54.517	0.478 ✔	1.05	Bolt Tension
		Diagonal	A325N	0.750	1	9.164	14.137	0.648 ✔	1.05	Member Bearing
T7	80	Leg	A325N	1.000	8	23.371	54.517	0.429 ✔	1.05	Bolt Tension

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
		Diagonal	A325N	0.750	1	10.021	14.137	0.709 ✔	1.05	Member Bearing
T8	60	Leg	A325N	1.000	8	26.836	54.517	0.492 ✔	1.05	Bolt Tension
		Diagonal	A325X	0.750	1	9.779	17.672	0.553 ✔	1.05	Member Bearing
T9	40	Leg	A325N	1.000	8	30.319	54.517	0.556 ✔	1.05	Bolt Tension
		Diagonal	A325X	0.750	1	11.351	17.672	0.642 ✔	1.05	Member Bearing
T10	20	Diagonal	A325X	0.750	1	11.785	18.922	0.623 ✔	1.05	Gusset Bearing

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	192 - 180	ROHN 2.5 STD	12.000	4.000	50.7 K=1.00	1.704	-7.757	63.560	0.122 [1] ✔
T2	180 - 160	ROHN 2.5 STD	20.032	5.008	63.4 K=1.00	1.704	-37.844	57.139	0.662 [1] ✔
T3	160 - 140	ROHN 3 EH	20.036	6.679	70.5 K=1.00	3.016	-72.729	94.337	0.771 [1] ✔
T4	140 - 120	ROHN 4 EH	20.038	6.679	54.3 K=1.00	4.407	-112.764	159.899	0.705 [1] ✔
T5	120 - 100	ROHN 5 EH	20.036	6.679	43.6 K=1.00	6.112	-150.298	239.378	0.628 [1] ✔
T6	100 - 80	ROHN 6 EHS	20.036	10.018	54.0 K=1.00	6.713	-183.017	244.047	0.750 [1] ✔
T7	80 - 60	ROHN 6 EH	20.032	10.016	54.8 K=1.00	8.405	-218.772	303.757	0.720 [1] ✔
T8	60 - 40	ROHN 8 EHS	20.042	10.021	41.2 K=1.00	9.719	-252.490	386.354	0.654 [1] ✔
T9	40 - 20	ROHN 8 EHS	20.031	10.015	41.2 K=1.00	9.719	-286.488	386.409	0.741 [1] ✔
T10	20 - 0	ROHN 8 EHS	20.033	10.017	41.2 K=1.00	9.719	-320.581	386.397	0.830 [1] ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	192 - 180	L1 3/4x1 3/4x3/16	7.700	3.585	125.3 K=1.00	0.621	-1.693	11.328	0.149 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	180 - 160	L2x2x3/16	9.686	4.721	143.8 K=1.00	0.715	-4.210	9.897	0.425 [1] ✔
T3	160 - 140	L2 1/2x2 1/2x1/4	12.241	6.028	147.3 K=1.00	1.190	-6.296	15.695	0.401 [1] ✔
T4	140 - 120	L2 1/2x2 1/2x1/4	14.067	6.897	168.6 K=1.00	1.190	-7.268	11.987	0.606 [1] ✔
T5	120 - 100	L3x3x1/4	15.944	7.773	157.6 K=1.00	1.440	-7.815	16.602	0.471 [1] ✔
T6	100 - 80	L3 1/2x3 1/2x1/4	19.209	9.452	163.4 K=1.00	1.690	-9.211	18.110	0.509 [1] ✔
T7	80 - 60	L4x4x1/4	20.935	10.297	155.4 K=1.00	1.940	-10.160	22.986	0.442 [1] ✔
T8	60 - 40	L4x4x5/16	22.872	11.214	170.1 K=1.00	2.400	-9.777	23.735	0.412 [1] ✔
T9	40 - 20	L4x4x5/16	24.688	12.078	183.2 K=1.00	2.400	-11.637	20.461	0.569 [1] ✔
T10	20 - 0	L4x4x3/8	26.510	13.002	198.0 K=1.00	2.860	-12.395	20.882	0.594 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	192 - 180	L1 3/4x1 3/4x3/16	6.580	6.090	212.8 K=1.00	0.621	-0.108	3.926	0.028 [1] ✔
T2	180 - 160	KL/R > 200 (C) - 5 L2x2x3/16	6.580	6.090	185.5 K=1.00	0.715	-0.903	5.948	0.152 [1] ✔

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	192 - 180	ROHN 2.5 STD	12.000	4.000	50.7	1.704	5.126	76.682	0.067 [1] ✔
T2	180 - 160	ROHN 2.5 STD	20.032	5.008	63.4	1.704	30.207	76.682	0.394 [1] ✔
T3	160 - 140	ROHN 3 EH	20.036	6.679	70.5	3.016	60.176	135.717	0.443 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T4	140 - 120	ROHN 4 EH	20.038	6.679	54.3	4.407	94.859	198.335	0.478 [1] ✔
T5	120 - 100	ROHN 5 EH	20.036	6.679	43.6	6.112	127.881	275.039	0.465 [1] ✔
T6	100 - 80	ROHN 6 EHS	20.036	10.018	54.0	6.713	156.348	302.097	0.518 [1] ✔
T7	80 - 60	ROHN 6 EH	20.032	10.016	54.8	8.405	186.966	378.222	0.494 [1] ✔
T8	60 - 40	ROHN 8 EHS	20.042	10.021	41.2	9.719	214.689	437.369	0.491 [1] ✔
T9	40 - 20	ROHN 8 EHS	20.031	10.015	41.2	9.719	242.551	437.369	0.555 [1] ✔
T10	20 - 0	ROHN 8 EHS	20.033	10.017	41.2	9.719	269.721	437.369	0.617 [1] ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	192 - 180	L1 3/4x1 3/4x3/16	7.700	3.585	82.9	0.360	1.683	15.675	0.107 [1] ✔
T2	180 - 160	L2x2x3/16	9.686	4.721	94.3	0.431	4.285	18.739	0.229 [1] ✔
T3	160 - 140	L2 1/2x2 1/2x1/4	12.241	6.028	96.0	0.752	6.214	32.707	0.190 [1] ✔
T4	140 - 120	L2 1/2x2 1/2x1/4	14.067	6.897	109.6	0.752	7.187	32.707	0.220 [1] ✔
T5	120 - 100	L3x3x1/4	15.944	7.773	102.0	0.916	7.838	44.652	0.176 [1] ✔
T6	100 - 80	L3 1/2x3 1/2x1/4	19.209	9.452	105.5	1.103	9.164	53.793	0.170 [1] ✔
T7	80 - 60	L4x4x1/4	20.935	10.297	100.1	1.291	10.021	62.933	0.159 [1] ✔
T8	60 - 40	L4x4x5/16	22.872	11.214	109.8	1.595	9.779	77.752	0.126 [1] ✔
T9	40 - 20	L4x4x5/16	24.688	12.078	118.2	1.595	11.351	77.752	0.146 [1] ✔
T10	20 - 0	L4x4x3/8	26.510	13.002	128.2	1.899	11.785	92.572	0.127 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	192 - 180	L1 3/4x1 3/4x3/16	6.580	6.090	141.7	0.360	0.120	15.675	0.008 [1] ✔
T2	180 - 160	L2x2x3/16	6.580	6.090	123.3	0.431	0.878	18.739	0.047 [1] ✔

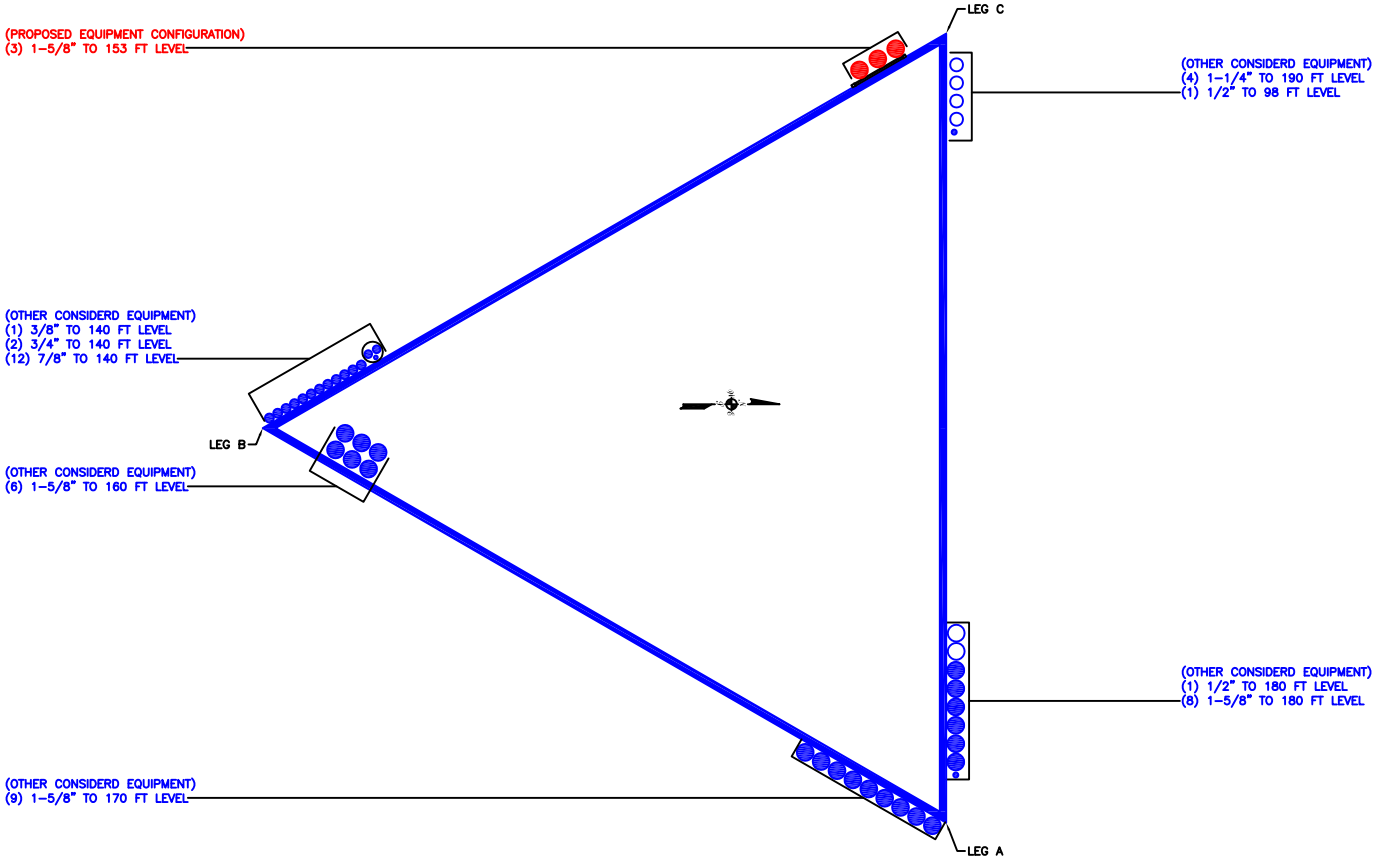
[1] P_u / ϕP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	192 - 180	Leg	ROHN 2.5 STD	1	-7.757	66.738	11.6	Pass
T2	180 - 160	Leg	ROHN 2.5 STD	27	-37.844	59.996	63.1	Pass
T3	160 - 140	Leg	ROHN 3 EH	56	-72.729	99.054	73.4	Pass
T4	140 - 120	Leg	ROHN 4 EH	77	-112.764	167.894	67.2	Pass
T5	120 - 100	Leg	ROHN 5 EH	98	-150.298	251.347	59.8	Pass
T6	100 - 80	Leg	ROHN 6 EHS	119	-183.017	256.249	71.4	Pass
T7	80 - 60	Leg	ROHN 6 EH	134	-218.772	318.945	68.6	Pass
T8	60 - 40	Leg	ROHN 8 EHS	149	-252.490	405.672	62.2	Pass
T9	40 - 20	Leg	ROHN 8 EHS	163	-286.488	405.729	70.6	Pass
T10	20 - 0	Leg	ROHN 8 EHS	178	-320.581	405.717	79.0	Pass
T1	192 - 180	Diagonal	L1 3/4x1 3/4x3/16	7	-1.693	11.895	14.2 22.5 (b)	Pass
T2	180 - 160	Diagonal	L2x2x3/16	36	-4.210	10.392	40.5 50.2 (b)	Pass
T3	160 - 140	Diagonal	L2 1/2x2 1/2x1/4	63	-6.296	16.480	38.2 56.7 (b)	Pass
T4	140 - 120	Diagonal	L2 1/2x2 1/2x1/4	81	-7.268	12.587	57.7 65.6 (b)	Pass
T5	120 - 100	Diagonal	L3x3x1/4	102	-7.815	17.432	44.8 52.8 (b)	Pass
T6	100 - 80	Diagonal	L3 1/2x3 1/2x1/4	123	-9.211	19.016	48.4 61.7 (b)	Pass
T7	80 - 60	Diagonal	L4x4x1/4	138	-10.160	24.136	42.1 67.5 (b)	Pass
T8	60 - 40	Diagonal	L4x4x5/16	153	-9.777	24.922	39.2 52.7 (b)	Pass
T9	40 - 20	Diagonal	L4x4x5/16	168	-11.637	21.484	54.2 61.2 (b)	Pass
T10	20 - 0	Diagonal	L4x4x3/8	183	-12.395	21.926	56.5 59.3 (b)	Pass
T1	192 - 180	Top Girt	L1 3/4x1 3/4x3/16	5	-0.108	4.122	2.6	Pass
T2	180 - 160	Top Girt	L2x2x3/16	28	-0.903	6.245	14.5	Pass
							Summary	
							Leg (T10) 79.0	Pass
							Diagonal (T7) 67.5	Pass
							Top Girt (T2) 14.5	Pass
							Bolt Checks 67.5	Pass
							RATING = 79.0	**Pass**

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876345

APPENDIX C

ADDITIONAL CALCULATIONS

CCIplate

Project Information

BU #	876345
Site Name	SKY HILL, CT
Order #	495679, Rev.0

Tower Information

Tower Type	Self Support
TIA-222 Rev	H

☑ Apply TIA-222-H Section 15.5

Applied Loads

	Comp.	Uplift
Axial (k)	0.00	276.00
Shear (k)	0.00	32.00

Anchor Rod Data

Quantity:	10	
Diameter (in):	1	
Material Grade:	A354-BC	Fy=109 ksi Fu=125 ksi
Grout Considered:	Yes	Not Considered, lar<=1(d)
l_{ar} (in):	0	
Eta Factor, η:	0.55	
Thread Type:	N-Included	
Configuration:	Symmetrical	

Anchor Rod Results

Axial, Pu_t (kips)	27.60	
Shear, Vu (kips)	3.20	
Moment, Mu (kip-in)	-	
Axial Cap., φPn_t (kips)	56.81	
Shear Cap., ϕVn (kips)	36.82	
Moment Cap., ϕMn (kip-in)	-	
Stress Rating	23.2%	**Pass**

LPile Plus for Windows, Version 2013-07.007

Analysis of Individual Piles and Drilled Shafts
Subjected to Lateral Loading Using the p-y Method

This copy of LPile is used by:

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Tulsa

Serial Number of Security Device: 136081582
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Use of this program by any entity other than B&T Engineering, Tulsa, OK
is forbidden by the software license agreement.

Files Used for Analysis

Path to file locations:
\\Data\data\FOUNDATION\Manish\Compile_77921_876345_Sky Hill----Sampath-----Akshaykumar--------QCD\77921_007_01_L-Pile\
Name of input data file: 77921_LPile (USCS units).lp7d
Name of output report file: 77921_LPile (USCS units).lp7o
Name of plot output file: 77921_LPile (USCS units).lp7p
Name of runtime messeage file: 77921_LPile (USCS units).lp7r

Date and Time of Analysis

Date: June 19, 2019 Time: 17:15:17

Problem Title

Project Name: SKY HILL, CT

Job Number: 876345

Client: CCI

Engineer:

Description:

Program Options and Settings

Engineering Units of Input Data and Computations:
- Engineering units are US Customary Units (pounds, feet, inches)

Analysis Control Options:

- Maximum number of iterations allowed	=	500
- Deflection tolerance for convergence	=	1.0000E-05 in
- Maximum allowable deflection	=	100.0000 in
- Number of pile increments	=	100

Loading Type and Number of Cycles of Loading:
- Static loading specified

Computational Options:
- Use unfactored loads in computations (conventional analysis)
- Compute pile response under loading and nonlinear bending properties of pile (only if nonlinear pile properties are input)
- Use of p-y modification factors for p-y curves not selected
- Loading by lateral soil movements acting on pile not selected
- Input of shear resistance at the pile tip not selected
- Computation of pile-head foundation stiffness matrix not selected
- Push-over analysis of pile not selected
- Buckling analysis of pile not selected

Output Options:
- No p-y curves to be computed and reported for user-specified depths
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (nodal spacing of output points) = 1

Pile Structural Properties and Geometry

Total number of pile sections	=	1
Total length of pile	=	26.50 ft
Depth of ground surface below top of pile	=	0.50 ft

Pile diameter values used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over the length of the pile.

Point	Depth X ft	Pile Diameter in
1	0.00000	60.0000000
2	26.500000	60.0000000

Input Structural Properties:

Pile Section No. 1:

Section Type	=	Drilled Shaft (Bored Pile)
Section Length	=	26.50000 ft
Section Diameter	=	60.00000 in

Ground Slope and Pile Batter Angles

Ground Slope Angle	=	0.000 degrees
	=	0.000 radians
Pile Batter Angle	=	0.000 degrees
	=	0.000 radians

Soil and Rock Layering Information

The soil profile is modelled using 3 layers

Layer 1 is soft clay, p-y criteria by Matlock, 1970

Distance from top of pile to top of layer	=	0.50000 ft
Distance from top of pile to bottom of layer	=	3.83000 ft
Effective unit weight at top of layer	=	120.00000 pcf
Effective unit weight at bottom of layer	=	120.00000 pcf
Undrained cohesion at top of layer	=	0.10000 psf
Undrained cohesion at bottom of layer	=	0.10000 psf
Epsilon-50 at top of layer	=	0.0000
Epsilon-50 at bottom of layer	=	0.0000

NOTE: Internal default values for Epsilon-50 will be computed for this soil layer.

Layer 2 is stiff clay without free water

Distance from top of pile to top of layer	=	3.83000 ft
Distance from top of pile to bottom of layer	=	5.50000 ft
Effective unit weight at top of layer	=	130.00000 pcf
Effective unit weight at bottom of layer	=	130.00000 pcf
Undrained cohesion at top of layer	=	3000.00000 psf
Undrained cohesion at bottom of layer	=	3000.00000 psf
Epsilon-50 at top of layer	=	0.00400
Epsilon-50 at bottom of layer	=	0.00400

Layer 3 is stiff clay without free water

Distance from top of pile to top of layer	=	5.50000 ft
Distance from top of pile to bottom of layer	=	26.50000 ft
Effective unit weight at top of layer	=	135.00000 pcf
Effective unit weight at bottom of layer	=	135.00000 pcf
Undrained cohesion at top of layer	=	5000.00000 psf

Undrained cohesion at bottom of layer = 5000.00000 psf
Epsilon-50 at top of layer = 0.00200
Epsilon-50 at bottom of layer = 0.00200

(Depth of lowest soil layer extends 0.00 ft below pile tip)

Summary of Soil Properties

Layer Num.	Soil Type (p-y Curve Criteria)	Layer Depth ft	Effective Unit Wt. pcf	Undrained Cohesion psf	Strain Factor Epsilon 50
1	Soft Clay	0.500	120.000	0.10000	default
		3.830	120.000	0.10000	default
2	Stiff Clay w/o Free Water	3.830	130.000	3000.000	0.00400
		5.500	130.000	3000.000	0.00400
3	Stiff Clay w/o Free Water	5.500	135.000	5000.000	0.00200
		26.500	135.000	5000.000	0.00200

Loading Type

Static loading criteria were used when computing p-y curves for all analyses.

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 2

Load No.	Load Compute Type	Condition 1	Condition 2	Axial Thrust Force, lbs Top y vs. Pile Length
1	1 No	V = 37000. lbs	M = 0.0000 in-lbs	329000.
2	1 No	V = 32000. lbs	M = 0.0000 in-lbs	-276000.

V = perpendicular shear force applied to pile head
M = bending moment applied to pile head

y = lateral deflection relative to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applie to pile head
Axial thrust is assumed to be acting axially for all pile batter angles.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

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Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Dimensions and Properties of Drilled Shaft (Bored Pile):

Length of Section	=	26.50000 ft
Shaft Diameter	=	60.00000 in
Concrete Cover Thickness	=	3.30000 in
Number of Reinforcing Bars	=	18 bars
Yield Stress of Reinforcing Bars	=	60000. psi
Modulus of Elasticity of Reinforcing Bars	=	29000000. psi
Gross Area of Shaft	=	2827.43339 sq. in.
Total Area of Reinforcing Steel	=	18.00000 sq. in.
Area Ratio of Steel Reinforcement	=	0.64 percent
Edge-to-Edge Bar Spacing	=	7.94894 in
Maximum Concrete Aggregate Size	=	0.75000 in
Ratio of Bar Spacing to Aggregate Size	=	10.60
Offset of Center of Rebar Cage from Center of Pile	=	0.0000 in

Axial Structural Capacities:

Nom. Axial Structural Capacity = 0.85 Fc Ac + Fy As	=	8244.055 kips
Tensile Load for Cracking of Concrete	=	-1077.607 kips
Nominal Axial Tensile Capacity	=	-1080.000 kips

Reinforcing Bar Dimensions and Positions Used in Computations:

Bar Number	Bar Diam. inches	Bar Area sq. in.	X inches	Y inches
1	1.12800	1.00000	26.13600	0.00000
2	1.12800	1.00000	24.55981	8.93904
3	1.12800	1.00000	20.02134	16.79990
4	1.12800	1.00000	13.06800	22.63444
5	1.12800	1.00000	4.53847	25.73894
6	1.12800	1.00000	-4.53847	25.73894
7	1.12800	1.00000	-13.06800	22.63444
8	1.12800	1.00000	-20.02134	16.79990
9	1.12800	1.00000	-24.55981	8.93904
10	1.12800	1.00000	-26.13600	0.00000
11	1.12800	1.00000	-24.55981	-8.93904
12	1.12800	1.00000	-20.02134	-16.79990
13	1.12800	1.00000	-13.06800	-22.63444
14	1.12800	1.00000	-4.53847	-25.73894
15	1.12800	1.00000	4.53847	-25.73894
16	1.12800	1.00000	13.06800	-22.63444

17	1.12800	1.00000	20.02134	-16.79990
18	1.12800	1.00000	24.55981	-8.93904

NOTE: The positions of the above rebars were computed by LPile

Minimum spacing between any two bars not equal to zero = 7.94894 inches between Bars 17 and 18

Spacing to aggregate size ratio = 10.59858

Concrete Properties:

Compressive Strength of Concrete	=	3000.00000 psi
Modulus of Elasticity of Concrete	=	3122019. psi
Modulus of Rupture of Concrete	=	-410.79191 psi
Compression Strain at Peak Stress	=	0.00163
Tensile Strain at Fracture of Concrete	=	-0.0001160
Maximum Coarse Aggregate Size	=	0.75000 in

Number of Axial Thrust Force Values Determined from Pile-head Loadings = 2

Number	Axial Thrust Force kips
1	-276.000
2	329.000

Definitions of Run Messages and Notes:

C = concrete in section has cracked in tension.
Y = stress in reinforcing steel has reached yield stress.
T = ACI 318-08 criteria for tension-controlled section met, tensile strain in reinforcement exceeds 0.005 while simultaneously compressive strain in concrete more than than 0.003. See ACI 318-08, Section 10.3.4.
Z = depth of tensile zone in concrete section is less than 10 percent of section depth.

Bending Stiffness (EI) = Computed Bending Moment / Curvature.
Position of neutral axis is measured from edge of compression side of pile.
Compressive stresses and strains are positive in sign.
Tensile stresses and strains are negative in sign.

