March 24, 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# 876377; T-Mobile Site ID# CTHA479A
625 Spring Street, Southington, CT 06489
Latitude: 41° 37′ 56.90″/ Longitude: -72° 53′ 39.30″

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 147-foot mount on the existing 158-foot Monopole Tower located at 625 Spring Street in Southington. The property and tower are both 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. T-Mobile is also proposing mount modifications as shown on the enclosed mount analysis.

Planned Modifications:
Tower:

Remove and Replace:
(3) RFS – APXVTM14-C-120 Antennas **(REMOVE)** - (3) RFS – APX16DWV-16DWV-S-E-A20 Antennas **(REPLACE)**

(3) RFS – APXVTM18-C-A20 Antennas **(REMOVE)** – (3) RFS – APXVAALL24_43-U-NA20 Antennas **(REPLACE)**

Install New:
(3) AIR6449 B41 Antennas
(3) Ericsson Radio 4449 B71+B85
(3) Ericsson Radio 4415 B66A
(3) Ericsson Radio 4424 B25
(4) hybrid cables

Remove:
(12) Sprint RRUs
(1) Sprint RRU mount
(3) Sprint RFS – IBC1900HG-2A combiners
(3) Sprint RFS – IBC1900BB-1 combiners

Ground:

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

Remove:
(2) Sprint cabinets

This facility was approved by the Town of Southington Planning and Zoning Department on May 18, 1998. There were no conditions listed in the approval.

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 Mark J. Sciota, Town Manager of Southington, as well as Matthew Reimondo, Zoning Enforcement Officer for the Town of Southington.

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

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

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

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

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

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

For the foregoing reasons, T-Mobile respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

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

cc:

Mr. Mark J. Sciota -Town Manager *(via email only to sciotam@southington.org)*
Town of Southington
75 Main Street
Southington, CT 06489
860-276-6200

Mr. Matthew Reimondo – Zoning Enforcement Officer *(via email only to reimondom@southington.org)*
Town of Southington
196 North Main Street - Municipal Center
Southington, CT 06489
860-276-6248

Zajac, Richard

From: Zajac, Richard
Sent: Wednesday, March 24, 2021 1:03 PM
To: sciotam@southington.org
Subject: Connecticut Siting Council exempt modification application notification
Attachments: CSC Exempt Modification Application - 625 Spring St.pdf

Good afternoon Mr. Sciota,
Please see the attached application to the Connecticut Siting Council regarding antenna work on the existing cell tower located at 625 Spring Street in Southington.

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: Wednesday, March 24, 2021 1:06 PM
To: reimondom@southington.org
Subject: Connecticut Siting Council exempt modification application notification
Attachments: CSC Exempt Modification Application - 625 Spring St.pdf

Good afternoon Mr. Reimondo,
Please see the attached application to the Connecticut Siting Council regarding antenna work on the existing cell tower located at 625 Spring Street in Southington.

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 A

Original Facility Approval

3/11/98 ... 10/03 OK #10 SMM

PLANNING AND ZONING DEPARTMENT

P.O. BOX 610 • SOUTHINGTON, CONN. 06489 • 203/276-6248

TOWN FEE: $10.00
STATE FEE: $10.00
TOTAL FEE: $20.00

Z.P. # 5625

ZONING PERMIT APPLICATION

Applicant (please print):
~~Sprint PCS~~
~~9 Barnes Industrial Road~~
~~Wallingford, CT. 06492~~
Telephone: ~~203-294-5676~~

Owner (please print):
Josephine Smoron
55 Smoron Drive
Southington, CT. 06489
Telephone: ~~860-628-6243~~

Address of Property: 625 Spring Street Zone: R-40
Utilities: Sewer N/A Septic System N/A Well N/A Town Water N/A

Proposed Activity: install Telecommunication Facility
Does proposed activity entail construction or land alteration within 50 feet of a wetland/wet area/waterbody? Yes X No ____

Date of following approvals: Special Permit* 12/9/97 Subdivision ____
Site Plan ~~12/9/97~~ Inland/Wetland ~~12/2/97~~ Filling of Floodplain ____
Variance ____ Special Exception* ____ Home Occupation* ____
Expansion of Non-Conforming Use* ____

Submit 7 set of plans. * NOTE: Provide one copy each of certain approval letters stamped by the Town Clerk and noting the volume and page number of the approval in the land records.

OFFICE USE ONLY

	Approved	Denied
Planner/Inland Wetlands:	5/18/98	
Zoning Officer:	5/18/98	
Town Engineer:	5/15/98	
Water Department:	—	
Health Department:	—	

Approved for Zoning Permit. A copy of this approval shall be presented to the Building Official prior to issuance of a Building Permit.

Frank Vinci 5/18/98
Zoning Enforcement Officer / Date

CERTIFICATE OF ZONING COMPLIANCE Z.P. # ____
I hereby certify that all improvements were installed in compliance with the Zoning Permit.

	Approved	Denied
Planner/Inland Wetlands:		
Zoning Officer:		
Town Engineer:		
Water Department:		
Health Department:		

Approved for Certificate of Zoning Compliance. A copy of this approval shall be presented to the Building Official prior to issuance of a Certificate of Occupancy.

1/94

Zoning Enforcement Officer Date

** I have received a copy of the ordinance requiring the fencing of pools
Signed ____
Print ____

Exhibit B

Property Card

625 SPRING ST

Location	625 SPRING ST	**Mblu**	168/ / 020/ /
Acct#	19111	**Owner**	GLOBAL SIGNAL ACQUISITIONS II LLC
Assessment	$253,850	**Appraisal**	$362,630
PID	15908	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$23,750	$338,880	$362,630
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$16,630	$237,220	$253,850

Owner of Record

Owner	GLOBAL SIGNAL ACQUISITIONS II LLC	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	4017 WASHINGTON RD PMB 331 CANONSBURG, PA 15317	**Book & Page**	0788/0214
		Sale Date	04/25/2001
		Instrument	

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
GLOBAL SIGNAL ACQUISITIONS II LLC	$0		0788/0214		04/25/2001

Building Information

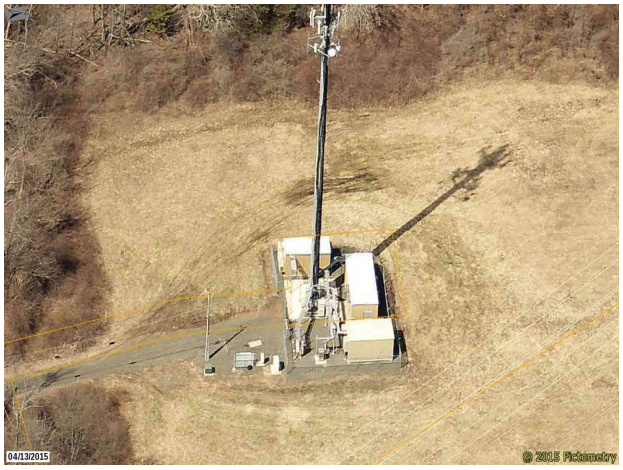
Building 1 : Section 1

Year Built:
Living Area: 0
Building Percent Good:

Building Attributes	
Field	**Description**

Style	Vacant w/OB
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:	
Full Bthrms:	
Half Baths:	
Extra Fixtures	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Total Kitchens	
Fireplaces	
Whirlpool Tubs	
Fin Bsmt Area	
Fin Bsmt Quality	
Bsmt Garages	
.	
Bsmt Type	
Attic Type	
Cath Ceiling	

Building Photo



(http://images.vgsi.com/photos2/SouthingtonCTPhotos//\00\05\81\46.jpg)

Building Layout

(http://images.vgsi.com/photos2/SouthingtonCTPhotos//Sketches/15908_1

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

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	438
Description	Cell Site
Zone	R-40
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	1.62
Depth	

Outbuildings

Outbuildings					Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Bldg #**
FN5	Fence-10'Chain			233.00 L.F.	1
SHD5	Cell Shed			360.00 units	1
SHD5	Cell Shed			240.00 units	1
SHD5	Cell Shed			180.00 units	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$23,750	$338,880	$362,630
2019	$23,750	$206,120	$229,870
2018	$23,750	$206,120	$229,870
2017	$3,500	$206,120	$209,620
2016	$3,500	$206,120	$209,620

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$16,630	$237,220	$253,850
2019	$16,630	$144,280	$160,910
2018	$16,630	$144,280	$160,910
2017	$2,450	$144,280	$146,730
2016	$2,450	$144,280	$146,730


Cava
Takeout
229
Western Little League
New England
Baptist College
West St
Central Baptist Church
Central Christian
Academy
625 Spring St,
Southington, CT 06489
Spring St
Spring St
Spring St
Spring Hill Rd
Summit Farms Rd
Dr
229
Spring St
The Tabernacle
Christian Church

Exhibit C

Construction Drawings

T-Mobile

T-MOBILE SITE NUMBER: CTHA479A
T-MOBILE SITE NAME: CTHA479A
SITE TYPE: MONOPOLE
TOWER HEIGHT: 158'-0"

BUSINESS UNIT #: 876334
SITE ADDRESS: 625 SPRING STREET SOUTHINGTON, CT 06489
COUNTY: HARTFORD
JURISDICTION: HARTFORD COUNTY

T-MOBILE SPRINT RETAIN SITE CONFIGURATION: 67D5998C_1xAIR+1QP+1OP

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	SOUTHINGTON, SMORON
SITE ADDRESS:	625 SPRING STREET SOUTHINGTON, CT 06489
COUNTY:	HARTFORD
MAP/PARCEL #:	M:168 L:012
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.63246111° (41° 37' 56.90")
LONGITUDE:	-72.89424444° (-72° 53' 39.30")
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	305.1 FT
CURRENT ZONING:	R-40
JURISDICTION:	HARTFORD COUNTY
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	GLOBAL SIGNAL ACQUISITIONS II LLC 4017 WASHINGTON RD PMB 331 CANONSBURG, PA 15317
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	T-MOBILE 35 GRIFFIN ROAD BLOOMFIELD, CT 06002
ELECTRIC PROVIDER:	TBD --
TELCO PROVIDER:	TBD --

PROJECT TEAM

A&E FIRM:	INFINIGY 1033 WATERVLIET SHAKER RD. ALBANY, NY 12205
CROWN CASTLE USA INC. DISTRICT CONTACTS:	1500 CORPORATE DRIVE CANONSBURG, PA 15317
	TRICIA PELON - PROJECT MANAGER (518) 373-3507
	JASON D'AMICO - CONSTRUCTION MANAGER (860) 209-0104

DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1	SITE PLAN & ENLARGED SITE PLAN
C-2	FINAL ELEVATION & ANTENNA PLANS
C-3	ANTENNA & CABLE SCHEDULE
C-4	PLUMBING DIAGRAM
C-5	EQUIPMENT SPECS
C-6	EQUIPMENT SPECS
E-1	AC PANEL SCHEDULES & ONE LINE DIAGRAM
G-1	ANTENNA GROUNDING DIAGRAM
G-2	GROUNDING DETAILS

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

PROJECT DESCRIPTION

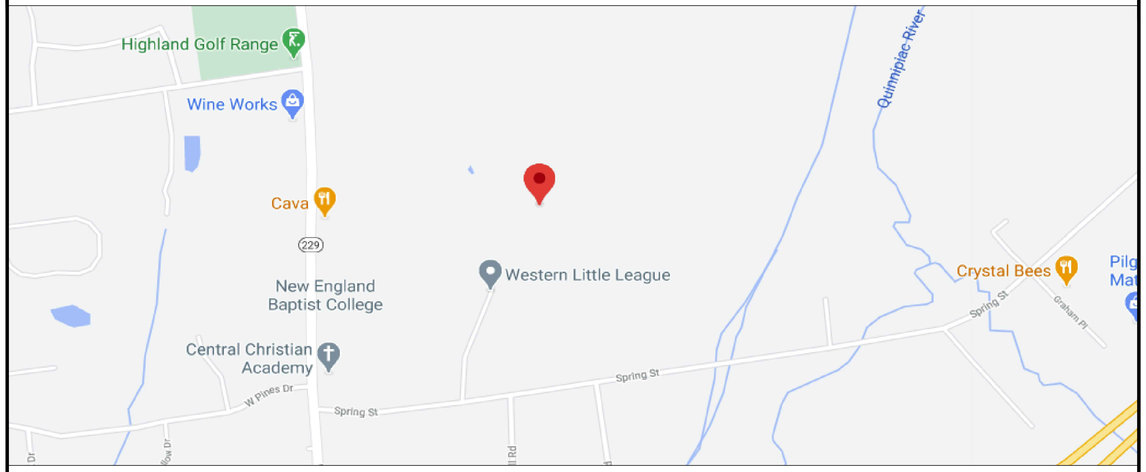
THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.

