April 9, 2021

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

RE: **Notice of Exempt Modification for T-Mobile**
Crown Site ID# 876309; T-Mobile Site ID# CTNH602A
311 Old Gate Lane, Milford, CT
Latitude: 41° 14′ 2.59″/ Longitude: -73° 1′ 22.40″

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 117-foot mount on the existing 120-foot Monopole Tower located at 311 Old Gate Lane in Milford. The property is owned by BVS Jai Alai LLC and the Tower is owned by Crown Castle. T-Mobile now intends to replace six (6) existing antennas and add three (3) new antennas. This modification/proposal includes hardware that is both 4G(LTE) and 5G capable through remote software configuration and either or both services may be turned on or off at various times.

Planned Modifications:
Tower:

Remove and Replace:
(3) RFS – APXVTMI4/APXVSPP18 Antennas **(REMOVE)** - (3) RFS – APX16DWV-16DWV-S-E-A20 Antennas **(REPLACE)**

(3) Commscope – LLPX310R-V1 Antennas **(REMOVE)** – (3) RFS – APXVAALL24_43-U-NA20 Antennas **(REPLACE)**

Install New:
(3) AIR6449 B41 Antennas
(3) Ericsson – Radio 4415 B66A
(3) Ericsson – Radio 4449 B71+B85A
(3) Ericsson – Radio 4424 B25
(4) 6x24 HCS 4AWG 120m feedlines

Remove:
(9) Sprint RRUs

Ground:

Install New:
(1) SSC 6160 cabinet
(1) B160 battery cabinet
(1) BB6648
(3) BB6630
(1) DUG20
(1) PSU 4813 voltage booster
(1) CSR IXRe VE (Gen 2) router

Original zoning documents have not been made available as of the time of this filing.

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 Benjamin Blake, Mayor of the City of Milford, as well as Stephen Harris, Zoning Enforcement Officer for the City of Milford. A copy of this application will also be sent to the property owner.

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

2. 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.

3. 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.

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

5. 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).

Sincerely,

Richard Zajac
Site Acquisition Specialist
4545 East River Road, Suite 320
West Henrietta, NY
(585) 445-5896
Richard.zajac@crowncastle.com

cc:

City of Milford
Attn: Benjamin Blake – Mayor *(via email to mayor@ci.milford.ct.us)*
110 River St
Milford, CT 06460
203-783-3201

City of Milford
Attn: Stephen H. Harris – Zoning Enforcement Officer *(via email to shharris@ci.milford.ct.us)*
70 West River St
Milford, CT 06460
203-783-3245

BVS Jai Alai LLC *(via email to sfilho@ceruzzi.com)*
1720 Post Road
Fairfield, CT 06824

Zajac, Richard

From: Zajac, Richard
Sent: Friday, April 9, 2021 10:04 AM
To: mayor@ci.milford.ct.us
Subject: Connecticut Siting Council exempt modification application notification
Attachments: CSC Exempt Modification Application - 311 Old Gate Lane.pdf

Good morning Mayor Blake,
Please see the attached application to the Connecticut Siting Council regarding antenna work on the existing cell tower located at 311 Old Gate Lane in Milford.

Should you have any questions/comments/concerns regarding this application, please do not hesitate to contact me.

Thank you,
RICH ZAJAC
Site Acquisition Specialist
T: (585) 445-5896 M: (607) 346-7212
F: (724) 416-4461
CROWN CASTLE
4545 East River Road, Suite 320
West Henrietta, NY 14586

Zajac, Richard

From: Zajac, Richard
Sent: Friday, April 9, 2021 10:05 AM
To: shharris@ci.milford.ct.us
Subject: Connecticut Siting Council exempt modification application notification
Attachments: CSC Exempt Modification Application - 311 Old Gate Lane.pdf

Good morning Mr. Harris,
Please see the attached application to the Connecticut Siting Council regarding antenna work on the existing cell tower located at 311 Old Gate Lane in Milford.

Should you have any questions/comments/concerns regarding this application, please do not hesitate to contact me.

Thank you,
RICH ZAJAC
Site Acquisition Specialist
T: (585) 445-5896 M: (607) 346-7212
F: (724) 416-4461
CROWN CASTLE
4545 East River Road, Suite 320
West Henrietta, NY 14586

Zajac, Richard

From: Zajac, Richard
Sent: Friday, April 9, 2021 10:08 AM
To: 'sfilho@ceruzzi.com'
Subject: Connecticut Siting Council exempt modification application notification
Attachments: CSC Exempt Modification Application - 311 Old Gate Lane.pdf

Good morning,
Please see the attached application to the Connecticut Siting Council regarding antenna work on the existing cell tower located at 311 Old Gate Lane in Milford.

Should you have any questions/comments/concerns regarding this application, please do not hesitate to contact me.

Thank you,
RICH ZAJAC
Site Acquisition Specialist
T: (585) 445-5896 M: (607) 346-7212
F: (724) 416-4461
CROWN CASTLE
4545 East River Road, Suite 320
West Henrietta, NY 14586

Exhibit B

Property Card

311 OLD GATE LN #UNIT 4

Location	311 OLD GATE LN #UNIT 4	**Mblu**	79/ 810/ 13/G1 /
Acct#	023045	**Owner**	BVS JAI ALAI LLC
Assessment	$329,180	**Appraisal**	$470,250
PID	100282	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$450,000	$20,250	$470,250
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$315,000	$14,180	$329,180

Owner of Record

Owner	BVS JAI ALAI LLC	**Sale Price**	$14,000,000
Other		**Certificate**	
Address	1720 POST RD FAIRFIELD, CT 06824	**Book & Page**	03138/0001
		Sale Date	12/19/2006
		Instrument	15

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
BVS JAI ALAI LLC	$14,000,000		03138/0001	15	12/19/2006
CITY OF MILFORD (TAXABLE)	$0		02955/0591		01/20/2005
JAI ALAI ASSOCIATES LLC	$0		02407/0500		05/22/2000
JAI ALAI ASSOCIATES LIMITED	$0		01191/0215		02/08/1983

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0
Replacement Cost: $0

Building Percent Good:
Replacement Cost
Less Depreciation: $0

Building Attributes	
Field	**Description**
Style	Outbuildings
Model	
Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Description:	
Kitchen Descrip:	
Num Kitchens	
Cndtn	
Usrfld 103	
Int Condition:	
Solar Panels	
House Generator	
Usrfld 107	
Num Park	
Fireplaces	
Usrfld 108	
Usrfld 101	
Usrfld 102	
Usrfld 100	
Usrfld 300	

Building Photo

(http://images.vgsi.com/photos/MilfordCTPhotos//default.jpg)

Building Layout


Building Layout (ParcelSketch.ashx?pid=100282&bid=100286)

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

Usrfld 301	

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	434V
Description	CELL TOWER MDL-00
Zone	ID
Neighborhood	F
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	0.09
Frontage	
Depth	
Assessed Value	$14,180
Appraised Value	$20,250

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
CEL1	CEL TWR SITE			1.00 UNITS	$450,000	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$450,000	$20,250	$470,250
2018	$450,000	$20,250	$470,250
2017	$450,000	$20,250	$470,250
2016	$450,000	$20,250	$470,250

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$315,000	$14,180	$329,180
2018	$315,000	$14,180	$329,180
2017	$315,000	$14,180	$329,180
2016	$315,000	$14,180	$329,180

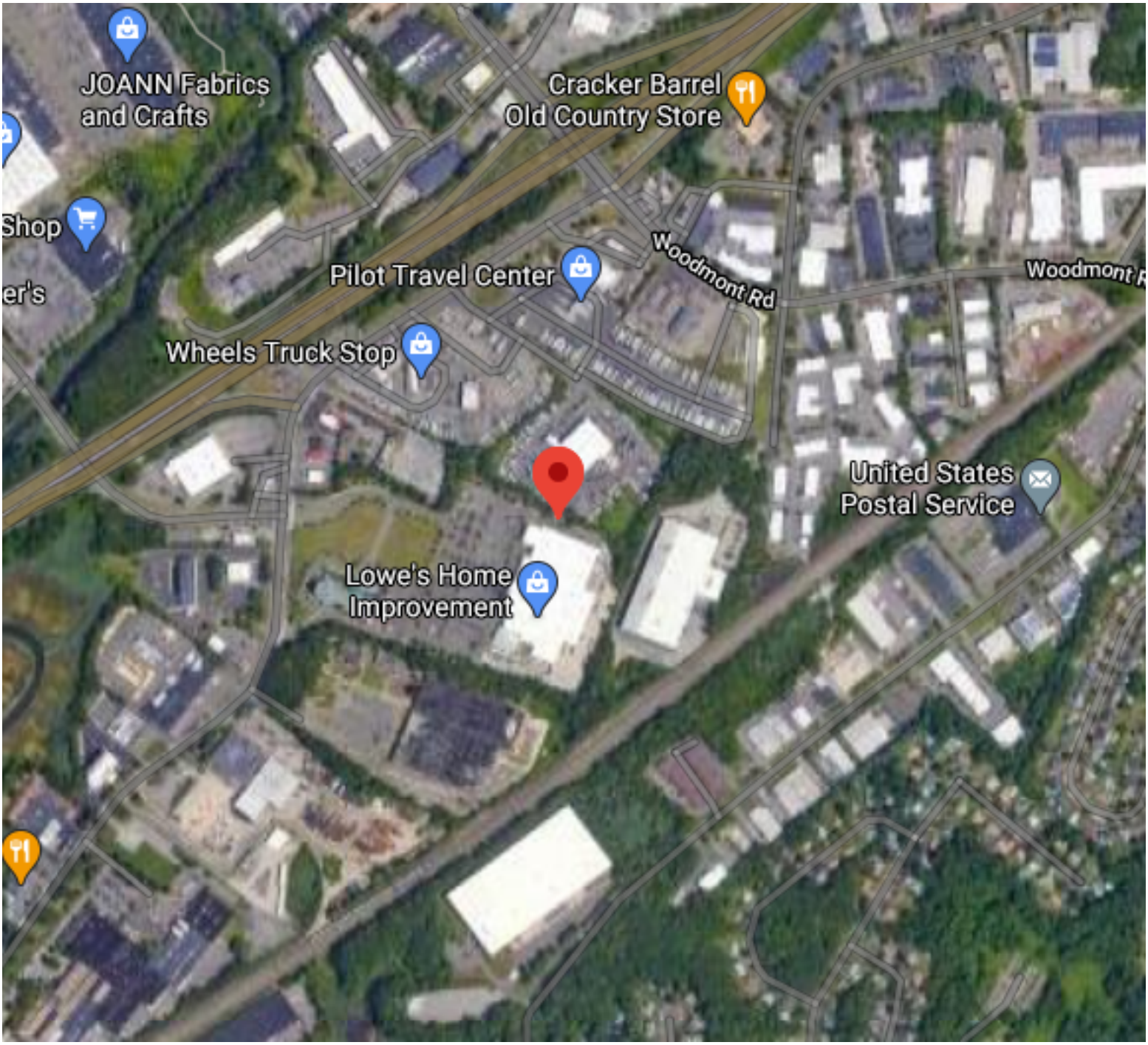

JOANN Fabrics
and Crafts
Cracker Barrel
Old Country Store
Shop
er's
Pilot Travel Center
Woodmont Rd
Woodmont R
Wheels Truck Stop
United States
Postal Service
Lowe's Home
Improvement

Exhibit C

Construction Drawings

T-Mobile

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

T-MOBILE SITE NUMBER: CTNH602A
T-MOBILE SITE NAME: CTNH602A
SITE TYPE: MONOPOLE
TOWER HEIGHT: 120'-0"

BUSINESS UNIT #: 876309
SITE ADDRESS: 311 OLD GATE LANE MILFORD, CT 06460
COUNTY: NEW HAVEN
JURISDICTION: CITY OF MILFORD

T-MOBILE SPRINT-RETAIN SITE CONFIGURATION: 67D5998C_1xAIR+1QP+1OP (GSM ONLY)

SITE INFORMATION

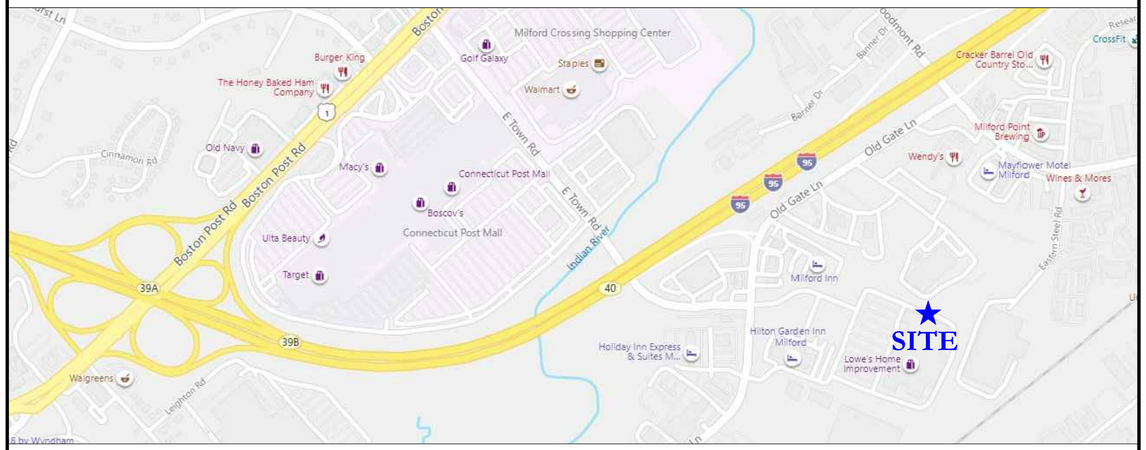
CROWN CASTLE USA INC. SITE NAME:	MILFORD JAI-ALAI
SITE ADDRESS:	311 OLD GATE LANE MILFORD, CT 06460
COUNTY:	NEW HAVEN
MAP/PARCEL #:	079 810 13 G1
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41° 14' 02.59" (41.23405305°)
LONGITUDE:	-73° 01' 22.40" (-73.02288611°)
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	44 FT
CURRENT ZONING:	ID
JURISDICTION:	CITY OF MILFORD
OVERLAY DISTRICT:	N/A
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	BVS JAI ALAI 1720 POST RD FAIRFIELD, CT 06824
TOWER OWNER:	CROWN CASTLE USA INC. 1200 MACARTHUR BLVD, SUITE 200 MAHWAH, NJ 07430
CARRIER/APPLICANT:	T-MOBILE 35 GRIFFIN ROAD BLOOMFIELD, CT 06002
ELECTRIC PROVIDER:	CONNECTICUT LIGHT AND POWER (800) 947-2000
TELCO PROVIDER:	AT&T (800) 331-0500

DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1.1	FINAL SITE PLAN
C-1.2	EXISTING & FINAL EQUIPMENT PLAN
C-2	FINAL ELEVATION & ANTENNA PLANS
C-3	ANTENNA & CABLE SCHEDULE
C-4	EQUIPMENT SPECS
C-5	CABINET SPECS
E-1	AC PANEL SCHEDULES & ONE LINE DIAGRAM
G-1	ANTENNA GROUNDING DIAGRAM
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 22x34. 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.

LOCATION MAP



NO SCALE

PROJECT TEAM

A&E FIRM:	TOWER ENGINEERING PROFESSIONALS 326 TRYON ROAD RALEIGH, NC 27603
	JOSEPH T. CRESS - PROJECT MANAGER (919) 661-6351
	GRAHAM M. ANDRES - CIVIL ENGINEER (919) 661-6351
	GRAHAM M. ANDRES - ELECTRICAL ENGINEER (919) 661-6351
CROWN CASTLE USA INC. DISTRICT CONTACTS:	4511 N. HIMES AVE, SUITE 210 TAMPA, FL 33614
	NITSA CRENSHAW - A&E SPECIALIST (813) 342-3871

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

PROJECT DESCRIPTION

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

TOWER SCOPE OF WORK:
- REMOVE (6) EXISTING SPRINT ANTENNAS
- REMOVE (9) EXISTING SPRINT RRUs
- REMOVE (4) SPRINT CABLES
- REUSE (1) PLATFORM MOUNT W/ HANDRAIL
- REUSE (1) GPS ANTENNA & CABLE
- INSTALL (9) ANTENNAS
- INSTALL (9) RRHs
- INSTALL (6) BACK-TO-BACK RADIO MOUNTS
- INSTALL (4) 6/24 HCS 4AWG 120m CABLES

GROUND SCOPE OF WORK:
- REMOVE SPRINT CABINETS, AS NEEDED
- INSTALL (2) CABINETS
- INSTALL (3) BB 6630, (1) BB 6648, (1) DUG20, (1) CSR IXRE VE (GEN2) & (1) PSU 4813 BOOSTER
- REUSE EXISTING SPRINT PLATFORM, ICE BRIDGE & UTILITY EQUIPMENT

APPLICABLE CODES/REFERENCE DOCUMENTS

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

CODE TYPE	CODE
BUILDING	2018 CONNECTICUT BUILDING CODE
MECHANICAL	2018 CONNECTICUT MECHANICAL CODE
ELECTRICAL	2017 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	B+T GROUP		
DATED:	02/16/2021		
MOUNT ANALYSIS:	INFINIGY ENGINEERING, PLLC		
DATED:	02/01/2021		
ORDER ID:	538776	RFDS VERSION:	1
REVISION:	0	DATED:	01/11/2021

ANALYSIS CRITERIA:

APPLICABLE CODES:	TIA-222-H / ASCE 7-16
WIND SPEED:	V = 125 MPH (ULTIMATE 3 SECOND GUST)
EXPOSURE CATEGORY:	C
RISK CATEGORY:	II
TOPOGRAPHIC CATEGORY:	1
SEISMIC Ss:	0.200
SEISMIC S1:	0.053
SERVICE WIND SPEED:	60 MPH

APPROVALS

APPROVAL	SIGNATURE	DATE
RF		
CONST.		
FAA		
OPS		
RE		
SR DEV MGR		
REG DIR		

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

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351

TEP JOB #: 42544.477010

T-MOBILE SITE NUMBER:
CTNH602A

BU #: **876309**
MILFORD JAI-ALAI

311 OLD GATE LANE
MILFORD, CT 06460

EXISTING 120'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	03/01/21	SPK	PRELIMINARY	JTC
0	03/17/21	BSE	CONSTRUCTION	JTC

SEAL:

STATE OF CONNECTICUT
JOSEPH T. CRESS
25538
LICENSED PROFESSIONAL ENGINEER

03/17/21

SHEET NUMBER: T-1
REVISION: 0

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

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

GENERAL NOTES:

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

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST–IN–PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.
4. CONCRETE EXPOSED TO FREEZE–THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER–TO–CEMENT RATIO (W/C) OF 0.45.
5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
   #4 BARS AND SMALLER . . . . . 40 ksi
   #5 BARS AND LARGER . . . . . 60 ksi
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
   CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH . . . . . 3"
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 BARS AND LARGER . . . . . 2"
   #5 BARS AND SMALLER . . . . . 1–1/2"
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
   SLAB AND WALLS . . . . . 3/4"
   BEAMS AND COLUMNS . . . . . 1–1/2"
7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

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

CONDUCTOR COLOR CODE

SYSTEM	CONDUCTOR	COLOR
120/240V, 1Ø	A PHASE	BLACK
	B PHASE	RED
	NEUTRAL	WHITE
	GROUND	GREEN
120/208V, 3Ø	A PHASE	BLACK
	B PHASE	RED
	C PHASE	BLUE
	NEUTRAL	WHITE
	GROUND	GREEN
277/480V, 3Ø	A PHASE	BROWN
	B PHASE	ORANGE OR PURPLE
	C PHASE	YELLOW
	NEUTRAL	GREY
	GROUND	GREEN
DC VOLTAGE	POS (+)	RED**
	NEG (–)	BLACK**

* SEE NEC 210.5(C)(1) AND (2)
** POLARITY MARKED AT TERMINATION

APWA UNIFORM COLOR CODE:

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

ABBREVIATIONS:

ANT	ANTENNA
(E)	EXISTING
FIF	FACILITY INTERFACE FRAME
GEN	GENERATOR
GPS	GLOBAL POSITIONING SYSTEM
GSM	GLOBAL SYSTEM FOR MOBILE
LTE	LONG TERM EVOLUTION
MGB	MASTER GROUND BAR
MW	MICROWAVE
(N)	NEW
NEC	NATIONAL ELECTRIC CODE
(P)	PROPOSED
PP	POWER PLANT
QTY	QUANTITY
RECT	RECTIFIER
RBS	RADIO BASE STATION
RET	REMOTE ELECTRIC TILT
RFDS	RADIO FREQUENCY DATA SHEET
RRH	REMOTE RADIO HEAD
RRU	REMOTE RADIO UNIT
SIAD	SMART INTEGRATED DEVICE
TMA	TOWER MOUNTED AMPLIFIER
TYP	TYPICAL
UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
W.P.	WORK POINT

GREENFIELD GROUNDING NOTES:

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

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351
TEP JOB #: 42544.477010

T-MOBILE SITE NUMBER:
CTNH602A

BU #: **876309**
MILFORD JAI-ALAI

311 OLD GATE LANE
MILFORD, CT 06460

EXISTING 120'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	03/01/21	SPK	PRELIMINARY	JTC
0	03/17/21	BSE	CONSTRUCTION	JTC

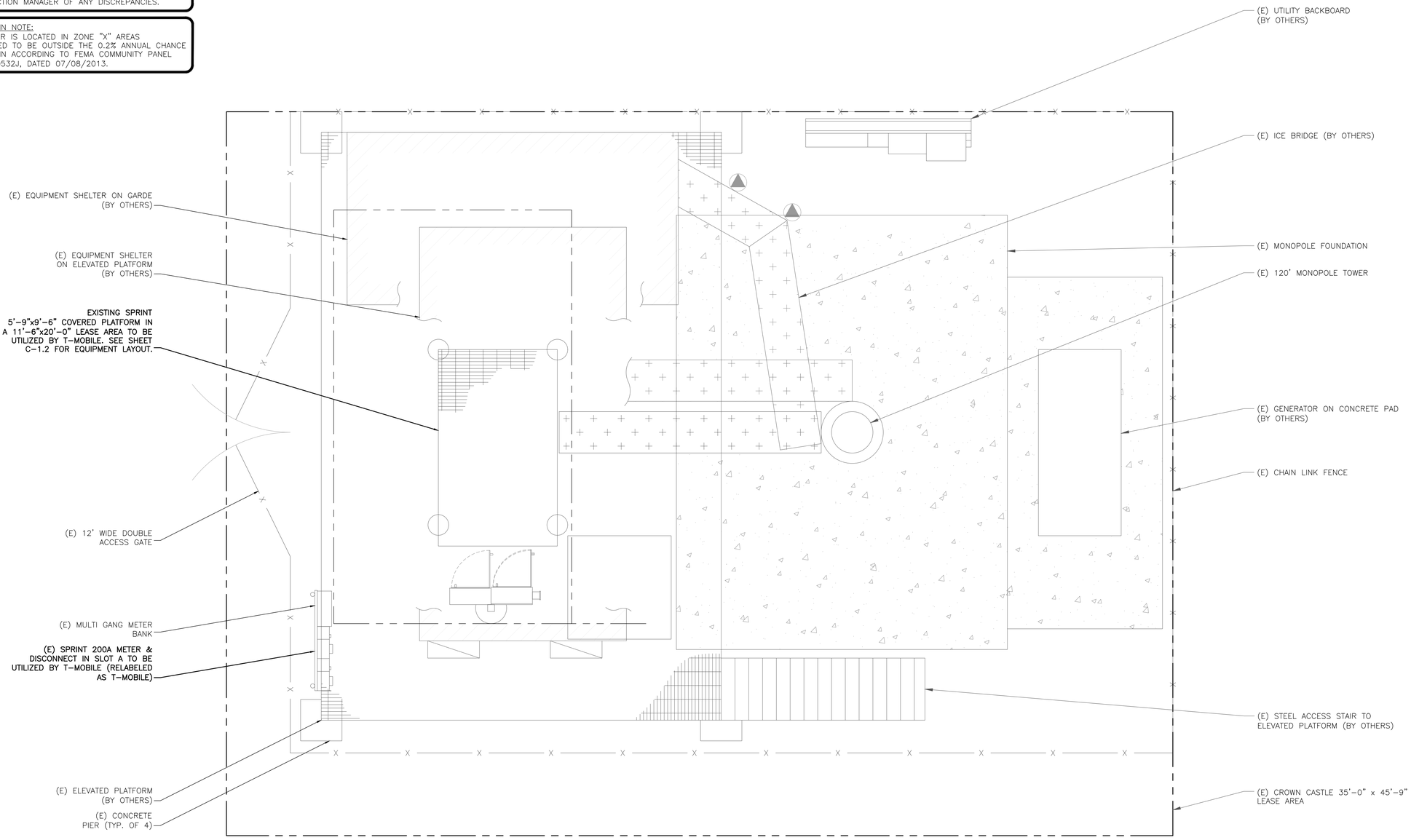
SEAL:

03/17/21

SHEET NUMBER:	REVISION:
T-2	0

NOTE:
SITE PLAN SHOWN BELOW WAS REPRODUCED FROM INFORMATION PROVIDED BY CROWN CASTLE AND SITE WALK CONDUCTED BY TEP. CONTRACTOR TO VERIFY ALL EXISTING INFORMATION IS AS INDICATED ON SITE PLAN. CONTRACTOR IS TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES. IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES.

FLOODPLAIN NOTE:
THE TOWER IS LOCATED IN ZONE "X" AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO FEMA COMMUNITY PANEL #09009C0532J, DATED 07/08/2013.



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

N

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

TOWER ENGINEERING PROFESSIONALS
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TEP JOB #: 42544.477010

T-MOBILE SITE NUMBER:
CTNH602A

BU #: **876309**
MILFORD JAI-ALAI

311 OLD GATE LANE
MILFORD, CT 06460

EXISTING 120'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	03/01/21	SPK	PRELIMINARY	JTC
0	03/17/21	BSE	CONSTRUCTION	JTC

SEAL:

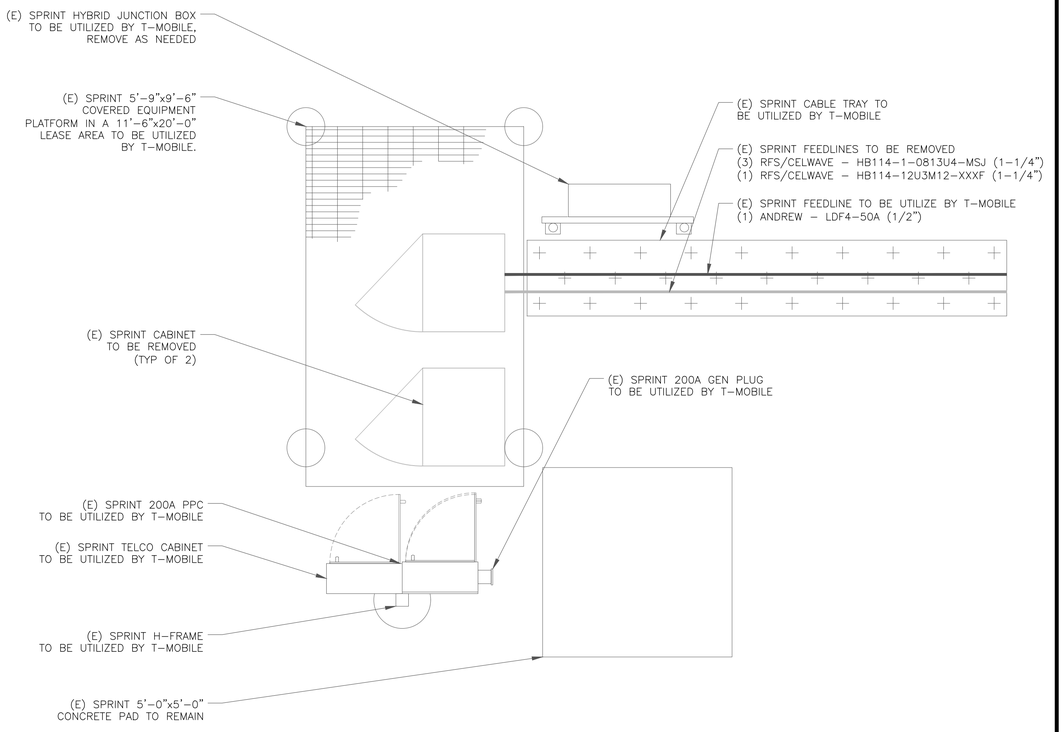
STATE OF CONNECTICUT 29538 LICENSED PROFESSIONAL ENGINEER

03/17/21

SHEET NUMBER: C-1.1

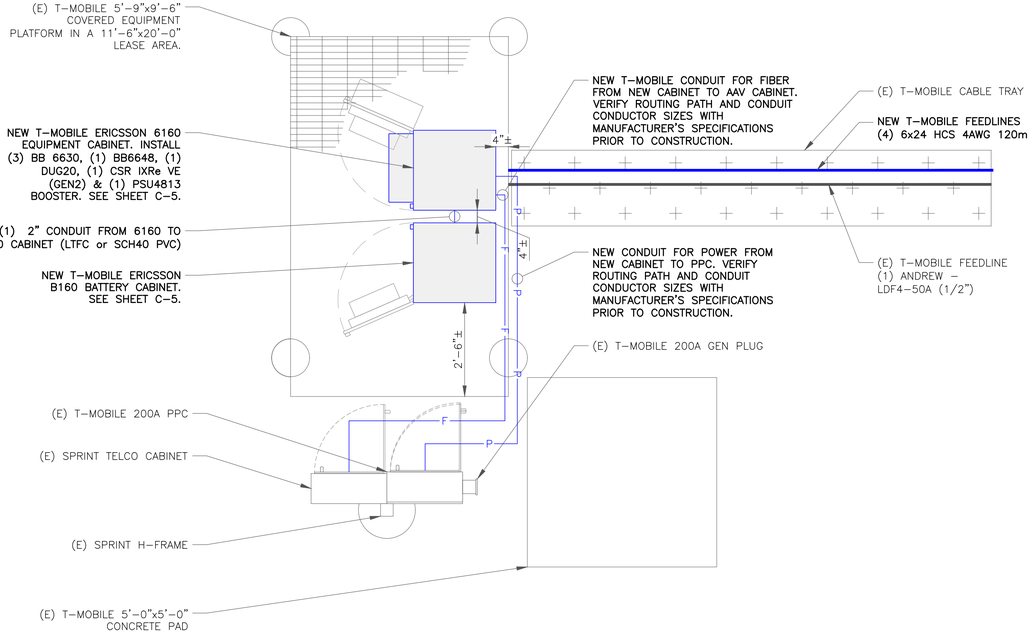
REVISION: 0

FLOODPLAIN NOTE:
THE TOWER IS LOCATED IN ZONE "X" AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO FEMA COMMUNITY PANEL #09009C0532J, DATED 07/08/2013.



1 EXISTING EQUIPMENT PLAN
SCALE: 2' 1' 0 2' 1/2"=1'-0" (FULL SIZE) 1/4"=1'-0" (11x17)

N



2 FINAL EQUIPMENT PLAN
SCALE: 2' 1' 0 2' 1/2"=1'-0" (FULL SIZE) 1/4"=1'-0" (11x17)

N

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

TOWER ENGINEERING PROFESSIONALS
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TEP JOB #: 42544.477010

T-MOBILE SITE NUMBER:
CTNH602A

BU #: **876309**
MILFORD JAI-ALAI

311 OLD GATE LANE
MILFORD, CT 06460

EXISTING 120'-0" MONOPOLE

ISSUED FOR:

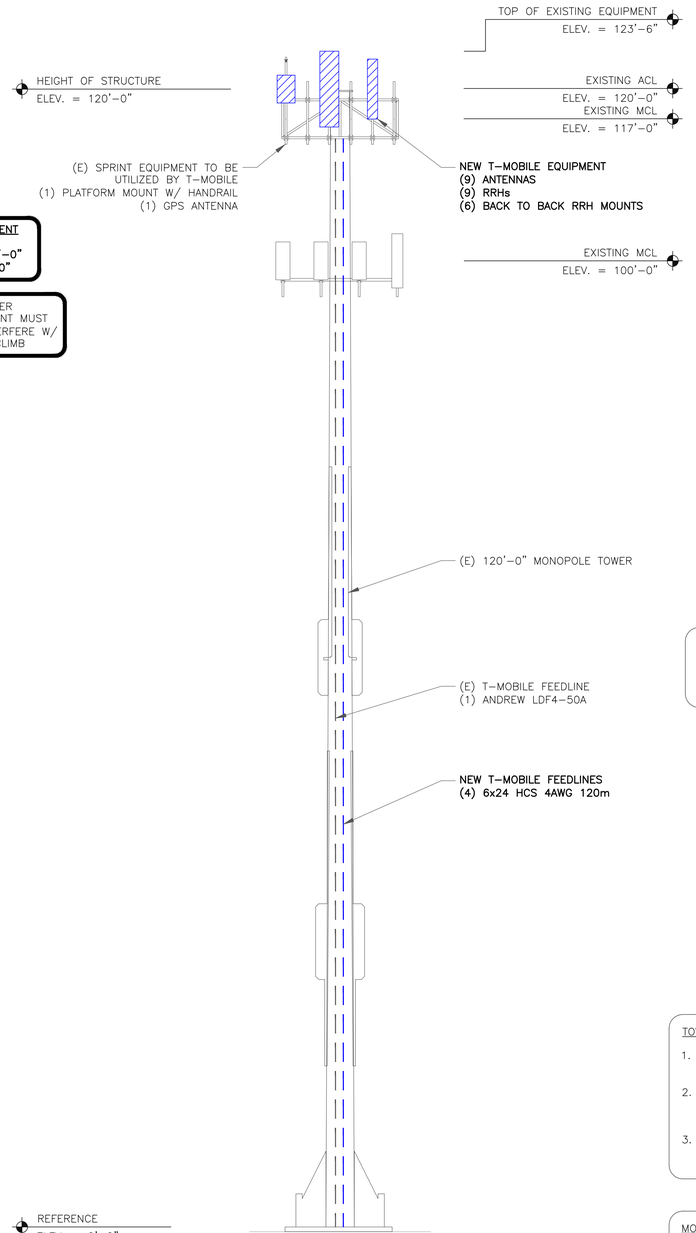
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	03/01/21	SPK	PRELIMINARY	JTC
0	03/17/21	BSE	CONSTRUCTION	JTC

SEAL:

STATE OF CONNECTICUT 29538 LICENSED PROFESSIONAL ENGINEER

03/17/21

SHEET NUMBER: C-1.2
REVISION: 0



T-MOBILE EQUIPMENT

ANTENNA CL: 120'-0"
MOUNT CL: 117'-0"

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

INSTALLER NOTE:

EXISTING AND PROPOSED ANTENNA/ EQUIPMENT POSITIONING SHOWN PER RFDS. FIELD CONDITIONS MAY VARY.

TOWER ANALYSIS NOTES:

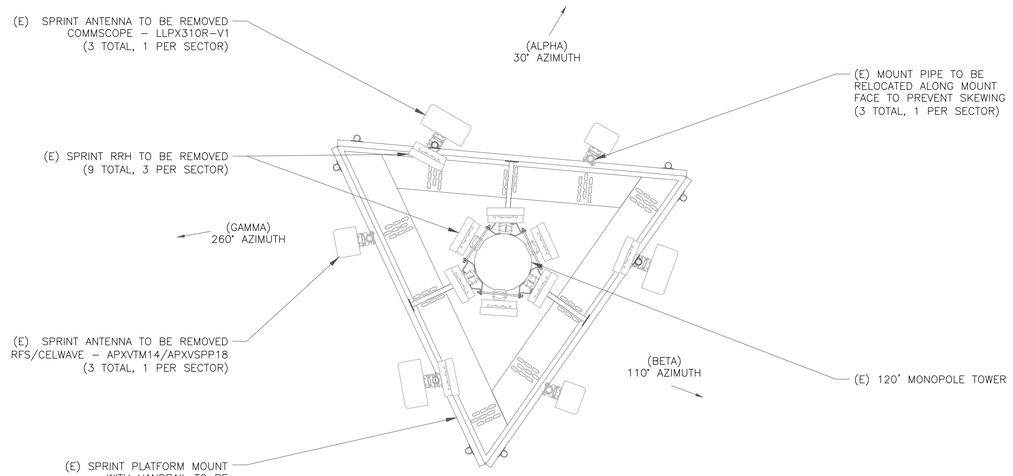
1. THE DESIGN DEPICTED IN THESE DRAWINGS IS VALID WHEN ACCOMPANIED BY A CORRESPONDING PASSING TOWER ANALYSIS.
2. CONSTRUCTION MANAGER / GENERAL CONTRACTOR SHALL REVIEW THE TOWER ANALYSIS FOR ANY CONDITIONS PRIOR TO INSTALLATION.
3. ANY REQUIRED TOWER MODIFICATION DESIGN OR TOWER REPLACEMENT SHALL BE APPROVED BY EOR.

MOUNT ANALYSIS NOTES:

1. THE DESIGN DEPICTED IN THESE DRAWINGS IS VALID WHEN ACCOMPANIED BY A CORRESPONDING PASSING MOUNT ANALYSIS.
2. CONSTRUCTION MANAGER / GENERAL CONTRACTOR SHALL REVIEW THE MOUNT ANALYSIS FOR ANY CONDITIONS PRIOR TO INSTALLATION.
3. ANY REQUIRED MOUNT MODIFICATION DESIGN OR MOUNT REPLACEMENT SHALL BE APPROVED BY EOR.

1 FINAL ELEVATION
SCALE: NOT TO SCALE

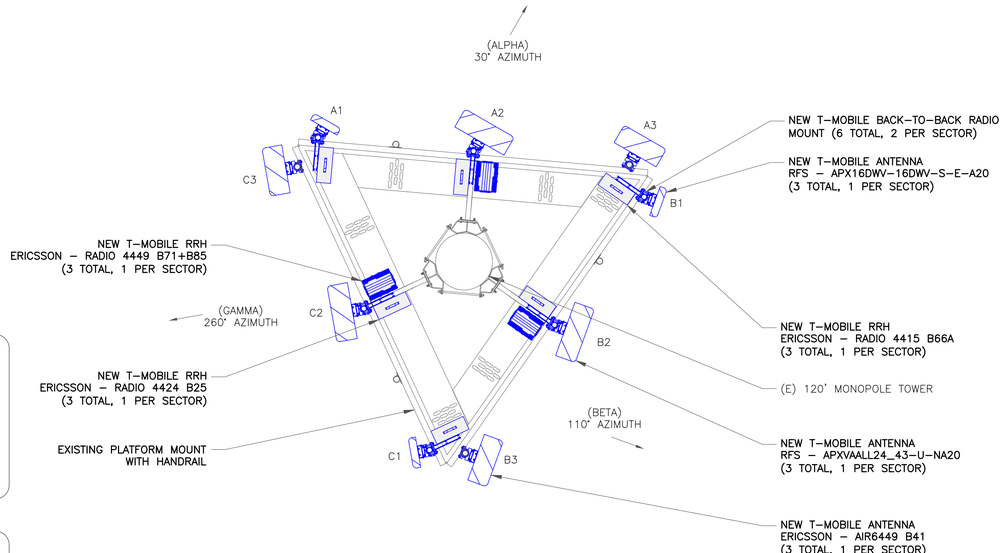
ALL SPRINT ANTENNAS, RRHs AND ALL ASSOCIATED EQUIPMENT TO BE REMOVED



2 EXISTING ANTENNA LAYOUT
SCALE: NOT TO SCALE

RRH NOTE:

CONTRACTOR TO ENSURE RRHs ARE INSTALLED MIN 8" AWAY FROM ANTENNA



3 FINAL ANTENNA LAYOUT
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351
TEP JOB #: 42544.477010

T-MOBILE SITE NUMBER:
CTNH602A

BU #: **876309**
MILFORD JAI-ALAI

311 OLD GATE LANE
MILFORD, CT 06460

EXISTING 120'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	03/01/21	SPK	PRELIMINARY	JTC
0	03/17/21	BSE	CONSTRUCTION	JTC

SEAL:

03/17/21

SHEET NUMBER: C-2

REVISION: 0

FINAL ANTENNA SCHEDULE

SECTOR	POS.	TECHNOLOGY	RAD CENTER	AZIMUTH	ANTENNA MANUFACTURER	ANTENNA MODEL	MECH. TILT	ELECT. TILT	TOWER MOUNTED EQUIPMENT	FEEDLINE TYPE
ALPHA	A1	L2100	120'–0"	30°	RFS	APX16DWV–16DWV–S–E–A20 (QUAD)	–	–	(1) ERICSSON RRU – RADIO 4415 B66A	HYBRID (SHARED)
ALPHA	A2	L700, L600, N600, G1900, L1900	120'–0"	30°	RFS	APXVAALL24_43–U–NA20 (OCTO)	–	–	(1) ERICSSON RRU – RADIO 4449 B71+B85 (1) ERICSSON RRU – RADIO 4424 B25	(1) 6x24 HCS 4AWG 120m
ALPHA	A3	L2500, N2500	120'–0"	30°	ERICSSON	AIR6449 B41 (ACTIVE ANTENNA – MASSIVE MIMO)	–	–	–	(1) 6x24 HCS 4AWG 120m
BETA	B1	L2100	120'–0"	110°	RFS	APX16DWV–16DWV–S–E–A20 (QUAD)	–	–	(1) ERICSSON RRU – RADIO 4415 B66A	HYBRID (SHARED)
BETA	B2	L700, L600, N600, L1900, U1900	120'–0"	110°	RFS	APXVAALL24_43–U–NA20 (OCTO)	–	–	(1) ERICSSON RRU – RADIO 4449 B71+B85 (1) ERICSSON RRU – RADIO 4424 B25	(1) 6x24 HCS 4AWG 120m
BETA	B3	L2500, N2500	120'–0"	110°	ERICSSON	AIR6449 B41 (ACTIVE ANTENNA – MASSIVE MIMO)	–	–	–	HYBRID (SHARED)
GAMMA	C1	L2100	120'–0"	260°	RFS	APX16DWV–16DWV–S–E–A20 (QUAD)	–	–	(1) ERICSSON RRU – RADIO 4415 B66A	HYBRID (SHARED)
GAMMA	C2	L700, L600, N600, L1900, U1900	120'–0"	260°	RFS	APXVAALL24_43–U–NA20 (OCTO)	–	–	(1) ERICSSON RRU – RADIO 4449 B71+B85 (1) ERICSSON RRU – RADIO 4424 B25	(1) 6x24 HCS 4AWG 120m
GAMMA	C3	L2500, N2500	120'–0"	260°	ERICSSON	AIR6449 B41 (ACTIVE ANTENNA – MASSIVE MIMO)	–	–	–	HYBRID (SHARED)

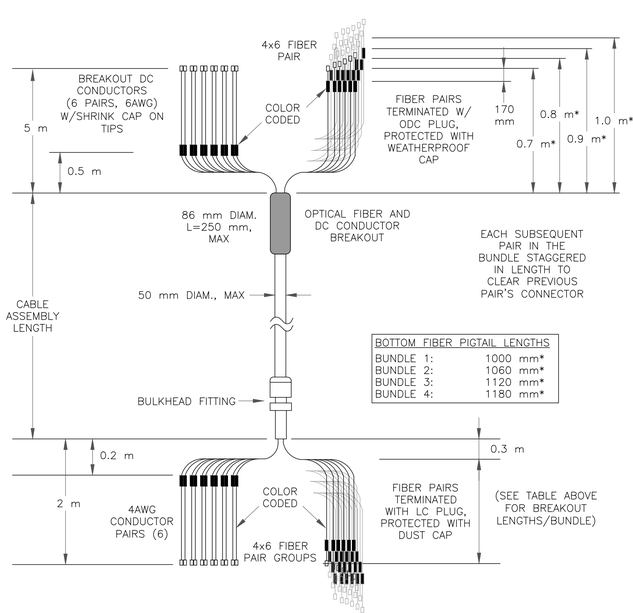
PROPOSED ANTENNA/EQUIPMENT SHOWN IN BOLD

FINAL CABLE SCHEDULE

STATUS	CABLE TYPE	SIZE	QUANTITY
NEW	HCS	6x24 4AWG 120m	4
CABLE QUANTITY			4

NOTE:
(3) HYBRID SHARED BETWEEN APX/4415/4449/4424 PER SECTOR
(1) HYBRID SHARED BETWEEN 6449 ANTENNAS PER SECTOR

1 PROPOSED ANTENNA AND CABLE SCHEDULE
SCALE: NOT TO SCALE



2 HCS DETAIL
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351

TEP JOB #: 42544.477010

T-MOBILE SITE NUMBER:
CTNH602A

BU #: **876309**
MILFORD JAI-ALAI

311 OLD GATE LANE
MILFORD, CT 06460

EXISTING 120'-0" MONOPOLE

ISSUED FOR:

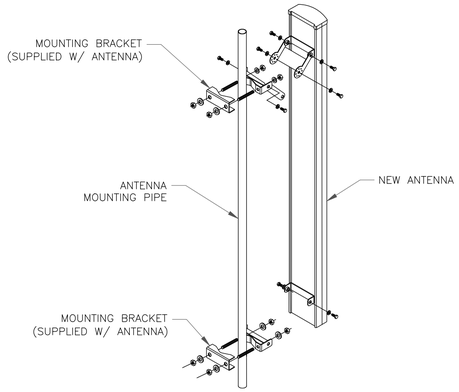
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	03/01/21	SPK	PRELIMINARY	JTC
0	03/17/21	BSE	CONSTRUCTION	JTC

SEAL:

03/17/21

SHEET NUMBER: C-3

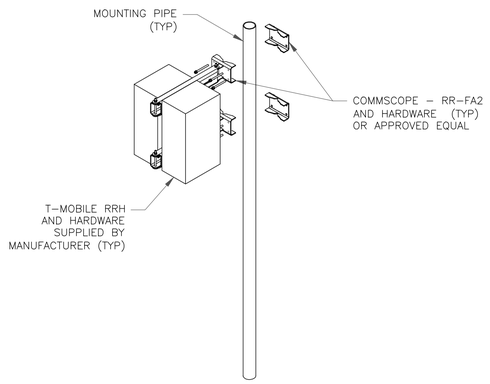
REVISION: 0



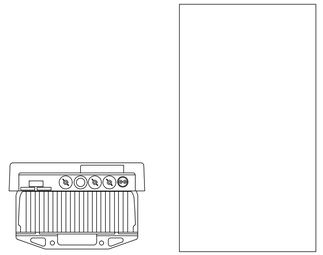
1 ANTENNA MOUNTING DETAIL
SCALE: NOT TO SCALE

INSTALLER NOTES:

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

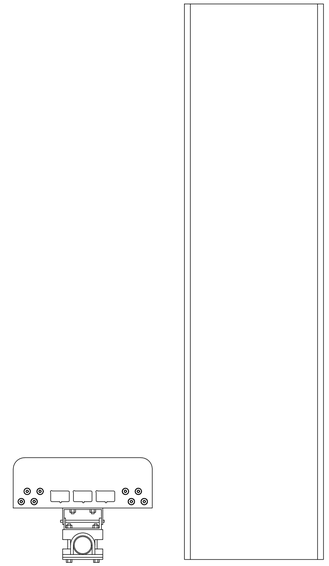


2 RRHs MOUNTING DETAIL
SCALE: NOT TO SCALE



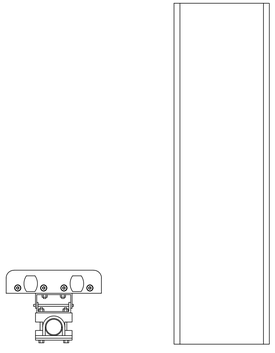
ERICSSON – AIR6449 B41
WEIGHT: 104.0 LBS
SIZE (HxWxD): 33.10x20.60x8.60 IN.

3 ERICSSON – AIR6449 B41
SCALE: NOT TO SCALE



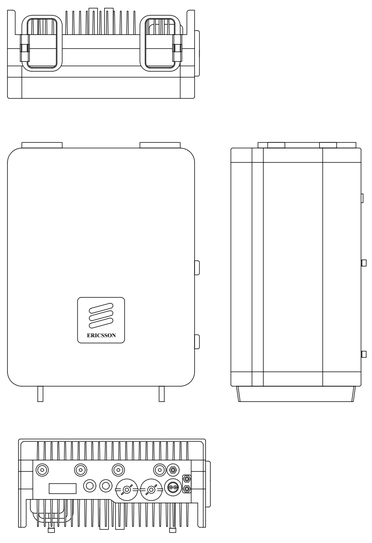
RFS/CELWAVE – APXVAALL24_43-U-NA20
WEIGHT (WITHOUT MOUNTING HARDWARE): 149.9 LBS
SIZE (HxWxD): 95.9x24.0x8.5 IN.

4 RFS/CELWAVE – APXVAALL24_43-U-NA20
SCALE: NOT TO SCALE



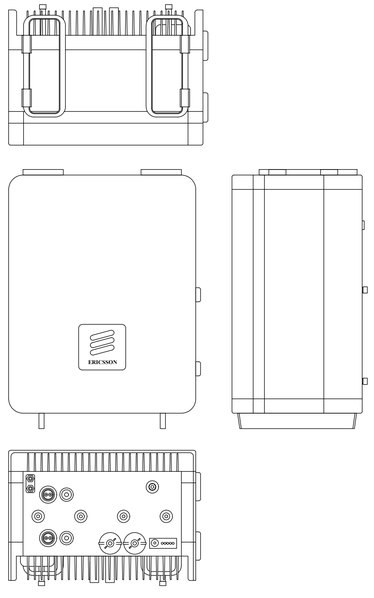
RFS – APX16DWV-16DWV-S-E-A20
WEIGHT (WITHOUT MOUNTING HARDWARE): 55.0 LBS
SIZE (HxWxD): 55.9x13.3x3.15 IN.

5 RFS – APX16DWV-16DWV-S-E-A20
SCALE: NOT TO SCALE



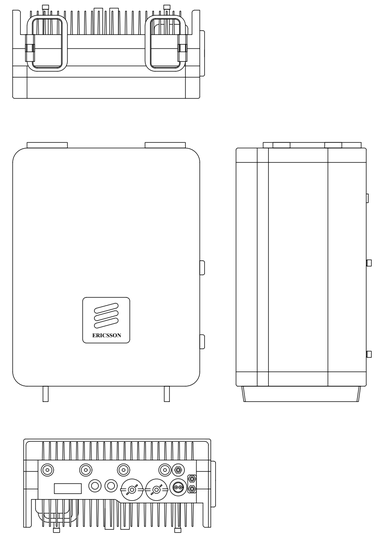
ERICSSON – RADIO 4424 B25
WEIGHT: 86.0 LBS
SIZE (HxWxD): 17.91x14.40x11.30 IN.

6 ERICSSON – RADIO 4424 B25
SCALE: NOT TO SCALE



ERICSSON – RADIO 4449 B71/B85
WEIGHT: 70.0 LBS
SIZE (HxWxD): 18.0x13.2x9.4 IN.

7 ERICSSON – RADIO 4449 B71/B85
SCALE: NOT TO SCALE



ERICSSON – RADIO 4415 B66A
WEIGHT: 44.0 LBS
SIZE (HxWxD): 14.96x13.19x5.39 IN.

8 ERICSSON – RADIO 4415 B66A
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351
TEP JOB #: 42544.477010

T-MOBILE SITE NUMBER:
CTNH602A

BU #: **876309**
MILFORD JAI-ALAI

311 OLD GATE LANE
MILFORD, CT 06460

EXISTING 120'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	03/01/21	SPK	PRELIMINARY	JTC
0	03/17/21	BSE	CONSTRUCTION	JTC

SEAL:

STATE OF CONNECTICUT
GRAHAM E. SOBIES
29538
LICENSED
PROFESSIONAL ENGINEER

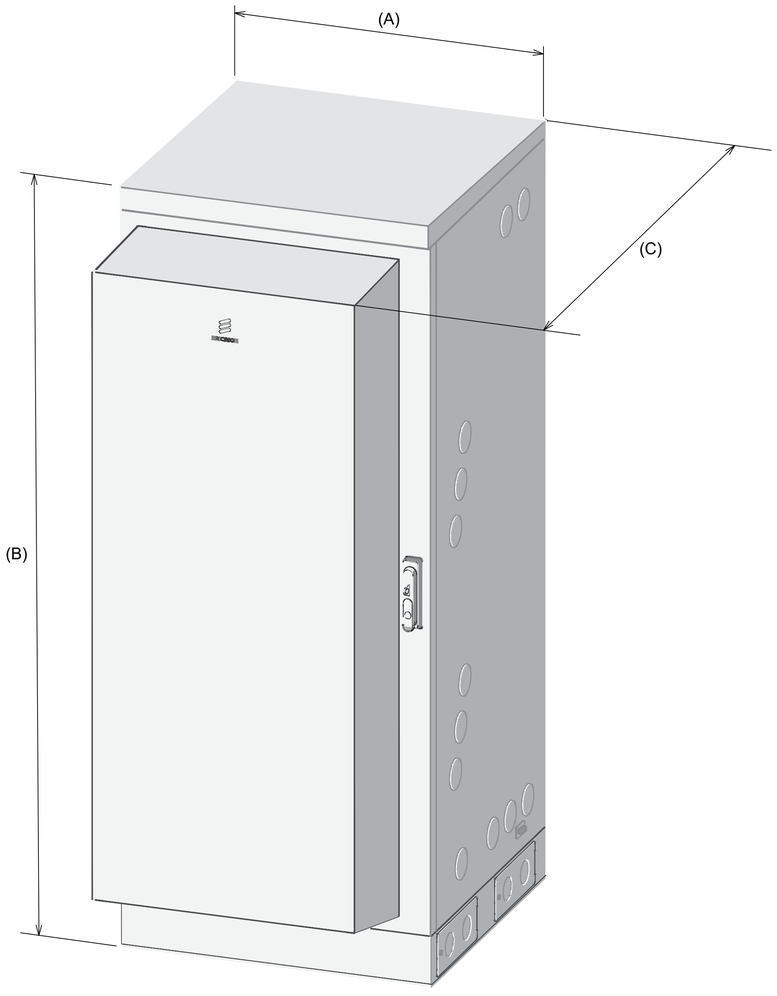
03/17/21

SHEET NUMBER: C-4

REVISION: 0

INSTALLER NOTES:

1. INFORMATION SHOWN PROVIDED BY T–MOBILE. CONTRACTOR TO REFERENCE CABINET MANUFACTURER'S SPECIFICATIONS FOR FURTHER DETAILS.
2. CONTRACTOR TO FOLLOW THE LATEST VERSION OF T–MOBILE REGIONAL CONSTRUCTION STANDARDS. CONTACT T–MOBILE FOR DETAILS.