Axial Thrust Force = -276.000 kips

Bending Curvature rad/in.	Bending Moment Stress in-kip	Bending Stiffness kip-in2	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in	Max Concrete Stress ksi	Max Steel Stress ksi	Run Msg
0.000000417	1023.5447974	2456507514.	-31.5893776	-0.0000132	-0.0000382	-0.0486051	-1.1030800	
0.000000833	2047.0469182	2456456302.	-0.8361440	-0.000000697	-0.0000507	-0.0034765	-1.4629568	

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0.000001250  3069.9230057   2455938405.     9.3980311     0.0000117    -0.0000633
 0.0416255    -1.8234464
0.000001667  4089.6983716   2453819023.    14.5081402     0.0000242    -0.0000758
 0.0863462    -2.1842732
0.000002083  5105.1053977   2450450591.    17.5715583     0.0000366    -0.0000884
 0.1307065    -2.5452600
0.000002500  6115.7675539   2446307022.    19.6125932     0.0000490    -0.0001010
 0.1747154    -2.9063370
0.000002917  6115.7675539   2096834590.  -151.2806264    -0.0004412    -0.0006162
  0.000000   -17.8454446  C
0.000003333  6115.7675539   1834730266.  -128.6205278    -0.0004287    -0.0006287
  0.000000   -18.2043177  C
0.000003750  6115.7675539   1630871348.  -110.9960068    -0.0004162    -0.0006412
  0.000000   -18.5631907  C
0.000004167  6115.7675539   1467784213.   -96.8963899    -0.0004037    -0.0006537
  0.000000   -18.9220638  C
0.000004583  6115.7675539   1334349284.   -85.3603397    -0.0003912    -0.0006662
  0.000000   -19.2809368  C
0.000005000  6115.7675539   1223153511.   -75.7469646    -0.0003787    -0.0006787
  0.000000   -19.6398099  C
0.000005417  6115.7675539   1129064779.   -67.6125703    -0.0003662    -0.0006912
  0.000000   -19.9986829  C
0.000005833  6115.7675539   1048417295.   -60.6402323    -0.0003537    -0.0007037
  0.000000   -20.3575559  C
0.000006250  6115.7675539    978522809.   -54.5975393    -0.0003412    -0.0007162
  0.000000   -20.7164290  C
0.000006667  6115.7675539    917365133.   -49.3101830    -0.0003287    -0.0007287
  0.000000   -21.0753021  C
0.000007083  6115.7675539    863402478.   -44.6448686    -0.0003162    -0.0007412
  0.000000   -21.4341752  C
0.000007500  6115.7675539    815435674.   -40.4979225    -0.0003037    -0.0007537
  0.000000   -21.7930481  C
0.000007917  6115.7675539    772518007.   -36.7874970    -0.0002912    -0.0007662
  0.000000   -22.1519211  C
0.000008333  6115.7675539    733892106.   -33.4481140    -0.0002787    -0.0007787
  0.000000   -22.5107942  C
0.000008750  6115.7675539    698944863.   -30.4267676    -0.0002662    -0.0007912
  0.000000   -22.8696672  C
0.000009167  6115.7675539    667174642.   -27.6800890    -0.0002537    -0.0008037
  0.000000   -23.2285403  C
0.000009583  6115.7675539    638167049.   -25.1722520    -0.0002412    -0.0008162
  0.000000   -23.5874133  C
  0.0000100  6115.7675539    611576755.   -22.8734014    -0.0002287    -0.0008287
  0.000000   -23.9462864  C
  0.0000104  6115.7675539    587113685.   -20.7584589    -0.0002162    -0.0008412
  0.000000   -24.3051594  C
  0.0000108  6115.7675539    564532390.   -18.8062042    -0.0002037    -0.0008537
  0.000000   -24.6640325  C
  0.0000113  6115.7675539    543623783.   -16.9985610    -0.0001912    -0.0008662
  0.000000   -25.0229055  C
  0.0000117  6115.7675539    524208647.   -15.3200352    -0.0001787    -0.0008787
  0.000000   -25.3817786  C
  0.0000121  6115.7675539    506132487.   -13.7572698    -0.0001662    -0.0008912
  0.000000   -25.7406516  C
  0.0000125  6115.7675539    489261404.   -12.2986888    -0.0001537    -0.0009037
  0.000000   -26.0995247  C
  0.0000129  6115.7675539    473478778.   -10.9342097    -0.0001412    -0.0009162
  0.000000   -26.4583977  C
  0.0000133  6115.7675539    458682567.    -9.6550106    -0.0001287    -0.0009287
  0.000000   -26.8172707  C
  0.0000138  6115.7675539    444783095.    -8.4533387    -0.0001162    -0.0009412
  0.000000   -27.1761437  C
  0.0000142  6115.7675539    431701239.    -7.3223534    -0.0001037    -0.0009537
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 0.000000   -27.5350168  C
 0.0000146  6115.7675539    419366918.    -6.2559958    -0.0000912    -0.0009662
 0.000000   -27.8938899  C
 0.0000150  6115.7675539    407717837.    -5.2488803    -0.0000787    -0.0009787
 0.000000   -28.2527629  C
 0.0000154  6115.7675539    396698436.    -4.2962035    -0.0000662    -0.0009912
 0.000000   -28.6116359  C
 0.0000158  6115.7675539    386259003.    -3.3936676    -0.0000537    -0.0010037
 0.000000   -28.9705090  C
 0.0000163  6115.7675539    376354926.    -2.5374155    -0.0000412    -0.0010162
 0.000000   -29.3293820  C
 0.0000171  6115.7675539    357996149.    -0.9502166    -0.0000162    -0.0010412
 0.000000   -30.0471281  C
 0.0000179  6115.7675539    341345166.     0.4831740   0.000008657    -0.0010663
0.0120421   -30.7680758  C
 0.0000188  6115.7675539    326174270.     1.6911249     0.0000317    -0.0010933
0.0950392   -31.5423258  C
 0.0000196  6115.7675539    312294513.     2.6702681     0.0000523    -0.0011227
0.1680684   -32.3881352  C
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0.2326820   -33.2955264  C
 0.0000213  6115.7675539    287800826.     4.1345325     0.0000879    -0.0011871
0.2918226   -34.2422197  C
 0.0000221  6115.7675539    276940418.     4.7088748     0.0001040    -0.0012210
0.3469523   -35.2172335  C
 0.0000229  6115.7675539    266869857.     5.2096019     0.0001194    -0.0012556
0.3990199   -36.2134105  C
 0.0000238  6115.7675539    257506002.     5.6492331     0.0001342    -0.0012908
0.4484837   -37.2274656  C
 0.0000246  6115.7675539    248776985.     6.0338645     0.0001483    -0.0013267
0.4953945   -38.2594823  C
 0.0000254  6115.7675539    240620363.     6.3846433     0.0001623    -0.0013627
0.5411406   -39.2978609  C
 0.0000263  6115.7675539    232981621.     6.6963913     0.0001758    -0.0013992
0.5850156   -40.3489970  C
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0.6280627   -41.4039774  C
 0.0000279  6481.9231357    232188291.     7.2425295     0.0002022    -0.0014728
0.6696360   -42.4686937  C
 0.0000288  6792.4807030    236260198.     7.4871747     0.0002153    -0.0015097
0.7109487   -43.5324430  C
 0.0000296  7106.6905495    240226159.     7.7047560     0.0002279    -0.0015471
0.7506426   -44.6075863  C
 0.0000304  7420.6969883    243968120.     7.9106248     0.0002406    -0.0015844
0.7900093   -45.6825446  C
 0.0000313  7734.3837394    247500280.     8.1060667     0.0002533    -0.0016217
0.8290826   -46.7570020  C
 0.0000321  8051.1207485    250944023.     8.2801919     0.0002657    -0.0016593
0.8666981   -47.8418463  C
 0.0000329  8367.4501495    254201017.     8.4463576     0.0002780    -0.0016970
0.9040714   -48.9258727  C
 0.0000338  8683.3680887    257284980.     8.6051615     0.0002904    -0.0017346
0.9412012   -50.0090731  C
 0.0000346  8999.9408300    260239253.     8.7533849     0.0003027    -0.0017723
0.9776938   -51.0952094  C
 0.0000354  9317.8586616    263092480.     8.8894320     0.0003148    -0.0018102
1.0133096   -52.1866874  C
 0.0000363  9635.3911954    265803895.     9.0199484     0.0003270    -0.0018480
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0.0000396	10905.	275502491.	9.4813412	0.0003753	-0.0019997
1.1863708	-57.6468353	C			
0.0000404	11223.	277684299.	9.5822983	0.0003873	-0.0020377
1.2197190	-58.7421227	C			
0.0000412	11540.	279768904.	9.6797814	0.0003993	-0.0020757
1.2528277	-59.8366864	C			
0.0000421	11857.	281762000.	9.7740026	0.0004113	-0.0021137
1.2856956	-60.0000000	CY			
0.0000429	12174.	283668840.	9.8651575	0.0004234	-0.0021516
1.3183213	-60.0000000	CY			
0.0000437	12491.	285516930.	9.9500619	0.0004353	-0.0021897
1.3503026	-60.0000000	CY			
0.0000446	12809.	287302049.	10.0302078	0.0004472	-0.0022278
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0.0000529	14790.	279504234.	10.3530310	0.0005478	-0.0026272
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0.0000562	15385.	273517607.	10.4038701	0.0005852	-0.0027898
1.7243631	-60.0000000	CY			
0.0000596	15770.	264670254.	10.3809123	0.0006185	-0.0029565
1.8005782	-60.0000000	CY			
0.0000629	16107.	256006424.	10.3473274	0.0006510	-0.0031240
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0.0000662	16443.	248198044.	10.3190226	0.0006836	-0.0032914
1.9426600	-60.0000000	CY			
0.0000696	16778.	241121901.	10.2952761	0.0007164	-0.0034586
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0.0000729	17072.	234126990.	10.2609250	0.0007482	-0.0036268
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0.0000762	17234.	226019344.	10.1849915	0.0007766	-0.0037984
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0.0000796	17395.	218578756.	10.1163723	0.0008051	-0.0039699
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0.0000829	17556.	211729161.	10.0543236	0.0008337	-0.0041413
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0.0000963	18192.	189005502.	9.8547054	0.0009485	-0.0048265
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0.0000996	18349.	184255787.	9.8127409	0.0009772	-0.0049978
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0.0001029	18477.	179535087.	9.7627640	0.0010048	-0.0051702
2.5107603	-60.0000000	CY			
0.0001063	18551.	174597028.	9.6944230	0.0010300	-0.0053450
2.5461130	-60.0000000	CY			
0.0001096	18613.	169855782.	9.6264147	0.0010549	-0.0055201

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2.5795638   -60.0000000  CY
 0.0001129        18675.     165391605.     9.5630236     0.0010798    -0.0056952
2.6118242   -60.0000000  CY
 0.0001163        18737.     161180627.     9.5038593     0.0011048    -0.0058702
2.6428842   -60.0000000  CY
 0.0001196        18799.     157201637.     9.4485752     0.0011299    -0.0060451
2.6727336   -60.0000000  CY
 0.0001229        18860.     153435727.     9.3968621     0.0011550    -0.0062200
2.7013620   -60.0000000  CY
 0.0001263        18921.     149865982.     9.3484441     0.0011802    -0.0063948
2.7287591   -60.0000000  CY
 0.0001296        18981.     146477230.     9.3030735     0.0012055    -0.0065695
2.7549139   -60.0000000  CY
 0.0001329        19040.     143248747.     9.2562632     0.0012303    -0.0067447
2.7792512   -60.0000000  CY
 0.0001363        19099.     140175387.     9.2119722     0.0012551    -0.0069199
2.8023456   -60.0000000  CY
 0.0001396        19157.     137246476.     9.1703336     0.0012800    -0.0070950
2.8242310   -60.0000000  CY
 0.0001429        19215.     134451891.     9.1311694     0.0013050    -0.0072700
2.8448961   -60.0000000  CY
 0.0001462        19273.     131782414.     9.0943179     0.0013300    -0.0074450
2.8643295   -60.0000000  CY
 0.0001496        19331.     129229650.     9.0596323     0.0013552    -0.0076198
2.8825196   -60.0000000  CY
 0.0001529        19388.     126785935.     9.0269786     0.0013804    -0.0077946
2.8994544   -60.0000000  CY
 0.0001562        19444.     124444257.     8.9962344     0.0014057    -0.0079693
2.9151217   -60.0000000  CY
 0.0001596        19501.     122198192.     8.9672881     0.0014310    -0.0081440
2.9295090   -60.0000000  CY
 0.0001629        19557.     120040615.     8.9399360     0.0014565    -0.0083185
2.9425950   -60.0000000  CY
 0.0001662        19612.     117967232.     8.9141766     0.0014820    -0.0084930
2.9543760   -60.0000000  CY
 0.0001696        19651.     115876169.     8.8814419     0.0015061    -0.0086689
2.9642644   -60.0000000  CY
 0.0001729        19684.     113837879.     8.8480972     0.0015300    -0.0088450
2.9728335   -60.0000000  CY
 0.0001762        19709.     111824655.     8.8117584     0.0015531    -0.0090219
2.9800055   -60.0000000  CY
 0.0001796        19727.     109846963.     8.7736251     0.0015756    -0.0091994
2.9859389   -60.0000000  CY
 0.0001829        19744.     107940230.     8.7372367     0.0015982    -0.0093768
2.9908437   -60.0000000  CY
 0.0002029        19838.      97763667.     8.5298829     0.0017309    -0.0104441
2.9924347   -60.0000000  CY
 0.0002229        19923.      89375812.     8.3667084     0.0018651    -0.0115099
2.9935827   -60.0000000  CY
 0.0002429        20003.      82343689.     8.2400967     0.0020017    -0.0125733
2.9992266   -60.0000000  CY
 0.0002629        20076.      76359687.     8.1414794     0.0021405    -0.0136345
2.9977080   -60.0000000  CY
 0.0002829        20144.      71201803.     8.0574194     0.0022796    -0.0146954
2.9892207    60.0000000  CY
 0.0003029        20208.      66710351.     7.9841955     0.0024185    -0.0157565
2.9987840    60.0000000  CY
 0.0003229        20268.      62765416.     7.9258984     0.0025594    -0.0168156
2.9887894    60.0000000  CY
 0.0003429        20326.      59273965.     7.8787973     0.0027018    -0.0178732
2.9954793    60.0000000  CY
 0.0003629        20382.      56161637.     7.8408932     0.0028456    -0.0189294
2.9970074    60.0000000  CY
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0.0003829	20415.	53313342.	7.7910270	0.0029833	-0.0199917
2.9821095	60.0000000	CY			
0.0004029	20442.	50735027.	7.7438990	0.0031201	-0.0210549
2.9919180	60.0000000	CYT			
0.0004229	20448.	48349472.	7.6824574	0.0032490	-0.0221260
2.9987085	60.0000000	CYT			
0.0004429	20453.	46178113.	7.6283130	0.0033787	-0.0231963
2.9963082	60.0000000	CYT			
0.0004629	20458.	44193220.	7.5804817	0.0035091	-0.0242659
2.9854189	60.0000000	CYT			
0.0004829	20462.	42372366.	7.5374047	0.0036399	-0.0253351
2.9744502	60.0000000	CYT			
0.0005029	20467.	40695816.	7.4980891	0.0037709	-0.0264041
2.9822171	60.0000000	CYT			
0.0005229	20469.	39143782.	7.4521760	0.0038969	-0.0274781
2.9909309	60.0000000	CYT			

Axial Thrust Force = 329.000 kips

Bending Max Concrete Curvature rad/in.	Bending Max Steel Stress ksi	Bending Stiffness kip-in2	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in	Run Msg
0.000000417	1020.6066029	2449455847.	103.5183337	0.0000431	0.0000181	
0.1558860	1.2472215					
0.000000833	2041.1745527	2449409463.	66.8007513	0.0000557	0.000005667	
0.2000931	1.6071015					
0.000001250	3061.5757302	2449260584.	54.5798113	0.0000682	-0.000006775	
0.2440342	1.9676432					
0.000001667	4080.1206183	2448072371.	48.4794202	0.0000808	-0.0000192	
0.2876865	2.3286720					
0.000002083	5094.8797255	2445542268.	44.8233667	0.0000934	-0.0000316	
0.3310204	2.6899534					
0.000002500	6105.1479760	2442059190.	42.3879643	0.0001060	-0.0000440	
0.3740223	3.0513774					
0.000002917	7110.6592674	2437940320.	40.6494670	0.0001186	-0.0000564	
0.4166857	3.4128924					
0.000003333	8111.2976533	2433389296.	39.3462585	0.0001312	-0.0000688	
0.4590071	3.7744717					
0.000003750	9107.0067486	2428535133.	38.3331043	0.0001437	-0.0000813	
0.5009847	4.1361001					
0.000004167	10098.	2423461676.	37.5229144	0.0001563	-0.0000937	
0.5426172	4.4977688					
0.000004583	11084.	2418224987.	36.8602917	0.0001689	-0.0001061	
0.5839040	4.8594721					
0.000005000	11084.	2216706238.	30.3631117	0.0001518	-0.0001482	
0.5267020	4.3591512	C				
0.000005417	11084.	2046190374.	29.4610197	0.0001596	-0.0001654	
0.5521155	-4.7500399	C				
0.000005833	11084.	1900033918.	28.6631011	0.0001672	-0.0001828	
0.5769223	-5.2504087	C				
0.000006250	11084.	1773364990.	27.9506638	0.0001747	-0.0002003	
0.6011736	-5.7545672	C				
0.000006667	11084.	1662529679.	27.3090622	0.0001821	-0.0002179	
0.6249060	-6.2622480	C				
0.000007083	11084.	1564733815.	26.7272538	0.0001893	-0.0002357	
0.6481590	-6.7731517	C				
0.000007500	11084.	1477804159.	26.1968133	0.0001965	-0.0002535	

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 0.6709754    -7.2869432  C
0.000007917        11084.    1400024992.    25.7112609     0.0002035    -0.0002715
 0.6934014    -7.8032480  C
0.000008333        11084.    1330023743.    25.2655942     0.0002105    -0.0002895
 0.7154874    -8.3216481  C
0.000008750        11084.    1266689279.    24.8559558     0.0002175    -0.0003075
 0.7372881    -8.8416762  C
0.000009167        11084.    1209112493.    24.4739499     0.0002243    -0.0003257
 0.7587046    -9.3642583  C
0.000009583        11084.    1156542385.    24.1201777     0.0002312    -0.0003438
 0.7798684    -9.8882256  C
 0.0000100         11084.    1108353119.    23.7913404     0.0002379    -0.0003621
 0.8007888   -10.4135112  C
 0.0000104         11084.    1064018994.    23.4824376     0.0002446    -0.0003804
 0.8214025   -10.9407220  C
 0.0000108         11084.    1023095187.    23.1949773     0.0002513    -0.0003987
 0.8418408   -11.4686613  C
 0.0000113         11084.     985202772.    22.9235194     0.0002579    -0.0004171
 0.8619982   -11.9983268  C
 0.0000117         11084.     950016959.    22.6688830     0.0002645    -0.0004355
 0.8819686   -12.5288612  C
 0.0000121         11084.     917257754.    22.4298319     0.0002710    -0.0004540
 0.9017719   -13.0600880  C
 0.0000125         11084.     886682495.    22.2016563     0.0002775    -0.0004725
 0.9212888   -13.5931496  C
 0.0000129         11084.     858079834.    21.9885147     0.0002840    -0.0004910
 0.9407268   -14.1260938  C
 0.0000133         11084.     831264839.    21.7850822     0.0002905    -0.0005095
 0.9599276   -14.6604349  C
 0.0000138         11084.     806074996.    21.5913355     0.0002969    -0.0005281
 0.9789289   -15.1958299  C
 0.0000142         11084.     782366908.    21.4092634     0.0003033    -0.0005467
 0.9978531   -15.7311109  C
 0.0000146         11084.     760013567.    21.2356795     0.0003097    -0.0005653
 1.0166049   -16.2672022  C
 0.0000150         11087.     739154863.    21.0683693     0.0003160    -0.0005840
 1.0351181   -16.8047593  C
 0.0000154         11255.     730029240.    20.9103524     0.0003224    -0.0006026
 1.0535560   -17.3422049  C
 0.0000158         11422.     721376528.    20.7608956     0.0003287    -0.0006213
 1.0719183   -17.8795387  C
 0.0000163         11588.     713104408.    20.6163870     0.0003350    -0.0006400
 1.0900642   -18.4181526  C
 0.0000171         11919.     697672696.    20.3450523     0.0003476    -0.0006774
 1.1259267   -19.4970970  C
 0.0000179         12249.     683651185.    20.0997961     0.0003601    -0.0007149
 1.1614926   -20.5756059  C
 0.0000188         12576.     670707376.    19.8684852     0.0003725    -0.0007525
 1.1962983   -21.6583861  C
 0.0000196         12902.     658842970.    19.6576237     0.0003850    -0.0007900
 1.2308135   -22.7407328  C
 0.0000204         13228.     647904930.    19.4632888     0.0003974    -0.0008276
 1.2649561   -23.8234860  C
 0.0000213         13552.     637719455.    19.2790561     0.0004097    -0.0008653
 1.2984640   -24.9094066  C
 0.0000221         13875.     628283596.    19.1094025     0.0004220    -0.0009030
 1.3316860   -25.9948951  C
 0.0000229         14197.     619515469.    18.9527406     0.0004343    -0.0009407
 1.3646210   -27.0799494  C
 0.0000238         14518.     611296544.    18.8038353     0.0004466    -0.0009784
 1.3970213   -28.1672334  C
 0.0000246         14838.     603592447.    18.6635772     0.0004588    -0.0010162
 1.4290028   -29.2555497  C
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0.0000254	15158.	596377313.	18.5331076	0.0004710	-0.0010540	
1.4607015	-30.3434302	C				
0.0000263	15477.	589604487.	18.4114974	0.0004833	-0.0010917	
1.4921166	-31.4308725	C				
0.0000271	15796.	583232114.	18.2978414	0.0004956	-0.0011294	
1.5232405	-32.5179453	C				
0.0000279	16113.	577178037.	18.1869504	0.0005077	-0.0011673	
1.5537538	-33.6082730	C				
0.0000288	16429.	571460868.	18.0830196	0.0005199	-0.0012051	
1.5839870	-34.6981573	C				
0.0000296	16746.	566052057.	17.9854639	0.0005321	-0.0012429	
1.6139393	-35.7875957	C				
0.0000304	17062.	560926181.	17.8937620	0.0005443	-0.0012807	
1.6436096	-36.8765856	C				
0.0000313	17377.	556060528.	17.8074487	0.0005565	-0.0013185	
1.6729969	-37.9651245	C				
0.0000321	17692.	551434746.	17.7261069	0.0005687	-0.0013563	
1.7021001	-39.0532096	C				
0.0000329	18006.	547011395.	17.6470387	0.0005809	-0.0013941	
1.7307356	-40.1430559	C				
0.0000338	18319.	542785131.	17.5712109	0.0005930	-0.0014320	
1.7589986	-41.2335522	C				
0.0000346	18632.	538750837.	17.4995001	0.0006052	-0.0014698	
1.7869809	-42.3235846	C				
0.0000354	18944.	534894896.	17.4316185	0.0006174	-0.0015076	
1.8146812	-43.4131500	C				
0.0000363	19256.	531204940.	17.3673048	0.0006296	-0.0015454	
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0.0000371	19568.	527669711.	17.3063214	0.0006418	-0.0015832	
1.8692318	-45.5908684	C				
0.0000379	19879.	524278943.	17.2484513	0.0006540	-0.0016210	
1.8960800	-46.6790153	C				
0.0000387	20190.	521023249.	17.1934965	0.0006662	-0.0016588	
1.9226420	-47.7666832	C				
0.0000396	20500.	517894033.	17.1412756	0.0006785	-0.0016965	
1.9489166	-48.8538690	C				
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1.9748675	-49.9410459	C				
0.0000412	21119.	511967843.	17.0416768	0.0007030	-0.0017720	
2.0003628	-51.0300190	C				
0.0000421	21427.	509160292.	16.9945091	0.0007152	-0.0018098	
2.0255730	-52.1184928	C				
0.0000429	21735.	506452074.	16.9495772	0.0007274	-0.0018476	
2.0504971	-53.2064636	C				
0.0000437	22043.	503837453.	16.9067561	0.0007397	-0.0018853	
2.0751340	-54.2939280	C				
0.0000446	22350.	501311118.	16.8659304	0.0007519	-0.0019231	
2.0994823	-55.3808824	C				
0.0000454	22657.	498868151.	16.8269929	0.0007642	-0.0019608	
2.1235411	-56.4673230	C				
0.0000462	22963.	496503984.	16.7898443	0.0007765	-0.0019985	
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0.0000471	23269.	494214376.	16.7543924	0.0007889	-0.0020361	
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0.0000487	23880.	489843304.	16.6882416	0.0008136	-0.0021114	
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2.5925980   -60.0000000  CY
 0.0000696        28400.     408137866.    15.6855754     0.0010915    -0.0030835
2.6436834   -60.0000000  CY
 0.0000729        28725.     393944302.    15.5113349     0.0011310    -0.0032440
2.6908459   -60.0000000  CY
 0.0000762        29048.     380958085.    15.3547728     0.0011708    -0.0034042
2.7348652   -60.0000000  CY
 0.0000796        29366.     368991815.    15.2079656     0.0012103    -0.0035647
2.7752367   -60.0000000  CY
 0.0000829        29679.     357937055.    15.0719470     0.0012497    -0.0037253
2.8121984   -60.0000000  CY
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2.8456169   -60.0000000  CY
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2.8741822   -60.0000000  CY
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2.8995067   -60.0000000  CY
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 0.0001029        30763.     298912302.    14.2943602     0.0014711    -0.0047039
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 0.0001063        30911.     290929681.    14.1901127     0.0015077    -0.0048673
2.9720293   -60.0000000  CY
 0.0001096        31057.     283413960.    14.0933326     0.0015444    -0.0050306
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 0.0001129        31198.     276295330.    13.9969488     0.0015805    -0.0051945
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2.9969990   -60.0000000  CY
 0.0001196        31475.     263205197.    13.8249464     0.0016532    -0.0055218
2.9997049   -60.0000000  CY
 0.0001229        31610.     257169270.    13.7483768     0.0016899    -0.0056851
2.9966878   -60.0000000  CY
 0.0001263        31727.     251303299.    13.6721224     0.0017261    -0.0058489
2.9995005   -60.0000000  CY
 0.0001296        31812.     245496448.    13.5920422     0.0017613    -0.0060137
2.9976905   -60.0000000  CY
 0.0001329        31870.     239777241.    13.5094186     0.0017956    -0.0061794
2.9984353   -60.0000000  CY
 0.0001363        31924.     234305189.    13.4254480     0.0018292    -0.0063458
2.9999146   -60.0000000  CY
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2.9958580   -60.0000000  CY
 0.0001429        32027.     224095522.    13.2712505     0.0018967    -0.0066783
2.9984609   -60.0000000  CY
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2.9998863   -60.0000000  CY
 0.0001496        32126.     214770933.    13.1347909     0.0019647    -0.0070103
2.9964559   -60.0000000  CY
 0.0001529        32174.     210403806.    13.0725602     0.0019990    -0.0071760
2.9974719   -60.0000000  CY
 0.0001562        32222.     206218648.    13.0137689     0.0020334    -0.0073416
2.9994543   -60.0000000  CY
 0.0001596        32268.     202203452.    12.9582763     0.0020679    -0.0075071
2.9992748   -60.0000000  CY
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0.0001629	32314.	198345587.	12.9061488	0.0021026	-0.0076724
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2.9976688	60.0000000	CY			
0.0001696	32399.	191049415.	12.7999831	0.0021707	-0.0080043
2.9994299	60.0000000	CY			
0.0001729	32440.	187607022.	12.7506101	0.0022048	-0.0081702
2.9998734	60.0000000	CY			
0.0001762	32481.	184289255.	12.7041401	0.0022391	-0.0083359
2.9950312	60.0000000	CY			
0.0001796	32521.	181092467.	12.6599125	0.0022735	-0.0085015
2.9958954	60.0000000	CY			
0.0001829	32561.	178010005.	12.6178130	0.0023080	-0.0086670
2.9982966	60.0000000	CY			
0.0002029	32790.	161593088.	12.4053637	0.0025173	-0.0096577
2.9990264	60.0000000	CY			
0.0002229	33002.	148046591.	12.2388676	0.0027282	-0.0106468
2.9979993	60.0000000	CY			
0.0002429	33131.	136388879.	12.0643099	0.0029306	-0.0116444
2.9913806	60.0000000	CY			
0.0002629	33183.	126209592.	11.8941352	0.0031272	-0.0126478
2.9999717	60.0000000	CYT			
0.0002829	33217.	117407792.	11.7673063	0.0033292	-0.0136458
2.9915364	60.0000000	CYT			
0.0003029	33228.	109691981.	11.6763687	0.0035370	-0.0146380
2.9999723	60.0000000	CYT			
0.0003229	33229.	102903820.	11.5941843	0.0037440	-0.0156310
2.9844184	60.0000000	CYT			
0.0003429	33229.	96902139.	11.6060596	0.0039799	-0.0165951
2.9995605	60.0000000	CYT			

Summary of Results for Nominal (Unfactored) Moment Capacity for Section 1

Moment values interpolated at maximum compressive strain = 0.003
or maximum developed moment if pile fails at smaller strains.

Load No.	Axial Thrust kips	Nominal Mom. Cap. in-kip	Max. Comp. Strain
1	-276.000	20417.911	0.00300000
2	329.000	33149.301	0.00300000

Note note that the values of moment capacity in the table above are not factored by a strength reduction factor (phi-factor).

In ACI 318-08, the value of the strength reduction factor depends on whether the transverse reinforcing steel bars are tied hoops (0.65) or spirals (0.70).

The above values should be multiplied by the appropriate strength reduction factor to compute ultimate moment capacity according to ACI 318-08, Section 9.3.2.2 or the value required by the design standard being followed.

The following table presents factored moment capacities and corresponding bending stiffnesses computed for common resistance factor values used for reinforced concrete sections.

Axial Load	Resistance Factor	Nominal Moment Capacity	Ultimate (Factored) Axial Thrust	Ultimate (Factored) Moment Capacity	Bending Stiffness at Ult. Mom. Cap.

