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

July 16, 2019

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

RE: **Notice of Exempt Modification for T-Mobile:**
822765 - T-Mobile Site ID: CT11025B
10 Sylvia Street, Branford, CT 06405
Latitude: 41° 17′ 38.16″ / Longitude: -72° 47′ 8.54″

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 122-foot mount on the existing 125-foot Monopole Tower, located at 10 Sylvia Street, Branford, CT. The tower is owned by Crown Castle and the property is owned by 322 East Main Street LLC. T-Mobile now intends to replace six (6) existing antennas with three (3) new 1900/2100 MHz antennas and three (3) new 600/700 MHz antennas. T-Mobile is also proposing tower mount modifications as shown on the enclosed mount analysis.

Planned Modifications:
Tower:

Remove:
(6) 1 5/8" Coax

Remove and Replace:
(3) LNX 6515DS-A1M Antenna **(REMOVE)** - (3) RFS-APXVAARR24_43-U-NA20 Antenna 600/700 MHz **(REPLACE)**

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

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

Install New:
(3) 1 5/8" Hybrid Fiber Line

Existing to Remain:
(6) 1 5/8" Coax
(1) Fiber line

(3) AIR21 KRC118023-1_B2P_B4A Antenna 1900/2100 MHz
(3) TMA

Ground:

Upgrade to existing ground cabinet. (Internally)
Upgrade existing breakers.

The facility was approved by the Town of Branford Planning and Zoning Commission in Application Number 98-9.3 on November 10, 1998. The 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 James B. Cosgrove, First Selectman for the Town of Branford, Harry Smith, Town Planner, Crown Castle as the tower owner, and 322 East Main Street LLC, the property owner.

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

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

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

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

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

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

Sincerely,

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

AnneMarie.Zsamba@crowncastle.com

Attachments

cc:

James B. Cosgrove, First Selectman
Town of Branford
Town Hall – Selectman's Office
1019 Main Street
Branford, CT 06405
203.488.8394

Harry Smith, Town Planner
Town of Branford
Town Hall – Planning Department
1019 Main Street
Branford, CT 06405
203.488.1255

322 East Main Street, Property Owner
375 Fairfield Avenue
Stamford, CT 06902
203.967.8367

Crown Castle, Tower Owner

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

SHIP DATE: 12JUL19
ACTWGT: 4.00 LB
CAD: 104924194/INET4100

BILL SENDER

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

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

565J2/A6F9/23AD

J191019010701uv

FedEx Express

MON - 15 JUL 10:30A
PRIORITY OVERNIGHT

TRK# 0201 **7757 1283 4228**

SE BDLA

06051
BDL
CT-US

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

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Exhibit A

Original Facility Approval

CTH-025

6740

VOL. 662 PAGE 502

PLANNING AND ZONING COMMISSION
TOWN OF BRANFORD TOWN HALL DRIVE P.O. BOX 150
Branford, Connecticut 06405 488-1255

NOTICE OF DECISION

November 10, 1998

J. Brendan Sharkey, Esq. For Omnipoint Communications, Inc.
25 VanZant Street #18E
East Norwalk, Connecticut 06855

SUBJECT: Special Exception APPLICATION # 98-9.3

LOCATION: 10 Sylvia Street

OWNERS OF RECORD: TKJ SYLVIA ASSOCIATES, LLC

Dear Sir:

At a meeting of the Branford Planning & Zoning Commission held on Thursday, November 5, 1998, the Commission voted to:

X Approve your above subject application with the conditions noted below.

Very truly yours,

Shirley Rasmussen

Shirley Rasmussen
Town Planner

NOTE: This Special Exception shall become effective only after it is filed on the Land Records in the office of the Town Clerk.

1. Omnipoint must construct tower so that it can easily be extended to provide spaces for two (2) other carriers for co-location purposes.

NOTE: Special Exception shall become null and void in the event the applicant fails to obtain a building permit within one (1) year of date of approval.
(Per Section 31.7 of the Branford Zoning Regulations)

RECEIVED FOR RECORD Nov. 19, 1998
at 3h 49m P M. AND RECORDED BY
GEORGETTE A. LASKE
BRANFORD TOWN CLERK

Exhibit B

Property Card

Town of Branford
Property Listing Report

Parcel ID G05/F05/004/00017 **Account** 000614

Property Information

Owner	322 EAST MAIN STREET LLC
Address	10 SYLVIA ST
Mailing Address	375 FAIRFIELD AVE STAMFORD , CT 06902
Land Use	- COMM WHS MDL96
Land Class	C

Census Tract	
Neighborhood	400
Zoning	BL
Acreage	0.95
Utilities	Public Water,Septic
Lot Setting/ Desc	/ Level

Photo

PARCEL VALUATIONS (Assessed value = 70% of Appraised Value)

	Appraised	Assessed
Buildings	87900	61500
Outbuildings	16900	11800
Improvements	108000	75500
Extras	3200	2200
Land	467500	327300
Total	575500	402800
Previous		

Construction Details

Year Built	1960
Stories	1
Building Style	Warehouse
Building Use	Ind/Comm
Building Condition	03
Total Rooms	
Bedrooms	
Full Bathrooms	
Half Bathrooms	
Bath Style	
Kitchen Style	
Roof Style	Gable/Hip
Roof Cover	Asphalt

EXTERIOR WALLS:

Primary	MASONRY
Secondary	Concr/Cinder

INTERIOR WALLS:

Primary	Minim/Masonry
Secondary	

FLOORS:

Primary	Concr-Finished
Secondary	Linoleum

HEATING/AC:

Heating Type	Hot Air-no Duc
Heating Fuel	Gas
AC Type	None

BUILDING AREA:

Effective Building Area	
Gross Building Area	4820
Total Living Area	2620

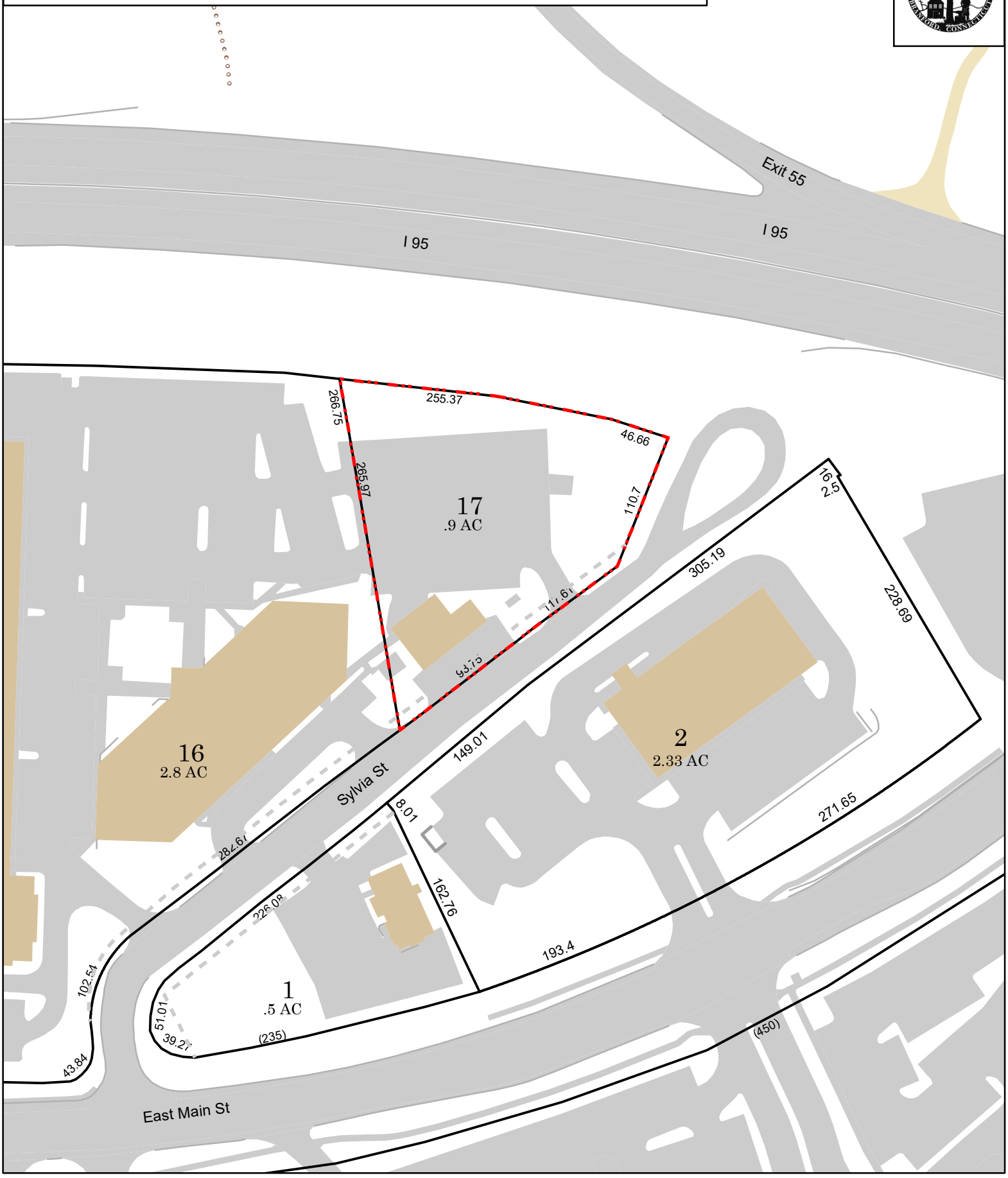
SALES HISTORY:

Sale Date	5/2/2013
Sale Price	468000
Book/ Page	1132/0054

Report Created On **7/12/2019**

Town of Branford, Connecticut - Assessment Parcel Map

Parcel: G05-F05-004-00017 Address: 10 SYLVIA ST



Approximate Scale: 1 inch : 100 feet

Grand List Date October 2018

Disclaimer:
This map is for informational purposes only.
All information is subject to verification by any user. The Town of Branford and its mapping contractors assume no legal responsibility for the information contained herein.

Exhibit C

Construction Drawings

T-MOBILE SITE NAME:

BRANFORD/I-95/X55/DTN1

T-MOBILE SITE NUMBER:

CT11025B

CROWN BU: 822765 / APP#: 479795

67D92DB CONFIGURATION

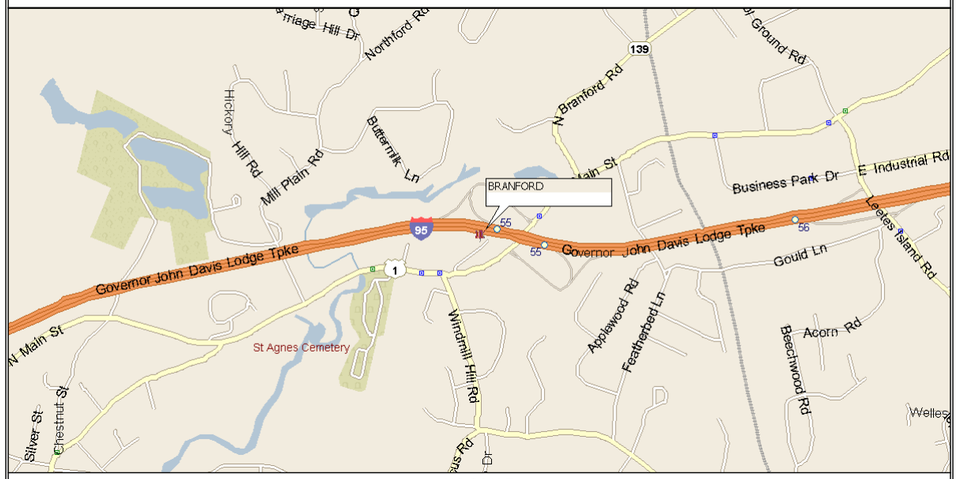
10 SYLVIA ST
BRANFORD, CT 06405

EXISTING 125'-0" MONOPOLE

PROJECT SUMMARY

SITE TYPE:	EXISTING EQUIPMENT UPGRADE
SITE ADDRESS:	10 SYLVIA ST BRANFORD, CT 06405
JURISDICTION:	NEW HAVEN COUNTY
NAD83	
LATITUDE:	41.293911° N
LONGITUDE:	72.785729° 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	1
A-1	OVERALL SITE PLAN	1
A-2	ANTENNA/CABLE SCHEDULE AND AZIMUTH PLANS	1
A-3	TOWER ELEVATION	1
A-4	ANTENNA AND RRU DETAILS	1
E-1	PANEL SCEHDULE AND ONE-LINE DIAGRAM	1

CONTACT INFORMATION

A&E FIRM:	B+T GROUP 1717 S. BOULDER, STE. 300 TULSA, OK 74119	ELECTRIC PROVIDER:	N/A
CONTACT:	MIKE OAKES	TELCO PROVIDER:	N/A
PHONE:	(918) 587-4630		

DRIVING DIRECTIONS

DEPART 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]. TAKE RAMP (LEFT) ONTO I-95 [GOVERNOR JOHN DAVIS LODGE TPKE]. AT EXIT 55, TURN RIGHT ONTO RAMP. KEEP RIGHT TO STAY ON RAMP. TURN LEFT ONTO US-1 [E MAIN ST]. TURN RIGHT ONTO SYLVIA ST. ARRIVE AT BRANFORD.

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	IBC 2015
STRUCTURAL	IBC 2015
MECHANICAL	IMC 2015
ELECTRICAL	NEC 2017

PROJECT DESCRIPTION

THE PROPOSED PROJECT INCLUDES:

- REMOVE (1) EXISTING DUS31.
- REMOVE (1) EXISTING XMU.
- REMOVE (6) EXISTING ANTENNAS AT 122'-0".
- REMOVE (3) EXISTING RRUS AT 122'-0".
- REMOVE (6) EXISTING COAX.
- INSTALL (2) NEW BB 6630S.
- INSTALL (6) NEW ANTENNAS AT 122'-0".
- INSTALL (3) NEW RRUS AT 122'-0".
- INSTALL (3) NEW 1 1/4" HYBRID CABLE FOR NEW ANTENNAS.
- MODIFY EXISTING MOUNTS PER MOUNT ANALYSIS BY B+T GROUP DATED 5/9/19.
- INSTALL (1) NEW ELECTRICAL PANEL BOARD & UPGRADE CONDUITS AND WIRES PER NEC REQUIREMENTS.
- UPGRADE EXISTING 6131 BREAKER FROM 100A TO 125A.

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.

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.

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

811

B+T GRP

CROWN CASTLE

T-Mobile

CT11025B
BU #: 822765

BRANFORD/I-95/X55/DTN1

10 SYLVIA ST
BRANFORD, CT 06405

EXISTING 125'-0" MONOPOLE

PROJECT NO:	101126.005.01
CHECKED BY:	RMC

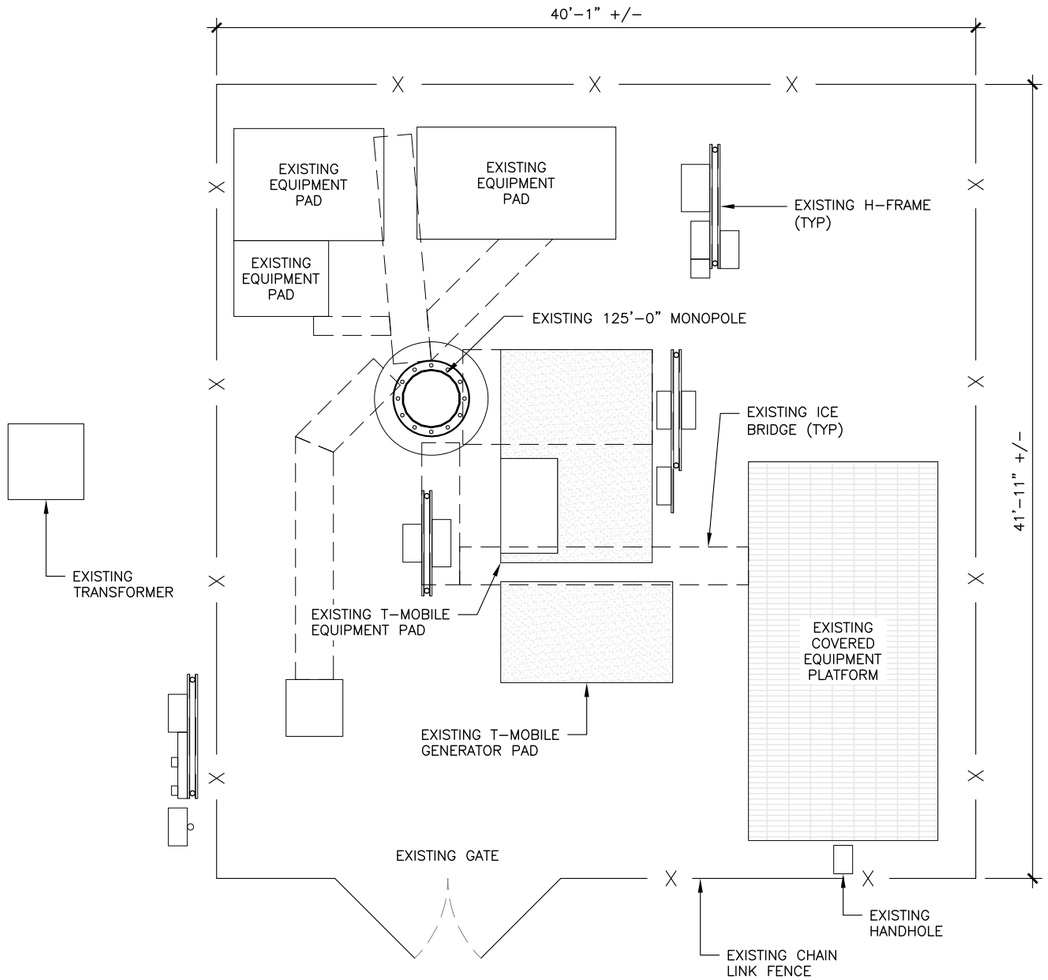
ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
0	6/5/19	GEH	CONSTRUCTION
1	7/2/19	JJD	CONSTRUCTION

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

STATE OF CONNECTICUT
31627
LICENSED
PROFESSIONAL ENGINEER
7/2/19

SHEET NUMBER:	REVISION:
T-1	1



1 OVERALL SITE PLAN

SCALE: 0' 1' 4' 8' 20'

N

GENERAL NOTES:

1. SUBJECT PROPERTY IS KNOWN AS BLOCK TBD LOT TBD AS SHOWN ON THE BRANFORD TOWNSHIP TAX MAP AND IS SITUATED AT 10 SYLVIA ST, BRANFORD, CT 06405.

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 SIX (6) NEW PANEL ANTENNAS, THREE (3) RRUS, AND THREE (3) ADDITIONAL CABLES MOUNTED ON AN EXISTING MONOPOLE.

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 41.293911° N± AND LONGITUDE OF 72.785729° 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 CASTLE SITE PLANS AND FROM CROWN CASTLE 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

CT11025B
BU #: 822765
BRANFORD/I-95/X55/DTN1
10 SYLVIA ST
BRANFORD, CT 06405
EXISTING 125'-0" MONOPOLE

PROJECT NO:	101126.005.01
CHECKED BY:	RMC

ISSUED FOR:

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1	7/2/19	JJD	CONSTRUCTION

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

STATE OF CONNECTICUT
31627
LICENSED PROFESSIONAL ENGINEER
7/2/19

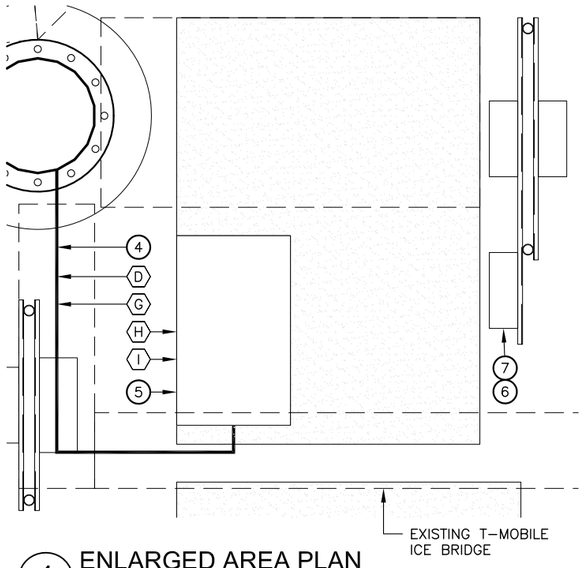
SHEET NUMBER:	REVISION:
A-1	1

LEGEND

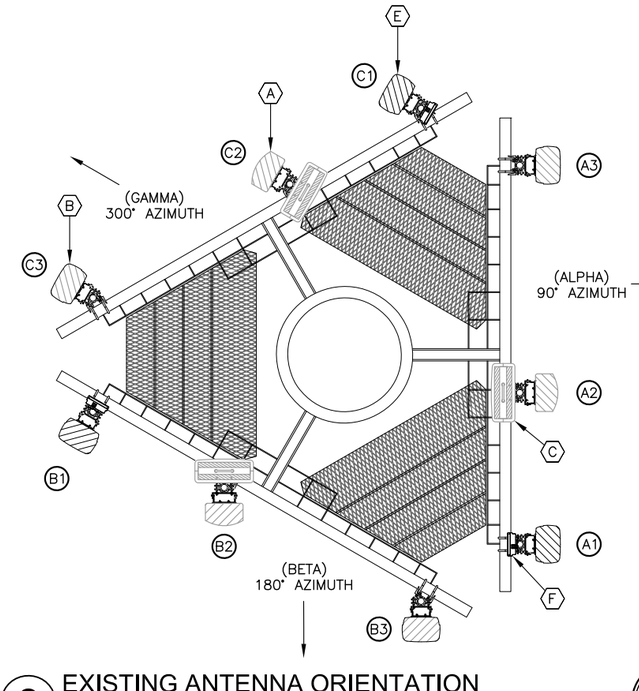
EXISTING/DEMOLITION NOTES		INSTALLATION NOTES	
A	EXISTING ANDREW LNX-6515DS-A1M ANTENNA TO BE REMOVED (TOTAL OF 3)	1	INSTALL RFS APXVAARR24_43-U-NA20 (8 FT) ANTENNAS ON EXISTING MOUNT. (TYP. OF 1 PER SECTOR, TOTAL OF 3)
B	EXISTING ERICSSON AIR21 KRC118023-1_B2P_B4A ANTENNA TO BE REMOVED (TOTAL OF 3)	2	INSTALL ERICSSON AIR32 KRD901146-1_B66A_B2A ANTENNAS ON EXISTING MOUNT (TYP. OF 1 PER SECTOR, TOTAL OF 3)
C	EXISTING RRUS11 B12 TO BE REMOVED (TOTAL OF 3)	3	INSTALL RADIO 4449 B71/B12 (TYP. OF 1 PER SECTOR, TOTAL OF 3)
D	EXISTING 1-5/8" COAX TO BE REMOVED (TOTAL OF 6)	4	INSTALL (3) 1 5/8" HYBRID FIBER TRUNK FROM EQUIPMENT TO ANTENNAS FOLLOWING EXISTING ROUTING
E	EXISTING ERICSSON AIR21 KRC118023-1_B2A_B4P ANTENNA TO REMAIN (TOTAL OF 3)	5	INSTALL (2) NEW BB6630S
F	EXISTING ERICSSON KRY 112 TMA TO REMAIN (TOTAL OF 3)	6	UPGRADE MAIN BREAKER FROM 100A TO 225A
G	EXISTING 1-5/8" COAX TO REMAIN (TOTAL OF 6)	7	UPGRADE 6131 BREAKER FROM 100A TO 125A
H	EXISTING XMU TO BE REMOVED (TOTAL OF 1)		
I	EXISTING DUS31 TO BE REMOVED (TOTAL OF 1)		

ANTENNA AND CABLE SCHEDULE

SECTOR	POSITION	EXISTING ANTENNAS	PROPOSED ANTENNA CONFIGURATION		E-TILT	M-TILT	ANTENNA CENTERLINE	TMA/RRU	CABLES	JUMPER TYPE	CABLE LENGTH
90° – ALPHA	**A3**	**ERICSSON AIR32 KRD901146-1_B66A_B2A**	**LTE**	**B71+ B12**	**2°/2°**	**–**	122'-0"	**–**	**–**	**(2) FIBER**	**–**
	A2	**RFS APXVAARR24_43-U-NA20**	**LTE**	**B71+ B12**	**2°**	**0°**		**0/1**	**(1) 1 5/8" HYBRID FIBER TRUNK**	**(4) COAX (1) FIBER**	**172'-0"**
	A1	ERICSSON AIR21 KRC118023-1_B2A_B4P	GSM UMTS	–	2°/2°	–		1/0	(2) 1 5/8" COAX	(2) COAX (2) FIBER	172'-0"
180° – BETA	**B3**	**ERICSSON AIR32 KRD901146-1_B66A_B2A**	**LTE**	**B71+ B12**	**2°/2°**	**–**	122'-0"	**–**	**–**	**(2) FIBER**	**–**
	B2	**RFS APXVAARR24_43-U-NA20**	**LTE**	**B71+ B12**	**2°**	**0°**		**0/1**	**(1) 1 5/8" HYBRID FIBER TRUNK**	**(4) COAX (1) FIBER**	**172'-0"**
	B1	ERICSSON AIR21 KRC118023-1_B2A_B4P	GSM UMTS	–	2°/2°	–		1/0	(2) 1 5/8" COAX	(2) COAX (2) FIBER	172'-0"
300° – GAMMA	**G3**	**ERICSSON AIR32 KRD901146-1_B66A_B2A**	**LTE**	**B71+ B12**	**2°/2°**	**–**	122'-0"	**–**	(1) 1 5/8" HYBRID FIBER TRUNK	**(2) FIBER**	**–**
	G2	**RFS APXVAARR24_43-U-NA20**	**LTE**	**B71+ B12**	**2°**	**0°**		**0/1**	**(1) 1 5/8" HYBRID FIBER TRUNK**	**(4) COAX (1) FIBER**	**172'-0"**
	G1	ERICSSON AIR21 KRC118023-1_B2A_B4P	GSM UMTS	–	2°/2°	–		1/0	(2) 1 5/8" COAX	(2) COAX (2) FIBER	172'-0"



1 ENLARGED AREA PLAN
SCALE: 0' 1' 2' 4' 10'



2 EXISTING ANTENNA ORIENTATION
SCALE: 0' 1' 2' 4' 10'

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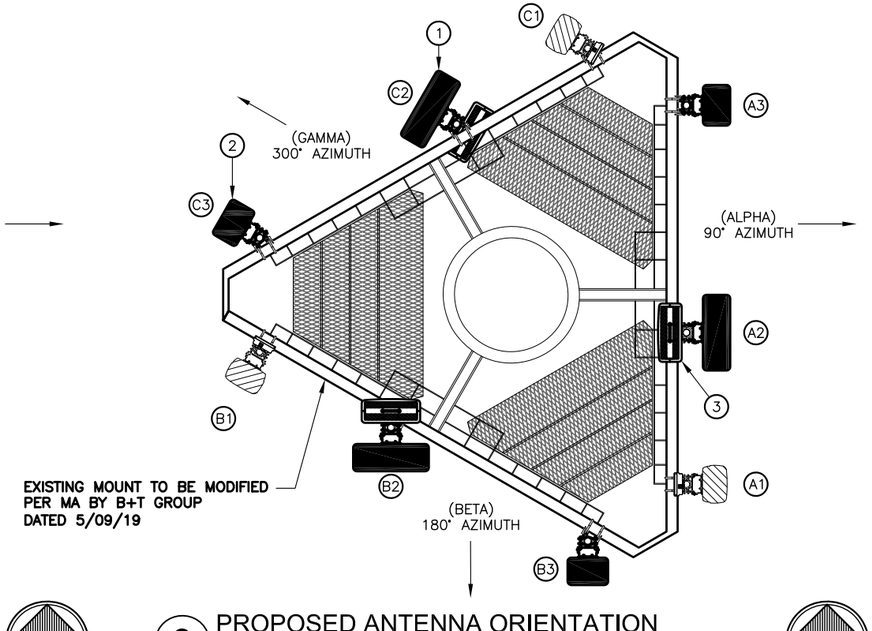

3 PROPOSED ANTENNA ORIENTATION
SCALE: 0' 1' 2' 4' 10'

N

B+T GRP

CROWN CASTLE

T-Mobile

CT11025B
BU #: 822765
BRANFORD/I-95/X55/DTN1
10 SYLVIA ST
BRANFORD, CT 06405
EXISTING 125'-0" MONOPOLE

PROJECT NO:	101126.005.01
CHECKED BY:	RMC

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
0	6/5/19	GEH	CONSTRUCTION
1	7/2/19	JJD	CONSTRUCTION

B&T ENGINEERING, INC.
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STATE OF CONNECTICUT 31627 LICENSED PROFESSIONAL ENGINEER
7/2/19

SHEET NUMBER:	REVISION:
A-2	1

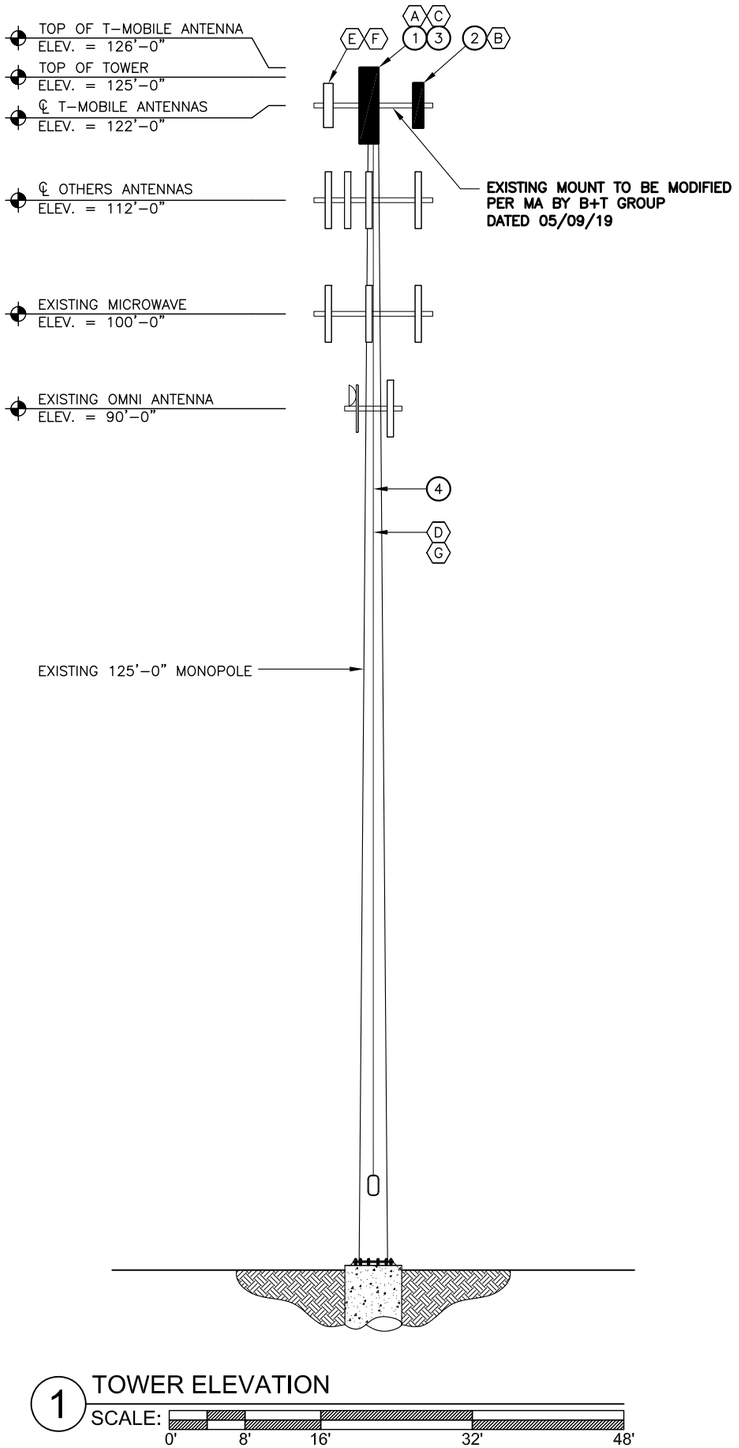
LEGEND

EXISTING/DEMOLITION NOTES		INSTALLATION NOTES	
A	EXISTING ANDREW LNX-6515DS-A1M ANTENNA TO BE REMOVED (TOTAL OF 3)	1	INSTALL RFS APXVAARR24_43-U-NA20 (8 FT) ANTENNAS ON EXISTING MOUNT. (TYP. OF 1 PER SECTOR, TOTAL OF 3)
B	EXISTING ERICSSON AIR21 KRC118023-1_B2P_B4A ANTENNA TO BE REMOVED (TOTAL OF 3)	2	INSTALL ERICSSON AIR32 KRD901146-1_B66A_B2A ANTENNAS ON EXISTING MOUNT (TYP. OF 1 PER SECTOR, TOTAL OF 3)
C	EXISTING RRUS11 B12 TO BE REMOVED (TOTAL OF 3)	3	INSTALL RADIO 4449 B71/B12 (TYP. OF 1 PER SECTOR, TOTAL OF 3)
D	EXISTING 1-5/8" COAX TO BE REMOVED (TOTAL OF 6)	4	INSTALL (3) 1 5/8" HYBRID FIBER TRUNK FROM EQUIPMENT TO ANTENNAS FOLLOWING EXISTING ROUTING
E	EXISTING ERICSSON AIR21 KRC118023-1_B2A_B4P ANTENNA TO REMAIN (TOTAL OF 3)		
F	EXISTING ERICSSON KRY 112 TMA TO REMAIN (TOTAL OF 3)		
G	EXISTING 1-5/8" COAX TO REMAIN (TOTAL OF 6)		

EXISTING TOWER IS SUFFICIENT PER STRUCTURAL ANALYSIS BY B+T GROUP DATED 5/17/19.

LEGEND:

- NEW
- EXISTING
- FUTURE



1 TOWER ELEVATION

SCALE: 0' 8' 16' 32' 48'

B+T GRP

CROWN CASTLE

T-Mobile

CT11025B
BU #: 822765

BRANFORD/I-95/X55/DTN1

10 SYLVIA ST
BRANFORD, CT 06405

EXISTING 125'-0" MONOPOLE

PROJECT NO:	101126.005.01
CHECKED BY:	RMC

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
0	6/5/19	GEH	CONSTRUCTION
1	7/2/19	JJD	CONSTRUCTION

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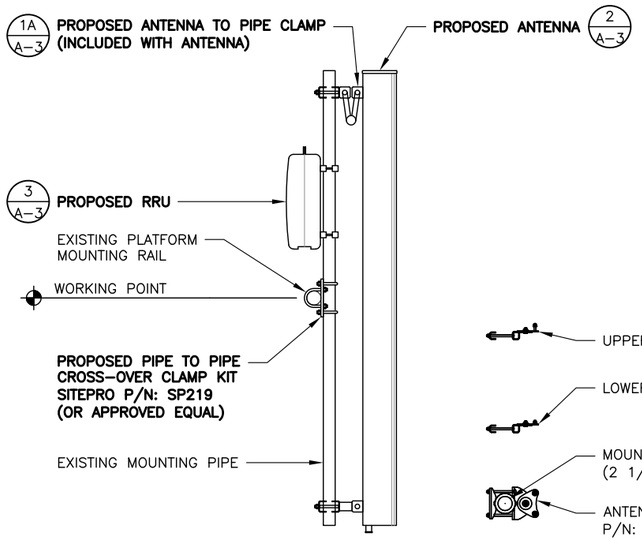
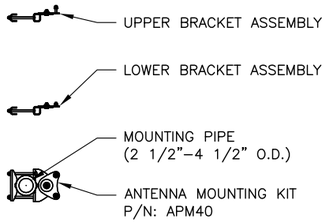
SHEET NUMBER:	REVISION:
A-3	1



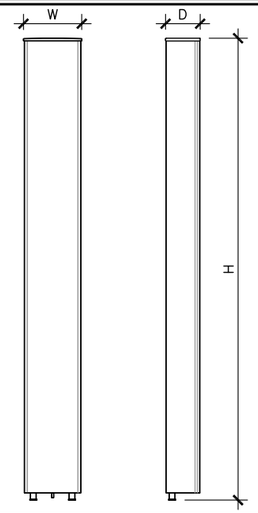
1 PROPOSED ANTENNA & RRU MOUNTING DETAIL

SCALE: N.T.S.



1A ANTENNA MOUNTING BRACKET

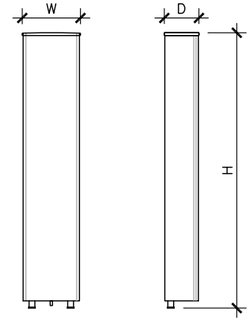
SCALE: N.T.S.



ANTENNA SPECS	
MANUFACTURER	RFS
MODEL #	APXVAARR24_43-U-NA20
WIDTH	24.0"
DEPTH	8.7"
HEIGHT	95.9"
WEIGHT	128.0 LBS

2 L700/L600 ANTENNA DETAIL

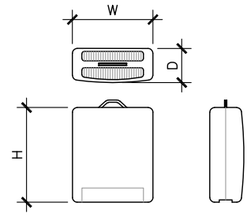
SCALE: N.T.S.



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

2A L1900/L2100 ANTENNA DETAIL

SCALE: N.T.S.

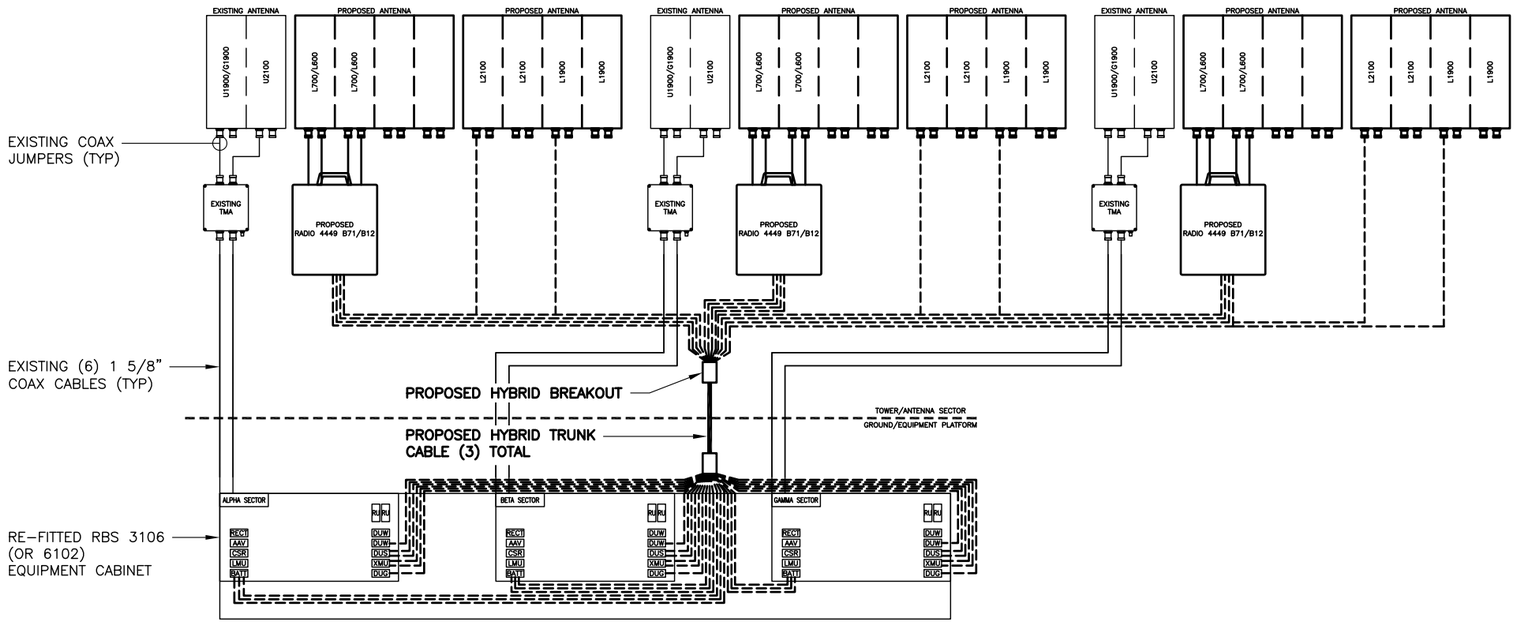


RRU SPECIFICATIONS	
MANUFACTURER	ERICSSON
MODEL #	4449
WIDTH	13.2"
DEPTH	10.4"
HEIGHT	14.9"
WEIGHT	74 LBS

3 REMOTE RADIO UNIT (RRU)

SCALE: N.T.S.

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 C-3 FOR EXACT ANTENNA POSITIONING.



4 ANTENNA & CABLING SCHEMATIC

SCALE: N.T.S.

B+T GRP

CROWN CASTLE

T-Mobile

CT11025B
BU #: 822765

BRANFORD/I-95/X55/DTN1

10 SYLVIA ST
BRANFORD, CT 06405

EXISTING 125'-0" MONOPOLE

PROJECT NO:	101126.005.01
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0	6/5/19	GEH	CONSTRUCTION
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7/2/19

SHEET NUMBER: A-4

REVISION: 1

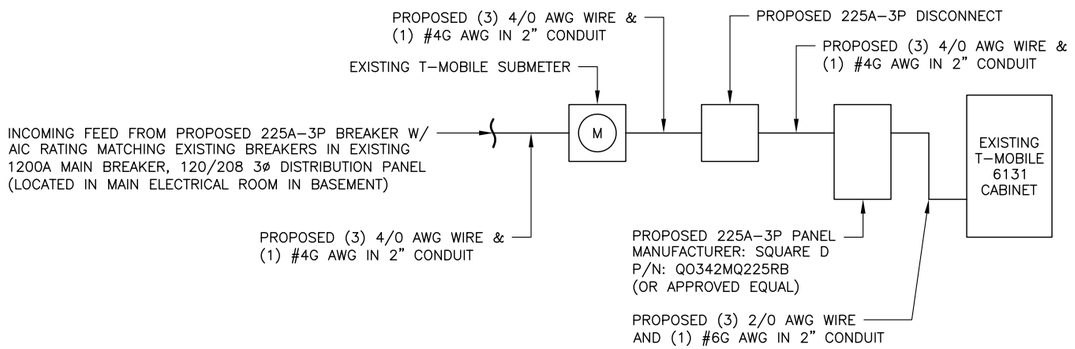
FINAL PANEL SCHEDULE								
LOAD	POLES	AMPS	BUS L1	BUS L2	BUS L3	AMPS	POLES	LOAD
UNKNOWN	1	20A	1		2	50A	2	UNKNOWN
6131	2	**125A**	3		4			
			5		6			
LED FLOOD	1	20A	7		8			

RATED VOLTAGE: ■120/240 □_____. 3 PHASE, 4 WIRE	BRANCH POLES: □12 ■24 □30 □42	APPROVED MF'RS	
RATED AMPS: □100 ■225 □400 □_____.	CABINET: ■SURFACE □FLUSH	NEMA □1 ■3R □4X	
□MAIN LUGS ONLY MAIN **225** 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			

EXISTING 100A BREAKER PANEL TO BE REPLACED W/ NEW 225A BREAKER PANEL. SQUARE D P/N: QO342MQ225RB (OR APPROVED EQUAL)
REPLACE EXISTING BREAKER IN POSITION 3 & 5 WITH A NEW 2P 125A BREAKER
REPLACE EXISTING WIRES FOR EXISTING 6131 CABINET WITH (3) 2/0 AWG THWN (COPPER) AND (1) #6G AWG. MINIMUM CONDUIT SIZE TO BE 2"
FINAL PANEL DESIGN AND CALCULATIONS FOR WIRE SIZE WERE BASED OFF OF EXISTING DOCUMENTS AND 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

CT11025B
BU #: 822765

BRANFORD/I-95/X55/DTN1

10 SYLVIA ST
BRANFORD, CT 06405

EXISTING 125'-0" MONOPOLE

PROJECT NO:	101126.005.01
CHECKED BY:	RMC

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
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PEC.0001564
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31627
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PROFESSIONAL ENGINEER
7/2/19

SHEET NUMBER:	REVISION:
E-1	1

Exhibit D

Structural Analysis Report

Date: **May 17, 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:	CT11025B
	Carrier Site Name:	Brandford/I-95/X55/Dtn1
Crown Castle Designation:	**Crown Castle BU Number:**	822765
	Crown Castle Site Name:	Branford/ I-95/ X55/ Dtn1
	Crown Castle JDE Job Number:	559227
	Crown Castle Work Order Number:	1734970
	Crown Castle Order Number:	479795 Rev. 0
Engineering Firm Designation:	**B+T Group Project Number:**	101126.004.01
Site Data:	**10 Sylvia St., Branford, New Haven County, CT** **Latitude *41° 17' 38.16"*, Longitude *-72° 47' 8.54"*** **125 Foot - Monopole 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.

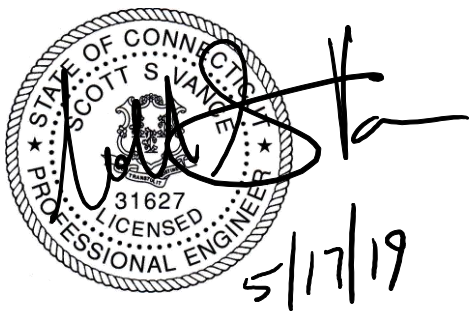
The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration	**Sufficient Capacity**
	96.0%

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

Structural analysis prepared by: John Landon

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



Scott S. Vance, P.E.

tnxTower Report - version 8.0.5.0

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 125 ft. Monopole tower designed by Pirod Manufactures Inc. in January of 1999. The tower was originally designed for a wind speed of 85 mph per TIA/EIA-222-F. This tower has been modified by B+T Group in October of 2015 and those modifications are incorporated in this analysis.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	130 mph
Exposure Category:	B
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)
122.0	122.0	3	Ericsson	AIR 32 B2A/B66AA	10	1-5/8
		3	Ericsson	ERICSSON AIR 21 B2A B4P		
		3	Ericsson	KRY 112 144/1		
		3	Ericsson	RADIO 4449 B12/B71		
		3	SitePro1	AHCP		
		3	SitePro1	SCX2-K		
		3	Rfs Celwave	APXVAARR24_43-U-NA20		
		3	--	17' x 2.375" Horizontal Pipe		
		1	--	Platform Mount [LP 405-1]		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
112.0	113.0	3	Alcatel Lucent	B13 RRH 4X30	2	1-5/8
		3	Alcatel Lucent	B4 RRH2X60-4R		
		6	Andrew	HBXX-6517DS-A2M		
		6	Andrew	LNX-6514DS-A1M		
		2	Raycap	RXXDC-3315-PF-48		
	112.0	1	--	Platform Mount [LP 303-1]		
100.0	100.0	2	Andrew	SBNHH-1D65A	12 2 6	1-1/4 3/8 3/4
		1	Andrew	SBNHH-1D65A		
		1	Cci Antennas	HPA-65R-BUU-H6		
		3	Ericsson	RRUS 32		
		3	Ericsson	RRUS 4449 B5/B12		
		3	Ericsson	RRUS 8843 B2/B66A		
		4	Kathrein	80010964		
		2	Kathrein	80010965		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		2	Powerwave Tech.	7770.00		
		6	Powerwave Tech.	LGP21401		
		1	Raycap	DC6-48-60-18-8F		
		2	Raycap	DC6-48-60-18-8F		
		1	--	T-Arm Mount [TA 602-3]		
90.0	90.0	2	Dragonwave	A-ANT-18G-2-C	4 2	1-1/4 1/2
		3	Alcatel Lucent	PCS 1900MHZ 4X45W-65MHZ		
		6	Alcatel Lucent	RRH2X50-800		
		3	Alcatel Lucent	TD-RRH8X20-25		
		3	Commscope	NNVV-65B-R4		
		3	Dragonwave	AIRPAIR ODU		
		3	Rfs Celwave	APXVTM14-ALU-I20		
		1	Site Pro 1	HRK12 Handrail Kit		
		1	Site Pro 1	RMQP Platform Mount		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
Online Order Information	T-Mobile Co-locate, Rev. 0	479795	CCI Sites
Tower Manufacturer Drawing	PiROD, Inc. Drawing No: 204417-B	3552248	CCI Sites
Mount Analysis	B+T Group, Project No: 101126.003.01	Date: 05/09/2019	On File
Tower Modification Drawing	B+T Group, Date: 10/27/2015	5952282	CCI Sites
Post Modification Inspection	TEP, Date: 04/11/2016	6215120	CCI Sites
Foundation Drawing	PiROD, Inc. Drawing No: 204417-B	3910040	CCI Sites
Geotech Report	F&P Associates, FPA No: 98A191ER1	3552247	CCI Sites
Antenna Configuration	Crown CAD Package	Date: 05/01/2019	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.