Dimensions	
Width (A)	650 mm / 25.5906 in
Height (B)	1450 mm / 57.08661 in (without base frame) 1600 mm / 62.99213 in (with base frame)
Depth (C)	850 mm / 33.4646 in
Weight	
Empty enclosure	176 kg / 388.014 lb

1 ERICSSON 6160 CABINET DETAILS
SCALE: NOT TO SCALE

2 ERICSSON B160 CABINET DETAILS
SCALE: NOT TO SCALE

T-Mobile

35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE

1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

TOWER ENGINEERING PROFESSIONALS

326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351

TEP JOB #: 42544.477010

T-MOBILE SITE NUMBER:
CTNH602A

BU #: **876309**
MILFORD JAI-ALAI

311 OLD GATE LANE
MILFORD, CT 06460

EXISTING 120'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
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0	03/17/21	BSE	CONSTRUCTION	JTC

SEAL:

STATE OF CONNECTICUT
GRAHAM S. ANDRES
29538
LICENSED
PROFESSIONAL ENGINEER

03/17/21

SHEET NUMBER: C-5

REVISION: 0

NOTE:
LOAD CALCULATIONS TAKEN FROM INFORMATION PROVIDED BY CROWN CASTLE & POWER ANALYSIS TOOL BASED ON THE RFDS DATED 01/11/2021 V1.0. CONTRACTOR TO VERIFY LOADS WITH MANUFACTURER'S SPECIFICATIONS PRIOR TO CONSTRUCTION.

EXISTING 200A M.C.B, 240/120 VAC, 1ø, 3W PPC PANEL SCHEDULE

LOAD SERVED	VOLT AMPERES (WATTS) L1	VOLT AMPERES (WATTS) L2	TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPERES (WATTS) L1	VOLT AMPERES (WATTS) L2	LOAD SERVED
SURGE PROTECTOR	100		60	1	A	2	15	180		TELCO GFI
		100		3	B	4	10		340	FAN
**MM BTS	9600		**100	5	A	6	15	–		*NEXTEL (OFF)
		9600		7	B	8			–	
SPARE	–		–	9	A	10	–	–		SPARE
SPARE		–	–	11	B	12	–		–	SPARE
SPARE	–		–	13	A	14	–	–		SPARE
SPARE		–	–	15	B	16	–		–	SPARE
*SPARE (OFF)	–		100	17	A	18	–	–		SPARE
		–		19	B	20	–		–	SPARE
SPARE	–		–	21	A	22	–	–		SPARE
SPARE		–	–	23	B	24	–		–	SPARE
VOLT AMPS	9700	9700						180	340	VOLT AMPS

L1 VOLT AMPERES	9880	10040	L2 VOLT AMPERES
	10040		MAX VOLT AMPERES
	83.6		MAX AMPS
	104.6		MAX AMPS x125%

*NOTE – EXISTING BREAKER TO BE REMOVED. NOTIFY TEP IF BREAKER IS TO REMAIN.
**NOTE – REUSE BREAKER FOR NEW CABINET INSTALL

PROPOSED 200A M.C.B, 240/120 VAC, 1ø, 3W PPC PANEL SCHEDULE

LOAD SERVED	VOLT AMPERES (WATTS) L1	VOLT AMPERES (WATTS) L2	TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPERES (WATTS) L1	VOLT AMPERES (WATTS) L2	LOAD SERVED
SURGE PROTECTOR	100		60	1	A	2	15	180		TELCO GFI
		100		3	B	4	10		340	FAN
6160 ENCLOSURE	**7405**		**100	5	A	6	–	–		SPARE
		7405		7	B	8	–		–	SPARE
GFCI INTERNAL IN 6160	**180**		**20**	9	A	10	–	–		SPARE
SPARE		–	–	11	B	12	–		–	SPARE
SPARE	–		–	13	A	14	–	–		SPARE
SPARE		–	–	15	B	16	–		–	SPARE
SPARE	–		–	17	A	18	–	–		SPARE
SPARE		–	–	19	B	20	–		–	SPARE
SPARE	–		–	21	A	22	–	–		SPARE
SPARE		–	–	23	B	24	–		–	SPARE
VOLT AMPS	**7685**	**7505**						180	340	VOLT AMPS

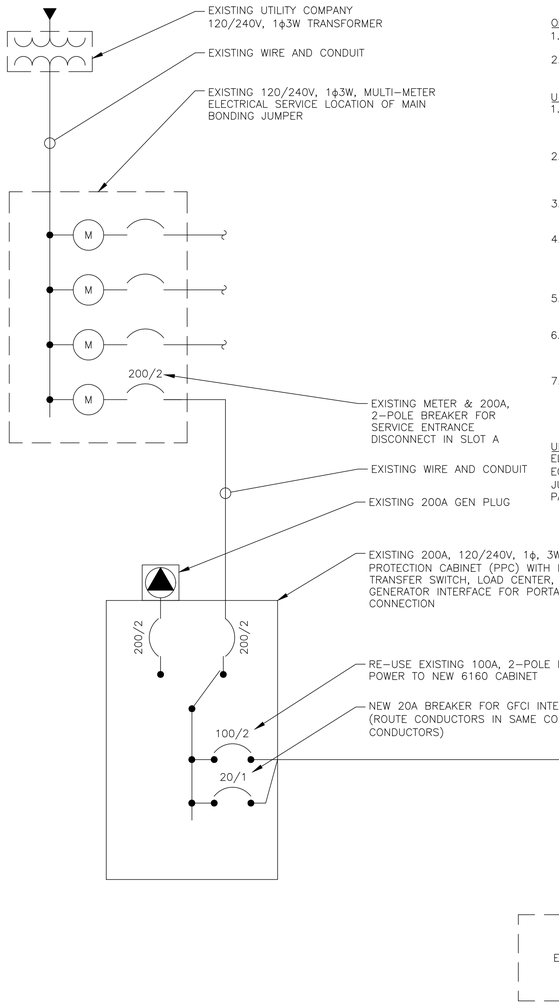
L1 VOLT AMPERES	**7865**	**7845**	L2 VOLT AMPERES
	7865		MAX VOLT AMPERES
	65.5		MAX AMPS
	81.9		MAX AMPS x 125%

NOTE – PROPOSED BREAKER IN BOLD
**NOTE – REUSE BREAKER FOR NEW CABINET INSTALL

1 AC PANEL SCHEDULES
SCALE: NOT TO SCALE

GENERAL NOTES:

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



ONE–LINE DIAGRAM NOTES:
1. ELECTRICAL SERVICE IS 200A, 120/240V, 1ø, 3W.
2. FOR COMPLETE INTERNAL WIRING AND ARRANGEMENT, REFER TO VENDOR PRINTS PROVIDED BY EQUIPMENT MANUFACTURER.

UTILITY NOTES:
1. CONTRACTOR SHALL VERIFY AVAILABLE FAULT CURRENT WITH POWER COMPANY AND ENSURE ALL ELECTRICAL EQUIPMENT IS SUITABLE FOR AVAILABLE FAULT CURRENT.
2. CONTRACTOR SHALL COORDINATE UTILITY SERVICES WITH LOCAL UTILITY COMPANIES. VERIFY ALL REQUIREMENTS WITH UTILITY COMPANY STANDARDS.
3. ONE–LINE DIAGRAM IS FOR SCHEMATIC PURPOSES ONLY AND IS NOT INDICATIVE OF THE ACTUAL EQUIPMENT LAYOUT.
4. ALL EQUIPMENT WILL HAVE A MINIMUM AIC OF 10 KA. CONTRACTOR TO DETERMINE AVAILABLE FAULT CURRENT BEFORE ENERGIZING EQUIPMENT. THE AMOUNT OF AVAILABLE FAULT CURRENT SHALL BE MARKED ON THE SERVICE EQUIPMENT PER NEC 110.24.
5. CONTRACTOR SHALL NOTIFY UTILITY COMPANY OF CHANGES IN ELECTRICAL LOAD.
6. CONTRACTOR TO VERIFY EXISTING CONDUIT(S) SIZE(S) PRIOR TO CONSTRUCTION AND MAY REUSE EXISTING CONDUIT(S) IF THEY MEET THE MINIMUM REQUIREMENTS PER NEC CODE.
7. GROUNDING ELECTRODE CONDUCTOR IS SIZED FOR SINGLE 200A SERVICE ONLY. IF METER BANK SHARES A COMMON NEUTRAL/GROUND POINT, CONTRACTOR WILL INSTALL (1) 3/0 COPPER GEC INSTEAD.

UL NOTE:
ELECTRICAL MATERIALS, DEVICES, CONDUCTORS, APPLIANCES AND EQUIPMENT SHALL BE LABELED/LISTED BY UL OR ACCEPTED BY JURISDICTION (I.E.: LOCAL COUNTY OR STATE) APPROVED THIRD PARTY TESTING AGENCY

2 ONE LINE DIAGRAM
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351
TEP JOB #: 42544.477010

T-MOBILE SITE NUMBER:
CTNH602A

BU #: **876309**
MILFORD JAI-ALAI

311 OLD GATE LANE
MILFORD, CT 06460

EXISTING 120'-0" MONOPOLE

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0	03/17/21	BSE	CONSTRUCTION	JTC

SEAL:

03/17/21

SHEET NUMBER: E-1

REVISION: 0

T-MOBILE GROUNDING NOTES:

ALL GROUNDS MUST ROUTE DOWNHILL FOR ENTIRE DURATION OF ROUTE

1. PROVIDE LABOR, MATERIALS, INSPECTION, AND TESTING TO PROVIDE CODE COMPLIANCE FOR ELECTRIC, TELEPHONE, AND GROUNDING/LIGHTNING SYSTEMS.

ICE BRIDGE/ EQUIPMENT POST:

#2 SOLID COPPER TINNED, EXOTHERMICALLY WELDED TO GROUND RING (BOTH ENDS), FINAL WELD COLD GALVANIZED, IN ½" NON–METALLIC SEAL TIGHT CONDUIT, SEALED WITH SILICONE, ANCHORED TO PAD/PLATFORM TO AVOID TRIP HAZARD USING HAMMER SET ANCHORS.

PEDESTALS, PLINTHS, SSC CABINET, FCOA CABINETS:

1. #2 SOLID COPPER TINNED, 2 HOLE LUG WITH FLAT AND LOCK WASHER AT EQUIPMENT; EXOTHERMICALLY WELDED TO GROUND RING, FINAL WELD COLD GALVANIZED, IN ½" NON–METALLIC SEAL TIGHT CONDUIT, SEALED WITH SILICONE, ANCHORED TO PAD TO AVOID TRIP HAZARD USING HAMMER SET ANCHORS. EACH PART REQUIRES A SEPARATE DOWNLEAD, NO DAISY CHAINS.

2. ALL COMPONENTS INSIDE FCOA CABINETS REQUIRE A DEDICATED GROUND.

COVP's:

#6 THHN STRANDED (GREEN JACKET), CONNECTED AT EQUIPMENT SIDE USING OVP TERMINAL BLOCK CONNECTION; MECHANICALLY CONNECTED TO GROUND REFERENCE AT MASTER BUSS BAR USING 2 HOLE LUG WITH FLAT AND LOCK WASHER, IN ½" NON–METALLIC SEAL TIGHT CONDUIT, SEALED WITH SILICONE, AND ANCHORED TO PAD/PLATFORM TO AVOID TRIP HAZARD.

ANTENNA/ COVP/ RRU MAST PIPES:

1. ALL VERTICAL MAST PIPES: #2 SOLID COPPER TINNED, EXOTHERMICALLY WELDED TO TOP OF PIPE (PIPE, DOWN MOLD), FINAL WELD COLD GALVANIZED, BONDED TO TOP BUSS BAR WITH 2 HOLE COPPER COMPRESSION LUG, FLAT AND LOCK WASHER.

2. EXISTING/REUSED PIPES: #2 SOLID COPPER TINNED, BONDED WITH COLD WATER CLAMP TO TOP OF PIPE, BONDED TO TOP BUSS WITH 2 HOLE COPPER COMPRESSION LUG, FLAT AND LOCK WASHER

AIR TERMINALS:

TO BE INSTALLED, ONLY IF REQUIRED

TMA's, DIPLEXERS AND TRIPLEXERS:

1. #6 THHN, WITH PROPER COPPER COMPRESSION LUG, FLATS AND LOCK WASHERS

2. ALL GROUND LUGS ON TMA MUST BE GROUNDED WITH SEPARATE DOWNLEAD TO BUSS BAR (NO DAISY CHAINS)

ELEVATED STEEL PLATFORMS WITH LUNAR FEET:

#2 SOLID COPPER TINNED, EXOTHERMICALLY WELDED (FLAT PLATE MOLD) TO OUTSIDE PERIMETER BEAMS IN FOUR (4) PLACES, FINAL WELD COLD GALVANIZED, BONDED DIRECTLY TO SUBGRADE GROUND RING.

STEEL CANOPY (STEEL PLATFORM OR CONCRETE PAD):

1. #2 SOLID COPPER TINNED, EXOTHERMICALLY WELDED (PIPE, DOWN MOLD) TO BOTTOM OF ALL VERTICAL SUPPORT POSTS, TYPICALLY FOUR (4) PIPES, FINAL WELD COLD GALVANIZED, BONDED DIRECTLY TO SUBGRADE GROUND RING.

2. #2 SOLID COPPER TINNED, EXOTHERMICALLY WELDED (PIPE, UP MOLD) TO TOP OF ALL VERTICAL SUPPORT POSTS, TYPICALLY FOUR (4) PIPES, FINAL WELD COLD GALVANIZED, BONDED UP TO CANOPY GRIP–STRUT USING 2 HOLE COPPER COMPRESSION LUG, FLAT AND LOCK WASHER.

RRU:

#6 THHN, WITH PROPER COPPER COMPRESSION LUG, ANTI–OXIDANT TO SECTOR BUSS BAR

FSBE ALARM BOX:

#6 THHN WITH ONE HOLE LUG BONDED TO PREVIOUSLY GROUNDED FCOA, PLINTH OR BUSS BAR.

SURGE SUPPRESSORS:

#6 THHN TO PREVIOUSLY GROUNDED BUSS BAR USING PROPER LUGS

FYGA/FYGB BRACKET:

1. #6 THHN TO PREVIOUSLY GROUNDED BUSS BAR USING PROPER LUGS

2. THROUGH BOLTS WITH FLAT, LOCK ON BRACKET

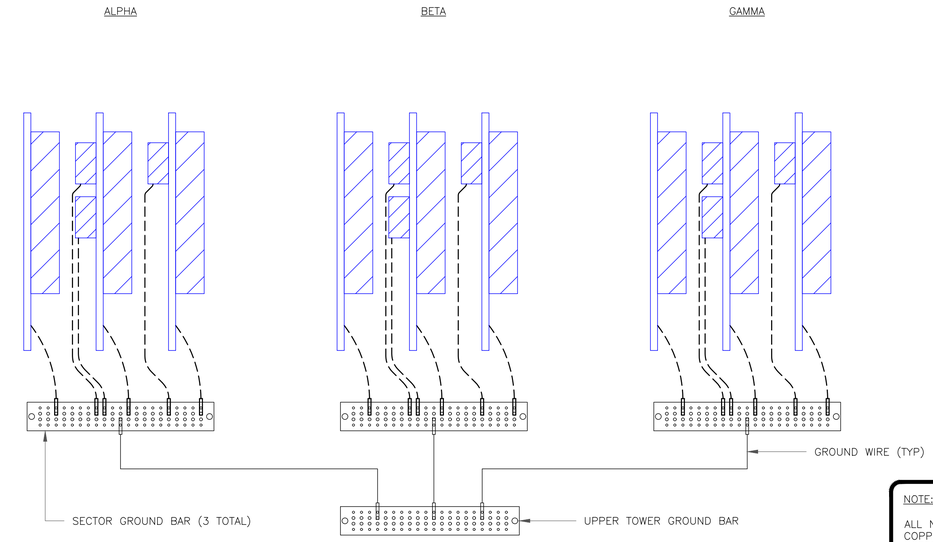
BUSS BARS:

1. PLATFORM / PAD BUSS BAR SHOULD BE MINIMUM 12" TINNED COPPER WITH INSULATORS, AND SHOULD HAVE TWO (2) EXOTHERMICALLY WELDED DOWN LEADS DIRECTLY TO GROUND RING USING #2 SOLID COPPER TINNED WIRE.

2. SECTOR BUSS BAR SHOULD BE PROPERLY SIZED TO ACCOMMODATE NECESSARY GROUNDING FOR EQUIPMENT ON EACH MOUNT, AND MAY BE SOLID COPPER (TINNED NOT REQUIRED). DO NOT USE INSULATORS ON SECTOR BUSS BARS ATTACH DIRECTLY TO TOWER MOUNT STEEL.

GENERAL:

- NO GROUND KITS ON HYBRID TRUNKS (TOP OR BOTTOM)
- NO GROUND KITS ON MICROWAVE IF CABLES (TOP OR BOTTOM)
- MICROWAVE SURGE SUPPRESSORS ARE NOT TO BE INSTALLED UPSTAIRS ON TOWER, DOWNSTAIRS ONLY (BULKHEAD PREFERRED)
- MICROWAVE ODU MUST BE GROUNDED TO TOWER TOP SECTOR OR COLLECTOR BUSS BAR
- ALL TMA'S AND DIPLEXERS MUST BE GROUNDED TO BUSS BAR. NO DAISY CHAIN ON TWIN/DUAL TMA
- ALL LUGS SHOULD BE PROPERLY SIZED FOR CONDUCTOR, BURNDY TINNED COPPER COMPRESSION STYLE
  1. INDOOR (OR INSIDE CABINET) SHOULD HAVE WINDOW
  2. OUTDOOR SHOULD NOT HAVE WINDOW
- CONTRACTOR TO VERIFY EXISTENCE AND LOCATION OF EXISTING SITE GROUND SYSTEM.
- CONTRACTOR SHALL VERIFY THAT GROUNDING ELECTRODES SHALL BE CONNECTED IN A RING USING #2 AWG BARE TINNED COPPER WIRE. THE TOP OF THE GROUND RODS AND THE RING CONDUCTOR SHALL BE 30" BELOW FINISHED GRADE, OR TO FROST DEPTH, WHICHEVER IS GREATER. GROUNDING ELECTRODES SHALL BE DRIVEN ON 10'–0" CENTERS (PROVIDE AND INSTALL AS REQUIRED. REQUIRED PER PLAN BELOW).
- GROUNDING CONDUCTORS SHALL BE OF EQUAL LENGTH, MATERIAL, AND BONDING TECHNIQUE.
- CONTRACTOR SHALL ENSURE GROUND RING IS WITHIN 12 TO 36 INCHES OF THE EQUIPMENT PLATFORM. PROVIDE AND INSTALL GROUNDING CONNECTIONS SHOWN BELOW AS NEEDED PER EXISTING SITE GROUNDING SYSTEM. CONTRACTOR SHALL VERIFY ALL EXISTING SITE GROUNDING CONDITIONS BEFORE STARTING WORK OR PURCHASING EQUIPMENT.
- ALL DOWN CONDUCTORS MUST GO DOWN.



NOTE:

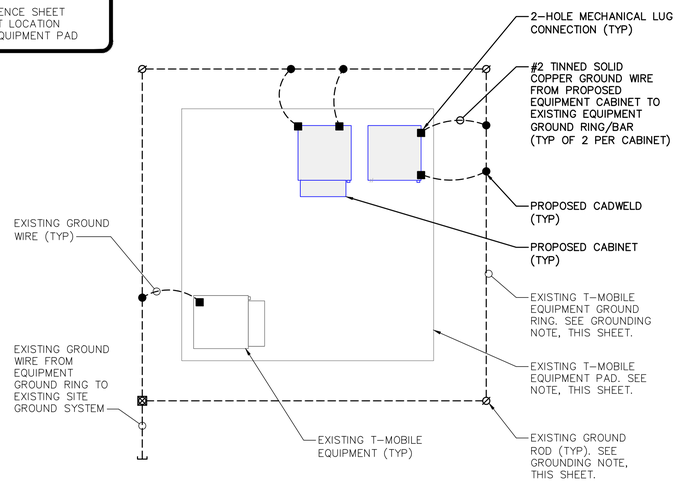
ALL NEW GROUNDS TO BE #6 STRANDED COPPER WITH GREEN INSULATION UNLESS NOTED OTHERWISE.

GROUNDING SHOWN TYPICAL PER SECTOR.

1 TYPICAL ANTENNA GROUNDING DIAGRAM
SCALE: NOT TO SCALE

NOTE:

CONTRACTOR TO REFERENCE SHEET C–1.1 & 1.2 FOR EXACT LOCATION AND ORIENTATION OF EQUIPMENT PAD



2 TYPICAL CABINET GROUNDING DIAGRAM
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351
TEP JOB #: 42544.477010

T-MOBILE SITE NUMBER:
CTNH602A

BU #: **876309**
MILFORD JAI-ALAI

311 OLD GATE LANE
MILFORD, CT 06460

EXISTING 120'-0" MONOPOLE

ISSUED FOR:

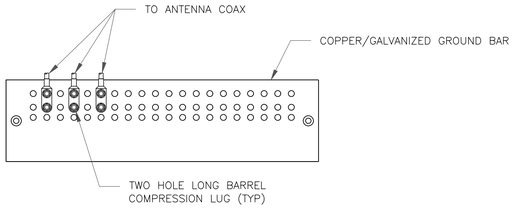
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	03/01/21	SPK	PRELIMINARY	JTC
0	03/17/21	BSE	CONSTRUCTION	JTC

SEAL:

03/17/21

SHEET NUMBER: G-1

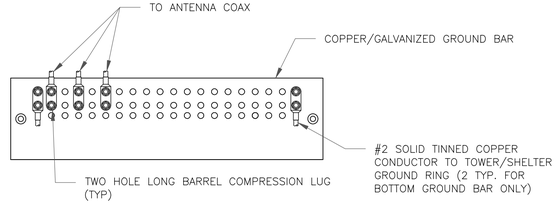
REVISION: 0



NOTES:

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

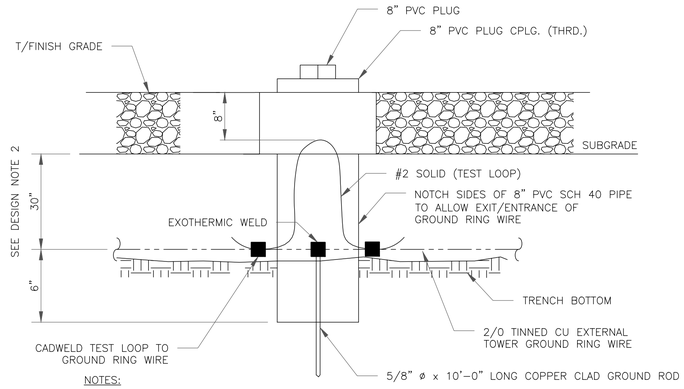
1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

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

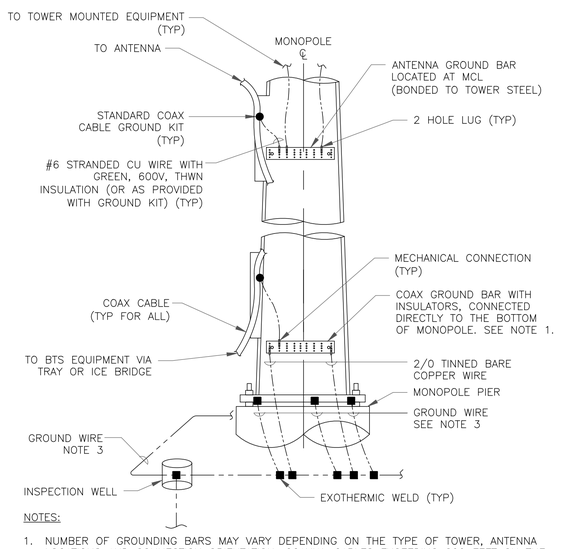
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL
2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D)

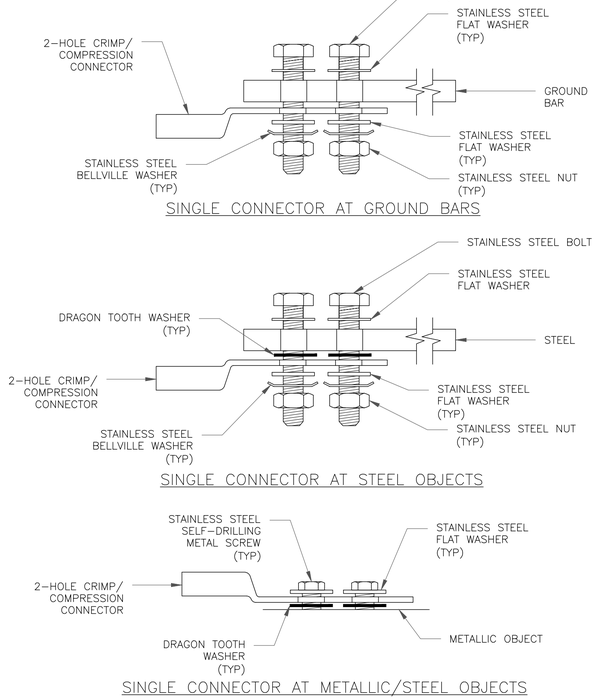
3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE



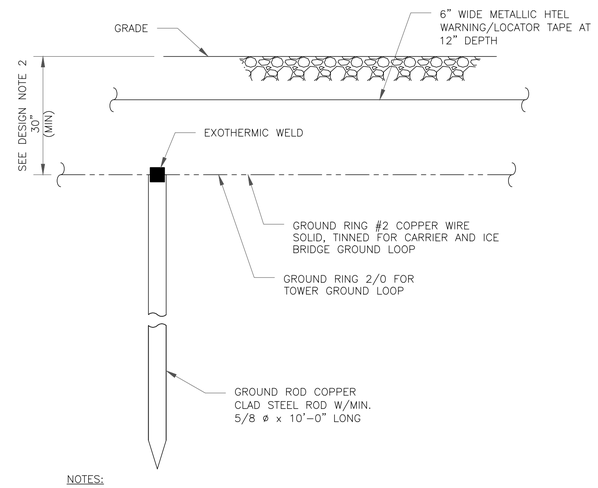
NOTES:

1. NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATIONS AND CONNECTION ORIENTATION. COAXIAL CABLES EXCEEDING 200 FEET ON THE TOWER SHALL HAVE GROUND KITS AT THE MIDPOINT. PROVIDE AS REQUIRED.
2. ONLY MECHANICAL CONNECTIONS ARE ALLOWED TO BE MADE TO CROWN CASTLE USA INC. TOWERS. ALL MECHANICAL CONNECTIONS SHALL BE TREATED WITH AN ANTI-OXIDANT COATING.
3. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF THE RECOGNIZED EDITION OF ANSI/TIA 222 AND NFPA 780.

4 TYPICAL ANTENNA CABLE GROUNDING
SCALE: NOT TO SCALE



5 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL
2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D)

6 GROUND ROD DETAIL
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351
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EXISTING 120'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	03/01/21	SPK	PRELIMINARY	JTC
0	03/17/21	BSE	CONSTRUCTION	JTC

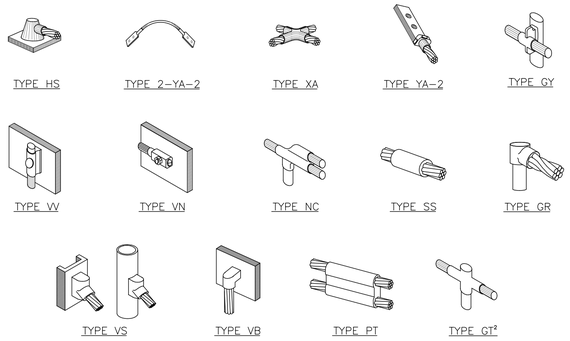
SEAL:

STATE OF CONNECTICUT STEPHANIE A. SPERES 29538 LICENSED PROFESSIONAL ENGINEER

03/17/21

SHEET NUMBER: G-2

REVISION: 0

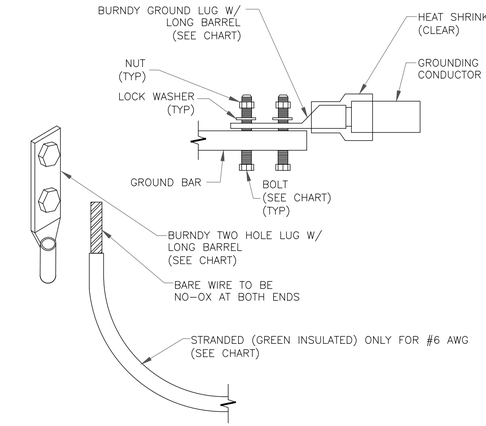


NOTE:

1. ERICO EXOTHERMIC "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH CONSTRUCTION MANAGER FOR SPECIFIC MOLDS TO BE USED FOR THIS PROJECT.
2. MOLD TYPE ONLY TO BE USED BELOW GRADE WHEN CONNECTING GROUND RING TO GROUND ROD.

1 CADWELD GROUNDING CONNECTIONS
SCALE: NOT TO SCALE

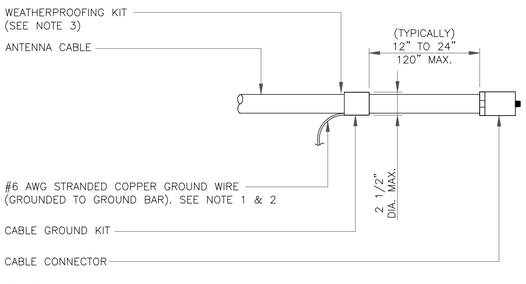
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT



NOTES:

1. ALL GROUNDING LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL HARDWARE BOLTS, NUTS, LOCK WASHERS SHALL BE STAINLESS STEEL. ALL HARDWARE ARE TO BE AS FOLLOWS: BOLT, FLAT WASHER,GROUND BAR, GROUND LUG, FLAT WASHER AND NUT.

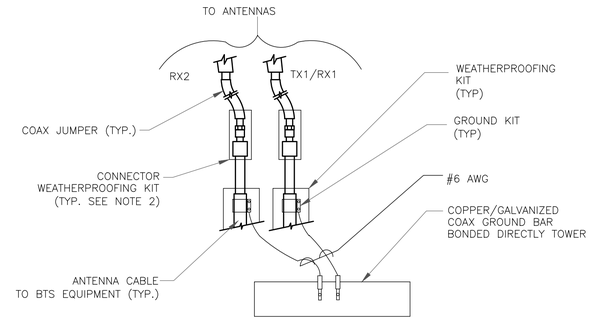
2 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



NOTES:

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

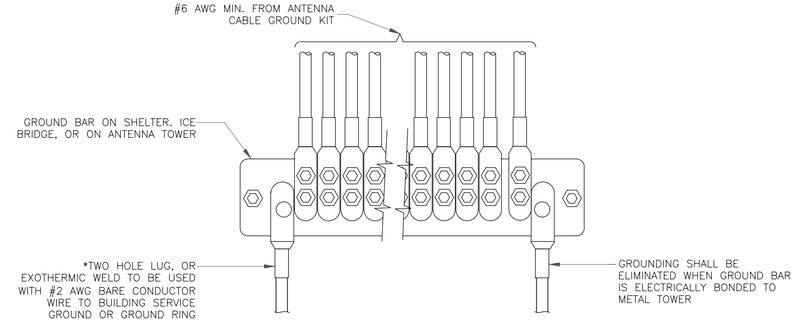
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



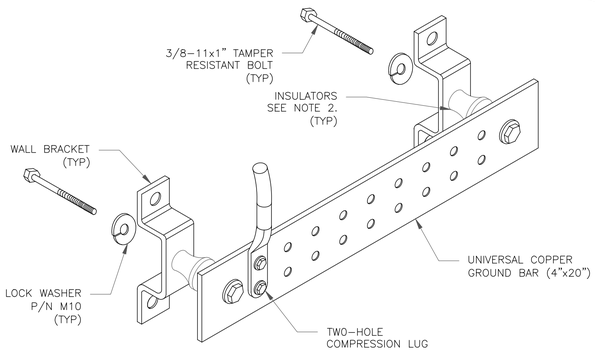
NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.

4 GROUND CABLE CONNECTION
SCALE: NOT TO SCALE



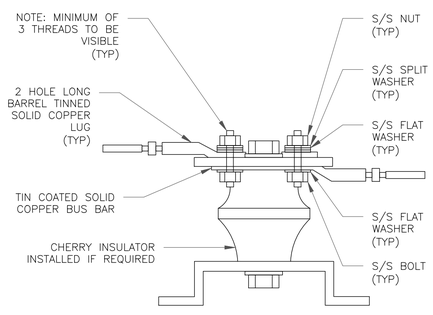
5 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



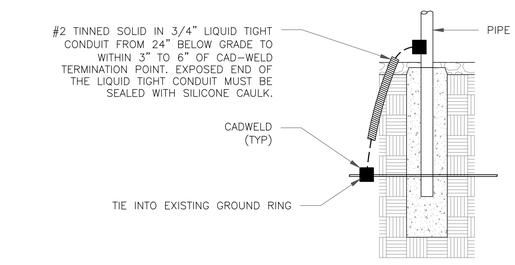
NOTES:

1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.
2. OMIT INSULATOR WHEN MOUNTING TO TOWER STEEL OR PLATFORM STEEL USE INSULATORS WHEN ATTACHING TO BUILDING OR SHELTERS.

6 GROUND BAR DETAIL
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE



8 TRANSITIONING GROUND DETAIL
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

TOWER ENGINEERING PROFESSIONALS
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TEP JOB #: 42544.477010

T-MOBILE SITE NUMBER:
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BU #: **876309**
MILFORD JAI-ALAI

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EXISTING 120'-0" MONOPOLE

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0	03/17/21	BSE	CONSTRUCTION	JTC

SEAL:

03/17/21

SHEET NUMBER: G-3

REVISION: 0

Exhibit D

Structural Analysis Report

Date: **February 16, 2021**

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

Subject:	**Structural Analysis Report**	
Carrier Designation:	***Sprint PCS* Co-Locate**	
	Site Number:	CTNH602A
	Site Name:	CTNH602A
Crown Castle Designation:	**BU Number:**	876309
	Site Name:	Milford JAI-ALAI
	JDE Job Number:	628839
	Work Order Number:	1919505
	Order Number:	538776 Rev. 1
Engineering Firm Designation:	**B+T Group Project Number:**	78288.003.01
Site Data:	**311 Old Gate Lane, Milford, New Haven County, CT** **Latitude *41° 14' 2.59"*, Longitude *-73° 1' 22.4"*** **120 Foot - Monopole Tower**	

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

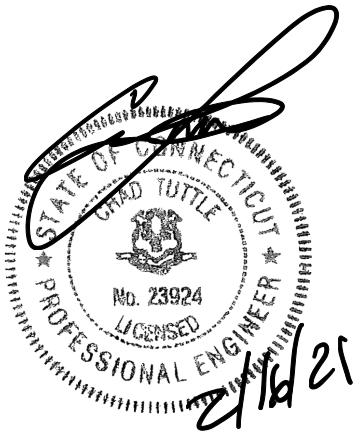
The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC5: Proposed Equipment Configuration **Sufficient Capacity – 92.4%**

This analysis has been performed in accordance with the 2018 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 125 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Brandon Sevier, P.E.

Respectfully submitted by: B+T Engineering, Inc.
COA: PEC.0001564; Expires: 02/10/2021



Chad E. Tuttle, P.E.

tnxTower Report - version 8.0.7.5

TABLE OF CONTENTS

1) INTRODUCTION

This is a 120 ft monopole tower designed by Rohn in December of 1996.

The tower has been modified multiple times to accommodate additional loading.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1 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)
117.0	123.0	1	Lucent	KS24019-L112A	4 1	1-5/8 1/2
	120.0	3	Ericsson	AIR6449 B41_T-MOBILE		
		3	Ericsson	RADIO 4415 B66A		
		3	Ericsson	RADIO 4424 B25_TMO		
		3	Ericsson	RADIO 4449 B71 B85A_T-MOBILE		
		3	RFS Celwave	APX16DWV-16DWV-S-E-A20		
		3	RFS Celwave	APXVAALL24_43-U-NA20_TMO		
	117.0	1	--	Platform Mount [LP 502-1]		

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)
100.0	102.0	3	Alcatel Lucent	B25 RRH4X30	13	1-5/8
		3	Alcatel Lucent	B66A RRH4X45		
		3	Antel	BXA-70063-6BF-EDIN-0		
		9	Commscope	SBNHH-1D45A		
		1	Raycap	RXXDC-3315-PF-48		
		12	RFS Celwave	FD9R6004/2C-3L		
	100.0	1	--	Platform Mount [LP 303-1_KCKR-HR-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
Tower Manufacturer Drawing	2068406	CCI Sites
Mount Analysis Report	9546012	CCI Sites
Tower Modification Drawing	2217524	CCI Sites
Post Modification Inspection	2217525	CCI Sites
Tower Modification Drawing	2638364	CCI Sites
Post Modification Inspection	2638363	CCI Sites
Tower Modification Drawing	3088811	CCI Sites
Tower Modification Drawing	3139251	CCI Sites
Post Modification Inspection	3158394	CCI Sites
Tower Modification Drawing	3265183	CCI Sites
Post Modification Inspection	3334396	CCI Sites
Tower Modification Drawing	5461972	CCI Sites
Post Modification Inspection	6078054	CCI Sites
Foundation Drawing	2068407	CCI Sites
Geotech Report	2221322	CCI Sites
Crown CAD Package	Date: 02/01/2021	CCI Sites

3.1) Analysis Method

tnxTower (version 8.0.7.5), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 standard.
tnxTower was used to determine the loads on the modified structure. Additional calculations were performed to determine the stresses in the pole and in the reinforcing elements. These calculations are presented in Appendix C.

3.2) Assumptions

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

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	120 - 115	Pole	TP24x24x0.25	1	-3.528	--	5.8	Pass
L2	115 - 110	Pole	TP24x24x0.25	2	-3.946	--	12.6	Pass
L3	110 - 105	Pole	TP24x24x0.25	3	-4.369	--	19.9	Pass
L4	105 - 100	Pole	TP24x24x0.25	4	-4.795	--	29.6	Pass
L5	100 - 98.5	Pole	TP24x24x0.25	5	-8.135	--	33.7	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L6	98.5 - 98.25	Pole + Reinf.	TP24x24x0.3875	6	-8.174	--	24.3	Pass
L7	98.25 - 93.25	Pole + Reinf.	TP24x24x0.3875	7	-8.884	--	34.5	Pass
L8	93.25 - 90	Pole + Reinf.	TP24x24x0.3875	8	-11.218	--	41.7	Pass
L9	90 - 89.75	Pole	TP24x24x0.375	9	-11.467	--	38.0	Pass
L10	89.75 - 84.75	Pole	TP24x24x0.375	10	-14.225	--	48.6	Pass
L11	84.75 - 79.75	Pole	TP24x24x0.375	11	-14.999	--	59.5	Pass
L12	79.75 - 79	Pole	TP24x24x0.375	12	-15.118	--	61.1	Pass
L13	79 - 78.75	Pole + Reinf.	TP24x24x0.5188	13	-15.169	--	52.3	Pass
L14	78.75 - 74.04	Pole + Reinf.	TP24x24x0.5188	14	-16.052	--	61.3	Pass
L15	74.04 - 73.79	Pole + Reinf.	TP24x24x0.675	15	-16.113	--	48.9	Pass
L16	73.79 - 68.79	Pole + Reinf.	TP24x24x0.675	16	-17.201	--	56.9	Pass
L17	68.79 - 63.79	Pole + Reinf.	TP24x24x0.675	17	-18.325	--	65.4	Pass
L18	63.79 - 60	Pole + Reinf.	TP24x24x0.675	18	-19.187	--	72.1	Pass
L19	60 - 59.75	Pole + Reinf.	TP30x30x0.5313	19	-21.619	--	51.2	Pass
L20	59.75 - 54.75	Pole + Reinf.	TP30x30x0.5313	20	-22.783	--	58.1	Pass
L21	54.75 - 49.75	Pole + Reinf.	TP30x30x0.5313	21	-23.966	--	65.3	Pass
L22	49.75 - 47.83	Pole + Reinf.	TP30x30x0.5313	22	-24.415	--	68.1	Pass
L23	47.83 - 47.58	Pole + Reinf.	TP30x30x0.65	23	-24.495	--	63.1	Pass
L24	47.58 - 43	Pole + Reinf.	TP30x30x0.65	24	-25.740	--	69.5	Pass
L25	43 - 42.75	Pole + Reinf.	TP30x30x0.8125	25	-25.828	--	64.1	Pass
L26	42.75 - 37.75	Pole + Reinf.	TP30x30x0.8125	26	-27.435	--	70.8	Pass
L27	37.75 - 34.5	Pole + Reinf.	TP30x30x0.8125	27	-28.490	--	75.2	Pass
L28	34.5 - 34.25	Pole + Reinf.	TP30x30x0.65	28	-28.566	--	82.3	Pass
L29	34.25 - 30	Pole + Reinf.	TP30x30x0.65	29	-29.754	--	88.8	Pass
L30	30 - 29.75	Pole + Reinf.	TP36x36x0.55	30	-34.116	--	66.4	Pass
L31	29.75 - 25.58	Pole + Reinf.	TP36x36x0.55	31	-35.314	--	71.7	Pass
L32	25.58 - 25.33	Pole + Reinf.	TP36x36x0.65	32	-35.403	--	66.7	Pass
L33	25.33 - 20.75	Pole + Reinf.	TP36x36x0.65	33	-36.888	--	72.2	Pass
L34	20.75 - 20.5	Pole + Reinf.	TP36x36x0.7875	34	-36.991	--	65.1	Pass
L35	20.5 - 17.58	Pole + Reinf.	TP36x36x0.7875	35	-38.083	--	68.3	Pass
L36	17.58 - 17.33	Pole + Reinf.	TP36x36x0.6875	36	-38.178	--	77.4	Pass
L37	17.33 - 13.67	Pole + Reinf.	TP36x36x0.6875	37	-39.435	--	82.0	Pass
L38	13.67 - 13.42	Pole + Reinf.	TP36x36x0.7	38	-39.533	--	82.9	Pass
L39	13.42 - 8.42	Pole + Reinf.	TP36x36x0.7	39	-41.315	--	89.3	Pass
L40	8.42 - 6.08	Pole + Reinf.	TP36x36x0.7	40	-42.152	--	92.4	Pass
L41	6.08 - 5.83	Pole + Reinf.	TP36x36x0.8875	41	-42.266	--	74.2	Pass
L42	5.83 - 0.83	Pole + Reinf.	TP36x36x0.8875	42	-44.316	--	79.5	Pass
L43	0.83 - 0	Pole + Reinf.	TP36x36x0.725	43	-44.618	--	84.2	Pass
							Summary	
						Pole (L43)	84.2	Pass
						Reinforcement	92.4	Pass
						Rating =	92.4	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Flange Connection	90.0	20.9	Pass
1,2	Bridge Stiffener	90.0	51.6	Pass
1,2	Flange Connection	60.0	37.4	Pass
1,2	Bridge Stiffener	60.0	30.0	Pass
1,2	Flange Connection	30.0	64.9	Pass
1,2	Bridge Stiffener	30.0	45.1	Pass
1,2	Anchor Rods	Base	54.8	Pass
1,2	Base Plate	Base	26.9	Pass
1,2	Base Foundation (Structure)	Base	84.4	Pass
1,2	Base Foundation (Soil Interaction)	Base	86.9	Pass
1,2	Concrete Breakout	Base	62.8	Pass

Structure Rating (max from all components) =	92.4%

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.

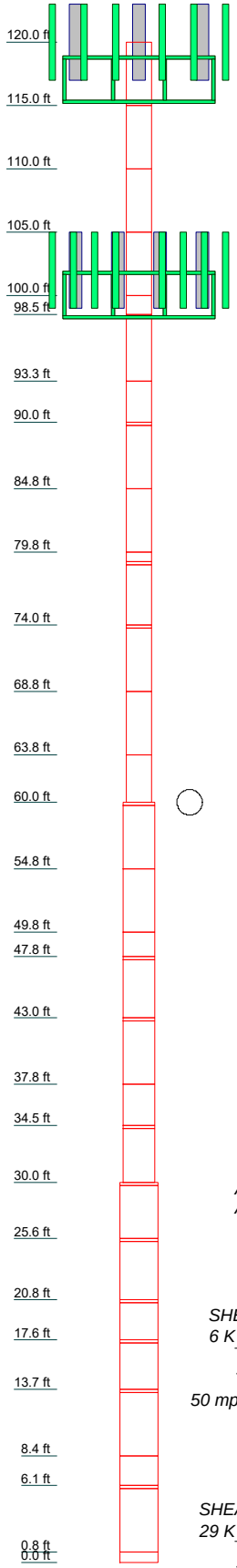
4.1) Recommendations

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	P24x0.25	5.000	A53-B-42	0.3
2	P24x0.25	5.000		0.3
3	P24x0.25	5.000		0.3
4	P24x0.25	5.000		0.3
5	P24x0.25	5.000		0.1
6	P24x0.25	0.250		0.0
7	P24x0.25	5.0000		0.5
8	P24x0.25	0.250		0.0
9	P24x0.25	0.250		0.3
10	P24x0.25	5.0000		0.5
11	P24x0.375	5.000		0.5
12	P24x0.375	0.250		0.0
13	P24x0.375	0.250		0.1
14	P24x0.375	4.709		0.6
15	P24x0.375	0.250		0.0
16	P24x0.375	5.0000		0.8
17	P24x0.675	5.000		0.8
18	P24x0.675	3.791		0.6
19	P30x0.675	0.250		0.0
20	P30x0.675	5.0000		0.8
21	P30x0.531	5.000		0.8
22	P30x0.531	0.250		0.3
23	P30x0.531	0.250		0.0
24	P30x0.531	4.583		0.9
25	P30x0.531	0.250		0.1
26	P30x0.531	5.0000		1.2
27	P30x0.531	0.250		0.8
28	P30x0.531	0.250		0.0
29	P30x0.531	0.250		0.8
30	P30x0.531	4.250		0.1
31	P30x0.531	4.167		0.8
32	P30x0.531	0.250		0.1
33	P30x0.531	4.583		1.1
34	P30x0.531	4.250		0.1
35	P30x0.531	0.250		0.8
36	P30x0.531	0.250		0.1
37	P30x0.531	0.666		0.9
38	P30x0.531	0.250		0.1
39	P36x0.625	5.0000		1.3
40	P36x0.625	0.834		0.6
41	P36x0.625	0.250		0.0
42	P36x0.625	5.0000		1.5
43	P36x0.625	0.833		0.2
				19.3



ALL REACTIONS ARE FACTORED

AXIAL 59 K

SHEAR 6 K

MOMENT 450 kip-ft

TORQUE 0 kip-ft
50 mph WIND - 1.000 in ICE

AXIAL 45 K

SHEAR 29 K

MOMENT 2134 kip-ft

TORQUE 1 kip-ft
REACTIONS - 125 mph WIND

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TIA-222-H Annex S
9. TOWER RATING: 92.4%

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

Job: 78288.003.01- Milford JAI-ALAI, CT (BU# 876309			
Project:			
Client: Crown Castle	Drawn by: Suhas Poojary	App'd:	
Code: TIA-222-H	Date: 02/16/21	Scale: NTS	
Path:		Dwg No. E-1	

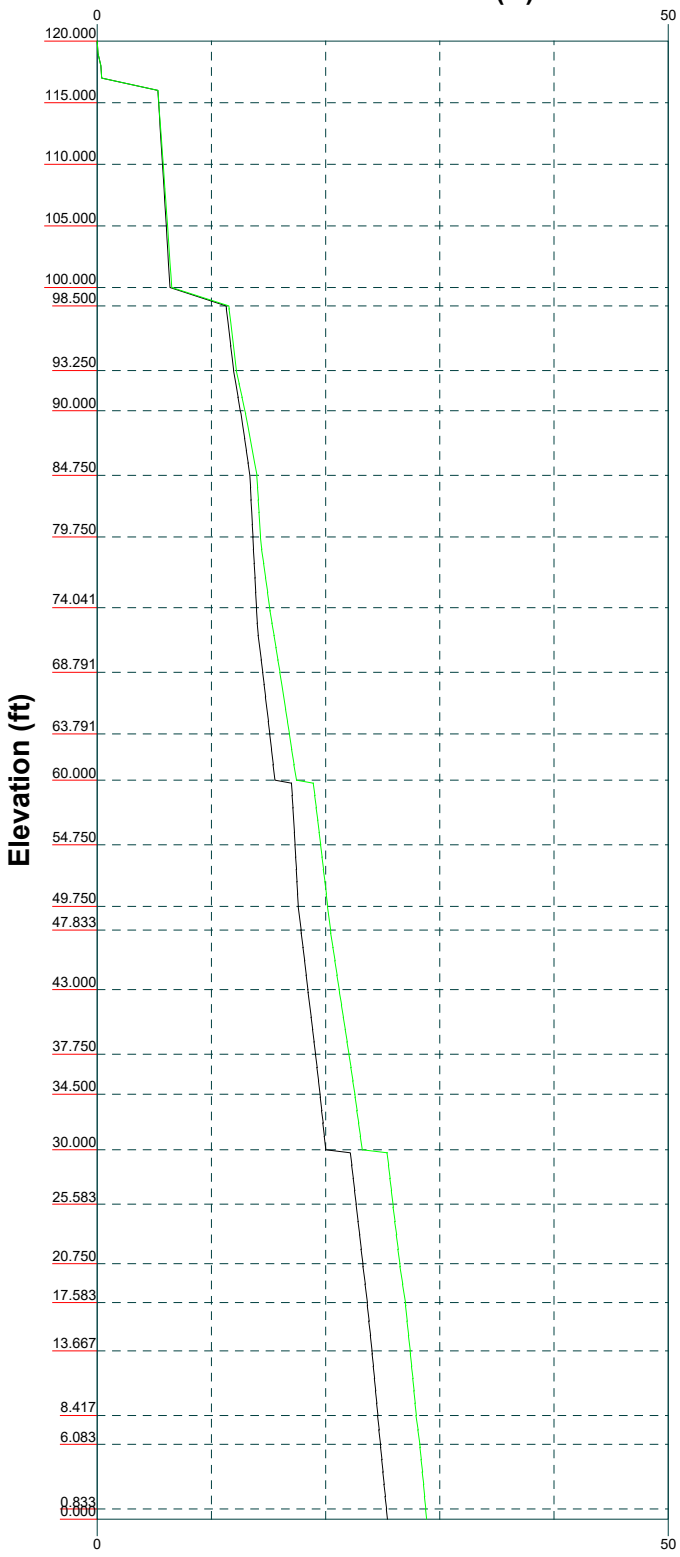
TIA-222-H - 125 mph/50 mph 1.000 in Ice Exposure C

Vx Vz

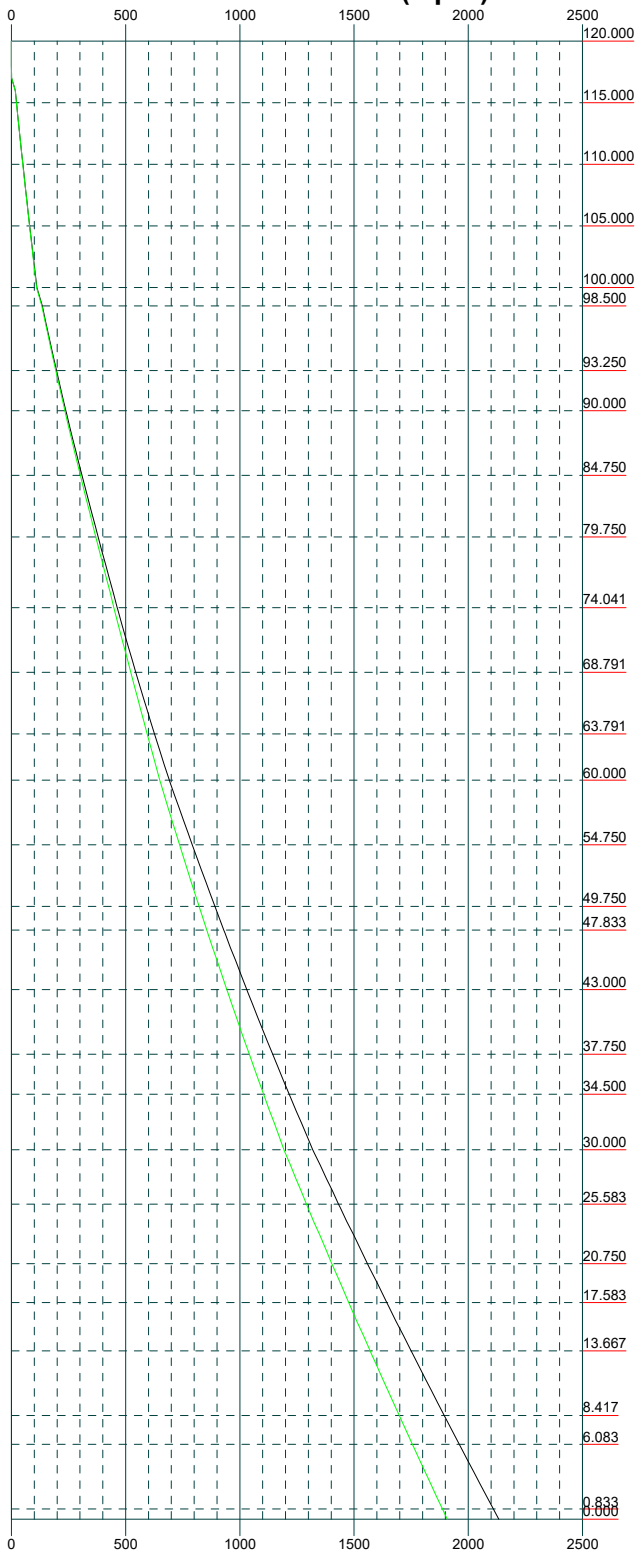
Maximum Values

Mx Mz

Global Mast Shear (K)



Global Mast Moment (kip-ft)