No.	for Moment in-kip	kip-in^2	kips	in-kip
1	0.65	20417.911	-179.400	13271.642
		288555083.411		
2	0.65	33149.301	213.850	21547.045
		508106420.674		
1	0.70	20417.911	-193.200	14292.537
		285111057.578		
2	0.70	33149.301	230.300	23204.511
		494698934.258		
1	0.75	20417.911	-207.000	15313.433
		274241438.158		
2	0.75	33149.301	246.750	24861.976
		483052716.531		

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 1

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 37000.0 lbs
Applied moment at pile head = 0.0 in-lbs
Axial thrust load on pile head = 329000.0 lbs

Depth X	Deflect. y	Bending Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil Res. Es*h	Soil Spr. p Distrib. Lat. Load
feet	inches	in-lbs	lbs	radians	psi*	lb-in^2	lb/in	lb/inch
0.00	0.0113	-6.723E-06	37000.	-0.000123	0.000	2.449E+12	0.000	0.000
0.265	0.0109	117788.	37000.	-0.000123	0.000	2.449E+12	0.000	0.000
0.530	0.0105	235576.	37000.	-0.000122	0.000	2.449E+12	-0.0285	8.6318
0.795	0.0101	353364.	37000.	-0.000122	0.000	2.449E+12	-0.0281	8.8518
1.060	0.009714	471151.	37000.	-0.000121	0.000	2.449E+12	-0.0278	9.0855
1.325	0.009329	588937.	37000.	-0.000121	0.000	2.449E+12	-0.0274	9.3339
1.590	0.008947	706721.	37000.	-0.000120	0.000	2.449E+12	-0.0270	9.5983
1.855	0.008567	824505.	37000.	-0.000119	0.000	2.449E+12	-0.0266	9.8800
2.120	0.008190	942287.	36999.	-0.000118	0.000	2.449E+12	-0.0262	10.1805
2.385	0.007818	1060068.	36999.	-0.000116	0.000	2.449E+12	-0.0258	10.5014
2.650	0.007450	1177847.	36999.	-0.000115	0.000	2.449E+12	-0.0254	10.8446

2.915	0.007087	1295624.	36999.	-0.000113	0.000	2.449E+12
-0.0250	11.2122	0.000				
3.180	0.006729	1413399.	36999.	-0.000112	0.000	2.449E+12
-0.0246	11.6065	0.000				
3.445	0.006377	1531171.	36999.	-0.000110	0.000	2.449E+12
-0.0241	12.0300	0.000				
3.710	0.006031	1648942.	36999.	-0.000108	0.000	2.449E+12
-0.0237	12.4856	0.000				
3.975	0.005692	1766710.	36061.	-0.000105	0.000	2.449E+12
-589.5912	329382.	0.000				
4.240	0.005361	1878514.	34189.	-0.000103	0.000	2.449E+12
-587.9809	348803.	0.000				
4.505	0.005037	1984369.	32323.	-0.000101	0.000	2.449E+12
-585.9719	369962.	0.000				
4.770	0.004721	2084295.	30463.	-9.791E-05	0.000	2.449E+12
-583.5496	393067.	0.000				
5.035	0.004414	2178318.	28612.	-9.514E-05	0.000	2.449E+12
-580.7004	418358.	0.000				
5.300	0.004116	2266466.	26770.	-9.226E-05	0.000	2.449E+12
-577.4108	446112.	0.000				
5.565	0.003827	2348771.	24111.	-8.926E-05	0.000	2.449E+12
-1094.9069	909747.	0.000				
5.830	0.003548	2420001.	20644.	-8.617E-05	0.000	2.449E+12
-1085.8267	973146.	0.000				
6.095	0.003279	2480248.	17207.	-8.299E-05	0.000	2.449E+12
-1075.8725	1043328.	0.000				
6.360	0.003020	2529612.	13803.	-7.973E-05	0.000	2.449E+12
-1065.0151	1121286.	0.000				
6.625	0.002772	2568202.	10435.	-7.643E-05	0.000	2.449E+12
-1053.2224	1208207.	0.000				
6.890	0.002534	2596138.	7106.0355	-7.307E-05	0.000	2.449E+12
-1040.4583	1305525.	0.000				
7.155	0.002307	2613549.	3819.2835	-6.969E-05	0.000	2.449E+12
-1026.6813	1414984.	0.000				
7.420	0.002091	2620574.	578.0289	-6.629E-05	0.000	2.449E+12
-1011.8435	1538730.	0.000				
7.685	0.001886	2617364.	-2614.2648	-6.289E-05	0.000	2.449E+12
-995.8884	1679431.	0.000				
7.950	0.001691	2604079.	-5753.9367	-5.950E-05	0.000	2.449E+12
-978.7481	1840451.	0.000				
8.215	0.001507	2580894.	-8837.0872	-5.614E-05	0.000	2.449E+12
-960.3403	2026098.	0.000				
8.480	0.001334	2547993.	-11860.	-5.281E-05	0.000	2.449E+12
-940.5632	2241982.	0.000				
8.745	0.001171	2505578.	-14788.	-4.953E-05	0.000	2.449E+12
-901.4309	2447085.	0.000				
9.010	0.001019	2454043.	-17480.	-4.631E-05	0.000	2.449E+12
-791.6610	2470325.	0.000				
9.275	0.000877	2394500.	-19832.	-4.316E-05	0.000	2.449E+12
-687.6115	2493571.	0.000				
9.540	0.000745	2328000.	-21863.	-4.009E-05	0.000	2.449E+12
-589.3089	2516825.	0.000				
9.805	0.000622	2255537.	-23589.	-3.712E-05	0.000	2.449E+12
-496.7498	2540085.	0.000				
10.070	0.000509	2178048.	-25031.	-3.424E-05	0.000	2.449E+12
-409.9031	2563351.	0.000				
10.335	0.000404	2096411.	-26205.	-3.147E-05	0.000	2.449E+12
-328.7123	2586622.	0.000				
10.600	0.000308	2011447.	-27131.	-2.880E-05	0.000	2.449E+12
-253.0975	2609897.	0.000				
10.865	0.000221	1923921.	-27824.	-2.625E-05	0.000	2.449E+12
-182.9578	2633178.	0.000				
11.130	0.000141	1834542.	-28303.	-2.381E-05	0.000	2.449E+12

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-118.1734   2656462.      0.000
    11.395  6.955E-05   1743966.    -28584. -2.148E-05      0.000  2.449E+12
-58.6074   2679750.      0.000
    11.660  4.833E-06   1652795.    -28683. -1.928E-05      0.000  2.449E+12
-4.1081   2703042.      0.000
    11.925 -5.306E-05   1561579.    -28618. -1.719E-05      0.000  2.449E+12
45.4891   2726337.      0.000
    12.190  -0.000105   1470822.    -28402. -1.522E-05      0.000  2.449E+12
90.3601   2749636.      0.000
    12.455  -0.000150   1380977.    -28050. -1.337E-05      0.000  2.449E+12
130.6902   2772937.      0.000
    12.720  -0.000190   1292451.    -27577. -1.164E-05      0.000  2.449E+12
166.6720   2796241.      0.000
    12.985  -0.000224   1205609.    -26997. -1.001E-05      0.000  2.449E+12
198.5045   2819547.      0.000
    13.250  -0.000253   1120772.    -26321. -8.505E-06      0.000  2.449E+12
226.3908   2842856.      0.000
    13.515  -0.000278   1038224.    -25563. -7.103E-06      0.000  2.449E+12
250.5373   2866167.      0.000
    13.780  -0.000298    958207.    -24733. -5.807E-06      0.000  2.449E+12
271.1520   2889480.      0.000
    14.045  -0.000315    880932.    -23844. -4.613E-06      0.000  2.449E+12
288.4431   2912795.      0.000
    14.310  -0.000328    806572.    -22904. -3.518E-06      0.000  2.449E+12
302.6182   2936112.      0.000
    14.575  -0.000337    735271.    -21924. -2.517E-06      0.000  2.449E+12
313.8831   2959431.      0.000
    14.840  -0.000344    667143.    -20912. -1.607E-06      0.000  2.449E+12
322.4406   2982751.      0.000
    15.105  -0.000347    602275.    -19877. -7.827E-07      0.000  2.449E+12
328.4899   3006073.      0.000
    15.370  -0.000349    540727.    -18826. -4.074E-08      0.000  2.449E+12
332.2253   3029397.      0.000
    15.635  -0.000348    482539.    -17767.  6.235E-07      0.000  2.449E+12
333.8361   3052722.      0.000
    15.900  -0.000345    427726.    -16706.  1.214E-06      0.000  2.449E+12
333.5056   3076048.      0.000
    16.165  -0.000340    376285.    -15649.  1.736E-06      0.000  2.449E+12
331.4105   3099375.      0.000
    16.430  -0.000334    328195.    -14601.  2.194E-06      0.000  2.449E+12
327.7204   3122704.      0.000
    16.695  -0.000326    283418.    -13567.  2.591E-06      0.000  2.449E+12
322.5976   3146034.      0.000
    16.960  -0.000317    241903.    -12551.  2.932E-06      0.000  2.449E+12
316.1965   3169364.      0.000
    17.225  -0.000307    203586.    -11558.  3.221E-06      0.000  2.449E+12
308.6633   3192696.      0.000
    17.490  -0.000297    168389.    -10590.  3.462E-06      0.000  2.449E+12
300.1360   3216029.      0.000
    17.755  -0.000285    136228. -9650.2778  3.660E-06      0.000  2.449E+12
290.7443   3239363.      0.000
    18.020  -0.000273    107006. -8741.8263  3.818E-06      0.000  2.449E+12
280.6089   3262698.      0.000
    18.285  -0.000261     80622. -7866.6093  3.940E-06      0.000  2.449E+12
269.8421   3286033.      0.000
    18.550  -0.000248     56966. -7026.4697  4.029E-06      0.000  2.449E+12
258.5476   3309370.      0.000
    18.815  -0.000236     35925. -6222.9347  4.089E-06      0.000  2.449E+12
246.8203   3332707.      0.000
    19.080  -0.000222     17380. -5457.2428  4.124E-06      0.000  2.449E+12
234.7469   3356045.      0.000
    19.345  -0.000209  1208.1837 -4730.3710  4.136E-06      0.000  2.449E+12
222.4052   3379384.      0.000
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19.610	-0.000196	-12714.	-4043.0609	4.128E-06	0.000	2.449E+12	
209.8653	3402723.	0.000					
19.875	-0.000183	-24514.	-3395.8449	4.104E-06	0.000	2.449E+12	
197.1888	3426063.	0.000					
20.140	-0.000170	-34320.	-2789.0712	4.066E-06	0.000	2.449E+12	
184.4298	3449404.	0.000					
20.405	-0.000157	-42261.	-2222.9285	4.016E-06	0.000	2.449E+12	
171.6348	3472745.	0.000					
20.670	-0.000144	-48467.	-1697.4691	3.957E-06	0.000	2.449E+12	
158.8428	3496087.	0.000					
20.935	-0.000132	-53066.	-1212.6323	3.892E-06	0.000	2.449E+12	
146.0860	3519429.	0.000					
21.200	-0.000120	-56187.	-768.2652	3.821E-06	0.000	2.449E+12	
133.3901	3542772.	0.000					
21.465	-0.000108	-57960.	-364.1438	3.747E-06	0.000	2.449E+12	
120.7743	3566116.	0.000					
21.730	-9.590E-05	-58511.	0.007664	3.671E-06	0.000	2.449E+12	
108.2518	3589460.	0.000					
21.995	-8.435E-05	-57967.	324.4989	3.595E-06	0.000	2.449E+12	
95.8307	3612804.	0.000					
22.260	-7.304E-05	-56455.	609.6563	3.521E-06	0.000	2.449E+12	
83.5136	3636149.	0.000					
22.525	-6.196E-05	-54097.	855.8076	3.449E-06	0.000	2.449E+12	
71.2986	3659494.	0.000					
22.790	-5.110E-05	-51019.	1063.2679	3.381E-06	0.000	2.449E+12	
59.1796	3682840.	0.000					
23.055	-4.045E-05	-47342.	1232.3266	3.317E-06	0.000	2.449E+12	
47.1466	3706186.	0.000					
23.320	-3.000E-05	-43188.	1363.2363	3.258E-06	0.000	2.449E+12	
35.1866	3729533.	0.000					
23.585	-1.973E-05	-38679.	1456.2037	3.205E-06	0.000	2.449E+12	
23.2835	3752880.	0.000					
23.850	-9.616E-06	-33933.	1511.3809	3.158E-06	0.000	2.449E+12	
11.4192	3776227.	0.000					
24.115	3.567E-07	-29073.	1528.8597	3.117E-06	0.000	2.449E+12	
-0.4262	3799575.	0.000					
24.380	1.021E-05	-24216.	1508.6666	3.083E-06	0.000	2.449E+12	
-12.2738	3822923.	0.000					
24.645	1.996E-05	-19484.	1450.7605	3.054E-06	0.000	2.449E+12	
-24.1451	3846272.	0.000					
24.910	2.964E-05	-14996.	1355.0314	3.032E-06	0.000	2.449E+12	
-36.0618	3869621.	0.000					
25.175	3.925E-05	-10872.	1221.3020	3.015E-06	0.000	2.449E+12	
-48.0447	3892970.	0.000					
25.440	4.881E-05	-7234.8112	1049.3304	3.003E-06	0.000	2.449E+12	
-60.1135	3916319.	0.000					
25.705	5.835E-05	-4205.0237	838.8156	2.996E-06	0.000	2.449E+12	
-72.2858	3939669.	0.000					
25.970	6.787E-05	-1906.2131	589.4047	2.992E-06	0.000	2.449E+12	
-84.5764	3963019.	0.000					
26.235	7.738E-05	-462.6705	300.7029	2.990E-06	0.000	2.449E+12	
-96.9970	3986369.	0.000					
26.500	8.689E-05	0.000	0.000	2.990E-06	0.000	2.449E+12	
-92.1243	1685879.	0.000					

* This analysis computed pile response using nonlinear moment-curvature relationships.
  Values of total stress due to combined axial and bending stresses are computed only
  for elastic sections only and do not equal the actual stresses in concrete and steel.
  Stresses in concrete and steel may be interpolated from the output for nonlinear
  bending properties relative to the magnitude of bending moment developed in the

pile.

Output Summary for Load Case No. 1:

Pile-head deflection = 0.0112693 inches
Computed slope at pile head = -0.0001226 radians
Maximum bending moment = 2620574. inch-lbs
Maximum shear force = 37000. lbs
Depth of maximum bending moment = 7.4200000 feet below pile head
Depth of maximum shear force = 0.2650000 feet below pile head
Number of iterations = 9
Number of zero deflection points = 2

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 2

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 32000.0 lbs
Applied moment at pile head = 0.0 in-lbs
Axial thrust load on pile head = -276000.0 lbs

Depth X	Deflect. y	Bending Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil Res. Es*h	Soil Spr. Lat. Load p
feet	inches	in-lbs	lbs	radians	psi*	lb-in^2	lb/in	lb/inch
0.00	0.009025	5.478E-06	32000.	-0.000101	0.000	2.457E+12	0.000	0.000
0.265	0.008705	101672.	32000.	-0.000101	0.000	2.457E+12	0.000	0.000
0.530	0.008385	203343.	32000.	-0.000100	0.000	2.457E+12	-0.0264	10.0226
0.795	0.008066	305015.	32000.	-0.000100	0.000	2.457E+12	-0.0261	10.2852
1.060	0.007749	406687.	32000.	-9.965E-05	0.000	2.457E+12	-0.0257	10.5645
1.325	0.007433	508359.	32000.	-9.905E-05	0.000	2.457E+12	-0.0254	10.8620
1.590	0.007119	610031.	32000.	-9.833E-05	0.000	2.457E+12	-0.0250	11.1792
1.855	0.006807	711704.	32000.	-9.747E-05	0.000	2.457E+12	-0.0247	11.5178
2.120	0.006499	813377.	31999.	-9.649E-05	0.000	2.457E+12	-0.0243	11.8796
2.385	0.006194	915051.	31999.	-9.537E-05	0.000	2.457E+12	-0.0239	12.2668
2.650	0.005892	1016726.	31999.	-9.412E-05	0.000	2.457E+12	-0.0235	12.6818
2.915	0.005595	1118402.	31999.	-9.274E-05	0.000	2.456E+12	-0.0231	13.1273
3.180	0.005302	1220078.	31999.	-9.122E-05	0.000	2.456E+12	-0.0227	13.6061
3.445	0.005015	1321756.	31999.	-8.958E-05	0.000	2.456E+12	-0.0223	14.1216

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     3.710   0.004733   1423435.     31999. -8.780E-05      0.000  2.456E+12
-0.0218    14.6777      0.000
     3.975   0.004456   1525116.     31117. -8.589E-05      0.000  2.456E+12
-554.6848    395808.      0.000
     4.240   0.004186   1621189.     29356. -8.385E-05      0.000  2.456E+12
-552.8304    419926.      0.000
     4.505   0.003923   1711674.     27602. -8.170E-05      0.000  2.456E+12
-550.5799    446287.      0.000
     4.770   0.003667   1796592.     25855. -7.943E-05      0.000  2.456E+12
-547.9189    475171.      0.000
     5.035   0.003418   1875972.     24118. -7.705E-05      0.000  2.456E+12
-544.8337    506899.      0.000
     5.300   0.003177   1949845.     22391. -7.457E-05      0.000  2.456E+12
-541.3105    541852.      0.000
     5.565   0.002944   2018246.     19899. -7.200E-05      0.000  2.456E+12
-1025.5644   1107893.      0.000
     5.830   0.002719   2076278.     16653. -6.935E-05      0.000  2.456E+12
-1016.1137   1188450.      0.000
     6.095   0.002503   2124037.     13438. -6.664E-05      0.000  2.456E+12
-1005.7907   1278038.      0.000
     6.360   0.002295   2161628.     10258. -6.386E-05      0.000  2.456E+12
-994.5645   1378048.      0.000
     6.625   0.002096   2189164.  7114.2528 -6.105E-05      0.000  2.456E+12
-982.4007   1490163.      0.000
     6.890   0.001907   2206767.  4011.1132 -5.820E-05      0.000  2.456E+12
-969.2595   1616432.      0.000
     7.155   0.001726   2214572.   951.3902 -5.534E-05      0.000  2.456E+12
-955.0946   1759383.      0.000
     7.420   0.001555   2212721. -2061.5738 -5.247E-05      0.000  2.456E+12
-939.8513   1922170.      0.000
     7.685   0.001393   2201368. -5024.2441 -4.961E-05      0.000  2.456E+12
-923.4633   2108780.      0.000
     7.950   0.001239   2180680. -7932.8518 -4.678E-05      0.000  2.456E+12
-905.8496   2324338.      0.000
     8.215   0.001095   2150833.    -10688. -4.397E-05      0.000  2.456E+12
-826.6746   2400632.      0.000
     8.480   0.000960   2112630.    -13165. -4.121E-05      0.000  2.456E+12
-731.4580   2423854.      0.000
     8.745   0.000833   2067032.    -15347. -3.851E-05      0.000  2.456E+12
-640.9587   2447085.      0.000
     9.010   0.000715   2014954.    -17249. -3.587E-05      0.000  2.456E+12
-555.2201   2470325.      0.000
     9.275   0.000605   1957265.    -18886. -3.330E-05      0.000  2.456E+12
-474.2596   2493571.      0.000
     9.540   0.000503   1894781.    -20273. -3.080E-05      0.000  2.456E+12
-398.0703   2516825.      0.000
     9.805   0.000409   1828275.    -21425. -2.839E-05      0.000  2.456E+12
-326.6227   2540085.      0.000
    10.070   0.000322   1758467.    -22358. -2.607E-05      0.000  2.456E+12
-259.8667   2563351.      0.000
    10.335   0.000243   1686034.    -23085. -2.384E-05      0.000  2.456E+12
-197.7332   2586622.      0.000
    10.600   0.000171   1611603.    -23623. -2.171E-05      0.000  2.456E+12
-140.1360   2609897.      0.000
    10.865   0.000105   1535757.    -23984. -1.967E-05      0.000  2.456E+12
-86.9734   2633178.      0.000
    11.130  4.564E-05   1459033.    -24183. -1.773E-05      0.000  2.456E+12
-38.1300   2656462.      0.000
    11.395 -7.739E-06   1381925.    -24233. -1.589E-05      0.000  2.456E+12
6.5217   2679750.      0.000
    11.660 -5.543E-05   1304884.    -24148. -1.415E-05      0.000  2.456E+12
47.1197   2703042.      0.000
    11.925 -9.776E-05   1228322.    -23939. -1.251E-05      0.000  2.456E+12
```

```
83.8112   2726337.      0.000
    12.190  -0.000135   1152608.    -23620. -1.097E-05      0.000  2.456E+12
116.7507   2749636.      0.000
    12.455  -0.000168   1078076.    -23202. -9.529E-06      0.000  2.457E+12
146.0990   2772937.      0.000
    12.720  -0.000196   1005023.    -22697. -8.181E-06      0.000  2.457E+12
172.0216   2796241.      0.000
    12.985  -0.000220    933711.    -22114. -6.926E-06      0.000  2.457E+12
194.6877   2819547.      0.000
    13.250  -0.000240    864369.    -21463. -5.762E-06      0.000  2.457E+12
214.2688   2842856.      0.000
    13.515  -0.000256    797194.    -20755. -4.687E-06      0.000  2.457E+12
230.9378   2866167.      0.000
    13.780  -0.000269    732355.    -19999. -3.697E-06      0.000  2.457E+12
244.8676   2889480.      0.000
    14.045  -0.000280    669994.    -19202. -2.789E-06      0.000  2.457E+12
256.2305   2912795.      0.000
    14.310  -0.000287    610224.    -18373. -1.960E-06      0.000  2.457E+12
265.1974   2936112.      0.000
    14.575  -0.000292    553137.    -17519. -1.207E-06      0.000  2.457E+12
271.9364   2959431.      0.000
    14.840  -0.000295    498801.    -16647. -5.265E-07      0.000  2.457E+12
276.6128   2982751.      0.000
    15.105  -0.000296    447262.    -15763.  8.580E-08      0.000  2.457E+12
279.3880   3006073.      0.000
    15.370  -0.000294    398549.    -14873.  6.333E-07      0.000  2.457E+12
280.4188   3029397.      0.000
    15.635  -0.000292    352672.    -13982.  1.119E-06      0.000  2.457E+12
279.8572   3052722.      0.000
    15.900  -0.000287    309626.    -13095.  1.548E-06      0.000  2.457E+12
277.8498   3076048.      0.000
    16.165  -0.000282    269390.    -12217.  1.923E-06      0.000  2.457E+12
274.5374   3099375.      0.000
    16.430  -0.000275    231930.    -11351.  2.247E-06      0.000  2.457E+12
270.0545   3122704.      0.000
    16.695  -0.000267    197201.    -10501.  2.525E-06      0.000  2.457E+12
264.5293   3146034.      0.000
    16.960  -0.000259    165148. -9670.0493  2.760E-06      0.000  2.457E+12
258.0833   3169364.      0.000
    17.225  -0.000250    135705. -8860.8756  2.954E-06      0.000  2.457E+12
250.8310   3192696.      0.000
    17.490  -0.000240    108798. -8075.8752  3.113E-06      0.000  2.457E+12
242.8800   3216029.      0.000
    17.755  -0.000230     84347. -7317.1099  3.238E-06      0.000  2.457E+12
234.3309   3239363.      0.000
    18.020  -0.000220     62267. -6586.3333  3.333E-06      0.000  2.457E+12
225.2770   3262698.      0.000
    18.285  -0.000209     42464. -5885.0133  3.400E-06      0.000  2.457E+12
215.8047   3286033.      0.000
    18.550  -0.000198     24844. -5214.3547  3.444E-06      0.000  2.457E+12
205.9931   3309370.      0.000
    18.815  -0.000187   9306.9271 -4575.3218  3.466E-06      0.000  2.457E+12
195.9144   3332707.      0.000
    19.080  -0.000176  -4248.9665 -3968.6603  3.469E-06      0.000  2.457E+12
185.6338   3356045.      0.000
    19.345  -0.000165    -15928. -3394.9191  3.456E-06      0.000  2.457E+12
175.2097   3379384.      0.000
    19.610  -0.000154    -25835. -2854.4722  3.429E-06      0.000  2.457E+12
164.6940   3402723.      0.000
    19.875  -0.000143    -34076. -2347.5386  3.390E-06      0.000  2.457E+12
154.1321   3426063.      0.000
    20.140  -0.000132    -40759. -1874.2033  3.342E-06      0.000  2.457E+12
143.5631   3449404.      0.000
```

20.405	-0.000122	-45990.	-1434.4361	3.286E-06	0.000	2.457E+12	
133.0201	3472745.	0.000					
20.670	-0.000111	-49876.	-1028.1108	3.224E-06	0.000	2.457E+12	
122.5304	3496087.	0.000					
20.935	-0.000101	-52523.	-655.0230	3.158E-06	0.000	2.457E+12	
112.1160	3519429.	0.000					
21.200	-9.137E-05	-54037.	-314.9068	3.089E-06	0.000	2.457E+12	
101.7935	3542772.	0.000					
21.465	-8.166E-05	-54521.	-7.4514	3.018E-06	0.000	2.457E+12	
91.5747	3566116.	0.000					
21.730	-7.217E-05	-54079.	267.6842	2.948E-06	0.000	2.457E+12	
81.4666	3589460.	0.000					
21.995	-6.291E-05	-52813.	510.8569	2.879E-06	0.000	2.457E+12	
71.4722	3612804.	0.000					
22.260	-5.386E-05	-50825.	722.4263	2.812E-06	0.000	2.457E+12	
61.5904	3636149.	0.000					
22.525	-4.503E-05	-48213.	902.7432	2.748E-06	0.000	2.457E+12	
51.8165	3659494.	0.000					
22.790	-3.639E-05	-45078.	1052.1384	2.687E-06	0.000	2.457E+12	
42.1428	3682840.	0.000					
23.055	-2.794E-05	-41517.	1170.9134	2.631E-06	0.000	2.457E+12	
32.5584	3706186.	0.000					
23.320	-1.965E-05	-37627.	1259.3316	2.580E-06	0.000	2.457E+12	
23.0505	3729533.	0.000					
23.585	-1.153E-05	-33503.	1317.6117	2.534E-06	0.000	2.457E+12	
13.6037	3752880.	0.000					
23.850	-3.538E-06	-29242.	1345.9217	2.493E-06	0.000	2.457E+12	
4.2014	3776227.	0.000					
24.115	4.331E-06	-24939.	1344.3745	2.458E-06	0.000	2.457E+12	
-5.1745	3799575.	0.000					
24.380	1.210E-05	-20688.	1313.0247	2.429E-06	0.000	2.457E+12	
-14.5424	3822923.	0.000					
24.645	1.978E-05	-16584.	1251.8673	2.405E-06	0.000	2.457E+12	
-23.9214	3846272.	0.000					
24.910	2.739E-05	-12722.	1160.8375	2.386E-06	0.000	2.457E+12	
-33.3301	3869621.	0.000					
25.175	3.495E-05	-9196.6006	1039.8122	2.371E-06	0.000	2.457E+12	
-42.7865	3892970.	0.000					
25.440	4.247E-05	-6104.2585	888.6133	2.362E-06	0.000	2.457E+12	
-52.3072	3916319.	0.000					
25.705	4.997E-05	-3540.8749	707.0120	2.355E-06	0.000	2.457E+12	
-61.9074	3939669.	0.000					
25.970	5.745E-05	-1603.5274	494.7363	2.352E-06	0.000	2.457E+12	
-71.5994	3963019.	0.000					
26.235	6.493E-05	-390.2237	251.4782	2.351E-06	0.000	2.457E+12	
-81.3931	3986369.	0.000					
26.500	7.240E-05	0.000	0.000	2.350E-06	0.000	2.457E+12	
-76.7693	1685879.	0.000					

* This analysis computed pile response using nonlinear moment-curvature relationships.
  Values of total stress due to combined axial and bending stresses are computed only
  for elastic sections only and do not equal the actual stresses in concrete and steel.
  Stresses in concrete and steel may be interpolated from the output for nonlinear
  bending properties relative to the magnitude of bending moment developed in the pile.

Output Summary for Load Case No. 2:

Pile-head deflection = 0.0090254 inches