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	125 - 120	Pole	TP24x24x0.375	1	-4.738	1104.673	2.1	Pass
L2	120 - 115	Pole	TP24x24x0.375	2	-5.378	1104.673	6.3	Pass
L3	115 - 110	Pole	TP24x24x0.375	3	-8.760	1104.673	13.1	Pass
L4	110 - 105	Pole	TP24x24x0.375	4	-9.427	1104.673	21.3	Pass
L5	105 - 100	Pole	TP24x24x0.375	5	-10.104	1104.673	29.8	Pass
L6	100 - 95	Pole	TP30x30x0.375	6	-13.929	1376.613	27.9	Pass
L7	95 - 90	Pole	TP30x30x0.375	7	-14.839	1376.613	35.9	Pass
L8	90 - 85	Pole	TP30x30x0.375	8	-19.075	1376.613	46.2	Pass
L9	85 - 80	Pole	TP30x30x0.375	9	-20.051	1376.613	56.3	Pass
L10	80 - 75	Pole	TP36x36x0.375	10	-21.155	1564.605	47.4	Pass
L11	75 - 73.5	Pole	TP36x36x0.375	11	-21.484	1564.605	49.6	Pass
L12	73.5 - 73.25	Pole + Reinf.	TP36x36x0.5625	12	-21.564	2485.518	39.4	Pass
L13	73.25 - 68.25	Pole + Reinf.	TP36x36x0.5625	13	-22.998	2485.518	45.4	Pass
L14	68.25 - 63.25	Pole + Reinf.	TP36x36x0.5625	14	-24.460	2485.518	51.6	Pass
L15	63.25 - 60	Pole + Reinf.	TP36x36x0.5625	15	-25.414	2485.518	55.7	Pass
L16	60 - 59.75	Pole + Reinf.	TP42x42x0.525	16	-25.499	2698.153	38.0	Pass
L17	59.75 - 54.75	Pole + Reinf.	TP42x42x0.525	17	-27.098	2698.153	42.5	Pass
L18	54.75 - 49.75	Pole + Reinf.	TP42x42x0.525	18	-28.708	2698.153	47.0	Pass
L19	49.75 - 44.75	Pole + Reinf.	TP42x42x0.525	19	-30.325	2698.153	51.8	Pass
L20	44.75 - 40	Pole + Reinf.	TP42x42x0.525	20	-31.869	2698.153	56.4	Pass
L21	40 - 39.75	Pole + Reinf.	TP48x48x0.5563	21	-31.969	3191.685	41.7	Pass
L22	39.75 - 34.75	Pole + Reinf.	TP48x48x0.5563	22	-33.851	3191.685	45.4	Pass
L23	34.75 - 29.75	Pole + Reinf.	TP48x48x0.5563	23	-35.742	3191.685	49.2	Pass
L24	29.75 - 24.75	Pole + Reinf.	TP48x48x0.5563	24	-37.640	3191.685	53.1	Pass
L25	24.75 - 20	Pole + Reinf.	TP48x48x0.5563	25	-39.448	3191.685	56.9	Pass
L26	20 - 19.75	Pole + Reinf.	TP54x54x0.5875	26	-39.564	3722.491	43.6	Pass
L27	19.75 - 14.75	Pole + Reinf.	TP54x54x0.5875	27	-41.749	3722.491	46.7	Pass
L28	14.75 - 9.75	Pole + Reinf.	TP54x54x0.5875	28	-43.942	3722.491	49.9	Pass
L29	9.75 - 4.75	Pole + Reinf.	TP54x54x0.5875	29	-46.142	3722.491	53.2	Pass
L30	4.75 - 0	Pole + Reinf.	TP54x54x0.5875	30	-48.236	3722.491	56.4	Pass
							Summary	
						Pole (L9)	56.9	Pass
						Rating =	56.9	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Flange Connection	100	50.9	Pass
1	Bridge Stiffeners	80	54.5	Pass
1	Flange Connection	80	52.2	Pass
1	Bridge Stiffeners	60	65.3	Pass
1	Flange Connection	60	61.1	Pass
1	Bridge Stiffeners	40	61.3	Pass
1	Flange Connection	40	64.8	Pass
1	Bridge Stiffeners	20	60.7	Pass
1	Flange Connection	20	64.7	Pass
1	Anchor Rods Brackets	Base	33.3	Pass
1	Anchor Rods	Base	52.2	Pass
1	Base plate	Base	96.0	Pass
1	Base Foundation (Structure)	Base	69.5	Pass
1	Base Foundation (Soil Interaction)	Base	62.9	Pass

Structure Rating (max from all components) =	**96.0%**

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

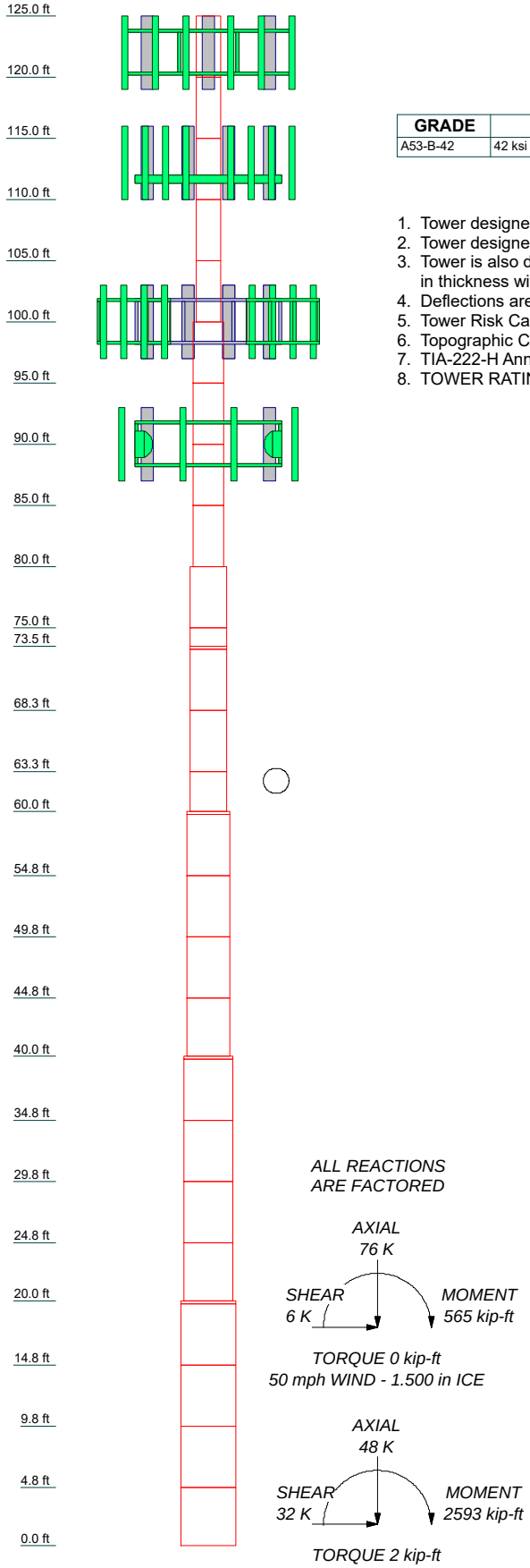
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	Size	Length (ft)	Grade	Weight (K)
1	P24x0.375	5.000	A53-B-42	0.5
2	P24x0.375	5.000		0.5
3	P24x0.375	5.000		0.5
4	P24x0.375	5.000		0.5
5	P24x0.375	5.000		0.5
6	P30x0.375	5.000		0.6
7	P30x0.375	5.000		0.6
8	P30x0.375	5.000		0.6
9	P30x0.375	5.000		0.6
10	P36x0.375	5.000		0.7
11				0.2
12				0.0
13		5.0000		1.0
14		5.000		1.0
15				0.7
16				0.1
17		5.0000		1.1
18	P42x0.525	5.000		1.1
19	P42x0.525	5.000		1.1
20	P42x0.525	4.750		1.1
21				0.1
22		5.0000		1.4
23		5.000		1.4
24		5.000		1.4
25		4.750		1.3
26				0.1
27		5.0000		1.6
28	P54x0.587	5.000		1.6
29	P54x0.587	5.000		1.6
30	P54x0.587	4.750		1.5
				24.9



MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-42	42 ksi	63 ksi			

TOWER DESIGN NOTES

1. Tower designed for Exposure B to the TIA-222-H Standard.
2. Tower designed for a 130 mph basic wind in accordance with the TIA-222-H Standard.
3. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category II.
6. Topographic Category 1 with Crest Height of 0.000 ft
7. TIA-222-H Annex S
8. TOWER RATING: 56.9%

ALL REACTIONS ARE FACTORED

AXIAL 76 K

SHEAR 6 K — *MOMENT 565 kip-ft*

TORQUE 0 kip-ft
50 mph WIND - 1.500 in ICE

AXIAL 48 K

SHEAR 32 K — *MOMENT 2593 kip-ft*

TORQUE 2 kip-ft
REACTIONS - 130 mph WIND

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

Job:	***101126.004.01 - Branford I-95 X55 Dtn1, CT (BU# 822765***		
Project:			
Client: Crown Castle	Drawn by: Shashank.S.Rao	App'd:	
Code: TIA-222-H	Date: 05/16/19	Scale: NTS	
Path:		Dwg No. E-1	

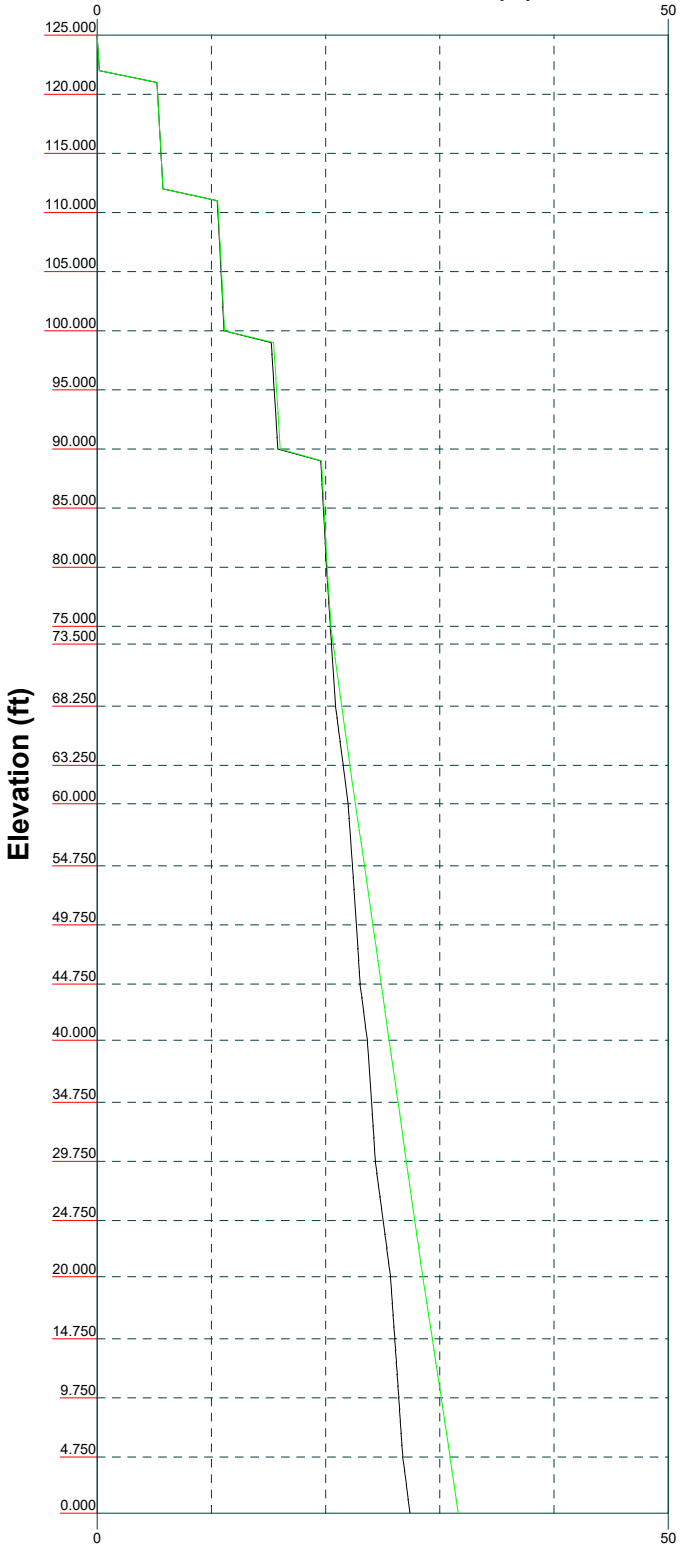
TIA-222-H - 130 mph/50 mph 1.500 in Ice Exposure B

Vx Vz

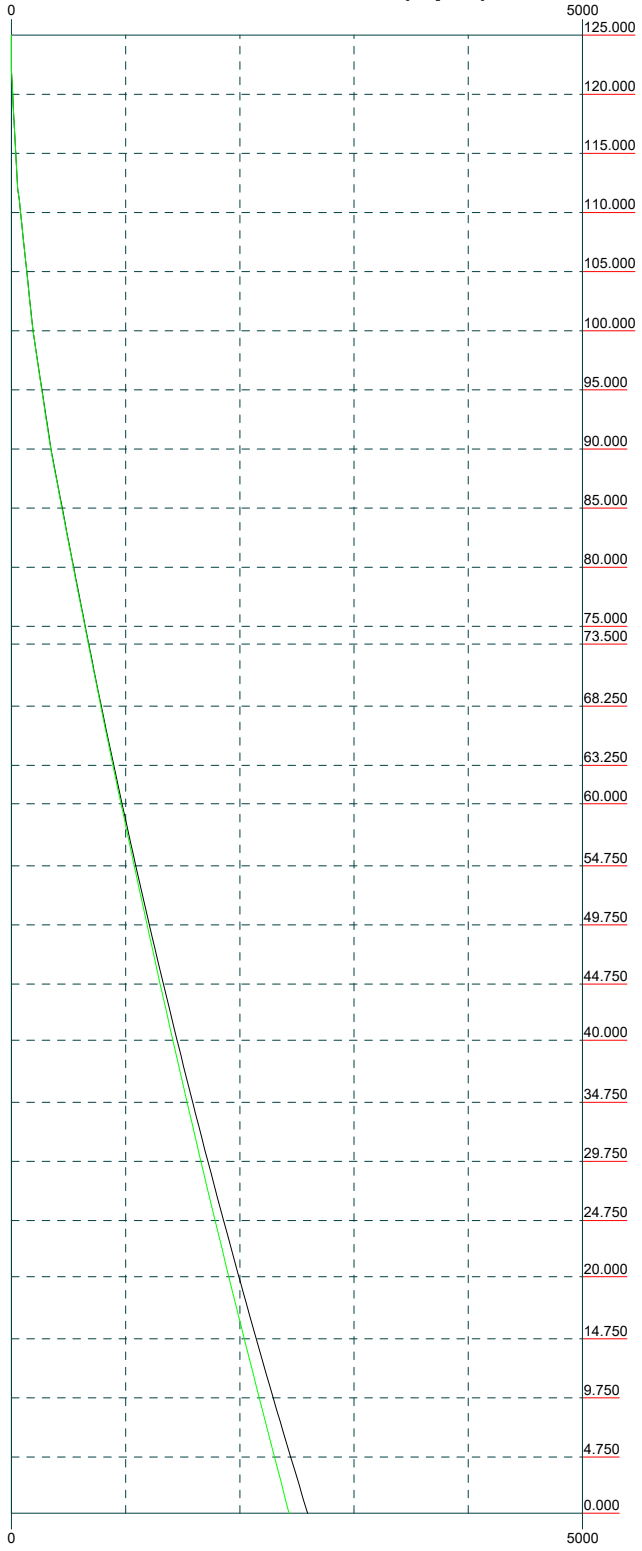
Maximum Values

Mx Mz

Global Mast Shear (K)



Global Mast Moment (kip-ft)



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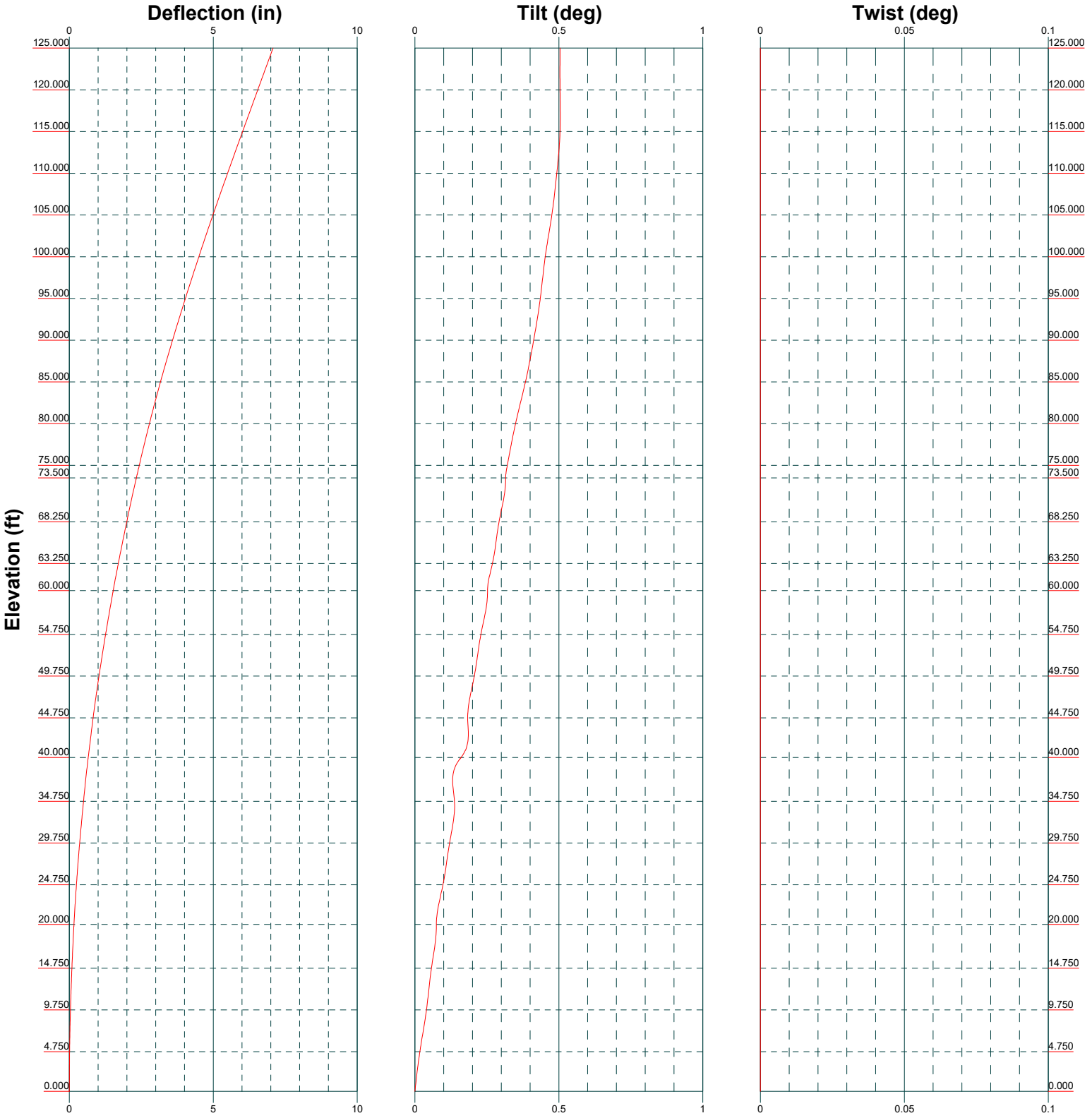
1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 101126.004.01 - Branford I-95 X55 Dtn1, CT (BU# 82276			
Project:			
Client: Crown Castle	Drawn by: Shashank.S.Rao	App'd:	
Code: TIA-222-H	Date: 05/16/19	Scale: NTS	
Path:		Dwg No. E-4	

TIA-222-H - Service - 60 mph

Maximum Values

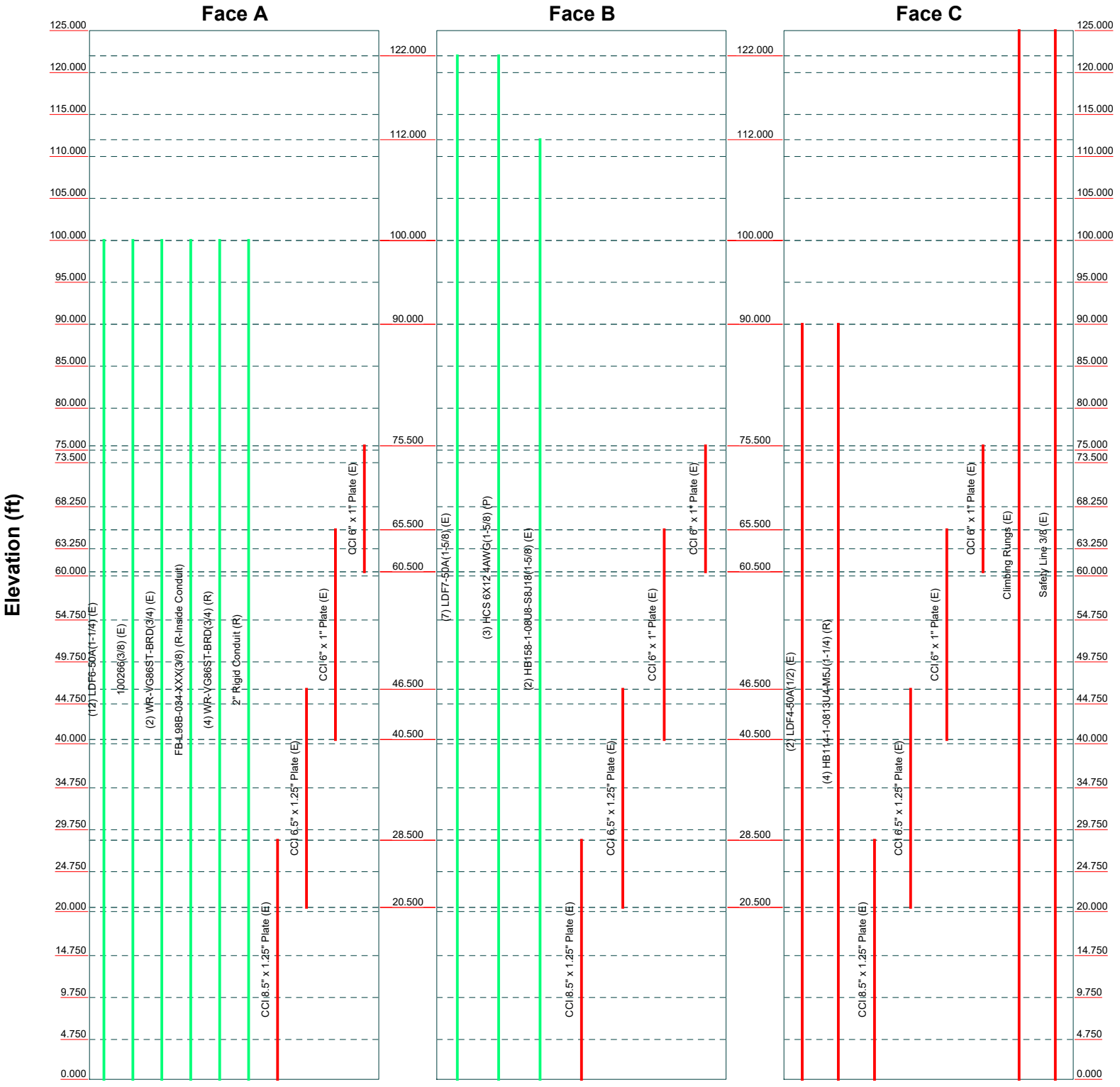


B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: ***101126.004.01 - Branford I-95 X55 Dtn1, CT (BU# 82276***			
Project:			
Client: Crown Castle	Drawn by: Shashank.S.Rao	App'd:	
Code: TIA-222-H	Date: 05/16/19	Scale: NTS	
Path:		Dwg No. E-5	

Feed Line Distribution Chart
0' - 125'

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



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

Job:	***101126.004.01 - Branford I-95 X55 Dtn1, CT (BU# 82276***		
Project:			
Client: Crown Castle	Drawn by: Shashank.S.Rao	App'd:	
Code: TIA-222-H	Date: 05/16/19	Scale: NTS	
Path:		Dwg No. E-7	

tnxTower	Job	Page
	101126.004.01 - Branford I-95 X55 Dtn1, CT (BU# 822765)	1 of 34
B+T Group *1717 S. Boulder, Suite 300* *Tulsa, OK 74119* *Phone: (918) 587-4630* *FAX: (918) 295-0265*	**Project**	**Date** 19:32:46 05/16/19
	Client Crown Castle	**Designed by** Shashank.S.Rao

Tower Input Data

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

Tower base elevation above sea level: 56.000 ft.
Basic wind speed of 130 mph.
Risk Category II.
Exposure Category B.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.000 ft.
Nominal ice thickness of 1.500 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 60 mph.
TIA-222-H Annex S.
TOWER RATING: 56.9%.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.05.
Tower analysis based on target reliabilities in accordance with Annex S.
Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
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

Pole Section Geometry

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L1	125.000-120.000	5.000	P24x0.375	A53-B-42 (42 ksi)	
L2	120.000-115.000	5.000	P24x0.375	A53-B-42 (42 ksi)	
L3	115.000-110.000	5.000	P24x0.375	A53-B-42 (42 ksi)	
L4	110.000-105.000	5.000	P24x0.375	A53-B-42 (42 ksi)	
L5	105.000-100.000	5.000	P24x0.375	A53-B-42 (42 ksi)	
L6	100.000-95.000	5.000	P30x0.375	A53-B-42 (42 ksi)	
L7	95.000-90.000	5.000	P30x0.375	A53-B-42 (42 ksi)	
L8	90.000-85.000	5.000	P30x0.375	A53-B-42 (42 ksi)	
L9	85.000-80.000	5.000	P30x0.375	A53-B-42 (42 ksi)	
L10	80.000-75.000	5.000	P36x0.375	A53-B-42 (42 ksi)	
L11	75.000-73.500	1.500	P36x0.375	A53-B-42 (42 ksi)	
L12	73.500-73.250	0.250	P36x0.5625	A53-B-42 (42 ksi)	
L13	73.250-68.250	5.000	P36x0.5625	A53-B-42 (42 ksi)	
L14	68.250-63.250	5.000	P36x0.5625	A53-B-42 (42 ksi)	
L15	63.250-60.000	3.250	P36x0.5625	A53-B-42 (42 ksi)	
L16	60.000-59.750	0.250	P42x0.525	A53-B-42 (42 ksi)	
L17	59.750-54.750	5.000	P42x0.525	A53-B-42 (42 ksi)	
L18	54.750-49.750	5.000	P42x0.525	A53-B-42 (42 ksi)	
L19	49.750-44.750	5.000	P42x0.525	A53-B-42 (42 ksi)	
L20	44.750-40.000	4.750	P42x0.525	A53-B-42 (42 ksi)	
L21	40.000-39.750	0.250	P48x0.55625	A53-B-42 (42 ksi)	
L22	39.750-34.750	5.000	P48x0.55625	A53-B-42 (42 ksi)	
L23	34.750-29.750	5.000	P48x0.55625	A53-B-42 (42 ksi)	
L24	29.750-24.750	5.000	P48x0.55625	A53-B-42 (42 ksi)	
L25	24.750-20.000	4.750	P48x0.55625	A53-B-42 (42 ksi)	
L26	20.000-19.750	0.250	P54x0.5875	A53-B-42 (42 ksi)	
L27	19.750-14.750	5.000	P54x0.5875	A53-B-42 (42 ksi)	
L28	14.750-9.750	5.000	P54x0.5875	A53-B-42 (42 ksi)	
L29	9.750-4.750	5.000	P54x0.5875	A53-B-42 (42 ksi)	

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L30	4.750-0.000	4.750	P54x0.5875	A53-B-42 (42 ksi)	

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 125.000-120.000				1	1	1			
L2 120.000-115.000				1	1	1			
L3 115.000-110.000				1	1	1			
L4 110.000-105.000				1	1	1			
L5 105.000-100.000				1	1	1			
L6 100.000-95.000				1	1	1			
L7 95.000-90.000				1	1	1			
L8 90.000-85.000				1	1	1			
L9 85.000-80.000				1	1	1			
L10 80.000-75.000				1	1	1			
L11 75.000-73.500				1	1	1			
L12 73.500-73.250				1	1	0.957627			
L13 73.250-68.250				1	1	0.957627			
L14 68.250-63.250				1	1	0.957627			
L15 63.250-60.000				1	1	0.957627			
L16 60.000-59.750				1	1	0.980003			
L17 59.750-54.750				1	1	0.980003			
L18 54.750-49.750				1	1	0.980003			
L19 49.750-44.750				1	1	0.980003			
L20 44.750-40.000				1	1	0.980003			
L21 40.000-39.750				1	1	0.970732			
L22 39.750-34.750				1	1	0.970732			

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
L23 34.750-29.750				1	1	0.970732			
L24 29.750-24.750				1	1	0.970732			
L25 24.750-20.000				1	1	0.970732			
L26 20.000-19.750				1	1	0.96417			
L27 19.750-14.750				1	1	0.96417			
L28 14.750-9.750				1	1	0.96417			
L29 9.750-4.750				1	1	0.96417			
L30 4.750-0.000				1	1	0.96417			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
LDF4-50A(1/2) (E)	C	No	Surface Ar (CaAa)	90.000 - 0.000	2	1	0.410 0.425	0.630		0.000
HB114-1-0813U4-M5J(1 -1/4) (R) *&&*	C	No	Surface Ar (CaAa)	90.000 - 0.000	4	4	0.250 0.400	1.540		0.001
CCI 8.5" x 1.25" Plate (E)	A	No	Surface Af (CaAa)	28.500 - 0.000	1	1	0.000 0.000	8.500	19.500	0.000
CCI 8.5" x 1.25" Plate (E)	B	No	Surface Af (CaAa)	28.500 - 0.000	1	1	0.000 0.000	8.500	19.500	0.000
CCI 8.5" x 1.25" Plate (E) *&&*	C	No	Surface Af (CaAa)	28.500 - 0.000	1	1	0.000 0.000	8.500	19.500	0.000
CCI 6.5" x 1.25" Plate (E)	A	No	Surface Af (CaAa)	46.500 - 20.500	1	1	0.000 0.000	6.500	15.500	0.000
CCI 6.5" x 1.25" Plate (E)	B	No	Surface Af (CaAa)	46.500 - 20.500	1	1	0.000 0.000	6.500	15.500	0.000
CCI 6.5" x 1.25" Plate (E) *&&*	C	No	Surface Af (CaAa)	46.500 - 20.500	1	1	0.000 0.000	6.500	15.500	0.000
CCI 6" x 1" Plate (E)	A	No	Surface Af (CaAa)	65.500 - 40.500	1	1	0.000 0.000	6.000	14.000	0.000
CCI 6" x 1" Plate (E)	B	No	Surface Af (CaAa)	65.500 - 40.500	1	1	0.000 0.000	6.000	14.000	0.000
CCI 6" x 1" Plate (E) *&&*	C	No	Surface Af (CaAa)	65.500 - 40.500	1	1	0.000 0.000	6.000	14.000	0.000
CCI 6" x 1" Plate (E)	A	No	Surface Af (CaAa)	75.500 - 60.500	1	1	0.000 0.000	6.000	14.000	0.000
CCI 6" x 1" Plate (E)	B	No	Surface Af (CaAa)	75.500 - 60.500	1	1	0.000 0.000	6.000	14.000	0.000
CCI 6" x 1" Plate	C	No	Surface Af	75.500 -	1	1	0.000	6.000	14.000	0.000

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
(E) *&&*			(CaAa)	60.500			0.000			
Climbing Rungs (E)	C	No	Surface Ar (CaAa)	125.000 - 0.000	1	1	0.000 0.100	0.000		0.001
Safety Line 3/8 (E) *&&*	C	No	Surface Ar (CaAa)	125.000 - 0.000	1	1	0.010 0.030	0.375		0.000
Bridge Stiffener (78"x4.5"x1.0")-80' (E-BS)	A	No	Surface Af (CaAa)	80.000 - 80.000	1	1	0.000 0.000	4.500	11.000	0.000
Bridge Stiffener (78"x4.5"x1.0")-80' (E-BS)	B	No	Surface Af (CaAa)	80.000 - 80.000	1	1	0.000 0.000	4.500	11.000	0.000
Bridge Stiffener (78"x4.5"x1.0")-80' (E-BS) * * * *	C	No	Surface Af (CaAa)	80.000 - 80.000	1	1	0.000 0.000	4.500	11.000	0.000

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
LDF7-50A(1-5/8) (E)	B	No	No	Inside Pole	122.000 - 0.000	7	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.001 0.001 0.001 0.001
HCS 6X12 4AWG(1-5/8) (P) *&&*	B	No	No	Inside Pole	122.000 - 0.000	3	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.002 0.002 0.002 0.002
HB158-1-08U8-S8J 18(1-5/8) (E) *&&*	B	No	No	Inside Pole	112.000 - 0.000	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.001 0.001 0.001 0.001
LDF6-50A(1-1/4) (E)	A	No	No	Inside Pole	100.000 - 0.000	12	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.001 0.001 0.001 0.001
100266(3/8) (E)	A	No	No	Inside Pole	100.000 - 0.000	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000
WR-VG86ST-BRD(3/4) (E)	A	No	No	Inside Pole	100.000 - 0.000	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.001 0.001 0.001 0.001
FB-L98B-034-XXX(3/8) (R-Inside Conduit)	A	No	No	Inside Pole	100.000 - 0.000	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
WR-VG86ST-BRD(3/4) (R)	A	No	No	Inside Pole	100.000 - 0.000	4	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
2" Rigid Conduit (R)	A	No	No	Inside Pole	100.000 - 0.000	1	No Ice	0.000	0.003
							1/2" Ice	0.000	0.003
							1" Ice	0.000	0.003
							2" Ice	0.000	0.003
&& *									

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	125.000-120.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.026
		C	0.000	0.000	0.188	0.000	0.004
L2	120.000-115.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.065
		C	0.000	0.000	0.188	0.000	0.004
L3	115.000-110.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.070
		C	0.000	0.000	0.188	0.000	0.004
L4	110.000-105.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.078
		C	0.000	0.000	0.188	0.000	0.004
L5	105.000-100.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.078
		C	0.000	0.000	0.188	0.000	0.004
L6	100.000-95.000	A	0.000	0.000	0.000	0.000	0.068
		B	0.000	0.000	0.000	0.000	0.078
		C	0.000	0.000	0.188	0.000	0.004
L7	95.000-90.000	A	0.000	0.000	0.000	0.000	0.068
		B	0.000	0.000	0.000	0.000	0.078
		C	0.000	0.000	0.188	0.000	0.004
L8	90.000-85.000	A	0.000	0.000	0.000	0.000	0.068
		B	0.000	0.000	0.000	0.000	0.078
		C	0.000	0.000	3.583	0.000	0.029
L9	85.000-80.000	A	0.000	0.000	0.000	0.000	0.068
		B	0.000	0.000	0.000	0.000	0.078
		C	0.000	0.000	3.583	0.000	0.029
L10	80.000-75.000	A	0.000	0.000	0.500	0.000	0.068
		B	0.000	0.000	0.500	0.000	0.078
		C	0.000	0.000	4.082	0.000	0.029
L11	75.000-73.500	A	0.000	0.000	1.500	0.000	0.020
		B	0.000	0.000	1.500	0.000	0.023
		C	0.000	0.000	2.575	0.000	0.009
L12	73.500-73.250	A	0.000	0.000	0.250	0.000	0.003
		B	0.000	0.000	0.250	0.000	0.004
		C	0.000	0.000	0.429	0.000	0.001
L13	73.250-68.250	A	0.000	0.000	5.000	0.000	0.068
		B	0.000	0.000	5.000	0.000	0.078

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C	0.000	0.000	8.582	0.000	0.029
L14	68.250-63.250	A	0.000	0.000	7.250	0.000	0.068
		B	0.000	0.000	7.250	0.000	0.078
		C	0.000	0.000	10.833	0.000	0.029
L15	63.250-60.000	A	0.000	0.000	6.000	0.000	0.044
		B	0.000	0.000	6.000	0.000	0.051
		C	0.000	0.000	8.329	0.000	0.019
L16	60.000-59.750	A	0.000	0.000	0.250	0.000	0.003
		B	0.000	0.000	0.250	0.000	0.004
		C	0.000	0.000	0.429	0.000	0.001
L17	59.750-54.750	A	0.000	0.000	5.000	0.000	0.068
		B	0.000	0.000	5.000	0.000	0.078
		C	0.000	0.000	8.582	0.000	0.029
L18	54.750-49.750	A	0.000	0.000	5.000	0.000	0.068
		B	0.000	0.000	5.000	0.000	0.078
		C	0.000	0.000	8.582	0.000	0.029
L19	49.750-44.750	A	0.000	0.000	6.896	0.000	0.068
		B	0.000	0.000	6.896	0.000	0.078
		C	0.000	0.000	10.478	0.000	0.029
L20	44.750-40.000	A	0.000	0.000	9.396	0.000	0.065
		B	0.000	0.000	9.396	0.000	0.074
		C	0.000	0.000	12.799	0.000	0.028
L21	40.000-39.750	A	0.000	0.000	0.271	0.000	0.003
		B	0.000	0.000	0.271	0.000	0.004
		C	0.000	0.000	0.450	0.000	0.001
L22	39.750-34.750	A	0.000	0.000	5.417	0.000	0.068
		B	0.000	0.000	5.417	0.000	0.078
		C	0.000	0.000	8.999	0.000	0.029
L23	34.750-29.750	A	0.000	0.000	5.417	0.000	0.068
		B	0.000	0.000	5.417	0.000	0.078
		C	0.000	0.000	8.999	0.000	0.029
L24	29.750-24.750	A	0.000	0.000	10.729	0.000	0.068
		B	0.000	0.000	10.729	0.000	0.078
		C	0.000	0.000	14.312	0.000	0.029
L25	24.750-20.000	A	0.000	0.000	11.333	0.000	0.065
		B	0.000	0.000	11.333	0.000	0.074
		C	0.000	0.000	14.737	0.000	0.028
L26	20.000-19.750	A	0.000	0.000	0.354	0.000	0.003
		B	0.000	0.000	0.354	0.000	0.004
		C	0.000	0.000	0.533	0.000	0.001
L27	19.750-14.750	A	0.000	0.000	7.083	0.000	0.068
		B	0.000	0.000	7.083	0.000	0.078
		C	0.000	0.000	10.666	0.000	0.029
L28	14.750-9.750	A	0.000	0.000	7.083	0.000	0.068
		B	0.000	0.000	7.083	0.000	0.078
		C	0.000	0.000	10.666	0.000	0.029
L29	9.750-4.750	A	0.000	0.000	7.083	0.000	0.068
		B	0.000	0.000	7.083	0.000	0.078
		C	0.000	0.000	10.666	0.000	0.029
L30	4.750-0.000	A	0.000	0.000	6.729	0.000	0.065
		B	0.000	0.000	6.729	0.000	0.074
		C	0.000	0.000	10.133	0.000	0.028

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

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	125.000-120.000	A	1.454	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.026
		C		0.000	0.000	3.095	0.000	0.033
L2	120.000-115.000	A	1.448	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.065
		C		0.000	0.000	3.083	0.000	0.033
L3	115.000-110.000	A	1.441	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.070
		C		0.000	0.000	3.070	0.000	0.032
L4	110.000-105.000	A	1.435	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.078
		C		0.000	0.000	3.057	0.000	0.032
L5	105.000-100.000	A	1.428	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.078
		C		0.000	0.000	3.044	0.000	0.032
L6	100.000-95.000	A	1.421	0.000	0.000	0.000	0.000	0.068
		B		0.000	0.000	0.000	0.000	0.078
		C		0.000	0.000	3.029	0.000	0.032
L7	95.000-90.000	A	1.413	0.000	0.000	0.000	0.000	0.068
		B		0.000	0.000	0.000	0.000	0.078
		C		0.000	0.000	3.014	0.000	0.031
L8	90.000-85.000	A	1.406	0.000	0.000	0.000	0.000	0.068
		B		0.000	0.000	0.000	0.000	0.078
		C		0.000	0.000	10.326	0.000	0.145
L9	85.000-80.000	A	1.397	0.000	0.000	0.000	0.000	0.068
		B		0.000	0.000	0.000	0.000	0.078
		C		0.000	0.000	10.291	0.000	0.144
L10	80.000-75.000	A	1.389	0.000	0.000	0.610	0.000	0.073
		B		0.000	0.000	0.610	0.000	0.083
		C		0.000	0.000	10.864	0.000	0.148
L11	75.000-73.500	A	1.383	0.000	0.000	1.830	0.000	0.036
		B		0.000	0.000	1.830	0.000	0.039
		C		0.000	0.000	4.899	0.000	0.058
L12	73.500-73.250	A	1.381	0.000	0.000	0.305	0.000	0.006
		B		0.000	0.000	0.305	0.000	0.006
		C		0.000	0.000	0.816	0.000	0.010
L13	73.250-68.250	A	1.376	0.000	0.000	6.097	0.000	0.120
		B		0.000	0.000	6.097	0.000	0.129
		C		0.000	0.000	16.297	0.000	0.193
L14	68.250-63.250	A	1.366	0.000	0.000	8.956	0.000	0.142
		B		0.000	0.000	8.956	0.000	0.152
		C		0.000	0.000	19.114	0.000	0.214
L15	63.250-60.000	A	1.357	0.000	0.000	7.480	0.000	0.105
		B		0.000	0.000	7.480	0.000	0.111
		C		0.000	0.000	14.058	0.000	0.151
L16	60.000-59.750	A	1.353	0.000	0.000	0.318	0.000	0.006
		B		0.000	0.000	0.318	0.000	0.006
		C		0.000	0.000	0.823	0.000	0.009
L17	59.750-54.750	A	1.347	0.000	0.000	6.347	0.000	0.118
		B		0.000	0.000	6.347	0.000	0.128
		C		0.000	0.000	16.425	0.000	0.188
L18	54.750-49.750	A	1.335	0.000	0.000	6.335	0.000	0.118
		B		0.000	0.000	6.335	0.000	0.127
		C		0.000	0.000	16.361	0.000	0.186
L19	49.750-44.750	A	1.322	0.000	0.000	8.680	0.000	0.136
		B		0.000	0.000	8.680	0.000	0.145
		C		0.000	0.000	18.649	0.000	0.202
L20	44.750-40.000	A	1.307	0.000	0.000	11.749	0.000	0.155
		B		0.000	0.000	11.749	0.000	0.164
		C		0.000	0.000	21.162	0.000	0.217
L21	40.000-39.750	A	1.299	0.000	0.000	0.336	0.000	0.006

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B		0.000	0.000	0.336	0.000	0.006
		C		0.000	0.000	0.830	0.000	0.009
L22	39.750-34.750	A	1.291	0.000	0.000	6.707	0.000	0.119
		B		0.000	0.000	6.707	0.000	0.129
		C		0.000	0.000	16.545	0.000	0.183
L23	34.750-29.750	A	1.272	0.000	0.000	6.689	0.000	0.119
		B		0.000	0.000	6.689	0.000	0.128
		C		0.000	0.000	16.448	0.000	0.179
L24	29.750-24.750	A	1.251	0.000	0.000	12.918	0.000	0.162
		B		0.000	0.000	12.918	0.000	0.171
		C		0.000	0.000	22.587	0.000	0.220
L25	24.750-20.000	A	1.226	0.000	0.000	13.541	0.000	0.160
		B		0.000	0.000	13.541	0.000	0.169
		C		0.000	0.000	22.627	0.000	0.213
L26	20.000-19.750	A	1.212	0.000	0.000	0.415	0.000	0.006
		B		0.000	0.000	0.415	0.000	0.007
		C		0.000	0.000	0.890	0.000	0.009
L27	19.750-14.750	A	1.195	0.000	0.000	8.278	0.000	0.124
		B		0.000	0.000	8.278	0.000	0.134
		C		0.000	0.000	17.709	0.000	0.176
L28	14.750-9.750	A	1.155	0.000	0.000	8.238	0.000	0.122
		B		0.000	0.000	8.238	0.000	0.131
		C		0.000	0.000	17.498	0.000	0.170
L29	9.750-4.750	A	1.096	0.000	0.000	8.179	0.000	0.119
		B		0.000	0.000	8.179	0.000	0.128
		C		0.000	0.000	17.188	0.000	0.160
L30	4.750-0.000	A	0.980	0.000	0.000	7.660	0.000	0.107
		B		0.000	0.000	7.660	0.000	0.116
		C		0.000	0.000	15.752	0.000	0.135

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	125.000-120.000	-0.015	0.369	-0.161	2.256
L2	120.000-115.000	-0.015	0.369	-0.160	2.250
L3	115.000-110.000	-0.015	0.369	-0.160	2.243
L4	110.000-105.000	-0.015	0.369	-0.159	2.236
L5	105.000-100.000	-0.015	0.369	-0.159	2.229
L6	100.000-95.000	-0.016	0.370	-0.167	2.345
L7	95.000-90.000	-0.016	0.370	-0.166	2.336
L8	90.000-85.000	-3.110	3.948	-2.699	4.452
L9	85.000-80.000	-3.110	3.948	-2.697	4.444
L10	80.000-75.000	-2.913	3.700	-2.755	4.546
L11	75.000-73.500	-1.487	1.889	-1.857	3.062
L12	73.500-73.250	-1.487	1.889	-1.856	3.061
L13	73.250-68.250	-1.487	1.889	-1.855	3.057
L14	68.250-63.250	-0.942	1.196	-1.575	2.594
L15	63.250-60.000	-0.823	1.044	-1.384	2.277
L16	60.000-59.750	-1.636	2.079	-1.993	3.282
L17	59.750-54.750	-1.636	2.079	-1.991	3.277
L18	54.750-49.750	-1.636	2.079	-1.987	3.266
L19	49.750-44.750	-1.369	1.739	-1.752	2.877
L20	44.750-40.000	-0.869	1.103	-1.466	2.404
L21	40.000-39.750	-1.701	2.161	-2.083	3.416
L22	39.750-34.750	-1.701	2.161	-2.079	3.408