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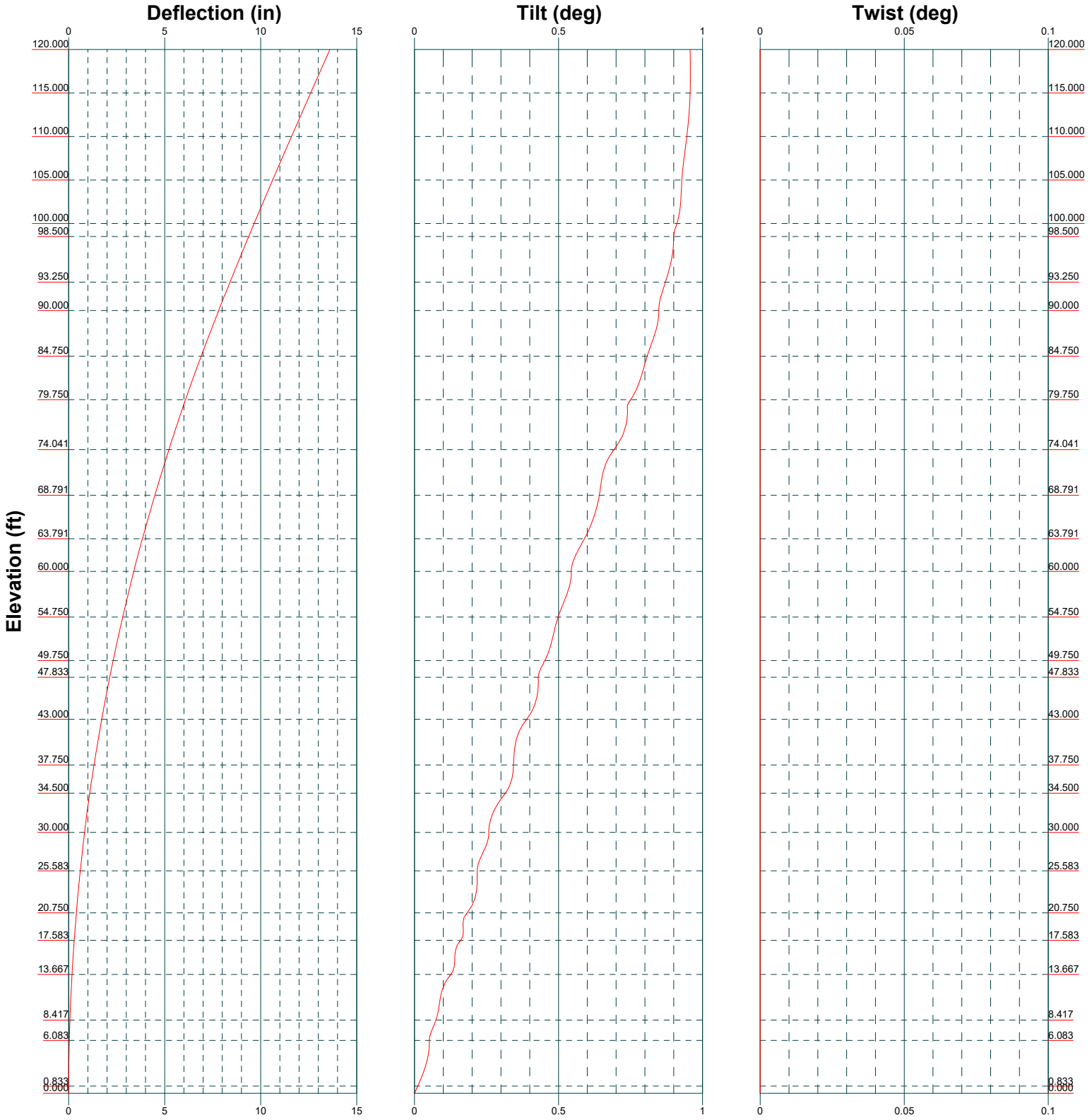
Project:			
Client: Crown Castle	Drawn by: Suhas Poojary	App'd:	
Code: TIA-222-H	Date: 02/16/21	Scale: NTS	
Path:		Dwg No. E-4	

TIA-222-H - Service - 60 mph

Maximum Values



B+T GRP

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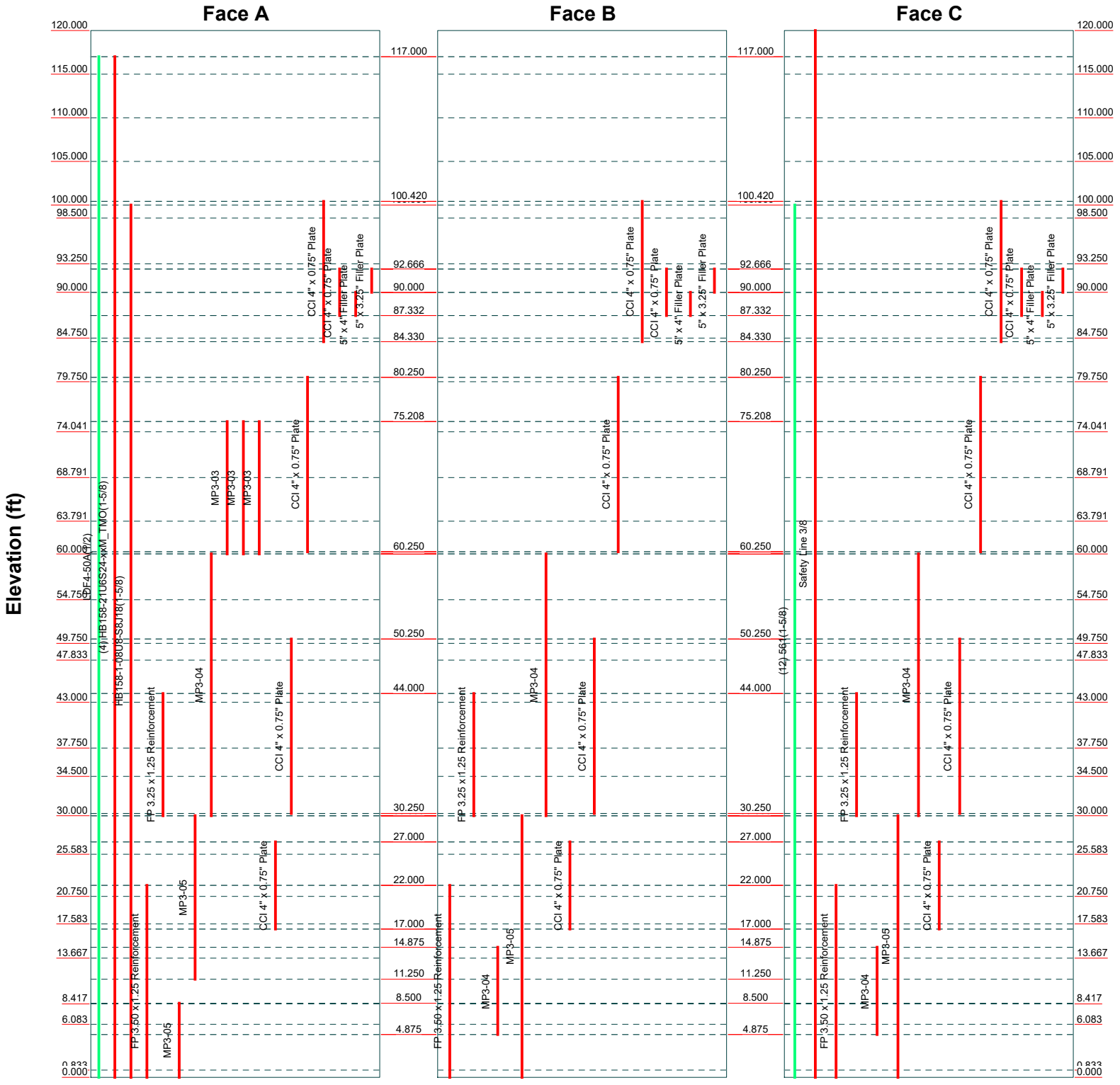
Job: *78288.003.01- Milford JAI-ALAI, CT (BU# 876309*			
Project:			
Client: Crown Castle	Drawn by: Suhas Poojary	App'd:	
Code: TIA-222-H	Date: 02/16/21	Scale: NTS	
Path:		Dwg No. E-5	

Feed Line Distribution Chart
0' - 120'

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



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Job:	***78288.003.01- Milford JAI-ALAI, CT (BU# 876309***		
Project:			
Client: Crown Castle	Drawn by: Suhas Poojary	App'd:	
Code: TIA-222-H	Date: 02/16/21	Scale: NTS	
Path:		Dwg No. E-7	

Tower Input Data

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

Tower is located in New Haven County, Connecticut.
Tower base elevation above sea level: 57.000 ft.
Basic wind speed of 125 mph.
Risk Category II.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.000 ft.
Nominal ice thickness of 1.000 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 60 mph.
TIA-222-H Annex S.
TOWER RATING: 92.4%.
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	120.000-115.000	5.000	P24x0.25	A53-B-42 (42 ksi)	
L2	115.000-110.000	5.000	P24x0.25	A53-B-42 (42 ksi)	
L3	110.000-105.000	5.000	P24x0.25	A53-B-42 (42 ksi)	
L4	105.000-100.000	5.000	P24x0.25	A53-B-42 (42 ksi)	
L5	100.000-98.500	1.500	P24x0.25	A53-B-42 (42 ksi)	
L6	98.500-98.250	0.250	P24x0.3875	A53-B-42 (42 ksi)	
L7	98.250-93.250	5.000	P24x0.3875	A53-B-42 (42 ksi)	
L8	93.250-90.000	3.250	P24x0.3875	A53-B-42 (42 ksi)	
L9	90.000-89.750	0.250	P24x0.375	A53-B-42 (42 ksi)	
L10	89.750-84.750	5.000	P24x0.375	A53-B-42 (42 ksi)	
L11	84.750-79.750	5.000	P24x0.375	A53-B-42 (42 ksi)	
L12	79.750-79.000	0.750	P24x0.375	A53-B-42 (42 ksi)	
L13	79.000-78.750	0.250	P24x0.51875	A53-B-42 (42 ksi)	
L14	78.750-74.041	4.709	P24x0.51875	A53-B-42 (42 ksi)	
L15	74.041-73.791	0.250	P24x0.675	A53-B-42 (42 ksi)	
L16	73.791-68.791	5.000	P24x0.675	A53-B-42 (42 ksi)	
L17	68.791-63.791	5.000	P24x0.675	A53-B-42 (42 ksi)	
L18	63.791-60.000	3.791	P24x0.675	A53-B-42 (42 ksi)	
L19	60.000-59.750	0.250	P30x0.53125	A53-B-42 (42 ksi)	
L20	59.750-54.750	5.000	P30x0.53125	A53-B-42 (42 ksi)	
L21	54.750-49.750	5.000	P30x0.53125	A53-B-42 (42 ksi)	
L22	49.750-47.833	1.917	P30x0.53125	A53-B-42 (42 ksi)	
L23	47.833-47.583	0.250	P30x0.65	A53-B-42 (42 ksi)	
L24	47.583-43.000	4.583	P30x0.65	A53-B-42 (42 ksi)	
L25	43.000-42.750	0.250	P30x0.8125	A53-B-42 (42 ksi)	
L26	42.750-37.750	5.000	P30x0.8125	A53-B-42 (42 ksi)	
L27	37.750-34.500	3.250	P30x0.8125	A53-B-42 (42 ksi)	
L28	34.500-34.250	0.250	P30x0.65	A53-B-42 (42 ksi)	
L29	34.250-30.000	4.250	P30x0.65	A53-B-42 (42 ksi)	

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L30	30.000-29.750	0.250	P36x0.55	A53-B-42 (42 ksi)	
L31	29.750-25.583	4.167	P36x0.55	A53-B-42 (42 ksi)	
L32	25.583-25.333	0.250	P36x0.65	A53-B-42 (42 ksi)	
L33	25.333-20.750	4.583	P36x0.65	A53-B-42 (42 ksi)	
L34	20.750-20.500	0.250	P36x0.7875	A53-B-42 (42 ksi)	
L35	20.500-17.583	2.917	P36x0.7875	A53-B-42 (42 ksi)	
L36	17.583-17.333	0.250	P36x0.6875	A53-B-42 (42 ksi)	
L37	17.333-13.667	3.666	P36x0.6875	A53-B-42 (42 ksi)	
L38	13.667-13.417	0.250	P36x0.7	A53-B-42 (42 ksi)	
L39	13.417-8.417	5.000	P36x0.7	A53-B-42 (42 ksi)	
L40	8.417-6.083	2.334	P36x0.7	A53-B-42 (42 ksi)	
L41	6.083-5.833	0.250	P36x0.8875	A53-B-42 (42 ksi)	
L42	5.833-0.833	5.000	P36x0.8875	A53-B-42 (42 ksi)	
L43	0.833-0.000	0.833	P36x0.725	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 120.000-115.000				1	1	1			
L2 115.000-110.000				1	1	1			
L3 110.000-105.000				1	1	1			
L4 105.000-100.000				1	1	1			
L5 100.000-98.500				1	1	1			
L6 98.500-98.250				1	1	0.962015			
L7 98.250-93.250				1	1	0.962015			
L8 93.250-90.000				1	1	0.962015			
L9 90.000-89.750				1	1	1			
L10				1	1	1			

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
89.750-84.750									
L11				1	1	1			
84.750-79.750									
L12				1	1	1			
79.750-79.000									
L13				1	1	0.962504			
79.000-78.750									
L14				1	1	0.962504			
78.750-74.041									
L15				1	1	0.921761			
74.041-73.791									
L16				1	1	0.921761			
73.791-68.791									
L17				1	1	0.921761			
68.791-63.791									
L18				1	1	0.921761			
63.791-60.000									
L19				1	1	0.961544			
60.000-59.750									
L20				1	1	0.961544			
59.750-54.750									
L21				1	1	0.961544			
54.750-49.750									
L22				1	1	0.961544			
49.750-47.833									
L23				1	1	0.939223			
47.833-47.583									
L24				1	1	0.939223			
47.583-43.000									
L25				1	1	0.919147			
43.000-42.750									
L26				1	1	0.919147			
42.750-37.750									
L27				1	1	0.919147			
37.750-34.500									
L28				1	1	0.939223			
34.500-34.250									
L29				1	1	0.939223			
34.250-30.000									
L30				1	1	0.961904			
30.000-29.750									
L31				1	1	0.961904			
29.750-25.583									
L32				1	1	0.940899			
25.583-25.333									
L33				1	1	0.940899			
25.333-20.750									
L34				1	1	0.930309			
20.750-20.500									
L35				1	1	0.930309			
20.500-17.583									
L36				1	1	0.944607			
17.583-17.333									
L37				1	1	0.944607			
17.333-13.667									
L38				1	1	0.961689			
13.667-13.417									
L39				1	1	0.961689			
13.417-8.417									

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
L40 8.417-6.083				1	1	0.961689			
L41 6.083-5.833				1	1	0.8987			
L42 5.833-0.833				1	1	0.8987			
L43 0.833-0.000				1	1	0.931706			

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
*										
*										
*										
*										
*										
HB158-21U6S24-xxM_TMO(1-5/8)	A	No	Surface Ar (CaAa)	117.000 - 0.000	4	3	-0.150 -0.010	1.996		0.003
HB158-1-08U8-S8J18(1-5/8)	A	No	Surface Ar (CaAa)	100.000 - 0.000	1	1	0.280 0.330	1.980		0.001
*										
Safety Line 3/8	C	No	Surface Ar (CaAa)	120.000 - 0.000	1	1	0.010 0.020	0.375		0.000
*										
FP 3.50 x 1.25 Reinforcement	A	No	Surface Af (CaAa)	22.000 - 0.000	1	1	0.250 0.350	3.500	9.500	0.000
FP 3.50 x 1.25 Reinforcement	B	No	Surface Af (CaAa)	22.000 - 0.000	1	1	0.250 0.350	3.500	9.500	0.000
FP 3.50 x 1.25 Reinforcement	C	No	Surface Af (CaAa)	22.000 - 0.000	1	1	0.250 0.350	3.500	9.500	0.000
FP 3.25 x 1.25 Reinforcement	A	No	Surface Af (CaAa)	44.000 - 30.000	1	1	0.250 0.350	3.250	9.000	0.000
FP 3.25 x 1.25 Reinforcement	B	No	Surface Af (CaAa)	44.000 - 30.000	1	1	0.250 0.350	3.250	9.000	0.000
FP 3.25 x 1.25 Reinforcement	C	No	Surface Af (CaAa)	44.000 - 30.000	1	1	0.250 0.350	3.250	9.000	0.000
*										
MP3-05	A	No	Surface Af (CaAa)	8.500 - 0.000	1	1	-0.300 -0.200	5.330	14.840	0.000
MP3-04	B	No	Surface Af (CaAa)	14.875 - 4.875	1	1	0.000 0.100	4.780	12.780	0.000
MP3-04	C	No	Surface Af (CaAa)	14.875 - 4.875	1	1	-0.500 -0.400	4.780	12.780	0.000
MP3-05	A	No	Surface Af (CaAa)	30.000 - 11.250	1	1	-0.300 -0.200	5.330	14.840	0.000
MP3-05	B	No	Surface Af (CaAa)	30.000 - 0.000	1	1	-0.300 -0.200	5.330	14.840	0.000
MP3-05	C	No	Surface Af (CaAa)	30.000 - 0.000	1	1	-0.300 -0.200	5.330	14.840	0.000
MP3-04	A	No	Surface Af (CaAa)	60.000 - 30.000	1	1	-0.300 -0.200	4.780	12.780	0.000

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
MP3-04	B	No	Surface Af (CaAa)	60.000 - 30.000	1	1	-0.300 -0.200	4.780	12.780	0.000
MP3-04	C	No	Surface Af (CaAa)	60.000 - 30.000	1	1	-0.300 -0.200	4.780	12.780	0.000
MP3-03	A	No	Surface Af (CaAa)	75.208 - 60.000	1	1	-0.300 -0.200	4.060	11.260	0.000
MP3-03	A	No	Surface Af (CaAa)	75.208 - 60.000	1	1	-0.300 -0.200	4.060	11.260	0.000
MP3-03	A	No	Surface Af (CaAa)	75.208 - 60.000	1	1	-0.300 -0.200	4.060	11.260	0.000
*										
*										
CCI 4" x 0.75" Plate	A	No	Surface Af (CaAa)	27.000 - 17.000	1	1	0.100 0.200	4.000	9.500	0.000
CCI 4" x 0.75" Plate	B	No	Surface Af (CaAa)	27.000 - 17.000	1	1	0.100 0.200	4.000	9.500	0.000
CCI 4" x 0.75" Plate	C	No	Surface Af (CaAa)	27.000 - 17.000	1	1	0.100 0.200	4.000	9.500	0.000
CCI 4" x 0.75" Plate	A	No	Surface Af (CaAa)	50.250 - 30.250	1	1	0.100 0.200	4.000	9.500	0.000
CCI 4" x 0.75" Plate	B	No	Surface Af (CaAa)	50.250 - 30.250	1	1	0.100 0.200	4.000	9.500	0.000
CCI 4" x 0.75" Plate	C	No	Surface Af (CaAa)	50.250 - 30.250	1	1	0.100 0.200	4.000	9.500	0.000
CCI 4" x 0.75" Plate	A	No	Surface Af (CaAa)	80.250 - 60.250	1	1	0.100 0.200	4.000	9.500	0.000
CCI 4" x 0.75" Plate	B	No	Surface Af (CaAa)	80.250 - 60.250	1	1	0.100 0.200	4.000	9.500	0.000
CCI 4" x 0.75" Plate	C	No	Surface Af (CaAa)	80.250 - 60.250	1	1	0.100 0.200	4.000	9.500	0.000
CCI 4" x 0.75" Plate	A	No	Surface Af (CaAa)	100.420 - 84.330	1	1	-0.300 -0.200	4.000	9.500	0.000
CCI 4" x 0.75" Plate	B	No	Surface Af (CaAa)	100.420 - 84.330	1	1	-0.300 -0.200	4.000	9.500	0.000
CCI 4" x 0.75" Plate	C	No	Surface Af (CaAa)	100.420 - 84.330	1	1	-0.300 -0.200	4.000	9.500	0.000
*										
CCI 4" x 0.75" Plate	A	No	Surface Af (CaAa)	92.666 - 87.333	1	1	-0.300 -0.200	4.000	9.500	0.031
CCI 4" x 0.75" Plate	B	No	Surface Af (CaAa)	92.666 - 87.333	1	1	-0.300 -0.200	4.000	9.500	0.031
CCI 4" x 0.75" Plate	C	No	Surface Af (CaAa)	92.666 - 87.333	1	1	-0.300 -0.200	4.000	9.500	0.031
*										
5" x 4" Filler Plate	A	No	Surface Af (CaAa)	90.000 - 87.332	1	1	-0.300 -0.200	5.000	18.000	0.204
5" x 4" Filler Plate	B	No	Surface Af (CaAa)	90.000 - 87.332	1	1	-0.300 -0.200	5.000	18.000	0.204
5" x 4" Filler Plate	C	No	Surface Af (CaAa)	90.000 - 87.332	1	1	-0.300 -0.200	5.000	18.000	0.204
*										
5" x 3.25" Filler Plate	A	No	Surface Af (CaAa)	92.666 - 90.000	1	1	-0.300 -0.200	5.000	16.500	0.166
5" x 3.25" Filler Plate	B	No	Surface Af (CaAa)	92.666 - 90.000	1	1	-0.300 -0.200	5.000	16.500	0.166
5" x 3.25" Filler Plate	C	No	Surface Af (CaAa)	92.666 - 90.000	1	1	-0.300 -0.200	5.000	16.500	0.166
*										

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
*									
*									
*CLEARWIRE8 *SPRINT*									
LDF4-50A(1/2)	A	No	No	Inside Pole	117.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
*									
561(1-5/8)	C	No	No	Inside Pole	100.000 - 0.000	12	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
*									
*									

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	120.000-115.000	A	0.000	0.000	1.198	0.000	0.020
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.188	0.000	0.001
L2	115.000-110.000	A	0.000	0.000	2.994	0.000	0.051
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.188	0.000	0.001
L3	110.000-105.000	A	0.000	0.000	2.994	0.000	0.051
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.188	0.000	0.001
L4	105.000-100.000	A	0.000	0.000	3.274	0.000	0.051
		B	0.000	0.000	0.280	0.000	0.000
		C	0.000	0.000	0.468	0.000	0.001
L5	100.000-98.500	A	0.000	0.000	2.195	0.000	0.017
		B	0.000	0.000	1.000	0.000	0.000
		C	0.000	0.000	1.056	0.000	0.025
L6	98.500-98.250	A	0.000	0.000	0.366	0.000	0.003
		B	0.000	0.000	0.167	0.000	0.000
		C	0.000	0.000	0.176	0.000	0.004
L7	98.250-93.250	A	0.000	0.000	7.317	0.000	0.057
		B	0.000	0.000	3.333	0.000	0.000
		C	0.000	0.000	3.521	0.000	0.082
L8	93.250-90.000	A	0.000	0.000	7.733	0.000	0.561
		B	0.000	0.000	5.144	0.000	0.523
		C	0.000	0.000	5.266	0.000	0.577
L9	90.000-89.750	A	0.000	0.000	0.643	0.000	0.062
		B	0.000	0.000	0.444	0.000	0.059
		C	0.000	0.000	0.454	0.000	0.063
L10	89.750-84.750	A	0.000	0.000	10.001	0.000	0.624
		B	0.000	0.000	6.017	0.000	0.567
		C	0.000	0.000	6.204	0.000	0.649
L11	84.750-79.750	A	0.000	0.000	4.597	0.000	0.057

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B	0.000	0.000	0.613	0.000	0.000
		C	0.000	0.000	0.801	0.000	0.082
L12	79.750-79.000	A	0.000	0.000	1.098	0.000	0.009
		B	0.000	0.000	0.500	0.000	0.000
		C	0.000	0.000	0.528	0.000	0.012
L13	79.000-78.750	A	0.000	0.000	0.366	0.000	0.003
		B	0.000	0.000	0.167	0.000	0.000
		C	0.000	0.000	0.176	0.000	0.004
L14	78.750-74.041	A	0.000	0.000	9.259	0.000	0.054
		B	0.000	0.000	3.139	0.000	0.000
		C	0.000	0.000	3.316	0.000	0.077
L15	74.041-73.791	A	0.000	0.000	0.873	0.000	0.003
		B	0.000	0.000	0.167	0.000	0.000
		C	0.000	0.000	0.176	0.000	0.004
L16	73.791-68.791	A	0.000	0.000	17.467	0.000	0.057
		B	0.000	0.000	3.333	0.000	0.000
		C	0.000	0.000	3.521	0.000	0.082
L17	68.791-63.791	A	0.000	0.000	17.467	0.000	0.057
		B	0.000	0.000	3.333	0.000	0.000
		C	0.000	0.000	3.521	0.000	0.082
L18	63.791-60.000	A	0.000	0.000	13.078	0.000	0.043
		B	0.000	0.000	2.361	0.000	0.000
		C	0.000	0.000	2.503	0.000	0.062
L19	60.000-59.750	A	0.000	0.000	0.398	0.000	0.003
		B	0.000	0.000	0.199	0.000	0.000
		C	0.000	0.000	0.209	0.000	0.004
L20	59.750-54.750	A	0.000	0.000	7.967	0.000	0.057
		B	0.000	0.000	3.983	0.000	0.000
		C	0.000	0.000	4.171	0.000	0.082
L21	54.750-49.750	A	0.000	0.000	8.301	0.000	0.057
		B	0.000	0.000	4.317	0.000	0.000
		C	0.000	0.000	4.504	0.000	0.082
L22	49.750-47.833	A	0.000	0.000	4.332	0.000	0.022
		B	0.000	0.000	2.805	0.000	0.000
		C	0.000	0.000	2.877	0.000	0.031
L23	47.833-47.583	A	0.000	0.000	0.565	0.000	0.003
		B	0.000	0.000	0.366	0.000	0.000
		C	0.000	0.000	0.375	0.000	0.004
L24	47.583-43.000	A	0.000	0.000	10.901	0.000	0.052
		B	0.000	0.000	7.249	0.000	0.000
		C	0.000	0.000	7.420	0.000	0.075
L25	43.000-42.750	A	0.000	0.000	0.700	0.000	0.003
		B	0.000	0.000	0.501	0.000	0.000
		C	0.000	0.000	0.511	0.000	0.004
L26	42.750-37.750	A	0.000	0.000	14.009	0.000	0.057
		B	0.000	0.000	10.025	0.000	0.000
		C	0.000	0.000	10.213	0.000	0.082
L27	37.750-34.500	A	0.000	0.000	9.106	0.000	0.037
		B	0.000	0.000	6.516	0.000	0.000
		C	0.000	0.000	6.638	0.000	0.053
L28	34.500-34.250	A	0.000	0.000	0.700	0.000	0.003
		B	0.000	0.000	0.501	0.000	0.000
		C	0.000	0.000	0.511	0.000	0.004
L29	34.250-30.000	A	0.000	0.000	11.741	0.000	0.049
		B	0.000	0.000	8.355	0.000	0.000
		C	0.000	0.000	8.514	0.000	0.070
L30	30.000-29.750	A	0.000	0.000	0.421	0.000	0.003
		B	0.000	0.000	0.222	0.000	0.000
		C	0.000	0.000	0.231	0.000	0.004
L31	29.750-25.583	A	0.000	0.000	7.966	0.000	0.048
		B	0.000	0.000	4.646	0.000	0.000

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C	0.000	0.000	4.802	0.000	0.068
L32	25.583-25.333	A	0.000	0.000	0.588	0.000	0.003
		B	0.000	0.000	0.389	0.000	0.000
		C	0.000	0.000	0.398	0.000	0.004
L33	25.333-20.750	A	0.000	0.000	11.508	0.000	0.052
		B	0.000	0.000	7.856	0.000	0.000
		C	0.000	0.000	8.028	0.000	0.075
L34	20.750-20.500	A	0.000	0.000	0.734	0.000	0.003
		B	0.000	0.000	0.535	0.000	0.000
		C	0.000	0.000	0.544	0.000	0.004
L35	20.500-17.583	A	0.000	0.000	8.561	0.000	0.033
		B	0.000	0.000	6.237	0.000	0.000
		C	0.000	0.000	6.346	0.000	0.048
L36	17.583-17.333	A	0.000	0.000	0.734	0.000	0.003
		B	0.000	0.000	0.535	0.000	0.000
		C	0.000	0.000	0.544	0.000	0.004
L37	17.333-13.667	A	0.000	0.000	8.539	0.000	0.042
		B	0.000	0.000	6.561	0.000	0.000
		C	0.000	0.000	6.698	0.000	0.060
L38	13.667-13.417	A	0.000	0.000	0.567	0.000	0.003
		B	0.000	0.000	0.563	0.000	0.000
		C	0.000	0.000	0.572	0.000	0.004
L39	13.417-8.417	A	0.000	0.000	8.891	0.000	0.057
		B	0.000	0.000	11.261	0.000	0.000
		C	0.000	0.000	11.449	0.000	0.082
L40	8.417-6.083	A	0.000	0.000	5.046	0.000	0.027
		B	0.000	0.000	5.257	0.000	0.000
		C	0.000	0.000	5.344	0.000	0.038
L41	6.083-5.833	A	0.000	0.000	0.541	0.000	0.003
		B	0.000	0.000	0.563	0.000	0.000
		C	0.000	0.000	0.572	0.000	0.004
L42	5.833-0.833	A	0.000	0.000	10.811	0.000	0.057
		B	0.000	0.000	8.106	0.000	0.000
		C	0.000	0.000	8.294	0.000	0.082
L43	0.833-0.000	A	0.000	0.000	1.801	0.000	0.010
		B	0.000	0.000	1.226	0.000	0.000
		C	0.000	0.000	1.257	0.000	0.014

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	120.000-115.000	A	0.965	0.000	0.000	1.980	0.000	0.038
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	1.153	0.000	0.009
L2	115.000-110.000	A	0.961	0.000	0.000	4.944	0.000	0.094
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	1.148	0.000	0.009
L3	110.000-105.000	A	0.957	0.000	0.000	4.938	0.000	0.094
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	1.144	0.000	0.009
L4	105.000-100.000	A	0.952	0.000	0.000	5.292	0.000	0.096
		B		0.000	0.000	0.360	0.000	0.002
		C		0.000	0.000	1.499	0.000	0.011
L5	100.000-98.500	A	0.949	0.000	0.000	3.345	0.000	0.042
		B		0.000	0.000	1.285	0.000	0.007
		C		0.000	0.000	1.626	0.000	0.034

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
L6	98.500-98.250	A	0.948	0.000	0.000	0.557	0.000	0.007
		B		0.000	0.000	0.214	0.000	0.001
		C		0.000	0.000	0.271	0.000	0.006
L7	98.250-93.250	A	0.946	0.000	0.000	11.139	0.000	0.141
		B		0.000	0.000	4.279	0.000	0.024
		C		0.000	0.000	5.412	0.000	0.114
L8	93.250-90.000	A	0.941	0.000	0.000	10.750	0.000	0.647
		B		0.000	0.000	6.297	0.000	0.571
		C		0.000	0.000	7.031	0.000	0.630
L9	90.000-89.750	A	0.940	0.000	0.000	0.884	0.000	0.069
		B		0.000	0.000	0.542	0.000	0.063
		C		0.000	0.000	0.598	0.000	0.067
L10	89.750-84.750	A	0.937	0.000	0.000	14.285	0.000	0.737
		B		0.000	0.000	7.445	0.000	0.621
		C		0.000	0.000	8.569	0.000	0.711
L11	84.750-79.750	A	0.931	0.000	0.000	7.613	0.000	0.120
		B		0.000	0.000	0.785	0.000	0.004
		C		0.000	0.000	1.903	0.000	0.094
L12	79.750-79.000	A	0.928	0.000	0.000	1.662	0.000	0.021
		B		0.000	0.000	0.639	0.000	0.004
		C		0.000	0.000	0.807	0.000	0.017
L13	79.000-78.750	A	0.927	0.000	0.000	0.554	0.000	0.007
		B		0.000	0.000	0.213	0.000	0.001
		C		0.000	0.000	0.269	0.000	0.006
L14	78.750-74.041	A	0.924	0.000	0.000	13.441	0.000	0.149
		B		0.000	0.000	4.010	0.000	0.022
		C		0.000	0.000	5.057	0.000	0.106
L15	74.041-73.791	A	0.921	0.000	0.000	1.199	0.000	0.011
		B		0.000	0.000	0.213	0.000	0.001
		C		0.000	0.000	0.268	0.000	0.006
L16	73.791-68.791	A	0.918	0.000	0.000	23.954	0.000	0.217
		B		0.000	0.000	4.251	0.000	0.023
		C		0.000	0.000	5.357	0.000	0.113
L17	68.791-63.791	A	0.911	0.000	0.000	23.912	0.000	0.215
		B		0.000	0.000	4.245	0.000	0.023
		C		0.000	0.000	5.344	0.000	0.112
L18	63.791-60.000	A	0.905	0.000	0.000	17.890	0.000	0.161
		B		0.000	0.000	3.002	0.000	0.016
		C		0.000	0.000	3.831	0.000	0.084
L19	60.000-59.750	A	0.902	0.000	0.000	0.582	0.000	0.007
		B		0.000	0.000	0.244	0.000	0.001
		C		0.000	0.000	0.299	0.000	0.006
L20	59.750-54.750	A	0.898	0.000	0.000	11.635	0.000	0.142
		B		0.000	0.000	4.881	0.000	0.028
		C		0.000	0.000	5.967	0.000	0.117
L21	54.750-49.750	A	0.890	0.000	0.000	12.031	0.000	0.143
		B		0.000	0.000	5.296	0.000	0.030
		C		0.000	0.000	6.373	0.000	0.119
L22	49.750-47.833	A	0.884	0.000	0.000	6.059	0.000	0.062
		B		0.000	0.000	3.482	0.000	0.019
		C		0.000	0.000	3.893	0.000	0.053
L23	47.833-47.583	A	0.882	0.000	0.000	0.790	0.000	0.008
		B		0.000	0.000	0.454	0.000	0.002
		C		0.000	0.000	0.507	0.000	0.007
L24	47.583-43.000	A	0.877	0.000	0.000	15.180	0.000	0.152
		B		0.000	0.000	9.033	0.000	0.049
		C		0.000	0.000	10.009	0.000	0.131
L25	43.000-42.750	A	0.873	0.000	0.000	0.967	0.000	0.009
		B		0.000	0.000	0.632	0.000	0.003
		C		0.000	0.000	0.685	0.000	0.008
L26	42.750-37.750	A	0.867	0.000	0.000	19.310	0.000	0.181

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	12.626	0.000	0.069
		C		0.000	0.000	13.681	0.000	0.158
L27	37.750-34.500	A	0.858	0.000	0.000	12.519	0.000	0.116
		B		0.000	0.000	8.189	0.000	0.044
		C		0.000	0.000	8.868	0.000	0.102
L28	34.500-34.250	A	0.853	0.000	0.000	0.962	0.000	0.009
		B		0.000	0.000	0.629	0.000	0.003
		C		0.000	0.000	0.681	0.000	0.008
L29	34.250-30.000	A	0.848	0.000	0.000	16.118	0.000	0.150
		B		0.000	0.000	10.474	0.000	0.056
		C		0.000	0.000	11.354	0.000	0.131
L30	30.000-29.750	A	0.842	0.000	0.000	0.595	0.000	0.007
		B		0.000	0.000	0.264	0.000	0.001
		C		0.000	0.000	0.316	0.000	0.006
L31	29.750-25.583	A	0.835	0.000	0.000	11.046	0.000	0.121
		B		0.000	0.000	5.536	0.000	0.030
		C		0.000	0.000	6.388	0.000	0.104
L32	25.583-25.333	A	0.828	0.000	0.000	0.794	0.000	0.008
		B		0.000	0.000	0.464	0.000	0.002
		C		0.000	0.000	0.515	0.000	0.007
L33	25.333-20.750	A	0.820	0.000	0.000	15.464	0.000	0.149
		B		0.000	0.000	9.434	0.000	0.050
		C		0.000	0.000	10.358	0.000	0.130
L34	20.750-20.500	A	0.811	0.000	0.000	0.977	0.000	0.009
		B		0.000	0.000	0.649	0.000	0.003
		C		0.000	0.000	0.699	0.000	0.008
L35	20.500-17.583	A	0.805	0.000	0.000	11.383	0.000	0.102
		B		0.000	0.000	7.566	0.000	0.039
		C		0.000	0.000	8.145	0.000	0.090
L36	17.583-17.333	A	0.798	0.000	0.000	0.974	0.000	0.009
		B		0.000	0.000	0.648	0.000	0.003
		C		0.000	0.000	0.697	0.000	0.008
L37	17.333-13.667	A	0.788	0.000	0.000	11.588	0.000	0.113
		B		0.000	0.000	7.865	0.000	0.041
		C		0.000	0.000	8.580	0.000	0.105
L38	13.667-13.417	A	0.778	0.000	0.000	0.770	0.000	0.008
		B		0.000	0.000	0.662	0.000	0.003
		C		0.000	0.000	0.710	0.000	0.008
L39	13.417-8.417	A	0.761	0.000	0.000	12.449	0.000	0.134
		B		0.000	0.000	13.199	0.000	0.068
		C		0.000	0.000	14.148	0.000	0.155
L40	8.417-6.083	A	0.730	0.000	0.000	6.693	0.000	0.068
		B		0.000	0.000	6.126	0.000	0.030
		C		0.000	0.000	6.554	0.000	0.071
L41	6.083-5.833	A	0.716	0.000	0.000	0.714	0.000	0.007
		B		0.000	0.000	0.654	0.000	0.003
		C		0.000	0.000	0.700	0.000	0.007
L42	5.833-0.833	A	0.676	0.000	0.000	14.132	0.000	0.138
		B		0.000	0.000	9.529	0.000	0.043
		C		0.000	0.000	10.392	0.000	0.129
L43	0.833-0.000	A	0.549	0.000	0.000	2.274	0.000	0.020
		B		0.000	0.000	1.409	0.000	0.005
		C		0.000	0.000	1.531	0.000	0.019

Feed Line Center of Pressure

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L1	120.000-115.000	-2.137	-0.482	-1.546	0.257
L2	115.000-110.000	-3.910	-1.224	-3.037	-0.471
L3	110.000-105.000	-3.910	-1.224	-3.036	-0.473
L4	105.000-100.000	-3.593	-1.125	-2.890	-0.452
L5	100.000-98.500	-1.695	-0.920	-2.069	-0.918
L6	98.500-98.250	-1.695	-0.920	-2.069	-0.918
L7	98.250-93.250	-1.695	-0.920	-2.069	-0.918
L8	93.250-90.000	-1.062	-0.576	-1.375	-0.610
L9	90.000-89.750	-0.980	-0.532	-1.278	-0.568
L10	89.750-84.750	-1.253	-0.680	-1.592	-0.707
L11	84.750-79.750	-3.422	-1.857	-2.913	-1.295
L12	79.750-79.000	-2.062	-1.119	-2.070	-0.921
L13	79.000-78.750	-2.062	-1.119	-2.070	-0.921
L14	78.750-74.041	-2.660	-0.314	-2.935	-0.355
L15	74.041-73.791	-4.691	0.990	-4.812	0.890
L16	73.791-68.791	-4.691	0.990	-4.812	0.890
L17	68.791-63.791	-4.691	0.990	-4.811	0.890
L18	63.791-60.000	-4.782	1.009	-4.898	0.906
L19	60.000-59.750	-1.728	-0.940	-2.200	-0.978
L20	59.750-54.750	-1.728	-0.940	-2.199	-0.978
L21	54.750-49.750	-1.671	-0.909	-2.128	-0.948
L22	49.750-47.833	-1.289	-0.702	-1.655	-0.738
L23	47.833-47.583	-1.289	-0.702	-1.655	-0.738
L24	47.583-43.000	-1.232	-0.670	-1.580	-0.705
L25	43.000-42.750	-1.062	-0.578	-1.361	-0.608
L26	42.750-37.750	-1.062	-0.578	-1.360	-0.608
L27	37.750-34.500	-1.062	-0.578	-1.359	-0.608
L28	34.500-34.250	-1.062	-0.578	-1.359	-0.608
L29	34.250-30.000	-1.076	-0.585	-1.375	-0.616
L30	30.000-29.750	-1.785	-0.973	-2.325	-1.040
L31	29.750-25.583	-1.621	-0.883	-2.119	-0.949
L32	25.583-25.333	-1.375	-0.750	-1.808	-0.810
L33	25.333-20.750	-1.301	-0.709	-1.708	-0.766
L34	20.750-20.500	-1.139	-0.621	-1.489	-0.669
L35	20.500-17.583	-1.139	-0.621	-1.488	-0.669
L36	17.583-17.333	-1.139	-0.621	-1.487	-0.669
L37	17.333-13.667	-0.180	-0.919	-0.688	-0.952
L38	13.667-13.417	1.914	-1.232	1.256	-1.235
L39	13.417-8.417	2.929	-1.729	2.205	-1.714
L40	8.417-6.083	2.123	-1.334	1.545	-1.375
L41	6.083-5.833	2.123	-1.334	1.550	-1.375
L42	5.833-0.833	-0.467	-0.982	-0.862	-1.060
L43	0.833-0.000	-1.196	-0.882	-1.519	-0.970