```
Computed slope at pile head      =     -0.0001007 radians
Maximum bending moment           =       2214572. inch-lbs
Maximum shear force              =         32000. lbs
Depth of maximum bending moment  =      7.1550000 feet below pile head
Depth of maximum shear force     =       0.000000 feet below pile head
Number of iterations             =              8
Number of zero deflection points =              2
```

Summary of Pile Response(s)

Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, lbs, and Load 2 = Moment, in-lbs
Load Type 2: Load 1 = Shear, lbs, and Load 2 = Slope, radians
Load Type 3: Load 1 = Shear, lbs, and Load 2 = Rotational Stiffness, in-lbs/radian
Load Type 4: Load 1 = Top Deflection, inches, and Load 2 = Moment, in-lbs
Load Type 5: Load 1 = Top Deflection, inches, and Load 2 = Slope, radians

Load Case No.	Load Type No.	Pile-head Condition 1 V(lbs) or y(inches)	Pile-head Condition 2 in-lb, rad., or in-lb/rad.	Axial Loading lbs	Pile-head Deflection inches	Maximum Moment in Pile in-lbs	Maximum Shear in Pile lbs	Pile-head Rotation radians
1	1	V = 37000.	M = 0.000	329000.	0.01126929	2620574.	37000.	-0.00012263
2	1	V = 32000.	M = 0.000	-276000.	0.00902537	2214572.	32000.	-0.00010070

The analysis ended normally.

Drilled Pier Foundation

BU # :	876345
Site Name:	SKY HILL, CT
Order Number:	495679, Rev.0

TIA-222 Revison:	H
Tower Type:	Self Support

Applied Loads	Comp.	Uplift
Moment (kip-ft)	0	0
Axial Force (kips)	329	276
Shear Force (kips)	37	32

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

Pier Design Data		
Depth	26	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
From 0.5' above grade to 26' below grade		
Pier Diameter	5	ft
Rebar Quantity	18	
Rebar Size	9	
Rebar Cage Diameter	51	in
Tie Size	5	

Analysis Results		
Soil Lateral Capacity	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	11.53	11.53
Soil Safety Factor	38.00	43.94
Max Moment (kip-ft)	294.95	255.09
Rating*	*3.3%*	*2.9%*
Soil Vertical Capacity	*Compression*	*Uplift*
Skin Friction (kips)	520.43	520.43
End Bearing (kips)	375.00	-
Weight of Concrete (kips)	93.66	70.24
Total Capacity (kips)	895.43	590.68
Axial (kips)	422.66	276.00
Rating*	*45.0%*	*44.5%*
Reinforced Concrete Capacity	*Compression*	*Uplift*
Critical Depth (ft from TOC)	11.83	10.76
Critical Moment (kip-ft)	218.38	184.55
Critical Moment Capacity	2361.83	1641.17
Rating*	*8.8%*	*10.7%*

Soil Interaction Rating*	**45.0%**
Structural Foundation Rating*	**10.7%**

*Rating per TIA-222-H Section 15.5

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

Soil Profile				
Groundwater Depth	N/A	ft	# of Layers	4

Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	2	2	120	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	2	3.33	1.33	130	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
3	3.33	5	1.67	130	150	3	0	1.650	1.650	0.00	0.00			Cohesive
4	5	26	21	135	150	5	0	2.321	2.321	2.10	2.10	25.46479		Cohesive

Exhibit E

Mount Analysis

Date: **June 13, 2019**

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

MasTec
507 Airport Blvd, Suite 111
Morrisville, NC 27560
(919) 674-5866

Subject:	**Mount Analysis**	
Carrier Designation:	**T-Mobile Equipment Change-Out**	
	Carrier Site Number:	CT11353C
	Carrier Site Name:	Ashford/I-84_1
Crown Castle Designation:	**Crown Castle BU Number:**	876345
	Crown Castle Site Name:	Sky Hill
	Crown Castle JDE Number:	578226
	Crown Castle Order Number:	495679 Revision 0
Engineering Firm Designation:	**MasTec Project Number:**	19087-MNT1
Site Data:	**33 Janowski Road, Ashford, Windham, CT** **Latitude: 41° 57' 7.70" Longitude: -72° 11' 43.9"**	
Structure Information	**Tower Height & Type:**	192 ft Self Support
	Mount Elevation:	153 ft
	Mount Width & Type:	12.5 ft Sector Mount

Dear Charles Mcguirt,

MasTec 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 above mentioned supporting tower structure. Analysis of the existing supporting tower structure is to be completed by others and therefore is not part of this analysis. Analysis of the antenna mounting system as a tie-off point for fall protection or rigging is not part of this document.

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

Sector Mount **Sufficient**

This analysis utilizes an ultimate 3-second gust wind speed of 130 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Noah Noxon, EI

Respectfully Submitted by:

Raphael Mohamed

Digitally signed by Raphael Mohamed
DN: E=Raphael.Mohamed@mastec.com, CN=Raphael Mohamed, OU=Users, OU=MasTec Network Solutions, OU=Service Lines, DC=mastec, DC=local
Date: 2019.06.13 17:34:34-04'00'

STATE OF CONNECTICUT
RAPHAEL MOHAMED
No. 25112
LICENSED
PROFESSIONAL ENGINEER

Raphael Mohamed, PE PEng
Senior Director of Engineering
CT PE License No. 25112

TABLE OF CONTENTS

1) INTRODUCTION

This is a 12.5 ft Sector Mount designed by SitePro1.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category	II
an ultimate:	130 mph
Exposure Category:	C
Topographic Category at Base:	1
Ice Thickness:	2 in
Wind Speed with Ice:	50 mph
Seismic Ss:	0.173
Seismic S1:	0.064
Live Loading Wind Speed:	30 mph
Live Loading at Mid/End-Points:	250 lb
Man Live Loading at Mount Pipes	500 lb

Table 1 - Proposed Loading Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
153.0	153.0	3	rfs/celwave	APX16DWV-16DWV-S-E-A20	VFA12-HD
		3	rfs/celwave	APXVAARR24_43-U-NA20	
		3	ericsson	Radio 4415 B66A	
		3	ericsson	Radio 4449 B12/B71	
		3	ericsson	RRUS 4415 B25	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
4-MOUNT MANUFACTURER DRAWING	SitePro1	VFA12-HD	On File
4-ORDER INFORMATION	CROWN CASTLE	Order No. 495679 Rev. 0	CCIsites

3.1) Analysis Method

RISA-3D (Version No. 17.0.2), 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.

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

3.2) Assumptions

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

4) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM 500 (GR B-46)
Pipe	ASTM A53 (GR B-35)
Connection Bolts	ASTM A325

This analysis may be affected if any assumptions are not valid or have been made in error. Mastec 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 (Sector Mount, Alpha Sector)

Notes	Component	Beam No.	Centerline (ft)	% Capacity	Pass / Fail
1	Pipe Mounts	--	153	60.4	Pass
1	Horizontals	--	153	41.1	Pass
1	Standoffs	--	153	30.1	Pass
1	Diagonal Bracing	--	153	19.0	Pass
1	Vertical Bracing	--	153	18.2	Pass
1	Standoff Gusset Plate	--	153	81.4	Pass
1	Standoff Connection Plate	--	153	74.3	Pass
1	Stiff-Arm	--	153	6.0	Pass
1	Connection Bolts	--	153	8.0	Pass

Structure Rating (max from all components) =	**81.4%**

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

Table 4 - Tieback Connection Data Table

Tower Connection Node No.	Existing / Proposed	Resultant End Reaction (lb)	Connected Member Type	Connected Member Size	Member Compressive Capacity (lb)[3]	Notes
N66	Existing	675	Pipe	Rohn 3 EH	99,337	2
N65A	Existing	681	Pipe	Rohn 3 EH	99,337	2

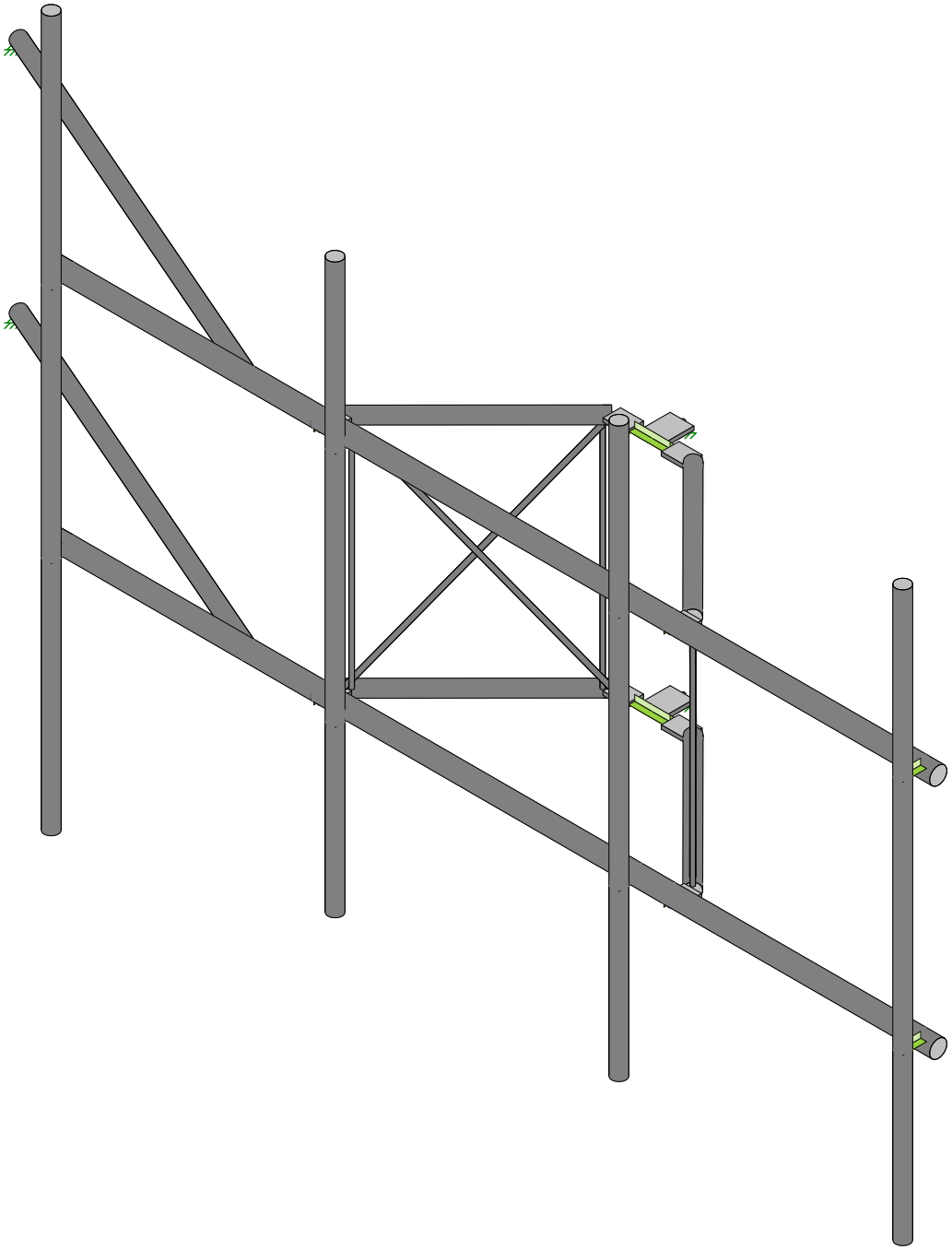
Notes:
1) Tieback connection point is within 25% of either end of the connected tower member
2) Tieback connection point is NOT within 25% of either end of the connected tower member
3) Reduced member compressive capacity according to CED-STD-10294 *Standard for Installation of Mounts and Appurtenances*

4.1) Recommendations

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

APPENDIX A

WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

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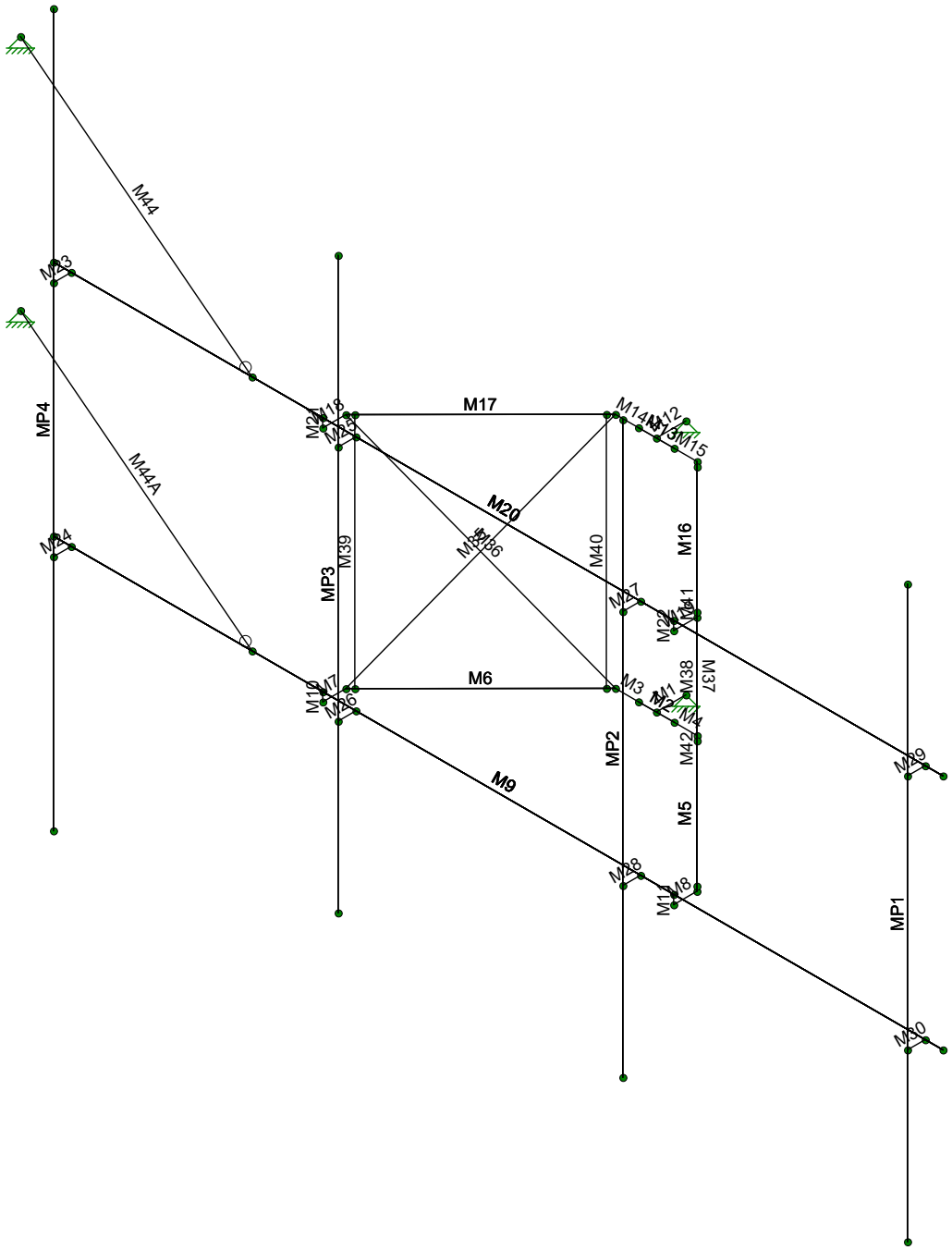

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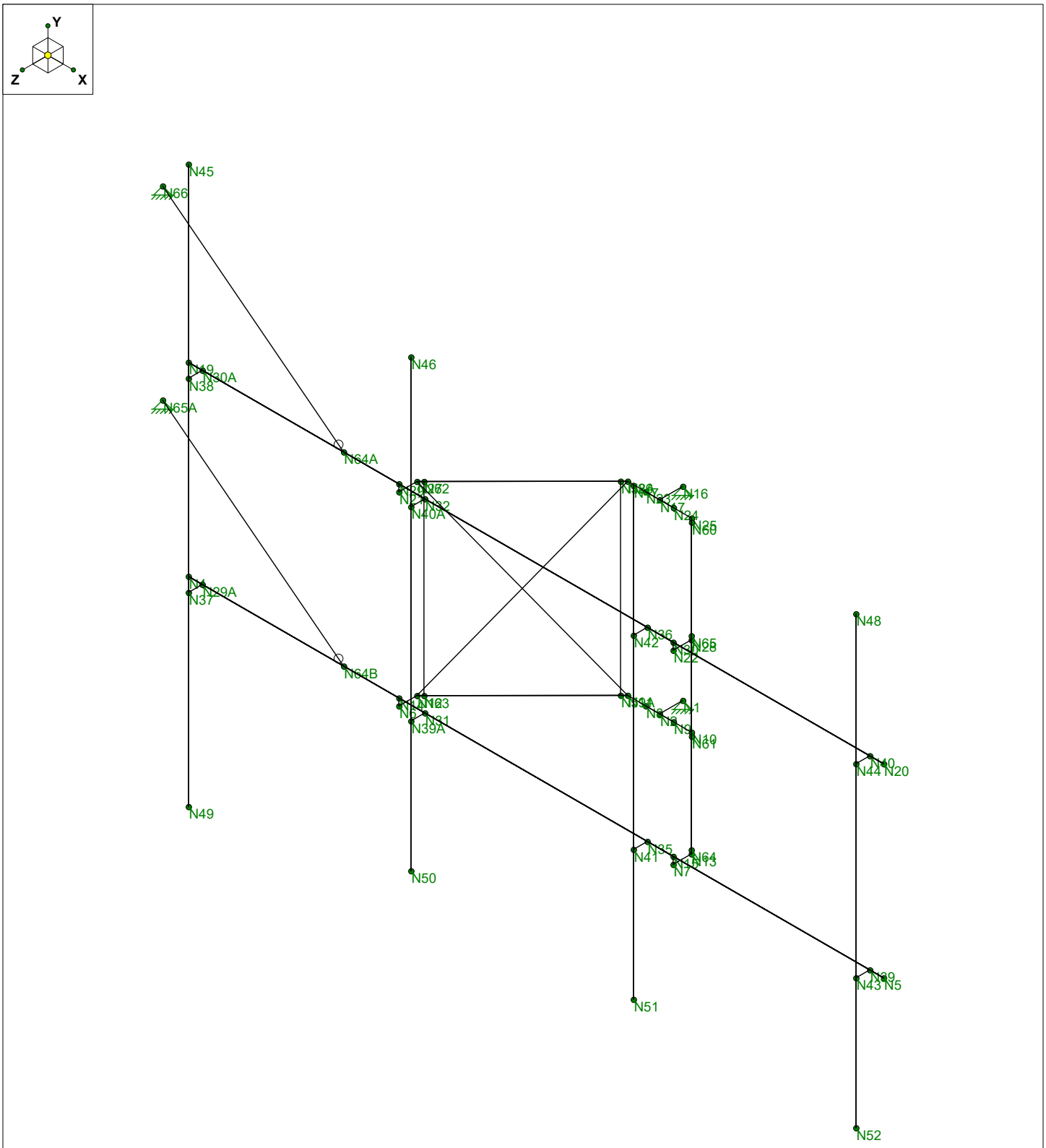

Envelope Only Solution

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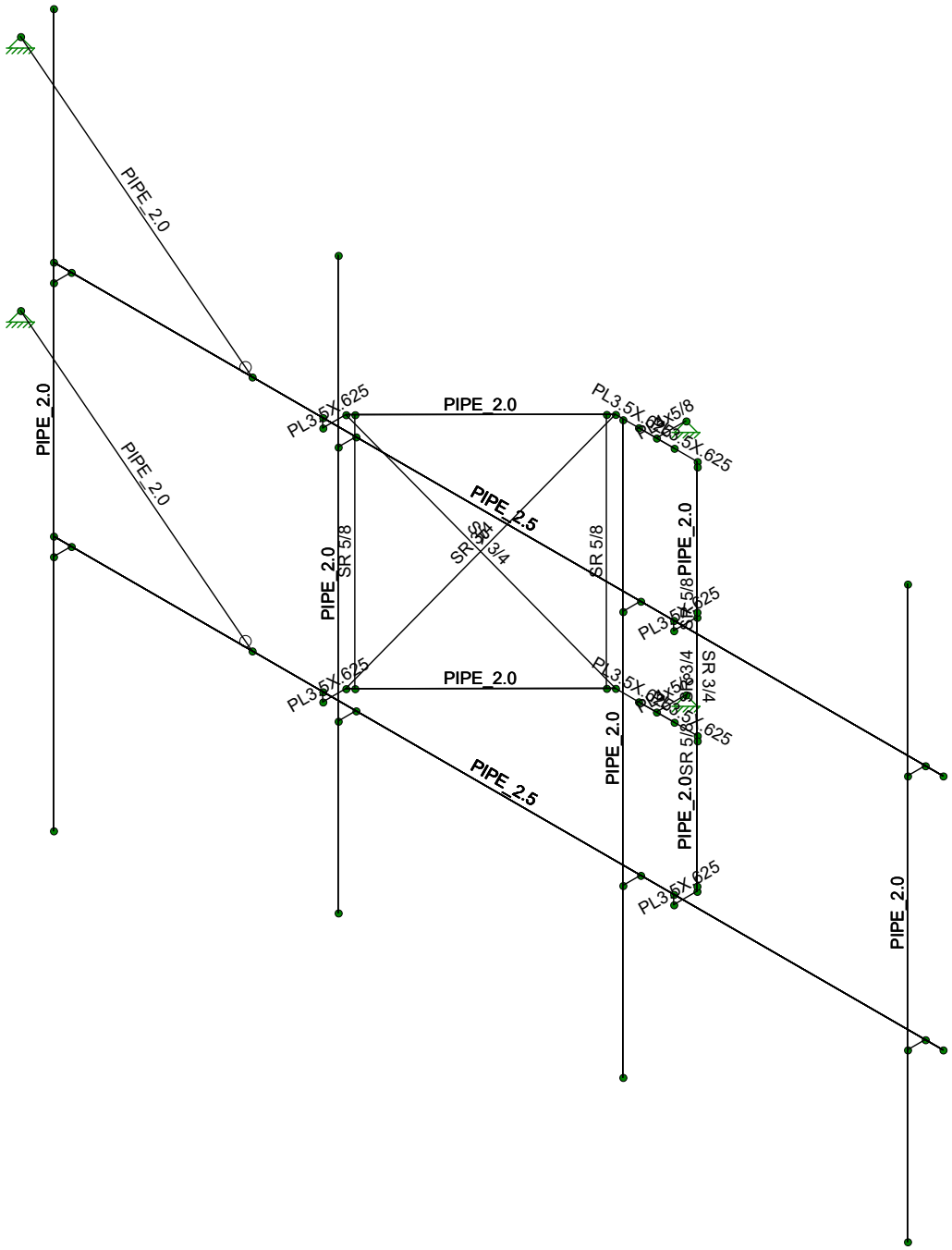

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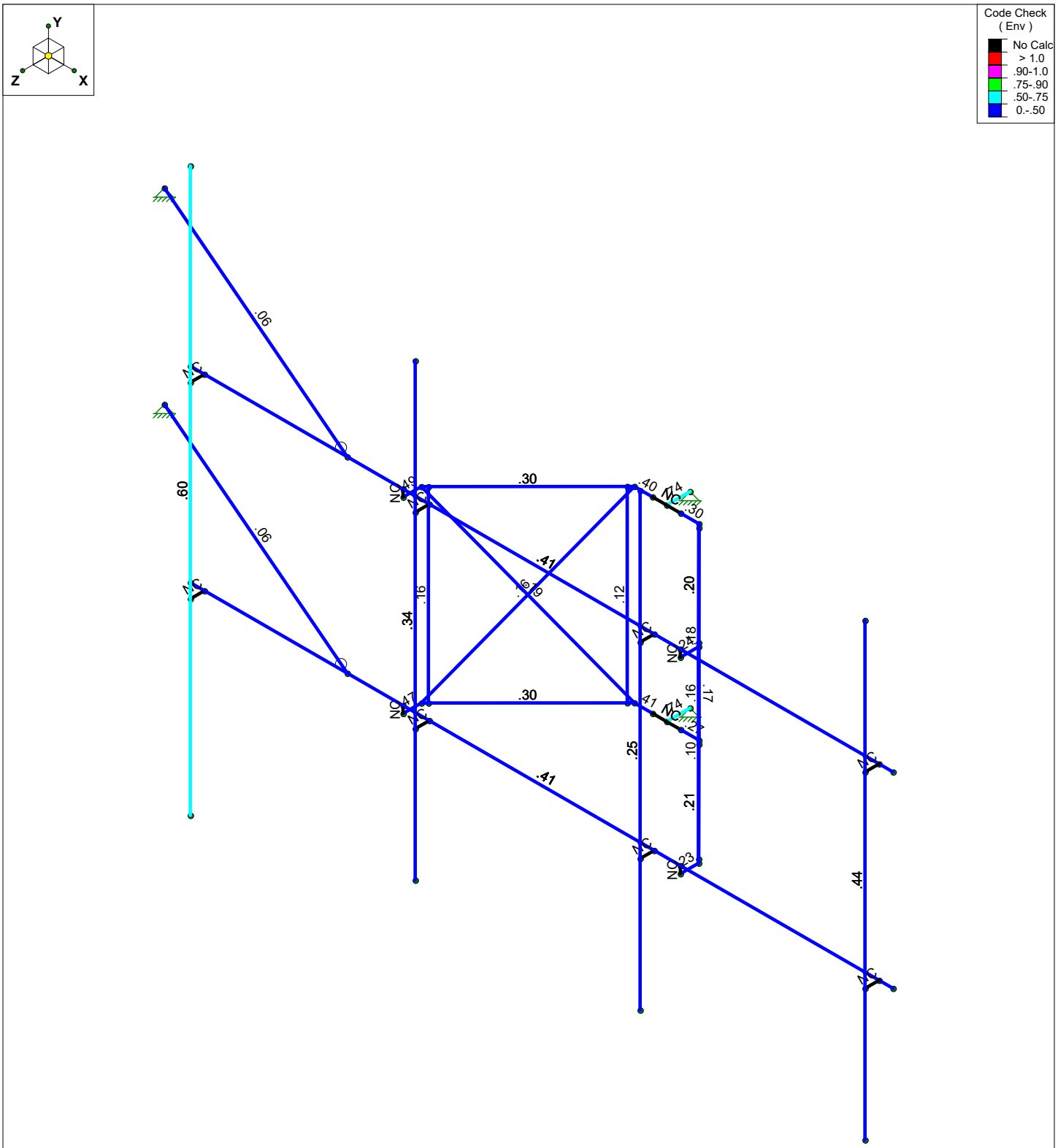

Member Code Checks Displayed (Enveloped)
Envelope Only Solution

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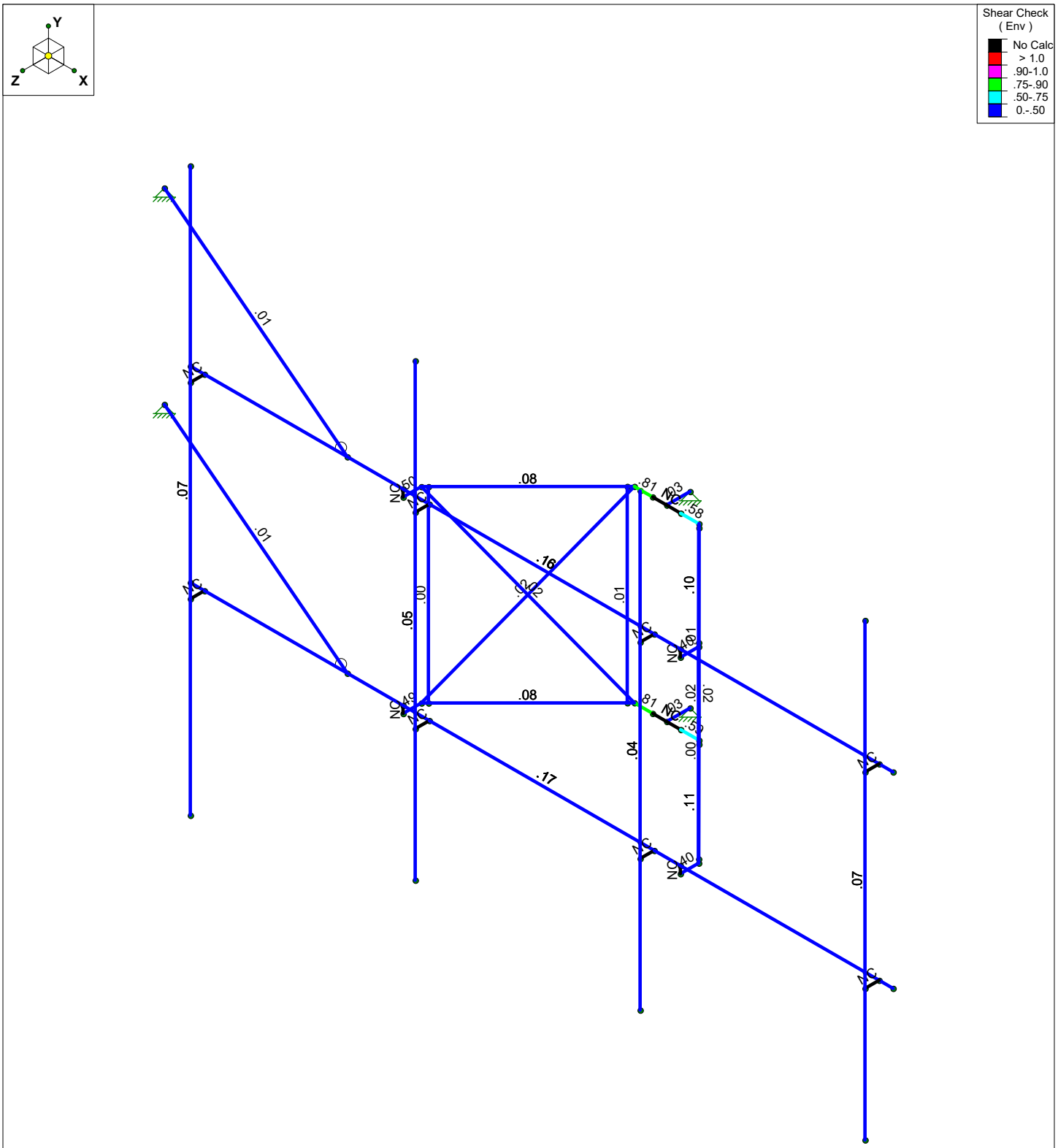
19087-MNT1		VFA12-HD.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Mastec	876345-Sky Hill	Shear Check
NDN		June 13, 2019 at 4:27 PM
19087-MNT1		VFA12-HD.r3d

APPENDIX B

SOFTWARE INPUT CALCULATIONS

MasTec Network Solutions

Mount Analysis Tool

Site Name	Sky Hill		
Site ID	876345		
Job Number	19087-MNT1	Mount Existing?	Crown
Code	H	Risk Category	II

Legend
Input
Calculated
Notes

Maximum Capacity		
Controlling Capacity	81.4%	PASS

Analysis Parameters		
Mount Height	153	ft
Exposure Category	B	(B,C, or D)
Ultimate Wind Speed	130	mph
Ice Wind Speed	50	mph
Design Ice Thickness, t_i	2	in
Maintenance Wind Speed	30	mph
Run Earthquake Analysis?	Yes	
Ground Elevation	1068	ft, Google Earth
S_1	0.064	USGS
S_{DS}	0.184	2.7.5
Vertical Seismic Loads, E_v	0.037	2.7.6
Seismic Response Coefficient, C_s	0.092	2.7.7.1.1
C_s Min	0.030	2.7.7.1.1

Wind Parameters					
Gust Effect Factor, G_h	1.000	2.6.9	K_s	1.000	2.6.7
K_Z	1.116	2.6.5.2	K_e	0.962	2.6.8
K_{Zt}	1.000	2.6.6	K_a	0.900	16.6
K_d	0.950	Table 2-2	*Note for Rooftop Structures greater than 50', unobstructed for 90 deg and protruding 50' above surrounding buildings Ks must be calculated.		
q_z	39.837	psf, 2.6.11.6			
C/D	137.327	Table 2-9			
t_{iz}	2.332	in, 2.6.10			
q_{iz}	5.893	psf, 2.6.9.6	I, Ice	1.000	Table 2-3
C/D $_{iz}$	52.818	Table 2-9	I, EQ	1.000	Table 2-3
$q_{Maintenance}$	2.198	psf, 2.6.9.6	$K_{es\ (Wind)}$	1.000	Table S-1
C/D $_{Maintenance}$	31.691	Table 2-9	$K_{es\ (ice)}$	1.000	Table S-1
Ice Dead, Grating	0.021761284	ksf			

Pipe Mounts (Orientation Drawn Top-Down)			
Risa 3D Label	Elevation (ft)	Length (in)	Diameter (in)
MP1	153	96	2.375
MP4	153	120	2.375

Appurtenances					
Model	Type	Height (in)	Width (in)	Depth (in)	Weight (lbs)
RFS CELWAVE APXVAARR24-43-U-N	Antenna	95.9	24	8.7	128
RFS CELWAVE APX16DWV-16DWV-S-	Antenna	55.9	13.3	3.15	40.7
Ericsson RADIO 4449 B12/B71	RRU, TMA, Etc.	14.95	13.19	9.25	75
Ericsson Radio 4415 B25	RRU, TMA, Etc.	14.96	13.19	5.39	44
Ericsson Radio 4415 B66A	RRU, TMA, Etc.	16.5	13.5	6.3	49.6

Pipe Mount	Antenna	Elevation (ft)	Quantity	Orientation (deg)	Front Exposed (%)	Side Exposed (%)	Type	Height (in)	Width (in)	Depth (in)	Weight (lbs)	Front CaAa (ft^2)	Side CaAa (ft^2)	Front F_A (kips)	Side F_A (kips)	Top %	Bottom %
MP1	ELWAVE APX16DWV-16DWV-S	153	1	0	100.0%	100.0%	Antenna	55.900	13.300	3.150	40.700	6.586	2.150	0.262	0.086	20.9%	79.1%
MP1	Ericsson Radio 4415 B25	153	1	90	50.0%	0.0%	RRU, TMA, Etc.	14.960	13.190	5.390	44.000	1.644	0.679	0.014	0.000	42.2%	57.8%
MP1	Ericsson Radio 4415 B66A	153	1	90	50.0%	100.0%	RRU, TMA, Etc.	16.500	13.500	6.300	49.600	1.856	0.870	0.017	0.074	41.4%	58.6%
MP1																	
MP1																	
MP1																	
MP4	CELWAVE APXVAARR24-43-U-I	153	1	0	100.0%	100.0%	Antenna	95.900	24.000	8.700	128.000	20.243	8.889	0.806	0.354	10.0%	90.0%
MP4	Ericsson Radio 4415 B25	153	1	90	0.0%	0.0%	RRU, TMA, Etc.	14.960	13.190	5.390	44.000	1.644	0.679	0.000	0.000	43.8%	56.2%
MP4	Ericsson Radio 4415 B66A	153	1	90	0.0%	100.0%	RRU, TMA, Etc.	16.500	13.500	6.300	49.600	1.856	0.870	0.000	0.074	43.1%	56.9%
MP4																	
MP4																	
MP4																	

Member	Section Set	Member Length (ft)	Flat/Round	Wind Projection (in)	D_c (in)	A_c (in^2)	C_F	Front Wind (klf)	Side Wind (klf)	Front Ice Wind (klf)	Side Ice Wind (klf)	Ice Dead (klf)	Front Maint Wind (klf)	Side Maint Wind (klf)
M1	Standoff Connection Plate	0.416667	Flat	0.625	0.884	23.552	2.000	0.000	0.004	0.000	0.001	0.009	0.000	0.000
M2	RIGID	0.5	Flat	0.000	0.000	17.078	2.000	0.000	0.000	0.005	0.005	0.007	0.000	0.000
M3	Standoff Gusset Plate	0.324242	Flat	0.625	0.884	23.552	2.000	0.004	0.000	0.007	0.006	0.009	0.000	0.000
M4	Standoff Gusset Plate	0.324242	Flat	0.625	0.884	23.552	2.000	0.004	0.000	0.007	0.006	0.009	0.000	0.000
M5	Standoffs	2.679636712	Round	2.380	2.380	34.511	1.200	0.005	0.005	0.002	0.002	0.013	0.000	0.000
M6	Standoffs	2.679636712	Round	2.380	2.380	34.511	1.200	0.005	0.005	0.002	0.002	0.013	0.000	0.000
M7	Standoff Gusset Plate	0.324241	Flat	0.625	0.884	23.552	2.000	0.000	0.004	0.000	0.001	0.009	0.000	0.000
M8	Standoff Gusset Plate	0.324241	Flat	0.625	0.884	23.552	2.000	0.000	0.004	0.000	0.001	0.009	0.000	0.000
M9	Horizontals	12.5	Round	2.880	2.880	38.174	1.200	0.011	0.000	0.005	0.003	0.015	0.001	0.000
M10	RIGID	0.125	Flat	0.000	0.000	17.078	2.000	0.000	0.000	0.020	0.020	0.007	0.000	0.000
M11	RIGID	0.125	Flat	0.000	0.000	17.078	2.000	0.000	0.000	0.020	0.020	0.007	0.000	0.000
M12	Standoff Connection Plate	0.416667	Flat	0.625	0.884	23.552	2.000	0.000	0.004	0.000	0.001	0.009	0.000	0.000
M13	RIGID	0.5	Flat	0.000	0.000	17.078	2.000	0.000	0.000	0.005	0.005	0.007	0.000	0.000
M14	Standoff Gusset Plate	0.324242	Flat	0.625	0.884	23.552	2.000	0.004	0.000	0.007	0.006	0.009	0.000	0.000
M15	Standoff Gusset Plate	0.324242	Flat	0.625	0.884	23.552	2.000	0.004	0.000	0.007	0.006	0.009	0.000	0.000
M16	Standoffs	2.679636712	Round	2.380	2.380	34.511	1.200	0.005	0.005	0.002	0.002	0.013	0.000	0.000
M17	Standoffs	2.679636712	Round	2.380	2.380	34.511	1.200	0.005	0.005	0.002	0.002	0.013	0.000	0.000
M18	Standoff Gusset Plate	0.324241	Flat	0.625	0.884	23.552	2.000	0.000	0.004	0.000	0.001	0.009	0.000	0.000
M19	Standoff Gusset Plate	0.324241	Flat	0.625	0.884	23.552	2.000	0.000	0.004	0.000	0.001	0.009	0.000	0.000
M20	Horizontals	12.5	Round	2.880	2.880	38.174	1.200	0.011	0.000	0.005	0.003	0.015	0.001	0.000
M21	RIGID	0.125	Flat	0.000	0.000	17.078	2.000	0.000	0.000	0.020	0.020	0.007	0.000	0.000
M22	RIGID	0.125	Flat	0.000	0.000	17.078	2.000	0.000	0.000	0.020	0.020	0.007	0.000	0.000
M23	RIGID	0.25	Flat	0.000	0.000	17.078	2.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000
M24	RIGID	0.25	Flat	0.000	0.000	17.078	2.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000
M25	RIGID	0.25	Flat	0.000	0.000	17.078	2.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000
M26	RIGID	0.25	Flat	0.000	0.000	17.078	2.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000
M27	RIGID	0.25	Flat	0.000	0.000	17.078	2.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000
M28	RIGID	0.25	Flat	0.000	0.000	17.078	2.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000
M29	RIGID	0.25	Flat	0.000	0.000	17.078	2.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000
M30	RIGID	0.25	Flat	0.000	0.000	17.078	2.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000
MP1	Pipe Mounts	8	Round	2.380	2.380	34.511	1.200	0.009	0.009	0.005	0.005	0.013	0.001	0.001