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L23	34.750-29.750	-1.701	2.161	-2.072	3.390
L24	29.750-24.750	-0.898	1.141	-1.545	2.522
L25	24.750-20.000	-0.845	1.073	-1.454	2.368
L26	20.000-19.750	-1.584	2.013	-2.015	3.279
L27	19.750-14.750	-1.584	2.013	-2.008	3.261
L28	14.750-9.750	-1.584	2.013	-1.990	3.219
L29	9.750-4.750	-1.584	2.013	-1.964	3.156
L30	4.750-0.000	-1.584	2.013	-1.912	3.030

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	36	Climbing Rungs	120.00 - 125.00	1.0000	1.0000
L1	37	Safety Line 3/8	120.00 - 125.00	1.0000	1.0000
L2	36	Climbing Rungs	115.00 - 120.00	1.0000	1.0000
L2	37	Safety Line 3/8	115.00 - 120.00	1.0000	1.0000
L3	36	Climbing Rungs	110.00 - 115.00	1.0000	1.0000
L3	37	Safety Line 3/8	110.00 - 115.00	1.0000	1.0000
L4	36	Climbing Rungs	105.00 - 110.00	1.0000	1.0000
L4	37	Safety Line 3/8	105.00 - 110.00	1.0000	1.0000
L5	36	Climbing Rungs	100.00 - 105.00	1.0000	1.0000
L5	37	Safety Line 3/8	100.00 - 105.00	1.0000	1.0000
L6	36	Climbing Rungs	95.00 - 100.00	1.0000	1.0000
L6	37	Safety Line 3/8	95.00 - 100.00	1.0000	1.0000
L7	36	Climbing Rungs	90.00 - 95.00	1.0000	1.0000
L7	37	Safety Line 3/8	90.00 - 95.00	1.0000	1.0000
L8	15	LDF4-50A(1/2)	85.00 - 90.00	1.0000	1.0000
L8	18	HB114-1-0813U4-M5J(1-1/4)	85.00 - 90.00	1.0000	1.0000
L8	36	Climbing Rungs	85.00 - 90.00	1.0000	1.0000
L8	37	Safety Line 3/8	85.00 - 90.00	1.0000	1.0000
L9	15	LDF4-50A(1/2)	80.00 - 85.00	1.0000	1.0000
L9	18	HB114-1-0813U4-M5J(1-1/4)	80.00 - 85.00	1.0000	1.0000
L9	36	Climbing Rungs	80.00 - 85.00	1.0000	1.0000
L9	37	Safety Line 3/8	80.00 - 85.00	1.0000	1.0000
L10	15	LDF4-50A(1/2)	75.00 - 80.00	1.0000	1.0000
L10	18	HB114-1-0813U4-M5J(1-1/4)	75.00 - 80.00	1.0000	1.0000
L10	32	CCI 6" x 1" Plate	75.00 - 75.50	1.0000	1.0000
L10	33	CCI 6" x 1" Plate	75.00 - 75.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L10	34	CCI 6" x 1" Plate	75.00 - 75.50	1.0000	1.0000
L10	36	Climbing Rungs	75.00 - 80.00	1.0000	1.0000
L10	37	Safety Line 3/8	75.00 - 80.00	1.0000	1.0000
L11	15	LDF4-50A(1/2)	73.50 - 75.00	1.0000	1.0000
L11	18	HB114-1-0813U4-M5J(1-1/4)	73.50 - 75.00	1.0000	1.0000
L11	32	CCI 6" x 1" Plate	73.50 - 75.00	1.0000	1.0000
L11	33	CCI 6" x 1" Plate	73.50 - 75.00	1.0000	1.0000
L11	34	CCI 6" x 1" Plate	73.50 - 75.00	1.0000	1.0000
L11	36	Climbing Rungs	73.50 - 75.00	1.0000	1.0000
L11	37	Safety Line 3/8	73.50 - 75.00	1.0000	1.0000
L12	15	LDF4-50A(1/2)	73.25 - 73.50	1.0000	1.0000
L12	18	HB114-1-0813U4-M5J(1-1/4)	73.25 - 73.50	1.0000	1.0000
L12	32	CCI 6" x 1" Plate	73.25 - 73.50	1.0000	1.0000
L12	33	CCI 6" x 1" Plate	73.25 - 73.50	1.0000	1.0000
L12	34	CCI 6" x 1" Plate	73.25 - 73.50	1.0000	1.0000
L12	36	Climbing Rungs	73.25 - 73.50	1.0000	1.0000
L12	37	Safety Line 3/8	73.25 - 73.50	1.0000	1.0000
L13	15	LDF4-50A(1/2)	68.25 - 73.25	1.0000	1.0000
L13	18	HB114-1-0813U4-M5J(1-1/4)	68.25 - 73.25	1.0000	1.0000
L13	32	CCI 6" x 1" Plate	68.25 - 73.25	1.0000	1.0000
L13	33	CCI 6" x 1" Plate	68.25 - 73.25	1.0000	1.0000
L13	34	CCI 6" x 1" Plate	68.25 - 73.25	1.0000	1.0000
L13	36	Climbing Rungs	68.25 - 73.25	1.0000	1.0000
L13	37	Safety Line 3/8	68.25 - 73.25	1.0000	1.0000
L14	15	LDF4-50A(1/2)	63.25 - 68.25	1.0000	1.0000
L14	18	HB114-1-0813U4-M5J(1-1/4)	63.25 - 68.25	1.0000	1.0000
L14	28	CCI 6" x 1" Plate	63.25 - 65.50	1.0000	1.0000
L14	29	CCI 6" x 1" Plate	63.25 - 65.50	1.0000	1.0000
L14	30	CCI 6" x 1" Plate	63.25 - 65.50	1.0000	1.0000
L14	32	CCI 6" x 1" Plate	63.25 - 68.25	1.0000	1.0000
L14	33	CCI 6" x 1" Plate	63.25 - 68.25	1.0000	1.0000
L14	34	CCI 6" x 1" Plate	63.25 - 68.25	1.0000	1.0000
L14	36	Climbing Rungs	63.25 - 68.25	1.0000	1.0000
L14	37	Safety Line 3/8	63.25 - 68.25	1.0000	1.0000
L15	15	LDF4-50A(1/2)	60.00 - 63.25	1.0000	1.0000
L15	18	HB114-1-0813U4-M5J(1-1/4)	60.00 - 63.25	1.0000	1.0000
L15	28	CCI 6" x 1" Plate	60.00 - 63.25	1.0000	1.0000
L15	29	CCI 6" x 1" Plate	60.00 - 63.25	1.0000	1.0000
L15	30	CCI 6" x 1" Plate	60.00 - 63.25	1.0000	1.0000
L15	32	CCI 6" x 1" Plate	60.50 - 63.25	1.0000	1.0000
L15	33	CCI 6" x 1" Plate	60.50 - 63.25	1.0000	1.0000
L15	34	CCI 6" x 1" Plate	60.50 - 63.25	1.0000	1.0000
L15	36	Climbing Rungs	60.00 - 63.25	1.0000	1.0000
L15	37	Safety Line 3/8	60.00 - 63.25	1.0000	1.0000
L16	15	LDF4-50A(1/2)	59.75 - 60.00	1.0000	1.0000
L16	18	HB114-1-0813U4-M5J(1-1/4)	59.75 - 60.00	1.0000	1.0000
L16	28	CCI 6" x 1" Plate	59.75 - 60.00	1.0000	1.0000
L16	29	CCI 6" x 1" Plate	59.75 - 60.00	1.0000	1.0000
L16	30	CCI 6" x 1" Plate	59.75 - 60.00	1.0000	1.0000
L16	36	Climbing Rungs	59.75 - 60.00	1.0000	1.0000
L16	37	Safety Line 3/8	59.75 - 60.00	1.0000	1.0000
L17	15	LDF4-50A(1/2)	54.75 - 59.75	1.0000	1.0000
L17	18	HB114-1-0813U4-M5J(1-1/4)	54.75 - 59.75	1.0000	1.0000
L17	28	CCI 6" x 1" Plate	54.75 - 59.75	1.0000	1.0000
L17	29	CCI 6" x 1" Plate	54.75 - 59.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L17	30	CCI 6" x 1" Plate	54.75 - 59.75	1.0000	1.0000
L17	36	Climbing Rungs	54.75 - 59.75	1.0000	1.0000
L17	37	Safety Line 3/8	54.75 - 59.75	1.0000	1.0000
L18	15	LDF4-50A(1/2)	49.75 - 54.75	1.0000	1.0000
L18	18	HB114-1-0813U4-M5J(1-1/4)	49.75 - 54.75	1.0000	1.0000
L18	28	CCI 6" x 1" Plate	49.75 - 54.75	1.0000	1.0000
L18	29	CCI 6" x 1" Plate	49.75 - 54.75	1.0000	1.0000
L18	30	CCI 6" x 1" Plate	49.75 - 54.75	1.0000	1.0000
L18	36	Climbing Rungs	49.75 - 54.75	1.0000	1.0000
L18	37	Safety Line 3/8	49.75 - 54.75	1.0000	1.0000
L19	15	LDF4-50A(1/2)	44.75 - 49.75	1.0000	1.0000
L19	18	HB114-1-0813U4-M5J(1-1/4)	44.75 - 49.75	1.0000	1.0000
L19	24	CCI 6.5" x 1.25" Plate	44.75 - 46.50	1.0000	1.0000
L19	25	CCI 6.5" x 1.25" Plate	44.75 - 46.50	1.0000	1.0000
L19	26	CCI 6.5" x 1.25" Plate	44.75 - 46.50	1.0000	1.0000
L19	28	CCI 6" x 1" Plate	44.75 - 49.75	1.0000	1.0000
L19	29	CCI 6" x 1" Plate	44.75 - 49.75	1.0000	1.0000
L19	30	CCI 6" x 1" Plate	44.75 - 49.75	1.0000	1.0000
L19	36	Climbing Rungs	44.75 - 49.75	1.0000	1.0000
L19	37	Safety Line 3/8	44.75 - 49.75	1.0000	1.0000
L20	15	LDF4-50A(1/2)	40.00 - 44.75	1.0000	1.0000
L20	18	HB114-1-0813U4-M5J(1-1/4)	40.00 - 44.75	1.0000	1.0000
L20	24	CCI 6.5" x 1.25" Plate	40.00 - 44.75	1.0000	1.0000
L20	25	CCI 6.5" x 1.25" Plate	40.00 - 44.75	1.0000	1.0000
L20	26	CCI 6.5" x 1.25" Plate	40.00 - 44.75	1.0000	1.0000
L20	28	CCI 6" x 1" Plate	40.50 - 44.75	1.0000	1.0000
L20	29	CCI 6" x 1" Plate	40.50 - 44.75	1.0000	1.0000
L20	30	CCI 6" x 1" Plate	40.50 - 44.75	1.0000	1.0000
L20	36	Climbing Rungs	40.00 - 44.75	1.0000	1.0000
L20	37	Safety Line 3/8	40.00 - 44.75	1.0000	1.0000
L21	15	LDF4-50A(1/2)	39.75 - 40.00	1.0000	1.0000
L21	18	HB114-1-0813U4-M5J(1-1/4)	39.75 - 40.00	1.0000	1.0000
L21	24	CCI 6.5" x 1.25" Plate	39.75 - 40.00	1.0000	1.0000
L21	25	CCI 6.5" x 1.25" Plate	39.75 - 40.00	1.0000	1.0000
L21	26	CCI 6.5" x 1.25" Plate	39.75 - 40.00	1.0000	1.0000
L21	36	Climbing Rungs	39.75 - 40.00	1.0000	1.0000
L21	37	Safety Line 3/8	39.75 - 40.00	1.0000	1.0000
L22	15	LDF4-50A(1/2)	34.75 - 39.75	1.0000	1.0000
L22	18	HB114-1-0813U4-M5J(1-1/4)	34.75 - 39.75	1.0000	1.0000
L22	24	CCI 6.5" x 1.25" Plate	34.75 - 39.75	1.0000	1.0000
L22	25	CCI 6.5" x 1.25" Plate	34.75 - 39.75	1.0000	1.0000
L22	26	CCI 6.5" x 1.25" Plate	34.75 - 39.75	1.0000	1.0000
L22	36	Climbing Rungs	34.75 - 39.75	1.0000	1.0000
L22	37	Safety Line 3/8	34.75 - 39.75	1.0000	1.0000
L23	15	LDF4-50A(1/2)	29.75 - 34.75	1.0000	1.0000
L23	18	HB114-1-0813U4-M5J(1-1/4)	29.75 - 34.75	1.0000	1.0000
L23	24	CCI 6.5" x 1.25" Plate	29.75 - 34.75	1.0000	1.0000
L23	25	CCI 6.5" x 1.25" Plate	29.75 - 34.75	1.0000	1.0000
L23	26	CCI 6.5" x 1.25" Plate	29.75 - 34.75	1.0000	1.0000
L23	36	Climbing Rungs	29.75 - 34.75	1.0000	1.0000
L23	37	Safety Line 3/8	29.75 - 34.75	1.0000	1.0000
L24	15	LDF4-50A(1/2)	24.75 - 29.75	1.0000	1.0000
L24	18	HB114-1-0813U4-M5J(1-1/4)	24.75 - 29.75	1.0000	1.0000
L24	20	CCI 8.5" x 1.25" Plate	24.75 - 28.50	1.0000	1.0000
L24	21	CCI 8.5" x 1.25" Plate	24.75 - 28.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L24	22	CCI 8.5" x 1.25" Plate	24.75 - 28.50	1.0000	1.0000
L24	24	CCI 6.5" x 1.25" Plate	24.75 - 29.75	1.0000	1.0000
L24	25	CCI 6.5" x 1.25" Plate	24.75 - 29.75	1.0000	1.0000
L24	26	CCI 6.5" x 1.25" Plate	24.75 - 29.75	1.0000	1.0000
L24	36	Climbing Rungs	24.75 - 29.75	1.0000	1.0000
L24	37	Safety Line 3/8	24.75 - 29.75	1.0000	1.0000
L25	15	LDF4-50A(1/2)	20.00 - 24.75	1.0000	1.0000
L25	18	HB114-1-0813U4-M5J(1-1/4)	20.00 - 24.75	1.0000	1.0000
L25	20	CCI 8.5" x 1.25" Plate	20.00 - 24.75	1.0000	1.0000
L25	21	CCI 8.5" x 1.25" Plate	20.00 - 24.75	1.0000	1.0000
L25	22	CCI 8.5" x 1.25" Plate	20.00 - 24.75	1.0000	1.0000
L25	24	CCI 6.5" x 1.25" Plate	20.50 - 24.75	1.0000	1.0000
L25	25	CCI 6.5" x 1.25" Plate	20.50 - 24.75	1.0000	1.0000
L25	26	CCI 6.5" x 1.25" Plate	20.50 - 24.75	1.0000	1.0000
L25	36	Climbing Rungs	20.00 - 24.75	1.0000	1.0000
L25	37	Safety Line 3/8	20.00 - 24.75	1.0000	1.0000
L26	15	LDF4-50A(1/2)	19.75 - 20.00	1.0000	1.0000
L26	18	HB114-1-0813U4-M5J(1-1/4)	19.75 - 20.00	1.0000	1.0000
L26	20	CCI 8.5" x 1.25" Plate	19.75 - 20.00	1.0000	1.0000
L26	21	CCI 8.5" x 1.25" Plate	19.75 - 20.00	1.0000	1.0000
L26	22	CCI 8.5" x 1.25" Plate	19.75 - 20.00	1.0000	1.0000
L26	36	Climbing Rungs	19.75 - 20.00	1.0000	1.0000
L26	37	Safety Line 3/8	19.75 - 20.00	1.0000	1.0000
L27	15	LDF4-50A(1/2)	14.75 - 19.75	1.0000	1.0000
L27	18	HB114-1-0813U4-M5J(1-1/4)	14.75 - 19.75	1.0000	1.0000
L27	20	CCI 8.5" x 1.25" Plate	14.75 - 19.75	1.0000	1.0000
L27	21	CCI 8.5" x 1.25" Plate	14.75 - 19.75	1.0000	1.0000
L27	22	CCI 8.5" x 1.25" Plate	14.75 - 19.75	1.0000	1.0000
L27	36	Climbing Rungs	14.75 - 19.75	1.0000	1.0000
L27	37	Safety Line 3/8	14.75 - 19.75	1.0000	1.0000
L28	15	LDF4-50A(1/2)	9.75 - 14.75	1.0000	1.0000
L28	18	HB114-1-0813U4-M5J(1-1/4)	9.75 - 14.75	1.0000	1.0000
L28	20	CCI 8.5" x 1.25" Plate	9.75 - 14.75	1.0000	1.0000
L28	21	CCI 8.5" x 1.25" Plate	9.75 - 14.75	1.0000	1.0000
L28	22	CCI 8.5" x 1.25" Plate	9.75 - 14.75	1.0000	1.0000
L28	36	Climbing Rungs	9.75 - 14.75	1.0000	1.0000
L28	37	Safety Line 3/8	9.75 - 14.75	1.0000	1.0000
L29	15	LDF4-50A(1/2)	4.75 - 9.75	1.0000	1.0000
L29	18	HB114-1-0813U4-M5J(1-1/4)	4.75 - 9.75	1.0000	1.0000
L29	20	CCI 8.5" x 1.25" Plate	4.75 - 9.75	1.0000	1.0000
L29	21	CCI 8.5" x 1.25" Plate	4.75 - 9.75	1.0000	1.0000
L29	22	CCI 8.5" x 1.25" Plate	4.75 - 9.75	1.0000	1.0000
L29	36	Climbing Rungs	4.75 - 9.75	1.0000	1.0000
L29	37	Safety Line 3/8	4.75 - 9.75	1.0000	1.0000
L30	15	LDF4-50A(1/2)	0.00 - 4.75	1.0000	1.0000
L30	18	HB114-1-0813U4-M5J(1-1/4)	0.00 - 4.75	1.0000	1.0000
L30	20	CCI 8.5" x 1.25" Plate	0.00 - 4.75	1.0000	1.0000
L30	21	CCI 8.5" x 1.25" Plate	0.00 - 4.75	1.0000	1.0000
L30	22	CCI 8.5" x 1.25" Plate	0.00 - 4.75	1.0000	1.0000
L30	36	Climbing Rungs	0.00 - 4.75	1.0000	1.0000
L30	37	Safety Line 3/8	0.00 - 4.75	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
ERICSSON AIR 21 B2A B4P w/ Mount Pipe (E)	A	From Leg	4.000 0.000 0.000	0.000	122.000	No Ice 1/2" Ice 1" Ice 2" Ice	6.329 6.775 7.214 8.117	5.642 6.426 7.131 8.591	0.112 0.169 0.233 0.383
ERICSSON AIR 21 B2A B4P w/ Mount Pipe (E)	B	From Leg	4.000 0.000 0.000	0.000	122.000	No Ice 1/2" Ice 1" Ice 2" Ice	6.329 6.775 7.214 8.117	5.642 6.426 7.131 8.591	0.112 0.169 0.233 0.383
ERICSSON AIR 21 B2A B4P w/ Mount Pipe (E)	C	From Leg	4.000 0.000 0.000	0.000	122.000	No Ice 1/2" Ice 1" Ice 2" Ice	6.329 6.775 7.214 8.117	5.642 6.426 7.131 8.591	0.112 0.169 0.233 0.383
KRY 112 144/1 (E)	A	From Leg	4.000 0.000 0.000	0.000	122.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.350 0.426 0.509 0.698	0.175 0.234 0.301 0.456	0.011 0.014 0.019 0.032
KRY 112 144/1 (E)	B	From Leg	4.000 0.000 0.000	0.000	122.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.350 0.426 0.509 0.698	0.175 0.234 0.301 0.456	0.011 0.014 0.019 0.032
KRY 112 144/1 (E)	C	From Leg	4.000 0.000 0.000	0.000	122.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.350 0.426 0.509 0.698	0.175 0.234 0.301 0.456	0.011 0.014 0.019 0.032
AIR 32 B2A/B66AA w/ Mount Pipe (P)	A	From Leg	4.000 0.000 0.000	0.000	122.000	No Ice 1/2" Ice 1" Ice 2" Ice	6.747 7.202 7.648 8.565	6.070 6.867 7.583 9.063	0.153 0.214 0.282 0.441
AIR 32 B2A/B66AA w/ Mount Pipe (P)	B	From Leg	4.000 0.000 0.000	0.000	122.000	No Ice 1/2" Ice 1" Ice 2" Ice	6.747 7.202 7.648 8.565	6.070 6.867 7.583 9.063	0.153 0.214 0.282 0.441
AIR 32 B2A/B66AA w/ Mount Pipe (P)	C	From Leg	4.000 0.000 0.000	0.000	122.000	No Ice 1/2" Ice 1" Ice 2" Ice	6.747 7.202 7.648 8.565	6.070 6.867 7.583 9.063	0.153 0.214 0.282 0.441
APXVAARR24_43-U-NA20 w/ Mount Pipe (P)	A	From Leg	4.000 0.000 0.000	0.000	122.000	No Ice 1/2" Ice 1" Ice 2" Ice	20.480 21.231 21.990 23.444	11.024 12.550 14.099 16.451	0.161 0.297 0.444 0.775
APXVAARR24_43-U-NA20 w/ Mount Pipe (P)	B	From Leg	4.000 0.000 0.000	0.000	122.000	No Ice 1/2" Ice 1" Ice 2" Ice	20.480 21.231 21.990 23.444	11.024 12.550 14.099 16.451	0.161 0.297 0.444 0.775
APXVAARR24_43-U-NA20 w/ Mount Pipe (P)	C	From Leg	4.000 0.000 0.000	0.000	122.000	No Ice 1/2" Ice 1" Ice 2" Ice	20.480 21.231 21.990 23.444	11.024 12.550 14.099 16.451	0.161 0.297 0.444 0.775
RADIO 4449 B12/B71 (P)	A	From Leg	4.000 0.000 0.000	0.000	122.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.650 1.810 1.978 2.336	1.300 1.445 1.597 1.924	0.075 0.092 0.112 0.161

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
RADIO 4449 B12/B71 (P)	B	From Leg	4.000 0.000 0.000	0.000	122.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.650 1.810 1.978 2.336	1.300 1.445 1.597 1.924	0.075 0.092 0.112 0.161
RADIO 4449 B12/B71 (P)	C	From Leg	4.000 0.000 0.000	0.000	122.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.650 1.810 1.978 2.336	1.300 1.445 1.597 1.924	0.075 0.092 0.112 0.161
17' x 2.375" Horizontal Mount Pipe (P-Mount Mod)	A	From Leg	4.000 0.000 0.000	0.000	122.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.037 5.766 7.510 11.050	4.037 5.766 7.510 11.050	0.080 0.110 0.151 0.266
17' x 2.375" Horizontal Mount Pipe (P-Mount Mod)	B	From Leg	4.000 0.000 0.000	0.000	122.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.037 5.766 7.510 11.050	4.037 5.766 7.510 11.050	0.080 0.110 0.151 0.266
17' x 2.375" Horizontal Mount Pipe (P-Mount Mod)	C	From Leg	4.000 0.000 0.000	0.000	122.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.037 5.766 7.510 11.050	4.037 5.766 7.510 11.050	0.080 0.110 0.151 0.266
L 2 1/2x2 1/2x1/4x15.62" (P-Mount Mod)	A	From Leg	4.000 0.000 0.000	0.000	122.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.325 0.430 0.542 0.787	0.007 0.025 0.051 0.126	0.020 0.022 0.025 0.037
L 2 1/2x2 1/2x1/4x15.62" (P-Mount Mod)	B	From Leg	4.000 0.000 0.000	0.000	122.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.325 0.430 0.542 0.787	0.007 0.025 0.051 0.126	0.020 0.022 0.025 0.037
L 2 1/2x2 1/2x1/4x15.62" (P-Mount Mod)	C	From Leg	4.000 0.000 0.000	0.000	122.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.325 0.430 0.542 0.787	0.007 0.025 0.051 0.126	0.020 0.022 0.025 0.037
Platform Mount [LP 405-1] (E)	C	None		0.000	122.000	No Ice 1/2" Ice 1" Ice 2" Ice	20.800 28.100 35.400 50.000	20.800 28.100 35.400 50.000	1.800 2.066 2.332 2.864
&&									
(2) HBXX-6517DS-A2M w/ Mount Pipe (E)	A	From Leg	4.000 0.000 1.000	0.000	112.000	No Ice 1/2" Ice 1" Ice 2" Ice	8.765 9.342 9.889 10.994	6.963 8.182 9.144 11.022	0.067 0.137 0.215 0.398
(2) HBXX-6517DS-A2M w/ Mount Pipe (E)	B	From Leg	4.000 0.000 1.000	0.000	112.000	No Ice 1/2" Ice 1" Ice 2" Ice	8.765 9.342 9.889 10.994	6.963 8.182 9.144 11.022	0.067 0.137 0.215 0.398
(2) HBXX-6517DS-A2M w/ Mount Pipe (E)	C	From Leg	4.000 0.000 1.000	0.000	112.000	No Ice 1/2" Ice 1" Ice 2" Ice	8.765 9.342 9.889 10.994	6.963 8.182 9.144 11.022	0.067 0.137 0.215 0.398
(2) LNX-6514DS-A1M w/ Mount Pipe (E)	A	From Leg	4.000 0.000 1.000	0.000	112.000	No Ice 1/2" Ice 1" Ice 2" Ice	8.411 8.975 9.505 10.585	7.082 8.273 9.185 11.023	0.065 0.134 0.211 0.393
(2) LNX-6514DS-A1M w/ Mount Pipe (E)	B	From Leg	4.000 0.000 1.000	0.000	112.000	No Ice 1/2" Ice 1" Ice 2" Ice	8.411 8.975 9.505 10.585	7.082 8.273 9.185 11.023	0.065 0.134 0.211 0.393

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) LNX-6514DS-A1M w/ Mount Pipe (E)	C	From Leg	4.000 0.000 1.000	0.000	112.000	No Ice 1/2" Ice 1" Ice 2" Ice	8.411 8.975 9.505 10.585	7.082 8.273 9.185 11.023	0.065 0.134 0.211 0.393
B4 RRH2X60-4R (E)	A	From Leg	4.000 0.000 1.000	0.000	112.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.356 3.613 3.877 4.425	2.005 2.238 2.477 2.976	0.055 0.078 0.105 0.170
B4 RRH2X60-4R (E)	B	From Leg	4.000 0.000 1.000	0.000	112.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.356 3.613 3.877 4.425	2.005 2.238 2.477 2.976	0.055 0.078 0.105 0.170
B4 RRH2X60-4R (E)	C	From Leg	4.000 0.000 1.000	0.000	112.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.356 3.613 3.877 4.425	2.005 2.238 2.477 2.976	0.055 0.078 0.105 0.170
B13 RRH 4X30 (E)	A	From Leg	4.000 0.000 1.000	0.000	112.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.055 2.241 2.433 2.841	1.320 1.475 1.638 1.997	0.056 0.073 0.093 0.142
B13 RRH 4X30 (E)	B	From Leg	4.000 0.000 1.000	0.000	112.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.055 2.241 2.433 2.841	1.320 1.475 1.638 1.997	0.056 0.073 0.093 0.142
B13 RRH 4X30 (E)	C	From Leg	4.000 0.000 1.000	0.000	112.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.055 2.241 2.433 2.841	1.320 1.475 1.638 1.997	0.056 0.073 0.093 0.142
RXXDC-3315-PF-48 (E)	A	From Leg	4.000 0.000 1.000	0.000	112.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.708 3.950 4.200 4.723	2.192 2.395 2.606 3.049	0.032 0.062 0.097 0.176
RXXDC-3315-PF-48 (E)	B	From Leg	4.000 0.000 1.000	0.000	112.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.708 3.950 4.200 4.723	2.192 2.395 2.606 3.049	0.032 0.062 0.097 0.176
Platform Mount [LP 303-1] (E)	C	None		0.000	112.000	No Ice 1/2" Ice 1" Ice 2" Ice	14.660 18.870 23.080 31.500	14.660 18.870 23.080 31.500	1.250 1.481 1.713 2.175
&& 7770.00 w/ Mount Pipe (E)	A	From Leg	4.000 0.000 0.000	0.000	100.000	No Ice 1/2" Ice 1" Ice 2" Ice	5.746 6.179 6.607 7.488	4.254 5.014 5.711 7.155	0.055 0.103 0.157 0.287
7770.00 w/ Mount Pipe (E)	C	From Leg	4.000 0.000 0.000	0.000	100.000	No Ice 1/2" Ice 1" Ice 2" Ice	5.746 6.179 6.607 7.488	4.254 5.014 5.711 7.155	0.055 0.103 0.157 0.287
HPA-65R-BUU-H6 w/ Mount Pipe (E)	A	From Leg	4.000 0.000 0.000	0.000	100.000	No Ice 1/2" Ice 1" Ice 2" Ice	9.895 10.470 11.010 12.112	8.113 9.304 10.209 12.014	0.077 0.158 0.248 0.456
SBNHH-1D65A w/ Mount Pipe (E)	B	From Leg	4.000 0.000 0.000	0.000	100.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.040 3.340 3.650 4.310	2.450 2.750 3.050 3.680	0.054 0.104 0.162 0.307

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
SBNHH-1D65A w/ Mount Pipe	C	From Leg	4.000	0.000	100.000	No Ice	3.040	2.450	0.054
(E)			0.000			1/2" Ice	3.340	2.750	0.104
			0.000			1" Ice	3.650	3.050	0.162
						2" Ice	4.310	3.680	0.307
DC6-48-60-18-8F	A	From Leg	4.000	0.000	100.000	No Ice	1.212	1.212	0.033
(E)			0.000			1/2" Ice	1.892	1.892	0.055
			0.000			1" Ice	2.105	2.105	0.080
						2" Ice	2.570	2.570	0.138
(2) LGP21401	A	From Leg	4.000	0.000	100.000	No Ice	1.104	0.207	0.014
(E)			0.000			1/2" Ice	1.239	0.274	0.021
			0.000			1" Ice	1.381	0.348	0.030
						2" Ice	1.688	0.521	0.055
(2) LGP21401	B	From Leg	4.000	0.000	100.000	No Ice	1.104	0.207	0.014
(E)			0.000			1/2" Ice	1.239	0.274	0.021
			0.000			1" Ice	1.381	0.348	0.030
						2" Ice	1.688	0.521	0.055
(2) LGP21401	C	From Leg	4.000	0.000	100.000	No Ice	1.104	0.207	0.014
(E)			0.000			1/2" Ice	1.239	0.274	0.021
			0.000			1" Ice	1.381	0.348	0.030
						2" Ice	1.688	0.521	0.055
(2) 80010965 w/ Mount Pipe	A	From Leg	4.000	0.000	100.000	No Ice	14.051	7.628	0.125
(R)			0.000			1/2" Ice	14.688	8.903	0.222
			0.000			1" Ice	15.303	9.963	0.327
						2" Ice	16.530	11.925	0.569
(2) 80010964 w/ Mount Pipe	B	From Leg	4.000	0.000	100.000	No Ice	10.235	5.509	0.105
(R)			0.000			1/2" Ice	10.742	6.369	0.180
			0.000			1" Ice	11.237	7.119	0.262
						2" Ice	12.252	8.643	0.451
(2) 80010964 w/ Mount Pipe	C	From Leg	4.000	0.000	100.000	No Ice	10.235	5.509	0.105
(R)			0.000			1/2" Ice	10.742	6.369	0.180
			0.000			1" Ice	11.237	7.119	0.262
						2" Ice	12.252	8.643	0.451
SBNHH-1D65A w/ Mount Pipe	B	From Leg	4.000	0.000	100.000	No Ice	3.040	2.450	0.054
(R)			0.000			1/2" Ice	3.340	2.750	0.104
			0.000			1" Ice	3.650	3.050	0.162
						2" Ice	4.310	3.680	0.307
RRUS 8843 B2/B66A	A	From Leg	4.000	0.000	100.000	No Ice	1.639	1.353	0.072
(R)			0.000			1/2" Ice	1.799	1.500	0.090
			0.000			1" Ice	1.966	1.655	0.110
						2" Ice	2.323	1.986	0.159
RRUS 8843 B2/B66A	B	From Leg	4.000	0.000	100.000	No Ice	1.639	1.353	0.072
(R)			0.000			1/2" Ice	1.799	1.500	0.090
			0.000			1" Ice	1.966	1.655	0.110
						2" Ice	2.323	1.986	0.159
RRUS 8843 B2/B66A	C	From Leg	4.000	0.000	100.000	No Ice	1.639	1.353	0.072
(R)			0.000			1/2" Ice	1.799	1.500	0.090
			0.000			1" Ice	1.966	1.655	0.110
						2" Ice	2.323	1.986	0.159
RRUS 4449 B5/B12	A	From Leg	4.000	0.000	100.000	No Ice	1.968	1.408	0.071
(R)			0.000			1/2" Ice	2.144	1.564	0.090
			0.000			1" Ice	2.328	1.727	0.111
						2" Ice	2.718	2.075	0.163
RRUS 4449 B5/B12	B	From Leg	4.000	0.000	100.000	No Ice	1.968	1.408	0.071
(R)			0.000			1/2" Ice	2.144	1.564	0.090
			0.000			1" Ice	2.328	1.727	0.111
						2" Ice	2.718	2.075	0.163
RRUS 4449 B5/B12	C	From Leg	4.000	0.000	100.000	No Ice	1.968	1.408	0.071

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)			0.000			1/2" Ice	2.144	1.564	0.090
			0.000			1" Ice	2.328	1.727	0.111
						2" Ice	2.718	2.075	0.163
DC6-48-60-18-8F	A	From Leg	4.000	0.000	100.000	No Ice	1.212	1.212	0.033
(R)			0.000			1/2" Ice	1.892	1.892	0.055
			0.000			1" Ice	2.105	2.105	0.080
						2" Ice	2.570	2.570	0.138
DC6-48-60-18-8F	B	From Leg	4.000	0.000	100.000	No Ice	1.212	1.212	0.033
(R)			0.000			1/2" Ice	1.892	1.892	0.055
			0.000			1" Ice	2.105	2.105	0.080
						2" Ice	2.570	2.570	0.138
RRUS 32	A	From Leg	4.000	0.000	100.000	No Ice	2.857	1.777	0.055
(R)			0.000			1/2" Ice	3.083	1.968	0.077
			0.000			1" Ice	3.316	2.166	0.103
						2" Ice	3.805	2.583	0.165
RRUS 32	B	From Leg	4.000	0.000	100.000	No Ice	2.857	1.777	0.055
(R)			0.000			1/2" Ice	3.083	1.968	0.077
			0.000			1" Ice	3.316	2.166	0.103
						2" Ice	3.805	2.583	0.165
RRUS 32	C	From Leg	4.000	0.000	100.000	No Ice	2.857	1.777	0.055
(R)			0.000			1/2" Ice	3.083	1.968	0.077
			0.000			1" Ice	3.316	2.166	0.103
						2" Ice	3.805	2.583	0.165
T-Arm Mount [TA 602-3]	C	None		0.000	100.000	No Ice	11.590	11.590	0.774
(E)						1/2" Ice	15.440	15.440	0.990
						1" Ice	19.290	19.290	1.206
						2" Ice	26.990	26.990	1.639
&&									
AIRPAIR ODU	A	From Leg	4.000	0.000	90.000	No Ice	1.007	0.456	0.012
(E)			0.000			1/2" Ice	1.141	0.561	0.019
			0.000			1" Ice	1.282	0.673	0.028
						2" Ice	1.587	0.919	0.053
AIRPAIR ODU	B	From Leg	4.000	0.000	90.000	No Ice	1.007	0.456	0.012
(E)			0.000			1/2" Ice	1.141	0.561	0.019
			0.000			1" Ice	1.282	0.673	0.028
						2" Ice	1.587	0.919	0.053
AIRPAIR ODU	C	From Leg	4.000	0.000	90.000	No Ice	1.007	0.456	0.012
(E)			0.000			1/2" Ice	1.141	0.561	0.019
			0.000			1" Ice	1.282	0.673	0.028
						2" Ice	1.587	0.919	0.053
NNVV-65B-R4 w/ Mount	A	From Leg	4.000	0.000	90.000	No Ice	12.509	7.413	0.103
Pipe			0.000			1/2" Ice	13.108	8.598	0.194
(R)			0.000			1" Ice	13.672	9.496	0.293
						2" Ice	14.822	11.328	0.520
NNVV-65B-R4 w/ Mount	B	From Leg	4.000	0.000	90.000	No Ice	12.509	7.413	0.103
Pipe			0.000			1/2" Ice	13.108	8.598	0.194
(R)			0.000			1" Ice	13.672	9.496	0.293
						2" Ice	14.822	11.328	0.520
NNVV-65B-R4 w/ Mount	C	From Leg	4.000	0.000	90.000	No Ice	12.509	7.413	0.103
Pipe			0.000			1/2" Ice	13.108	8.598	0.194
(R)			0.000			1" Ice	13.672	9.496	0.293
						2" Ice	14.822	11.328	0.520
APXVTM14-ALU-I20 w/	A	From Leg	4.000	0.000	90.000	No Ice	6.580	4.959	0.077
Mount Pipe			0.000			1/2" Ice	7.031	5.754	0.132
(R)			0.000			1" Ice	7.473	6.472	0.193
						2" Ice	8.385	7.941	0.339
APXVTM14-ALU-I20 w/	B	From Leg	4.000	0.000	90.000	No Ice	6.580	4.959	0.077

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
Mount Pipe			0.000			1/2" Ice	7.031	5.754	0.132
(R)			0.000			1" Ice	7.473	6.472	0.193
						2" Ice	8.385	7.941	0.339
APXVTM14-ALU-I20 w/	C	From Leg	4.000	0.000	90.000	No Ice	6.580	4.959	0.077
Mount Pipe			0.000			1/2" Ice	7.031	5.754	0.132
(R)			0.000			1" Ice	7.473	6.472	0.193
						2" Ice	8.385	7.941	0.339
(3) RRH2X50-800	A	From Leg	4.000	0.000	90.000	No Ice	1.701	1.282	0.053
(R)			0.000			1/2" Ice	1.864	1.428	0.070
			0.000			1" Ice	2.035	1.580	0.090
						2" Ice	2.398	1.908	0.138
(3) RRH2X50-800	C	From Leg	4.000	0.000	90.000	No Ice	1.701	1.282	0.053
(R)			0.000			1/2" Ice	1.864	1.428	0.070
			0.000			1" Ice	2.035	1.580	0.090
						2" Ice	2.398	1.908	0.138
PCS 1900MHZ	A	From Leg	4.000	0.000	90.000	No Ice	2.322	2.238	0.060
4X45W-65MHZ			0.000			1/2" Ice	2.527	2.441	0.083
(R)			0.000			1" Ice	2.739	2.651	0.110
						2" Ice	3.185	3.093	0.173
(2) PCS 1900MHZ	B	From Leg	4.000	0.000	90.000	No Ice	2.322	2.238	0.060
4X45W-65MHZ			0.000			1/2" Ice	2.527	2.441	0.083
(R)			0.000			1" Ice	2.739	2.651	0.110
						2" Ice	3.185	3.093	0.173
(2) TD-RRH8X20-25	B	From Leg	4.000	0.000	90.000	No Ice	4.045	1.535	0.070
(R)			0.000			1/2" Ice	4.298	1.714	0.097
			0.000			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	90.000	No Ice	4.045	1.535	0.070
(R)			0.000			1/2" Ice	4.298	1.714	0.097
			0.000			1" Ice	4.557	1.901	0.128
						2" Ice	5.098	2.295	0.201
Miscellaneous [NA 507-1]	C	None		0.000	90.000	No Ice	4.800	4.800	0.245
(R)						1/2" Ice	6.700	6.700	0.294
						1" Ice	8.600	8.600	0.343
						2" Ice	12.400	12.400	0.441
Platform Mount [LP 303-1]	C	None		0.000	90.000	No Ice	14.660	14.660	1.250
(R)						1/2" Ice	18.870	18.870	1.481
						1" Ice	23.080	23.080	1.713
						2" Ice	31.500	31.500	2.175
&&									

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
Dragonwave	B	Paraboloid	From	4.000	90.000		90.000	2.175	No Ice	3.715	0.027
A-ANT-18G-2-C		w/Shroud (HP)	Leg	0.000					1/2" Ice	4.006	0.048
(E)				0.000					1" Ice	4.296	0.068

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft²	Weight K
Dragonwave A-ANT-18G-2-C (E) *&&*	C	Paraboloid w/Shroud (HP)	From Leg	4.000 0.000 0.000	30.000		90.000	2.175	2" Ice No Ice 1/2" Ice 1" Ice 2" Ice	4.876 3.715 4.006 4.296 4.876	0.109 0.027 0.048 0.068 0.109

Load Combinations

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

Comb. No.	Description
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	125 - 120	Pole	Max Tension	14	0.000	0.000	0.000
			Max. Compression	26	-9.085	-0.002	-0.033
			Max. Mx	8	-4.743	-10.731	-0.003
			Max. My	14	-4.738	-0.001	-10.744
			Max. Vy	8	5.292	-10.731	-0.003
			Max. Vx	14	5.296	-0.001	-10.744
			Max. Torque	8			0.000
L2	120 - 115	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-9.989	-0.006	-0.064
			Max. Mx	8	-5.382	-37.922	-0.003
			Max. My	14	-5.378	-0.003	-37.961
			Max. Vy	8	5.584	-37.922	-0.003
			Max. Vx	14	5.589	-0.003	-37.961
			Max. Torque	10			-0.000
L3	115 - 110	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-17.836	-0.612	0.251
			Max. Mx	8	-8.761	-80.072	0.017
			Max. My	2	-8.758	-0.090	80.079
			Max. Vy	8	10.573	-80.072	0.017
			Max. Vx	14	10.607	-0.227	-79.960
			Max. Torque	12			0.392
L4	110 - 105	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-18.753	-0.617	0.220
			Max. Mx	8	-9.430	-133.622	-0.095
			Max. My	2	-9.427	0.021	133.764
			Max. Vy	8	10.848	-133.622	-0.095
			Max. Vx	14	10.883	-0.345	-133.685
			Max. Torque	12			0.392
L5	105 - 100	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-19.669	-0.617	0.187
			Max. Mx	8	-10.107	-188.514	-0.207
			Max. My	2	-10.104	0.133	188.792
			Max. Vy	8	11.111	-188.514	-0.207
			Max. Vx	14	11.146	-0.463	-188.755
			Max. Torque	12			0.392
L6	100 - 95	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-28.160	-1.147	2.459
			Max. Mx	8	-13.938	-265.365	0.342
			Max. My	2	-13.929	0.006	267.145
			Max. Vy	8	15.503	-265.365	0.342
			Max. Vx	14	15.712	-0.686	-265.810
			Max. Torque	20			-2.360
L7	95 - 90	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-29.351	-1.147	2.418
			Max. Mx	8	-14.849	-343.660	0.294
			Max. My	2	-14.840	0.050	346.430
			Max. Vy	8	15.819	-343.660	0.294
			Max. Vx	14	16.028	-0.738	-345.156

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	20			-2.360
L8	90 - 85	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-37.247	-1.631	1.342
			Max. Mx	8	-19.079	-442.143	0.309
			Max. My	2	-19.075	-0.170	444.650
			Max. Vy	8	19.812	-442.143	0.309
			Max. Vx	2	-19.868	-0.170	444.650
			Max. Torque	20			-2.360
L9	85 - 80	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-38.553	-1.631	1.147
			Max. Mx	8	-20.055	-541.850	0.606
			Max. My	2	-20.051	-0.248	544.592
			Max. Vy	8	20.080	-541.850	0.606
			Max. Vx	2	-20.137	-0.248	544.592
			Max. Torque	24			-1.787
L10	80 - 75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-40.067	-1.631	0.916
			Max. Mx	8	-21.158	-643.069	0.894
			Max. My	2	-21.155	-0.326	646.037
			Max. Vy	8	20.418	-643.069	0.894
			Max. Vx	2	-20.474	-0.326	646.037
			Max. Torque	24			-1.787
L11	75 - 73.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-40.562	-1.631	0.847
			Max. Mx	8	-21.488	-673.761	0.980
			Max. My	2	-21.484	-0.349	676.797
			Max. Vy	8	20.518	-673.761	0.980
			Max. Vx	14	20.665	-0.287	-676.193
			Max. Torque	24			-1.787
L12	73.5 - 73.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-40.663	-1.631	0.836
			Max. Mx	8	-21.567	-678.891	0.995
			Max. My	2	-21.564	-0.354	681.939
			Max. Vy	8	20.531	-678.891	0.995
			Max. Vx	14	20.697	-0.278	-681.365
			Max. Torque	24			-1.787
L13	73.25 - 68.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-42.678	-1.631	0.608
			Max. Mx	8	-23.028	-782.388	1.282
			Max. My	14	-22.998	-0.095	-786.682
			Max. Vy	8	20.874	-782.388	1.282
			Max. Vx	14	21.414	-0.095	-786.682
			Max. Torque	24			-1.787
L14	68.25 - 63.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-44.757	-1.631	0.381
			Max. Mx	8	-24.490	-888.409	1.569
			Max. My	14	-24.460	0.087	-895.592
			Max. Vy	8	21.543	-888.409	1.569
			Max. Vx	14	22.136	0.087	-895.592
			Max. Torque	24			-1.787
L15	63.25 - 60	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-46.144	-1.631	0.235
			Max. Mx	8	-25.444	-959.105	1.755
			Max. My	14	-25.414	0.206	-968.317
			Max. Vy	8	21.973	-959.105	1.755
			Max. Vx	14	22.608	0.206	-968.317
			Max. Torque	24			-1.786
L16	60 - 59.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-46.254	-1.631	0.222
			Max. Mx	8	-25.529	-964.599	1.770
			Max. My	14	-25.499	0.215	-973.976