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	50	HB158-21U6S24-xxM_TMO (1-5/8)	115.00 - 117.00	1.0000	1.0000
L1	56	Safety Line 3/8	115.00 - 120.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L2	50	HB158-21U6S24-xxM_TMO (1-5/8)	110.00 - 115.00	1.0000	1.0000
L2	56	Safety Line 3/8	110.00 - 115.00	1.0000	1.0000
L3	50	HB158-21U6S24-xxM_TMO (1-5/8)	105.00 - 110.00	1.0000	1.0000
L3	56	Safety Line 3/8	105.00 - 110.00	1.0000	1.0000
L4	50	HB158-21U6S24-xxM_TMO (1-5/8)	100.00 - 105.00	1.0000	1.0000
L4	56	Safety Line 3/8	100.00 - 105.00	1.0000	1.0000
L4	88	CCI 4" x 0.75" Plate	100.00 - 100.42	1.0000	1.0000
L4	89	CCI 4" x 0.75" Plate	100.00 - 100.42	1.0000	1.0000
L4	90	CCI 4" x 0.75" Plate	100.00 - 100.42	1.0000	1.0000
L5	50	HB158-21U6S24-xxM_TMO (1-5/8)	98.50 - 100.00	1.0000	1.0000
L5	54	HB158-1-08U8-S8J18(1-5/8)	98.50 - 100.00	1.0000	1.0000
L5	56	Safety Line 3/8	98.50 - 100.00	1.0000	1.0000
L5	88	CCI 4" x 0.75" Plate	98.50 - 100.00	1.0000	1.0000
L5	89	CCI 4" x 0.75" Plate	98.50 - 100.00	1.0000	1.0000
L5	90	CCI 4" x 0.75" Plate	98.50 - 100.00	1.0000	1.0000
L6	50	HB158-21U6S24-xxM_TMO (1-5/8)	98.25 - 98.50	1.0000	1.0000
L6	54	HB158-1-08U8-S8J18(1-5/8)	98.25 - 98.50	1.0000	1.0000
L6	56	Safety Line 3/8	98.25 - 98.50	1.0000	1.0000
L6	88	CCI 4" x 0.75" Plate	98.25 - 98.50	1.0000	1.0000
L6	89	CCI 4" x 0.75" Plate	98.25 - 98.50	1.0000	1.0000
L6	90	CCI 4" x 0.75" Plate	98.25 - 98.50	1.0000	1.0000
L7	50	HB158-21U6S24-xxM_TMO (1-5/8)	93.25 - 98.25	1.0000	1.0000
L7	54	HB158-1-08U8-S8J18(1-5/8)	93.25 - 98.25	1.0000	1.0000
L7	56	Safety Line 3/8	93.25 - 98.25	1.0000	1.0000
L7	88	CCI 4" x 0.75" Plate	93.25 - 98.25	1.0000	1.0000
L7	89	CCI 4" x 0.75" Plate	93.25 - 98.25	1.0000	1.0000
L7	90	CCI 4" x 0.75" Plate	93.25 - 98.25	1.0000	1.0000
L8	50	HB158-21U6S24-xxM_TMO (1-5/8)	90.00 - 93.25	1.0000	1.0000
L8	54	HB158-1-08U8-S8J18(1-5/8)	90.00 - 93.25	1.0000	1.0000
L8	56	Safety Line 3/8	90.00 - 93.25	1.0000	1.0000
L8	88	CCI 4" x 0.75" Plate	90.00 - 93.25	1.0000	1.0000
L8	89	CCI 4" x 0.75" Plate	90.00 - 93.25	1.0000	1.0000
L8	90	CCI 4" x 0.75" Plate	90.00 - 93.25	1.0000	1.0000
L8	92	CCI 4" x 0.75" Plate	90.00 - 92.67	1.0000	1.0000
L8	93	CCI 4" x 0.75" Plate	90.00 - 92.67	1.0000	1.0000
L8	94	CCI 4" x 0.75" Plate	90.00 - 92.67	1.0000	1.0000
L8	100	5" x 3.25" Filler Plate	90.00 - 92.67	1.0000	1.0000
L8	101	5" x 3.25" Filler Plate	90.00 - 92.67	1.0000	1.0000
L8	102	5" x 3.25" Filler Plate	90.00 - 92.67	1.0000	1.0000
L9	50	HB158-21U6S24-xxM_TMO (1-5/8)	89.75 - 90.00	1.0000	1.0000
L9	54	HB158-1-08U8-S8J18(1-5/8)	89.75 - 90.00	1.0000	1.0000
L9	56	Safety Line 3/8	89.75 - 90.00	1.0000	1.0000
L9	88	CCI 4" x 0.75" Plate	89.75 - 90.00	1.0000	1.0000
L9	89	CCI 4" x 0.75" Plate	89.75 - 90.00	1.0000	1.0000
L9	90	CCI 4" x 0.75" Plate	89.75 - 90.00	1.0000	1.0000
L9	92	CCI 4" x 0.75" Plate	89.75 - 90.00	1.0000	1.0000
L9	93	CCI 4" x 0.75" Plate	89.75 - 90.00	1.0000	1.0000
L9	94	CCI 4" x 0.75" Plate	89.75 - 90.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L9	96	5" x 4" Filler Plate	89.75 - 90.00	1.0000	1.0000
L9	97	5" x 4" Filler Plate	89.75 - 90.00	1.0000	1.0000
L9	98	5" x 4" Filler Plate	89.75 - 90.00	1.0000	1.0000
L10	50	HB158-21U6S24-xxM_TMO (1-5/8)	84.75 - 89.75	1.0000	1.0000
L10	54	HB158-1-08U8-S8J18(1-5/8)	84.75 - 89.75	1.0000	1.0000
L10	56	Safety Line 3/8	84.75 - 89.75	1.0000	1.0000
L10	88	CCI 4" x 0.75" Plate	84.75 - 89.75	1.0000	1.0000
L10	89	CCI 4" x 0.75" Plate	84.75 - 89.75	1.0000	1.0000
L10	90	CCI 4" x 0.75" Plate	84.75 - 89.75	1.0000	1.0000
L10	92	CCI 4" x 0.75" Plate	87.33 - 89.75	1.0000	1.0000
L10	93	CCI 4" x 0.75" Plate	87.33 - 89.75	1.0000	1.0000
L10	94	CCI 4" x 0.75" Plate	87.33 - 89.75	1.0000	1.0000
L10	96	5" x 4" Filler Plate	87.33 - 89.75	1.0000	1.0000
L10	97	5" x 4" Filler Plate	87.33 - 89.75	1.0000	1.0000
L10	98	5" x 4" Filler Plate	87.33 - 89.75	1.0000	1.0000
L11	50	HB158-21U6S24-xxM_TMO (1-5/8)	79.75 - 84.75	1.0000	1.0000
L11	54	HB158-1-08U8-S8J18(1-5/8)	79.75 - 84.75	1.0000	1.0000
L11	56	Safety Line 3/8	79.75 - 84.75	1.0000	1.0000
L11	85	CCI 4" x 0.75" Plate	79.75 - 80.25	1.0000	1.0000
L11	86	CCI 4" x 0.75" Plate	79.75 - 80.25	1.0000	1.0000
L11	87	CCI 4" x 0.75" Plate	79.75 - 80.25	1.0000	1.0000
L11	88	CCI 4" x 0.75" Plate	84.33 - 84.75	1.0000	1.0000
L11	89	CCI 4" x 0.75" Plate	84.33 - 84.75	1.0000	1.0000
L11	90	CCI 4" x 0.75" Plate	84.33 - 84.75	1.0000	1.0000
L12	50	HB158-21U6S24-xxM_TMO (1-5/8)	79.00 - 79.75	1.0000	1.0000
L12	54	HB158-1-08U8-S8J18(1-5/8)	79.00 - 79.75	1.0000	1.0000
L12	56	Safety Line 3/8	79.00 - 79.75	1.0000	1.0000
L12	85	CCI 4" x 0.75" Plate	79.00 - 79.75	1.0000	1.0000
L12	86	CCI 4" x 0.75" Plate	79.00 - 79.75	1.0000	1.0000
L12	87	CCI 4" x 0.75" Plate	79.00 - 79.75	1.0000	1.0000
L13	50	HB158-21U6S24-xxM_TMO (1-5/8)	78.75 - 79.00	1.0000	1.0000
L13	54	HB158-1-08U8-S8J18(1-5/8)	78.75 - 79.00	1.0000	1.0000
L13	56	Safety Line 3/8	78.75 - 79.00	1.0000	1.0000
L13	85	CCI 4" x 0.75" Plate	78.75 - 79.00	1.0000	1.0000
L13	86	CCI 4" x 0.75" Plate	78.75 - 79.00	1.0000	1.0000
L13	87	CCI 4" x 0.75" Plate	78.75 - 79.00	1.0000	1.0000
L14	50	HB158-21U6S24-xxM_TMO (1-5/8)	74.04 - 78.75	1.0000	1.0000
L14	54	HB158-1-08U8-S8J18(1-5/8)	74.04 - 78.75	1.0000	1.0000
L14	56	Safety Line 3/8	74.04 - 78.75	1.0000	1.0000
L14	74	MP3-03	74.04 - 75.21	1.0000	1.0000
L14	75	MP3-03	74.04 - 75.21	1.0000	1.0000
L14	76	MP3-03	74.04 - 75.21	1.0000	1.0000
L14	85	CCI 4" x 0.75" Plate	74.04 - 78.75	1.0000	1.0000
L14	86	CCI 4" x 0.75" Plate	74.04 - 78.75	1.0000	1.0000
L14	87	CCI 4" x 0.75" Plate	74.04 - 78.75	1.0000	1.0000
L15	50	HB158-21U6S24-xxM_TMO (1-5/8)	73.79 - 74.04	1.0000	1.0000
L15	54	HB158-1-08U8-S8J18(1-5/8)	73.79 - 74.04	1.0000	1.0000
L15	56	Safety Line 3/8	73.79 - 74.04	1.0000	1.0000
L15	74	MP3-03	73.79 - 74.04	1.0000	1.0000
L15	75	MP3-03	73.79 - 74.04	1.0000	1.0000
L15	76	MP3-03	73.79 - 74.04	1.0000	1.0000
L15	85	CCI 4" x 0.75" Plate	73.79 - 74.04	1.0000	1.0000
L15	86	CCI 4" x 0.75" Plate	73.79 - 74.04	1.0000	1.0000
L15	87	CCI 4" x 0.75" Plate	73.79 - 74.04	1.0000	1.0000
L16	50	HB158-21U6S24-xxM_TMO (1-5/8)	68.79 - 73.79	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L16	54	HB158-1-08U8-S8J18(1-5/8)	68.79 - 73.79	1.0000	1.0000
L16	56	Safety Line 3/8	68.79 - 73.79	1.0000	1.0000
L16	74	MP3-03	68.79 - 73.79	1.0000	1.0000
L16	75	MP3-03	68.79 - 73.79	1.0000	1.0000
L16	76	MP3-03	68.79 - 73.79	1.0000	1.0000
L16	85	CCI 4" x 0.75" Plate	68.79 - 73.79	1.0000	1.0000
L16	86	CCI 4" x 0.75" Plate	68.79 - 73.79	1.0000	1.0000
L16	87	CCI 4" x 0.75" Plate	68.79 - 73.79	1.0000	1.0000
L17	50	HB158-21U6S24-xxM_TMO (1-5/8)	63.79 - 68.79	1.0000	1.0000
L17	54	HB158-1-08U8-S8J18(1-5/8)	63.79 - 68.79	1.0000	1.0000
L17	56	Safety Line 3/8	63.79 - 68.79	1.0000	1.0000
L17	74	MP3-03	63.79 - 68.79	1.0000	1.0000
L17	75	MP3-03	63.79 - 68.79	1.0000	1.0000
L17	76	MP3-03	63.79 - 68.79	1.0000	1.0000
L17	85	CCI 4" x 0.75" Plate	63.79 - 68.79	1.0000	1.0000
L17	86	CCI 4" x 0.75" Plate	63.79 - 68.79	1.0000	1.0000
L17	87	CCI 4" x 0.75" Plate	63.79 - 68.79	1.0000	1.0000
L18	50	HB158-21U6S24-xxM_TMO (1-5/8)	60.00 - 63.79	1.0000	1.0000
L18	54	HB158-1-08U8-S8J18(1-5/8)	60.00 - 63.79	1.0000	1.0000
L18	56	Safety Line 3/8	60.00 - 63.79	1.0000	1.0000
L18	74	MP3-03	60.00 - 63.79	1.0000	1.0000
L18	75	MP3-03	60.00 - 63.79	1.0000	1.0000
L18	76	MP3-03	60.00 - 63.79	1.0000	1.0000
L18	85	CCI 4" x 0.75" Plate	60.25 - 63.79	1.0000	1.0000
L18	86	CCI 4" x 0.75" Plate	60.25 - 63.79	1.0000	1.0000
L18	87	CCI 4" x 0.75" Plate	60.25 - 63.79	1.0000	1.0000
L19	50	HB158-21U6S24-xxM_TMO (1-5/8)	59.75 - 60.00	1.0000	1.0000
L19	54	HB158-1-08U8-S8J18(1-5/8)	59.75 - 60.00	1.0000	1.0000
L19	56	Safety Line 3/8	59.75 - 60.00	1.0000	1.0000
L19	71	MP3-04	59.75 - 60.00	1.0000	1.0000
L19	72	MP3-04	59.75 - 60.00	1.0000	1.0000
L19	73	MP3-04	59.75 - 60.00	1.0000	1.0000
L20	50	HB158-21U6S24-xxM_TMO (1-5/8)	54.75 - 59.75	1.0000	1.0000
L20	54	HB158-1-08U8-S8J18(1-5/8)	54.75 - 59.75	1.0000	1.0000
L20	56	Safety Line 3/8	54.75 - 59.75	1.0000	1.0000
L20	71	MP3-04	54.75 - 59.75	1.0000	1.0000
L20	72	MP3-04	54.75 - 59.75	1.0000	1.0000
L20	73	MP3-04	54.75 - 59.75	1.0000	1.0000
L21	50	HB158-21U6S24-xxM_TMO (1-5/8)	49.75 - 54.75	1.0000	1.0000
L21	54	HB158-1-08U8-S8J18(1-5/8)	49.75 - 54.75	1.0000	1.0000
L21	56	Safety Line 3/8	49.75 - 54.75	1.0000	1.0000
L21	71	MP3-04	49.75 - 54.75	1.0000	1.0000
L21	72	MP3-04	49.75 - 54.75	1.0000	1.0000
L21	73	MP3-04	49.75 - 54.75	1.0000	1.0000
L21	82	CCI 4" x 0.75" Plate	49.75 - 50.25	1.0000	1.0000
L21	83	CCI 4" x 0.75" Plate	49.75 - 50.25	1.0000	1.0000
L21	84	CCI 4" x 0.75" Plate	49.75 - 50.25	1.0000	1.0000
L22	50	HB158-21U6S24-xxM_TMO (1-5/8)	47.83 - 49.75	1.0000	1.0000
L22	54	HB158-1-08U8-S8J18(1-5/8)	47.83 - 49.75	1.0000	1.0000
L22	56	Safety Line 3/8	47.83 - 49.75	1.0000	1.0000
L22	71	MP3-04	47.83 - 49.75	1.0000	1.0000
L22	72	MP3-04	47.83 - 49.75	1.0000	1.0000
L22	73	MP3-04	47.83 - 49.75	1.0000	1.0000
L22	82	CCI 4" x 0.75" Plate	47.83 - 49.75	1.0000	1.0000
L22	83	CCI 4" x 0.75" Plate	47.83 - 49.75	1.0000	1.0000
L22	84	CCI 4" x 0.75" Plate	47.83 - 49.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L23	50	HB158-21U6S24-xxM_TMO (1-5/8)	47.58 - 47.83	1.0000	1.0000
L23	54	HB158-1-08U8-S8J18(1-5/8)	47.58 - 47.83	1.0000	1.0000
L23	56	Safety Line 3/8	47.58 - 47.83	1.0000	1.0000
L23	71	MP3-04	47.58 - 47.83	1.0000	1.0000
L23	72	MP3-04	47.58 - 47.83	1.0000	1.0000
L23	73	MP3-04	47.58 - 47.83	1.0000	1.0000
L23	82	CCI 4" x 0.75" Plate	47.58 - 47.83	1.0000	1.0000
L23	83	CCI 4" x 0.75" Plate	47.58 - 47.83	1.0000	1.0000
L23	84	CCI 4" x 0.75" Plate	47.58 - 47.83	1.0000	1.0000
L24	50	HB158-21U6S24-xxM_TMO (1-5/8)	43.00 - 47.58	1.0000	1.0000
L24	54	HB158-1-08U8-S8J18(1-5/8)	43.00 - 47.58	1.0000	1.0000
L24	56	Safety Line 3/8	43.00 - 47.58	1.0000	1.0000
L24	61	FP 3.25 x 1.25 Reinforcement	43.00 - 44.00	1.0000	1.0000
L24	62	FP 3.25 x 1.25 Reinforcement	43.00 - 44.00	1.0000	1.0000
L24	63	FP 3.25 x 1.25 Reinforcement	43.00 - 44.00	1.0000	1.0000
L24	71	MP3-04	43.00 - 47.58	1.0000	1.0000
L24	72	MP3-04	43.00 - 47.58	1.0000	1.0000
L24	73	MP3-04	43.00 - 47.58	1.0000	1.0000
L24	82	CCI 4" x 0.75" Plate	43.00 - 47.58	1.0000	1.0000
L24	83	CCI 4" x 0.75" Plate	43.00 - 47.58	1.0000	1.0000
L24	84	CCI 4" x 0.75" Plate	43.00 - 47.58	1.0000	1.0000
L25	50	HB158-21U6S24-xxM_TMO (1-5/8)	42.75 - 43.00	1.0000	1.0000
L25	54	HB158-1-08U8-S8J18(1-5/8)	42.75 - 43.00	1.0000	1.0000
L25	56	Safety Line 3/8	42.75 - 43.00	1.0000	1.0000
L25	61	FP 3.25 x 1.25 Reinforcement	42.75 - 43.00	1.0000	1.0000
L25	62	FP 3.25 x 1.25 Reinforcement	42.75 - 43.00	1.0000	1.0000
L25	63	FP 3.25 x 1.25 Reinforcement	42.75 - 43.00	1.0000	1.0000
L25	71	MP3-04	42.75 - 43.00	1.0000	1.0000
L25	72	MP3-04	42.75 - 43.00	1.0000	1.0000
L25	73	MP3-04	42.75 - 43.00	1.0000	1.0000
L25	82	CCI 4" x 0.75" Plate	42.75 - 43.00	1.0000	1.0000
L25	83	CCI 4" x 0.75" Plate	42.75 - 43.00	1.0000	1.0000
L25	84	CCI 4" x 0.75" Plate	42.75 - 43.00	1.0000	1.0000
L26	50	HB158-21U6S24-xxM_TMO (1-5/8)	37.75 - 42.75	1.0000	1.0000
L26	54	HB158-1-08U8-S8J18(1-5/8)	37.75 - 42.75	1.0000	1.0000
L26	56	Safety Line 3/8	37.75 - 42.75	1.0000	1.0000
L26	61	FP 3.25 x 1.25 Reinforcement	37.75 - 42.75	1.0000	1.0000
L26	62	FP 3.25 x 1.25 Reinforcement	37.75 - 42.75	1.0000	1.0000
L26	63	FP 3.25 x 1.25 Reinforcement	37.75 - 42.75	1.0000	1.0000
L26	71	MP3-04	37.75 - 42.75	1.0000	1.0000
L26	72	MP3-04	37.75 - 42.75	1.0000	1.0000
L26	73	MP3-04	37.75 - 42.75	1.0000	1.0000
L26	82	CCI 4" x 0.75" Plate	37.75 - 42.75	1.0000	1.0000
L26	83	CCI 4" x 0.75" Plate	37.75 - 42.75	1.0000	1.0000
L26	84	CCI 4" x 0.75" Plate	37.75 - 42.75	1.0000	1.0000
L27	50	HB158-21U6S24-xxM_TMO (1-5/8)	34.50 - 37.75	1.0000	1.0000
L27	54	HB158-1-08U8-S8J18(1-5/8)	34.50 - 37.75	1.0000	1.0000
L27	56	Safety Line 3/8	34.50 - 37.75	1.0000	1.0000
L27	61	FP 3.25 x 1.25 Reinforcement	34.50 - 37.75	1.0000	1.0000
L27	62	FP 3.25 x 1.25 Reinforcement	34.50 - 37.75	1.0000	1.0000
L27	63	FP 3.25 x 1.25 Reinforcement	34.50 - 37.75	1.0000	1.0000
L27	71	MP3-04	34.50 - 37.75	1.0000	1.0000
L27	72	MP3-04	34.50 - 37.75	1.0000	1.0000
L27	73	MP3-04	34.50 - 37.75	1.0000	1.0000
L27	82	CCI 4" x 0.75" Plate	34.50 - 37.75	1.0000	1.0000
L27	83	CCI 4" x 0.75" Plate	34.50 - 37.75	1.0000	1.0000
L27	84	CCI 4" x 0.75" Plate	34.50 - 37.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L28	50	HB158-21U6S24-xxM_TMO (1-5/8)	34.25 - 34.50	1.0000	1.0000
L28	54	HB158-1-08U8-S8J18(1-5/8)	34.25 - 34.50	1.0000	1.0000
L28	56	Safety Line 3/8	34.25 - 34.50	1.0000	1.0000
L28	61	FP 3.25 x 1.25 Reinforcement	34.25 - 34.50	1.0000	1.0000
L28	62	FP 3.25 x 1.25 Reinforcement	34.25 - 34.50	1.0000	1.0000
L28	63	FP 3.25 x 1.25 Reinforcement	34.25 - 34.50	1.0000	1.0000
L28	71	MP3-04	34.25 - 34.50	1.0000	1.0000
L28	72	MP3-04	34.25 - 34.50	1.0000	1.0000
L28	73	MP3-04	34.25 - 34.50	1.0000	1.0000
L28	82	CCI 4" x 0.75" Plate	34.25 - 34.50	1.0000	1.0000
L28	83	CCI 4" x 0.75" Plate	34.25 - 34.50	1.0000	1.0000
L28	84	CCI 4" x 0.75" Plate	34.25 - 34.50	1.0000	1.0000
L29	50	HB158-21U6S24-xxM_TMO (1-5/8)	30.00 - 34.25	1.0000	1.0000
L29	54	HB158-1-08U8-S8J18(1-5/8)	30.00 - 34.25	1.0000	1.0000
L29	56	Safety Line 3/8	30.00 - 34.25	1.0000	1.0000
L29	61	FP 3.25 x 1.25 Reinforcement	30.00 - 34.25	1.0000	1.0000
L29	62	FP 3.25 x 1.25 Reinforcement	30.00 - 34.25	1.0000	1.0000
L29	63	FP 3.25 x 1.25 Reinforcement	30.00 - 34.25	1.0000	1.0000
L29	71	MP3-04	30.00 - 34.25	1.0000	1.0000
L29	72	MP3-04	30.00 - 34.25	1.0000	1.0000
L29	73	MP3-04	30.00 - 34.25	1.0000	1.0000
L29	82	CCI 4" x 0.75" Plate	30.25 - 34.25	1.0000	1.0000
L29	83	CCI 4" x 0.75" Plate	30.25 - 34.25	1.0000	1.0000
L29	84	CCI 4" x 0.75" Plate	30.25 - 34.25	1.0000	1.0000
L30	50	HB158-21U6S24-xxM_TMO (1-5/8)	29.75 - 30.00	1.0000	1.0000
L30	54	HB158-1-08U8-S8J18(1-5/8)	29.75 - 30.00	1.0000	1.0000
L30	56	Safety Line 3/8	29.75 - 30.00	1.0000	1.0000
L30	68	MP3-05	29.75 - 30.00	1.0000	1.0000
L30	69	MP3-05	29.75 - 30.00	1.0000	1.0000
L30	70	MP3-05	29.75 - 30.00	1.0000	1.0000
L31	50	HB158-21U6S24-xxM_TMO (1-5/8)	25.58 - 29.75	1.0000	1.0000
L31	54	HB158-1-08U8-S8J18(1-5/8)	25.58 - 29.75	1.0000	1.0000
L31	56	Safety Line 3/8	25.58 - 29.75	1.0000	1.0000
L31	68	MP3-05	25.58 - 29.75	1.0000	1.0000
L31	69	MP3-05	25.58 - 29.75	1.0000	1.0000
L31	70	MP3-05	25.58 - 29.75	1.0000	1.0000
L31	79	CCI 4" x 0.75" Plate	25.58 - 27.00	1.0000	1.0000
L31	80	CCI 4" x 0.75" Plate	25.58 - 27.00	1.0000	1.0000
L31	81	CCI 4" x 0.75" Plate	25.58 - 27.00	1.0000	1.0000
L32	50	HB158-21U6S24-xxM_TMO (1-5/8)	25.33 - 25.58	1.0000	1.0000
L32	54	HB158-1-08U8-S8J18(1-5/8)	25.33 - 25.58	1.0000	1.0000
L32	56	Safety Line 3/8	25.33 - 25.58	1.0000	1.0000
L32	68	MP3-05	25.33 - 25.58	1.0000	1.0000
L32	69	MP3-05	25.33 - 25.58	1.0000	1.0000
L32	70	MP3-05	25.33 - 25.58	1.0000	1.0000
L32	79	CCI 4" x 0.75" Plate	25.33 - 25.58	1.0000	1.0000
L32	80	CCI 4" x 0.75" Plate	25.33 - 25.58	1.0000	1.0000
L32	81	CCI 4" x 0.75" Plate	25.33 - 25.58	1.0000	1.0000
L33	50	HB158-21U6S24-xxM_TMO (1-5/8)	20.75 - 25.33	1.0000	1.0000
L33	54	HB158-1-08U8-S8J18(1-5/8)	20.75 - 25.33	1.0000	1.0000
L33	56	Safety Line 3/8	20.75 - 25.33	1.0000	1.0000
L33	58	FP 3.50 x 1.25 Reinforcement	20.75 - 22.00	1.0000	1.0000
L33	59	FP 3.50 x 1.25 Reinforcement	20.75 - 22.00	1.0000	1.0000
L33	60	FP 3.50 x 1.25 Reinforcement	20.75 - 22.00	1.0000	1.0000
L33	68	MP3-05	20.75 - 25.33	1.0000	1.0000
L33	69	MP3-05	20.75 - 25.33	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L33	70	MP3-05	20.75 - 25.33	1.0000	1.0000
L33	79	CCI 4" x 0.75" Plate	20.75 - 25.33	1.0000	1.0000
L33	80	CCI 4" x 0.75" Plate	20.75 - 25.33	1.0000	1.0000
L33	81	CCI 4" x 0.75" Plate	20.75 - 25.33	1.0000	1.0000
L34	50	HB158-21U6S24-xxM_TMO (1-5/8)	20.50 - 20.75	1.0000	1.0000
L34	54	HB158-1-08U8-S8J18(1-5/8)	20.50 - 20.75	1.0000	1.0000
L34	56	Safety Line 3/8	20.50 - 20.75	1.0000	1.0000
L34	58	FP 3.50 x 1.25 Reinforcement	20.50 - 20.75	1.0000	1.0000
L34	59	FP 3.50 x 1.25 Reinforcement	20.50 - 20.75	1.0000	1.0000
L34	60	FP 3.50 x 1.25 Reinforcement	20.50 - 20.75	1.0000	1.0000
L34	68	MP3-05	20.50 - 20.75	1.0000	1.0000
L34	69	MP3-05	20.50 - 20.75	1.0000	1.0000
L34	70	MP3-05	20.50 - 20.75	1.0000	1.0000
L34	79	CCI 4" x 0.75" Plate	20.50 - 20.75	1.0000	1.0000
L34	80	CCI 4" x 0.75" Plate	20.50 - 20.75	1.0000	1.0000
L34	81	CCI 4" x 0.75" Plate	20.50 - 20.75	1.0000	1.0000
L35	50	HB158-21U6S24-xxM_TMO (1-5/8)	17.58 - 20.50	1.0000	1.0000
L35	54	HB158-1-08U8-S8J18(1-5/8)	17.58 - 20.50	1.0000	1.0000
L35	56	Safety Line 3/8	17.58 - 20.50	1.0000	1.0000
L35	58	FP 3.50 x 1.25 Reinforcement	17.58 - 20.50	1.0000	1.0000
L35	59	FP 3.50 x 1.25 Reinforcement	17.58 - 20.50	1.0000	1.0000
L35	60	FP 3.50 x 1.25 Reinforcement	17.58 - 20.50	1.0000	1.0000
L35	68	MP3-05	17.58 - 20.50	1.0000	1.0000
L35	69	MP3-05	17.58 - 20.50	1.0000	1.0000
L35	70	MP3-05	17.58 - 20.50	1.0000	1.0000
L35	79	CCI 4" x 0.75" Plate	17.58 - 20.50	1.0000	1.0000
L35	80	CCI 4" x 0.75" Plate	17.58 - 20.50	1.0000	1.0000
L35	81	CCI 4" x 0.75" Plate	17.58 - 20.50	1.0000	1.0000
L36	50	HB158-21U6S24-xxM_TMO (1-5/8)	17.33 - 17.58	1.0000	1.0000
L36	54	HB158-1-08U8-S8J18(1-5/8)	17.33 - 17.58	1.0000	1.0000
L36	56	Safety Line 3/8	17.33 - 17.58	1.0000	1.0000
L36	58	FP 3.50 x 1.25 Reinforcement	17.33 - 17.58	1.0000	1.0000
L36	59	FP 3.50 x 1.25 Reinforcement	17.33 - 17.58	1.0000	1.0000
L36	60	FP 3.50 x 1.25 Reinforcement	17.33 - 17.58	1.0000	1.0000
L36	68	MP3-05	17.33 - 17.58	1.0000	1.0000
L36	69	MP3-05	17.33 - 17.58	1.0000	1.0000
L36	70	MP3-05	17.33 - 17.58	1.0000	1.0000
L36	79	CCI 4" x 0.75" Plate	17.33 - 17.58	1.0000	1.0000
L36	80	CCI 4" x 0.75" Plate	17.33 - 17.58	1.0000	1.0000
L36	81	CCI 4" x 0.75" Plate	17.33 - 17.58	1.0000	1.0000
L37	50	HB158-21U6S24-xxM_TMO (1-5/8)	13.67 - 17.33	1.0000	1.0000
L37	54	HB158-1-08U8-S8J18(1-5/8)	13.67 - 17.33	1.0000	1.0000
L37	56	Safety Line 3/8	13.67 - 17.33	1.0000	1.0000
L37	58	FP 3.50 x 1.25 Reinforcement	13.67 - 17.33	1.0000	1.0000
L37	59	FP 3.50 x 1.25 Reinforcement	13.67 - 17.33	1.0000	1.0000
L37	60	FP 3.50 x 1.25 Reinforcement	13.67 - 17.33	1.0000	1.0000
L37	66	MP3-04	13.67 - 14.88	1.0000	1.0000
L37	67	MP3-04	13.67 - 14.88	1.0000	1.0000
L37	68	MP3-05	13.67 - 17.33	1.0000	1.0000
L37	69	MP3-05	13.67 - 17.33	1.0000	1.0000
L37	70	MP3-05	13.67 - 17.33	1.0000	1.0000
L37	79	CCI 4" x 0.75" Plate	17.00 - 17.33	1.0000	1.0000
L37	80	CCI 4" x 0.75" Plate	17.00 - 17.33	1.0000	1.0000
L37	81	CCI 4" x 0.75" Plate	17.00 - 17.33	1.0000	1.0000
L38	50	HB158-21U6S24-xxM_TMO (1-5/8)	13.42 - 13.67	1.0000	1.0000
L38	54	HB158-1-08U8-S8J18(1-5/8)	13.42 - 13.67	1.0000	1.0000
L38	56	Safety Line 3/8	13.42 - 13.67	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L38	58	FP 3.50 x 1.25 Reinforcement	13.42 - 13.67	1.0000	1.0000
L38	59	FP 3.50 x 1.25 Reinforcement	13.42 - 13.67	1.0000	1.0000
L38	60	FP 3.50 x 1.25 Reinforcement	13.42 - 13.67	1.0000	1.0000
L38	66	MP3-04	13.42 - 13.67	1.0000	1.0000
L38	67	MP3-04	13.42 - 13.67	1.0000	1.0000
L38	68	MP3-05	13.42 - 13.67	1.0000	1.0000
L38	69	MP3-05	13.42 - 13.67	1.0000	1.0000
L38	70	MP3-05	13.42 - 13.67	1.0000	1.0000
L39	50	HB158-21U6S24-xxM_TMO (1-5/8)	8.42 - 13.42	1.0000	1.0000
L39	54	HB158-1-08U8-S8J18(1-5/8)	8.42 - 13.42	1.0000	1.0000
L39	56	Safety Line 3/8	8.42 - 13.42	1.0000	1.0000
L39	58	FP 3.50 x 1.25 Reinforcement	8.42 - 13.42	1.0000	1.0000
L39	59	FP 3.50 x 1.25 Reinforcement	8.42 - 13.42	1.0000	1.0000
L39	60	FP 3.50 x 1.25 Reinforcement	8.42 - 13.42	1.0000	1.0000
L39	65	MP3-05	8.42 - 8.50	1.0000	1.0000
L39	66	MP3-04	8.42 - 13.42	1.0000	1.0000
L39	67	MP3-04	8.42 - 13.42	1.0000	1.0000
L39	68	MP3-05	11.25 - 13.42	1.0000	1.0000
L39	69	MP3-05	8.42 - 13.42	1.0000	1.0000
L39	70	MP3-05	8.42 - 13.42	1.0000	1.0000
L40	50	HB158-21U6S24-xxM_TMO (1-5/8)	6.08 - 8.42	1.0000	1.0000
L40	54	HB158-1-08U8-S8J18(1-5/8)	6.08 - 8.42	1.0000	1.0000
L40	56	Safety Line 3/8	6.08 - 8.42	1.0000	1.0000
L40	58	FP 3.50 x 1.25 Reinforcement	6.08 - 8.42	1.0000	1.0000
L40	59	FP 3.50 x 1.25 Reinforcement	6.08 - 8.42	1.0000	1.0000
L40	60	FP 3.50 x 1.25 Reinforcement	6.08 - 8.42	1.0000	1.0000
L40	65	MP3-05	6.08 - 8.42	1.0000	1.0000
L40	66	MP3-04	6.08 - 8.42	1.0000	1.0000
L40	67	MP3-04	6.08 - 8.42	1.0000	1.0000
L40	69	MP3-05	6.08 - 8.42	1.0000	1.0000
L40	70	MP3-05	6.08 - 8.42	1.0000	1.0000
L41	50	HB158-21U6S24-xxM_TMO (1-5/8)	5.83 - 6.08	1.0000	1.0000
L41	54	HB158-1-08U8-S8J18(1-5/8)	5.83 - 6.08	1.0000	1.0000
L41	56	Safety Line 3/8	5.83 - 6.08	1.0000	1.0000
L41	58	FP 3.50 x 1.25 Reinforcement	5.83 - 6.08	1.0000	1.0000
L41	59	FP 3.50 x 1.25 Reinforcement	5.83 - 6.08	1.0000	1.0000
L41	60	FP 3.50 x 1.25 Reinforcement	5.83 - 6.08	1.0000	1.0000
L41	65	MP3-05	5.83 - 6.08	1.0000	1.0000
L41	66	MP3-04	5.83 - 6.08	1.0000	1.0000
L41	67	MP3-04	5.83 - 6.08	1.0000	1.0000
L41	69	MP3-05	5.83 - 6.08	1.0000	1.0000
L41	70	MP3-05	5.83 - 6.08	1.0000	1.0000
L42	50	HB158-21U6S24-xxM_TMO (1-5/8)	0.83 - 5.83	1.0000	1.0000
L42	54	HB158-1-08U8-S8J18(1-5/8)	0.83 - 5.83	1.0000	1.0000
L42	56	Safety Line 3/8	0.83 - 5.83	1.0000	1.0000
L42	58	FP 3.50 x 1.25 Reinforcement	0.83 - 5.83	1.0000	1.0000
L42	59	FP 3.50 x 1.25 Reinforcement	0.83 - 5.83	1.0000	1.0000
L42	60	FP 3.50 x 1.25 Reinforcement	0.83 - 5.83	1.0000	1.0000
L42	65	MP3-05	0.83 - 5.83	1.0000	1.0000
L42	66	MP3-04	4.88 - 5.83	1.0000	1.0000
L42	67	MP3-04	4.88 - 5.83	1.0000	1.0000
L42	69	MP3-05	0.83 - 5.83	1.0000	1.0000
L42	70	MP3-05	0.83 - 5.83	1.0000	1.0000
L43	50	HB158-21U6S24-xxM_TMO (1-5/8)	0.00 - 0.83	1.0000	1.0000
L43	54	HB158-1-08U8-S8J18(1-5/8)	0.00 - 0.83	1.0000	1.0000
L43	56	Safety Line 3/8	0.00 - 0.83	1.0000	1.0000
L43	58	FP 3.50 x 1.25 Reinforcement	0.00 - 0.83	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L43	59	FP 3.50 x 1.25 Reinforcement	0.00 - 0.83	1.0000	1.0000
L43	60	FP 3.50 x 1.25 Reinforcement	0.00 - 0.83	1.0000	1.0000
L43	65	MP3-05	0.00 - 0.83	1.0000	1.0000
L43	69	MP3-05	0.00 - 0.83	1.0000	1.0000
L43	70	MP3-05	0.00 - 0.83	1.0000	1.0000

Effective Width of Flat Linear Attachments / Feed Lines

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L4	88	CCI 4" x 0.75" Plate	100.00 - 100.42	Auto	1.0000
L4	89	CCI 4" x 0.75" Plate	100.00 - 100.42	Auto	1.0000
L4	90	CCI 4" x 0.75" Plate	100.00 - 100.42	Auto	1.0000
L5	88	CCI 4" x 0.75" Plate	98.50 - 100.00	Auto	1.0000
L5	89	CCI 4" x 0.75" Plate	98.50 - 100.00	Auto	1.0000
L5	90	CCI 4" x 0.75" Plate	98.50 - 100.00	Auto	1.0000
L6	88	CCI 4" x 0.75" Plate	98.25 - 98.50	Auto	1.0000
L6	89	CCI 4" x 0.75" Plate	98.25 - 98.50	Auto	1.0000
L6	90	CCI 4" x 0.75" Plate	98.25 - 98.50	Auto	1.0000
L7	88	CCI 4" x 0.75" Plate	93.25 - 98.25	Auto	1.0000
L7	89	CCI 4" x 0.75" Plate	93.25 - 98.25	Auto	1.0000
L7	90	CCI 4" x 0.75" Plate	93.25 - 98.25	Auto	1.0000
L8	88	CCI 4" x 0.75" Plate	90.00 - 93.25	Auto	1.0000
L8	89	CCI 4" x 0.75" Plate	90.00 - 93.25	Auto	1.0000
L8	90	CCI 4" x 0.75" Plate	90.00 - 93.25	Auto	1.0000
L8	92	CCI 4" x 0.75" Plate	90.00 - 92.67	Auto	1.0000
L8	93	CCI 4" x 0.75" Plate	90.00 - 92.67	Auto	1.0000
L8	94	CCI 4" x 0.75" Plate	90.00 - 92.67	Auto	1.0000
L8	100	5" x 3.25" Filler Plate	90.00 - 92.67	Auto	1.0000
L8	101	5" x 3.25" Filler Plate	90.00 - 92.67	Auto	1.0000
L8	102	5" x 3.25" Filler Plate	90.00 - 92.67	Auto	1.0000
L9	88	CCI 4" x 0.75" Plate	89.75 - 90.00	Auto	1.0000
L9	89	CCI 4" x 0.75" Plate	89.75 - 90.00	Auto	1.0000
L9	90	CCI 4" x 0.75" Plate	89.75 - 90.00	Auto	1.0000
L9	92	CCI 4" x 0.75" Plate	89.75 - 90.00	Auto	1.0000
L9	93	CCI 4" x 0.75" Plate	89.75 - 90.00	Auto	1.0000
L9	94	CCI 4" x 0.75" Plate	89.75 - 90.00	Auto	1.0000
L9	96	5" x 4" Filler Plate	89.75 - 90.00	Auto	1.0000
L9	97	5" x 4" Filler Plate	89.75 - 90.00	Auto	1.0000
L9	98	5" x 4" Filler Plate	89.75 - 90.00	Auto	1.0000
L10	88	CCI 4" x 0.75" Plate	84.75 - 89.75	Auto	1.0000
L10	89	CCI 4" x 0.75" Plate	84.75 - 89.75	Auto	1.0000
L10	90	CCI 4" x 0.75" Plate	84.75 - 89.75	Auto	1.0000
L10	92	CCI 4" x 0.75" Plate	87.33 - 89.75	Auto	1.0000
L10	93	CCI 4" x 0.75" Plate	87.33 - 89.75	Auto	1.0000
L10	94	CCI 4" x 0.75" Plate	87.33 - 89.75	Auto	1.0000
L10	96	5" x 4" Filler Plate	87.33 - 89.75	Auto	1.0000
L10	97	5" x 4" Filler Plate	87.33 - 89.75	Auto	1.0000
L10	98	5" x 4" Filler Plate	87.33 - 89.75	Auto	1.0000
L11	85	CCI 4" x 0.75" Plate	79.75 - 80.25	Auto	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L11	86	CCI 4" x 0.75" Plate	79.75 - 80.25	Auto	1.0000
L11	87	CCI 4" x 0.75" Plate	79.75 - 80.25	Auto	1.0000
L11	88	CCI 4" x 0.75" Plate	84.33 - 84.75	Auto	1.0000
L11	89	CCI 4" x 0.75" Plate	84.33 - 84.75	Auto	1.0000
L11	90	CCI 4" x 0.75" Plate	84.33 - 84.75	Auto	1.0000
L12	85	CCI 4" x 0.75" Plate	79.00 - 79.75	Auto	1.0000
L12	86	CCI 4" x 0.75" Plate	79.00 - 79.75	Auto	1.0000
L12	87	CCI 4" x 0.75" Plate	79.00 - 79.75	Auto	1.0000
L13	85	CCI 4" x 0.75" Plate	78.75 - 79.00	Auto	1.0000
L13	86	CCI 4" x 0.75" Plate	78.75 - 79.00	Auto	1.0000
L13	87	CCI 4" x 0.75" Plate	78.75 - 79.00	Auto	1.0000
L14	74	MP3-03	74.04 - 75.21	Auto	1.0000
L14	75	MP3-03	74.04 - 75.21	Auto	1.0000
L14	76	MP3-03	74.04 - 75.21	Auto	1.0000
L14	85	CCI 4" x 0.75" Plate	74.04 - 78.75	Auto	1.0000
L14	86	CCI 4" x 0.75" Plate	74.04 - 78.75	Auto	1.0000
L14	87	CCI 4" x 0.75" Plate	74.04 - 78.75	Auto	1.0000
L15	74	MP3-03	73.79 - 74.04	Auto	1.0000
L15	75	MP3-03	73.79 - 74.04	Auto	1.0000
L15	76	MP3-03	73.79 - 74.04	Auto	1.0000
L15	85	CCI 4" x 0.75" Plate	73.79 - 74.04	Auto	1.0000
L15	86	CCI 4" x 0.75" Plate	73.79 - 74.04	Auto	1.0000
L15	87	CCI 4" x 0.75" Plate	73.79 - 74.04	Auto	1.0000
L16	74	MP3-03	68.79 - 73.79	Auto	1.0000
L16	75	MP3-03	68.79 - 73.79	Auto	1.0000
L16	76	MP3-03	68.79 - 73.79	Auto	1.0000
L16	85	CCI 4" x 0.75" Plate	68.79 - 73.79	Auto	1.0000
L16	86	CCI 4" x 0.75" Plate	68.79 - 73.79	Auto	1.0000
L16	87	CCI 4" x 0.75" Plate	68.79 - 73.79	Auto	1.0000
L17	74	MP3-03	63.79 - 68.79	Auto	1.0000
L17	75	MP3-03	63.79 - 68.79	Auto	1.0000
L17	76	MP3-03	63.79 - 68.79	Auto	1.0000
L17	85	CCI 4" x 0.75" Plate	63.79 - 68.79	Auto	1.0000
L17	86	CCI 4" x 0.75" Plate	63.79 - 68.79	Auto	1.0000
L17	87	CCI 4" x 0.75" Plate	63.79 - 68.79	Auto	1.0000
L18	74	MP3-03	60.00 - 63.79	Auto	1.0000
L18	75	MP3-03	60.00 - 63.79	Auto	1.0000
L18	76	MP3-03	60.00 - 63.79	Auto	1.0000
L18	85	CCI 4" x 0.75" Plate	60.25 - 63.79	Auto	1.0000
L18	86	CCI 4" x 0.75" Plate	60.25 - 63.79	Auto	1.0000
L18	87	CCI 4" x 0.75" Plate	60.25 - 63.79	Auto	1.0000
L19	71	MP3-04	59.75 - 60.00	Auto	1.0000
L19	72	MP3-04	59.75 - 60.00	Auto	1.0000
L19	73	MP3-04	59.75 - 60.00	Auto	1.0000
L20	71	MP3-04	54.75 - 59.75	Auto	1.0000
L20	72	MP3-04	54.75 - 59.75	Auto	1.0000
L20	73	MP3-04	54.75 - 59.75	Auto	1.0000
L21	71	MP3-04	49.75 - 54.75	Auto	1.0000
L21	72	MP3-04	49.75 - 54.75	Auto	1.0000
L21	73	MP3-04	49.75 - 54.75	Auto	1.0000
L21	82	CCI 4" x 0.75" Plate	49.75 - 50.25	Auto	1.0000
L21	83	CCI 4" x 0.75" Plate	49.75 - 50.25	Auto	1.0000
L21	84	CCI 4" x 0.75" Plate	49.75 - 50.25	Auto	1.0000
L22	71	MP3-04	47.83 - 49.75	Auto	1.0000
L22	72	MP3-04	47.83 - 49.75	Auto	1.0000
L22	73	MP3-04	47.83 - 49.75	Auto	1.0000
L22	82	CCI 4" x 0.75" Plate	47.83 - 49.75	Auto	1.0000
L22	83	CCI 4" x 0.75" Plate	47.83 - 49.75	Auto	1.0000
L22	84	CCI 4" x 0.75" Plate	47.83 - 49.75	Auto	1.0000
L23	71	MP3-04	47.58 - 47.83	Auto	1.0000
L23	72	MP3-04	47.58 - 47.83	Auto	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L23	73	MP3-04	47.58 - 47.83	Auto	1.0000
L23	82	CCI 4" x 0.75" Plate	47.58 - 47.83	Auto	1.0000
L23	83	CCI 4" x 0.75" Plate	47.58 - 47.83	Auto	1.0000
L23	84	CCI 4" x 0.75" Plate	47.58 - 47.83	Auto	1.0000
L24	61	FP 3.25 x 1.25 Reinforcement	43.00 - 44.00	Auto	1.0000
L24	62	FP 3.25 x 1.25 Reinforcement	43.00 - 44.00	Auto	1.0000
L24	63	FP 3.25 x 1.25 Reinforcement	43.00 - 44.00	Auto	1.0000
L24	71	MP3-04	43.00 - 47.58	Auto	1.0000
L24	72	MP3-04	43.00 - 47.58	Auto	1.0000
L24	73	MP3-04	43.00 - 47.58	Auto	1.0000
L24	82	CCI 4" x 0.75" Plate	43.00 - 47.58	Auto	1.0000
L24	83	CCI 4" x 0.75" Plate	43.00 - 47.58	Auto	1.0000
L24	84	CCI 4" x 0.75" Plate	43.00 - 47.58	Auto	1.0000
L25	61	FP 3.25 x 1.25 Reinforcement	42.75 - 43.00	Auto	1.0000
L25	62	FP 3.25 x 1.25 Reinforcement	42.75 - 43.00	Auto	1.0000
L25	63	FP 3.25 x 1.25 Reinforcement	42.75 - 43.00	Auto	1.0000
L25	71	MP3-04	42.75 - 43.00	Auto	1.0000
L25	72	MP3-04	42.75 - 43.00	Auto	1.0000
L25	73	MP3-04	42.75 - 43.00	Auto	1.0000
L25	82	CCI 4" x 0.75" Plate	42.75 - 43.00	Auto	1.0000
L25	83	CCI 4" x 0.75" Plate	42.75 - 43.00	Auto	1.0000
L25	84	CCI 4" x 0.75" Plate	42.75 - 43.00	Auto	1.0000
L26	61	FP 3.25 x 1.25 Reinforcement	37.75 - 42.75	Auto	1.0000
L26	62	FP 3.25 x 1.25 Reinforcement	37.75 - 42.75	Auto	1.0000
L26	63	FP 3.25 x 1.25 Reinforcement	37.75 - 42.75	Auto	1.0000
L26	71	MP3-04	37.75 - 42.75	Auto	1.0000
L26	72	MP3-04	37.75 - 42.75	Auto	1.0000
L26	73	MP3-04	37.75 - 42.75	Auto	1.0000
L26	82	CCI 4" x 0.75" Plate	37.75 - 42.75	Auto	1.0000
L26	83	CCI 4" x 0.75" Plate	37.75 - 42.75	Auto	1.0000
L26	84	CCI 4" x 0.75" Plate	37.75 - 42.75	Auto	1.0000
L27	61	FP 3.25 x 1.25 Reinforcement	34.50 - 37.75	Auto	1.0000
L27	62	FP 3.25 x 1.25 Reinforcement	34.50 - 37.75	Auto	1.0000
L27	63	FP 3.25 x 1.25 Reinforcement	34.50 - 37.75	Auto	1.0000
L27	71	MP3-04	34.50 - 37.75	Auto	1.0000
L27	72	MP3-04	34.50 - 37.75	Auto	1.0000
L27	73	MP3-04	34.50 - 37.75	Auto	1.0000
L27	82	CCI 4" x 0.75" Plate	34.50 - 37.75	Auto	1.0000
L27	83	CCI 4" x 0.75" Plate	34.50 - 37.75	Auto	1.0000
L27	84	CCI 4" x 0.75" Plate	34.50 - 37.75	Auto	1.0000
L28	61	FP 3.25 x 1.25 Reinforcement	34.25 - 34.50	Auto	1.0000
L28	62	FP 3.25 x 1.25 Reinforcement	34.25 - 34.50	Auto	1.0000
L28	63	FP 3.25 x 1.25 Reinforcement	34.25 - 34.50	Auto	1.0000
L28	71	MP3-04	34.25 - 34.50	Auto	1.0000
L28	72	MP3-04	34.25 - 34.50	Auto	1.0000
L28	73	MP3-04	34.25 - 34.50	Auto	1.0000
L28	82	CCI 4" x 0.75" Plate	34.25 - 34.50	Auto	1.0000
L28	83	CCI 4" x 0.75" Plate	34.25 - 34.50	Auto	1.0000
L28	84	CCI 4" x 0.75" Plate	34.25 - 34.50	Auto	1.0000
L29	61	FP 3.25 x 1.25 Reinforcement	30.00 - 34.25	Auto	1.0000
L29	62	FP 3.25 x 1.25 Reinforcement	30.00 - 34.25	Auto	1.0000
L29	63	FP 3.25 x 1.25 Reinforcement	30.00 - 34.25	Auto	1.0000
L29	71	MP3-04	30.00 - 34.25	Auto	1.0000
L29	72	MP3-04	30.00 - 34.25	Auto	1.0000
L29	73	MP3-04	30.00 - 34.25	Auto	1.0000
L29	82	CCI 4" x 0.75" Plate	30.25 - 34.25	Auto	1.0000
L29	83	CCI 4" x 0.75" Plate	30.25 - 34.25	Auto	1.0000
L29	84	CCI 4" x 0.75" Plate	30.25 - 34.25	Auto	1.0000
L30	68	MP3-05	29.75 - 30.00	Auto	1.0000
L30	69	MP3-05	29.75 - 30.00	Auto	1.0000
L30	70	MP3-05	29.75 - 30.00	Auto	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L31	68	MP3-05	25.58 - 29.75	Auto	1.0000
L31	69	MP3-05	25.58 - 29.75	Auto	1.0000
L31	70	MP3-05	25.58 - 29.75	Auto	1.0000
L31	79	CCI 4" x 0.75" Plate	25.58 - 27.00	Auto	1.0000
L31	80	CCI 4" x 0.75" Plate	25.58 - 27.00	Auto	1.0000
L31	81	CCI 4" x 0.75" Plate	25.58 - 27.00	Auto	1.0000
L32	68	MP3-05	25.33 - 25.58	Auto	1.0000
L32	69	MP3-05	25.33 - 25.58	Auto	1.0000
L32	70	MP3-05	25.33 - 25.58	Auto	1.0000
L32	79	CCI 4" x 0.75" Plate	25.33 - 25.58	Auto	1.0000
L32	80	CCI 4" x 0.75" Plate	25.33 - 25.58	Auto	1.0000
L32	81	CCI 4" x 0.75" Plate	25.33 - 25.58	Auto	1.0000
L33	58	FP 3.50 x 1.25 Reinforcement	20.75 - 22.00	Auto	1.0000
L33	59	FP 3.50 x 1.25 Reinforcement	20.75 - 22.00	Auto	1.0000
L33	60	FP 3.50 x 1.25 Reinforcement	20.75 - 22.00	Auto	1.0000
L33	68	MP3-05	20.75 - 25.33	Auto	1.0000
L33	69	MP3-05	20.75 - 25.33	Auto	1.0000
L33	70	MP3-05	20.75 - 25.33	Auto	1.0000
L33	79	CCI 4" x 0.75" Plate	20.75 - 25.33	Auto	1.0000
L33	80	CCI 4" x 0.75" Plate	20.75 - 25.33	Auto	1.0000
L33	81	CCI 4" x 0.75" Plate	20.75 - 25.33	Auto	1.0000
L34	58	FP 3.50 x 1.25 Reinforcement	20.50 - 20.75	Auto	1.0000
L34	59	FP 3.50 x 1.25 Reinforcement	20.50 - 20.75	Auto	1.0000
L34	60	FP 3.50 x 1.25 Reinforcement	20.50 - 20.75	Auto	1.0000
L34	68	MP3-05	20.50 - 20.75	Auto	1.0000
L34	69	MP3-05	20.50 - 20.75	Auto	1.0000
L34	70	MP3-05	20.50 - 20.75	Auto	1.0000
L34	79	CCI 4" x 0.75" Plate	20.50 - 20.75	Auto	1.0000
L34	80	CCI 4" x 0.75" Plate	20.50 - 20.75	Auto	1.0000
L34	81	CCI 4" x 0.75" Plate	20.50 - 20.75	Auto	1.0000
L35	58	FP 3.50 x 1.25 Reinforcement	17.58 - 20.50	Auto	1.0000
L35	59	FP 3.50 x 1.25 Reinforcement	17.58 - 20.50	Auto	1.0000
L35	60	FP 3.50 x 1.25 Reinforcement	17.58 - 20.50	Auto	1.0000
L35	68	MP3-05	17.58 - 20.50	Auto	1.0000
L35	69	MP3-05	17.58 - 20.50	Auto	1.0000
L35	70	MP3-05	17.58 - 20.50	Auto	1.0000
L35	79	CCI 4" x 0.75" Plate	17.58 - 20.50	Auto	1.0000
L35	80	CCI 4" x 0.75" Plate	17.58 - 20.50	Auto	1.0000
L35	81	CCI 4" x 0.75" Plate	17.58 - 20.50	Auto	1.0000
L36	58	FP 3.50 x 1.25 Reinforcement	17.33 - 17.58	Auto	1.0000
L36	59	FP 3.50 x 1.25 Reinforcement	17.33 - 17.58	Auto	1.0000
L36	60	FP 3.50 x 1.25 Reinforcement	17.33 - 17.58	Auto	1.0000
L36	68	MP3-05	17.33 - 17.58	Auto	1.0000
L36	69	MP3-05	17.33 - 17.58	Auto	1.0000
L36	70	MP3-05	17.33 - 17.58	Auto	1.0000
L36	79	CCI 4" x 0.75" Plate	17.33 - 17.58	Auto	1.0000
L36	80	CCI 4" x 0.75" Plate	17.33 - 17.58	Auto	1.0000
L36	81	CCI 4" x 0.75" Plate	17.33 - 17.58	Auto	1.0000
L37	58	FP 3.50 x 1.25 Reinforcement	13.67 - 17.33	Auto	1.0000
L37	59	FP 3.50 x 1.25 Reinforcement	13.67 - 17.33	Auto	1.0000
L37	60	FP 3.50 x 1.25 Reinforcement	13.67 - 17.33	Auto	1.0000
L37	66	MP3-04	13.67 - 14.88	Auto	1.0000
L37	67	MP3-04	13.67 - 14.88	Auto	1.0000
L37	68	MP3-05	13.67 - 17.33	Auto	1.0000
L37	69	MP3-05	13.67 - 17.33	Auto	1.0000
L37	70	MP3-05	13.67 - 17.33	Auto	1.0000
L37	79	CCI 4" x 0.75" Plate	17.00 - 17.33	Auto	1.0000
L37	80	CCI 4" x 0.75" Plate	17.00 - 17.33	Auto	1.0000
L37	81	CCI 4" x 0.75" Plate	17.00 - 17.33	Auto	1.0000
L38	58	FP 3.50 x 1.25 Reinforcement	13.42 - 13.67	Auto	1.0000
L38	59	FP 3.50 x 1.25 Reinforcement	13.42 - 13.67	Auto	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L38	60	FP 3.50 x 1.25 Reinforcement	13.42 - 13.67	Auto	1.0000
L38	66	MP3-04	13.42 - 13.67	Auto	1.0000
L38	67	MP3-04	13.42 - 13.67	Auto	1.0000
L38	68	MP3-05	13.42 - 13.67	Auto	1.0000
L38	69	MP3-05	13.42 - 13.67	Auto	1.0000
L38	70	MP3-05	13.42 - 13.67	Auto	1.0000
L39	58	FP 3.50 x 1.25 Reinforcement	8.42 - 13.42	Auto	1.0000
L39	59	FP 3.50 x 1.25 Reinforcement	8.42 - 13.42	Auto	1.0000
L39	60	FP 3.50 x 1.25 Reinforcement	8.42 - 13.42	Auto	1.0000
L39	65	MP3-05	8.42 - 8.50	Auto	1.0000
L39	66	MP3-04	8.42 - 13.42	Auto	1.0000
L39	67	MP3-04	8.42 - 13.42	Auto	1.0000
L39	68	MP3-05	11.25 - 13.42	Auto	1.0000
L39	69	MP3-05	8.42 - 13.42	Auto	1.0000
L39	70	MP3-05	8.42 - 13.42	Auto	1.0000
L40	58	FP 3.50 x 1.25 Reinforcement	6.08 - 8.42	Auto	1.0000
L40	59	FP 3.50 x 1.25 Reinforcement	6.08 - 8.42	Auto	1.0000
L40	60	FP 3.50 x 1.25 Reinforcement	6.08 - 8.42	Auto	1.0000
L40	65	MP3-05	6.08 - 8.42	Auto	1.0000
L40	66	MP3-04	6.08 - 8.42	Auto	1.0000
L40	67	MP3-04	6.08 - 8.42	Auto	1.0000
L40	69	MP3-05	6.08 - 8.42	Auto	1.0000
L40	70	MP3-05	6.08 - 8.42	Auto	1.0000
L41	58	FP 3.50 x 1.25 Reinforcement	5.83 - 6.08	Auto	1.0000
L41	59	FP 3.50 x 1.25 Reinforcement	5.83 - 6.08	Auto	1.0000
L41	60	FP 3.50 x 1.25 Reinforcement	5.83 - 6.08	Auto	1.0000
L41	65	MP3-05	5.83 - 6.08	Auto	1.0000
L41	66	MP3-04	5.83 - 6.08	Auto	1.0000
L41	67	MP3-04	5.83 - 6.08	Auto	1.0000
L41	69	MP3-05	5.83 - 6.08	Auto	1.0000
L41	70	MP3-05	5.83 - 6.08	Auto	1.0000
L42	58	FP 3.50 x 1.25 Reinforcement	0.83 - 5.83	Auto	1.0000
L42	59	FP 3.50 x 1.25 Reinforcement	0.83 - 5.83	Auto	1.0000
L42	60	FP 3.50 x 1.25 Reinforcement	0.83 - 5.83	Auto	1.0000
L42	65	MP3-05	0.83 - 5.83	Auto	1.0000
L42	66	MP3-04	4.88 - 5.83	Auto	1.0000
L42	67	MP3-04	4.88 - 5.83	Auto	1.0000
L42	69	MP3-05	0.83 - 5.83	Auto	1.0000
L42	70	MP3-05	0.83 - 5.83	Auto	1.0000
L43	58	FP 3.50 x 1.25 Reinforcement	0.00 - 0.83	Auto	1.0000
L43	59	FP 3.50 x 1.25 Reinforcement	0.00 - 0.83	Auto	1.0000
L43	60	FP 3.50 x 1.25 Reinforcement	0.00 - 0.83	Auto	1.0000
L43	65	MP3-05	0.00 - 0.83	Auto	1.0000
L43	69	MP3-05	0.00 - 0.83	Auto	1.0000
L43	70	MP3-05	0.00 - 0.83	Auto	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
*										
*										
*										
*										
CLEARWIRE										
*										
SPRINT										
*										
KS24019-L112A	A	From Leg	4.000	0.000	0.000	117.000	No Ice	0.141	0.141	0.005
			0.000				1/2" Ice	0.198	0.198	0.007
			6.000				1" Ice	0.262	0.262	0.009
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	117.000	No Ice	5.870	3.270	0.128
			0.000				1/2" Ice	6.233	3.728	0.177
			3.000				1" Ice	6.606	4.203	0.232
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	117.000	No Ice	5.870	3.270	0.128
			0.000				1/2" Ice	6.233	3.728	0.177
			3.000				1" Ice	6.606	4.203	0.232
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	117.000	No Ice	5.870	3.270	0.128
			0.000				1/2" Ice	6.233	3.728	0.177
			3.000				1" Ice	6.606	4.203	0.232
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	117.000	No Ice	6.290	2.760	0.061
			0.000				1/2" Ice	6.860	3.270	0.105
			3.000				1" Ice	7.450	3.790	0.157
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	117.000	No Ice	6.290	2.760	0.061
			0.000				1/2" Ice	6.860	3.270	0.105
			3.000				1" Ice	7.450	3.790	0.157
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	117.000	No Ice	6.290	2.760	0.061
			0.000				1/2" Ice	6.860	3.270	0.105
			3.000				1" Ice	7.450	3.790	0.157
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	117.000	No Ice	14.690	6.870	0.183
			0.000				1/2" Ice	15.460	7.550	0.311
			3.000				1" Ice	16.230	8.250	0.453
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	117.000	No Ice	14.690	6.870	0.183
			0.000				1/2" Ice	15.460	7.550	0.311
			3.000				1" Ice	16.230	8.250	0.453
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	117.000	No Ice	14.690	6.870	0.183
			0.000				1/2" Ice	15.460	7.550	0.311
			3.000				1" Ice	16.230	8.250	0.453
RADIO 4415 B66A	A	From Leg	4.000	0.000	0.000	117.000	No Ice	1.856	0.870	0.050
			0.000				1/2" Ice	2.027	0.997	0.064
			3.000				1" Ice	2.204	1.134	0.081
RADIO 4415 B66A	B	From Leg	4.000	0.000	0.000	117.000	No Ice	1.856	0.870	0.050
			0.000				1/2" Ice	2.027	0.997	0.064
			3.000				1" Ice	2.204	1.134	0.081
RADIO 4415 B66A	C	From Leg	4.000	0.000	0.000	117.000	No Ice	1.856	0.870	0.050
			0.000				1/2" Ice	2.027	0.997	0.064
			3.000				1" Ice	2.204	1.134	0.081
RADIO 4424 B25_TMO	A	From Leg	4.000	0.000	0.000	117.000	No Ice	2.052	1.610	0.086
			0.000				1/2" Ice	2.231	1.772	0.107
			3.000				1" Ice	2.417	1.941	0.131
RADIO 4424 B25_TMO	B	From Leg	4.000	0.000	0.000	117.000	No Ice	2.052	1.610	0.086
			0.000				1/2" Ice	2.231	1.772	0.107
			3.000				1" Ice	2.417	1.941	0.131
RADIO 4424 B25_TMO	C	From Leg	4.000	0.000	0.000	117.000	No Ice	2.052	1.610	0.086
			0.000				1/2" Ice	2.231	1.772	0.107
			3.000				1" Ice	2.417	1.941	0.131
RADIO 4449 B71	A	From Leg	4.000	0.000	0.000	117.000	No Ice	1.970	1.587	0.073

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
B85A_T-MOBILE			0.000			1/2" Ice	2.147	1.749	0.093
			3.000			1" Ice	2.331	1.918	0.116
RADIO 4449 B71	B	From Leg	4.000	0.000	117.000	No Ice	1.970	1.587	0.073
B85A_T-MOBILE			0.000			1/2" Ice	2.147	1.749	0.093
			3.000			1" Ice	2.331	1.918	0.116
RADIO 4449 B71	C	From Leg	4.000	0.000	117.000	No Ice	1.970	1.587	0.073
B85A_T-MOBILE			0.000			1/2" Ice	2.147	1.749	0.093
			3.000			1" Ice	2.331	1.918	0.116
5' x 2" Pipe Mount	A	From Leg	4.000	0.000	117.000	No Ice	1.188	1.188	0.018
			0.000			1/2" Ice	1.496	1.496	0.027
			0.000			1" Ice	1.807	1.807	0.040
5' x 2" Pipe Mount	B	From Leg	4.000	0.000	117.000	No Ice	1.188	1.188	0.018
			0.000			1/2" Ice	1.496	1.496	0.027
			0.000			1" Ice	1.807	1.807	0.040
5' x 2" Pipe Mount	C	From Leg	4.000	0.000	117.000	No Ice	1.188	1.188	0.018
			0.000			1/2" Ice	1.496	1.496	0.027
			0.000			1" Ice	1.807	1.807	0.040
Platform Mount [LP 502-1]	C	None		0.000	117.000	No Ice	18.280	18.280	0.925
						1/2" Ice	23.540	23.540	1.435
						1" Ice	28.530	28.530	2.070
3' x 2" Pipe Mount	A	From Leg	4.000	0.000	117.000	No Ice	0.583	0.583	0.011
			0.000			1/2" Ice	0.770	0.770	0.017
			3.000			1" Ice	0.967	0.967	0.024
Side Lighting	A	From Leg	4.000	0.000	117.000	No Ice	0.106	0.106	0.005
			0.000			1/2" Ice	0.170	0.170	0.007
			4.000			1" Ice	0.233	0.233	0.010
Pipe Mount [PM 601-3]	C	None		0.000	119.000	No Ice	3.170	3.170	0.195
						1/2" Ice	3.790	3.790	0.232
						1" Ice	4.420	4.420	0.279
*									
BXA-70063-6BF-EDIN-0 w/ Mount Pipe	A	From Leg	4.000	0.000	100.000	No Ice	7.500	5.630	0.044
			0.000			1/2" Ice	8.033	6.719	0.103
			2.000			1" Ice	8.535	7.561	0.170
BXA-70063-6BF-EDIN-0 w/ Mount Pipe	B	From Leg	4.000	0.000	100.000	No Ice	7.500	5.630	0.044
			0.000			1/2" Ice	8.033	6.719	0.103
			2.000			1" Ice	8.535	7.561	0.170
BXA-70063-6BF-EDIN-0 w/ Mount Pipe	C	From Leg	4.000	0.000	100.000	No Ice	7.500	5.630	0.044
			0.000			1/2" Ice	8.033	6.719	0.103
			2.000			1" Ice	8.535	7.561	0.170
(2) SBNHH-1D45A w/ Mount Pipe	A	From Leg	4.000	0.000	100.000	No Ice	5.350	2.870	0.069
			0.000			1/2" Ice	5.760	3.230	0.123
			2.000			1" Ice	6.170	3.590	0.186
(2) SBNHH-1D45A w/ Mount Pipe	B	From Leg	4.000	0.000	100.000	No Ice	5.350	2.870	0.069
			0.000			1/2" Ice	5.760	3.230	0.123
			2.000			1" Ice	6.170	3.590	0.186
(2) SBNHH-1D45A w/ Mount Pipe	C	From Leg	4.000	0.000	100.000	No Ice	5.350	2.870	0.069
			0.000			1/2" Ice	5.760	3.230	0.123
			2.000			1" Ice	6.170	3.590	0.186
SBNHH-1D45A	A	From Leg	4.000	0.000	100.000	No Ice	5.330	2.080	0.051
			0.000			1/2" Ice	5.740	2.420	0.096
			2.000			1" Ice	6.160	2.780	0.146
SBNHH-1D45A	B	From Leg	4.000	0.000	100.000	No Ice	5.330	2.080	0.051
			0.000			1/2" Ice	5.740	2.420	0.096
			2.000			1" Ice	6.160	2.780	0.146
SBNHH-1D45A	C	From Leg	4.000	0.000	100.000	No Ice	5.330	2.080	0.051
			0.000			1/2" Ice	5.740	2.420	0.096
			2.000			1" Ice	6.160	2.780	0.146

