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

April 22, 2020

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

RE: **Notice of Exempt Modification for T-Mobile:**
842870 - T-Mobile Site ID: CT11018F
434 Boston Post Road, Milford, CT 06460
Latitude: 41° 13′ 42.69″ / Longitude: -73° 4′ 12.47″

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 114-foot mount on the existing 150-foot Self Support Lattice Tower, located at 434 Boston Post Road, Milford, CT. The tower is owned by Crown Castle and the property is owned by the City of Milford. T-Mobile now intends to replace three (3) existing antennas with three (3) new 1900/2100 MHz antennas. The new antennas will be installed at the 114-ft level of the tower. T-Mobile is also proposing tower mount modifications. As shown on the enclosed mount analysis.

Planned Modifications:
Tower:

Remove:
(4) 1 5/8" Coax

Remove and Replace:
(3) AIR21 KRC118023-1_B2P_B4A Antenna **(REMOVE)** – (3) AIR32_B66A_B2A Antenna 1900/2100 MHz **(REPLACE)**

Install New:
(1) Fiber Line

Existing to Remain:
(3) AIR21 KRC118023-1_B2A_B4P Antenna 1900/2100 MHz
(3) RFS APXVAARR24_43-UNA20 Antenna 600/700 MHz
(3) TMA

The facility was approved by the City of Milford Planning and Zoning Office on February 10, 2000 when a Zoning Permit was issued. This approval was given without conditions.

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 the Honorable Benjamin G. Blake, as both the

municipality and property owner, Stephen Harris, City of Milford Zoning Enforcement Officer, and Crown Castle is the tower owner.

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

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

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

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

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

For the foregoing reasons, T-Mobile respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn: 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: Benjamin Blake, Mayor *(via email only to jrosen@milfordct.gov, Mayor's Chief of Staff)*
110 River Street
Milford, CT 06460

Stephen Harris, Zoning Enforcement Officer *(via email only to shharris@ci.milford.ct.us)*
70 West River Street
Milford, CT 06460

Crown Castle, Tower Owner

From: Zsamba, Anne Marie
To: jrosen@milfordct.gov
Subject: 434 Boston Post Road - Exempt Modification Application
Date: Wednesday, April 22, 2020 8:20:00 AM
Attachments: T-Mobile-EM-842870-CT11018F-434 Boston Post Road-Milford_2.pdf

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Good morning Mr. Rosen,

As the Mayor's Chief of Staff, please accept the attached T-Mobile Exempt Modification application that is being submitted to the Connecticut Siting Council, today April 22, 2020.

In light of the present circumstances with Covid-19, The Council has advised that electronic notification of this filing is acceptable. If you could kindly confirm receipt. Thank you.

Best,
Anne Marie Zsamba

ANNE MARIE ZSAMBA
Network Real Estate Specialist
T: (201) 236-9224
M: (518) 350-3639
F: (724) 416-6112

CROWN CASTLE
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065
CrownCastle.com

From: Zsamba, Anne Marie
To: shharris@ci.milford.ct.us
Subject: 434 Boston Post Road - Exempt Modification Application
Date: Wednesday, April 22, 2020 8:20:00 AM
Attachments: T-Mobile-EM-842870-CT11018F-434 Boston Post Road-Milford_2.pdf

---

Dear Mr. Harris:

Attached please find T-Mobile's exempt modification application that is being submitted to the Connecticut Siting Council, today April 22, 2020.

In light of the present circumstances with Covid-19, The Council has advised that electronic notification of this filing is acceptable. If you could kindly confirm receipt. Thank you.

Best,
Anne Marie Zsamba

ANNE MARIE ZSAMBA
Network Real Estate Specialist
T: (201) 236-9224
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CROWN CASTLE
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065
CrownCastle.com

Exhibit A

Original Facility Approval

DATE FILED 10 Feb 00

RECEIPT # Exempt

FEE (INCLUDES CZC) $ see above

434

City of Milford, Connecticut

APPLICATION FOR ZONING PERMIT

#4430

INSTRUCTIONS: Fill out this application in ball point pen. A scaled plot plan in duplicate, based on a certified surveyor's plot plan must be submitted with this application showing the proposed or existing lot and building dimensions and the location of all buildings in relation to the street lines, side lot lines and rear lot lines.

ADDRESS OF PROPERTY Boston Post Road **ZONE** GB

MAP 64 **BLOCK** 430 **PARCEL** 6 **LOT NO.** _____ **ADDRESS MAP NO.** _____ **LOT SIZE** 2.73 acres

WIDTH OF STREET RIGHT OF WAY LESS THAN 50 FT.? YES ____ NO X **CORNER LOT?** YES ____ NO X

IS ANY PORTION OF THE LOT BELOW REGULATORY FLOOD ELEVATION? YES ____ NO X **CAM** YES ____ NO X

CITY WATER NA **PRIVATE WELL*** ____ **SEWER**** NA **SEPTIC***** ____ **ENGINEERING OFF STREET PERMIT #** _____

OWNER City of Milford → AT&T Wireless PCS, LLC **PHONE** (203) 871-4022

ADDRESS OF OWNER c/o Dan Garber 149 Water St Norwalk CT 06854
STREET CITY STATE ZIP CODE

PRESENT USE OF PROPERTY Police Station

PROPOSED CONSTRUCTION NEW X ADDITION _____ ALTERATION _____ REPAIR _____

SIZE/USE OF PROPOSED CONSTRUCTION Truss construction antenna - roof antenna hardware belongs to City total height antenna - with fencing with barbwire enclosure 8' 54'X 64' irregular shape with 20'X12' equip. bldg*

NO. OF STORIES NA **HEIGHT** 150' **REQUIRED PARKING SPACES** NC **LOT COVERAGE** _____%

DATE OF APPROVALS: **ZBA** NA **CASPR** _____ **SITE PLAN** 10 Jan 00 **SPECIAL PERMIT** _____

EXEMPTION ISSUED NA **SUBDIV. NAME** _____ **HISTORIC DIST. CERT.OF APPROPRIATENESS** ____

CERTIFICATION: *(WARNING)* I hereby certify that I am making this application on behalf of and with full authority of the owner of the property and that I am aware of the Zoning Regulations pertinent in this case and that the statements made herein are true and correct. *APPROVAL SHALL BE VALID FOR PLANS AS SUBMITTED.*

THE OCCUPANCY AND USE OF LAND AND BUILDINGS OR STRUCTURES PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY IS PROHIBITED

APPROVED BY:

Peter W. Cultrera ACP
Zoning Official

DATE ISSUED 10 Feb 00

APPLICANT:

NAME Peter H. Maxwell (Please Print)

SIGNATURE _____

ADDRESS URS Greiner Woodward Clyde, Two Enterprise Dr
Street

CITY Rocky Hill STATE CT ZIP 06706

TELEPHONE NO. (_____) _____

* **Permit required from State Health Dept. for apartments, subdivisions, trailer parks, shopping centers and public buildings.**

** **Permits for sewer connections are granted by Sewer Commission**

*** **Septic system approvals are granted by Health Department**

P&Z OFFICE - **WHITE** BUILDING DEPT. - **YELLOW** APPLICANT'S COPY - **PINK**

ZONPER7/96

RECEIVED
FEB 22 2000
Building Department
Milford, CT

* To be delivered to the site

From: Charles Corell [mailto:ccorell@ci.milford.ct.us]
Sent: Tuesday, February 23, 2016 2:53 PM
To: Goodall, Amanda
Cc: Joseph Griffith; Christine Angelica
Subject: RE: [Milford CT] Cell Tower-434 Boston Post Road

Good afternoon

We located the original file and plans from our archives, there are no conditions in these documents, there is a statement of special inspections and a final statement of special inspections for the construction. Let me know if this helps you at all

Thanks
Charlie Corell

Exhibit B

Property Card

City of Milford, CT

Property Listing Report

Map Block Lot	064 930 6 A	Account	023341

Property Information

Property Location	434 BOSTON POST RD
Owner	CITY OF MILFORD
Co-Owner	C/O AT&T MBLTY-TAX DEPT
Mailing Address	575 MOROSGO DR ATLANTA GA 30324
Land Use	434V CELL TOWER MDL-00
Land Class	I
Zoning Code	
Census Tract	

Neighborhood	D
Acreage	0
Utilities	All Public,Public Sewer
Lot Setting/Desc	
Additional Info	

Photo

Sketch

Primary Construction Details

Year Built		Bedrooms		Exterior Walls	
Stories		Full Bathrooms		Interior Walls	
Building Style		Half Bathrooms		Heating Type	
Building Use		Bath Style		Heating Fuel	
Building Condition		Kitchen Style		AC Type	
Floors		Roof Style		Gross Bldg Area	
Total Rooms		Roof Cover		Total Living Area	

Report Created On 4/21/2020

City of Milford, CT

Property Listing Report | Map Block Lot **064 930 6 A** | Account **023341**

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings		
Extras	0	
Improvements		
Outbuildings	450000	315000
Land	0	0
Total	450000	315000

Outbuilding and Extra Items

Type	Description
CEL TWR SITE	1 UNITS

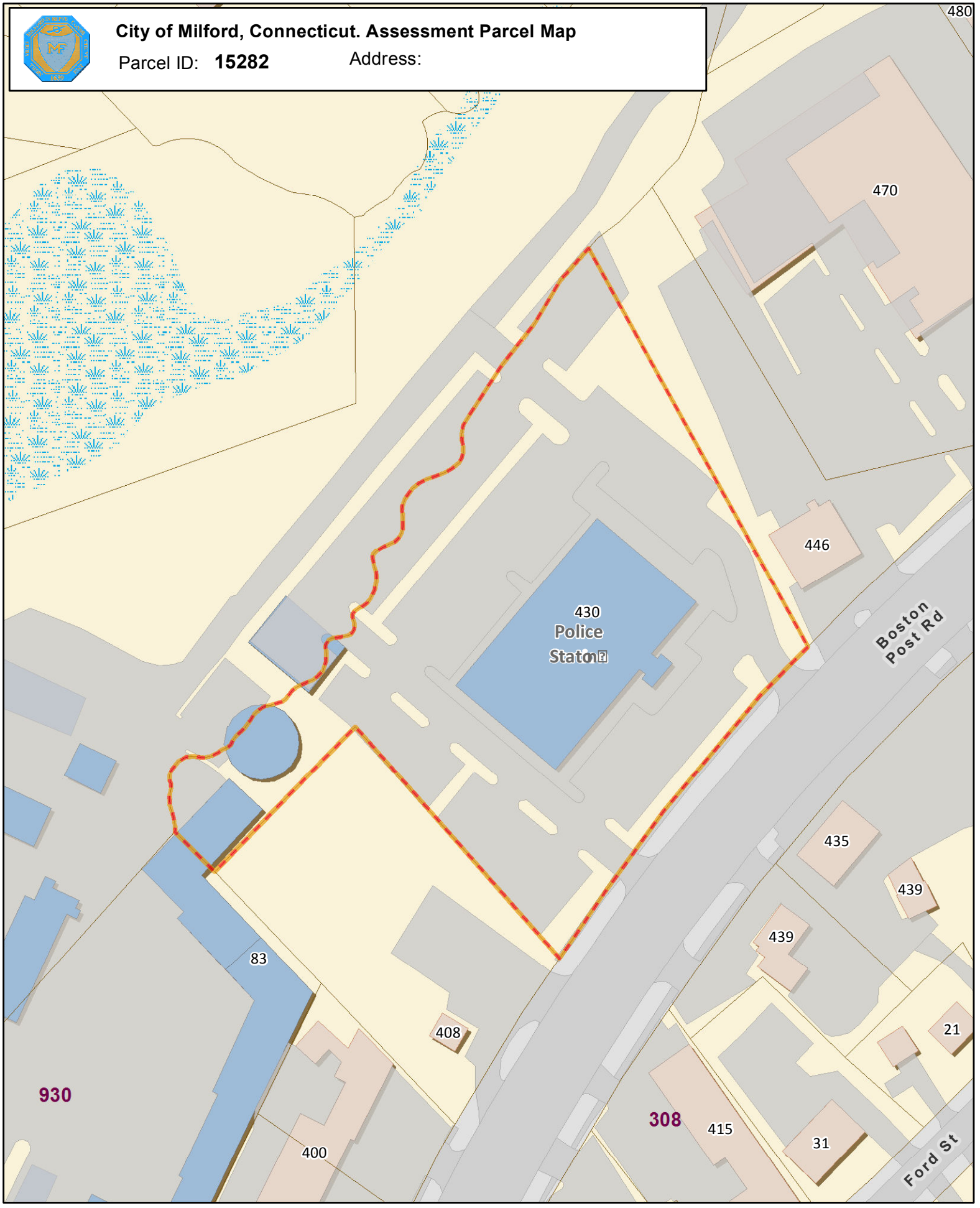
Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area		0

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
CITY OF MILFORD	02435/0430	11/22/1999	

Report Created On **4/21/2020**



1 inch = 100 feet

0 50 100 150 200 Feet

Map Produced: July 2016

Exhibit C

Construction Drawings

T-MOBILE SITE NAME:

MILFORD/I-95/X37/JCT.

T-MOBILE SITE NUMBER:

CT11018F

CROWN BU: 842870 / APP#: 481011

67D92DB CONFIGURATION

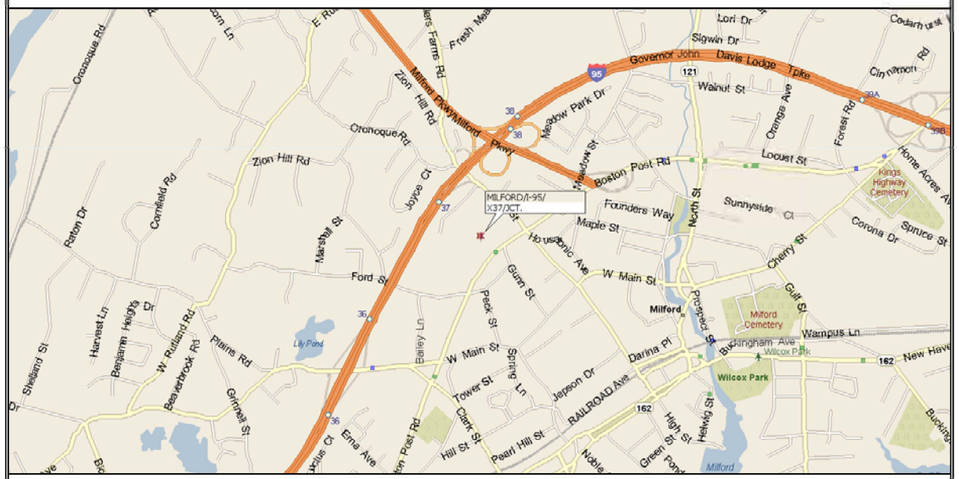
434 BOSTON POST ROAD
MILFORD, CT 06460

EXISTING 150'-0" SELF-SUPPORT TOWER

PROJECT SUMMARY

SITE TYPE:	EXISTING EQUIPMENT UPGRADE
SITE ADDRESS:	434 BOSTON POST ROAD MILFORD, CT 06460
JURISDICTION:	NEW HAVEN COUNTY
NAD83	
LATITUDE:	41.228548° N
LONGITUDE:	73.070141° W
TOWER OWNER:	CROWN CASTLE 3200 HORIZON DRIVE, SUITE 150 KING OF PRUSSIA, PA 19406 JASON SMITH (610) 635-3225
CUSTOMER/APPLICANT:	T-MOBILE 4 SYLVAN WAY PARSIPPANY, NJ 07054 (973) 397-4800
OCCUPANCY TYPE:	UNMANNED
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION

LOCATION MAP



NO SCALE

DRAWING INDEX

SHEET #	SHEET DESCRIPTION	REV. #
T-1	TITLE SHEET	0
A-1	OVERALL SITE PLAN	0
A-2	ANTENNA/CABLE SCHEDULE AND AZIMUTH PLANS	0
A-3	TOWER ELEVATION	0
A-4	ANTENNA AND RRU DETAILS	0
E-1	PANEL SCEHDULE AND ONE-LINE DIAGRAM	0

CONTACT INFORMATION

A&E FIRM:	B+T GROUP 1717 S. BOULDER, STE. 300 TULSA, OK 74119	ELECTRIC PROVIDER:	UNITED ILLUMINATING CO. 203-499-2000
CONTACT:	MIKE OAKES	TELCO PROVIDER:	OPTIMUM PHONE 855-267-8468
PHONE:	(918) 587-4630		

DRIVING DIRECTIONS

DEPART FROM BRADLEY INTERNATIONAL AIRPORT ON TERMINAL RD. ROAD NAME CHANGES TO BRADLEY FIELD CONNECTOR. ROAD NAME CHANGES TO CT-20 [BRADLEY FIELD CONNECTOR]. TAKE RAMP (RIGHT) ONTO I-91 [RICHARD P HORAN MEMORIAL HWY]. AT EXIT 17, TURN RIGHT ONTO RAMP. TAKE RAMP (LEFT) ONTO CT-15 [WILBUR CROSS PKWY]. AT EXIT 54, KEEP RIGHT ONTO RAMP. ROAD NAME CHANGES TO MILFORD PKWY. KEEP RIGHT ONTO RAMP. BEAR RIGHT ONTO MEADOW ST. TURN RIGHT ONTO US-1 [BOSTON POST RD]. TURN RIGHT ONTO LOCAL ROAD(S) AND ARRIVE AT MILFORD/I-95/X37/JCT.

A/E DOCUMENT REVIEW STATUS

TITLE	SIGNATURE	DATE
T-MOBILE PROP:		
T-MOBILE R.F. MGR.:		
T-MOBILE NetOps:		
T-MOBILE CONST. MGR.:		
INTERCONNECT:		
T-MOBILE SITE DEV. MGR.:		
PROPERTY OWNER:		
PLANNING:		

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

CODE COMPLIANCE

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

CODE TYPE	CODE
BUILDING/DWELLING	2018 CONNECTICUT STATE BUILDING CODE
STRUCTURAL	2018 CONNECTICUT STATE BUILDING CODE
MECHANICAL	2018 CONNECTICUT STATE BUILDING CODE
ELECTRICAL	NEC 2017

PROJECT DESCRIPTION

THE PROPOSED PROJECT INCLUDES:

- REMOVE (3) EXISTING ANTENNAS AT 114'-0".
- REMOVE (4) 1 5/8" COAX
- INSTALL (3) NEW ANTENNAS AT 114'-0".
- INSTALL (1) NEW 6x12 HCS FIBER.
- MODIFY EXISTING MOUNTS PER MOUNT ANALYSIS BY MASTEC NETWORK SOLUTIONS DATED 7/26/19.

DO NOT SCALE DRAWINGS

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

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

B+T GRP

CROWN CASTLE

T-Mobile

CT11018F
BU #: 842870
MILFORD/I-95/X37/JCT.
434 BOSTON POST ROAD
MILFORD, CT 06460
EXISTING 150'-0" SELF-SUPPORT TOWER

PROJECT NO:	091292.012.01
CHECKED BY:	RMC

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
0	8/15/19	RFC	CONSTRUCTION

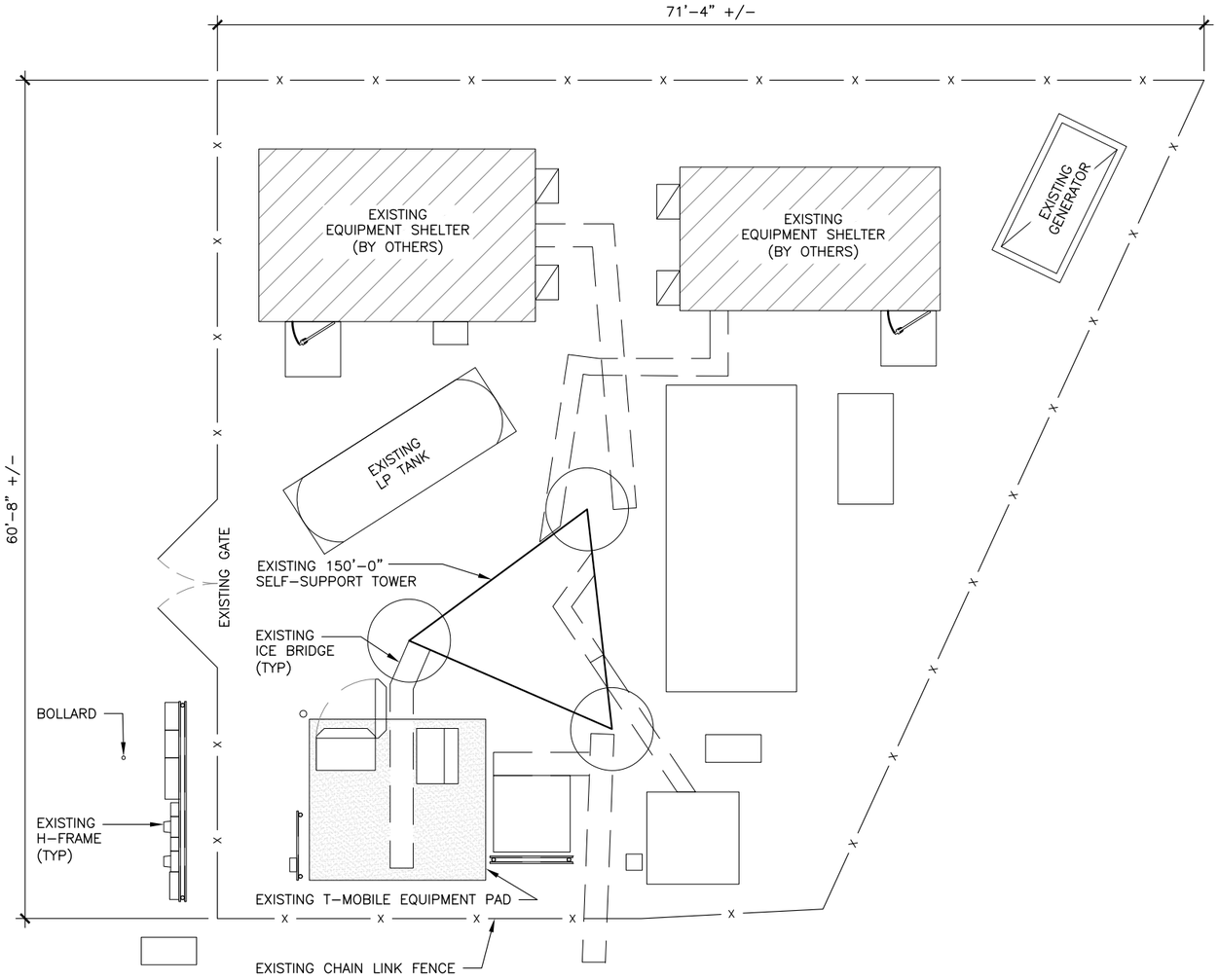
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/20

STATE OF CONNECTICUT
31627
LICENSED
PROFESSIONAL ENGINEER

8/15/19

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

SHEET NUMBER:	REVISION:
T-1	0



1 OVERALL SITE PLAN

SCALE: 0' 4' 8' 16' 32'

N

GENERAL NOTES:

1. SUBJECT PROPERTY IS SITUATED AT 434 BOSTON POST ROAD, MILFORD, CT 06460.

2. APPLICANT: T-MOBILE
A DELAWARE LIMITED LIABILITY COMPANY
4 SYLVAN WAY
PARSIPPANY, NEW JERSEY 07054
(973) 397-4800

   TOWER OWNER: CROWN CASTLE INTERNATIONAL

- THE APPLICANT IS TO UPDATE THEIR NETWORK BY INSTALLING THREE (3) NEW PANEL ANTENNAS AND ONE (1) ADDITIONAL CABLE MOUNTED ON AN EXISTING SELF-SUPPORT TOWER.

3. THIS FACILITY SHALL BE VISITED ON THE AVERAGE OF ONCE A MONTH FOR MAINTENANCE AND SHALL BE MONITORED FROM A REMOTE FACILITY.

4. THE EXISTING SITE IS LOCATED AT LATITUDE OF 41.228548° N± AND LONGITUDE OF 73.070141° W±. THE HORIZONTAL DATUM ARE IN TERMS OF NORTH AMERICAN DATUM OF 1983 (NAD 83).

5. THIS SET OF PLANS HAS BEEN PREPARED FOR THE PURPOSES OF MUNICIPAL AND AGENCY REVIEW AND APPROVAL. THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED AND EACH OF THE DRAWINGS HAVE BEEN REVISED TO INDICATED "ISSUED FOR CONSTRUCTION"

6. ALL MATERIALS, WORKMANSHIP, AND CONSTRUCTION FOR THE SITE IMPROVEMENTS SHOWN HEREON SHALL BE IN ACCORDANCE WITH:

   6.A. CURRENT PREVAILING MUNICIPAL AND/OR COUNTY SPECIFICATIONS, STANDARDS, AND REQUIREMENTS.
   6.B. CURRENT PREVAILING UTILITY COMPANY AUTHORITY SPECIFICATIONS, STANDARDS AND REQUIREMENTS.

7. THE CONTRACTOR SHALL NOTIFY B+T GROUP, P.A. IMMEDIATELY IF ANY FIELD-CONDITIONS ENCOUNTERED DIFFER FROM THOSE REPRESENTED HEREON, AND/OR IF SUCH CONDITIONS WOULD OR COULD RENDER THE DESIGNS SHOWN HEREON INAPPROPRIATE AND/OR INEFFECTIVE.

8. THE CONTRACTOR IS RESPONSIBLE TO PROTECT, REPAIR AND/OR REPLACE ANY DAMAGED STRUCTURES, UTILITIES OR LANDSCAPED AREA WHICH MAY BE DISTURBED DURING THE CONSTRUCTION OF THIS FACILITY.

9. THE CONSTRUCTION CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ALL CONSTRUCTION MEANS AND METHODS. THE CONSTRUCTION CONTRACTOR IS ALSO RESPONSIBLE FOR ALL JOB SITE SAFETY.

10. SITE INFORMATION SHOWN TAKEN FROM CROWN SITE PLANS AND FROM CROWN INSPECTION PHOTOS.

11. NO GUARANTEE IS MADE NOR SHOULD BE ASSUMED AS TO THE COMPLETENESS OR ACCURACY OF THE HORIZONTAL OR VERTICAL LOCATIONS. ALL PARTIES UTILIZING THIS INFORMATION SHALL FIELD VERIFY THE ACCURACY AND COMPLETENESS OF THE INFORMATION SHOWN PRIOR TO CONSTRUCTION ACTIVITIES.

12. ALL IMPROVEMENTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE TOWNSHIP ENGINEER WHO WILL BE GIVEN PROPER NOTIFICATION PRIOR TO THE START OF ANY CONSTRUCTION.

B+T GRP

CROWN CASTLE

T-Mobile

CT11018F
BU #: 842870
MILFORD/I-95/X37/JCT.
434 BOSTON POST ROAD
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EXISTING 150'-0" SELF-SUPPORT TOWER

PROJECT NO:	091292.012.01
CHECKED BY:	RMC

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B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/20

STATE OF CONNECTICUT
31627
LICENSED
PROFESSIONAL ENGINEER
8/15/19

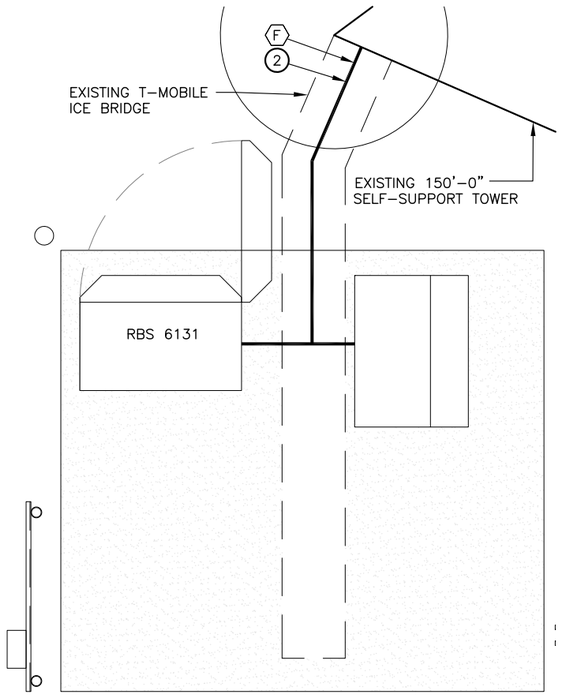
SHEET NUMBER:	REVISION:
A-1	0

LEGEND

EXISTING/DEMOLITION NOTES		INSTALLATION NOTES	
A	EXISTING ERICSSON AIR21 KRC118023-1_B2A_B4P ANTENNA TO REMAIN (TOTAL OF 3)	1	INSTALL ERICSSON AIR32 KRD901146-1_B66A_B2A (8 FT) ANTENNAS ON EXISTING MOUNT. PROVIDE NEW 2 7/8" OD SCH.40 PIPE MAST (LENGTH TO BE V.I.F) (TYP. OF 1 PER SECTOR, TOTAL OF 3)
B	EXISTING RFS APXVAARR24_43-U-NA20 ANTENNA TO REMAIN (TOTAL OF 3)	2	INSTALL (1) 6x12 HCS FIBER. RUN FROM EQUIPMENT TO ANTENNAS FOLLOWING EXISTING ROUTING
C	EXISTING ERICSSON AIR21 KRC118046-1_B2P_B4A ANTENNA TO BE REMOVED (TOTAL OF 3)		
D	EXISTING TMA TO REMAIN (TOTAL OF 3)		
E	EXISTING ERICSSON 4449 B12/B71 RRUs TO REMAIN (TOTAL OF 3)		
F	REMOVE (4) 1 5/8" COAX		

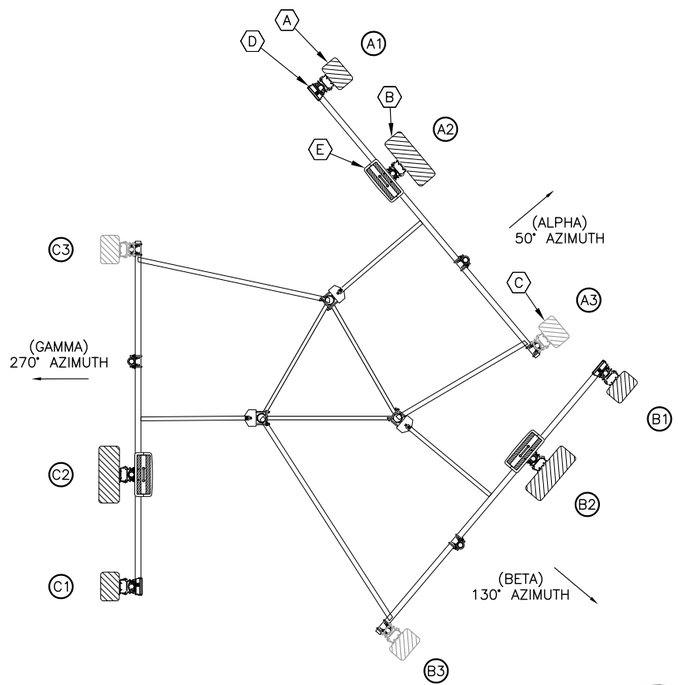
ANTENNA AND CABLE SCHEDULE

SECTOR	POSITION	EXISTING ANTENNAS	PROPOSED ANTENNA CONFIGURATION		E-TILT	M-TILT	ANTENNA CENTERLINE	TMA/RRU	CABLES	JUMPER TYPE	CABLE LENGTH
50° – ALPHA	A1	ERICSSON AIR21 KRC118023-1_B2A_B4P	GSM UMTS	–	0°	0°	114'-0"	1/0	(2) 1 5/8" COAX	DC/FIBER	162'-0"
	A2	RFS APXVAARR24_43-U-NA20	LTE	B71 B12	0°	0°		0/1	(1) 6x12 HCS FIBER (SHARED)	DC/FIBER & 1/2" COAX	162'-0"
	A3	**ERICSSON AIR32 KRD901146-1_B66A_B2A**	**LTE**	–	**0°**	**0°**		**0/0**	**(1) 6x12 HCS FIBER**	**DC/FIBER**	**162'-0"**
130° – BETA	B1	ERICSSON AIR21 KRC118023-1_B2A_B4P	GSM UMTS	–	0°	0°	114'-0"	1/0	(2) 1 5/8" COAX	DC/FIBER	162'-0"
	B2	RFS APXVAARR24_43-U-NA20	LTE	B71 B12	0°	0°		0/1	(1) 6x12 HCS FIBER	DC/FIBER & 1/2" COAX	162'-0"
	B3	**ERICSSON AIR32 KRD901146-1_B66A_B2A**	**LTE**	–	**0°**	**0°**		**0/0**	**(1) 6x12 HCS FIBER (SHARED)**	**DC/FIBER**	**162'-0"**
270° – GAMMA	C1	ERICSSON AIR21 KRC118023-1_B2A_B4P	GSM UMTS	–	0°	0°	114'-0"	1/0	(2) 1 5/8" COAX	DC/FIBER	162'-0"
	C2	RFS APXVAARR24_43-U-NA20	LTE	B71 B12	0°	0°		0/1	(1) 6x12 HCS FIBER	DC/FIBER & 1/2" COAX	162'-0"
	C3	**ERICSSON AIR32 KRD901146-1_B66A_B2A**	**LTE**	–	**0°**	**0°**		**0/0**	**(1) 6x12 HCS FIBER (SHARED)**	**DC/FIBER**	**162'-0"**



1 ENLARGED AREA PLAN

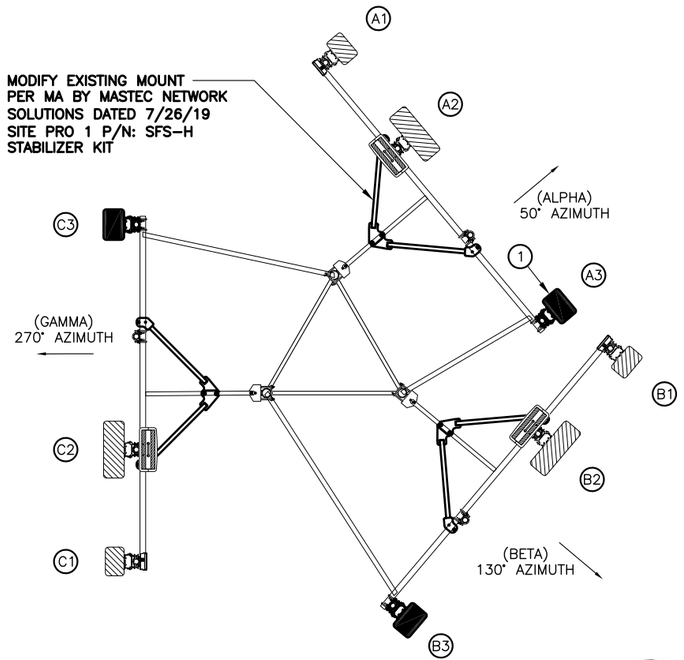
SCALE: 0' 1' 2' 4' 10'



2 EXISTING ANTENNA ORIENTATION

SCALE: 0' 1' 4' 8' 16'

N



3 PROPOSED ANTENNA ORIENTATION

SCALE: 0' 1' 4' 8' 16'

N

B+T GRP

CROWN CASTLE

T-Mobile

CT11018F
BU #: 842870

MILFORD/I-95/X37/JCT.

434 BOSTON POST ROAD
MILFORD, CT 06460

EXISTING 150'-0" SELF-SUPPORT TOWER

PROJECT NO:	091292.012.01
CHECKED BY:	RMC

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
0	8/15/19	RFC	CONSTRUCTION

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/20

STATE OF CONNECTICUT 31627 LICENSED PROFESSIONAL ENGINEER

8/15/19

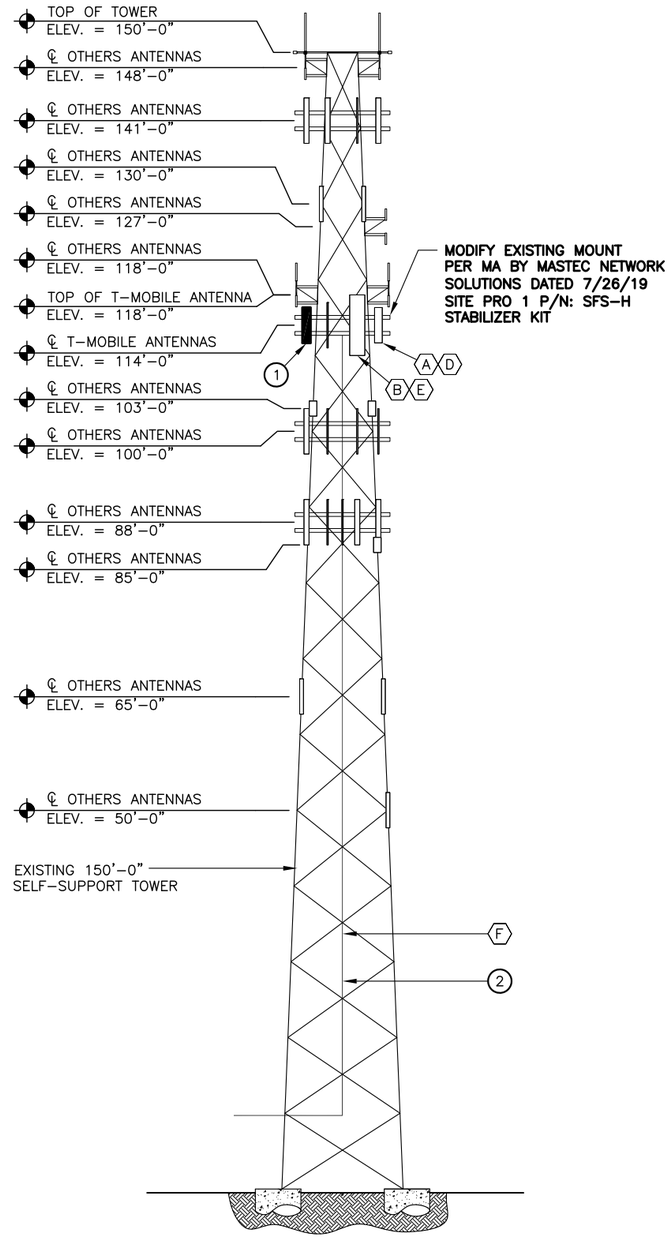
SHEET NUMBER:	REVISION:
A-2	0

LEGEND			
EXISTING/DEMOLITION NOTES		INSTALLATION NOTES	
A	EXISTING ERICSSON AIR21 KRC118023-1_B2A_B4P ANTENNA TO REMAIN (TOTAL OF 3)	1	INSTALL ERICSSON AIR32 KRD901146-1_B66A_B2A (8 FT) ANTENNAS ON EXISTING MOUNT. PROVIDE NEW 2 7/8" OD SCH.40 PIPE MAST (LENGTH TO BE V.I.F) (TYP. OF 1 PER SECTOR, TOTAL OF 3)
B	EXISTING RFS APXVAARR24_43-U-NA20 ANTENNA TO REMAIN (TOTAL OF 3)	2	INSTALL (1) 6x12 HCS FIBER. RUN FROM EQUIPMENT TO ANTENNAS FOLLOWING EXISTING ROUTING
C	EXISTING ERICSSON AIR21 KRC118046-1_B2P_B4A ANTENNA TO BE REMOVED (TOTAL OF 3)		
D	EXISTING TMA TO REMAIN (TOTAL OF 3)		
E	EXISTING ERICSSON 4449 B12/B71 RRUs TO REMAIN (TOTAL OF 3)		
F	REMOVE (4) 1 5/8" COAX		

EXISTING MOUNT TO BE MODIFIED PER MOUNT ANALYSIS BY MASTEC NETWORK SOLUTIONS DATED 7/26/19.

LEGEND:

- **NEW**
- EXISTING
- FUTURE



1 TOWER ELEVATION

SCALE: 0' 10' 20' 30' 40' 1"=20'

B+T GRP

CROWN CASTLE

T-Mobile

CT11018F
BU #: 842870

MILFORD/I-95/X37/JCT.

434 BOSTON POST ROAD
MILFORD, CT 06460

EXISTING 150'-0" SELF-SUPPORT TOWER

PROJECT NO:	091292.012.01
CHECKED BY:	RMC

ISSUED FOR:

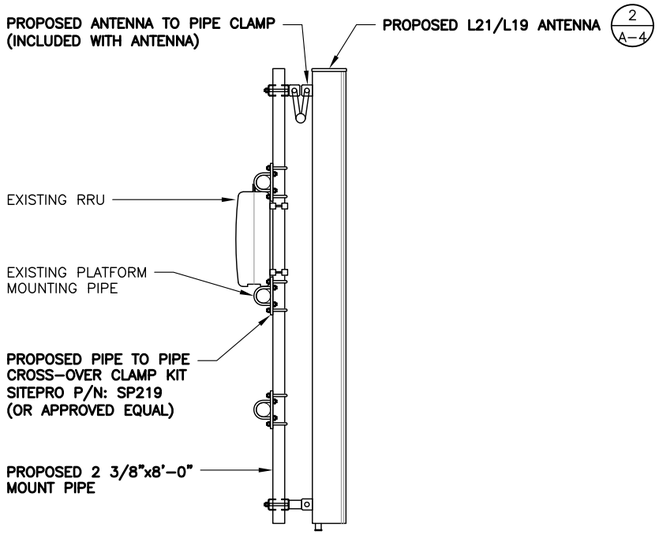
REV	DATE	DRWN	DESCRIPTION
0	8/15/19	RFC	CONSTRUCTION

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/20

STATE OF CONNECTICUT 31627 LICENSED PROFESSIONAL ENGINEER

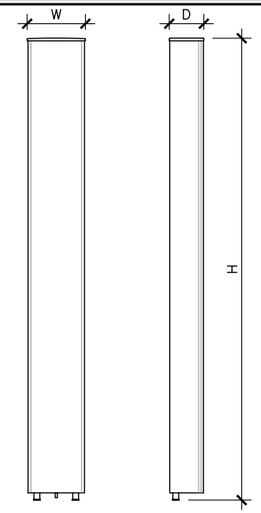
8/15/19

SHEET NUMBER:	REVISION:
A-3	0



1 PROPOSED L7/L6 ANTENNA & RRU MOUNTING DETAIL

SCALE: 3/8" = 1'-0"

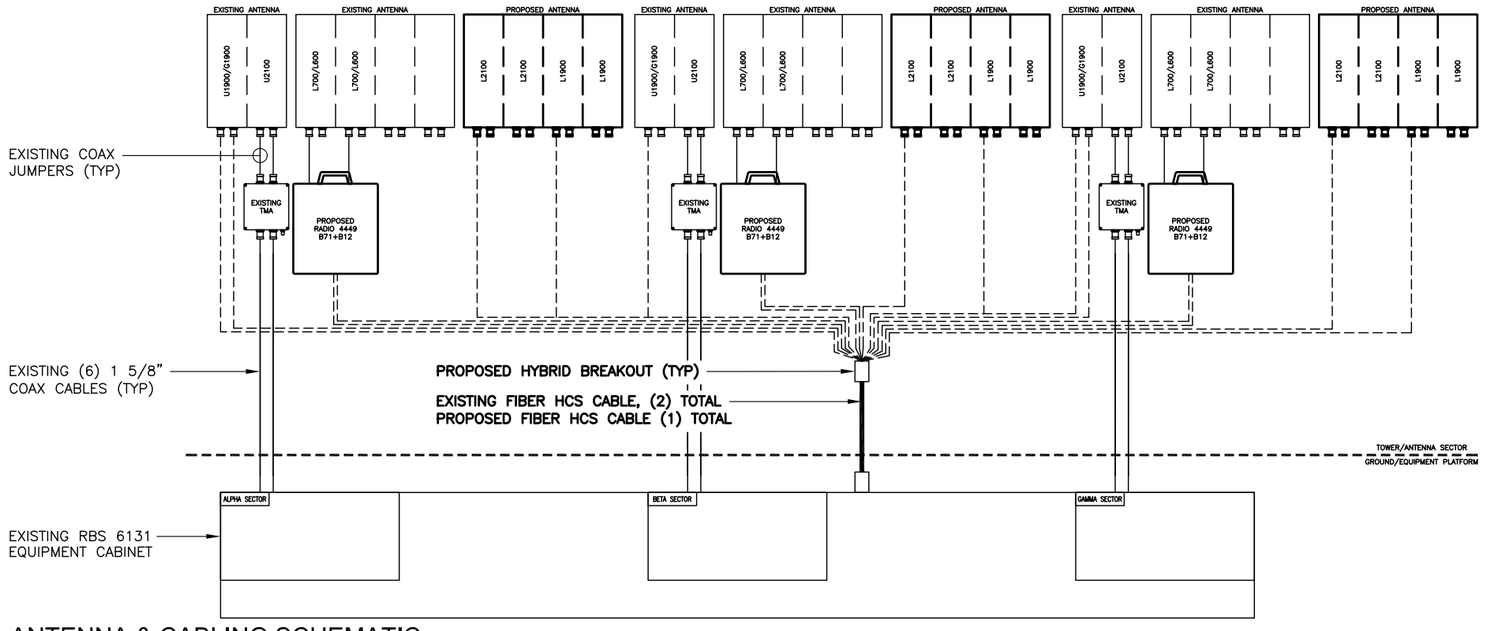


ANTENNA SPECS	
MANUFACTURER	ERICSSON
MODEL #	AIR32 KRD901146-1 _B66A_B2A
WIDTH	12.9"
DEPTH	8.7"
HEIGHT	56.6"
WEIGHT	132.2 LBS

2 L21/L19 ANTENNA DETAIL

SCALE: 3/8" = 1'-0"

NOTES:
1. TAG ALL EXISTING AND PROPOSED CABLES/JUMPERS PER T-MOBILE SPECIFICATIONS.
2. SEE RF SCHEDULE FOR CABLE AND JUMPER LENGTHS.
3. REFER TO ANTENNA ORIENTATION ON SHEET A-2 FOR EXACT ANTENNA POSITIONING.



4 ANTENNA & CABLING SCHEMATIC

SCALE: N.T.S.

B+T GRP

CROWN CASTLE

T-Mobile

CT11018F
BU #: 842870
MILFORD/I-95/X37/JCT.
434 BOSTON POST ROAD
MILFORD, CT 06460
EXISTING 150'-0" SELF-SUPPORT TOWER

PROJECT NO: 091292.012.01
CHECKED BY: RMC

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
0	8/15/19	RFC	CONSTRUCTION

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/20

STATE OF CONNECTICUT
31627
LICENSED
PROFESSIONAL ENGINEER
8/15/19

SHEET NUMBER: A-4
REVISION: 0

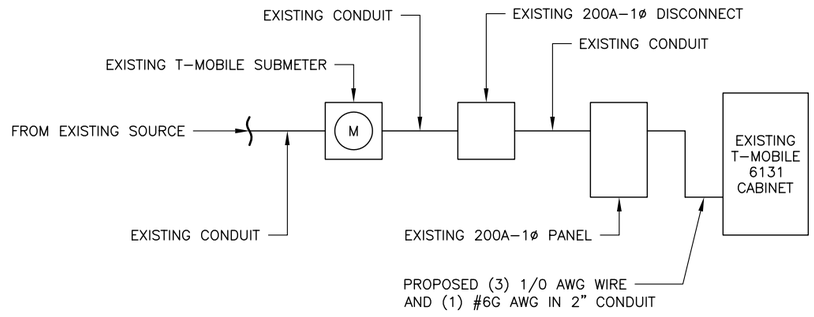
FINAL PANEL SCHEDULE							
LOAD	POLES	AMPS	BUS L1	BUS L2	AMPS	POLES	LOAD
SPARE	1	20A	1	2	40A	2	BTS
EQUIPMENT	2	50A	3	4			
			5	6	20A	1	GFI BY PANEL
LED FLOOD	1	20A	7	8	125A	2	6131

RATED VOLTAGE: ■120/240 ☐_____. 1 PHASE, 3 WIRE		BRANCH POLES: ☐12 ☐24 ■30 ☐42	APPROVED MF'RS
RATED AMPS: ☐100 ■200 ☐400 ☐_____.		CABINET: ■SURFACE ☐FLUSH	NEMA ☐1 ■3R ☐4X
☐MAIN LUGS ONLY	MAIN 200 AMPS ■BREAKER ☐FUSED SWITCH	■HINGED DOOR	■KEYED DOOR LATCH
☐FUSED ■CIRCUIT BREAKER	BRANCH DEVICES	☐_____ TO BE GFCI BREAKERS	FULL NEUTRAL BUS / GROUND BAR
ALL BREAKERS MUST BE RATED TO INTERRUPT A SHORT CIRCUIT ISC OF 10,000 AMPS SYMMETRICAL			

REPLACE EXISTING WIRES FOR EXISTING 6131 CABINET WITH (3) 1/0 AWG THWN (COPPER) AND (1) #6G AWG. MINIMUM CONDUIT SIZE TO BE 2".
IF 125A BREAKER WILL NOT PROPERLY FIT IN EXISTING PANEL, REPLACE (E) PANEL WITH SQUARE D PANEL QO12040M200RB (OR APPROVED EQUAL).
UPGRADE FEEDER WIRES TO MEET AMPACITY IF NEW PANEL IS REQUIRED.
FINAL PANEL DESIGN AND CALCULATIONS FOR WIRE SIZE WERE BASED OFF OF EXISTING PHOTOS

1 FINAL T-MOBILE PANEL DETAIL

SCALE: N.T.S.