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	8	21.989	-964.599	1.770
			Max. Vx	14	22.644	0.215	-973.976
			Max. Torque	24			-1.786
L17	59.75 - 54.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-48.449	-1.631	-0.037
			Max. Mx	8	-27.135	-1075.444	2.047
			Max. My	14	-27.098	0.399	-1089.157
			Max. Vy	8	22.356	-1075.444	2.047
			Max. Vx	14	23.411	0.399	-1089.157
			Max. Torque	24			-1.786
L18	54.75 - 49.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-50.637	-1.631	-0.293
			Max. Mx	8	-28.750	-1188.066	2.325
			Max. My	14	-28.708	0.582	-1208.091
			Max. Vy	8	22.702	-1188.066	2.325
			Max. Vx	14	24.146	0.582	-1208.091
			Max. Torque	24			-1.786
L19	49.75 - 44.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-52.873	-1.631	-0.547
			Max. Mx	8	-30.370	-1302.357	2.601
			Max. My	14	-30.325	0.765	-1330.676
			Max. Vy	8	23.025	-1302.357	2.601
			Max. Vx	14	24.873	0.765	-1330.676
			Max. Torque	24			-1.786
L20	44.75 - 40	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-55.072	-1.631	-0.785
			Max. Mx	8	-31.910	-1413.202	2.864
			Max. My	14	-31.869	0.940	-1450.491
			Max. Vy	8	23.660	-1413.202	2.864
			Max. Vx	14	25.565	0.940	-1450.491
			Max. Torque	24			-1.786
L21	40 - 39.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-55.197	-1.631	-0.799
			Max. Mx	8	-32.010	-1419.117	2.877
			Max. My	14	-31.969	0.949	-1456.888
			Max. Vy	8	23.673	-1419.117	2.877
			Max. Vx	14	25.598	0.949	-1456.888
			Max. Torque	24			-1.786
L22	39.75 - 34.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-57.694	-1.631	-1.080
			Max. Mx	8	-33.893	-1538.351	3.144
			Max. My	14	-33.851	1.133	-1586.820
			Max. Vy	8	24.029	-1538.351	3.144
			Max. Vx	14	26.354	1.133	-1586.820
			Max. Torque	24			-1.786
L23	34.75 - 29.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-60.181	-1.631	-1.357
			Max. Mx	8	-35.783	-1659.291	3.411
			Max. My	14	-35.742	1.316	-1720.417
			Max. Vy	8	24.358	-1659.291	3.411
			Max. Vx	14	27.066	1.316	-1720.417
			Max. Torque	24			-1.786
L24	29.75 - 24.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-62.789	-1.631	-1.629
			Max. Mx	8	-37.675	-1782.765	3.676
			Max. My	14	-37.640	1.500	-1857.651
			Max. Vy	8	25.043	-1782.765	3.676
			Max. Vx	14	27.810	1.500	-1857.651
			Max. Torque	24			-1.786
L25	24.75 - 20	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-65.277	-1.631	-1.882

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	8	-39.476	-1903.224	3.928
			Max. My	14	-39.448	1.675	-1991.467
			Max. Vy	8	25.691	-1903.224	3.928
			Max. Vx	14	28.520	1.675	-1991.467
			Max. Torque	24			-1.786
L26	20 - 19.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-65.418	-1.631	-1.897
			Max. Mx	8	-39.591	-1909.647	3.941
			Max. My	14	-39.564	1.684	-1998.604
			Max. Vy	8	25.703	-1909.647	3.941
			Max. Vx	14	28.553	1.684	-1998.604
			Max. Torque	24			-1.786
L27	19.75 - 14.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-68.230	-1.631	-2.188
			Max. Mx	8	-41.773	-2039.051	4.197
			Max. My	14	-41.749	1.867	-2143.418
			Max. Vy	8	26.066	-2039.051	4.197
			Max. Vx	14	29.348	1.867	-2143.418
			Max. Torque	24			-1.786
L28	14.75 - 9.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-71.018	-1.631	-2.468
			Max. Mx	8	-43.961	-2170.228	4.452
			Max. My	14	-43.942	2.050	-2292.164
			Max. Vy	8	26.416	-2170.228	4.452
			Max. Vx	14	30.130	2.050	-2292.164
			Max. Torque	24			-1.786
L29	9.75 - 4.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-73.769	-1.631	-2.735
			Max. Mx	8	-46.152	-2303.128	4.706
			Max. My	14	-46.142	2.234	-2444.787
			Max. Vy	6	26.768	-2115.564	1223.975
			Max. Vx	14	30.900	2.234	-2444.787
			Max. Torque	24			-1.786
L30	4.75 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-76.317	-1.631	-2.962
			Max. Mx	8	-48.237	-2430.928	4.947
			Max. My	14	-48.236	2.407	-2593.314
			Max. Vy	6	27.393	-2244.163	1298.285
			Max. Vx	14	31.622	2.407	-2593.314
			Max. Torque	24			-1.786

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	76.317	-0.000	0.000
	Max. H_x	23	36.182	27.343	15.774
	Max. H_z	2	48.242	-0.015	27.114
	Max. M_x	2	2437.013	-0.015	27.114
	Max. M_z	8	2430.928	-27.060	0.067
	Max. Torsion	10	1.692	-23.438	-13.544
	Min. Vert	19	36.182	23.391	-13.534
	Min. H_x	6	48.242	-27.384	15.840
	Min. H_z	14	48.242	0.036	-31.611
	Min. M_x	14	-2593.314	0.036	-31.611
	Min. M_z	20	-2425.652	27.014	-0.031

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Min. Torsion	24	-1.786	13.484	23.480

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	40.202	0.000	0.000	0.642	-0.419	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	48.242	0.015	-27.114	-2437.013	-1.455	1.064
0.9 Dead+1.0 Wind 0 deg - No Ice	36.182	0.015	-27.114	-2424.317	-1.319	1.059
1.2 Dead+1.0 Wind 30 deg - No Ice	48.242	13.588	-23.453	-2107.554	-1220.678	0.505
0.9 Dead+1.0 Wind 30 deg - No Ice	36.182	13.588	-23.453	-2096.599	-1214.102	0.503
1.2 Dead+1.0 Wind 60 deg - No Ice	48.242	27.384	-15.840	-1298.285	-2244.163	-0.389
0.9 Dead+1.0 Wind 60 deg - No Ice	36.182	27.384	-15.840	-1291.829	-2232.550	-0.387
1.2 Dead+1.0 Wind 90 deg - No Ice	48.242	27.060	-0.067	-4.947	-2430.928	-1.020
0.9 Dead+1.0 Wind 90 deg - No Ice	36.182	27.060	-0.067	-5.116	-2417.953	-1.015
1.2 Dead+1.0 Wind 120 deg - No Ice	48.242	23.438	13.544	1218.860	-2105.780	-1.692
0.9 Dead+1.0 Wind 120 deg - No Ice	36.182	23.438	13.544	1212.223	-2094.521	-1.686
1.2 Dead+1.0 Wind 150 deg - No Ice	48.242	13.547	23.443	2108.652	-1217.663	-1.553
0.9 Dead+1.0 Wind 150 deg - No Ice	36.182	13.547	23.443	2097.311	-1211.096	-1.547
1.2 Dead+1.0 Wind 180 deg - No Ice	48.242	-0.036	31.611	2593.314	2.407	-0.913
0.9 Dead+1.0 Wind 180 deg - No Ice	36.182	-0.036	31.611	2579.844	2.531	-0.908
1.2 Dead+1.0 Wind 210 deg - No Ice	48.242	-13.533	23.431	2107.099	1214.630	-0.130
0.9 Dead+1.0 Wind 210 deg - No Ice	36.182	-13.533	23.431	2095.767	1208.346	-0.128
1.2 Dead+1.0 Wind 240 deg - No Ice	48.242	-23.391	13.534	1217.221	2100.031	0.653
0.9 Dead+1.0 Wind 240 deg - No Ice	36.182	-23.391	13.534	1210.596	2089.067	0.652
1.2 Dead+1.0 Wind 270 deg - No Ice	48.242	-27.014	0.031	3.161	2425.652	1.270
0.9 Dead+1.0 Wind 270 deg - No Ice	36.182	-27.014	0.031	2.959	2412.965	1.266
1.2 Dead+1.0 Wind 300 deg - No Ice	48.242	-27.343	-15.774	-1292.963	2239.760	1.624
0.9 Dead+1.0 Wind 300 deg - No Ice	36.182	-27.343	-15.774	-1286.528	2228.430	1.617
1.2 Dead+1.0 Wind 330 deg - No Ice	48.242	-13.484	-23.480	-2110.440	1210.848	1.786
0.9 Dead+1.0 Wind 330 deg - No Ice	36.182	-13.484	-23.480	-2099.470	1204.578	1.779
1.2 Dead+1.0 Ice+1.0 Temp	76.317	0.000	-0.000	2.962	-1.631	-0.000

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	76.317	0.001	-6.227	-556.673	-1.781	0.205
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	76.317	3.127	-5.387	-481.101	-282.653	0.055
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	76.317	5.478	-3.158	-278.596	-490.092	-0.147
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	76.317	6.236	-0.011	2.074	-561.977	-0.280
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	76.317	5.401	3.112	282.788	-487.072	-0.396
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	76.317	3.122	5.387	487.132	-282.331	-0.340
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	76.317	-0.005	6.306	565.370	-1.339	-0.178
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	76.317	-3.117	5.383	486.714	278.249	0.013
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	76.317	-5.392	3.108	282.257	482.590	0.194
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	76.317	-6.227	0.004	3.294	557.715	0.325
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	76.317	-5.472	-3.148	-277.851	486.123	0.383
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	76.317	-3.111	-5.393	-481.764	277.787	0.382
Dead+Wind 0 deg - Service	40.202	0.003	-5.440	-486.828	-0.620	0.213
Dead+Wind 30 deg - Service	40.202	2.726	-4.705	-420.948	-244.422	0.101
Dead+Wind 60 deg - Service	40.202	5.494	-3.178	-259.152	-449.133	-0.078
Dead+Wind 90 deg - Service	40.202	5.429	-0.013	-0.502	-486.429	-0.205
Dead+Wind 120 deg - Service	40.202	4.702	2.717	244.216	-421.411	-0.339
Dead+Wind 150 deg - Service	40.202	2.718	4.703	422.144	-243.819	-0.311
Dead+Wind 180 deg - Service	40.202	-0.007	6.342	519.117	0.153	-0.183
Dead+Wind 210 deg - Service	40.202	-2.715	4.701	421.833	242.555	-0.026
Dead+Wind 240 deg - Service	40.202	-4.693	2.715	243.889	419.603	0.131
Dead+Wind 270 deg - Service	40.202	-5.420	0.006	1.120	484.716	0.255
Dead+Wind 300 deg - Service	40.202	-5.486	-3.165	-258.087	447.594	0.325
Dead+Wind 330 deg - Service	40.202	-2.705	-4.711	-421.525	241.798	0.358

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.000	-40.202	0.000	0.000	40.202	0.000	0.000%
2	0.015	-48.242	-27.114	-0.015	48.242	27.114	0.000%
3	0.015	-36.182	-27.114	-0.015	36.182	27.114	0.000%
4	13.588	-48.242	-23.453	-13.588	48.242	23.453	0.000%
5	13.588	-36.182	-23.453	-13.588	36.182	23.453	0.000%
6	27.384	-48.242	-15.840	-27.384	48.242	15.840	0.000%
7	27.384	-36.182	-15.840	-27.384	36.182	15.840	0.000%
8	27.060	-48.242	-0.067	-27.060	48.242	0.067	0.000%
9	27.060	-36.182	-0.067	-27.060	36.182	0.067	0.000%
10	23.438	-48.242	13.544	-23.438	48.242	-13.544	0.000%
11	23.438	-36.182	13.544	-23.438	36.182	-13.544	0.000%
12	13.547	-48.242	23.443	-13.547	48.242	-23.443	0.000%
13	13.547	-36.182	23.443	-13.547	36.182	-23.443	0.000%
14	-0.036	-48.242	31.611	0.036	48.242	-31.611	0.000%
15	-0.036	-36.182	31.611	0.036	36.182	-31.611	0.000%
16	-13.533	-48.242	23.431	13.533	48.242	-23.431	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
17	-13.533	-36.182	23.431	13.533	36.182	-23.431	0.000%
18	-23.391	-48.242	13.534	23.391	48.242	-13.534	0.000%
19	-23.391	-36.182	13.534	23.391	36.182	-13.534	0.000%
20	-27.014	-48.242	0.031	27.014	48.242	-0.031	0.000%
21	-27.014	-36.182	0.031	27.014	36.182	-0.031	0.000%
22	-27.343	-48.242	-15.774	27.343	48.242	15.774	0.000%
23	-27.343	-36.182	-15.774	27.343	36.182	15.774	0.000%
24	-13.484	-48.242	-23.480	13.484	48.242	23.480	0.000%
25	-13.484	-36.182	-23.480	13.484	36.182	23.480	0.000%
26	0.000	-76.317	0.000	-0.000	76.317	0.000	0.000%
27	0.001	-76.317	-6.227	-0.001	76.317	6.227	0.000%
28	3.127	-76.317	-5.387	-3.127	76.317	5.387	0.000%
29	5.478	-76.317	-3.158	-5.478	76.317	3.158	0.000%
30	6.236	-76.317	-0.011	-6.236	76.317	0.011	0.000%
31	5.401	-76.317	3.112	-5.401	76.317	-3.112	0.000%
32	3.122	-76.317	5.387	-3.122	76.317	-5.387	0.000%
33	-0.005	-76.317	6.306	0.005	76.317	-6.306	0.000%
34	-3.117	-76.317	5.383	3.117	76.317	-5.383	0.000%
35	-5.392	-76.317	3.108	5.392	76.317	-3.108	0.000%
36	-6.227	-76.317	0.004	6.227	76.317	-0.004	0.000%
37	-5.472	-76.317	-3.148	5.472	76.317	3.148	0.000%
38	-3.111	-76.317	-5.393	3.111	76.317	5.393	0.000%
39	0.003	-40.202	-5.440	-0.003	40.202	5.440	0.000%
40	2.726	-40.202	-4.705	-2.726	40.202	4.705	0.000%
41	5.494	-40.202	-3.178	-5.494	40.202	3.178	0.000%
42	5.429	-40.202	-0.013	-5.429	40.202	0.013	0.000%
43	4.702	-40.202	2.717	-4.702	40.202	-2.717	0.000%
44	2.718	-40.202	4.703	-2.718	40.202	-4.703	0.000%
45	-0.007	-40.202	6.342	0.007	40.202	-6.342	0.000%
46	-2.715	-40.202	4.701	2.715	40.202	-4.701	0.000%
47	-4.693	-40.202	2.715	4.693	40.202	-2.715	0.000%
48	-5.420	-40.202	0.006	5.420	40.202	-0.006	0.000%
49	-5.486	-40.202	-3.165	5.486	40.202	3.165	0.000%
50	-2.705	-40.202	-4.711	2.705	40.202	4.711	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00091460
3	Yes	4	0.00000001	0.00056447
4	Yes	5	0.00000001	0.00023313
5	Yes	5	0.00000001	0.00011128
6	Yes	5	0.00000001	0.00024367
7	Yes	5	0.00000001	0.00011507
8	Yes	4	0.00000001	0.00092801
9	Yes	4	0.00000001	0.00057556
10	Yes	5	0.00000001	0.00021312
11	Yes	5	0.00000001	0.00010133
12	Yes	5	0.00000001	0.00024479
13	Yes	5	0.00000001	0.00011716
14	Yes	4	0.00000001	0.00080380
15	Yes	4	0.00000001	0.00048043
16	Yes	5	0.00000001	0.00022544
17	Yes	5	0.00000001	0.00010755

18	Yes	5	0.00000001	0.00021978
19	Yes	5	0.00000001	0.00010475
20	Yes	5	0.00000001	0.00002888
21	Yes	4	0.00000001	0.00064875
22	Yes	5	0.00000001	0.00025574
23	Yes	5	0.00000001	0.00012121
24	Yes	5	0.00000001	0.00021152
25	Yes	5	0.00000001	0.00010059
26	Yes	4	0.00000001	0.00001851
27	Yes	5	0.00000001	0.00038706
28	Yes	5	0.00000001	0.00039747
29	Yes	5	0.00000001	0.00039949
30	Yes	5	0.00000001	0.00038964
31	Yes	5	0.00000001	0.00039824
32	Yes	5	0.00000001	0.00039718
33	Yes	5	0.00000001	0.00038691
34	Yes	5	0.00000001	0.00039324
35	Yes	5	0.00000001	0.00039238
36	Yes	5	0.00000001	0.00038361
37	Yes	5	0.00000001	0.00039431
38	Yes	5	0.00000001	0.00039428
39	Yes	4	0.00000001	0.00009304
40	Yes	4	0.00000001	0.00014719
41	Yes	4	0.00000001	0.00015350
42	Yes	4	0.00000001	0.00009274
43	Yes	4	0.00000001	0.00013996
44	Yes	4	0.00000001	0.00016056
45	Yes	4	0.00000001	0.00009348
46	Yes	4	0.00000001	0.00014093
47	Yes	4	0.00000001	0.00013823
48	Yes	4	0.00000001	0.00009484
49	Yes	4	0.00000001	0.00016806
50	Yes	4	0.00000001	0.00013934

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	125 - 120	7.076	41	0.506	0.001
L2	120 - 115	6.547	41	0.505	0.001
L3	115 - 110	6.019	41	0.502	0.001
L4	110 - 105	5.497	41	0.494	0.001
L5	105 - 100	4.988	41	0.478	0.001
L6	100 - 95	4.499	41	0.454	0.001
L7	95 - 90	4.032	41	0.437	0.001
L8	90 - 85	3.586	45	0.415	0.001
L9	85 - 80	3.167	45	0.385	0.001
L10	80 - 75	2.782	45	0.349	0.001
L11	75 - 73.5	2.430	45	0.323	0.001
L12	73.5 - 73.25	2.330	45	0.315	0.001
L13	73.25 - 68.25	2.313	45	0.314	0.001
L14	68.25 - 63.25	1.996	45	0.293	0.000
L15	63.25 - 60	1.702	45	0.268	0.000
L16	60 - 59.75	1.525	45	0.251	0.000
L17	59.75 - 54.75	1.512	45	0.250	0.000
L18	54.75 - 49.75	1.261	45	0.230	0.000
L19	49.75 - 44.75	1.031	45	0.208	0.000
L20	44.75 - 40	0.826	45	0.183	0.000
L21	40 - 39.75	0.657	45	0.158	0.000

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L22	39.75 - 34.75	0.648	45	0.157	0.000
L23	34.75 - 29.75	0.494	45	0.138	0.000
L24	29.75 - 24.75	0.359	45	0.118	0.000
L25	24.75 - 20	0.247	45	0.096	0.000
L26	20 - 19.75	0.162	45	0.074	0.000
L27	19.75 - 14.75	0.158	45	0.073	0.000
L28	14.75 - 9.75	0.090	45	0.056	0.000
L29	9.75 - 4.75	0.040	45	0.039	0.000
L30	4.75 - 0	0.010	45	0.019	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
122.000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	41	6.758	0.506	0.002	166399
112.000	(2) HBXX-6517DS-A2M w/ Mount Pipe	41	5.705	0.498	0.002	32015
100.000	7770.00 w/ Mount Pipe	41	4.499	0.454	0.001	13959
90.000	Dragonwave A-ANT-18G-2-C	45	3.586	0.415	0.001	11007

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	125 - 120	35.392	14	2.528	0.007
L2	120 - 115	32.745	14	2.527	0.007
L3	115 - 110	30.108	14	2.509	0.007
L4	110 - 105	27.500	14	2.468	0.007
L5	105 - 100	24.954	14	2.390	0.007
L6	100 - 95	22.510	14	2.272	0.007
L7	95 - 90	20.173	14	2.188	0.006
L8	90 - 85	17.940	14	2.074	0.005
L9	85 - 80	15.841	14	1.928	0.004
L10	80 - 75	13.916	14	1.744	0.003
L11	75 - 73.5	12.154	14	1.617	0.003
L12	73.5 - 73.25	11.653	14	1.575	0.003
L13	73.25 - 68.25	11.571	14	1.570	0.003
L14	68.25 - 63.25	9.981	14	1.464	0.002
L15	63.25 - 60	8.510	14	1.342	0.002
L16	60 - 59.75	7.626	14	1.255	0.002
L17	59.75 - 54.75	7.561	14	1.250	0.002
L18	54.75 - 49.75	6.303	14	1.150	0.002
L19	49.75 - 44.75	5.156	14	1.039	0.001
L20	44.75 - 40	4.131	14	0.916	0.001
L21	40 - 39.75	3.282	14	0.789	0.001
L22	39.75 - 34.75	3.241	14	0.784	0.001
L23	34.75 - 29.75	2.468	14	0.691	0.001
L24	29.75 - 24.75	1.796	14	0.591	0.001
L25	24.75 - 20	1.234	14	0.482	0.001

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L26	20 - 19.75	0.809	14	0.370	0.000
L27	19.75 - 14.75	0.790	14	0.366	0.000
L28	14.75 - 9.75	0.450	14	0.282	0.000
L29	9.75 - 4.75	0.201	14	0.193	0.000
L30	4.75 - 0	0.049	14	0.097	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
122.000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	14	33.804	2.528	0.008	33332
112.000	(2) HBXX-6517DS-A2M w/ Mount Pipe	14	28.538	2.488	0.008	6442
100.000	7770.00 w/ Mount Pipe	14	22.510	2.272	0.007	2808
90.000	Dragonwave A-ANT-18G-2-C	14	17.940	2.074	0.005	2213

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	125 - 120 (1)	P24x0.375	5.000	0.000	0.0	27.833	-4.738	1052.070	0.005
L2	120 - 115 (2)	P24x0.375	5.000	0.000	0.0	27.833	-5.378	1052.070	0.005
L3	115 - 110 (3)	P24x0.375	5.000	0.000	0.0	27.833	-8.760	1052.070	0.008
L4	110 - 105 (4)	P24x0.375	5.000	0.000	0.0	27.833	-9.427	1052.070	0.009
L5	105 - 100 (5)	P24x0.375	5.000	0.000	0.0	27.833	-10.104	1052.070	0.010
L6	100 - 95 (6)	P30x0.375	5.000	0.000	0.0	34.901	-13.929	1311.060	0.011
L7	95 - 90 (7)	P30x0.375	5.000	0.000	0.0	34.901	-14.839	1311.060	0.011
L8	90 - 85 (8)	P30x0.375	5.000	0.000	0.0	34.901	-19.075	1311.060	0.015
L9	85 - 80 (9)	P30x0.375	5.000	0.000	0.0	34.901	-20.051	1311.060	0.015
L10	80 - 75 (10)	P36x0.375	5.000	0.000	0.0	41.970	-21.155	1490.100	0.014
L11	75 - 73.5 (11)	P36x0.375	1.500	0.000	0.0	41.970	-21.484	1490.100	0.014
L12	73.5 - 73.25 (12)	P36x0.5625	0.250	0.000	0.0	62.623	-21.564	2367.160	0.009
L13	73.25 - 68.25 (13)	P36x0.5625	5.000	0.000	0.0	62.623	-22.998	2367.160	0.010
L14	68.25 - 63.25 (14)	P36x0.5625	5.000	0.000	0.0	62.623	-24.460	2367.160	0.010
L15	63.25 - 60 (15)	P36x0.5625	3.250	0.000	0.0	62.623	-25.414	2367.160	0.011
L16	60 - 59.75 (16)	P42x0.525	0.250	0.000	0.0	68.406	-25.499	2569.670	0.010
L17	59.75 - 54.75 (17)	P42x0.525	5.000	0.000	0.0	68.406	-27.098	2569.670	0.011
L18	54.75 - 49.75 (18)	P42x0.525	5.000	0.000	0.0	68.406	-28.708	2569.670	0.011
L19	49.75 - 44.75 (19)	P42x0.525	5.000	0.000	0.0	68.406	-30.325	2569.670	0.012

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L20	44.75 - 40 (20)	P42x0.525	4.750	0.000	0.0	68.406	-31.869	2569.670	0.012
L21	40 - 39.75 (21)	P48x0.55625	0.250	0.000	0.0	82.909	-31.969	3039.700	0.011
L22	39.75 - 34.75 (22)	P48x0.55625	5.000	0.000	0.0	82.909	-33.851	3039.700	0.011
L23	34.75 - 29.75 (23)	P48x0.55625	5.000	0.000	0.0	82.909	-35.742	3039.700	0.012
L24	29.75 - 24.75 (24)	P48x0.55625	5.000	0.000	0.0	82.909	-37.640	3039.700	0.012
L25	24.75 - 20 (25)	P48x0.55625	4.750	0.000	0.0	82.909	-39.448	3039.700	0.013
L26	20 - 19.75 (26)	P54x0.5875	0.250	0.000	0.0	98.583	-39.564	3545.230	0.011
L27	19.75 - 14.75 (27)	P54x0.5875	5.000	0.000	0.0	98.583	-41.749	3545.230	0.012
L28	14.75 - 9.75 (28)	P54x0.5875	5.000	0.000	0.0	98.583	-43.942	3545.230	0.012
L29	9.75 - 4.75 (29)	P54x0.5875	5.000	0.000	0.0	98.583	-46.142	3545.230	0.013
L30	4.75 - 0 (30)	P54x0.5875	4.750	0.000	0.0	98.583	-48.236	3545.230	0.014

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	125 - 120 (1)	P24x0.375	10.744	623.717	0.017	0.000	623.717	0.000
L2	120 - 115 (2)	P24x0.375	37.961	623.717	0.061	0.000	623.717	0.000
L3	115 - 110 (3)	P24x0.375	80.092	623.717	0.128	0.000	623.717	0.000
L4	110 - 105 (4)	P24x0.375	133.802	623.717	0.215	0.000	623.717	0.000
L5	105 - 100 (5)	P24x0.375	188.902	623.717	0.303	0.000	623.717	0.000
L6	100 - 95 (6)	P30x0.375	267.145	947.858	0.282	0.000	947.858	0.000
L7	95 - 90 (7)	P30x0.375	346.430	947.858	0.365	0.000	947.858	0.000
L8	90 - 85 (8)	P30x0.375	444.650	947.858	0.469	0.000	947.858	0.000
L9	85 - 80 (9)	P30x0.375	544.592	947.858	0.575	0.000	947.858	0.000
L10	80 - 75 (10)	P36x0.375	646.038	1338.808	0.483	0.000	1338.808	0.000
L11	75 - 73.5 (11)	P36x0.375	676.798	1338.808	0.506	0.000	1338.808	0.000
L12	73.5 - 73.25 (12)	P36x0.5625	681.939	2105.042	0.324	0.000	2105.042	0.000
L13	73.25 - 68.25 (13)	P36x0.5625	786.683	2105.042	0.374	0.000	2105.042	0.000
L14	68.25 - 63.25 (14)	P36x0.5625	895.592	2105.042	0.425	0.000	2105.042	0.000
L15	63.25 - 60 (15)	P36x0.5625	968.317	2105.042	0.460	0.000	2105.042	0.000
L16	60 - 59.75 (16)	P42x0.525	973.975	2600.925	0.374	0.000	2600.925	0.000
L17	59.75 - 54.75 (17)	P42x0.525	1089.158	2600.925	0.419	0.000	2600.925	0.000
L18	54.75 - 49.75 (18)	P42x0.525	1208.092	2600.925	0.464	0.000	2600.925	0.000
L19	49.75 - 44.75 (19)	P42x0.525	1330.675	2600.925	0.512	0.000	2600.925	0.000
L20	44.75 - 40 (20)	P42x0.525	1450.492	2600.925	0.558	0.000	2600.925	0.000
L21	40 - 39.75 (21)	P48x0.55625	1456.892	3569.342	0.408	0.000	3569.342	0.000
L22	39.75 - 34.75 (22)	P48x0.55625	1586.817	3569.342	0.445	0.000	3569.342	0.000
L23	34.75 - 29.75 (23)	P48x0.55625	1720.417	3569.342	0.482	0.000	3569.342	0.000
L24	29.75 - 24.75 (24)	P48x0.55625	1857.650	3569.342	0.520	0.000	3569.342	0.000
L25	24.75 - 20 (25)	P48x0.55625	1991.467	3569.342	0.558	0.000	3569.342	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L26	20 - 19.75 (26)	P54x0.5875	1998.608	4739.867	0.422	0.000	4739.867	0.000
L27	19.75 - 14.75 (27)	P54x0.5875	2143.417	4739.867	0.452	0.000	4739.867	0.000
L28	14.75 - 9.75 (28)	P54x0.5875	2292.167	4739.867	0.484	0.000	4739.867	0.000
L29	9.75 - 4.75 (29)	P54x0.5875	2444.792	4739.867	0.516	0.000	4739.867	0.000
L30	4.75 - 0 (30)	P54x0.5875	2593.317	4739.867	0.547	0.000	4739.867	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	125 - 120 (1)	P24x0.375	5.296	315.621	0.017	0.000	655.568	0.000
L2	120 - 115 (2)	P24x0.375	5.589	315.621	0.018	0.000	655.568	0.000
L3	115 - 110 (3)	P24x0.375	10.600	315.621	0.034	0.339	655.568	0.001
L4	110 - 105 (4)	P24x0.375	10.889	315.621	0.035	0.392	655.568	0.001
L5	105 - 100 (5)	P24x0.375	11.152	315.621	0.035	0.392	655.568	0.001
L6	100 - 95 (6)	P30x0.375	15.703	395.779	0.040	0.258	994.725	0.000
L7	95 - 90 (7)	P30x0.375	16.018	395.779	0.040	0.258	994.725	0.000
L8	90 - 85 (8)	P30x0.375	19.868	395.779	0.050	1.065	994.725	0.001
L9	85 - 80 (9)	P30x0.375	20.137	395.779	0.051	1.065	994.725	0.001
L10	80 - 75 (10)	P36x0.375	20.474	454.187	0.045	1.065	1094.275	0.001
L11	75 - 73.5 (11)	P36x0.375	20.575	454.187	0.045	1.065	1094.275	0.001
L12	73.5 - 73.25 (12)	P36x0.5625	20.587	710.147	0.029	1.065	2212.542	0.000
L13	73.25 - 68.25 (13)	P36x0.5625	21.414	710.147	0.030	0.913	2212.542	0.000
L14	68.25 - 63.25 (14)	P36x0.5625	22.136	710.147	0.031	0.913	2212.542	0.000
L15	63.25 - 60 (15)	P36x0.5625	22.608	710.147	0.032	0.913	2212.542	0.000
L16	60 - 59.75 (16)	P42x0.525	22.644	775.727	0.029	0.913	2800.233	0.000
L17	59.75 - 54.75 (17)	P42x0.525	23.411	775.727	0.030	0.913	2800.233	0.000
L18	54.75 - 49.75 (18)	P42x0.525	24.147	775.727	0.031	0.913	2800.233	0.000
L19	49.75 - 44.75 (19)	P42x0.525	24.873	775.727	0.032	0.913	2800.233	0.000
L20	44.75 - 40 (20)	P42x0.525	25.565	775.727	0.033	0.913	2800.233	0.000
L21	40 - 39.75 (21)	P48x0.55625	25.598	940.182	0.027	0.913	3775.583	0.000
L22	39.75 - 34.75 (22)	P48x0.55625	26.354	940.182	0.028	0.913	3775.583	0.000
L23	34.75 - 29.75 (23)	P48x0.55625	27.066	940.182	0.029	0.913	3775.583	0.000
L24	29.75 - 24.75 (24)	P48x0.55625	27.811	940.182	0.030	0.913	3775.583	0.000
L25	24.75 - 20 (25)	P48x0.55625	28.520	940.182	0.030	0.913	3775.583	0.000
L26	20 - 19.75 (26)	P54x0.5875	28.553	1117.930	0.026	0.913	4954.017	0.000
L27	19.75 - 14.75 (27)	P54x0.5875	29.348	1117.930	0.026	0.913	4954.017	0.000
L28	14.75 - 9.75 (28)	P54x0.5875	30.130	1117.930	0.027	0.913	4954.017	0.000
L29	9.75 - 4.75 (29)	P54x0.5875	30.900	1117.930	0.028	0.913	4954.017	0.000
L30	4.75 - 0 (30)	P54x0.5875	31.622	1117.930	0.028	0.913	4954.017	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	125 - 120 (1)	0.005	0.017	0.000	0.017	0.000	0.022 ✔	1.050	4.8.2 ✔
L2	120 - 115 (2)	0.005	0.061	0.000	0.018	0.000	0.066 ✔	1.050	4.8.2 ✔
L3	115 - 110 (3)	0.008	0.128	0.000	0.034	0.001	0.138 ✔	1.050	4.8.2 ✔
L4	110 - 105 (4)	0.009	0.215	0.000	0.035	0.001	0.225 ✔	1.050	4.8.2 ✔
L5	105 - 100 (5)	0.010	0.303	0.000	0.035	0.001	0.314 ✔	1.050	4.8.2 ✔
L6	100 - 95 (6)	0.011	0.282	0.000	0.040	0.000	0.294 ✔	1.050	4.8.2 ✔
L7	95 - 90 (7)	0.011	0.365	0.000	0.040	0.000	0.378 ✔	1.050	4.8.2 ✔
L8	90 - 85 (8)	0.015	0.469	0.000	0.050	0.001	0.486 ✔	1.050	4.8.2 ✔
L9	85 - 80 (9)	0.015	0.575	0.000	0.051	0.001	0.593 ✔	1.050	4.8.2 ✔
L10	80 - 75 (10)	0.014	0.483	0.000	0.045	0.001	0.499 ✔	1.050	4.8.2 ✔
L11	75 - 73.5 (11)	0.014	0.506	0.000	0.045	0.001	0.522 ✔	1.050	4.8.2 ✔
L12	73.5 - 73.25 (12)	0.009	0.324	0.000	0.029	0.000	0.334 ✔	1.050	4.8.2 ✔
L13	73.25 - 68.25 (13)	0.010	0.374	0.000	0.030	0.000	0.384 ✔	1.050	4.8.2 ✔
L14	68.25 - 63.25 (14)	0.010	0.425	0.000	0.031	0.000	0.437 ✔	1.050	4.8.2 ✔
L15	63.25 - 60 (15)	0.011	0.460	0.000	0.032	0.000	0.472 ✔	1.050	4.8.2 ✔
L16	60 - 59.75 (16)	0.010	0.374	0.000	0.029	0.000	0.385 ✔	1.050	4.8.2 ✔
L17	59.75 - 54.75 (17)	0.011	0.419	0.000	0.030	0.000	0.430 ✔	1.050	4.8.2 ✔
L18	54.75 - 49.75 (18)	0.011	0.464	0.000	0.031	0.000	0.477 ✔	1.050	4.8.2 ✔
L19	49.75 - 44.75 (19)	0.012	0.512	0.000	0.032	0.000	0.524 ✔	1.050	4.8.2 ✔
L20	44.75 - 40 (20)	0.012	0.558	0.000	0.033	0.000	0.571 ✔	1.050	4.8.2 ✔
L21	40 - 39.75 (21)	0.011	0.408	0.000	0.027	0.000	0.419 ✔	1.050	4.8.2 ✔
L22	39.75 - 34.75 (22)	0.011	0.445	0.000	0.028	0.000	0.457 ✔	1.050	4.8.2 ✔
L23	34.75 - 29.75 (23)	0.012	0.482	0.000	0.029	0.000	0.495 ✔	1.050	4.8.2 ✔
L24	29.75 - 24.75 (24)	0.012	0.520	0.000	0.030	0.000	0.534 ✔	1.050	4.8.2 ✔
L25	24.75 - 20 (25)	0.013	0.558	0.000	0.030	0.000	0.572 ✔	1.050	4.8.2 ✔

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L26	20 - 19.75 (26)	0.011	0.422	0.000	0.026	0.000	0.433 ✔	1.050	4.8.2 ✔
L27	19.75 - 14.75 (27)	0.012	0.452	0.000	0.026	0.000	0.465 ✔	1.050	4.8.2 ✔
L28	14.75 - 9.75 (28)	0.012	0.484	0.000	0.027	0.000	0.497 ✔	1.050	4.8.2 ✔
L29	9.75 - 4.75 (29)	0.013	0.516	0.000	0.028	0.000	0.530 ✔	1.050	4.8.2 ✔
L30	4.75 - 0 (30)	0.014	0.547	0.000	0.028	0.000	0.562 ✔	1.050	4.8.2 ✔

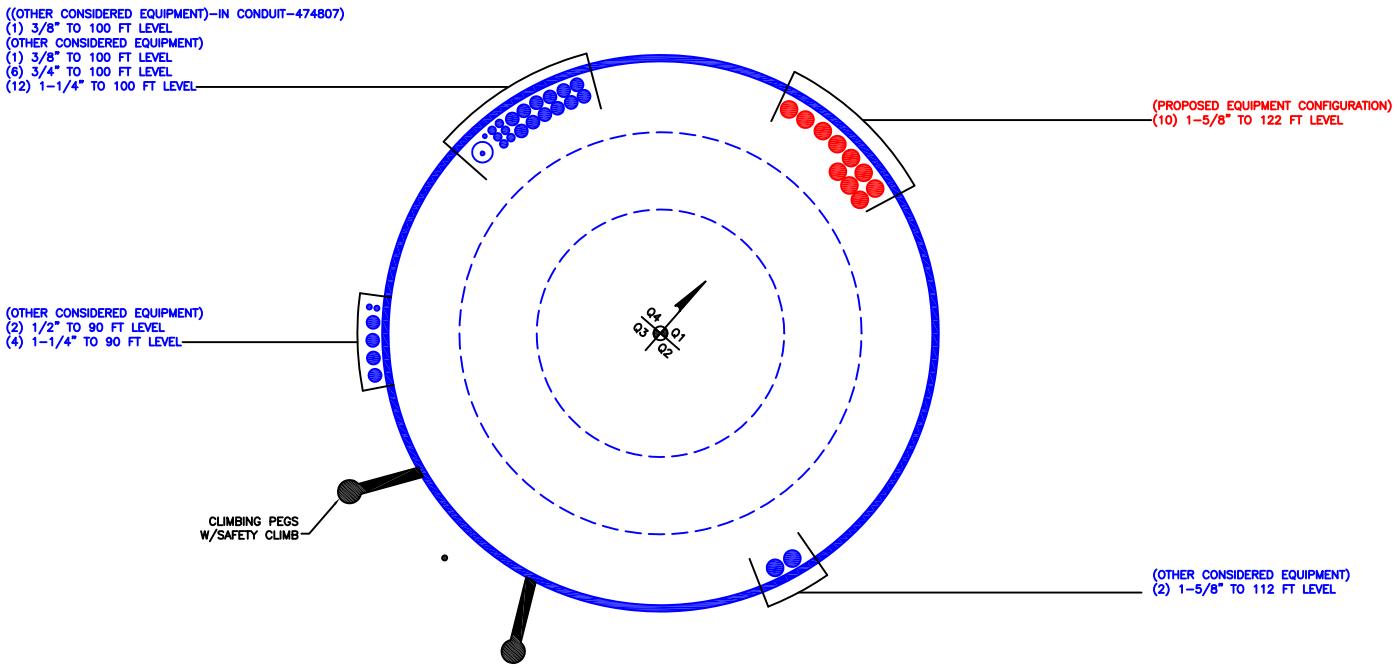
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	125 - 120	Pole	P24x0.375	1	-4.738	1104.673	**	**
L2	120 - 115	Pole	P24x0.375	2	-5.378	1104.673	**	**
L3	115 - 110	Pole	P24x0.375	3	-8.760	1104.673	**	**
L4	110 - 105	Pole	P24x0.375	4	-9.427	1104.673	**	**
L5	105 - 100	Pole	P24x0.375	5	-10.104	1104.673	**	**
L6	100 - 95	Pole	P30x0.375	6	-13.929	1376.613	**	**
L7	95 - 90	Pole	P30x0.375	7	-14.839	1376.613	**	**
L8	90 - 85	Pole	P30x0.375	8	-19.075	1376.613	**	**
L9	85 - 80	Pole	P30x0.375	9	-20.051	1376.613	**	**
L10	80 - 75	Pole	P36x0.375	10	-21.155	1564.605	**	**
L11	75 - 73.5	Pole	P36x0.375	11	-21.484	1564.605	**	**
L12	73.5 - 73.25	Pole	P36x0.5625	12	-21.564	2485.518	**	**
L13	73.25 - 68.25	Pole	P36x0.5625	13	-22.998	2485.518	**	**
L14	68.25 - 63.25	Pole	P36x0.5625	14	-24.460	2485.518	**	**
L15	63.25 - 60	Pole	P36x0.5625	15	-25.414	2485.518	**	**
L16	60 - 59.75	Pole	P42x0.525	16	-25.499	2698.153	**	**
L17	59.75 - 54.75	Pole	P42x0.525	17	-27.098	2698.153	**	**
L18	54.75 - 49.75	Pole	P42x0.525	18	-28.708	2698.153	**	**
L19	49.75 - 44.75	Pole	P42x0.525	19	-30.325	2698.153	**	**
L20	44.75 - 40	Pole	P42x0.525	20	-31.869	2698.153	**	**
L21	40 - 39.75	Pole	P48x0.55625	21	-31.969	3191.685	**	**
L22	39.75 - 34.75	Pole	P48x0.55625	22	-33.851	3191.685	**	**
L23	34.75 - 29.75	Pole	P48x0.55625	23	-35.742	3191.685	**	**
L24	29.75 - 24.75	Pole	P48x0.55625	24	-37.640	3191.685	**	**
L25	24.75 - 20	Pole	P48x0.55625	25	-39.448	3191.685	**	**
L26	20 - 19.75	Pole	P54x0.5875	26	-39.564	3722.491	**	**
L27	19.75 - 14.75	Pole	P54x0.5875	27	-41.749	3722.491	**	**
L28	14.75 - 9.75	Pole	P54x0.5875	28	-43.942	3722.491	**	**
L29	9.75 - 4.75	Pole	P54x0.5875	29	-46.142	3722.491	**	**
L30	4.75 - 0	Pole	P54x0.5875	30	-48.236	3722.491	**	**
							Summary	
						Pole (L9)	**	**
						RATING =	**	**

** Check Additional Calculations

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 822765

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 822765

Work Order: 1734970

Pole Geometry

	Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1	125	25		0	24	24	0.375		A53-B-42
2	100	20		0	30.00	30	0.375		A53-B-42
3	80	20		0	36.00	36	0.375		A53-B-42
4	60	20		0	42.00	42	0.375		A53-B-42
5	40	20		0	48.00	48	0.375		A53-B-42
6	20	20		0	54.00	54	0.375		A53-B-42

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	0	20	plate	CCI-CFP-085125	3	0					120						240						
2	20	40	plate	CCI-CFP-065125	3	0					120						240						
3	40	60	plate	CCI-CFP-060100	3	0					120						240						
4	60	73.5	plate	CCI-CFP-060100-15	3	0					120						240						
5																							
6																							
7																							
8																							
9																							
10																							

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Length (in)	Top Termination Length (in)	L_u (in)	Net Area (in^2)	Bolt Hole Size (in)	Reinforcement Material
1	8.5	1.25	10.625	0.625	45.000	90.000	24.000	9.063	1.1875	A572-65
2	6.5	1.25	8.125	0.625	90.000	66.000	16.000	6.563	1.1875	A572-65
3	6	1	6	0.5	66.000	48.000	16.000	4.750	1.1875	A572-65
4	6	1	6	0.5	48.000	24.000	24.000	4.750	1.1875	A572-65

TNX Geometry Input

Increment (ft): 5

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	125 - 120	5		0	24.000	24.000	0.375	A53-B-42	1.000
2	120 - 115	5		0	24.000	24.000	0.375	A53-B-42	1.000
3	115 - 110	5		0	24.000	24.000	0.375	A53-B-42	1.000
4	110 - 105	5		0	24.000	24.000	0.375	A53-B-42	1.000
5	105 - 100	5	0	0	24.000	24.000	0.375	A53-B-42	1.000
6	100 - 95	5		0	30.000	30.000	0.375	A53-B-42	1.000
7	95 - 90	5		0	30.000	30.000	0.375	A53-B-42	1.000
8	90 - 85	5		0	30.000	30.000	0.375	A53-B-42	1.000
9	85 - 80	5	0	0	30.000	30.000	0.375	A53-B-42	1.000
10	80 - 75	5		0	36.000	36.000	0.375	A53-B-42	1.000
11	75 - 73.5	1.5		0	36.000	36.000	0.375	A53-B-42	1.000
12	73.5 - 73.25	0.25		0	36.000	36.000	0.5625	A53-B-42	0.958
13	73.25 - 68.25	5		0	36.000	36.000	0.5625	A53-B-42	0.958
14	68.25 - 63.25	5		0	36.000	36.000	0.5625	A53-B-42	0.958
15	63.25 - 60	3.25	0	0	36.000	36.000	0.5625	A53-B-42	0.958
16	60 - 59.75	0.25		0	42.000	42.000	0.525	A53-B-42	0.980
17	59.75 - 54.75	5		0	42.000	42.000	0.525	A53-B-42	0.980
18	54.75 - 49.75	5		0	42.000	42.000	0.525	A53-B-42	0.980
19	49.75 - 44.75	5		0	42.000	42.000	0.525	A53-B-42	0.980
20	44.75 - 40	4.75	0	0	42.000	42.000	0.525	A53-B-42	0.980
21	40 - 39.75	0.25		0	48.000	48.000	0.55625	A53-B-42	0.971
22	39.75 - 34.75	5		0	48.000	48.000	0.55625	A53-B-42	0.971
23	34.75 - 29.75	5		0	48.000	48.000	0.55625	A53-B-42	0.971
24	29.75 - 24.75	5		0	48.000	48.000	0.55625	A53-B-42	0.971
25	24.75 - 20	4.75	0	0	48.000	48.000	0.55625	A53-B-42	0.971
26	20 - 19.75	0.25		0	54.000	54.000	0.5875	A53-B-42	0.964
27	19.75 - 14.75	5		0	54.000	54.000	0.5875	A53-B-42	0.964
28	14.75 - 9.75	5		0	54.000	54.000	0.5875	A53-B-42	0.964
29	9.75 - 4.75	5		0	54.000	54.000	0.5875	A53-B-42	0.964
30	4.75 - 0	4.75		0	54.000	54.000	0.5875	A53-B-42	0.964

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	125 - 120	4.74	10.74	5.30
2	120 - 115	5.38	37.96	5.59
3	115 - 110	8.75	80.11	10.57
4	110 - 105	9.43	133.80	10.89
5	105 - 100	10.10	188.90	11.15
6	100 - 95	13.93	267.14	15.70
7	95 - 90	14.84	346.43	16.02
8	90 - 85	19.08	444.65	19.87
9	85 - 80	20.05	544.59	20.14
10	80 - 75	21.15	646.04	20.47
11	75 - 73.5	21.48	676.80	20.57
12	73.5 - 73.25	21.56	681.94	20.59
13	73.25 - 68.25	23.00	786.68	21.41
14	68.25 - 63.25	24.46	895.59	22.14
15	63.25 - 60	25.41	968.32	22.61
16	60 - 59.75	25.50	973.98	22.64
17	59.75 - 54.75	27.10	1089.16	23.41
18	54.75 - 49.75	28.71	1208.09	24.15
19	49.75 - 44.75	30.33	1330.68	24.87
20	44.75 - 40	31.87	1450.49	25.56
21	40 - 39.75	31.97	1456.89	25.60
22	39.75 - 34.75	33.85	1586.82	26.35
23	34.75 - 29.75	35.74	1720.42	27.07
24	29.75 - 24.75	37.64	1857.65	27.81
25	24.75 - 20	39.45	1991.47	28.52
26	20 - 19.75	39.56	1998.60	28.55
27	19.75 - 14.75	41.75	2143.42	29.35
28	14.75 - 9.75	43.94	2292.17	30.13
29	9.75 - 4.75	46.14	2444.79	30.90
30	4.75 - 0	48.24	2593.31	31.62

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
125 - 120	Pole	TP24x24x0.375	Pole	2.1%	Pass
120 - 115	Pole	TP24x24x0.375	Pole	6.3%	Pass
115 - 110	Pole	TP24x24x0.375	Pole	13.1%	Pass
110 - 105	Pole	TP24x24x0.375	Pole	21.3%	Pass
105 - 100	Pole	TP24x24x0.375	Pole	29.8%	Pass
100 - 95	Pole	TP30x30x0.375	Pole	27.9%	Pass
95 - 90	Pole	TP30x30x0.375	Pole	35.9%	Pass
90 - 85	Pole	TP30x30x0.375	Pole	46.2%	Pass
85 - 80	Pole	TP30x30x0.375	Pole	56.3%	Pass
80 - 75	Pole	TP36x36x0.375	Pole	47.4%	Pass
75 - 73.5	Pole	TP36x36x0.375	Pole	49.6%	Pass
73.5 - 73.25	Pole + Reinf.	TP36x36x0.5625	Reinf. 4 Compression	39.4%	Pass
73.25 - 68.25	Pole + Reinf.	TP36x36x0.5625	Reinf. 4 Compression	45.4%	Pass
68.25 - 63.25	Pole + Reinf.	TP36x36x0.5625	Reinf. 4 Compression	51.6%	Pass
63.25 - 60	Pole + Reinf.	TP36x36x0.5625	Reinf. 4 Compression	55.7%	Pass
60 - 59.75	Pole + Reinf.	TP42x42x0.525	Pole	38.0%	Pass
59.75 - 54.75	Pole + Reinf.	TP42x42x0.525	Pole	42.5%	Pass
54.75 - 49.75	Pole + Reinf.	TP42x42x0.525	Pole	47.0%	Pass
49.75 - 44.75	Pole + Reinf.	TP42x42x0.525	Pole	51.8%	Pass
44.75 - 40	Pole + Reinf.	TP42x42x0.525	Pole	56.4%	Pass
40 - 39.75	Pole + Reinf.	TP48x48x0.5563	Pole	41.7%	Pass
39.75 - 34.75	Pole + Reinf.	TP48x48x0.5563	Pole	45.4%	Pass
34.75 - 29.75	Pole + Reinf.	TP48x48x0.5563	Pole	49.2%	Pass
29.75 - 24.75	Pole + Reinf.	TP48x48x0.5563	Pole	53.1%	Pass
24.75 - 20	Pole + Reinf.	TP48x48x0.5563	Pole	56.9%	Pass
20 - 19.75	Pole + Reinf.	TP54x54x0.5875	Pole	43.6%	Pass
19.75 - 14.75	Pole + Reinf.	TP54x54x0.5875	Pole	46.7%	Pass
14.75 - 9.75	Pole + Reinf.	TP54x54x0.5875	Pole	49.9%	Pass
9.75 - 4.75	Pole + Reinf.	TP54x54x0.5875	Pole	53.2%	Pass
4.75 - 0	Pole + Reinf.	TP54x54x0.5875	Pole	56.4%	Pass
				Summary	
			Pole	56.9%	Pass
			Reinforcement	55.7%	Pass
			Overall	56.9%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity*				
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4
125 - 120	1942	n/a	1942	27.83	n/a	27.83	2.1%				
120 - 115	1942	n/a	1942	27.83	n/a	27.83	6.3%				
115 - 110	1942	n/a	1942	27.83	n/a	27.83	13.1%				
110 - 105	1942	n/a	1942	27.83	n/a	27.83	21.3%				
105 - 100	1942	n/a	1942	27.83	n/a	27.83	29.8%				
100 - 95	3829	n/a	3829	34.90	n/a	34.90	27.9%				
95 - 90	3829	n/a	3829	34.90	n/a	34.90	35.9%				
90 - 85	3829	n/a	3829	34.90	n/a	34.90	46.2%				
85 - 80	3829	n/a	3829	34.90	n/a	34.90	56.3%				
80 - 75	6659	n/a	6659	41.97	n/a	41.97	47.4%				
75 - 73.5	6659	n/a	6659	41.97	n/a	41.97	49.6%				
73.5 - 73.25	6659	3108	9767	41.97	18.00	59.97	34.0%				39.4%
73.25 - 68.25	6659	3108	9767	41.97	18.00	59.97	39.2%				45.4%
68.25 - 63.25	6659	3108	9767	41.97	18.00	59.97	44.5%				51.6%
63.25 - 60	6659	3108	9767	41.97	18.00	59.97	48.1%				55.7%
60 - 59.75	10622	4188	14810	49.04	18.00	67.04	38.0%			35.0%	
59.75 - 54.75	10622	4188	14810	49.04	18.00	67.04	42.5%			39.1%	
54.75 - 49.75	10622	4188	14810	49.04	18.00	67.04	47.0%			43.3%	
49.75 - 44.75	10622	4188	14810	49.04	18.00	67.04	51.8%			47.6%	
44.75 - 40	10622	4188	14810	49.04	18.00	67.04	56.4%			51.9%	
40 - 39.75	15908	7435	23343	56.11	24.38	80.48	41.7%		37.2%		
39.75 - 34.75	15908	7435	23343	56.11	24.38	80.48	45.4%		40.5%		
34.75 - 29.75	15908	7435	23343	56.11	24.38	80.48	49.2%		43.9%		
29.75 - 24.75	15908	7435	23343	56.11	24.38	80.48	53.1%		47.4%		
24.75 - 20	15908	7435	23343	56.11	24.38	80.48	56.9%		50.8%		
20 - 19.75	22710	12261	34970	63.18	31.88	95.05	43.6%	41.5%			
19.75 - 14.75	22710	12261	34970	63.18	31.88	95.05	46.7%	44.5%			
14.75 - 9.75	22710	12261	34970	63.18	31.88	95.05	49.9%	47.5%			
9.75 - 4.75	22710	12261	34970	63.18	31.88	95.05	53.2%	50.7%			
4.75 - 0	22710	12261	34970	63.18	31.88	95.05	56.4%	53.7%			

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

PROJECT	**101126_004_01 - Branford/ I-95/ Intiti**				
SUBJECT	**Bridge Stiffener - 80 ft**				
DATE	**05-16-19**	PAGE	1	OF	3

V1.0.1

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

Bolted Bridge Stiffeners Reinforcement Check

Assumptions / Notes:

1. For design purposes, it is assumed that the proposed bridge stiffeners are to take the full load.
2. The plastification of the pole is not considered.
3. All shear and axial loads are taken by the flange bolts.