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
B25 RRH4X30	A	From Leg	4.000 0.000 2.000	0.000	100.000	No Ice 1/2" Ice 1" Ice	2.200 2.393 2.593	1.742 1.920 2.106	0.055 0.075 0.099
B25 RRH4X30	B	From Leg	4.000 0.000 2.000	0.000	100.000	No Ice 1/2" Ice 1" Ice	2.200 2.393 2.593	1.742 1.920 2.106	0.055 0.075 0.099
B25 RRH4X30	C	From Leg	4.000 0.000 2.000	0.000	100.000	No Ice 1/2" Ice 1" Ice	2.200 2.393 2.593	1.742 1.920 2.106	0.055 0.075 0.099
B66A RRH4X45	A	From Leg	4.000 0.000 2.000	0.000	100.000	No Ice 1/2" Ice 1" Ice	2.537 2.750 2.970	1.610 1.791 1.978	0.057 0.077 0.100
B66A RRH4X45	B	From Leg	4.000 0.000 2.000	0.000	100.000	No Ice 1/2" Ice 1" Ice	2.537 2.750 2.970	1.610 1.791 1.978	0.057 0.077 0.100
B66A RRH4X45	C	From Leg	4.000 0.000 2.000	0.000	100.000	No Ice 1/2" Ice 1" Ice	2.537 2.750 2.970	1.610 1.791 1.978	0.057 0.077 0.100
RXXDC-3315-PF-48	A	From Leg	4.000 0.000 2.000	0.000	100.000	No Ice 1/2" Ice 1" Ice	3.708 3.950 4.200	2.192 2.395 2.606	0.032 0.062 0.097
(4) FD9R6004/2C-3L	A	From Leg	4.000 0.000 2.000	0.000	100.000	No Ice 1/2" Ice 1" Ice	0.314 0.386 0.466	0.076 0.119 0.169	0.003 0.005 0.009
(4) FD9R6004/2C-3L	B	From Leg	4.000 0.000 2.000	0.000	100.000	No Ice 1/2" Ice 1" Ice	0.314 0.386 0.466	0.076 0.119 0.169	0.003 0.005 0.009
(4) FD9R6004/2C-3L	C	From Leg	4.000 0.000 2.000	0.000	100.000	No Ice 1/2" Ice 1" Ice	0.314 0.386 0.466	0.076 0.119 0.169	0.003 0.005 0.009
6' x 2" Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	100.000	No Ice 1/2" Ice 1" Ice	1.425 1.925 2.294	1.425 1.925 2.294	0.022 0.033 0.048
6' x 2" Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	100.000	No Ice 1/2" Ice 1" Ice	1.425 1.925 2.294	1.425 1.925 2.294	0.022 0.033 0.048
6' x 2" Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	100.000	No Ice 1/2" Ice 1" Ice	1.425 1.925 2.294	1.425 1.925 2.294	0.022 0.033 0.048
Platform Mount [LP 303-1_KCKR-HR-1]	C	None		0.000	100.000	No Ice 1/2" Ice 1" Ice	28.310 35.690 43.110	28.310 35.690 43.110	1.770 2.297 2.943
*									
Bridge Stiffener (96"x1.25"x16")	A	From Leg	1.000 0.000 0.000	0.000	60.000	No Ice 1/2" Ice 1" Ice	1.667 2.573 3.492	14.459 15.067 15.681	0.544 0.602 0.668
Bridge Stiffener (96"x1.25"x16")	B	From Leg	1.000 0.000 0.000	0.000	60.000	No Ice 1/2" Ice 1" Ice	1.667 2.573 3.492	14.459 15.067 15.681	0.544 0.602 0.668
Bridge Stiffener (96"x1.25"x16")	C	From Leg	1.000 0.000 0.000	0.000	60.000	No Ice 1/2" Ice 1" Ice	1.667 2.573 3.492	14.459 15.067 15.681	0.544 0.602 0.668
*									
Bridge Stiffener (96"x1.25"x16")	A	From Leg	1.000 0.000 0.000	0.000	30.000	No Ice 1/2" Ice 1" Ice	1.667 2.573 3.492	14.459 15.067 15.681	0.544 0.602 0.668
Bridge Stiffener	B	From Leg	1.000	0.000	30.000	No Ice	1.667	14.459	0.544

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
(96"x1.25"x16")			0.000			1/2" Ice	2.573	15.067	0.602
			0.000			1" Ice	3.492	15.681	0.668
Bridge Stiffener (96"x1.25"x16")	C	From Leg	1.000	0.000	30.000	No Ice	1.667	14.459	0.544
			0.000			1/2" Ice	2.573	15.067	0.602
			0.000			1" Ice	3.492	15.681	0.668
*									
Bridge Stiffener (93"x1.25"x16")	A	From Leg	1.000	0.000	30.000	No Ice	1.615	13.921	0.527
			0.000			1/2" Ice	2.493	14.513	0.583
			0.000			1" Ice	3.385	15.111	0.647
Bridge Stiffener (93"x1.25"x16")	B	From Leg	1.000	0.000	30.000	No Ice	1.615	13.921	0.527
			0.000			1/2" Ice	2.493	14.513	0.583
			0.000			1" Ice	3.385	15.111	0.647
Bridge Stiffener (93"x1.25"x16")	C	From Leg	1.000	0.000	30.000	No Ice	1.615	13.921	0.527
			0.000			1/2" Ice	2.493	14.513	0.583
			0.000			1" Ice	3.385	15.111	0.647
*									
Bridge Stiffener (35" x 10.5" x 1.25")	A	From Leg	1.000	0.000	60.000	No Ice	0.608	3.157	0.130
			0.000			1/2" Ice	0.848	3.404	0.145
			0.000			1" Ice	1.066	3.659	0.164
Bridge Stiffener (35" x 10.5" x 1.25")	B	From Leg	1.000	0.000	60.000	No Ice	0.608	3.157	0.130
			0.000			1/2" Ice	0.848	3.404	0.145
			0.000			1" Ice	1.066	3.659	0.164
Bridge Stiffener (35" x 10.5" x 1.25")	C	From Leg	1.000	0.000	60.000	No Ice	0.608	3.157	0.130
			0.000			1/2" Ice	0.848	3.404	0.145
			0.000			1" Ice	1.066	3.659	0.164
Bridge Stiffener (35" x 10.5" x 1.25")	A	From Leg	1.000	0.000	30.000	No Ice	0.608	3.157	0.130
			0.000			1/2" Ice	0.848	3.404	0.145
			0.000			1" Ice	1.066	3.659	0.164
Bridge Stiffener (35" x 10.5" x 1.25")	B	From Leg	1.000	0.000	30.000	No Ice	0.608	3.157	0.130
			0.000			1/2" Ice	0.848	3.404	0.145
			0.000			1" Ice	1.066	3.659	0.164
Bridge Stiffener (35" x 10.5" x 1.25")	C	From Leg	1.000	0.000	30.000	No Ice	0.608	3.157	0.130
			0.000			1/2" Ice	0.848	3.404	0.145
			0.000			1" Ice	1.066	3.659	0.164
*									

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
*										
*										

Load Combinations

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	120 - 115	Pole	Max Tension	14	0.000	-0.000	0.000
			Max. Compression	26	-7.074	0.045	0.251
			Max. Mx	20	-3.555	21.951	0.128

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	2	-3.528	0.026	22.104
			Max. Vy	20	-5.378	21.951	0.128
			Max. Vx	2	-5.396	0.026	22.104
			Max. Torque	20			-0.209
L2	115 - 110	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-7.714	0.154	0.308
			Max. Mx	20	-3.978	49.744	0.166
			Max. My	2	-3.946	0.089	50.078
			Max. Vy	20	-5.715	49.744	0.166
			Max. Vx	2	-5.780	0.089	50.078
			Max. Torque	20			-0.209
L3	110 - 105	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-8.354	0.263	0.364
			Max. Mx	20	-4.405	79.208	0.205
			Max. My	2	-4.368	0.153	79.958
			Max. Vy	20	-6.046	79.208	0.205
			Max. Vx	2	-6.159	0.153	79.958
			Max. Torque	20			-0.209
L4	105 - 100	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-8.999	0.372	0.420
			Max. Mx	20	-4.837	110.309	0.243
			Max. My	2	-4.795	0.217	111.714
			Max. Vy	20	-6.371	110.309	0.243
			Max. Vx	2	-6.532	0.217	111.714
			Max. Torque	20			-0.209
L5	100 - 98.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-15.622	0.413	0.941
			Max. Mx	20	-8.202	132.929	0.419
			Max. My	2	-8.131	0.239	134.996
			Max. Vy	20	-11.287	132.929	0.419
			Max. Vx	2	-11.526	0.239	134.996
			Max. Torque	20			-0.662
L6	98.5 - 98.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-15.673	0.425	0.949
			Max. Mx	20	-8.241	135.758	0.423
			Max. My	2	-8.170	0.244	137.883
			Max. Vy	20	-11.318	135.758	0.423
			Max. Vx	2	-11.558	0.244	137.883
			Max. Torque	20			-0.662
L7	98.25 - 93.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-16.688	0.557	1.019
			Max. Mx	20	-8.952	193.984	0.468
			Max. My	2	-8.879	0.317	197.276
			Max. Vy	20	-11.948	193.984	0.468
			Max. Vx	2	-12.189	0.317	197.276
			Max. Torque	20			-0.662
L8	93.25 - 90	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-19.328	0.645	1.067
			Max. Mx	20	-11.298	233.807	0.498
			Max. My	2	-11.212	0.363	238.118
			Max. Vy	20	-12.535	233.807	0.498
			Max. Vx	2	-12.934	0.363	238.118
			Max. Torque	20			-0.662
L9	90 - 89.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-19.600	0.656	1.074
			Max. Mx	20	-11.548	236.951	0.501
			Max. My	2	-11.461	0.368	241.361
			Max. Vy	20	-12.594	236.951	0.501
			Max. Vx	2	-13.000	0.368	241.361
			Max. Torque	20			-0.662
L10	89.75 - 84.75	Pole	Max Tension	1	0.000	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	26	-22.748	0.790	1.145
			Max. Mx	20	-14.320	301.933	0.546
			Max. My	2	-14.219	0.440	308.848
			Max. Vy	20	-13.375	301.933	0.546
			Max. Vx	2	-13.986	0.440	308.848
			Max. Torque	20			-0.662
L11	84.75 - 79.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-23.705	0.927	1.218
			Max. Mx	20	-15.094	369.524	0.592
			Max. My	2	-14.992	0.515	379.588
			Max. Vy	20	-13.644	369.524	0.592
			Max. Vx	2	-14.305	0.515	379.588
			Max. Torque	20			-0.662
L12	79.75 - 79	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-23.856	0.947	1.230
			Max. Mx	20	-15.213	379.776	0.599
			Max. My	2	-15.111	0.527	390.335
			Max. Vy	20	-13.681	379.776	0.599
			Max. Vx	14	14.377	0.527	-389.049
			Max. Torque	20			-0.662
L13	79 - 78.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-23.916	0.959	1.238
			Max. Mx	20	-15.264	383.200	0.602
			Max. My	2	-15.163	0.532	393.926
			Max. Vy	20	-13.693	383.200	0.602
			Max. Vx	14	14.406	0.532	-392.644
			Max. Torque	20			-0.662
L14	78.75 - 74.0413	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-25.060	1.103	1.303
			Max. Mx	20	-16.160	448.330	0.643
			Max. My	2	-16.037	0.598	463.205
			Max. Vy	20	-13.953	448.330	0.643
			Max. Vx	14	15.098	0.598	-462.042
			Max. Torque	20			-0.662
L15	74.0413 - 73.7913	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-25.133	1.121	1.312
			Max. Mx	20	-16.222	451.821	0.646
			Max. My	2	-16.098	0.603	466.974
			Max. Vy	20	-13.962	451.821	0.646
			Max. Vx	14	15.140	0.603	-465.819
			Max. Torque	20			-0.662
L16	73.7913 - 68.7913	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-26.584	1.342	1.385
			Max. Mx	20	-17.351	522.375	0.689
			Max. My	2	-17.201	0.668	544.603
			Max. Vy	8	14.498	-511.963	0.689
			Max. Vx	14	16.005	0.668	-543.616
			Max. Torque	20			-0.662
L17	68.7913 - 63.7913	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-28.032	1.567	1.463
			Max. Mx	20	-18.494	594.244	0.733
			Max. My	2	-18.325	0.735	626.434
			Max. Vy	8	15.120	-585.912	0.733
			Max. Vx	14	16.839	0.735	-625.658
			Max. Torque	20			-0.661
L18	63.7913 - 60	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-29.124	1.735	1.520

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	20	-19.365	649.547	0.766
			Max. My	2	-19.187	0.785	691.180
			Max. Vy	8	15.573	-644.012	0.765
			Max. Vx	14	17.448	0.785	-690.590
			Max. Torque	20			-0.661
L19	60 - 59.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-32.046	1.752	1.532
			Max. Mx	20	-21.801	653.580	0.769
			Max. My	2	-21.619	0.791	695.892
			Max. Vy	8	17.022	-648.261	0.769
			Max. Vx	14	18.927	0.791	-695.314
			Max. Torque	20			-0.661
L20	59.75 - 54.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-33.496	1.900	1.605
			Max. Mx	20	-22.956	735.956	0.820
			Max. My	2	-22.783	0.879	791.818
			Max. Vy	8	17.331	-734.035	0.820
			Max. Vx	14	19.572	0.879	-791.478
			Max. Torque	20			-0.661
L21	54.75 - 49.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-34.950	2.044	1.676
			Max. Mx	20	-24.125	821.517	0.871
			Max. My	2	-23.966	0.967	890.908
			Max. Vy	8	17.615	-821.280	0.871
			Max. Vx	14	20.192	0.967	-890.803
			Max. Torque	20			-0.661
L22	49.75 - 47.8333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-35.529	2.098	1.702
			Max. Mx	8	-24.563	-855.218	0.890
			Max. My	2	-24.415	1.001	929.710
			Max. Vy	8	17.859	-855.218	0.890
			Max. Vx	14	20.441	1.001	-929.696
			Max. Torque	20			-0.661
L23	47.8333 - 47.5833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-35.614	2.113	1.713
			Max. Mx	8	-24.643	-859.678	0.893
			Max. My	2	-24.498	1.007	934.806
			Max. Vy	8	17.877	-859.678	0.893
			Max. Vx	14	20.462	1.007	-934.804
			Max. Torque	20			-0.661
L24	47.5833 - 43	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-37.177	2.237	1.771
			Max. Mx	8	-25.882	-942.831	0.939
			Max. My	14	-25.740	1.085	-1030.177
			Max. Vy	8	18.454	-942.831	0.939
			Max. Vx	14	21.192	1.085	-1030.177
			Max. Torque	20			-0.661
L25	43 - 42.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-37.277	2.252	1.781
			Max. Mx	8	-25.968	-947.442	0.942
			Max. My	14	-25.828	1.091	-1035.476
			Max. Vy	8	18.480	-947.442	0.942
			Max. Vx	14	21.231	1.091	-1035.476
			Max. Torque	20			-0.661
L26	42.75 - 37.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-39.274	2.386	1.845
			Max. Mx	8	-27.569	-1041.345	0.991
			Max. My	14	-27.435	1.176	-1143.602
			Max. Vy	8	19.125	-1041.345	0.991

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	14	22.054	1.176	-1143.602
			Max. Torque	20			-0.661
L27	37.75 - 34.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-40.569	2.478	1.890
			Max. Mx	8	-28.616	-1104.063	1.023
			Max. My	14	-28.489	1.232	-1216.046
			Max. Vy	8	19.522	-1104.063	1.023
			Max. Vx	14	22.566	1.232	-1216.046
			Max. Torque	6			0.661
L28	34.5 - 34.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-40.656	2.489	1.897
			Max. Mx	8	-28.691	-1108.940	1.026
			Max. My	14	-28.566	1.237	-1221.687
			Max. Vy	8	19.545	-1108.940	1.026
			Max. Vx	14	22.600	1.237	-1221.687
			Max. Torque	6			0.662
L29	34.25 - 30	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-42.130	2.604	1.952
			Max. Mx	8	-29.865	-1192.907	1.067
			Max. My	14	-29.754	1.309	-1318.951
			Max. Vy	8	20.019	-1192.907	1.067
			Max. Vx	14	23.212	1.309	-1318.951
			Max. Torque	6			0.680
L30	30 - 29.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-47.230	2.619	1.962
			Max. Mx	8	-34.228	-1198.443	1.070
			Max. My	14	-34.116	1.315	-1325.291
			Max. Vy	8	22.173	-1198.443	1.070
			Max. Vx	14	25.396	1.315	-1325.291
			Max. Torque	6			0.680
L31	29.75 - 25.5833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-48.668	2.750	2.025
			Max. Mx	8	-35.414	-1291.772	1.117
			Max. My	14	-35.314	1.399	-1432.076
			Max. Vy	8	22.680	-1291.772	1.117
			Max. Vx	14	25.906	1.399	-1432.076
			Max. Torque	6			0.680
L32	25.5833 - 25.3333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-48.765	2.764	2.034
			Max. Mx	8	-35.501	-1297.438	1.120
			Max. My	14	-35.403	1.404	-1438.551
			Max. Vy	8	22.704	-1297.438	1.120
			Max. Vx	14	25.933	1.404	-1438.551
			Max. Torque	6			0.680
L33	25.3333 - 20.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-50.560	2.908	2.103
			Max. Mx	8	-36.972	-1402.663	1.172
			Max. My	14	-36.888	1.496	-1558.602
			Max. Vy	8	23.267	-1402.663	1.172
			Max. Vx	14	26.497	1.496	-1558.602
			Max. Torque	6			0.680
L34	20.75 - 20.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-50.673	2.922	2.113
			Max. Mx	8	-37.072	-1408.475	1.175
			Max. My	14	-36.991	1.501	-1565.226
			Max. Vy	8	23.290	-1408.475	1.175
			Max. Vx	14	26.530	1.501	-1565.226
			Max. Torque	6			0.680

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L35	20.5 - 17.5833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-51.991	3.011	2.154
			Max. Mx	8	-38.158	-1476.853	1.208
			Max. My	14	-38.083	1.559	-1643.207
			Max. Vy	8	23.656	-1476.853	1.208
			Max. Vx	14	26.989	1.559	-1643.207
			Max. Torque	6			0.680
L36	17.5833 - 17.3333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-52.095	3.023	2.162
			Max. Mx	8	-38.251	-1482.763	1.210
			Max. My	14	-38.178	1.564	-1649.952
			Max. Vy	8	23.674	-1482.763	1.210
			Max. Vx	14	27.017	1.564	-1649.952
			Max. Torque	6			0.680
L37	17.3333 - 13.667	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-53.583	3.120	2.212
			Max. Mx	8	-39.495	-1570.181	1.251
			Max. My	14	-39.435	1.636	-1749.643
			Max. Vy	8	24.071	-1570.181	1.251
			Max. Vx	14	27.411	1.636	-1749.643
			Max. Torque	6			0.680
L38	13.667 - 13.417	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-53.689	3.128	2.218
			Max. Mx	8	-39.591	-1576.193	1.254
			Max. My	14	-39.534	1.641	-1756.493
			Max. Vy	8	24.086	-1576.193	1.254
			Max. Vx	14	27.435	1.641	-1756.493
			Max. Torque	6			0.680
L39	13.417 - 8.417	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-55.769	3.193	2.271
			Max. Mx	8	-41.353	-1697.726	1.309
			Max. My	14	-41.315	1.740	-1894.847
			Max. Vy	8	24.582	-1697.726	1.309
			Max. Vx	14	27.948	1.740	-1894.847
			Max. Torque	6			0.680
L40	8.417 - 6.083	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-56.738	3.237	2.297
			Max. Mx	8	-42.181	-1755.288	1.334
			Max. My	14	-42.152	1.786	-1960.372
			Max. Vy	8	24.813	-1755.288	1.334
			Max. Vx	14	28.257	1.786	-1960.372
			Max. Torque	6			0.680
L41	6.083 - 5.833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-56.855	3.243	2.302
			Max. Mx	8	-42.291	-1761.486	1.337
			Max. My	14	-42.266	1.790	-1967.433
			Max. Vy	8	24.825	-1761.486	1.337
			Max. Vx	14	28.276	1.790	-1967.433
			Max. Torque	6			0.680
L42	5.833 - 0.833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-59.140	3.381	2.373
			Max. Mx	8	-44.322	-1886.755	1.391
			Max. My	14	-44.316	1.888	-2109.980
			Max. Vy	8	25.336	-1886.755	1.391
			Max. Vx	14	28.781	1.888	-2109.980
			Max. Torque	6			0.680
L43	0.833 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-59.464	3.404	2.385

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	-44.620	-1907.865	1.400
			Max. My	14	-44.618	1.904	-2133.963
			Max. Vy	8	25.413	-1907.865	1.400
			Max. Vx	14	28.855	1.904	-2133.963
			Max. Torque	6			0.680

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	59.464	-0.001	-0.001
	Max. H_x	21	33.471	25.390	0.000
	Max. H_z	3	33.471	0.000	28.825
	Max. M_x	2	2132.523	-0.000	28.825
	Max. M_z	8	1907.865	-25.399	0.000
	Max. Torsion	6	0.680	-23.773	13.756
	Min. Vert	15	33.471	0.000	-28.839
	Min. H_x	9	33.471	-25.399	0.000
	Min. H_z	15	33.471	0.000	-28.839
	Min. M_x	14	-2133.963	-0.000	-28.839
	Min. M_z	20	-1902.818	25.390	0.000
	Min. Torsion	18	-0.676	22.890	-13.246

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	37.190	0.000	0.000	-1.112	1.523	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	44.628	0.000	-28.825	-2132.523	1.904	-0.622
0.9 Dead+1.0 Wind 0 deg - No Ice	33.471	-0.000	-28.825	-2111.948	1.412	-0.623
1.2 Dead+1.0 Wind 30 deg - No Ice	44.628	13.792	-23.942	-1806.004	-1036.737	-0.599
0.9 Dead+1.0 Wind 30 deg - No Ice	33.471	13.792	-23.942	-1788.321	-1027.264	-0.597
1.2 Dead+1.0 Wind 60 deg - No Ice	44.628	23.773	-13.756	-1028.504	-1771.468	-0.680
0.9 Dead+1.0 Wind 60 deg - No Ice	33.471	23.773	-13.756	-1018.317	-1755.004	-0.675
1.2 Dead+1.0 Wind 90 deg - No Ice	44.628	25.399	-0.000	-1.400	-1907.865	-0.660
0.9 Dead+1.0 Wind 90 deg - No Ice	33.471	25.399	-0.000	-1.037	-1889.893	-0.655
1.2 Dead+1.0 Wind 120 deg - No Ice	44.628	23.052	13.340	998.064	-1723.591	-0.570
0.9 Dead+1.0 Wind 120 deg - No Ice	33.471	23.052	13.340	988.820	-1707.503	-0.565
1.2 Dead+1.0 Wind 150 deg - No Ice	44.628	13.267	23.031	1727.120	-992.807	-0.329
0.9 Dead+1.0 Wind 150 deg -	33.471	13.267	23.031	1710.856	-983.735	-0.326

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
No Ice						
1.2 Dead+1.0 Wind 180 deg - No Ice	44.628	0.000	28.839	2133.963	1.904	0.622
0.9 Dead+1.0 Wind 180 deg - No Ice	33.471	-0.000	28.839	2114.077	1.412	0.623
1.2 Dead+1.0 Wind 210 deg - No Ice	44.628	-13.204	22.923	1730.455	998.545	0.595
0.9 Dead+1.0 Wind 210 deg - No Ice	33.471	-13.204	22.923	1714.084	988.427	0.593
1.2 Dead+1.0 Wind 240 deg - No Ice	44.628	-22.890	13.246	984.610	1704.101	0.676
0.9 Dead+1.0 Wind 240 deg - No Ice	33.471	-22.890	13.246	975.466	1687.203	0.672
1.2 Dead+1.0 Wind 270 deg - No Ice	44.628	-25.390	-0.000	-1.400	1902.818	0.660
0.9 Dead+1.0 Wind 270 deg - No Ice	33.471	-25.390	-0.000	-1.037	1883.886	0.655
1.2 Dead+1.0 Wind 300 deg - No Ice	44.628	-22.920	-13.264	-994.083	1715.661	0.574
0.9 Dead+1.0 Wind 300 deg - No Ice	33.471	-22.920	-13.264	-984.163	1698.676	0.569
1.2 Dead+1.0 Wind 330 deg - No Ice	44.628	-12.505	-21.712	-1633.599	941.010	0.332
0.9 Dead+1.0 Wind 330 deg - No Ice	33.471	-12.505	-21.712	-1617.377	931.397	0.329
1.2 Dead+1.0 Ice+1.0 Temp	59.464	0.001	0.001	-2.385	3.404	0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	59.464	0.000	-5.667	-449.678	3.607	-0.149
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	59.464	2.695	-4.677	-380.019	-213.764	-0.147
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	59.464	4.664	-2.698	-218.603	-369.636	-0.160
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	59.464	5.163	0.000	-2.554	-413.649	-0.150
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	59.464	4.496	2.601	207.308	-358.917	-0.130
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	59.464	2.589	4.493	360.508	-205.449	-0.075
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	59.464	0.000	5.662	444.686	3.607	0.149
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	59.464	-2.670	4.633	371.644	219.093	0.147
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	59.464	-4.646	2.687	211.970	374.208	0.160
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	59.464	-5.161	0.000	-2.554	419.330	0.151
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	59.464	-4.465	-2.583	-210.817	363.365	0.131
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	59.464	-2.565	-4.452	-362.032	210.595	0.076
Dead+Wind 0 deg - Service	37.190	0.000	-6.254	-460.960	1.579	-0.136
Dead+Wind 30 deg - Service	37.190	2.993	-5.195	-390.506	-222.510	-0.130
Dead+Wind 60 deg - Service	37.190	5.158	-2.985	-222.757	-381.025	-0.147
Dead+Wind 90 deg - Service	37.190	5.511	0.000	-1.161	-410.363	-0.143
Dead+Wind 120 deg - Service	37.190	5.002	2.894	214.460	-370.675	-0.124
Dead+Wind 150 deg - Service	37.190	2.879	4.997	371.744	-213.018	-0.072
Dead+Wind 180 deg - Service	37.190	0.000	6.257	459.556	1.579	0.136
Dead+Wind 210 deg - Service	37.190	-2.865	4.974	372.459	216.588	0.130
Dead+Wind 240 deg - Service	37.190	-4.967	2.874	211.553	368.797	0.147
Dead+Wind 270 deg - Service	37.190	-5.509	0.000	-1.161	411.604	0.143
Dead+Wind 300 deg - Service	37.190	-4.973	-2.878	-215.316	371.295	0.124

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
Dead+Wind 330 deg - Service	37.190	-2.713	-4.711	-353.246	204.156	0.072

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.000	-37.190	0.000	-0.000	37.190	-0.000	0.000%
2	0.000	-44.628	-28.826	-0.000	44.628	28.825	0.002%
3	0.000	-33.471	-28.826	0.000	33.471	28.825	0.001%
4	13.792	-44.628	-23.942	-13.792	44.628	23.942	0.000%
5	13.792	-33.471	-23.942	-13.792	33.471	23.942	0.000%
6	23.773	-44.628	-13.756	-23.773	44.628	13.756	0.000%
7	23.773	-33.471	-13.756	-23.773	33.471	13.756	0.000%
8	25.399	-44.628	0.000	-25.399	44.628	0.000	0.001%
9	25.399	-33.471	0.000	-25.399	33.471	0.000	0.001%
10	23.052	-44.628	13.340	-23.052	44.628	-13.340	0.000%
11	23.052	-33.471	13.340	-23.052	33.471	-13.340	0.000%
12	13.267	-44.628	23.031	-13.267	44.628	-23.031	0.000%
13	13.267	-33.471	23.031	-13.267	33.471	-23.031	0.000%
14	0.000	-44.628	28.840	-0.000	44.628	-28.839	0.002%
15	0.000	-33.471	28.840	0.000	33.471	-28.839	0.001%
16	-13.204	-44.628	22.923	13.204	44.628	-22.923	0.000%
17	-13.204	-33.471	22.923	13.204	33.471	-22.923	0.000%
18	-22.890	-44.628	13.246	22.890	44.628	-13.246	0.000%
19	-22.890	-33.471	13.246	22.890	33.471	-13.246	0.000%
20	-25.390	-44.628	0.000	25.390	44.628	0.000	0.001%
21	-25.390	-33.471	0.000	25.390	33.471	0.000	0.001%
22	-22.920	-44.628	-13.264	22.920	44.628	13.264	0.000%
23	-22.920	-33.471	-13.264	22.920	33.471	13.264	0.000%
24	-12.505	-44.628	-21.712	12.505	44.628	21.712	0.000%
25	-12.505	-33.471	-21.712	12.505	33.471	21.712	0.000%
26	0.000	-59.464	0.000	-0.001	59.464	-0.001	0.002%
27	0.000	-59.464	-5.667	-0.000	59.464	5.667	0.000%
28	2.695	-59.464	-4.677	-2.695	59.464	4.677	0.000%
29	4.664	-59.464	-2.698	-4.664	59.464	2.698	0.000%
30	5.163	-59.464	0.000	-5.163	59.464	-0.000	0.000%
31	4.497	-59.464	2.601	-4.496	59.464	-2.601	0.000%
32	2.589	-59.464	4.493	-2.589	59.464	-4.493	0.000%
33	0.000	-59.464	5.662	-0.000	59.464	-5.662	0.000%
34	-2.670	-59.464	4.633	2.670	59.464	-4.633	0.000%
35	-4.646	-59.464	2.687	4.646	59.464	-2.687	0.000%
36	-5.161	-59.464	0.000	5.161	59.464	-0.000	0.000%
37	-4.465	-59.464	-2.583	4.465	59.464	2.583	0.000%
38	-2.565	-59.464	-4.452	2.565	59.464	4.452	0.000%
39	0.000	-37.190	-6.255	-0.000	37.190	6.254	0.002%
40	2.993	-37.190	-5.195	-2.993	37.190	5.195	0.001%
41	5.159	-37.190	-2.985	-5.158	37.190	2.985	0.001%
42	5.512	-37.190	0.000	-5.511	37.190	-0.000	0.002%
43	5.002	-37.190	2.895	-5.002	37.190	-2.894	0.001%
44	2.879	-37.190	4.998	-2.879	37.190	-4.997	0.001%
45	0.000	-37.190	6.258	-0.000	37.190	-6.257	0.002%
46	-2.865	-37.190	4.974	2.865	37.190	-4.974	0.001%
47	-4.967	-37.190	2.874	4.967	37.190	-2.874	0.001%
48	-5.510	-37.190	0.000	5.509	37.190	-0.000	0.002%
49	-4.974	-37.190	-2.878	4.973	37.190	2.878	0.001%
50	-2.714	-37.190	-4.712	2.713	37.190	4.711	0.001%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	16	0.00000001	0.00014490
3	Yes	16	0.00000001	0.00010997
4	Yes	21	0.00000001	0.00007557
5	Yes	20	0.00000001	0.00013047
6	Yes	21	0.00000001	0.00007478
7	Yes	20	0.00000001	0.00012944
8	Yes	17	0.00000001	0.00009151
9	Yes	17	0.00000001	0.00007126
10	Yes	21	0.00000001	0.00006808
11	Yes	20	0.00000001	0.00011833
12	Yes	21	0.00000001	0.00007017
13	Yes	20	0.00000001	0.00012206
14	Yes	16	0.00000001	0.00014478
15	Yes	16	0.00000001	0.00010990
16	Yes	21	0.00000001	0.00007251
17	Yes	20	0.00000001	0.00012603
18	Yes	21	0.00000001	0.00006696
19	Yes	20	0.00000001	0.00011648
20	Yes	17	0.00000001	0.00009189
21	Yes	17	0.00000001	0.00007155
22	Yes	21	0.00000001	0.00007067
23	Yes	20	0.00000001	0.00012279
24	Yes	20	0.00000001	0.00014588
25	Yes	20	0.00000001	0.00010897
26	Yes	7	0.00000001	0.00008944
27	Yes	18	0.00000001	0.00013589
28	Yes	18	0.00000001	0.00014399
29	Yes	18	0.00000001	0.00014208
30	Yes	18	0.00000001	0.00012714
31	Yes	18	0.00000001	0.00013651
32	Yes	18	0.00000001	0.00013687
33	Yes	18	0.00000001	0.00013357
34	Yes	18	0.00000001	0.00014300
35	Yes	18	0.00000001	0.00014174
36	Yes	18	0.00000001	0.00012956
37	Yes	18	0.00000001	0.00014044
38	Yes	18	0.00000001	0.00013991
39	Yes	14	0.00000001	0.00007038
40	Yes	15	0.00000001	0.00012678
41	Yes	15	0.00000001	0.00013752
42	Yes	14	0.00000001	0.00007211
43	Yes	15	0.00000001	0.00011200
44	Yes	15	0.00000001	0.00012348
45	Yes	14	0.00000001	0.00006999
46	Yes	15	0.00000001	0.00013129
47	Yes	15	0.00000001	0.00011062
48	Yes	14	0.00000001	0.00007280
49	Yes	15	0.00000001	0.00013004
50	Yes	15	0.00000001	0.00010550

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	120 - 115	13.602	39	0.956	0.001
L2	115 - 110	12.601	39	0.954	0.001
L3	110 - 105	11.605	39	0.946	0.001
L4	105 - 100	10.622	39	0.931	0.001
L5	100 - 98.5	9.659	39	0.908	0.001
L6	98.5 - 98.25	9.375	39	0.899	0.001
L7	98.25 - 93.25	9.328	39	0.898	0.001
L8	93.25 - 90	8.400	39	0.872	0.001
L9	90 - 89.75	7.813	39	0.851	0.001
L10	89.75 - 84.75	7.769	39	0.849	0.001
L11	84.75 - 79.75	6.902	39	0.805	0.001
L12	79.75 - 79	6.086	39	0.751	0.001
L13	79 - 78.75	5.969	39	0.742	0.001
L14	78.75 - 74.0413	5.930	39	0.739	0.001
L15	74.0413 - 73.7913	5.224	39	0.692	0.001
L16	73.7913 - 68.7913	5.188	39	0.690	0.001
L17	68.7913 - 63.7913	4.488	39	0.644	0.001
L18	63.7913 - 60	3.841	39	0.591	0.000
L19	60 - 59.75	3.390	39	0.545	0.000
L20	59.75 - 54.75	3.362	39	0.543	0.000
L21	54.75 - 49.75	2.815	39	0.500	0.000
L22	49.75 - 47.8333	2.316	39	0.452	0.000
L23	47.8333 - 47.5833	2.138	39	0.432	0.000
L24	47.5833 - 43	2.116	39	0.430	0.000
L25	43 - 42.75	1.723	39	0.387	0.000
L26	42.75 - 37.75	1.703	39	0.385	0.000
L27	37.75 - 34.5	1.322	39	0.343	0.000
L28	34.5 - 34.25	1.098	39	0.313	0.000
L29	34.25 - 30	1.082	39	0.310	0.000
L30	30 - 29.75	0.828	39	0.259	0.000
L31	29.75 - 25.5833	0.815	39	0.257	0.000
L32	25.5833 - 25.3333	0.607	39	0.220	0.000
L33	25.3333 - 20.75	0.595	39	0.218	0.000
L34	20.75 - 20.5	0.403	39	0.181	0.000
L35	20.5 - 17.5833	0.394	39	0.179	0.000
L36	17.5833 - 17.3333	0.291	39	0.158	0.000
L37	17.3333 - 13.667	0.283	39	0.156	0.000
L38	13.667 - 13.417	0.175	39	0.124	0.000
L39	13.417 - 8.417	0.169	39	0.121	0.000
L40	8.417 - 6.083	0.066	39	0.075	0.000
L41	6.083 - 5.833	0.035	39	0.052	0.000
L42	5.833 - 0.833	0.032	39	0.050	0.000
L43	0.833 - 0	0.001	39	0.009	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
119.000	Pipe Mount [PM 601-3]	39	13.401	0.956	0.001	56899
117.000	KS24019-L112A	39	13.001	0.956	0.001	56899
100.000	BXA-70063-6BF-EDIN-0 w/ Mount Pipe	39	9.659	0.908	0.001	11447
60.000	Bridge Stiffener (96"x1.25"x16")	39	3.390	0.545	0.000	5621

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
30.000	Bridge Stiffener (96"x1.25"x16")	39	0.828	0.259	0.000	5506

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	120 - 115	62.935	2	4.424	0.007
L2	115 - 110	58.309	2	4.416	0.007
L3	110 - 105	53.706	2	4.377	0.006
L4	105 - 100	49.161	2	4.307	0.006
L5	100 - 98.5	44.706	2	4.204	0.006
L6	98.5 - 98.25	43.393	14	4.163	0.006
L7	98.25 - 93.25	43.176	14	4.158	0.006
L8	93.25 - 90	38.888	14	4.039	0.005
L9	90 - 89.75	36.176	14	3.939	0.005
L10	89.75 - 84.75	35.970	14	3.930	0.005
L11	84.75 - 79.75	31.961	14	3.729	0.004
L12	79.75 - 79	28.188	14	3.477	0.003
L13	79 - 78.75	27.645	14	3.434	0.003
L14	78.75 - 74.0413	27.466	14	3.424	0.003
L15	74.0413 - 73.7913	24.196	14	3.206	0.003
L16	73.7913 - 68.7913	24.028	14	3.197	0.003
L17	68.7913 - 63.7913	20.791	14	2.983	0.002
L18	63.7913 - 60	17.795	14	2.736	0.002
L19	60 - 59.75	15.705	14	2.526	0.002
L20	59.75 - 54.75	15.573	14	2.516	0.002
L21	54.75 - 49.75	13.040	14	2.319	0.002
L22	49.75 - 47.8333	10.727	14	2.095	0.001
L23	47.8333 - 47.5833	9.905	14	2.002	0.001
L24	47.5833 - 43	9.801	14	1.991	0.001
L25	43 - 42.75	7.983	14	1.793	0.001
L26	42.75 - 37.75	7.890	14	1.784	0.001
L27	37.75 - 34.5	6.123	14	1.589	0.001
L28	34.5 - 34.25	5.088	14	1.451	0.001
L29	34.25 - 30	5.012	14	1.438	0.001
L30	30 - 29.75	3.837	14	1.200	0.001
L31	29.75 - 25.5833	3.774	14	1.190	0.001
L32	25.5833 - 25.3333	2.809	14	1.020	0.001
L33	25.3333 - 20.75	2.756	14	1.011	0.001
L34	20.75 - 20.5	1.867	14	0.838	0.000
L35	20.5 - 17.5833	1.824	14	0.830	0.000
L36	17.5833 - 17.3333	1.346	14	0.731	0.000
L37	17.3333 - 13.667	1.308	14	0.721	0.000
L38	13.667 - 13.417	0.811	14	0.572	0.000
L39	13.417 - 8.417	0.781	14	0.562	0.000
L40	8.417 - 6.083	0.304	14	0.347	0.000
L41	6.083 - 5.833	0.160	14	0.242	0.000
L42	5.833 - 0.833	0.147	14	0.232	0.000
L43	0.833 - 0	0.004	14	0.040	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
119.000	Pipe Mount [PM 601-3]	2	62.009	4.423	0.007	12633
117.000	KS24019-L112A	2	60.158	4.422	0.007	12633
100.000	BXA-70063-6BF-EDIN-0 w/ Mount Pipe	2	44.706	4.204	0.006	2513
60.000	Bridge Stiffener (96"x1.25"x16")	14	15.705	2.526	0.002	1218
30.000	Bridge Stiffener (96"x1.25"x16")	14	3.837	1.200	0.001	1189

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	120 - 115 (1)	P24x0.25	5.000	0.000	0.0	18.653	-3.528	662.265	0.005
L2	115 - 110 (2)	P24x0.25	5.000	0.000	0.0	18.653	-3.946	662.265	0.006
L3	110 - 105 (3)	P24x0.25	5.000	0.000	0.0	18.653	-4.369	662.265	0.007
L4	105 - 100 (4)	P24x0.25	5.000	0.000	0.0	18.653	-4.795	662.265	0.007
L5	100 - 98.5 (5)	P24x0.25	1.500	0.000	0.0	18.653	-8.135	662.265	0.012
L6	98.5 - 98.25 (6)	P24x0.3875	0.250	0.000	0.0	28.745	-8.174	1086.560	0.008
L7	98.25 - 93.25 (7)	P24x0.3875	5.000	0.000	0.0	28.745	-8.884	1086.560	0.008
L8	93.25 - 90 (8)	P24x0.3875	3.250	0.000	0.0	28.745	-11.218	1086.560	0.010
L9	90 - 89.75 (9)	P24x0.375	0.250	0.000	0.0	27.833	-11.467	1052.070	0.011
L10	89.75 - 84.75 (10)	P24x0.375	5.000	0.000	0.0	27.833	-14.225	1052.070	0.014
L11	84.75 - 79.75 (11)	P24x0.375	5.000	0.000	0.0	27.833	-14.999	1052.070	0.014
L12	79.75 - 79 (12)	P24x0.375	0.750	0.000	0.0	27.833	-15.118	1052.070	0.014
L13	79 - 78.75 (13)	P24x0.51875	0.250	0.000	0.0	38.267	-15.169	1446.510	0.010
L14	78.75 - 74.0413 (14)	P24x0.51875	4.709	0.000	0.0	38.267	-16.052	1446.510	0.011
L15	74.0413 - 73.7913 (15)	P24x0.675	0.250	0.000	0.0	49.462	-16.113	1869.680	0.009
L16	73.7913 - 68.7913 (16)	P24x0.675	5.000	0.000	0.0	49.462	-17.201	1869.680	0.009
L17	68.7913 - 63.7913 (17)	P24x0.675	5.000	0.000	0.0	49.462	-18.325	1869.680	0.010
L18	63.7913 - 60 (18)	P24x0.675	3.791	0.000	0.0	49.462	-19.187	1869.680	0.010
L19	60 - 59.75 (19)	P30x0.53125	0.250	0.000	0.0	49.182	-21.619	1859.100	0.012
L20	59.75 - 54.75 (20)	P30x0.53125	5.000	0.000	0.0	49.182	-22.783	1859.100	0.012
L21	54.75 - 49.75 (21)	P30x0.53125	5.000	0.000	0.0	49.182	-23.966	1859.100	0.013
L22	49.75 - 47.8333 (22)	P30x0.53125	1.917	0.000	0.0	49.182	-24.415	1859.100	0.013
L23	47.8333 - 47.5833 (23)	P30x0.65	0.250	0.000	0.0	59.934	-24.495	2265.500	0.011
L24	47.5833 - 43 (24)	P30x0.65	4.583	0.000	0.0	59.934	-25.740	2265.500	0.011
L25	43 - 42.75 (25)	P30x0.8125	0.250	0.000	0.0	74.502	-25.828	2816.190	0.009
L26	42.75 - 37.75 (26)	P30x0.8125	5.000	0.000	0.0	74.502	-27.435	2816.190	0.010

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L27	37.75 - 34.5 (27)	P30x0.8125	3.250	0.000	0.0	74.502	-28.490	2816.190	0.010
L28	34.5 - 34.25 (28)	P30x0.65	0.250	0.000	0.0	59.934	-28.566	2265.500	0.013
L29	34.25 - 30 (29)	P30x0.65	4.250	0.000	0.0	59.934	-29.754	2265.500	0.013
L30	30 - 29.75 (30)	P36x0.55	0.250	0.000	0.0	61.253	-34.116	2315.370	0.015
L31	29.75 - 25.5833 (31)	P36x0.55	4.167	0.000	0.0	61.253	-35.314	2315.370	0.015
L32	25.5833 - 25.3333 (32)	P36x0.65	0.250	0.000	0.0	72.186	-35.403	2728.630	0.013
L33	25.3333 - 20.75 (33)	P36x0.65	4.583	0.000	0.0	72.186	-36.888	2728.630	0.014
L34	20.75 - 20.5 (34)	P36x0.7875	0.250	0.000	0.0	87.116	-36.991	3292.980	0.011
L35	20.5 - 17.5833 (35)	P36x0.7875	2.917	0.000	0.0	87.116	-38.083	3292.980	0.012
L36	17.5833 - 17.3333 (36)	P36x0.6875	0.250	0.000	0.0	76.270	-38.178	2882.990	0.013
L37	17.3333 - 13.667 (37)	P36x0.6875	3.666	0.000	0.0	76.270	-39.435	2882.990	0.014
L38	13.667 - 13.417 (38)	P36x0.7	0.250	0.000	0.0	77.629	-39.533	2934.370	0.013
L39	13.417 - 8.417 (39)	P36x0.7	5.000	0.000	0.0	77.629	-41.315	2934.370	0.014
L40	8.417 - 6.083 (40)	P36x0.7	2.334	0.000	0.0	77.629	-42.152	2934.370	0.014
L41	6.083 - 5.833 (41)	P36x0.8875	0.250	0.000	0.0	97.899	-42.266	3700.600	0.011
L42	5.833 - 0.833 (42)	P36x0.8875	5.000	0.000	0.0	97.899	-44.316	3700.600	0.012
L43	0.833 - 0 (43)	P36x0.725	0.833	0.000	0.0	80.344	-44.618	3037.010	0.015

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	120 - 115 (1)	P24x0.25	22.104	396.683	0.056	0.000	396.683	0.000
L2	115 - 110 (2)	P24x0.25	50.078	396.683	0.126	0.000	396.683	0.000
L3	110 - 105 (3)	P24x0.25	79.990	396.683	0.202	0.000	396.683	0.000
L4	105 - 100 (4)	P24x0.25	111.890	396.683	0.282	0.000	396.683	0.000
L5	100 - 98.5 (5)	P24x0.25	135.143	396.683	0.341	0.000	396.683	0.000
L6	98.5 - 98.25 (6)	P24x0.3875	138.034	647.412	0.213	0.000	647.412	0.000
L7	98.25 - 93.25 (7)	P24x0.3875	197.517	647.412	0.305	0.000	647.412	0.000
L8	93.25 - 90 (8)	P24x0.3875	238.409	647.412	0.368	0.000	647.412	0.000
L9	90 - 89.75 (9)	P24x0.375	241.656	623.717	0.387	0.000	623.717	0.000
L10	89.75 - 84.75 (10)	P24x0.375	309.214	623.717	0.496	0.000	623.717	0.000
L11	84.75 - 79.75 (11)	P24x0.375	380.056	623.717	0.609	0.000	623.717	0.000
L12	79.75 - 79 (12)	P24x0.375	390.823	623.717	0.627	0.000	623.717	0.000
L13	79 - 78.75 (13)	P24x0.51875	394.421	901.117	0.438	0.000	901.117	0.000
L14	78.75 - 74.0413 (14)	P24x0.51875	463.485	901.117	0.514	0.000	901.117	0.000
L15	74.0413 -	P24x0.675	467.224	1157.125	0.404	0.000	1157.125	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 $\frac{M_{uy}}{\phi M_{ny}}$
	73.7913 (15)							
L16	73.7913 - 68.7913 (16)	P24x0.675	544.603	1157.125	0.471	0.000	1157.125	0.000
L17	68.7913 - 63.7913 (17)	P24x0.675	626.434	1157.125	0.541	0.000	1157.125	0.000
L18	63.7913 - 60 (18)	P24x0.675	691.181	1157.125	0.597	0.000	1157.125	0.000
L19	60 - 59.75 (19)	P30x0.53125	695.893	1405.375	0.495	0.000	1405.375	0.000
L20	59.75 - 54.75 (20)	P30x0.53125	791.818	1405.375	0.563	0.000	1405.375	0.000
L21	54.75 - 49.75 (21)	P30x0.53125	890.908	1405.375	0.634	0.000	1405.375	0.000
L22	49.75 - 47.8333 (22)	P30x0.53125	929.708	1405.375	0.662	0.000	1405.375	0.000
L23	47.8333 - 47.5833 (23)	P30x0.65	934.808	1764.050	0.530	0.000	1764.050	0.000
L24	47.5833 - 43 (24)	P30x0.65	1030.175	1764.050	0.584	0.000	1764.050	0.000
L25	43 - 42.75 (25)	P30x0.8125	1035.475	2180.925	0.475	0.000	2180.925	0.000
L26	42.75 - 37.75 (26)	P30x0.8125	1143.600	2180.925	0.524	0.000	2180.925	0.000
L27	37.75 - 34.5 (27)	P30x0.8125	1216.050	2180.925	0.558	0.000	2180.925	0.000
L28	34.5 - 34.25 (28)	P30x0.65	1221.692	1764.050	0.693	0.000	1764.050	0.000
L29	34.25 - 30 (29)	P30x0.65	1318.950	1764.050	0.748	0.000	1764.050	0.000
L30	30 - 29.75 (30)	P36x0.55	1325.292	2052.067	0.646	0.000	2052.067	0.000
L31	29.75 - 25.5833 (31)	P36x0.55	1432.075	2052.067	0.698	0.000	2052.067	0.000
L32	25.5833 - 25.3333 (32)	P36x0.65	1438.550	2483.300	0.579	0.000	2483.300	0.000
L33	25.3333 - 20.75 (33)	P36x0.65	1558.600	2483.300	0.628	0.000	2483.300	0.000
L34	20.75 - 20.5 (34)	P36x0.7875	1565.225	3076.292	0.509	0.000	3076.292	0.000
L35	20.5 - 17.5833 (35)	P36x0.7875	1643.208	3076.292	0.534	0.000	3076.292	0.000
L36	17.5833 - 17.3333 (36)	P36x0.6875	1649.950	2649.317	0.623	0.000	2649.317	0.000
L37	17.3333 - 13.667 (37)	P36x0.6875	1749.642	2649.317	0.660	0.000	2649.317	0.000
L38	13.667 - 13.417 (38)	P36x0.7	1756.492	2705.167	0.649	0.000	2705.167	0.000
L39	13.417 - 8.417 (39)	P36x0.7	1894.850	2705.167	0.700	0.000	2705.167	0.000
L40	8.417 - 6.083 (40)	P36x0.7	1960.375	2705.167	0.725	0.000	2705.167	0.000
L41	6.083 - 5.833 (41)	P36x0.8875	1967.433	3447.425	0.571	0.000	3447.425	0.000
L42	5.833 - 0.833 (42)	P36x0.8875	2109.983	3447.425	0.612	0.000	3447.425	0.000
L43	0.833 - 0 (43)	P36x0.725	2133.967	2817.625	0.757	0.000	2817.625	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	120 - 115 (1)	P24x0.25	5.396	201.861	0.027	0.001	324.229	0.000
L2	115 - 110 (2)	P24x0.25	5.780	201.861	0.029	0.001	324.229	0.000
L3	110 - 105 (3)	P24x0.25	6.188	201.861	0.031	0.103	324.229	0.000
L4	105 - 100 (4)	P24x0.25	6.574	201.861	0.033	0.103	324.229	0.000
L5	100 - 98.5 (5)	P24x0.25	11.551	201.861	0.057	0.332	324.229	0.001
L6	98.5 - 98.25 (6)	P24x0.3875	11.589	325.969	0.036	0.332	676.703	0.000
L7	98.25 - 93.25 (7)	P24x0.3875	12.215	325.969	0.037	0.332	676.703	0.000
L8	93.25 - 90 (8)	P24x0.3875	12.955	325.969	0.040	0.354	676.703	0.001
L9	90 - 89.75 (9)	P24x0.375	13.024	315.621	0.041	0.356	655.568	0.001
L10	89.75 - 84.75 (10)	P24x0.375	14.009	315.621	0.044	0.393	655.568	0.001
L11	84.75 - 79.75 (11)	P24x0.375	14.339	315.621	0.045	0.393	655.568	0.001
L12	79.75 - 79 (12)	P24x0.375	14.387	315.621	0.046	0.393	655.568	0.001
L13	79 - 78.75 (13)	P24x0.51875	14.407	433.953	0.033	0.393	895.867	0.000
L14	78.75 - 74.0413 (14)	P24x0.51875	14.943	433.953	0.034	0.393	895.867	0.000
L15	74.0413 - 73.7913 (15)	P24x0.675	14.982	560.904	0.027	0.396	1150.242	0.000
L16	73.7913 - 68.7913 (16)	P24x0.675	15.952	560.904	0.028	0.275	1150.242	0.000
L17	68.7913 - 63.7913 (17)	P24x0.675	16.778	560.904	0.030	0.429	1150.242	0.000
L18	63.7913 - 60 (18)	P24x0.675	17.381	560.904	0.031	0.546	1150.242	0.000
L19	60 - 59.75 (19)	P30x0.53125	18.861	557.729	0.034	0.546	1444.992	0.000
L20	59.75 - 54.75 (20)	P30x0.53125	19.507	557.729	0.035	0.546	1444.992	0.000
L21	54.75 - 49.75 (21)	P30x0.53125	20.127	557.729	0.036	0.546	1444.992	0.000
L22	49.75 - 47.8333 (22)	P30x0.53125	20.374	557.729	0.037	0.546	1444.992	0.000
L23	47.8333 - 47.5833 (23)	P30x0.65	20.462	679.649	0.030	0.546	1753.767	0.000
L24	47.5833 - 43 (24)	P30x0.65	21.192	679.649	0.031	0.570	1753.767	0.000
L25	43 - 42.75 (25)	P30x0.8125	21.231	844.857	0.025	0.571	2168.000	0.000
L26	42.75 - 37.75 (26)	P30x0.8125	22.054	844.857	0.026	0.595	2168.000	0.000
L27	37.75 - 34.5 (27)	P30x0.8125	22.566	844.857	0.027	0.610	2168.000	0.000
L28	34.5 - 34.25 (28)	P30x0.65	22.600	679.649	0.033	0.611	1753.767	0.000
L29	34.25 - 30 (29)	P30x0.65	23.212	679.649	0.034	0.631	1753.767	0.000
L30	30 - 29.75 (30)	P36x0.55	25.396	694.611	0.037	0.631	2164.900	0.000
L31	29.75 - 25.5833 (31)	P36x0.55	25.906	694.611	0.037	0.631	2164.900	0.000
L32	25.5833 - 25.3333 (32)	P36x0.65	25.933	818.589	0.032	0.631	2544.100	0.000
L33	25.3333 - 20.75 (33)	P36x0.65	26.497	818.589	0.032	0.631	2544.100	0.000
L34	20.75 - 20.5 (34)	P36x0.7875	26.530	987.894	0.027	0.632	3058.350	0.000
L35	20.5 - 17.5833 (35)	P36x0.7875	26.989	987.894	0.027	0.646	3058.350	0.000
L36	17.5833 - 17.3333 (36)	P36x0.6875	27.017	864.896	0.031	0.648	2685.175	0.000
L37	17.3333 - 13.667 (37)	P36x0.6875	27.411	864.896	0.032	0.647	2685.175	0.000