TOWER SCOPE OF WORK:
- REMOVE (6) ANTENNAS
- REMOVE (6) COMBINERS
- REMOVE (12) RRHs
- REMOVE (1) PLATFORM
- REMOVE (4) HYBRID CABLES
- INSTALL (9) ANTENNAS
- INSTALL (9) RRHs
- INSTALL (4) HYBRID CABLES
- INSTALL (1) PLATFORM

GROUND SCOPE OF WORK:
- REMOVE (1) MMBS EQUIPMENT CABINET
- REMOVE (1) BBU EQUIPMENT CABINET
- INSTALL (1) 6160 & (1) B160 BATTERY CABINETS
- INSTALL (1) PSU4813 BOOSTER IN (P) CABINET
- INSTALL (3) BB6630 IN (P) CABINET
- INSTALL (1) BB6648 IN (P) CABINET
- INSTALL (1) IXRE ROUTER IN (P) CABINET
- UPGRADE SERVICE TO 200AMP.

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

LOCATION MAP



NO SCALE

APPLICABLE CODES/REFERENCE DOCUMENTS

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

CODE TYPE	CODE
BUILDING	2018 CT STATE BUILDING CODE
MECHANICAL	2015 IMC
ELECTRICAL	2017 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	BY OTHERS
DATED:	
MOUNT ANALYSIS:	INFINIGY ENGINEERING, PLLC
DATED:	02/01/2021
RFDS REVISION:	1
DATED:	01/11/2021
ORDER ID:	538762
REVISION:	0

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

APPROVALS

APPROVAL	SIGNATURE	DATE
PROPERTY OWNER OR REP.		
LAND USE PLANNER		
T-MOBILE		
OPERATIONS		
RF		
NETWORK		
BACKHAUL		
CONSTRUCTION MANAGER		

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

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
1500 CORPORATE DRIVE
CANONSBURG, PA 15317

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1033 Watervliet Shaker Rd | Albany, NY 12205
Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com

T-MOBILE SITE NUMBER:
CTHA479A

BU #: **876334**
SOUTHINGTON, SMORON

625 SPRING STREET
SOUTHINGTON, CT 06489

EXISTING 158'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	02/10/20	RCD	PRELIMINARY	SS
0	03/09/21	BMM	FINAL	SS

STATE OF CONNECTICUT
SHUHEI SAKANO
34916
LICENSED PROFESSIONAL ENGINEER
3/10/21

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," CED–STD–10294 "STANDARD FOR INSTALLATION OF MOUNTS AND APPURTENANCES," AND LATEST VERSION OF ANSI/TIA–1019–A–2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY CROWN CASTLE USA INC. PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, TOWER OWNER, CROWN CASTLE USA INC., AND/OR LOCAL UTILITIES.
14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.
16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

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

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

GREENFIELD GROUNDING NOTES:

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

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

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T-MOBILE SITE NUMBER:
CTHA479A

BU #: **876334**
SOUTHINGTON, SMORON

625 SPRING STREET
SOUTHINGTON, CT 06489

EXISTING 158'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	02/10/20	RCD	PRELIMINARY	SS
0	03/09/21	BMM	FINAL	SS

STATE OF CONNECTICUT
SHUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER
3/10/21

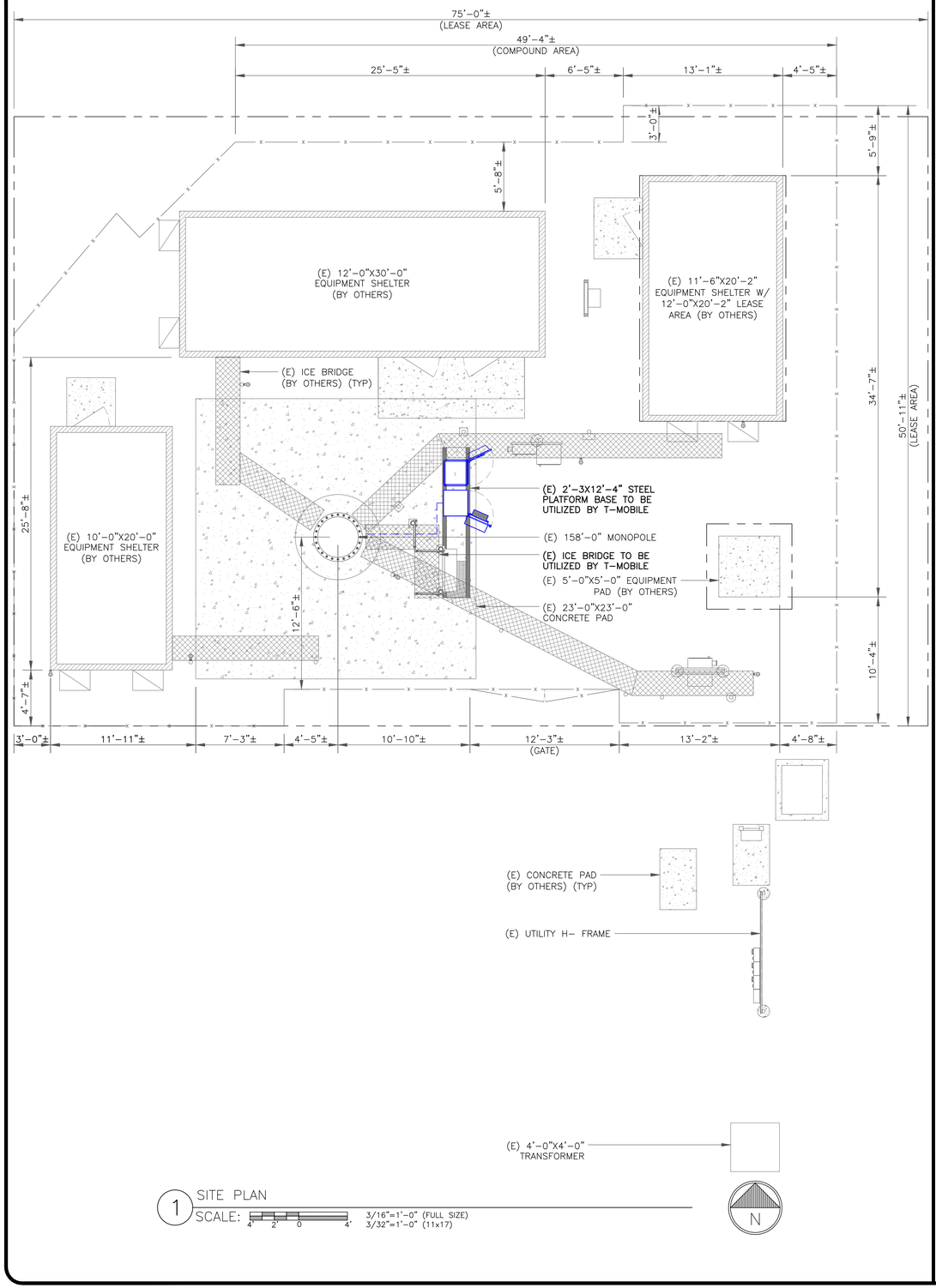
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: T-2

REVISION: 0

NOTE:

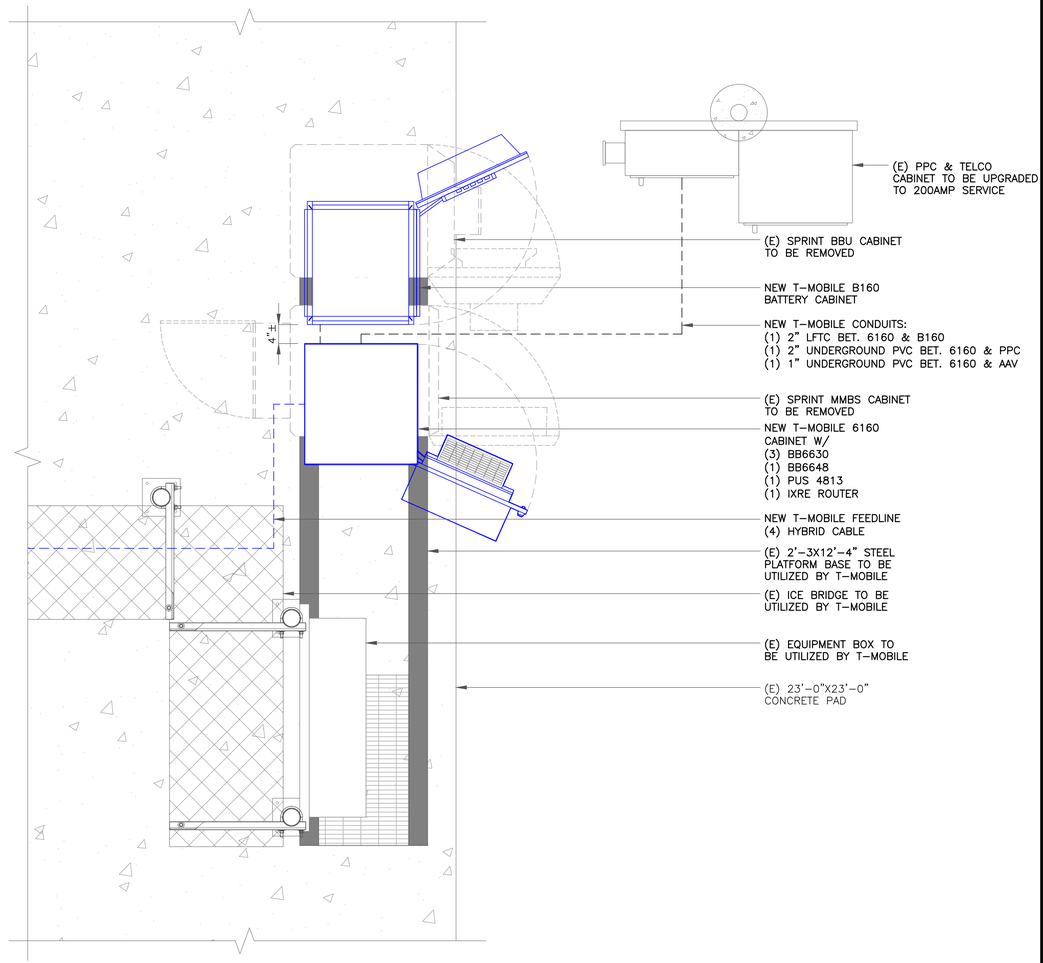
1. PLANS BASED ON SITE PLAN PROVIDED BY TOWER OWNER AND SITE VISIT PERFORMED BY INFINIGY. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LOCATION/ORIENTATION OF EXISTING T–MOBILE EQUIPMENT.