1. PARAMETERS

Rev. H

Elevation 80 ft Apply TIA-222-H Section 15.5? Yes

1.1 tnxTower Reactions

Moment (M)	544.59	k-ft
Axial Load (P)	20.05	kip
Shear Load (V)	20.13	kips

1.2 Shaft Properties at the Flange

Upper Shaft Diameter (Dshaft1)	30	in
Upper Shaft Thichkness (t1)	0.375	in
Lower Shaft Diameter (Dshaft2)	36	in
Lower Shaft Thickness (t2)	0.375	in
Shaft Grade:		
Fyshaft	42	ksi
Fushaft	63	ksi

1.3 Existing Bridge Stiffeners Properties

(Verify existing bolted connection for reduced moment.)

Number of Proposed Bridge Stiffeners (Nexist)	3	
Thickness of Proposed Bridge Stiffeners (texist)	1	in
Width of Proposed Bridge Stiffeners (wexist)	4.5	in
Existing Bridge Stiffener Grade:		
Fyex	65	ksi
Fuex	80	ksi
Diameter to the centroid of Existing Bridge Stiffeners (BCexist)	37	in
Gross Area of One Existing Bridge Stiffener (Ag_exist)	4.5	in^2
Radius of Gyration about x-axis (rx)	0.289	in
Moment of Inertia of Existing Bridge Stiffeners (Iexist)	2310	in^4

1.4 Flange Bolt Properties

Number of Flange Bolts (Nbolts)	24	
Diameter of Flange Bolts	1	in
Bolt Circle of Flange Bolts (BCbolts)	33	in
Gross Area of One Flange Bolt (Ag_bolts)	0.785	in^2
Moment of Inertia of Flange Bolts (Ibolts)	2566	in^4

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Tulsa, OK 74119
(918) 587-4630

1.5 Division of Forces

Total Gross Area (Ag_total)	32.35	in^2
Total Moment of Inertia (Itotal)	4876	in^4

1.6 Reactions to Existing Bridge Stiffeners

Moment Reaction to Existing Bridge Stiffeners (Mexist)	258.0	kip-ft
Axial Reaction to Existing Bridge Stiffeners (Pexist)	0.0	kips
Shear Reaction to Flange Bolts (Vexist)	0.0	kips

1.7 Reactions to Flange Bolts

(It is assumed that all shear and axial loads are taken by the flange bolts)

Moment Reaction to Flange Bolts (Mbolts)	286.6	kip-ft	**Check Flange Connection with these Reactions**
Axial Reaction to Flange Bolts (Pbolts)	20.1	kips	
Shear Reaction to Flange Bolts (Vbolts)	20.1	kips	

2. Existing Bridge Stiffener

2.1 Maximum Axial Forces in Single Existing

Outer Radius of Bolt Circle (C)	18.5	in
Critical Compression Bending Stress (Pcomp)	111.6	kips
Critical Tension Bending Stress (Ptens)	111.6	kips

2.2 Available Compression Strength

[AISC 15th Edition E3-1]

Resistance Factor (φc)	0.9		
Unbraced Length (Lu)	16	in	
Effective Length Factor (K)	1		
Strength of Bridge Stiffener:			
Fy	65	ksi	
Fu	80	ksi	
Effective Length of Member (Lc)	16.00	in	[AISC 15th Edition E3-2]
Elastic Buckling Stress (Fe)	93.2	ksi	[AISC 15th Edition,Eq. E3-4]
Limit	99.5		
Determination of Crticial Stress (Fcr)	48.5	ksi	

[AISC 15th Edition,Eqs. E3-2 and E3-3]

Allowable Compressive Strength (φPn)	196.6	kips

[AISC 15th Ed., Eqs. J4-6 and E3-1]

Check Compressive Strength (Checkcomp)	54.1%	Pass

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Tulsa, OK 74119
(918) 587-4630

2.3 Available Tension Strength

Gross Section Yield

Available Tension Yield Strength (φPty)	263.3	kips
[AISC 15th Ed., Ch.D2]		

Net Section Fracture

Bolt Hole Diameter (BH)	1.188	in
Thickness (T)	1.00	in
Net Area (Anet)	3.250	in^2
Net Area Limitation (Ae)	3.250	in^2
Available Fractile Strength (φPtr)	195.0	kips

Tension Check

Controlling Mode of Failure (Check mode)	Fracture Controls		
(φPnt)	195.0	kips	
Controlling Tension Mode Check (Checktension)	54.5%		Pass

SUMMARY

tnxTower Reactions

M	544.6	kip-ft
P	20.1	kip
V	20.1	kip

Flange Bolts

Diameter of Flange Bolts (Dbolts)	1.00	in	
Bolt Circle of Flange Bolts (BCbolts)	33.0	in	
Loads to Flange Bolts			
Mbolts	286.6	kip-ft	See Flange tool for Flange Bolt and Plate Capacities
P	20.1	kip	
V	20.1	kip	

Existing Jump Plates

Moment to Existing Bridge Stiffeners (Mexist)	258.0	kip-ft	
Number of Existing Bridge Stiffeners (Nexist)	3		
Thickness (texist)	1.00	in	
Width (wexist)	4.50	in	
Controlling Capacity of Existing Bridge Stiffeners (Capacitymax)	54.5%		Pass

PROJECT	**101126_004_01 - Branford/ I-95/ Intiti**				
SUBJECT	**Bridge Stiffener - 60 ft**				
DATE	**05-16-19**	PAGE	1	OF	3

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(918) 587-4630

Bolted Bridge Stiffeners Reinforcement Check

Assumptions / Notes:

1. For design purposes, it is assumed that the proposed bridge stiffeners are to take the full load.
2. The plastification of the pole is not considered.
3. All shear and axial loads are taken by the flange bolts.

1. PARAMETERS

Rev. H

Elevation 60 ft Apply TIA-222-H Section 15.5? Yes

1.1 tnxTower Reactions

Moment (M)	968.31	k-ft
Axial Load (P)	25.41	kip
Shear Load (V)	22.6	kips

1.2 Shaft Properties at the Flange

Upper Shaft Diameter (Dshaft1)	36	in
Upper Shaft Thichkness (t1)	0.375	in
Lower Shaft Diameter (Dshaft2)	42	in
Lower Shaft Thickness (t2)	0.375	in
Shaft Grade:		
Fyshaft	42	ksi
Fushaft	63	ksi

1.3 Existing Bridge Stiffeners Properties

(Verify existing bolted connection for reduced moment.)

Number of Proposed Bridge Stiffeners (Nexist)	3	
Thickness of Proposed Bridge Stiffeners (texist)	1	in
Width of Proposed Bridge Stiffeners (wexist)	6	in
Existing Bridge Stiffener Grade:		
Fyex	65	ksi
Fuex	80	ksi
Diameter to the centroid of Existing Bridge Stiffeners (BCexist)	43	in
Gross Area of One Existing Bridge Stiffener (Ag_exist)	6	in^2
Radius of Gyration about x-axis (rx)	0.289	in
Moment of Inertia of Existing Bridge Stiffeners (Iexist)	4160	in^4

1.4 Flange Bolt Properties

Number of Flange Bolts (Nbolts)	28	
Diameter of Flange Bolts	1	in
Bolt Circle of Flange Bolts (BCbolts)	39	in
Gross Area of One Flange Bolt (Ag_bolts)	0.785	in^2
Moment of Inertia of Flange Bolts (Ibolts)	4181	in^4

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1.5 Division of Forces

Total Gross Area (Ag_total)	39.99	in^2
Total Moment of Inertia (Itotal)	8341	in^4

1.6 Reactions to Existing Bridge Stiffeners

Moment Reaction to Existing Bridge Stiffeners (Mexist)	482.9	kip-ft
Axial Reaction to Existing Bridge Stiffeners (Pexist)	0.0	kips
Shear Reaction to Flange Bolts (Vexist)	0.0	kips

1.7 Reactions to Flange Bolts

(It is assumed that all shear and axial loads are taken by the flange bolts)

Moment Reaction to Flange Bolts (Mbolts)	485.4	kip-ft	**Check Flange Connection with these Reactions**
Axial Reaction to Flange Bolts (Pbolts)	25.4	kips	
Shear Reaction to Flange Bolts (Vbolts)	22.6	kips	

2. Existing Bridge Stiffener

2.1 Maximum Axial Forces in Single Existing

Outer Radius of Bolt Circle (C)	21.5	in
Critical Compression Bending Stress (Pcomp)	179.7	kips
Critical Tension Bending Stress (Ptens)	179.7	kips

2.2 Available Compression Strength

[AISC 15th Edition E3-1]

Resistance Factor (φc)	0.9		
Unbraced Length (Lu)	16	in	
Effective Length Factor (K)	1		
Strength of Bridge Stiffener:			
Fy	65	ksi	
Fu	80	ksi	
Effective Length of Member (Lc)	16.00	in	[AISC 15th Edition E3-2]
Elastic Buckling Stress (Fe)	93.2	ksi	[AISC 15th Edition,Eq. E3-4]
Limit	99.5		
Determination of Crticial Stress (Fcr)	48.5	ksi	

[AISC 15th Edition,Eqs. E3-2 and E3-3]

Allowable Compressive Strength (φPn)	262.1	kips

[AISC 15th Ed., Eqs. J4-6 and E3-1]

Check Compressive Strength (Checkcomp)	65.3%	Pass

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2.3 Available Tension Strength

Gross Section Yield

Available Tension Yield Strength (φPty)	351.0	kips
[AISC 15th Ed., Ch.D2]		

Net Section Fracture

Bolt Hole Diameter (BH)	1.188	in
Thickness (T)	1.00	in
Net Area (Anet)	4.750	in^2
Net Area Limitation (Ae)	4.750	in^2
Available Fractile Strength (φPtr)	285.0	kips

Tension Check

Controlling Mode of Failure (Check mode)	Fracture Controls		
(φPnt)	285.0	kips	
Controlling Tension Mode Check (Checktension)	60.1%		Pass

SUMMARY

tnxTower Reactions

M	968.3	kip-ft
P	25.4	kip
V	22.6	kip

Flange Bolts

Diameter of Flange Bolts (Dbolts)	1.00	in	
Bolt Circle of Flange Bolts (BCbolts)	39.0	in	
Loads to Flange Bolts			
Mbolts	485.4	kip-ft	See Flange tool for Flange Bolt and Plate Capacities
P	25.4	kip	
V	22.6	kip	

Existing Jump Plates

Moment to Existing Bridge Stiffeners (Mexist)	482.9	kip-ft	
Number of Existing Bridge Stiffeners (Nexist)	3		
Thickness (texist)	1.00	in	
Width (wexist)	6.00	in	
Controlling Capacity of Existing Bridge Stiffeners (Capacitymax)	65.3%		Pass

PROJECT	**101126_004_01 - Branford/ I-95/ Intiti**				
SUBJECT	**Bridge Stiffener - 40 ft**				
DATE	**05-16-19**	PAGE	1	OF	3

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Tulsa, OK 74119
(918) 587-4630

Bolted Bridge Stiffeners Reinforcement Check

Assumptions / Notes:

1. For design purposes, it is assumed that the proposed bridge stiffeners are to take the full load.
2. The plastification of the pole is not considered.
3. All shear and axial loads are taken by the flange bolts.

1. PARAMETERS

Rev. H

Elevation 40 ft Apply TIA-222-H Section 15.5? Yes

1.1 tnxTower Reactions

Moment (M)	1450.49	k-ft
Axial Load (P)	31.86	kip
Shear Load (V)	25.56	kips

1.2 Shaft Properties at the Flange

Upper Shaft Diameter (Dshaft1)	42	in
Upper Shaft Thichkness (t1)	0.375	in
Lower Shaft Diameter (Dshaft2)	48	in
Lower Shaft Thickness (t2)	0.375	in
Shaft Grade:		
Fyshaft	42	ksi
Fushaft	63	ksi

1.3 Existing Bridge Stiffeners Properties

(Verify existing bolted connection for reduced moment.)

Number of Proposed Bridge Stiffeners (Nexist)	3	
Thickness of Proposed Bridge Stiffeners (texist)	1.25	in
Width of Proposed Bridge Stiffeners (wexist)	6.5	in
Existing Bridge Stiffener Grade:		
Fyex	65	ksi
Fuex	80	ksi
Diameter to the centroid of Existing Bridge Stiffeners (BCexist)	49	in
Gross Area of One Existing Bridge Stiffener (Ag_exist)	8.125	in^2
Radius of Gyration about x-axis (rx)	0.361	in
Moment of Inertia of Existing Bridge Stiffeners (Iexist)	7316	in^4

1.4 Flange Bolt Properties

Number of Flange Bolts (Nbolts)	32	
Diameter of Flange Bolts	1	in
Bolt Circle of Flange Bolts (BCbolts)	45	in
Gross Area of One Flange Bolt (Ag_bolts)	0.785	in^2
Moment of Inertia of Flange Bolts (Ibolts)	6362	in^4

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1.5 Division of Forces

Total Gross Area (Ag_total)	49.51	in^2
Total Moment of Inertia (Itotal)	13677	in^4

1.6 Reactions to Existing Bridge Stiffeners

Moment Reaction to Existing Bridge Stiffeners (Mexist)	775.8	kip-ft
Axial Reaction to Existing Bridge Stiffeners (Pexist)	0.0	kips
Shear Reaction to Flange Bolts (Vexist)	0.0	kips

1.7 Reactions to Flange Bolts

(It is assumed that all shear and axial loads are taken by the flange bolts)

Moment Reaction to Flange Bolts (Mbolts)	674.7	kip-ft	**Check Flange Connection with these Reactions**
Axial Reaction to Flange Bolts (Pbolts)	31.9	kips	
Shear Reaction to Flange Bolts (Vbolts)	25.6	kips	

2. Existing Bridge Stiffener

2.1 Maximum Axial Forces in Single Existing

Outer Radius of Bolt Circle (C)	24.5	in
Critical Compression Bending Stress (Pcomp)	253.3	kips
Critical Tension Bending Stress (Ptens)	253.3	kips

2.2 Available Compression Strength

[AISC 15th Edition E3-1]

Resistance Factor (φc)	0.9		
Unbraced Length (Lu)	16	in	
Effective Length Factor (K)	1		
Strength of Bridge Stiffener:			
Fy	65	ksi	
Fu	80	ksi	
Effective Length of Member (Lc)	16.00	in	[AISC 15th Edition E3-2]
Elastic Buckling Stress (Fe)	145.6	ksi	[AISC 15th Edition,Eq. E3-4]
Limit	99.5		
Determination of Crticial Stress (Fcr)	53.9	ksi	

[AISC 15th Edition,Eqs. E3-2 and E3-3]

Allowable Compressive Strength (φPn)	394.3	kips

[AISC 15th Ed., Eqs. J4-6 and E3-1]

Check Compressive Strength (Checkcomp)	61.2%	Pass

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2.3 Available Tension Strength

Gross Section Yield

Available Tension Yield Strength (φPty)	475.3	kips
[AISC 15th Ed., Ch.D2]		

Net Section Fracture

Bolt Hole Diameter (BH)	1.188	in
Thickness (T)	1.25	in
Net Area (Anet)	6.563	in^2
Net Area Limitation (Ae)	6.563	in^2
Available Fractile Strength (φPtr)	393.8	kips

Tension Check

Controlling Mode of Failure (Check mode)	Fracture Controls		
(φPnt)	393.8	kips	
Controlling Tension Mode Check (Checktension)	61.3%		Pass

SUMMARY

tnxTower Reactions

M	1450.5	kip-ft
P	31.9	kip
V	25.6	kip

Flange Bolts

Diameter of Flange Bolts (Dbolts)	1.00	in	
Bolt Circle of Flange Bolts (BCbolts)	45.0	in	
Loads to Flange Bolts			
Mbolts	674.7	kip-ft	See Flange tool for Flange Bolt and Plate Capacities
P	31.9	kip	
V	25.6	kip	

Existing Jump Plates

Moment to Existing Bridge Stiffeners (Mexist)	775.8	kip-ft	
Number of Existing Bridge Stiffeners (Nexist)	3		
Thickness (texist)	1.25	in	
Width (wexist)	6.50	in	
Controlling Capacity of Existing Bridge Stiffeners (Capacitymax)	61.3%		Pass

PROJECT	**101126_004_01 - Branford/ I-95/ Intiti**				
SUBJECT	**Bridge Stiffener - 20 ft**				
DATE	**05-16-19**	PAGE	1	OF	3

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Bolted Bridge Stiffeners Reinforcement Check

Assumptions / Notes:

1. For design purposes, it is assumed that the proposed bridge stiffeners are to take the full load.
2. The plastification of the pole is not considered.
3. All shear and axial loads are taken by the flange bolts.

1. PARAMETERS

Rev. H

Elevation 20 ft Apply TIA-222-H Section 15.5? Yes

1.1 tnxTower Reactions

Moment (M)	1991.46	k-ft
Axial Load (P)	39.44	kip
Shear Load (V)	28.51	kips

1.2 Shaft Properties at the Flange

Upper Shaft Diameter (Dshaft1)	48	in
Upper Shaft Thichkness (t1)	0.375	in
Lower Shaft Diameter (Dshaft2)	54	in
Lower Shaft Thickness (t2)	0.375	in
Shaft Grade:		
Fyshaft	42	ksi
Fushaft	63	ksi

1.3 Existing Bridge Stiffeners Properties

(Verify existing bolted connection for reduced moment.)

Number of Proposed Bridge Stiffeners (Nexist)	3	
Thickness of Proposed Bridge Stiffeners (texist)	1.25	in
Width of Proposed Bridge Stiffeners (wexist)	8.5	in
Existing Bridge Stiffener Grade:		
Fyex	65	ksi
Fuex	80	ksi
Diameter to the centroid of Existing Bridge Stiffeners (BCexist)	55	in
Gross Area of One Existing Bridge Stiffener (Ag_exist)	10.625	in^2
Radius of Gyration about x-axis (rx)	0.361	in
Moment of Inertia of Existing Bridge Stiffeners (Iexist)	12053	in^4

1.4 Flange Bolt Properties

Number of Flange Bolts (Nbolts)	36	
Diameter of Flange Bolts	1	in
Bolt Circle of Flange Bolts (BCbolts)	51	in
Gross Area of One Flange Bolt (Ag_bolts)	0.785	in^2
Moment of Inertia of Flange Bolts (Ibolts)	9193	in^4

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1.5 Division of Forces

Total Gross Area (Ag_total)	60.15	in^2
Total Moment of Inertia (Itotal)	21245	in^4

1.6 Reactions to Existing Bridge Stiffeners

Moment Reaction to Existing Bridge Stiffeners (Mexist)	1129.8	kip-ft
Axial Reaction to Existing Bridge Stiffeners (Pexist)	0.0	kips
Shear Reaction to Flange Bolts (Vexist)	0.0	kips

1.7 Reactions to Flange Bolts

(It is assumed that all shear and axial loads are taken by the flange bolts)

Moment Reaction to Flange Bolts (Mbolts)	861.7	kip-ft	**Check Flange Connection with these Reactions**
Axial Reaction to Flange Bolts (Pbolts)	39.4	kips	
Shear Reaction to Flange Bolts (Vbolts)	28.5	kips	

2. Existing Bridge Stiffener

2.1 Maximum Axial Forces in Single Existing

Outer Radius of Bolt Circle (C)	27.5	in
Critical Compression Bending Stress (Pcomp)	328.7	kips
Critical Tension Bending Stress (Ptens)	328.7	kips

2.2 Available Compression Strength

[AISC 15th Edition E3-1]

Resistance Factor (φc)	0.9		
Unbraced Length (Lu)	16	in	
Effective Length Factor (K)	1		
Strength of Bridge Stiffener:			
Fy	65	ksi	
Fu	80	ksi	
Effective Length of Member (Lc)	16.00	in	[AISC 15th Edition E3-2]
Elastic Buckling Stress (Fe)	145.6	ksi	[AISC 15th Edition,Eq. E3-4]
Limit	99.5		
Determination of Crticial Stress (Fcr)	53.9	ksi	

[AISC 15th Edition,Eqs. E3-2 and E3-3]

Allowable Compressive Strength (φPn)	515.6	kips

[AISC 15th Ed., Eqs. J4-6 and E3-1]

Check Compressive Strength (Checkcomp)	60.7%	Pass

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2.3 Available Tension Strength

Gross Section Yield

Available Tension Yield Strength (φPty)	621.6	kips
[AISC 15th Ed., Ch.D2]		

Net Section Fracture

Bolt Hole Diameter (BH)	1.188	in
Thickness (T)	1.25	in
Net Area (Anet)	9.063	in^2
Net Area Limitation (Ae)	9.063	in^2
Available Fractile Strength (φPtr)	543.8	kips

Tension Check

Controlling Mode of Failure (Check mode)	Fracture Controls		
(φPnt)	543.8	kips	
Controlling Tension Mode Check (Checktension)	57.6%		Pass

SUMMARY

tnxTower Reactions

M	1991.5	kip-ft
P	39.4	kip
V	28.5	kip

Flange Bolts

Diameter of Flange Bolts (Dbolts)	1.00	in	
Bolt Circle of Flange Bolts (BCbolts)	51.0	in	
Loads to Flange Bolts			
Mbolts	861.7	kip-ft	See Flange tool for Flange Bolt and Plate Capacities
P	39.4	kip	
V	28.5	kip	

Existing Jump Plates

Moment to Existing Bridge Stiffeners (Mexist)	1129.8	kip-ft	
Number of Existing Bridge Stiffeners (Nexist)	3		
Thickness (texist)	1.25	in	
Width (wexist)	8.50	in	
Controlling Capacity of Existing Bridge Stiffeners (Capacitymax)	60.7%		Pass

Monopole Flange Plate Connection

Elevation = 100 ft.

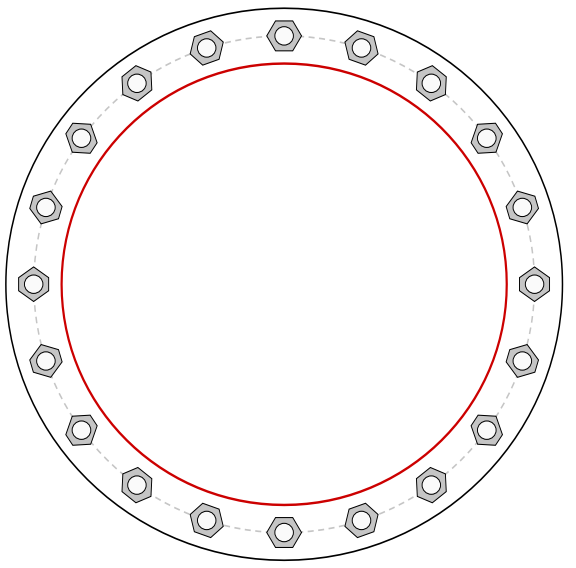
BU #	822765
Site Name	nford/ I-95/ X55/ Dtn1
Order #	479795, Rev. 0

TIA-222 Revision	H

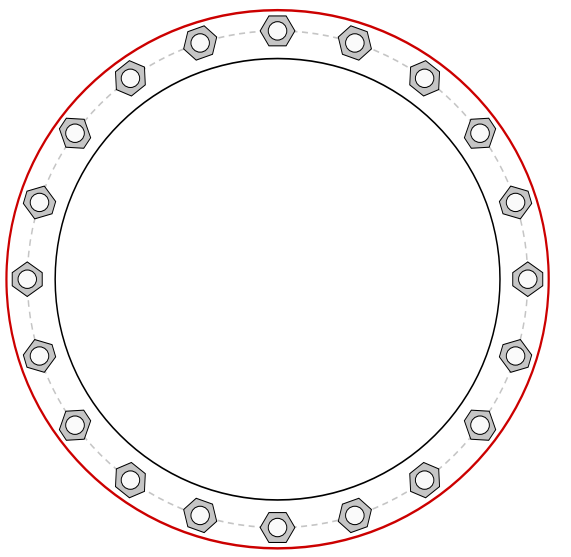
Applied Loads	
Moment (kip-ft)	188.90
Axial Force (kips)	10.10
Shear Force (kips)	11.15

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - Internal



Connection Properties

Bolt Data

(20) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 27" BC

Top Plate Data

30" OD x 1" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Top Pole Data

24" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bottom Plate Data

24" ID x 1" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

30" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	16.28	
Allowable (kips)	54.53	
Stress Rating:	**28.4%**	**Pass**

Top Plate Capacity

Max Stress (ksi):	17.32	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**50.9%**	**Pass**
Tension Side Stress Rating:	**18.3%**	**Pass**

Bottom Plate Capacity

Max Stress (ksi):	16.93	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**49.8%**	**Pass**
Tension Side Stress Rating:	**N/A**	

Monopole Flange Plate Connection

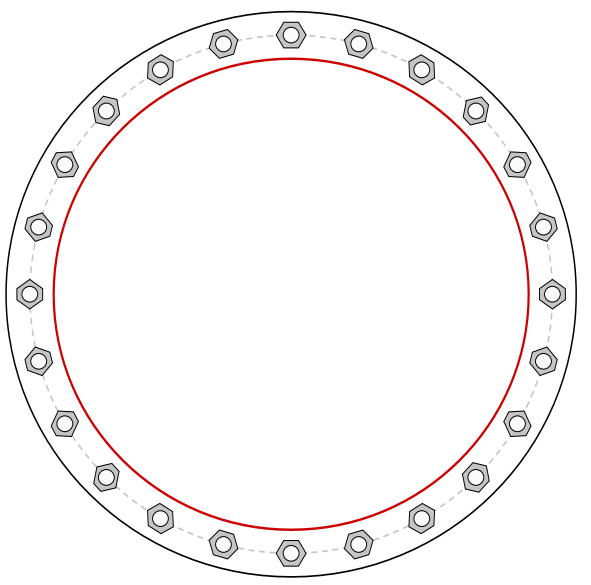
Elevation = 80 ft.

BU #	822765
Site Name	nford/ I-95/ X55/ Dtn1
Order #	479795, Rev. 0
TIA-222 Revision	H

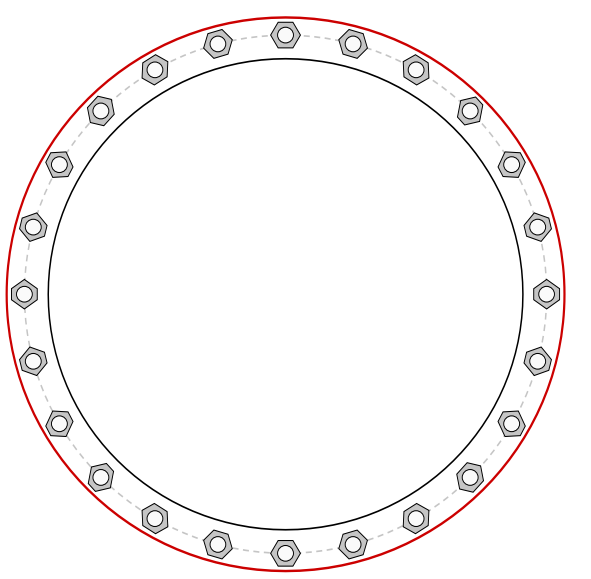
Applied Loads	
Moment (kip-ft)	286.60
Axial Force (kips)	20.10
Shear Force (kips)	20.10

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - Internal



Connection Properties

Bolt Data

(24) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 33" BC

Top Plate Data

36" OD x 1" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Top Pole Data

30" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bottom Plate Data

30" ID x 1" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

36" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	16.53	
Allowable (kips)	54.52	
Stress Rating:	**28.9%**	**Pass**

Top Plate Capacity

Max Stress (ksi):	17.55	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**51.6%**	**Pass**
Tension Side Stress Rating:	**17.7%**	**Pass**

Bottom Plate Capacity

Max Stress (ksi):	17.75	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**52.2%**	**Pass**
Tension Side Stress Rating:	**N/A**	

Monopole Flange Plate Connection

Elevation = 60 ft.

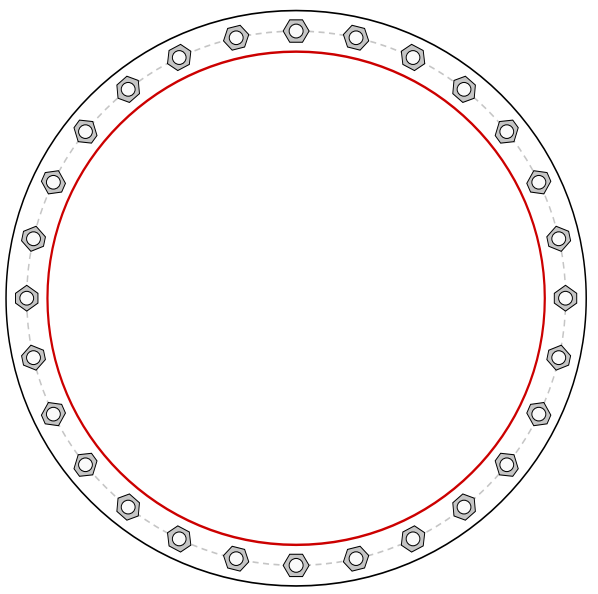
BU #	822765
Site Name	nford/ I-95/ X55/ Dtn1
Order #	479795, Rev. 0

TIA-222 Revision	H

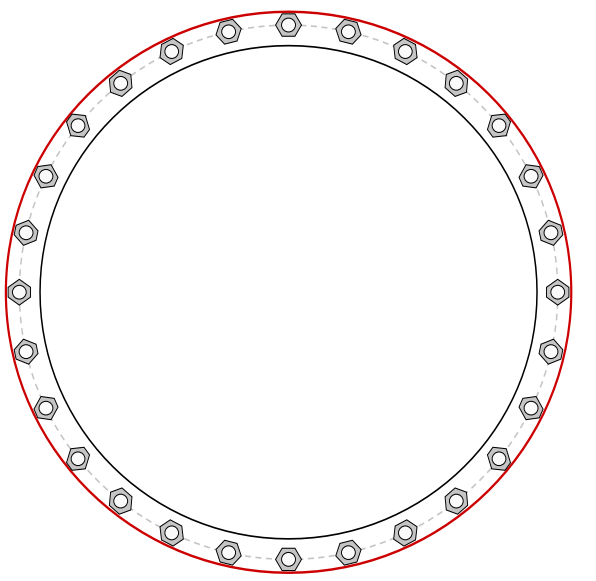
Applied Loads	
Moment (kip-ft)	485.40
Axial Force (kips)	25.40
Shear Force (kips)	22.60

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - Internal



Connection Properties

Bolt Data

(28) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 39" BC

Top Plate Data

42" OD x 1" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Top Pole Data

36" x 0.5625" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bottom Plate Data

36" ID x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

42" x 0.525" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	20.42	
Allowable (kips)	54.53	
Stress Rating:	**35.7%**	**Pass**

Top Plate Capacity

Max Stress (ksi):	20.79	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**61.1%**	**Pass**
Tension Side Stress Rating:	**21.2%**	**Pass**

Bottom Plate Capacity

Max Stress (ksi):	12.08	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**35.5%**	**Pass**
Tension Side Stress Rating:	**N/A**	

Monopole Flange Plate Connection

Elevation = 40 ft.

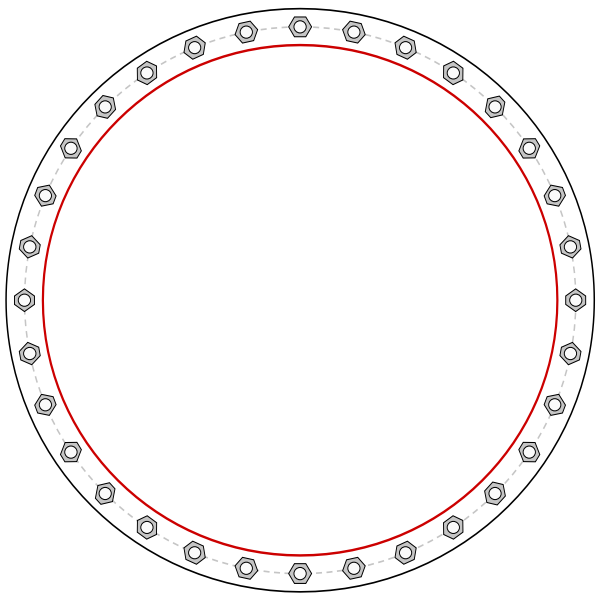
BU #	822765
Site Name	nford/ I-95/ X55/ Dtn1
Order #	479795, Rev. 0

TIA-222 Revision	H

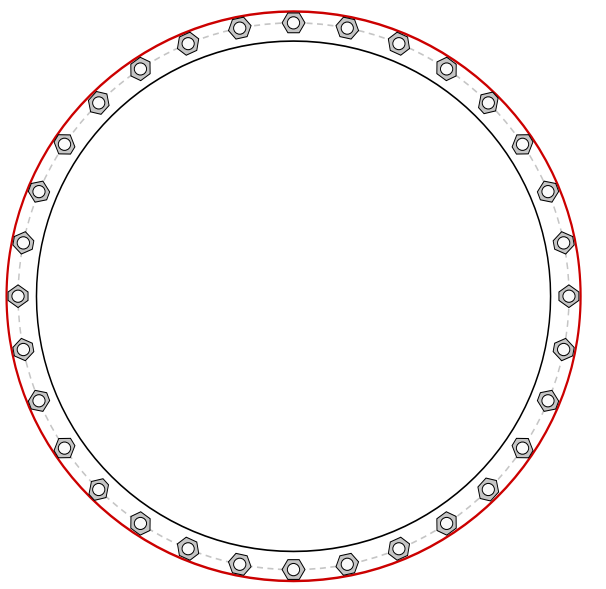
Applied Loads	
Moment (kip-ft)	674.70
Axial Force (kips)	31.90
Shear Force (kips)	25.60

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - Internal



Connection Properties

Bolt Data

(32) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 45" BC

Top Plate Data

48" OD x 1" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Top Pole Data

42" x 0.525" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bottom Plate Data

42" ID x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

48" x 0.55625" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	21.49	
Allowable (kips)	54.53	
Stress Rating:	**37.5%**	**Pass**

Top Plate Capacity

Max Stress (ksi):	22.03	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**64.8%**	**Pass**
Tension Side Stress Rating:	**21.8%**	**Pass**

Bottom Plate Capacity

Max Stress (ksi):	12.32	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**36.2%**	**Pass**
Tension Side Stress Rating:	**N/A**	

Monopole Flange Plate Connection

Elevation = 20 ft.

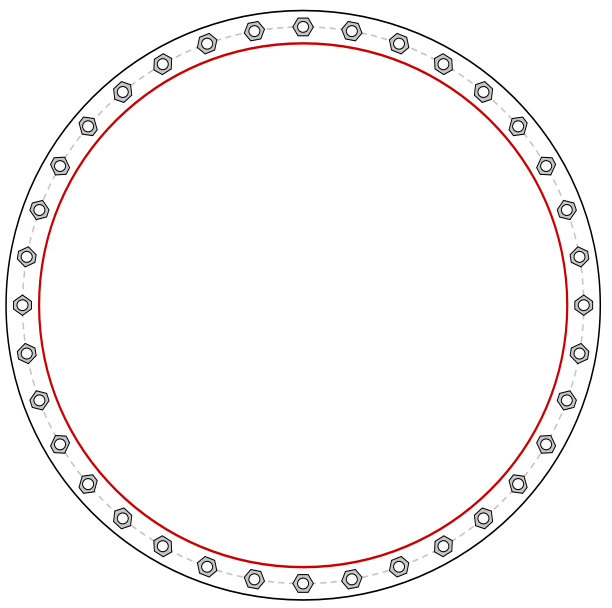
BU #	822765
Site Name	nford/ I-95/ X55/ Dtn1
Order #	479795, Rev. 0

TIA-222 Revision	H

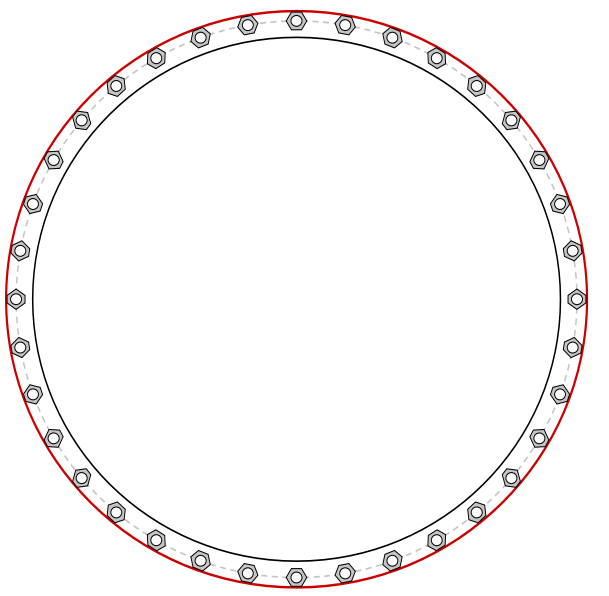
Applied Loads	
Moment (kip-ft)	861.70
Axial Force (kips)	39.40
Shear Force (kips)	28.50

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - Internal



Connection Properties

Bolt Data

(36) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 51" BC

Top Plate Data

54" OD x 1" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Plate Data

48" ID x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

48" x 0.55625" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bottom Pole Data

54" x 0.5875" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	21.43	
Allowable (kips)	54.53	
Stress Rating:	**37.4%**	**Pass**

Top Plate Capacity

Max Stress (ksi):	22.02	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**64.7%**	**Pass**
Tension Side Stress Rating:	**21.4%**	**Pass**

Bottom Plate Capacity

Max Stress (ksi):	11.97	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**35.2%**	**Pass**
Tension Side Stress Rating:	**N/A**	

PROJECT	**101126_004_01 - Branford/ I-95/ X55/ Dtn1, CT**
SUBJECT	**Anchor Rod Bracket Analysis**
DATE	**05-16-19**

V3.2.1

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

Analysis Criteria		
Design or Analysis?	Analysis	
AR Load Considered	Current Load	
Current load	95.17	kips
AR Capacity	199.5	kips

Tower Type	Monopole	

Post-Installed Adhesive AR Modification		
Size	1.75	in
Quantity	8	
Bolt Circle	60.3	in
Grade	F1554-105	
Fy	105	ksi
Fu	125	ksi

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

Anchor Rod Bracket Analysis Checks		
Tube Bearing	33.3%	-
Tube Compression	N/A	
Gusset Shear Yield	8.9%	-
Gusset Shear Rupture	9.6%	-
Gusset Flexure	N/A	-
Welds: Gusset to Tower and BP	28.2%	-
Welds: Gusset to Tube	16.9%	-
Welds: Geometry	N/A	
Tower Punching	3.6%	-
Tube Punching	5.5%	-
Utilization	**33.3%**	

Manufacturers Tower Properties			
Pole Thickness		0.375	in
Pole Grade		Custom	
Fy	42	42	ksi
Fu	63	63	ksi
Base Plate Gr.		A36	
Fy		36	ksi
Fu		58	ksi
Anchor Rods			
Size		1.75	in
Quantity		8	
Bolt Circle		60.25	in
Grade		F1554-105	
Fy		105	ksi
Fu		125	ksi

Bracket Properties				
Gusset			Pipe/Tube	
Thickness	1.25	in	Size	2.5 XXS Pipe
Width at Tube	3.125	in	Total Length	21 in
Height at Pole	60	in	Length above Gusset	0 in
Height at Tube	21	in	Length below Gusset	0 in
Grade	A572-65		Grade	Custom
Fy	65	ksi	Fy	50 50 ksi
Fu	80	ksi	Fu	65 65 ksi

Weld - Gusset to Tower			Weld - Gusset to Pipe/Tube	
FEXX	70	ksi	FEXX	70 ksi
Weld Type	Double Fillet		Weld Type	Double Bevel+Fillet
Fillet Size	3/8	in	Fillet Size	3/8 in
			Bevel Depth	3/8 in
Length	60	in		
Load Angle	45	deg.		