MP2	Pipe Mounts	8	Round	2.380	2.380	34.511	1.200	0.009	0.009	0.005	0.005	0.013	0.001	0.001
MP3	Pipe Mounts	8	Round	2.380	2.380	34.511	1.200	0.009	0.009	0.005	0.005	0.013	0.001	0.001
MP4	Pipe Mounts	10	Round	2.380	2.380	34.511	1.200	0.009	0.009	0.004	0.004	0.013	0.001	0.001
M35	Diagonal Bracing	4.276863547	Round	0.750	0.750	22.572	1.200	0.003	0.003	0.003	0.003	0.009	0.000	0.000
M36	Diagonal Bracing	4.276863547	Round	0.750	0.750	22.572	1.200	0.003	0.003	0.003	0.003	0.009	0.000	0.000
M37	Diagonal Bracing	4.276863547	Round	0.750	0.750	22.572	1.200	0.003	0.003	0.003	0.003	0.009	0.000	0.000
M38	Diagonal Bracing	4.276863547	Round	0.750	0.750	22.572	1.200	0.003	0.003	0.003	0.003	0.009	0.000	0.000
M39	Vertical Bracing	3.333333	Round	0.625	0.625	21.656	1.200	0.002	0.002	0.004	0.004	0.008	0.000	0.000
M40	Vertical Bracing	3.333333	Round	0.625	0.625	21.656	1.200	0.002	0.002	0.004	0.004	0.008	0.000	0.000
M41	Vertical Bracing	3.333333	Round	0.625	0.625	21.656	1.200	0.002	0.002	0.004	0.004	0.008	0.000	0.000
M42	Vertical Bracing	3.333333	Round	0.625	0.625	21.656	1.200	0.002	0.002	0.004	0.004	0.008	0.000	0.000
M44	Stiff-Arm	6.45662388	Round	2.380	2.380	34.511	1.200	0.008	0.002	0.004	0.001	0.013	0.000	0.000
M44A	Stiff-Arm	6.45662388	Round	2.380	2.380	34.511	1.200	0.008	0.002	0.004	0.001	0.013	0.000	0.000

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

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 Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Pipe Mounts	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
2	Horizontals	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
3	Standoffs	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
4	Diagonal Bracing	SR 3/4	Beam	BAR	A36 Gr.36	Typical	.442	.016	.016	.031
5	Vertical Bracing	SR 5/8	Beam	BAR	A36 Gr.36	Typical	.307	.007	.007	.015
6	Standoff Gusset Plate	PL3.5X.625	Beam	BAR	A36 Gr.36	Typical	1.875	.061	1.406	.212
7	Standoff Connection Plate	PL4x5/8	Beam	BAR	A36 Gr.36	Typical	2.5	.081	3.333	.293
8	Stiff-Arm	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
9	Pipe Frame	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N1	0.	0	-0.000005	0	
2	N2	0.	0	0.416662	0	
3	N4	-6.25	.125	2.638295	0	
4	N5	6.25	.125	2.638295	0	
5	N6	-2.466425	0	2.638295	0	
6	N7	2.466425	0	2.638295	0	
7	N8	-.25	0	0.416662	0	
8	N9	.25	0	0.416662	0	
9	N10	0.574242	0	0.416662	0	
10	N11	-0.574242	0	0.416662	0	
11	N12	-2.466425	0	2.314054	0	
12	N13	2.466425	0	2.314054	0	
13	N14	-2.466425	.125	2.638295	0	
14	N15	2.466425	.125	2.638295	0	
15	N16	0.	3.333333	-0.000005	0	
16	N17	0.	3.333333	0.416662	0	
17	N19	-6.25	3.458333	2.638295	0	
18	N20	6.25	3.458333	2.638295	0	
19	N21	-2.466425	3.333333	2.638295	0	
20	N22	2.466425	3.333333	2.638295	0	
21	N23	-.25	3.333333	0.416662	0	
22	N24	.25	3.333333	0.416662	0	
23	N25	0.574242	3.333333	0.416662	0	
24	N26	-0.574242	3.333333	0.416662	0	
25	N27	-2.466425	3.333333	2.314054	0	
26	N28	2.466425	3.333333	2.314054	0	
27	N29	-2.466425	3.458333	2.638295	0	
28	N30	2.466425	3.458333	2.638295	0	
29	N29A	-6	.125	2.638295	0	
30	N30A	-6	3.458333	2.638295	0	
31	N31	-2	.125	2.638295	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
32	N32	-2	3.458333	2.638295	0	
33	N35	2	.125	2.638295	0	
34	N36	2	3.458333	2.638295	0	
35	N39	6	.125	2.638295	0	
36	N40	6	3.458333	2.638295	0	
37	N37	-6	.125	2.888295	0	
38	N38	-6	3.458333	2.888295	0	
39	N39A	-2	.125	2.888295	0	
40	N40A	-2	3.458333	2.888295	0	
41	N41	2	.125	2.888295	0	
42	N42	2	3.458333	2.888295	0	
43	N43	6	.125	2.888295	0	
44	N44	6	3.458333	2.888295	0	
45	N45	-6	6.791667	2.888295	0	
46	N46	-2	5.791667	2.888295	0	
47	N47	2	5.791667	2.888295	0	
48	N48	6	5.791667	2.888295	0	
49	N49	-6	-3.208333	2.888295	0	
50	N50	-2	-2.208333	2.888295	0	
51	N51	2	-2.208333	2.888295	0	
52	N52	6	-2.208333	2.888295	0	
53	N58A	-0.637676	3.333333	0.480271	0	
54	N59A	-0.637676	0	0.480271	0	
55	N60	0.637676	3.333333	0.480271	0	
56	N61	0.637676	0	0.480271	0	
57	N62	-2.403012	3.333333	2.250466	0	
58	N63	-2.403012	0	2.250466	0	
59	N64	2.403012	0	2.250466	0	
60	N65	2.403012	3.333333	2.250466	0	
61	N64A	-3.458333	3.458333	2.638295	0	
62	N64B	-3.458333	0.125	2.638295	0	
63	N65A	-9.35	0	-0.000005	0	
64	N66	-9.35	3.333333	-0.000005	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	N1	Reaction	Reaction	Reaction			
2	N16	Reaction	Reaction	Reaction			
3	N65A	Reaction	Reaction	Reaction			
4	N66	Reaction	Reaction	Reaction			

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N2		90	Standoff Conn...	Beam	BAR	A36 Gr.36	Typical
2	M2	N8	N9			RIGID	None	None	RIGID	Typical
3	M3	N8	N11		90	Standoff Guss...	Beam	BAR	A36 Gr.36	Typical
4	M4	N9	N10		90	Standoff Guss...	Beam	BAR	A36 Gr.36	Typical
5	M5	N10	N13			Standoffs	Beam	Pipe	A53 Gr.B	Typical
6	M6	N11	N12			Standoffs	Beam	Pipe	A53 Gr.B	Typical
7	M7	N12	N6		90	Standoff Guss...	Beam	BAR	A36 Gr.36	Typical
8	M8	N13	N7		90	Standoff Guss...	Beam	BAR	A36 Gr.36	Typical
9	M9	N4	N5			Horizontals	Beam	Pipe	A53 Gr.B	Typical
10	M10	N14	N6			RIGID	None	None	RIGID	Typical
11	M11	N15	N7			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
12	M12	N16	N17		90	Standoff Conn...	Beam	BAR	A36 Gr.36	Typical
13	M13	N23	N24			RIGID	None	None	RIGID	Typical
14	M14	N23	N26		90	Standoff Guss...	Beam	BAR	A36 Gr.36	Typical
15	M15	N24	N25		90	Standoff Guss...	Beam	BAR	A36 Gr.36	Typical
16	M16	N25	N28			Standoffs	Beam	Pipe	A53 Gr.B	Typical
17	M17	N26	N27			Standoffs	Beam	Pipe	A53 Gr.B	Typical
18	M18	N27	N21		90	Standoff Guss...	Beam	BAR	A36 Gr.36	Typical
19	M19	N28	N22		90	Standoff Guss...	Beam	BAR	A36 Gr.36	Typical
20	M20	N19	N20			Horizontals	Beam	Pipe	A53 Gr.B	Typical
21	M21	N29	N21			RIGID	None	None	RIGID	Typical
22	M22	N30	N22			RIGID	None	None	RIGID	Typical
23	M23	N30A	N38			RIGID	None	None	RIGID	Typical
24	M24	N29A	N37			RIGID	None	None	RIGID	Typical
25	M25	N32	N40A			RIGID	None	None	RIGID	Typical
26	M26	N31	N39A			RIGID	None	None	RIGID	Typical
27	M27	N36	N42			RIGID	None	None	RIGID	Typical
28	M28	N35	N41			RIGID	None	None	RIGID	Typical
29	M29	N40	N44			RIGID	None	None	RIGID	Typical
30	M30	N39	N43			RIGID	None	None	RIGID	Typical
31	MP1	N48	N52			Pipe Mounts	Beam	Pipe	A53 Gr.B	Typical
32	MP2	N47	N51			Pipe Mounts	Beam	Pipe	A53 Gr.B	Typical
33	MP3	N46	N50			Pipe Mounts	Beam	Pipe	A53 Gr.B	Typical
34	MP4	N45	N49			Pipe Mounts	Beam	Pipe	A53 Gr.B	Typical
35	M35	N26	N12			Diagonal Braci...	Beam	BAR	A36 Gr.36	Typical
36	M36	N27	N11			Diagonal Braci...	Beam	BAR	A36 Gr.36	Typical
37	M37	N28	N10			Diagonal Braci...	Beam	BAR	A36 Gr.36	Typical
38	M38	N25	N13			Diagonal Braci...	Beam	BAR	A36 Gr.36	Typical
39	M39	N62	N63			Vertical Bracing	Beam	BAR	A36 Gr.36	Typical
40	M40	N58A	N59A			Vertical Bracing	Beam	BAR	A36 Gr.36	Typical
41	M41	N60	N61			Vertical Bracing	Beam	BAR	A36 Gr.36	Typical
42	M42	N65	N64			Vertical Bracing	Beam	BAR	A36 Gr.36	Typical
43	M44	N64A	N66			Stiff-Arm	Beam	Pipe	A53 Gr.B	Typical
44	M44A	N64B	N65A			Stiff-Arm	Beam	Pipe	A53 Gr.B	Typical

Joint Loads and Enforced Displacements (BLC 42 : Man 1 (500 lbs))

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/f...
1	N29A	L	Y	-.5

Joint Loads and Enforced Displacements (BLC 43 : Man 2 (500 lbs))

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/f...
1	N39	L	Y	-.5

Joint Loads and Enforced Displacements (BLC 44 : Man 3 (500 lbs))

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/f...
1	N29A	L	Y	-.5

Joint Loads and Enforced Displacements (BLC 45 : Man 4 (250 lbs))

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/f...
1	N4	L	Y	-.25

Joint Loads and Enforced Displacements (BLC 46 : Man 5 (250 lbs))

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/f...
1	N5	L	Y	-.25

Joint Loads and Enforced Displacements (BLC 47 : Man 6 (250 lbs))

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/f...
1	N4	L	Y	-.25

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Y	-.041	%50
2	MP1	Y	-.044	%50
3	MP1	Y	-.05	%50
4	MP4	Y	-.128	%50
5	MP4	Y	-.044	%50
6	MP4	Y	-.05	%50

Member Point Loads (BLC 2 : Ice Dead)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Y	-.212	%50
2	MP1	Y	-.059	%50
3	MP1	Y	-.067	%50
4	MP4	Y	-.634	%50
5	MP4	Y	-.059	%50
6	MP4	Y	-.067	%50

Member Point Loads (BLC 3 : Full Wind Antenna (0 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	-.131	%20.9
2	MP1	Z	-.014	%50
3	MP1	Z	-.017	%50
4	MP4	Z	-.403	%10
5	MP1	Z	-.131	%79.1
6	MP4	Z	-.403	%90

Member Point Loads (BLC 4 : Full Wind Antenna (30 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	-.094	%20.9
2	MP1	Z	-.016	%50
3	MP1	Z	-.019	%50
4	MP4	Z	-.3	%10
5	MP1	Z	-.094	%79.1
6	MP4	Z	-.3	%90
7	MP1	X	.055	%20.9
8	MP1	X	.004	%50
9	MP1	X	.018	%50
10	MP4	X	.173	%10
11	MP4	X	.013	%50
12	MP1	X	.055	%79.1
13	MP4	X	.173	%90

Member Point Loads (BLC 5 : Full Wind Antenna (60 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	-.032	%20.9
2	MP1	Z	-.014	%50
3	MP1	Z	-.016	%50
4	MP4	Z	-.117	%10
5	MP1	Z	-.032	%79.1
6	MP4	Z	-.117	%90

Member Point Loads (BLC 5 : Full Wind Antenna (60 Deg)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
7	MP1	X	.056	%20.9
8	MP1	X	.021	%50
9	MP1	X	.032	%50
10	MP4	X	.202	%10
11	MP4	X	.008	%50
12	MP1	X	.056	%79.1
13	MP4	X	.202	%90

Member Point Loads (BLC 6 : Full Wind Antenna (90 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	0	%20.9
2	MP1	Z	0	%50
3	MP1	Z	0	%50
4	MP4	Z	0	%10
5	MP1	Z	0	%79.1
6	MP4	Z	0	%90
7	MP1	X	.043	%20.9
8	MP1	X	.033	%50
9	MP1	X	.037	%50
10	MP4	X	.177	%10
11	MP1	X	.043	%79.1
12	MP4	X	.177	%90

Member Point Loads (BLC 7 : Full Wind Antenna (120 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	.032	%20.9
2	MP1	Z	.014	%50
3	MP1	Z	.016	%50
4	MP4	Z	.117	%10
5	MP1	Z	.032	%79.1
6	MP4	Z	.117	%90
7	MP1	X	.056	%20.9
8	MP1	X	.021	%50
9	MP1	X	.032	%50
10	MP4	X	.202	%10
11	MP4	X	.008	%50
12	MP1	X	.056	%79.1
13	MP4	X	.202	%90

Member Point Loads (BLC 8 : Full Wind Antenna (150 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	.094	%20.9
2	MP1	Z	.016	%50
3	MP1	Z	.019	%50
4	MP4	Z	.3	%10
5	MP1	Z	.094	%79.1
6	MP4	Z	.3	%90
7	MP1	X	.055	%20.9
8	MP1	X	.004	%50
9	MP1	X	.018	%50
10	MP4	X	.173	%10
11	MP4	X	.013	%50
12	MP1	X	.055	%79.1
13	MP4	X	.173	%90

Member Point Loads (BLC 15 : Ice Wind Antenna (0 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	-.028	%20.9
2	MP1	Z	-.005	%50
3	MP1	Z	-.006	%50
4	MP4	Z	-.073	%10
5	MP1	Z	-.028	%79.1
6	MP4	Z	-.073	%90

Member Point Loads (BLC 16 : Ice Wind Antenna (30 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	-.021	%20.9
2	MP1	Z	-.005	%50
3	MP1	Z	-.006	%50
4	MP4	Z	-.056	%10
5	MP1	Z	-.021	%79.1
6	MP4	Z	-.056	%90
7	MP1	X	.012	%20.9
8	MP1	X	.001	%50
9	MP1	X	.005	%50
10	MP4	X	.032	%10
11	MP4	X	.004	%50
12	MP1	X	.012	%79.1
13	MP4	X	.032	%90

Member Point Loads (BLC 17 : Ice Wind Antenna (60 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	-.009	%20.9
2	MP1	Z	-.004	%50
3	MP1	Z	-.004	%50
4	MP4	Z	-.024	%10
5	MP1	Z	-.009	%79.1
6	MP4	Z	-.024	%90
7	MP1	X	.015	%20.9
8	MP1	X	.006	%50
9	MP1	X	.009	%50
10	MP4	X	.041	%10
11	MP4	X	.002	%50
12	MP1	X	.015	%79.1
13	MP4	X	.041	%90

Member Point Loads (BLC 18 : Ice Wind Antenna (90 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	0	%20.9
2	MP1	Z	0	%50
3	MP1	Z	0	%50
4	MP4	Z	0	%10
5	MP1	Z	0	%79.1
6	MP4	Z	0	%90
7	MP1	X	.014	%20.9
8	MP1	X	.009	%50
9	MP1	X	.009	%50
10	MP4	X	.039	%10
11	MP1	X	.014	%79.1
12	MP4	X	.039	%90

Member Point Loads (BLC 19 : Ice Wind Antenna (120 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	.009	%20.9
2	MP1	Z	.004	%50
3	MP1	Z	.004	%50
4	MP4	Z	.024	%10
5	MP1	Z	.009	%79.1
6	MP4	Z	.024	%90
7	MP1	X	.015	%20.9
8	MP1	X	.006	%50
9	MP1	X	.009	%50
10	MP4	X	.041	%10
11	MP4	X	.002	%50
12	MP1	X	.015	%79.1
13	MP4	X	.041	%90

Member Point Loads (BLC 20 : Ice Wind Antenna (150 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	.021	%20.9
2	MP1	Z	.004	%50
3	MP1	Z	.004	%50
4	MP4	Z	.024	%10
5	MP1	Z	.021	%79.1
6	MP4	Z	.024	%90
7	MP1	X	.012	%20.9
8	MP1	X	.006	%50
9	MP1	X	.009	%50
10	MP4	X	.041	%10
11	MP4	X	.002	%50
12	MP1	X	.012	%79.1
13	MP4	X	.041	%90

Member Point Loads (BLC 27 : Seismic Antenna (0 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	-.004	%50
2	MP1	Z	-.004	%50
3	MP1	Z	-.005	%50
4	MP4	Z	-.012	%50
5	MP4	Z	-.004	%50
6	MP4	Z	-.005	%50

Member Point Loads (BLC 28 : Seismic Antenna (90 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	X	.004	%50
2	MP1	X	.004	%50
3	MP1	X	.005	%50
4	MP4	X	.012	%50
5	MP4	X	.004	%50
6	MP4	X	.005	%50

Member Point Loads (BLC 41 : Seismic Vertical Antennas)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Y	-.008	%50
2	MP1	Y	-.009	%50
3	MP1	Y	-.01	%50
4	MP4	Y	-.026	%50
5	MP4	Y	-.009	%50

Member Point Loads (BLC 41 : Seismic Vertical Antennas) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
6	MP4	Y	-.01	%50

Member Distributed Loads (BLC 2 : Ice Dead)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
1	M1	Y	-.009	-.009	0	%100
2	M2	Y	-.007	-.007	0	%100
3	M3	Y	-.009	-.009	0	%100
4	M4	Y	-.009	-.009	0	%100
5	M5	Y	-.013	-.013	0	%100
6	M6	Y	-.013	-.013	0	%100
7	M7	Y	-.009	-.009	0	%100
8	M8	Y	-.009	-.009	0	%100
9	M9	Y	-.015	-.015	0	%100
10	M10	Y	-.007	-.007	0	%100
11	M11	Y	-.007	-.007	0	%100
12	M12	Y	-.009	-.009	0	%100
13	M13	Y	-.007	-.007	0	%100
14	M14	Y	-.009	-.009	0	%100
15	M15	Y	-.009	-.009	0	%100
16	M16	Y	-.013	-.013	0	%100
17	M17	Y	-.013	-.013	0	%100
18	M18	Y	-.009	-.009	0	%100
19	M19	Y	-.009	-.009	0	%100
20	M20	Y	-.015	-.015	0	%100
21	M21	Y	-.007	-.007	0	%100
22	M22	Y	-.007	-.007	0	%100
23	M23	Y	-.007	-.007	0	%100
24	M24	Y	-.007	-.007	0	%100
25	M25	Y	-.007	-.007	0	%100
26	M26	Y	-.007	-.007	0	%100
27	M27	Y	-.007	-.007	0	%100
28	M28	Y	-.007	-.007	0	%100
29	M29	Y	-.007	-.007	0	%100
30	M30	Y	-.007	-.007	0	%100
31	MP1	Y	-.013	-.013	0	%100
32	MP2	Y	-.013	-.013	0	%100
33	MP3	Y	-.013	-.013	0	%100
34	MP4	Y	-.013	-.013	0	%100
35	M35	Y	-.009	-.009	0	%100
36	M36	Y	-.009	-.009	0	%100
37	M37	Y	-.009	-.009	0	%100
38	M38	Y	-.009	-.009	0	%100
39	M39	Y	-.008	-.008	0	%100
40	M40	Y	-.008	-.008	0	%100
41	M41	Y	-.008	-.008	0	%100
42	M42	Y	-.008	-.008	0	%100
43	M44	Y	-.013	-.013	0	%100
44	M44A	Y	-.013	-.013	0	%100

Member Distributed Loads (BLC 9 : Full Wind Members (0 Deg))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
1	M1	Z	0	0	0	%100
2	M3	Z	-.004	-.004	0	%100
3	M4	Z	-.004	-.004	0	%100
4	M5	Z	-.005	-.005	0	%100

Member Distributed Loads (BLC 9 : Full Wind Members (0 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
5	M6	Z	-.005	-.005	0	%100
6	M7	Z	0	0	0	%100
7	M8	Z	0	0	0	%100
8	M9	Z	-.011	-.011	0	%100
9	M12	Z	0	0	0	%100
10	M14	Z	-.004	-.004	0	%100
11	M15	Z	-.004	-.004	0	%100
12	M16	Z	-.005	-.005	0	%100
13	M17	Z	-.005	-.005	0	%100
14	M18	Z	0	0	0	%100