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

NOTES:

THE POWER DESIGN FOR ANY AC ELECTRICAL POWER CHANGES IS TO BE PERFORMED BY OTHERS AND IS SHOWN HERE FOR REFERENCE PURPOSES ONLY. T–MOBILE IS SOLELY RESPONSIBLE FOR THE ELECTRICAL POWER DESIGN.



2 ENLARGED SITE PLAN
SCALE: 1' 6" 0 1' 3/4"=1'–0" (FULL SIZE) 3/8"=1'–0" (11x17)

T-Mobile
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EXISTING 158'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	02/10/20	RCD	PRELIMINARY	SS
0	03/09/21	BMM	FINAL	SS

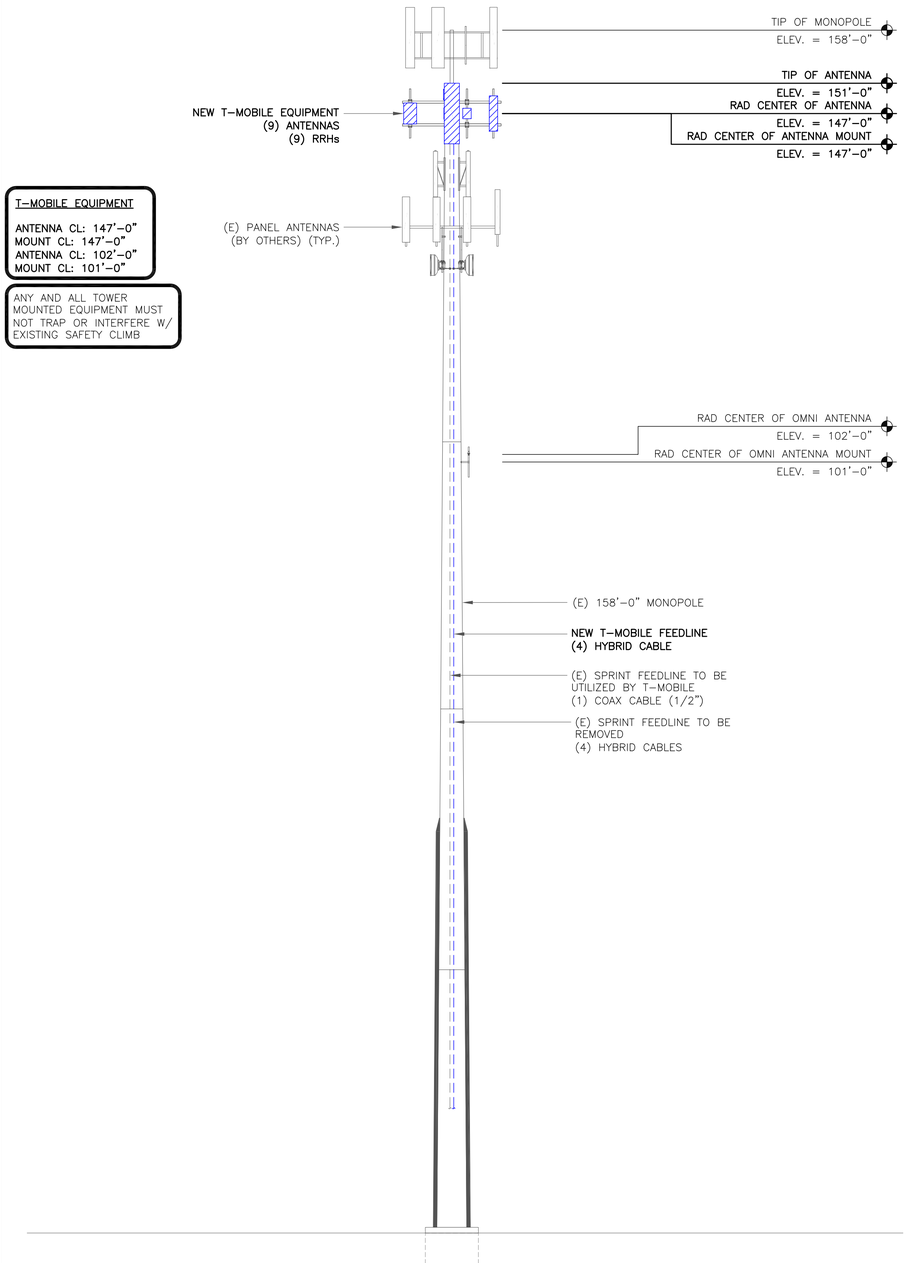
STATE OF CONNECTICUT
SHUHEI SAKAMOTO
34916
LICENSED
PROFESSIONAL ENGINEER
3/10/21

SHEET NUMBER: C-1

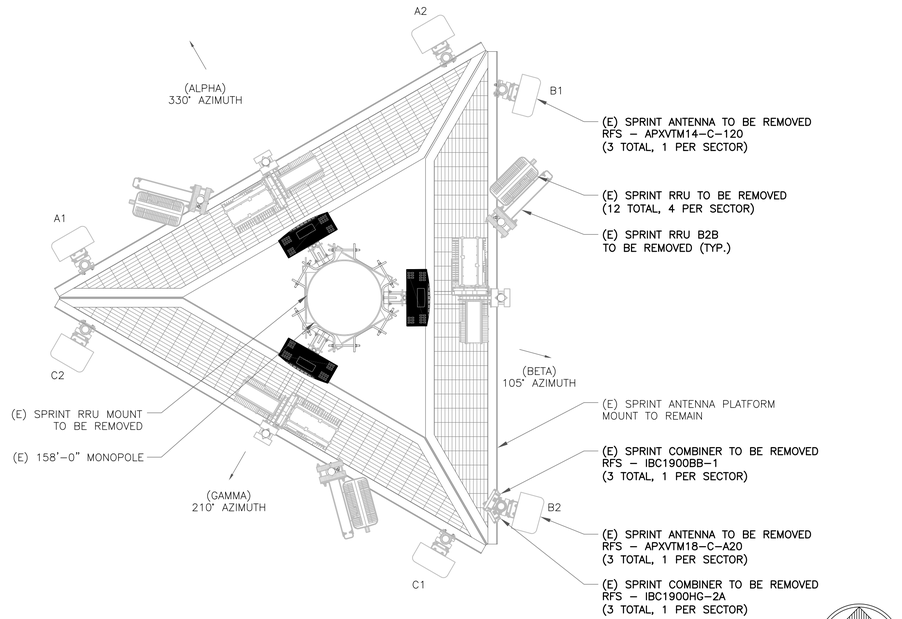
REVISION: 0

NOTES:

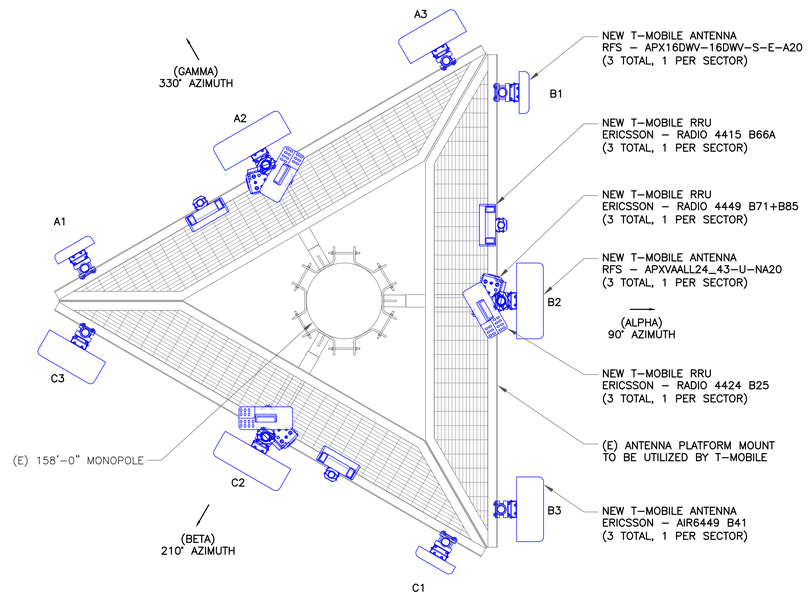
1. ELEVATION BASED ON DRAWING PROVIDED BY TOWER OWNER. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LOCATION/ORIENTATION OF EXISTING EQUIPMENT.
2. INFINIGY HAS NOT EVALUATED THE TOWER OR MOUNT STRUCTURE AND ASSUMES NO RESPONSIBILITY FOR THEIR STRUCTURAL INTEGRITY REGARDING PROPOSED LOADINGS. FINAL INSTALLATION SHALL COMPLY WITH RESULTS OF PASSING STRUCTURAL ANALYSES PERFORMED BY OTHERS.



1 FINAL ELEVATION
SCALE: NOT TO SCALE



2 EXISTING ANTENNA LAYOUT
SCALE: NOT TO SCALE



3 FINAL ANTENNA LAYOUT
SCALE: NOT TO SCALE

NOTE:
A STRUCTURAL EVALUATION OF THE T-MOBILE ANTENNA MOUNTS HAS BEEN PERFORMED BY INFINIGY ENGINEERING, PLLC. REFER TO ANTENNA MOUNT STRUCTURAL ANALYSIS DATED 02-01-2021 PRIOR TO CONSTRUCTION.

INFINIGY HAS NOT EVALUATED THE TOWER FOR THIS SITE AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY. CONTRACTOR TO COORDINATE LOADING WITH RF ENGINEER. REFER TO STRUCTURAL ANALYSIS PERFORMED BY OTHERS PRIOR TO CONSTRUCTION.