2 ONE-LINE DIAGRAM

SCALE: N.T.S.

B+T GRP

CROWN CASTLE

T···Mobile

CT11018F
BU #: 842870
MILFORD/I-95/X37/JCT.
434 BOSTON POST ROAD
MILFORD, CT 06460
EXISTING 150'-0" SELF-SUPPORT TOWER

PROJECT NO: 091292.012.01
CHECKED BY: RMC

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
0	8/15/19	RFC	CONSTRUCTION

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/20

STATE OF CONNECTICUT 31627 LICENSED PROFESSIONAL ENGINEER
8/15/19

SHEET NUMBER: E-1
REVISION: 0

Exhibit D

Structural Analysis Report

Date: **August 02, 2019**

Amanda D Brown
Crown Castle
3530 Toringdon Way
Charlotte, NC 28277

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

Subject:	**Structural Analysis Report**	
Carrier Designation:	***T-Mobile* Co-Locate**	
	Carrier Site Number:	CT11018F
	Carrier Site Name:	Milford/ I-95/ X37/ Jct.
Crown Castle Designation:	**Crown Castle BU Number:**	842870
	Crown Castle Site Name:	Milford
	Crown Castle JDE Job Number:	559276
	Crown Castle Work Order Number:	1761951
	Crown Castle Order Number:	481011 Rev. 0
Engineering Firm Designation:	**B+T Group Project Number:**	91292.014.01
Site Data:	**434 Boston Post Road, Milford, New Haven County, CT** **Latitude *41° 13' 42.69"*, Longitude *-73° 4' 12.47"*** **150 Foot - Self Support Tower**	

Dear Amanda D Brown,

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

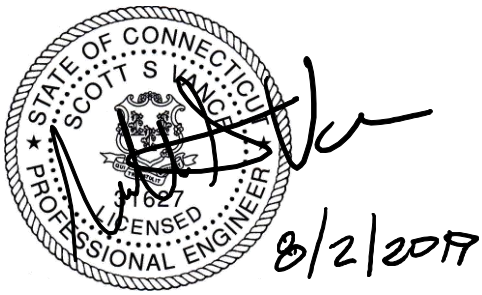
The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration **Sufficient Capacity – 79.6%**

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

Structural analysis prepared by: Johnique Williams

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 150 ft. Self-Support tower designed by PiRod Inc. in March of 2000. This tower has been modified by GPD Group in 2012 and those modifications were incorporated in this analysis.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
114.0	114.0	3	Site Pro1	SFS-H Stabilizer Kit	6 3	1-5/8 1-3/8
		1	--	Sector Mount [SM 307-3]		
	112.0	3	Ericsson	AIR 32 B2A/B66AA		
		3	Ericsson	ERICSSON AIR 21 B2A B4P		
		3	Ericsson	KRY 112 71		
		3	Ericsson	RADIO 4449 B12/B71		
		3	RFS Celwave	APXVAARR24_43-U-NA20		

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)
150.0	160.0	2	Sinclair	SC226-SFXSNM	6 1	5/8 3/8
	151.0	2	Radiowaves	HPLPD1-18		
	150.0	1	--	Platform Mount [LP 405-1]		
141.0	141.0	3	Andrew	SBNHH-1D65A	12 4 3 2	1-5/8 5/8 3/8 7/8
		3	CCI Antennas	OPA-65R-LCUU-H4		
		1	Commscope	WCS-IMFQ-AMT		
		3	Ericsson	RRUS 11 B2		
		3	Ericsson	RRUS 32 B2		
		3	Ericsson	RRUS 32 B30		
		3	Ericsson	RRUS 4426 B66		
		3	Ericsson	RRUS 4478 B14		
		3	Ericsson	RRUS 4478 B5		
		6	Kaelus	DBCT108F1V92-1		
		3	Kathrein	80010964		
		3	Powerwave Tech.	7020.00		
		3	Powerwave Tech.	7770.00		
		6	Powerwave Tech.	LGP21401		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		3	Raycap	DC6-48-60-18-8F		
		1	--	Pipe Mount [PM 601-3]		
		1	--	Sector Mount [SM 410-3]		
130.0	130.0	2	Terrawave	M5160160P10006	2	7/8
		2	--	Side Arm Mount [SO 301-1]		
118.0	128.0	1	Sinclair	SC229-SFXLDF	2	7/8
		1	Sinclair	SC320		
	118.0	2	--	Side Arm Mount [SO 306-1]		
103.0	103.0	3	Alcatel Lucent	800MHZ 2X50W RRH W/FILTER	--	--
		3	Alcatel Lucent	PCS 1900MHZ 2X40W		
		1	--	Pipe Mount [PM 601-3]		
100.0	103.0	3	Alcatel Lucent	RRH2X50-800	3 1	1-1/4 7/8
		3	Alcatel Lucent	TD-RRH8X20-25		
	100.0	3	Commscope	DT465B-2XR		
		3	Rfs Celwave	APXVSPP18-C-A20		
		3	Site Pro	STK-U Stiff Arm Kit		
		1	--	Sector Mount [SM 406-3]		
88.0	90.0	6	Antel	BXA-171063/8CF	12	1-5/8
		6	Antel	LPA-80063/4CF		
		1	Rfs Celwave	DB-T1-6Z-8AB-0Z		
		6	Rfs Celwave	FD9R6004/2C-3L		
		3	Swedcom	SWCP 2x5514		
	88.0	1	--	Pipe Mount [PM 601-3]		
		1	--	Sector Mount [SM 408-3]		
65.0	65.0	3	Rfs Celwave	APXV18-206517S-C	6	1-5/8
50.0	50.0	1	Pctel	GPS-TMG-HR-26NCM	1	1/2

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
Online Order Information	T-Mobile Co-Locate, Rev. 0	481011	CCI Sites
Tower Manufacturer Drawing	PiRod Inc., Eng. File No. A-116849-Q-92250	4480661	CCI Sites
Mount Reinforcement Drawing	MasTec Network Solutions, Project No. 19114-MOD1	8556514	CCI Sites
Tower Modification Drawing	GPD Group, Date: 03/27/2012	4713244	CCI Sites
Post Modification Inspection	GPD Group, Date: 10/23/2012	4713239	CCI Sites
Foundation Drawing	PiRod Inc., Eng. File No. A-116849-Q-92250	4480652	CCI Sites
Geotech Report	Clarence Welti Associates, Date: 01/17/2000	5359323	CCI Sites
Exposure Category Determination	Crown Castle, Date: 11/13/2015	5974782	CCI Sites
Antenna Configuration	Crown CAD Package	Date: 06/26/2019	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 Castle 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	150 - 147.583	Leg	1 1/2	1	-3.754	53.917	7.0	Pass
T2	147.583 - 130	Leg	1 1/2	15	-26.679	53.917	49.5	Pass
T3	130 - 110	Leg	2	72	-69.345	117.290	59.1	Pass
T4	110 - 100	Leg	Pirod 105244	136	-75.796	149.618	50.7	Pass
T5	100 - 80	Leg	Pirod 105216	148	-115.377	149.618	77.1	Pass
T6	80 - 60	Leg	Pirod 105217	169	-170.921	225.602	75.8	Pass
T7	60 - 40	Leg	Pirod 105218	187	-212.166	315.715	67.2	Pass
T8	40 - 20	Leg	Pirod 105218	202	-251.350	315.715	79.6	Pass
T9	20 - 0	Leg	Pirod 105219	217	-287.671	419.861	68.5	Pass
T1	150 - 147.583	Diagonal	3/4	11	-1.303	5.577	23.4	Pass
T2	147.583 - 130	Diagonal	3/4	26	-3.134	5.123	61.2	Pass
T3	130 - 110	Diagonal	7/8	80	-4.948	8.211	60.3	Pass
T4	110 - 100	Diagonal	L2 1/2x2 1/2x3/16	142	-8.621	18.455	46.7 65.1 (b)	Pass
T5	100 - 80	Diagonal	L2 1/2x2 1/2x3/8	157	-15.285	27.043	56.5 57.2 (b)	Pass
T6	80 - 60	Diagonal	L3x3x3/16	177	-8.096	20.182	40.1 66.5 (b)	Pass
T7	60 - 40	Diagonal	L3x3x3/16	193	-8.101	16.112	50.3 65.6 (b)	Pass
T8	40 - 20	Diagonal	L3x3x5/16	205	-8.807	20.744	42.5	Pass
T9	20 - 0	Diagonal	L3x3x5/16	220	-10.923	17.119	63.8	Pass
T2	147.583 - 130	Horizontal	7/8	35	-0.345	5.364	6.4	Pass
T3	130 - 110	Horizontal	3/4	127	-0.800	2.691	29.7	Pass
T1	150 - 147.583	Top Girt	5x1/2	6	-0.897	10.158	8.8	Pass
T2	147.583 - 130	Top Girt	7/8	17	-0.125	6.213	2.0	Pass
T3	130 - 110	Top Girt	7/8	74	-1.448	5.122	28.3	Pass
T4	110 - 100	Top Girt	L3x3x3/16	137	1.010	30.113	3.4 8.2 (b)	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T5	100 - 80	Top Girt	L3x3x3/16	150	8.392	30.113	27.9 68.4 (b)	Pass
T6	80 - 60	Top Girt	L3x3x3/16	170	-7.045	18.645	37.8 70.2 (b)	Pass
T2	147.583 - 130	Bottom Girt	7/8	19	-1.363	5.073	26.9	Pass
T3	130 - 110	Bottom Girt	7/8	76	-1.667	4.166	40.0	Pass
T5	100 - 80	Mid Girt	L3x3x3/16	152	-9.712	22.249	43.7	Pass
							Summary	
						Leg (T8)	79.6	Pass
						Diagonal (T6)	66.5	Pass
						Horizontal (T3)	29.7	Pass
						Top Girt (T6)	70.2	Pass
						Bottom Girt (T3)	40.0	Pass
						Mid Girt (T5)	43.7	Pass
						Bolt Checks	70.2	Pass
						Rating =	79.6	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	Base	22.6	Pass
1	Base Foundation (Structure)	Base	15.2	Pass
1	Base Foundation (Soil Interaction)	Base	42.1	Pass

Structure Rating (max from all components) =	**79.6%**

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

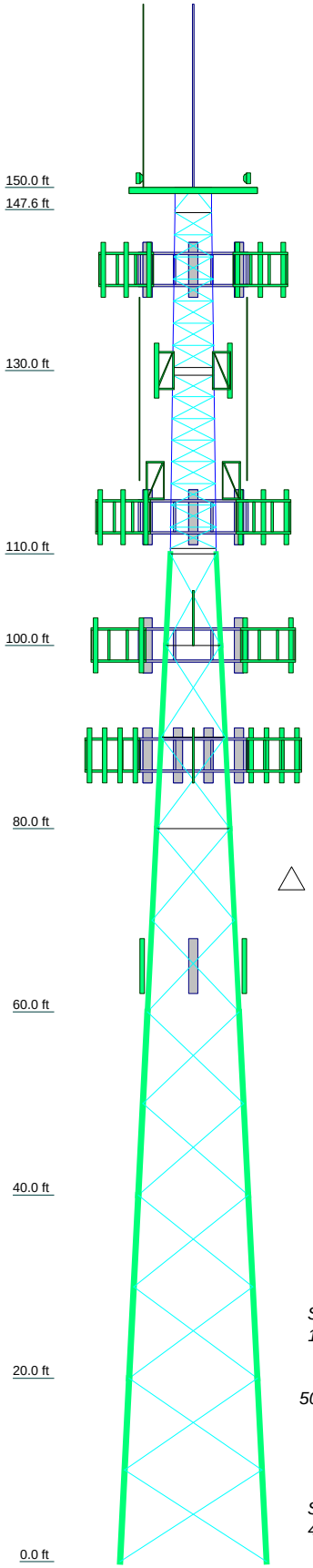
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section		T1	T2	T3	T4	T5	T6	T7	T8	T9	
Legs			SR 1 1/2	SR 2	Pirod 105244	Pirod 105216	Pirod 105217	Pirod 105218	Pirod 105219		
Leg Grade			A572-50								
Diagonals			SR 3/4	SR 7/8	A	L2 1/2x2 1/2x3/8	L3x3x3/16	L3x3x5/16			
Diagonal Grade			A572-50				A36				
Top Girts	B					L3x3x3/16		N.A.			
Mid Girts				N.A.		L3x3x3/16		N.A.			
Bottom Girts	C			SR 7/8			N.A.				
Horizontals	C		SR 7/8	SR 3/4			N.A.				
Face Width (ft)	4	4.0625		4.5	5	6	8	10	12	14	16
# Panels @ (ft)		8 @ 2.41667		8 @ 2.36458				11 @ 10			
Weight (K)	0.2	0.7		1.3	1.1	2.6	2.6	3.0	3.5	4.2	19.2



SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L2 1/2x2 1/2x3/16	C	N.A.
B	5x1/2		

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 New Haven County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0'
8. TIA-222H Annex S
9. TOWER RATING: 79.6%

ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 298 K
SHEAR: 31 K

UPLIFT: -262 K
SHEAR: 28 K

AXIAL 137 K
SHEAR 13 K *MOMENT 1146 kip-ft*

TORQUE 5 kip-ft
50 mph WIND - 1.500 in ICE

AXIAL 53 K
SHEAR 47 K *MOMENT 3889 kip-ft*

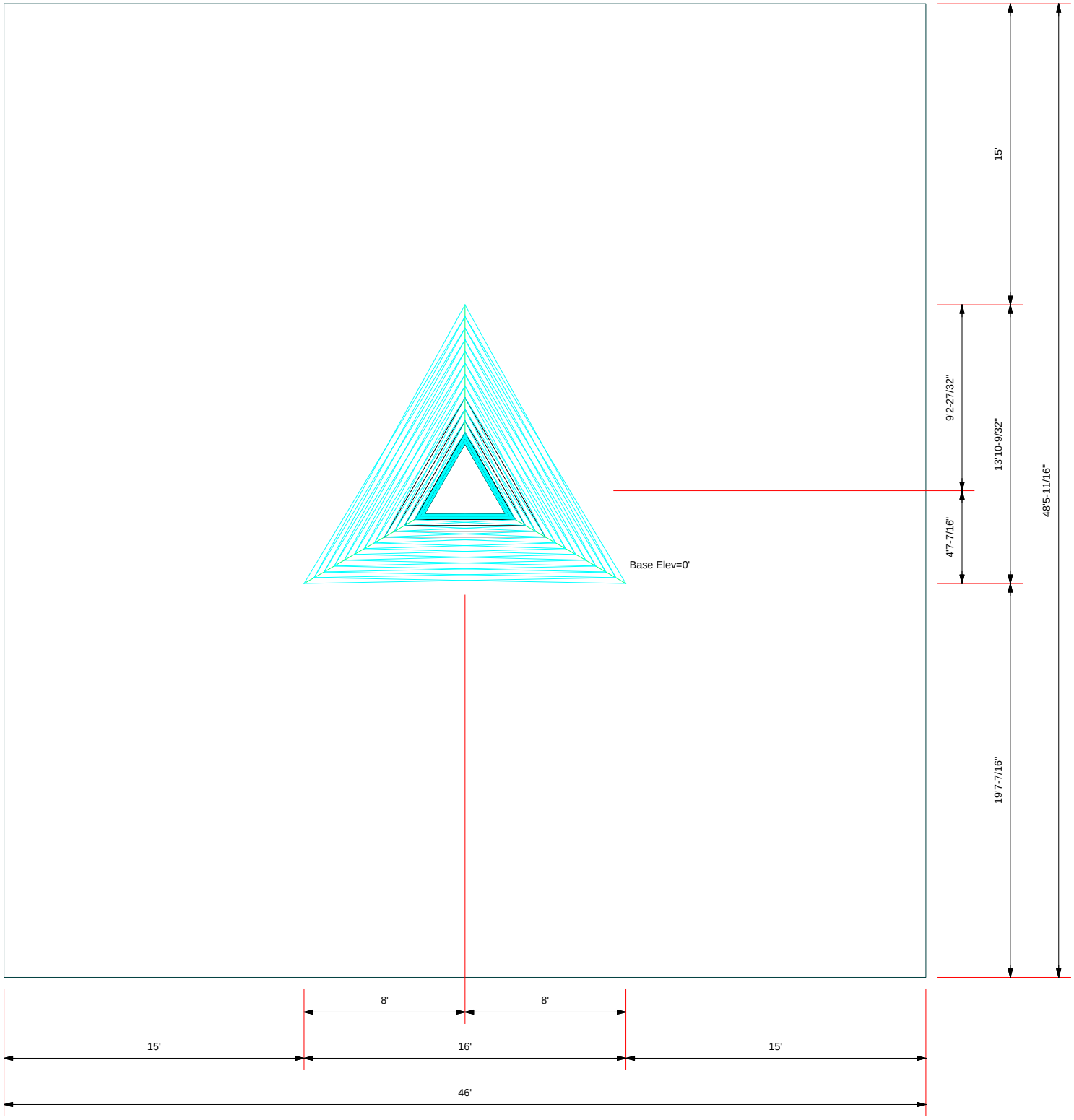
TORQUE 25 kip-ft
REACTIONS - 125 mph WIND

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

Job: 91292.014.01 - MILFORD, CT (BU# 842870			
Project:			
Client: Crown Castle	Drawn by: Suhas Poojary	App'd:	
Code: TIA-222-H	Date: 08/02/19	Scale: NTS	
Path:		Dwg No. E-1	

Plot Plan

Total Area - 0.05 Acres

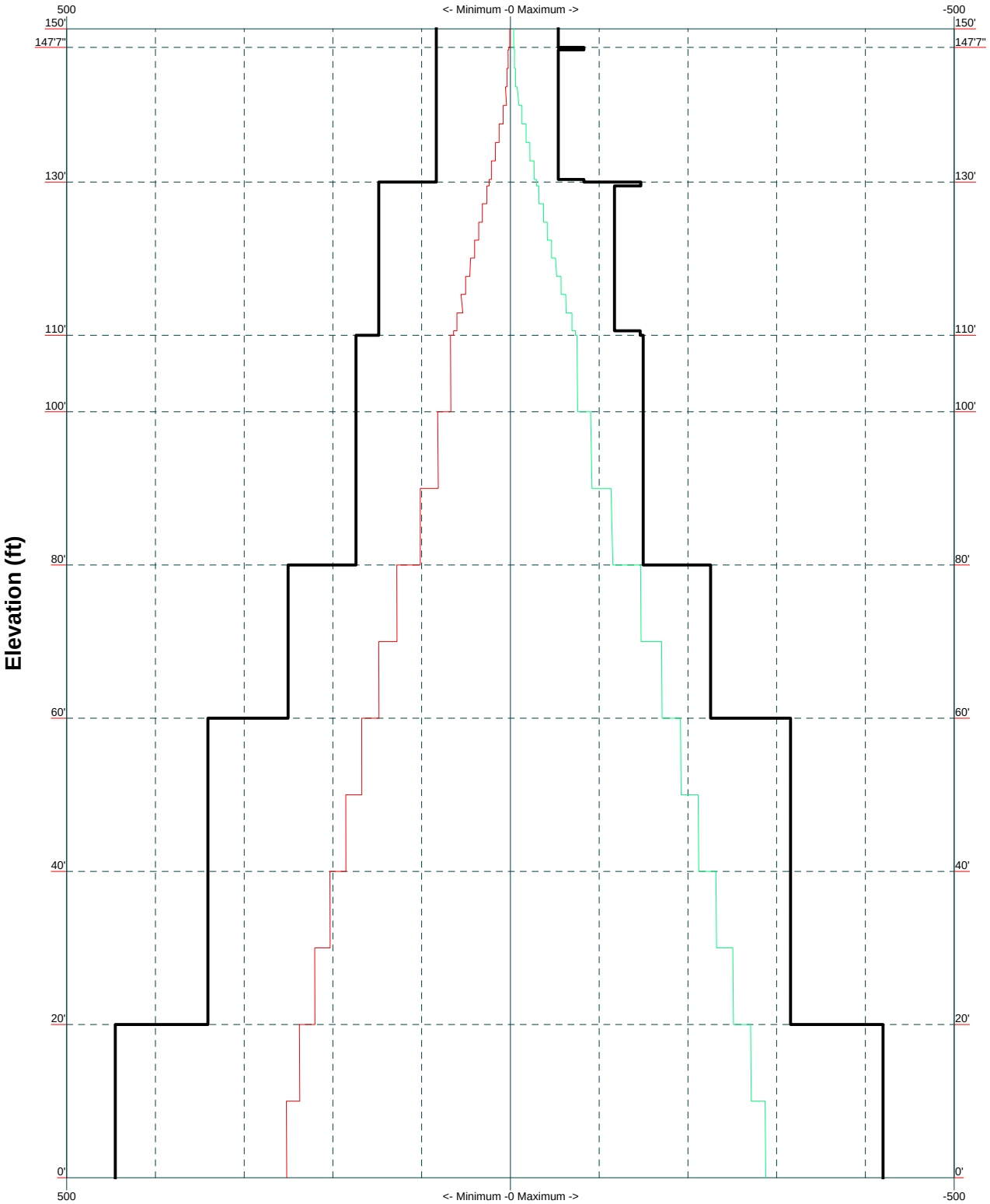


B+T Group
1717 S.Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 91292.014.01 - MILFORD, CT (BU# 842870			
Project:			
Client: Crown Castle	Drawn by: Suhas Poojary	App'd:	
Code: TIA-222-H	Date: 08/02/19	Scale: NTS	
Path:		Dwg No. E-2	

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

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



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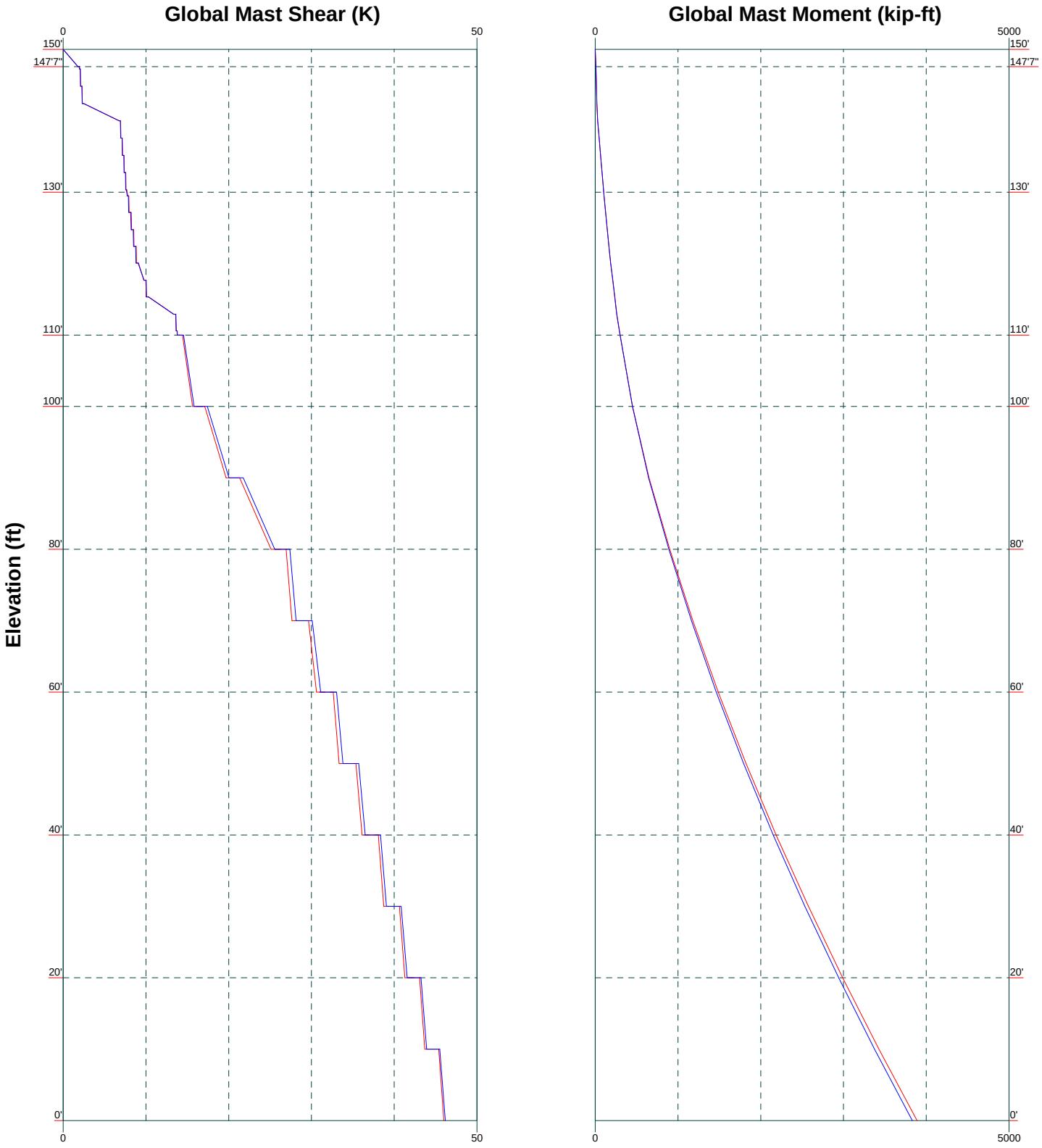
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 91292.014.01 - MILFORD, CT (BU# 842870			
Project:			
Client: Crown Castle	Drawn by: Suhas Poojary	App'd:	
Code: TIA-222-H	Date: 08/02/19	Scale: NTS	
Path:		Dwg No. E-3	

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

Maximum Values

Vx Vz Mx Mz

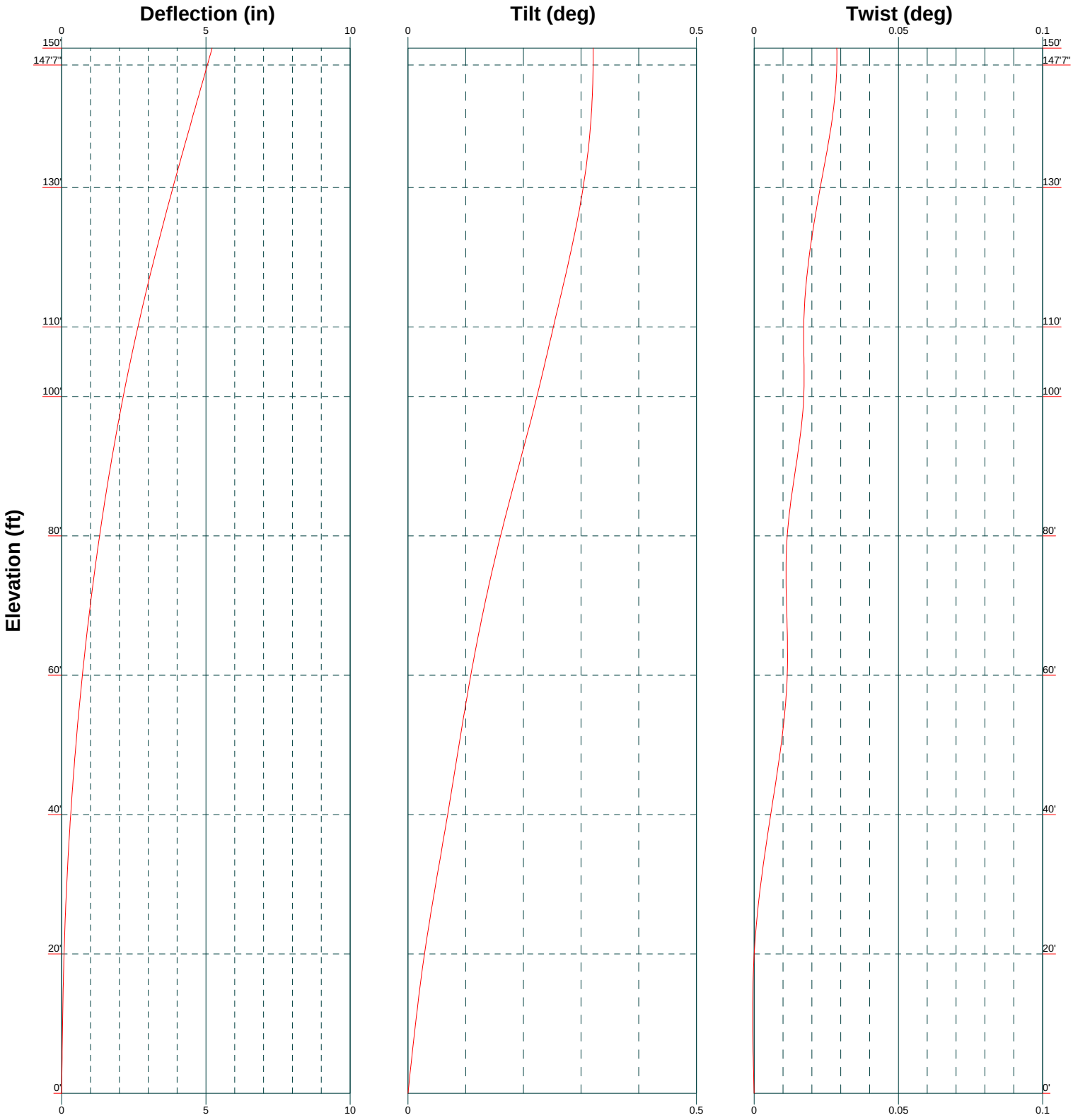


B+T Group
1717 S.Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 91292.014.01 - MILFORD, CT (BU# 842870			
Project:			
Client: Crown Castle	Drawn by: Suhas Poojary	App'd:	
Code: TIA-222-H	Date: 08/02/19	Scale: NTS	
Path:		Dwg No. E-4	

TIA-222-H - Service - 60 mph

Maximum Values



B+T GRP

B+T Group
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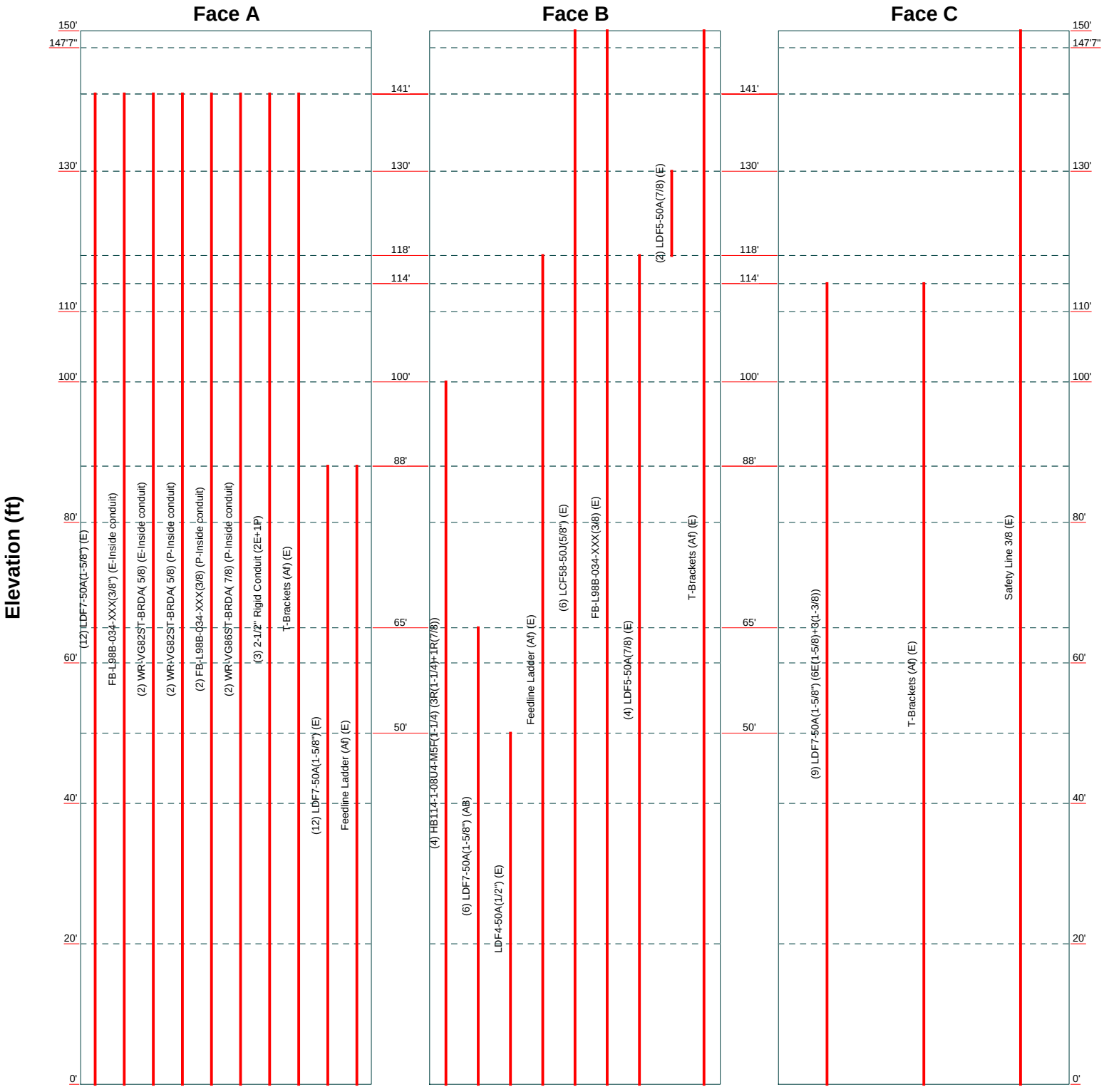
Job: *91292.014.01 - MILFORD, CT (BU# 842870*			
Project:			
Client: Crown Castle	Drawn by: Suhas Poojary	App'd:	
Code: TIA-222-H	Date: 08/02/19	Scale: NTS	
Path:		Dwg No. E-5	

Feed Line Distribution Chart
0' - 150'

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



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Job: 91292.014.01 - MILFORD, CT (BU# 842870			
Project:			
Client: Crown Castle	Drawn by: Suhas Poojary	App'd:	
Code: TIA-222-H	Date: 08/02/19	Scale: NTS	
Path:		Dwg No. E-7	

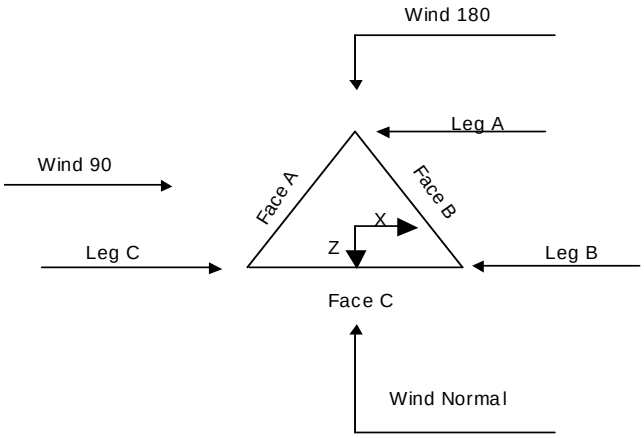
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 150' above the ground line.
The base of the tower is set at an elevation of 0' above the ground line.
The face width of the tower is 4' at the top and 16' at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower is located in New Haven County, Connecticut.
Tower base elevation above sea level: 68'.
Basic wind speed of 125 mph.
Risk Category II.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0'.
Nominal ice thickness of 1.500 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 60 mph.
TIA-222H 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	150'-147'7"			4'	1	2'5"
T2	147'7"-130'			4'3/4"	1	17'7"
T3	130'-110'			4'6"	1	20'
T4	110'-100'			5'	1	10'
T5	100'-80'			6'	1	20'
T6	80'-60'			8'	1	20'
T7	60'-40'			10'	1	20'
T8	40'-20'			12'	1	20'
T9	20'-0'			14'	1	20'

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	150'-147'7"	2'5"	K Brace Down	No	Yes	0.000	0.000
T2	147'7"-130'	2'5"	X Brace	No	Steps	4.000	4.000
T3	130'-110'	2'4-3/8"	X Brace	No	Steps	6.000	7.000
T4	110'-100'	10'	X Brace	No	No	0.000	0.000
T5	100'-80'	10'	X Brace	No	No	0.000	0.000
T6	80'-60'	10'	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
T7	60'-40'	10'	X Brace	No	No	0.000	0.000
T8	40'-20'	10'	X Brace	No	No	0.000	0.000
T9	20'-0'	10'	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 150'-147'7"	Solid Round	1 1/2	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T2 147'7"-130'	Solid Round	1 1/2	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T3 130'-110'	Solid Round	2	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T4 110'-100'	Truss Leg	Pirod 105244	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T5 100'-80'	Truss Leg	Pirod 105216	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/8	A36 (36 ksi)
T6 80'-60'	Truss Leg	Pirod 105217	A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T7 60'-40'	Truss Leg	Pirod 105218	A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T8 40'-20'	Truss Leg	Pirod 105218	A572-50 (50 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)
T9 20'-0'	Truss Leg	Pirod 105219	A572-50 (50 ksi)	Equal Angle	L3x3x5/16	A36 (36 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
T2 147'7"-130'	Solid Round	7/8	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T3 130'-110'	Solid Round	7/8	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T4 110'-100'	Equal Angle	L3x3x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T5 100'-80'	Equal Angle	L3x3x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T6 80'-60'	Equal Angle	L3x3x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 150'-147'7"	None	Solid Round		A36 (36 ksi)	Flat Bar	5x1/2	A36 (36 ksi)
T2 147'7"-130'	None	Solid Round		A36 (36 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T3 130'-110'	None	Solid Round		A36 (36 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T5 100'-80'	1	Equal Angle	L3x3x3/16	A36 (36 ksi)	Equal 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 150'-147'7"	0.000	0.000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T2 147'7"-130'	0.000	0.000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T3 130'-110'	0.000	0.000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T4 110'-100'	0.000	0.000	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T5 100'-80'	0.000	0.000	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T6 80'-60'	0.000	0.000	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T7 60'-40'	0.000	0.000	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T8 40'-20'	0.000	0.000	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T9 20'-0'	0.000	0.000	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 150'-147'7"	No	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 147'7"-130'	No	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 130'-110'	No	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 110'-100'	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 Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T5 100'-80'	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T6 80'-60'	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T7 60'-40'	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T8 40'-20'	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T9 20'-0'	Yes	No	1	1	1	1	1	1	1	1
				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	Truss-Leg K Factors: Truss-Legs Used As Leg Members — Leg Panels	X Brace Diagonals	Z Brace Diagonals	Truss-Legs Used As Inner Members — Leg Panels	X Brace Diagonals	Z Brace Diagonals
T4 110'-100'	1	0.5	0.85	1	0.5	0.85
T5 100'-80'	1	0.5	0.85	1	0.5	0.85
T6 80'-60'	1	0.5	0.85	1	0.5	0.85
T7 60'-40'	1	0.5	0.85	1	0.5	0.85
T8 40'-20'	1	0.5	0.85	1	0.5	0.85
T9 20'-0'	1	0.5	0.85	1	0.5	0.85

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 150'-147'7"	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75
T2 147'7"-130'	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75
T3 130'-110'	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75
T4 110'-100'	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
T5 100'-80'	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
T6 80'-60'	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
T7 60'-40'	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
T8 40'-20'	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
T9 20'-0'	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

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 150'-147'7"	Sleeve DS	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0
T2 147'7"-130'	Sleeve DS	0.625 A325N	5	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0
T3 130'-110'	Flange	1.000 A325N	6	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0
T4 110'-100'	Flange	1.000 A325N	6	1.000 A325N	1	1.000 A325N	1	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0
T5 100'-80'	Flange	1.000 A325N	6	1.000 A325N	1	1.000 A325N	1	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0
T6 80'-60'	Flange	1.000 A325N	6	1.000 A325N	1	1.000 A325N	1	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0
T7 60'-40'	Flange	1.000 A325N	6	1.000 A325N	1	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0
T8 40'-20'	Flange	1.000 A325N	6	1.000 A325N	1	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0
T9 20'-0'	Flange	1.250 A687	0	1.250 A325N	1	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.625 A325N	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
Face A													
LDF7-50A(1-5/8") (E)	A	No	No	Ar (CaAa)	141' - 0'	-15.000	0.4	12	4	1.000 2.000	1.980		0.001
FB-L98B-034-XXX(3/8") (E-Inside conduit)	A	No	No	Ar (CaAa)	141' - 0'	-4.000	0.38	1	1	0.394	0.394		0.000
WR-VG82ST-BRDA(5/8) (E-Inside conduit)	A	No	No	Ar (CaAa)	141' - 0'	-4.000	0.37	2	2	0.645	0.645		0.000
WR-VG82ST-BRDA(5/8) (P-Inside conduit)	A	No	No	Ar (CaAa)	141' - 0'	-4.000	0.37	2	2	0.645	0.645		0.000
FB-L98B-034-XXX(3/8) (P-Inside conduit)	A	No	No	Ar (CaAa)	141' - 0'	-15.000	0.35	2	2	0.394	0.394		0.000
WR-VG86ST-BRDA(7/8) (P-Inside conduit)	A	No	No	Ar (CaAa)	141' - 0'	-15.000	0.36	2	2	0.850 0.750	0.880		0.001
2-1/2" Rigid Conduit	A	No	No	Ar (CaAa)	141' - 0'	-4.000	0.38	3	3	2.500	2.500		0.003

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
(2E+1P) T-Brackets (Af) (E) ***	A	No	No	Af (CaAa)	141' - 0'	-8.000	0.42	1	1	1.000	1.000		0.008
LDF7-50A(1-5/8") (E)	A	No	No	Ar (CaAa)	88' - 0'	0.000	-0.1	12	12	1.000	1.980		0.001
Feedline Ladder (Af) (E) ***	A	No	No	Af (CaAa)	88' - 0'	0.000	-0.1	1	1	3.000	3.000		0.008
Face B HB114-1-08U4-M5F(1-1/4) (3R(1-1/4)+1R(7/8)) ***	B	No	No	Ar (CaAa)	100' - 0'	-2.000	-0.22	4	3	1.000 0.750	1.540		0.001
LDF7-50A(1-5/8") (AB) ***	B	No	No	Ar (CaAa)	65' - 0'	-2.000	-0.3	6	6	1.000	1.980		0.001
LDF4-50A(1/2") (E) ***	B	No	No	Ar (CaAa)	50' - 0'	-1.000	-0.19	1	1	0.500	0.630		0.000
Feedline Ladder (Af) (E) ***	B	No	No	Af (CaAa)	118' - 0'	-1.000	-0.26	1	1	3.000	3.000		0.008
Face C LCF58-50J(5/8") (E)	B	No	No	Ar (CaAa)	150' - 0'	-4.000	0.46	6	4	1.000 2.000	0.840		0.000
FB-L98B-034-XXX(3/8) (E) ***	B	No	No	Ar (CaAa)	150' - 0'	-5.000	0.39	1	1	0.500	0.394		0.000
LDF5-50A(7/8) (E)	B	No	No	Ar (CaAa)	118' - 0'	-4.000	0.42	4	4	1.000	1.090		0.000
LDF5-50A(7/8) (E)	B	No	No	Ar (CaAa)	130' - 118'	-4.000	0.42	2	2	1.000	1.090		0.000
T-Brackets (Af) (E) *** ***	B	No	No	Af (CaAa)	150' - 0'	-4.000	0.46	1	1	1.000	1.000		0.008
LDF7-50A(1-5/8") (6E(1-5/8)+3(1-3/8))	C	No	No	Ar (CaAa)	114' - 0'	-7.000	0.42	9	6	1.000 2.000	1.980		0.001
T-Brackets (Af) (E) ***	C	No	No	Af (CaAa)	114' - 0'	-4.000	0.44	1	1	1.000	1.000		0.008
Safety Line 3/8 (E)	C	No	No	Ar (CaAa)	150' - 0'	0.000	0.5	1	1	0.375	0.375		0.000

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
***													

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
***								
***								
***								
***								

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	150'-147'7"	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	1.716	0.000	0.024
		C	0.000	0.000	0.091	0.000	0.001
T2	147'7"-130'	A	0.000	0.000	42.293	0.000	0.330
		B	0.000	0.000	12.485	0.000	0.175
		C	0.000	0.000	0.659	0.000	0.004
T3	130'-110'	A	0.000	0.000	76.896	0.000	0.600
		B	0.000	0.000	24.305	0.000	0.285
		C	0.000	0.000	8.545	0.000	0.068
T4	110'-100'	A	0.000	0.000	38.448	0.000	0.300
		B	0.000	0.000	16.460	0.000	0.197
		C	0.000	0.000	19.862	0.000	0.160
T5	100'-80'	A	0.000	0.000	99.904	0.000	0.746
		B	0.000	0.000	45.241	0.000	0.480
		C	0.000	0.000	39.723	0.000	0.320
T6	80'-60'	A	0.000	0.000	134.416	0.000	0.965
		B	0.000	0.000	51.181	0.000	0.505
		C	0.000	0.000	39.723	0.000	0.320
T7	60'-40'	A	0.000	0.000	134.416	0.000	0.965
		B	0.000	0.000	69.631	0.000	0.580
		C	0.000	0.000	39.723	0.000	0.320
T8	40'-20'	A	0.000	0.000	134.416	0.000	0.965
		B	0.000	0.000	70.261	0.000	0.581
		C	0.000	0.000	39.723	0.000	0.320
T9	20'-0'	A	0.000	0.000	134.416	0.000	0.965
		B	0.000	0.000	70.261	0.000	0.581
		C	0.000	0.000	39.723	0.000	0.320

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	150'-147'7"	A	1.482	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	5.389	0.000	0.090
		C		0.000	0.000	0.807	0.000	0.009
T2	147'7"-130'	A	1.472	0.000	0.000	90.506	0.000	1.521
		B		0.000	0.000	39.078	0.000	0.651
		C		0.000	0.000	5.836	0.000	0.062
T3	130'-110'	A	1.451	0.000	0.000	163.507	0.000	2.738
		B		0.000	0.000	72.373	0.000	1.090
		C		0.000	0.000	19.218	0.000	0.330
T4	110'-100'	A	1.431	0.000	0.000	81.278	0.000	1.356
		B		0.000	0.000	43.485	0.000	0.686
		C		0.000	0.000	34.798	0.000	0.682
T5	100'-80'	A	1.410	0.000	0.000	205.614	0.000	3.337
		B		0.000	0.000	115.277	0.000	1.740
		C		0.000	0.000	69.277	0.000	1.350
T6	80'-60'	A	1.375	0.000	0.000	269.761	0.000	4.244
		B		0.000	0.000	126.764	0.000	1.866
		C		0.000	0.000	68.766	0.000	1.330
T7	60'-40'	A	1.329	0.000	0.000	267.081	0.000	4.151
		B		0.000	0.000	166.163	0.000	2.319
		C		0.000	0.000	68.102	0.000	1.303
T8	40'-20'	A	1.263	0.000	0.000	263.184	0.000	4.017
		B		0.000	0.000	166.648	0.000	2.261
		C		0.000	0.000	67.137	0.000	1.265
T9	20'-0'	A	1.132	0.000	0.000	245.256	0.000	3.665
		B		0.000	0.000	161.091	0.000	2.085
		C		0.000	0.000	65.221	0.000	1.191

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	150'-147'7"	2.888	2.472	2.265	2.773
T2	147'7"-130'	5.690	-4.884	3.809	-1.709
T3	130'-110'	4.177	-6.485	3.628	-3.115
T4	110'-100'	-1.365	-3.994	-0.277	-1.392
T5	100'-80'	-2.880	-6.438	-1.196	-3.553
T6	80'-60'	-5.515	-8.564	-3.353	-6.046
T7	60'-40'	-6.065	-12.734	-3.871	-10.391
T8	40'-20'	-6.961	-14.769	-4.423	-12.336
T9	20'-0'	-7.744	-16.420	-5.186	-13.801

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	26	LCF58-50J(5/8")	147.58 - 150.00	0.6000	0.4113
T1	27	FB-L98B-034-XXX(3/8)	147.58 -	0.6000	0.4113