15	M19	Z	0	0	0	%100
16	M20	Z	-.011	-.011	0	%100
17	MP1	Z	-.009	-.009	0	%20.9
18	MP2	Z	-.009	-.009	0	%100
19	MP3	Z	-.009	-.009	0	%100
20	MP4	Z	-.009	-.009	0	%10
21	M35	Z	-.003	-.003	0	%100
22	M36	Z	-.003	-.003	0	%100
23	M37	Z	-.003	-.003	0	%100
24	M38	Z	-.003	-.003	0	%100
25	M39	Z	-.002	-.002	0	%100
26	M40	Z	-.002	-.002	0	%100
27	M41	Z	-.002	-.002	0	%100
28	M42	Z	-.002	-.002	0	%100
29	M44	Z	-.008	-.008	0	%100
30	M44A	Z	-.008	-.008	0	%100
31	MP1	Z	-.009	-.009	%79.1	%100
32	MP4	Z	-.009	-.009	%90	%100
33	M1	X	0	0	0	%100
34	M3	X	0	0	0	%100
35	M4	X	0	0	0	%100
36	M5	X	0	0	0	%100
37	M6	X	0	0	0	%100
38	M7	X	0	0	0	%100
39	M8	X	0	0	0	%100
40	M9	X	0	0	0	%100
41	M12	X	0	0	0	%100
42	M14	X	0	0	0	%100
43	M15	X	0	0	0	%100
44	M16	X	0	0	0	%100
45	M17	X	0	0	0	%100
46	M18	X	0	0	0	%100
47	M19	X	0	0	0	%100
48	M20	X	0	0	0	%100
49	MP1	X	0	0	0	%100
50	MP2	X	0	0	0	%100
51	MP3	X	0	0	0	%100
52	MP4	X	0	0	0	%100
53	M35	X	0	0	0	%100
54	M36	X	0	0	0	%100
55	M37	X	0	0	0	%100
56	M38	X	0	0	0	%100
57	M39	X	0	0	0	%100
58	M40	X	0	0	0	%100
59	M41	X	0	0	0	%100
60	M42	X	0	0	0	%100
61	M44	X	0	0	0	%100

Member Distributed Loads (BLC 9 : Full Wind Members (0 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
62	M44A	X	0	0	0	%100

Member Distributed Loads (BLC 10 : Full Wind Members (30 Deg))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
1	M1	Z	-.001	-.001	0	%100
2	M3	Z	-.003	-.003	0	%100
3	M4	Z	-.003	-.003	0	%100
4	M5	Z	-.008	-.008	0	%100
5	M6	Z	-.001	-.001	0	%100
6	M7	Z	-.001	-.001	0	%100
7	M8	Z	-.001	-.001	0	%100
8	M9	Z	-.007	-.007	0	%100
9	M12	Z	-.001	-.001	0	%100
10	M14	Z	-.003	-.003	0	%100
11	M15	Z	-.003	-.003	0	%100
12	M16	Z	-.008	-.008	0	%100
13	M17	Z	-.001	-.001	0	%100
14	M18	Z	-.001	-.001	0	%100
15	M19	Z	-.001	-.001	0	%100
16	M20	Z	-.007	-.007	0	%100
17	MP1	Z	-.008	-.008	0	%20.9
18	MP2	Z	-.008	-.008	0	%100
19	MP3	Z	-.008	-.008	0	%100
20	MP4	Z	-.008	-.008	0	%10
21	M35	Z	-.002	-.002	0	%100
22	M36	Z	-.002	-.002	0	%100
23	M37	Z	-.003	-.003	0	%100
24	M38	Z	-.003	-.003	0	%100
25	M39	Z	-.002	-.002	0	%100
26	M40	Z	-.002	-.002	0	%100
27	M41	Z	-.002	-.002	0	%100
28	M42	Z	-.002	-.002	0	%100
29	M44	Z	-.008	-.008	0	%100
30	M44A	Z	-.008	-.008	0	%100
31	MP1	Z	-.008	-.008	%79.1	%100
32	MP4	Z	-.008	-.008	%90	%100
33	M1	X	.001	.001	0	%100
34	M3	X	.002	.002	0	%100
35	M4	X	.002	.002	0	%100
36	M5	X	.004	.004	0	%100
37	M6	X	0	0	0	%100
38	M7	X	.001	.001	0	%100
39	M8	X	.001	.001	0	%100
40	M9	X	.004	.004	0	%100
41	M12	X	.001	.001	0	%100
42	M14	X	.002	.002	0	%100
43	M15	X	.002	.002	0	%100
44	M16	X	.004	.004	0	%100
45	M17	X	0	0	0	%100
46	M18	X	.001	.001	0	%100
47	M19	X	.001	.001	0	%100
48	M20	X	.004	.004	0	%100
49	MP1	X	.005	.005	0	%100
50	MP2	X	.005	.005	0	%100
51	MP3	X	.005	.005	0	%100
52	MP4	X	.005	.005	0	%100

Member Distributed Loads (BLC 10 : Full Wind Members (30 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
53	M35	X	.001	.001	0	%100
54	M36	X	.001	.001	0	%100
55	M37	X	.001	.001	0	%100
56	M38	X	.001	.001	0	%100
57	M39	X	.001	.001	0	%100
58	M40	X	.001	.001	0	%100
59	M41	X	.001	.001	0	%100
60	M42	X	.001	.001	0	%100
61	M44	X	.005	.005	0	%100
62	M44A	X	.005	.005	0	%100

Member Distributed Loads (BLC 11 : Full Wind Members (60 Deg))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
1	M1	Z	-.002	-.002	0	%100
2	M3	Z	-.001	-.001	0	%100
3	M4	Z	-.001	-.001	0	%100
4	M5	Z	-.004	-.004	0	%100
5	M6	Z	0	0	0	%100
6	M7	Z	-.002	-.002	0	%100
7	M8	Z	-.002	-.002	0	%100
8	M9	Z	-.001	-.001	0	%100
9	M12	Z	-.002	-.002	0	%100
10	M14	Z	-.001	-.001	0	%100
11	M15	Z	-.001	-.001	0	%100
12	M16	Z	-.004	-.004	0	%100
13	M17	Z	0	0	0	%100
14	M18	Z	-.002	-.002	0	%100
15	M19	Z	-.002	-.002	0	%100
16	M20	Z	-.001	-.001	0	%100
17	MP1	Z	-.005	-.005	0	%20.9
18	MP2	Z	-.005	-.005	0	%100
19	MP3	Z	-.005	-.005	0	%100
20	MP4	Z	-.005	-.005	0	%10
21	M35	Z	-.001	-.001	0	%100
22	M36	Z	-.001	-.001	0	%100
23	M37	Z	-.001	-.001	0	%100
24	M38	Z	-.001	-.001	0	%100
25	M39	Z	-.001	-.001	0	%100
26	M40	Z	-.001	-.001	0	%100
27	M41	Z	-.001	-.001	0	%100
28	M42	Z	-.001	-.001	0	%100
29	M44	Z	-.003	-.003	0	%100
30	M44A	Z	-.003	-.003	0	%100
31	MP1	Z	-.005	-.005	%79.1	%100
32	MP4	Z	-.005	-.005	%90	%100
33	M1	X	.003	.003	0	%100
34	M3	X	.001	.001	0	%100
35	M4	X	.001	.001	0	%100
36	M5	X	.008	.008	0	%100
37	M6	X	.001	.001	0	%100
38	M7	X	.003	.003	0	%100
39	M8	X	.003	.003	0	%100
40	M9	X	.002	.002	0	%100
41	M12	X	.003	.003	0	%100
42	M14	X	.001	.001	0	%100
43	M15	X	.001	.001	0	%100

Member Distributed Loads (BLC 11 : Full Wind Members (60 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
44	M16	X	.008	.008	0	%100
45	M17	X	.001	.001	0	%100
46	M18	X	.003	.003	0	%100
47	M19	X	.003	.003	0	%100
48	M20	X	.002	.002	0	%100
49	MP1	X	.008	.008	0	%100
50	MP2	X	.008	.008	0	%100
51	MP3	X	.008	.008	0	%100
52	MP4	X	.008	.008	0	%100
53	M35	X	.002	.002	0	%100
54	M36	X	.002	.002	0	%100
55	M37	X	.003	.003	0	%100
56	M38	X	.003	.003	0	%100
57	M39	X	.002	.002	0	%100
58	M40	X	.002	.002	0	%100
59	M41	X	.002	.002	0	%100
60	M42	X	.002	.002	0	%100
61	M44	X	.005	.005	0	%100
62	M44A	X	.005	.005	0	%100

Member Distributed Loads (BLC 12 : Full Wind Members (90 Deg))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
1	M1	Z	0	0	0	%100
2	M3	Z	0	0	0	%100
3	M4	Z	0	0	0	%100
4	M5	Z	0	0	0	%100
5	M6	Z	0	0	0	%100
6	M7	Z	0	0	0	%100
7	M8	Z	0	0	0	%100
8	M9	Z	0	0	0	%100
9	M12	Z	0	0	0	%100
10	M14	Z	0	0	0	%100
11	M15	Z	0	0	0	%100
12	M16	Z	0	0	0	%100
13	M17	Z	0	0	0	%100
14	M18	Z	0	0	0	%100
15	M19	Z	0	0	0	%100
16	M20	Z	0	0	0	%100
17	MP1	Z	0	0	0	%20.9
18	MP2	Z	0	0	0	%100
19	MP3	Z	0	0	0	%100
20	MP4	Z	0	0	0	%10
21	M35	Z	0	0	0	%100
22	M36	Z	0	0	0	%100
23	M37	Z	0	0	0	%100
24	M38	Z	0	0	0	%100
25	M39	Z	0	0	0	%100
26	M40	Z	0	0	0	%100
27	M41	Z	0	0	0	%100
28	M42	Z	0	0	0	%100
29	M44	Z	0	0	0	%100
30	M44A	Z	0	0	0	%100
31	MP1	Z	0	0	%79.1	%100
32	MP4	Z	0	0	%90	%100
33	M1	X	.004	.004	0	%100
34	M3	X	0	0	0	%100

Member Distributed Loads (BLC 12 : Full Wind Members (90 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
35	M4	X	0	0	0	%100
36	M5	X	.005	.005	0	%100
37	M6	X	.005	.005	0	%100
38	M7	X	.004	.004	0	%100
39	M8	X	.004	.004	0	%100
40	M9	X	0	0	0	%100
41	M12	X	.004	.004	0	%100
42	M14	X	0	0	0	%100
43	M15	X	0	0	0	%100
44	M16	X	.005	.005	0	%100
45	M17	X	.005	.005	0	%100
46	M18	X	.004	.004	0	%100
47	M19	X	.004	.004	0	%100
48	M20	X	0	0	0	%100
49	MP1	X	.009	.009	0	%100
50	MP2	X	.009	.009	0	%100
51	MP3	X	.009	.009	0	%100
52	MP4	X	.009	.009	0	%100
53	M35	X	.003	.003	0	%100
54	M36	X	.003	.003	0	%100
55	M37	X	.003	.003	0	%100
56	M38	X	.003	.003	0	%100
57	M39	X	.002	.002	0	%100
58	M40	X	.002	.002	0	%100
59	M41	X	.002	.002	0	%100
60	M42	X	.002	.002	0	%100
61	M44	X	.002	.002	0	%100
62	M44A	X	.002	.002	0	%100

Member Distributed Loads (BLC 13 : Full Wind Members (120 Deg))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
1	M1	Z	.002	.002	0	%100
2	M3	Z	.001	.001	0	%100
3	M4	Z	.001	.001	0	%100
4	M5	Z	0	0	0	%100
5	M6	Z	.004	.004	0	%100
6	M7	Z	.002	.002	0	%100
7	M8	Z	.002	.002	0	%100
8	M9	Z	.001	.001	0	%100
9	M12	Z	.002	.002	0	%100
10	M14	Z	.001	.001	0	%100
11	M15	Z	.001	.001	0	%100
12	M16	Z	0	0	0	%100
13	M17	Z	.004	.004	0	%100
14	M18	Z	.002	.002	0	%100
15	M19	Z	.002	.002	0	%100
16	M20	Z	.001	.001	0	%100
17	MP1	Z	.005	.005	0	%20.9
18	MP2	Z	.005	.005	0	%100
19	MP3	Z	.005	.005	0	%100
20	MP4	Z	.005	.005	0	%10
21	M35	Z	.001	.001	0	%100
22	M36	Z	.001	.001	0	%100
23	M37	Z	.001	.001	0	%100
24	M38	Z	.001	.001	0	%100
25	M39	Z	.001	.001	0	%100

Member Distributed Loads (BLC 13 : Full Wind Members (120 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
26	M40	Z	.001	.001	0	%100
27	M41	Z	.001	.001	0	%100
28	M42	Z	.001	.001	0	%100
29	M44	Z	0	0	0	%100
30	M44A	Z	0	0	0	%100
31	MP1	Z	.005	.005	%79.1	%100
32	MP4	Z	.005	.005	%90	%100
33	M1	X	.003	.003	0	%100
34	M3	X	.001	.001	0	%100
35	M4	X	.001	.001	0	%100
36	M5	X	.001	.001	0	%100
37	M6	X	.008	.008	0	%100
38	M7	X	.003	.003	0	%100
39	M8	X	.003	.003	0	%100
40	M9	X	.002	.002	0	%100
41	M12	X	.003	.003	0	%100
42	M14	X	.001	.001	0	%100
43	M15	X	.001	.001	0	%100
44	M16	X	.001	.001	0	%100
45	M17	X	.008	.008	0	%100
46	M18	X	.003	.003	0	%100
47	M19	X	.003	.003	0	%100
48	M20	X	.002	.002	0	%100
49	MP1	X	.008	.008	0	%100
50	MP2	X	.008	.008	0	%100
51	MP3	X	.008	.008	0	%100
52	MP4	X	.008	.008	0	%100
53	M35	X	.003	.003	0	%100
54	M36	X	.003	.003	0	%100
55	M37	X	.002	.002	0	%100
56	M38	X	.002	.002	0	%100
57	M39	X	.002	.002	0	%100
58	M40	X	.002	.002	0	%100
59	M41	X	.002	.002	0	%100
60	M42	X	.002	.002	0	%100
61	M44	X	0	0	0	%100
62	M44A	X	0	0	0	%100

Member Distributed Loads (BLC 14 : Full Wind Members (150 Deg))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
1	M1	Z	.001	.001	0	%100
2	M3	Z	.003	.003	0	%100
3	M4	Z	.003	.003	0	%100
4	M5	Z	.001	.001	0	%100
5	M6	Z	.008	.008	0	%100
6	M7	Z	.001	.001	0	%100
7	M8	Z	.001	.001	0	%100
8	M9	Z	.007	.007	0	%100
9	M12	Z	.001	.001	0	%100
10	M14	Z	.003	.003	0	%100
11	M15	Z	.003	.003	0	%100
12	M16	Z	.001	.001	0	%100
13	M17	Z	.008	.008	0	%100
14	M18	Z	.001	.001	0	%100
15	M19	Z	.001	.001	0	%100
16	M20	Z	.007	.007	0	%100

Member Distributed Loads (BLC 14 : Full Wind Members (150 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
17	MP1	Z	.008	.008	0	%20.9
18	MP2	Z	.008	.008	0	%100
19	MP3	Z	.008	.008	0	%100
20	MP4	Z	.008	.008	0	%10
21	M35	Z	.003	.003	0	%100
22	M36	Z	.003	.003	0	%100
23	M37	Z	.002	.002	0	%100
24	M38	Z	.002	.002	0	%100
25	M39	Z	.002	.002	0	%100
26	M40	Z	.002	.002	0	%100
27	M41	Z	.002	.002	0	%100
28	M42	Z	.002	.002	0	%100
29	M44	Z	.003	.003	0	%100
30	M44A	Z	.003	.003	0	%100
31	MP1	Z	.008	.008	%79.1	%100
32	MP4	Z	.008	.008	%90	%100
33	M1	X	.001	.001	0	%100
34	M3	X	.002	.002	0	%100
35	M4	X	.002	.002	0	%100
36	M5	X	0	0	0	%100
37	M6	X	.004	.004	0	%100
38	M7	X	.001	.001	0	%100
39	M8	X	.001	.001	0	%100
40	M9	X	.004	.004	0	%100
41	M12	X	.001	.001	0	%100
42	M14	X	.002	.002	0	%100
43	M15	X	.002	.002	0	%100
44	M16	X	0	0	0	%100
45	M17	X	.004	.004	0	%100
46	M18	X	.001	.001	0	%100
47	M19	X	.001	.001	0	%100
48	M20	X	.004	.004	0	%100
49	MP1	X	.005	.005	0	%100
50	MP2	X	.005	.005	0	%100
51	MP3	X	.005	.005	0	%100
52	MP4	X	.005	.005	0	%100
53	M35	X	.001	.001	0	%100
54	M36	X	.001	.001	0	%100
55	M37	X	.001	.001	0	%100
56	M38	X	.001	.001	0	%100
57	M39	X	.001	.001	0	%100
58	M40	X	.001	.001	0	%100
59	M41	X	.001	.001	0	%100
60	M42	X	.001	.001	0	%100
61	M44	X	.002	.002	0	%100
62	M44A	X	.002	.002	0	%100

Member Distributed Loads (BLC 21 : Ice Wind Members (0 Deg))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
1	M1	Z	0	0	0	%100
2	M2	Z	-.005	-.005	0	%100
3	M3	Z	-.007	-.007	0	%100
4	M4	Z	-.007	-.007	0	%100
5	M5	Z	-.002	-.002	0	%100
6	M6	Z	-.002	-.002	0	%100
7	M7	Z	0	0	0	%100

Member Distributed Loads (BLC 21 : Ice Wind Members (0 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
8	M8	Z	0	0	0	%100
9	M9	Z	-.005	-.005	0	%100
10	M10	Z	-.02	-.02	0	%100
11	M11	Z	-.02	-.02	0	%100
12	M12	Z	0	0	0	%100
13	M13	Z	-.005	-.005	0	%100
14	M14	Z	-.007	-.007	0	%100
15	M15	Z	-.007	-.007	0	%100
16	M16	Z	-.002	-.002	0	%100
17	M17	Z	-.002	-.002	0	%100
18	M18	Z	0	0	0	%100
19	M19	Z	0	0	0	%100
20	M20	Z	-.005	-.005	0	%100
21	M21	Z	-.02	-.02	0	%100
22	M22	Z	-.02	-.02	0	%100
23	M23	Z	0	0	0	%100
24	M24	Z	0	0	0	%100
25	M25	Z	0	0	0	%100
26	M26	Z	0	0	0	%100
27	M27	Z	0	0	0	%100
28	M28	Z	0	0	0	%100
29	M29	Z	0	0	0	%100
30	M30	Z	0	0	0	%100
31	MP1	Z	-.005	-.005	0	%20.9
32	MP2	Z	-.005	-.005	0	%100
33	MP3	Z	-.005	-.005	0	%100
34	MP4	Z	-.004	-.004	0	%10
35	M35	Z	-.003	-.003	0	%100
36	M36	Z	-.003	-.003	0	%100
37	M37	Z	-.003	-.003	0	%100
38	M38	Z	-.003	-.003	0	%100
39	M39	Z	-.004	-.004	0	%100
40	M40	Z	-.004	-.004	0	%100
41	M41	Z	-.004	-.004	0	%100
42	M42	Z	-.004	-.004	0	%100
43	M44	Z	-.004	-.004	0	%100
44	M44A	Z	-.004	-.004	0	%100
45	MP1	Z	-.005	-.005	%79.1	%100
46	MP4	Z	-.004	-.004	%90	%100
47	M1	X	0	0	0	%100
48	M2	X	0	0	0	%100
49	M3	X	0	0	0	%100
50	M4	X	0	0	0	%100
51	M5	X	0	0	0	%100
52	M6	X	0	0	0	%100
53	M7	X	0	0	0	%100
54	M8	X	0	0	0	%100
55	M9	X	0	0	0	%100
56	M10	X	0	0	0	%100
57	M11	X	0	0	0	%100
58	M12	X	0	0	0	%100
59	M13	X	0	0	0	%100
60	M14	X	0	0	0	%100
61	M15	X	0	0	0	%100
62	M16	X	0	0	0	%100
63	M17	X	0	0	0	%100
64	M18	X	0	0	0	%100

Member Distributed Loads (BLC 21 : Ice Wind Members (0 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
65	M19	X	0	0	0	%100
66	M20	X	0	0	0	%100
67	M21	X	0	0	0	%100
68	M22	X	0	0	0	%100
69	M23	X	0	0	0	%100
70	M24	X	0	0	0	%100
71	M25	X	0	0	0	%100
72	M26	X	0	0	0	%100
73	M27	X	0	0	0	%100
74	M28	X	0	0	0	%100
75	M29	X	0	0	0	%100
76	M30	X	0	0	0	%100
77	MP1	X	0	0	0	%100
78	MP2	X	0	0	0	%100
79	MP3	X	0	0	0	%100
80	MP4	X	0	0	0	%100
81	M35	X	0	0	0	%100
82	M36	X	0	0	0	%100
83	M37	X	0	0	0	%100
84	M38	X	0	0	0	%100
85	M39	X	0	0	0	%100
86	M40	X	0	0	0	%100
87	M41	X	0	0	0	%100
88	M42	X	0	0	0	%100
89	M44	X	0	0	0	%100
90	M44A	X	0	0	0	%100

Member Distributed Loads (BLC 22 : Ice Wind Members (30 Deg))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
1	M1	Z	0	0	0	%100
2	M2	Z	-.004	-.004	0	%100
3	M3	Z	-.006	-.006	0	%100
4	M4	Z	-.006	-.006	0	%100
5	M5	Z	-.003	-.003	0	%100
6	M6	Z	-.002	-.002	0	%100
7	M7	Z	0	0	0	%100
8	M8	Z	0	0	0	%100
9	M9	Z	-.004	-.004	0	%100
10	M10	Z	-.017	-.017	0	%100
11	M11	Z	-.017	-.017	0	%100
12	M12	Z	0	0	0	%100
13	M13	Z	-.004	-.004	0	%100
14	M14	Z	-.006	-.006	0	%100
15	M15	Z	-.006	-.006	0	%100
16	M16	Z	-.003	-.003	0	%100
17	M17	Z	-.002	-.002	0	%100
18	M18	Z	0	0	0	%100
19	M19	Z	0	0	0	%100
20	M20	Z	-.004	-.004	0	%100
21	M21	Z	-.017	-.017	0	%100
22	M22	Z	-.017	-.017	0	%100
23	M23	Z	0	0	0	%100
24	M24	Z	0	0	0	%100
25	M25	Z	0	0	0	%100
26	M26	Z	0	0	0	%100
27	M27	Z	0	0	0	%100

Member Distributed Loads (BLC 22 : Ice Wind Members (30 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
28	M28	Z	0	0	0	%100
29	M29	Z	0	0	0	%100
30	M30	Z	0	0	0	%100
31	MP1	Z	-.004	-.004	0	%20.9
32	MP2	Z	-.004	-.004	0	%100
33	MP3	Z	-.004	-.004	0	%100
34	MP4	Z	-.004	-.004	0	%10
35	M35	Z	-.003	-.003	0	%100
36	M36	Z	-.003	-.003	0	%100
37	M37	Z	-.003	-.003	0	%100
38	M38	Z	-.003	-.003	0	%100
39	M39	Z	-.003	-.003	0	%100
40	M40	Z	-.003	-.003	0	%100
41	M41	Z	-.003	-.003	0	%100
42	M42	Z	-.003	-.003	0	%100
43	M44	Z	-.004	-.004	0	%100
44	M44A	Z	-.004	-.004	0	%100
45	MP1	Z	-.004	-.004	%79.1	%100
46	MP4	Z	-.004	-.004	%90	%100
47	M1	X	0	0	0	%100
48	M2	X	.002	.002	0	%100
49	M3	X	.003	.003	0	%100
50	M4	X	.003	.003	0	%100
51	M5	X	.001	.001	0	%100
52	M6	X	.001	.001	0	%100
53	M7	X	0	0	0	%100
54	M8	X	0	0	0	%100
55	M9	X	.002	.002	0	%100
56	M10	X	.01	.01	0	%100
57	M11	X	.01	.01	0	%100
58	M12	X	0	0	0	%100
59	M13	X	.002	.002	0	%100
60	M14	X	.003	.003	0	%100
61	M15	X	.003	.003	0	%100
62	M16	X	.001	.001	0	%100
63	M17	X	.001	.001	0	%100
64	M18	X	0	0	0	%100
65	M19	X	0	0	0	%100
66	M20	X	.002	.002	0	%100
67	M21	X	.01	.01	0	%100