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T-MOBILE SITE NUMBER:
CTHA479A

BU #: **876334**
SOUTHINGTON, SMORON

625 SPRING STREET
SOUTHINGTON, CT 06489

EXISTING 158'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	02/10/20	RCD	PRELIMINARY	SS
0	03/09/21	BMM	FINAL	SS

STATE OF CONNECTICUT
SHUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER
3/10/21

SHEET NUMBER: C-2

REVISION: 0

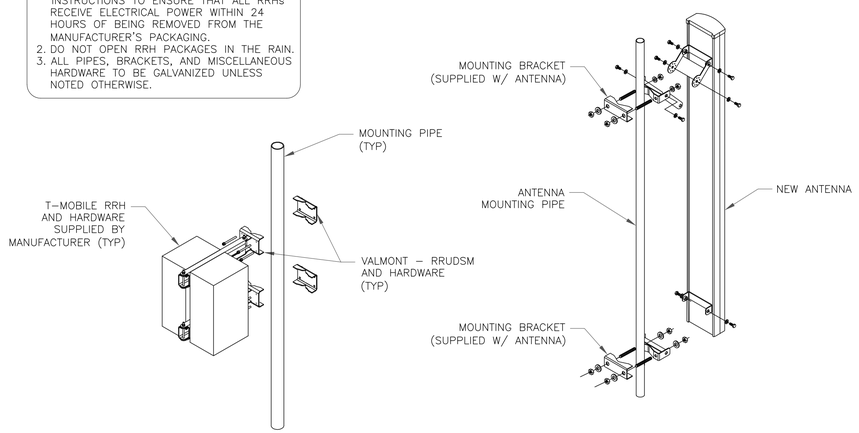
ANTENNA SCHEDULE

SECTOR	POS.	TECHNOLOGY	RAD CENTER	AZIMUTH	ANTENNA MANUFACTURER	ANTENNA MODEL	MECH. TILT	ELECT. TILT	TOWER MOUNTED EQUIPMENT	FEEDLINE TYPE
ALPHA	A1	L2100	147'-0"	90°	RFS	APX16DWV-16DWV-S-E-A20	0°	2/2	(1) ERICSSON - RRUS 4415 B66A	(1) 6X12 HCS HYBRID (SHARED)
ALPHA	A2	L700, L600, N600, L1900, G1900	147'-0"	90°	RFS	APXVAALL24_43-U-NA20	0°	2/2/2/2	(1) ERICSSON - RRUS 4449 B71+B85 (1) ERICSSON - RRUS 4424 B25	(2) 6X12 HCS HYBRID (SHARED)
ALPHA	A3	L2500, N2500	147'-0"	90°	ERICSSON	AIR6449 B41	0°	2/2	--	(1) 6X12 HCS HYBRID (SHARED)
BETA	B1	L2100	147'-0"	210°	RFS	APX16DWV-16DWV-S-E-A20	0°	2/2	(1) ERICSSON - RRUS 4415 B66A	(1) 6X12 HCS HYBRID (SHARED)
BETA	B2	L700, L600, N600, L1900, G1900	147'-0"	210°	RFS	APXVAALL24_43-U-NA20	0°	2/2/2/2	(1) ERICSSON - RRUS 4449 B71+B85 (1) ERICSSON - RRUS 4424 B25	(2) 6X12 HCS HYBRID (SHARED)
BETA	B3	L2500, N2500	147'-0"	210°	ERICSSON	AIR6449 B41	0°	2/2	--	(1) 6X12 HCS HYBRID (SHARED)
GAMMA	C1	L2100	147'-0"	330°	RFS	APX16DWV-16DWV-S-E-A20	0°	2/2	(1) ERICSSON - RRUS 4415 B66A	(1) 6X12 HCS HYBRID (SHARED)
GAMMA	C2	L700, L600, N600, L1900, G1900	147'-0"	330°	RFS	APXVAALL24_43-U-NA20	0°	2/2/2/2	(1) ERICSSON - RRUS 4449 B71+B85 (1) ERICSSON - RRUS 4424 B25	(2) 6X12 HCS HYBRID (SHARED)
GAMMA	C3	L2500, N2500	147'-0"	330°	ERICSSON	AIR6449 B41	0°	2/2	--	(1) 6X12 HCS HYBRID (SHARED)

1 ANTENNA AND CABLE SCHEDULE
SCALE: NOT TO SCALE

INSTALLER NOTES:

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



2 ANTENNA WITH RRHs MOUNTING DETAIL
SCALE: NOT TO SCALE

NOTE:

1. CONTRACTOR SHALL INSTALL 3RD DUAL RRH MOUNT TO ACCOMMODATE ALL RRH BRACKETS HOLES IF NECESSARY.

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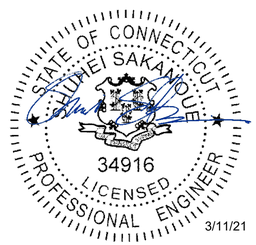

SHEET NUMBER: C-3

REVISION: 0

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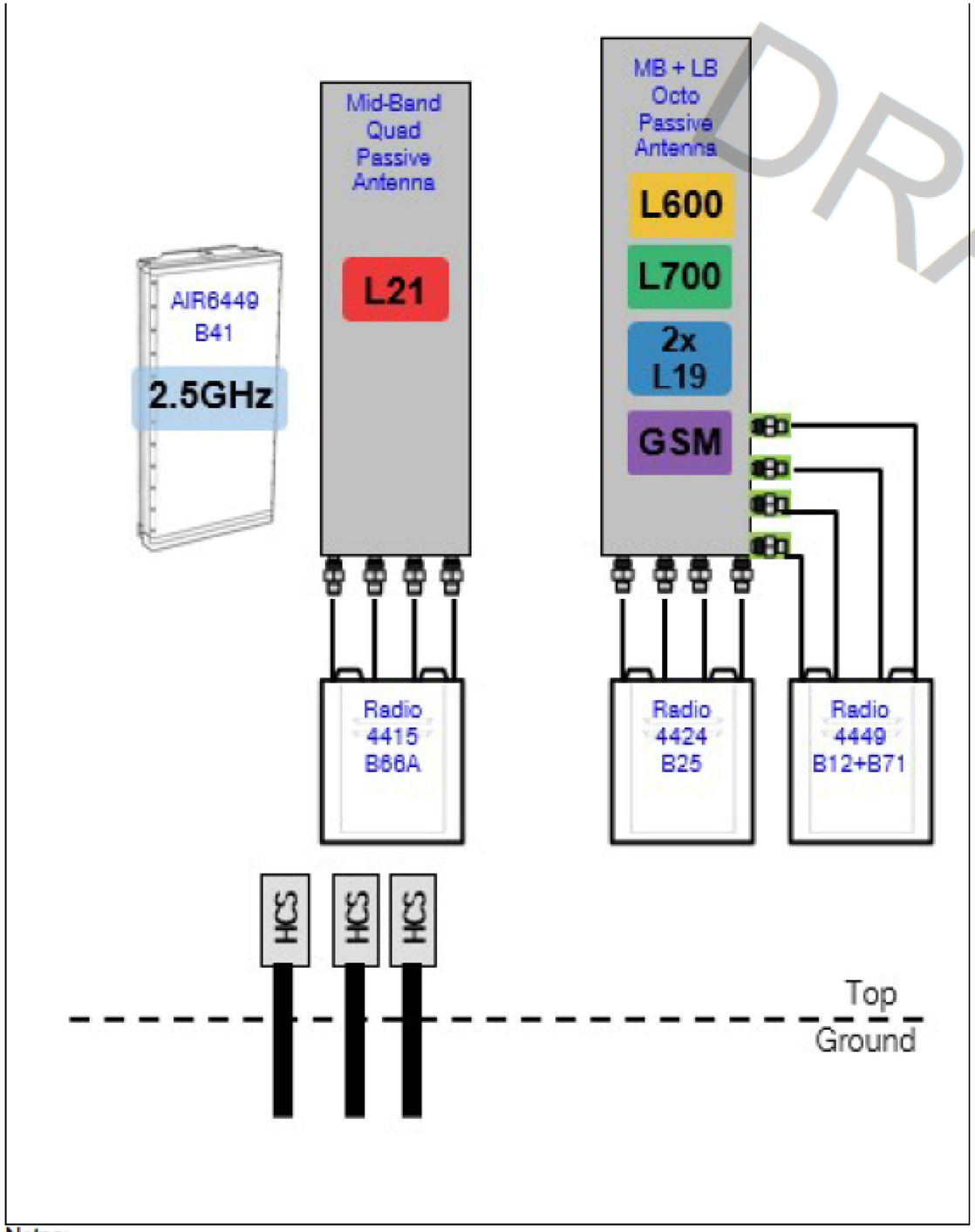

Notes:

1 PLUMBING DIAGRAM
SCALE: NOT TO SCALE

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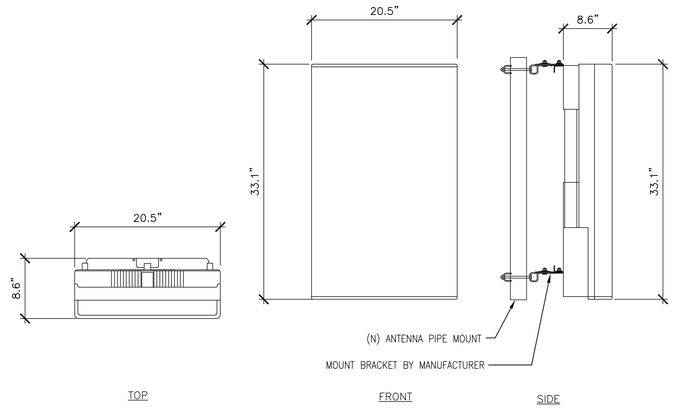
STATE OF CONNECTICUT
SHUHEI SAKANO
34916
LICENSED PROFESSIONAL ENGINEER
3/10/21

SHEET NUMBER: C-4

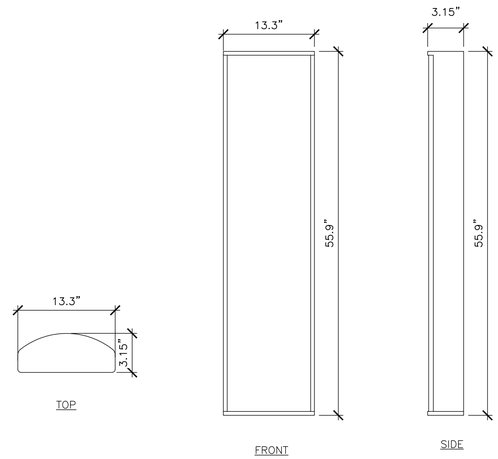
REVISION: 0

MANUFACTURER: ERICSSON
MODEL: AIR6449 B41
WEIGHT: 104 LBS (W/ MOUNT BRACKET 113)
DIMENSIONS: 33.1"H. X 20.5"W. X 8.6"D.
FREQUENCY: REFER TO RF DATA SHEET

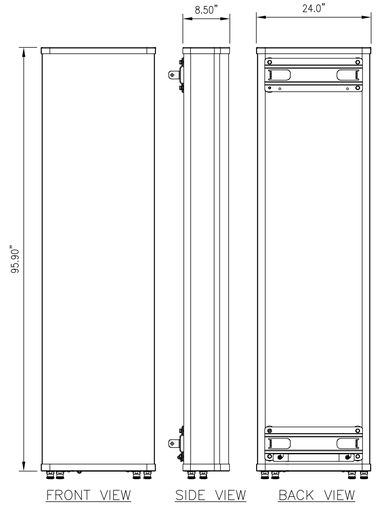


1 (N) AIR6449 B41 ANTENNA SPEC
SCALE: NOT TO SCALE

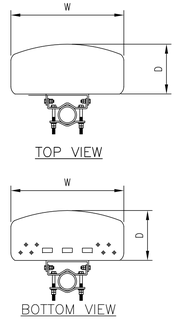
MANUFACTURER: RFS
MODEL: APX16DWV-16DWV-S-E-A20
WEIGHT: 40.7 LBS
DIMENSIONS: 55.9"H. X 13.3"W. X 3.15"D.
FREQUENCY: REFER TO RF DATA SHEET