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	31	T-Brackets (Af)	150.00 147.58 - 150.00	0.6000	0.4113
T1	39	Safety Line 3/8	147.58 - 150.00	0.6000	0.4113
T2	2	LDF7-50A(1-5/8")	130.00 - 141.00	0.6000	0.5569
T2	3	FB-L98B-034-XXX(3/8")	130.00 - 141.00	0.0000	0.0000
T2	4	WR-VG82ST-BRDA(5/8)	130.00 - 141.00	0.0000	0.0000
T2	5	WR-VG82ST-BRDA(5/8)	130.00 - 141.00	0.0000	0.0000
T2	6	FB-L98B-034-XXX(3/8)	130.00 - 141.00	0.0000	0.0000
T2	7	WR-VG86ST-BRDA(7/8)	130.00 - 141.00	0.0000	0.0000
T2	8	2-1/2" Rigid Conduit	130.00 - 141.00	0.6000	0.5569
T2	9	T-Brackets (Af)	130.00 - 141.00	0.6000	0.5569
T2	26	LCF58-50J(5/8")	130.00 - 147.58	0.6000	0.5569
T2	27	FB-L98B-034-XXX(3/8)	130.00 - 147.58	0.6000	0.5569
T2	31	T-Brackets (Af)	130.00 - 147.58	0.6000	0.5569
T2	39	Safety Line 3/8	130.00 - 147.58	0.6000	0.5569
T3	2	LDF7-50A(1-5/8")	110.00 - 130.00	0.6000	0.5638
T3	3	FB-L98B-034-XXX(3/8")	110.00 - 130.00	0.0000	0.0000
T3	4	WR-VG82ST-BRDA(5/8)	110.00 - 130.00	0.0000	0.0000
T3	5	WR-VG82ST-BRDA(5/8)	110.00 - 130.00	0.0000	0.0000
T3	6	FB-L98B-034-XXX(3/8)	110.00 - 130.00	0.0000	0.0000
T3	7	WR-VG86ST-BRDA(7/8)	110.00 - 130.00	0.0000	0.0000
T3	8	2-1/2" Rigid Conduit	110.00 - 130.00	0.6000	0.5638
T3	9	T-Brackets (Af)	110.00 - 130.00	0.6000	0.5638
T3	23	Feedline Ladder (Af)	110.00 - 118.00	0.6000	0.5638
T3	26	LCF58-50J(5/8")	110.00 - 130.00	0.6000	0.5638
T3	27	FB-L98B-034-XXX(3/8)	110.00 - 130.00	0.6000	0.5638
T3	29	LDF5-50A(7/8)	110.00 - 118.00	0.6000	0.5638
T3	30	LDF5-50A(7/8)	118.00 - 130.00	0.6000	0.5638
T3	31	T-Brackets (Af)	110.00 - 130.00	0.6000	0.5638
T3	35	LDF7-50A(1-5/8")	110.00 - 114.00	0.6000	0.5638
T3	37	T-Brackets (Af)	110.00 - 114.00	0.6000	0.5638
T3	39	Safety Line 3/8	110.00 -	0.6000	0.5638

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			130.00		
T4	2	LDF7-50A(1-5/8")	100.00 - 110.00	0.6000	0.3163
T4	3	FB-L98B-034-XXX(3/8")	100.00 - 110.00	0.0000	0.0000
T4	4	WR-VG82ST-BRDA(5/8)	100.00 - 110.00	0.0000	0.0000
T4	5	WR-VG82ST-BRDA(5/8)	100.00 - 110.00	0.0000	0.0000
T4	6	FB-L98B-034-XXX(3/8)	100.00 - 110.00	0.0000	0.0000
T4	7	WR-VG86ST-BRDA(7/8)	100.00 - 110.00	0.0000	0.0000
T4	8	2-1/2" Rigid Conduit	100.00 - 110.00	0.6000	0.3163
T4	9	T-Brackets (Af)	100.00 - 110.00	0.6000	0.3163
T4	23	Feedline Ladder (Af)	100.00 - 110.00	0.6000	0.3163
T4	26	LCF58-50J(5/8")	100.00 - 110.00	0.6000	0.3163
T4	27	FB-L98B-034-XXX(3/8)	100.00 - 110.00	0.6000	0.3163
T4	29	LDF5-50A(7/8)	100.00 - 110.00	0.6000	0.3163
T4	31	T-Brackets (Af)	100.00 - 110.00	0.6000	0.3163
T4	35	LDF7-50A(1-5/8")	100.00 - 110.00	0.6000	0.3163
T4	37	T-Brackets (Af)	100.00 - 110.00	0.6000	0.3163
T4	39	Safety Line 3/8	100.00 - 110.00	0.6000	0.3163
T5	2	LDF7-50A(1-5/8")	80.00 - 100.00	0.6000	0.4220
T5	3	FB-L98B-034-XXX(3/8")	80.00 - 100.00	0.0000	0.0000
T5	4	WR-VG82ST-BRDA(5/8)	80.00 - 100.00	0.0000	0.0000
T5	5	WR-VG82ST-BRDA(5/8)	80.00 - 100.00	0.0000	0.0000
T5	6	FB-L98B-034-XXX(3/8)	80.00 - 100.00	0.0000	0.0000
T5	7	WR-VG86ST-BRDA(7/8)	80.00 - 100.00	0.0000	0.0000
T5	8	2-1/2" Rigid Conduit	80.00 - 100.00	0.6000	0.4220
T5	9	T-Brackets (Af)	80.00 - 100.00	0.6000	0.4220
T5	11	LDF7-50A(1-5/8")	80.00 - 88.00	0.6000	0.4220
T5	12	Feedline Ladder (Af)	80.00 - 88.00	0.6000	0.4220
T5	17	HB114-1-08U4-M5F(1-1/4)	80.00 - 100.00	0.6000	0.4220
T5	23	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.4220
T5	26	LCF58-50J(5/8")	80.00 - 100.00	0.6000	0.4220
T5	27	FB-L98B-034-XXX(3/8)	80.00 - 100.00	0.6000	0.4220
T5	29	LDF5-50A(7/8)	80.00 - 100.00	0.6000	0.4220
T5	31	T-Brackets (Af)	80.00 - 100.00	0.6000	0.4220
T5	35	LDF7-50A(1-5/8")	80.00 - 100.00	0.6000	0.4220
T5	37	T-Brackets (Af)	80.00 - 100.00	0.6000	0.4220
T5	39	Safety Line 3/8	80.00 - 100.00	0.6000	0.4220
T6	2	LDF7-50A(1-5/8")	60.00 - 80.00	0.6000	0.5201
T6	3	FB-L98B-034-XXX(3/8")	60.00 - 80.00	0.0000	0.0000
T6	4	WR-VG82ST-BRDA(5/8)	60.00 - 80.00	0.0000	0.0000
T6	5	WR-VG82ST-BRDA(5/8)	60.00 - 80.00	0.0000	0.0000
T6	6	FB-L98B-034-XXX(3/8)	60.00 - 80.00	0.0000	0.0000
T6	7	WR-VG86ST-BRDA(7/8)	60.00 - 80.00	0.0000	0.0000
T6	8	2-1/2" Rigid Conduit	60.00 - 80.00	0.6000	0.5201
T6	9	T-Brackets (Af)	60.00 - 80.00	0.6000	0.5201
T6	11	LDF7-50A(1-5/8")	60.00 - 80.00	0.6000	0.5201
T6	12	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.5201

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T6	17	HB114-1-08U4-M5F(1-1/4)	60.00 - 80.00	0.6000	0.5201
T6	19	LDF7-50A(1-5/8")	60.00 - 65.00	0.6000	0.5201
T6	23	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.5201
T6	26	LCF58-50J(5/8")	60.00 - 80.00	0.6000	0.5201
T6	27	FB-L98B-034-XXX(3/8)	60.00 - 80.00	0.6000	0.5201
T6	29	LDF5-50A(7/8)	60.00 - 80.00	0.6000	0.5201
T6	31	T-Brackets (Af)	60.00 - 80.00	0.6000	0.5201
T6	35	LDF7-50A(1-5/8")	60.00 - 80.00	0.6000	0.5201
T6	37	T-Brackets (Af)	60.00 - 80.00	0.6000	0.5201
T6	39	Safety Line 3/8	60.00 - 80.00	0.6000	0.5201
T7	2	LDF7-50A(1-5/8")	40.00 - 60.00	0.6000	0.5999
T7	3	FB-L98B-034-XXX(3/8")	40.00 - 60.00	0.0000	0.0000
T7	4	WR-VG82ST-BRDA(5/8)	40.00 - 60.00	0.0000	0.0000
T7	5	WR-VG82ST-BRDA(5/8)	40.00 - 60.00	0.0000	0.0000
T7	6	FB-L98B-034-XXX(3/8)	40.00 - 60.00	0.0000	0.0000
T7	7	WR-VG86ST-BRDA(7/8)	40.00 - 60.00	0.0000	0.0000
T7	8	2-1/2" Rigid Conduit	40.00 - 60.00	0.6000	0.5999
T7	9	T-Brackets (Af)	40.00 - 60.00	0.6000	0.5999
T7	11	LDF7-50A(1-5/8")	40.00 - 60.00	0.6000	0.5999
T7	12	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.5999
T7	17	HB114-1-08U4-M5F(1-1/4)	40.00 - 60.00	0.6000	0.5999
T7	19	LDF7-50A(1-5/8")	40.00 - 60.00	0.6000	0.5999
T7	21	LDF4-50A(1/2")	40.00 - 50.00	0.6000	0.5999
T7	23	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.5999
T7	26	LCF58-50J(5/8")	40.00 - 60.00	0.6000	0.5999
T7	27	FB-L98B-034-XXX(3/8)	40.00 - 60.00	0.6000	0.5999
T7	29	LDF5-50A(7/8)	40.00 - 60.00	0.6000	0.5999
T7	31	T-Brackets (Af)	40.00 - 60.00	0.6000	0.5999
T7	35	LDF7-50A(1-5/8")	40.00 - 60.00	0.6000	0.5999
T7	37	T-Brackets (Af)	40.00 - 60.00	0.6000	0.5999
T7	39	Safety Line 3/8	40.00 - 60.00	0.6000	0.5999
T8	2	LDF7-50A(1-5/8")	20.00 - 40.00	0.6000	0.6000
T8	3	FB-L98B-034-XXX(3/8")	20.00 - 40.00	0.0000	0.0000
T8	4	WR-VG82ST-BRDA(5/8)	20.00 - 40.00	0.0000	0.0000
T8	5	WR-VG82ST-BRDA(5/8)	20.00 - 40.00	0.0000	0.0000
T8	6	FB-L98B-034-XXX(3/8)	20.00 - 40.00	0.0000	0.0000
T8	7	WR-VG86ST-BRDA(7/8)	20.00 - 40.00	0.0000	0.0000
T8	8	2-1/2" Rigid Conduit	20.00 - 40.00	0.6000	0.6000
T8	9	T-Brackets (Af)	20.00 - 40.00	0.6000	0.6000
T8	11	LDF7-50A(1-5/8")	20.00 - 40.00	0.6000	0.6000
T8	12	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T8	17	HB114-1-08U4-M5F(1-1/4)	20.00 - 40.00	0.6000	0.6000
T8	19	LDF7-50A(1-5/8")	20.00 - 40.00	0.6000	0.6000
T8	21	LDF4-50A(1/2")	20.00 - 40.00	0.6000	0.6000
T8	23	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T8	26	LCF58-50J(5/8")	20.00 - 40.00	0.6000	0.6000
T8	27	FB-L98B-034-XXX(3/8)	20.00 - 40.00	0.6000	0.6000
T8	29	LDF5-50A(7/8)	20.00 - 40.00	0.6000	0.6000
T8	31	T-Brackets (Af)	20.00 - 40.00	0.6000	0.6000
T8	35	LDF7-50A(1-5/8")	20.00 - 40.00	0.6000	0.6000
T8	37	T-Brackets (Af)	20.00 - 40.00	0.6000	0.6000
T8	39	Safety Line 3/8	20.00 - 40.00	0.6000	0.6000
T9	2	LDF7-50A(1-5/8")	0.00 - 20.00	0.6000	0.6000
T9	3	FB-L98B-034-XXX(3/8")	0.00 - 20.00	0.0000	0.0000
T9	4	WR-VG82ST-BRDA(5/8)	0.00 - 20.00	0.0000	0.0000
T9	5	WR-VG82ST-BRDA(5/8)	0.00 - 20.00	0.0000	0.0000
T9	6	FB-L98B-034-XXX(3/8)	0.00 - 20.00	0.0000	0.0000
T9	7	WR-VG86ST-BRDA(7/8)	0.00 - 20.00	0.0000	0.0000
T9	8	2-1/2" Rigid Conduit	0.00 - 20.00	0.6000	0.6000
T9	9	T-Brackets (Af)	0.00 - 20.00	0.6000	0.6000
T9	11	LDF7-50A(1-5/8")	0.00 - 20.00	0.6000	0.6000
T9	12	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T9	17	HB114-1-08U4-M5F(1-1/4)	0.00 - 20.00	0.6000	0.6000
T9	19	LDF7-50A(1-5/8")	0.00 - 20.00	0.6000	0.6000
T9	21	LDF4-50A(1/2")	0.00 - 20.00	0.6000	0.6000
T9	23	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000
T9	26	LCF58-50J(5/8")	0.00 - 20.00	0.6000	0.6000
T9	27	FB-L98B-034-XXX(3/8)	0.00 - 20.00	0.6000	0.6000
T9	29	LDF5-50A(7/8)	0.00 - 20.00	0.6000	0.6000
T9	31	T-Brackets (Af)	0.00 - 20.00	0.6000	0.6000
T9	35	LDF7-50A(1-5/8")	0.00 - 20.00	0.6000	0.6000
T9	37	T-Brackets (Af)	0.00 - 20.00	0.6000	0.6000
T9	39	Safety Line 3/8	0.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	Placement		C_AA_A Front	C_AA_A Side	Weight
			ft ft ft	°	ft		ft^2	ft^2	K
***									
SC226-SFXSNM (E)	A	From Leg	4.000 0' 10'	0.000	150'	No Ice 1/2" Ice 1" Ice 2" Ice	5.748 7.776 9.804 13.860	5.748 7.776 9.804 13.860	0.032 0.340 0.661 1.340
SC226-SFXSNM (E)	C	From Leg	4.000 0' 10'	0.000	150'	No Ice 1/2" Ice 1" Ice 2" Ice	5.748 7.776 9.804 13.860	5.748 7.776 9.804 13.860	0.032 0.340 0.661 1.340
1' x 6" x 3" (E-Camera)	C	From Leg	4.000 0' 0'	0.000	150'	No Ice 1/2" Ice 1" Ice 2" Ice	0.600 0.704 0.815 1.059	0.317 0.401 0.492 0.695	0.033 0.038 0.044 0.062
(3) 6' x 2" Mount Pipe (E-Photo)	A	From Leg	4.000 0' 0'	0.000	150'	No Ice 1/2" Ice 1" Ice 2" Ice	1.425 1.925 2.294 3.060	1.425 1.925 2.294 3.060	0.022 0.033 0.048 0.090
(3) 6' x 2" Mount Pipe (E-Photo)	B	From Leg	4.000 0' 0'	0.000	150'	No Ice 1/2" Ice 1" Ice 2" Ice	1.425 1.925 2.294 3.060	1.425 1.925 2.294 3.060	0.022 0.033 0.048 0.090
(3) 6' x 2" Mount Pipe (E-Photo)	C	From Leg	4.000 0' 0'	0.000	150'	No Ice 1/2" Ice 1" Ice 2" Ice	1.425 1.925 2.294 3.060	1.425 1.925 2.294 3.060	0.022 0.033 0.048 0.090
Platform Mount [LP 405-1] (E)	C	None		0.000	150'	No Ice 1/2" Ice 1" Ice 2" Ice	20.880 28.890 37.040 53.730	20.880 28.890 37.040 53.730	1.800 2.277 2.868 4.394
***									
7770.00 w/ Mount Pipe (E)	A	From Leg	4.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	5.746 6.179 6.607 7.488	4.254 5.014 5.711 7.155	0.055 0.103 0.157 0.287

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
7770.00 w/ Mount Pipe	B	From Leg	4.000	0.000	141'	No Ice	5.746	4.254	0.055
(E)			0'			1/2" Ice	6.179	5.014	0.103
			0'			1" Ice	6.607	5.711	0.157
						2" Ice	7.488	7.155	0.287
7770.00 w/ Mount Pipe	C	From Leg	4.000	0.000	141'	No Ice	5.746	4.254	0.055
(E)			0'			1/2" Ice	6.179	5.014	0.103
			0'			1" Ice	6.607	5.711	0.157
						2" Ice	7.488	7.155	0.287
LGP21401	A	From Leg	4.000	0.000	141'	No Ice	1.104	0.207	0.014
(E)			0'			1/2" Ice	1.239	0.274	0.021
			0'			1" Ice	1.381	0.348	0.030
						2" Ice	1.688	0.521	0.055
LGP21401	B	From Leg	4.000	0.000	141'	No Ice	1.104	0.207	0.014
(E)			0'			1/2" Ice	1.239	0.274	0.021
			0'			1" Ice	1.381	0.348	0.030
						2" Ice	1.688	0.521	0.055
LGP21401	C	From Leg	4.000	0.000	141'	No Ice	1.104	0.207	0.014
(E)			0'			1/2" Ice	1.239	0.274	0.021
			0'			1" Ice	1.381	0.348	0.030
						2" Ice	1.688	0.521	0.055
7020.00	A	From Leg	4.000	0.000	141'	No Ice	0.102	0.175	0.002
(E)			0'			1/2" Ice	0.147	0.239	0.005
			0'			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	141'	No Ice	0.102	0.175	0.002
(E)			0'			1/2" Ice	0.147	0.239	0.005
			0'			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	141'	No Ice	0.102	0.175	0.002
(E)			0'			1/2" Ice	0.147	0.239	0.005
			0'			1" Ice	0.199	0.311	0.009
						2" Ice	0.326	0.476	0.022
RRUS 11 B2	A	From Leg	4.000	0.000	141'	No Ice	2.833	1.182	0.051
(E)			0'			1/2" Ice	3.043	1.330	0.072
			0'			1" Ice	3.259	1.485	0.095
						2" Ice	3.715	1.826	0.153
RRUS 11 B2	B	From Leg	4.000	0.000	141'	No Ice	2.833	1.182	0.051
(E)			0'			1/2" Ice	3.043	1.330	0.072
			0'			1" Ice	3.259	1.485	0.095
						2" Ice	3.715	1.826	0.153
RRUS 11 B2	C	From Leg	4.000	0.000	141'	No Ice	2.833	1.182	0.051
(E)			0'			1/2" Ice	3.043	1.330	0.072
			0'			1" Ice	3.259	1.485	0.095
						2" Ice	3.715	1.826	0.153
DC6-48-60-18-8F	B	From Leg	4.000	0.000	141'	No Ice	1.212	1.212	0.033
(E)			0'			1/2" Ice	1.892	1.892	0.055
			0'			1" Ice	2.105	2.105	0.080
						2" Ice	2.570	2.570	0.138
80010964 w/ Mount Pipe	A	From Leg	4.000	0.000	141'	No Ice	8.610	4.100	0.116
(R)			0'			1/2" Ice	9.180	4.590	0.186
			0'			1" Ice	9.770	5.100	0.265
						2" Ice	10.980	6.160	0.453
80010964 w/ Mount Pipe	B	From Leg	4.000	0.000	141'	No Ice	8.610	4.100	0.116
(R)			0'			1/2" Ice	9.180	4.590	0.186
			0'			1" Ice	9.770	5.100	0.265
						2" Ice	10.980	6.160	0.453
80010964 w/ Mount Pipe	C	From Leg	4.000	0.000	141'	No Ice	8.610	4.100	0.116

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
(R)			0'			1/2" Ice	9.180	4.590	0.186
			0'			1" Ice	9.770	5.100	0.265
						2" Ice	10.980	6.160	0.453
SBNHH-1D65A w/ Mount Pipe	A	From Leg	4.000	0.000	141'	No Ice	3.040	2.450	0.054
			0'			1/2" Ice	3.340	2.750	0.104
(R)			0'			1" Ice	3.650	3.050	0.162
						2" Ice	4.310	3.680	0.307
SBNHH-1D65A w/ Mount Pipe	B	From Leg	4.000	0.000	141'	No Ice	3.040	2.450	0.054
			0'			1/2" Ice	3.340	2.750	0.104
(R)			0'			1" Ice	3.650	3.050	0.162
						2" Ice	4.310	3.680	0.307
SBNHH-1D65A w/ Mount Pipe	C	From Leg	4.000	0.000	141'	No Ice	3.040	2.450	0.054
			0'			1/2" Ice	3.340	2.750	0.104
(R)			0'			1" Ice	3.650	3.050	0.162
						2" Ice	4.310	3.680	0.307
OPA-65R-LCUU-H4 w/ Mount Pipe	A	From Leg	4.000	0.000	141'	No Ice	6.175	4.548	0.075
			0'			1/2" Ice	6.575	5.158	0.128
(R)			0'			1" Ice	6.982	5.779	0.187
						2" Ice	7.823	7.069	0.326
OPA-65R-LCUU-H4 w/ Mount Pipe	B	From Leg	4.000	0.000	141'	No Ice	6.175	4.548	0.075
			0'			1/2" Ice	6.575	5.158	0.128
(R)			0'			1" Ice	6.982	5.779	0.187
						2" Ice	7.823	7.069	0.326
OPA-65R-LCUU-H4 w/ Mount Pipe	C	From Leg	4.000	0.000	141'	No Ice	6.175	4.548	0.075
			0'			1/2" Ice	6.575	5.158	0.128
(R)			0'			1" Ice	6.982	5.779	0.187
						2" Ice	7.823	7.069	0.326
(3) DBCT108F1V92-1	A	From Leg	4.000	0.000	141'	No Ice	0.637	0.604	0.029
(R)			0'			1/2" Ice	0.740	0.705	0.036
			0'			1" Ice	0.850	0.813	0.045
						2" Ice	1.093	1.052	0.069
(2) DBCT108F1V92-1	B	From Leg	4.000	0.000	141'	No Ice	0.637	0.604	0.029
(R)			0'			1/2" Ice	0.740	0.705	0.036
			0'			1" Ice	0.850	0.813	0.045
						2" Ice	1.093	1.052	0.069
DBCT108F1V92-1	C	From Leg	4.000	0.000	141'	No Ice	0.637	0.604	0.029
(R)			0'			1/2" Ice	0.740	0.705	0.036
			0'			1" Ice	0.850	0.813	0.045
						2" Ice	1.093	1.052	0.069
LGP21401	A	From Leg	4.000	0.000	141'	No Ice	1.104	0.207	0.014
(R)			0'			1/2" Ice	1.239	0.274	0.021
			0'			1" Ice	1.381	0.348	0.030
						2" Ice	1.688	0.521	0.055
LGP21401	B	From Leg	4.000	0.000	141'	No Ice	1.104	0.207	0.014
(R)			0'			1/2" Ice	1.239	0.274	0.021
			0'			1" Ice	1.381	0.348	0.030
						2" Ice	1.688	0.521	0.055
LGP21401	C	From Leg	4.000	0.000	141'	No Ice	1.104	0.207	0.014
(R)			0'			1/2" Ice	1.239	0.274	0.021
			0'			1" Ice	1.381	0.348	0.030
						2" Ice	1.688	0.521	0.055
RRUS 4478 B5	A	From Leg	4.000	0.000	141'	No Ice	1.843	1.059	0.060
(R)			0'			1/2" Ice	2.012	1.197	0.076
			0'			1" Ice	2.190	1.342	0.094
						2" Ice	2.566	1.656	0.140
RRUS 4478 B5	B	From Leg	4.000	0.000	141'	No Ice	1.843	1.059	0.060
(R)			0'			1/2" Ice	2.012	1.197	0.076

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'			1" Ice	2.190	1.342	0.094
						2" Ice	2.566	1.656	0.140
RRUS 4478 B5	C	From Leg	4.000	0.000	141'	No Ice	1.843	1.059	0.060
(R)			0'			1/2" Ice	2.012	1.197	0.076
			0'			1" Ice	2.190	1.342	0.094
						2" Ice	2.566	1.656	0.140
RRUS 32 B2	A	From Leg	4.000	0.000	141'	No Ice	2.731	1.668	0.053
(R)			0'			1/2" Ice	2.953	1.855	0.074
			0'			1" Ice	3.182	2.049	0.098
						2" Ice	3.663	2.458	0.157
RRUS 32 B2	B	From Leg	4.000	0.000	141'	No Ice	2.731	1.668	0.053
(R)			0'			1/2" Ice	2.953	1.855	0.074
			0'			1" Ice	3.182	2.049	0.098
						2" Ice	3.663	2.458	0.157
RRUS 32 B2	C	From Leg	4.000	0.000	141'	No Ice	2.731	1.668	0.053
(R)			0'			1/2" Ice	2.953	1.855	0.074
			0'			1" Ice	3.182	2.049	0.098
						2" Ice	3.663	2.458	0.157
RRUS 4478 B14	A	From Leg	4.000	0.000	141'	No Ice	1.843	1.059	0.060
(R)			0'			1/2" Ice	2.012	1.197	0.076
			0'			1" Ice	2.190	1.342	0.094
						2" Ice	2.566	1.656	0.140
RRUS 4478 B14	B	From Leg	4.000	0.000	141'	No Ice	1.843	1.059	0.060
(R)			0'			1/2" Ice	2.012	1.197	0.076
			0'			1" Ice	2.190	1.342	0.094
						2" Ice	2.566	1.656	0.140
RRUS 4478 B14	C	From Leg	4.000	0.000	141'	No Ice	1.843	1.059	0.060
(R)			0'			1/2" Ice	2.012	1.197	0.076
			0'			1" Ice	2.190	1.342	0.094
						2" Ice	2.566	1.656	0.140
RRUS 32 B30	A	From Leg	4.000	0.000	141'	No Ice	2.692	1.573	0.060
(R)			0'			1/2" Ice	2.912	1.756	0.080
			0'			1" Ice	3.138	1.945	0.104
						2" Ice	3.614	2.346	0.161
RRUS 32 B30	B	From Leg	4.000	0.000	141'	No Ice	2.692	1.573	0.060
(R)			0'			1/2" Ice	2.912	1.756	0.080
			0'			1" Ice	3.138	1.945	0.104
						2" Ice	3.614	2.346	0.161
RRUS 32 B30	C	From Leg	4.000	0.000	141'	No Ice	2.692	1.573	0.060
(R)			0'			1/2" Ice	2.912	1.756	0.080
			0'			1" Ice	3.138	1.945	0.104
						2" Ice	3.614	2.346	0.161
RRUS 4426 B66	A	From Leg	4.000	0.000	141'	No Ice	1.644	0.725	0.048
(R)			0'			1/2" Ice	1.804	0.842	0.061
			0'			1" Ice	1.972	0.969	0.076
						2" Ice	2.329	1.244	0.115
RRUS 4426 B66	B	From Leg	4.000	0.000	141'	No Ice	1.644	0.725	0.048
(R)			0'			1/2" Ice	1.804	0.842	0.061
			0'			1" Ice	1.972	0.969	0.076
						2" Ice	2.329	1.244	0.115
RRUS 4426 B66	C	From Leg	4.000	0.000	141'	No Ice	1.644	0.725	0.048
(R)			0'			1/2" Ice	1.804	0.842	0.061
			0'			1" Ice	1.972	0.969	0.076
						2" Ice	2.329	1.244	0.115
WCS-IMFQ-AMT	C	From Leg	4.000	0.000	141'	No Ice	0.989	0.644	0.030
(R)			0'			1/2" Ice	1.114	0.748	0.039
			0'			1" Ice	1.246	0.860	0.051

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	1.533	1.105	0.081
DC6-48-60-18-8F	A	From Leg	4.000	0.000	141'	No Ice	1.212	1.212	0.033
(R)			0'			1/2" Ice	1.892	1.892	0.055
			0'			1" Ice	2.105	2.105	0.080
						2" Ice	2.570	2.570	0.138
DC6-48-60-18-8F	C	From Leg	4.000	0.000	141'	No Ice	1.212	1.212	0.033
(R)			0'			1/2" Ice	1.892	1.892	0.055
			0'			1" Ice	2.105	2.105	0.080
						2" Ice	2.570	2.570	0.138
7'x2" Antenna Mount Pipe	A	From Leg	4.000	0.000	141'	No Ice	1.663	1.663	0.026
(E)			0'			1/2" Ice	2.391	2.391	0.039
			0'			1" Ice	2.825	2.825	0.056
						2" Ice	3.706	3.706	0.105
7'x2" Antenna Mount Pipe	B	From Leg	4.000	0.000	141'	No Ice	1.663	1.663	0.026
(E)			0'			1/2" Ice	2.391	2.391	0.039
			0'			1" Ice	2.825	2.825	0.056
						2" Ice	3.706	3.706	0.105
7'x2" Antenna Mount Pipe	C	From Leg	4.000	0.000	141'	No Ice	1.663	1.663	0.026
(E)			0'			1/2" Ice	2.391	2.391	0.039
			0'			1" Ice	2.825	2.825	0.056
						2" Ice	3.706	3.706	0.105
5 Hor x 2" x 2" Tube Mount	A	From Face	0.500	0.000	141'	No Ice	1.000	0.033	0.100
(E)			0'			1/2" Ice	1.348	0.059	0.110
			-3'			1" Ice	1.704	0.093	0.124
						2" Ice	2.437	0.181	0.167
5 Hor x 2" x 2" Tube Mount	B	From Face	0.500	0.000	141'	No Ice	1.000	0.033	0.100
(E)			0'			1/2" Ice	1.348	0.059	0.110
			-3'			1" Ice	1.704	0.093	0.124
						2" Ice	2.437	0.181	0.167
5 Hor x 2" x 2" Tube Mount	C	From Face	0.500	0.000	141'	No Ice	1.000	0.033	0.100
(E)			0'			1/2" Ice	1.348	0.059	0.110
			-3'			1" Ice	1.704	0.093	0.124
						2" Ice	2.437	0.181	0.167
Sector Mount [SM 410-3]	C	None		0.000	141'	No Ice	23.830	23.830	1.100
(E)						1/2" Ice	33.870	33.870	1.576
						1" Ice	43.790	43.790	2.209
						2" Ice	63.560	63.560	3.929
Pipe Mount [PM 601-3]	C	None		0.000	141'	No Ice	3.170	3.170	0.195
(E)						1/2" Ice	3.790	3.790	0.232
						1" Ice	4.420	4.420	0.279
						2" Ice	5.760	5.760	0.401
***									
M5160160P10006	B	From Leg	2.000	0.000	130'	No Ice	0.917	0.294	0.002
(E)			0'			1/2" Ice	1.049	0.408	0.007
			0'			1" Ice	1.187	0.530	0.014
						2" Ice	1.493	0.783	0.035
M5160160P10006	C	From Leg	2.000	0.000	130'	No Ice	0.917	0.294	0.002
(E)			0'			1/2" Ice	1.049	0.408	0.007
			0'			1" Ice	1.187	0.530	0.014
						2" Ice	1.493	0.783	0.035
Side Arm Mount [SO 301-1]	B	From Leg	1.000	0.000	130'	No Ice	0.460	0.910	0.023
(E)			0'			1/2" Ice	0.650	1.300	0.033
			0'			1" Ice	0.870	1.710	0.047
						2" Ice	1.410	2.620	0.091
Side Arm Mount [SO 301-1]	C	From Leg	1.000	0.000	130'	No Ice	0.460	0.910	0.023
(E)			0'			1/2" Ice	0.650	1.300	0.033
			0'			1" Ice	0.870	1.710	0.047

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	1.410	2.620	0.091
***									
SC320	B	From Leg	4.000	0.000	118'	No Ice	6.380	6.380	0.025
(E)			0'			1/2" Ice	8.613	8.613	0.071
			10'			1" Ice	10.862	10.862	0.131
						2" Ice	15.410	15.410	0.293
SC229-SFXLDF	C	From Leg	4.000	0.000	118'	No Ice	5.950	5.950	0.032
(E)			0'			1/2" Ice	7.967	7.967	0.075
			10'			1" Ice	10.000	10.000	0.130
						2" Ice	14.117	14.117	0.279
Side Arm Mount [SO 306-1]	B	From Leg	2.000	0.000	118'	No Ice	0.410	2.260	0.042
(E)			0'			1/2" Ice	0.810	3.830	0.062
			0'			1" Ice	1.230	5.480	0.094
						2" Ice	2.080	9.370	0.187
Side Arm Mount [SO 306-1]	C	From Leg	2.000	0.000	118'	No Ice	0.410	2.260	0.042
(E)			0'			1/2" Ice	0.810	3.830	0.062
			0'			1" Ice	1.230	5.480	0.094
						2" Ice	2.080	9.370	0.187
10' x 2.375" Horizontal	B	From Face	1.000	0.000	118'	No Ice	2.375	0.061	0.040
Mount Pipe			0'			1/2" Ice	3.403	0.124	0.058
(E-Tie Back as per photo)			0'			1" Ice	4.448	0.209	0.082
						2" Ice	5.911	0.443	0.151
10' x 2.375" Horizontal	C	From Face	1.000	0.000	118'	No Ice	2.375	0.061	0.040
Mount Pipe			0'			1/2" Ice	3.403	0.124	0.058
(E-Tie Back as per photo)			0'			1" Ice	4.448	0.209	0.082
						2" Ice	5.911	0.443	0.151
***									
ERICSSON AIR 21 B2A	A	From Leg	4.000	0.000	114'	No Ice	6.329	5.642	0.112
B4P w/ Mount Pipe			0'			1/2" Ice	6.775	6.426	0.169
(E)			-2'			1" Ice	7.214	7.131	0.233
						2" Ice	8.117	8.591	0.383
ERICSSON AIR 21 B2A	B	From Leg	4.000	0.000	114'	No Ice	6.329	5.642	0.112
B4P w/ Mount Pipe			0'			1/2" Ice	6.775	6.426	0.169
(E)			-2'			1" Ice	7.214	7.131	0.233
						2" Ice	8.117	8.591	0.383
ERICSSON AIR 21 B2A	C	From Leg	4.000	0.000	114'	No Ice	6.329	5.642	0.112
B4P w/ Mount Pipe			0'			1/2" Ice	6.775	6.426	0.169
(E)			-2'			1" Ice	7.214	7.131	0.233
						2" Ice	8.117	8.591	0.383
KRY 112 71	A	From Leg	4.000	0.000	114'	No Ice	0.583	0.398	0.013
(E)			0'			1/2" Ice	0.688	0.488	0.018
			-2'			1" Ice	0.799	0.586	0.025
						2" Ice	1.045	0.805	0.044
KRY 112 71	B	From Leg	4.000	0.000	114'	No Ice	0.583	0.398	0.013
(E)			0'			1/2" Ice	0.688	0.488	0.018
			-2'			1" Ice	0.799	0.586	0.025
						2" Ice	1.045	0.805	0.044
KRY 112 71	C	From Leg	4.000	0.000	114'	No Ice	0.583	0.398	0.013
(E)			0'			1/2" Ice	0.688	0.488	0.018
			-2'			1" Ice	0.799	0.586	0.025
						2" Ice	1.045	0.805	0.044
AIR 32 B2a/B66Aa	A	From Leg	4.000	0.000	114'	No Ice	6.510	4.712	0.132
(P)			0'			1/2" Ice	6.887	5.068	0.178
			-2'			1" Ice	7.271	5.431	0.229
						2" Ice	8.060	6.178	0.348
AIR 32 B2a/B66Aa	B	From Leg	4.000	0.000	114'	No Ice	6.510	4.712	0.132
(P)			0'			1/2" Ice	6.887	5.068	0.178

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'			1" Ice	7.271	5.431	0.229
						2" Ice	8.060	6.178	0.348
AIR 32 B2a/B66Aa (P)	C	From Leg	4.000 0' -2'	0.000	114'	No Ice 1/2" Ice 1" Ice	6.510 6.887 7.271	4.712 5.068 5.431	0.132 0.178 0.229
						2" Ice	8.060	6.178	0.348
APXVAARR24_43-U-NA20 (P)	A	From Leg	4.000 0' -2'	0.000	114'	No Ice 1/2" Ice 1" Ice	14.670 15.430 16.210	5.320 5.990 6.680	0.153 0.266 0.387
						2" Ice	17.810	8.080	0.656
APXVAARR24_43-U-NA20 (P)	B	From Leg	4.000 0' -2'	0.000	114'	No Ice 1/2" Ice 1" Ice	14.670 15.430 16.210	5.320 5.990 6.680	0.153 0.266 0.387
						2" Ice	17.810	8.080	0.656
APXVAARR24_43-U-NA20 (P)	C	From Leg	4.000 0' -2'	0.000	114'	No Ice 1/2" Ice 1" Ice	14.670 15.430 16.210	5.320 5.990 6.680	0.153 0.266 0.387
						2" Ice	17.810	8.080	0.656
RADIO 4449 B12/B71 (P)	A	From Leg	4.000 0' -2'	0.000	114'	No Ice 1/2" Ice 1" Ice	1.650 1.810 1.978	1.300 1.445 1.597	0.075 0.092 0.112
						2" Ice	2.336	1.924	0.161
RADIO 4449 B12/B71 (P)	B	From Leg	4.000 0' -2'	0.000	114'	No Ice 1/2" Ice 1" Ice	1.650 1.810 1.978	1.300 1.445 1.597	0.075 0.092 0.112
						2" Ice	2.336	1.924	0.161
RADIO 4449 B12/B71 (P)	C	From Leg	4.000 0' -2'	0.000	114'	No Ice 1/2" Ice 1" Ice	1.650 1.810 1.978	1.300 1.445 1.597	0.075 0.092 0.112
						2" Ice	2.336	1.924	0.161
L 2.5x2.5x3/16x6' (P-Mod)	A	From Leg	2.000 0' 0'	0.000	114'	No Ice 1/2" Ice 1" Ice	1.500 1.918 2.343	0.005 0.024 0.049	0.025 0.034 0.048
						2" Ice	3.215	0.123	0.091
L 2.5x2.5x3/16x6' (P-Mod)	B	From Leg	2.000 0' 0'	0.000	114'	No Ice 1/2" Ice 1" Ice	1.500 1.918 2.343	0.005 0.024 0.049	0.025 0.034 0.048
						2" Ice	3.215	0.123	0.091
L 2.5x2.5x3/16x6' (P-Mod)	C	From Leg	2.000 0' 0'	0.000	114'	No Ice 1/2" Ice 1" Ice	1.500 1.918 2.343	0.005 0.024 0.049	0.025 0.034 0.048
						2" Ice	3.215	0.123	0.091
Sector Mount [SM 307-3] (E-4 M.Pipes/Sector&2 tie back included)	C	None		0.000	114'	No Ice 1/2" Ice 1" Ice	26.180 35.720 45.160	26.180 35.720 45.160	1.620 2.113 2.761
						2" Ice	63.920	63.920	4.520
***									
800MHZ 2X50W RRH W/FILTER (E)	A	From Leg	2.000 0' 0'	0.000	103'	No Ice 1/2" Ice 1" Ice	2.058 2.240 2.429	1.932 2.109 2.293	0.064 0.086 0.111
						2" Ice	2.829	2.684	0.172
800MHZ 2X50W RRH W/FILTER (E)	B	From Leg	2.000 0' 0'	0.000	103'	No Ice 1/2" Ice 1" Ice	2.058 2.240 2.429	1.932 2.109 2.293	0.064 0.086 0.111
						2" Ice	2.829	2.684	0.172
800MHZ 2X50W RRH W/FILTER	C	From Leg	2.000 0'	0.000	103'	No Ice 1/2" Ice	2.058 2.240	1.932 2.109	0.064 0.086

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
(E)			0'			1" Ice	2.429	2.293	0.111
						2" Ice	2.829	2.684	0.172
PCS 1900MHZ 2X40W	A	From Leg	2.000	0.000	103'	No Ice	2.351	1.278	0.044
(E)			0'			1/2" Ice	2.547	1.434	0.062
			0'			1" Ice	2.751	1.598	0.084
						2" Ice	3.181	1.946	0.135
PCS 1900MHZ 2X40W	B	From Leg	2.000	0.000	103'	No Ice	2.351	1.278	0.044
(E)			0'			1/2" Ice	2.547	1.434	0.062
			0'			1" Ice	2.751	1.598	0.084
						2" Ice	3.181	1.946	0.135
PCS 1900MHZ 2X40W	C	From Leg	2.000	0.000	103'	No Ice	2.351	1.278	0.044
(E)			0'			1/2" Ice	2.547	1.434	0.062
			0'			1" Ice	2.751	1.598	0.084
						2" Ice	3.181	1.946	0.135
(2) 4' x 2" Pipe Mount	A	From Leg	1.000	0.000	103'	No Ice	0.785	0.785	0.029
(E-For TMA As per photo)			0'			1/2" Ice	1.028	1.028	0.035
			0'			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
(2) 4' x 2" Pipe Mount	B	From Leg	1.000	0.000	103'	No Ice	0.785	0.785	0.029
(E-For TMA As per photo)			0'			1/2" Ice	1.028	1.028	0.035
			0'			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
(2) 4' x 2" Pipe Mount	C	From Leg	1.000	0.000	103'	No Ice	0.785	0.785	0.029
(E-For TMA As per photo)			0'			1/2" Ice	1.028	1.028	0.035
			0'			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
Pipe Mount [PM 601-3]	C	None		0.000	103'	No Ice	3.170	3.170	0.195
(E)						1/2" Ice	3.790	3.790	0.232
						1" Ice	4.420	4.420	0.279
						2" Ice	5.760	5.760	0.401
***									
APXVSPP18-C-A20 w/	A	From Leg	4.000	0.000	100'	No Ice	4.600	4.010	0.095
Mount Pipe			0'			1/2" Ice	5.050	4.450	0.160
(E)			0'			1" Ice	5.500	4.890	0.235
						2" Ice	6.440	5.820	0.419
APXVSPP18-C-A20 w/	B	From Leg	4.000	0.000	100'	No Ice	4.600	4.010	0.095
Mount Pipe			0'			1/2" Ice	5.050	4.450	0.160
(E)			0'			1" Ice	5.500	4.890	0.235
						2" Ice	6.440	5.820	0.419
APXVSPP18-C-A20 w/	C	From Leg	4.000	0.000	100'	No Ice	4.600	4.010	0.095
Mount Pipe			0'			1/2" Ice	5.050	4.450	0.160
(E)			0'			1" Ice	5.500	4.890	0.235
						2" Ice	6.440	5.820	0.419
DT465B-2XR w/ Mount Pipe	A	From Leg	4.000	0.000	100'	No Ice	5.500	4.380	0.091
(R)			0'			1/2" Ice	5.970	4.840	0.164
			0'			1" Ice	6.450	5.300	0.248
						2" Ice	7.440	6.260	0.451
DT465B-2XR w/ Mount Pipe	B	From Leg	4.000	0.000	100'	No Ice	5.500	4.380	0.091
(R)			0'			1/2" Ice	5.970	4.840	0.164
			0'			1" Ice	6.450	5.300	0.248
						2" Ice	7.440	6.260	0.451
DT465B-2XR w/ Mount Pipe	C	From Leg	4.000	0.000	100'	No Ice	5.500	4.380	0.091
(R)			0'			1/2" Ice	5.970	4.840	0.164
			0'			1" Ice	6.450	5.300	0.248
						2" Ice	7.440	6.260	0.451
RRH2X50-800	A	From Leg	4.000	0.000	100'	No Ice	1.701	1.282	0.053
(R)			0'			1/2" Ice	1.864	1.428	0.070

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
			3'			1" Ice	2.035	1.580	0.090
						2" Ice	2.398	1.908	0.138
RRH2X50-800	B	From Leg	4.000	0.000	100'	No Ice	1.701	1.282	0.053
(R)			0'			1/2" Ice	1.864	1.428	0.070
			3'			1" Ice	2.035	1.580	0.090
						2" Ice	2.398	1.908	0.138
RRH2X50-800	C	From Leg	4.000	0.000	100'	No Ice	1.701	1.282	0.053
(R)			0'			1/2" Ice	1.864	1.428	0.070
			3'			1" Ice	2.035	1.580	0.090
						2" Ice	2.398	1.908	0.138
TD-RRH8X20-25	A	From Leg	4.000	0.000	100'	No Ice	4.045	1.535	0.070
(R)			0'			1/2" Ice	4.298	1.714	0.097
			3'			1" Ice	4.557	1.901	0.128
						2" Ice	5.098	2.295	0.201
TD-RRH8X20-25	B	From Leg	4.000	0.000	100'	No Ice	4.045	1.535	0.070
(R)			0'			1/2" Ice	4.298	1.714	0.097
			3'			1" Ice	4.557	1.901	0.128
						2" Ice	5.098	2.295	0.201
TD-RRH8X20-25	C	From Leg	4.000	0.000	100'	No Ice	4.045	1.535	0.070
(R)			0'			1/2" Ice	4.298	1.714	0.097
			3'			1" Ice	4.557	1.901	0.128
						2" Ice	5.098	2.295	0.201
10' x 2.375" Horizontal	A	From Leg	4.000	0.000	100'	No Ice	2.375	0.061	0.040
Mount Pipe			0'			1/2" Ice	3.403	0.124	0.058
(R-STK-U STIFF Arm)			0'			1" Ice	4.448	0.209	0.082
						2" Ice	5.911	0.443	0.151
10' x 2.375" Horizontal	B	From Leg	4.000	0.000	100'	No Ice	2.375	0.061	0.040
Mount Pipe			0'			1/2" Ice	3.403	0.124	0.058
(R-STK-U STIFF Arm)			0'			1" Ice	4.448	0.209	0.082
						2" Ice	5.911	0.443	0.151
10' x 2.375" Horizontal	C	From Leg	4.000	0.000	100'	No Ice	2.375	0.061	0.040
Mount Pipe			0'			1/2" Ice	3.403	0.124	0.058
(R-STK-U STIFF Arm)			0'			1" Ice	4.448	0.209	0.082
						2" Ice	5.911	0.443	0.151
Sector Mount [SM 406-3]	C	None		0.000	100'	No Ice	19.760	19.760	0.923
(E)						1/2" Ice	29.240	29.240	1.311
						1" Ice	38.800	38.800	1.845
						2" Ice	58.910	58.910	3.330
***									
(2) BXA-171063/8CF w/	A	From Leg	4.000	0.000	88'	No Ice	3.140	3.510	0.029
Mount Pipe			0'			1/2" Ice	3.515	4.130	0.062
(E)			2'			1" Ice	3.892	4.757	0.100
						2" Ice	4.654	6.059	0.196
(2) BXA-171063/8CF w/	B	From Leg	4.000	0.000	88'	No Ice	3.140	3.510	0.029
Mount Pipe			0'			1/2" Ice	3.515	4.130	0.062
(E)			2'			1" Ice	3.892	4.757	0.100
						2" Ice	4.654	6.059	0.196
(2) BXA-171063/8CF w/	C	From Leg	4.000	0.000	88'	No Ice	3.140	3.510	0.029
Mount Pipe			0'			1/2" Ice	3.515	4.130	0.062
(E)			2'			1" Ice	3.892	4.757	0.100
						2" Ice	4.654	6.059	0.196
SWCP 2x5514 w/ Mount	A	From Leg	4.000	0.000	88'	No Ice	6.524	6.531	0.039
Pipe			0'			1/2" Ice	6.949	7.240	0.104
(E)			2'			1" Ice	7.375	7.920	0.174
						2" Ice	8.252	9.331	0.339
SWCP 2x5514 w/ Mount	B	From Leg	4.000	0.000	88'	No Ice	6.524	6.531	0.039
Pipe			0'			1/2" Ice	6.949	7.240	0.104

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
(E)			2'			1" Ice	7.375	7.920	0.174
						2" Ice	8.252	9.331	0.339
SWCP 2x5514 w/ Mount Pipe	C	From Leg	4.000 0'	0.000	88'	No Ice 1/2" Ice	6.524 6.949	6.531 7.240	0.039 0.104
(E)			2'			1" Ice	7.375	7.920	0.174
						2" Ice	8.252	9.331	0.339
(2) LPA-80063/4CF w/ Mount Pipe	A	From Leg	4.000 0'	0.000	88'	No Ice 1/2" Ice	6.385 6.784	6.603 7.232	0.038 0.104
(E)			2'			1" Ice	7.192	7.876	0.176
						2" Ice	8.035	9.214	0.344
(2) LPA-80063/4CF w/ Mount Pipe	B	From Leg	4.000 0'	0.000	88'	No Ice 1/2" Ice	6.385 6.784	6.603 7.232	0.038 0.104
(E)			2'			1" Ice	7.192	7.876	0.176
						2" Ice	8.035	9.214	0.344
(2) LPA-80063/4CF w/ Mount Pipe	C	From Leg	4.000 0'	0.000	88'	No Ice 1/2" Ice	6.385 6.784	6.603 7.232	0.038 0.104
(E)			2'			1" Ice	7.192	7.876	0.176
						2" Ice	8.035	9.214	0.344
(2) FD9R6004/2C-3L	A	From Leg	4.000 0'	0.000	88'	No Ice 1/2" Ice	0.314 0.386	0.076 0.119	0.003 0.005
(E)			2'			1" Ice	0.466	0.169	0.009
						2" Ice	0.647	0.294	0.020
(2) FD9R6004/2C-3L	B	From Leg	4.000 0'	0.000	88'	No Ice 1/2" Ice	0.314 0.386	0.076 0.119	0.003 0.005
(E)			2'			1" Ice	0.466	0.169	0.009
						2" Ice	0.647	0.294	0.020
(2) FD9R6004/2C-3L	C	From Leg	4.000 0'	0.000	88'	No Ice 1/2" Ice	0.314 0.386	0.076 0.119	0.003 0.005
(E)			2'			1" Ice	0.466	0.169	0.009
						2" Ice	0.647	0.294	0.020
DB-T1-6Z-8AB-0Z	C	From Leg	4.000 0'	0.000	88'	No Ice 1/2" Ice	4.800 5.070	2.000 2.193	0.044 0.080
(E)			2'			1" Ice	5.348	2.393	0.120
						2" Ice	5.926	2.815	0.213
Sector Mount [SM 408-3]	C	None		0.000	88'	No Ice	22.380	22.380	1.019
(E)						1/2" Ice	33.310	33.310	1.459
						1" Ice	44.350	44.350	2.064
						2" Ice	67.760	67.760	3.750
Pipe Mount [PM 601-3]	C	None		0.000	88'	No Ice	3.170	3.170	0.195
(E)						1/2" Ice	3.790	3.790	0.232
						1" Ice	4.420	4.420	0.279
						2" Ice	5.760	5.760	0.401
***									
APXV18-206517S-C w/ Mount Pipe	A	From Leg	1.000 0'	0.000	65'	No Ice 1/2" Ice	3.790 4.380	3.160 3.750	0.053 0.094
(AB-Leg connected)			0'			1" Ice	4.990	4.350	0.145
						2" Ice	6.250	5.590	0.281
APXV18-206517S-C w/ Mount Pipe	B	From Leg	1.000 0'	0.000	65'	No Ice 1/2" Ice	3.790 4.380	3.160 3.750	0.053 0.094
(AB-Leg connected)			0'			1" Ice	4.990	4.350	0.145
						2" Ice	6.250	5.590	0.281
APXV18-206517S-C w/ Mount Pipe	C	From Leg	1.000 0'	0.000	65'	No Ice 1/2" Ice	3.790 4.380	3.160 3.750	0.053 0.094
(AB-Leg connected)			0'			1" Ice	4.990	4.350	0.145
						2" Ice	6.250	5.590	0.281
***									
GPS-TMG-HR-26NCM	C	From Leg	1.000	0.000	50'	No Ice	0.133	0.133	0.001