68	M22	X	.01	.01	0	%100
69	M23	X	0	0	0	%100
70	M24	X	0	0	0	%100
71	M25	X	0	0	0	%100
72	M26	X	0	0	0	%100
73	M27	X	0	0	0	%100
74	M28	X	0	0	0	%100
75	M29	X	0	0	0	%100
76	M30	X	0	0	0	%100
77	MP1	X	.002	.002	0	%100
78	MP2	X	.002	.002	0	%100
79	MP3	X	.002	.002	0	%100
80	MP4	X	.002	.002	0	%100
81	M35	X	.002	.002	0	%100
82	M36	X	.002	.002	0	%100
83	M37	X	.002	.002	0	%100
84	M38	X	.002	.002	0	%100

Member Distributed Loads (BLC 22 : Ice Wind Members (30 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
85	M39	X	.002	.002	0	%100
86	M40	X	.002	.002	0	%100
87	M41	X	.002	.002	0	%100
88	M42	X	.002	.002	0	%100
89	M44	X	.002	.002	0	%100
90	M44A	X	.002	.002	0	%100

Member Distributed Loads (BLC 23 : Ice Wind Members (60 Deg))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
1	M1	Z	0	0	0	%100
2	M2	Z	-.002	-.002	0	%100
3	M3	Z	-.003	-.003	0	%100
4	M4	Z	-.003	-.003	0	%100
5	M5	Z	-.001	-.001	0	%100
6	M6	Z	-.001	-.001	0	%100
7	M7	Z	0	0	0	%100
8	M8	Z	0	0	0	%100
9	M9	Z	-.002	-.002	0	%100
10	M10	Z	-.01	-.01	0	%100
11	M11	Z	-.01	-.01	0	%100
12	M12	Z	0	0	0	%100
13	M13	Z	-.002	-.002	0	%100
14	M14	Z	-.003	-.003	0	%100
15	M15	Z	-.003	-.003	0	%100
16	M16	Z	-.001	-.001	0	%100
17	M17	Z	-.001	-.001	0	%100
18	M18	Z	0	0	0	%100
19	M19	Z	0	0	0	%100
20	M20	Z	-.002	-.002	0	%100
21	M21	Z	-.01	-.01	0	%100
22	M22	Z	-.01	-.01	0	%100
23	M23	Z	0	0	0	%100
24	M24	Z	0	0	0	%100
25	M25	Z	0	0	0	%100
26	M26	Z	0	0	0	%100
27	M27	Z	0	0	0	%100
28	M28	Z	0	0	0	%100
29	M29	Z	0	0	0	%100
30	M30	Z	0	0	0	%100
31	MP1	Z	-.002	-.002	0	%20.9
32	MP2	Z	-.002	-.002	0	%100
33	MP3	Z	-.002	-.002	0	%100
34	MP4	Z	-.002	-.002	0	%10
35	M35	Z	-.002	-.002	0	%100
36	M36	Z	-.002	-.002	0	%100
37	M37	Z	-.002	-.002	0	%100
38	M38	Z	-.002	-.002	0	%100
39	M39	Z	-.002	-.002	0	%100
40	M40	Z	-.002	-.002	0	%100
41	M41	Z	-.002	-.002	0	%100
42	M42	Z	-.002	-.002	0	%100
43	M44	Z	-.002	-.002	0	%100
44	M44A	Z	-.002	-.002	0	%100
45	MP1	Z	-.002	-.002	%79.1	%100
46	MP4	Z	-.002	-.002	%90	%100
47	M1	X	0	0	0	%100

Member Distributed Loads (BLC 23 : Ice Wind Members (60 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
48	M2	X	.004	.004	0	%100
49	M3	X	.006	.006	0	%100
50	M4	X	.006	.006	0	%100
51	M5	X	.003	.003	0	%100
52	M6	X	.002	.002	0	%100
53	M7	X	0	0	0	%100
54	M8	X	0	0	0	%100
55	M9	X	.003	.003	0	%100
56	M10	X	.017	.017	0	%100
57	M11	X	.017	.017	0	%100
58	M12	X	0	0	0	%100
59	M13	X	.004	.004	0	%100
60	M14	X	.006	.006	0	%100
61	M15	X	.006	.006	0	%100
62	M16	X	.003	.003	0	%100
63	M17	X	.002	.002	0	%100
64	M18	X	0	0	0	%100
65	M19	X	0	0	0	%100
66	M20	X	.003	.003	0	%100
67	M21	X	.017	.017	0	%100
68	M22	X	.017	.017	0	%100
69	M23	X	0	0	0	%100
70	M24	X	0	0	0	%100
71	M25	X	0	0	0	%100
72	M26	X	0	0	0	%100
73	M27	X	0	0	0	%100
74	M28	X	0	0	0	%100
75	M29	X	0	0	0	%100
76	M30	X	0	0	0	%100
77	MP1	X	.004	.004	0	%100
78	MP2	X	.004	.004	0	%100
79	MP3	X	.004	.004	0	%100
80	MP4	X	.004	.004	0	%100
81	M35	X	.003	.003	0	%100
82	M36	X	.003	.003	0	%100
83	M37	X	.003	.003	0	%100
84	M38	X	.003	.003	0	%100
85	M39	X	.003	.003	0	%100
86	M40	X	.003	.003	0	%100
87	M41	X	.003	.003	0	%100
88	M42	X	.003	.003	0	%100
89	M44	X	.003	.003	0	%100
90	M44A	X	.003	.003	0	%100

Member Distributed Loads (BLC 24 : Ice Wind Members (90 Deg))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
1	M1	Z	0	0	0	%100
2	M2	Z	0	0	0	%100
3	M3	Z	0	0	0	%100
4	M4	Z	0	0	0	%100
5	M5	Z	0	0	0	%100
6	M6	Z	0	0	0	%100
7	M7	Z	0	0	0	%100
8	M8	Z	0	0	0	%100
9	M9	Z	0	0	0	%100
10	M10	Z	0	0	0	%100

Member Distributed Loads (BLC 24 : Ice Wind Members (90 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
11	M11	Z	0	0	0	%100
12	M12	Z	0	0	0	%100
13	M13	Z	0	0	0	%100
14	M14	Z	0	0	0	%100
15	M15	Z	0	0	0	%100
16	M16	Z	0	0	0	%100
17	M17	Z	0	0	0	%100
18	M18	Z	0	0	0	%100
19	M19	Z	0	0	0	%100
20	M20	Z	0	0	0	%100
21	M21	Z	0	0	0	%100
22	M22	Z	0	0	0	%100
23	M23	Z	0	0	0	%100
24	M24	Z	0	0	0	%100
25	M25	Z	0	0	0	%100
26	M26	Z	0	0	0	%100
27	M27	Z	0	0	0	%100
28	M28	Z	0	0	0	%100
29	M29	Z	0	0	0	%100
30	M30	Z	0	0	0	%100
31	MP1	Z	0	0	0	%20.9
32	MP2	Z	0	0	0	%100
33	MP3	Z	0	0	0	%100
34	MP4	Z	0	0	0	%10
35	M35	Z	0	0	0	%100
36	M36	Z	0	0	0	%100
37	M37	Z	0	0	0	%100
38	M38	Z	0	0	0	%100
39	M39	Z	0	0	0	%100
40	M40	Z	0	0	0	%100
41	M41	Z	0	0	0	%100
42	M42	Z	0	0	0	%100
43	M44	Z	0	0	0	%100
44	M44A	Z	0	0	0	%100
45	MP1	Z	0	0	%79.1	%100
46	MP4	Z	0	0	%90	%100
47	M1	X	.001	.001	0	%100
48	M2	X	.005	.005	0	%100
49	M3	X	.006	.006	0	%100
50	M4	X	.006	.006	0	%100
51	M5	X	.002	.002	0	%100
52	M6	X	.002	.002	0	%100
53	M7	X	.001	.001	0	%100
54	M8	X	.001	.001	0	%100
55	M9	X	.003	.003	0	%100
56	M10	X	.02	.02	0	%100
57	M11	X	.02	.02	0	%100
58	M12	X	.001	.001	0	%100
59	M13	X	.005	.005	0	%100
60	M14	X	.006	.006	0	%100
61	M15	X	.006	.006	0	%100
62	M16	X	.002	.002	0	%100
63	M17	X	.002	.002	0	%100
64	M18	X	.001	.001	0	%100
65	M19	X	.001	.001	0	%100
66	M20	X	.003	.003	0	%100
67	M21	X	.02	.02	0	%100

Member Distributed Loads (BLC 24 : Ice Wind Members (90 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
68	M22	X	.02	.02	0	%100
69	M23	X	0	0	0	%100
70	M24	X	0	0	0	%100
71	M25	X	0	0	0	%100
72	M26	X	0	0	0	%100
73	M27	X	0	0	0	%100
74	M28	X	0	0	0	%100
75	M29	X	0	0	0	%100
76	M30	X	0	0	0	%100
77	MP1	X	.005	.005	0	%100
78	MP2	X	.005	.005	0	%100
79	MP3	X	.005	.005	0	%100
80	MP4	X	.004	.004	0	%100
81	M35	X	.003	.003	0	%100
82	M36	X	.003	.003	0	%100
83	M37	X	.003	.003	0	%100
84	M38	X	.003	.003	0	%100
85	M39	X	.004	.004	0	%100
86	M40	X	.004	.004	0	%100
87	M41	X	.004	.004	0	%100
88	M42	X	.004	.004	0	%100
89	M44	X	.001	.001	0	%100
90	M44A	X	.001	.001	0	%100

Member Distributed Loads (BLC 25 : Ice Wind Members (120 Deg))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
1	M1	Z	0	0	0	%100
2	M2	Z	.002	.002	0	%100
3	M3	Z	.003	.003	0	%100
4	M4	Z	.003	.003	0	%100
5	M5	Z	.001	.001	0	%100
6	M6	Z	.001	.001	0	%100
7	M7	Z	0	0	0	%100
8	M8	Z	0	0	0	%100
9	M9	Z	.002	.002	0	%100
10	M10	Z	.01	.01	0	%100
11	M11	Z	.01	.01	0	%100
12	M12	Z	0	0	0	%100
13	M13	Z	.002	.002	0	%100
14	M14	Z	.003	.003	0	%100
15	M15	Z	.003	.003	0	%100
16	M16	Z	.001	.001	0	%100
17	M17	Z	.001	.001	0	%100
18	M18	Z	0	0	0	%100
19	M19	Z	0	0	0	%100
20	M20	Z	.002	.002	0	%100
21	M21	Z	.01	.01	0	%100
22	M22	Z	.01	.01	0	%100
23	M23	Z	0	0	0	%100
24	M24	Z	0	0	0	%100
25	M25	Z	0	0	0	%100
26	M26	Z	0	0	0	%100
27	M27	Z	0	0	0	%100
28	M28	Z	0	0	0	%100
29	M29	Z	0	0	0	%100
30	M30	Z	0	0	0	%100

Member Distributed Loads (BLC 25 : Ice Wind Members (120 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
31	MP1	Z	.002	.002	0	%20.9
32	MP2	Z	.002	.002	0	%100
33	MP3	Z	.002	.002	0	%100
34	MP4	Z	.002	.002	0	%10
35	M35	Z	.002	.002	0	%100
36	M36	Z	.002	.002	0	%100
37	M37	Z	.002	.002	0	%100
38	M38	Z	.002	.002	0	%100
39	M39	Z	.002	.002	0	%100
40	M40	Z	.002	.002	0	%100
41	M41	Z	.002	.002	0	%100
42	M42	Z	.002	.002	0	%100
43	M44	Z	0	0	0	%100
44	M44A	Z	0	0	0	%100
45	MP1	Z	.002	.002	%79.1	%100
46	MP4	Z	.002	.002	%90	%100
47	M1	X	0	0	0	%100
48	M2	X	.004	.004	0	%100
49	M3	X	.006	.006	0	%100
50	M4	X	.006	.006	0	%100
51	M5	X	.002	.002	0	%100
52	M6	X	.003	.003	0	%100
53	M7	X	0	0	0	%100
54	M8	X	0	0	0	%100
55	M9	X	.003	.003	0	%100
56	M10	X	.017	.017	0	%100
57	M11	X	.017	.017	0	%100
58	M12	X	0	0	0	%100
59	M13	X	.004	.004	0	%100
60	M14	X	.006	.006	0	%100
61	M15	X	.006	.006	0	%100
62	M16	X	.002	.002	0	%100
63	M17	X	.003	.003	0	%100
64	M18	X	0	0	0	%100
65	M19	X	0	0	0	%100
66	M20	X	.003	.003	0	%100
67	M21	X	.017	.017	0	%100
68	M22	X	.017	.017	0	%100
69	M23	X	0	0	0	%100
70	M24	X	0	0	0	%100
71	M25	X	0	0	0	%100
72	M26	X	0	0	0	%100
73	M27	X	0	0	0	%100
74	M28	X	0	0	0	%100
75	M29	X	0	0	0	%100
76	M30	X	0	0	0	%100
77	MP1	X	.004	.004	0	%100
78	MP2	X	.004	.004	0	%100
79	MP3	X	.004	.004	0	%100
80	MP4	X	.004	.004	0	%100
81	M35	X	.003	.003	0	%100
82	M36	X	.003	.003	0	%100
83	M37	X	.003	.003	0	%100
84	M38	X	.003	.003	0	%100
85	M39	X	.003	.003	0	%100
86	M40	X	.003	.003	0	%100
87	M41	X	.003	.003	0	%100

Member Distributed Loads (BLC 25 : Ice Wind Members (120 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
88	M42	X	.003	.003	0	%100
89	M44	X	.001	.001	0	%100
90	M44A	X	.001	.001	0	%100

Member Distributed Loads (BLC 26 : Ice Wind Members (150 Deg))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
1	M1	Z	0	0	0	%100
2	M2	Z	.004	.004	0	%100
3	M3	Z	.006	.006	0	%100
4	M4	Z	.006	.006	0	%100
5	M5	Z	.002	.002	0	%100
6	M6	Z	.003	.003	0	%100
7	M7	Z	0	0	0	%100
8	M8	Z	0	0	0	%100
9	M9	Z	.004	.004	0	%100
10	M10	Z	.017	.017	0	%100
11	M11	Z	.017	.017	0	%100
12	M12	Z	0	0	0	%100
13	M13	Z	.004	.004	0	%100
14	M14	Z	.006	.006	0	%100
15	M15	Z	.006	.006	0	%100
16	M16	Z	.002	.002	0	%100
17	M17	Z	.003	.003	0	%100
18	M18	Z	0	0	0	%100
19	M19	Z	0	0	0	%100
20	M20	Z	.004	.004	0	%100
21	M21	Z	.017	.017	0	%100
22	M22	Z	.017	.017	0	%100
23	M23	Z	0	0	0	%100
24	M24	Z	0	0	0	%100
25	M25	Z	0	0	0	%100
26	M26	Z	0	0	0	%100
27	M27	Z	0	0	0	%100
28	M28	Z	0	0	0	%100
29	M29	Z	0	0	0	%100
30	M30	Z	0	0	0	%100
31	MP1	Z	.004	.004	0	%20.9
32	MP2	Z	.004	.004	0	%100
33	MP3	Z	.004	.004	0	%100
34	MP4	Z	.004	.004	0	%10
35	M35	Z	.003	.003	0	%100
36	M36	Z	.003	.003	0	%100
37	M37	Z	.003	.003	0	%100
38	M38	Z	.003	.003	0	%100
39	M39	Z	.003	.003	0	%100
40	M40	Z	.003	.003	0	%100
41	M41	Z	.003	.003	0	%100
42	M42	Z	.003	.003	0	%100
43	M44	Z	.002	.002	0	%100
44	M44A	Z	.002	.002	0	%100
45	MP1	Z	.004	.004	%79.1	%100
46	MP4	Z	.004	.004	%90	%100
47	M1	X	0	0	0	%100
48	M2	X	.002	.002	0	%100
49	M3	X	.003	.003	0	%100
50	M4	X	.003	.003	0	%100

Member Distributed Loads (BLC 26 : Ice Wind Members (150 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,%]
51	M5	X	.001	.001	0	%100
52	M6	X	.001	.001	0	%100
53	M7	X	0	0	0	%100
54	M8	X	0	0	0	%100
55	M9	X	.002	.002	0	%100
56	M10	X	.01	.01	0	%100
57	M11	X	.01	.01	0	%100
58	M12	X	0	0	0	%100
59	M13	X	.002	.002	0	%100
60	M14	X	.003	.003	0	%100
61	M15	X	.003	.003	0	%100
62	M16	X	.001	.001	0	%100
63	M17	X	.001	.001	0	%100
64	M18	X	0	0	0	%100
65	M19	X	0	0	0	%100
66	M20	X	.002	.002	0	%100
67	M21	X	.01	.01	0	%100
68	M22	X	.01	.01	0	%100
69	M23	X	0	0	0	%100
70	M24	X	0	0	0	%100
71	M25	X	0	0	0	%100
72	M26	X	0	0	0	%100
73	M27	X	0	0	0	%100
74	M28	X	0	0	0	%100
75	M29	X	0	0	0	%100
76	M30	X	0	0	0	%100
77	MP1	X	.002	.002	0	%100
78	MP2	X	.002	.002	0	%100
79	MP3	X	.002	.002	0	%100
80	MP4	X	.002	.002	0	%100
81	M35	X	.002	.002	0	%100
82	M36	X	.002	.002	0	%100
83	M37	X	.002	.002	0	%100
84	M38	X	.002	.002	0	%100
85	M39	X	.002	.002	0	%100
86	M40	X	.002	.002	0	%100
87	M41	X	.002	.002	0	%100
88	M42	X	.002	.002	0	%100
89	M44	X	.001	.001	0	%100
90	M44A	X	.001	.001	0	%100

Member Area Loads

Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
No Data to Print ...						

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
1	Dead	None		-1			6			
2	Ice Dead	None					6	44		
3	Full Wind Antenna (0 Deg)	None					6			
4	Full Wind Antenna (30 Deg)	None					13			
5	Full Wind Antenna (60 Deg)	None					13			
6	Full Wind Antenna (90 Deg)	None					12			
7	Full Wind Antenna (120 Deg)	None					13			

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
8	Full Wind Antenna (150 Deg)	None					13			
9	Full Wind Members (0 Deg)	None						62		
10	Full Wind Members (30 Deg)	None						62		
11	Full Wind Members (60 Deg)	None						62		
12	Full Wind Members (90 Deg)	None						62		
13	Full Wind Members (120 Deg)	None						62		
14	Full Wind Members (150 Deg)	None						62		
15	Ice Wind Antenna (0 Deg)	None					6			
16	Ice Wind Antenna (30 Deg)	None					13			
17	Ice Wind Antenna (60 Deg)	None					13			
18	Ice Wind Antenna (90 Deg)	None					12			
19	Ice Wind Antenna (120 Deg)	None					13			
20	Ice Wind Antenna (150 Deg)	None					13			
21	Ice Wind Members (0 Deg)	None						90		
22	Ice Wind Members (30 Deg)	None						90		
23	Ice Wind Members (60 Deg)	None						90		
24	Ice Wind Members (90 Deg)	None						90		
25	Ice Wind Members (120 Deg)	None						90		
26	Ice Wind Members (150 Deg)	None						90		
27	Seismic Antenna (0 Deg)	None					6			
28	Seismic Antenna (90 Deg)	None					6			
29	Seismic Members (0 Deg)	None		-.037	-.092					
30	Seismic Members (30 Deg)	None	.046	-.037	-.08					
31	Seismic Members (60 Deg)	None	.08	-.037	-.046					
32	Seismic Members (90 Deg)	None	.092	-.037	-5.636e-...					
33	Seismic Members (120 Deg)	None	.08	-.037	.046					
34	Seismic Members (150 Deg)	None	.046	-.037	.08					
35	Seismic Members (180 Deg)	None	1.127e-17	-.037	.092					
36	Seismic Members (210 Deg)	None	-.046	-.037	.08					
37	Seismic Members (240 Deg)	None	-.08	-.037	.046					
38	Seismic Members (270 Deg)	None	-.092	-.037	1.691e-17					
39	Seismic Members (300 Deg)	None	-.08	-.037	-.046					
40	Seismic Members (330 Deg)	None	-.046	-.037	-.08					
41	Seismic Vertical Antennas	None					6			
42	Man 1 (500 lbs)	None				1				
43	Man 2 (500 lbs)	None				1				
44	Man 3 (500 lbs)	None				1				
45	Man 4 (250 lbs)	None				1				
46	Man 5 (250 lbs)	None				1				
47	Man 6 (250 lbs)	None				1				

Load Combinations

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4D	Yes	Y		1	1.4																				
2	1.2D + 1.0W 0°	Yes	Y		1	1.2	3	1	9	1																
3	1.2D + 1.0W 30°	Yes	Y		1	1.2	4	1	10	1																
4	1.2D + 1.0W 60°	Yes	Y		1	1.2	5	1	11	1																
5	1.2D + 1.0W 90°	Yes	Y		1	1.2	6	1	12	1																
6	1.2D + 1.0W 120°	Yes	Y		1	1.2	7	1	13	1																
7	1.2D + 1.0W 150°	Yes	Y		1	1.2	8	1	14	1																
8	1.2D + 1.0W 180°	Yes	Y		1	1.2	3	-1	9	-1																
9	1.2D + 1.0W 210°	Yes	Y		1	1.2	4	-1	10	-1																
10	1.2D + 1.0W 240°	Yes	Y		1	1.2	5	-1	11	-1																
11	1.2D + 1.0W 270°	Yes	Y		1	1.2	6	-1	12	-1																
12	1.2D + 1.0W 300°	Yes	Y		1	1.2	7	-1	13	-1																

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
13	1.2D + 1.0W 330°	Yes	Y		1	1.2	8	-1	14	-1														
14	1.2D + 1.0Di + 1.0Wi 0°	Yes	Y		1	1.2	2	1	15	1	21	1												
15	1.2D + 1.0Di + 1.0Wi 30°	Yes	Y		1	1.2	2	1	16	1	22	1												
16	1.2D + 1.0Di + 1.0Wi 60°	Yes	Y		1	1.2	2	1	17	1	23	1												
17	1.2D + 1.0Di + 1.0Wi 90°	Yes	Y		1	1.2	2	1	18	1	24	1												
18	1.2D + 1.0Di + 1.0Wi 120°	Yes	Y		1	1.2	2	1	19	1	25	1												
19	1.2D + 1.0Di + 1.0Wi 150°	Yes	Y		1	1.2	2	1	20	1	26	1												
20	1.2D + 1.0Di + 1.0Wi 180°	Yes	Y		1	1.2	2	1	15	-1	21	-1												
21	1.2D + 1.0Di + 1.0Wi 210°	Yes	Y		1	1.2	2	1	16	-1	22	-1												
22	1.2D + 1.0Di + 1.0Wi 240°	Yes	Y		1	1.2	2	1	17	-1	23	-1												
23	1.2D + 1.0Di + 1.0Wi 270°	Yes	Y		1	1.2	2	1	18	-1	24	-1												
24	1.2D + 1.0Di + 1.0Wi 300°	Yes	Y		1	1.2	2	1	19	-1	25	-1												
25	1.2D + 1.0Di + 1.0Wi 330°	Yes	Y		1	1.2	2	1	20	-1	26	-1												
26	1.2D + 1.5Lm_1 + 1.0Wm 0°	Yes	Y		1	1.2	3	.055	9	.055	42	1.5												
27	1.2D + 1.5Lm_1 + 1.0Wm 30°	Yes	Y		1	1.2	4	.055	10	.055	42	1.5												