2 (N) APX16DWV-16DWV-S-E-A20 ANTENNA SPEC
SCALE: NOT TO SCALE



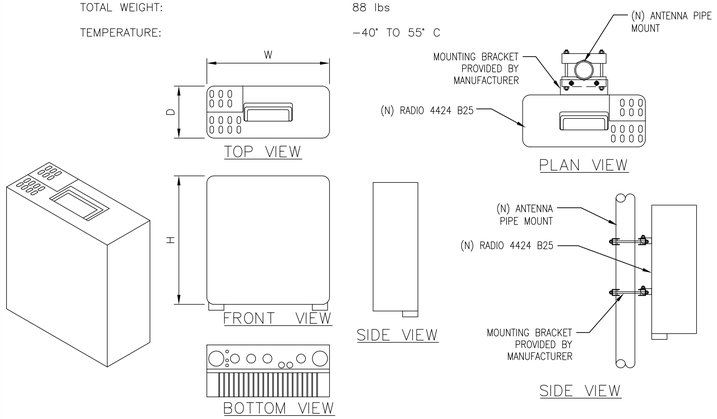
700MHz RFS ANTENNAS	
MODEL	WEIGHT (lb)
(8') APXVAALL24_43-UNA20	149.90
WEIGHT W/ MOUNTING BRACKET (lb):	154



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

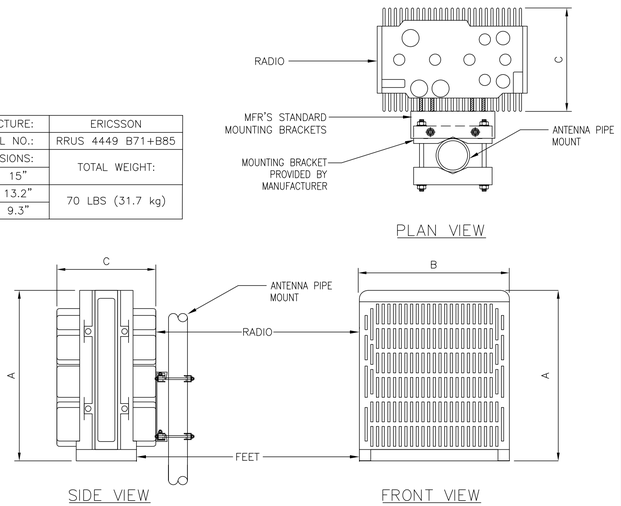
ERICSSON RADIO-4424 B25

DIMENSIONS, WxDxH:	13.5"x9.6"x16.5"
MAX OUTPUT POWER:	4x80W (2x(2x80W))
TOTAL WEIGHT:	88 lbs
TEMPERATURE:	-40° TO 55° C



4 (N) RADIO 4424 B25 SPEC
SCALE: NOT TO SCALE

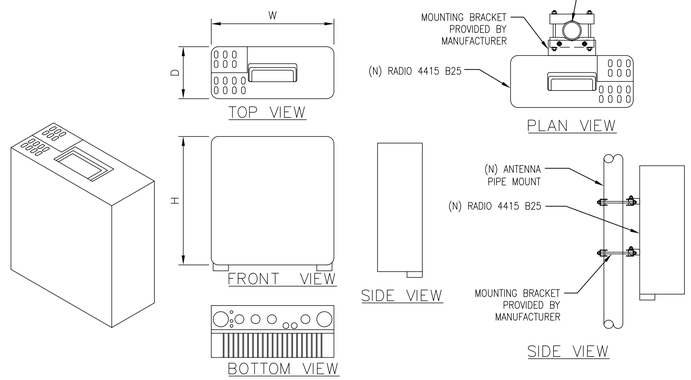
MANUFACTURE:	ERICSSON
MODEL NO.:	RRUS 4449 B71+B85
DIMENSIONS:	TOTAL WEIGHT:
A 15"	70 LBS (31.7 kg)
B 13.2"	
C 9.3"	



5 (N) RADIO 4449 B71+B85 SPEC
SCALE: NOT TO SCALE

ERICSSON RADIO-4415 B66A

DIMENSIONS, WxDxH:	13.19"x5.39"x14.96"
POWER CONSUMPTION:	660 WATTS
TOTAL WEIGHT:	44.0 lbs
TEMPERATURE:	-40° TO 55° C



6 (N) RADIO 4415 B66A SPEC
SCALE: NOT TO SCALE

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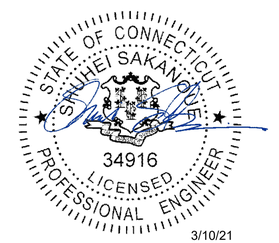
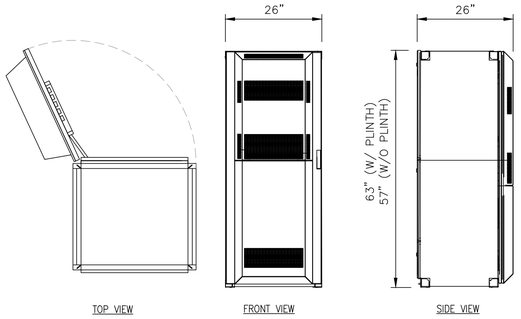


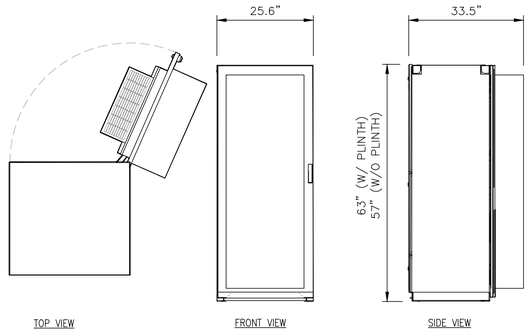
SHEET NUMBER: C-5

REVISION: 0



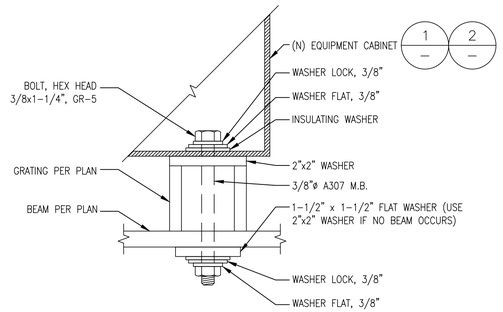
ERICSSON MODEL NO.:	B160
RACK SPACE:	19U
DIMENSIONS, HxWxD:	63"x26"x26" (W/ 6" PLINTH)
CABINET WEIGHT, EMPTY:	485 LBS
MAXIMUM WEIGHT:	2100± LBS

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

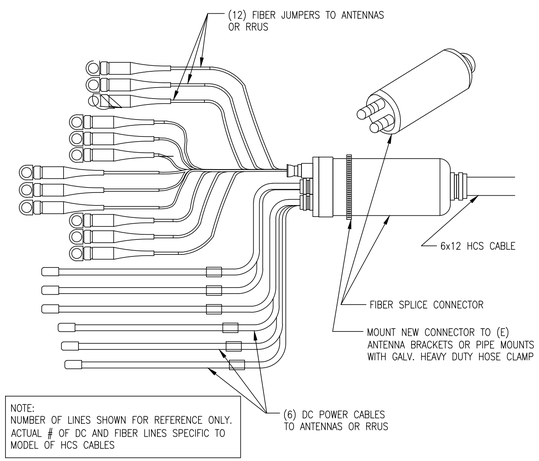


ERICSSON MODEL NO.:	6160
RACK SPACE:	19U
DIMENSIONS, HxWxD:	63"x25.6"x25.6" (W/ 6" PLINTH)
CABINET WEIGHT, EMPTY:	410 LBS
MAXIMUM WEIGHT:	770± LBS

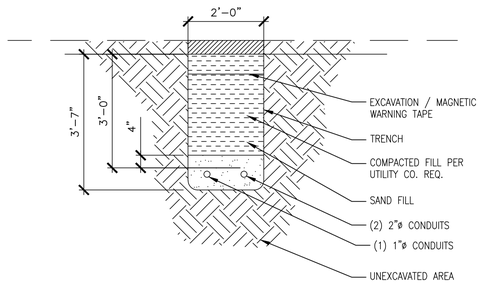
2 (N) 6160 CABINET DETAIL
SCALE: NOT TO SCALE



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



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



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

6 NOT USED
SCALE: NOT TO SCALE

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BU #: **876334**
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625 SPRING STREET
SOUTHINGTON, CT 06489

EXISTING 158'-0" MONOPOLE

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SHEET NUMBER: C-6

REVISION: 0

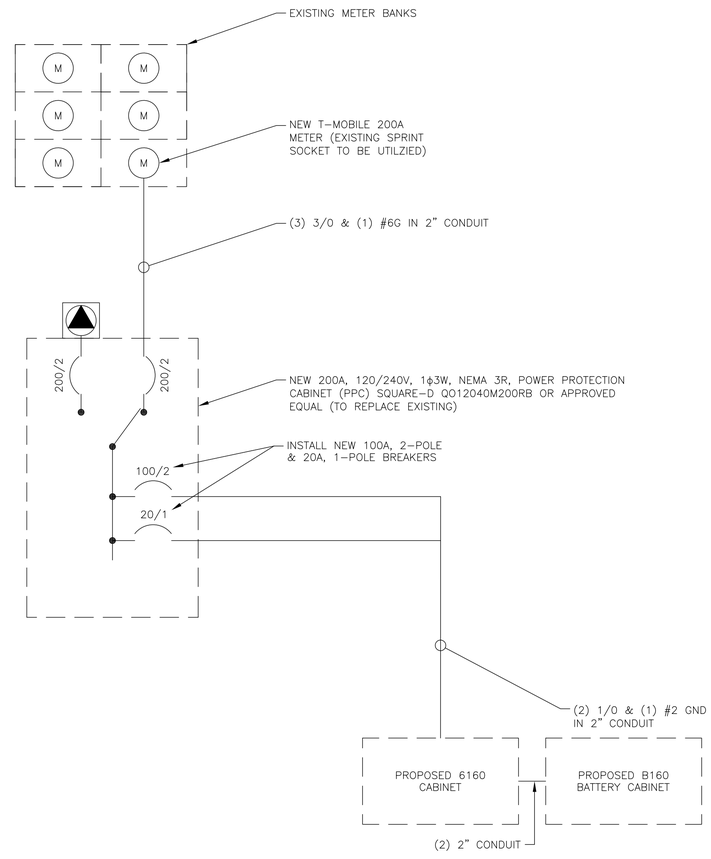
T-MOBILE PANEL SCHEDULE											
MAIN: 200A MAIN BREAKER			**VOTAGE/PHASE:** 120/240V, 1-PHASE, 3-WIRE					**SHORT CIRCUIT CURRENT RATING:** --		
MOUNTING: INSIDE PPC ENCLOSURE			**ENCLOSURE:** NEMA 3R					**SURGE PROTECTION DEVICE:** YES		
					PHASE LOADS (VA)					
DESCRIPTION	LOAD (VA)	C or NC	C/B	CIR No.	A	B	CIR No.	C/B	C or NC	LOAD (VA)	DESCRIPTION
6160**	**7000**	**C**	**100**	**1**	7000		2	30	NC	0	GENERATOR
	7000	**C**		**3**		7000	4		NC	0	
6160 GFI**	**180**	**NC**	**20**	**5**	380		6	50	NC	200	TOWER LIGHTS
FAN	960	NC	10	7		1160	8		NC	200	
AC SURGE	0	NC	50	9	180		10	20	NC	180	TELCO GFCI
	0	NC		11		0	12				
BLANK				13	0		14				BLANK
				15		0	16				
				17	0		18				
				19		0	20				
				21	0		22				
				23		0	24				
BASE LOAD (VA) =					7560	8160					
25% OF CONTINUOUS LOAD (VA) =					1750	1750					
TOTAL LOAD (VA) =					9310	9910					
TOTAL LOAD (A) =					77.6	82.6					