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
(E)			0'			1/2" Ice	0.183	0.183	0.002
			0'			1" Ice	0.239	0.239	0.005
						2" Ice	0.375	0.375	0.014
4' x 2" Pipe Mount	C	From Leg	0.500	0.000	50'	No Ice	0.785	0.785	0.029
(E)			0'			1/2" Ice	1.028	1.028	0.035
			0'			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
***									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
HPLPD1-18	B	Paraboloid	From	4.000	-27.000		150'	1.140	No Ice	1.021	0.017
(E)		w/Shroud (HP)	Leg	0'					1/2" Ice	1.175	0.023
				1'					1" Ice	1.330	0.029
									2" Ice	1.639	0.041
HPLPD1-18	C	Paraboloid	From	4.000	-11.000		150'	1.140	No Ice	1.021	0.017
(E)		w/Shroud (HP)	Leg	0'					1/2" Ice	1.175	0.023
				1'					1" Ice	1.330	0.029
									2" Ice	1.639	0.041
***											

Truss-Leg Properties

Section Designation	Area in^2	Area Ice in^2	Self Weight K	Ice Weight K	Equiv. Diameter in	Equiv. Diameter Ice in	Leg Area in^2
Pirod 105244	1026.861	3022.418	0.563	0.444	7.131	20.989	3.682
Pirod 105216	1998.089	6207.095	0.505	0.833	6.938	21.552	3.682
Pirod 105217	2130.748	6248.170	0.619	0.819	7.398	21.695	5.301
Pirod 105218	2263.469	6279.964	0.755	0.796	7.859	21.805	7.216
Pirod 105218	2263.469	6221.454	0.755	0.737	7.859	21.602	7.216
Pirod 105219	2441.869	6177.301	0.944	0.658	8.479	21.449	9.425

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice

Comb. No.	Description
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	150 - 147.583	Leg	Max Tension	23	0.749	0.000	0.000
			Max. Compression	35	-3.754	-0.052	0.009
			Max. Mx	18	-2.324	-0.132	0.021
			Max. My	2	-0.322	0.060	-0.064
			Max. Vy	18	0.062	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	24	0.031	0.000	0.000
		Diagonal	Max Tension	5	1.252	0.000	0.000
			Max. Compression	4	-1.303	0.000	0.000
			Max. Mx	26	-0.069	0.005	0.000
			Max. Vy	26	-0.006	0.000	0.000
		Top Girt	Max Tension	15	0.882	0.000	0.000
			Max. Compression	2	-0.897	0.017	-0.000
			Max. Mx	31	0.093	-0.092	-0.000
			Max. My	27	0.052	-0.052	-0.000
			Max. Vy	31	0.068	-0.092	-0.000
			Max. Vx	27	-0.000	0.000	0.000
T2	147.583 - 130	Leg	Max Tension	7	24.000	-0.272	0.023
			Max. Compression	2	-29.269	0.281	0.006
			Max. Mx	6	23.266	0.586	-0.034
			Max. My	21	-2.006	-0.003	0.582
			Max. Vy	2	-2.587	0.281	0.006
			Max. Vx	9	-2.290	0.003	0.221
		Diagonal	Max Tension	5	3.119	0.000	0.000
			Max. Compression	4	-3.134	0.000	0.000
			Max. Mx	27	0.756	-0.005	0.000
			Max. My	6	-2.457	-0.001	-0.000
			Max. Vy	27	0.008	-0.005	0.000
			Max. Vx	6	0.000	-0.001	-0.000
		Horizontal	Max Tension	14	0.582	0.000	0.000
			Max. Compression	3	-0.345	0.000	0.000
			Max. Mx	26	0.369	0.016	0.000
			Max. Vy	26	0.015	0.000	0.000
		Top Girt	Max Tension	10	0.172	0.000	0.000
			Max. Compression	7	-0.125	0.000	0.000
			Max. Mx	26	0.046	0.014	0.000
			Max. Vy	26	-0.014	0.000	0.000
		Bottom Girt	Max Tension	14	1.488	0.000	0.000
			Max. Compression	3	-1.363	0.000	0.000
			Max. Mx	26	0.054	0.017	0.000
			Max. Vy	26	-0.015	0.000	0.000
T3	130 - 110	Leg	Max Tension	7	63.971	-2.271	0.003
			Max. Compression	2	-73.259	2.262	-0.010
			Max. Mx	6	62.718	-2.273	0.003
			Max. My	8	-5.768	-0.005	1.587
			Max. Vy	6	4.937	-2.273	0.003
			Max. Vx	9	-3.328	-0.001	1.587
		Diagonal	Max Tension	25	4.852	0.000	0.000
			Max. Compression	8	-4.948	0.000	0.000
			Max. Mx	27	1.168	-0.007	0.000
			Max. My	6	-3.313	-0.002	-0.001
			Max. Vy	27	0.011	-0.007	0.000
			Max. Vx	6	0.000	0.000	0.000
		Horizontal	Max Tension	14	0.941	0.000	0.000
			Max. Compression	3	-0.800	0.000	0.000
			Max. Mx	26	0.277	0.017	0.000
			Max. Vy	26	-0.014	0.000	0.000
		Top Girt	Max Tension	10	1.462	0.000	0.000
			Max. Compression	7	-1.448	0.000	0.000
			Max. Mx	26	0.028	0.017	0.000
			Max. Vy	26	-0.015	0.000	0.000
		Bottom Girt	Max Tension	14	1.794	0.000	0.000
			Max. Compression	3	-1.667	0.000	0.000
			Max. Mx	26	0.162	0.020	0.000
			Max. Vy	26	0.016	0.000	0.000
T4	110 - 100	Leg	Max Tension	7	67.473	-2.271	0.003
			Max. Compression	2	-75.797	4.796	0.038

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	2	-75.797	4.796	0.038
			Max. My	8	-5.410	0.022	4.832
			Max. Vy	14	0.508	-4.694	-0.015
			Max. Vx	8	-0.601	0.022	4.832
		Diagonal	Max Tension	9	7.294	0.047	0.002
			Max. Compression	8	-8.621	0.000	0.000
			Max. Mx	8	4.366	0.066	-0.001
			Max. My	35	-3.951	0.008	0.008
			Max. Vy	28	0.026	0.043	-0.005
			Max. Vx	35	-0.002	0.000	0.000
		Top Girt	Max Tension	14	1.010	0.000	0.000
			Max. Compression	3	-0.644	0.000	0.000
			Max. Mx	26	0.515	-0.046	0.000
			Max. My	26	0.513	0.000	0.001
			Max. Vy	26	0.036	0.000	0.000
			Max. Vx	26	0.001	0.000	0.000
T5	100 - 80	Leg	Max Tension	7	101.622	-4.825	0.020
			Max. Compression	2	-115.377	5.268	0.031
			Max. Mx	2	-115.377	5.268	0.031
			Max. My	8	-6.295	-0.109	5.422
			Max. Vy	6	-0.919	-4.388	0.076
			Max. Vx	8	1.293	-0.109	5.422
		Diagonal	Max Tension	9	12.815	0.000	0.000
			Max. Compression	8	-15.284	0.000	0.000
			Max. Mx	2	0.443	0.141	-0.004
			Max. My	35	-6.090	0.020	0.010
			Max. Vy	27	-0.043	0.091	0.009
			Max. Vx	35	-0.003	0.000	0.000
		Top Girt	Max Tension	6	8.392	0.000	0.000
			Max. Compression	3	-6.686	0.000	0.000
			Max. Mx	26	2.529	-0.065	0.000
			Max. My	26	2.344	0.000	0.002
			Max. Vy	26	-0.043	0.000	0.000
			Max. Vx	26	-0.001	0.000	0.000
		Mid Girt	Max Tension	6	12.084	0.000	0.000
			Max. Compression	3	-9.712	0.000	0.000
			Max. Mx	26	3.647	-0.088	0.000
			Max. My	26	3.406	0.000	0.003
			Max. Vy	26	0.050	0.000	0.000
			Max. Vx	26	0.001	0.000	0.000
T6	80 - 60	Leg	Max Tension	7	148.441	-4.245	0.083
			Max. Compression	2	-170.921	5.591	0.043
			Max. Mx	2	-170.921	5.591	0.043
			Max. My	9	-8.274	-0.275	7.554
			Max. Vy	10	-0.355	5.508	0.004
			Max. Vx	9	-0.701	-0.275	7.554
		Diagonal	Max Tension	16	8.161	0.000	0.000
			Max. Compression	10	-8.326	0.000	0.000
			Max. Mx	2	6.840	0.123	0.010
			Max. My	4	-7.827	-0.059	0.018
			Max. Vy	27	-0.048	0.105	0.011
			Max. Vx	38	0.003	0.000	0.000
		Top Girt	Max Tension	6	8.606	0.000	0.000
			Max. Compression	3	-7.045	0.000	0.000
			Max. Mx	26	2.455	-0.113	0.000
			Max. My	26	2.306	0.000	0.003
			Max. Vy	26	0.056	0.000	0.000
			Max. Vx	26	-0.002	0.000	0.000
T7	60 - 40	Leg	Max Tension	23	185.517	-4.812	-0.018
			Max. Compression	2	-212.166	6.387	0.145
			Max. Mx	2	-212.166	6.387	0.145

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	9	-11.044	0.079	6.170
			Max. Vy	10	-0.283	6.349	0.106
			Max. Vx	9	-0.368	0.079	6.170
		Diagonal	Max Tension	16	8.048	0.000	0.000
			Max. Compression	16	-8.107	0.000	0.000
			Max. Mx	27	1.607	0.098	0.011
			Max. My	36	-0.974	0.064	-0.012
			Max. Vy	37	0.052	0.089	0.011
			Max. Vx	36	0.003	0.000	0.000
T8	40 - 20	Leg	Max Tension	23	220.498	-4.643	-0.023
			Max. Compression	2	-251.350	5.802	0.036
			Max. Mx	2	-231.628	6.387	0.145
			Max. My	9	-11.517	0.079	6.170
			Max. Vy	33	0.495	-4.251	-0.033
			Max. Vx	9	0.422	-0.131	5.849
		Diagonal	Max Tension	16	8.540	0.000	0.000
			Max. Compression	10	-8.807	0.000	0.000
			Max. Mx	2	6.580	0.151	0.012
			Max. My	30	2.730	0.125	0.018
			Max. Vy	37	0.071	0.128	0.016
			Max. Vx	30	-0.004	0.000	0.000
T9	20 - 0	Leg	Max Tension	23	252.361	-5.282	-0.033
			Max. Compression	2	-287.671	0.000	0.000
			Max. Mx	27	-125.323	5.982	-0.053
			Max. My	24	-15.779	-0.425	9.011
			Max. Vy	33	-0.817	-4.251	-0.033
			Max. Vx	9	1.061	-0.285	8.976
		Diagonal	Max Tension	7	10.091	0.000	0.000
			Max. Compression	10	-10.923	0.000	0.000
			Max. Mx	27	0.656	0.158	0.017
			Max. My	8	8.539	0.123	0.023
			Max. Vy	37	0.074	0.156	-0.017
			Max. Vx	36	0.004	0.000	0.000

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	18	291.754	26.320	-16.086
	Max. H_x	18	291.754	26.320	-16.086
	Max. H_z	7	-257.796	-23.551	14.423
	Min. Vert	7	-257.796	-23.551	14.423
	Min. H_x	7	-257.796	-23.551	14.423
	Min. H_z	18	291.754	26.320	-16.086
Leg B	Max. Vert	10	295.903	-27.093	-16.198
	Max. H_x	23	-261.720	24.235	14.502
	Max. H_z	23	-261.720	24.235	14.502
	Min. Vert	23	-261.720	24.235	14.502
	Min. H_x	10	295.903	-27.093	-16.198
	Min. H_z	10	295.903	-27.093	-16.198
Leg A	Max. Vert	2	298.447	-0.461	31.365
	Max. H_x	21	13.577	2.435	1.084
	Max. H_z	2	298.447	-0.461	31.365
	Min. Vert	15	-258.051	0.443	-27.798
	Min. H_x	8	19.952	-2.447	1.598
	Min. H_z	15	-258.051	0.443	-27.798

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K

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	44.395	0.000	-0.000	-15.834	5.386	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	53.274	0.102	-46.972	-3889.338	-5.739	-12.557
0.9 Dead+1.0 Wind 0 deg - No Ice	39.955	0.102	-46.972	-3884.588	-7.355	-12.557
1.2 Dead+1.0 Wind 30 deg - No Ice	53.274	22.244	-38.450	-3235.730	-1856.141	-11.159
0.9 Dead+1.0 Wind 30 deg - No Ice	39.955	22.244	-38.450	-3230.980	-1857.756	-11.159
1.2 Dead+1.0 Wind 60 deg - No Ice	53.274	39.063	-22.615	-1901.120	-3241.342	-20.532
0.9 Dead+1.0 Wind 60 deg - No Ice	39.955	39.063	-22.615	-1896.370	-3242.958	-20.532
1.2 Dead+1.0 Wind 90 deg - No Ice	53.274	46.831	-0.097	-30.406	-3829.462	-25.466
0.9 Dead+1.0 Wind 90 deg - No Ice	39.955	46.831	-0.097	-25.656	-3831.078	-25.466
1.2 Dead+1.0 Wind 120 deg - No Ice	53.274	41.151	23.709	1911.011	-3346.995	-12.698
0.9 Dead+1.0 Wind 120 deg - No Ice	39.955	41.151	23.709	1915.761	-3348.611	-12.698
1.2 Dead+1.0 Wind 150 deg - No Ice	53.274	23.287	40.445	3304.531	-1905.066	10.135
0.9 Dead+1.0 Wind 150 deg - No Ice	39.955	23.287	40.445	3309.281	-1906.682	10.135
1.2 Dead+1.0 Wind 180 deg - No Ice	53.274	-0.089	45.507	3755.456	16.651	12.569
0.9 Dead+1.0 Wind 180 deg - No Ice	39.955	-0.089	45.507	3760.206	15.035	12.569
1.2 Dead+1.0 Wind 210 deg - No Ice	53.274	-22.151	38.278	3175.250	1857.064	11.141
0.9 Dead+1.0 Wind 210 deg - No Ice	39.955	-22.151	38.278	3180.000	1855.448	11.141
1.2 Dead+1.0 Wind 240 deg - No Ice	53.274	-40.006	23.154	1885.821	3295.154	20.484
0.9 Dead+1.0 Wind 240 deg - No Ice	39.955	-40.006	23.154	1890.571	3293.538	20.484
1.2 Dead+1.0 Wind 270 deg - No Ice	53.274	-46.646	0.092	-8.327	3818.603	25.433
0.9 Dead+1.0 Wind 270 deg - No Ice	39.955	-46.646	0.092	-3.577	3816.988	25.433
1.2 Dead+1.0 Wind 300 deg - No Ice	53.274	-40.056	-23.079	-1914.526	3299.627	12.654
0.9 Dead+1.0 Wind 300 deg - No Ice	39.955	-40.056	-23.079	-1909.776	3298.011	12.654
1.2 Dead+1.0 Wind 330 deg - No Ice	53.274	-23.297	-40.442	-3342.010	1919.491	-10.167
0.9 Dead+1.0 Wind 330 deg - No Ice	39.955	-23.297	-40.442	-3337.260	1917.875	-10.167
1.2 Dead+1.0 Ice+1.0 Temp	137.064	-0.000	-0.000	-68.990	26.936	0.000
1.2 Dead+1.0 Wind 0 deg+1.0	137.064	0.025	-12.763	-1144.742	23.909	-2.038

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+1.0 Temp 1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	137.064	6.293	-10.904	-991.902	-505.695	-1.077
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	137.064	11.152	-6.467	-611.704	-907.321	-3.038
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	137.064	13.325	-0.024	-71.832	-1076.516	-5.243
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	137.064	11.557	6.674	478.826	-921.816	-2.774
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	137.064	6.429	11.186	861.190	-506.710	1.397
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	137.064	-0.022	12.468	980.292	29.495	2.041
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	137.064	-6.224	10.781	838.098	550.657	1.072
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	137.064	-11.167	6.474	468.855	953.122	3.027
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	137.064	-13.187	0.023	-66.318	1112.621	5.236
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	137.064	-11.425	-6.598	-612.817	968.648	2.764
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	137.064	-6.431	-11.185	-999.049	560.929	-1.404
Dead+Wind 0 deg - Service	44.395	0.025	-11.392	-954.492	2.427	-3.045
Dead+Wind 30 deg - Service	44.395	5.395	-9.325	-795.975	-446.344	-2.706
Dead+Wind 60 deg - Service	44.395	9.474	-5.485	-472.297	-782.292	-4.980
Dead+Wind 90 deg - Service	44.395	11.358	-0.024	-18.600	-924.927	-6.176
Dead+Wind 120 deg - Service	44.395	9.980	5.750	452.245	-807.916	-3.080
Dead+Wind 150 deg - Service	44.395	5.648	9.809	790.210	-458.210	2.458
Dead+Wind 180 deg - Service	44.395	-0.022	11.037	899.571	7.857	3.048
Dead+Wind 210 deg - Service	44.395	-5.372	9.283	758.856	454.205	2.702
Dead+Wind 240 deg - Service	44.395	-9.702	5.615	446.136	802.980	4.968
Dead+Wind 270 deg - Service	44.395	-11.313	0.022	-13.245	929.930	6.168
Dead+Wind 300 deg - Service	44.395	-9.715	-5.597	-475.549	804.065	3.069
Dead+Wind 330 deg - Service	44.395	-5.650	-9.808	-821.751	469.346	-2.466

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	-44.395	0.000	0.000	44.395	0.000	0.000%
2	0.102	-53.274	-46.972	-0.102	53.274	46.972	0.000%
3	0.102	-39.955	-46.972	-0.102	39.955	46.972	0.000%
4	22.244	-53.274	-38.450	-22.244	53.274	38.450	0.000%
5	22.244	-39.955	-38.450	-22.244	39.955	38.450	0.000%
6	39.063	-53.274	-22.615	-39.063	53.274	22.615	0.000%
7	39.063	-39.955	-22.615	-39.063	39.955	22.615	0.000%
8	46.831	-53.274	-0.097	-46.831	53.274	0.097	0.000%
9	46.831	-39.955	-0.097	-46.831	39.955	0.097	0.000%
10	41.151	-53.274	23.709	-41.151	53.274	-23.709	0.000%
11	41.151	-39.955	23.709	-41.151	39.955	-23.709	0.000%
12	23.287	-53.274	40.445	-23.287	53.274	-40.445	0.000%
13	23.287	-39.955	40.445	-23.287	39.955	-40.445	0.000%
14	-0.089	-53.274	45.507	0.089	53.274	-45.507	0.000%
15	-0.089	-39.955	45.507	0.089	39.955	-45.507	0.000%
16	-22.151	-53.274	38.278	22.151	53.274	-38.278	0.000%
17	-22.151	-39.955	38.278	22.151	39.955	-38.278	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
18	-40.006	-53.274	23.154	40.006	53.274	-23.154	0.000%
19	-40.006	-39.955	23.154	40.006	39.955	-23.154	0.000%
20	-46.646	-53.274	0.092	46.646	53.274	-0.092	0.000%
21	-46.646	-39.955	0.092	46.646	39.955	-0.092	0.000%
22	-40.056	-53.274	-23.079	40.056	53.274	23.079	0.000%
23	-40.056	-39.955	-23.079	40.056	39.955	23.079	0.000%
24	-23.297	-53.274	-40.442	23.297	53.274	40.442	0.000%
25	-23.297	-39.955	-40.442	23.297	39.955	40.442	0.000%
26	0.000	-137.064	0.000	0.000	137.064	0.000	0.000%
27	0.025	-137.064	-12.763	-0.025	137.064	12.763	0.000%
28	6.293	-137.064	-10.904	-6.293	137.064	10.904	0.000%
29	11.152	-137.064	-6.467	-11.152	137.064	6.467	0.000%
30	13.325	-137.064	-0.024	-13.325	137.064	0.024	0.000%
31	11.557	-137.064	6.674	-11.557	137.064	-6.674	0.000%
32	6.429	-137.064	11.186	-6.429	137.064	-11.186	0.000%
33	-0.022	-137.064	12.468	0.022	137.064	-12.468	0.000%
34	-6.224	-137.064	10.781	6.224	137.064	-10.781	0.000%
35	-11.167	-137.064	6.474	11.167	137.064	-6.474	0.000%
36	-13.187	-137.064	0.023	13.187	137.064	-0.023	0.000%
37	-11.425	-137.064	-6.598	11.425	137.064	6.598	0.000%
38	-6.431	-137.064	-11.185	6.431	137.064	11.185	0.000%
39	0.025	-44.395	-11.392	-0.025	44.395	11.392	0.000%
40	5.395	-44.395	-9.325	-5.395	44.395	9.325	0.000%
41	9.474	-44.395	-5.485	-9.474	44.395	5.485	0.000%
42	11.358	-44.395	-0.024	-11.358	44.395	0.024	0.000%
43	9.980	-44.395	5.750	-9.980	44.395	-5.750	0.000%
44	5.648	-44.395	9.809	-5.648	44.395	-9.809	0.000%
45	-0.022	-44.395	11.037	0.022	44.395	-11.037	0.000%
46	-5.372	-44.395	9.283	5.372	44.395	-9.283	0.000%
47	-9.702	-44.395	5.615	9.702	44.395	-5.615	0.000%
48	-11.313	-44.395	0.022	11.313	44.395	-0.022	0.000%
49	-9.715	-44.395	-5.597	9.715	44.395	5.597	0.000%
50	-5.650	-44.395	-9.808	5.650	44.395	9.808	0.000%

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	150 - 147.583	5.215	39	0.323	0.027
T2	147.583 - 130	5.050	39	0.323	0.027
T3	130 - 110	3.858	39	0.301	0.021
T4	110 - 100	2.643	39	0.251	0.016
T5	100 - 80	2.134	39	0.223	0.014
T6	80 - 60	1.314	39	0.160	0.013
T7	60 - 40	0.718	39	0.110	0.009
T8	40 - 20	0.312	39	0.071	0.005
T9	20 - 0	0.082	39	0.031	0.003

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
151'	HPLPD1-18	39	5.215	0.323	0.027	385427
150'	SC226-SFXSNM	39	5.215	0.323	0.027	385427
141'	7770.00 w/ Mount Pipe	39	4.599	0.319	0.025	143285
130'	M5160160P10006	39	3.858	0.301	0.021	31337
118'	SC320	39	3.101	0.273	0.017	19721
114'	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	39	2.866	0.262	0.016	17604
103'	800MHZ 2X50W RRH W/FILTER	39	2.280	0.231	0.015	17244
100'	APXVSPP18-C-A20 w/ Mount Pipe	39	2.134	0.223	0.014	17771
88'	(2) BXA-171063/8CF w/ Mount Pipe	39	1.613	0.185	0.013	19907
65'	APXV18-206517S-C w/ Mount Pipe	39	0.848	0.121	0.010	24552
50'	GPS-TMG-HR-26NCM	39	0.493	0.090	0.007	26778

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	150 - 147.583	21.300	2	1.321	0.112
T2	147.583 - 130	20.626	2	1.319	0.110
T3	130 - 110	15.755	2	1.230	0.085
T4	110 - 100	10.792	2	1.025	0.064
T5	100 - 80	8.715	2	0.909	0.059
T6	80 - 60	5.367	2	0.654	0.052
T7	60 - 40	2.934	2	0.446	0.038
T8	40 - 20	1.276	2	0.288	0.023
T9	20 - 0	0.336	11	0.124	0.011

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
151'	HPLPD1-18	2	21.300	1.321	0.112	74109
150'	SC226-SFXSNM	2	21.300	1.321	0.112	74109
141'	7770.00 w/ Mount Pipe	2	18.785	1.301	0.101	35761
130'	M5160160P10006	2	15.755	1.230	0.085	7689
118'	SC320	2	12.663	1.114	0.070	4817
114'	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	2	11.706	1.070	0.067	4302
103'	800MHZ 2X50W RRH W/FILTER	2	9.308	0.945	0.061	4212
100'	APXVSPP18-C-A20 w/ Mount Pipe	2	8.715	0.909	0.059	4341
88'	(2) BXA-171063/8CF w/ Mount Pipe	2	6.586	0.755	0.055	4871
65'	APXV18-206517S-C w/ Mount Pipe	2	3.465	0.492	0.042	6018
50'	GPS-TMG-HR-26NCM	2	2.014	0.365	0.030	6559

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
T2	147.583	Leg	A325N	0.625	5	5.854	27.612	0.212 ✔	1.05	Bolt DS
T3	130	Leg	A325N	1.000	6	10.662	54.517	0.196 ✔	1.05	Bolt Tension
T4	110	Leg	A325N	1.000	6	11.245	54.517	0.206 ✔	1.05	Bolt Tension
		Diagonal	A325N	1.000	1	7.294	10.663	0.684 ✔	1.05	Member Block Shear
		Top Girt	A325N	1.000	1	1.010	11.682	0.086 ✔	1.05	Member Block Shear
T5	100	Leg	A325N	1.000	6	16.937	54.517	0.311 ✔	1.05	Bolt Tension
		Diagonal	A325N	1.000	1	12.815	21.326	0.601 ✔	1.05	Member Block Shear
		Top Girt	A325N	1.000	1	8.392	11.682	0.718 ✔	1.05	Member Block Shear
T6	80	Leg	A325N	1.000	6	24.740	54.517	0.454 ✔	1.05	Bolt Tension
		Diagonal	A325N	1.000	1	8.161	11.682	0.699 ✔	1.05	Member Block Shear
		Top Girt	A325N	1.000	1	8.606	11.682	0.737 ✔	1.05	Member Block Shear
T7	60	Leg	A325N	1.000	6	30.920	54.517	0.567 ✔	1.05	Bolt Tension
		Diagonal	A325N	1.000	1	8.048	11.682	0.689 ✔	1.05	Member Block Shear
T8	40	Leg	A325N	1.000	6	36.750	54.517	0.674 ✔	1.05	Bolt Tension
		Diagonal	A325N	1.000	1	8.540	19.471	0.439 ✔	1.05	Member Block Shear
T9	20	Diagonal	A325N	1.250	1	10.091	23.701	0.426 ✔	1.05	Member Block Shear

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	150 - 147.583	1 1/2	2'5"	2'5"	77.3 K=1.00	1.767	-3.754	51.350	0.073 [1] ✔
T2	147.583 - 130	1 1/2	17'7-1/32"	2'5"	77.3 K=1.00	1.767	-26.679	51.350	0.520 [1] ✔
T3	130 - 110	2	20'1/32"	2'4-3/8"	56.8 K=1.00	3.142	-69.345	111.705	0.621 [1] ✔
T4	110 - 100	Pirod 105244	10'7/32"	10'7/32"	45.4 K=1.00	3.682	-75.796	142.493	0.532 [1] ✔
T5	100 - 80	Pirod 105216	20'13/32"	10'7/32"	45.4 K=1.00	3.682	-115.377	142.493	0.810 [1] ✔
T6	80 - 60	Pirod 105217	20'13/32	10'7/32"	37.8	5.301	-170.921	214.859	0.796 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T7	60 - 40	Pirod 105218	20'13/32"	10'7/32"	K=1.00 32.4	7.216	-212.166	300.681	✔ 0.706 [1]
T8	40 - 20	Pirod 105218	20'13/32"	10'7/32"	K=1.00 32.4	7.216	-251.350	300.681	✔ 0.836 [1]
T9	20 - 0	Pirod 105219	20'13/32"	10'7/32"	K=1.00 28.4	9.425	-287.671	399.868	✔ 0.719 [1]
					K=1.00				✔

[1] P_u / ϕP_n controls

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n K	A in^2	V_u K	ϕV_n K	Stress Ratio
T4	110 - 100	0.5	1'5-25/32"	121.0	165.670	0.196	0.601	3.389	0.178 ✔
T5	100 - 80	0.5	1'5-25/32"	121.0	165.670	0.196	1.295	3.292	0.394 ✔
T6	80 - 60	0.5	1'5-21/32"	120.0	238.565	0.196	0.706	3.335	0.212 ✔
T7	60 - 40	0.5	1'5-1/2"	119.0	324.713	0.196	0.369	3.378	0.110 ✔
T8	40 - 20	0.5	1'5-1/2"	119.0	324.713	0.196	0.495	3.378	0.147 ✔
T9	20 - 0	0.625	1'5-11/32"	94.4	424.115	0.307	1.062	6.958	0.154 ✔

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	150 - 147.583	3/4	3'1-7/8"	3'23/32"	137.1 K=0.70	0.442	-1.303	5.311	0.245 [1] ✔
T2	147.583 - 130	3/4	5'7/8"	2'5-25/32"	143.0 K=0.90	0.442	-3.134	4.879	0.642 [1] ✔
T3	130 - 110	7/8	5'5-29/32"	2'8-1/32"	131.8 K=0.90	0.601	-4.948	7.820	0.633 [1] ✔
T4	110 - 100	L2 1/2x2 1/2x3/16	11'5"	4'11-25/32"	120.8 K=1.00	0.902	-8.621	17.576	0.490 [1] ✔
T5	100 - 80	L2 1/2x2 1/2x3/8	12'6-1/32"	5'7-17/32"	138.7 K=1.00	1.730	-15.285	25.755	0.593 [1] ✔
T6	80 - 60	L3x3x3/16	13'9-9/16"	6'3-15/16"	127.4 K=1.00	1.090	-8.096	19.221	0.421 [1] ✔
T7	60 - 40	L3x3x3/16	15'2-29/32"	7'31/32"	142.6 K=1.00	1.090	-8.101	15.345	0.528 [1] ✔
T8	40 - 20	L3x3x5/16	16'9-5/8'	7'10-19/	160.6	1.780	-8.807	19.756	0.446 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T9	20 - 0	L3x3x5/16	18'5-3/8"	8'8-1/8"	32" K=1.00 176.8 K=1.00	1.780	-10.923	16.304	0.670 [1]

[1] P_u / ϕP_n controls

Horizontal 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 $\frac{P_u}{\phi P_n}$
T2	147.583 - 130	7/8	4'4-7/16"	4'2-15/16"	163.1 K=0.70	0.601	-0.345	5.109	0.068 [1]
T3	130 - 110	3/4	4'6-7/8"	4'4-7/8"	197.3 K=0.70	0.442	-0.800	2.563	0.312 [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	150 - 147.583	5x1/2	4'	2'10-7/8"	241.6 K=1.00	2.500	-0.897	9.674	0.093 [1]
T2	147.583 - 130	KL/R > 200 (C) - 6 7/8	4'27/32"	3'11-11/32"	151.5 K=0.70	0.601	-0.125	5.917	0.021 [1]
T3	130 - 110	7/8	4'6-5/32"	4'4-5/32"	166.9 K=0.70	0.601	-1.448	4.878	0.297 [1]
T4	110 - 100	L3x3x3/16	5'	4'5"	104.5 K=1.17	1.090	-0.644	25.343	0.025 [1]
T5	100 - 80	L3x3x3/16	6'	4'7"	106.1 K=1.15	1.090	-6.686	24.936	0.268 [1]
T6	80 - 60	L3x3x3/16	8'	6'7"	132.6 K=1.00	1.090	-7.045	17.757	0.397 [1]

[1] P_u / ϕP_n controls

Bottom 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 $\frac{P_u}{\phi P_n}$
T2	147.583 - 130	7/8	4'5-29/32"	4'4-13/32"	167.7 K=0.70	0.601	-1.363	4.831	0.282 [1] ✔
T3	130 - 110	7/8	4'11-13/16"	4'9-13/16"	185.0 K=0.70	0.601	-1.667	3.967	0.420 [1] ✔

[1] P_u / ϕP_n controls

Mid 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 $\frac{P_u}{\phi P_n}$
T5	100 - 80	L3x3x3/16	7'	6'	120.5 K=1.00	1.090	-9.712	21.189	0.458 [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	150 - 147.583	1 1/2	2'5"	2'5"	77.3	1.767	0.749	79.522	0.009 [1] ✔
T2	147.583 - 130	1 1/2	17'7-1/32"	4"	10.7	1.767	24.000	79.522	0.302 [1] ✔
T3	130 - 110	2	20'1/32"	7"	14.0	3.142	63.971	141.372	0.453 [1] ✔
T4	110 - 100	Pirod 105244	10'7/32"	10'7/32"	45.4	3.682	67.473	165.670	0.407 [1] ✔
T5	100 - 80	Pirod 105216	20'13/32"	10'7/32"	45.4	3.682	101.622	165.670	0.613 [1] ✔
T6	80 - 60	Pirod 105217	20'13/32"	10'7/32"	37.8	5.301	148.441	238.565	0.622 [1] ✔
T7	60 - 40	Pirod 105218	20'13/32"	10'7/32"	32.4	7.216	185.518	324.713	0.571 [1] ✔
T8	40 - 20	Pirod 105218	20'13/32"	10'7/32"	32.4	7.216	220.498	324.713	0.679 [1] ✔
T9	20 - 0	Pirod 105219	20'13/32"	10'7/32"	28.4	9.425	252.361	424.115	0.595 [1] ✔

[1] P_u / ϕP_n controls

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n K	A in^2	V_u K	ϕV_n K	Stress Ratio
T4	110 - 100	0.5	1'5-25/32"	121.0	165.670	0.196	0.601	3.389	0.178 ✔
T5	100 - 80	0.5	1'5-25/32"	121.0	165.670	0.196	1.295	3.292	0.394 ✔
T6	80 - 60	0.5	1'5-21/32"	120.0	238.565	0.196	0.706	3.335	0.212 ✔
T7	60 - 40	0.5	1'5-1/2"	119.0	324.713	0.196	0.369	3.378	0.110 ✔
T8	40 - 20	0.5	1'5-1/2"	119.0	324.713	0.196	0.495	3.378	0.147 ✔
T9	20 - 0	0.625	1'5-11/32"	94.4	424.115	0.307	1.062	6.958	0.154 ✔

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	150 - 147.583	3/4	3'1-7/8"	3'23/32"	195.8	0.442	1.252	19.880	0.063 [1] ✔
T2	147.583 - 130	3/4	5'7/8"	2'5-25/32"	158.9	0.442	3.119	19.880	0.157 [1] ✔
T3	130 - 110	7/8	5'5-29/32"	2'8-1/32"	146.4	0.601	4.852	27.059	0.179 [1] ✔
T4	110 - 100	L2 1/2x2 1/2x3/16	11'5"	4'11-25/32"	80.1	0.518	7.294	22.546	0.324 [1] ✔
T5	100 - 80	L2 1/2x2 1/2x3/8	12'6-1/32"	5'7-17/32"	93.0	0.981	12.815	42.678	0.300 [1] ✔
T6	80 - 60	L3x3x3/16	13'9-9/16"	6'3-15/16"	83.5	0.659	8.161	28.679	0.285 [1] ✔
T7	60 - 40	L3x3x3/16	14'6-1/32"	6'8-23/32"	88.6	0.659	8.048	28.679	0.281 [1] ✔
T8	40 - 20	L3x3x5/16	16'1/8"	7'5-15/16"	100.3	1.071	8.540	46.603	0.183 [1] ✔
T9	20 - 0	L3x3x5/16	18'5-3/8"	8'8-1/8"	116.2	1.013	10.091	44.054	0.229 [1] ✔

[1] P_u / ϕP_n controls

Horizontal 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 $\frac{P_u}{\phi P_n}$
T2	147.583 - 130	7/8	4'4-7/16''	4'2-15/16"	232.9	0.601	0.582	27.059	0.022 [1] ✔
T3	130 - 110	3/4	4'6-7/8"	4'4-7/8"	281.9	0.442	0.941	19.880	0.047 [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	150 - 147.583	5x1/2	4'	2'10-7/8''	241.6	2.500	0.882	81.000	0.011 [1] ✔
T2	147.583 - 130	7/8	4'27/32"	3'11-11/32"	216.5	0.601	0.172	27.059	0.006 [1] ✔
T3	130 - 110	7/8	4'6-5/32''	4'4-5/32''	238.4	0.601	1.462	27.059	0.054 [1] ✔
T4	110 - 100	L3x3x3/16	5'	4'5"	61.8	0.659	1.010	28.679	0.035 [1] ✔
T5	100 - 80	L3x3x3/16	6'	4'7"	63.9	0.659	8.392	28.679	0.293 [1] ✔
T6	80 - 60	L3x3x3/16	8'	6'7"	89.5	0.659	8.606	28.679	0.300 [1] ✔

[1] P_u / ϕP_n controls

Bottom 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 $\frac{P_u}{\phi P_n}$
T2	147.583 - 130	7/8	4'5-29/32"	4'4-13/32"	239.5	0.601	1.488	27.059	0.055 [1] ✔
T3	130 - 110	7/8	4'11-13/16"	4'9-13/16"	264.3	0.601	1.794	27.059	0.066 [1] ✔

[1] P_u / ϕP_n controls

Mid 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 $\frac{P_u}{\phi P_n}$
T5	100 - 80	L3x3x3/16	7'	6'	76.7	1.090	12.084	35.316	0.342 [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	150 - 147.583	Leg	1 1/2	1	-3.754	53.917	7.0	Pass
T2	147.583 - 130	Leg	1 1/2	15	-26.679	53.917	49.5	Pass
T3	130 - 110	Leg	2	72	-69.345	117.290	59.1	Pass
T4	110 - 100	Leg	Pirod 105244	136	-75.796	149.618	50.7	Pass
T5	100 - 80	Leg	Pirod 105216	148	-115.377	149.618	77.1	Pass
T6	80 - 60	Leg	Pirod 105217	169	-170.921	225.602	75.8	Pass
T7	60 - 40	Leg	Pirod 105218	187	-212.166	315.715	67.2	Pass
T8	40 - 20	Leg	Pirod 105218	202	-251.350	315.715	79.6	Pass
T9	20 - 0	Leg	Pirod 105219	217	-287.671	419.861	68.5	Pass
T1	150 - 147.583	Diagonal	3/4	11	-1.303	5.577	23.4	Pass
T2	147.583 - 130	Diagonal	3/4	26	-3.134	5.123	61.2	Pass
T3	130 - 110	Diagonal	7/8	80	-4.948	8.211	60.3	Pass
T4	110 - 100	Diagonal	L2 1/2x2 1/2x3/16	142	-8.621	18.455	46.7 65.1 (b)	Pass
T5	100 - 80	Diagonal	L2 1/2x2 1/2x3/8	157	-15.285	27.043	56.5 57.2 (b)	Pass
T6	80 - 60	Diagonal	L3x3x3/16	177	-8.096	20.182	40.1 66.5 (b)	Pass
T7	60 - 40	Diagonal	L3x3x3/16	193	-8.101	16.112	50.3 65.6 (b)	Pass
T8	40 - 20	Diagonal	L3x3x5/16	205	-8.807	20.744	42.5	Pass
T9	20 - 0	Diagonal	L3x3x5/16	220	-10.923	17.119	63.8	Pass
T2	147.583 - 130	Horizontal	7/8	35	-0.345	5.364	6.4	Pass
T3	130 - 110	Horizontal	3/4	127	-0.800	2.691	29.7	Pass
T1	150 - 147.583	Top Girt	5x1/2	6	-0.897	10.158	8.8	Pass
T2	147.583 - 130	Top Girt	7/8	17	-0.125	6.213	2.0	Pass
T3	130 - 110	Top Girt	7/8	74	-1.448	5.122	28.3	Pass
T4	110 - 100	Top Girt	L3x3x3/16	137	1.010	30.113	3.4 8.2 (b)	Pass
T5	100 - 80	Top Girt	L3x3x3/16	150	8.392	30.113	27.9 68.4 (b)	Pass
T6	80 - 60	Top Girt	L3x3x3/16	170	-7.045	18.645	37.8 70.2 (b)	Pass
T2	147.583 - 130	Bottom Girt	7/8	19	-1.363	5.073	26.9	Pass
T3	130 - 110	Bottom Girt	7/8	76	-1.667	4.166	40.0	Pass
T5	100 - 80	Mid Girt	L3x3x3/16	152	-9.712	22.249	43.7	Pass
							Summary	
						Leg (T8)	79.6	Pass
						Diagonal (T6)	66.5	Pass
						Horizontal (T3)	29.7	Pass
						Top Girt (T6)	70.2	Pass
						Bottom Girt (T3)	40.0	Pass

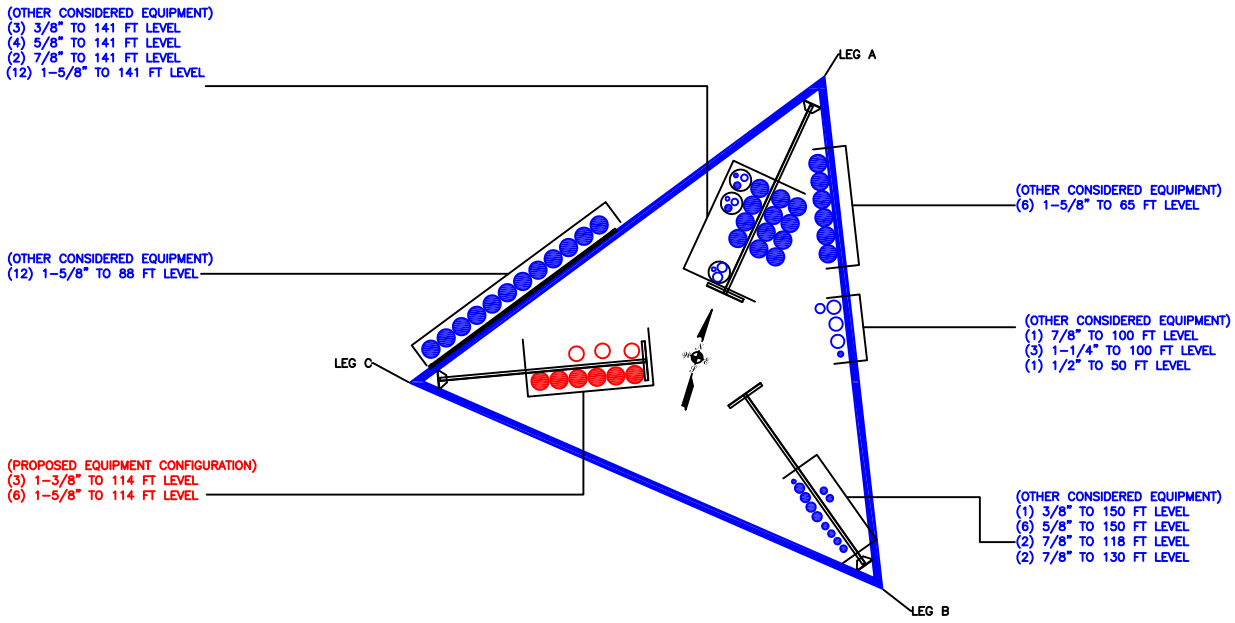
B+T Group
1717 S.Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
						Mid Girt (T5)	43.7	Pass
						Bolt Checks	70.2	Pass
						RATING =	**79.6**	**Pass**

Program Version 8.0.5.0

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 842870

APPENDIX C

ADDITIONAL CALCULATIONS

CCIplate

Project Information

BU #	842870
Site Name	MILFORD, CT
Order #	481011 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	262.00
Shear (k)	0.00	28.00

Anchor Rod Data

Quantity:	6	
Diameter (in):	1.25	
Material Grade:	A687	Fy=105 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)	43.67	
Shear, Vu (kips)	4.67	
Moment, Mu (kip-in)	-	
Axial Cap., φPn_t (kips)	90.84	
Shear Cap., ϕVn (kips)	57.52	
Moment Cap., ϕMn (kip-in)	-	
Stress Rating	22.6%	**Pass**

SST Unit Base Foundation

BU # :	842870
Site Name:	MILFORD, CT
App. Number:	481011 Rev# 0
TIA-222 Revision:	H

Top & Bot. Pad Rein. Different?:	☐
Tower Centroid Offset?:	☑
Block Foundation?:	☐

Superstructure Analysis Reactions

Global Moment, **M**:	3889	ft-kips
Global Axial, **P**:	53	kips
Global Shear, **V**:	47	kips
Leg Compression, $\mathbf{P_{comp}}$:	298	kips
Leg Comp. Shear, $\mathbf{V_{u\_comp}}$:	31	kips
Leg Uplift, $\mathbf{P_{uplift}}$:	262	kips
Leg Uplift. Shear, $\mathbf{V_{u\_uplift}}$:	28	kips
Tower Height, **H**:	150	ft
Base Face Width, **BW**:	16	ft
BP Dist. Above Fdn, $\mathbf{bp_{dist}}$:	4.75	in

Foundation Analysis Checks

	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	493.46	47.00	**9.1%**	**Pass**
Bearing Pressure (ksf)	9.00	1.87	**19.8%**	**Pass**
*Overturning (kip*ft)*	10407.47	4376.62	**42.1%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	1648.45	100.75	**5.8%**	**Pass**
*Pier Flexure (Tension) (kip*ft)*	851.91	91.00	**10.2%**	**Pass**
Pier Compression (kip)	7592.08	307.30	**3.9%**	**Pass**
*Pad Flexure (kip*ft)*	10017.30	454.66	**4.3%**	**Pass**
Pad Shear - 1-way (kips)	1172.32	74.62	**6.1%**	**Pass**
Pad Shear - Comp 2-way (ksi)	0.164	0.026	**15.2%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	9194.09	60.45	**0.6%**	**Pass**
Pad Shear - Tension 2-way (ksi)	0.164	0.024	**14.2%**	**Pass**
*Flexural 2-way (Tension) (kip*ft)*	9194.09	54.60	**0.6%**	**Pass**

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

Soil Rating*:	**42.1%**
Structural Rating*:	**15.2%**

Pier Properties

Pier Shape:	Circular	
Pier Diameter, **dpier**:	4.5	ft
Ext. Above Grade, **E**:	0.50	ft
Pier Rebar Size, **Sc**:	8	
Pier Rebar Quantity, **mc**:	16	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	7	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, $\mathbf{cc_{pier}}$:	3	in

Pad Properties

Depth, **D**:	6.50	ft
Pad Width, **W**:	29.50	ft
Pad Thickness, **T**:	3.75	ft
Pad Rebar Size (Bottom), **Sp**:	9	
Pad Rebar Quantity (Bottom), **mp**:	58	
Pad Clear Cover, $\mathbf{cc_{pad}}$:	3	in

Material Properties

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

Soil Properties

Total Soil Unit Weight, γ:	125	pcf
Ultimate Gross Bearing, Qult:	12.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	34	degrees
SPT Blow Count, $\mathbf{N_{blows}}$:		
Base Friction, μ:	0.6	
Neglected Depth, **N**:	3.3	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	7	ft

<-- Toggle between Gross and Net

Exposure Category Determination
BU#842870

- Latitude/Longitude = 41° 13' 42.69",-73° 4' 12.47"
- Tower Height = 151 ft
- Upwind Fetch Radius = Greater of 25 x Tower Height or 3250 ft = 3775 ft
- Minimum Open Patch = 164 ft x 164 ft
- Maximum continuous surface roughness category C arc angle = 55 degrees
- Kmz file saved in folder … R:\SA Models - Letters\Work Area\Exposure_Topo_KMZ

Exposure Category for this site is C.

The determination is based on Crown Castle standard ENG-PRC-10202, Determination of Exposure Category, revision C.