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 $\frac{T_u}{\phi T_n}$
L38	13.667 - 13.417 (38)	P36x0.7	27.435	880.310	0.031	0.647	2732.058	0.000
L39	13.417 - 8.417 (39)	P36x0.7	27.948	880.310	0.032	0.645	2732.058	0.000
L40	8.417 - 6.083 (40)	P36x0.7	28.257	880.310	0.032	0.635	2732.058	0.000
L41	6.083 - 5.833 (41)	P36x0.8875	28.276	1110.180	0.025	0.625	3427.158	0.000
L42	5.833 - 0.833 (42)	P36x0.8875	28.781	1110.180	0.026	0.622	3427.158	0.000
L43	0.833 - 0 (43)	P36x0.725	28.855	911.104	0.032	0.622	2825.625	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	120 - 115 (1)	0.005	0.056	0.000	0.027	0.000	0.062 ✔	1.050	4.8.2 ✔
L2	115 - 110 (2)	0.006	0.126	0.000	0.029	0.000	0.133 ✔	1.050	4.8.2 ✔
L3	110 - 105 (3)	0.007	0.202	0.000	0.031	0.000	0.209 ✔	1.050	4.8.2 ✔
L4	105 - 100 (4)	0.007	0.282	0.000	0.033	0.000	0.290 ✔	1.050	4.8.2 ✔
L5	100 - 98.5 (5)	0.012	0.341	0.000	0.057	0.001	0.356 ✔	1.050	4.8.2 ✔
L6	98.5 - 98.25 (6)	0.008	0.213	0.000	0.036	0.000	0.222 ✔	1.050	4.8.2 ✔
L7	98.25 - 93.25 (7)	0.008	0.305	0.000	0.037	0.000	0.315 ✔	1.050	4.8.2 ✔
L8	93.25 - 90 (8)	0.010	0.368	0.000	0.040	0.001	0.380 ✔	1.050	4.8.2 ✔
L9	90 - 89.75 (9)	0.011	0.387	0.000	0.041	0.001	0.400 ✔	1.050	4.8.2 ✔
L10	89.75 - 84.75 (10)	0.014	0.496	0.000	0.044	0.001	0.511 ✔	1.050	4.8.2 ✔
L11	84.75 - 79.75 (11)	0.014	0.609	0.000	0.045	0.001	0.626 ✔	1.050	4.8.2 ✔
L12	79.75 - 79 (12)	0.014	0.627	0.000	0.046	0.001	0.643 ✔	1.050	4.8.2 ✔
L13	79 - 78.75 (13)	0.010	0.438	0.000	0.033	0.000	0.449 ✔	1.050	4.8.2 ✔
L14	78.75 - 74.0413 (14)	0.011	0.514	0.000	0.034	0.000	0.527 ✔	1.050	4.8.2 ✔
L15	74.0413 - 73.7913 (15)	0.009	0.404	0.000	0.027	0.000	0.413 ✔	1.050	4.8.2 ✔
L16	73.7913 - 68.7913 (16)	0.009	0.471	0.000	0.028	0.000	0.481 ✔	1.050	4.8.2 ✔

Section No.	Elevation ft	Ratio $P_u/\phi P_n$	Ratio $M_{ux}/\phi M_{nx}$	Ratio $M_{uy}/\phi M_{ny}$	Ratio $V_u/\phi V_n$	Ratio $T_u/\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L17	68.7913 - 63.7913 (17)	0.010	0.541	0.000	0.030	0.000	0.552 ✔	1.050	4.8.2 ✔
L18	63.7913 - 60 (18)	0.010	0.597	0.000	0.031	0.000	0.609 ✔	1.050	4.8.2 ✔
L19	60 - 59.75 (19)	0.012	0.495	0.000	0.034	0.000	0.508 ✔	1.050	4.8.2 ✔
L20	59.75 - 54.75 (20)	0.012	0.563	0.000	0.035	0.000	0.577 ✔	1.050	4.8.2 ✔
L21	54.75 - 49.75 (21)	0.013	0.634	0.000	0.036	0.000	0.648 ✔	1.050	4.8.2 ✔
L22	49.75 - 47.8333 (22)	0.013	0.662	0.000	0.037	0.000	0.676 ✔	1.050	4.8.2 ✔
L23	47.8333 - 47.5833 (23)	0.011	0.530	0.000	0.030	0.000	0.542 ✔	1.050	4.8.2 ✔
L24	47.5833 - 43 (24)	0.011	0.584	0.000	0.031	0.000	0.596 ✔	1.050	4.8.2 ✔
L25	43 - 42.75 (25)	0.009	0.475	0.000	0.025	0.000	0.485 ✔	1.050	4.8.2 ✔
L26	42.75 - 37.75 (26)	0.010	0.524	0.000	0.026	0.000	0.535 ✔	1.050	4.8.2 ✔
L27	37.75 - 34.5 (27)	0.010	0.558	0.000	0.027	0.000	0.568 ✔	1.050	4.8.2 ✔
L28	34.5 - 34.25 (28)	0.013	0.693	0.000	0.033	0.000	0.706 ✔	1.050	4.8.2 ✔
L29	34.25 - 30 (29)	0.013	0.748	0.000	0.034	0.000	0.762 ✔	1.050	4.8.2 ✔
L30	30 - 29.75 (30)	0.015	0.646	0.000	0.037	0.000	0.662 ✔	1.050	4.8.2 ✔
L31	29.75 - 25.5833 (31)	0.015	0.698	0.000	0.037	0.000	0.715 ✔	1.050	4.8.2 ✔
L32	25.5833 - 25.3333 (32)	0.013	0.579	0.000	0.032	0.000	0.593 ✔	1.050	4.8.2 ✔
L33	25.3333 - 20.75 (33)	0.014	0.628	0.000	0.032	0.000	0.642 ✔	1.050	4.8.2 ✔
L34	20.75 - 20.5 (34)	0.011	0.509	0.000	0.027	0.000	0.521 ✔	1.050	4.8.2 ✔
L35	20.5 - 17.5833 (35)	0.012	0.534	0.000	0.027	0.000	0.546 ✔	1.050	4.8.2 ✔
L36	17.5833 - 17.3333 (36)	0.013	0.623	0.000	0.031	0.000	0.637 ✔	1.050	4.8.2 ✔
L37	17.3333 - 13.667 (37)	0.014	0.660	0.000	0.032	0.000	0.675 ✔	1.050	4.8.2 ✔
L38	13.667 - 13.417 (38)	0.013	0.649	0.000	0.031	0.000	0.664 ✔	1.050	4.8.2 ✔
L39	13.417 - 8.417 (39)	0.014	0.700	0.000	0.032	0.000	0.716 ✔	1.050	4.8.2 ✔
L40	8.417 - 6.083 (40)	0.014	0.725	0.000	0.032	0.000	0.740 ✔	1.050	4.8.2 ✔
L41	6.083 - 5.833 (41)	0.011	0.571	0.000	0.025	0.000	0.583 ✔	1.050	4.8.2 ✔
L42	5.833 - 0.833 (42)	0.012	0.612	0.000	0.026	0.000	0.625 ✔	1.050	4.8.2 ✔

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L43	0.833 - 0 (43)	0.015	0.757	0.000	0.032	0.000	0.773 ✔	1.050	4.8.2 ✔

Section Capacity Table

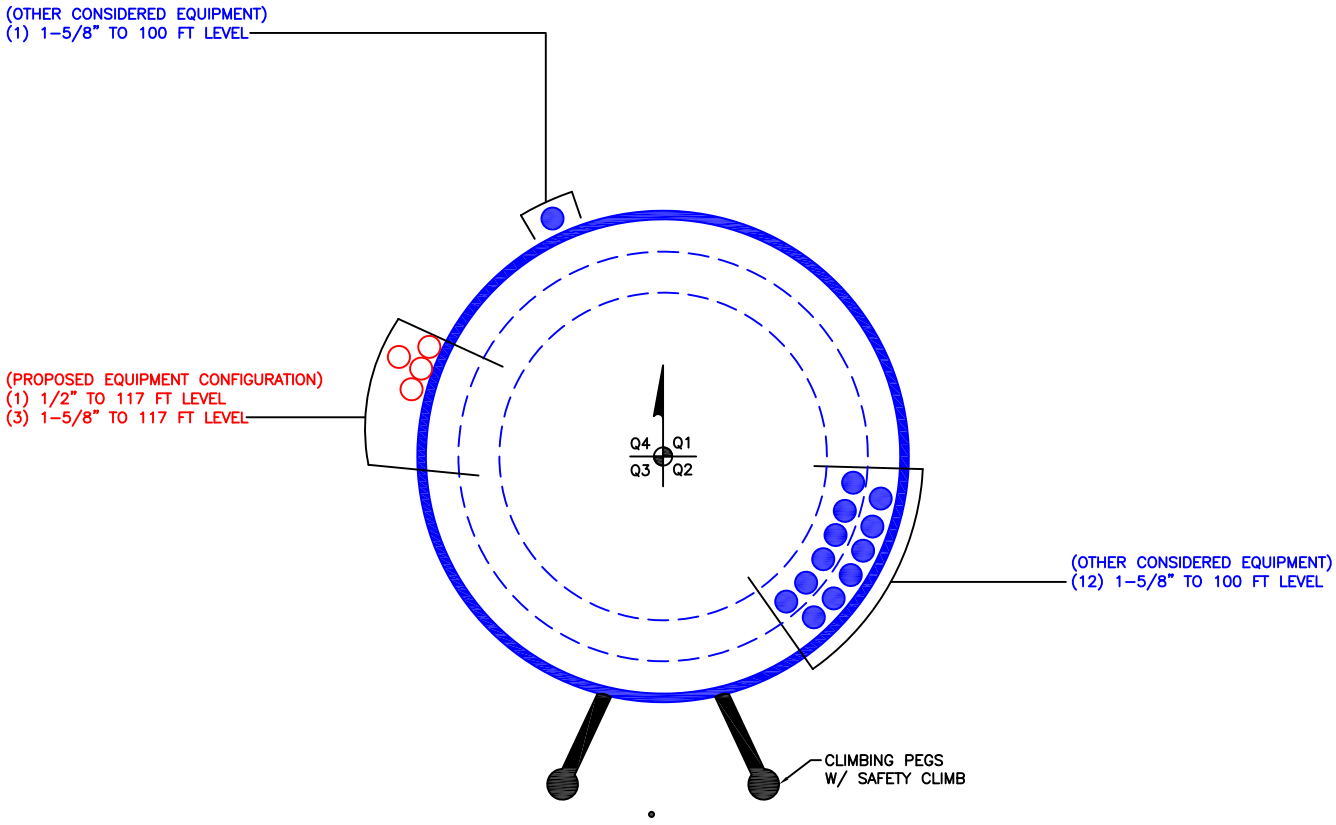
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	120 - 115	Pole	P24x0.25	1	-3.528	695.378	**	**
L2	115 - 110	Pole	P24x0.25	2	-3.946	695.378	**	**
L3	110 - 105	Pole	P24x0.25	3	-4.369	695.378	**	**
L4	105 - 100	Pole	P24x0.25	4	-4.795	695.378	**	**
L5	100 - 98.5	Pole	P24x0.25	5	-8.135	695.378	**	**
L6	98.5 - 98.25	Pole	P24x0.3875	6	-8.174	1140.888	**	**
L7	98.25 - 93.25	Pole	P24x0.3875	7	-8.884	1140.888	**	**
L8	93.25 - 90	Pole	P24x0.3875	8	-11.218	1140.888	**	**
L9	90 - 89.75	Pole	P24x0.375	9	-11.467	1104.673	**	**
L10	89.75 - 84.75	Pole	P24x0.375	10	-14.225	1104.673	**	**
L11	84.75 - 79.75	Pole	P24x0.375	11	-14.999	1104.673	**	**
L12	79.75 - 79	Pole	P24x0.375	12	-15.118	1104.673	**	**
L13	79 - 78.75	Pole	P24x0.51875	13	-15.169	1518.835	**	**
L14	78.75 - 74.0413	Pole	P24x0.51875	14	-16.052	1518.835	**	**
L15	74.0413 - 73.7913	Pole	P24x0.675	15	-16.113	1963.164	**	**
L16	73.7913 - 68.7913	Pole	P24x0.675	16	-17.201	1963.164	**	**
L17	68.7913 - 63.7913	Pole	P24x0.675	17	-18.325	1963.164	**	**
L18	63.7913 - 60	Pole	P24x0.675	18	-19.187	1963.164	**	**
L19	60 - 59.75	Pole	P30x0.53125	19	-21.619	1952.055	**	**
L20	59.75 - 54.75	Pole	P30x0.53125	20	-22.783	1952.055	**	**
L21	54.75 - 49.75	Pole	P30x0.53125	21	-23.966	1952.055	**	**
L22	49.75 - 47.8333	Pole	P30x0.53125	22	-24.415	1952.055	**	**
L23	47.8333 - 47.5833	Pole	P30x0.65	23	-24.495	2378.775	**	**
L24	47.5833 - 43	Pole	P30x0.65	24	-25.740	2378.775	**	**
L25	43 - 42.75	Pole	P30x0.8125	25	-25.828	2956.999	**	**
L26	42.75 - 37.75	Pole	P30x0.8125	26	-27.435	2956.999	**	**
L27	37.75 - 34.5	Pole	P30x0.8125	27	-28.490	2956.999	**	**
L28	34.5 - 34.25	Pole	P30x0.65	28	-28.566	2378.775	**	**
L29	34.25 - 30	Pole	P30x0.65	29	-29.754	2378.775	**	**
L30	30 - 29.75	Pole	P36x0.55	30	-34.116	2431.138	**	**
L31	29.75 - 25.5833	Pole	P36x0.55	31	-35.314	2431.138	**	**
L32	25.5833 - 25.3333	Pole	P36x0.65	32	-35.403	2865.061	**	**
L33	25.3333 - 20.75	Pole	P36x0.65	33	-36.888	2865.061	**	**
L34	20.75 - 20.5	Pole	P36x0.7875	34	-36.991	3457.629	**	**
L35	20.5 - 17.5833	Pole	P36x0.7875	35	-38.083	3457.629	**	**
L36	17.5833 - 17.3333	Pole	P36x0.6875	36	-38.178	3027.139	**	**
L37	17.3333 - 13.667	Pole	P36x0.6875	37	-39.435	3027.139	**	**
L38	13.667 - 13.417	Pole	P36x0.7	38	-39.533	3081.088	**	**
L39	13.417 - 8.417	Pole	P36x0.7	39	-41.315	3081.088	**	**
L40	8.417 - 6.083	Pole	P36x0.7	40	-42.152	3081.088	**	**

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L41	6.083 - 5.833	Pole	P36x0.8875	41	-42.266	3885.630	**	**
L42	5.833 - 0.833	Pole	P36x0.8875	42	-44.316	3885.630	**	**
L43	0.833 - 0	Pole	P36x0.725	43	-44.618	3188.860	**	**
							Summary	
						Pole (L43)	**	**
						RATING =	**	**

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

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876309

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 876309

Work Order: 1919505

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	120	30		0	24	24	0.25		A53-B-42
2	90	30		0	24.00	24	0.375		A53-B-42
3	60	30		0	30.00	30	0.375		A53-B-42
4	30	30		0	36.00	36	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	20.75	plate	3.5x1.25: (1) (1.1875)	3		22.5						143						263				
2	34.5	43	plate	3.25x1.25: (1) (1.1875	3		22.5						143						263				
3	0	6.083	channel	MP3-05 (1.1875in)	1					90													
4	6.083	13.667	channel	MP3-04 (1.1875in)	2				60		120												
5	13.667	30	channel	MP3-05 (1.1875in)	1					90													
6	0	30	channel	MP3-05 (1.1875in)	2											210						330	
7	30	60	channel	MP3-04 (1.1875in)	3					90						210						330	
8	60	74.04133333	channel	MP3-03 (1.1875in)	3					90						210						330	
9	17.58333333	25.58333333	plate	CCI-SFP-040075	3			45						165						285			
10	30	47.83333333	plate	CCI-SFP-040075	3			45						165						285			
11	60	79	plate	CCI-SFP-040075	3			45						165						285			
12	90	98.5	plate	-SFP_040075: (1) (1.18	3					90						210						330	
13	0	6.083	plate	FP 1.25 x 4.25_1	3			43						156						290			
14																							

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Type	Bottom Termination Length (in)	Top Termination Type	Top Termination Length (in)	Lu (in)	Net Area (in2)	Bolt Hole Size (in)	Reinforcement Material
1	3.5	1.25	4.375	0.625	Welded	n/a	PC 8.8 - M20 (100)	15.000	24.000	2.813	1.1875	A572-65
2	3.25	1.25	4.0625	0.625	None	n/a	PC 8.8 - M20 (100)	12.000	24.000	2.500	1.1875	A572-65
3	5.33	2.09	5.65	0.79	PC 8.8 - M20 (100)	29	PC 8.8 - M20 (100)	29.000	18.000	5.025	1.1875	A572-65
4	4.78	1.61	4.13	0.61	PC 8.8 - M20 (100)	17	PC 8.8 - M20 (100)	17.000	18.000	3.593	1.1875	A572-65
5	5.33	2.09	5.65	0.79	PC 8.8 - M20 (100)	29	PC 8.8 - M20 (100)	29.000	18.000	5.025	1.1875	A572-65
6	5.33	2.09	5.65	0.79	PC 8.8 - M20 (100)	29	PC 8.8 - M20 (100)	29.000	18.000	5.025	1.1875	A572-65
7	4.78	1.61	4.13	0.61	PC 8.8 - M20 (100)	17	PC 8.8 - M20 (100)	17.000	18.000	3.593	1.1875	A572-65
8	4.06	1.57	2.92	0.59	PC 8.8 - M20 (100)	14	PC 8.8 - M20 (100)	14.000	18.000	2.545	1.1875	A572-65
9	4	0.75	3	0.375	PC 8.8 - M20 (100)	12	PC 8.8 - M20 (100)	12.000	16.000	2.063	1.1875	A572-65
10	4	0.75	3	0.375	PC 8.8 - M20 (100)	12	PC 8.8 - M20 (100)	12.000	16.000	2.063	1.1875	A572-65
11	4	0.75	3	0.375	PC 8.8 - M20 (100)	12	PC 8.8 - M20 (100)	12.000	16.000	2.063	1.1875	A572-65
12	4	0.75	3	0.375	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	18.000	16.000	2.063	1.1875	A572-65
13	1.25	4.25	5.3125	2.125	Welded	n/a	Welded	n/a	0.000	5.313	0.0000	A572-65

Connection Details for Custom Reinforcements

Reinforcement	End	# Bolts	N or X	Bolt Spacing (in)	Edge Dist (in)	Weld Grade (ksi)	Transverse (Horiz.) Weld Type	Horiz. Weld Length (in)	Horiz. Groove Depth (in)	Horiz. Groove Angle (deg)	Horiz. Fillet Size (in)	Vertical Weld Length (in)	Vertical Fillet Size (in)	Rev H Connection Capacity (kip)
FP 3.5x1.25: (1) (1.1875)_1	Top	5	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	70	CJP Groove	3.5	0.625	45	0.375	-	-	-
FP 3.25x1.25: (1) (1.1875)_1	Top	4	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	N	-	-	70	None	-	-	-	-	-	-	-
CCI-SFP_040075: (1) (1.1875)	Top	6	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	8	N	3	3	-	-	-	-	-	-	-	-	-
FP 1.25 x 4.25_1	Top	-	-	-	-	70	None	-	-	-	-	96	0.375	-
	Bottom	-	-	-	-	70	None	-	-	-	-	96	0.375	-

TNX Geometry Input

Increment (ft): 5 Export to TNX

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	120 - 115	5		0	24.000	24.000	0.25	A53-B-42	1.000
2	115 - 110	5		0	24.000	24.000	0.25	A53-B-42	1.000
3	110 - 105	5		0	24.000	24.000	0.25	A53-B-42	1.000
4	105 - 100	5		0	24.000	24.000	0.25	A53-B-42	1.000
5	100 - 98.5	1.5		0	24.000	24.000	0.25	A53-B-42	1.000
6	98.5 - 98.25	0.25		0	24.000	24.000	0.3875	A53-B-42	0.962
7	98.25 - 93.25	5		0	24.000	24.000	0.3875	A53-B-42	0.962
8	93.25 - 90	3.25	0	0	24.000	24.000	0.3875	A53-B-42	0.962
9	90 - 89.75	0.25		0	24.000	24.000	0.375	A53-B-42	1.000
10	89.75 - 84.75	5		0	24.000	24.000	0.375	A53-B-42	1.000
11	84.75 - 79.75	5		0	24.000	24.000	0.375	A53-B-42	1.000
12	79.75 - 79	0.75		0	24.000	24.000	0.375	A53-B-42	1.000
13	79 - 78.75	0.25		0	24.000	24.000	0.51875	A53-B-42	0.963
14	78.75 - 74.04133	4.708666667		0	24.000	24.000	0.51875	A53-B-42	0.963
15	74.04133 - 73.79133	0.25		0	24.000	24.000	0.675	A53-B-42	0.922
16	73.79133 - 68.79133	5		0	24.000	24.000	0.675	A53-B-42	0.922
17	68.79133 - 63.79133	5		0	24.000	24.000	0.675	A53-B-42	0.922
18	63.79133 - 60	3.791333333	0	0	24.000	24.000	0.675	A53-B-42	0.922
19	60 - 59.75	0.25		0	30.000	30.000	0.53125	A53-B-42	0.962
20	59.75 - 54.75	5		0	30.000	30.000	0.53125	A53-B-42	0.962
21	54.75 - 49.75	5		0	30.000	30.000	0.53125	A53-B-42	0.962
22	49.75 - 47.83333	1.916666667		0	30.000	30.000	0.53125	A53-B-42	0.962
23	47.83333 - 47.58333	0.25		0	30.000	30.000	0.65	A53-B-42	0.939
24	47.58333 - 43	4.583333333		0	30.000	30.000	0.65	A53-B-42	0.939
25	43 - 42.75	0.25		0	30.000	30.000	0.8125	A53-B-42	0.919
26	42.75 - 37.75	5		0	30.000	30.000	0.8125	A53-B-42	0.919
27	37.75 - 34.5	3.25		0	30.000	30.000	0.8125	A53-B-42	0.919
28	34.5 - 34.25	0.25		0	30.000	30.000	0.65	A53-B-42	0.939
29	34.25 - 30	4.25	0	0	30.000	30.000	0.65	A53-B-42	0.939
30	30 - 29.75	0.25		0	36.000	36.000	0.55	A53-B-42	0.962
31	29.75 - 25.58333	4.166666667		0	36.000	36.000	0.55	A53-B-42	0.962
32	25.58333 - 25.33333	0.25		0	36.000	36.000	0.65	A53-B-42	0.941
33	25.33333 - 20.75	4.583333333		0	36.000	36.000	0.65	A53-B-42	0.941
34	20.75 - 20.5	0.25		0	36.000	36.000	0.7875	A53-B-42	0.930
35	20.5 - 17.58333	2.916666667		0	36.000	36.000	0.7875	A53-B-42	0.930
36	17.58333 - 17.33333	0.25		0	36.000	36.000	0.6875	A53-B-42	0.945
37	17.33333 - 13.667	3.666333333		0	36.000	36.000	0.6875	A53-B-42	0.945
38	13.667 - 13.417	0.25		0	36.000	36.000	0.7	A53-B-42	0.962
39	13.417 - 8.417	5		0	36.000	36.000	0.7	A53-B-42	0.962
40	8.417 - 6.083	2.334		0	36.000	36.000	0.7	A53-B-42	0.962
41	6.083 - 5.833	0.25		0	36.000	36.000	0.8875	A53-B-42	0.899
42	5.833 - 0.833	5		0	36.000	36.000	0.8875	A53-B-42	0.899
43	0.833 - 0	0.833		0	36.000	36.000	0.725	A53-B-42	0.932

TNX Section Forces

Increment (ft): 5

	Section Height (ft)	TNX Output P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	120 - 115	3.53	22.10	5.40
2	115 - 110	3.95	50.08	5.78
3	110 - 105	4.37	79.99	6.19
4	105 - 100	8.32	117.96	11.12
5	100 - 98.5	8.14	135.14	11.55
6	98.5 - 98.25	8.17	138.03	11.59
7	98.25 - 93.25	8.88	197.52	12.22
8	93.25 - 90	11.22	238.41	12.95
9	90 - 89.75	11.47	241.66	13.02
10	89.75 - 84.75	14.23	309.21	14.01
11	84.75 - 79.75	15.00	380.06	14.34
12	79.75 - 79	15.12	390.82	14.39
13	79 - 78.75	15.17	394.42	14.41
14	78.75 - 74.0413	16.05	463.48	14.94
15	74.0413 - 73.7913	16.11	467.22	14.98
16	73.7913 - 68.7913	17.20	544.60	15.95
17	68.7913 - 63.7913	18.32	626.43	16.78
18	63.7913 - 60	19.19	691.18	17.38
19	60 - 59.75	21.62	695.89	18.86
20	59.75 - 54.75	22.78	791.82	19.51
21	54.75 - 49.75	23.97	890.91	20.13
22	49.75 - 47.8333	24.41	929.71	20.37
23	47.8333 - 47.5833	24.50	934.81	20.39
24	47.5833 - 43	25.74	1030.18	21.19
25	43 - 42.75	25.83	1035.48	21.23
26	42.75 - 37.75	27.43	1143.60	22.05
27	37.75 - 34.5	28.49	1216.05	22.57
28	34.5 - 34.25	28.57	1221.69	22.60
29	34.25 - 30	29.75	1318.95	23.21
30	30 - 29.75	34.12	1325.29	25.40
31	29.75 - 25.5833	35.31	1432.08	25.91
32	25.5833 - 25.3333	35.40	1438.55	25.93
33	25.3333 - 20.75	36.89	1558.60	26.50
34	20.75 - 20.5	36.99	1565.23	26.53
35	20.5 - 17.5833	38.08	1643.21	26.99
36	17.5833 - 17.3333	38.18	1649.95	27.02
37	17.3333 - 13.667	39.43	1749.64	27.41
38	13.667 - 13.417	39.53	1756.49	27.44
39	13.417 - 8.417	41.32	1894.85	27.95
40	8.417 - 6.083	42.15	1960.37	28.26
41	6.083 - 5.833	42.27	1967.43	28.28
42	5.833 - 0.833	44.32	2109.98	28.78
43	0.833 - 0	44.62	2133.96	28.85

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
120 - 115	Pole	TP24x24x0.25	Pole	5.8%	Pass
115 - 110	Pole	TP24x24x0.25	Pole	12.6%	Pass
110 - 105	Pole	TP24x24x0.25	Pole	19.9%	Pass
105 - 100	Pole	TP24x24x0.25	Pole	29.6%	Pass
100 - 98.5	Pole	TP24x24x0.25	Pole	33.7%	Pass
98.5 - 98.25	Pole + Reinf.	TP24x24x0.3875	Reinf. 12 Tension Rupture	24.3%	Pass
98.25 - 93.25	Pole + Reinf.	TP24x24x0.3875	Reinf. 12 Tension Rupture	34.5%	Pass
93.25 - 90	Pole + Reinf.	TP24x24x0.3875	Reinf. 12 Tension Rupture	41.7%	Pass
90 - 89.75	Pole	TP24x24x0.375	Pole	38.0%	Pass
89.75 - 84.75	Pole	TP24x24x0.375	Pole	48.6%	Pass
84.75 - 79.75	Pole	TP24x24x0.375	Pole	59.5%	Pass
79.75 - 79	Pole	TP24x24x0.375	Pole	61.1%	Pass
79 - 78.75	Pole + Reinf.	TP24x24x0.5188	Reinf. 11 Tension Rupture	52.3%	Pass
78.75 - 74.04	Pole + Reinf.	TP24x24x0.5188	Reinf. 11 Tension Rupture	61.3%	Pass
74.04 - 73.79	Pole + Reinf.	TP24x24x0.675	Reinf. 11 Tension Rupture	48.9%	Pass
73.79 - 68.79	Pole + Reinf.	TP24x24x0.675	Reinf. 11 Tension Rupture	56.9%	Pass
68.79 - 63.79	Pole + Reinf.	TP24x24x0.675	Reinf. 11 Tension Rupture	65.4%	Pass
63.79 - 60	Pole + Reinf.	TP24x24x0.675	Reinf. 11 Tension Rupture	72.1%	Pass
60 - 59.75	Pole + Reinf.	TP30x30x0.5313	Pole	51.2%	Pass
59.75 - 54.75	Pole + Reinf.	TP30x30x0.5313	Pole	58.1%	Pass
54.75 - 49.75	Pole + Reinf.	TP30x30x0.5313	Pole	65.3%	Pass
49.75 - 47.83	Pole + Reinf.	TP30x30x0.5313	Pole	68.1%	Pass
47.83 - 47.58	Pole + Reinf.	TP30x30x0.65	Reinf. 10 Tension Rupture	63.1%	Pass
47.58 - 43	Pole + Reinf.	TP30x30x0.65	Reinf. 10 Tension Rupture	69.5%	Pass
43 - 42.75	Pole + Reinf.	TP30x30x0.8125	Reinf. 2 Tension Rupture	64.1%	Pass
42.75 - 37.75	Pole + Reinf.	TP30x30x0.8125	Reinf. 2 Tension Rupture	70.8%	Pass
37.75 - 34.5	Pole + Reinf.	TP30x30x0.8125	Reinf. 2 Tension Rupture	75.2%	Pass
34.5 - 34.25	Pole + Reinf.	TP30x30x0.65	Reinf. 10 Tension Rupture	82.3%	Pass
34.25 - 30	Pole + Reinf.	TP30x30x0.65	Reinf. 10 Tension Rupture	88.8%	Pass
30 - 29.75	Pole + Reinf.	TP36x36x0.55	Pole	66.4%	Pass
29.75 - 25.58	Pole + Reinf.	TP36x36x0.55	Pole	71.7%	Pass
25.58 - 25.33	Pole + Reinf.	TP36x36x0.65	Reinf. 9 Tension Rupture	66.7%	Pass
25.33 - 20.75	Pole + Reinf.	TP36x36x0.65	Reinf. 9 Tension Rupture	72.2%	Pass
20.75 - 20.5	Pole + Reinf.	TP36x36x0.7875	Reinf. 1 Tension Rupture	65.1%	Pass
20.5 - 17.58	Pole + Reinf.	TP36x36x0.7875	Reinf. 1 Tension Rupture	68.3%	Pass
17.58 - 17.33	Pole + Reinf.	TP36x36x0.6875	Reinf. 1 Tension Rupture	77.4%	Pass
17.33 - 13.67	Pole + Reinf.	TP36x36x0.6875	Reinf. 1 Tension Rupture	82.0%	Pass
13.67 - 13.42	Pole + Reinf.	TP36x36x0.7	Reinf. 1 Tension Rupture	82.9%	Pass
13.42 - 8.42	Pole + Reinf.	TP36x36x0.7	Reinf. 1 Tension Rupture	89.3%	Pass
8.42 - 6.08	Pole + Reinf.	TP36x36x0.7	Reinf. 1 Tension Rupture	92.4%	Pass
6.08 - 5.83	Pole + Reinf.	TP36x36x0.8875	Reinf. 1 Tension Rupture	74.2%	Pass
5.83 - 0.83	Pole + Reinf.	TP36x36x0.8875	Reinf. 1 Tension Rupture	79.5%	Pass
0.83 - 0	Pole + Reinf.	TP36x36x0.725	Pole	84.2%	Pass
				Summary	
			Pole	84.2%	Pass
			Reinforcement	92.4%	Pass
			Overall	92.4%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity*												
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13
120 - 115	1315	n/a	1315	18.65	n/a	18.65	5.8%													
115 - 110	1315	n/a	1315	18.65	n/a	18.65	12.6%													
110 - 105	1315	n/a	1315	18.65	n/a	18.65	19.9%													
105 - 100	1315	n/a	1315	18.65	n/a	18.65	29.6%													
100 - 98.5	1315	n/a	1315	18.65	n/a	18.65	33.7%													
98.5 - 98.25	1315	695	2011	18.65	9.00	27.65	22.5%												24.3%	
98.25 - 93.25	1315	695	2011	18.65	9.00	27.65	31.9%												34.5%	
93.25 - 90	1315	695	2011	18.65	9.00	27.65	38.5%												41.7%	
90 - 89.75	1942	n/a	1942	27.83	n/a	27.83	38.0%													
89.75 - 84.75	1942	n/a	1942	27.83	n/a	27.83	48.6%													
84.75 - 79.75	1942	n/a	1942	27.83	n/a	27.83	59.5%													
79.75 - 79	1942	n/a	1942	27.83	n/a	27.83	61.1%													
79 - 78.75	1942	695	2638	27.83	9.00	36.83	45.4%											52.3%		
78.75 - 74.04	1942	695	2638	27.83	9.00	36.83	53.2%											61.4%		
74.04 - 73.79	1942	1392	3335	27.83	17.76	45.59	42.4%								41.4%			48.9%		
73.79 - 68.79	1942	1392	3335	27.83	17.76	45.59	49.3%								48.2%			56.9%		
68.79 - 63.79	1942	1392	3335	27.83	17.76	45.59	56.7%								55.3%			65.4%		
63.79 - 60	1942	1392	3335	27.83	17.76	45.59	62.5%								61.0%			72.1%		
60 - 59.75	3829	1516	5346	34.90	12.39	47.29	51.2%							47.5%						
59.75 - 54.75	3829	1516	5346	34.90	12.39	47.29	58.1%							53.9%						
54.75 - 49.75	3829	1516	5346	34.90	12.39	47.29	65.3%							60.6%						
49.75 - 47.83	3829	1516	5346	34.90	12.39	47.29	68.1%							63.2%						
47.83 - 47.58	3829	2586	6416	34.90	21.39	56.29	57.1%							52.9%			63.1%			
47.58 - 43	3829	2586	6416	34.90	21.39	56.29	62.9%							58.3%			69.5%			
43 - 42.75	3829	4080	7910	34.90	33.58	68.48	51.2%		64.1%					47.5%			56.6%			
42.75 - 37.75	3829	4080	7910	34.90	33.58	68.48	56.6%		70.8%					52.4%			62.5%			
37.75 - 34.5	3829	4080	7910	34.90	33.58	68.48	60.1%		75.2%					55.7%			66.5%			
34.5 - 34.25	3829	2586	6416	34.90	21.39	56.29	74.5%							69.0%			82.3%			
34.25 - 30	3829	2586	6416	34.90	21.39	56.29	80.3%							74.5%			88.8%			
30 - 29.75	6659	3003	9662	41.97	16.95	58.92	66.4%					58.3%	58.3%							
29.75 - 25.58	6659	3003	9662	41.97	16.95	58.92	71.7%					62.9%	62.9%							
25.58 - 25.33	6659	4529	11188	41.97	25.95	67.92	62.2%					54.5%	54.5%			66.7%				
25.33 - 20.75	6659	4529	11188	41.97	25.95	67.92	67.3%					59.0%	59.0%			72.2%				
20.75 - 20.5	6659	6813	13472	41.97	39.08	81.04	56.1%	65.1%				49.2%	49.2%			60.2%				
20.5 - 17.58	6659	6813	13472	41.97	39.08	81.04	58.9%	68.3%				51.7%	51.7%			63.2%				
17.58 - 17.33	6659	5287	11946	41.97	30.08	72.04	66.7%	77.4%				58.5%	58.5%							
17.33 - 13.67	6659	5287	11946	41.97	30.08	72.04	70.7%	82.0%				62.0%	62.0%							
13.67 - 13.42	6664	5428	12093	41.97	32.69	74.65	71.4%	82.9%			61.2%		60.0%							
13.42 - 8.42	6664	5428	12093	41.97	32.69	74.65	77.0%	89.3%			66.0%		64.7%							
8.42 - 6.08	6664	5428	12093	41.97	32.69	74.65	79.6%	92.4%			68.3%		66.9%							
6.08 - 5.83	6661	8406	15067	41.97	46.01	87.98	63.9%	74.2%		54.5%			57.2%							53.0%
5.83 - 0.83	6661	8406	15067	41.97	46.01	87.98	68.5%	79.5%		58.4%			61.3%							56.9%
0.83 - 0	6663	5813	12476	41.97	32.89	74.86	84.2%			69.5%			73.6%							68.0%

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

PROJECT	**78288.003.01 - Milford JAI-ALAI, CT**
SUBJECT	**Bolted Bridge Stiffeners at 90'**
DATE	**02/16/21**

v2.4.1

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

General		
TIA-222 Rev.		H
Apply TIA-222-H Section 15.5?		Yes
Analysis/Design		Analysis
Modification Qty		1
Loads	Moment	238.4 k-ft
	Axial	11.2 k
	Shear	13.0 k

Pole Properties		
Upper Diameter		24.0 in
Upper Thickness		0.250 in
Lower Diameter		24.0 in
Lower Thickness		0.375 in
Grade		Custom
Fy	42	42 ksi
Fu	63	63 ksi

Flange Bolt Properties		
Qty		20
Diameter	1	in
Circle		29.0 in

Bridge Stiffener Properties			
Mod ID #	Mod 1	N/A	N/A
Type	Plate		
Qty	3		
Configuration	Symmetric		
Thickness	0.75 in		
Width	4.00 in		
Channel Part Number			
Diameter to Mod Centroid	33.5 in		
Unbraced Length	16.0 in		
Plate Grade	A572-65		
Fy	65 ksi		
Fu	80 ksi		
Eccentric Bolt Qty	8		
Shear-Only Bolt Qty	8		
Bolt Spacing	3.00 in		
Eccentricity	4.75 in		
Bolt Diameter	20 mm		
Shim Plate Length	29.0 in		
Shim Thickness	3 1/2 in		
Shim Weld Electrode	E70XX		
Shim Fillet Weld Size	3/8 in		

Results Summary

Checks		Capacity	Demand	Rating	Result
Mod 1	Plate Compression	104.4	56.5	51.6%	Pass
	Plate Tension	123.8	56.5	43.5%	Pass
Blind Bolts	Shear Only	37.0	7.1	18.2%	Pass
	Eccentric Shear	37.0	7.1	18.2%	Pass
	Tension	32.9	5.6	16.2%	Pass
	Combined Shear & Tens.	--	--	6.2%	Pass
	Bearing in Pole	31.7	7.1	21.2%	Pass
	Pull Out	32.7	5.6	16.3%	Pass
Shim Weld Strength		484.2	56.5	11.1%	Pass

Considered Loads at 90 ft

Load Type	Flange*	Bridge Stiffeners		
		Mod 1		
Moment	119.5 k-ft	119.0 k-ft		
Axial	11.2 k	0.0 k		
Shear	13.0 k	0.0 k		

*See flange tool for flange bolt and plate capacities

Monopole Flange Plate Connection

Elevation = 90 ft.

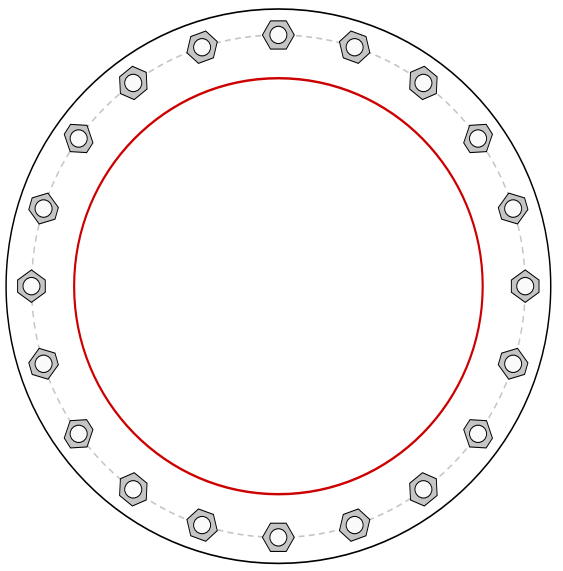
BU #	876309
Site Name	Milford JAI-ALAI, CT
Order #	538776 Rev# 1

TIA-222 Revision	H

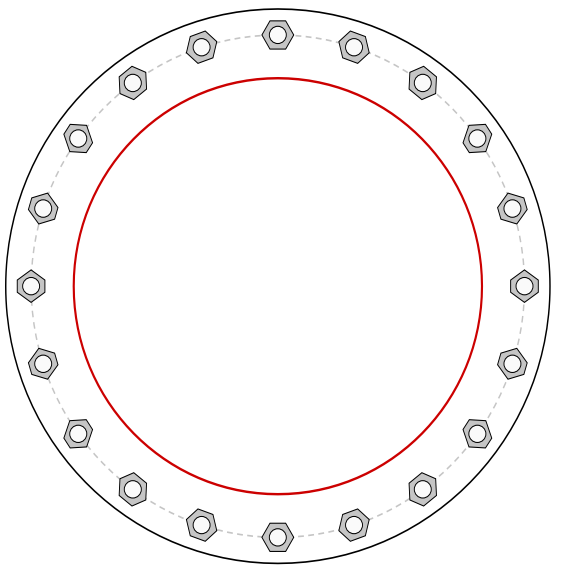
Applied Loads	
Moment (kip-ft)	119.50
Axial Force (kips)	11.22
Shear Force (kips)	12.95

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(20) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 29" BC

Top Plate Data

32" OD x 1.5" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Plate Data

32" OD x 1.5" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

24" x 0.25" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bottom Pole Data

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

Analysis Results

Bolt Capacity

Max Load (kips)	9.32	
Allowable (kips)	54.53	
Stress Rating:	**16.3%**	**Pass**

Top Plate Capacity

Max Stress (ksi):	7.12	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**20.9%**	**Pass**
Tension Side Stress Rating:	**9.3%**	**Pass**

Bottom Plate Capacity

Max Stress (ksi):	7.12	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**20.9%**	**Pass**
Tension Side Stress Rating:	**9.3%**	**Pass**

Welded-Plate Monopole Bridge Stiffeners
per TIA-222-H

CROWN CASTLE

Site Data

BU#: *876309*
Site Name: *Milford JAI-ALAI, CT*
Order #: *538776 Rev# 1*

Factored Loads at Splice Elevation		
Moment:	691.18	ft-kips
Axial:	19.19	kips
Shear:	17.38	kips

Elevation:	60	ft

Splice Bolt Data		
Quantity:	12	
Bolt Diameter:	1.5	in
Bolt Circle:	38	in

Pole Data		
Upper Diam:	24	in
Upper Thickness	0.375	in
Lower Diam:	30	in
Lower Thickness	0.375	in
Pipe Steel (Fy):	42	ksi

Bridge Stiffener Data		
Quantity:	3	
Total Length:	97.0	in
Plate Thickness:	1.250	in
Steel Grade (Fy):	65.0	ksi
Steel Ultimate (Fu):	80.0	ksi
Weld Type:	Fillet (both sides)	
Weld Size:	0.375	in
Weld Strength:	80	ksi
Upper Weld Length:	48	in
Upper Weld, C:	3.50	Table 8-4
Upper Plate Width:	16	in
Lower Weld Length:	44.875	in
Lower Weld, C:	3.71	Table 8-4
Lower Plate Width:	13	in
Gap PL Length:	4.1	in
Gap PL Width:	7	in

Stress Increase Factor		
ASIF:	1.000	

Stiffener Results	30.0%	
Maximum Compression:	151.9	kips
Allowable Compression:	505.6	kips
Compression Stress Ratio:	30.0%	
Maximum Tension:	151.9	kips
Allowable Tension:	511.9	kips
Tension Stress Ratio:	29.7%	
Maximum Flexure:	1898.7	in.kips
Allowable Flexure:	28080.0	in.kips
Bending&Shear Stress Ratio:	6.0%	

Weld Results	20.3%	
Upper Weld Eccentric Load:	151.89	kip
Allowable Weld Strength:	756.52	kip
Upper Weld Strength Ratio:	20.1%	
Upper Weld Eccentric Load:	151.89	kip
Allowable Weld Strength:	749.19	kip
Lower Weld Strength Ratio:	20.3%	

Pole Results	17.4%	
Punching Shear Stress:	4.94	kip/in
Allowable Punching Stress:	28.35	kip/in
Punching Shear Stress Ratio:	17.4%	

Loads to Use to Check Flange and Bolts w / CCIPlate		
Moment:	226	ft.kips
Axial:	19.2	kips
Shear:	17.4	kips

Monopole Flange Plate Connection

Elevation = 60 ft.

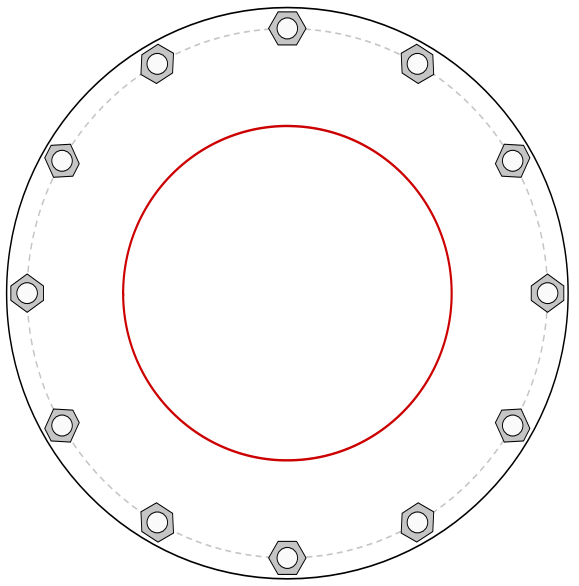
BU #	876309
Site Name	Milford JAI-ALAI, CT
Order #	538776 Rev# 1

TIA-222 Revision	H

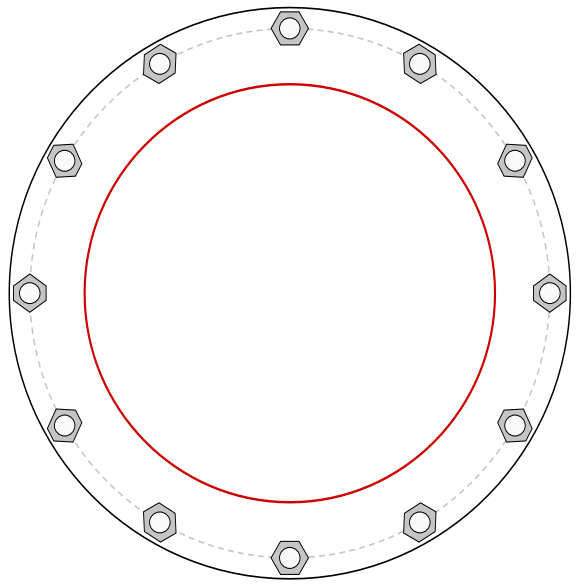
Applied Loads	
Moment (kip-ft)	226.00
Axial Force (kips)	19.19
Shear Force (kips)	17.38

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(12) 1-1/2" ø bolts (A325 N; Fy=81 ksi, Fu=105 ksi) on 38" BC

Top Plate Data

41" OD x 2" 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

41" OD x 2" 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)	22.18	
Allowable (kips)	111.01	
Stress Rating:	**19.0%**	**Pass**

Top Plate Capacity

Max Stress (ksi):	12.74	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**37.4%**	**Pass**
Tension Side Stress Rating:	**23.0%**	**Pass**

Bottom Plate Capacity

Max Stress (ksi):	7.12	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**20.9%**	**Pass**
Tension Side Stress Rating:	**9.3%**	**Pass**

Welded-Plate Monopole Bridge Stiffeners
per TIA-222-H

CROWN CASTLE

Site Data

BU#: *876309*
Site Name: *Milford JAI-ALAI, CT*
Order #: *538776 Rev# 1*

Factored Loads at Splice Elevation		
Moment:	1318.95	ft-kips
Axial:	29.75	kips
Shear:	23.21	kips

Elevation:	30--Mod 6	ft

Splice Bolt Data		
Quantity:	16	
Bolt Diameter:	1.5	in
Bolt Circle:	44	in

Pole Data		
Upper Diam:	30	in
Upper Thickness	0.375	in
Lower Diam:	36	in
Lower Thickness	0.375	in
Pipe Steel (Fy):	42	ksi

Bridge Stiffener Data		
Quantity:	3	
Total Length:	97.0	in
Plate Thickness:	1.250	in
Steel Grade (Fy):	65.0	ksi
Steel Ultimate (Fu):	80.0	ksi
Weld Type:	Fillet (both sides)	
Weld Size:	0.375	in
Weld Strength:	80	ksi
Upper Weld Length:	47.25	in
Upper Weld, C:	3.49	Table 8-4
Upper Plate Width:	16	in
Lower Weld Length:	44.875	in
Lower Weld, C:	3.71	Table 8-4
Lower Plate Width:	13	in
Gap PL Length:	4.9	in
Gap PL Width:	7	in

Stress Increase Factor		
ASIF:	1.000	

Stiffener Results	45.1%	
Maximum Compression:	227.1	kips
Allowable Compression:	503.1	kips
Compression Stress Ratio:	45.1%	
Maximum Tension:	227.1	kips
Allowable Tension:	511.9	kips
Tension Stress Ratio:	44.4%	
Maximum Flexure:	2839.1	in.kips
Allowable Flexure:	27209.4	in.kips
Bending&Shear Stress Ratio:	9.7%	

Weld Results	30.6%	
Upper Weld Eccentric Load:	227.12	kip
Allowable Weld Strength:	741.46	kip
Upper Weld Strength Ratio:	30.6%	
Upper Weld Eccentric Load:	227.12	kip
Allowable Weld Strength:	749.19	kip
Lower Weld Strength Ratio:	30.3%	

Pole Results	26.9%	
Punching Shear Stress:	7.63	kip/in
Allowable Punching Stress:	28.35	kip/in
Punching Shear Stress Ratio:	26.9%	

Loads to Use to Check Flange and Bolts w / CCIPlate		
Moment:	538	ft.kips
Axial:	29.8	kips
Shear:	23.2	kips

Welded-Plate Monopole Bridge Stiffeners
per TIA-222-H

CROWN CASTLE

Site Data

BU#: *876309*
Site Name: *Milford JAI-ALAI, CT*
Order #: *538776 Rev# 1*

Factored Loads at Splice Elevation		
Moment:	1318.95	ft-kips
Axial:	29.75	kips
Shear:	23.21	kips

Elevation:	30-Mod 3	ft

Splice Bolt Data		
Quantity:	16	
Bolt Diameter:	1.5	in
Bolt Circle:	44	in

Pole Data		
Upper Diam:	30	in
Upper Thickness	0.375	in
Lower Diam:	36	in
Lower Thickness	0.375	in
Pipe Steel (Fy):	42	ksi

Bridge Stiffener Data		
Quantity:	3	
Total Length:	93.0	in
Plate Thickness:	1.250	in
Steel Grade (Fy):	65.0	ksi
Steel Ultimate (Fu):	80.0	ksi
Weld Type:	Fillet (both sides)	
Weld Size:	0.375	in
Weld Strength:	80	ksi
Upper Weld Length:	45.25	in
Upper Weld, C:	3.44	Table 8-4
Upper Plate Width:	16	in
Lower Weld Length:	42.875	in
Lower Weld, C:	3.71	Table 8-4
Lower Plate Width:	13	in
Gap PL Length:	4.9	in
Gap PL Width:	7	in

Stress Increase Factor		
ASIF:	1.000	

Stiffener Results	45.1%	
Maximum Compression:	227.1	kips
Allowable Compression:	503.1	kips
Compression Stress Ratio:	45.1%	
Maximum Tension:	227.1	kips
Allowable Tension:	511.9	kips
Tension Stress Ratio:	44.4%	
Maximum Flexure:	2839.1	in.kips
Allowable Flexure:	24954.7	in.kips
Bending&Shear Stress Ratio:	10.5%	

Weld Results	32.4%	
Upper Weld Eccentric Load:	227.12	kip
Allowable Weld Strength:	701.35	kip
Upper Weld Strength Ratio:	32.4%	
Upper Weld Eccentric Load:	227.12	kip
Allowable Weld Strength:	715.80	kip
Lower Weld Strength Ratio:	31.7%	

Pole Results	29.3%	
Punching Shear Stress:	8.32	kip/in
Allowable Punching Stress:	28.35	kip/in
Punching Shear Stress Ratio:	29.3%	

Loads to Use to Check Flange and Bolts w / CCIPlate		
Moment:	538	ft.kips
Axial:	29.8	kips
Shear:	23.2	kips

Monopole Flange Plate Connection

Elevation = 30 ft.