Weld - Gusset to Base Plate		
FEXX	70	ksi
Weld Type	Double Bevel+Fillet	
Fillet Size	9/16	in
Bevel Depth	9/16	in
Gap	0	in
Notch	0.75	in
Pipe/Tube Welded to Base/Footpad?	Yes	
Fillet Size	1/2	in

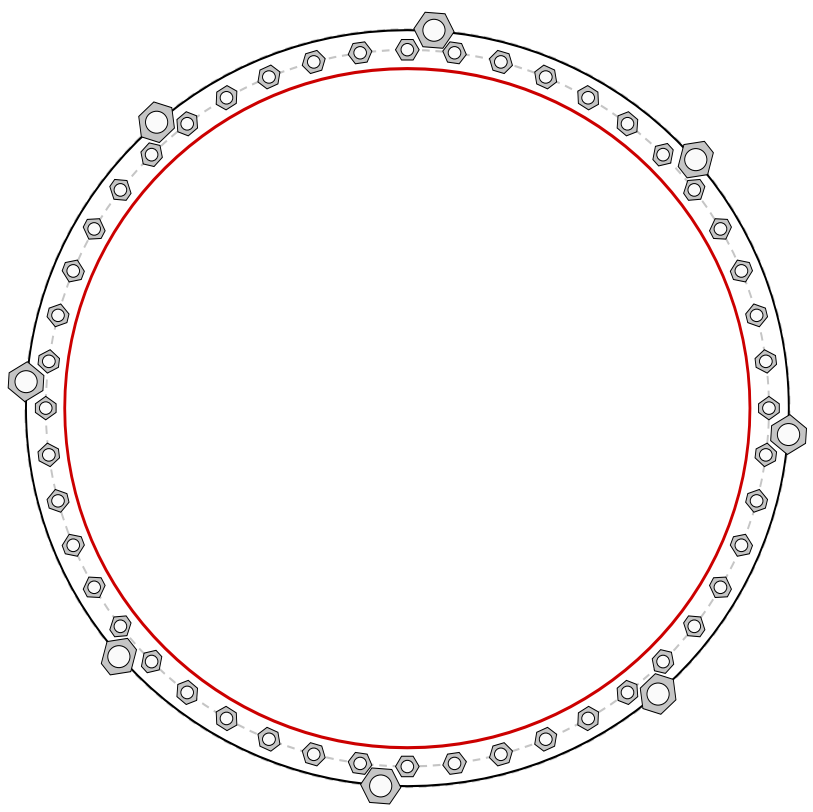
Monopole Base Plate Connection

Site Info	
BU #	822765
Site Name	nford/ I-95/ X55/ Dtn1
Order #	479795, Rev. 0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	2

Applied Loads	
Moment (kip-ft)	2593.31
Axial Force (kips)	48.24
Shear Force (kips)	31.62

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

GROUP 1: (48) 1" ø bolts (A687 N; Fy=105 ksi, Fu=125 ksi) on 57" BC

GROUP 2: (8) 1-3/4" ø bolts (A193 Gr. B7 N; Fy=105 ksi, Fu=125 ksi) on 60.25" BC

Base Plate Data

60.125" OD x 1" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Stiffener Data

N/A

Pole Data

54" x 0.5875" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

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

GROUP 1:		
Pu_c = 29.72	ϕPn_c = 63.63	**Stress Rating**
Vu = 0.66	ϕVn = 19.09	**52.2%**
Mu = 0.86	ϕMn = 10.67	**Pass**
GROUP 2:		
Pu_c = 95.17	ϕPn_c = 199.5	**Stress Rating**
Vu = 0	ϕVn = 59.85	**45.4%**
Mu = 0	ϕMn = 59.26	**Pass**

Base Plate Summary

Max Stress (ksi):	32.67	(Flexural)
Allowable Stress (ksi):	32.4	
Stress Rating:	**96.0%**	**Pass**

Drilled Pier Foundation

BU # :	822765
Site Name:	Branford/ I-95/ X55/ Dtr
Order Number:	479795, Rev. 0

TIA-222 Revison:	H
Tower Type:	Monopole

Applied Loads	Comp.	Uplift
Moment (kip-ft)	2593	
Axial Force (kips)	48	
Shear Force (kips)	32	

Material Properties		
Concrete Strength, f'c:	4	ksi
Rebar Strength, Fy:	60	ksi

Pier Design Data		
Depth	21	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
From 0.5' above grade to 12.547' below grade		
Pier Diameter	6	ft
Rebar Quantity	24	
Rebar Size	9	
Clear Cover to Ties	3	in
Tie Size	5	
Rebar Quantity	2	
Rebar Size	14	
Rebar Cage Diameter	60.25	in
Pier Section 2		
From 12.547' below grade to 21' below grade		
Pier Diameter	6	ft
Rebar Quantity	24	
Rebar Size	9	
Clear Cover to Ties	3	in
Tie Size	5	

Analysis Results		
Soil Lateral Capacity	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	5.79	-
Soil Safety Factor	2.01	-
Max Moment (kip-ft)	2750.06	-
Rating*	*62.9%*	-
Soil Vertical Capacity	*Compression*	*Uplift*
Skin Friction (kips)	366.71	-
End Bearing (kips)	254.47	-
Weight of Concrete (kips)	109.42	-
Total Capacity (kips)	621.18	-
Axial (kips)	157.42	-
Rating*	*24.1%*	-
Reinforced Concrete Capacity	*Compression*	*Uplift*
Critical Depth (ft from TOC)	5.77	-
Critical Moment (kip-ft)	2750.05	-
Critical Moment Capacity	3769.03	-
Rating*	*69.5%*	-

Soil Interaction Rating*	**62.9%**
Structural Foundation Rating*	**69.5%**

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

*Rating per TIA-222-H Section 15.5

Soil Profile

Groundwater Depth	N/A	ft	# of Layers	3

Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	3.333	3.333	120	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	3.333	11	7.667	120	150		34	0.979	0.979				20	Cohesionless
3	11	21	10	120	150		33	1.843	1.843			12	100	Cohesionless

Exhibit E

Mount Analysis

Date: May 9, 2019

Charles McGuirt
Crown Castle
2000 Corporate Drive.
Canonsburg, NC 15317
(704) 405-6607

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

Subject:	**Mount Analysis Report**	
Carrier Designation:	**T-Mobile Equipment Change-Out**	
	Carrier Site Number:	CT11025B
	Carrier Site Name:	Brandford/I-95/X55/Dtn1
Crown Castle Designation:	**Crown Castle BU Number:**	822765
	Crown Castle Site Name:	Branford/ I-95/ X55/ Dtn1
	Crown Castle JDE Job Number:	559227
	Crown Castle Order Number:	479795, Rev.0
Engineering Firm Designation:	**B+T Group Report Designation:**	101126.003.01
Site Data:	**10 Sylvia St., Branford, CT, New Haven, 06405** **Latitude 41° 17' 38.16" Longitude -72° 47' 8.54"**	
Structure Information:	**Tower Height & Type:**	**125 ft. Monopole**
	Mount Elevation:	**122 ft.**
	Mount Type:	**17 ft. Platform Mount**

Dear Mr. McGuirt,

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

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

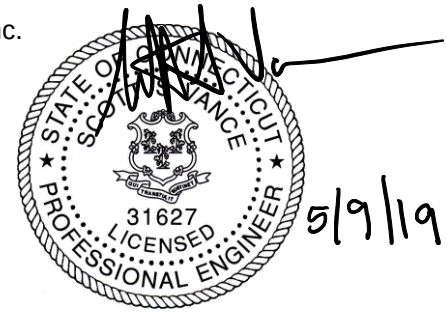
Platform Mount **Sufficient**

***See Section 4.1 of this report for the structural modifications required in order for the mount to support the loading listed in Table 1**

This analysis utilizes an ultimate 3-second gust wind speed of 130 mph as required by the 2015 International Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount structural analysis prepared by: Siva Tellakula, E.I.T.

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



Scott S. Vance, P.E.

TABLE OF CONTENTS

1) INTRODUCTION

This is a 17' Platform Mount, Mapped by Pier Structural Engineering Corp.

2) ANALYSIS CRITERIA

Building Code:	2015 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	130 mph
Exposure Category:	B
Topographic Factor at Base:	1
Topographic Factor at Mount:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.179
Seismic S_1:	0.061
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb.
Man Live Load at Mount Pipes:	500 lb.

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft.)	Antenna Centerline (ft.)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
122	122	3	Ericsson	AIR 32 B2A/B66AA	17' Platform Mount
		3	Ericsson	AIR 21 B2A B4P	
		3	RFS	APXVAARR24_43-U-NA20	
		3	Ericsson	KRY 112 144/1	
		3	Ericsson	RADIO 4449 B12/B71	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
CCI Order	Existing Loading Proposed Loading	Date: 04/30/2019	Crown Castle
Mount Mapping	Pier Structural Engineering Corp.	Date: 04/17/2019	On File

3.1) Analysis Method

RISA-3D (Version 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.

A tool internally developed by B+T Group, was used to calculate wind loading on all appurtenances, dishes and mount members for various loading cases. Selected output from the analysis is included in Appendix B "Software Input Calculations".

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

3.2) Assumptions

1. The mount was properly fabricated and installed in accordance with its original design and manufacturer's specifications.
2. The mount has been maintained in accordance with the manufacturer's specifications and is free of damage.
3. The configuration of antennas, mounts, and other appurtenances are as specified in Table-1.
4. All mount components have been assumed to be in sufficient condition to carry their full design capacity for the analysis.
5. Mount areas and weights are determined from field measurements, standard material properties, and/or manufacturer product data.
6. Serviceability with respect to antenna twist, tilt, roll or lateral translation is not checked and is left to the carrier or tower owner to ensure conformance.
7. All prior structural modifications, if any are assumed to be correctly installed and fully effective.
8. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
9. The analysis will be required to be revised if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.
10. The following material grades were assumed (Unless Noted Otherwise):
    (a) Connection Bolts : ASTM A325
    (b) Steel Pipe : ASTM A53 (GR. 35)
    (c) HSS (Round) : ASTM 500 (GR. B-42)
    (d) HSS (Rectangular) : ASTM 500 (GR. B-46)
    (e) Channel : ASTM A36 (GR. 36)
    (f) Steel Solid Rod : ASTM A36 (GR. 36)
    (g) Steel Plate : ASTM A36 (GR. 36)
    (h) Steel Angle : ASTM A36 (GR. 36)
    (i) UNISTRUT : ASTM A570 (GR. 33)

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

4) ANALYSIS RESULTS

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

Notes	Component	Critical Member	Centerline (ft.)	% Capacity	Pass / Fail
1,2	Main Horizontals	M1	122	76.4	Pass
	Handrails	M14	122	54.8	Pass
	Support Tubes	M11	122	39.5	Pass
	Solid Rods	M92	122	32.6	Pass
	Cold Formed Support	M126	122	89.9	Pass
	Connection Plates	M2	122	24.1	Pass
	Connection Angles	M16	122	44.5	Pass
	Mount Pipes	M25	122	92.7	Pass

Structure Rating (max from all components) =	92.7%

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

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.

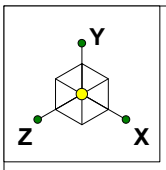
1. Install new horizontal pipes 2” Std. x 17’-0” Long with SitePro1 Handrail Connection Assembly AHCP, 2’-0” above the main horizontals
2. Replace existing mount pipe at Position 1 with new 2.0” X-Strong. Pipe x 7’-0” Long

No further structural modifications are required at this time, provided that the above-listed structural modifications are implemented.

(Refer to SK-1 of Appendix-A for modification details)

APPENDIX A

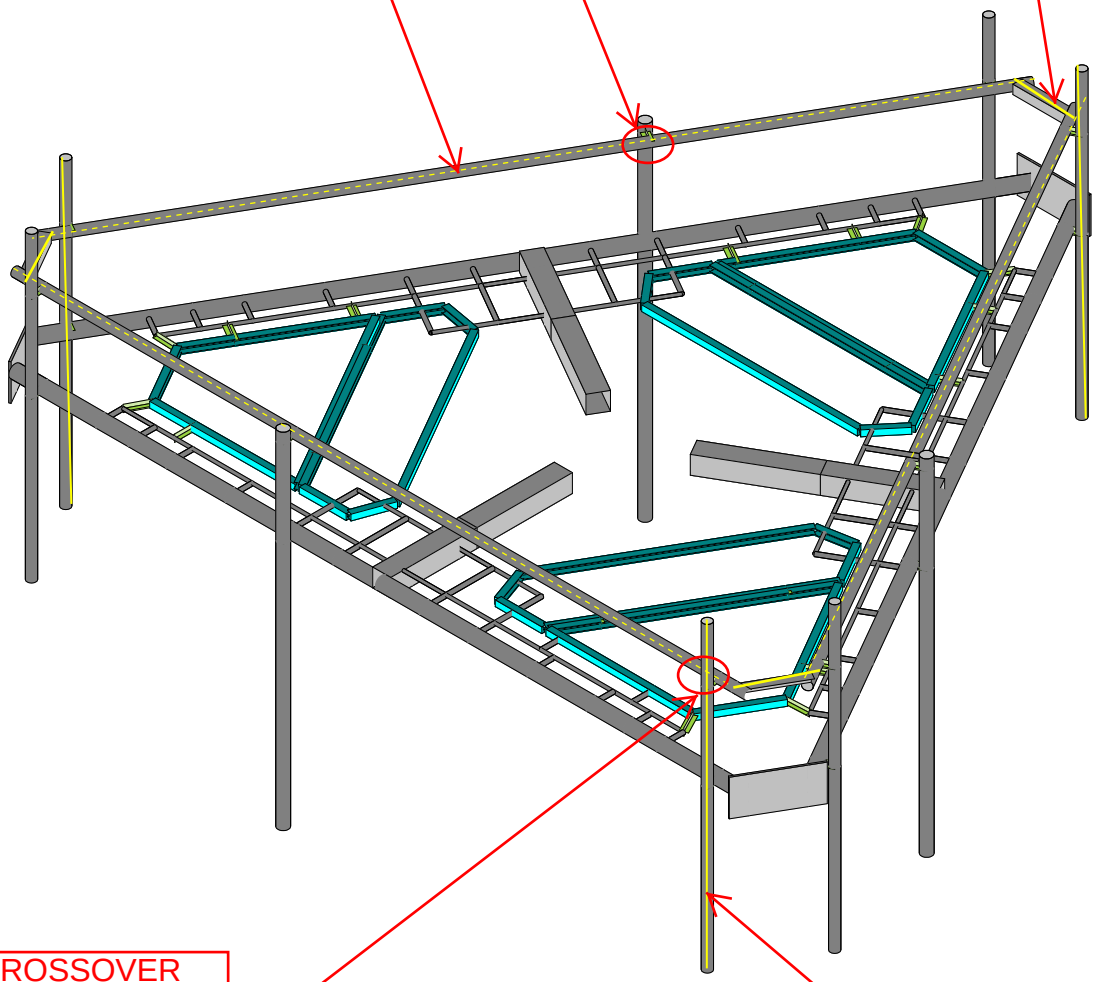
WIRE FRAME AND RENDERED MODELS



NEW 2" STD PIPE x 17'-0" LONG
TYP. 3 PLACES

NEW CROSSOVER PLATE KIT
(SITEPRO #SCX2-K)
TYP.3 PLACES

NEW HANDRAIL CORNER KIT,
SITEPRO #AHCP



NEW CROSSOVER PLATE KIT
(SITEPRO #SCX1-K)
TYP.6 PLACES

REPLACE EXISTING AT POS. 1 IN ALL SECTORS WITH
NEW 2" X-STRONG PIPE (2.38" x 0.218" thick) x 7'-0" LONG
TYP. 3 PLACES

Envelope Only Solution

B+T Group	822765 - Branford/ I-95/ X55/ Dtn1	SK - 1
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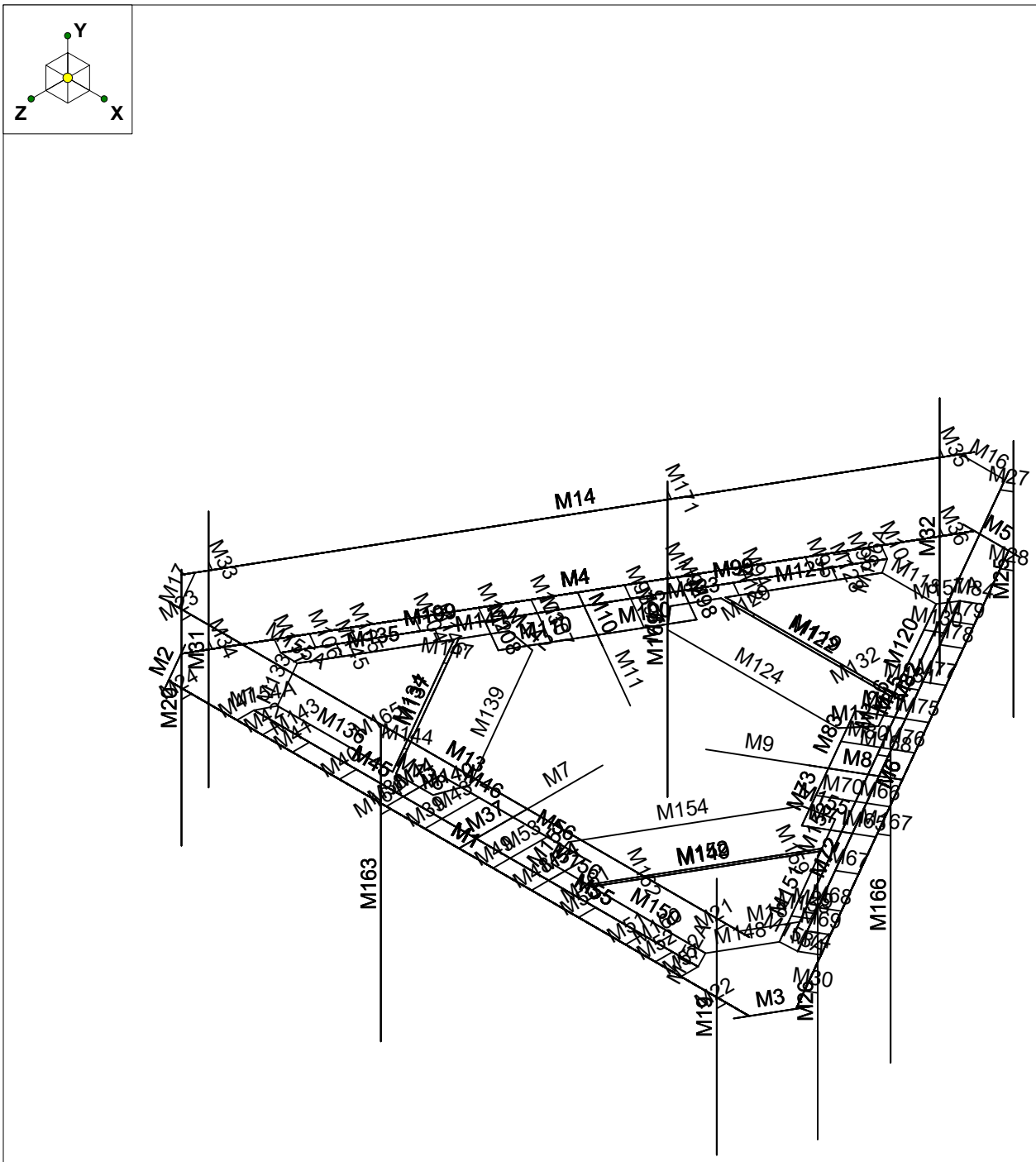

Envelope Only Solution

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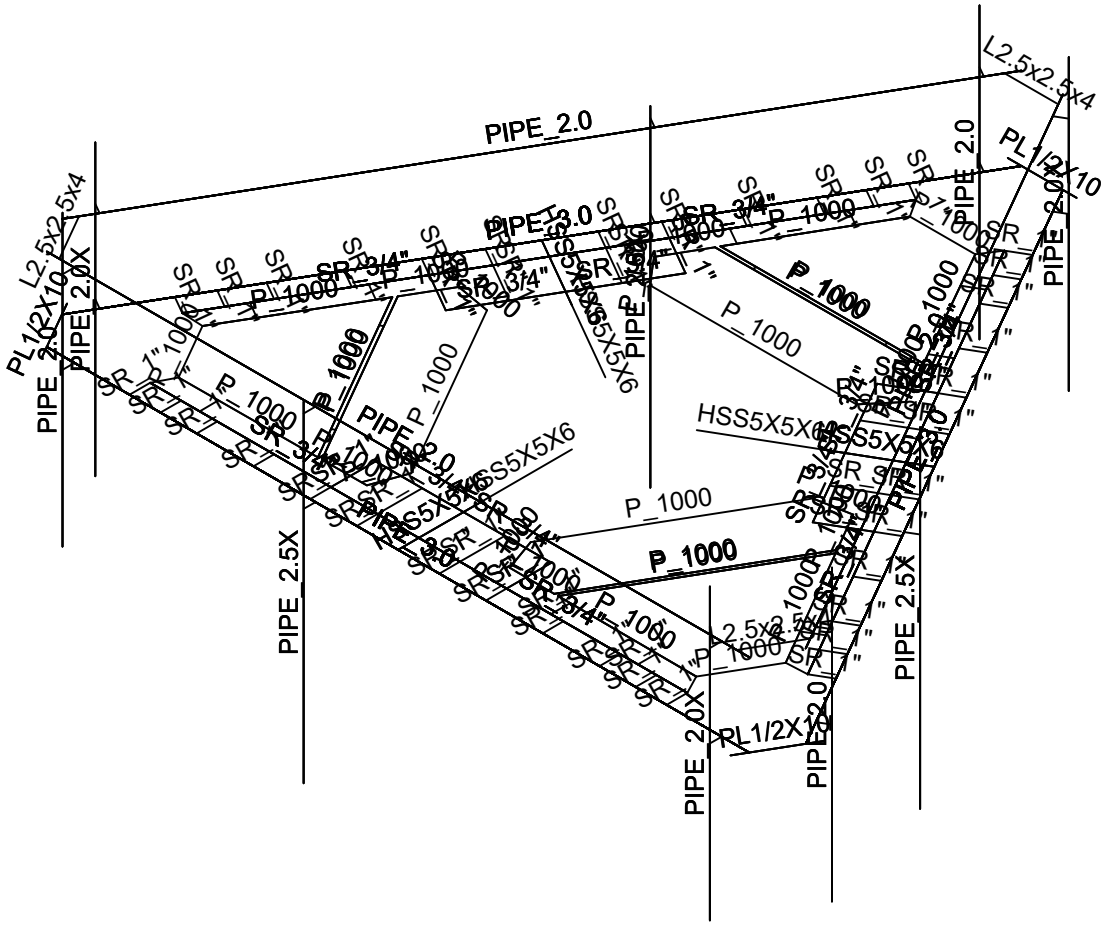

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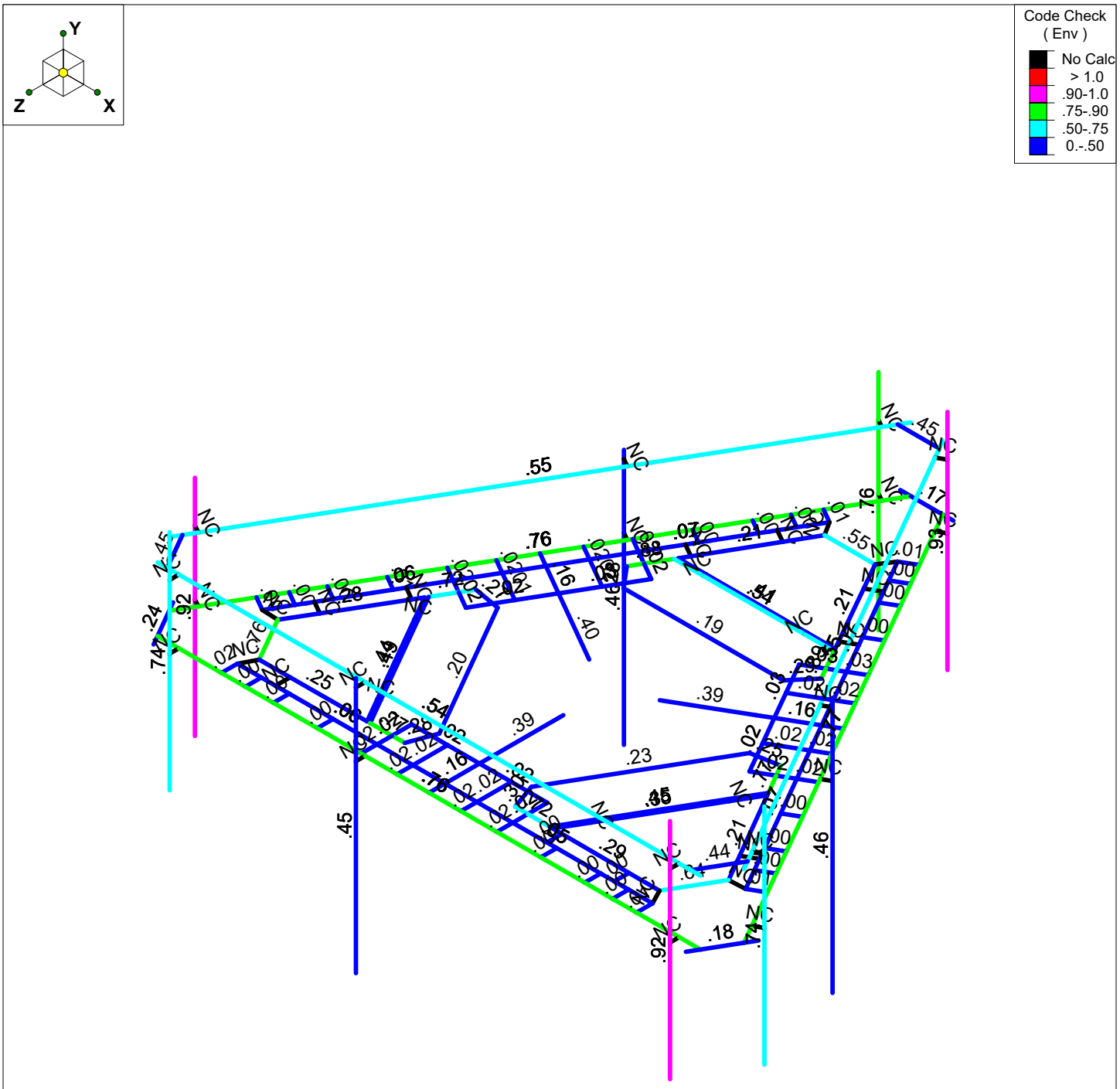

Member Code Checks Displayed (Enveloped)
Envelope Only Solution

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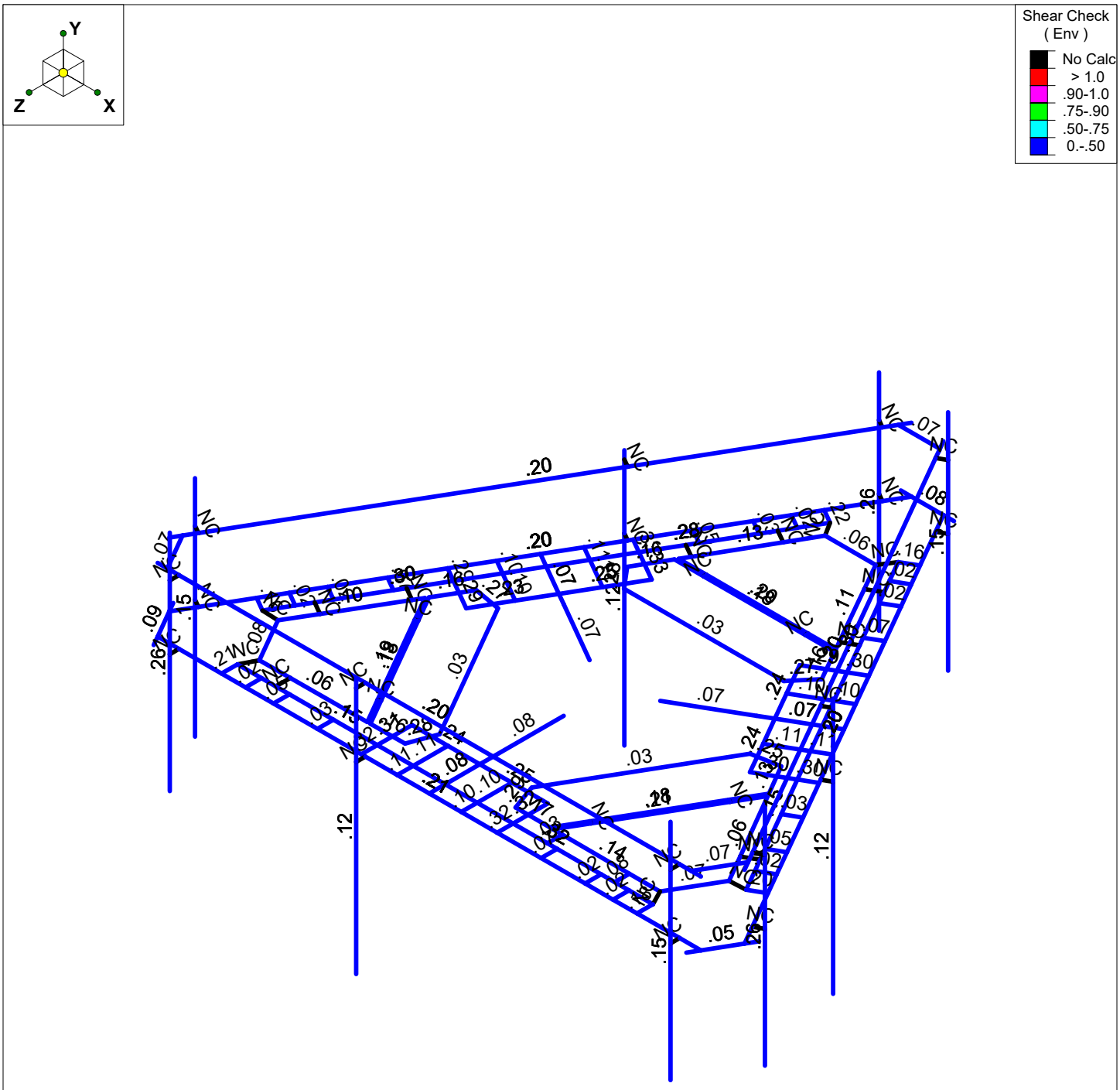

Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

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APPENDIX B

SOFTWARE INPUT CALCULATIONS

PROJECT	**101126.003.01 - Branford, CT**				**SP**
SUBJECT	**Platform Mount Mount Analysis**				
DATE	**05/09/19**	PAGE	1	OF	1

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

INPUT

[REF: ANSI/TIA-222-H]

Tower Type		:	MP		
Tower Height		:	125	ft	
Mount Elevation		:	122	ft	
Antenna Elevation		:	122	ft	
Crest Height		:	0	ft	
Risk Category		:	II		[Table 2-1]
Exposure Category		:	B		[Sec. 2.6.5.1.2]
Topography Category		:	1		[Sec. 2.6.6.2]
Wind Velocity	V	:	130	mph	[Annex B]
Ice wind Velocity	V_i	:	50	mph	[Annex B]
Service Velocity	V_s	:	30	mph	[Annex B]
Base Ice thickness	t_i	:	1.5	in	[Annex B]
Ground Elevation	z_s	:	56.16	ft	[Sec. 2.6.8]

ANTENNAS

	Manufacturer	Model	Height (in)	Front Width (in)	Side Width (in)	Weight (lbs)	Shape	Quantity	Location (%)
Mount Pipe **M19**									
	Ericsson	AIR 21 B2A B4P	56.00	12.10	7.87	91.50	Flat	0.5	10
	Ericsson	AIR 21 B2A B4P	56.00	12.10	7.87	91.50	Flat	0.5	70
	Ericsson	RADIO 4449 B12/B71	14.95	13.19	9.25	75.00	Flat	1	30
Mount Pipe **M163**									
	Ericsson	AIR 32 B2A/B66AA	56.60	12.90	8.70	132.20	Flat	0.5	20
	Ericsson	AIR 32 B2A/B66AA	56.60	12.90	8.70	132.20	Flat	0.5	80
Mount Pipe **M20**									
	RFS	APXVAARR24_43-U-NA20	95.90	24.00	8.70	128.00	Flat	0.5	10
	RFS	APXVAARR24_43-U-NA20	95.90	24.00	8.70	128.00	Flat	0.5	90
	Ericsson	KRY 112 144/1	7.00	6.00	3.00	11.00	Flat	1	30
Mount Pipe **M31**									
	Ericsson	AIR 21 B2A B4P	56.00	12.10	7.87	91.50	Flat	0.5	10
	Ericsson	AIR 21 B2A B4P	56.00	12.10	7.87	91.50	Flat	0.5	70
	Ericsson	RADIO 4449 B12/B71	14.95	13.19	9.25	75.00	Flat	1	30
Mount Pipe **M169**									
	Ericsson	AIR 32 B2A/B66AA	56.60	12.90	8.70	132.20	Flat	0.5	20
	Ericsson	AIR 32 B2A/B66AA	56.60	12.90	8.70	132.20	Flat	0.5	80
Mount Pipe **M32**									
	RFS	APXVAARR24_43-U-NA20	95.90	24.00	8.70	128.00	Flat	0.5	10
	RFS	APXVAARR24_43-U-NA20	95.90	24.00	8.70	128.00	Flat	0.5	90
	Ericsson	KRY 112 144/1	7.00	6.00	3.00	11.00	Flat	1	30

PROJECT	**101126.003.01 - Branford, CT**			**SP**
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Mount Pipe **M25**

	Ericsson	AIR 21 B2A B4P	56.00	12.10	7.87	91.50	Flat	0.5	10
	Ericsson	AIR 21 B2A B4P	56.00	12.10	7.87	91.50	Flat	0.5	70
	Ericsson	RADIO 4449 B12/B71	14.95	13.19	9.25	75.00	Flat	1	30

Mount Pipe **M166**

	Ericsson	AIR 32 B2A/B66AA	56.60	12.90	8.70	132.20	Flat	0.5	20
	Ericsson	AIR 32 B2A/B66AA	56.60	12.90	8.70	132.20	Flat	0.5	80

Mount Pipe **M26**

	RFS	APXVAARR24_43-U-NA20	95.90	24.00	8.70	128.00	Flat	0.5	10
	RFS	APXVAARR24_43-U-NA20	95.90	24.00	8.70	128.00	Flat	0.5	90
	Ericsson	KRY 112 144/1	7.00	6.00	3.00	11.00	Flat	1	30

Mount Pipe

PROJECT	**101126.003.01 - Branford, CT**				**SP**
SUBJECT	**Platform Mount Mount Analysis**				
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INPUT

[REF: ANSI/TIA-222-H]

	Member Number	Section Set	Wind Projection (in)	Length (in)	Perimeter (in)	Shape	D_c (in)
	M1	MF-H1	3.50	204.00	11.00	Round	3.50
	M2	F1-C1	10.00	20.00	21.00	Flat	10.01
	M3	F1-C1	10.00	20.00	21.00	Flat	10.01
	M4	MF-H1	3.50	204.00	11.00	Round	3.50
	M5	F1-C1	10.00	20.00	21.00	Flat	10.01
	M6	MF-H1	3.50	204.00	11.00	Round	3.50
	M7	F1-S1	5.00	26.50	20.00	Flat	7.07
	M8	F1-S1	5.00	24.00	20.00	Flat	7.07
	M9	F1-S1	5.00	26.50	20.00	Flat	7.07
	M10	F1-S1	5.00	24.00	20.00	Flat	7.07
	M11	F1-S1	5.00	26.50	20.00	Flat	7.07
	M13	Handrail	2.38	204.00	7.48	Round	2.38
	M14	Handrail	2.38	204.00	7.48	Round	2.38
	M15	Handrail	2.38	204.00	7.48	Round	2.38
	M16	F1-CA1	2.50	15.62	10.00	Flat	3.54
	M17	F1-CA1	2.50	15.62	10.00	Flat	3.54
	M18	F1-CA1	2.50	15.62	10.00	Flat	3.54
	M19	MF-P3	2.38	84.00	7.48	Round	2.38
	M20	MF-P1	2.38	84.00	7.48	Round	2.38
	M25	MF-P3	2.38	84.00	7.48	Round	2.38
	M26	MF-P1	2.38	84.00	7.48	Round	2.38
	M31	MF-P3	2.38	84.00	7.48	Round	2.38
	M32	MF-P1	2.38	84.00	7.48	Round	2.38
	M37	F1-S1	5.00	24.00	20.00	Flat	7.07
	M38	F1-SR1	1.00	6.00	3.14	Round	1.00
	M39	F1-SR1	1.00	6.00	3.14	Round	1.00
	M40	F1-SR1	1.00	6.00	3.14	Round	1.00
	M41	F1-SR1	1.00	6.00	3.14	Round	1.00
	M42	F1-SR1	1.00	6.00	3.14	Round	1.00
	M43	F1-SR1	1.00	13.00	3.14	Round	1.00
	M44	F1-SR1	1.00	13.00	3.14	Round	1.00
	M45	F1-SR2	0.75	78.00	2.36	Round	0.75
	M46	F1-SR2	0.75	25.50	2.36	Round	0.75
	M47	F1-SR1	1.00	6.00	3.14	Round	1.00
	M48	F1-SR1	1.00	6.00	3.14	Round	1.00
	M49	F1-SR1	1.00	6.00	3.14	Round	1.00
	M50	F1-SR1	1.00	6.00	3.14	Round	1.00
	M51	F1-SR1	1.00	6.00	3.14	Round	1.00
	M52	F1-SR1	1.00	6.00	3.14	Round	1.00
	M53	F1-SR1	1.00	13.00	3.14	Round	1.00
	M54	F1-SR1	1.00	13.00	3.14	Round	1.00
	M55	F1-SR2	0.75	78.00	2.36	Round	0.75
	M56	F1-SR2	0.75	25.50	2.36	Round	0.75
	M57	F1-SR1	1.00	6.00	3.14	Round	1.00
	M65	F1-SR1	1.00	6.00	3.14	Round	1.00
	M66	F1-SR1	1.00	6.00	3.14	Round	1.00
	M67	F1-SR1	1.00	6.00	3.14	Round	1.00
	M68	F1-SR1	1.00	6.00	3.14	Round	1.00
	M69	F1-SR1	1.00	6.00	3.14	Round	1.00
	M70	F1-SR1	1.00	13.00	3.14	Round	1.00
	M71	F1-SR1	1.00	13.00	3.14	Round	1.00
	M72	F1-SR2	0.75	78.00	2.36	Round	0.75

	M73	F1-SR2	0.75	25.50	2.36	Round	0.75
	M74	F1-SR1	1.00	6.00	3.14	Round	1.00
	M75	F1-SR1	1.00	6.00	3.14	Round	1.00
	M76	F1-SR1	1.00	6.00	3.14	Round	1.00
	M77	F1-SR1	1.00	6.00	3.14	Round	1.00
	M78	F1-SR1	1.00	6.00	3.14	Round	1.00
	M79	F1-SR1	1.00	6.00	3.14	Round	1.00
	M80	F1-SR1	1.00	13.00	3.14	Round	1.00
	M81	F1-SR1	1.00	13.00	3.14	Round	1.00
	M82	F1-SR2	0.75	78.00	2.36	Round	0.75
	M83	F1-SR2	0.75	25.50	2.36	Round	0.75
	M84	F1-SR1	1.00	6.00	3.14	Round	1.00
	M92	F1-SR1	1.00	6.00	3.14	Round	1.00
	M93	F1-SR1	1.00	6.00	3.14	Round	1.00
	M94	F1-SR1	1.00	6.00	3.14	Round	1.00
	M95	F1-SR1	1.00	6.00	3.14	Round	1.00
	M96	F1-SR1	1.00	6.00	3.14	Round	1.00
	M97	F1-SR1	1.00	13.00	3.14	Round	1.00
	M98	F1-SR1	1.00	13.00	3.14	Round	1.00
	M99	F1-SR2	0.75	78.00	2.36	Round	0.75
	M100	F1-SR2	0.75	25.50	2.36	Round	0.75
	M101	F1-SR1	1.00	6.00	3.14	Round	1.00
	M102	F1-SR1	1.00	6.00	3.14	Round	1.00
	M103	F1-SR1	1.00	6.00	3.14	Round	1.00
	M104	F1-SR1	1.00	6.00	3.14	Round	1.00
	M105	F1-SR1	1.00	6.00	3.14	Round	1.00
	M106	F1-SR1	1.00	6.00	3.14	Round	1.00
	M107	F1-SR1	1.00	13.00	3.14	Round	1.00
	M108	F1-SR1	1.00	13.00	3.14	Round	1.00
	M109	F1-SR2	0.75	78.00	2.36	Round	0.75
	M110	F1-SR2	0.75	25.50	2.36	Round	0.75
	M111	F1-SR1	1.00	6.00	3.14	Round	1.00
	M160	F1-SR1	1.00	5.48	3.14	Round	1.00
	M161	F1-SR1	1.00	5.60	3.14	Round	1.00
	M163	MF-P2	2.88	96.00	9.05	Round	2.88
	M166	MF-P2	2.88	96.00	9.05	Round	2.88
	M169	MF-P2	2.88	96.00	9.05	Round	2.88
	M118	CF1	1.63	19.00	9.75	Flat	2.30
	M119	CF1	1.63	59.00	9.75	Flat	2.30
	M120	CF1	1.63	40.31	9.75	Flat	2.30
	M121	CF1	1.63	40.31	9.75	Flat	2.30
	M122	CF1	1.63	60.14	9.75	Flat	2.30
	M123	CF1	1.63	12.98	9.75	Flat	2.30
	M124	CF1	1.63	60.00	9.75	Flat	2.30
	M125	CF1	1.63	10.10	9.75	Flat	2.30
	M126	CF1	1.63	12.98	9.75	Flat	2.30
	M127	CF1	1.63	10.10	9.75	Flat	2.30
	M133	CF1	1.63	19.00	9.75	Flat	2.30
	M134	CF1	1.63	59.00	9.75	Flat	2.30
	M135	CF1	1.63	40.31	9.75	Flat	2.30
	M136	CF1	1.63	40.31	9.75	Flat	2.30
	M137	CF1	1.63	60.14	9.75	Flat	2.30
	M138	CF1	1.63	12.98	9.75	Flat	2.30
	M139	CF1	1.63	60.00	9.75	Flat	2.30
	M140	CF1	1.63	10.10	9.75	Flat	2.30
	M141	CF1	1.63	12.98	9.75	Flat	2.30
	M142	CF1	1.63	10.10	9.75	Flat	2.30
	M148	CF1	1.63	19.00	9.75	Flat	2.30
	M149	CF1	1.63	59.00	9.75	Flat	2.30
	M150	CF1	1.63	40.31	9.75	Flat	2.30
	M151	CF1	1.63	40.31	9.75	Flat	2.30
	M152	CF1	1.63	60.14	9.75	Flat	2.30
	M153	CF1	1.63	12.98	9.75	Flat	2.30
	M154	CF1	1.63	60.00	9.75	Flat	2.30
	M155	CF1	1.63	10.10	9.75	Flat	2.30
	M156	CF1	1.63	12.98	9.75	Flat	2.30
	M157	CF1	1.63	10.10	9.75	Flat	2.30

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	MF-H1	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	Handrail	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
3	MF-P1	PIPE_2.0	Column	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
4	MF-P2	PIPE_2.5X	Column	Pipe	A53 Gr.B	Typical	2.1	1.83	1.83	3.66
5	F1-S1	HSS5X5X6	Beam	Tube	A500 Gr.B Rect	Typical	6.18	21.7	21.7	36.1
6	F1-SR1	SR_1"	Beam	BAR	A36 Gr.36	Typical	.785	.049	.049	.098
7	F1-SR2	SR_3/4"	Beam	BAR	A36 Gr.36	Typical	.442	.016	.016	.031
8	F1-CA1	L2.5x2.5x4	Beam	Single Angle	A36 Gr.36	Typical	1.19	.692	.692	.026
9	F1-C1	PL1/2X10	Beam	RECT	A36 Gr.36	Typical	5	.104	41.667	.404
10	MF-P3	PIPE_2.0X	Column	Pipe	A53 Gr.B	Typical	1.4	.827	.827	1.65