Completed by: Erin Doyle

Date: 11/12/2015

Approved by: Jason Hedrich

Date: 11/13/2015

Unmitigated Percentage (B/C)

Inputs

Tower Height (ft):	151'
Starting Azimuth:	205°
Upwind Fetch Radius (ft):	3775'
20% Unmitigated Limit (ft):	755'
Overlay Size Selected:	40°

Subsector (Degrees)	Total Unmitigated Length (ft)	Percentage of Subsector Unmitigated
190°	975'	25.8%
195°	1805'	47.8%
200°	755'	20.0%
205°	890'	23.6%
210°	1095'	29.0%
215°	1175'	31.1%
220°	1650'	43.7%
225°	1965'	52.1%
230°	1290'	34.2%
235°	1350'	35.8%
240°	860'	22.8%
245°	690'	18.3%
250°	695'	18.4%
255°	670'	17.7%

THIS SITE IS EXPOSURE:	C

Length measurements should be taken to the nearest 5' increment.

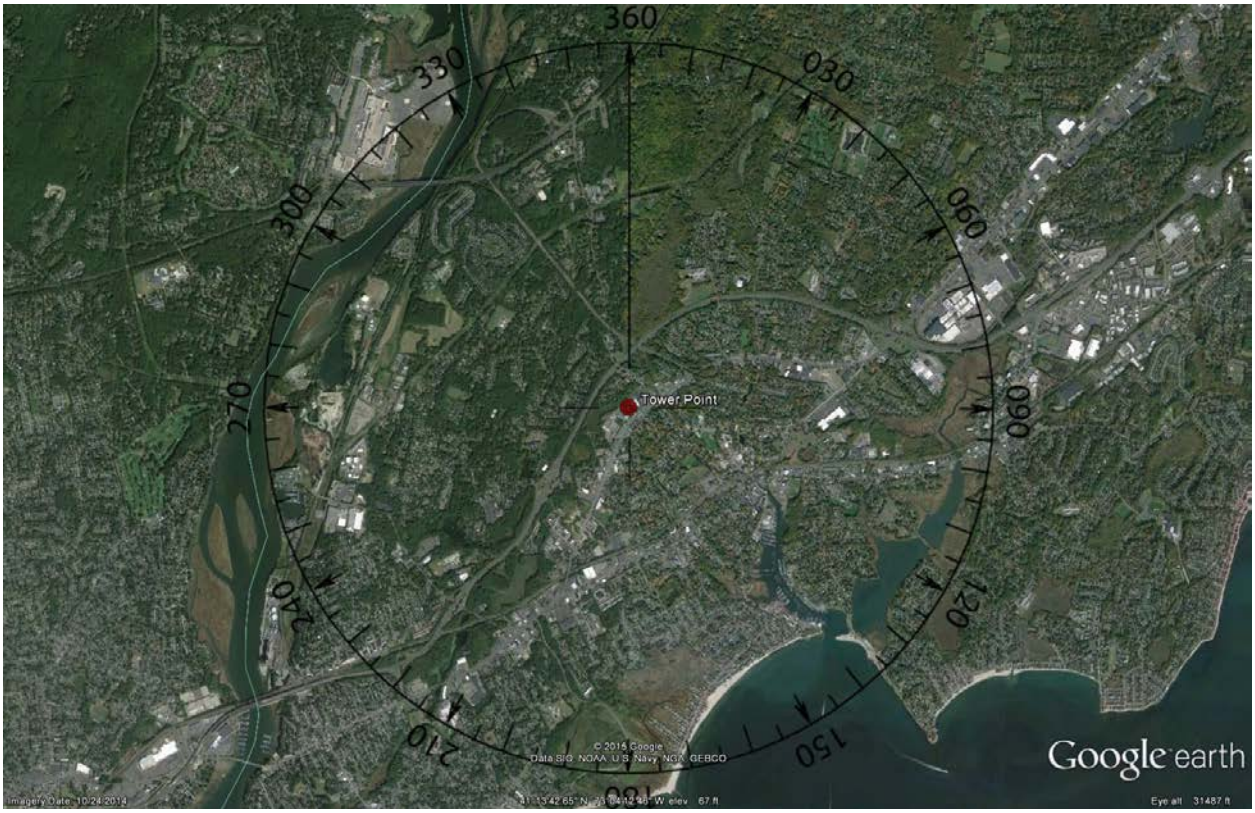
The determination is based on Crown Castle standard ENG-PRC-10202, Determination of Exposure Category, revision C.

This chart is intended only for use with Exposures B and C and is <u>Not</u> applicable for Exposure D.

LEGEND	
	Considered Subsector
	Bookending Subsector

Topographic Factor Determination
BU#842870

- Latitude/Longitude = 41° 13' 42.69",-73° 4' 12.47"
- Tower Height = 151 ft
- Topo Radius = 10,560 ft
- Maximum continuous effective topo arc angle = 0 degrees
- Critical wind azimuth used in topo tool = 0
- Kmz file saved in folder … R:\SA Models - Letters\Work Area\Exposure_Topo_KMZ



Exposure Category for this site is C.
No topo feature.
Topographic Factor (K_{ZT}) at base is 1.0.

The determination is based on Crown Castle standard ENG-PRC-10040, Determination of Topographic Factor, initial release.

Completed by:	Erin Doyle	Approved by:	Jason Hedrich
Date:	11/12/2015	Date:	11/13/2015

Exhibit E

Mount Analysis

Date: **July 26, 2019**

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

MasTec Network Solutions
507 Airport Blvd, Suite 111
Morrisville, NC 27560
(919) 244-5207

Subject:	**Mount Modification Analysis**	
Carrier Designation:	**T-Mobile Equipment Change-Out**	
	Carrier Site Number:	CT11018F
	Carrier Site Name:	Milford/ I-95/ X37/ Jct.
Crown Castle Designation:	**Crown Castle BU Number:**	842870
	Crown Castle Site Name:	MILFORD
	Crown Castle JDE Number:	559276
	Crown Castle Order Number:	481011 Revision 0
Engineering Firm Designation:	**MasTec Network Solutions Project Number:**	19114-MOD1
Site Data:	**434 Boston Post Road, Milford, New Haven County, CT 06460** **Latitude: 41° 13' 42.69" Longitude: -73° 4' 12.47"**	
Structure Information	**Tower Height & Type:**	150 ft Self Support
	Mount Elevation:	114 ft
	Mount Width & Type:	12.5 ft T-Frame Mount

Dear Charles McGuirt,

MasTec Network Solutions is pleased to submit this **"Mount Modification 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:

T-Frame Mount **Sufficient***

***Structure has sufficient capacity provided the proposed reinforcement is installed as recommended.**

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

Mount analysis prepared by: Elisa Mathon, EI

Respectfully Submitted by:

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

Raphael Mohamed

Digitally signed by Raphael Mohamed
DN: CN=Raphael Mohamed, O=Raphael I. Mohamed, L=Cary, S=North Carolina, C=US, SERIALNUMBER=zp164vf0fbrshbcrw38c96vpsjn6
Date: 2019.07.29 10:02:02-04'00'

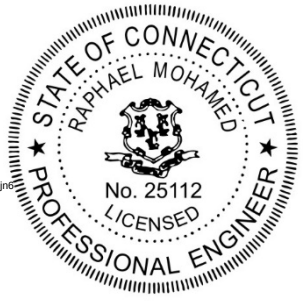


TABLE OF CONTENTS

1) INTRODUCTION

This is a 12.5 ft T-Frame Mount mapped by ETS.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category	II
Ultimate Wind Speed:	125 mph
Exposure Category:	C
Topographic Category:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Seismic Ss:	0.195
Seismic S1:	0.063
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
114.0	112.0	3	ericsson	AIR 21 B2A B4P	(3) 12.5ft T-Frames w/ Proposed Modifications
		3	rfs/celwave	APXVAARR24_43-U-NA20	
		3	ericsson	AIR -32 B2A/B66AA	
		3	ericsson	KRY 112 71	
		3	ericsson	RADIO 4449 B12/B71	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
4-ORDER INFORMATION	CROWN CASTLE	Order No. 481011, Rev. 0	CCIsites
4-MOUNT MAPPING	ETS	ETS# 194015	On File
4-MOUNT ANALYSIS	MasTec	Project No. 19114-MNT1	On File
4-MODIFICATION DRAWINGS	MasTec	Appendix E	On File

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 (T-Frame Mount)

Notes	Component	Beam No.	Centerline (ft)	% Capacity	Pass / Fail
1	Mount Pipe	--	114	73.0	Pass
1	Horizontal	--	114	82.4	Pass
1	Center Pipe	--	114	25.0	Pass
1	Stabilizer	--	114	5.4	Pass
1	Standoff	--	114	63.7	Pass
1	MOD	--	114	14.6	Pass
1	Bolt Connection	--	114	13.9	Pass

Structure Rating (max from all components) =	**82.4%**

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
N83A	Existing	571	Leg	2" SR	5585	1

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

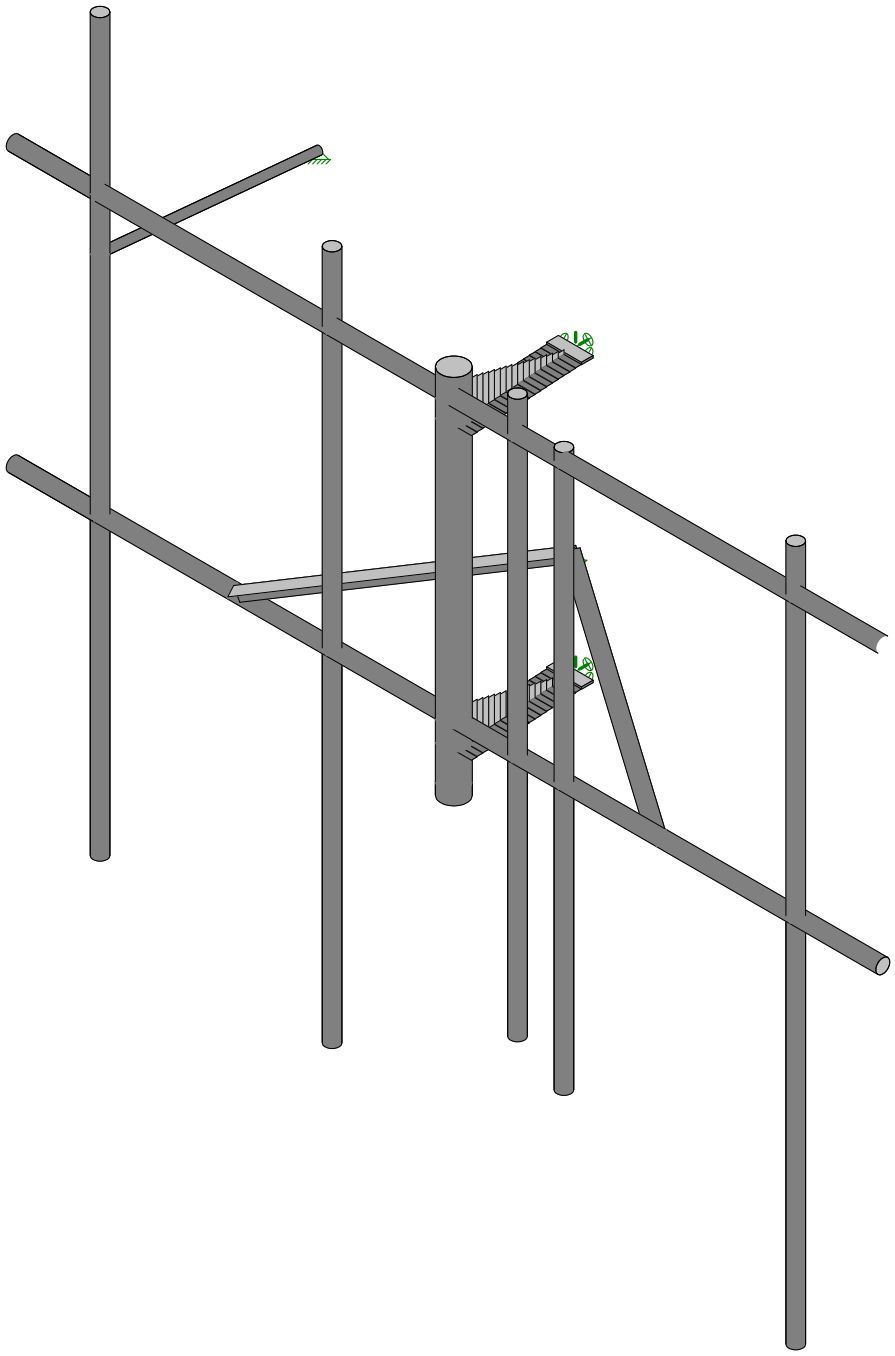
The mount has sufficient capacity to carry the proposed loading configuration. In order for the results of the analysis to be considered valid, the structural modification listed below must be completed.

1. (1) Site Pro 1 SFS-H Stabilizer Kit per sector

Engineering Detail Drawings have been provided in Appendix E- Mount Modification Design Drawings. Connection from the mount to the tower and local stresses on the tower are sufficient.

APPENDIX A

WIRE FRAME AND RENDERED MODELS



MasTec Network Solutions	842870-Milford	Rendered View
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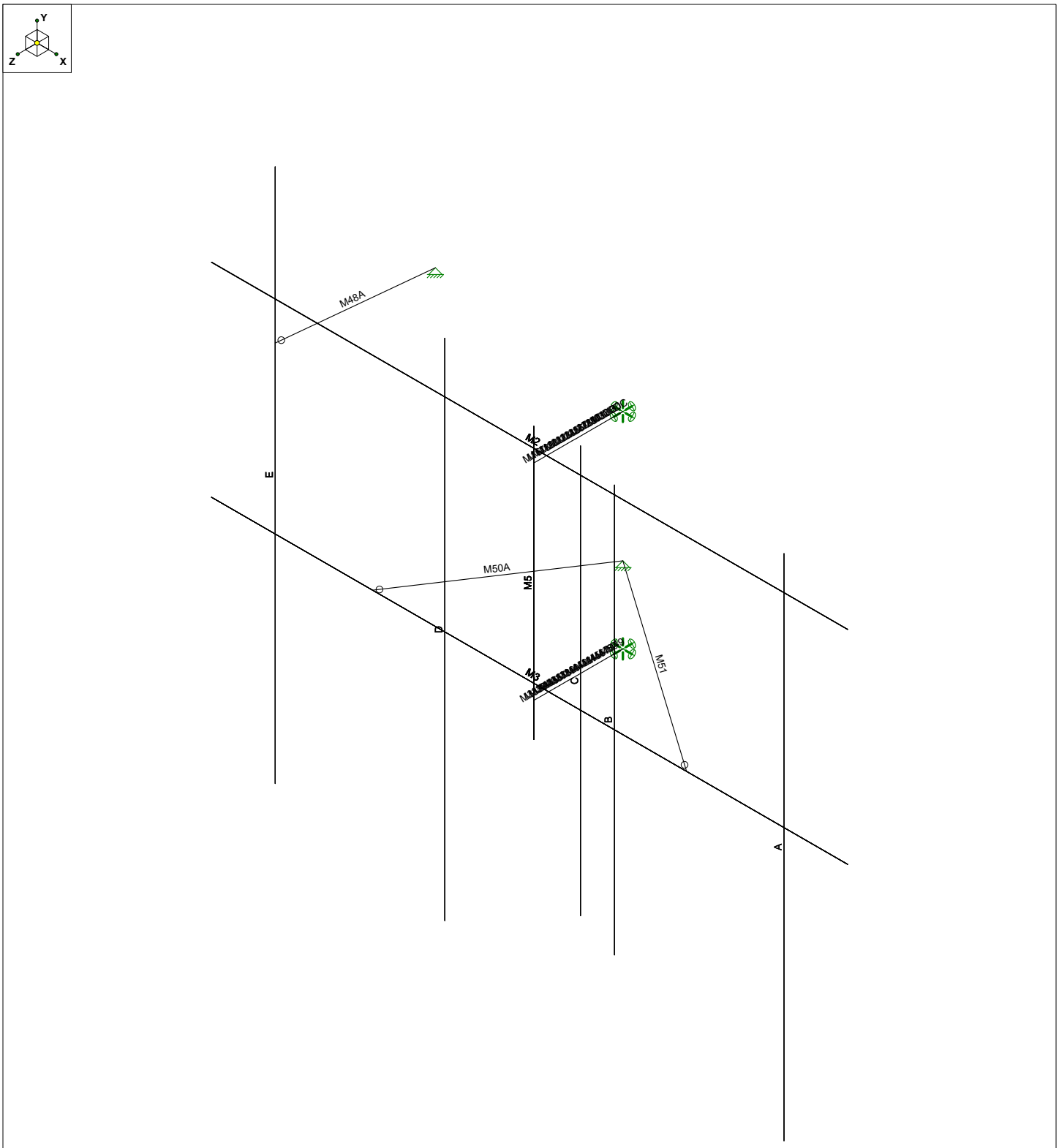
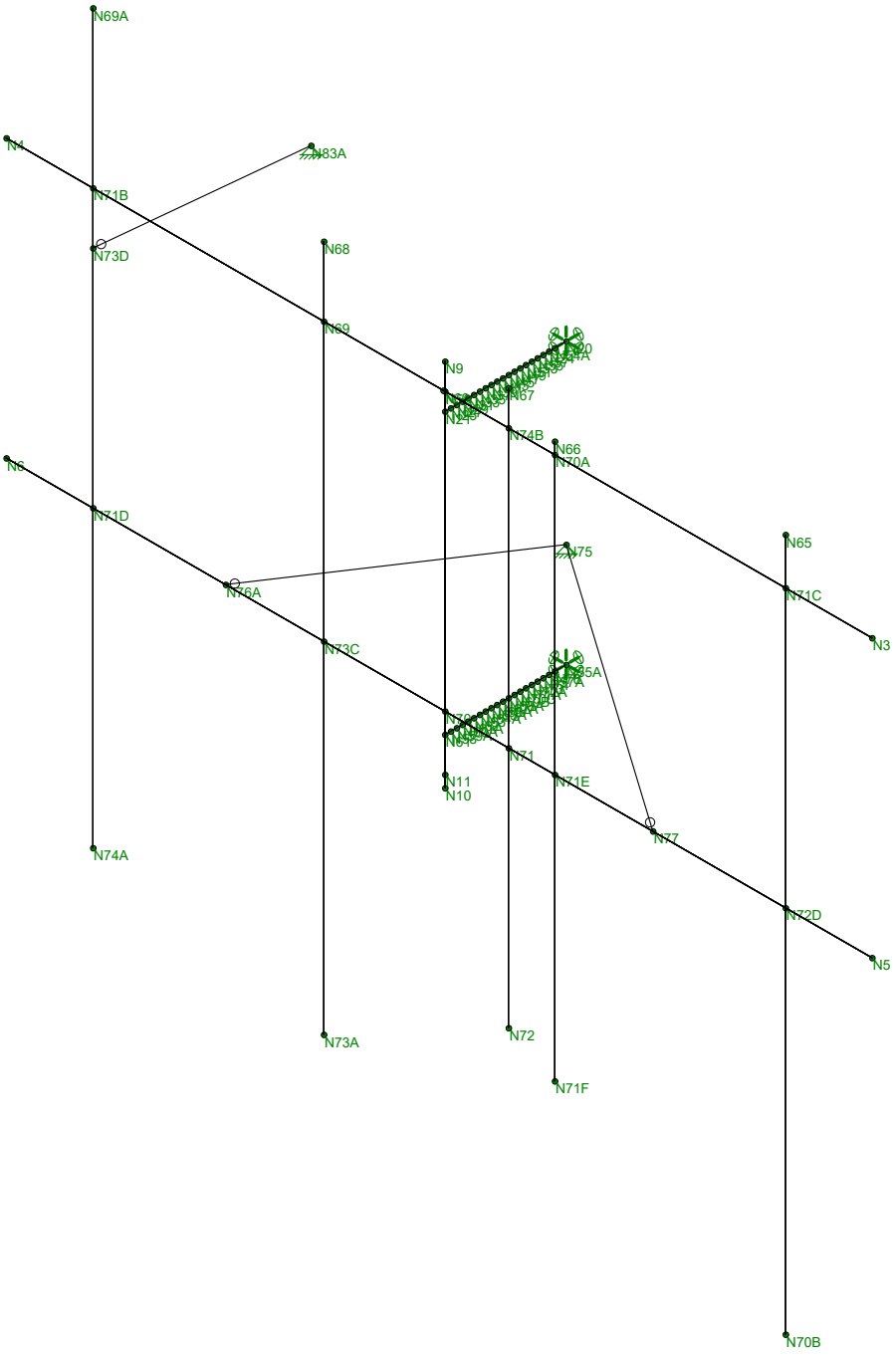
19114-MOD1		19114.R3D



MasTec Network Solutions	842870-Milford	Member Labels
EJM		July 26, 2019 at 5:57 PM
19114-MOD1		19114.R3D



MasTec Network Solutions	842870-Milford	Node Labels
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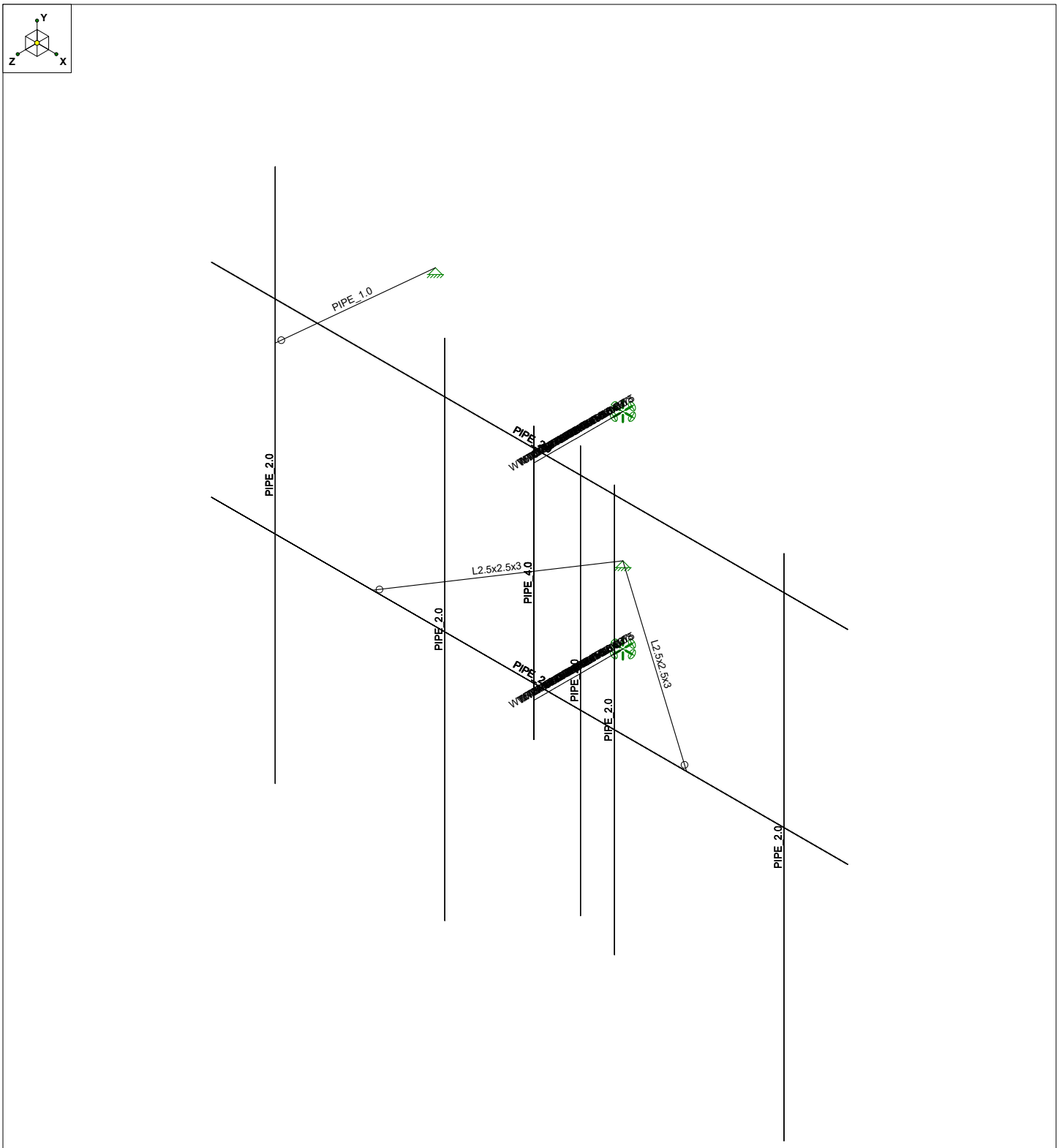

MasTec Network Solutions	842870-Milford	Member Shapes
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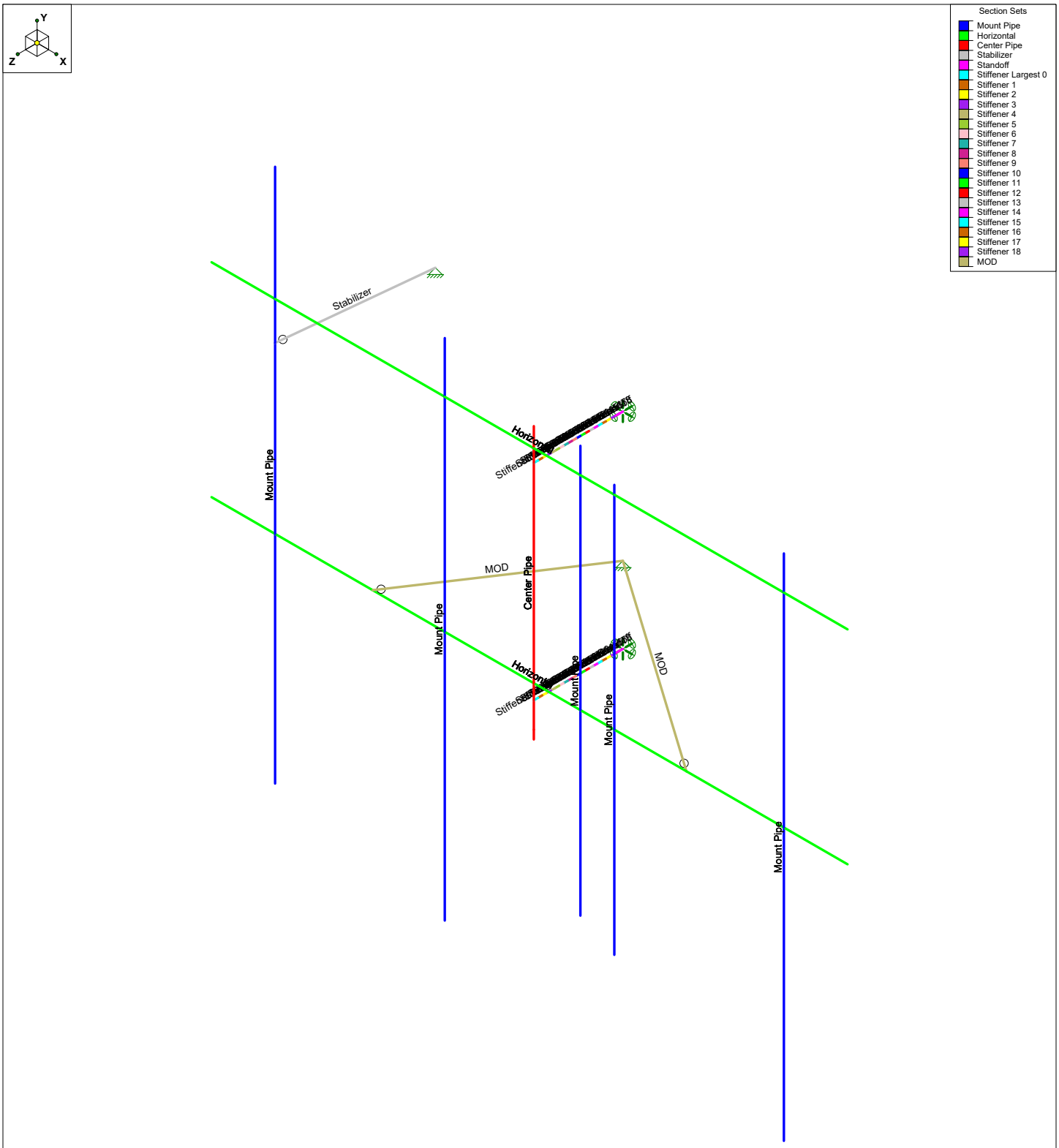
19114-MOD1		19114.R3D



MasTec Network Solutions	842870-Milford	Section Sets
EJM		July 26, 2019 at 5:58 PM
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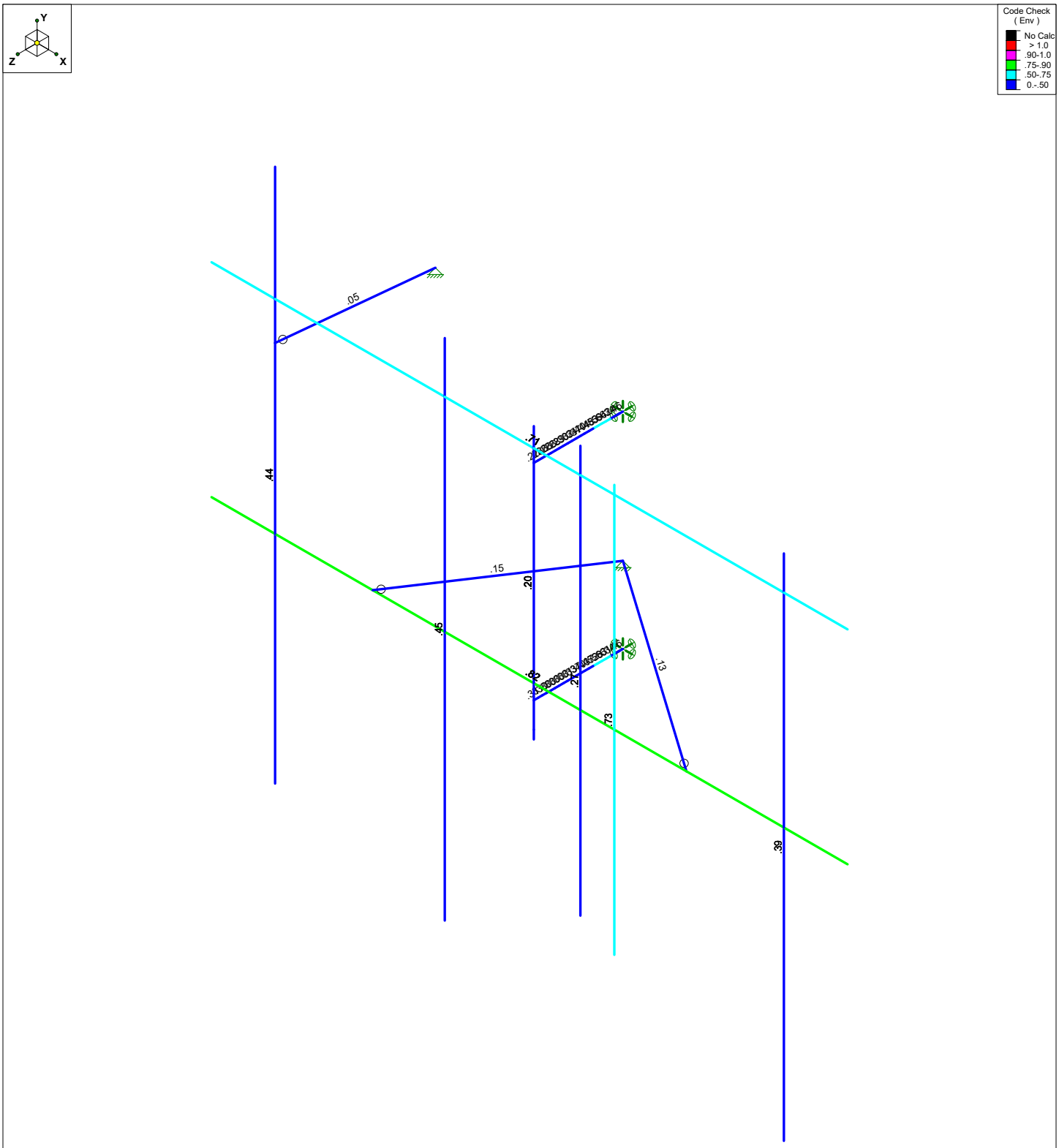
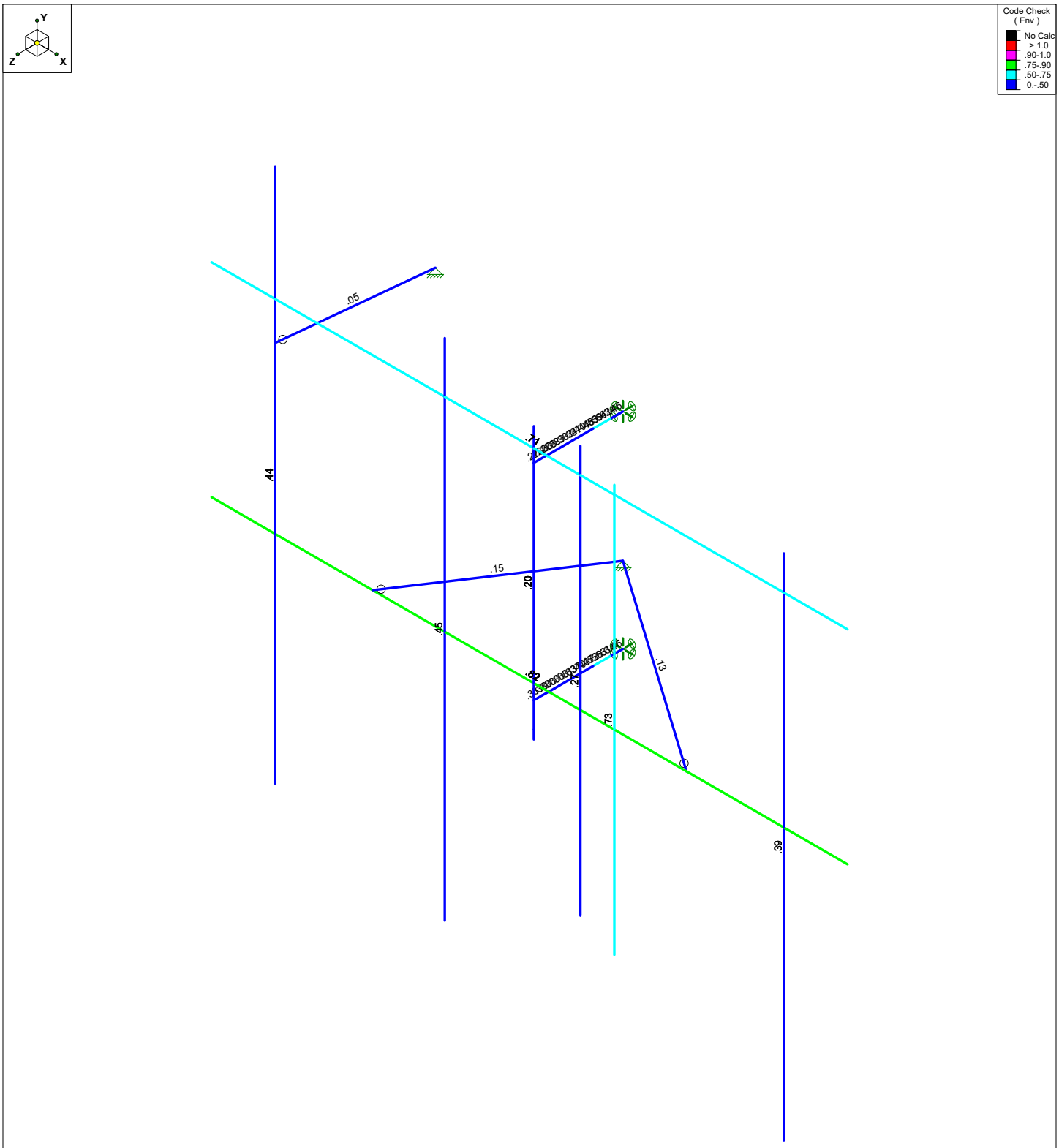


Member Code Checks Displayed (Enveloped)
Envelope Only Solution

MasTec Network Solutions	842870-Milford	Unity Check
EJM		July 26, 2019 at 5:58 PM
19114-MOD1		19114.R3D



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

MasTec Network Solutions	842870-Milford	Shear Check
EJM		July 26, 2019 at 5:58 PM
19114-MOD1		19114.R3D

APPENDIX B

SOFTWARE INPUT CALCULATIONS

MasTec Network Solutions

Mount Analysis Tool

Site Name	MILFORD		
Site ID	842870		
Job Number	19114-MOD1	Mount Existing?	Crown
Code	H	Risk Category	II

Legend
Input
Calculated
Notes

Maximum Capacity		
Controlling Capacity	82.4%	PASS

Analysis Parameters		
Mount Height	114	ft
Exposure Category	C	(B,C, or D)
Ultimate Wind Speed	125	mph
Ice Wind Speed	50	mph
Design Ice Thickness, t_i	1.5	in
Maintenance Wind Speed	30	mph
Run Earthquake Analysis?	Yes	
Ground Elevation	68.18	ft, Google Earth
S_1	0.063	USGS
S_{DS}	0.209	2.7.5
Vertical Seismic Loads, E_v	0.042	2.7.6
Seismic Response Coefficient, C_s	0.105	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	1.301	2.6.5.2	K_e	0.998	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	44.524	psf, 2.6.11.6			
C/D	142.578	Table 2-9			
t_{iz}	1.698	in, 2.6.10			
q_{iz}	7.124	psf, 2.6.9.6	I, Ice	1.000	Table 2-3
C/D_{iz}	57.031	Table 2-9	I, EQ	1.000	Table 2-3
$q_{Maintenance}$	2.563	psf, 2.6.9.6	$K_{es\ (Wind)}$	1.000	Table S-1
$C/D_{Maintenance}$	34.219	Table 2-9	$K_{es\ (ice)}$	1.000	Table S-1
Ice Dead, Grating	0.015847732	ksf			

Pipe Mounts (Orientation Drawn Top-Down)			
Risa 3D Label	Elevation (ft)	Length (in)	Diameter (in)
A	114	120	2.375
B	114	96	2.375
C	114	96	2.375
D	114	119	2.375
E	114	126	2.375

Appurtenances					
Model	Type	Height (in)	Width (in)	Depth (in)	Weight (lbs)
Ericsson AIR 21 B2A B4P	Antenna	56	12.1	7.87	91.5
RFS APXVAARR24_43-U-NA20	Antenna	95.9	24	8.7	128
Ericsson AIR -32 B2A/B66AA	Antenna	56.6	12.9	8.7	132.2
Ericsson KRY 112 71	RRU, TMA, Etc.	13.2	12.5	5.6	3.7
Ericsson RADIO 4449 B12/B71	RRU, TMA, Etc.	14.95	13.19	9.25	75

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 %
A	Ericsson AIR 21 B2A B4P	112	1	0	100.0%	100.0%	Antenna	56.000	12.100	7.870	91.500	6.092	4.297	0.271	0.191	46.7%	93.3%
A	Ericsson KRY 112 71	112	1	0	50.0%	100.0%	RRU, TMA, Etc.	13.200	12.500	5.600	3.700	1.375	0.616	0.031	0.027	64.5%	75.5%
A																	
A																	
A																	
A																	
B	RFS APXVAARR24_43-U-NA20	112	1	0	100.0%	100.0%	Antenna	95.900	24.000	8.700	128.000	14.694	6.873	0.654	0.306	25.1%	100.0%
B	Ericsson RADIO 4449 B12/B71	112	1	0	0.0%	100.0%	RRU, TMA, Etc.	14.950	13.190	9.250	75.000	1.643	1.152	0.000	0.051	67.2%	82.8%
B																	
B																	
B																	
B																	
C																	
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E	Ericsson AIR -32 B2A/B66AA	112	1	0	100.0%	100.0%	Antenna	56.600	12.900	8.700	132.200	6.510	4.712	0.290	0.210	46.6%	91.5%
E																	
E																	
E																	
E																	
E																	

Pipe Mount	Antenna	Elevation (ft)	Quantity	Orientation (deg)	Front Exposed (%)	Side Exposed (%)	Type	Height (in)	Width (in)	Depth (in)	Ice Weight (lb)	Front CaAa (ft^2)	Side CaAa (ft^2)	Front F_A (kips)	Side F_A (kips)	Top %	Bottom %
A	Ericsson AIR 21 B2A B4P	112	1	0	100.0%	100.0%	Antenna	56.000	12.100	7.870	156.173	8.049	6.149	0.057	0.044	46.7%	93.3%
A	Ericsson KRY 112 71	112	1	0	50.0%	100.0%	RRU, TMA, Etc.	13.200	12.500	5.600	35.130	2.198	1.244	0.008	0.009	64.5%	75.5%
A																	
A																	
A																	
A																	
B	RFS APXVAARR24_43-U-NA20	112	1	0	100.0%	100.0%	Antenna	95.900	24.000	8.700	451.367	23.613	12.013	0.168	0.086	25.1%	100.0%
B	Ericsson RADIO 4449 B12/B71	112	1	0	0.0%	100.0%	RRU, TMA, Etc.	14.950	13.190	9.250	46.024	2.536	1.933	0.000	0.014	67.2%	82.8%
B																	
B																	
B																	
B																	
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D																	
E	Ericsson AIR -32 B2A/B66AA	112	1	0	100.0%	100.0%	Antenna	56.600	12.900	8.700	168.857	8.504	6.599	0.061	0.047	46.6%	91.5%
E																	
E																	
E																	
E																	
E																	

Member	Section Set	Member Length (ft)	Flat/Round	Wind Projection (in)	D_c (in)	A_w (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)
M2	Horizontal	12.5	Round	2.380	2.380	21.753	1.200	0.011	0.000	0.004	0.003	0.008	0.001	0.000
M3	Horizontal	12.5	Round	2.380	2.380	21.753	1.200	0.011	0.000	0.004	0.003	0.008	0.001	0.000
M5	Center Pipe	5.333333	Round	4.500	4.500	33.062	1.200	0.020	0.020	0.006	0.006	0.013	0.001	0.001
M16	Stiffener Largest 0	0.083333	Flat	6.375	7.046	46.643	2.000	0.000	0.047	0.000	0.008	0.018	0.000	0.003
M17	Stiffener 1	0.083334	Flat	6.063	6.760	45.118	2.000	0.000	0.045	0.000	0.007	0.018	0.000	0.003
M18	Stiffener 2	0.083333	Flat	5.750	6.486	43.656	2.000	0.000	0.043	0.000	0.007	0.017	0.000	0.002
M19	Stiffener 3	0.083333	Flat	5.438	6.210	42.184	2.000	0.000	0.040	0.000	0.006	0.016	0.000	0.002
M20	Stiffener 4	0.083334	Flat	5.125	5.938	40.733	2.000	0.000	0.038	0.000	0.006	0.016	0.000	0.002
M21	Stiffener 5	0.083333	Flat	4.813	5.671	39.309	2.000	0.000	0.036	0.000	0.006	0.015	0.000	0.002
M22	Stiffener 6	0.083333	Flat	4.500	5.408	37.906	2.000	0.000	0.033	0.000	0.005	0.015	0.000	0.002
M23	Stiffener 7	0.083334	Flat	4.188	5.151	36.535	2.000	0.000	0.031	0.000	0.005	0.014	0.000	0.002
M24	Stiffener 8	0.083333	Flat	3.875	4.901	35.201	2.000	0.000	0.029	0.000	0.005	0.014	0.000	0.002
M25	Stiffener 9	0.083333	Flat	3.563	4.657	33.900	2.000	0.000	0.026	0.000	0.004	0.013	0.000	0.002
M26	Stiffener 10	0.083334	Flat	3.188	4.377	32.406	2.000	0.000	0.024	0.000	0.004	0.013	0.000	0.001
M27	Stiffener 11	0.083333	Flat	2.875	4.155	31.222	2.000	0.000	0.021	0.000	0.003	0.012	0.000	0.001
M28	Stiffener 12	0.083333	Flat	2.563	3.945	30.101	2.000	0.000	0.019	0.000	0.003	0.012	0.000	0.001
M29	Stiffener 13	0.083334	Flat	2.250	3.750	29.061	2.000	0.000	0.017	0.000	0.003	0.011	0.000	0.001
M30	Stiffener 14	0.083333	Flat	1.938	3.571	28.106	2.000	0.000	0.014	0.000	0.002	0.011	0.000	0.001
M31	Stiffener 15	0.083333	Flat	1.625	3.412	27.258	2.000	0.000	0.012	0.000	0.002	0.011	0.000	0.001
M32	Stiffener 16	0.083334	Flat	1.313	3.275	26.527	2.000	0.000	0.010	0.000	0.002	0.010	0.000	0.001
M30B	Stiffener 17	0.083333	Flat	1.000	3.162	25.925	2.000	0.000	0.007	0.000	0.001	0.010	0.000	0.000
M30C	Standoff	0.166667	Flat	6.000	6.012	41.128	2.000	0.000	0.045	0.000	0.007	0.016	0.000	0.003
M30D	Stiffener 18	0.083333	Flat	0.688	3.078	25.477	2.000	0.000	0.005	0.000	0.001	0.010	0.000	0.000
M31A	Stiffener Largest 0	0.083333	Flat	6.375	7.046	46.643	2.000	0.000	0.047	0.000	0.008	0.018	0.000	0.003
M32A	Stiffener 1	0.083334	Flat	6.063	6.760	45.118	2.000	0.000	0.045	0.000	0.007	0.018	0.000	0.003
M33A	Stiffener 2	0.083333	Flat	5.750	6.486	43.656	2.000	0.000	0.043	0.000	0.007	0.017	0.000	0.002
M34A	Stiffener 3	0.083333	Flat	5.438	6.210	42.184	2.000	0.000	0.040	0.000	0.006	0.016	0.000	0.002
M35	Stiffener 4	0.083334	Flat	5.125	5.938	40.733	2.000	0.000	0.038	0.000	0.006	0.016	0.000	0.002
M36	Stiffener 5	0.083333	Flat	4.813	5.671	39.309	2.000	0.000	0.036	0.000	0.006	0.015	0.000	0.002
M37	Stiffener 6	0.083333	Flat	4.500	5.408	37.906	2.000	0.000	0.033	0.000	0.005	0.015	0.000	0.002
M38	Stiffener 7	0.083334	Flat	4.188	5.151	36.535	2.000	0.000	0.031	0.000	0.005	0.014	0.000	0.002
M39	Stiffener 8	0.083333	Flat	3.875	4.901	35.201	2.000	0.000	0.029	0.000	0.005	0.014	0.000	0.002
M40	Stiffener 9	0.083333	Flat	3.563	4.657	33.900	2.000	0.000	0.026	0.000	0.004	0.013	0.000	0.002
M41	Stiffener 10	0.083334	Flat	3.188	4.377	32.406	2.000	0.000	0.024	0.000	0.004	0.013	0.000	0.001
M42	Stiffener 11	0.083333	Flat	2.875	4.155	31.222	2.000	0.000	0.021	0.000	0.003	0.012	0.000	0.001
M43	Stiffener 12	0.083333	Flat	2.563	3.945	30.101	2.000	0.000	0.019	0.000	0.003	0.012	0.000	0.001
M44	Stiffener 13	0.083334	Flat	2.250	3.750	29.061	2.000	0.000	0.017	0.000	0.003	0.011	0.000	0.001
M45	Stiffener 14	0.083333	Flat	1.938	3.571	28.106	2.000	0.000	0.014	0.000	0.002	0.011	0.000	0.001
M46	Stiffener 15	0.083333	Flat	1.625	3.412	27.258	2.000	0.000	0.012	0.000	0.002	0.011	0.000	0.001
M47	Stiffener 16	0.083334	Flat	1.313	3.275	26.527	2.000	0.000	0.010	0.000	0.002	0.010	0.000	0.001
M48	Stiffener 17	0.083333	Flat	1.000	3.162	25.925	2.000	0.000	0.007	0.000	0.001	0.010	0.000	0.000
M49	Standoff	0.166667	Flat	6.000	6.012	41.128	2.000	0.000	0.045	0.000	0.007	0.016	0.000	0.003
M50	Stiffener 18	0.083333	Flat	0.688	3.078	25.477	2.000	0.000	0.005	0.000	0.001	0.010	0.000	0.000
M48A	Stabilizer	2.870966662	Round	2.380	2.380	21.753	1.200	0.000	0.010	0.000	0.002	0.008	0.000	0.001
A	Mount Pipe	10	Round	2.380	2.380	21.753	1.200	0.011	0.011	0.004	0.004	0.008	0.001	0.001
B	Mount Pipe	8	Round	2.380	2.380	21.753	1.200	0.011	0.011	0.004	0.004	0.008	0.001	0.001
C	Mount Pipe	8	Round	2.380	2.380	21.753	1.200	0.011	0.011	0.004	0.004	0.008	0.001	0.001
D	Mount Pipe	9.916667	Round	2.380	2.380	21.753	1.200	0.011	0.011	0.004	0.004	0.008	0.001	0.001
E	Mount Pipe	10.5	Round	2.380	2.380	21.753	1.200	0.011	0.011	0.004	0.004	0.008	0.001	0.001
M50A	MOD	3.81449191	Flat	2.500	3.536	27.917	2.000	0.016	0.009	0.005	0.003	0.011	0.001	0.001
M51	MOD	3.677304534	Flat	2.500	3.536	27.917	2.000	0.015	0.009	0.005	0.003	0.011	0.001	0.001