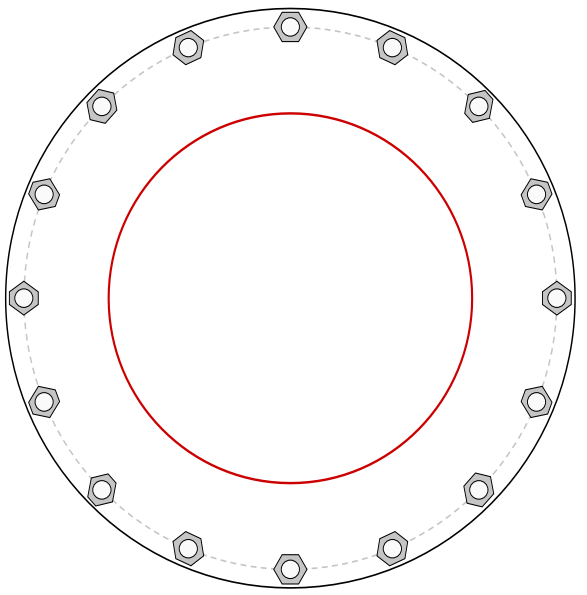
BU #	876309
Site Name	Milford JAI-ALAI, CT
Order #	538776 Rev# 1

TIA-222 Revision	H

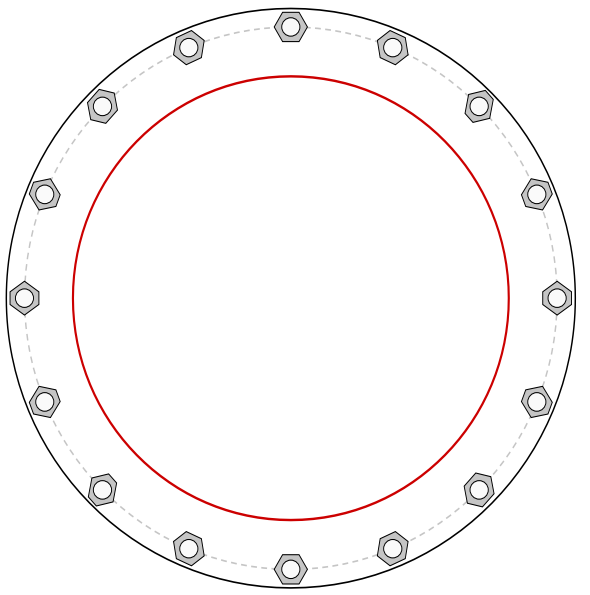
Applied Loads	
Moment (kip-ft)	538.00
Axial Force (kips)	29.75
Shear Force (kips)	23.21

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(16) 1-1/2" ø bolts (A325 N; Fy=81 ksi, Fu=105 ksi) on 44" BC

Top Plate Data

47" OD x 2" 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

47" OD x 2" 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)	34.81	
Allowable (kips)	111.01	
Stress Rating:	**29.9%**	**Pass**

Top Plate Capacity

Max Stress (ksi):	22.07	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**64.9%**	**Pass**
Tension Side Stress Rating:	**38.8%**	**Pass**

Bottom Plate Capacity

Max Stress (ksi):	12.66	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**37.2%**	**Pass**
Tension Side Stress Rating:	**16.4%**	**Pass**

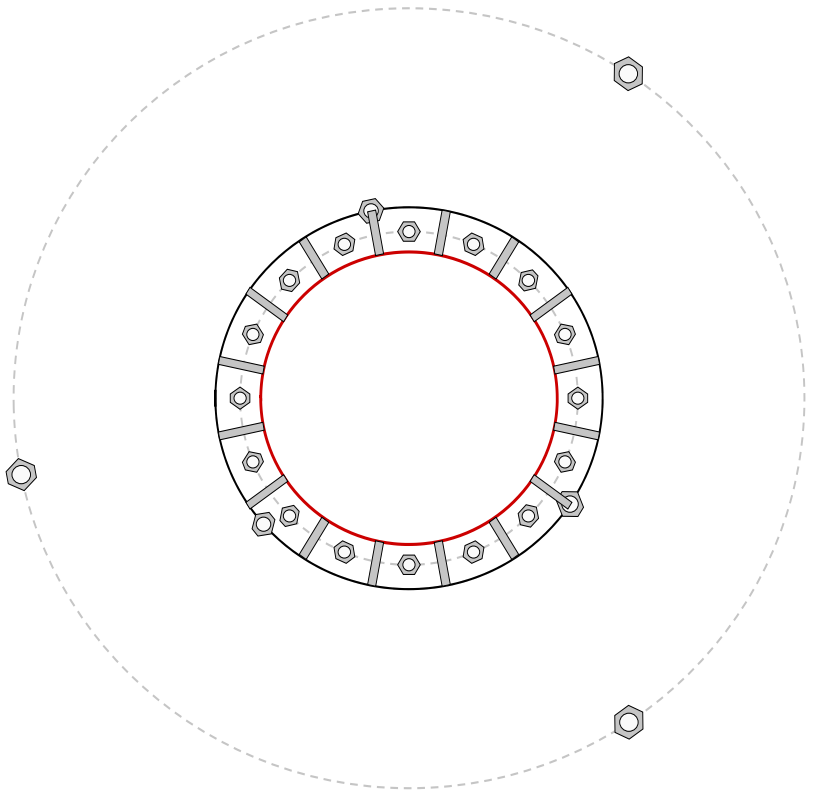
Monopole Base Plate Connection

Site Info	
BU #	876309
Site Name	Milford JAI-ALAI, CT
Order #	538776 Rev# 1

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

Applied Loads	
Moment (kip-ft)	2133.96
Axial Force (kips)	44.62
Shear Force (kips)	28.85

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

GROUP 1: (16) 1-1/2" ø bolts (A354-BC N; Fy=109 ksi, Fu=125 ksi) on 41" BC
GROUP 2: (2) 1-3/4" ø bolts (Dywidag N N; Fy=120 ksi, Fu=125 ksi) on 47" BC
pos. (deg): 101.3, 221.3

GROUP 3: (1) 2" ø bolts (A193 Gr. B7 N; Fy=105 ksi, Fu=125 ksi) on 47" BC
pos. (deg): 326.3

GROUP 4: (3) 2-1/4" ø bolts (Williams R71 N; Fy=120 ksi, Fu=125 ksi) on 96" BC
pos. (deg): 56.3, 191.3, 303.8

Base Plate Data

47" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Stiffener Data

(16) 18"H x 5.5"W x 1"T, Notch: 0.75"
plate: Fy= 50 ksi ; weld: Fy= 70 ksi
horiz. weld: 0.4375" fillet
vert. weld: 0.25" fillet

Pole Data

36" x 0.375" 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 = 43.22	ϕPn_c = 173.36	**Stress Rating**
Vu = 1.8	ϕVn = 78.01	**23.8%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 2:		
Pu_c = 84	ϕPn_c = 282.96	**Stress Rating**
Vu = 0	ϕVn = 127.33	**28.3%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 3:		
Pu_c = 73.53	ϕPn_c = 296.88	**Stress Rating**
Vu = 0	ϕVn = 133.6	**23.6%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 4:		
Pu_c = 253.66	ϕPn_c = 440.64	**Stress Rating**
Vu = 0	ϕVn = 198.29	**54.8%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	9.14	(Roark's Flexural)
Allowable Stress (ksi):	32.4	
Stress Rating:	**26.9%**	**Pass**

Stiffener Summary

Horizontal Weld:	**26.8%**	**Pass**
Vertical Weld:	**14.0%**	**Pass**
Plate Flexure+Shear:	**1.8%**	**Pass**
Plate Tension+Shear:	**11.4%**	**Pass**
Plate Compression:	**11.7%**	**Pass**
Pole Summary		
Punching Shear:	**3.7%**	**Pass**

CCIplate

Elevation (ft)	0	*(Base)*

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

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

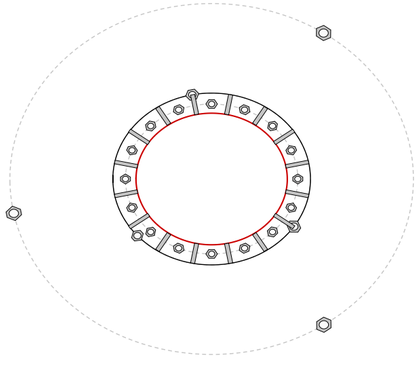
Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, n:	l_{ar} (in):	Thread Type	Area Override, in^2	Tension Only
1	1	0	1.5	A354-BC	41	0.5	0	N-Included		No
2	1	22.5	1.5	A354-BC	41	0.5	0	N-Included		No
3	1	45	1.5	A354-BC	41	0.5	0	N-Included		No
4	1	67.5	1.5	A354-BC	41	0.5	0	N-Included		No
5	1	90	1.5	A354-BC	41	0.5	0	N-Included		No
6	1	112.5	1.5	A354-BC	41	0.5	0	N-Included		No
7	1	135	1.5	A354-BC	41	0.5	0	N-Included		No
8	1	157.5	1.5	A354-BC	41	0.5	0	N-Included		No
9	1	180	1.5	A354-BC	41	0.5	0	N-Included		No
10	1	202.5	1.5	A354-BC	41	0.5	0	N-Included		No
11	1	225	1.5	A354-BC	41	0.5	0	N-Included		No
12	1	247.5	1.5	A354-BC	41	0.5	0	N-Included		No
13	1	270	1.5	A354-BC	41	0.5	0	N-Included		No
14	1	292.5	1.5	A354-BC	41	0.5	0	N-Included		No
15	1	315	1.5	A354-BC	41	0.5	0	N-Included		No
16	1	337.5	1.5	A354-BC	41	0.5	0	N-Included		No
17	2	101.3	1.75	Dywidag N	47	0.5	0	N-Included	2.62	No
18	2	221.3	1.75	Dywidag N	47	0.5	0	N-Included	2.62	No
19	3	326.3	2	A193 Gr. B7	47	0.5	0	N-Included		No
20	4	56.3	2.25	Williams R71	96	0.5	0	N-Included	4.08	No
21	4	191.3	2.25	Williams R71	96	0.5	0	N-Included	4.08	No
22	4	303.8	2.25	Williams R71	96	0.5	0	N-Included	4.08	No

Custom Stiffener Connection

Stiffener	Stiffener Group ID	Location (deg.)	Width (in)	Height (in)	Thickness (in)	H. Notch (in)	V. Notch (in)	Grade (ksi)	Weld Type	Groove Depth (in)	Groove Angle (deg.)	H. Fillet Weld Size (in)	V. Fillet Weld Size (in)	Weld Strength (ksi)
1	1	11.25	5.5	18	1	0.75	0.75	50	Fillet			0.4375	0.25	70
2	1	33.75	5.5	18	1	0.75	0.75	50	Fillet			0.4375	0.25	70
3	1	56.25	5.5	18	1	0.75	0.75	50	Fillet			0.4375	0.25	70
4	1	78.75	5.5	18	1	0.75	0.75	50	Fillet			0.4375	0.25	70
5	1	101.25	5.5	18	1	0.75	0.75	50	Fillet			0.4375	0.25	70
6	1	123.75	5.5	18	1	0.75	0.75	50	Fillet			0.4375	0.25	70
7	1	146.25	5.5	18	1	0.75	0.75	50	Fillet			0.4375	0.25	70
8	1	168.75	5.5	18	1	0.75	0.75	50	Fillet			0.4375	0.25	70
9	1	191.25	5.5	18	1	0.75	0.75	50	Fillet			0.4375	0.25	70
10	1	213.75	5.5	18	1	0.75	0.75	50	Fillet			0.4375	0.25	70
11	1	236.25	5.5	18	1	0.75	0.75	50	Fillet			0.4375	0.25	70
12	1	258.75	5.5	18	1	0.75	0.75	50	Fillet			0.4375	0.25	70
13	1	281.25	5.5	18	1	0.75	0.75	50	Fillet			0.4375	0.25	70
14	1	303.75	5.5	18	1	0.75	0.75	50	Fillet			0.4375	0.25	70
15	1	326.25	5.5	18	1	0.75	0.75	50	Fillet			0.4375	0.25	70
16	1	348.75	5.5	18	1	0.75	0.75	50	Fillet			0.4375	0.25	70

Plot Graphic



PROJECT	**78288.003.01 - Milford JAI-ALAI, CT**
SUBJECT	**Anchor Rod Bracket Analysis**
DATE	**02/16/21**

v4.6.1

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

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

Analysis Criteria		
Design/Analysis	Analysis	
Load Type	Current Load	
Current load	73.53	kips
AR Capacity	296.9	kips

Tower Type	Monopole

Manufacturers Tower Prop.		
Pole Thickness	0.375	in
Pole Grade	Custom	
Fy	42	ksi
Fu	63	ksi
Base Plate Gr.	A36	
Fy	36	ksi
Fu	58	ksi

Post-Installed Adhesive AR Mod.		
ARB Type	Welded	
Size	2	in
Grade	A193 Gr B7	
Fy	105	ksi
Fu	125	ksi

Anchor Rod Bracket Analysis Checks		
Tube Bearing	18.7%	-
Tube Compression	28.1%	-
Gusset Shear	13.0%	-
Gusset Flexure	N/A	-
Welds: Gusset to Tower and BP	17.6%	-
Welds: Gusset to Tube	13.1%	-
Welds: Geometry	N/A	
Tower Punching	23.2%	-
Tube Punching	22.4%	-
Utilization	**28.1%**	

Bracket Properties

Gusset			Pipe/Tube			Weld - Gusset to Pipe/Tube		
Thickness	1.25	in	Size	HSS4x4x1/2		FEXX	70	ksi
Width at Tube	4	in	Total Length	12	in	Weld Type	CJP - Double Bevel	
Height at Pole	24	in	Length above Gusset	0	in	Fillet Size	5/8	in
Height at Tube	12	in	Length below Gusset	0	in	Bevel Depth	1/2	in
Grade	A572-65		Grade	A500 Grade B (Square)				
Fy	65	ksi	Fy	46	ksi			
Fu	80	ksi	Fu	58	ksi			

Weld - Gusset to Tower			Weld - Gusset to Base Plate		
FEXX	70	ksi	FEXX	70	ksi
Weld Type	Double Fillet		Weld Type	CJP - Double Bevel	
Fillet Size	5/8	in	Fillet Size	5/8	in
			Bevel Depth	1/2	in
			Gap	0	in
			Notch (horiz)	0.75	in
			Notch (vert)	0.75	in
			Pipe/Tube Welded to Base/Footpad?	Yes	
			Fillet Size	3/8	in

PROJECT	**78288.003.01 - Milford JAI-ALAI, CT**
SUBJECT	**Anchor Rod Bracket Analysis**
DATE	**02/16/21**

v4.6.1

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

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

Analysis Criteria		
Design/Analysis	Analysis	
Load Type	Current Load	
Current load	253.66	kips
AR Capacity	573.1	kips

Tower Type	Monopole	

Manufacturers Tower Prop.		
Pole Thickness	0.375	in
Pole Grade	Custom	
Fy	42	ksi
Fu	63	ksi
Base Plate Gr.	A36	
Fy	36	ksi
Fu	58	ksi

Post-Installed Adhesive AR Mod.		
ARB Type	Welded	
Size	2 1/4 - 150	in
Grade	'22-150 (William	
Fy	127.7	ksi
Fu	150	ksi

Anchor Rod Bracket Analysis Checks		
Tube Bearing	28.8%	-
Tube Compression	43.2%	-
Gusset Shear	14.9%	-
Gusset Flexure	6.2%	-
Welds: Gusset to Tower and BP	24.5%	-
Welds: Gusset to Tube	24.1%	-
Welds: Geometry	N/A	
Tower Punching	23.9%	-
Tube Punching	34.3%	-
Utilization	**43.2%**	

Bracket Properties

Gusset			Pipe/Tube			Weld - Gusset to Pipe/Tube		
Thickness	1.25	in	Size	HSS8x8x1/2		FEXX	70	ksi
Width at Tube	24.75	in	Total Length	42	in	Weld Type	Double Fillet	
Height at Pole	96	in	Length above Gusset	6	in	Fillet Size	5/8	in
Height at Tube	36	in	Length below Gusset	0	in			
Grade	A572-65		Grade	A500 Grade B (Square)				
Fy	65	ksi	Fy	46	ksi			
Fu	80	ksi	Fu	58	ksi			

Weld - Gusset to Tower			Weld - Gusset to Base Plate	
FEXX	70	ksi		
Weld Type	Double Fillet		Weld Type	Floating
Fillet Size	3/8	in		

Rock Arm Calcs

Project #: 78288.003.01
Site Name: MILFORD, CT

	Moment Arm (in)			
Bending Axis	Pile 1	Pile 2	Pile 3	
A-A	0	44.6463	34.5283	
B-B	44.6463	0	44.1842	
C-C	34.5283	44.1842	0	

Rock anchor moment	
2422.74276	k-ft
2718.2133	k-ft
2408.6025	k-ft

Allowable existing Capacity of Rock Anchor= 367.2 K

Tnx moment= 2134 K-ft

Resisting Rock arm moment= 2408.60 K-ft

Rating= 84.4 %

Rev H

Pier and Pad Foundation

BU # :	876309
Site Name:	MILFORD JAI-ALA
App. Number:	538776, Rev# 1

TIA-222 Revision:	H
Tower Type:	Monopole

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

Superstructure Analysis Reactions		
Compression, P_{comp}:	45	kips
Base Shear, Vu_comp:	29	kips
Moment, M_u:	2134	ft-kips
Tower Height, **H**:	135	ft
BP Dist. Above Fdn, bp_{dist}:	4	in
Bolt Circle / Bearing Plate Width, **BC**:	41	in

Foundation Analysis Checks	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	160.86	29.00	**17.2%**	**Pass**
Bearing Pressure (ksf)	22.50	6.06	**26.9%**	**Pass**
*Overturning (kip*ft)*	2701.22	2346.67	**86.9%**	**Pass**
*Pad Flexure (kip*ft)*	4766.69	1353.80	**27.0%**	**Pass**
Pad Shear - 1-way (kips)	1254.07	87.52	**6.6%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.164	0.001	**0.7%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	9533.38	0.00	**0.0%**	**Pass**

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

Soil Rating*:	**86.9%**
Structural Rating*:	**27.0%**

Pad Properties		
Depth, **D**:	5.5	ft
Pad Width, W_1:	16	ft
Pad Width, W_2:	21	ft
Pad Thickness, **T**:	7	ft
Pad Rebar Size (Bottom dir. 1), Sp_1:	8	
Pad Rebar Quantity (Bottom dir. 1), mp_1:	17	
Pad Rebar Size (Bottom dir. 2), Sp_2:	8	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	17	
Pad Clear Cover, cc_{pad}:	3	in

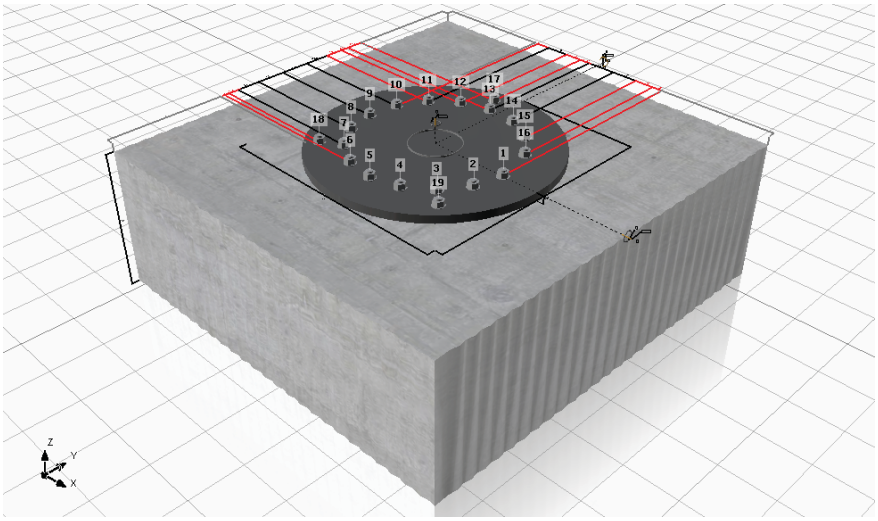
Material Properties		
Rebar Grade, **Fy**:	60	ksi
Concrete Compressive Strength, **F'c**:	3	ksi
Dry Concrete Density, δ**c**:	150	pcf

Soil Properties		
Total Soil Unit Weight, γ:	130	pcf
Ultimate Gross Bearing, Qult:	30.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	40	degrees
SPT Blow Count, N_{blows}:		
Base Friction, μ:	0.35	
Neglected Depth, **N**:	3.33	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	N/A	ft

<--Toggle between Gross and Net

P

5.Geometric Conditions



h_{min} 25.250 in c_{min} 1.625 in c_{ac} 36.000 in s_{min} 6.000 in

6.Summary Results

Tension Loading

Design Proof	Demand	(lb)	Capacity	(lb)	Utilization	Status	Critical
Steel Strength	76141.00		131742.00		0.578	OK	
Concrete Breakout Strength	678367.00		1029358		0.659	Not OK	Controls

62.763%
Rev H

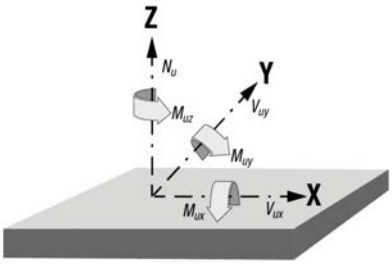
7.Warnings and Remarks

8.Load Conditions

Design Loads / Actions

Nu	-45000	lb	Vux	29000	lb	Vuy	0	lb
Muz	0	in-lb	Demand	0	in-lb	Muy	25608000	in-lb

Consider Load Reversal X Direction 0% Y Direction 0%



9.Load Distribution

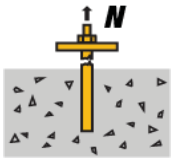
Max. concrete compressive strain:	0.764	%	Anchor Eccentricity					
Max. concrete compressive stress:	3324.019	psi	ex	-0.825	in	ey	1.287	in
Resulting tension force:	678366.692	lb	Profile Eccentricity					
Resulting compression force:	-723366.686	lb	ex	0	in	ey	0	in

Resulting anchor forces / Load distribution

Anchor	Tension Load (lb)	Shear Load (lb)	Component Shear Load (lb)		Anchor Coordinates (in)	
			Shear Y	Shear Y	X	Y
1	0.00	1528.6	1527.9	-47.9	20.506	-0.001
2	0.00	1511.1	1510.5	-44.5	19.013	-7.680
3	1047.82	1496.0	1495.6	-34.9	14.752	-14.241
4	14594.81	1485.6	1485.4	-20.3	8.344	-18.728
5	30774.58	1481.5	1481.4	-3.1	0.721	-20.488
6	47230.83	1484.3	1484.2	14.4	-7.006	-19.264
7	61567.01	1493.6	1493.3	29.6	-13.712	-15.235
8	71695.30	1508.0	1507.5	40.3	-18.420	-8.987
9	76140.69	1525.3	1524.6	44.9	-20.445	-1.431
10	74255.80	1542.8	1542.2	42.7	-19.491	6.334
11	66315.12	1558.1	1557.7	34.1	-15.698	13.176
12	53475.07	1569.0	1568.9	20.3	-9.619	18.100
13	37605.58	1574.0	1574.0	3.4	-2.137	20.387
14	21017.77	1572.6	1572.5	-14.3	5.656	19.705
15	6127.34	1564.7	1564.5	-30.1	12.627	16.154
16	0.00	1551.6	1551.1	-41.7	17.759	10.249
17	43767.15	1584.5	1584.5	9.9	-4.994	24.999
18	72751.83	1487.7	1487.1	41.6	-18.994	-18.001
19	0.00	1487.7	1487.1	-44.5	19.006	-18.001

10.Design Proof Tension Loading

Steel Strength:



ACI 318-14 17.4.1

Variables

N_{sa} (lb)	φ
175656.511	0.75

Results

φN_{sa}	=	131742.0	lb
N_{ua}	=	76141.0	lb
Utilization	=	57.8%	

Table 17.3.1.1

Concrete Breakout Strength

ACI 318-14 17.4.2

Equations

$N_{cbg} = (A_{Nc} / A_{Nc0}) . \Psi_{ec,N} . \Psi_{ed,N} . \Psi_{c,N} . \Psi_{cp,N} . N_b$ Eqn. 17.4.2.1b

$N_b = 16 . \lambda_a . (f'_c)^{0.5} . h_{ef}^{5/3}$ Eqn. 17.4.2.2b

Variables

A_{Nc} (in²)	A_{Nc0} (in²)	$\Psi_{ec,N}$	$\Psi_{ed,N}$	$\Psi_{c,N}$	$\Psi_{cp,N}$
37325.26	31329	0.839	1.000	1.000	1.000

c_{ac} (in)	k_c	λ_a	f'_c (psi)	h_{ef} (in)
36.000	24.000	1.000	3000	59

N_b (lb)	φ
783611.2	0.70

Results

φN_{cbg}	=	239413	lb
N_{ua}	=	678367.0	lb
Utilization	=	65.902%	

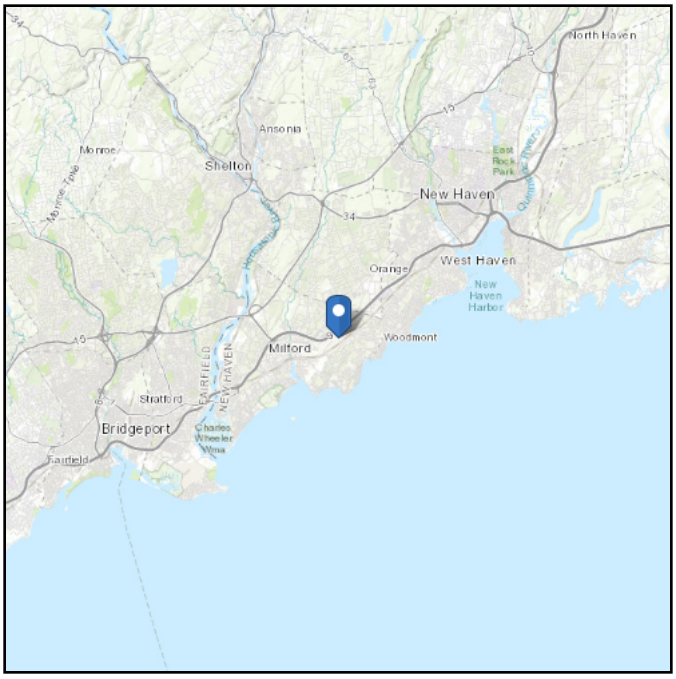
Table 17.3.1.1

=74-6-2-4-3

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-16	**Elevation:**	56.6 ft (NAVD 88)
Risk Category:	II	**Latitude:**	41.234053
Soil Class:	D - Default (see Section 11.4.3)	**Longitude:**	-73.022889



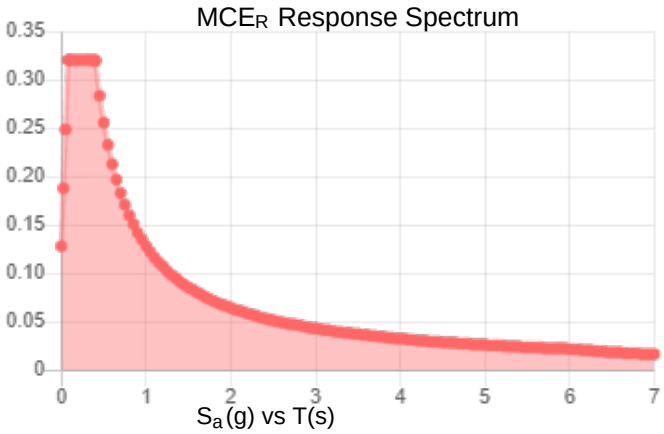
Seismic

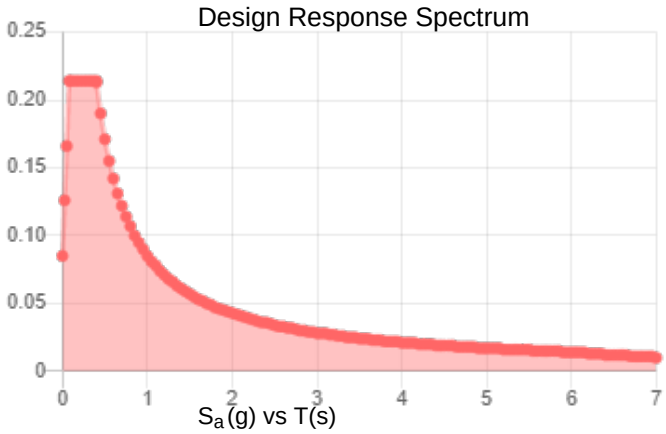
Site Soil Class: D - Default (see Section 11.4.3)

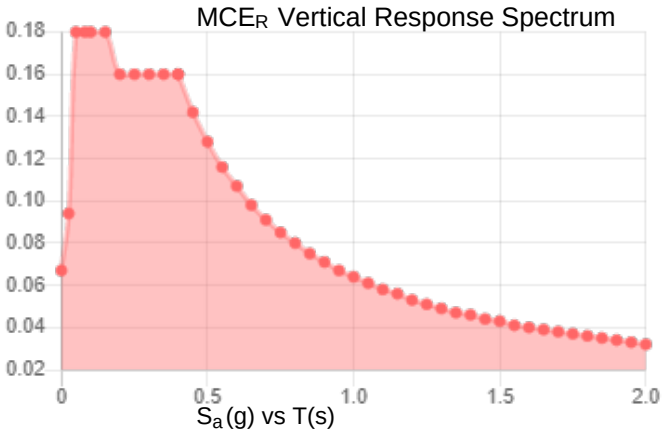
Results:

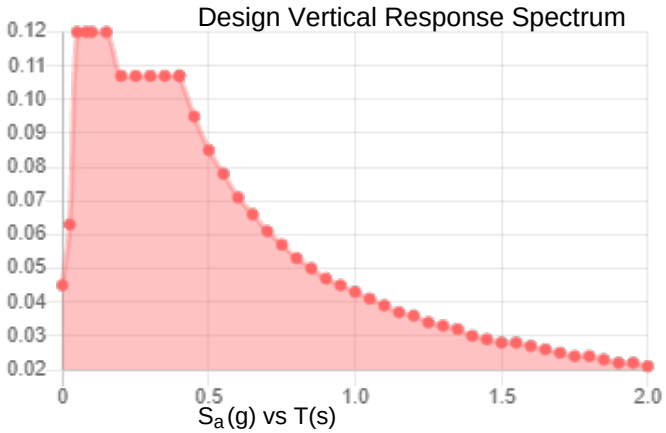
S_S :	0.2	S_{D1} :	0.085
S_1 :	0.053	T_L :	6
F_a :	1.6	PGA :	0.112
F_v :	2.4	PGA_M :	0.177
S_{MS} :	0.321	F_{PGA} :	1.575
S_{M1} :	0.128	I_e :	1
S_{DS} :	0.214	C_v :	0.701

Seismic Design Category B









Data Accessed: Thu Feb 11 2021

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Thu Feb 11 2021

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Exhibit E

Mount Analysis

Date: **February 1, 2021**

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

Infinigy Engineering, PLLC
1033 Watervliet Shaker Road
Albany, NY 12205
518-690-0790
structural@infinigy.com

Subject:	**Mount Analysis Report**	
Carrier Designation:	**Sprint PCS Retain**	
	Carrier Site Number:	CTNH602A
	Carrier Site Name:	CTNH602A
Crown Castle Designation:	**Crown Castle BU Number:**	876309
	Crown Castle Site Name:	MILFORD JAI-ALAI
	Crown Castle JDE Job Number:	628839
	Crown Castle Order Number:	538776 Rev. 0
Engineering Firm Designation:	**Infinigy Engineering, PLLC Report Designation:** 1039-Z0001-B	
Site Data:	**311 Old Gate Lane**, **Milford**, **New Haven County**, **CT**, **06460** **Latitude 41°14'2.59", Longitude -73°1'22.40"**	
Structure Information:	**Tower Height & Type:**	**120.0 ft Monopole**
	Mount Elevation:	**117.0 ft**
	Mount Type:	**12.0 ft Platform**

Dear Darcy Tarr,

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

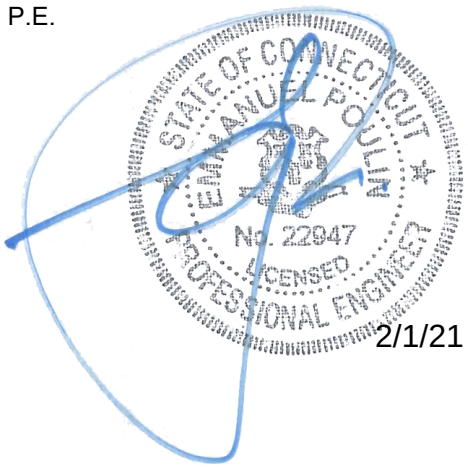
The purpose of the analysis is to determine acceptability of the mount stress level. Based on our analysis we have determined the mount stress level to be:

Platform **Sufficient - 98.3%**

This analysis has been performed in accordance with the 2018 Connecticut State Building Code and Appendix N based upon an ultimate 3-second gust wind speed of 125 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Jacques S. Grimaldi, M.S., P.E.

Respectfully Submitted by:
Emmanuel Poulin, P.E.
518-690-0790
structural@infinigy.com
CT PE License No. 22947



2/1/21

TABLE OF CONTENTS

1) INTRODUCTION

This is an existing 3 sector 12.0 ft Platform, designed by Rohn.

2) ANALYSIS CRITERIA

Building Code:	2015 IBC / 2018 Connecticut State Building Code and Appendix N
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	125 mph
Exposure Category:	C
Topographic Factor at Base:	1.0
Topographic Factor at Mount:	1.0
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.194
Seismic S_1:	0.063
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb
Man Live Load at Mount Pipes:	500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
117.0	123.0	1	Lucent	KS24019-L112A	12.0 ft Platform Addition of (1) 8' pipe mount per sector
	120.0	3	Ericsson	AIR6449 B41_T-MOBILE	
		3	RFS/Celwave	APX16DWV-16DWV-S-E-A20	
		3	RFS/Celwave	APXVAALL24_43-U-NA20_TMO	
		3	Ericsson	RADIO 4415 B66A	
		3	Ericsson	RADIO 4424 B25_TMO	
		3	Ericsson	RADIO 4449 B71 B85A_ T-MOBILE	
117.0[1]	124.0	1	Andrew	VHLP1-18	
		1	Dragonwave	HORIZON COMPACT	
	121.0	1	Andrew	VHLP1-18	
		1	Dragonwave	HORIZON COMPACT	
	117.0	3	Argus Technologies	LLPX310R	
		3	Samsung Telecommunications	FDD_R6_RRH	

Notes:
1) Clearwire Corp equipment.

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	Sprint PCS Application	538776 Rev. 0	CCI Sites
Loading Document	Sprint PCS	RFDS Version: 1	TSA
Previous Mount Analysis	Infinigy Engineering	7720698	CCI Sites

3.1) Analysis Method

RISA-3D (Version 19.0.1), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

Infinigy Mount Analysis Tool V2.1.4, a tool internally developed by Infinigy, 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 B).

3.2) Assumptions

1) The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design and manufacturer's specifications.
2) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and the referenced drawings.
3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
4) The analysis will be required to be revised if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.
5) Prior structural modifications to the tower mounting system are assumed to be installed as shown per available data.
6) Steel grades have been assumed as follows, unless noted otherwise:

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

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

4) ANALYSIS RESULTS

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

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1, 2	Mount Pipe(s)	MP3	117.0	39.0	Pass
	Horizontal(s)	M3		55.5	Pass
	Handrail(s)	M7		59.2	Pass
	Standoff(s)	M14		62.0	Pass
	Frame Bracing(s)	M22		59.7	Pass
	Support Angle(s)	M43		80.4	Pass
	Mount Connection(s)	-		98.3	Pass

Structure Rating (max from all components) =	98.3%

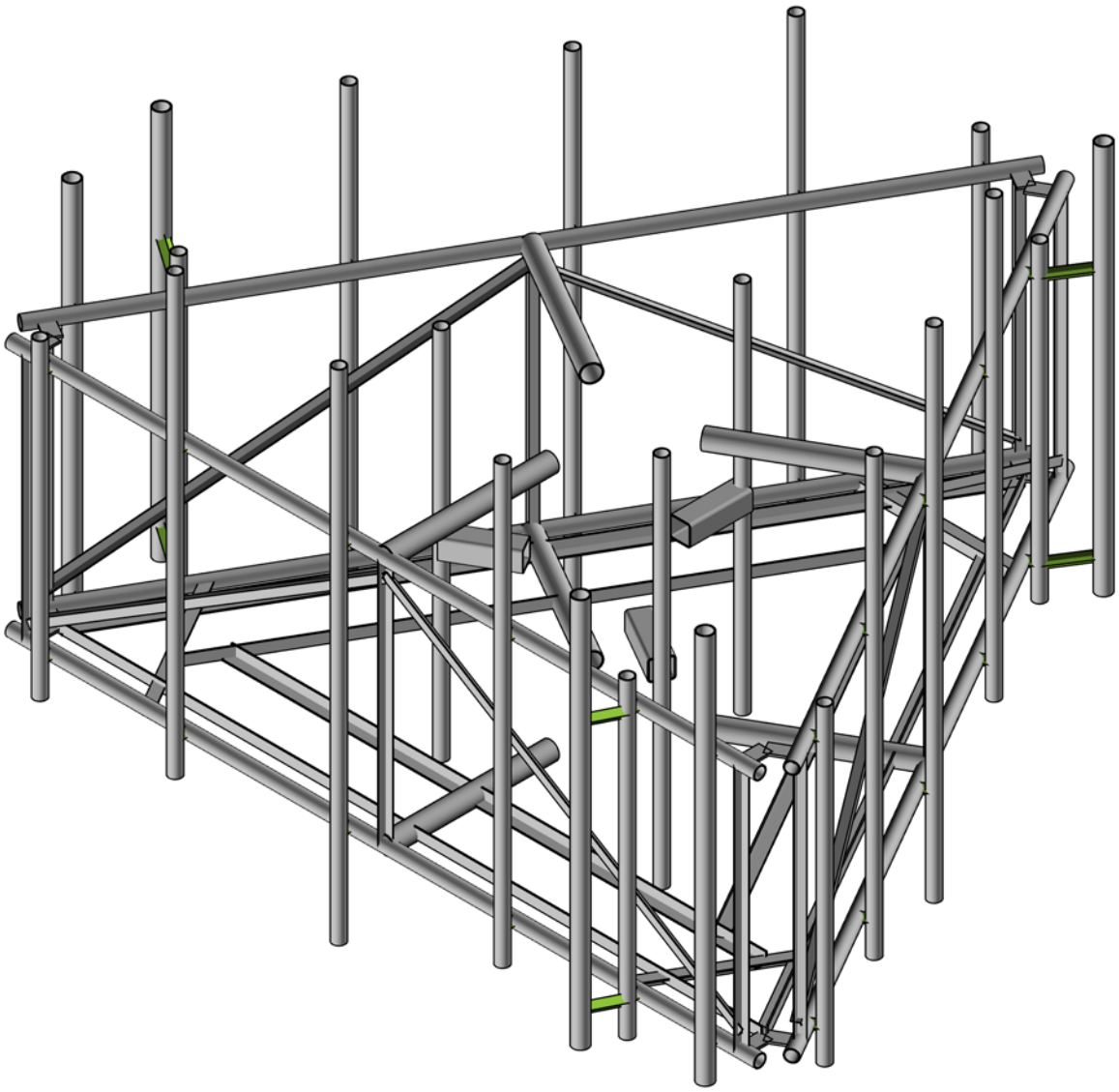
Notes:
1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
2) See additional documentation in “Appendix D - Additional Calculations” for detailed mount connection calculations.

4.1) Recommendations

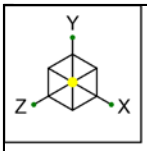
The mount has sufficient capacity to carry the proposed loading configuration. No modifications are required at this time.

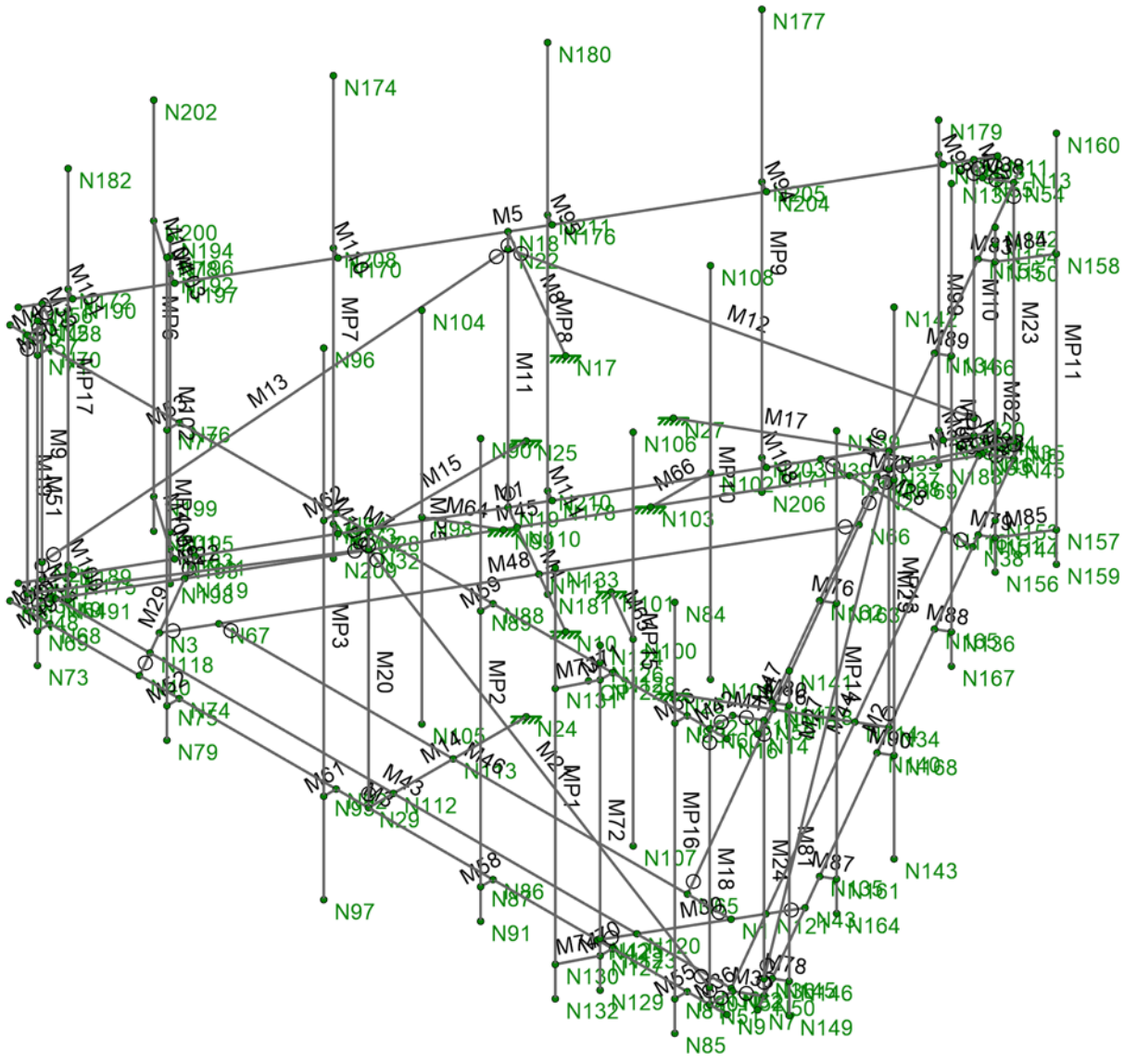
APPENDIX A

WIRE FRAME AND RENDERED MODELS



Infinigy Engineering, PLLC	876309	Render
JG		Feb 01, 2021
1039-Z0001-B		876309_loaded.r3d





Infinigy Engineering, PLLC	876309	Wireframe
JG		Feb 01, 2021
1039-Z0001-B		876309_loaded.r3d

APPENDIX B

SOFTWARE INPUT CALCULATIONS

Program Inputs

PROJECT INFORMATION	
Client:	Crown Castle
Carrier:	Sprint PCS
Engineer:	Jacques Grimaldi

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	C	
Topo Factor Procedure:	Method 1, Category 1	
Site Class:	D - Stiff Soil	
Ground Elevation:	56.6	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Platform	
Num Sectors:	3	
Centerline AGL:	117.0	ft
Tower Height AGL:	120.0	ft

TOPOGRAPHIC DATA		
Topo Feature:	N/A	
Slope Distance:	N/A	ft
Crest Distance:	N/A	ft
Crest Height:	N/A	ft

FACTORS		
Directionality Fact. (K_d):	0.95	
Ground Ele. Factor (K_e):	1.00	*Rev H Only
Rooftop Speed-Up (K_s):	1.00	*Rev H Only
Topographic Factor (K_{zt}):	1.00	
Gust Effect Factor (G_h):	1.0	

CODE STANDARDS		
Building Code:	2015 IBC	
TIA Standard:	TIA-222-H	
ASCE Standard:	ASCE 7-10	

WIND AND ICE DATA		
Ultimate Wind (V_{ult}):	125	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	1.5	in
Flat Pressure:	99.22	psf
Round Pressure:	59.53	psf
Ice Wind Pressure:	9.52	psf

SEISMIC DATA		
Short-Period Accel. (S_s):	0.194	g
1-Second Accel. (S_1):	0.063	g
Short-Period Design (S_{DS}):	0.21	
1-Second Design (S_{D1}):	0.10	
Short-Period Coeff. (F_a):	1.60	
1-Second Coeff. (F_v):	2.40	
Amplification Factor (a_p):	1.00	
Response Mod. (R_p):	2.50	
Overstrength (Ω_o):	1.00	

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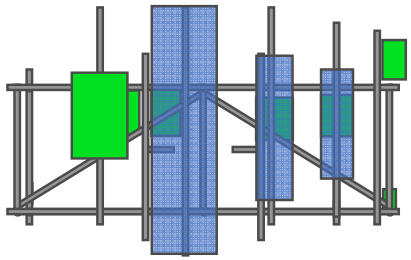
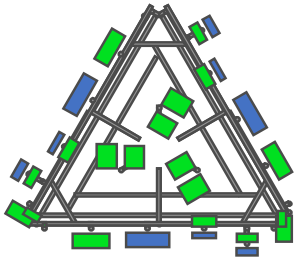
Infinigy Load Calculator V2.1.4

Program Inputs

ELEVATION VIEW



PLAN VIEW



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Infinigy Load Calculator V2.1.4

APPURTENANCE INFORMATION

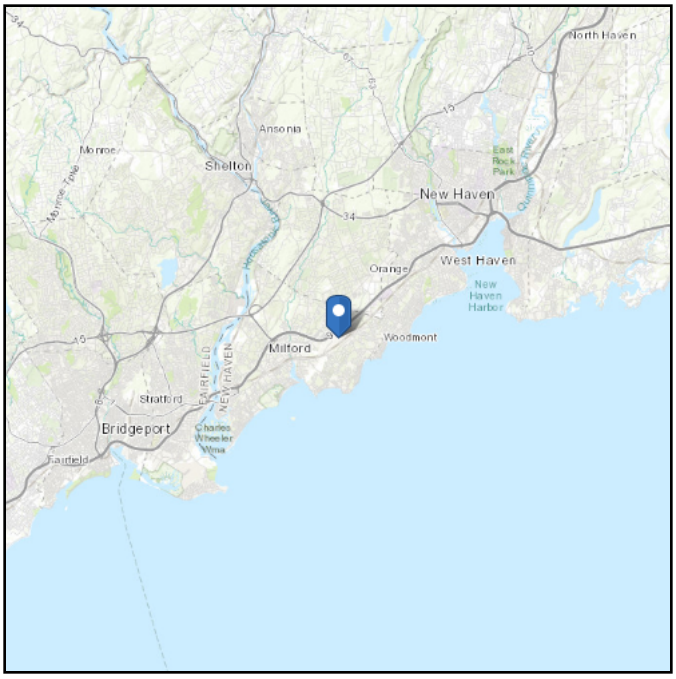
Appurtenance Name	Elevation	Qty.	K_a	q_z (psf)	EPA_N (ft^2)	EPA_T (ft^2)	Wind F_z (lbs)	Wind F_x (lbs)	Weight (lbs)	Seismic F (lbs)	Member (α sector)
ERICSSON AIR6449 B41_T-MOBILE	120.0	3	0.90	49.87	5.66	2.48	254.01	111.16	114.63	11.86	MP4
RFS/CELWAVE APX16DWV-16DWV-S-E-A20	120.0	3	0.90	49.87	6.26	1.50	280.99	67.33	40.70	4.21	MP2
RFS/CELWAVE APXVAALL24_43-U-NA20_TMO	120.0	3	0.90	49.87	14.67	5.32	658.47	238.79	149.90	15.51	MP3
ERICSSON RADIO 4415 B66A	120.0	3	0.90	49.87	1.86	0.87	83.32	39.05	49.60	5.13	MP2
ERICSSON RADIO 4424 B25_TMO	120.0	3	0.90	49.87	2.05	1.61	92.11	72.28	86.00	8.90	MP5
ERICSSON RADIO 4449 B71 B85A_T-MOBILE	120.0	3	0.90	49.87	1.97	1.59	88.43	71.21	73.21	7.57	MP5
LUCENT KS24019-L112A	123.0	1	0.90	50.13	0.14	0.14	6.35	6.35	5.00	0.52	M51
ANDREW VHLP1-18	124.0	1	0.90	50.22	1.61	0.80	72.81	36.07	14.21	1.47	Leg/Flush
ANDREW VHLP1-18	121.0	1	0.90	49.96	1.61	0.80	72.43	35.88	14.21	1.47	MP16
DRAGONWAVE HORIZON COMPACT	124.0	1	0.90	50.22	0.72	0.37	32.58	16.64	11.50	1.19	Leg/Flush
DRAGONWAVE HORIZON COMPACT	121.0	1	0.90	49.96	0.72	0.37	32.41	16.55	11.50	1.19	MP16
ARGUS TECHNOLOGIES LLPX310R	117.0	3	0.90	49.61	3.87	1.49	172.78	66.52	41.90	4.34	MP1
SAMSUNG TELECOMMUNICATIONS FDD_R6_RRH	117.0	3	0.90	49.61	1.55	0.68	69.05	30.54	33.00	3.41	MP1

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 56.6 ft (NAVD 88)
Latitude: 41.234053
Longitude: -73.022889



Wind

Results:

Wind Speed:	125 Vmph
10-year MRI	77 Vmph
25-year MRI	87 Vmph
50-year MRI	94 Vmph
100-year MRI	101 Vmph
Data Source:	ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, incorporating errata of March 12, 2014
Date Accessed:	Sun Jan 31 2021

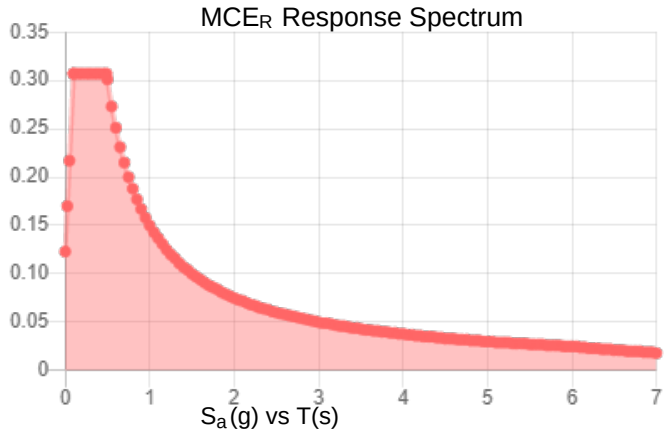
Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance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

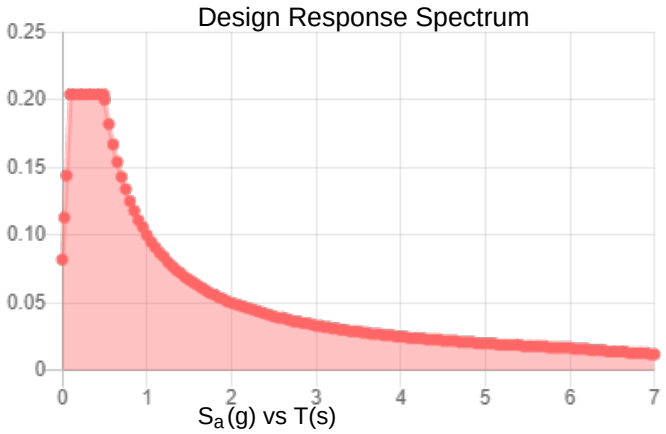
Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

Seismic

Site Soil Class:	D - Stiff Soil		
Results:	per 2018 Connecticut State Building Code and Appendix N		
S_S :	0.194	S_{DS} :	0.204
S_1 :	0.063	S_{D1} :	0.1
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.101
S_{MS} :	0.307	PGA_M :	0.162
S_{M1} :	0.15	F_{PGA} :	1.597
		I_e :	1
Seismic Design Category	B		





Data Accessed:	Sun Jan 31 2021
Date Source:	USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Sun Jan 31 2021

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

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

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	M1	N4	N5		Frame Rail	Beam	Pipe	A53 Gr.B	Typical
2	M2	N6	N7		Frame Rail	Beam	Pipe	A53 Gr.B	Typical
3	M3	N8	N9		Frame Rail	Beam	Pipe	A53 Gr.B	Typical
4	M4	N10	N19		Standoff	Beam	Pipe	A53 Gr.B	Typical
5	M5	N11	N12		Handrails	Beam	Pipe	A53 Gr.B	Typical
6	M6	N13	N14		Handrails	Beam	Pipe	A53 Gr.B	Typical
7	M7	N15	N16		Handrails	Beam	Pipe	A53 Gr.B	Typical
8	M8	N17	N18		Standoff	Beam	Pipe	A53 Gr.B	Typical
9	M9	N56	N47	30	Frame Vertical Bracing	Column	Single Angle	A36 Gr.36	Typical
10	M10	N53	N44	30	Frame Vertical Bracing	Column	Single Angle	A36 Gr.36	Typical
11	M11	N18	N19	30	Frame Vertical Bracing	Column	Single Angle	A36 Gr.36	Typical
12	M12	N20	N22	180	Frame Bracing	VBrace	Single Angle	A36 Gr.36	Typical
13	M13	N21	N22		Frame Bracing	VBrace	Single Angle	A36 Gr.36	Typical
14	M14	N24	N29		Standoff	Beam	Pipe	A53 Gr.B	Typical
15	M15	N25	N28		Standoff	Beam	Pipe	A53 Gr.B	Typical
16	M16	N26	N34		Standoff	Beam	Pipe	A53 Gr.B	Typical
17	M17	N27	N33		Standoff	Beam	Pipe	A53 Gr.B	Typical
18	M18	N60	N51	180	Frame Vertical Bracing	Column	Single Angle	A36 Gr.36	Typical
19	M19	N57	N48	180	Frame Vertical Bracing	Column	Single Angle	A36 Gr.36	Typical
20	M20	N28	N29	180	Frame Vertical Bracing	Column	Single Angle	A36 Gr.36	Typical
21	M21	N30	N32		Frame Bracing	VBrace	Single Angle	A36 Gr.36	Typical
22	M22	N31	N32	180	Frame Bracing	VBrace	Single Angle	A36 Gr.36	Typical
23	M23	N54	N45	150	Frame Vertical Bracing	Column	Single Angle	A36 Gr.36	Typical
24	M24	N59	N50	150	Frame Vertical Bracing	Column	Single Angle	A36 Gr.36	Typical
25	M25	N33	N34	150	Frame Vertical Bracing	Column	Single Angle	A36 Gr.36	Typical
26	M26	N35	N37		Frame Bracing	VBrace	Single Angle	A36 Gr.36	Typical
27	M27	N36	N37	180	Frame Bracing	VBrace	Single Angle	A36 Gr.36	Typical
28	M28	N38	N39	90	Grating Support Angle	Beam	Single Angle	A36 Gr.36	Typical
29	M29	N40	N41	90	Grating Support Angle	Beam	Single Angle	A36 Gr.36	Typical
30	M30	N42	N43	90	Grating Support Angle	Beam	Single Angle	A36 Gr.36	Typical
31	M31	N44	N46	90	Connection Plate	Beam	RECT	A36 Gr.36	Typical
32	M32	N45	N46	90	Connection Plate	Beam	RECT	A36 Gr.36	Typical
33	M33	N47	N49	90	Connection Plate	Beam	RECT	A36 Gr.36	Typical
34	M34	N48	N49	90	Connection Plate	Beam	RECT	A36 Gr.36	Typical
35	M35	N50	N52	90	Connection Plate	Beam	RECT	A36 Gr.36	Typical
36	M36	N51	N52	90	Connection Plate	Beam	RECT	A36 Gr.36	Typical
37	M37	N53	N55	90	Connection Plate	Beam	RECT	A36 Gr.36	Typical
38	M38	N54	N55	90	Connection Plate	Beam	RECT	A36 Gr.36	Typical
39	M39	N56	N58	90	Connection Plate	Beam	RECT	A36 Gr.36	Typical
40	M40	N57	N58	90	Connection Plate	Beam	RECT	A36 Gr.36	Typical
41	M41	N59	N61	90	Connection Plate	Beam	RECT	A36 Gr.36	Typical
42	M42	N60	N61	90	Connection Plate	Beam	RECT	A36 Gr.36	Typical
43	M43	N64	N62	270	Grating Support Angle	Beam	Single Angle	A36 Gr.36	Typical
44	M44	N63	N62		Grating Support Angle	Beam	Single Angle	A36 Gr.36	Typical
45	M45	N63	N64	270	Grating Support Angle	Beam	Single Angle	A36 Gr.36	Typical
46	M46	N67	N1		Grating Support Angle	Beam	Single Angle	A36 Gr.36	Typical
47	M47	N2	N65	270	Grating Support Angle	Beam	Single Angle	A36 Gr.36	Typical
48	M48	N66	N3		Grating Support Angle	Beam	Single Angle	A36 Gr.36	Typical
49	M49	N68	N69		RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
50	M50	N70	N71		RIGID	None	None	RIGID	Typical
51	M51	N72	N73		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
52	M52	N74	N75		RIGID	None	None	RIGID	Typical
53	M53	N76	N77		RIGID	None	None	RIGID	Typical
54	MP4	N78	N79		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
55	M55	N80	N81		RIGID	None	None	RIGID	Typical
56	M56	N82	N83		RIGID	None	None	RIGID	Typical
57	MP16	N84	N85		Mount Pipe 2.5	Column	Pipe	A53 Gr.B	Typical
58	M58	N86	N87		RIGID	None	None	RIGID	Typical
59	M59	N88	N89		RIGID	None	None	RIGID	Typical
60	MP2	N90	N91		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
61	M61	N92	N93		RIGID	None	None	RIGID	Typical
62	M62	N94	N95		RIGID	None	None	RIGID	Typical
63	MP3	N96	N97		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
64	M64	N99	N98		RRH Standoff	Beam	Tube	A500 Gr.B RECT	Typical
65	M65	N101	N100		RRH Standoff	Beam	Tube	A500 Gr.B RECT	Typical
66	M66	N103	N102		RRH Standoff	Beam	Tube	A500 Gr.B RECT	Typical
67	MP5	N104	N105		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
68	MP15	N106	N107		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
69	MP10	N108	N109		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
70	M70	N123	N127		RIGID	None	None	RIGID	Typical
71	M71	N128	N122		RIGID	None	None	RIGID	Typical
72	M72	N124	N129		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
73	M73	N131	N122		RIGID	None	None	RIGID	Typical
74	M74	N130	N127		RIGID	None	None	RIGID	Typical
75	MP1	N133	N132		Mount Pipe 2.5	Column	Pipe	A53 Gr.B	Typical
76	M76	N162	N163		RIGID	None	None	RIGID	Typical
77	M77	N138	N169		RIGID	None	None	RIGID	Typical
78	M78	N145	N146		RIGID	None	None	RIGID	Typical
79	M79	N151	N144		RIGID	None	None	RIGID	Typical
80	M80	N147	N148		RIGID	None	None	RIGID	Typical
81	M81	N141	N149		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
82	M82	N152	N156		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
83	M83	N155	N150		RIGID	None	None	RIGID	Typical
84	M84	N158	N150		RIGID	None	None	RIGID	Typical
85	M85	N157	N144		RIGID	None	None	RIGID	Typical
86	MP11	N160	N159		Mount Pipe 2.5	Column	Pipe	A53 Gr.B	Typical
87	M87	N135	N161		RIGID	None	None	RIGID	Typical
88	M88	N165	N136		RIGID	None	None	RIGID	Typical
89	M89	N134	N166		RIGID	None	None	RIGID	Typical
90	M90	N140	N168		RIGID	None	None	RIGID	Typical
91	MP12	N137	N167		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
92	MP13	N142	N143		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
93	MP14	N139	N164		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
94	M94	N204	N205		RIGID	None	None	RIGID	Typical
95	M95	N176	N211		RIGID	None	None	RIGID	Typical
96	M96	N184	N185		RIGID	None	None	RIGID	Typical
97	M97	N193	N183		RIGID	None	None	RIGID	Typical
98	M98	N186	N187		RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
99	M99	N179	N188		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
100	M100	N175	N189		RIGID	None	None	RIGID	Typical
101	M101	N190	N172		RIGID	None	None	RIGID	Typical
102	M102	N194	N198		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
103	M103	N197	N192		RIGID	None	None	RIGID	Typical
104	M104	N200	N192		RIGID	None	None	RIGID	Typical
105	M105	N199	N183		RIGID	None	None	RIGID	Typical
106	MP6	N202	N201		Mount Pipe 2.5	Column	Pipe	A53 Gr.B	Typical
107	MP17	N182	N191		Mount Pipe 2.5	Column	Pipe	A53 Gr.B	Typical
108	M108	N171	N203		RIGID	None	None	RIGID	Typical
109	M109	N207	N173		RIGID	None	None	RIGID	Typical
110	M110	N170	N208		RIGID	None	None	RIGID	Typical
111	M111	N178	N210		RIGID	None	None	RIGID	Typical
112	MP7	N174	N209		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
113	MP8	N180	N181		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
114	MP9	N177	N206		Mount Pipe	Column	Pipe	A53 Gr.B	Typical