C = CONTINUOUS LOAD; NC = NON-CONTINUOUS LOAD
*INDICATES NEW LOAD. ALL OTHER LOADS ARE EXISTING.
NEW BREAKER TO BE SAME TYPE AND HAVE SAME AIC RATING AS EXISTING. CUSTOMER HAS NOT PROVIDED LOADS FOR EQUIPMENT CABINETS THEREFORE THE CABINET LOADS SHOWN ARE ESTIMATED

1 AC PANEL SCHEDULE
SCALE: NOT TO SCALE

NOTES:

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



2 ONE LINE DIAGRAM
SCALE: NOT TO SCALE

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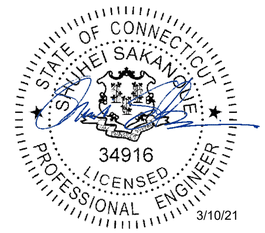
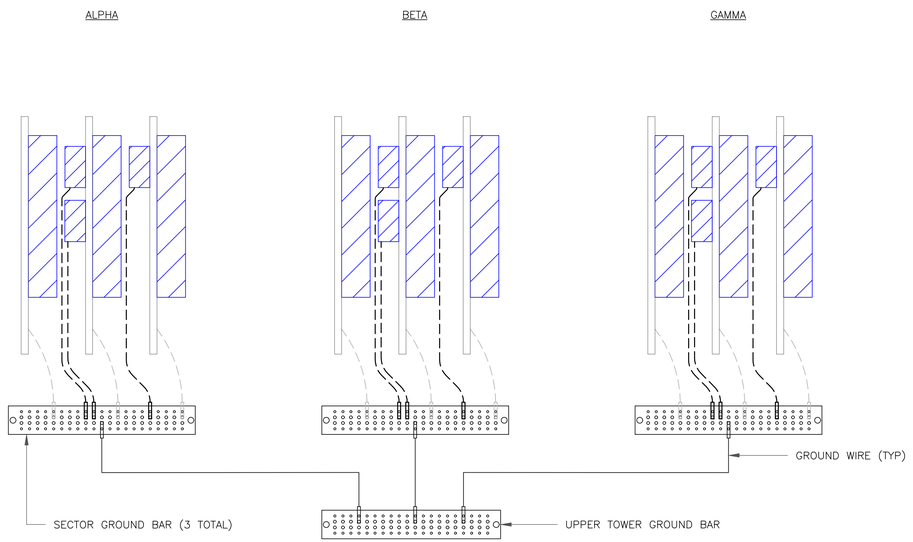


SHEET NUMBER: E-1

REVISION: 0



NOTE:

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

1 ANTENNA GROUNDING DIAGRAM
SCALE: NOT TO SCALE

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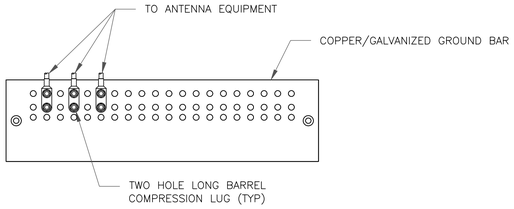
STATE OF CONNECTICUT
TUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER
3/10/21

SHEET NUMBER: G-1

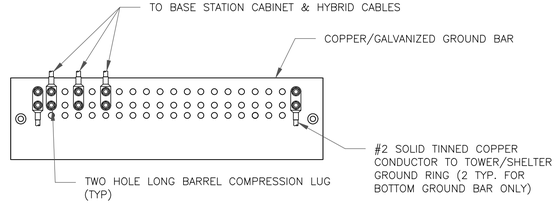
REVISION: 0



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.

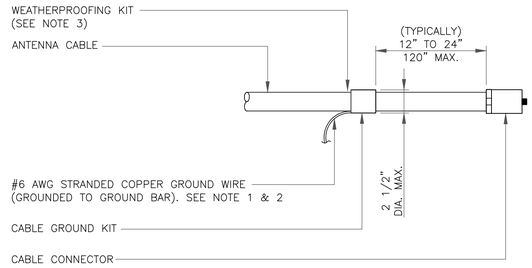
1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



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.

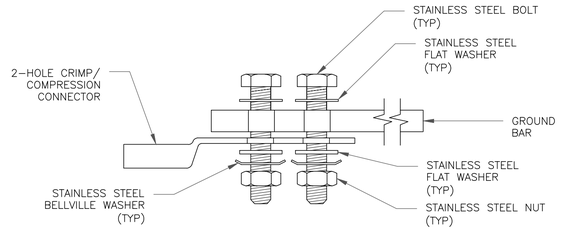
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



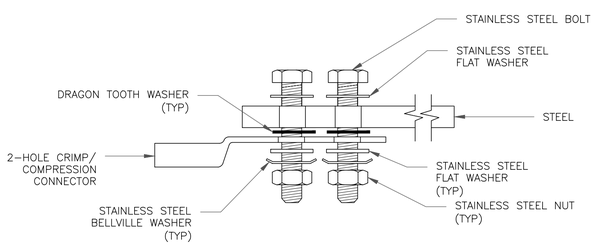
NOTES:

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

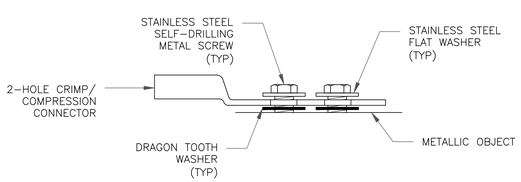
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS

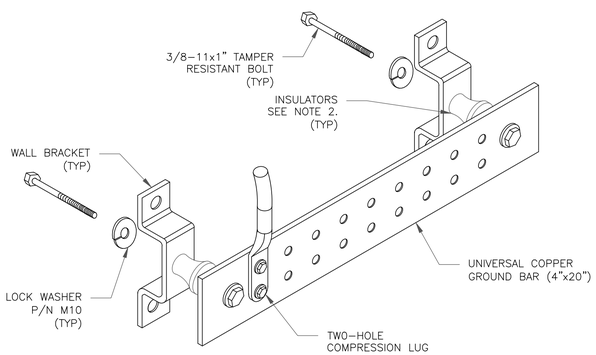


SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

4 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



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.

5 GROUND BAR DETAIL
SCALE: NOT TO SCALE

6 NOT USED
SCALE: NOT TO SCALE

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35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

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T-MOBILE SITE NUMBER:
CTHA479A

BU #: **876334**
SOUTHINGTON, SMORON

625 SPRING STREET
SOUTHINGTON, CT 06489

EXISTING 158'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	02/10/20	RCD	PRELIMINARY	SS
0	03/09/21	BMM	FINAL	SS

STATE OF CONNECTICUT
SUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER

3/10/21

SHEET NUMBER: G-2
REVISION: 0

Exhibit D

Structural Analysis Report

Date: **February 9th, 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:**	 CTHA479A
Crown Castle Designation:	**BU Number:** **Site Name:** **JDE Job Number:** **Work Order Number:** **Order Number:**	876334 SOUTHINGTON, SMORON 628842 1919210 538762 Rev. 0
Engineering Firm Designation:	**B+T Group Project Number:**	127834.003.01
Site Data:	**625 Spring Street, SOUTHINGTON, Hartford County, CT** **Latitude *41° 37' 56.9"*, Longitude *-72° 53' 39.3"*** **160.333 Foot - Monopole**	

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

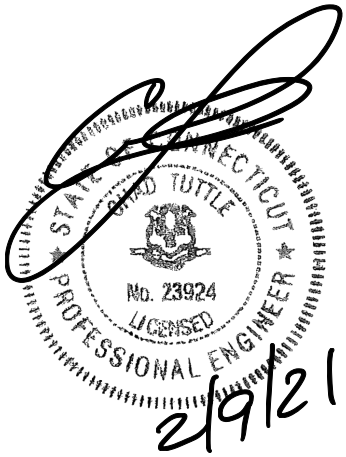
The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration **Sufficient Capacity- 99.8%**

This analysis has been performed in accordance with the 2018 Connecticut State Building Code (2015 IBC) 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: Tharun Cheriyan, E.I.T.

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



Chad E. Tuttle, P.E.