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 ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Mount Pipe	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
2	Horizontal	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
3	Center Pipe	PIPE_4.0	Beam	Pipe	A53 Gr.B	Typical	2.96	6.82	6.82	13.6
4	Stabilizer	PIPE_1.0	Beam	Pipe	A53 Gr.B	Typical	.469	.083	.083	.166
5	Standoff	PL6x.375	Beam	RECT	A36 Gr.36	Typical	2.25	.026	6.75	.101
6	Stiffener Largest 0	WT6x0	Beam	W_Tee	A36 Gr.36	Typical	4.5	6.776	18.207	.212
7	Stiffener 1	WT5-11/16x1	Beam	W_Tee	A36 Gr.36	Typical	4.383	6.775	15.836	.206
8	Stiffener 2	WT5-3/8x2	Beam	W_Tee	A36 Gr.36	Typical	4.266	6.774	13.667	.201
9	Stiffener 3	WT5-1/16x3	Beam	W_Tee	A36 Gr.36	Typical	4.148	6.772	11.692	.195
10	Stiffener 4	WT4-3/4x4	Beam	W_Tee	A36 Gr.36	Typical	4.031	6.771	9.904	.19
11	Stiffener 5	WT4-7/16x5	Beam	W_Tee	A36 Gr.36	Typical	3.914	6.77	8.296	.184
12	Stiffener 6	WT4-1/8x6	Beam	W_Tee	A36 Gr.36	Typical	3.797	6.768	6.86	.179
13	Stiffener 7	WT3-13/16x7	Beam	W_Tee	A36 Gr.36	Typical	3.68	6.767	5.59	.173
14	Stiffener 8	WT3-1/2x8	Beam	W_Tee	A36 Gr.36	Typical	3.563	6.765	4.478	.168
15	Stiffener 9	WT3-3/16x9	Beam	W_Tee	A36 Gr.36	Typical	3.445	6.764	3.515	.163
16	Stiffener 10	WT2-13/16x10	Beam	W_Tee	A36 Gr.36	Typical	3.305	6.762	2.546	.156
17	Stiffener 11	WT2-1/2x11	Beam	W_Tee	A36 Gr.36	Typical	3.188	6.761	1.882	.15
18	Stiffener 12	WT2-3/16x12	Beam	W_Tee	A36 Gr.36	Typical	3.07	6.76	1.34	.145
19	Stiffener 13	WT1-7/8x13	Beam	W_Tee	A36 Gr.36	Typical	2.953	6.758	.91	.139
20	Stiffener 14	WT1-9/16x14	Beam	W_Tee	A36 Gr.36	Typical	2.836	6.757	.582	.134
21	Stiffener 15	WT1-1/4x15	Beam	W_Tee	A36 Gr.36	Typical	2.719	6.755	.343	.128
22	Stiffener 16	WT-15/16x16	Beam	W_Tee	A36 Gr.36	Typical	2.602	6.754	.183	.123
23	Stiffener 17	WT-5/8x17	Beam	W_Tee	A36 Gr.36	Typical	2.484	6.753	.087	.117
24	Stiffener 18	WT-5/16x18	Beam	W_Tee	A36 Gr.36	Typical	2.367	6.751	.04	.111
25	MOD	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical	.901	.535	.535	.011

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N3	15.558291	4.	9.319514	0	
2	N4	3.058291	4.	9.319514	0	
3	N5	15.558291	0	9.319514	0	
4	N6	3.058291	0	9.319514	0	
5	N9	9.391625	4.375	9.319514	0	
6	N10	9.391625	-0.958333	9.319514	0	
7	N11	9.391625	-0.791667	9.319514	0	
8	N20	9.391625	3.75	7.569514	0	
9	N21	9.391625	3.75	9.319514	0	
10	N24	9.391625	3.75	7.819514	0	
11	N25	9.391625	3.75	9.236181	0	
12	N27	9.391625	3.75	9.152847	0	
13	N29	9.391625	3.75	9.069514	0	
14	N31	9.391625	3.75	8.986181	0	
15	N33	9.391625	3.75	8.902847	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
16	N35	9.391625	3.75	8.819514	0	
17	N37	9.391625	3.75	8.736181	0	
18	N39	9.391625	3.75	8.652847	0	
19	N41	9.391625	3.75	8.569514	0	
20	N43	9.391625	3.75	8.486181	0	
21	N45	9.391625	3.75	8.402847	0	
22	N47	9.391625	3.75	8.319514	0	
23	N49	9.391625	3.75	8.236181	0	
24	N51	9.391625	3.75	8.152847	0	
25	N53	9.391625	3.75	8.069514	0	
26	N55	9.391625	3.75	7.986181	0	
27	N57	9.391625	3.75	7.902847	0	
28	N59	9.391625	4.	9.319514	0	
29	N60	9.365309	4.	9.319514	0	
30	N61	9.391625	-0.291667	9.319514	0	
31	N70	9.391625	0	9.319514	0	
32	N54A	9.391625	3.75	7.736181	0	
33	N55A	9.391625	-0.291667	7.569514	0	
34	N57A	9.391625	-0.291667	7.819514	0	
35	N58	9.391625	-0.291667	9.236181	0	
36	N59A	9.391625	-0.291667	9.152847	0	
37	N60A	9.391625	-0.291667	9.069514	0	
38	N61A	9.391625	-0.291667	8.986181	0	
39	N62	9.391625	-0.291667	8.902847	0	
40	N63	9.391625	-0.291667	8.819514	0	
41	N64A	9.391625	-0.291667	8.736181	0	
42	N65A	9.391625	-0.291667	8.652847	0	
43	N66A	9.391625	-0.291667	8.569514	0	
44	N67A	9.391625	-0.291667	8.486181	0	
45	N68A	9.391625	-0.291667	8.402847	0	
46	N69B	9.391625	-0.291667	8.319514	0	
47	N70C	9.391625	-0.291667	8.236181	0	
48	N71A	9.391625	-0.291667	8.152847	0	
49	N72A	9.391625	-0.291667	8.069514	0	
50	N73	9.391625	-0.291667	7.986181	0	
51	N74	9.391625	-0.291667	7.902847	0	
52	N76	9.391625	-0.291667	7.736181	0	
53	N71B	4.308291	4.	9.319514	0	
54	N71C	14.308291	4.	9.319514	0	
55	N71D	4.308291	0	9.319514	0	
56	N72D	14.308291	0	9.319514	0	
57	N73C	7.641625	0	9.319514	0	
58	N71E	10.974958	0	9.319514	0	
59	N69	7.641625	4.	9.319514	0	
60	N70A	10.974958	4.	9.319514	0	
61	N83A	4.600972	3.25	6.463505	0	
62	N73D	4.308291	3.25	9.319514	0	
63	N71	10.308291	0	9.319514	0	
64	N74B	10.308291	4.	9.319514	0	
65	N65	14.308291	4.666667	9.319514	0	
66	N66	10.974958	4.166667	9.319514	0	
67	N67	10.308291	4.5	9.319514	0	
68	N68	7.641625	5.	9.319514	0	
69	N69A	4.308291	6.25	9.319514	0	
70	N70B	14.308291	-5.333333	9.319514	0	
71	N71F	10.974958	-3.833333	9.319514	0	
72	N72	10.308291	-3.5	9.319514	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
73	N73A	7.641625	-4.916667	9.319514	0	
74	N74A	4.308291	-4.25	9.319514	0	
75	N75	9.391625	1.208333	7.569514	0	
76	N76A	6.224958	0	9.319514	0	
77	N77	12.391625	0	9.319514	0	

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design R...
1	M2	N3	N4			Horizontal	Beam	Pipe	A53 Gr.B	Typical
2	M3	N5	N6			Horizontal	Beam	Pipe	A53 Gr.B	Typical
3	M5	N9	N10			Center Pipe	Beam	Pipe	A53 Gr.B	Typical
4	M16	N25	N21		180	Stiffener Largest 0	Beam	W_Tee	A36 Gr.36	Typical
5	M17	N27	N25		180	Stiffener 1	Beam	W_Tee	A36 Gr.36	Typical
6	M18	N29	N27		180	Stiffener 2	Beam	W_Tee	A36 Gr.36	Typical
7	M19	N31	N29		180	Stiffener 3	Beam	W_Tee	A36 Gr.36	Typical
8	M20	N33	N31		180	Stiffener 4	Beam	W_Tee	A36 Gr.36	Typical
9	M21	N35	N33		180	Stiffener 5	Beam	W_Tee	A36 Gr.36	Typical
10	M22	N37	N35		180	Stiffener 6	Beam	W_Tee	A36 Gr.36	Typical
11	M23	N39	N37		180	Stiffener 7	Beam	W_Tee	A36 Gr.36	Typical
12	M24	N41	N39		180	Stiffener 8	Beam	W_Tee	A36 Gr.36	Typical
13	M25	N43	N41		180	Stiffener 9	Beam	W_Tee	A36 Gr.36	Typical
14	M26	N45	N43		180	Stiffener 10	Beam	W_Tee	A36 Gr.36	Typical
15	M27	N47	N45		180	Stiffener 11	Beam	W_Tee	A36 Gr.36	Typical
16	M28	N49	N47		180	Stiffener 12	Beam	W_Tee	A36 Gr.36	Typical
17	M29	N51	N49		180	Stiffener 13	Beam	W_Tee	A36 Gr.36	Typical
18	M30	N53	N51		180	Stiffener 14	Beam	W_Tee	A36 Gr.36	Typical
19	M31	N55	N53		180	Stiffener 15	Beam	W_Tee	A36 Gr.36	Typical
20	M32	N57	N55		180	Stiffener 16	Beam	W_Tee	A36 Gr.36	Typical
21	M30B	N24	N57		180	Stiffener 17	Beam	W_Tee	A36 Gr.36	Typical
22	M30C	N54A	N20		90	Standoff	Beam	RECT	A36 Gr.36	Typical
23	M30D	N24	N54A		180	Stiffener 18	Beam	W_Tee	A36 Gr.36	Typical
24	M31A	N58	N61		180	Stiffener Largest 0	Beam	W_Tee	A36 Gr.36	Typical
25	M32A	N59A	N58		180	Stiffener 1	Beam	W_Tee	A36 Gr.36	Typical
26	M33A	N60A	N59A		180	Stiffener 2	Beam	W_Tee	A36 Gr.36	Typical
27	M34A	N61A	N60A		180	Stiffener 3	Beam	W_Tee	A36 Gr.36	Typical
28	M35	N62	N61A		180	Stiffener 4	Beam	W_Tee	A36 Gr.36	Typical
29	M36	N63	N62		180	Stiffener 5	Beam	W_Tee	A36 Gr.36	Typical
30	M37	N64A	N63		180	Stiffener 6	Beam	W_Tee	A36 Gr.36	Typical
31	M38	N65A	N64A		180	Stiffener 7	Beam	W_Tee	A36 Gr.36	Typical
32	M39	N66A	N65A		180	Stiffener 8	Beam	W_Tee	A36 Gr.36	Typical
33	M40	N67A	N66A		180	Stiffener 9	Beam	W_Tee	A36 Gr.36	Typical
34	M41	N68A	N67A		180	Stiffener 10	Beam	W_Tee	A36 Gr.36	Typical
35	M42	N69B	N68A		180	Stiffener 11	Beam	W_Tee	A36 Gr.36	Typical
36	M43	N70C	N69B		180	Stiffener 12	Beam	W_Tee	A36 Gr.36	Typical
37	M44	N71A	N70C		180	Stiffener 13	Beam	W_Tee	A36 Gr.36	Typical
38	M45	N72A	N71A		180	Stiffener 14	Beam	W_Tee	A36 Gr.36	Typical
39	M46	N73	N72A		180	Stiffener 15	Beam	W_Tee	A36 Gr.36	Typical
40	M47	N74	N73		180	Stiffener 16	Beam	W_Tee	A36 Gr.36	Typical
41	M48	N57A	N74		180	Stiffener 17	Beam	W_Tee	A36 Gr.36	Typical
42	M49	N76	N55A		90	Standoff	Beam	RECT	A36 Gr.36	Typical
43	M50	N57A	N76		180	Stiffener 18	Beam	W_Tee	A36 Gr.36	Typical
44	M48A	N73D	N83A			Stabilizer	Beam	Pipe	A53 Gr.B	Typical
45	A	N65	N70B			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
46	B	N66	N71F			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
47	C	N67	N72			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design R...
48	D	N68	N73A			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
49	E	N69A	N74A			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
50	M50A	N76A	N75		90	MOD	Beam	Single Angle	A36 Gr.36	Typical
51	M51	N77	N75		180	MOD	Beam	Single Angle	A36 Gr.36	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/ft, k*s^2*ft)]
1	N70B	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/ft, k*s^2*ft)]
1	N71F	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/ft, k*s^2*ft)]
1	N74A	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/ft, k*s^2*ft)]
1	N5	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/ft, k*s^2*ft)]
1	N6	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/ft, k*s^2*ft)]
1	N3	L	Y	0

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	A	Y	-.092	%70
2	A	Y	-.004	%70
3	B	Y	-.128	%62.5
4	B	Y	-.075	%75
5	E	Y	-.132	%69

Member Point Loads (BLC 2 : Ice Dead)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	A	Y	-.156	%70
2	A	Y	-.035	%70
3	B	Y	-.451	%62.5
4	B	Y	-.046	%75
5	E	Y	-.169	%69

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	A	Z	-.136	%46.7
2	A	Z	-.031	%70
3	B	Z	-.327	%25.1

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
4	E	Z	-.145	%46.6
5	A	Z	-.136	%93.3
6	B	Z	-.327	%100
7	E	Z	-.145	%91.5

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	A	Z	-.109	%46.7
2	A	Z	-.023	%70
3	B	Z	-.246	%25.1
4	E	Z	-.117	%46.6
5	A	Z	-.109	%93.3
6	B	Z	-.246	%100
7	E	Z	-.117	%91.5
8	A	X	.063	%46.7
9	A	X	.015	%70
10	B	X	.142	%25.1
11	B	X	.006	%75
12	E	X	.067	%46.6
13	A	X	.063	%93.3
14	B	X	.142	%100
15	E	X	.067	%91.5

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	A	Z	-.053	%46.7
2	A	Z	-.009	%70
3	B	Z	-.098	%25.1
4	E	Z	-.057	%46.6
5	A	Z	-.053	%93.3
6	B	Z	-.098	%100
7	E	Z	-.057	%91.5
8	A	X	.091	%46.7
9	A	X	.024	%70
10	B	X	.17	%25.1
11	B	X	.033	%75
12	E	X	.1	%46.6
13	A	X	.091	%93.3
14	B	X	.17	%100
15	E	X	.1	%91.5

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	A	Z	0	%46.7
2	A	Z	0	%70
3	B	Z	0	%25.1
4	E	Z	0	%46.6
5	A	Z	0	%93.3
6	B	Z	0	%100
7	E	Z	0	%91.5
8	A	X	.096	%46.7
9	A	X	.027	%70
10	B	X	.153	%25.1
11	B	X	.051	%75
12	E	X	.105	%46.6

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
13	A	X	.096	%93.3
14	B	X	.153	%100
15	E	X	.105	%91.5

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	A	Z	.053	%46.7
2	A	Z	.009	%70
3	B	Z	.098	%25.1
4	E	Z	.057	%46.6
5	A	Z	.053	%93.3
6	B	Z	.098	%100
7	E	Z	.057	%91.5
8	A	X	.091	%46.7
9	A	X	.024	%70
10	B	X	.17	%25.1
11	B	X	.033	%75
12	E	X	.1	%46.6
13	A	X	.091	%93.3
14	B	X	.17	%100
15	E	X	.1	%91.5

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	A	Z	.109	%46.7
2	A	Z	.023	%70
3	B	Z	.246	%25.1
4	E	Z	.117	%46.6
5	A	Z	.109	%93.3
6	B	Z	.246	%100
7	E	Z	.117	%91.5
8	A	X	.063	%46.7
9	A	X	.015	%70
10	B	X	.142	%25.1
11	B	X	.006	%75
12	E	X	.067	%46.6
13	A	X	.063	%93.3
14	B	X	.142	%100
15	E	X	.067	%91.5

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	A	Z	-.029	%46.7
2	A	Z	-.008	%70
3	B	Z	-.084	%25.1
4	E	Z	-.03	%46.6
5	A	Z	-.029	%93.3
6	B	Z	-.084	%100
7	E	Z	-.03	%91.5

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	A	Z	-.023	%46.7
2	A	Z	-.006	%70
3	B	Z	-.064	%25.1

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
4	E	Z	-.025	%46.6
5	A	Z	-.023	%93.3
6	B	Z	-.064	%100
7	E	Z	-.025	%91.5
8	A	X	.013	%46.7
9	A	X	.004	%70
10	B	X	.037	%25.1
11	B	X	.002	%75
12	E	X	.014	%46.6
13	A	X	.013	%93.3
14	B	X	.037	%100
15	E	X	.014	%91.5

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	A	Z	-.012	%46.7
2	A	Z	-.003	%70
3	B	Z	-.027	%25.1
4	E	Z	-.013	%46.6
5	A	Z	-.012	%93.3
6	B	Z	-.027	%100
7	E	Z	-.013	%91.5
8	A	X	.02	%46.7
9	A	X	.007	%70
10	B	X	.046	%25.1
11	B	X	.009	%75
12	E	X	.022	%46.6
13	A	X	.02	%93.3
14	B	X	.046	%100
15	E	X	.022	%91.5

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	A	Z	0	%46.7
2	A	Z	0	%70
3	B	Z	0	%25.1
4	E	Z	0	%46.6
5	A	Z	0	%93.3
6	B	Z	0	%100
7	E	Z	0	%91.5
8	A	X	.022	%46.7
9	A	X	.009	%70
10	B	X	.043	%25.1
11	B	X	.014	%75
12	E	X	.024	%46.6
13	A	X	.022	%93.3
14	B	X	.043	%100
15	E	X	.024	%91.5

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	A	Z	.012	%46.7
2	A	Z	.003	%70
3	B	Z	.027	%25.1
4	E	Z	.013	%46.6

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
5	A	Z	.012	%93.3
6	B	Z	.027	%100
7	E	Z	.013	%91.5
8	A	X	.02	%46.7
9	A	X	.007	%70
10	B	X	.046	%25.1
11	B	X	.009	%75
12	E	X	.022	%46.6
13	A	X	.02	%93.3
14	B	X	.046	%100
15	E	X	.022	%91.5

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	A	Z	.023	%46.7
2	A	Z	.003	%70
3	B	Z	.027	%25.1
4	E	Z	.013	%46.6
5	A	Z	.023	%93.3
6	B	Z	.027	%100
7	E	Z	.013	%91.5
8	A	X	.013	%46.7
9	A	X	.007	%70
10	B	X	.046	%25.1
11	B	X	.009	%75
12	E	X	.022	%46.6
13	A	X	.013	%93.3
14	B	X	.046	%100
15	E	X	.022	%91.5

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	A	Z	-.01	%70
2	A	Z	0	%70
3	B	Z	-.013	%62.5
4	B	Z	-.008	%75
5	E	Z	-.014	%69

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	A	X	.01	%70
2	A	X	0	%70
3	B	X	.013	%62.5
4	B	X	.008	%75
5	E	X	.014	%69

Member Point Loads (BLC 41 : Seismic Vertical Antennas)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	A	Y	-.018	%70
2	A	Y	-.001	%70
3	B	Y	-.026	%62.5
4	B	Y	-.015	%75
5	E	Y	-.026	%69

Member Distributed Loads (BLC 2 : Ice Dead)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M2	Y	-.008	-.008	0	%100
2	M3	Y	-.008	-.008	0	%100
3	M5	Y	-.013	-.013	0	%100
4	M16	Y	-.018	-.018	0	%100
5	M17	Y	-.018	-.018	0	%100
6	M18	Y	-.017	-.017	0	%100
7	M19	Y	-.016	-.016	0	%100
8	M20	Y	-.016	-.016	0	%100
9	M21	Y	-.015	-.015	0	%100
10	M22	Y	-.015	-.015	0	%100
11	M23	Y	-.014	-.014	0	%100
12	M24	Y	-.014	-.014	0	%100
13	M25	Y	-.013	-.013	0	%100
14	M26	Y	-.013	-.013	0	%100
15	M27	Y	-.012	-.012	0	%100
16	M28	Y	-.012	-.012	0	%100
17	M29	Y	-.011	-.011	0	%100
18	M30	Y	-.011	-.011	0	%100
19	M31	Y	-.011	-.011	0	%100
20	M32	Y	-.01	-.01	0	%100
21	M30B	Y	-.01	-.01	0	%100
22	M30C	Y	-.016	-.016	0	%100
23	M30D	Y	-.01	-.01	0	%100
24	M31A	Y	-.018	-.018	0	%100
25	M32A	Y	-.018	-.018	0	%100
26	M33A	Y	-.017	-.017	0	%100
27	M34A	Y	-.016	-.016	0	%100
28	M35	Y	-.016	-.016	0	%100
29	M36	Y	-.015	-.015	0	%100
30	M37	Y	-.015	-.015	0	%100
31	M38	Y	-.014	-.014	0	%100
32	M39	Y	-.014	-.014	0	%100
33	M40	Y	-.013	-.013	0	%100
34	M41	Y	-.013	-.013	0	%100
35	M42	Y	-.012	-.012	0	%100
36	M43	Y	-.012	-.012	0	%100
37	M44	Y	-.011	-.011	0	%100
38	M45	Y	-.011	-.011	0	%100
39	M46	Y	-.011	-.011	0	%100
40	M47	Y	-.01	-.01	0	%100
41	M48	Y	-.01	-.01	0	%100
42	M49	Y	-.016	-.016	0	%100
43	M50	Y	-.01	-.01	0	%100
44	M48A	Y	-.008	-.008	0	%100
45	A	Y	-.008	-.008	0	%100
46	B	Y	-.008	-.008	0	%100
47	C	Y	-.008	-.008	0	%100
48	D	Y	-.008	-.008	0	%100
49	E	Y	-.008	-.008	0	%100
50	M50A	Y	-.011	-.011	0	%100
51	M51	Y	-.011	-.011	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M2	Z	-.011	-.011	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
2	M3	Z	-.011	-.011	0	%100
3	M5	Z	-.02	-.02	0	%100
4	M16	Z	0	0	0	%100
5	M17	Z	0	0	0	%100
6	M18	Z	0	0	0	%100
7	M19	Z	0	0	0	%100
8	M20	Z	0	0	0	%100
9	M21	Z	0	0	0	%100
10	M22	Z	0	0	0	%100
11	M23	Z	0	0	0	%100
12	M24	Z	0	0	0	%100
13	M25	Z	0	0	0	%100
14	M26	Z	0	0	0	%100
15	M27	Z	0	0	0	%100
16	M28	Z	0	0	0	%100
17	M29	Z	0	0	0	%100
18	M30	Z	0	0	0	%100
19	M31	Z	0	0	0	%100
20	M32	Z	0	0	0	%100
21	M30B	Z	0	0	0	%100
22	M30C	Z	0	0	0	%100
23	M30D	Z	0	0	0	%100
24	M31A	Z	0	0	0	%100
25	M32A	Z	0	0	0	%100
26	M33A	Z	0	0	0	%100
27	M34A	Z	0	0	0	%100
28	M35	Z	0	0	0	%100
29	M36	Z	0	0	0	%100
30	M37	Z	0	0	0	%100
31	M38	Z	0	0	0	%100
32	M39	Z	0	0	0	%100
33	M40	Z	0	0	0	%100
34	M41	Z	0	0	0	%100
35	M42	Z	0	0	0	%100
36	M43	Z	0	0	0	%100
37	M44	Z	0	0	0	%100
38	M45	Z	0	0	0	%100
39	M46	Z	0	0	0	%100
40	M47	Z	0	0	0	%100
41	M48	Z	0	0	0	%100
42	M49	Z	0	0	0	%100
43	M50	Z	0	0	0	%100
44	M48A	Z	0	0	0	%100
45	A	Z	-.011	-.011	0	%46.7
46	B	Z	-.011	-.011	0	%25.1
47	E	Z	-.011	-.011	0	%46.6
48	M50A	Z	-.016	-.016	0	%100
49	M51	Z	-.015	-.015	0	%100
50	A	Z	-.011	-.011	%93.3	%100
51	C	Z	-.011	-.011	0	%100
52	D	Z	-.011	-.011	0	%100
53	E	Z	-.011	-.011	%91.5	%100
54	M2	X	0	0	0	%100
55	M3	X	0	0	0	%100
56	M5	X	0	0	0	%100
57	M16	X	0	0	0	%100
58	M17	X	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
59	M18	X	0	0	0	%100
60	M19	X	0	0	0	%100
61	M20	X	0	0	0	%100
62	M21	X	0	0	0	%100
63	M22	X	0	0	0	%100
64	M23	X	0	0	0	%100
65	M24	X	0	0	0	%100
66	M25	X	0	0	0	%100
67	M26	X	0	0	0	%100
68	M27	X	0	0	0	%100
69	M28	X	0	0	0	%100
70	M29	X	0	0	0	%100
71	M30	X	0	0	0	%100
72	M31	X	0	0	0	%100
73	M32	X	0	0	0	%100
74	M30B	X	0	0	0	%100
75	M30C	X	0	0	0	%100
76	M30D	X	0	0	0	%100
77	M31A	X	0	0	0	%100
78	M32A	X	0	0	0	%100
79	M33A	X	0	0	0	%100
80	M34A	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	M43	X	0	0	0	%100
90	M44	X	0	0	0	%100
91	M45	X	0	0	0	%100
92	M46	X	0	0	0	%100
93	M47	X	0	0	0	%100
94	M48	X	0	0	0	%100
95	M49	X	0	0	0	%100
96	M50	X	0	0	0	%100
97	M48A	X	0	0	0	%100
98	A	X	0	0	0	%100
99	B	X	0	0	0	%100
100	E	X	0	0	0	%100
101	M50A	X	0	0	0	%100
102	M51	X	0	0	0	%100
103	C	X	0	0	0	%100
104	D	X	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M2	Z	-.007	-.007	0	%100
2	M3	Z	-.007	-.007	0	%100
3	M5	Z	-.017	-.017	0	%100
4	M16	Z	-.01	-.01	0	%100
5	M17	Z	-.01	-.01	0	%100
6	M18	Z	-.009	-.009	0	%100
7	M19	Z	-.009	-.009	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
8	M20	Z	-.008	-.008	0	%100
9	M21	Z	-.008	-.008	0	%100
10	M22	Z	-.007	-.007	0	%100
11	M23	Z	-.007	-.007	0	%100
12	M24	Z	-.006	-.006	0	%100
13	M25	Z	-.006	-.006	0	%100
14	M26	Z	-.005	-.005	0	%100
15	M27	Z	-.005	-.005	0	%100
16	M28	Z	-.004	-.004	0	%100
17	M29	Z	-.004	-.004	0	%100
18	M30	Z	-.003	-.003	0	%100
19	M31	Z	-.003	-.003	0	%100
20	M32	Z	-.002	-.002	0	%100
21	M30B	Z	-.002	-.002	0	%100
22	M30C	Z	-.01	-.01	0	%100
23	M30D	Z	-.001	-.001	0	%100
24	M31A	Z	-.01	-.01	0	%100
25	M32A	Z	-.01	-.01	0	%100
26	M33A	Z	-.009	-.009	0	%100
27	M34A	Z	-.009	-.009	0	%100
28	M35	Z	-.008	-.008	0	%100
29	M36	Z	-.008	-.008	0	%100
30	M37	Z	-.007	-.007	0	%100
31	M38	Z	-.007	-.007	0	%100
32	M39	Z	-.006	-.006	0	%100
33	M40	Z	-.006	-.006	0	%100
34	M41	Z	-.005	-.005	0	%100
35	M42	Z	-.005	-.005	0	%100
36	M43	Z	-.004	-.004	0	%100
37	M44	Z	-.004	-.004	0	%100
38	M45	Z	-.003	-.003	0	%100
39	M46	Z	-.003	-.003	0	%100
40	M47	Z	-.002	-.002	0	%100
41	M48	Z	-.002	-.002	0	%100
42	M49	Z	-.01	-.01	0	%100
43	M50	Z	-.001	-.001	0	%100
44	M48A	Z	-.002	-.002	0	%100
45	A	Z	-.009	-.009	0	%46.7
46	B	Z	-.009	-.009	0	%25.1
47	E	Z	-.009	-.009	0	%46.6
48	M50A	Z	-.008	-.008	0	%100
49	M51	Z	-.016	-.016	0	%100
50	A	Z	-.009	-.009	%93.3	%100
51	C	Z	-.009	-.009	0	%100
52	D	Z	-.009	-.009	0	%100
53	E	Z	-.009	-.009	%91.5	%100
54	M2	X	.004	.004	0	%100
55	M3	X	.004	.004	0	%100
56	M5	X	.01	.01	0	%100
57	M16	X	.006	.006	0	%100
58	M17	X	.006	.006	0	%100
59	M18	X	.005	.005	0	%100
60	M19	X	.005	.005	0	%100
61	M20	X	.005	.005	0	%100
62	M21	X	.004	.004	0	%100
63	M22	X	.004	.004	0	%100
64	M23	X	.004	.004	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
65	M24	X	.004	.004	0	%100
66	M25	X	.003	.003	0	%100
67	M26	X	.003	.003	0	%100
68	M27	X	.003	.003	0	%100
69	M28	X	.002	.002	0	%100
70	M29	X	.002	.002	0	%100
71	M30	X	.002	.002	0	%100
72	M31	X	.002	.002	0	%100
73	M32	X	.001	.001	0	%100
74	M30B	X	.001	.001	0	%100
75	M30C	X	.006	.006	0	%100
76	M30D	X	.001	.001	0	%100
77	M31A	X	.006	.006	0	%100
78	M32A	X	.006	.006	0	%100
79	M33A	X	.005	.005	0	%100
80	M34A	X	.005	.005	0	%100
81	M35	X	.005	.005	0	%100
82	M36	X	.004	.004	0	%100
83	M37	X	.004	.004	0	%100
84	M38	X	.004	.004	0	%100
85	M39	X	.004	.004	0	%100
86	M40	X	.003	.003	0	%100
87	M41	X	.003	.003	0	%100
88	M42	X	.003	.003	0	%100
89	M43	X	.002	.002	0	%100
90	M44	X	.002	.002	0	%100
91	M45	X	.002	.002	0	%100
92	M46	X	.002	.002	0	%100
93	M47	X	.001	.001	0	%100
94	M48	X	.001	.001	0	%100
95	M49	X	.006	.006	0	%100
96	M50	X	.001	.001	0	%100
97	M48A	X	.001	.001	0	%100
98	A	X	.005	.005	0	%100
99	B	X	.005	.005	0	%100
100	E	X	.005	.005	0	%100
101	M50A	X	.005	.005	0	%100
102	M51	X	.009	.009	0	%100
103	C	X	.005	.005	0	%100
104	D	X	.005	.005	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M2	Z	-.001	-.001	0	%100
2	M3	Z	-.001	-.001	0	%100
3	M5	Z	-.01	-.01	0	%100
4	M16	Z	-.018	-.018	0	%100
5	M17	Z	-.017	-.017	0	%100
6	M18	Z	-.016	-.016	0	%100
7	M19	Z	-.015	-.015	0	%100
8	M20	Z	-.014	-.014	0	%100
9	M21	Z	-.013	-.013	0	%100
10	M22	Z	-.013	-.013	0	%100
11	M23	Z	-.012	-.012	0	%100
12	M24	Z	-.011	-.011	0	%100
13	M25	Z	-.01	-.01	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
14	M26	Z	-.009	-.009	0	%100
15	M27	Z	-.008	-.008	0	%100
16	M28	Z	-.007	-.007	0	%100
17	M29	Z	-.006	-.006	0	%100
18	M30	Z	-.005	-.005	0	%100
19	M31	Z	-.005	-.005	0	%100
20	M32	Z	-.004	-.004	0	%100
21	M30B	Z	-.003	-.003	0	%100
22	M30C	Z	-.017	-.017	0	%100
23	M30D	Z	-.002	-.002	0	%100
24	M31A	Z	-.018	-.018	0	%100
25	M32A	Z	-.017	-.017	0	%100
26	M33A	Z	-.016	-.016	0	%100
27	M34A	Z	-.015	-.015	0	%100
28	M35	Z	-.014	-.014	0	%100
29	M36	Z	-.013	-.013	0	%100
30	M37	Z	-.013	-.013	0	%100
31	M38	Z	-.012	-.012	0	%100
32	M39	Z	-.011	-.011	0	%100
33	M40	Z	-.01	-.01	0	%100
34	M41	Z	-.009	-.009	0	%100
35	M42	Z	-.008	-.008	0	%100
36	M43	Z	-.007	-.007	0	%100
37	M44	Z	-.006	-.006	0	%100
38	M45	Z	-.005	-.005	0	%100
39	M46	Z	-.005	-.005	0	%100
40	M47	Z	-.004	-.004	0	%100
41	M48	Z	-.003	-.003	0	%100
42	M49	Z	-.017	-.017	0	%100
43	M50	Z	-.002	-.002	0	%100
44	M48A	Z	-.003	-.003	0	%100
45	A	Z	-.005	-.005	0	%46.7
46	B	Z	-.005	-.005	0	%25.1
47	E	Z	-.005	-.005	0	%46.6
48	M50A	Z	-.003	-.003	0	%100
49	M51	Z	-.008	-.008	0	%100
50	A	Z	-.005	-.005	%93.3	%100
51	C	Z	-.005	-.005	0	%100
52	D	Z	-.005	-.005	0	%100
53	E	Z	-.005	-.005	%91.5	%100
54	M2	X	.002	.002	0	%100
55	M3	X	.002	.002	0	%100
56	M5	X	.017	.017	0	%100
57	M16	X	.031	.031	0	%100
58	M17	X	.029	.029	0	%100
59	M18	X	.028	.028	0	%100
60	M19	X	.026	.026	0	%100
61	M20	X	.025	.025	0	%100
62	M21	X	.023	.023	0	%100
63	M22	X	.022	.022	0	%100
64	M23	X	.02	.02	0	%100
65	M24	X	.019	.019	0	%100
66	M25	X	.017	.017	0	%100
67	M26	X	.015	.015	0	%100
68	M27	X	.014	.014	0	%100
69	M28	X	.012	.012	0	%100
70	M29	X	.011	.011	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
71	M30	X	.009	.009	0	%100
72	M31	X	.008	.008	0	%100
73	M32	X	.006	.006	0	%100
74	M30B	X	.005	.005	0	%100
75	M30C	X	.029	.029	0	%100
76	M30D	X	.003	.003	0	%100
77	M31A	X	.031	.031	0	%100
78	M32A	X	.029	.029	0	%100
79	M33A	X	.028	.028	0	%100
80	M34A	X	.026	.026	0	%100
81	M35	X	.025	.025	0	%100
82	M36	X	.023	.023	0	%100
83	M37	X	.022	.022	0	%100
84	M38	X	.02	.02	0	%100
85	M39	X	.019	.019	0	%100
86	M40	X	.017	.017	0	%100
87	M41	X	.015	.015	0	%100
88	M42	X	.014	.014	0	%100
89	M43	X	.012	.012	0	%100
90	M44	X	.011	.011	0	%100
91	M45	X	.009	.009	0	%100
92	M46	X	.008	.008	0	%100
93	M47	X	.006	.006	0	%100
94	M48	X	.005	.005	0	%100
95	M49	X	.029	.029	0	%100
96	M50	X	.003	.003	0	%100
97	M48A	X	.006	.006	0	%100
98	A	X	.009	.009	0	%100
99	B	X	.009	.009	0	%100
100	E	X	.009	.009	0	%100
101	M50A	X	.005	.005	0	%100
102	M51	X	.013	.013	0	%100
103	C	X	.009	.009	0	%100
104	D	X	.009	.009	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M2	Z	0	0	0	%100
2	M3	Z	0	0	0	%100
3	M5	Z	0	0	0	%100
4	M16	Z	0	0	0	%100
5	M17	Z	0	0	0	%100
6	M18	Z	0	0	0	%100
7	M19	Z	0	0	0	%100
8	M20	Z	0	0	0	%100
9	M21	Z	0	0	0	%100
10	M22	Z	0	0	0	%100
11	M23	Z	0	0	0	%100
12	M24	Z	0	0	0	%100
13	M25	Z	0	0	0	%100
14	M26	Z	0	0	0	%100
15	M27	Z	0	0	0	%100
16	M28	Z	0	0	0	%100
17	M29	Z	0	0	0	%100
18	M30	Z	0	0	0	%100
19	M31	Z	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
20	M32	Z	0	0	0	%100
21	M30B	Z	0	0	0	%100
22	M30C	Z	0	0	0	%100
23	M30D	Z	0	0	0	%100
24	M31A	Z	0	0	0	%100
25	M32A	Z	0	0	0	%100
26	M33A	Z	0	0	0	%100
27	M34A	Z	0	0	0	%100
28	M35	Z	0	0	0	%100
29	M36	Z	0	0	0	%100
30	M37	Z	0	0	0	%100
31	M38	Z	0	0	0	%100
32	M39	Z	0	0	0	%100
33	M40	Z	0	0	0	%100
34	M41	Z	0	0	0	%100
35	M42	Z	0	0	0	%100
36	M43	Z	0	0	0	%100
37	M44	Z	0	0	0	%100
38	M45	Z	0	0	0	%100
39	M46	Z	0	0	0	%100
40	M47	Z	0	0	0	%100
41	M48	Z	0	0	0	%100
42	M49	Z	0	0	0	%100
43	M50	Z	0	0	0	%100
44	M48A	Z	0	0	0	%100
45	A	Z	0	0	0	%46.7
46	B	Z	0	0	0	%25.1
47	E	Z	0	0	0	%46.6
48	M50A	Z	0	0	0	%100
49	M51	Z	0	0	0	%100
50	A	Z	0	0	%93.3	%100
51	C	Z	0	0	0	%100
52	D	Z	0	0	0	%100
53	E	Z	0	0	%91.5	%100
54	M2	X	0	0	0	%100
55	M3	X	0	0	0	%100
56	M5	X	.02	.02	0	%100
57	M16	X	.047	.047	0	%100
58	M17	X	.045	.045	0	%100
59	M18	X	.043	.043	0	%100
60	M19	X	.04	.04	0	%100
61	M20	X	.038	.038	0	%100
62	M21	X	.036	.036	0	%100
63	M22	X	.033	.033	0	%100
64	M23	X	.031	.031	0	%100
65	M24	X	.029	.029	0	%100
66	M25	X	.026	.026	0	%100
67	M26	X	.024	.024	0	%100
68	M27	X	.021	.021	0	%100
69	M28	X	.019	.019	0	%100
70	M29	X	.017	.017	0	%100
71	M30	X	.014	.014	0	%100
72	M31	X	.012	.012	0	%100
73	M32	X	.01	.01	0	%100
74	M30B	X	.007	.007	0	%100
75	M30C	X	.045	.045	0	%100
76	M30D	X	.005	.005	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
77	M31A	X	.047	.047	0	%100
78	M32A	X	.045	.045	0	%100
79	M33A	X	.043	.043	0	%100
80	M34A	X	.04	.04	0	%100
81	M35	X	.038	.038	0	%100
82	M36	X	.036	.036	0	%100
83	M37	X	.033	.033	0	%100
84	M38	X	.031	.031	0	%100
85	M39	X	.029	.029	0	%100
86	M40	X	.026	.026	0	%100
87	M41	X	.024	.024	0	%100
88	M42	X	.021	.021	0	%100
89	M43	X	.019	.019	0	%100
90	M44	X	.017	.017	0	%100
91	M45	X	.014	.014	0	%100
92	M46	X	.012	.012	0	%100
93	M47	X	.01	.01	0	%100
94	M48	X	.007	.007	0	%100
95	M49	X	.045	.045	0	%100
96	M50	X	.005	.005	0	%100
97	M48A	X	.01	.01	0	%100
98	A	X	.011	.011	0	%100
99	B	X	.011	.011	0	%100
100	E	X	.011	.011	0	%100
101	M50A	X	.009	.009	0	%100
102	M51	X	.009	.009	0	%100
103	C	X	.011	.011	0	%100
104	D	X	.011	.011	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M2	Z	.001	.001	0	%100
2	M3	Z	.001	.001	0	%100
3	M5	Z	.01	.01	0	%100
4	M16	Z	.018	.018	0	%100
5	M17	Z	.017	.017	0	%100
6	M18	Z	.016	.016	0	%100
7	M19	Z	.015	.015	0	%100
8	M20	Z	.014	.014	0	%100
9	M21	Z	.013	.013	0	%100
10	M22	Z	.013	.013	0	%100
11	M23	Z	.012	.012	0	%100
12	M24	Z	.011	.011	0	%100
13	M25	Z	.01	.01	0	%100
14	M26	Z	.009	.009	0	%100
15	M27	Z	.008	.008	0	%100
16	M28	Z	.007	.007	0	%100
17	M29	Z	.006	.006	0	%100
18	M30	Z	.005	.005	0	%100
19	M31	Z	.005	.005	0	%100
20	M32	Z	.004	.004	0	%100
21	M30B	Z	.003	.003	0	%100
22	M30C	Z	.017	.017	0	%100
23	M30D	Z	.002	.002	0	%100
24	M31A	Z	.018	.018	0	%100
25	M32A	Z	.017	.017	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
26	M33A	Z	.016	.016	0	%100
27	M34A	Z	.015	.015	0	%100
28	M35	Z	.014	.014	0	%100
29	M36	Z	.013	.013	0	%100
30	M37	Z	.013	.013	0	%100
31	M38	Z	.012	.012	0	%100
32	M39	Z	.011	.011	0	%100
33	M40	Z	.01	.01	0	%100
34	M41	Z	.009	.009	0	%100
35	M42	Z	.008	.008	0	%100
36	M43	Z	.007	.007	0	%100
37	M44	Z	.006	.006	0	%100
38	M45	Z	.005	.005	0	%100
39	M46	Z	.005	.005	0	%100
40	M47	Z	.004	.004	0	%100
41	M48	Z	.003	.003	0	%100
42	M49	Z	.017	.017	0	%100
43	M50	Z	.002	.002	0	%100
44	M48A	Z	.004	.004	0	%100
45	A	Z	.005	.005	0	%46.7
46	B	Z	.005	.005	0	%25.1
47	E	Z	.005	.005	0	%46.6
48	M50A	Z	.008	.008	0	%100
49	M51	Z	.003	.003	0	%100
50	A	Z	.005	.005	%93.3	%100
51	C	Z	.005	.005	0	%100
52	D	Z	.005	.005	0	%100
53	E	Z	.005	.005	%91.5	%100
54	M2	X	.002	.002	0	%100
55	M3	X	.002	.002	0	%100
56	M5	X	.017	.017	0	%100
57	M16	X	.031	.031	0	%100
58	M17	X	.029	.029	0	%100
59	M18	X	.028	.028	0	%100
60	M19	X	.026	.026	0	%100
61	M20	X	.025	.025	0	%100
62	M21	X	.023	.023	0	%100
63	M22	X	.022	.022	0	%100
64	M23	X	.02	.02	0	%100
65	M24	X	.019	.019	0	%100
66	M25	X	.017	.017	0	%100
67	M26	X	.015	.015	0	%100
68	M27	X	.014	.014	0	%100
69	M28	X	.012	.012	0	%100
70	M29	X	.011	.011	0	%100
71	M30	X	.009	.009	0	%100
72	M31	X	.008	.008	0	%100
73	M32	X	.006	.006	0	%100
74	M30B	X	.005	.005	0	%100
75	M30C	X	.029	.029	0	%100
76	M30D	X	.003	.003	0	%100
77	M31A	X	.031	.031	0	%100
78	M32A	X	.029	.029	0	%100
79	M33A	X	.028	.028	0	%100
80	M34A	X	.026	.026	0	%100
81	M35	X	.025	.025	0	%100
82	M36	X	.023	.023	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
83	M37	X	.022	.022	0	%100
84	M38	X	.02	.02	0	%100
85	M39	X	.019	.019	0	%100
86	M40	X	.017	.017	0	%100
87	M41	X	.015	.015	0	%100
88	M42	X	.014	.014	0	%100
89	M43	X	.012	.012	0	%100
90	M44	X	.011	.011	0	%100
91	M45	X	.009	.009	0	%100
92	M46	X	.008	.008	0	%100
93	M47	X	.006	.006	0	%100
94	M48	X	.005	.005	0	%100
95	M49	X	.029	.029	0	%100
96	M50	X	.003	.003	0	%100
97	M48A	X	.008	.008	0	%100
98	A	X	.009	.009	0	%100
99	B	X	.009	.009	0	%100
100	E	X	.009	.009	0	%100
101	M50A	X	.013	.013	0	%100
102	M51	X	.005	.005	0	%100
103	C	X	.009	.009	0	%100
104	D	X	.009	.009	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M2	Z	.007	.007	0	%100
2	M3	Z	.007	.007	0	%100
3	M5	Z	.017	.017	0	%100
4	M16	Z	.01	.01	0	%100
5	M17	Z	.01	.01	0	%100
6	M18	Z	.009	.009	0	%100
7	M19	Z	.009	.009	0	%100
8	M20	Z	.008	.008	0	%100
9	M21	Z	.008	.008	0	%100
10	M22	Z	.007	.007	0	%100
11	M23	Z	.007	.007	0	%100
12	M24	Z	.006	.006	0	%100
13	M25	Z	.006	.006	0	%100
14	M26	Z	.005	.005	0	%100
15	M27	Z	.005	.005	0	%100
16	M28	Z	.004	.004	0	%100
17	M29	Z	.004	.004	0	%100
18	M30	Z	.003	.003	0	%100
19	M31	Z	.003	.003	0	%100
20	M32	Z	.002	.002	0	%100
21	M30B	Z	.002	.002	0	%100
22	M30C	Z	.01	.01	0	%100
23	M30D	Z	.001	.001	0	%100
24	M31A	Z	.01	.01	0	%100
25	M32A	Z	.01	.01	0	%100
26	M33A	Z	.009	.009	0	%100
27	M34A	Z	.009	.009	0	%100
28	M35	Z	.008	.008	0	%100
29	M36	Z	.008	.008	0	%100
30	M37	Z	.007	.007	0	%100
31	M38	Z	.007	.007	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
32	M39	Z	.006	.006	0	%100
33	M40	Z	.006	.006	0	%100
34	M41	Z	.005	.005	0	%100
35	M42	Z	.005	.005	0	%100
36	M43	Z	.004	.004	0	%100
37	M44	Z	.004	.004	0	%100
38	M45	Z	.003	.003	0	%100
39	M46	Z	.003	.003	0	%100
40	M47	Z	.002	.002	0	%100
41	M48	Z	.002	.002	0	%100
42	M49	Z	.01	.01	0	%100
43	M50	Z	.001	.001	0	%100
44	M48A	Z	.003	.003	0	%100
45	A	Z	.009	.009	0	%46.7
46	B	Z	.009	.009	0	%25.1
47	E	Z	.009	.009	0	%46.6
48	M50A	Z	.016	.016	0	%100
49	M51	Z	.008	.008	0	%100
50	A	Z	.009	.009	%93.3	%100
51	C	Z	.009	.009	0	%100
52	D	Z	.009	.009	0	%100
53	E	Z	.009	.009	%91.5	%100
54	M2	X	.004	.004	0	%100
55	M3	X	.004	.004	0	%100
56	M5	X	.01	.01	0	%100
57	M16	X	.006	.006	0	%100
58	M17	X	.006	.006	0	%100
59	M18	X	.005	.005	0	%100
60	M19	X	.005	.005	0	%100
61	M20	X	.005	.005	0	%100
62	M21	X	.004	.004	0	%100
63	M22	X	.004	.004	0	%100
64	M23	X	.004	.004	0	%100
65	M24	X	.004	.004	0	%100
66	M25	X	.003	.003	0	%100
67	M26	X	.003	.003	0	%100
68	M27	X	.003	.003	0	%100
69	M28	X	.002	.002	0	%100
70	M29	X	.002	.002	0	%100
71	M30	X	.002	.002	0	%100
72	M31	X	.002	.002	0	%100
73	M32	X	.001	.001	0	%100
74	M30B	X	.001	.001	0	%100
75	M30C	X	.006	.006	0	%100
76	M30D	X	.001	.001	0	%100
77	M31A	X	.006	.006	0	%100
78	M32A	X	.006	.006	0	%100
79	M33A	X	.005	.005	0	%100
80	M34A	X	.005	.005	0	%100
81	M35	X	.005	.005	0	%100
82	M36	X	.004	.004	0	%100
83	M37	X	.004	.004	0	%100
84	M38	X	.004	.004	0	%100
85	M39	X	.004	.004	0	%100
86	M40	X	.003	.003	0	%100
87	M41	X	.003	.003	0	%100
88	M42	X	.003	.003	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
89	M43	X	.002	.002	0	%100
90	M44	X	.002	.002	0	%100
91	M45	X	.002	.002	0	%100
92	M46	X	.002	.002	0	%100
93	M47	X	.001	.001	0	%100
94	M48	X	.001	.001	0	%100
95	M49	X	.006	.006	0	%100
96	M50	X	.001	.001	0	%100
97	M48A	X	.002	.002	0	%100
98	A	X	.005	.005	0	%100
99	B	X	.005	.005	0	%100
100	E	X	.005	.005	0	%100
101	M50A	X	.009	.009	0	%100
102	M51	X	.005	.005	0	%100
103	C	X	.005	.005	0	%100
104	D	X	.005	.005	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M2	Z	-.004	-.004	0	%100
2	M3	Z	-.004	-.004	0	%100
3	M5	Z	-.006	-.006	0	%100
4	M16	Z	0	0	0	%100
5	M17	Z	0	0	0	%100
6	M18	Z	0	0	0	%100
7	M19	Z	0	0	0	%100
8	M20	Z	0	0	0	%100
9	M21	Z	0	0	0	%100
10	M22	Z	0	0	0	%100
11	M23	Z	0	0	0	%100
12	M24	Z	0	0	0	%100
13	M25	Z	0	0	0	%100
14	M26	Z	0	0	0	%100
15	M27	Z	0	0	0	%100
16	M28	Z	0	0	0	%100
17	M29	Z	0	0	0	%100
18	M30	Z	0	0	0	%100
19	M31	Z	0	0	0	%100
20	M32	Z	0	0	0	%100
21	M30B	Z	0	0	0	%100
22	M30C	Z	0	0	0	%100
23	M30D	Z	0	0	0	%100
24	M31A	Z	0	0	0	%100
25	M32A	Z	0	0	0	%100
26	M33A	Z	0	0	0	%100
27	M34A	Z	0	0	0	%100
28	M35	Z	0	0	0	%100
29	M36	Z	0	0	0	%100
30	M37	Z	0	0	0	%100
31	M38	Z	0	0	0	%100
32	M39	Z	0	0	0	%100
33	M40	Z	0	0	0	%100
34	M41	Z	0	0	0	%100
35	M42	Z	0	0	0	%100
36	M43	Z	0	0	0	%100
37	M44	Z	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
38	M45	Z	0	0	0	%100
39	M46	Z	0	0	0	%100
40	M47	Z	0	0	0	%100
41	M48	Z	0	0	0	%100
42	M49	Z	0	0	0	%100
43	M50	Z	0	0	0	%100
44	M48A	Z	0	0	0	%100
45	A	Z	-.004	-.004	0	%46.7
46	B	Z	-.004	-.004	0	%25.1
47	E	Z	-.004	-.004	0	%46.6
48	M50A	Z	-.005	-.005	0	%100
49	M51	Z	-.005	-.005	0	%100
50	A	Z	-.004	-.004	%93.3	%100
51	C	Z	-.004	-.004	0	%100
52	D	Z	-.004	-.004	0	%100
53	E	Z	-.004	-.004	%91.5	%100
54	M2	X	0	0	0	%100
55	M3	X	0	0	0	%100
56	M5	X	0	0	0	%100
57	M16	X	0	0	0	%100
58	M17	X	0	0	0	%100
59	M18	X	0	0	0	%100
60	M19	X	0	0	0	%100
61	M20	X	0	0	0	%100
62	M21	X	0	0	0	%100
63	M22	X	0	0	0	%100
64	M23	X	0	0	0	%100
65	M24	X	0	0	0	%100
66	M25	X	0	0	0	%100
67	M26	X	0	0	0	%100
68	M27	X	0	0	0	%100
69	M28	X	0	0	0	%100
70	M29	X	0	0	0	%100
71	M30	X	0	0	0	%100
72	M31	X	0	0	0	%100
73	M32	X	0	0	0	%100
74	M30B	X	0	0	0	%100
75	M30C	X	0	0	0	%100
76	M30D	X	0	0	0	%100
77	M31A	X	0	0	0	%100
78	M32A	X	0	0	0	%100
79	M33A	X	0	0	0	%100
80	M34A	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	M43	X	0	0	0	%100
90	M44	X	0	0	0	%100
91	M45	X	0	0	0	%100
92	M46	X	0	0	0	%100
93	M47	X	0	0	0	%100
94	M48	X	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
95	M49	X	0	0	0	%100
96	M50	X	0	0	0	%100
97	M48A	X	0	0	0	%100
98	A	X	0	0	0	%100
99	B	X	0	0	0	%100
100	E	X	0	0	0	%100
101	M50A	X	0	0	0	%100
102	M51	X	0	0	0	%100
103	C	X	0	0	0	%100
104	D	X	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M2	Z	-.003	-.003	0	%100
2	M3	Z	-.003	-.003	0	%100
3	M5	Z	-.005	-.005	0	%100
4	M16	Z	-.002	-.002	0	%100
5	M17	Z	-.002	-.002	0	%100
6	M18	Z	-.001	-.001	0	%100
7	M19	Z	-.001	-.001	0	%100
8	M20	Z	-.001	-.001	0	%100
9	M21	Z	-.001	-.001	0	%100
10	M22	Z	-.001	-.001	0	%100
11	M23	Z	-.001	-.001	0	%100
12	M24	Z	-.001	-.001	0	%100
13	M25	Z	-.001	-.001	0	%100
14	M26	Z	-.001	-.001	0	%100
15	M27	Z	-.001	-.001	0	%100
16	M28	Z	-.001	-.001	0	%100
17	M29	Z	-.001	-.001	0	%100
18	M30	Z	0	0	0	%100
19	M31	Z	0	0	0	%100
20	M32	Z	0	0	0	%100
21	M30B	Z	0	0	0	%100
22	M30C	Z	-.002	-.002	0	%100
23	M30D	Z	0	0	0	%100
24	M31A	Z	-.002	-.002	0	%100
25	M32A	Z	-.002	-.002	0	%100
26	M33A	Z	-.001	-.001	0	%100
27	M34A	Z	-.001	-.001	0	%100
28	M35	Z	-.001	-.001	0	%100
29	M36	Z	-.001	-.001	0	%100
30	M37	Z	-.001	-.001	0	%100
31	M38	Z	-.001	-.001	0	%100
32	M39	Z	-.001	-.001	0	%100
33	M40	Z	-.001	-.001	0	%100
34	M41	Z	-.001	-.001	0	%100
35	M42	Z	-.001	-.001	0	%100
36	M43	Z	-.001	-.001	0	%100
37	M44	Z	-.001	-.001	0	%100
38	M45	Z	0	0	0	%100
39	M46	Z	0	0	0	%100
40	M47	Z	0	0	0	%100
41	M48	Z	0	0	0	%100
42	M49	Z	-.002	-.002	0	%100
43	M50	Z	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
44	M48A	Z	0	0	0	%100
45	A	Z	-.004	-.004	0	%46.7
46	B	Z	-.004	-.004	0	%25.1
47	E	Z	-.004	-.004	0	%46.6
48	M50A	Z	-.003	-.003	0	%100
49	M51	Z	-.005	-.005	0	%100
50	A	Z	-.004	-.004	%93.3	%100
51	C	Z	-.004	-.004	0	%100
52	D	Z	-.004	-.004	0	%100
53	E	Z	-.004	-.004	%91.5	%100
54	M2	X	.002	.002	0	%100
55	M3	X	.002	.002	0	%100
56	M5	X	.003	.003	0	%100
57	M16	X	.001	.001	0	%100
58	M17	X	.001	.001	0	%100
59	M18	X	.001	.001	0	%100
60	M19	X	.001	.001	0	%100
61	M20	X	.001	.001	0	%100
62	M21	X	.001	.001	0	%100
63	M22	X	.001	.001	0	%100
64	M23	X	.001	.001	0	%100
65	M24	X	.001	.001	0	%100
66	M25	X	.001	.001	0	%100
67	M26	X	0	0	0	%100
68	M27	X	0	0	0	%100
69	M28	X	0	0	0	%100
70	M29	X	0	0	0	%100
71	M30	X	0	0	0	%100
72	M31	X	0	0	0	%100
73	M32	X	0	0	0	%100
74	M30B	X	0	0	0	%100
75	M30C	X	.001	.001	0	%100
76	M30D	X	0	0	0	%100
77	M31A	X	.001	.001	0	%100
78	M32A	X	.001	.001	0	%100
79	M33A	X	.001	.001	0	%100
80	M34A	X	.001	.001	0	%100
81	M35	X	.001	.001	0	%100
82	M36	X	.001	.001	0	%100
83	M37	X	.001	.001	0	%100
84	M38	X	.001	.001	0	%100
85	M39	X	.001	.001	0	%100
86	M40	X	.001	.001	0	%100
87	M41	X	0	0	0	%100
88	M42	X	0	0	0	%100
89	M43	X	0	0	0	%100
90	M44	X	0	0	0	%100
91	M45	X	0	0	0	%100
92	M46	X	0	0	0	%100
93	M47	X	0	0	0	%100
94	M48	X	0	0	0	%100
95	M49	X	.001	.001	0	%100
96	M50	X	0	0	0	%100
97	M48A	X	0	0	0	%100
98	A	X	.002	.002	0	%100
99	B	X	.002	.002	0	%100
100	E	X	.002	.002	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
101	M50A	X	.002	.002	0	%100
102	M51	X	.003	.003	0	%100
103	C	X	.002	.002	0	%100
104	D	X	.002	.002	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M2	Z	-.001	-.001	0	%100
2	M3	Z	-.001	-.001	0	%100
3	M5	Z	-.003	-.003	0	%100
4	M16	Z	-.003	-.003	0	%100
5	M17	Z	-.003	-.003	0	%100
6	M18	Z	-.003	-.003	0	%100
7	M19	Z	-.002	-.002	0	%100
8	M20	Z	-.002	-.002	0	%100
9	M21	Z	-.002	-.002	0	%100
10	M22	Z	-.002	-.002	0	%100
11	M23	Z	-.002	-.002	0	%100
12	M24	Z	-.002	-.002	0	%100
13	M25	Z	-.002	-.002	0	%100
14	M26	Z	-.001	-.001	0	%100
15	M27	Z	-.001	-.001	0	%100
16	M28	Z	-.001	-.001	0	%100
17	M29	Z	-.001	-.001	0	%100
18	M30	Z	-.001	-.001	0	%100
19	M31	Z	-.001	-.001	0	%100
20	M32	Z	-.001	-.001	0	%100
21	M30B	Z	0	0	0	%100
22	M30C	Z	-.003	-.003	0	%100
23	M30D	Z	0	0	0	%100
24	M31A	Z	-.003	-.003	0	%100
25	M32A	Z	-.003	-.003	0	%100
26	M33A	Z	-.003	-.003	0	%100
27	M34A	Z	-.002	-.002	0	%100
28	M35	Z	-.002	-.002	0	%100
29	M36	Z	-.002	-.002	0	%100
30	M37	Z	-.002	-.002	0	%100
31	M38	Z	-.002	-.002	0	%100
32	M39	Z	-.002	-.002	0	%100
33	M40	Z	-.002	-.002	0	%100
34	M41	Z	-.001	-.001	0	%100
35	M42	Z	-.001	-.001	0	%100
36	M43	Z	-.001	-.001	0	%100
37	M44	Z	-.001	-.001	0	%100
38	M45	Z	-.001	-.001	0	%100
39	M46	Z	-.001	-.001	0	%100
40	M47	Z	-.001	-.001	0	%100
41	M48	Z	0	0	0	%100
42	M49	Z	-.003	-.003	0	%100
43	M50	Z	0	0	0	%100
44	M48A	Z	-.001	-.001	0	%100
45	A	Z	-.002	-.002	0	%46.7
46	B	Z	-.002	-.002	0	%25.1
47	E	Z	-.002	-.002	0	%46.6
48	M50A	Z	-.001	-.001	0	%100
49	M51	Z	-.003	-.003	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
50	A	Z	-.002	-.002	%93.3	%100
51	C	Z	-.002	-.002	0	%100
52	D	Z	-.002	-.002	0	%100
53	E	Z	-.002	-.002	%91.5	%100
54	M2	X	.003	.003	0	%100
55	M3	X	.003	.003	0	%100
56	M5	X	.005	.005	0	%100
57	M16	X	.005	.005	0	%100
58	M17	X	.005	.005	0	%100
59	M18	X	.004	.004	0	%100
60	M19	X	.004	.004	0	%100
61	M20	X	.004	.004	0	%100
62	M21	X	.004	.004	0	%100
63	M22	X	.003	.003	0	%100
64	M23	X	.003	.003	0	%100
65	M24	X	.003	.003	0	%100
66	M25	X	.003	.003	0	%100
67	M26	X	.002	.002	0	%100
68	M27	X	.002	.002	0	%100
69	M28	X	.002	.002	0	%100
70	M29	X	.002	.002	0	%100
71	M30	X	.001	.001	0	%100
72	M31	X	.001	.001	0	%100
73	M32	X	.001	.001	0	%100
74	M30B	X	.001	.001	0	%100
75	M30C	X	.005	.005	0	%100
76	M30D	X	.001	.001	0	%100
77	M31A	X	.005	.005	0	%100
78	M32A	X	.005	.005	0	%100
79	M33A	X	.004	.004	0	%100
80	M34A	X	.004	.004	0	%100
81	M35	X	.004	.004	0	%100
82	M36	X	.004	.004	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	.002	.002	0	%100
88	M42	X	.002	.002	0	%100
89	M43	X	.002	.002	0	%100
90	M44	X	.002	.002	0	%100
91	M45	X	.001	.001	0	%100
92	M46	X	.001	.001	0	%100
93	M47	X	.001	.001	0	%100
94	M48	X	.001	.001	0	%100
95	M49	X	.005	.005	0	%100
96	M50	X	.001	.001	0	%100
97	M48A	X	.001	.001	0	%100
98	A	X	.004	.004	0	%100
99	B	X	.004	.004	0	%100
100	E	X	.004	.004	0	%100
101	M50A	X	.002	.002	0	%100
102	M51	X	.004	.004	0	%100
103	C	X	.004	.004	0	%100
104	D	X	.004	.004	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M2	Z	0	0	0	%100
2	M3	Z	0	0	0	%100
3	M5	Z	0	0	0	%100
4	M16	Z	0	0	0	%100
5	M17	Z	0	0	0	%100
6	M18	Z	0	0	0	%100
7	M19	Z	0	0	0	%100
8	M20	Z	0	0	0	%100
9	M21	Z	0	0	0	%100
10	M22	Z	0	0	0	%100
11	M23	Z	0	0	0	%100
12	M24	Z	0	0	0	%100
13	M25	Z	0	0	0	%100
14	M26	Z	0	0	0	%100
15	M27	Z	0	0	0	%100
16	M28	Z	0	0	0	%100
17	M29	Z	0	0	0	%100
18	M30	Z	0	0	0	%100
19	M31	Z	0	0	0	%100
20	M32	Z	0	0	0	%100
21	M30B	Z	0	0	0	%100
22	M30C	Z	0	0	0	%100
23	M30D	Z	0	0	0	%100
24	M31A	Z	0	0	0	%100
25	M32A	Z	0	0	0	%100
26	M33A	Z	0	0	0	%100
27	M34A	Z	0	0	0	%100
28	M35	Z	0	0	0	%100
29	M36	Z	0	0	0	%100
30	M37	Z	0	0	0	%100
31	M38	Z	0	0	0	%100
32	M39	Z	0	0	0	%100
33	M40	Z	0	0	0	%100
34	M41	Z	0	0	0	%100
35	M42	Z	0	0	0	%100
36	M43	Z	0	0	0	%100
37	M44	Z	0	0	0	%100
38	M45	Z	0	0	0	%100
39	M46	Z	0	0	0	%100
40	M47	Z	0	0	0	%100
41	M48	Z	0	0	0	%100
42	M49	Z	0	0	0	%100
43	M50	Z	0	0	0	%100
44	M48A	Z	0	0	0	%100
45	A	Z	0	0	0	%46.7
46	B	Z	0	0	0	%25.1
47	E	Z	0	0	0	%46.6
48	M50A	Z	0	0	0	%100
49	M51	Z	0	0	0	%100
50	A	Z	0	0	%93.3	%100
51	C	Z	0	0	0	%100
52	D	Z	0	0	0	%100
53	E	Z	0	0	%91.5	%100
54	M2	X	.003	.003	0	%100
55	M3	X	.003	.003	0	%100
56	M5	X	.006	.006	0	%100
57	M16	X	.008	.008	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
58	M17	X	.007	.007	0	%100
59	M18	X	.007	.007	0	%100
60	M19	X	.006	.006	0	%100
61	M20	X	.006	.006	0	%100
62	M21	X	.006	.006	0	%100
63	M22	X	.005	.005	0	%100
64	M23	X	.005	.005	0	%100
65	M24	X	.005	.005	0	%100
66	M25	X	.004	.004	0	%100
67	M26	X	.004	.004	0	%100
68	M27	X	.003	.003	0	%100
69	M28	X	.003	.003	0	%100
70	M29	X	.003	.003	0	%100
71	M30	X	.002	.002	0	%100
72	M31	X	.002	.002	0	%100
73	M32	X	.002	.002	0	%100
74	M30B	X	.001	.001	0	%100
75	M30C	X	.007	.007	0	%100
76	M30D	X	.001	.001	0	%100
77	M31A	X	.008	.008	0	%100
78	M32A	X	.007	.007	0	%100
79	M33A	X	.007	.007	0	%100
80	M34A	X	.006	.006	0	%100
81	M35	X	.006	.006	0	%100
82	M36	X	.006	.006	0	%100
83	M37	X	.005	.005	0	%100
84	M38	X	.005	.005	0	%100
85	M39	X	.005	.005	0	%100
86	M40	X	.004	.004	0	%100
87	M41	X	.004	.004	0	%100
88	M42	X	.003	.003	0	%100
89	M43	X	.003	.003	0	%100
90	M44	X	.003	.003	0	%100
91	M45	X	.002	.002	0	%100
92	M46	X	.002	.002	0	%100
93	M47	X	.002	.002	0	%100
94	M48	X	.001	.001	0	%100
95	M49	X	.007	.007	0	%100
96	M50	X	.001	.001	0	%100
97	M48A	X	.002	.002	0	%100
98	A	X	.004	.004	0	%100
99	B	X	.004	.004	0	%100
100	E	X	.004	.004	0	%100
101	M50A	X	.003	.003	0	%100
102	M51	X	.003	.003	0	%100
103	C	X	.004	.004	0	%100
104	D	X	.004	.004	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M2	Z	.001	.001	0	%100
2	M3	Z	.001	.001	0	%100
3	M5	Z	.003	.003	0	%100
4	M16	Z	.003	.003	0	%100
5	M17	Z	.003	.003	0	%100
6	M18	Z	.003	.003	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
7	M19	Z	.002	.002	0	%100
8	M20	Z	.002	.002	0	%100
9	M21	Z	.002	.002	0	%100
10	M22	Z	.002	.002	0	%100
11	M23	Z	.002	.002	0	%100
12	M24	Z	.002	.002	0	%100
13	M25	Z	.002	.002	0	%100
14	M26	Z	.001	.001	0	%100
15	M27	Z	.001	.001	0	%100
16	M28	Z	.001	.001	0	%100
17	M29	Z	.001	.001	0	%100
18	M30	Z	.001	.001	0	%100
19	M31	Z	.001	.001	0	%100
20	M32	Z	.001	.001	0	%100
21	M30B	Z	0	0	0	%100
22	M30C	Z	.003	.003	0	%100
23	M30D	Z	0	0	0	%100
24	M31A	Z	.003	.003	0	%100
25	M32A	Z	.003	.003	0	%100
26	M33A	Z	.003	.003	0	%100
27	M34A	Z	.002	.002	0	%100
28	M35	Z	.002	.002	0	%100
29	M36	Z	.002	.002	0	%100
30	M37	Z	.002	.002	0	%100
31	M38	Z	.002	.002	0	%100
32	M39	Z	.002	.002	0	%100
33	M40	Z	.002	.002	0	%100
34	M41	Z	.001	.001	0	%100
35	M42	Z	.001	.001	0	%100
36	M43	Z	.001	.001	0	%100
37	M44	Z	.001	.001	0	%100
38	M45	Z	.001	.001	0	%100
39	M46	Z	.001	.001	0	%100
40	M47	Z	.001	.001	0	%100
41	M48	Z	0	0	0	%100
42	M49	Z	.003	.003	0	%100
43	M50	Z	0	0	0	%100
44	M48A	Z	.001	.001	0	%100
45	A	Z	.002	.002	0	%46.7
46	B	Z	.002	.002	0	%25.1
47	E	Z	.002	.002	0	%46.6
48	M50A	Z	.003	.003	0	%100
49	M51	Z	.001	.001	0	%100
50	A	Z	.002	.002	%93.3	%100
51	C	Z	.002	.002	0	%100
52	D	Z	.002	.002	0	%100
53	E	Z	.002	.002	%91.5	%100
54	M2	X	.003	.003	0	%100
55	M3	X	.003	.003	0	%100
56	M5	X	.005	.005	0	%100
57	M16	X	.005	.005	0	%100
58	M17	X	.005	.005	0	%100
59	M18	X	.004	.004	0	%100
60	M19	X	.004	.004	0	%100
61	M20	X	.004	.004	0	%100
62	M21	X	.004	.004	0	%100
63	M22	X	.003	.003	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
64	M23	X	.003	.003	0	%100
65	M24	X	.003	.003	0	%100
66	M25	X	.003	.003	0	%100
67	M26	X	.002	.002	0	%100
68	M27	X	.002	.002	0	%100
69	M28	X	.002	.002	0	%100
70	M29	X	.002	.002	0	%100
71	M30	X	.001	.001	0	%100
72	M31	X	.001	.001	0	%100
73	M32	X	.001	.001	0	%100
74	M30B	X	.001	.001	0	%100
75	M30C	X	.005	.005	0	%100
76	M30D	X	.001	.001	0	%100
77	M31A	X	.005	.005	0	%100
78	M32A	X	.005	.005	0	%100
79	M33A	X	.004	.004	0	%100
80	M34A	X	.004	.004	0	%100
81	M35	X	.004	.004	0	%100
82	M36	X	.004	.004	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	.002	.002	0	%100
88	M42	X	.002	.002	0	%100
89	M43	X	.002	.002	0	%100
90	M44	X	.002	.002	0	%100
91	M45	X	.001	.001	0	%100
92	M46	X	.001	.001	0	%100
93	M47	X	.001	.001	0	%100
94	M48	X	.001	.001	0	%100
95	M49	X	.005	.005	0	%100
96	M50	X	.001	.001	0	%100
97	M48A	X	.001	.001	0	%100
98	A	X	.004	.004	0	%100
99	B	X	.004	.004	0	%100
100	E	X	.004	.004	0	%100
101	M50A	X	.004	.004	0	%100
102	M51	X	.002	.002	0	%100
103	C	X	.004	.004	0	%100
104	D	X	.004	.004	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M2	Z	.003	.003	0	%100
2	M3	Z	.003	.003	0	%100
3	M5	Z	.005	.005	0	%100
4	M16	Z	.002	.002	0	%100
5	M17	Z	.002	.002	0	%100
6	M18	Z	.001	.001	0	%100
7	M19	Z	.001	.001	0	%100
8	M20	Z	.001	.001	0	%100
9	M21	Z	.001	.001	0	%100
10	M22	Z	.001	.001	0	%100
11	M23	Z	.001	.001	0	%100
12	M24	Z	.001	.001	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
13	M25	Z	.001	.001	0	%100
14	M26	Z	.001	.001	0	%100
15	M27	Z	.001	.001	0	%100
16	M28	Z	.001	.001	0	%100
17	M29	Z	.001	.001	0	%100
18	M30	Z	0	0	0	%100
19	M31	Z	0	0	0	%100
20	M32	Z	0	0	0	%100
21	M30B	Z	0	0	0	%100
22	M30C	Z	.002	.002	0	%100
23	M30D	Z	0	0	0	%100
24	M31A	Z	.002	.002	0	%100
25	M32A	Z	.002	.002	0	%100
26	M33A	Z	.001	.001	0	%100
27	M34A	Z	.001	.001	0	%100
28	M35	Z	.001	.001	0	%100
29	M36	Z	.001	.001	0	%100
30	M37	Z	.001	.001	0	%100
31	M38	Z	.001	.001	0	%100
32	M39	Z	.001	.001	0	%100
33	M40	Z	.001	.001	0	%100
34	M41	Z	.001	.001	0	%100
35	M42	Z	.001	.001	0	%100
36	M43	Z	.001	.001	0	%100
37	M44	Z	.001	.001	0	%100
38	M45	Z	0	0	0	%100
39	M46	Z	0	0	0	%100
40	M47	Z	0	0	0	%100
41	M48	Z	0	0	0	%100
42	M49	Z	.002	.002	0	%100
43	M50	Z	0	0	0	%100
44	M48A	Z	.001	.001	0	%100
45	A	Z	.004	.004	0	%46.7
46	B	Z	.004	.004	0	%25.1
47	E	Z	.004	.004	0	%46.6
48	M50A	Z	.005	.005	0	%100
49	M51	Z	.003	.003	0	%100
50	A	Z	.004	.004	%93.3	%100
51	C	Z	.004	.004	0	%100
52	D	Z	.004	.004	0	%100
53	E	Z	.004	.004	%91.5	%100
54	M2	X	.002	.002	0	%100
55	M3	X	.002	.002	0	%100
56	M5	X	.003	.003	0	%100
57	M16	X	.001	.001	0	%100
58	M17	X	.001	.001	0	%100
59	M18	X	.001	.001	0	%100
60	M19	X	.001	.001	0	%100
61	M20	X	.001	.001	0	%100
62	M21	X	.001	.001	0	%100
63	M22	X	.001	.001	0	%100
64	M23	X	.001	.001	0	%100
65	M24	X	.001	.001	0	%100
66	M25	X	.001	.001	0	%100
67	M26	X	0	0	0	%100
68	M27	X	0	0	0	%100
69	M28	X	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
70	M29	X	0	0	0	%100
71	M30	X	0	0	0	%100
72	M31	X	0	0	0	%100
73	M32	X	0	0	0	%100
74	M30B	X	0	0	0	%100
75	M30C	X	.001	.001	0	%100
76	M30D	X	0	0	0	%100
77	M31A	X	.001	.001	0	%100
78	M32A	X	.001	.001	0	%100
79	M33A	X	.001	.001	0	%100
80	M34A	X	.001	.001	0	%100
81	M35	X	.001	.001	0	%100
82	M36	X	.001	.001	0	%100
83	M37	X	.001	.001	0	%100
84	M38	X	.001	.001	0	%100
85	M39	X	.001	.001	0	%100
86	M40	X	.001	.001	0	%100
87	M41	X	0	0	0	%100
88	M42	X	0	0	0	%100
89	M43	X	0	0	0	%100
90	M44	X	0	0	0	%100
91	M45	X	0	0	0	%100
92	M46	X	0	0	0	%100
93	M47	X	0	0	0	%100
94	M48	X	0	0	0	%100
95	M49	X	.001	.001	0	%100
96	M50	X	0	0	0	%100
97	M48A	X	0	0	0	%100
98	A	X	.002	.002	0	%100
99	B	X	.002	.002	0	%100
100	E	X	.002	.002	0	%100
101	M50A	X	.003	.003	0	%100
102	M51	X	.002	.002	0	%100
103	C	X	.002	.002	0	%100
104	D	X	.002	.002	0	%100