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N2			MF-H1	Beam	Pipe	A53 Gr.B	Typical
2	M2	N3	N4			F1-C1	Beam	RECT	A36 Gr.36	Typical
3	M3	N5	N6			F1-C1	Beam	RECT	A36 Gr.36	Typical
4	M4	N7	N8			MF-H1	Beam	Pipe	A53 Gr.B	Typical
5	M5	N9	N10			F1-C1	Beam	RECT	A36 Gr.36	Typical
6	M6	N11	N12			MF-H1	Beam	Pipe	A53 Gr.B	Typical
7	M7	N68	N14			F1-S1	Beam	Tube	A500 Gr.B...	Typical
8	M8	N105	N106			F1-S1	Beam	Tube	A500 Gr.B...	Typical
9	M9	N106	N15			F1-S1	Beam	Tube	A500 Gr.B...	Typical
10	M10	N143	N144			F1-S1	Beam	Tube	A500 Gr.B...	Typical
11	M11	N144	N16			F1-S1	Beam	Tube	A500 Gr.B...	Typical
12	M12	N17	N18			RIGID	None	None	RIGID	Typical
13	M13	N19	N20			Handrail	Beam	Pipe	A53 Gr.B	Typical
14	M14	N21	N22			Handrail	Beam	Pipe	A53 Gr.B	Typical
15	M15	N23	N24			Handrail	Beam	Pipe	A53 Gr.B	Typical
16	M16	N25	N26		180	F1-CA1	Beam	Single Angle	A36 Gr.36	Typical
17	M17	N27	N28		180	F1-CA1	Beam	Single Angle	A36 Gr.36	Typical
18	M18	N29	N30		180	F1-CA1	Beam	Single Angle	A36 Gr.36	Typical
19	M19	N31	N32			MF-P3	Column	Pipe	A53 Gr.B	Typical
20	M20	N33	N34			MF-P1	Column	Pipe	A53 Gr.B	Typical
21	M21	N35	N36			RIGID	None	None	RIGID	Typical
22	M22	N37	N38			RIGID	None	None	RIGID	Typical
23	M23	N39	N40			RIGID	None	None	RIGID	Typical
24	M24	N41	N42			RIGID	None	None	RIGID	Typical
25	M25	N43	N44			MF-P3	Column	Pipe	A53 Gr.B	Typical
26	M26	N45	N46			MF-P1	Column	Pipe	A53 Gr.B	Typical
27	M27	N47	N48			RIGID	None	None	RIGID	Typical
28	M28	N49	N50			RIGID	None	None	RIGID	Typical
29	M29	N51	N52			RIGID	None	None	RIGID	Typical
30	M30	N53	N54			RIGID	None	None	RIGID	Typical
31	M31	N55	N56			MF-P3	Column	Pipe	A53 Gr.B	Typical
32	M32	N57	N58			MF-P1	Column	Pipe	A53 Gr.B	Typical
33	M33	N59	N60			RIGID	None	None	RIGID	Typical
34	M34	N61	N62			RIGID	None	None	RIGID	Typical
35	M35	N63	N64			RIGID	None	None	RIGID	Typical
36	M36	N65	N66			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
37	M37	N67	N68			F1-S1	Beam	Tube	A500 Gr.B...	Typical
38	M38	N69	N79			F1-SR1	Beam	BAR	A36 Gr.36	Typical
39	M39	N70	N77			F1-SR1	Beam	BAR	A36 Gr.36	Typical
40	M40	N71	N72			F1-SR1	Beam	BAR	A36 Gr.36	Typical
41	M41	N73	N74			F1-SR1	Beam	BAR	A36 Gr.36	Typical
42	M42	N75	N76			F1-SR1	Beam	BAR	A36 Gr.36	Typical
43	M43	N77	N78			F1-SR1	Beam	BAR	A36 Gr.36	Typical
44	M44	N79	N80			F1-SR1	Beam	BAR	A36 Gr.36	Typical
45	M45	N94	N82			F1-SR2	Beam	BAR	A36 Gr.36	Typical
46	M46	N95	N80			F1-SR2	Beam	BAR	A36 Gr.36	Typical
47	M47	N81	N82			F1-SR1	Beam	BAR	A36 Gr.36	Typical
48	M48	N83	N93			F1-SR1	Beam	BAR	A36 Gr.36	Typical
49	M49	N84	N91			F1-SR1	Beam	BAR	A36 Gr.36	Typical
50	M50	N85	N86			F1-SR1	Beam	BAR	A36 Gr.36	Typical
51	M51	N87	N88			F1-SR1	Beam	BAR	A36 Gr.36	Typical
52	M52	N89	N90			F1-SR1	Beam	BAR	A36 Gr.36	Typical
53	M53	N91	N92			F1-SR1	Beam	BAR	A36 Gr.36	Typical
54	M54	N93	N96			F1-SR1	Beam	BAR	A36 Gr.36	Typical
55	M55	N94	N98			F1-SR2	Beam	BAR	A36 Gr.36	Typical
56	M56	N95	N96			F1-SR2	Beam	BAR	A36 Gr.36	Typical
57	M57	N97	N98			F1-SR1	Beam	BAR	A36 Gr.36	Typical
58	M65	N107	N117			F1-SR1	Beam	BAR	A36 Gr.36	Typical
59	M66	N108	N115			F1-SR1	Beam	BAR	A36 Gr.36	Typical
60	M67	N109	N110			F1-SR1	Beam	BAR	A36 Gr.36	Typical
61	M68	N111	N112			F1-SR1	Beam	BAR	A36 Gr.36	Typical
62	M69	N113	N114			F1-SR1	Beam	BAR	A36 Gr.36	Typical
63	M70	N115	N116			F1-SR1	Beam	BAR	A36 Gr.36	Typical
64	M71	N117	N118			F1-SR1	Beam	BAR	A36 Gr.36	Typical
65	M72	N132	N120			F1-SR2	Beam	BAR	A36 Gr.36	Typical
66	M73	N133	N118			F1-SR2	Beam	BAR	A36 Gr.36	Typical
67	M74	N119	N120			F1-SR1	Beam	BAR	A36 Gr.36	Typical
68	M75	N121	N131			F1-SR1	Beam	BAR	A36 Gr.36	Typical
69	M76	N122	N129			F1-SR1	Beam	BAR	A36 Gr.36	Typical
70	M77	N123	N124			F1-SR1	Beam	BAR	A36 Gr.36	Typical
71	M78	N125	N126			F1-SR1	Beam	BAR	A36 Gr.36	Typical
72	M79	N127	N128			F1-SR1	Beam	BAR	A36 Gr.36	Typical
73	M80	N129	N130			F1-SR1	Beam	BAR	A36 Gr.36	Typical
74	M81	N131	N134			F1-SR1	Beam	BAR	A36 Gr.36	Typical
75	M82	N132	N136			F1-SR2	Beam	BAR	A36 Gr.36	Typical
76	M83	N133	N134			F1-SR2	Beam	BAR	A36 Gr.36	Typical
77	M84	N135	N136			F1-SR1	Beam	BAR	A36 Gr.36	Typical
78	M92	N145	N155			F1-SR1	Beam	BAR	A36 Gr.36	Typical
79	M93	N146	N153			F1-SR1	Beam	BAR	A36 Gr.36	Typical
80	M94	N147	N148			F1-SR1	Beam	BAR	A36 Gr.36	Typical
81	M95	N149	N150			F1-SR1	Beam	BAR	A36 Gr.36	Typical
82	M96	N151	N152			F1-SR1	Beam	BAR	A36 Gr.36	Typical
83	M97	N153	N154			F1-SR1	Beam	BAR	A36 Gr.36	Typical
84	M98	N155	N156			F1-SR1	Beam	BAR	A36 Gr.36	Typical
85	M99	N170	N158			F1-SR2	Beam	BAR	A36 Gr.36	Typical
86	M100	N171	N156			F1-SR2	Beam	BAR	A36 Gr.36	Typical
87	M101	N157	N158			F1-SR1	Beam	BAR	A36 Gr.36	Typical
88	M102	N159	N169			F1-SR1	Beam	BAR	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
89	M103	N160	N167			F1-SR1	Beam	BAR	A36 Gr.36	Typical
90	M104	N161	N162			F1-SR1	Beam	BAR	A36 Gr.36	Typical
91	M105	N163	N164			F1-SR1	Beam	BAR	A36 Gr.36	Typical
92	M106	N165	N166			F1-SR1	Beam	BAR	A36 Gr.36	Typical
93	M107	N167	N168			F1-SR1	Beam	BAR	A36 Gr.36	Typical
94	M108	N169	N172			F1-SR1	Beam	BAR	A36 Gr.36	Typical
95	M109	N170	N174			F1-SR2	Beam	BAR	A36 Gr.36	Typical
96	M110	N171	N172			F1-SR2	Beam	BAR	A36 Gr.36	Typical
97	M111	N173	N174			F1-SR1	Beam	BAR	A36 Gr.36	Typical
98	M118	N183	N181			CF1	Beam	CS	A653 SS ...	Typical
99	M119	N184	N182		180	CF1	Beam	CS	A653 SS ...	Typical
100	M120	N181	N182			CF1	Beam	CS	A653 SS ...	Typical
101	M121	N183	N184		180	CF1	Beam	CS	A653 SS ...	Typical
102	M122	N185	N188			CF1	Beam	CS	A653 SS ...	Typical
103	M123	N185	N186		180	CF1	Beam	CS	A653 SS ...	Typical
104	M124	N187	N190		180	CF1	Beam	CS	A653 SS ...	Typical
105	M125	N186	N187		180	CF1	Beam	CS	A653 SS ...	Typical
106	M126	N188	N189			CF1	Beam	CS	A653 SS ...	Typical
107	M127	N189	N190			CF1	Beam	CS	A653 SS ...	Typical
108	M128	N191	N192			RIGID	None	None	RIGID	Typical
109	M129	N193	N194			RIGID	None	None	RIGID	Typical
110	M130	N195	N196			RIGID	None	None	RIGID	Typical
111	M131	N197	N198			RIGID	None	None	RIGID	Typical
112	M132	N199	N200			RIGID	None	None	RIGID	Typical
113	M133	N203	N201			CF1	Beam	CS	A653 SS ...	Typical
114	M134	N204	N202		180	CF1	Beam	CS	A653 SS ...	Typical
115	M135	N201	N202			CF1	Beam	CS	A653 SS ...	Typical
116	M136	N203	N204		180	CF1	Beam	CS	A653 SS ...	Typical
117	M137	N205	N208			CF1	Beam	CS	A653 SS ...	Typical
118	M138	N205	N206		180	CF1	Beam	CS	A653 SS ...	Typical
119	M139	N207	N210		180	CF1	Beam	CS	A653 SS ...	Typical
120	M140	N206	N207		180	CF1	Beam	CS	A653 SS ...	Typical
121	M141	N208	N209			CF1	Beam	CS	A653 SS ...	Typical
122	M142	N209	N210			CF1	Beam	CS	A653 SS ...	Typical
123	M143	N211	N212			RIGID	None	None	RIGID	Typical
124	M144	N213	N214			RIGID	None	None	RIGID	Typical
125	M145	N215	N216			RIGID	None	None	RIGID	Typical
126	M146	N217	N218			RIGID	None	None	RIGID	Typical
127	M147	N219	N220			RIGID	None	None	RIGID	Typical
128	M148	N223	N221			CF1	Beam	CS	A653 SS ...	Typical
129	M149	N224	N222		180	CF1	Beam	CS	A653 SS ...	Typical
130	M150	N221	N222			CF1	Beam	CS	A653 SS ...	Typical
131	M151	N223	N224		180	CF1	Beam	CS	A653 SS ...	Typical
132	M152	N225	N228			CF1	Beam	CS	A653 SS ...	Typical
133	M153	N225	N226		180	CF1	Beam	CS	A653 SS ...	Typical
134	M154	N227	N230		180	CF1	Beam	CS	A653 SS ...	Typical
135	M155	N226	N227		180	CF1	Beam	CS	A653 SS ...	Typical
136	M156	N228	N229			CF1	Beam	CS	A653 SS ...	Typical
137	M157	N229	N230			CF1	Beam	CS	A653 SS ...	Typical
138	M158	N231	N232			RIGID	None	None	RIGID	Typical
139	M159	N233	N234			RIGID	None	None	RIGID	Typical
140	M160	N235	N236			F1-SR1	Beam	BAR	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
141	M161	N237	N238			F1-SR1	Beam	BAR	A36 Gr.36	Typical
142	M162	N239	N240			RIGID	None	None	RIGID	Typical
143	M163	N241	N242			MF-P2	Column	Pipe	A53 Gr.B	Typical
144	M164	N243	N244			RIGID	None	None	RIGID	Typical
145	M165	N245	N246			RIGID	None	None	RIGID	Typical
146	M166	N247	N248			MF-P2	Column	Pipe	A53 Gr.B	Typical
147	M167	N249	N250			RIGID	None	None	RIGID	Typical
148	M168	N251	N252			RIGID	None	None	RIGID	Typical
149	M169	N253	N254			MF-P2	Column	Pipe	A53 Gr.B	Typical
150	M170	N255	N256			RIGID	None	None	RIGID	Typical
151	M171	N257	N258			RIGID	None	None	RIGID	Typical
152	M152A	N221	N98			RIGID	None	None	RIGID	Typical
153	M153A	N223	N120			RIGID	None	None	RIGID	Typical
154	M154A	N203	N82			RIGID	None	None	RIGID	Typical
155	M155A	N201	N174			RIGID	None	None	RIGID	Typical
156	M156A	N183	N158			RIGID	None	None	RIGID	Typical
157	M157A	N181	N136			RIGID	None	None	RIGID	Typical

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(...
1	Dead	DL		-1			45		9	
2	0 Wind - No Ice	WLZ					45	119		
3	90 Wind - No Ice	WLX					45	119		
4	0 Wind - Ice	WLZ					45	119		
5	90 Wind - Ice	WLX					45	119		
6	0 Wind - Service	WLZ					45	119		
7	90 Wind - Service	WLX					45	119		
8	Ice	OL1					45	119	9	
9	Live Load a	LL				1				
10	Live Load b	LL				1				
11	Live Load c	LL				1				
12	Live Load d	LL								
13	Maint LL 1	LL					1			
14	Maint LL 2	LL					1			
15	Maint LL 3	LL					1			
16	Maint LL 4	LL					1			
17	Maint LL 5	LL					1			
18	Maint LL 6	LL					1			
19	Maint LL 7	LL					1			
20	Maint LL 8	LL					1			
21	Maint LL 9	LL					1			
22	Maint LL 10	LL					1			
23	Maint LL 11	LL					1			
24	Maint LL 12	LL					1			
25	Maint LL 13	LL					1			
26	Maint LL 14	LL					1			
27	Maint LL 15	LL					1			
28	BLC 1 Transient Area Loads	None						63		
29	BLC 8 Transient Area Loads	None						63		

Load Combinations

	Description	Sol..	P..	Delta	SR...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4 Dead	Yes	Y			1	1.4																				
2	1.2 D + 1.0 - 0 W	Yes	Y			1	1.2	2	1																		
3	1.2 D + 1.0 - 30 W	Yes	Y			1	1.2	2	.866	3	.5																
4	1.2 D + 1.0 - 60 W	Yes	Y			1	1.2	3	.866	2	.5																
5	1.2 D + 1.0 - 90 W	Yes	Y			1	1.2	3	1																		
6	1.2 D + 1.0 - 120 W	Yes	Y			1	1.2	3	.866	2	-.5																
7	1.2 D + 1.0 - 150 W	Yes	Y			1	1.2	2	-.8...	3	.5																
8	1.2 D + 1.0 - 180 W	Yes	Y			1	1.2	2	-1																		
9	1.2 D + 1.0 - 210 W	Yes	Y			1	1.2	2	-.8...	3	-.5																
10	1.2 D + 1.0 - 240 W	Yes	Y			1	1.2	3	-.8...	2	-.5																
11	1.2 D + 1.0 - 270 W	Yes	Y			1	1.2	3	-1																		
12	1.2 D + 1.0 - 300 W	Yes	Y			1	1.2	3	-.8...	2	.5																
13	1.2 D + 1.0 - 330 W	Yes	Y			1	1.2	2	.866	3	-.5																
14	1.2 D + 1.0 - 0 W/Ice	Yes	Y			1	1.2	4	1			8	1														
15	1.2 D + 1.0 - 30 W/Ice	Yes	Y			1	1.2	4	.866	5	.5	8	1														
16	1.2 D + 1.0 - 60 W/Ice	Yes	Y			1	1.2	5	.866	4	.5	8	1														
17	1.2 D + 1.0 - 90 W/Ice	Yes	Y			1	1.2	5	1			8	1														
18	1.2 D + 1.0 - 120 W/Ice	Yes	Y			1	1.2	5	.866	4	-.5	8	1														
19	1.2 D + 1.0 - 150 W/Ice	Yes	Y			1	1.2	4	-.8...	5	.5	8	1														
20	1.2 D + 1.0 - 180 W/Ice	Yes	Y			1	1.2	4	-1			8	1														
21	1.2 D + 1.0 - 210 W/Ice	Yes	Y			1	1.2	4	-.8...	5	-.5	8	1														
22	1.2 D + 1.0 - 240 W/Ice	Yes	Y			1	1.2	5	-.8...	4	-.5	8	1														
23	1.2 D + 1.0 - 270 W/Ice	Yes	Y			1	1.2	5	-1			8	1														
24	1.2 D + 1.0 - 300 W/Ice	Yes	Y			1	1.2	5	-.8...	4	.5	8	1														
25	1.2 D + 1.0 - 330 W/Ice	Yes	Y			1	1.2	4	.866	5	-.5	8	1														
26	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y			1	1.2	6	1			9	1.5														
27	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y			1	1.2	6	.866	7	.5	9	1.5														
28	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y			1	1.2	7	.866	6	.5	9	1.5														
29	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y			1	1.2	7	1			9	1.5														
30	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y			1	1.2	7	.866	6	-.5	9	1.5														
31	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y			1	1.2	6	-.8...	7	.5	9	1.5														
32	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y			1	1.2	6	-1			9	1.5														
33	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y			1	1.2	6	-.8...	7	-.5	9	1.5														
34	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y			1	1.2	7	-.8...	6	-.5	9	1.5														
35	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y			1	1.2	7	-1			9	1.5														
36	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y			1	1.2	7	-.8...	6	.5	9	1.5														
37	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y			1	1.2	6	.866	7	-.5	9	1.5														
38	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y			1	1.2	6	1			10	1.5														
39	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y			1	1.2	6	.866	7	.5	10	1.5														
40	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y			1	1.2	7	.866	6	.5	10	1.5														
41	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y			1	1.2	7	1			10	1.5														
42	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y			1	1.2	7	.866	6	-.5	10	1.5														
43	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y			1	1.2	6	-.8...	7	.5	10	1.5														
44	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y			1	1.2	6	-1			10	1.5														
45	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y			1	1.2	6	-.8...	7	-.5	10	1.5														
46	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y			1	1.2	7	-.8...	6	-.5	10	1.5														
47	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y			1	1.2	7	-1			10	1.5														
48	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y			1	1.2	7	-.8...	6	.5	10	1.5														
49	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y			1	1.2	6	.866	7	-.5	10	1.5														
50	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y			1	1.2	6	1			11	1.5														
51	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y			1	1.2	6	.866	7	.5	11	1.5														

Load Combinations (Continued)

	Description	Sol..	PDelta	SR...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
52	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y		1	1.2	7	.866	6	.5	11	1.5														
53	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y		1	1.2	7	1			11	1.5														
54	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y		1	1.2	7	.866	6	-.5	11	1.5														
55	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y		1	1.2	6	-.8...	7	.5	11	1.5														
56	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y		1	1.2	6	-1			11	1.5														
57	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y		1	1.2	6	-.8...	7	-.5	11	1.5														
58	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y		1	1.2	7	-.8...	6	-.5	11	1.5														
59	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y		1	1.2	7	-1			11	1.5														
60	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y		1	1.2	7	-.8...	6	.5	11	1.5														
61	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y		1	1.2	6	.866	7	-.5	11	1.5														
62	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y		1	1.2	6	1			12	1.5														
63	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y		1	1.2	6	.866	7	.5	12	1.5														
64	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y		1	1.2	7	.866	6	.5	12	1.5														
65	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y		1	1.2	7	1			12	1.5														
66	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y		1	1.2	7	.866	6	-.5	12	1.5														
67	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y		1	1.2	6	-.8...	7	.5	12	1.5														
68	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y		1	1.2	6	-1			12	1.5														
69	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y		1	1.2	6	-.8...	7	-.5	12	1.5														
70	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y		1	1.2	7	-.8...	6	-.5	12	1.5														
71	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y		1	1.2	7	-1			12	1.5														
72	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y		1	1.2	7	-.8...	6	.5	12	1.5														
73	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y		1	1.2	6	.866	7	-.5	12	1.5														
74	1.2 D + 1.5 LL Maint (1)	Yes	Y		1	1.2					13	1.5														
75	1.2 D + 1.5 LL Maint (2)	Yes	Y		1	1.2					14	1.5														
76	1.2 D + 1.5 LL Maint (3)	Yes	Y		1	1.2					15	1.5														
77	1.2 D + 1.5 LL Maint (4)	Yes	Y		1	1.2					16	1.5														
78	1.2 D + 1.5 LL Maint (5)	Yes	Y		1	1.2					17	1.5														
79	1.2 D + 1.5 LL Maint (6)	Yes	Y		1	1.2					18	1.5														
80	1.2 D + 1.5 LL Maint (7)	Yes	Y		1	1.2					19	1.5														
81	1.2 D + 1.5 LL Maint (8)	Yes	Y		1	1.2					20	1.5														
82	1.2 D + 1.5 LL Maint (9)	Yes	Y		1	1.2					21	1.5														
83	1.2 D + 1.5 LL Maint (10)	Yes	Y		1	1.2					22	1.5														
84	1.2 D + 1.5 LL Maint (11)	Yes	Y		1	1.2					23	1.5														
85	1.2 D + 1.5 LL Maint (12)	Yes	Y		1	1.2					24	1.5														
86	1.2 D + 1.5 LL Maint (13)	Yes	Y		1	1.2					25	1.5														
87	1.2 D + 1.5 LL Maint (14)	Yes	Y		1	1.2					26	1.5														
88	1.2 D + 1.5 LL Maint (15)	Yes	Y		1	1.2					27	1.5														

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
1	M19	Y	-.046	%10
2	M19	Y	-.046	%70
3	M19	Y	-.075	%30
4	M19	Y	0	0
5	M19	Y	0	0
6	M163	Y	-.066	%20
7	M163	Y	-.066	%80
8	M163	Y	0	0
9	M163	Y	0	0
10	M163	Y	0	0

Member Point Loads (BLC 1 : Dead) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
11	M20	Y	-.064	%10
12	M20	Y	-.064	%90
13	M20	Y	-.011	%30
14	M20	Y	0	0
15	M20	Y	0	0
16	M31	Y	-.046	%10
17	M31	Y	-.046	%70
18	M31	Y	-.075	%30
19	M31	Y	0	0
20	M31	Y	0	0
21	M169	Y	-.066	%20
22	M169	Y	-.066	%80
23	M169	Y	0	0
24	M169	Y	0	0
25	M169	Y	0	0
26	M32	Y	-.064	%10
27	M32	Y	-.064	%90
28	M32	Y	-.011	%30
29	M32	Y	0	0
30	M32	Y	0	0
31	M25	Y	-.046	%10
32	M25	Y	-.046	%70
33	M25	Y	-.075	%30
34	M25	Y	0	0
35	M25	Y	0	0
36	M166	Y	-.066	%20
37	M166	Y	-.066	%80
38	M166	Y	0	0
39	M166	Y	0	0
40	M166	Y	0	0
41	M26	Y	-.064	%10
42	M26	Y	-.064	%90
43	M26	Y	-.011	%30
44	M26	Y	0	0
45	M26	Y	0	0

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
1	M19	Z	-.118	%10
2	M19	Z	-.118	%70
3	M19	Z	-.064	%30
4	M19	Z	0	0
5	M19	Z	0	0
6	M163	Z	-.126	%20
7	M163	Z	-.126	%80
8	M163	Z	0	0
9	M163	Z	0	0
10	M163	Z	0	0
11	M20	Z	-.391	%10
12	M20	Z	-.391	%90
13	M20	Z	-.013	%30

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
14	M20	Z	0	0
15	M20	Z	0	0
16	M31	Z	-.118	%10
17	M31	Z	-.118	%70
18	M31	Z	-.064	%30
19	M31	Z	0	0
20	M31	Z	0	0
21	M169	Z	-.126	%20
22	M169	Z	-.126	%80
23	M169	Z	0	0
24	M169	Z	0	0
25	M169	Z	0	0
26	M32	Z	-.391	%10
27	M32	Z	-.391	%90
28	M32	Z	-.013	%30
29	M32	Z	0	0
30	M32	Z	0	0
31	M25	Z	-.118	%10
32	M25	Z	-.118	%70
33	M25	Z	-.064	%30
34	M25	Z	0	0
35	M25	Z	0	0
36	M166	Z	-.126	%20
37	M166	Z	-.126	%80
38	M166	Z	0	0
39	M166	Z	0	0
40	M166	Z	0	0
41	M26	Z	-.391	%10
42	M26	Z	-.391	%90
43	M26	Z	-.013	%30
44	M26	Z	0	0
45	M26	Z	0	0

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
1	M19	X	-.083	%10
2	M19	X	-.083	%70
3	M19	X	-.044	%30
4	M19	X	0	0
5	M19	X	0	0
6	M163	X	-.091	%20
7	M163	X	-.091	%80
8	M163	X	0	0
9	M163	X	0	0
10	M163	X	0	0
11	M20	X	-.172	%10
12	M20	X	-.172	%90
13	M20	X	-.007	%30
14	M20	X	0	0
15	M20	X	0	0
16	M31	X	-.083	%10

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
17	M31	X	-.083	%70
18	M31	X	-.044	%30
19	M31	X	0	0
20	M31	X	0	0
21	M169	X	-.091	%20
22	M169	X	-.091	%80
23	M169	X	0	0
24	M169	X	0	0
25	M169	X	0	0
26	M32	X	-.172	%10
27	M32	X	-.172	%90
28	M32	X	-.007	%30
29	M32	X	0	0
30	M32	X	0	0
31	M25	X	-.083	%10
32	M25	X	-.083	%70
33	M25	X	-.044	%30
34	M25	X	0	0
35	M25	X	0	0
36	M166	X	-.091	%20
37	M166	X	-.091	%80
38	M166	X	0	0
39	M166	X	0	0
40	M166	X	0	0
41	M26	X	-.172	%10
42	M26	X	-.172	%90
43	M26	X	-.007	%30
44	M26	X	0	0
45	M26	X	0	0

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
1	M19	Z	-.017	%10
2	M19	Z	-.017	%70
3	M19	Z	-.009	%30
4	M19	Z	0	0
5	M19	Z	0	0
6	M163	Z	-.019	%20
7	M163	Z	-.019	%80
8	M163	Z	0	0
9	M163	Z	0	0
10	M163	Z	0	0
11	M20	Z	-.058	%10
12	M20	Z	-.058	%90
13	M20	Z	-.002	%30
14	M20	Z	0	0
15	M20	Z	0	0
16	M31	Z	-.017	%10
17	M31	Z	-.017	%70
18	M31	Z	-.009	%30
19	M31	Z	0	0

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
20	M31	Z	0	0
21	M169	Z	-.019	%20
22	M169	Z	-.019	%80
23	M169	Z	0	0
24	M169	Z	0	0
25	M169	Z	0	0
26	M32	Z	-.058	%10
27	M32	Z	-.058	%90
28	M32	Z	-.002	%30
29	M32	Z	0	0
30	M32	Z	0	0
31	M25	Z	-.017	%10
32	M25	Z	-.017	%70
33	M25	Z	-.009	%30
34	M25	Z	0	0
35	M25	Z	0	0
36	M166	Z	-.019	%20
37	M166	Z	-.019	%80
38	M166	Z	0	0
39	M166	Z	0	0
40	M166	Z	0	0
41	M26	Z	-.058	%10
42	M26	Z	-.058	%90
43	M26	Z	-.002	%30
44	M26	Z	0	0
45	M26	Z	0	0

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
1	M19	X	-.012	%10
2	M19	X	-.012	%70
3	M19	X	-.007	%30
4	M19	X	0	0
5	M19	X	0	0
6	M163	X	-.013	%20
7	M163	X	-.013	%80
8	M163	X	0	0
9	M163	X	0	0
10	M163	X	0	0
11	M20	X	-.025	%10
12	M20	X	-.025	%90
13	M20	X	-.001	%30
14	M20	X	0	0
15	M20	X	0	0
16	M31	X	-.012	%10
17	M31	X	-.012	%70
18	M31	X	-.007	%30
19	M31	X	0	0
20	M31	X	0	0
21	M169	X	-.013	%20
22	M169	X	-.013	%80

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
23	M169	X	0	0
24	M169	X	0	0
25	M169	X	0	0
26	M32	X	-.025	%10
27	M32	X	-.025	%90
28	M32	X	-.001	%30
29	M32	X	0	0
30	M32	X	0	0
31	M25	X	-.012	%10
32	M25	X	-.012	%70
33	M25	X	-.007	%30
34	M25	X	0	0
35	M25	X	0	0
36	M166	X	-.013	%20
37	M166	X	-.013	%80
38	M166	X	0	0
39	M166	X	0	0
40	M166	X	0	0
41	M26	X	-.025	%10
42	M26	X	-.025	%90
43	M26	X	-.001	%30
44	M26	X	0	0
45	M26	X	0	0

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
1	M19	Z	-.006	%10
2	M19	Z	-.006	%70
3	M19	Z	-.003	%30
4	M19	Z	0	0
5	M19	Z	0	0
6	M163	Z	-.007	%20
7	M163	Z	-.007	%80
8	M163	Z	0	0
9	M163	Z	0	0
10	M163	Z	0	0
11	M20	Z	-.021	%10
12	M20	Z	-.021	%90
13	M20	Z	-.0007	%30
14	M20	Z	0	0
15	M20	Z	0	0
16	M31	Z	-.006	%10
17	M31	Z	-.006	%70
18	M31	Z	-.003	%30
19	M31	Z	0	0
20	M31	Z	0	0
21	M169	Z	-.007	%20
22	M169	Z	-.007	%80
23	M169	Z	0	0
24	M169	Z	0	0
25	M169	Z	0	0

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
26	M32	Z	-.021	%10
27	M32	Z	-.021	%90
28	M32	Z	-.0007	%30
29	M32	Z	0	0
30	M32	Z	0	0
31	M25	Z	-.006	%10
32	M25	Z	-.006	%70
33	M25	Z	-.003	%30
34	M25	Z	0	0
35	M25	Z	0	0
36	M166	Z	-.007	%20
37	M166	Z	-.007	%80
38	M166	Z	0	0
39	M166	Z	0	0
40	M166	Z	0	0
41	M26	Z	-.021	%10
42	M26	Z	-.021	%90
43	M26	Z	-.0007	%30
44	M26	Z	0	0
45	M26	Z	0	0

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
1	M19	X	-.004	%10
2	M19	X	-.004	%70
3	M19	X	-.002	%30
4	M19	X	0	0
5	M19	X	0	0
6	M163	X	-.005	%20
7	M163	X	-.005	%80
8	M163	X	0	0
9	M163	X	0	0
10	M163	X	0	0
11	M20	X	-.009	%10
12	M20	X	-.009	%90
13	M20	X	-.0004	%30
14	M20	X	0	0
15	M20	X	0	0
16	M31	X	-.004	%10
17	M31	X	-.004	%70
18	M31	X	-.002	%30
19	M31	X	0	0
20	M31	X	0	0
21	M169	X	-.005	%20
22	M169	X	-.005	%80
23	M169	X	0	0
24	M169	X	0	0
25	M169	X	0	0
26	M32	X	-.009	%10
27	M32	X	-.009	%90
28	M32	X	-.0004	%30

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
29	M32	X	0	0
30	M32	X	0	0
31	M25	X	-.004	%10
32	M25	X	-.004	%70
33	M25	X	-.002	%30
34	M25	X	0	0
35	M25	X	0	0
36	M166	X	-.005	%20
37	M166	X	-.005	%80
38	M166	X	0	0
39	M166	X	0	0
40	M166	X	0	0
41	M26	X	-.009	%10
42	M26	X	-.009	%90
43	M26	X	-.0004	%30
44	M26	X	0	0
45	M26	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
1	M19	Y	-.079	%10
2	M19	Y	-.079	%70
3	M19	Y	-.046	%30
4	M19	Y	0	0
5	M19	Y	0	0
6	M163	Y	-.085	%20
7	M163	Y	-.085	%80
8	M163	Y	0	0
9	M163	Y	0	0
10	M163	Y	0	0
11	M20	Y	-.227	%10
12	M20	Y	-.227	%90
13	M20	Y	-.01	%30
14	M20	Y	0	0
15	M20	Y	0	0
16	M31	Y	-.079	%10
17	M31	Y	-.079	%70
18	M31	Y	-.046	%30
19	M31	Y	0	0
20	M31	Y	0	0
21	M169	Y	-.085	%20
22	M169	Y	-.085	%80
23	M169	Y	0	0
24	M169	Y	0	0
25	M169	Y	0	0
26	M32	Y	-.227	%10
27	M32	Y	-.227	%90
28	M32	Y	-.01	%30
29	M32	Y	0	0
30	M32	Y	0	0
31	M25	Y	-.079	%10

Member Point Loads (BLC 8 : Ice) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
32	M25	Y	-.079	%70
33	M25	Y	-.046	%30
34	M25	Y	0	0
35	M25	Y	0	0
36	M166	Y	-.085	%20
37	M166	Y	-.085	%80
38	M166	Y	0	0
39	M166	Y	0	0
40	M166	Y	0	0
41	M26	Y	-.227	%10
42	M26	Y	-.227	%90
43	M26	Y	-.01	%30
44	M26	Y	0	0
45	M26	Y	0	0

Member Point Loads (BLC 13 : Maint LL 1)

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
1	M13	Y	-.25	%5

Member Point Loads (BLC 14 : Maint LL 2)

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
1	M1	Y	-.25	%5

Member Point Loads (BLC 15 : Maint LL 3)

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
1	M15	Y	-.25	%5

Member Point Loads (BLC 16 : Maint LL 4)

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
1	M6	Y	-.25	%5

Member Point Loads (BLC 17 : Maint LL 5)

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
1	M14	Y	-.25	%5

Member Point Loads (BLC 18 : Maint LL 6)

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
1	M4	Y	-.25	%5

Member Point Loads (BLC 19 : Maint LL 7)

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
1	M13	Y	-.25	%95

Member Point Loads (BLC 20 : Maint LL 8)

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
1	M1	Y	-.25	%95

Member Point Loads (BLC 21 : Maint LL 9)

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
1	M15	Y	-.25	%95

Member Point Loads (BLC 22 : Maint LL 10)

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
1	M6	Y	-.25	%95

Member Point Loads (BLC 23 : Maint LL 11)

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
1	M14	Y	-.25	%95

Member Point Loads (BLC 24 : Maint LL 12)

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
1	M4	Y	-.25	%95

Member Point Loads (BLC 25 : Maint LL 13)

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
1	M7	Y	-.25	%5

Member Point Loads (BLC 26 : Maint LL 14)

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
1	M9	Y	-.25	%5

Member Point Loads (BLC 27 : Maint LL 15)

	Member Label	Direction	Magnitude[k,k-ft]	Location[in,%]
1	M11	Y	-.25	%5

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	Z	-.013	-.013	0	0
2	M2	Z	-.039	-.039	0	0
3	M3	Z	-.039	-.039	0	0
4	M4	Z	-.013	-.013	0	0
5	M5	Z	-.039	-.039	0	0
6	M6	Z	-.013	-.013	0	0
7	M7	Z	-.021	-.021	0	0
8	M8	Z	-.021	-.021	0	0
9	M9	Z	-.021	-.021	0	0
10	M10	Z	-.021	-.021	0	0
11	M11	Z	-.021	-.021	0	0
12	M13	Z	-.009	-.009	0	0
13	M14	Z	-.009	-.009	0	0
14	M15	Z	-.009	-.009	0	0
15	M16	Z	-.011	-.011	0	0
16	M17	Z	-.011	-.011	0	0
17	M18	Z	-.011	-.011	0	0
18	M19	Z	-.009	-.009	0	0
19	M20	Z	-.009	-.009	0	0

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
20	M25	Z	-.009	-.009	0	0
21	M26	Z	-.009	-.009	0	0
22	M31	Z	-.009	-.009	0	0
23	M32	Z	-.009	-.009	0	0
24	M37	Z	-.021	-.021	0	0
25	M38	Z	-.003	-.003	0	0
26	M39	Z	-.003	-.003	0	0
27	M40	Z	-.003	-.003	0	0
28	M41	Z	-.003	-.003	0	0
29	M42	Z	-.003	-.003	0	0
30	M43	Z	-.003	-.003	0	0
31	M44	Z	-.003	-.003	0	0
32	M45	Z	-.003	-.003	0	0
33	M46	Z	-.003	-.003	0	0
34	M47	Z	-.003	-.003	0	0
35	M48	Z	-.003	-.003	0	0
36	M49	Z	-.003	-.003	0	0
37	M50	Z	-.003	-.003	0	0
38	M51	Z	-.003	-.003	0	0
39	M52	Z	-.003	-.003	0	0
40	M53	Z	-.003	-.003	0	0
41	M54	Z	-.003	-.003	0	0
42	M55	Z	-.003	-.003	0	0
43	M56	Z	-.003	-.003	0	0
44	M57	Z	-.003	-.003	0	0
45	M65	Z	-.003	-.003	0	0
46	M66	Z	-.003	-.003	0	0
47	M67	Z	-.003	-.003	0	0
48	M68	Z	-.003	-.003	0	0
49	M69	Z	-.003	-.003	0	0
50	M70	Z	-.003	-.003	0	0
51	M71	Z	-.003	-.003	0	0
52	M72	Z	-.003	-.003	0	0
53	M73	Z	-.003	-.003	0	0
54	M74	Z	-.003	-.003	0	0
55	M75	Z	-.003	-.003	0	0
56	M76	Z	-.003	-.003	0	0
57	M77	Z	-.003	-.003	0	0
58	M78	Z	-.003	-.003	0	0
59	M79	Z	-.003	-.003	0	0
60	M80	Z	-.003	-.003	0	0
61	M81	Z	-.003	-.003	0	0
62	M82	Z	-.003	-.003	0	0
63	M83	Z	-.003	-.003	0	0
64	M84	Z	-.003	-.003	0	0
65	M92	Z	-.003	-.003	0	0
66	M93	Z	-.003	-.003	0	0
67	M94	Z	-.003	-.003	0	0
68	M95	Z	-.003	-.003	0	0
69	M96	Z	-.003	-.003	0	0
70	M97	Z	-.003	-.003	0	0
71	M98	Z	-.003	-.003	0	0

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
72	M99	Z	-.003	-.003	0	0
73	M100	Z	-.003	-.003	0	0
74	M101	Z	-.003	-.003	0	0
75	M102	Z	-.003	-.003	0	0
76	M103	Z	-.003	-.003	0	0
77	M104	Z	-.003	-.003	0	0
78	M105	Z	-.003	-.003	0	0
79	M106	Z	-.003	-.003	0	0
80	M107	Z	-.003	-.003	0	0
81	M108	Z	-.003	-.003	0	0
82	M109	Z	-.003	-.003	0	0
83	M110	Z	-.003	-.003	0	0
84	M111	Z	-.003	-.003	0	0
85	M160	Z	-.003	-.003	0	0
86	M161	Z	-.003	-.003	0	0
87	M163	Z	-.011	-.011	0	0
88	M166	Z	-.011	-.011	0	0
89	M169	Z	-.011	-.011	0	0
90	M118	Z	-.008	-.008	0	0
91	M119	Z	-.011	-.011	0	0
92	M120	Z	-.01	-.01	0	0
93	M121	Z	-.01	-.01	0	0
94	M122	Z	-.011	-.011	0	0
95	M123	Z	-.007	-.007	0	0
96	M124	Z	-.011	-.011	0	0
97	M125	Z	-.007	-.007	0	0
98	M126	Z	-.007	-.007	0	0
99	M127	Z	-.007	-.007	0	0
100	M133	Z	-.008	-.008	0	0
101	M134	Z	-.011	-.011	0	0
102	M135	Z	-.01	-.01	0	0
103	M136	Z	-.01	-.01	0	0
104	M137	Z	-.011	-.011	0	0
105	M138	Z	-.007	-.007	0	0
106	M139	Z	-.011	-.011	0	0
107	M140	Z	-.007	-.007	0	0
108	M141	Z	-.007	-.007	0	0
109	M142	Z	-.007	-.007	0	0
110	M148	Z	-.008	-.008	0	0
111	M149	Z	-.011	-.011	0	0
112	M150	Z	-.01	-.01	0	0
113	M151	Z	-.01	-.01	0	0
114	M152	Z	-.011	-.011	0	0
115	M153	Z	-.007	-.007	0	0
116	M154	Z	-.011	-.011	0	0
117	M155	Z	-.007	-.007	0	0
118	M156	Z	-.007	-.007	0	0
119	M157	Z	-.007	-.007	0	0

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	X	-.013	-.013	0	0
2	M2	X	-.039	-.039	0	0
3	M3	X	-.039	-.039	0	0
4	M4	X	-.013	-.013	0	0
5	M5	X	-.039	-.039	0	0
6	M6	X	-.013	-.013	0	0
7	M7	X	-.021	-.021	0	0
8	M8	X	-.021	-.021	0	0
9	M9	X	-.021	-.021	0	0
10	M10	X	-.021	-.021	0	0
11	M11	X	-.021	-.021	0	0
12	M13	X	-.009	-.009	0	0
13	M14	X	-.009	-.009	0	0
14	M15	X	-.009	-.009	0	0
15	M16	X	-.011	-.011	0	0
16	M17	X	-.011	-.011	0	0
17	M18	X	-.011	-.011	0	0
18	M19	X	-.009	-.009	0	0
19	M20	X	-.009	-.009	0	0
20	M25	X	-.009	-.009	0	0
21	M26	X	-.009	-.009	0	0
22	M31	X	-.009	-.009	0	0
23	M32	X	-.009	-.009	0	0
24	M37	X	-.021	-.021	0	0
25	M38	X	-.003	-.003	0	0
26	M39	X	-.003	-.003	0	0
27	M40	X	-.003	-.003	0	0
28	M41	X	-.003	-.003	0	0
29	M42	X	-.003	-.003	0	0
30	M43	X	-.003	-.003	0	0
31	M44	X	-.003	-.003	0	0
32	M45	X	-.003	-.003	0	0
33	M46	X	-.003	-.003	0	0
34	M47	X	-.003	-.003	0	0
35	M48	X	-.003	-.003	0	0
36	M49	X	-.003	-.003	0	0
37	M50	X	-.003	-.003	0	0
38	M51	X	-.003	-.003	0	0
39	M52	X	-.003	-.003	0	0
40	M53	X	-.003	-.003	0	0
41	M54	X	-.003	-.003	0	0
42	M55	X	-.003	-.003	0	0
43	M56	X	-.003	-.003	0	0
44	M57	X	-.003	-.003	0	0
45	M65	X	-.003	-.003	0	0
46	M66	X	-.003	-.003	0	0
47	M67	X	-.003	-.003	0	0
48	M68	X	-.003	-.003	0	0
49	M69	X	-.003	-.003	0	0
50	M70	X	-.003	-.003	0	0
51	M71	X	-.003	-.003	0	0
52	M72	X	-.003	-.003	0	0

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
53	M73	X	-.003	-.003	0	0
54	M74	X	-.003	-.003	0	0
55	M75	X	-.003	-.003	0	0
56	M76	X	-.003	-.003	0	0
57	M77	X	-.003	-.003	0	0
58	M78	X	-.003	-.003	0	0
59	M79	X	-.003	-.003	0	0
60	M80	X	-.003	-.003	0	0
61	M81	X	-.003	-.003	0	0
62	M82	X	-.003	-.003	0	0
63	M83	X	-.003	-.003	0	0
64	M84	X	-.003	-.003	0	0
65	M92	X	-.003	-.003	0	0
66	M93	X	-.003	-.003	0	0
67	M94	X	-.003	-.003	0	0
68	M95	X	-.003	-.003	0	0
69	M96	X	-.003	-.003	0	0
70	M97	X	-.003	-.003	0	0
71	M98	X	-.003	-.003	0	0
72	M99	X	-.003	-.003	0	0
73	M100	X	-.003	-.003	0	0
74	M101	X	-.003	-.003	0	0
75	M102	X	-.003	-.003	0	0
76	M103	X	-.003	-.003	0	0
77	M104	X	-.003	-.003	0	0
78	M105	X	-.003	-.003	0	0
79	M106	X	-.003	-.003	0	0
80	M107	X	-.003	-.003	0	0
81	M108	X	-.003	-.003	0	0
82	M109	X	-.003	-.003	0	0
83	M110	X	-.003	-.003	0	0
84	M111	X	-.003	-.003	0	0
85	M160	X	-.003	-.003	0	0
86	M161	X	-.003	-.003	0	0
87	M163	X	-.011	-.011	0	0
88	M166	X	-.011	-.011	0	0
89	M169	X	-.011	-.011	0	0
90	M118	X	-.008	-.008	0	0
91	M119	X	-.011	-.011	0	0
92	M120	X	-.01	-.01	0	0
93	M121	X	-.01	-.01	0	0
94	M122	X	-.011	-.011	0	0
95	M123	X	-.007	-.007	0	0
96	M124	X	-.011	-.011	0	0
97	M125	X	-.007	-.007	0	0
98	M126	X	-.007	-.007	0	0
99	M127	X	-.007	-.007	0	0
100	M133	X	-.008	-.008	0	0
101	M134	X	-.011	-.011	0	0
102	M135	X	-.01	-.01	0	0
103	M136	X	-.01	-.01	0	0
104	M137	X	-.011	-.011	0	0

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
105	M138	X	-.007	-.007	0	0
106	M139	X	-.011	-.011	0	0
107	M140	X	-.007	-.007	0	0
108	M141	X	-.007	-.007	0	0
109	M142	X	-.007	-.007	0	0
110	M148	X	-.008	-.008	0	0
111	M149	X	-.011	-.011	0	0
112	M150	X	-.01	-.01	0	0
113	M151	X	-.01	-.01	0	0
114	M152	X	-.011	-.011	0	0
115	M153	X	-.007	-.007	0	0
116	M154	X	-.011	-.011	0	0
117	M155	X	-.007	-.007	0	0
118	M156	X	-.007	-.007	0	0
119	M157	X	-.007	-.007	0	0

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	Z	-.002	-.002	0	0
2	M2	Z	-.009	-.009	0	0
3	M3	Z	-.009	-.009	0	0
4	M4	Z	-.002	-.002	0	0
5	M5	Z	-.009	-.009	0	0
6	M6	Z	-.002	-.002	0	0
7	M7	Z	-.006	-.006	0	0
8	M8	Z	-.006	-.006	0	0
9	M9	Z	-.006	-.006	0	0
10	M10	Z	-.006	-.006	0	0
11	M11	Z	-.006	-.006	0	0
12	M13	Z	-.002	-.002	0	0
13	M14	Z	-.002	-.002	0	0
14	M15	Z	-.002	-.002	0	0
15	M16	Z	-.005	-.005	0	0
16	M17	Z	-.005	-.005	0	0
17	M18	Z	-.005	-.005	0	0
18	M19	Z	-.002	-.002	0	0
19	M20	Z	-.002	-.002	0	0
20	M25	Z	-.002	-.002	0	0
21	M26	Z	-.002	-.002	0	0
22	M31	Z	-.002	-.002	0	0
23	M32	Z	-.002	-.002	0	0
24	M37	Z	-.006	-.006	0	0
25	M38	Z	-.002	-.002	0	0
26	M39	Z	-.002	-.002	0	0
27	M40	Z	-.002	-.002	0	0
28	M41	Z	-.002	-.002	0	0
29	M42	Z	-.002	-.002	0	0
30	M43	Z	-.001	-.001	0	0
31	M44	Z	-.001	-.001	0	0
32	M45	Z	-.002	-.002	0	0
33	M46	Z	-.002	-.002	0	0

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
34	M47	Z	-.002	-.002	0	0
35	M48	Z	-.002	-.002	0	0
36	M49	Z	-.002	-.002	0	0
37	M50	Z	-.002	-.002	0	0
38	M51	Z	-.002	-.002	0	0
39	M52	Z	-.002	-.002	0	0
40	M53	Z	-.001	-.001	0	0
41	M54	Z	-.001	-.001	0	0
42	M55	Z	-.002	-.002	0	0
43	M56	Z	-.002	-.002	0	0
44	M57	Z	-.002	-.002	0	0
45	M65	Z	-.002	-.002	0	0
46	M66	Z	-.002	-.002	0	0
47	M67	Z	-.002	-.002	0	0
48	M68	Z	-.002	-.002	0	0
49	M69	Z	-.002	-.002	0	0
50	M70	Z	-.001	-.001	0	0
51	M71	Z	-.001	-.001	0	0
52	M72	Z	-.002	-.002	0	0
53	M73	Z	-.002	-.002	0	0
54	M74	Z	-.002	-.002	0	0
55	M75	Z	-.002	-.002	0	0
56	M76	Z	-.002	-.002	0	0
57	M77	Z	-.002	-.002	0	0
58	M78	Z	-.002	-.002	0	0
59	M79	Z	-.002	-.002	0	0
60	M80	Z	-.001	-.001	0	0
61	M81	Z	-.001	-.001	0	0
62	M82	Z	-.002	-.002	0	0
63	M83	Z	-.002	-.002	0	0
64	M84	Z	-.002	-.002	0	0
65	M92	Z	-.002	-.002	0	0
66	M93	Z	-.002	-.002	0	0
67	M94	Z	-.002	-.002	0	0
68	M95	Z	-.002	-.002	0	0
69	M96	Z	-.002	-.002	0	0
70	M97	Z	-.001	-.001	0	0
71	M98	Z	-.001	-.001	0	0
72	M99	Z	-.002	-.002	0	0
73	M100	Z	-.002	-.002	0	0
74	M101	Z	-.002	-.002	0	0
75	M102	Z	-.002	-.002	0	0
76	M103	Z	-.002	-.002	0	0
77	M104	Z	-.002	-.002	0	0
78	M105	Z	-.002	-.002	0	0
79	M106	Z	-.002	-.002	0	0
80	M107	Z	-.001	-.001	0	0
81	M108	Z	-.001	-.001	0	0
82	M109	Z	-.002	-.002	0	0
83	M110	Z	-.002	-.002	0	0
84	M111	Z	-.002	-.002	0	0
85	M160	Z	-.002	-.002	0	0

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
86	M161	Z	-.002	-.002	0	0
87	M163	Z	-.002	-.002	0	0
88	M166	Z	-.002	-.002	0	0
89	M169	Z	-.002	-.002	0	0
90	M118	Z	-.004	-.004	0	0
91	M119	Z	-.005	-.005	0	0
92	M120	Z	-.005	-.005	0	0
93	M121	Z	-.005	-.005	0	0
94	M122	Z	-.005	-.005	0	0
95	M123	Z	-.004	-.004	0	0
96	M124	Z	-.005	-.005	0	0
97	M125	Z	-.004	-.004	0	0
98	M126	Z	-.004	-.004	0	0
99	M127	Z	-.004	-.004	0	0
100	M133	Z	-.004	-.004	0	0
101	M134	Z	-.005	-.005	0	0
102	M135	Z	-.005	-.005	0	0
103	M136	Z	-.005	-.005	0	0
104	M137	Z	-.005	-.005	0	0
105	M138	Z	-.004	-.004	0	0
106	M139	Z	-.005	-.005	0	0
107	M140	Z	-.004	-.004	0	0
108	M141	Z	-.004	-.004	0	0
109	M142	Z	-.004	-.004	0	0
110	M148	Z	-.004	-.004	0	0
111	M149	Z	-.005	-.005	0	0
112	M150	Z	-.005	-.005	0	0
113	M151	Z	-.005	-.005	0	0
114	M152	Z	-.005	-.005	0	0
115	M153	Z	-.004	-.004	0	0
116	M154	Z	-.005	-.005	0	0
117	M155	Z	-.004	-.004	0	0
118	M156	Z	-.004	-.004	0	0
119	M157	Z	-.004	-.004	0	0