tnxTower Report - version 8.0.7.5

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 146 ft. Monopole designed by SUMMIT in July of 1998. A 14-ft tower extension has been considered in this analysis, bringing the total tower height to 160 ft. 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)
146.0	147.0	3	Ericsson	AIR6449 B41_T-MOBILE	3	1-5/8
		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		
	146.0	1	--	Platform Mount [LP 1201-1]		
		1	--	Miscellaneous [NA 510-1]		
101.0	102.0	1	Symmetricom	58532A	1	1/2
	101.0	1	--	Side Arm Mount [SO 701-1]		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
156.0	157.0	2	Andrew	SBNH-1D6565C	8 6 2	1-5/8 3/4 3/8
		3	CCI Antennas	DTMABP7819VG12A		
		2	CCI Antennas	TPA-65R-LCUUUU-H8		
		3	Ericsson	RRUS 11		
		3	Ericsson	RRUS 12		
		3	Ericsson	RRUS 32		
		3	Ericsson	RRUS 32 B2		
		3	Ericsson	RRUS 32 B66		
		3	Ericsson	RRUS 4478 B14		
		1	Kathrein	80010798		
		1	Kathrein	80010965		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		2	Kathrein	80010966		
		1	KMW Comm.	AM-X-CD-16-65-00T-RET		
		1	Raycap	DC6-48-60-0-8F		
		2	Raycap	DC6-48-60-18-8F		
	156.0	1	--	Sector Mount [SM 502-3]		
139.0	139.0	3	RFS Celwave	APXV18-206517S-C	6	1-5/8
		1	--	Pipe Mount [PM 501-3]		
132.0	134.0	6	Antel	BXA-80080-6CF-EDIN-X	6 1	1-5/8 1-1/4
	133.0	6	Andrew	SBNHH-1D65B		
		1	RFS Celwave	DB-C1-12C-24AB-0Z		
		3	Samsung Telecomm.	20W CBRS		
		3	Samsung Telecomm.	CBRS		
		3	Samsung Telecomm.	RFV01U-D1A		
		3	Samsung Telecomm.	RFV01U-D2A		
	132.0	1	--	Platform Mount [LP 1201-1_HR-1]		
129.0	130.0	3	Dragonwave	HORIZON COMPACT	3	1/2
	129.0	1	--	Side Arm Mount [SO 104-3]		
	127.0	1	Andrew	VHLP2-18		
		2	Andrew	VHLP800-11		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
Tower Manufacturing Drawing	1614569	CCI Sites
Mount Analysis Report	9546032	CCI Sites
Tower Modification drawing	2588177	CCI Sites
Post Modification Inspection	2588175	CCI Sites
Tower Modification drawing	3363885	CCI Sites
Post Modification Inspection	3794196	CCI Sites
Tower Modification drawing	5288062	CCI Sites
Post Modification Inspection	5570676	CCI Sites
Tower Modification drawing	5755362	CCI Sites
Post Modification Inspection	5888770	CCI Sites
Tower Modification drawing	6249238	CCI Sites
Post Modification Inspection	6544953	CCI Sites
Tower Modification drawing	6962729	CCI Sites
Post Modification Inspection	7104038	CCI Sites
Foundation Drawing	1999756	CCI Sites
Geotech Report	1530919	CCI Sites
Crown CAD Package	Date: 02/02/2021	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	160.33 - 155.33	Pole	TP16x16x0.375	1	-4.223	--	5.5	Pass
L2	155.33 - 150.33	Pole	TP16x16x0.375	2	-4.652	--	21.8	Pass
L3	150.33 - 146.83	Pole	TP16x16x0.375	3	-4.963	--	33.9	Pass
L4	146.83 - 146.33	Pole	TP22x22x0.375	4	-5.026	--	18.8	Pass
L5	146.33 - 141.33	Pole	TP22.924x22x0.25	5	-9.926	--	28.2	Pass
L6	141.33 - 136.33	Pole	TP23.848x22.924x0.25	6	-10.730	--	38.7	Pass
L7	136.33 - 131.33	Pole	TP24.772x23.848x0.25	7	-15.018	--	50.1	Pass
L8	131.33 - 126.33	Pole	TP25.696x24.772x0.25	8	-16.551	--	63.1	Pass
L9	126.33 - 121.33	Pole	TP26.62x25.696x0.25	9	-17.319	--	75.6	Pass
L10	121.33 - 120.08	Pole	TP26.851x26.62x0.25	10	-17.512	--	78.5	Pass
L11	120.08 - 119.83	Pole + Reinf.	TP26.897x26.851x0.4875	11	-17.587	--	54.9	Pass
L12	119.83 - 117.5	Pole + Reinf.	TP27.328x26.897x0.4875	12	-18.075	--	58.7	Pass
L13	117.5 - 117.25	Pole + Reinf.	TP27.375x27.328x0.5	13	-18.143	--	54.7	Pass
L14	117.25 - 115.5	Pole + Reinf.	TP27.698x27.375x0.5	14	-18.537	--	57.3	Pass
L15	115.5 - 115.25	Pole + Reinf.	TP27.744x27.698x0.6625	15	-18.620	--	50.6	Pass
L16	115.25 - 110.25	Pole + Reinf.	TP28.668x27.744x0.65	16	-19.956	--	57.0	Pass
L17	110.25 - 107.82	Pole + Reinf.	TP29.808x28.668x0.6375	17	-20.619	--	60.1	Pass
L18	107.82 - 102.82	Pole + Reinf.	TP29.541x28.617x0.7	18	-22.913	--	61.6	Pass
L19	102.82 - 100.5	Pole + Reinf.	TP29.969x29.541x0.6875	19	-23.672	--	64.1	Pass
L20	100.5 - 100.25	Pole + Reinf.	TP30.015x29.969x0.6375	20	-23.756	--	65.5	Pass
L21	100.25 - 98.5	Pole + Reinf.	TP30.338x30.015x0.625	21	-24.266	--	67.3	Pass
L22	98.5 - 98.25	Pole + Reinf.	TP30.385x30.338x0.6625	22	-24.363	--	64.4	Pass
L23	98.25 - 93.25	Pole + Reinf.	TP31.308x30.385x0.65	23	-25.934	--	69.3	Pass
L24	93.25 - 90.5	Pole + Reinf.	TP31.816x31.308x0.6375	24	-26.813	--	71.8	Pass
L25	90.5 - 90.25	Pole + Reinf.	TP31.862x31.816x0.6875	25	-26.919	--	70.9	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L26	90.25 - 85.25	Pole + Reinf.	TP32.785x31.862x0.675	26	-28.716	--	75.2	Pass
L27	85.25 - 83.5	Pole + Reinf.	TP33.108x32.785x0.6625	27	-29.347	--	76.7	Pass
L28	83.5 - 83.25	Pole + Reinf.	TP33.154x33.108x0.9125	28	-29.477	--	58.2	Pass
L29	83.25 - 80.75	Pole + Reinf.	TP33.616x33.154x0.8875	29	-30.550	--	59.8	Pass
L30	80.75 - 80.5	Pole + Reinf.	TP33.662x33.616x1.0625	30	-30.680	--	49.2	Pass
L31	80.5 - 80.25	Pole + Reinf.	TP33.708x33.662x0.975	31	-30.798	--	53.0	Pass
L32	80.25 - 77.5	Pole + Reinf.	TP34.216x33.708x0.9625	32	-32.084	--	54.6	Pass
L33	77.5 - 77.25	Pole + Reinf.	TP34.262x34.216x0.6875	33	-32.197	--	76.4	Pass
L34	77.25 - 73.29	Pole + Reinf.	TP35.819x34.262x0.6875	34	-33.803	--	79.3	Pass
L35	73.29 - 68.29	Pole + Reinf.	TP35.291x34.368x0.75	35	-37.509	--	77.6	Pass
L36	68.29 - 64.25	Pole + Reinf.	TP36.037x35.291x0.7375	36	-39.298	--	80.1	Pass
L37	64.25 - 64	Pole + Reinf.	TP36.084x36.037x0.875	37	-39.429	--	70.6	Pass
L38	64 - 60.5	Pole + Reinf.	TP36.73x36.084x0.8625	38	-41.081	--	72.5	Pass
L39	60.5 - 60.25	Pole + Reinf.	TP36.776x36.73x0.925	39	-41.219	--	68.5	Pass
L40	60.25 - 60.08	Pole + Reinf.	TP36.807x36.776x0.925	40	-41.304	--	68.5	Pass
L41	60.08 - 59.83	Pole + Reinf.	TP36.853x36.807x0.975	41	-41.434	--	66.3	Pass
L42	59.83 - 59.08	Pole + Reinf.	TP36.991x36.853x0.975	42	-41.818	--	66.7	Pass
L43	59.08 - 58.83	Pole + Reinf.	TP37.037x36.991x1.05	43	-41.962	--	60.7	Pass
L44	58.83 - 55.42	Pole + Reinf.	TP37.668x37.037x1.025	44	-43.843	--	62.3	Pass
L45	55.42 - 55.17	Pole + Reinf.	TP37.714x37.668x1.025	45	-43.993	--	62.4	Pass
L46	55.17 - 54.75	Pole + Reinf.	TP37.791x37.714x1.025	46	-44.223	--	62.6	Pass
L47	54.75 - 54.5	Pole + Reinf.	TP37.837x37.791x0.825	47	-44.347	--	76.0	Pass
L48	54.5 - 49.5	Pole + Reinf.	TP38.76x37.837x0.8125	48	-46.791	--	78.5	Pass
L49	49.5 - 44.5	Pole + Reinf.	TP39.683x38.76x0.8	49	-49.276	--	80.8	Pass
L50	44.5 - 41.25	Pole + Reinf.	TP40.283x39.683x0.7875	50	-50.910	--	82.3	Pass
L51	41.25 - 41	Pole + Reinf.	TP40.329x40.283x0.875	51	-51.060	--	72.2	Pass
L52	41 - 39	Pole + Reinf.	TP41.568x40.329x0.875	52	-52.145	--	73.0	Pass
L53	39 - 33.29	Pole + Reinf.	TP40.996x39.949x1.175	53	-58.028	--	57.1	Pass
L54	33.29 - 31.5	Pole + Reinf.	TP41.324x40.996x1.175	54	-59.176	--	57.7	Pass
L55	31.5 - 31.25	Pole + Reinf.	TP41.37x41.324x1.175	55	-59.357	--	57.4	Pass
L56	31.25 - 30.5	Pole + Reinf.	TP41.507x41.37x1.175	56	-59.842	--	57.7	Pass
L57	30.5 - 30.25	Pole + Reinf.	TP41.553x41.507x1.125	57	-60.008	--	60.5	Pass
L58	30.25 - 25.75	Pole + Reinf.	TP42.378x41.553x1.1	58	-62.890	--	62.0	Pass
L59	25.75 - 25.5	Pole + Reinf.	TP42.424x42.378x0.825	59	-63.039	--	84.5	Pass
L60	25.5 - 24.67	Pole + Reinf.	TP42.577x42.424x0.8125	60	-63.494	--	84.8	Pass
L61	24.67 - 24.42	Pole + Reinf.	TP42.623x42.577x0.7125	61	-63.621	--	95.6	Pass
L62	24.42 - 19.42	Pole + Reinf.	TP43.54x42.623x0.7	62	-65.993	--	97.5	Pass
L63	19.42 - 14.42	Pole + Reinf.	TP44.456x43.54x0.7	63	-68.404	--	99.4	Pass
L64	14.42 - 14.08	Pole + Reinf.	TP44.518x44.456x0.7	64	-68.579	--	99.5	Pass
L65	14.08 - 13.82	Pole + Reinf.	TP44.566x44.518x0.725	65	-68.713	--	95.4	Pass
L66	13.82 - 13.67	Pole + Reinf.	TP44.594x44.566x0.725	66	-68.789	--	95.5	Pass
L67	13.67 - 10.5	Pole + Reinf.	TP45.175x44.594x0.7125	67	-70.350	--	96.6	Pass
L68	10.5 - 10.25	Pole + Reinf.	TP45.22x45.175x0.7125	68	-70.485	--	96.6	Pass
L69	10.25 - 5.25	Pole + Reinf.	TP46.137x45.22x0.7	69	-72.888	--	98.2	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L70	5.25 - 0.25	Pole + Reinf.	TP47.054x46.137x0.7	70	-75.329	--	99.7	Pass
L71	0.25 - 0	Pole + Reinf.	TP47.1x47.054x0.7	71	-75.466	--	99.8	Pass
							Summary	
						Pole	78.5	Pass
						Reinforcement	99.8	Pass
						Rating =	99.8	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC7

Notes	Component		Elevation	% Capacity	Pass / Fail
1,2	Flange Connections		146’	61.8	Pass
1,2	Anchor Rods		Base	63.2	Pass
1,2	Base Plate		Base	60.0	Pass
1,2	Base Foundation	Structure	Base	97.5	Pass
		Soil	Base	85.6	Pass