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
1	Dead	None		-1			5			
2	Ice Dead	None					5	51		
3	Full Wind Antenna (0 Deg)	None					7			
4	Full Wind Antenna (30 Deg)	None					15			
5	Full Wind Antenna (60 Deg)	None					15			
6	Full Wind Antenna (90 Deg)	None					15			
7	Full Wind Antenna (120 Deg)	None					15			
8	Full Wind Antenna (150 Deg)	None					15			
9	Full Wind Members (0 Deg)	None						104		
10	Full Wind Members (30 Deg)	None						104		
11	Full Wind Members (60 Deg)	None						104		
12	Full Wind Members (90 Deg)	None						104		
13	Full Wind Members (120 Deg)	None						104		
14	Full Wind Members (150 Deg)	None						104		
15	Ice Wind Antenna (0 Deg)	None					7			
16	Ice Wind Antenna (30 Deg)	None					15			
17	Ice Wind Antenna (60 Deg)	None					15			

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
18	Ice Wind Antenna (90 Deg)	None					15			
19	Ice Wind Antenna (120 Deg)	None					15			
20	Ice Wind Antenna (150 Deg)	None					15			
21	Ice Wind Members (0 Deg)	None						104		
22	Ice Wind Members (30 Deg)	None						104		
23	Ice Wind Members (60 Deg)	None						104		
24	Ice Wind Members (90 Deg)	None						104		
25	Ice Wind Members (120 Deg)	None						104		
26	Ice Wind Members (150 Deg)	None						104		
27	Seismic Antenna (0 Deg)	None					5			
28	Seismic Antenna (90 Deg)	None					5			
29	Seismic Members (0 Deg)	None		-.042	-.104					
30	Seismic Members (30 Deg)	None	.052	-.042	-.09					
31	Seismic Members (60 Deg)	None	.09	-.042	-.052					
32	Seismic Members (90 Deg)	None	.104	-.042	-6.401e-...					
33	Seismic Members (120 Deg)	None	.09	-.042	.052					
34	Seismic Members (150 Deg)	None	.052	-.042	.09					
35	Seismic Members (180 Deg)	None	1.28e-17	-.042	.104					
36	Seismic Members (210 Deg)	None	-.052	-.042	.09					
37	Seismic Members (240 Deg)	None	-.09	-.042	.052					
38	Seismic Members (270 Deg)	None	-.104	-.042	1.92e-17					
39	Seismic Members (300 Deg)	None	-.09	-.042	-.052					
40	Seismic Members (330 Deg)	None	-.052	-.042	-.09					
41	Seismic Vertical Antennas	None					5			
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...	PDelta	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	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																
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														

Load Combinations (Continued)

	Description	S...	PDelta	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
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 + 1.0W...	Yes	Y		1	1.2	3	.058	9	.058	42	1.5														
27	1.2D + 1.5Lm_1 + 1.0W...	Yes	Y		1	1.2	4	.058	10	.058	42	1.5														
28	1.2D + 1.5Lm_1 + 1.0W...	Yes	Y		1	1.2	5	.058	11	.058	42	1.5														
29	1.2D + 1.5Lm_1 + 1.0W...	Yes	Y		1	1.2	6	.058	12	.058	42	1.5														
30	1.2D + 1.5Lm_1 + 1.0W...	Yes	Y		1	1.2	7	.058	13	.058	42	1.5														
31	1.2D + 1.5Lm_1 + 1.0W...	Yes	Y		1	1.2	8	.058	14	.058	42	1.5														
32	1.2D + 1.5Lm_1 + 1.0W...	Yes	Y		1	1.2	3	-.0...	9	-.0...	42	1.5														
33	1.2D + 1.5Lm_1 + 1.0W...	Yes	Y		1	1.2	4	-.0...	10	-.0...	42	1.5														
34	1.2D + 1.5Lm_1 + 1.0W...	Yes	Y		1	1.2	5	-.0...	11	-.0...	42	1.5														
35	1.2D + 1.5Lm_1 + 1.0W...	Yes	Y		1	1.2	6	-.0...	12	-.0...	42	1.5														
36	1.2D + 1.5Lm_1 + 1.0W...	Yes	Y		1	1.2	7	-.0...	13	-.0...	42	1.5														
37	1.2D + 1.5Lm_1 + 1.0W...	Yes	Y		1	1.2	8	-.0...	14	-.0...	42	1.5														
38	1.2D + 1.5Lm_2 + 1.0W...	Yes	Y		1	1.2	3	.058	9	.058	43	1.5														
39	1.2D + 1.5Lm_2 + 1.0W...	Yes	Y		1	1.2	4	.058	10	.058	43	1.5														
40	1.2D + 1.5Lm_2 + 1.0W...	Yes	Y		1	1.2	5	.058	11	.058	43	1.5														
41	1.2D + 1.5Lm_2 + 1.0W...	Yes	Y		1	1.2	6	.058	12	.058	43	1.5														
42	1.2D + 1.5Lm_2 + 1.0W...	Yes	Y		1	1.2	7	.058	13	.058	43	1.5														
43	1.2D + 1.5Lm_2 + 1.0W...	Yes	Y		1	1.2	8	.058	14	.058	43	1.5														
44	1.2D + 1.5Lm_2 + 1.0W...	Yes	Y		1	1.2	3	-.0...	9	-.0...	43	1.5														
45	1.2D + 1.5Lm_2 + 1.0W...	Yes	Y		1	1.2	4	-.0...	10	-.0...	43	1.5														
46	1.2D + 1.5Lm_2 + 1.0W...	Yes	Y		1	1.2	5	-.0...	11	-.0...	43	1.5														
47	1.2D + 1.5Lm_2 + 1.0W...	Yes	Y		1	1.2	6	-.0...	12	-.0...	43	1.5														
48	1.2D + 1.5Lm_2 + 1.0W...	Yes	Y		1	1.2	7	-.0...	13	-.0...	43	1.5														
49	1.2D + 1.5Lm_2 + 1.0W...	Yes	Y		1	1.2	8	-.0...	14	-.0...	43	1.5														
50	1.2D + 1.5Lm_3 + 1.0W...	Yes	Y		1	1.2	3	.058	9	.058	44	1.5														
51	1.2D + 1.5Lm_3 + 1.0W...	Yes	Y		1	1.2	4	.058	10	.058	44	1.5														
52	1.2D + 1.5Lm_3 + 1.0W...	Yes	Y		1	1.2	5	.058	11	.058	44	1.5														
53	1.2D + 1.5Lm_3 + 1.0W...	Yes	Y		1	1.2	6	.058	12	.058	44	1.5														
54	1.2D + 1.5Lm_3 + 1.0W...	Yes	Y		1	1.2	7	.058	13	.058	44	1.5														
55	1.2D + 1.5Lm_3 + 1.0W...	Yes	Y		1	1.2	8	.058	14	.058	44	1.5														
56	1.2D + 1.5Lm_3 + 1.0W...	Yes	Y		1	1.2	3	-.0...	9	-.0...	44	1.5														
57	1.2D + 1.5Lm_3 + 1.0W...	Yes	Y		1	1.2	4	-.0...	10	-.0...	44	1.5														
58	1.2D + 1.5Lm_3 + 1.0W...	Yes	Y		1	1.2	5	-.0...	11	-.0...	44	1.5														
59	1.2D + 1.5Lm_3 + 1.0W...	Yes	Y		1	1.2	6	-.0...	12	-.0...	44	1.5														
60	1.2D + 1.5Lm_3 + 1.0W...	Yes	Y		1	1.2	7	-.0...	13	-.0...	44	1.5														
61	1.2D + 1.5Lm_3 + 1.0W...	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																		
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																		

Load Combinations (Continued)

	Description	S...	PDelta	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
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 12...	Yes	Y		1	1.2	27	-.5	28	.866	33	1	40	1										
103	1.2D + 1.0EV +1.0 EH 15...	Yes	Y		1	1.2	27	-.8...	28	.5	34	1	40	1										
104	1.2D + 1.0EV +1.0 EH 18...	Yes	Y		1	1.2	27	-1	28		35	1	40	1										
105	1.2D + 1.0EV +1.0 EH 21...	Yes	Y		1	1.2	27	-.8...	28	-.5	36	1	40	1										
106	1.2D + 1.0EV +1.0 EH 24...	Yes	Y		1	1.2	27	-.5	28	-.8...	37	1	40	1										
107	1.2D + 1.0EV +1.0 EH 27...	Yes	Y		1	1.2	27		28	-1	38	1	40	1										
108	1.2D + 1.0EV +1.0 EH 30...	Yes	Y		1	1.2	27	.5	28	-.8...	39	1	40	1										
109	1.2D + 1.0EV +1.0 EH 33...	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	N20	max	.829	53	1.349	15	.223	7	.058	8	0	109	.024	34
2		min	-.868	35	-.312	8	-.965	24	-.26	15	0	1	-.023	52
3	N55A	max	1.091	35	1.317	15	1.377	14	.032	8	0	109	.021	34
4		min	-1.088	53	-.146	8	-.363	7	-.257	15	0	1	-.021	52
5	N83A	max	.044	3	.017	16	.55	10	0	109	0	109	0	109
6		min	-.054	10	.002	13	-.557	4	0	1	0	1	0	1
7	N75	max	1.089	11	1.414	8	1.846	2	0	109	0	109	0	109
8		min	-1.07	5	-1.248	2	-2.105	8	0	1	0	1	0	1
9	Totals:	max	1.597	11	2.611	25	2.086	2						
10		min	-1.597	5	.96	2	-2.086	8						

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

	Member	Shape	Code ...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y...	phi*Mn z...	Cb	Eqn
1	M2	PIPE_2.0	.711	6.25	3	.236	6.25		3	6.295	32.13	1.872	1.872	1...	H1-1b
2	M3	PIPE_2.0	.824	9.245	9	.423	5.208		2	6.295	32.13	1.872	1.872	1...	H1-1a
3	M5	PIPE_4.0	.197	4.667	15	.250	4.667		35	88.588	93.24	10.631	10.631	2...	H1-1b
4	M16	WT6x0	.267	.083	26	.042	.083	z	35	116.619	145.8	9.682	10.701	1...	H1-1b
5	M17	WT5-11/16x1	.265	.083	26	.042	0	y	3	117.299	142.003	9.652	9.718	1...	H1-1b
6	M18	WT5-3/8x2	.263	.083	26	.044	0	y	3	117.591	138.218	9.623	8.778	1...	H1-1b
7	M19	WT5-1/16x3	.262	.083	26	.046	0	y	3	117.433	134.409	9.593	7.88	1...	H1-1b
8	M20	WT4-3/4x4	.265	.083	14	.049	0	y	3	116.864	130.613	9.563	7.027	1...	H1-1b

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

	Member	Shape	Code ...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y...	phi*Mn z...	Cb	Eqn
9	M21	WT4-7/16x5	.276	.083	14	.051	0	y	3	115.874	126.816	9.534	6.218	1....	H1-1b
10	M22	WT4-1/8x6	.288	.083	14	.054	0	y	3	114.477	123.019	9.504	5.455	1....	H1-1b
11	M23	WT3-13/16x7	.302	.083	14	.057	0	y	3	112.696	119.222	9.474	4.737	1....	H1-1b
12	M24	WT3-1/2x8	.318	.083	14	.061	0	y	3	110.561	115.425	9.445	4.066	1....	H1-1b
13	M25	WT3-3/16x9	.337	.083	14	.065	0	y	3	108.104	111.628	9.415	3.442	1....	H1-1b
14	M26	WT2-13/16x10	.372	.083	14	.071	0	y	3	104.784	107.072	9.379	2.759	1....	H1-1b
15	M27	WT2-1/2x11	.401	.083	14	.078	0	y	3	101.75	103.275	9.35	2.244	1....	H1-1b
16	M28	WT2-3/16x12	.435	.083	14	.085	0	y	3	98.515	99.478	9.32	1.78	1....	H1-1b
17	M29	WT1-7/8x13	.477	.083	15	.095	0	y	3	95.113	95.681	9.29	1.37	1....	H1-1b
18	M30	WT1-9/16x14	.528	.083	15	.107	0	y	3	91.578	91.884	9.261	1.014	1....	H1-1b
19	M31	WT1-1/4x15	.586	.083	15	.124	0	y	3	87.942	88.088	9.231	.715	1....	H1-1b
20	M32	WT-15/16x16	.637	.083	15	.148	0	y	3	84.228	84.291	9.201	.477	1....	H1-1b
21	M30B	WT-5/8x17	.619	.083	15	.188	0	y	14	80.373	80.494	9.172	.307	1....	H1-1b
22	M30C	PL6x.375	.463	.167	15	.084	0	y	35	71.45	72.9	.57	9.113	1....	H1-1b
23	M30D	WT-5/16x18	.342	0	15	.271	.083	y	14	76.461	76.697	9.142	.226	1....	H1-1b
24	M31A	WT6x0	.312	.083	52	.044	0	z	52	116.619	145.8	9.682	10.701	1....	H1-1b
25	M32A	WT5-11/16x1	.307	.083	52	.044	0	z	52	117.299	142.003	9.652	9.718	1....	H1-1b
26	M33A	WT5-3/8x2	.304	.083	52	.045	0	z	52	117.591	138.218	9.623	8.778	1....	H1-1b
27	M34A	WT5-1/16x3	.301	.083	52	.045	0	z	52	117.433	134.409	9.593	7.88	1....	H1-1b
28	M35	WT4-3/4x4	.298	.083	51	.046	0	z	52	116.864	130.613	9.563	7.027	1....	H1-1b
29	M36	WT4-7/16x5	.297	.083	51	.047	0	z	52	115.874	126.816	9.534	6.218	1....	H1-1b
30	M37	WT4-1/8x6	.296	.083	51	.047	0	z	52	114.477	123.019	9.504	5.455	1....	H1-1b
31	M38	WT3-13/16x7	.302	.083	25	.050	0	y	3	112.696	119.222	9.474	4.737	1....	H1-1b
32	M39	WT3-1/2x8	.315	.083	25	.053	0	y	3	110.561	115.425	9.445	4.066	1....	H1-1b
33	M40	WT3-3/16x9	.333	.083	14	.057	0	y	3	108.104	111.628	9.415	3.442	1....	H1-1b
34	M41	WT2-13/16x10	.368	.083	14	.062	0	y	3	104.784	107.072	9.379	2.759	1....	H1-1b
35	M42	WT2-1/2x11	.396	.083	14	.068	0	y	3	101.75	103.275	9.35	2.244	1....	H1-1b
36	M43	WT2-3/16x12	.431	.083	14	.075	0	y	25	98.515	99.478	9.32	1.78	1....	H1-1b
37	M44	WT1-7/8x13	.473	.083	14	.085	0	y	25	95.113	95.681	9.29	1.37	1....	H1-1b
38	M45	WT1-9/16x14	.523	.083	14	.097	0	y	25	91.578	91.884	9.261	1.014	1....	H1-1b
39	M46	WT1-1/4x15	.579	.083	14	.115	0	y	14	87.942	88.088	9.231	.715	1....	H1-1b
40	M47	WT-15/16x16	.629	.083	14	.142	0	y	14	84.228	84.291	9.201	.477	1....	H1-1b
41	M48	WT-5/8x17	.610	.083	14	.186	0	y	14	80.373	80.494	9.172	.307	1....	H1-1b
42	M49	PL6x.375	.460	.167	15	.085	.167	y	52	71.45	72.9	.57	9.113	1....	H1-1b
43	M50	WT-5/16x18	.338	0	14	.269	.083	y	14	76.461	76.697	9.142	.226	1....	H1-1b
44	M48A	PIPE_1.0	.054	0	10	.003	2.871		11	10.481	14.774	.465	.465	1....	H1-1b*
45	A	PIPE_2.0	.393	4.688	8	.151	4.583		2	9.837	32.13	1.872	1.872	2....	H1-1b
46	B	PIPE_2.0	.730	4.167	2	.096	2.083		2	14.916	32.13	1.872	1.872	1....	H1-1b
47	C	PIPE_2.0	.266	4.5	13	.079	4.5		3	14.916	32.13	1.872	1.872	1....	H1-1b
48	D	PIPE_2.0	.452	1.033	51	.242	4.958		10	10.003	32.13	1.872	1.872	1....	H1-1b
49	E	PIPE_2.0	.437	6.234	52	.172	2.953		12	8.922	32.13	1.872	1.872	1.8	H1-1b
50	M50A	L2.5x2.5x3	.146	3.814	3	.044	0	z	3	18.003	29.192	.873	1.798	1....	H2-1
51	M51	L2.5x2.5x3	.131	3.677	2	.029	3.677	y	15	18.607	29.192	.873	1.801	1....	H2-1

APPENDIX D

ADDITIONAL CALCUATIONS

Input Connection Info. For Each Boundary Conditions							
Joint Label	Bolt Qty.	Bolt Axis	Bolt Oientation	Diameter (in.)	Bolt Type	Horizontal Spacing	Vertical Spacing
N20	2	Horizontal	0	0.625	hreaded Ro	5.5	3.25
N55A	2	Horizontal	0	0.625	hreaded Ro	5.5	3.25
N83A	1	Horizontal	90	0.5	A325N	0	0
N75	4	Horizontal	0	0.5	hreaded Ro	9.5	1.375

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

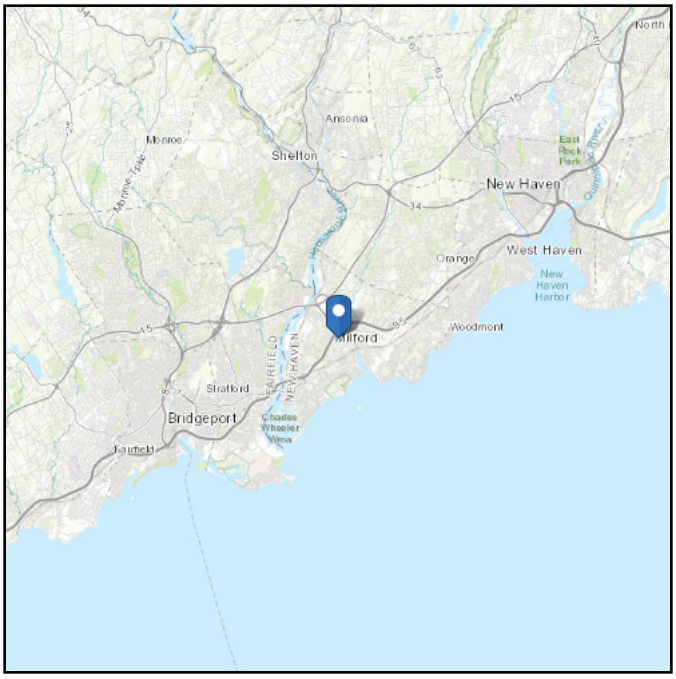
Results	
Limit State	Capacity (%)
Shear	11.3%
Tension	13.9%
Combined	3.2%

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 68.18 ft (NAVD 88)
Latitude: 41.228525
Longitude: -73.070131



Wind

Results:

Wind Speed:	124 Vmph	125 mph per milford city
10-year MRI	77 Vmph	
25-year MRI	87 Vmph	
50-year MRI	94 Vmph	
100-year MRI	100 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 Jul 16 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.

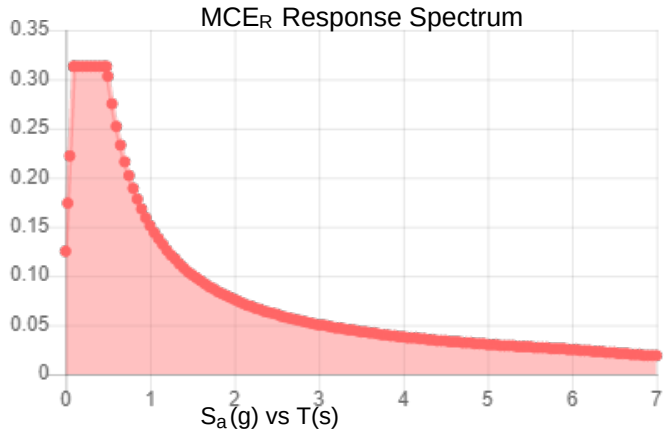
Seismic

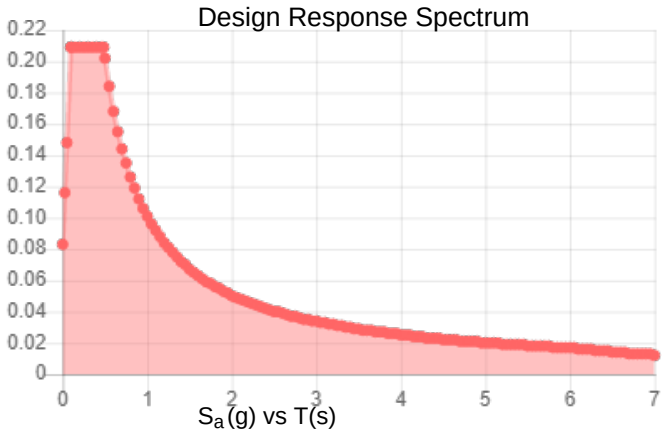
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.195	S_{DS} :	0.209
S_1 :	0.063	S_{D1} :	0.101
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.104
S_{MS} :	0.313	PGA_M :	0.166
S_{M1} :	0.151	F_{PGA} :	1.592
		I_e :	1

Seismic Design Category B





Data Accessed: Tue Jul 16 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:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Tue Jul 16 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.