28	1.2D + 1.5Lm_1 + 1.0Wm 60°	Yes	Y		1	1.2	5	.055	11	.055	42	1.5												
29	1.2D + 1.5Lm_1 + 1.0Wm 90°	Yes	Y		1	1.2	6	.055	12	.055	42	1.5												
30	1.2D + 1.5Lm_1 + 1.0Wm 120°	Yes	Y		1	1.2	7	.055	13	.055	42	1.5												
31	1.2D + 1.5Lm_1 + 1.0Wm 150°	Yes	Y		1	1.2	8	.055	14	.055	42	1.5												
32	1.2D + 1.5Lm_1 + 1.0Wm 180°	Yes	Y		1	1.2	3	-.0...	9	-.0...	42	1.5												
33	1.2D + 1.5Lm_1 + 1.0Wm 210°	Yes	Y		1	1.2	4	-.0...	10	-.0...	42	1.5												
34	1.2D + 1.5Lm_1 + 1.0Wm 240°	Yes	Y		1	1.2	5	-.0...	11	-.0...	42	1.5												
35	1.2D + 1.5Lm_1 + 1.0Wm 270°	Yes	Y		1	1.2	6	-.0...	12	-.0...	42	1.5												
36	1.2D + 1.5Lm_1 + 1.0Wm 300°	Yes	Y		1	1.2	7	-.0...	13	-.0...	42	1.5												
37	1.2D + 1.5Lm_1 + 1.0Wm 330°	Yes	Y		1	1.2	8	-.0...	14	-.0...	42	1.5												
38	1.2D + 1.5Lm_2 + 1.0Wm 0°	Yes	Y		1	1.2	3	.055	9	.055	43	1.5												
39	1.2D + 1.5Lm_2 + 1.0Wm 30°	Yes	Y		1	1.2	4	.055	10	.055	43	1.5												
40	1.2D + 1.5Lm_2 + 1.0Wm 60°	Yes	Y		1	1.2	5	.055	11	.055	43	1.5												
41	1.2D + 1.5Lm_2 + 1.0Wm 90°	Yes	Y		1	1.2	6	.055	12	.055	43	1.5												
42	1.2D + 1.5Lm_2 + 1.0Wm 120°	Yes	Y		1	1.2	7	.055	13	.055	43	1.5												
43	1.2D + 1.5Lm_2 + 1.0Wm 150°	Yes	Y		1	1.2	8	.055	14	.055	43	1.5												
44	1.2D + 1.5Lm_2 + 1.0Wm 180°	Yes	Y		1	1.2	3	-.0...	9	-.0...	43	1.5												
45	1.2D + 1.5Lm_2 + 1.0Wm 210°	Yes	Y		1	1.2	4	-.0...	10	-.0...	43	1.5												
46	1.2D + 1.5Lm_2 + 1.0Wm 240°	Yes	Y		1	1.2	5	-.0...	11	-.0...	43	1.5												
47	1.2D + 1.5Lm_2 + 1.0Wm 270°	Yes	Y		1	1.2	6	-.0...	12	-.0...	43	1.5												
48	1.2D + 1.5Lm_2 + 1.0Wm 300°	Yes	Y		1	1.2	7	-.0...	13	-.0...	43	1.5												
49	1.2D + 1.5Lm_2 + 1.0Wm 330°	Yes	Y		1	1.2	8	-.0...	14	-.0...	43	1.5												
50	1.2D + 1.5Lm_3 + 1.0Wm 0°	Yes	Y		1	1.2	3	.055	9	.055	44	1.5												
51	1.2D + 1.5Lm_3 + 1.0Wm 30°	Yes	Y		1	1.2	4	.055	10	.055	44	1.5												
52	1.2D + 1.5Lm_3 + 1.0Wm 60°	Yes	Y		1	1.2	5	.055	11	.055	44	1.5												
53	1.2D + 1.5Lm_3 + 1.0Wm 90°	Yes	Y		1	1.2	6	.055	12	.055	44	1.5												
54	1.2D + 1.5Lm_3 + 1.0Wm 120°	Yes	Y		1	1.2	7	.055	13	.055	44	1.5												
55	1.2D + 1.5Lm_3 + 1.0Wm 150°	Yes	Y		1	1.2	8	.055	14	.055	44	1.5												
56	1.2D + 1.5Lm_3 + 1.0Wm 180°	Yes	Y		1	1.2	3	-.0...	9	-.0...	44	1.5												
57	1.2D + 1.5Lm_3 + 1.0Wm 210°	Yes	Y		1	1.2	4	-.0...	10	-.0...	44	1.5												
58	1.2D + 1.5Lm_3 + 1.0Wm 240°	Yes	Y		1	1.2	5	-.0...	11	-.0...	44	1.5												
59	1.2D + 1.5Lm_3 + 1.0Wm 270°	Yes	Y		1	1.2	6	-.0...	12	-.0...	44	1.5												
60	1.2D + 1.5Lm_3 + 1.0Wm 300°	Yes	Y		1	1.2	7	-.0...	13	-.0...	44	1.5												
61	1.2D + 1.5Lm_3 + 1.0Wm 330°	Yes	Y		1	1.2	8	-.0...	14	-.0...	44	1.5												
62	1.2D + 1.5Lv_1 0°	Yes	Y		1	1.2	45	1.5																
63	1.2D + 1.5Lv_1 30°	Yes	Y		1	1.2	45	1.5																
64	1.2D + 1.5Lv_1 60°	Yes	Y		1	1.2	45	1.5																
65	1.2D + 1.5Lv_1 90°	Yes	Y		1	1.2	45	1.5																
66	1.2D + 1.5Lv_1 120°	Yes	Y		1	1.2	45	1.5																
67	1.2D + 1.5Lv_1 150°	Yes	Y		1	1.2	45	1.5																
68	1.2D + 1.5Lv_1 180°	Yes	Y		1	1.2	45	1.5																
69	1.2D + 1.5Lv_1 210°	Yes	Y		1	1.2	45	1.5																

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
70	1.2D + 1.5Lv_1 240°	Yes	Y		1	1.2	45	1.5																
71	1.2D + 1.5Lv_1 270°	Yes	Y		1	1.2	45	1.5																
72	1.2D + 1.5Lv_1 300°	Yes	Y		1	1.2	45	1.5																
73	1.2D + 1.5Lv_1 330°	Yes	Y		1	1.2	45	1.5																
74	1.2D + 1.5Lv_2 0°	Yes	Y		1	1.2	46	1.5																
75	1.2D + 1.5Lv_2 30°	Yes	Y		1	1.2	46	1.5																
76	1.2D + 1.5Lv_2 60°	Yes	Y		1	1.2	46	1.5																
77	1.2D + 1.5Lv_2 90°	Yes	Y		1	1.2	46	1.5																
78	1.2D + 1.5Lv_2 120°	Yes	Y		1	1.2	46	1.5																
79	1.2D + 1.5Lv_2 150°	Yes	Y		1	1.2	46	1.5																
80	1.2D + 1.5Lv_2 180°	Yes	Y		1	1.2	46	1.5																
81	1.2D + 1.5Lv_2 210°	Yes	Y		1	1.2	46	1.5																
82	1.2D + 1.5Lv_2 240°	Yes	Y		1	1.2	46	1.5																
83	1.2D + 1.5Lv_2 270°	Yes	Y		1	1.2	46	1.5																
84	1.2D + 1.5Lv_2 300°	Yes	Y		1	1.2	46	1.5																
85	1.2D + 1.5Lv_2 330°	Yes	Y		1	1.2	46	1.5																
86	1.2D + 1.5Lv_3 0°	Yes	Y		1	1.2	47	1.5																
87	1.2D + 1.5Lv_3 30°	Yes	Y		1	1.2	47	1.5																
88	1.2D + 1.5Lv_3 60°	Yes	Y		1	1.2	47	1.5																
89	1.2D + 1.5Lv_3 90°	Yes	Y		1	1.2	47	1.5																
90	1.2D + 1.5Lv_3 120°	Yes	Y		1	1.2	47	1.5																
91	1.2D + 1.5Lv_3 150°	Yes	Y		1	1.2	47	1.5																
92	1.2D + 1.5Lv_3 180°	Yes	Y		1	1.2	47	1.5																
93	1.2D + 1.5Lv_3 210°	Yes	Y		1	1.2	47	1.5																
94	1.2D + 1.5Lv_3 240°	Yes	Y		1	1.2	47	1.5																
95	1.2D + 1.5Lv_3 270°	Yes	Y		1	1.2	47	1.5																
96	1.2D + 1.5Lv_3 300°	Yes	Y		1	1.2	47	1.5																
97	1.2D + 1.5Lv_3 330°	Yes	Y		1	1.2	47	1.5																
98	1.2D + 1.0EV +1.0 EH 0°	Yes	Y		1	1.2	27	1	28		29	1	40	1										
99	1.2D + 1.0EV +1.0 EH 30°	Yes	Y		1	1.2	27	.866	28	.5	30	1	40	1										
100	1.2D + 1.0EV +1.0 EH 60°	Yes	Y		1	1.2	27	.5	28	.866	31	1	40	1										
101	1.2D + 1.0EV +1.0 EH 90°	Yes	Y		1	1.2	27		28	1	32	1	40	1										
102	1.2D + 1.0EV +1.0 EH 120°	Yes	Y		1	1.2	27	-.5	28	.866	33	1	40	1										
103	1.2D + 1.0EV +1.0 EH 150°	Yes	Y		1	1.2	27	-.8...	28	.5	34	1	40	1										
104	1.2D + 1.0EV +1.0 EH 180°	Yes	Y		1	1.2	27	-1	28		35	1	40	1										
105	1.2D + 1.0EV +1.0 EH 210°	Yes	Y		1	1.2	27	-.8...	28	-.5	36	1	40	1										
106	1.2D + 1.0EV +1.0 EH 240°	Yes	Y		1	1.2	27	-.5	28	-.8...	37	1	40	1										
107	1.2D + 1.0EV +1.0 EH 270°	Yes	Y		1	1.2	27		28	-1	38	1	40	1										
108	1.2D + 1.0EV +1.0 EH 300°	Yes	Y		1	1.2	27	.5	28	-.8...	39	1	40	1										
109	1.2D + 1.0EV +1.0 EH 330°	Yes	Y		1	1.2	27	.866	28	-.5	40	1	40	1										

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	N1	max	.786	45	1.631	14	2.977	14	0	109	0	109	0	109
2		min	-1.128	27	.412	9	.069	8	0	1	0	1	0	1
3	N16	max	1.132	57	1.739	20	.046	2	0	109	0	109	0	109
4		min	-.79	39	.405	2	-3.007	20	0	1	0	1	0	1
5	N65A	max	.5	13	.053	24	.231	13	0	109	0	109	0	109
6		min	-.619	7	0	7	-.284	7	0	1	0	1	0	1
7	N66	max	.613	13	.063	24	.281	13	0	109	0	109	0	109
8		min	-.498	7	.004	7	-.23	7	0	1	0	1	0	1
9	Totals:	max	1.089	10	3.447	25	1.806	2						
10		min	-1.089	4	.909	7	-1.806	8						

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

	Mem...	Shape	Code Check	Loc[ft]	LC	Shear C...	Loc[ft]	Dir	LC	phi*...	phi*...	phi*...	phi*...	Cb	Eqn
1	M1	PL4x5/8	.743	.417	15	.035	0	y	51	76.4...	81	1.055	6.75	1.667	H1...
2	M3	PL3.5X.625	.412	.324	15	.814	0	y	14	59.2...	60.75	.791	3.797	2.014	H1...
3	M4	PL3.5X.625	.270	0	25	.587	0	y	15	59.2...	60.75	.791	3.797	1.742	H1...
4	M5	PIPE_2.0	.212	2.68	2	.108	.084		15	29.48	32.13	1.872	1.872	2.206	H1...
5	M6	PIPE_2.0	.301	2.68	2	.082	2.68		14	29.48	32.13	1.872	1.872	1.902	H1...
6	M7	PL3.5X.625	.466	.324	8	.489	0	y	18	59.2...	60.75	.791	3.797	1.151	H1...
7	M8	PL3.5X.625	.232	.324	8	.396	0	y	22	59.2...	60.75	.791	3.797	1.125	H1...
8	M9	PIPE_2.5	.411	3.776	2	.171	2.734		2	30.2...	50.7...	3.596	3.596	1.809	H1...
9	M12	PL4x5/8	.738	.417	21	.035	0	y	57	76.4...	81	1.055	6.75	1.667	H1...
10	M14	PL3.5X.625	.400	.324	21	.813	0	y	20	59.2...	60.75	.791	3.797	1.834	H1...
11	M15	PL3.5X.625	.302	0	19	.582	0	y	21	59.2...	60.75	.791	3.797	1.581	H1...
12	M16	PIPE_2.0	.203	2.68	2	.103	.084		23	29.48	32.13	1.872	1.872	2.064	H1...
13	M17	PIPE_2.0	.297	2.68	8	.084	2.68		20	29.48	32.13	1.872	1.872	2.352	H1...
14	M18	PL3.5X.625	.489	.324	2	.499	0	y	20	59.2...	60.75	.791	3.797	1.157	H1...
15	M19	PL3.5X.625	.243	.324	2	.395	0	y	17	59.2...	60.75	.791	3.797	1.133	H1...
16	M20	PIPE_2.5	.411	3.776	8	.164	2.734		8	30.2...	50.7...	3.596	3.596	2.515	H1...
17	MP1	PIPE_2.0	.444	2.333	42	.072	5.667		47	24.0...	32.13	1.872	1.872	4.908	H1...
18	MP2	PIPE_2.0	.250	2.333	44	.038	5.667		45	24.0...	32.13	1.872	1.872	4.957	H1...
19	MP3	PIPE_2.0	.341	2.333	20	.046	2.333		21	24.0...	32.13	1.872	1.872	4.877	H1...
20	MP4	PIPE_2.0	.604	6.667	18	.074	6.667		55	24.0...	32.13	1.872	1.872	4.163	H1...
21	M35	SR 3/4	.164	4.277	15	.018	4.277		2	9.437	14.3...	.179	.179	2.257	H1...
22	M36	SR 3/4	.190	0	21	.018	0		8	9.437	14.3...	.179	.179	2.29	H1...
23	M37	SR 3/4	.172	0	21	.017	0		20	9.437	14.3...	.179	.179	2.361	H1...
24	M38	SR 3/4	.159	4.277	15	.015	4.277		14	9.437	14.3...	.179	.179	2.33	H1...
25	M39	SR 5/8	.159	3.333	2	.003	0		20	2.503	9.94	.104	.104	2.158	H1...
26	M40	SR 5/8	.118	3.333	14	.006	3.333		14	2.503	9.94	.104	.104	2.259	H1...
27	M41	SR 5/8	.182	3.333	15	.005	0		20	2.503	9.94	.104	.104	2.337	H1...
28	M42	SR 5/8	.100	3.333	15	.003	3.333		15	2.503	9.94	.104	.104	2.364	H1...
29	M44	PIPE_2.0	.060	3.228	24	.006	0		15	19.4...	32.13	1.872	1.872	1.136	H1...
30	M44A	PIPE_2.0	.056	3.228	16	.006	0		15	19.4...	32.13	1.872	1.872	1.136	H1...

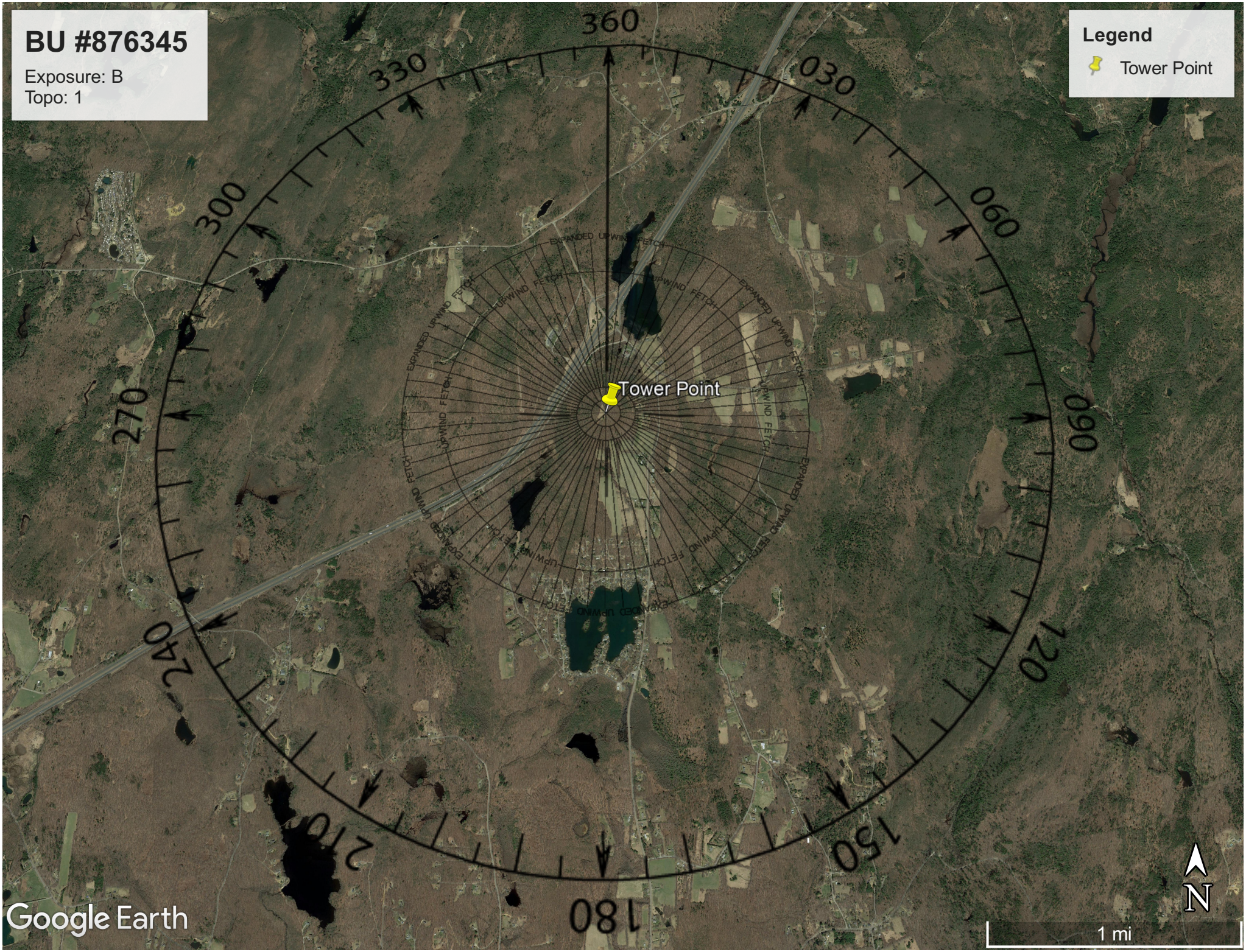
APPENDIX D

ADDITIONAL CALCUATIONS

Input Connection Info. For Each Boundary Conditions							
Joint Label	Bolt Qty.	Bolt Axis	Bolt Orientation	Diameter (in.)	Bolt Type	Horizontal Spacing	Vertical Spacing
N16	4	Horizontal	0	0.625	Threaded Ro	6	4
N1	4	Horizontal	0	0.625	Threaded Ro	6	4

Bolt Types			
Bolt Type	Fu (ksi)	Fnt (ksi)	Fnv (ksi)
A325N	120	90	54
A325X	120	90	68
A490N	150	113	68
A490X	150	113	85
U-Bolt	58	44	27
Threaded Rod	58	44	27
OTHER	0	0	0

Results	
Limit State	Capacity (%)
Shear	8.0%
Tension	7.4%
Combined	1.2%

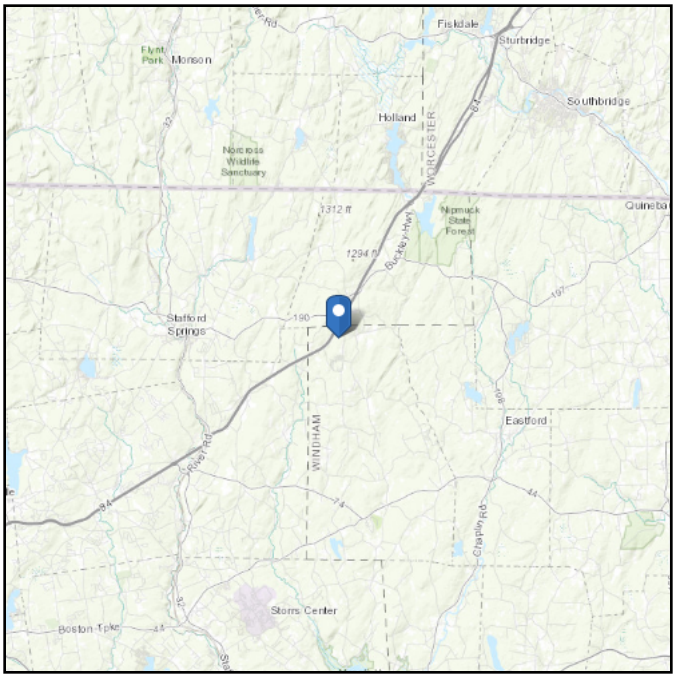

BU #876345
Exposure: B
Topo: 1
Legend
Tower Point
360
030
060
090
120
150
180
210
240
270
300
330
Tower Point
Google Earth
N
1 mi

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 1068.03 ft (NAVD 88)
Latitude: 41.952139
Longitude: -72.195528



Wind

Results:

Wind Speed:	125 Vmph	**130 mph per Ashford Municipality
10-year MRI	77 Vmph	
25-year MRI	87 Vmph	
50-year MRI	94 Vmph	
100-year MRI	101 Vmph	

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

Date Accessed: Tue Jun 11 2019

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

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

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

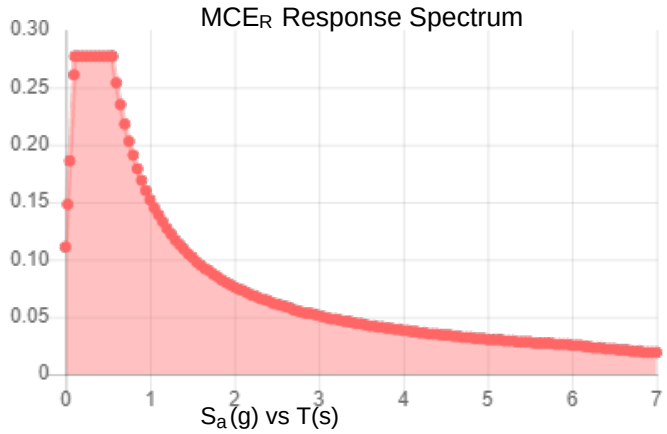
Seismic

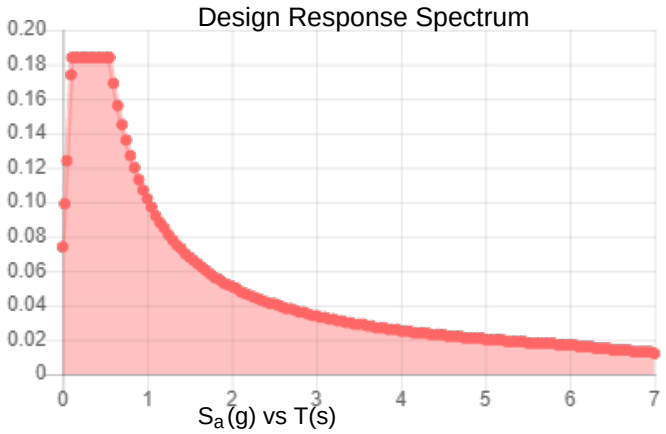
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.173	S_{DS} :	0.184
S_1 :	0.064	S_{D1} :	0.102
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.085
S_{MS} :	0.277	PGA_M :	0.136
S_{M1} :	0.152	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Tue Jun 11 2019

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Tue Jun 11 2019

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

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

Exhibit F

Power Density/RF Emissions Report

Transcom Engineering, Inc.

Wireless Network Design and Deployment

Radio Frequency Emissions Analysis Report

T-MOBILE Existing Facility

Site ID: CT11353C

Ashford/ I-84_1
36 Janoski Road
Ashford, CT 06278

June 6, 2019

Transcom Engineering Project Number: 737001-0147

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**9.51 %**

June 6, 2019

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

Emissions Analysis for Site: **CT11353C – Ashford/ I-84_1**

Transcom Engineering, Inc ("Transcom") was directed to analyze the proposed upgrades to the T-MOBILE facility located at **36 Janoski Road, Ashford, CT**, for the purpose of determining whether the emissions from the Proposed T-MOBILE Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed upgrades to the T-MOBILE antenna facility located at **36 Janoski Road, Ashford, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-MOBILE is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

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

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

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

Table 1: Channel Data Table

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

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	RFS APX16DWV-16DWV-S-E-ACU	158
A	2	RFS APXVAARR24_43-U-NA20	158
B	1	RFS APX16DWV-16DWV-S-E-ACU	158
B	2	RFS APXVAARR24_43-U-NA20	158
C	1	RFS APX16DWV-16DWV-S-E-ACU	158
C	2	RFS APXVAARR24_43-U-NA20	158

Table 2: Antenna Data

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

RESULTS

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

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	RFS APX16DWV-16DWV-S-E-ACU	1900 MHz (PCS)	15.9	5	175	6,808.29	1.06
Antenna A2	RFS APXVAARR24_43-U-NA20	600 MHz / 700 MHz / 2100 MHz (AWS)	12.95 / 13.35 / 16.35	6	240	7,621.25	1.71
						Sector A Composite MPE%	**2.77**
Antenna B1	RFS APX16DWV-16DWV-S-E-ACU	1900 MHz (PCS)	15.9	5	175	6,808.29	1.06
Antenna B2	RFS APXVAARR24_43-U-NA20	600 MHz / 700 MHz / 2100 MHz (AWS)	12.95 / 13.35 / 16.35	6	240	7,621.25	1.71
						Sector B Composite MPE%	**2.77**
Antenna C1	RFS APX16DWV-16DWV-S-E-ACU	1900 MHz (PCS)	15.9	5	175	6,808.29	1.06
Antenna C2	RFS APXVAARR24_43-U-NA20	600 MHz / 700 MHz / 2100 MHz (AWS)	12.95 / 13.35 / 16.35	6	240	7,621.25	1.71
						Sector C Composite MPE%	**2.77**

Table 3: T-MOBILE Emissions Levels

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

Site Composite MPE%	
Carrier	**MPE%**
T-MOBILE – Max Per Sector Value	**2.77 %**
AT&T	2.14 %
Verizon Wireless	2.80 %
Nextel	0.21 %
Sprint	1.59 %
Site Total MPE %:	**9.51 %**

Table 4: All Carrier MPE Contributions

T-MOBILE Sector A Total:	2.77 %
T-MOBILE Sector B Total:	2.77 %
T-MOBILE Sector C Total:	2.77 %
Site Total:	9.51 %

Table 5: Site MPE Summary

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

T-MOBILE _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile 1900 MHz (PCS) LTE	4	1,556.18	158	9.69	1900 MHz (PCS)	1000	0.97%
T-Mobile 1900 MHz (PCS) GSM	1	583.57	158	0.91	1900 MHz (PCS)	1000	0.09%
T-Mobile 600 MHz LTE / 5G NR	2	788.97	158	2.46	600 MHz	400	0.61%
T-Mobile 700 MHz LTE	2	432.54	158	1.35	700 MHz	467	0.29%
T-Mobile 2100 MHz (AWS) LTE	2	2,589.11	158	8.06	2100 MHz (AWS)	1000	0.81%
						Total:	**2.77%**

Table 6: T-MOBILE Maximum Sector MPE Power Values

Summary

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

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

T-MOBILE Sector	Power Density Value (%)
Sector A:	2.77 %
Sector B:	2.77 %
Sector C:	2.77 %
T-MOBILE Maximum Total (per sector):	2.77 %
Site Total:	9.51 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **9.51 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

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