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	X	-.002	-.002	0	0
2	M2	X	-.009	-.009	0	0
3	M3	X	-.009	-.009	0	0
4	M4	X	-.002	-.002	0	0
5	M5	X	-.009	-.009	0	0
6	M6	X	-.002	-.002	0	0
7	M7	X	-.006	-.006	0	0
8	M8	X	-.006	-.006	0	0
9	M9	X	-.006	-.006	0	0
10	M10	X	-.006	-.006	0	0
11	M11	X	-.006	-.006	0	0
12	M13	X	-.002	-.002	0	0
13	M14	X	-.002	-.002	0	0
14	M15	X	-.002	-.002	0	0

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
15	M16	X	-.005	-.005	0	0
16	M17	X	-.005	-.005	0	0
17	M18	X	-.005	-.005	0	0
18	M19	X	-.002	-.002	0	0
19	M20	X	-.002	-.002	0	0
20	M25	X	-.002	-.002	0	0
21	M26	X	-.002	-.002	0	0
22	M31	X	-.002	-.002	0	0
23	M32	X	-.002	-.002	0	0
24	M37	X	-.006	-.006	0	0
25	M38	X	-.002	-.002	0	0
26	M39	X	-.002	-.002	0	0
27	M40	X	-.002	-.002	0	0
28	M41	X	-.002	-.002	0	0
29	M42	X	-.002	-.002	0	0
30	M43	X	-.001	-.001	0	0
31	M44	X	-.001	-.001	0	0
32	M45	X	-.002	-.002	0	0
33	M46	X	-.002	-.002	0	0
34	M47	X	-.002	-.002	0	0
35	M48	X	-.002	-.002	0	0
36	M49	X	-.002	-.002	0	0
37	M50	X	-.002	-.002	0	0
38	M51	X	-.002	-.002	0	0
39	M52	X	-.002	-.002	0	0
40	M53	X	-.001	-.001	0	0
41	M54	X	-.001	-.001	0	0
42	M55	X	-.002	-.002	0	0
43	M56	X	-.002	-.002	0	0
44	M57	X	-.002	-.002	0	0
45	M65	X	-.002	-.002	0	0
46	M66	X	-.002	-.002	0	0
47	M67	X	-.002	-.002	0	0
48	M68	X	-.002	-.002	0	0
49	M69	X	-.002	-.002	0	0
50	M70	X	-.001	-.001	0	0
51	M71	X	-.001	-.001	0	0
52	M72	X	-.002	-.002	0	0
53	M73	X	-.002	-.002	0	0
54	M74	X	-.002	-.002	0	0
55	M75	X	-.002	-.002	0	0
56	M76	X	-.002	-.002	0	0
57	M77	X	-.002	-.002	0	0
58	M78	X	-.002	-.002	0	0
59	M79	X	-.002	-.002	0	0
60	M80	X	-.001	-.001	0	0
61	M81	X	-.001	-.001	0	0
62	M82	X	-.002	-.002	0	0
63	M83	X	-.002	-.002	0	0
64	M84	X	-.002	-.002	0	0
65	M92	X	-.002	-.002	0	0
66	M93	X	-.002	-.002	0	0

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
67	M94	X	-.002	-.002	0	0
68	M95	X	-.002	-.002	0	0
69	M96	X	-.002	-.002	0	0
70	M97	X	-.001	-.001	0	0
71	M98	X	-.001	-.001	0	0
72	M99	X	-.002	-.002	0	0
73	M100	X	-.002	-.002	0	0
74	M101	X	-.002	-.002	0	0
75	M102	X	-.002	-.002	0	0
76	M103	X	-.002	-.002	0	0
77	M104	X	-.002	-.002	0	0
78	M105	X	-.002	-.002	0	0
79	M106	X	-.002	-.002	0	0
80	M107	X	-.001	-.001	0	0
81	M108	X	-.001	-.001	0	0
82	M109	X	-.002	-.002	0	0
83	M110	X	-.002	-.002	0	0
84	M111	X	-.002	-.002	0	0
85	M160	X	-.002	-.002	0	0
86	M161	X	-.002	-.002	0	0
87	M163	X	-.002	-.002	0	0
88	M166	X	-.002	-.002	0	0
89	M169	X	-.002	-.002	0	0
90	M118	X	-.004	-.004	0	0
91	M119	X	-.005	-.005	0	0
92	M120	X	-.005	-.005	0	0
93	M121	X	-.005	-.005	0	0
94	M122	X	-.005	-.005	0	0
95	M123	X	-.004	-.004	0	0
96	M124	X	-.005	-.005	0	0
97	M125	X	-.004	-.004	0	0
98	M126	X	-.004	-.004	0	0
99	M127	X	-.004	-.004	0	0
100	M133	X	-.004	-.004	0	0
101	M134	X	-.005	-.005	0	0
102	M135	X	-.005	-.005	0	0
103	M136	X	-.005	-.005	0	0
104	M137	X	-.005	-.005	0	0
105	M138	X	-.004	-.004	0	0
106	M139	X	-.005	-.005	0	0
107	M140	X	-.004	-.004	0	0
108	M141	X	-.004	-.004	0	0
109	M142	X	-.004	-.004	0	0
110	M148	X	-.004	-.004	0	0
111	M149	X	-.005	-.005	0	0
112	M150	X	-.005	-.005	0	0
113	M151	X	-.005	-.005	0	0
114	M152	X	-.005	-.005	0	0
115	M153	X	-.004	-.004	0	0
116	M154	X	-.005	-.005	0	0
117	M155	X	-.004	-.004	0	0
118	M156	X	-.004	-.004	0	0

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
119	M157	X	-.004	-.004	0	0

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	Z	-.0004	-.0004	0	0
2	M2	Z	-.002	-.002	0	0
3	M3	Z	-.002	-.002	0	0
4	M4	Z	-.0004	-.0004	0	0
5	M5	Z	-.002	-.002	0	0
6	M6	Z	-.0004	-.0004	0	0
7	M7	Z	-.001	-.001	0	0
8	M8	Z	-.001	-.001	0	0
9	M9	Z	-.001	-.001	0	0
10	M10	Z	-.001	-.001	0	0
11	M11	Z	-.001	-.001	0	0
12	M13	Z	-.0002	-.0002	0	0
13	M14	Z	-.0002	-.0002	0	0
14	M15	Z	-.0002	-.0002	0	0
15	M16	Z	-.0006	-.0006	0	0
16	M17	Z	-.0006	-.0006	0	0
17	M18	Z	-.0006	-.0006	0	0
18	M19	Z	-.0002	-.0002	0	0
19	M20	Z	-.0002	-.0002	0	0
20	M25	Z	-.0002	-.0002	0	0
21	M26	Z	-.0002	-.0002	0	0
22	M31	Z	-.0002	-.0002	0	0
23	M32	Z	-.0002	-.0002	0	0
24	M37	Z	-.001	-.001	0	0
25	M38	Z	-.0001	-.0001	0	0
26	M39	Z	-.0001	-.0001	0	0
27	M40	Z	-.0001	-.0001	0	0
28	M41	Z	-.0001	-.0001	0	0
29	M42	Z	-.0001	-.0001	0	0
30	M43	Z	-.0001	-.0001	0	0
31	M44	Z	-.0001	-.0001	0	0
32	M45	Z	-.0001	-.0001	0	0
33	M46	Z	-.0001	-.0001	0	0
34	M47	Z	-.0001	-.0001	0	0
35	M48	Z	-.0001	-.0001	0	0
36	M49	Z	-.0001	-.0001	0	0
37	M50	Z	-.0001	-.0001	0	0
38	M51	Z	-.0001	-.0001	0	0
39	M52	Z	-.0001	-.0001	0	0
40	M53	Z	-.0001	-.0001	0	0
41	M54	Z	-.0001	-.0001	0	0
42	M55	Z	-.0001	-.0001	0	0
43	M56	Z	-.0001	-.0001	0	0
44	M57	Z	-.0001	-.0001	0	0
45	M65	Z	-.0001	-.0001	0	0
46	M66	Z	-.0001	-.0001	0	0
47	M67	Z	-.0001	-.0001	0	0

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
48	M68	Z	-.0001	-.0001	0	0
49	M69	Z	-.0001	-.0001	0	0
50	M70	Z	-.0001	-.0001	0	0
51	M71	Z	-.0001	-.0001	0	0
52	M72	Z	-.0001	-.0001	0	0
53	M73	Z	-.0001	-.0001	0	0
54	M74	Z	-.0001	-.0001	0	0
55	M75	Z	-.0001	-.0001	0	0
56	M76	Z	-.0001	-.0001	0	0
57	M77	Z	-.0001	-.0001	0	0
58	M78	Z	-.0001	-.0001	0	0
59	M79	Z	-.0001	-.0001	0	0
60	M80	Z	-.0001	-.0001	0	0
61	M81	Z	-.0001	-.0001	0	0
62	M82	Z	-.0001	-.0001	0	0
63	M83	Z	-.0001	-.0001	0	0
64	M84	Z	-.0001	-.0001	0	0
65	M92	Z	-.0001	-.0001	0	0
66	M93	Z	-.0001	-.0001	0	0
67	M94	Z	-.0001	-.0001	0	0
68	M95	Z	-.0001	-.0001	0	0
69	M96	Z	-.0001	-.0001	0	0
70	M97	Z	-.0001	-.0001	0	0
71	M98	Z	-.0001	-.0001	0	0
72	M99	Z	-.0001	-.0001	0	0
73	M100	Z	-.0001	-.0001	0	0
74	M101	Z	-.0001	-.0001	0	0
75	M102	Z	-.0001	-.0001	0	0
76	M103	Z	-.0001	-.0001	0	0
77	M104	Z	-.0001	-.0001	0	0
78	M105	Z	-.0001	-.0001	0	0
79	M106	Z	-.0001	-.0001	0	0
80	M107	Z	-.0001	-.0001	0	0
81	M108	Z	-.0001	-.0001	0	0
82	M109	Z	-.0001	-.0001	0	0
83	M110	Z	-.0001	-.0001	0	0
84	M111	Z	-.0001	-.0001	0	0
85	M160	Z	-.0001	-.0001	0	0
86	M161	Z	-.0001	-.0001	0	0
87	M163	Z	-.0003	-.0003	0	0
88	M166	Z	-.0003	-.0003	0	0
89	M169	Z	-.0003	-.0003	0	0
90	M118	Z	-.0004	-.0004	0	0
91	M119	Z	-.0006	-.0006	0	0
92	M120	Z	-.0006	-.0006	0	0
93	M121	Z	-.0006	-.0006	0	0
94	M122	Z	-.0006	-.0006	0	0
95	M123	Z	-.0004	-.0004	0	0
96	M124	Z	-.0006	-.0006	0	0
97	M125	Z	-.0004	-.0004	0	0
98	M126	Z	-.0004	-.0004	0	0
99	M127	Z	-.0004	-.0004	0	0

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
100	M133	Z	-.0004	-.0004	0	0
101	M134	Z	-.0006	-.0006	0	0
102	M135	Z	-.0006	-.0006	0	0
103	M136	Z	-.0006	-.0006	0	0
104	M137	Z	-.0006	-.0006	0	0
105	M138	Z	-.0004	-.0004	0	0
106	M139	Z	-.0006	-.0006	0	0
107	M140	Z	-.0004	-.0004	0	0
108	M141	Z	-.0004	-.0004	0	0
109	M142	Z	-.0004	-.0004	0	0
110	M148	Z	-.0004	-.0004	0	0
111	M149	Z	-.0006	-.0006	0	0
112	M150	Z	-.0006	-.0006	0	0
113	M151	Z	-.0006	-.0006	0	0
114	M152	Z	-.0006	-.0006	0	0
115	M153	Z	-.0004	-.0004	0	0
116	M154	Z	-.0006	-.0006	0	0
117	M155	Z	-.0004	-.0004	0	0
118	M156	Z	-.0004	-.0004	0	0
119	M157	Z	-.0004	-.0004	0	0

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	X	-.0004	-.0004	0	0
2	M2	X	-.002	-.002	0	0
3	M3	X	-.002	-.002	0	0
4	M4	X	-.0004	-.0004	0	0
5	M5	X	-.002	-.002	0	0
6	M6	X	-.0004	-.0004	0	0
7	M7	X	-.001	-.001	0	0
8	M8	X	-.001	-.001	0	0
9	M9	X	-.001	-.001	0	0
10	M10	X	-.001	-.001	0	0
11	M11	X	-.001	-.001	0	0
12	M13	X	-.0002	-.0002	0	0
13	M14	X	-.0002	-.0002	0	0
14	M15	X	-.0002	-.0002	0	0
15	M16	X	-.0006	-.0006	0	0
16	M17	X	-.0006	-.0006	0	0
17	M18	X	-.0006	-.0006	0	0
18	M19	X	-.0002	-.0002	0	0
19	M20	X	-.0002	-.0002	0	0
20	M25	X	-.0002	-.0002	0	0
21	M26	X	-.0002	-.0002	0	0
22	M31	X	-.0002	-.0002	0	0
23	M32	X	-.0002	-.0002	0	0
24	M37	X	-.001	-.001	0	0
25	M38	X	-.0001	-.0001	0	0
26	M39	X	-.0001	-.0001	0	0
27	M40	X	-.0001	-.0001	0	0
28	M41	X	-.0001	-.0001	0	0

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
29	M42	X	-.0001	-.0001	0	0
30	M43	X	-.0001	-.0001	0	0
31	M44	X	-.0001	-.0001	0	0
32	M45	X	-.0001	-.0001	0	0
33	M46	X	-.0001	-.0001	0	0
34	M47	X	-.0001	-.0001	0	0
35	M48	X	-.0001	-.0001	0	0
36	M49	X	-.0001	-.0001	0	0
37	M50	X	-.0001	-.0001	0	0
38	M51	X	-.0001	-.0001	0	0
39	M52	X	-.0001	-.0001	0	0
40	M53	X	-.0001	-.0001	0	0
41	M54	X	-.0001	-.0001	0	0
42	M55	X	-.0001	-.0001	0	0
43	M56	X	-.0001	-.0001	0	0
44	M57	X	-.0001	-.0001	0	0
45	M65	X	-.0001	-.0001	0	0
46	M66	X	-.0001	-.0001	0	0
47	M67	X	-.0001	-.0001	0	0
48	M68	X	-.0001	-.0001	0	0
49	M69	X	-.0001	-.0001	0	0
50	M70	X	-.0001	-.0001	0	0
51	M71	X	-.0001	-.0001	0	0
52	M72	X	-.0001	-.0001	0	0
53	M73	X	-.0001	-.0001	0	0
54	M74	X	-.0001	-.0001	0	0
55	M75	X	-.0001	-.0001	0	0
56	M76	X	-.0001	-.0001	0	0
57	M77	X	-.0001	-.0001	0	0
58	M78	X	-.0001	-.0001	0	0
59	M79	X	-.0001	-.0001	0	0
60	M80	X	-.0001	-.0001	0	0
61	M81	X	-.0001	-.0001	0	0
62	M82	X	-.0001	-.0001	0	0
63	M83	X	-.0001	-.0001	0	0
64	M84	X	-.0001	-.0001	0	0
65	M92	X	-.0001	-.0001	0	0
66	M93	X	-.0001	-.0001	0	0
67	M94	X	-.0001	-.0001	0	0
68	M95	X	-.0001	-.0001	0	0
69	M96	X	-.0001	-.0001	0	0
70	M97	X	-.0001	-.0001	0	0
71	M98	X	-.0001	-.0001	0	0
72	M99	X	-.0001	-.0001	0	0
73	M100	X	-.0001	-.0001	0	0
74	M101	X	-.0001	-.0001	0	0
75	M102	X	-.0001	-.0001	0	0
76	M103	X	-.0001	-.0001	0	0
77	M104	X	-.0001	-.0001	0	0
78	M105	X	-.0001	-.0001	0	0
79	M106	X	-.0001	-.0001	0	0
80	M107	X	-.0001	-.0001	0	0

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

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
81	M108	X	-.0001	-.0001	0	0
82	M109	X	-.0001	-.0001	0	0
83	M110	X	-.0001	-.0001	0	0
84	M111	X	-.0001	-.0001	0	0
85	M160	X	-.0001	-.0001	0	0
86	M161	X	-.0001	-.0001	0	0
87	M163	X	-.0003	-.0003	0	0
88	M166	X	-.0003	-.0003	0	0
89	M169	X	-.0003	-.0003	0	0
90	M118	X	-.0004	-.0004	0	0
91	M119	X	-.0006	-.0006	0	0
92	M120	X	-.0006	-.0006	0	0
93	M121	X	-.0006	-.0006	0	0
94	M122	X	-.0006	-.0006	0	0
95	M123	X	-.0004	-.0004	0	0
96	M124	X	-.0006	-.0006	0	0
97	M125	X	-.0004	-.0004	0	0
98	M126	X	-.0004	-.0004	0	0
99	M127	X	-.0004	-.0004	0	0
100	M133	X	-.0004	-.0004	0	0
101	M134	X	-.0006	-.0006	0	0
102	M135	X	-.0006	-.0006	0	0
103	M136	X	-.0006	-.0006	0	0
104	M137	X	-.0006	-.0006	0	0
105	M138	X	-.0004	-.0004	0	0
106	M139	X	-.0006	-.0006	0	0
107	M140	X	-.0004	-.0004	0	0
108	M141	X	-.0004	-.0004	0	0
109	M142	X	-.0004	-.0004	0	0
110	M148	X	-.0004	-.0004	0	0
111	M149	X	-.0006	-.0006	0	0
112	M150	X	-.0006	-.0006	0	0
113	M151	X	-.0006	-.0006	0	0
114	M152	X	-.0006	-.0006	0	0
115	M153	X	-.0004	-.0004	0	0
116	M154	X	-.0006	-.0006	0	0
117	M155	X	-.0004	-.0004	0	0
118	M156	X	-.0004	-.0004	0	0
119	M157	X	-.0004	-.0004	0	0

Member Distributed Loads (BLC 8 : Ice)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	Y	-.011	-.011	0	0
2	M2	Y	-.024	-.024	0	0
3	M3	Y	-.024	-.024	0	0
4	M4	Y	-.011	-.011	0	0
5	M5	Y	-.024	-.024	0	0
6	M6	Y	-.011	-.011	0	0
7	M7	Y	-.018	-.018	0	0
8	M8	Y	-.018	-.018	0	0
9	M9	Y	-.018	-.018	0	0

Member Distributed Loads (BLC 8 : Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
10	M10	Y	-.018	-.018	0	0
11	M11	Y	-.018	-.018	0	0
12	M13	Y	-.009	-.009	0	0
13	M14	Y	-.009	-.009	0	0
14	M15	Y	-.009	-.009	0	0
15	M16	Y	-.011	-.011	0	0
16	M17	Y	-.011	-.011	0	0
17	M18	Y	-.011	-.011	0	0
18	M19	Y	-.009	-.009	0	0
19	M20	Y	-.009	-.009	0	0
20	M25	Y	-.009	-.009	0	0
21	M26	Y	-.009	-.009	0	0
22	M31	Y	-.009	-.009	0	0
23	M32	Y	-.009	-.009	0	0
24	M37	Y	-.018	-.018	0	0
25	M38	Y	-.006	-.006	0	0
26	M39	Y	-.006	-.006	0	0
27	M40	Y	-.006	-.006	0	0
28	M41	Y	-.006	-.006	0	0
29	M42	Y	-.006	-.006	0	0
30	M43	Y	-.006	-.006	0	0
31	M44	Y	-.006	-.006	0	0
32	M45	Y	-.005	-.005	0	0
33	M46	Y	-.005	-.005	0	0
34	M47	Y	-.006	-.006	0	0
35	M48	Y	-.006	-.006	0	0
36	M49	Y	-.006	-.006	0	0
37	M50	Y	-.006	-.006	0	0
38	M51	Y	-.006	-.006	0	0
39	M52	Y	-.006	-.006	0	0
40	M53	Y	-.006	-.006	0	0
41	M54	Y	-.006	-.006	0	0
42	M55	Y	-.005	-.005	0	0
43	M56	Y	-.005	-.005	0	0
44	M57	Y	-.006	-.006	0	0
45	M65	Y	-.006	-.006	0	0
46	M66	Y	-.006	-.006	0	0
47	M67	Y	-.006	-.006	0	0
48	M68	Y	-.006	-.006	0	0
49	M69	Y	-.006	-.006	0	0
50	M70	Y	-.006	-.006	0	0
51	M71	Y	-.006	-.006	0	0
52	M72	Y	-.005	-.005	0	0
53	M73	Y	-.005	-.005	0	0
54	M74	Y	-.006	-.006	0	0
55	M75	Y	-.006	-.006	0	0
56	M76	Y	-.006	-.006	0	0
57	M77	Y	-.006	-.006	0	0
58	M78	Y	-.006	-.006	0	0
59	M79	Y	-.006	-.006	0	0
60	M80	Y	-.006	-.006	0	0
61	M81	Y	-.006	-.006	0	0

Member Distributed Loads (BLC 8 : Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
62	M82	Y	-.005	-.005	0	0
63	M83	Y	-.005	-.005	0	0
64	M84	Y	-.006	-.006	0	0
65	M92	Y	-.006	-.006	0	0
66	M93	Y	-.006	-.006	0	0
67	M94	Y	-.006	-.006	0	0
68	M95	Y	-.006	-.006	0	0
69	M96	Y	-.006	-.006	0	0
70	M97	Y	-.006	-.006	0	0
71	M98	Y	-.006	-.006	0	0
72	M99	Y	-.005	-.005	0	0
73	M100	Y	-.005	-.005	0	0
74	M101	Y	-.006	-.006	0	0
75	M102	Y	-.006	-.006	0	0
76	M103	Y	-.006	-.006	0	0
77	M104	Y	-.006	-.006	0	0
78	M105	Y	-.006	-.006	0	0
79	M106	Y	-.006	-.006	0	0
80	M107	Y	-.006	-.006	0	0
81	M108	Y	-.006	-.006	0	0
82	M109	Y	-.005	-.005	0	0
83	M110	Y	-.005	-.005	0	0
84	M111	Y	-.006	-.006	0	0
85	M160	Y	-.006	-.006	0	0
86	M161	Y	-.006	-.006	0	0
87	M163	Y	-.01	-.01	0	0
88	M166	Y	-.01	-.01	0	0
89	M169	Y	-.01	-.01	0	0
90	M118	Y	-.008	-.008	0	0
91	M119	Y	-.008	-.008	0	0
92	M120	Y	-.008	-.008	0	0
93	M121	Y	-.008	-.008	0	0
94	M122	Y	-.008	-.008	0	0
95	M123	Y	-.008	-.008	0	0
96	M124	Y	-.008	-.008	0	0
97	M125	Y	-.008	-.008	0	0
98	M126	Y	-.008	-.008	0	0
99	M127	Y	-.008	-.008	0	0
100	M133	Y	-.008	-.008	0	0
101	M134	Y	-.008	-.008	0	0
102	M135	Y	-.008	-.008	0	0
103	M136	Y	-.008	-.008	0	0
104	M137	Y	-.008	-.008	0	0
105	M138	Y	-.008	-.008	0	0
106	M139	Y	-.008	-.008	0	0
107	M140	Y	-.008	-.008	0	0
108	M141	Y	-.008	-.008	0	0
109	M142	Y	-.008	-.008	0	0
110	M148	Y	-.008	-.008	0	0
111	M149	Y	-.008	-.008	0	0
112	M150	Y	-.008	-.008	0	0
113	M151	Y	-.008	-.008	0	0

Member Distributed Loads (BLC 8 : Ice) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
114	M152	Y	-.008	-.008	0	0
115	M153	Y	-.008	-.008	0	0
116	M154	Y	-.008	-.008	0	0
117	M155	Y	-.008	-.008	0	0
118	M156	Y	-.008	-.008	0	0
119	M157	Y	-.008	-.008	0	0

Member Distributed Loads (BLC 28 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
1	M133	Y	-.008	-.008	0	19
2	M134	Y	-.012	-.009	0	29.5
3	M134	Y	-.009	-.006	29.5	59
4	M135	Y	-.011	-.011	5.652	25.738
5	M136	Y	-.008	-.008	2.165	32.433
6	M137	Y	-.003	-.008	0	12.029
7	M137	Y	-.008	-.01	12.029	24.057
8	M137	Y	-.01	-.01	24.057	36.086
9	M137	Y	-.01	-.008	36.086	48.114
10	M137	Y	-.008	-.002	48.114	60.143
11	M138	Y	-.006	-.008	0	12.989
12	M141	Y	-.006	-.008	0	12.989
13	M139	Y	-.006	-.006	0	12
14	M139	Y	-.006	-.006	12	24
15	M139	Y	-.006	-.006	24	36
16	M139	Y	-.006	-.006	36	48
17	M139	Y	-.006	-.006	48	60
18	M140	Y	-.003	-.003	0	10.104
19	M142	Y	-.003	-.003	0	10.104
20	M154	Y	-.006	-.006	0	12
21	M154	Y	-.006	-.006	12	24
22	M154	Y	-.006	-.006	24	36
23	M154	Y	-.006	-.006	36	48
24	M154	Y	-.006	-.006	48	60
25	M155	Y	-.003	-.003	0	10.104
26	M157	Y	-.003	-.003	0	10.104
27	M152	Y	-.005	-.008	0	12.029
28	M152	Y	-.008	-.01	12.029	24.057
29	M152	Y	-.01	-.01	24.057	36.086
30	M152	Y	-.01	-.007	36.086	48.114
31	M152	Y	-.007	-.005	48.114	60.143
32	M153	Y	-.003	-.008	0	12.989
33	M156	Y	-.004	-.008	0	12.989
34	M148	Y	-.008	-.008	0	19
35	M149	Y	-.006	-.009	0	29.5
36	M149	Y	-.009	-.012	29.5	59
37	M150	Y	-.008	-.008	2.165	32.432
38	M151	Y	-.011	-.011	5.65	25.737
39	M124	Y	-.006	-.006	0	12
40	M124	Y	-.006	-.006	12	24
41	M124	Y	-.006	-.006	24	36
42	M124	Y	-.006	-.006	36	48

Member Distributed Loads (BLC 28 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
43	M124	Y	-.006	-.006	48	60
44	M125	Y	-.003	-.003	0	10.104
45	M127	Y	-.003	-.003	0	10.104
46	M122	Y	-.005	-.008	0	12.029
47	M122	Y	-.008	-.009	12.029	24.057
48	M122	Y	-.009	-.01	24.057	36.086
49	M122	Y	-.01	-.008	36.086	48.114
50	M122	Y	-.008	-.004	48.114	60.143
51	M123	Y	-.02	-.006	.982	3.133
52	M123	Y	-.006	-.003	3.133	5.284
53	M123	Y	-.003	-.009	5.284	7.434
54	M123	Y	-.009	-.013	7.434	9.585
55	M126	Y	-.02	-.006	.982	3.133
56	M126	Y	-.006	-.003	3.133	5.283
57	M126	Y	-.003	-.009	5.283	7.434
58	M126	Y	-.009	-.013	7.434	9.585
59	M118	Y	-.008	-.008	0	19
60	M119	Y	-.012	-.009	0	29.5
61	M119	Y	-.009	-.006	29.5	59
62	M120	Y	-.011	-.011	5.65	25.737
63	M121	Y	-.008	-.008	2.165	32.432

Member Distributed Loads (BLC 29 : BLC 8 Transient Area Loads)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
1	M133	Y	-.007	-.007	0	19
2	M134	Y	-.009	-.007	0	29.5
3	M134	Y	-.007	-.005	29.5	59
4	M135	Y	-.009	-.009	5.652	25.738
5	M136	Y	-.006	-.006	2.165	32.433
6	M137	Y	-.002	-.006	0	12.029
7	M137	Y	-.006	-.008	12.029	24.057
8	M137	Y	-.008	-.008	24.057	36.086
9	M137	Y	-.008	-.006	36.086	48.114
10	M137	Y	-.006	-.002	48.114	60.143
11	M138	Y	-.005	-.006	0	12.989
12	M141	Y	-.005	-.006	0	12.989
13	M139	Y	-.005	-.005	0	12
14	M139	Y	-.005	-.005	12	24
15	M139	Y	-.005	-.005	24	36
16	M139	Y	-.005	-.005	36	48
17	M139	Y	-.005	-.005	48	60
18	M140	Y	-.002	-.002	0	10.104
19	M142	Y	-.002	-.002	0	10.104
20	M154	Y	-.005	-.005	0	12
21	M154	Y	-.005	-.005	12	24
22	M154	Y	-.005	-.005	24	36
23	M154	Y	-.005	-.005	36	48
24	M154	Y	-.005	-.005	48	60
25	M155	Y	-.002	-.002	0	10.104
26	M157	Y	-.002	-.002	0	10.104
27	M152	Y	-.004	-.006	0	12.029

Member Distributed Loads (BLC 29 : BLC 8 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[in,%]	End Location[in,%]
28	M152	Y	-.006	-.008	12.029	24.057
29	M152	Y	-.008	-.008	24.057	36.086
30	M152	Y	-.008	-.006	36.086	48.114
31	M152	Y	-.006	-.004	48.114	60.143
32	M153	Y	-.003	-.006	0	12.989
33	M156	Y	-.003	-.006	0	12.989
34	M148	Y	-.007	-.007	0	19
35	M149	Y	-.005	-.007	0	29.5
36	M149	Y	-.007	-.009	29.5	59
37	M150	Y	-.006	-.006	2.165	32.432
38	M151	Y	-.009	-.009	5.65	25.737
39	M124	Y	-.005	-.005	0	12
40	M124	Y	-.005	-.005	12	24
41	M124	Y	-.005	-.005	24	36
42	M124	Y	-.005	-.005	36	48
43	M124	Y	-.005	-.005	48	60
44	M125	Y	-.002	-.002	0	10.104
45	M127	Y	-.002	-.002	0	10.104
46	M122	Y	-.004	-.006	0	12.029
47	M122	Y	-.006	-.007	12.029	24.057
48	M122	Y	-.007	-.008	24.057	36.086
49	M122	Y	-.008	-.007	36.086	48.114
50	M122	Y	-.007	-.003	48.114	60.143
51	M123	Y	-.016	-.005	.982	3.133
52	M123	Y	-.005	-.002	3.133	5.284
53	M123	Y	-.002	-.007	5.284	7.434
54	M123	Y	-.007	-.011	7.434	9.585
55	M126	Y	-.016	-.005	.982	3.133
56	M126	Y	-.005	-.002	3.133	5.283
57	M126	Y	-.002	-.007	5.283	7.434
58	M126	Y	-.007	-.011	7.434	9.585
59	M118	Y	-.007	-.007	0	19
60	M119	Y	-.009	-.007	0	29.5
61	M119	Y	-.007	-.005	29.5	59
62	M120	Y	-.009	-.009	5.65	25.737
63	M121	Y	-.006	-.006	2.165	32.432

Joint Loads and Enforced Displacements (BLC 9 : Live Load a)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/i...
1	N41	L	Y	-.5

Joint Loads and Enforced Displacements (BLC 10 : Live Load b)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/i...
1	N243	L	Y	-.5

Joint Loads and Enforced Displacements (BLC 11 : Live Load c)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/i...
1	N37	L	Y	-.5

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	N14	max	1.936	5	3.417	15	2.18	2	-4.452	85	5.288	5	1.521	51
2		min	-1.95	11	1.241	85	-2.367	8	-13.126	14	-5.282	11	-1.29	33
3	N16	max	1.769	5	3.398	25	2.778	2	6.533	21	6.718	13	-3.198	52
4		min	-1.648	11	1.1	54	-2.689	8	1.823	51	-6.818	7	-11.285	22
5	N15	max	1.872	5	3.398	20	2.428	2	6.505	18	6.734	9	11.292	19
6		min	-1.98	11	1.086	26	-2.329	8	1.716	37	-6.662	3	3.198	37
7	Totals:	max	5.578	5	10.197	15	7.386	2						
8		min	-5.578	11	4.113	11	-7.386	8						

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc.....		LC	phi*Pn...	phi*Pn...	phi*Mn...	phi*Mn.....		Eqn
1	M25	PIPE_2.0X	.927	39.375	20	.155	39....		21	23.929	44.1	2.531	2.531	3...	H1-1b
2	M31	PIPE_2.0X	.924	39.375	25	.154	39....		14	23.929	44.1	2.531	2.531	4...	H1-1b
3	M19	PIPE_2.0X	.919	39.375	16	.153	39....		17	23.929	44.1	2.531	2.531	4...	H1-1b
4	M6	PIPE_3.0	.766	102	14	.201	102		24	15.471	65.205	5.749	5.749	1...	H1-1b
5	M1	PIPE_3.0	.764	102	22	.206	102		20	15.471	65.205	5.749	5.749	1...	H1-1b
6	M4	PIPE_3.0	.763	102	14	.204	102		15	15.471	65.205	5.749	5.749	1...	H1-1b
7	M32	PIPE_2.0	.760	39.375	20	.261	39....		20	17.855	32.13	1.872	1.872	2...	H1-1b
8	M26	PIPE_2.0	.744	39.375	15	.260	39....		15	17.855	32.13	1.872	1.872	3...	H1-1b
9	M20	PIPE_2.0	.744	39.375	25	.259	39....		24	17.855	32.13	1.872	1.872	3...	H1-1b
10	M14	PIPE_2.0	.548	127.5	20	.198	199...		23	3.404	32.13	1.872	1.872	2...	H1-1b
11	M15	PIPE_2.0	.546	76.5	15	.202	4.25		19	3.404	32.13	1.872	1.872	2...	H1-1b
12	M13	PIPE_2.0	.543	76.5	24	.203	4.25		15	3.404	32.13	1.872	1.872	2...	H1-1b
13	M169	PIPE_2.5X	.458	27	19	.122	27		18	38.499	66.15	4.646	4.646	2...	H1-1b
14	M166	PIPE_2.5X	.456	27	15	.124	27		25	38.499	66.15	4.646	4.646	2...	H1-1b
15	M163	PIPE_2.5X	.454	27	23	.123	27		21	38.499	66.15	4.646	4.646	2...	H1-1b
16	M16	L2.5x2.5x4	.445	15.625	17	.073	15....	z	15	36.481	38.556	1.114	2.537	1...	H2-1
17	M17	L2.5x2.5x4	.445	15.625	21	.073	0	z	22	36.481	38.556	1.114	2.537	1...	H2-1
18	M18	L2.5x2.5x4	.444	15.625	25	.073	0	z	14	36.481	38.556	1.114	2.537	1...	H2-1
19	M11	HSS5X5X6	.395	26.5	19	.071	26.5	y	35	252.433	255.852	36.57	36.57	1...	H1-1b
20	M9	HSS5X5X6	.394	26.5	21	.068	26.5	y	50	252.433	255.852	36.57	36.57	1...	H1-1b
21	M7	HSS5X5X6	.390	26.5	23	.077	26.5	y	51	252.433	255.852	36.57	36.57	1...	H1-1b
22	M2	PL1/2X10	.241	15.833	2	.090	4.167	y	2	58.832	162	1.688	33.75	1...	H1-1b
23	M3	PL1/2X10	.185	15.833	7	.047	15....	y	6	58.832	162	1.688	33.75	1...	H1-1b
24	M5	PL1/2X10	.173	4.167	10	.076	15....	y	9	58.832	162	1.688	33.75	1...	H1-1b
25	M8	HSS5X5X6	.162	24	20	.067	24	y	50	253.044	255.852	36.57	36.57	1...	H1-1b
26	M37	HSS5X5X6	.161	24	16	.076	24	y	51	253.044	255.852	36.57	36.57	1...	H1-1b
27	M10	HSS5X5X6	.161	24	20	.071	24	y	35	253.044	255.852	36.57	36.57	1...	H1-1b
28	M72	SR_3/4"	.074	26	9	.146	64....		18	.577	14.314	.179	.179	2...	H1-1b*
29	M99	SR_3/4"	.067	26	2	.281	41....		22	.577	14.314	.179	.179	3...	H1-1b*
30	M82	SR_3/4"	.066	26	2	.304	41....		18	.577	14.314	.179	.179	2...	H1-1b*
31	M45	SR_3/4"	.062	26	6	.151	64....		15	.577	14.314	.179	.179	2...	H1-1b*
32	M109	SR_3/4"	.058	26	7	.302	41....		22	.577	14.314	.179	.179	2...	H1-1b*
33	M55	SR_3/4"	.053	0	10	.317	41....		18	.577	14.314	.179	.179	2...	H1-1b*
34	M100	SR_3/4"	.029	0	2	.252	12....		20	5.396	14.314	.179	.179	2...	H1-1b*
35	M83	SR_3/4"	.026	0	2	.238	12....		20	5.396	14.314	.179	.179	2...	H1-1b*
36	M75	SR_1"	.026	0	8	.295	0		21	24.687	25.447	.424	.424	1...	H1-1b*
37	M81	SR_1"	.026	0	8	.294	0		21	22.071	25.447	.424	.424	2...	H1-1b*
38	M92	SR_1"	.024	0	8	.326	0		19	24.687	25.447	.424	.424	1...	H1-1b*

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc.....		LC	phi*Pn...	phi*Pn...	phi*Mn...	phi*Mn.....		Eqn
39	M98	SR_1"	.024	0	8	.326	0		19	22.071	25.447	.424	.424	3..	H1-1b*
40	M110	SR_3/4"	.022	0	7	.233	12....		24	5.396	14.314	.179	.179	2..	H1-1b*
41	M48	SR_1"	.022	0	3	.317	0		17	24.687	25.447	.424	.424	1..	H1-1b*
42	M54	SR_1"	.022	0	3	.316	0		17	22.071	25.447	.424	.424	2..	H1-1b*
43	M93	SR_1"	.021	0	8	.110	0		19	24.687	25.447	.424	.424	1..	H1-1b*
44	M46	SR_3/4"	.021	0	7	.244	12....		24	5.396	14.314	.179	.179	2..	H1-1b*
45	M97	SR_1"	.021	0	8	.109	13		20	22.071	25.447	.424	.424	1..	H1-1b*
46	M65	SR_1"	.020	0	3	.300	0		14	24.687	25.447	.424	.424	1..	H1-1b*
47	M71	SR_1"	.020	0	3	.298	0		14	22.071	25.447	.424	.424	2..	H1-1b*
48	M102	SR_1"	.020	0	12	.291	0		14	24.687	25.447	.424	.424	1..	H1-1b*
49	M108	SR_1"	.019	0	12	.290	0		14	22.071	25.447	.424	.424	2..	H1-1b*
50	M76	SR_1"	.019	0	8	.101	0		20	24.687	25.447	.424	.424	1..	H1-1b*
51	M80	SR_1"	.019	0	8	.100	0		20	22.071	25.447	.424	.424	1..	H1-1b*
52	M56	SR_3/4"	.019	0	11	.246	12....		16	5.396	14.314	.179	.179	2..	H1-1b*
53	M39	SR_1"	.018	0	13	.110	0		23	24.687	25.447	.424	.424	1..	H1-1b*
54	M43	SR_1"	.018	0	13	.109	13		23	22.071	25.447	.424	.424	1..	H1-1b*
55	M38	SR_1"	.018	0	12	.316	0		23	24.687	25.447	.424	.424	1..	H1-1b*
56	M44	SR_1"	.018	0	12	.314	0		23	22.071	25.447	.424	.424	2..	H1-1b*
57	M73	SR_3/4"	.017	0	10	.236	12....		16	5.396	14.314	.179	.179	2..	H1-1b*
58	M49	SR_1"	.017	0	3	.104	0		16	24.687	25.447	.424	.424	1..	H1-1b*
59	M53	SR_1"	.017	0	3	.103	0		16	22.071	25.447	.424	.424	1..	H1-1b*
60	M66	SR_1"	.016	0	4	.108	0		14	24.687	25.447	.424	.424	1..	H1-1b*
61	M70	SR_1"	.016	0	4	.107	13		15	22.071	25.447	.424	.424	1..	H1-1b*
62	M47	SR_1"	.015	6	8	.209	0		23	24.687	25.447	.424	.424	1..	H1-1b*
63	M103	SR_1"	.015	0	12	.101	0		24	24.687	25.447	.424	.424	1..	H1-1b*
64	M107	SR_1"	.015	0	12	.100	0		24	22.071	25.447	.424	.424	1..	H1-1b*
65	M101	SR_1"	.013	6	3	.217	0		19	24.687	25.447	.424	.424	1..	H1-1b*
66	M84	SR_1"	.010	6	13	.163	0		21	24.687	25.447	.424	.424	1..	H1-1b*
67	M74	SR_1"	.009	6	12	.205	0		14	24.687	25.447	.424	.424	1..	H1-1b*
68	M57	SR_1"	.007	6	8	.176	0		17	24.687	25.447	.424	.424	1..	H1-1b*
69	M104	SR_1"	.006	0	3	.065	6		22	24.687	25.447	.424	.424	1..	H1-1b*
70	M94	SR_1"	.005	0	5	.046	6		14	24.687	25.447	.424	.424	1..	H1-1b*
71	M50	SR_1"	.005	0	7	.071	6		21	24.687	25.447	.424	.424	1..	H1-1b*
72	M68	SR_1"	.004	6	6	.048	6		18	24.687	25.447	.424	.424	1..	H1-1b*
73	M41	SR_1"	.004	6	3	.048	6		15	24.687	25.447	.424	.424	1..	H1-1b*
74	M111	SR_1"	.004	6	4	.162	0		25	24.687	25.447	.424	.424	1..	H1-1b*
75	M77	SR_1"	.004	0	22	.066	6		18	24.687	25.447	.424	.424	1..	H1-1b*
76	M161	SR_1"	.004	5.598	7	.029	0		19	24.784	25.447	.424	.424	1..	H1-1b*
77	M51	SR_1"	.003	6	13	.023	0		9	24.687	25.447	.424	.424	1..	H1-1b*
78	M105	SR_1"	.002	6	9	.019	0		6	24.687	25.447	.424	.424	1..	H1-1b*
79	M160	SR_1"	.002	0	13	.079	0		19	24.81	25.447	.424	.424	1..	H1-1b*
80	M96	SR_1"	.002	0	2	.020	0		2	24.687	25.447	.424	.424	1..	H1-1b*
81	M69	SR_1"	.001	0	9	.019	0		9	24.687	25.447	.424	.424	1..	H1-1b*
82	M95	SR_1"	.001	6	11	.031	0		2	24.687	25.447	.424	.424	1..	H1-1b*
83	M78	SR_1"	.001	6	5	.024	0		2	24.687	25.447	.424	.424	1..	H1-1b*
84	M106	SR_1"	.001	0	6	.016	0		6	24.687	25.447	.424	.424	1..	H1-1b*
85	M79	SR_1"	.001	0	2	.018	0		2	24.687	25.447	.424	.424	1..	H1-1b*
86	M42	SR_1"	.001	0	5	.017	0		6	24.687	25.447	.424	.424	1..	H1-1b*
87	M52	SR_1"	.001	0	10	.020	0		52	24.687	25.447	.424	.424	1..	H1-1b*
88	M40	SR_1"	.001	0	7	.033	0		7	24.687	25.447	.424	.424	1..	H1-1b*
89	M67	SR_1"	.001	0	10	.031	0		10	24.687	25.447	.424	.424	1..	H1-1b*

Exhibit F

Power Density/RF Emissions Report

Transcom Engineering, Inc.

Wireless Network Design and Deployment

Radio Frequency Emissions Analysis Report

T-MOBILE Existing Facility

Site ID: CT11025B

Branford/ I-95/ X55/ Dtn1
10 Sylvia St
Branford, CT 06405

May 20, 2019

Transcom Engineering Project Number: 737001-0028

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**52.66 %**

May 20, 2019

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

Emissions Analysis for Site: **CT11025B – Branford/ I-95/ X55/ Dtn1**

Transcom Engineering, Inc ("Transcom") was directed to analyze the proposed upgrades to the T-MOBILE facility located at **10 Sylvia St, Branford, CT**, for the purpose of determining whether the emissions from the Proposed T-MOBILE Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed upgrades to the T-MOBILE antenna facility located at **10 Sylvia St, Branford, 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
UMTS	1900 MHz (PCS)	1	40
GSM	1900 MHz (PCS)	1	15
UMTS	2100 MHz (AWS)	1	40
LTE / 5G NR	600 MHz	2	40
LTE	700 MHz	2	20

Table 1: Channel Data Table

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

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Ericsson AIR32 B66A / B2A	122
A	2	Ericsson AIR21 B2A/B4P	122
A	3	RFS APXVAARR24_43-U-NA20	120
B	1	Ericsson AIR32 B66A / B2A	122
B	2	Ericsson AIR21 B2A/B4P	122
B	3	RFS APXVAARR24_43-U-NA20	120
C	1	Ericsson AIR32 B66A / B2A	122
C	2	Ericsson AIR21 B2A/B4P	122
C	3	RFS APXVAARR24_43-U-NA20	120

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	6	280	10,768.57	2.88
Antenna A2	Ericsson AIR21 B2A/B4P	1900 MHz (PCS) / 2100 MHz (AWS)	15.9	3	95	3,218.84	0.86
Antenna A3	RFS APXVAARR24_43-U-NA20	600 MHz / 700 MHz	12.95 / 13.35	4	200	4,173.20	2.63
						Sector A Composite MPE%	**6.37**
Antenna B1	Ericsson AIR32 B66A / B2A	1900 MHz (PCS) / 2100 MHz (AWS)	15.85	6	280	10,768.57	2.88
Antenna B2	Ericsson AIR21 B2A/B4P	1900 MHz (PCS) / 2100 MHz (AWS)	15.9	3	95	3,218.84	0.86
Antenna B3	RFS APXVAARR24_43-U-NA20	600 MHz / 700 MHz	12.95 / 13.35	4	200	4,173.20	2.63
						Sector B Composite MPE%	**6.37**
Antenna C1	Ericsson AIR32 B66A / B2A	1900 MHz (PCS) / 2100 MHz (AWS)	15.85	6	280	10,768.57	2.88
Antenna C2	Ericsson AIR21 B2A/B4P	1900 MHz (PCS) / 2100 MHz (AWS)	15.9	3	95	3,218.84	0.86
Antenna C3	RFS APXVAARR24_43-U-NA20	600 MHz / 700 MHz	12.95 / 13.35	4	200	4,173.20	2.63
						Sector C Composite MPE%	**6.37**

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	**6.37 %**
AT&T	29.73 %
Verizon Wireless	4.24 %
Clearwire	12.32 %
Site Total MPE %:	**52.66 %**

Table 4: All Carrier MPE Contributions

T-MOBILE Sector A Total:	6.37 %
T-MOBILE Sector B Total:	6.37 %
T-MOBILE Sector C Total:	6.37 %
Site Total:	52.66 %

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	122	16.45	1900 MHz (PCS)	1000	1.64%
T-Mobile 2100 MHz (AWS) LTE	2	2,307.55	122	12.33	2100 MHz (AWS)	1000	1.23%
T-Mobile 1900 MHz (PCS) UMTS	1	1,556.18	122	4.16	1900 MHz (PCS)	1000	0.42%
T-Mobile 1900 MHz (PCS) GSM	1	583.57	122	1.56	1900 MHz (PCS)	1000	0.16%
T-Mobile 2100 MHz (AWS) UMTS	1	1,079.10	122	2.88	2100 MHz (AWS)	1000	0.29%
T-Mobile 600 MHz LTE / 5G NR	2	788.97	120	4.37	600 MHz	400	1.09%
T-Mobile 700 MHz LTE	2	1,297.63	120	7.18	700 MHz	467	1.54%
						Total:	**6.37%**

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:	6.37 %
Sector B:	6.37 %
Sector C:	6.37 %
T-MOBILE Maximum Total (per sector):	6.37 %
Site Total:	52.66 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **52.66 %** 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.

Scott Heffernan
RF Engineering Director
Transcom Engineering, Inc
PO Box 1048
Sterling, MA 01564