APPENDIX E

MOUNT MODIFICATION DESIGN DRAWINGS (MDD) / SUPPLEMENTAL DRAWINGS

MOUNT REINFORCEMENT DRAWINGS PREPARED FOR CROWN CASTLE

SITE NAME: MILFORD
BU NUMBER: 842870

SITE ADDRESS:
434 BOSTON POST ROAD
MILFORD, CT 06460
NEW HAVEN COUNTY, USA

PROJECT CONTACTS:

1. CROWN PROJECT MANAGER
   CHARLES MCGUIRT
   CHARLES.MCGUIRT@CROWNCASTLE.COM

2. DESIGN ENGINEER - MAIN RFI CONTACT
   ELISA MATHON
   919-674-5835
   ELISA.MATHON@MASTEC.COM

3. ENGINEER OF RECORD
   RAPHAEL I. MOHAMED, PE, PEng
   919-674-5895
   507 AIRPORT BLVD.
   SUITE 111
   MORRISVILLE, NC 27560
   RAPHAEL.MOHAMED@MASTEC.COM

4. FOR FABRICATION AND CONSTRUCTION RELATED INQUIRIES: CONTACT MASTEC DESIGN ENGINEER AND ENGINEER OF RECORD.

TOWER INFORMATION

TOWER HEIGHT / TYPE:	150 FT SELF SUPPORT TOWER
MOUNT HEIGHT/TYPE:	114 FT RAD (12.5 FT T-FRAME MOUNT)
TOWER LOCATION:	LAT: 41° 13' 42.69"
	LONG: -73° 4' 12.47"
MODIFICATION DRAWINGS:	MASTEC
MASTEC PROJECT NUMBER:	19114-MOD1
MA FAILING CCI DOCUMENT ID:	8532371
MOUNT ANALYSIS DATE:	07/16/2019
ORDER NUMBER:	481011, REV. 0
JDE JOB NUMBER:	559276

CODE COMPLIANCE

ANSI/TIA-222-H

2018 CONNECTICUT STATE BUILDING CODE

ATTENTION ALL CONTRACTORS, ANYTIME YOU ACCESS A CROWN SITE FOR ANY REASON YOU ARE TO CALL THE CROWN NOC UPON ARRIVAL AND DEPARTURE, DAILY AT 800-788-7011.

SAFETY CLIMB: 'LOOK UP'
THE INTEGRITY OF THE WIRE ROPE SAFETY CLIMB SYSTEM SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER REINFORCEMENTS AND EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF ANY WIRE ROPE SAFETY CLIMB 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, OR IMPACT TO THE ANCHORAGE POINTS IN ANY WAY. ANY COMPROMISED SAFETY CLIMB MUST BE REPORTED TO YOUR CROWN POC FOR RESOLUTION, INCLUDING EXISTING CONDITIONS.

QUALIFIED ENGINEERING SERVICES ARE AVAILABLE FROM MASTEC NETWORK SOLUTIONS TO ASSIST CONTRACTORS IN CLASS IV RIGGING PLAN REVIEWS. FOR REQUESTED QUALIFIED ENGINEERING SERVICES, PLEASE CONTACT RAPHAEL MOHAMED AT (919) 244-5207.

DRAWINGS INCLUDED

SHEET NO.	DESCRIPTION	SHEET NO.	DESCRIPTION
T-1	TITLE SHEET		
N-1	MODIFICATION INSPECTION CHECKLIST		
N-2	GENERAL NOTES		
S-1	MODIFICATION SCHEDULE		
S-2	SECTOR FRAME REINFORCEMENT DETAILS		
A-1	MANUFACTURER SPECIFICATIONS I		

NO.	DATE	DESCRIPTION	BY
0	07/29/19	FIRST ISSUE	JMB

REVISIONS

RAPHAEL I. MOHAMED, PE,PEng
SENIOR DIRECTOR OF ENGINEERING
CT PE LICENSE NO. 25112

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF CONNECTICUT.

MasTec Network Solutions
507 AIRPORT BLVD., SUITE 111
MORRISVILLE, NC 27560

SITE NAME: MILFORD

BU NUMBER: 842870

MNS ENG. NUMBER: 19114 - MOD1

SITE ADDRESS:
434 BOSTON POST ROAD
MILFORD, CT 06460
NEW HAVEN COUNTY, USA

DRAWN BY: JMB

CHECKED BY: EJM

APPROVED BY: RIM

SCALE: N.T.S

TITLE SHEET

T-1

REV 0

MI CHECKLIST

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY EOR)	REPORT ITEM
PRE-CONSTRUCTION	
X	MI CHECKLIST DRAWING
N/A	EOR APPROVAL
N/A	FABRICATION INSPECTION
N/A	FABRICATOR CERTIFIED WELD INSPECTION
N/A	MATERIAL TEST REPORT (MTR)
N/A	FABRICATOR NDE INSPECTION
N/A	NDE REPORT OF BASE PLATE
X	PACKING SLIPS
ADDITIONAL TESTING AND INSPECTIONS:	
CONSTRUCTION	
X	CONSTRUCTION INSPECTIONS
N/A	CONTINUOUS FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH AND SLUMP TESTS
N/A	GROUT COMP. STRENGTH (ASTM C109)
N/A	POST INSTALLED ANCHOR ROD VERIFICATION
N/A	BASE PLATE GROUT VERIFICATION
N/A	CONTRACTOR'S CERTIFIED WELD INSPECTION AND NDE REPORTS
N/A	EARTHWORK: LIFT AND DENSITY
X	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT
X	GC AS-BUILT DOCUMENTS
ADDITIONAL TESTING AND INSPECTIONS:	
POST-CONSTRUCTION	
X	MI INSPECTOR REDLINE OR RECORD DRAWING(S)
N/A	POST INSTALLED ANCHOR ROD PULL-OUT TESTING
X	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

NOTE: X DENOTES A DOCUMENT NEEDED FOR THE PMI REPORT
N/A DENOTES A DOCUMENT THAT IS NOT REQUIRED FOR THE PMI REPORT

MODIFICATION INSPECTION NOTES:

GENERAL:

1. THE MODIFICATION INSPECTION (MI) IS A VISUAL INSPECTION OF THE TOWER MODIFICATIONS AND A REVIEW OF CONSTRUCTION INSPECTIONS AND OTHER REPORTS TO ENSURE THE INSTALLATION WAS CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, NAMELY THE MODIFICATION DRAWINGS, AS DESIGNED BY THE ENGINEER OF RECORD (EOR)
2. THE MI IS TO CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A REVIEW OF THE MODIFICATION DESIGN ITSELF, NOR DOES THE MI INSPECTOR TAKE OWNERSHIP OF THE MODIFICATION DESIGN. OWNERSHIP OF THE STRUCTURAL MODIFICATION DESIGN EFFECTIVENESS AND INTEGRITY RESIDES WITH THE EOR AT ALL TIMES.
3. TO ENSURE THAT THE REQUIREMENTS OF THE MI ARE MET IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE MI INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A PO IS RECEIVED. IT IS EXPECTED THAT EACH PARTY WILL BE PROACTIVE IN REACHING OUT TO THE OTHER PARTY. IF CONTACT INFORMATION IS NOT KNOWN, CONTACT YOUR POINT OF CONTACT (POC).

MI INSPECTOR:

1. THE MI INSPECTOR IS REQUIRED TO CONTACT THE GC AS SOON AS RECEIVING A PO FOR THE MI TO, AT A MINIMUM

   REVIEW THE REQUIREMENTS OF THE MI CHECKLIST WORK WITH THE GC TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS.
2. THE MI IS RESPONSIBLE FOR COLLECTING ALL GENERAL CONTRACTORS (GC) INSPECTION AND TEST REPORTS, REVIEWING THE DOCUMENTS FOR ADHERENCE TO THE CONTRACT DOCUMENTS, CONDUCTING THE IN-FIELD INSPECTIONS. AND SUBMITTING THE MI REPORT.

GENERAL CONTRACTOR:

1. THE GC IS REQUIRED TO CONTACT THE MI INSPECTOR AS SOON AS RECEIVING A PO FOR THE MODIFICATION INSTALLATION OR TURNKEY PROJECT TO, AT A MINIMUM:
   - REVIEW THE REQUIREMENTS OF THE MI CHECKLIST.
   - WORK WITH THE MI INSPECTOR TO DEVELOP A SCHEDULE TO CONDUCT
   - ON-SITE MI INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS.
   - BETTER UNDERSTAND ALL INSPECTION AND TESTING REQUIREMENTS.
2. THE GC SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MI CHECKLIST.

MI VERIFICATION INSPECTIONS:

VERIFICATION INSPECTION MAY BE CONDUCTED BY AN INDEPENDENT FIRM AFTER A MODIFICATION PROJECT IS COMPLETED, AS MARKED BY THE OF AN ACCEPTED "PASSING MI" OR "PASS AS NOTED MI" REPORT FOR THE ORIGINAL PROJECT.

REQUIRED PHOTOS:

BETWEEN THE GC AND THE MI INSPECTOR THE FOLLOWING PHOTOGRAPHS, AT A MINIMUM, ARE TO BE TAKEN AND INCLUDED IN THE MI REPORT:

- PRE-CONSTRUCTION GENERAL SITE CONDITION
- PHOTOGRAPHS DURING THE REINFORCEMENT MODIFICATION CONSTRUCTION/ERECTIONS AND INSPECTION:
- RAW MATERIALS
- PHOTOS OF ALL CRITICAL DETAILS
- FOUNDATION MODIFICATIONS
- WELD PREPARATION
- BOLT INSTALLATION AND TORQUE
- FINAL INSTALLED CONDITION
- SURFACE COATING REPAIR
- POST CONSTRUCTION PHOTOGRAPHS
- FINAL IN FIELD CONDITIONS

PHOTOS OF ELEVATED MODIFICATION TAKEN FROM THE GROUND SHALL BE CONSIDERED INADEQUATE.

CORRECTION OF FAILING MI'S:

IF THE MODIFICATION INSTALLATION WOULD FAIL THE MI ("FAILED MI"), THE GC SHALL WORK WITH THE TOWER OWNER TO COORDINATE A REMEDIATION PLAN IN ONE OF TWO WAYS:

- CORRECT FAILING ISSUES TO COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE ORIGINAL CONTRACT DOCUMENTS AND COORDINATE A SUPPLEMENT MI.
- OR, THE GC MAY WORK WITH THE EOR TO RE-ANALYZE THE MODIFICATION/ENFORCEMENT USING THE AS-BUILT CONDITION.

RECOMMENDATIONS:

THE FOLLOWING RECOMMENDATIONS AND SUGGESTIONS ARE OFFERED TO ENHANCE THE EFFICIENCY AND EFFECTIVENESS OF DELIVERING A MI REPORT:

- IT IS SUGGESTED THAT THE GC PROVIDE A MINIMUM OF 5 BUSINESS DAYS NOTICE, PREFERABLY 10, TO THE MI INSPECTOR AS TO WHEN THE SITE WILL BE READY FOR THE MI TO BE CONDUCTED.
- THE GC AND MI INSPECTOR COORDINATE CLOSELY THROUGHOUT THE ENTIRE PROJECT.
- WHEN POSSIBLE IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE SIMULTANEOUSLY FOR ANY GUY WIRE TENSIONING OR RE-TENSIONING OPERATIONS.
- IT MAY BE BENEFICIAL TO INSTALL ALL TOWER MODIFICATIONS PRIOR TO CONDUCTING THE FOUNDATION INSPECTIONS TO ALLOW FOUNDATION AND MI INSPECTION(S) TO COMMENCE WITH ONE SITE VISIT.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE DURING THE MI TO HAVE ANY DEFICIENCIES CORRECTED DURING THE INITIAL MI, THEREFORE, THE GC MAY CHOOSE TO COORDINATE THE MI CAREFULLY TO ENSURE ALL CONSTRUCTION FACULTIES ARE AT THEIR DISPOSAL WHEN THE MI INSPECTOR IS ON SITE.

CANCELLATION OR DELAYS IN SCHEDULED MI:

IF THE GC AND MI INSPECTOR AGREE TO A DATE ON WHICH THE MI WILL BE CONDUCTED, AND EITHER PARTY CANCELS OR DELAYS, TOWER OWNER SHALL NOT BE RESPONSIBLE FOR ANY COSTS, FEES, LOSS OF DEPOSITS AND/OR OTHER PENALTIES RELATED TO THE CANCELLATION OR DELAY INCURRED BY EITHER PARTY FOR ANY TIME (E.G. TRAVEL AND LODGING, COSTS OF KEEPING EQUIPMENT ON-SITE, ETC.). IF TOWER OWNER CONTRACTS DIRECTLY FOR A THIRD PARTY MI, EXCEPTIONS MAY BE MADE IN THE EVENT THAT THE DELAY/CANCELLATION IS CAUSED BY WEATHER OR OTHER CONDITIONS THAT MAY COMPROMISE THE SAFETY OF THE PARTIES INVOLVED.

NO.	DATE	DESCRIPTION	BY
0	07/29/19	FIRST ISSUE	JMB

REVISIONS

RAPHAEL I. MOHAMED, PE,PEng
SENIOR DIRECTOR OF ENGINEERING
CT PE LICENSE NO. 25112

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NEW HAVEN COUNTY, USA

DRAWN BY: JMB

CHECKED BY: EJM

APPROVED BY: RIM

SCALE: N.T.S

MODIFICATION INSPECTION CHECKLIST

N-1

REV 0

GENERAL NOTES:

1. ALL WORK PRESENTED IN THESE DRAWINGS MUST BE COMPLETED BY THE CONTRACTOR UNLESS OTHERWISE SPECIFIED.
2. THE CONTRACTOR MUST HAVE A MINIMUM OF 5 YEARS OF EXPERIENCE IN TOWER ERECTION AND RETROFIT SIMILAR TO THAT DESCRIBED HEREIN.
3. ALL CONSTRUCTION IS TO BE COMPLETE IN ACCORDANCE WITH THE ANSI/ASSE A10.48 AND ANSI/TIA-322 STANDARDS. THE CONTRACTOR MUST HAVE CONSIDERABLE WORKING KNOWLEDGE IN THESE STANDARDS TO ACCEPT THIS WORK. BY ACCEPTING THIS PROJECT, THE CONTRACTOR IS ATTESTING THAT HE HAS SUFFICIENT EXPERIENCE, ABILITY, AND KNOWLEDGE OF THE WORK TO BE PERFORMED AND IS PROPERLY LICENSED AND REGISTERED TO COMPLETE THIS WORK.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS, ELEVATIONS, AND EXISTING CONDITIONS PRIOR TO BEGINNING ANY MATERIAL ORDERS, FABRICATION OR CONSTRUCTION WORK ON THIS PROJECT. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE EOR. THE DISCREPANCIES MUST BE RESOLVED BEFORE THE CONTRACTOR MAY PROCEED WITH THE PROJECT.
5. ANY WORK PERFORMED WITHOUT A PREFABRICATION MAPPING IS DONE AT THE RISK OF THE CONTRACTOR AND/OR FABRICATOR.
6. ALL MANUFACTURERS' INSTRUCTIONS FOR INSTALLATION MUST BE FOLLOWED EXACTLY AS SPECIFIED. WHEN CONFLICTING WITH THESE DRAWINGS, THE MANUFACTURER SPECIFICATIONS SHALL GOVERN.
7. ALL MATERIALS AND EQUIPMENT USED IN THE INSTALLATION OF THESE DRAWINGS SHALL BE IN NEW OR GOOD WORKING QUALITY, FREE FROM DEFECTS AND FAULTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ALL SUBSTITUTIONS MUST BE GIVEN WRITTEN APPROVAL FROM THE EOR PRIOR TO INSTALLATION. ALL MATERIALS SHALL BE WARRANTED FOR ONE YEAR FROM ACCEPTANCE DATE.
8. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL INTENDED CONSTRUCTION ACTIVITY INCLUDING MATERIALS, ACCESS AND WORK SCHEDULE. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND WILL BE RESPONSIBLE FOR ABIDING BY ALL REQUIREMENTS AND CONDITIONS OF THE PERMITS. WHEN APPLICABLE, THE CONTRACTOR MUST NOTIFY THE APPLICABLE JURISDICTION PRIOR TO BEGINNING OF ANY CONSTRUCTION.
9. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION MEANS AND METHODS. INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS. CONSTRUCTION OF THE PROPOSED WORK SHALL MEET ANSI/ASSE A10.48, OSHA, AND GENERAL INDUSTRY STANDARDS. ALL RIGGING PLANS SHALL ADHERE TO ANSI/TIA-322 INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION.
10. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE INSTALLATION PROCEDURE AND SEQUENCE TO INSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENTS DURING ERECTION AND/OR FIELD ALTERATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF TEMPORARY BRACING, GUYS OR TIE-DOWNS THAT MAY BE NECESSARY; SUCH MATERIAL SHALL BE REMOVED AFTER THE COMPLETION OF THE PROJECT.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THIS PROJECT AND RELATED WORK COMPLIES WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY CODES AND REGULATIONS GOVERNING THIS WORK.
12. THE CLIMBING FACILITIES, SAFETY CLIMB AND ALL PARTS THEREOF SHALL NOT BE IMPEDED, MODIFIED OR ALTERED WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE EOR.
13. INCORRECTLY FABRICATED, DAMAGED, MIS-FITTING, OR NON-CONFORMING MATERIALS AND CONDITIONS SHALL BE REPORTED TO THE EOR PRIOR TO ANY REMEDIAL OR CORRECTING ACTION. ALL ACTIONS SHALL REQUIRE EOR APPROVAL.

STEEL:

1. THE FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE LATEST AISC CODE AND ASTM SPECIFICATIONS.
2. HOLES SHALL NOT BE TORCH CUT THROUGH STRUCTURAL STEEL FOR FABRICATION. ALL STEEL FABRICATION MUST FOLLOW AISC SPECIFICATIONS.
3. HOT-DIP GALVANIZE ALL ITEMS AFTER FABRICATION IN COMPLIANCE WITH ASTM A-123 UNLESS OTHERWISE SPECIFIED. ALL NEW STEEL IS TO BE PAINTED TO MATCH THE EXISTING STEEL.
4. NEW STEEL MEMBERS MUST HAVE SINGLE DRILLED HOLES. SLOTTED AND DOUBLY DRILLED HOLES ARE NOT ACCEPTABLE MEANS OF FABRICATION UNLESS OTHERWISE SPECIFIED.
5. ALL CONNECTIONS NOT DETAILED IN THESE DRAWINGS MUST BE DETAILED BY THE STEEL FABRICATOR IN ACCORDANCE WITH THE LATEST AISC SPECIFICATIONS.
6. ALL BOLTED CONNECTIONS MUST BE INSTALLED TO A SNUG-TIGHTENED CONDITION PER AISC “SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM 325 OR A490 BOLTS” SECTION 8.1 UNLESS OTHERWISE SPECIFIED.
7. CONTRACTOR MAY BE REQUIRED TO STACK WASHERS FOR BOLTS WHERE THREADS ARE EXCLUDED FROM SHEAR PLANE TO OBTAIN SNUG TIGHT INSTALLATION. A NUT LOCKING DEVICE MUST BE INSTALLED ON ALL PROPOSED AND/OR REPLACED BOLTS. GALVANIZED ASTM 325 OR A490 BOLTS SHALL NOT BE REUSED.

COLD GALVANIZATION:

1. ALL DAMAGED SURFACES SHALL BE REPAIRED WITH A COLD-GALVANIZING COATING CONFORMING TO ASTM 780. THIS COATING SHALL BE APPLIED BY BRUSH. THE GALVANIZING COMPOUND SHALL CONTAIN A MINIMUM OF 95% ± PURE ZINC. THE FINISHED COATING SHALL BE A MINIMUM THICKNESS OF 4 MILS.
2. CONTRACTOR TO USE ZINGA OR ZRC COLD GALVANIZATION COMPOUNDS OR APPROVED EQUIVALENTS.
3. CLEAN AREAS TO BE PREPARED AND REMOVE SLAG FROM WELDS FOR TREATMENT ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
4. IF THE TOWER IS PAINTED, ALL TREATED AREAS ARE TO BE BRUSH PAINTED TO MATCH THE TOWER AFTER COLD GALVANIZING COMPOUND IS ALLOWED TO CURE.

U-BOLTS:

1. ALL U-BOLTS ARE TO BE ASTM A36/A307, SAE 429 GR. 2 UNLESS OTHERWISE SPECIFIED.
2. U-BOLTS SHALL MEET REQUIREMENTS OF ASME B18.31.5-2011 BENT BOLTS.
3. U-BOLT ASSEMBLY SHALL COME COMPLETE WITH NUTS (ASTM A563), WASHERS (ASTM F436), AND LOCK WASHERS.
4. FULL U-BOLT ASSEMBLY TO BE HOT-DIP GALVANIZED PER ASTM A153/A153M OR A123, AS APPLICABLE.

MODIFICATION MATERIALS

SCOPE	SHAPE	GRADE	YIELD STRENGTH (Fy)	ULTIMATE STRENGTH (Fu)
ALL	ANGLE	A36	36 KSI	58 KSI

NO.	DATE	DESCRIPTION	BY
0	07/29/19	FIRST ISSUE	JMB

REVISIONS

RAPHAEL I. MOHAMED, PE,PEng
SENIOR DIRECTOR OF ENGINEERING
CT PE LICENSE NO. 25112

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF CONNECTICUT.

MasTec Network Solutions
507 AIRPORT BLVD., SUITE 111
MORRISVILLE, NC 27560

SITE NAME: MILFORD

BU NUMBER: 842870

MNS ENG. NUMBER: 19114 - MOD1

SITE ADDRESS:
434 BOSTON POST ROAD
MILFORD, CT 06460
NEW HAVEN COUNTY, USA

DRAWN BY: JMB

CHECKED BY: EJM

APPROVED BY: RIM

SCALE: N.T.S

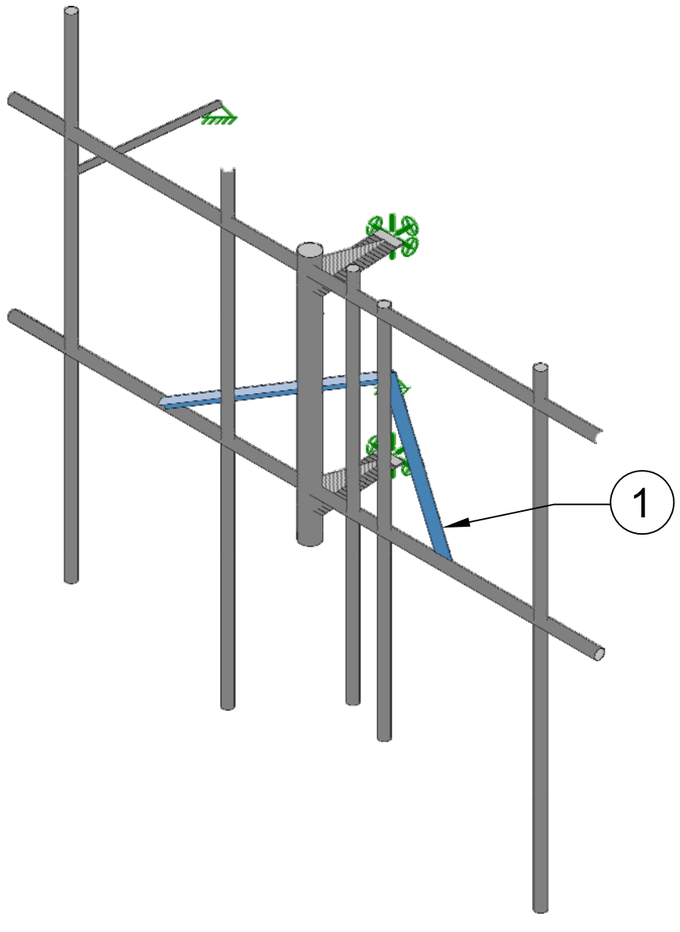
NOTES

N-2

REV 0

MODIFICATION SCHEDULE

SCOPE NO.	MODIFICATION DESCRIPTION	BOTTOM ELEVATION	TOP ELEVATION	SHEET NO.
1	INSTALLATION OF NEW SECTOR FRAME STABILIZER KIT	-	114'-0" ±	S-2



NOTES:

1. APPURTENANCES MAY INTERFERE WITH PROPOSED MODIFICATIONS.
2. ALL MODIFICATIONS TO BE INSTALLED CONTINUOUSLY THROUGH EXISTING EQUIPMENT. ALL EXISTING EQUIPMENT MUST NOT BE DAMAGED OR TAKEN OFF AIR DURING INSTALLATION OF PROPOSED MODIFICATIONS.
3. ANTENNA AND COAX NOT SHOWN FOR CLARITY. SEE STRUCTURAL ANALYSIS REPORT FOR EXISTING ANTENNA LOADING AND COAX CONFIGURATION.
4. PRIOR TO FABRICATION AND INSTALLATION , CONTRACTOR SHALL FIELD VERIFY ALL LENGTHS AND QUANTITIES GIVEN. INFORMATION PROVIDED IS FOR QUOTING PURPOSES ONLY, AND SHALL NOT BE USED FOR FABRICATION.
5. EXISTING RRU'S AND ANCILLARY EQUIPMENT MAY NEED TO BE TEMPORARILY RELOCATED AS NECESSARY TO COMPLETE THIS MODIFICATION. EQUIPMENT IS NOT TO BE TAKEN OFF AIR AT ANY TIME DURING INSTALLATION. PLEASE CONTACT EOR IF THIS CANNOT BE MET.
6. CONTACT EOR IF PROPOSED MOUNT REINFORCEMENT DIMENSIONS CANNOT BE MET.

NO.	DATE	DESCRIPTION	BY
0	07/29/19	FIRST ISSUE	JMB

REVISIONS

STATE OF CONNECTICUT
RAPHAEL MOHAMED
No. 25112
LICENSED
PROFESSIONAL ENGINEER

RAPHAEL I. MOHAMED, PE,PEng
SENIOR DIRECTOR OF ENGINEERING
CT PE LICENSE NO. 25112

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MasTec
Network Solutions
507 AIRPORT BLVD., SUITE 111
MORRISVILLE, NC 27560

SITE NAME: MILFORD

BU NUMBER: 842870

MNS ENG. NUMBER: 19114 - MOD1

SITE ADDRESS:
434 BOSTON POST ROAD
MILFORD, CT 06460
NEW HAVEN COUNTY, USA

DRAWN BY: JMB

CHECKED BY: EJM

APPROVED BY: RIM

SCALE: N.T.S

MODIFICATION SCHEDULE

S-1

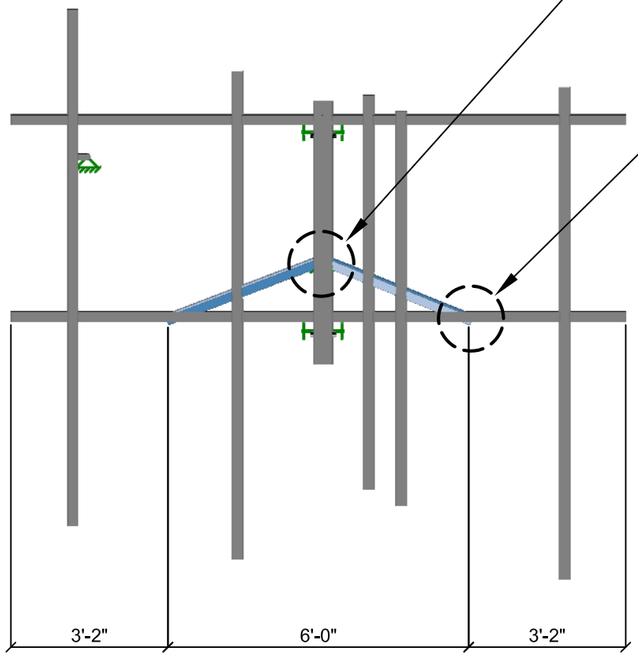
REV 0

NOTE:

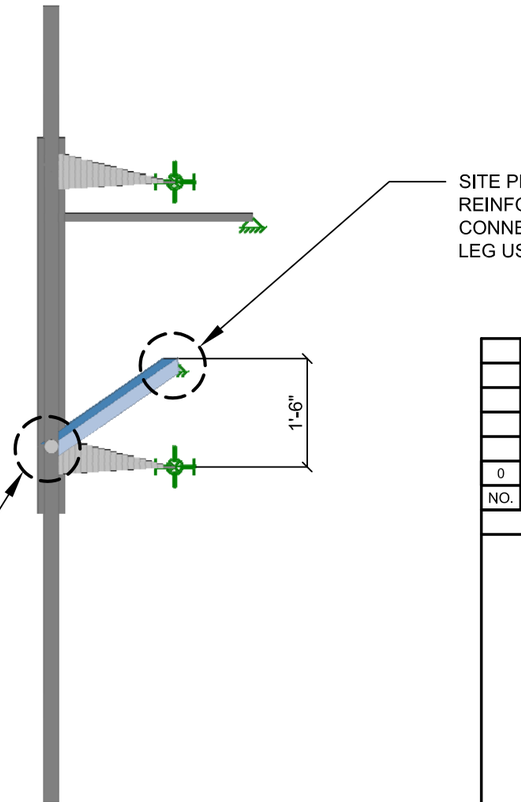
1. TWO COATS OF COLD GALVANIZING COATING MUST BE APPLIED TO ALL CUT ENDS IN ACCORDANCE TO ASTM A780 PRIOR TO INSTALLATION.

NEW SECTOR FRAME STABILIZER KIT MATERIAL LIST

SITE PRO1 PART NO.	QTY.	LENGTH	DESCRIPTION
SFS-H	3	ADJUSTABLE	SECTOR FRAME STABILIZER KIT



1 S-2 SECTOR FRAME STABILIZER KIT INSTALLATION
FRONT VIEW
NTS



2 S-2 SECTOR FRAME STABILIZER KIT INSTALLATION
SIDE VIEW
NTS

NO.	DATE	DESCRIPTION	BY
0	07/29/19	FIRST ISSUE	JMB

REVISIONS

STATE OF CONNECTICUT
RAPHAEL MOHAMED
No. 25112
LICENSED
PROFESSIONAL ENGINEER

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SITE NAME: MILFORD

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MNS ENG. NUMBER: 19114 - MOD1

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434 BOSTON POST ROAD
MILFORD, CT 06460
NEW HAVEN COUNTY, USA

DRAWN BY: JMB

CHECKED BY: EJM

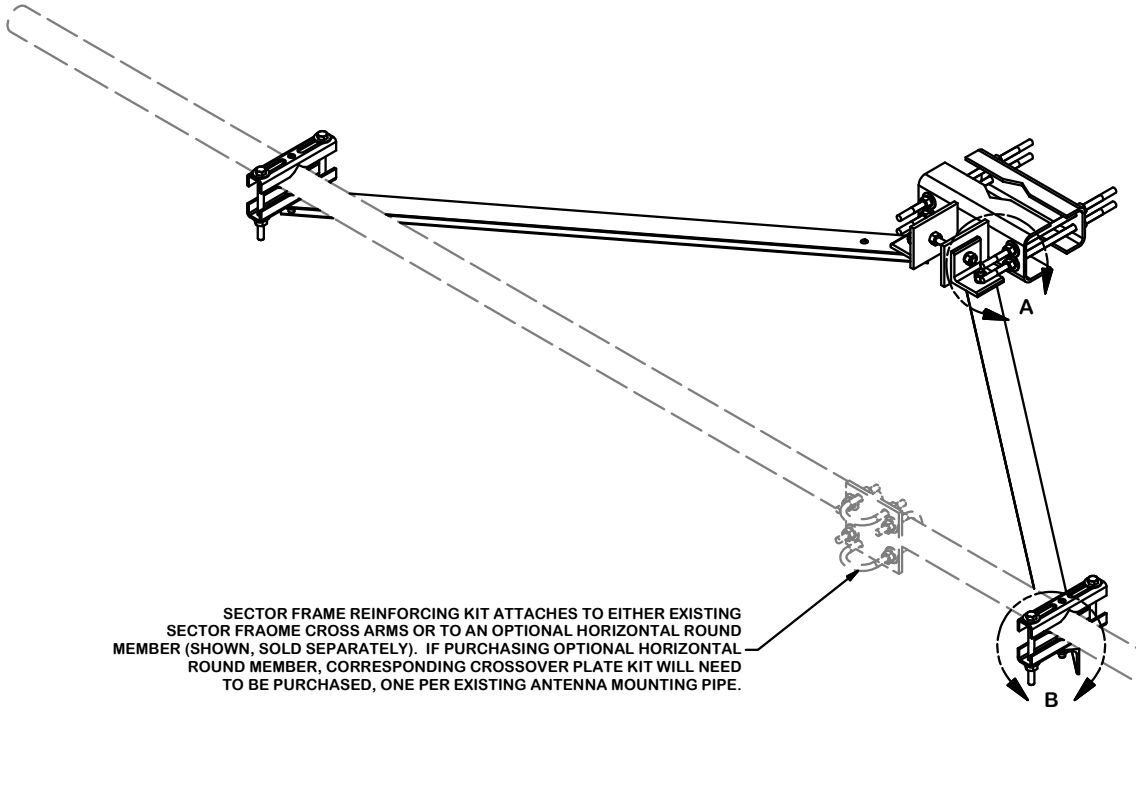
APPROVED BY: RIM

SCALE: N.T.S

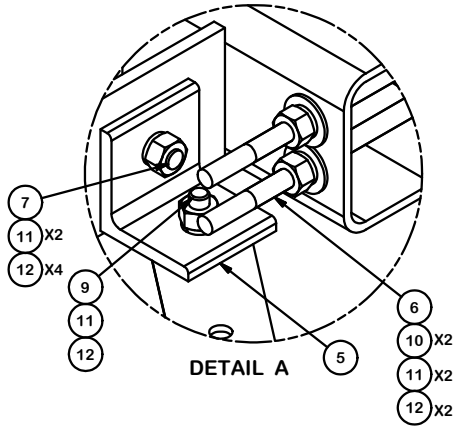
SECTOR FRAME REINFORCEMENT DETAILS

S-2 | REV 0

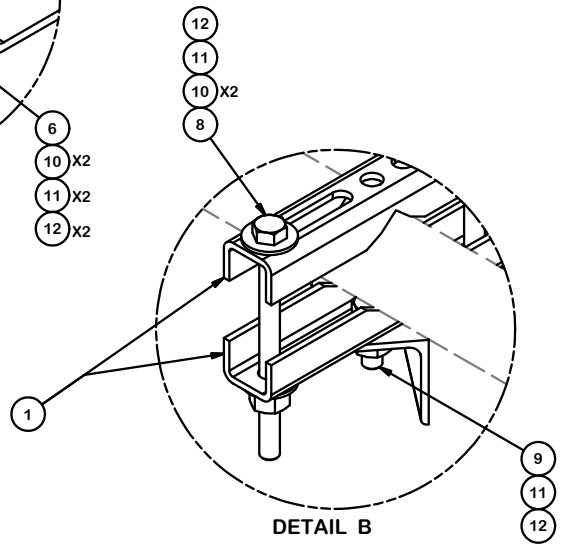
PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	4	X-STU	STIFF ARM CHANNEL BRACKET		1.37	5.49
2	2	X-232697	TRPD-HD DIAGONAL ANGLE - SITR PRO 1	52 1/2 in	14.21	28.42
3	1	CFS	LOWER GATE FOOT WELDMENT		12.72	12.72
4	1	GBB	GATE BACKING BAR		4.53	4.53
5	2	SHCM-T	CHAIN MOUNT TIGHTENER BRACKET	3 in	1.84	3.68
6	4	G12R-15	1/2" x 15" THREADED ROD (HDG.)		0.55	2.20
6	4	G12R-12	1/2" x 12" THREADED ROD (HDG.)		0.55	2.20
7	1	G12R-6	1/2" x 6" GALV. THREADED ROD		0.33	0.33
8	4	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	6 1/2 in	0.41	1.64
9	4	G12112	1/2" x 1-1/2" HDG HEX BOLT GR5	1 1/2 in	0.15	0.59
10	16	G12FW	1/2" HDG USS FLATWASHER		0.03	0.54
11	18	G12LW	1/2" HDG LOCKWASHER		0.01	0.25
12	20	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	1.43
					TOTAL WT. #	65.66



SECTOR FRAME REINFORCING KIT ATTACHES TO EITHER EXISTING SECTOR FRAOME CROSS ARMS OR TO AN OPTIONAL HORIZONTAL ROUND MEMBER (SHOWN, SOLD SEPARATELY). IF PURCHASING OPTIONAL HORIZONTAL ROUND MEMBER, CORRESPONDING CROSSOVER PLATE KIT WILL NEED TO BE PURCHASED, ONE PER EXISTING ANTENNA MOUNTING PIPE.



DETAIL A



DETAIL B

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
SECTOR FRAME
STABILIZER - HORIZONTAL

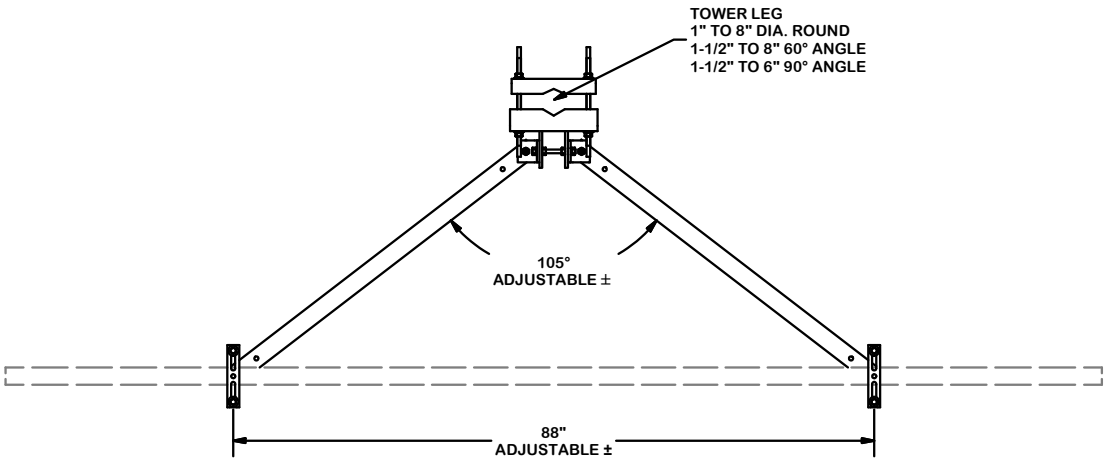
SITE PRO 1 — A valmont COMPANY

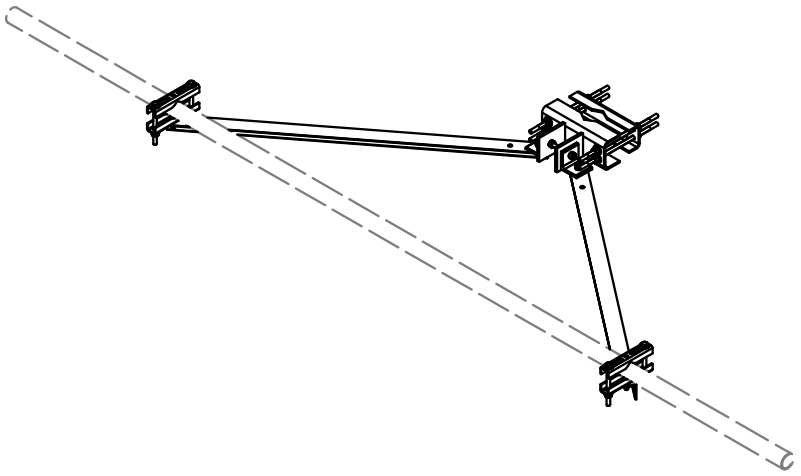
Engineering Support Team: 1-888-753-7446

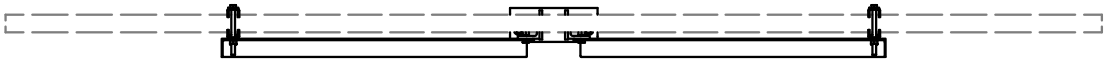
Locations:
New York, NY
Atlanta, GA
Los Angeles, CA
Plymouth, IN
Salem, OR
Dallas, TX

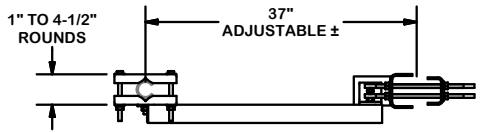
CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	
5563	CEK 4/29/2014		SFS-H	PAGE 1 OF 3

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	01	CUSTOMER	BMC 4/30/2014	SFS-H









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DESCRIPTION
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STABILIZER - HORIZONTAL

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A valmont COMPANY

Engineering Support Team:
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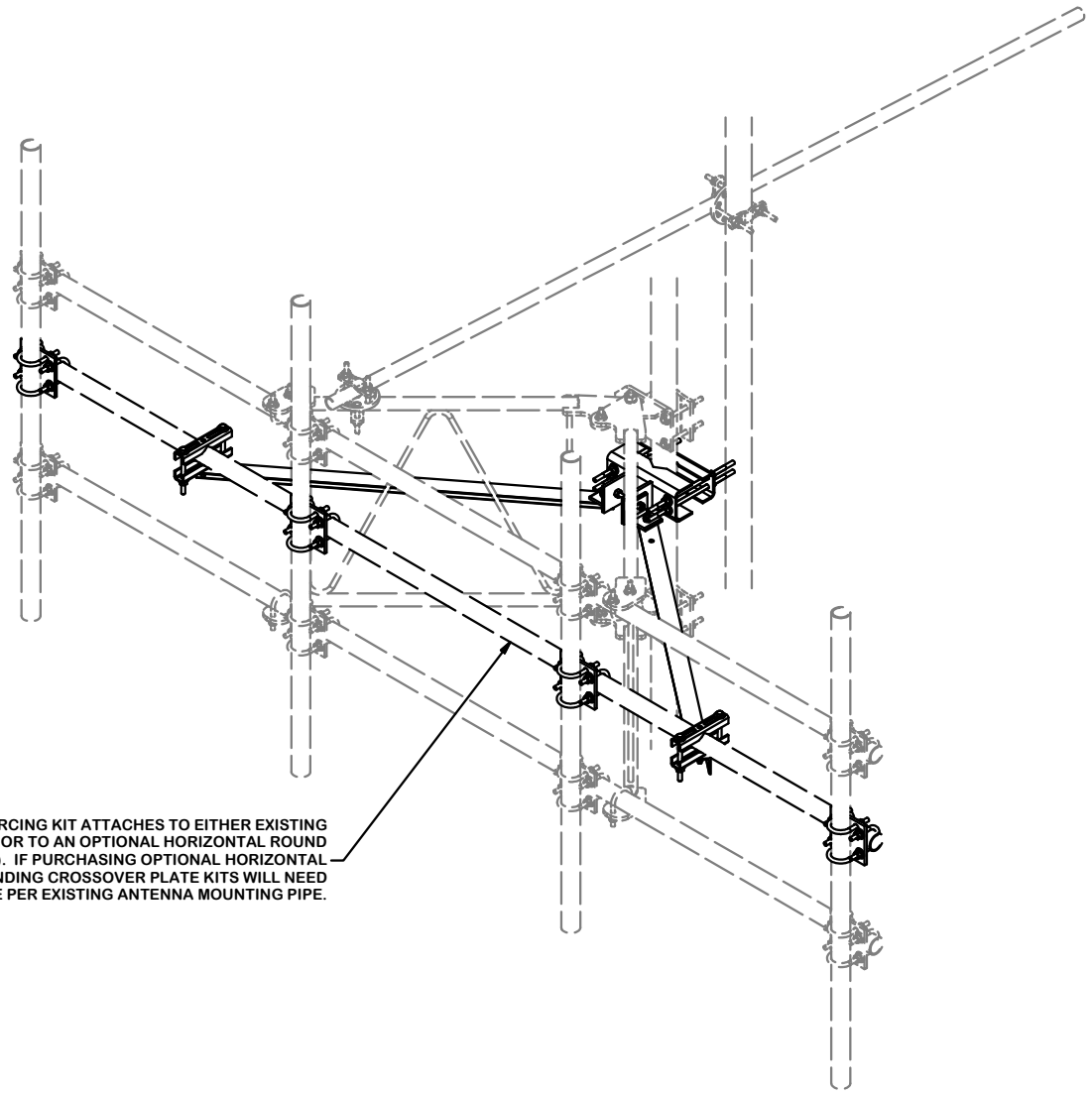
CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
5563	CEK 4/29/2014		SFS-H

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	01	CUSTOMER	BMC 4/30/2014	SFS-H



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DESCRIPTION
SECTOR FRAME
STABILIZER - HORIZONTAL

SITE PRO 1
A valmont COMPANY
Engineering Support Team:
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CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
5563	CEK 4/29/2014		SFS-H

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	01	CUSTOMER	BMC 4/30/2014	SFS-H

Exhibit F

Power Density/RF Emissions Report

Radio Frequency Emissions Analysis Report

T-MOBILE Existing Facility

Site ID: CT11018F

Milford_I-95_X37_Jct
434 Boston Post Road
Milford, CT 06460

June 14, 2019

Transcom Engineering Project Number: 737001-0157

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**24.03 %**

June 14, 2019

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

Emissions Analysis for Site: **CT11018F – Milford_I-95_X37_Jct**

Transcom Engineering, Inc ("Transcom") was directed to analyze the proposed upgrades to the T-MOBILE facility located at **434 Boston Post Road, Milford, 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 **434 Boston Post Road, Milford, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-MOBILE is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

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

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

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

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 600 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	Ericsson AIR32 B66A / B2A	114
A	2	Ericsson AIR21 B2A/B4P	114
A	3	RFS APXVAARR24_43-U-NA20	114
B	1	Ericsson AIR32 B66A / B2A	114
B	2	Ericsson AIR21 B2A/B4P	114
B	3	RFS APXVAARR24_43-U-NA20	114
C	1	Ericsson AIR32 B66A / B2A	114
C	2	Ericsson AIR21 B2A/B4P	114
C	3	RFS APXVAARR24_43-U-NA20	114

Table 2: Antenna Data

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

Cable losses were factored in the calculations for this site. Since all **2100 MHz (AWS) UMTS** radios are ground mounted the following cable loss values were used. For each ground mounted **2100 MHz (AWS) UMTS** radio there was **1.59 dB** of cable loss calculated into the system gains / losses for this site. These values were calculated based upon the manufacturers specifications for **150 feet** of **1-5/8"** coax.

RESULTS

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

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Ericsson AIR32 B66A / B2A	1900 MHz (PCS) / 2100 MHz (AWS)	15.85 / 15.85	6	280	10,768.57	3.32
Antenna A2	Ericsson AIR21 B2A/B4P	1900 MHz (PCS) / 2100 MHz (AWS)	15.9 / 15.9	3	95	3,218.84	0.99
Antenna A3	RFS APXVAARR24_43-U-NA20	600 MHz / 700 MHz	12.95 / 13.35	4	120	2,443.03	1.79
						Sector A Composite MPE%	**6.10**
Antenna B1	Ericsson AIR32 B66A / B2A	1900 MHz (PCS) / 2100 MHz (AWS)	15.85 / 15.85	6	280	10,768.57	3.32
Antenna B2	Ericsson AIR21 B2A/B4P	1900 MHz (PCS) / 2100 MHz (AWS)	15.9 / 15.9	3	95	3,218.84	0.99
Antenna B3	RFS APXVAARR24_43-U-NA20	600 MHz / 700 MHz	12.95 / 13.35	4	120	2,443.03	1.79
						Sector B Composite MPE%	**6.10**
Antenna C1	Ericsson AIR32 B66A / B2A	1900 MHz (PCS) / 2100 MHz (AWS)	15.85 / 15.85	6	280	10,768.57	3.32
Antenna C2	Ericsson AIR21 B2A/B4P	1900 MHz (PCS) / 2100 MHz (AWS)	15.9 / 15.9	3	95	3,218.84	0.99
Antenna C3	RFS APXVAARR24_43-U-NA20	600 MHz / 700 MHz	12.95 / 13.35	4	120	2,443.03	1.79
						Sector C Composite MPE%	**6.10**

Table 3: T-MOBILE Emissions Levels

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

Site Composite MPE%	
Carrier	**MPE%**
T-MOBILE – Max Per Sector Value	**6.10 %**
Town Antennas	0.30 %
MetroPCS	1.96 %
XM Satellite Radio	2.85 %
Sprint	5.56 %
Verizon Wireless	5.73 %
AT&T	1.53 %
Site Total MPE %:	**24.03 %**

Table 4: All Carrier MPE Contributions

T-MOBILE Sector A Total:	6.10 %
T-MOBILE Sector B Total:	6.10 %
T-MOBILE Sector C Total:	6.10 %
Site Total:	24.03 %

Table 5: Site MPE Summary

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

T-MOBILE _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile 1900 MHz (PCS) LTE	4	1,538.37	114	18.97	1900 MHz (PCS)	1000	1.90%
T-Mobile 2100 MHz (AWS) LTE	2	2,307.55	114	14.22	2100 MHz (AWS)	1000	1.42%
T-Mobile 1900 MHz (PCS) UMTS	1	1,556.18	114	4.80	1900 MHz (PCS)	1000	0.48%
T-Mobile 1900 MHz (PCS) GSM	1	583.57	114	1.80	1900 MHz (PCS)	1000	0.18%
T-Mobile 2100 MHz (AWS) UMTS	1	1,079.10	114	3.33	2100 MHz (AWS)	1000	0.33%
T-Mobile 600 MHz LTE / 5G NR	2	788.97	114	4.86	600 MHz	400	1.22%
T-Mobile 700 MHz LTE	2	432.54	114	2.67	700 MHz	467	0.57%
						Total:	**6.10%**

Table 6: T-MOBILE Maximum Sector MPE Power Values

Summary

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

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

T-MOBILE Sector	Power Density Value (%)
Sector A:	6.10 %
Sector B:	6.10 %
Sector C:	6.10 %
T-MOBILE Maximum Total (per sector):	6.10 %
Site Total:	24.03 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **24.03 %** 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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