Material Take-Off

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General Members				
2	RIGID		40	141.9	0
3	Total General		40	141.9	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	2.625x0.375	12	55.4	15.471
7	A36 Gr.36	L2x2x4	9	807.1	216.062
8	A36 Gr.36	1.5x1.5x2	15	854.1	87.039
9	A500 Gr.B RECT	HSS4X4X4	3	36	37
10	A53 Gr.B	PIPE_2.0	24	2232	645.575
11	A53 Gr.B	PIPE_2.5	5	375	171.202
12	A53 Gr.B	PIPE_3.0	6	190	111.528
13	Total HR Steel		74	4549.7	1283.878

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Point	Distributed	Area(Member)
1	Self Weight	DL		-1			58		6
2	Wind Load AZI 0	WLZ					116		
3	Wind Load AZI 30	None					116		
4	Wind Load AZI 60	None					116		
5	Wind Load AZI 90	WLX					116		
6	Wind Load AZI 120	None					116		
7	Wind Load AZI 150	None					116		
8	Wind Load AZI 180	None					116		
9	Wind Load AZI 210	None					116		
10	Wind Load AZI 240	None					116		
11	Wind Load AZI 270	None					116		
12	Wind Load AZI 300	None					116		
13	Wind Load AZI 330	None					116		

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Point	Distributed	Area(Member)
14	Distr. Wind Load Z	WLZ						114	
15	Distr. Wind Load X	WLX						114	
16	Ice Weight	OL1					58	114	6
17	Ice Wind Load AZI 0	OL2					116		
18	Ice Wind Load AZI 30	None					116		
19	Ice Wind Load AZI 60	None					116		
20	Ice Wind Load AZI 90	OL3					116		
21	Ice Wind Load AZI 120	None					116		
22	Ice Wind Load AZI 150	None					116		
23	Ice Wind Load AZI 180	None					116		
24	Ice Wind Load AZI 210	None					116		
25	Ice Wind Load AZI 240	None					116		
26	Ice Wind Load AZI 270	None					116		
27	Ice Wind Load AZI 300	None					116		
28	Ice Wind Load AZI 330	None					116		
29	Distr. Ice Wind Load Z	OL2						114	
30	Distr. Ice Wind Load X	OL3						114	
31	Seismic Load Z	ELZ			-0.103		58		
32	Seismic Load X	ELX	-0.103				58		
33	Service Live Loads	LL				1			
34	Maintenance Load 1	LL				1			
35	Maintenance Load 2	LL				1			
36	Maintenance Load 3	LL				1			
37	Maintenance Load 4	LL				1			
38	Maintenance Load 5	LL				1			
39	Maintenance Load 6	LL				1			
40	Maintenance Load 7	LL				1			
41	Maintenance Load 8	LL				1			
42	Maintenance Load 9	LL				1			
43	Maintenance Load 10	LL				1			
44	Maintenance Load 11	LL				1			
45	Maintenance Load 12	LL				1			
46	Maintenance Load 13	LL				1			
47	Maintenance Load 14	LL				1			
48	Maintenance Load 15	LL				1			
49	Maintenance Load 16	LL				1			
50	Maintenance Load 17	LL				1			
51	BLC 1 Transient Area Loads	None						90	
52	BLC 16 Transient Area Loads	None						90	

Load Combinations

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4DL	Yes	Y	1	1.4								
2	1.2DL + 1WL AZI 0	Yes	Y	1	1.2	2	1	14	1	15			
3	1.2DL + 1WL AZI 30	Yes	Y	1	1.2	3	1	14	0.866	15	0.5		
4	1.2DL + 1WL AZI 60	Yes	Y	1	1.2	4	1	14	0.5	15	0.866		
5	1.2DL + 1WL AZI 90	Yes	Y	1	1.2	5	1	14		15	1		
6	1.2DL + 1WL AZI 120	Yes	Y	1	1.2	6	1	14	-0.5	15	0.866		

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
7	1.2DL + 1WL AZI 150	Yes	Y	1	1.2	7	1	14	-0.866	15	0.5		
8	1.2DL + 1WL AZI 180	Yes	Y	1	1.2	8	1	14	-1	15			
9	1.2DL + 1WL AZI 210	Yes	Y	1	1.2	9	1	14	-0.866	15	-0.5		
10	1.2DL + 1WL AZI 240	Yes	Y	1	1.2	10	1	14	-0.5	15	-0.866		
11	1.2DL + 1WL AZI 270	Yes	Y	1	1.2	11	1	14		15	-1		
12	1.2DL + 1WL AZI 300	Yes	Y	1	1.2	12	1	14	0.5	15	-0.866		
13	1.2DL + 1WL AZI 330	Yes	Y	1	1.2	13	1	14	0.866	15	-0.5		
14	0.9DL + 1WL AZI 0	Yes	Y	1	0.9	2	1	14	1	15			
15	0.9DL + 1WL AZI 30	Yes	Y	1	0.9	3	1	14	0.866	15	0.5		
16	0.9DL + 1WL AZI 60	Yes	Y	1	0.9	4	1	14	0.5	15	0.866		
17	0.9DL + 1WL AZI 90	Yes	Y	1	0.9	5	1	14		15	1		
18	0.9DL + 1WL AZI 120	Yes	Y	1	0.9	6	1	14	-0.5	15	0.866		
19	0.9DL + 1WL AZI 150	Yes	Y	1	0.9	7	1	14	-0.866	15	0.5		
20	0.9DL + 1WL AZI 180	Yes	Y	1	0.9	8	1	14	-1	15			
21	0.9DL + 1WL AZI 210	Yes	Y	1	0.9	9	1	14	-0.866	15	-0.5		
22	0.9DL + 1WL AZI 240	Yes	Y	1	0.9	10	1	14	-0.5	15	-0.866		
23	0.9DL + 1WL AZI 270	Yes	Y	1	0.9	11	1	14		15	-1		
24	0.9DL + 1WL AZI 300	Yes	Y	1	0.9	12	1	14	0.5	15	-0.866		
25	0.9DL + 1WL AZI 330	Yes	Y	1	0.9	13	1	14	0.866	15	-0.5		
26	1.2D + 1.0Di	Yes	Y	1	1.2	16	1						
27	1.2D + 1.0Di +1.0Wi AZI 0	Yes	Y	1	1.2	16	1	17	1	29	1	30	
28	1.2D + 1.0Di +1.0Wi AZI 30	Yes	Y	1	1.2	16	1	18	1	29	0.866	30	0.5
29	1.2D + 1.0Di +1.0Wi AZI 60	Yes	Y	1	1.2	16	1	19	1	29	0.5	30	0.866
30	1.2D + 1.0Di +1.0Wi AZI 90	Yes	Y	1	1.2	16	1	20	1	29		30	1
31	1.2D + 1.0Di +1.0Wi AZI 120	Yes	Y	1	1.2	16	1	21	1	29	-0.5	30	0.866
32	1.2D + 1.0Di +1.0Wi AZI 150	Yes	Y	1	1.2	16	1	22	1	29	-0.866	30	0.5
33	1.2D + 1.0Di +1.0Wi AZI 180	Yes	Y	1	1.2	16	1	23	1	29	-1	30	
34	1.2D + 1.0Di +1.0Wi AZI 210	Yes	Y	1	1.2	16	1	24	1	29	-0.866	30	-0.5
35	1.2D + 1.0Di +1.0Wi AZI 240	Yes	Y	1	1.2	16	1	25	1	29	-0.5	30	-0.866
36	1.2D + 1.0Di +1.0Wi AZI 270	Yes	Y	1	1.2	16	1	26	1	29		30	-1
37	1.2D + 1.0Di +1.0Wi AZI 300	Yes	Y	1	1.2	16	1	27	1	29	0.5	30	-0.866
38	1.2D + 1.0Di +1.0Wi AZI 330	Yes	Y	1	1.2	16	1	28	1	29	0.866	30	-0.5
39	(1.2 + 0.2Sds)DL + 1.0E AZI 0	Yes	Y	1	1.241	31	1	32					
40	(1.2 + 0.2Sds)DL + 1.0E AZI 30	Yes	Y	1	1.241	31	0.866	32	0.5				
41	(1.2 + 0.2Sds)DL + 1.0E AZI 60	Yes	Y	1	1.241	31	0.5	32	0.866				
42	(1.2 + 0.2Sds)DL + 1.0E AZI 90	Yes	Y	1	1.241	31		32	1				
43	(1.2 + 0.2Sds)DL + 1.0E AZI 120	Yes	Y	1	1.241	31	-0.5	32	0.866				
44	(1.2 + 0.2Sds)DL + 1.0E AZI 150	Yes	Y	1	1.241	31	-0.866	32	0.5				
45	(1.2 + 0.2Sds)DL + 1.0E AZI 180	Yes	Y	1	1.241	31	-1	32					
46	(1.2 + 0.2Sds)DL + 1.0E AZI 210	Yes	Y	1	1.241	31	-0.866	32	-0.5				
47	(1.2 + 0.2Sds)DL + 1.0E AZI 240	Yes	Y	1	1.241	31	-0.5	32	-0.866				
48	(1.2 + 0.2Sds)DL + 1.0E AZI 270	Yes	Y	1	1.241	31		32	-1				
49	(1.2 + 0.2Sds)DL + 1.0E AZI 300	Yes	Y	1	1.241	31	0.5	32	-0.866				
50	(1.2 + 0.2Sds)DL + 1.0E AZI 330	Yes	Y	1	1.241	31	0.866	32	-0.5				
51	(0.9 - 0.2Sds)DL + 1.0E AZI 0	Yes	Y	1	0.859	31	1	32					
52	(0.9 - 0.2Sds)DL + 1.0E AZI 30	Yes	Y	1	0.859	31	0.866	32	0.5				
53	(0.9 - 0.2Sds)DL + 1.0E AZI 60	Yes	Y	1	0.859	31	0.5	32	0.866				
54	(0.9 - 0.2Sds)DL + 1.0E AZI 90	Yes	Y	1	0.859	31		32	1				
55	(0.9 - 0.2Sds)DL + 1.0E AZI 120	Yes	Y	1	0.859	31	-0.5	32	0.866				

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
56	(0.9 - 0.2Sds)DL + 1.0E AZI 150	Yes	Y	1	0.859	31	-0.866	32	0.5				
57	(0.9 - 0.2Sds)DL + 1.0E AZI 180	Yes	Y	1	0.859	31	-1	32					
58	(0.9 - 0.2Sds)DL + 1.0E AZI 210	Yes	Y	1	0.859	31	-0.866	32	-0.5				
59	(0.9 - 0.2Sds)DL + 1.0E AZI 240	Yes	Y	1	0.859	31	-0.5	32	-0.866				
60	(0.9 - 0.2Sds)DL + 1.0E AZI 270	Yes	Y	1	0.859	31		32	-1				
61	(0.9 - 0.2Sds)DL + 1.0E AZI 300	Yes	Y	1	0.859	31	0.5	32	-0.866				
62	(0.9 - 0.2Sds)DL + 1.0E AZI 330	Yes	Y	1	0.859	31	0.866	32	-0.5				
63	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 0	Yes	Y	1	1	2	0.23	14	0.23	15		33	1.5
64	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 30	Yes	Y	1	1	3	0.23	14	0.2	15	0.115	33	1.5
65	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 60	Yes	Y	1	1	4	0.23	14	0.115	15	0.2	33	1.5
66	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 90	Yes	Y	1	1	5	0.23	14		15	0.23	33	1.5
67	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 120	Yes	Y	1	1	6	0.23	14	-0.115	15	0.2	33	1.5
68	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 150	Yes	Y	1	1	7	0.23	14	-0.2	15	0.115	33	1.5
69	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 180	Yes	Y	1	1	8	0.23	14	-0.23	15		33	1.5
70	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 210	Yes	Y	1	1	9	0.23	14	-0.2	15	-0.115	33	1.5
71	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 240	Yes	Y	1	1	10	0.23	14	-0.115	15	-0.2	33	1.5
72	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 270	Yes	Y	1	1	11	0.23	14		15	-0.23	33	1.5
73	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 300	Yes	Y	1	1	12	0.23	14	0.115	15	-0.2	33	1.5
74	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 330	Yes	Y	1	1	13	0.23	14	0.2	15	-0.115	33	1.5
75	1.2DL + 1.5LL	Yes	Y	1	1.2	33	1.5						
76	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	34	1.5	2	0.058	14	0.058	15	
77	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	34	1.5	3	0.058	14	0.05	15	0.029
78	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	34	1.5	4	0.058	14	0.029	15	0.05
79	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	34	1.5	5	0.058	14		15	0.058
80	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	34	1.5	6	0.058	14	-0.029	15	0.05
81	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	34	1.5	7	0.058	14	-0.05	15	0.029
82	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	34	1.5	8	0.058	14	-0.058	15	
83	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	34	1.5	9	0.058	14	-0.05	15	-0.029
84	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	34	1.5	10	0.058	14	-0.029	15	-0.05
85	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	34	1.5	11	0.058	14		15	-0.058
86	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	34	1.5	12	0.058	14	0.029	15	-0.05
87	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	34	1.5	13	0.058	14	0.05	15	-0.029
88	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	35	1.5	2	0.058	14	0.058	15	
89	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	35	1.5	3	0.058	14	0.05	15	0.029
90	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	35	1.5	4	0.058	14	0.029	15	0.05
91	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	35	1.5	5	0.058	14		15	0.058
92	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	35	1.5	6	0.058	14	-0.029	15	0.05
93	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	35	1.5	7	0.058	14	-0.05	15	0.029
94	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	35	1.5	8	0.058	14	-0.058	15	
95	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	35	1.5	9	0.058	14	-0.05	15	-0.029
96	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	35	1.5	10	0.058	14	-0.029	15	-0.05
97	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	35	1.5	11	0.058	14		15	-0.058
98	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	35	1.5	12	0.058	14	0.029	15	-0.05
99	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	35	1.5	13	0.058	14	0.05	15	-0.029
100	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	36	1.5	2	0.058	14	0.058	15	
101	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	36	1.5	3	0.058	14	0.05	15	0.029
102	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	36	1.5	4	0.058	14	0.029	15	0.05
103	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	36	1.5	5	0.058	14		15	0.058
104	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	36	1.5	6	0.058	14	-0.029	15	0.05

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
105	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	36	1.5	7	0.058	14	-0.05	15	0.029
106	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	36	1.5	8	0.058	14	-0.058	15	
107	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	36	1.5	9	0.058	14	-0.05	15	-0.029
108	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	36	1.5	10	0.058	14	-0.029	15	-0.05
109	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	36	1.5	11	0.058	14		15	-0.058
110	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	36	1.5	12	0.058	14	0.029	15	-0.05
111	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	36	1.5	13	0.058	14	0.05	15	-0.029
112	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	37	1.5	2	0.058	14	0.058	15	
113	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	37	1.5	3	0.058	14	0.05	15	0.029
114	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	37	1.5	4	0.058	14	0.029	15	0.05
115	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	37	1.5	5	0.058	14		15	0.058
116	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	37	1.5	6	0.058	14	-0.029	15	0.05
117	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	37	1.5	7	0.058	14	-0.05	15	0.029
118	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	37	1.5	8	0.058	14	-0.058	15	
119	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	37	1.5	9	0.058	14	-0.05	15	-0.029
120	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	37	1.5	10	0.058	14	-0.029	15	-0.05
121	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	37	1.5	11	0.058	14		15	-0.058
122	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	37	1.5	12	0.058	14	0.029	15	-0.05
123	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	37	1.5	13	0.058	14	0.05	15	-0.029
124	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	38	1.5	2	0.058	14	0.058	15	
125	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	38	1.5	3	0.058	14	0.05	15	0.029
126	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	38	1.5	4	0.058	14	0.029	15	0.05
127	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	38	1.5	5	0.058	14		15	0.058
128	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	38	1.5	6	0.058	14	-0.029	15	0.05
129	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	38	1.5	7	0.058	14	-0.05	15	0.029
130	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	38	1.5	8	0.058	14	-0.058	15	
131	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	38	1.5	9	0.058	14	-0.05	15	-0.029
132	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	38	1.5	10	0.058	14	-0.029	15	-0.05
133	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	38	1.5	11	0.058	14		15	-0.058
134	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	38	1.5	12	0.058	14	0.029	15	-0.05
135	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	38	1.5	13	0.058	14	0.05	15	-0.029
136	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	39	1.5	2	0.058	14	0.058	15	
137	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	39	1.5	3	0.058	14	0.05	15	0.029
138	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	39	1.5	4	0.058	14	0.029	15	0.05
139	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	39	1.5	5	0.058	14		15	0.058
140	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	39	1.5	6	0.058	14	-0.029	15	0.05
141	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	39	1.5	7	0.058	14	-0.05	15	0.029
142	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	39	1.5	8	0.058	14	-0.058	15	
143	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	39	1.5	9	0.058	14	-0.05	15	-0.029
144	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	39	1.5	10	0.058	14	-0.029	15	-0.05
145	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	39	1.5	11	0.058	14		15	-0.058
146	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	39	1.5	12	0.058	14	0.029	15	-0.05
147	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	39	1.5	13	0.058	14	0.05	15	-0.029
148	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	40	1.5	2	0.058	14	0.058	15	
149	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	40	1.5	3	0.058	14	0.05	15	0.029
150	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	40	1.5	4	0.058	14	0.029	15	0.05
151	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	40	1.5	5	0.058	14		15	0.058
152	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	40	1.5	6	0.058	14	-0.029	15	0.05
153	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	40	1.5	7	0.058	14	-0.05	15	0.029

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
154	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	40	1.5	8	0.058	14	-0.058	15	
155	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	40	1.5	9	0.058	14	-0.05	15	-0.029
156	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	40	1.5	10	0.058	14	-0.029	15	-0.05
157	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	40	1.5	11	0.058	14		15	-0.058
158	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	40	1.5	12	0.058	14	0.029	15	-0.05
159	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	40	1.5	13	0.058	14	0.05	15	-0.029
160	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	41	1.5	2	0.058	14	0.058	15	
161	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	41	1.5	3	0.058	14	0.05	15	0.029
162	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	41	1.5	4	0.058	14	0.029	15	0.05
163	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	41	1.5	5	0.058	14		15	0.058
164	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	41	1.5	6	0.058	14	-0.029	15	0.05
165	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	41	1.5	7	0.058	14	-0.05	15	0.029
166	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	41	1.5	8	0.058	14	-0.058	15	
167	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	41	1.5	9	0.058	14	-0.05	15	-0.029
168	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	41	1.5	10	0.058	14	-0.029	15	-0.05
169	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	41	1.5	11	0.058	14		15	-0.058
170	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	41	1.5	12	0.058	14	0.029	15	-0.05
171	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	41	1.5	13	0.058	14	0.05	15	-0.029
172	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	42	1.5	2	0.058	14	0.058	15	
173	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	42	1.5	3	0.058	14	0.05	15	0.029
174	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	42	1.5	4	0.058	14	0.029	15	0.05
175	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	42	1.5	5	0.058	14		15	0.058
176	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	42	1.5	6	0.058	14	-0.029	15	0.05
177	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	42	1.5	7	0.058	14	-0.05	15	0.029
178	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	42	1.5	8	0.058	14	-0.058	15	
179	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	42	1.5	9	0.058	14	-0.05	15	-0.029
180	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	42	1.5	10	0.058	14	-0.029	15	-0.05
181	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	42	1.5	11	0.058	14		15	-0.058
182	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	42	1.5	12	0.058	14	0.029	15	-0.05
183	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	42	1.5	13	0.058	14	0.05	15	-0.029
184	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	43	1.5	2	0.058	14	0.058	15	
185	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	43	1.5	3	0.058	14	0.05	15	0.029
186	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	43	1.5	4	0.058	14	0.029	15	0.05
187	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	43	1.5	5	0.058	14		15	0.058
188	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	43	1.5	6	0.058	14	-0.029	15	0.05
189	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	43	1.5	7	0.058	14	-0.05	15	0.029
190	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	43	1.5	8	0.058	14	-0.058	15	
191	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	43	1.5	9	0.058	14	-0.05	15	-0.029
192	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	43	1.5	10	0.058	14	-0.029	15	-0.05
193	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	43	1.5	11	0.058	14		15	-0.058
194	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	43	1.5	12	0.058	14	0.029	15	-0.05
195	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	43	1.5	13	0.058	14	0.05	15	-0.029
196	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	44	1.5	2	0.058	14	0.058	15	
197	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	44	1.5	3	0.058	14	0.05	15	0.029
198	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	44	1.5	4	0.058	14	0.029	15	0.05
199	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	44	1.5	5	0.058	14		15	0.058
200	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	44	1.5	6	0.058	14	-0.029	15	0.05
201	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	44	1.5	7	0.058	14	-0.05	15	0.029
202	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	44	1.5	8	0.058	14	-0.058	15	

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
203	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	44	1.5	9	0.058	14	-0.05	15	-0.029
204	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	44	1.5	10	0.058	14	-0.029	15	-0.05
205	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	44	1.5	11	0.058	14		15	-0.058
206	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	44	1.5	12	0.058	14	0.029	15	-0.05
207	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	44	1.5	13	0.058	14	0.05	15	-0.029
208	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	45	1.5	2	0.058	14	0.058	15	
209	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	45	1.5	3	0.058	14	0.05	15	0.029
210	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	45	1.5	4	0.058	14	0.029	15	0.05
211	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	45	1.5	5	0.058	14		15	0.058
212	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	45	1.5	6	0.058	14	-0.029	15	0.05
213	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	45	1.5	7	0.058	14	-0.05	15	0.029
214	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	45	1.5	8	0.058	14	-0.058	15	
215	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	45	1.5	9	0.058	14	-0.05	15	-0.029
216	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	45	1.5	10	0.058	14	-0.029	15	-0.05
217	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	45	1.5	11	0.058	14		15	-0.058
218	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	45	1.5	12	0.058	14	0.029	15	-0.05
219	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	45	1.5	13	0.058	14	0.05	15	-0.029
220	1.2DL + 1.5LM-MP13 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	46	1.5	2	0.058	14	0.058	15	
221	1.2DL + 1.5LM-MP13 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	46	1.5	3	0.058	14	0.05	15	0.029
222	1.2DL + 1.5LM-MP13 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	46	1.5	4	0.058	14	0.029	15	0.05
223	1.2DL + 1.5LM-MP13 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	46	1.5	5	0.058	14		15	0.058
224	1.2DL + 1.5LM-MP13 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	46	1.5	6	0.058	14	-0.029	15	0.05
225	1.2DL + 1.5LM-MP13 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	46	1.5	7	0.058	14	-0.05	15	0.029
226	1.2DL + 1.5LM-MP13 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	46	1.5	8	0.058	14	-0.058	15	
227	1.2DL + 1.5LM-MP13 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	46	1.5	9	0.058	14	-0.05	15	-0.029
228	1.2DL + 1.5LM-MP13 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	46	1.5	10	0.058	14	-0.029	15	-0.05
229	1.2DL + 1.5LM-MP13 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	46	1.5	11	0.058	14		15	-0.058
230	1.2DL + 1.5LM-MP13 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	46	1.5	12	0.058	14	0.029	15	-0.05
231	1.2DL + 1.5LM-MP13 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	46	1.5	13	0.058	14	0.05	15	-0.029
232	1.2DL + 1.5LM-MP14 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	47	1.5	2	0.058	14	0.058	15	
233	1.2DL + 1.5LM-MP14 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	47	1.5	3	0.058	14	0.05	15	0.029
234	1.2DL + 1.5LM-MP14 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	47	1.5	4	0.058	14	0.029	15	0.05
235	1.2DL + 1.5LM-MP14 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	47	1.5	5	0.058	14		15	0.058
236	1.2DL + 1.5LM-MP14 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	47	1.5	6	0.058	14	-0.029	15	0.05
237	1.2DL + 1.5LM-MP14 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	47	1.5	7	0.058	14	-0.05	15	0.029
238	1.2DL + 1.5LM-MP14 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	47	1.5	8	0.058	14	-0.058	15	
239	1.2DL + 1.5LM-MP14 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	47	1.5	9	0.058	14	-0.05	15	-0.029
240	1.2DL + 1.5LM-MP14 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	47	1.5	10	0.058	14	-0.029	15	-0.05
241	1.2DL + 1.5LM-MP14 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	47	1.5	11	0.058	14		15	-0.058
242	1.2DL + 1.5LM-MP14 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	47	1.5	12	0.058	14	0.029	15	-0.05
243	1.2DL + 1.5LM-MP14 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	47	1.5	13	0.058	14	0.05	15	-0.029
244	1.2DL + 1.5LM-MP15 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	48	1.5	2	0.058	14	0.058	15	
245	1.2DL + 1.5LM-MP15 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	48	1.5	3	0.058	14	0.05	15	0.029
246	1.2DL + 1.5LM-MP15 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	48	1.5	4	0.058	14	0.029	15	0.05
247	1.2DL + 1.5LM-MP15 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	48	1.5	5	0.058	14		15	0.058
248	1.2DL + 1.5LM-MP15 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	48	1.5	6	0.058	14	-0.029	15	0.05
249	1.2DL + 1.5LM-MP15 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	48	1.5	7	0.058	14	-0.05	15	0.029
250	1.2DL + 1.5LM-MP15 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	48	1.5	8	0.058	14	-0.058	15	
251	1.2DL + 1.5LM-MP15 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	48	1.5	9	0.058	14	-0.05	15	-0.029

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
252	1.2DL + 1.5LM-MP15 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	48	1.5	10	0.058	14	-0.029	15	-0.05
253	1.2DL + 1.5LM-MP15 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	48	1.5	11	0.058	14		15	-0.058
254	1.2DL + 1.5LM-MP15 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	48	1.5	12	0.058	14	0.029	15	-0.05
255	1.2DL + 1.5LM-MP15 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	48	1.5	13	0.058	14	0.05	15	-0.029
256	1.2DL + 1.5LM-MP16 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	49	1.5	2	0.058	14	0.058	15	
257	1.2DL + 1.5LM-MP16 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	49	1.5	3	0.058	14	0.05	15	0.029
258	1.2DL + 1.5LM-MP16 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	49	1.5	4	0.058	14	0.029	15	0.05
259	1.2DL + 1.5LM-MP16 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	49	1.5	5	0.058	14		15	0.058
260	1.2DL + 1.5LM-MP16 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	49	1.5	6	0.058	14	-0.029	15	0.05
261	1.2DL + 1.5LM-MP16 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	49	1.5	7	0.058	14	-0.05	15	0.029
262	1.2DL + 1.5LM-MP16 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	49	1.5	8	0.058	14	-0.058	15	
263	1.2DL + 1.5LM-MP16 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	49	1.5	9	0.058	14	-0.05	15	-0.029
264	1.2DL + 1.5LM-MP16 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	49	1.5	10	0.058	14	-0.029	15	-0.05
265	1.2DL + 1.5LM-MP16 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	49	1.5	11	0.058	14		15	-0.058
266	1.2DL + 1.5LM-MP16 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	49	1.5	12	0.058	14	0.029	15	-0.05
267	1.2DL + 1.5LM-MP16 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	49	1.5	13	0.058	14	0.05	15	-0.029
268	1.2DL + 1.5LM-MP17 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	50	1.5	2	0.058	14	0.058	15	
269	1.2DL + 1.5LM-MP17 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	50	1.5	3	0.058	14	0.05	15	0.029
270	1.2DL + 1.5LM-MP17 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	50	1.5	4	0.058	14	0.029	15	0.05
271	1.2DL + 1.5LM-MP17 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	50	1.5	5	0.058	14		15	0.058
272	1.2DL + 1.5LM-MP17 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	50	1.5	6	0.058	14	-0.029	15	0.05
273	1.2DL + 1.5LM-MP17 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	50	1.5	7	0.058	14	-0.05	15	0.029
274	1.2DL + 1.5LM-MP17 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	50	1.5	8	0.058	14	-0.058	15	
275	1.2DL + 1.5LM-MP17 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	50	1.5	9	0.058	14	-0.05	15	-0.029
276	1.2DL + 1.5LM-MP17 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	50	1.5	10	0.058	14	-0.029	15	-0.05
277	1.2DL + 1.5LM-MP17 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	50	1.5	11	0.058	14		15	-0.058
278	1.2DL + 1.5LM-MP17 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	50	1.5	12	0.058	14	0.029	15	-0.05

Envelope Node Reactions

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N25	max	1160.009	4	1651.571	33	1297.536	14	-345.837	14	2347.398	4	165.226	10
2		min	-1151.463	22	316.018	15	-1534.848	8	-3465.216	33	-2312.631	22	-155.821	16
3	N27	max	1181.121	17	1509.25	37	1342.606	13	1624.556	38	2472.216	8	2723.045	37
4		min	-1396.623	11	285.135	20	-1273.997	19	49.511	19	-2351.23	14	283.967	18
5	N17	max	1552.386	5	1543.793	29	1214.662	2	1578.637	28	2377.471	25	-240.308	22
6		min	-1337.873	23	292.708	21	-1149.681	20	135.689	21	-2470.773	7	-2830.084	29
7	N103	max	275.023	17	980.842	158	223.451	14	989.18	148	258.487	23	304.269	11
8		min	-275.023	11	165.17	56	-223.451	20	-103.586	20	-258.487	5	-304.269	5
9	N99	max	230.727	17	980.842	135	279.853	14	236.678	14	254.783	15	109.593	23
10		min	-230.727	11	165.17	54	-279.853	8	-505.249	130	-254.783	21	-857.802	127
11	N101	max	258.487	17	980.842	139	252.093	14	187.381	14	254.783	19	860.643	145
12		min	-258.487	11	165.17	59	-252.093	8	-502.408	142	-254.783	13	-158.892	17
13	N24	max	1481.626	16	1801.4	33	689.244	2	-73.334	14	1731.342	16	211.065	23
14		min	-1496.789	10	31.874	14	-488.219	20	-3555.072	33	-1731.58	10	-210.863	17
15	N26	max	999.196	5	1670.121	37	1571.03	14	1646.536	38	1913.167	20	2833.828	37
16		min	-816.007	23	11.946	18	-1604.898	8	3.797	19	-1966.912	2	-0.474	18
17	N10	max	1042.222	18	1694.987	29	1291.856	14	1637.384	28	1966.232	12	-62.308	22
18		min	-1215.959	12	15.088	22	-1356.3	8	-54.36	21	-1906.728	18	-2905.975	29

Envelope Node Reactions (Continued)

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
19	Totals:	max	7934.247	17	10969.171	29	8102.626	2						
20		min	-7934.249	11	2710.967	59	-8102.622	20						

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
1	M43	L2x2x4	0.804	67.84	9	0.024	67.84	z	31	1735.023	30585.6	690.934	1216.083	1.5	H2-1
2	M44	L2x2x4	0.787	67.84	13	0.024	117.306	z	4	1735.023	30585.6	690.934	1216.083	1.5	H2-1
3	M45	L2x2x4	0.761	67.84	17	0.025	67.84	z	36	1735.023	30585.6	690.934	1216.083	1.5	H2-1
4	M14	PIPE_3.0	0.62	0	33	0.119	0		10	62818.967	65205	5748.75	5748.75	2.085	H1-1b
5	M15	PIPE_3.0	0.608	0	34	0.098	0		10	62818.967	65205	5748.75	5748.75	1.993	H1-1b
6	M22	1.5x1.5x2	0.597	37.38	15	0.025	76.351	z	8	1221.779	11643.75	214.356	307.979	1.136	H2-1
7	M7	PIPE_2.0	0.592	72	3	0.43	72		27	6830.97	32130	1871.625	1871.625	1.87	H3-6
8	M18	1.5x1.5x2	0.59	42.625	32	0.378	44	y	8	3678.869	11643.75	214.356	407.151	1.471	H2-1
9	M4	PIPE_3.0	0.581	0	29	0.127	0		6	62818.967	65205	5748.75	5748.75	2.09	H1-1b
10	M8	PIPE_3.0	0.574	0	31	0.101	0		6	62818.967	65205	5748.75	5748.75	2.005	H1-1b
11	M5	PIPE_2.0	0.574	72	11	0.401	72		35	6830.97	32130	1871.625	1871.625	1.866	H3-6
12	M16	PIPE_3.0	0.572	0	38	0.127	0		2	62818.967	65205	5748.75	5748.75	2.097	H1-1b
13	M6	PIPE_2.0	0.57	72	7	0.402	72		31	6830.97	32130	1871.625	1871.625	1.864	H3-6
14	M21	1.5x1.5x2	0.568	38.175	8	0.021	76.351	z	2	1221.779	11643.75	214.356	307.979	1.136	H2-1
15	M17	PIPE_3.0	0.559	0	36	0.098	0		2	62818.967	65205	5748.75	5748.75	1.995	H1-1b
16	M3	PIPE_2.0	0.555	72	32	0.444	72		33	6830.97	32130	1871.625	1871.625	1.492	H3-6
17	M9	1.5x1.5x2	0.553	42.625	28	0.397	44	z	4	3678.869	11643.75	214.356	409.108	1.5	H2-1
18	M26	1.5x1.5x2	0.529	37.38	17	0.022	76.351	z	12	1221.779	11643.75	214.356	307.979	1.136	H2-1
19	M2	PIPE_2.0	0.512	72	37	0.413	72		37	6830.97	32130	1871.625	1871.625	1.484	H3-6
20	M27	1.5x1.5x2	0.51	38.175	18	0.021	76.351	z	5	1221.779	11643.75	214.356	307.979	1.136	H2-1
21	M12	1.5x1.5x2	0.508	37.38	23	0.02	76.351	z	10	1221.779	11643.75	214.356	307.979	1.136	H2-1
22	M1	PIPE_2.0	0.499	72	29	0.415	72		29	6830.97	32130	1871.625	1871.625	1.494	H3-6
23	M19	1.5x1.5x2	0.496	42.625	34	0.364	44	y	9	3678.869	11643.75	214.356	409.108	1.5	H2-1
24	M13	1.5x1.5x2	0.469	38.175	22	0.022	76.351	z	4	1221.779	11643.75	214.356	307.979	1.136	H2-1
25	M48	L2x2x4	0.439	93.226	15	0.019	94.298	z	4	3018.252	30585.6	690.934	1319.788	1.5	H2-1
26	M46	L2x2x4	0.435	93.226	19	0.02	94.298	z	8	3018.252	30585.6	690.934	1319.788	1.5	H2-1
27	M24	1.5x1.5x2	0.428	42.625	27	0.36	44	z	12	3678.869	11643.75	214.356	405.452	1.446	H2-1
28	M47	L2x2x4	0.419	9.644	23	0.018	8.573	y	12	3018.252	30585.6	690.934	1319.788	1.5	H2-1
29	M10	1.5x1.5x2	0.412	42.625	31	0.354	44	z	5	3678.869	11643.75	214.356	405.096	1.441	H2-1
30	M23	1.5x1.5x2	0.41	42.625	36	0.36	44	z	12	3678.869	11643.75	214.356	409.108	1.5	H2-1
31	MP3	PIPE_2.0	0.39	30	8	0.08	30		9	14916.096	32130	1871.625	1871.625	2.354	H1-1b
32	MP8	PIPE_2.0	0.389	30	4	0.078	30		5	14916.096	32130	1871.625	1871.625	1.92	H1-1b
33	MP13	PIPE_2.0	0.389	30	12	0.079	30		13	14916.096	32130	1871.625	1871.625	1.835	H1-1b
34	M40	2.625x0.375	0.376	0	9	0.044	0	y	3	28979.154	31893.75	249.17	1744.189	1.667	H1-1b
35	M41	2.625x0.375	0.353	0	13	0.043	0	y	7	28979.154	31893.75	249.17	1744.189	1.667	H1-1b
36	M39	2.625x0.375	0.353	0	9	0.028	0	y	3	28979.154	31893.75	249.17	1744.189	1.667	H1-1b
37	M30	L2x2x4	0.348	24.781	3	0.091	24.781	y	210	22055.07	30585.6	690.934	1576.849	1.5	H2-1
38	M29	L2x2x4	0.344	5.719	11	0.103	5.719	y	12	22055.07	30585.6	690.934	1576.849	1.5	H2-1
39	M28	L2x2x4	0.343	24.781	7	0.088	24.781	y	274	22055.07	30585.6	690.934	1576.849	1.5	H2-1
40	M42	2.625x0.375	0.329	0	13	0.028	0	y	7	28979.154	31893.75	249.17	1744.189	1.667	H1-1b
41	M37	2.625x0.375	0.276	0	11	0.028	0	y	11	28979.154	31893.75	249.17	1744.189	1.667	H1-1b
42	M25	1.5x1.5x2	0.272	19.25	5	0.073	0.917	z	178	3678.869	11643.75	214.356	383.722	1.177	H2-1
43	M11	1.5x1.5x2	0.272	19.25	9	0.133	0.917	z	221	3678.869	11643.75	214.356	384.178	1.182	H2-1

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
44	M34	2.625x0.375	0.266	0	9	0.018	0	y	12	28979.154	31893.75	249.17	1744.189	1.672	H1-1b
45	M38	2.625x0.375	0.265	0	5	0.022	0	y	5	28979.154	31893.75	249.17	1744.189	1.667	H1-1b
46	M33	2.625x0.375	0.264	0	9	0.009	4.619	z	9	28979.154	31893.75	249.17	1744.189	1.672	H1-1b
47	M20	1.5x1.5x2	0.246	1.375	163	0.127	0.917	y	162	3678.869	11643.75	214.356	409.108	1.5	H2-1
48	M35	2.625x0.375	0.242	0	99	0.016	0	y	4	28979.154	31893.75	249.17	1744.189	1.667	H1-1b
49	M36	2.625x0.375	0.239	0	13	0.008	4.619	z	13	28979.154	31893.75	249.17	1744.189	1.672	H1-1b
50	M31	2.625x0.375	0.219	0	5	0.014	0	y	7	28979.154	31893.75	249.17	1744.189	1.668	H1-1b
51	M32	2.625x0.375	0.214	0	11	0.007	0	z	11	28979.154	31893.75	249.17	1744.189	1.668	H1-1b
52	MP10	PIPE_2.0	0.205	36	4	0.022	36		4	20866.733	32130	1871.625	1871.625	1.68	H1-1b
53	MP15	PIPE_2.0	0.205	36	12	0.022	36		12	20866.733	32130	1871.625	1871.625	1.68	H1-1b
54	MP5	PIPE_2.0	0.205	36	8	0.022	36		8	20866.733	32130	1871.625	1871.625	1.545	H1-1b
55	MP7	PIPE_2.0	0.192	29.75	4	0.078	30.625		4	17855.085	32130	1871.625	1871.625	1.787	H1-1b
56	MP2	PIPE_2.0	0.192	29.75	8	0.079	30.625		8	17855.085	32130	1871.625	1871.625	2.271	H1-1b
57	MP12	PIPE_2.0	0.192	29.75	12	0.076	30.625		12	17855.085	32130	1871.625	1871.625	2.103	H1-1b
58	M99	PIPE_2.0	0.139	53.75	277	0.043	6.25		5	23808.54	32130	1871.625	1871.625	1.992	H1-1b
59	M51	PIPE_2.0	0.137	53.75	77	0.051	53.75		3	23808.54	32130	1871.625	1871.625	1.989	H1-1b
60	M81	PIPE_2.0	0.135	53.75	213	0.049	53.75		7	23808.54	32130	1871.625	1871.625	1.974	H1-1b
61	MP4	PIPE_2.0	0.122	29.75	8	0.046	30.625		8	17855.085	32130	1871.625	1871.625	2.275	H1-1b
62	MP14	PIPE_2.0	0.122	29.75	12	0.045	30.625		6	17855.085	32130	1871.625	1871.625	2.316	H1-1b
63	MP9	PIPE_2.0	0.122	29.75	4	0.045	30.625		10	17855.085	32130	1871.625	1871.625	2.422	H1-1b
64	MP16	PIPE_2.5	0.095	68.75	163	0.054	21.094		7	36838.897	50715	3596.25	3596.25	2.453	H1-1b
65	MP17	PIPE_2.5	0.095	68.75	231	0.056	21.094		3	36838.897	50715	3596.25	3596.25	2.577	H1-1b
66	MP11	PIPE_2.5	0.09	21.094	182	0.029	21.094		8	36838.897	50715	3596.25	3596.25	2.425	H1-1b
67	M82	PIPE_2.0	0.073	6.25	183	0.021	6.25		8	23808.54	32130	1871.625	1871.625	1.993	H1-1b
68	MP6	PIPE_2.5	0.073	21.094	222	0.025	21.094		12	36838.897	50715	3596.25	3596.25	2.406	H1-1b
69	MP1	PIPE_2.5	0.073	21.094	166	0.024	21.094		4	36838.897	50715	3596.25	3596.25	2.597	H1-1b
70	M64	HSS4X4X4	0.062	0	129	0.029	0	z	3	138935.324	139518	16180.5	16180.5	1.653	H1-1b
71	M66	HSS4X4X4	0.062	0	149	0.029	0	z	11	138935.324	139518	16180.5	16180.5	1.653	H1-1b
72	M65	HSS4X4X4	0.062	0	145	0.029	0	z	13	138935.324	139518	16180.5	16180.5	1.653	H1-1b
73	M102	PIPE_2.0	0.059	6.25	223	0.018	53.75		12	23808.54	32130	1871.625	1871.625	1.968	H1-1b
74	M72	PIPE_2.0	0.059	6.25	167	0.018	53.75		4	23808.54	32130	1871.625	1871.625	1.913	H1-1b

APPENDIX D

ADDITIONAL CALCUATIONS

INFINIGY

FROM ZERO TO INFINIGY

the solutions are endless

Welded Calculation Tool, V1.0

PROJECT DATA	
Site Name:	MILFORD JAI-ALAI
Site Number:	876309
Job Code:	1039-Z0001-B
Date:	2/1/2021

WELD INFORMATION		
Design:	LRFD	-
Weld Strength (F_EXX):	70	ksi
Weld Thickness:	0.25	in

MAIN SHAPE INFORMATION		
Main Shape:	Circle	-
Main Shape Material:	A 53 Gr. B	-
Main Shape Thickness:	0.216	in
Main Shape Dia.:	3.5	in

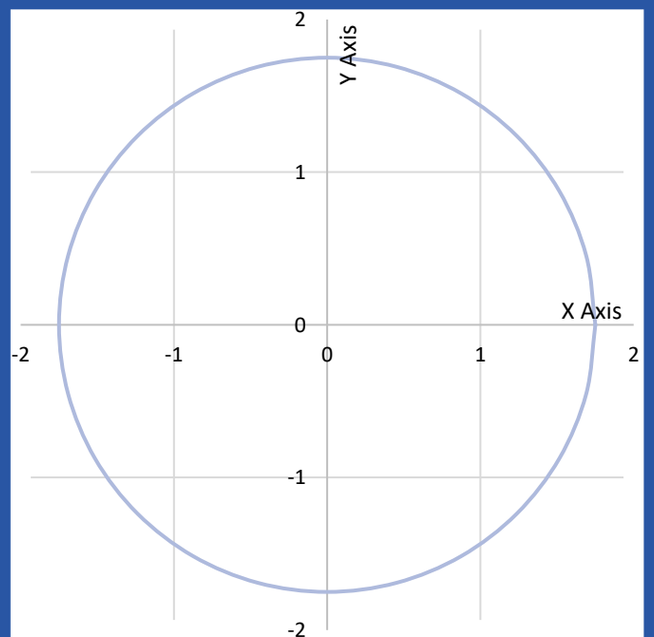
TOTAL SUM OF LINES PROPERTIES		
Polar Moment of Inertia:	33.674	in^3
Section Modulus X-X dir.:	9.621	in^2
Section Modulus Y-Y dir.:	9.621	in^2
Critical Usage Mode*:	Base Yielding	-
Critical Thickness Used**:	0.204	in

SECONDARY SHAPE INFORMATION		
Secondary Shape:	N/A	-
Secondary Shape Material:	N/A	-
Secondary Shape Thickness:	N/A	in
Secondary Shape Size:	N/A	in

WELD DESCRIPTION
Platform Standoff to Collar

RESULTS		
Critical Risa Combination:	LC 33	-
Critical Member Label:	M14	-
Member End:	i	-
Weld Strength (Phi*Rn):	4536.000	lb/in
Weld Demand (Ru):	4458.965	lb/in
Usage ratio:	98.3%	OK

WELD DIAGRAM (NOT TO SCALE)



NOTES

*Base Yielding governs when the welded object has a lesser effective strength than the weld itself.

**For base shapes with double sided weldments half the thickness is used to calculate the effective strength.

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

Welded Calculation Tool, V1.0

PROJECT DATA	
Site Name:	MILFORD JAI-ALAI
Site Number:	876309
Job Code:	1039-Z0001-B
Date:	2/1/2021

WELD INFORMATION		
Design:	LRFD	-
Weld Strength (F_EXX):	70	ksi
Weld Thickness:	0.25	in

MAIN SHAPE INFORMATION		
Main Shape:	Rectangle	-
Main Shape Material:	A 500 Gr. B Rect.	-
Main Shape Thickness:	0.250	in
Main Shape Size:	4X4	in

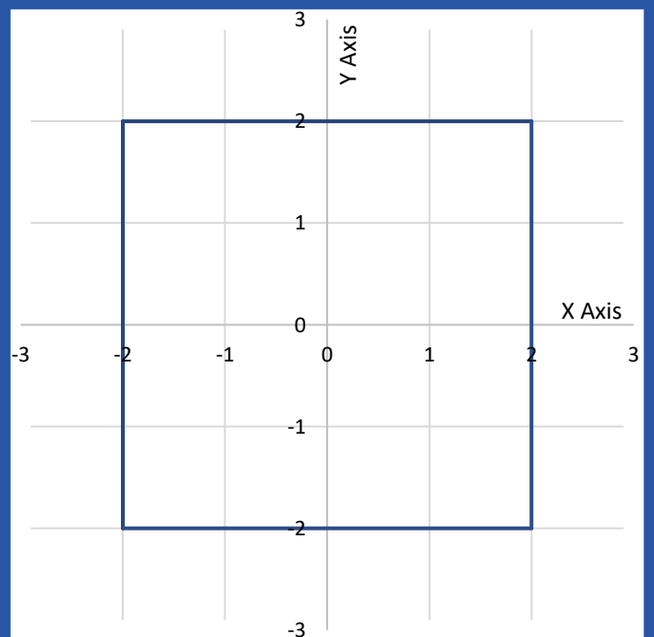
TOTAL SUM OF LINES PROPERTIES		
Polar Moment of Inertia:	85.333	in^3
Section Modulus X-X dir.:	21.333	in^2
Section Modulus Y-Y dir.:	21.333	in^2
Critical Usage Mode*:	Weld Critical	-
Critical Thickness Used:	0.250	in

SECONDARY SHAPE INFORMATION		
Secondary Shape:	N/A	-
Secondary Shape Material:	N/A	-
Secondary Shape Thickness:	N/A	in
Secondary Shape Size:	N/A	in

WELD DESCRIPTION
RRH Standoff to Collar

RESULTS		
Critical Risa Combination:	LC 144	-
Critical Member Label:	M65	-
Member End:	i	-
Weld Strength (Phi*Rn):	5568.466	lb/in
Weld Demand (Ru):	560.650	lb/in
Usage ratio:	**10.1%**	OK

WELD DIAGRAM (NOT TO SCALE)



NOTES

*The strength of the weld governs the design compared to the effective strength of the welded object.

Exhibit F

Power Density/RF Emissions Report

EBI Consulting

environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CTNH602A

311 Old Gate Lane
Milford, Connecticut 06460

March 22, 2021

EBI Project Number: 6221001352

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**21.82%**

21 B Street, Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

March 22, 2021

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

Emissions Analysis for Site: CTNH602A -

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **311 Old Gate Lane** in **Milford, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 311 Old Gate Lane in Milford, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower. For power density calculations, the broadcast footprint of the AIR6449 antenna has been considered. Due to the beamforming nature of this antenna, the actual beam locations vary depending on demand and are narrow in nature. Using the broadcast footprint accounts for the potential location of beams at any given time.

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

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

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

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

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

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

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

7) 1 LTE channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.

8) 1 NR channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.

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

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

11) The antennas used in this modeling are the RFS APX16DWV-16DWV-S-E-A20 for the 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector A, the RFS APX16DWV-16DWV-S-E-A20 for the 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector B, the RFS APX16DWV-16DWV-S-E-A20 for the 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

12) The antenna mounting height centerline of the proposed antennas is 120 feet above ground level (AGL).

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

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APX16DWV-16DWV-S-E-A20	Make / Model:	RFS APX16DWV-16DWV-S-E-A20	Make / Model:	RFS APX16DWV-16DWV-S-E-A20
Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	120 feet	Height (AGL):	120 feet	Height (AGL):	120 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A1 MPE %:	**1.29%**	Antenna B1 MPE %:	**1.29%**	Antenna C1 MPE %:	**1.29%**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd
Height (AGL):	120 feet	Height (AGL):	120 feet	Height (AGL):	120 feet
Channel Count:	11	Channel Count:	11	Channel Count:	11
Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts
ERP (W):	12,569.87	ERP (W):	12,569.87	ERP (W):	12,569.87
Antenna A2 MPE %:	**5.06%**	Antenna B2 MPE %:	**5.06%**	Antenna C2 MPE %:	**5.06%**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz
Gain:	17.3 dBd / 17.3 dBd	Gain:	17.3 dBd / 17.3 dBd	Gain:	17.3 dBd / 17.3 dBd
Height (AGL):	120 feet	Height (AGL):	120 feet	Height (AGL):	120 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	12,888.76	ERP (W):	12,888.76	ERP (W):	12,888.76
Antenna A3 MPE %:	**3.57%**	Antenna B3 MPE %:	**3.57%**	Antenna C3 MPE %:	**3.57%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	9.92%
Sprint	4.02%
Clearwire	0.14%
Verizon	7.74%
Site Total MPE % :	21.82%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	9.92%
T-Mobile Sector B Total:	9.92%
T-Mobile Sector C Total:	9.92%
Site Total MPE % :	21.82%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 2100 MHz LTE	2	2334.27	120.0	12.91	2100 MHz LTE	1000	1.29%
T-Mobile 600 MHz LTE	2	591.73	120.0	3.27	600 MHz LTE	400	0.82%
T-Mobile 600 MHz NR	1	1577.94	120.0	4.37	600 MHz NR	400	1.09%
T-Mobile 700 MHz LTE	2	695.22	120.0	3.85	700 MHz LTE	467	0.82%
T-Mobile 1900 MHz GSM	4	1052.26	120.0	11.64	1900 MHz GSM	1000	1.16%
T-Mobile 1900 MHz LTE	2	2104.51	120.0	11.64	1900 MHz LTE	1000	1.16%
T-Mobile 2500 MHz LTE	1	6444.38	120.0	17.83	2500 MHz LTE	1000	1.78%
T-Mobile 2500 MHz NR	1	6444.38	120.0	17.83	2500 MHz NR	1000	1.78%
						Total:	**9.92%**

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

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	9.92%
Sector B:	9.92%
Sector C:	9.92%
T-Mobile Maximum MPE % (Sector A):	9.92%
Site Total:	21.82%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **21.82%** 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.