Structure Rating (max from all components) =	99.8%

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

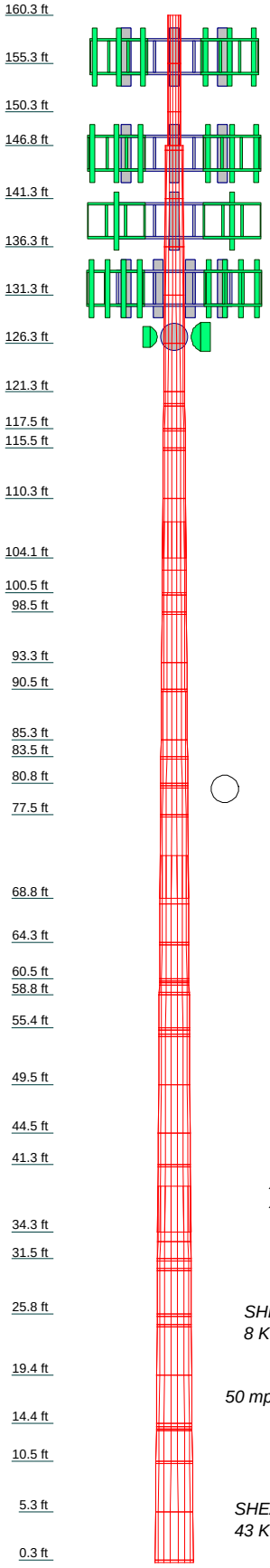
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.000	0	0.375		16.000	16.000	A53-B-35	0.3
2	5.000	0	0.375		16.000	16.000		0.3
3	5.000	0	0.375		16.000	16.000		0.2
4	5.000	0	0.375		16.000	16.000		0.3
5	5.000	12	0.250		22.000	22.924		0.3
6	5.000	12	0.250		22.924	23.848		0.3
7	5.000	12	0.250		23.848	24.772		0.3
8	5.000	12	0.250		24.772	25.696		0.3
9	5.000	12	0.250		25.696	26.620		0.4
10	5.000	12	0.250		26.620	27.544		0.4
11	5.000	12	0.250		27.544	28.468		0.4
12	5.000	12	0.250		28.468	29.392		0.4
13	5.000	12	0.250		29.392	30.316		0.4
14	5.000	12	0.250		30.316	31.240		0.4
15	5.000	12	0.250		31.240	32.164		0.4
16	5.000	12	0.650		27.772	28.668		0.9
17	5.000	12	0.637	3.737	28.668	29.808		1.2
18	5.000	12	0.637		29.808	30.948		1.2
19	5.000	12	0.637		30.948	32.088		1.2
20	5.000	12	0.637		32.088	33.228		1.2
21	5.000	12	0.637		33.228	34.368		1.2
22	5.000	12	0.637		34.368	35.508		1.2
23	5.000	12	0.650		30.388	31.396		1.1
24	5.000	12	0.637		31.396	32.404		1.2
25	5.000	12	0.637		32.404	33.412		1.2
26	5.000	12	0.637		33.412	34.420		1.2
27	5.000	12	0.637		34.420	35.428		1.2
28	5.000	12	0.637		35.428	36.436		1.2
29	5.000	12	0.637		36.436	37.444		1.3
30	5.000	12	0.637		37.444	38.452		1.3
31	5.000	12	0.637		38.452	39.460		1.3
32	5.000	12	0.637		39.460	40.468		1.3
33	5.000	12	0.637		40.468	41.476		1.3
34	5.000	12	0.688	4.471	41.476	42.484		2.4
35	5.000	12	0.750		42.484	43.492		1.5
36	5.000	12	0.750		43.492	44.500		1.5
37	5.000	12	0.750		44.500	45.508		1.5
38	5.000	12	0.750		45.508	46.516		1.5
39	5.000	12	0.750		46.516	47.524		1.5
40	5.000	12	0.750		47.524	48.532		1.5
41	5.000	12	0.750		48.532	49.540		1.5
42	5.000	12	0.750		49.540	50.548		1.5
43	5.000	12	0.750		50.548	51.556		1.5
44	5.000	12	0.750		51.556	52.564		1.5
45	5.000	12	0.750		52.564	53.572		1.5
46	5.000	12	0.750		53.572	54.580		1.5
47	5.000	12	0.750		54.580	55.588		1.5
48	5.000	12	0.813		55.588	56.596		1.8
49	5.000	12	0.800		56.596	57.604		1.8
50	5.000	12	0.787		57.604	58.612		1.8
51	5.000	12	0.775		58.612	59.620		1.8
52	5.000	12	0.875	4.709	59.620	60.628		2.7
53	5.000	12	0.875		60.628	61.636		1.9
54	5.000	12	0.875		61.636	62.644		1.9
55	5.000	12	0.875		62.644	63.652		1.9
56	5.000	12	0.875		63.652	64.660		1.9
57	5.000	12	0.875		64.660	65.668		1.9
58	5.000	12	0.875		65.668	66.676		2.0
59	5.000	12	0.875		66.676	67.684		2.0
60	5.000	12	0.875		67.684	68.692		2.0
61	5.000	12	0.875		68.692	69.700		2.0
62	5.000	12	0.700		42.620	43.540	A607-65	1.6
63	5.000	12	0.700		43.540	44.456		1.7
64	5.000	12	0.700		44.456	45.372		1.7
65	5.000	12	0.700		45.372	46.288		1.7
66	5.000	12	0.700		46.288	47.204		1.7
67	5.000	12	0.700		47.204	48.120		1.7
68	5.000	12	0.700		48.120	49.036		1.7
69	5.000	12	0.700		45.252	46.137		1.7
70	5.000	12	0.700		46.137	47.054		1.7
71	0.250	12	0.700		47.054	47.137		0.1
					47.137	44.000		44.0



ALL REACTIONS ARE FACTORED

AXIAL 105 K

SHEAR 8 K

MOMENT 989 kip-ft

TORQUE 1 kip-ft
50 mph WIND - 1.000 in ICE

AXIAL 75 K

SHEAR 43 K

MOMENT 4811 kip-ft

TORQUE 3 kip-ft
REACTIONS - 125 mph WIND

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-35	35 ksi	63 ksi	A607-65	65 ksi	80 ksi
A607-60	60 ksi	75 ksi			

TOWER DESIGN NOTES

1. Tower is located in Hartford 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: 99.8%

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

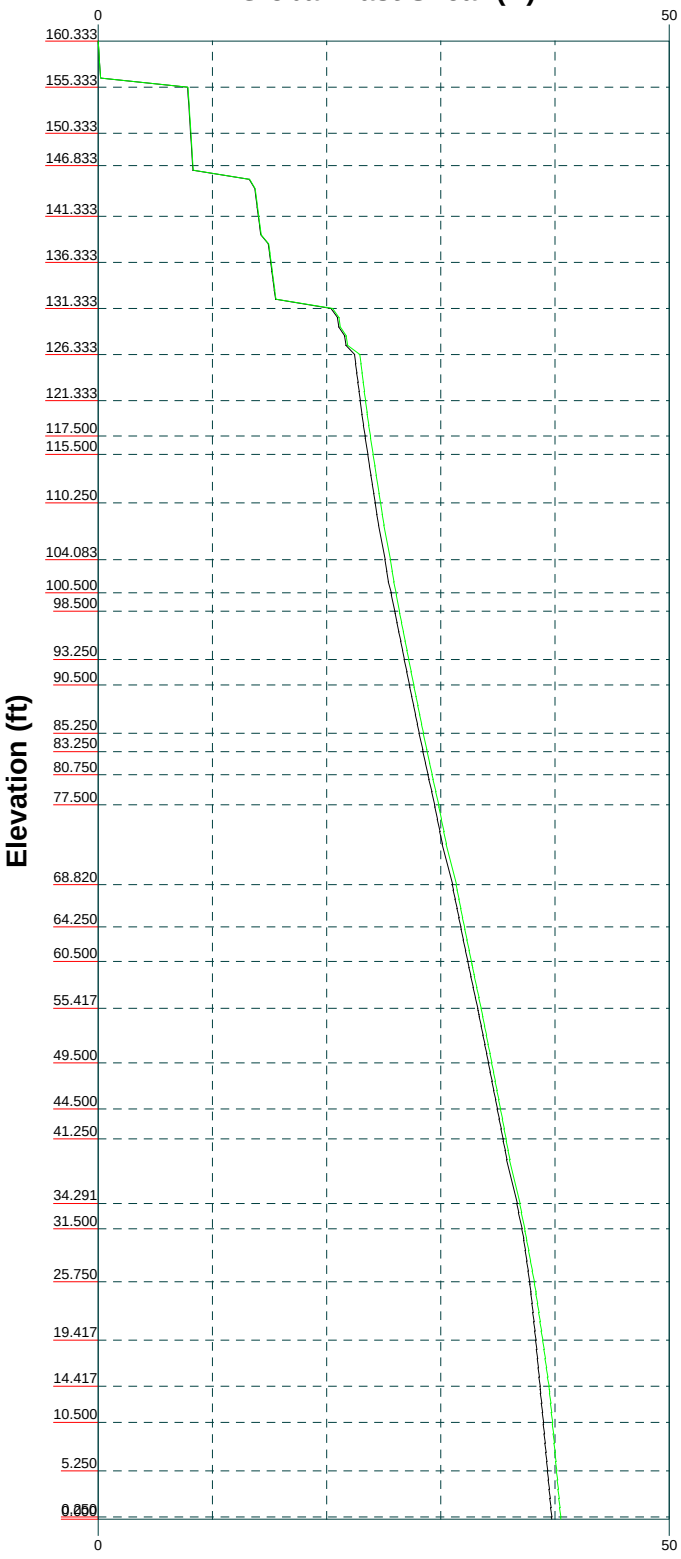
Job: ***127834.003.01 - SOUTHINGTON_SMORON, CT (BU# 87633-***		
Project:		
Client: Crown Castle	Drawn by: GURUPRASAD	App'd:
Code: TIA-222-H	Date: 02/08/21	Scale: NTS
Path:		Dwg No. E-1

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

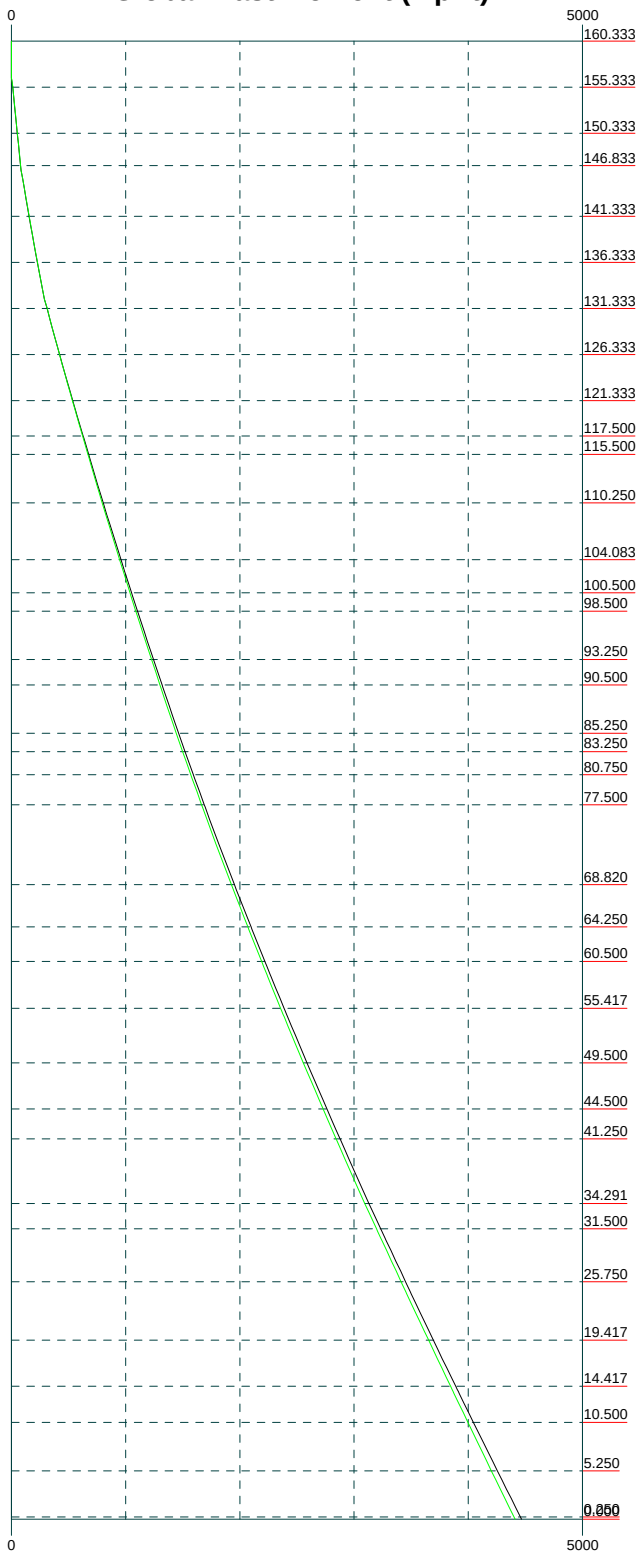
Maximum Values

Vx Vz Mx Mz

Global Mast Shear (K)



Global Mast Moment (kip-ft)



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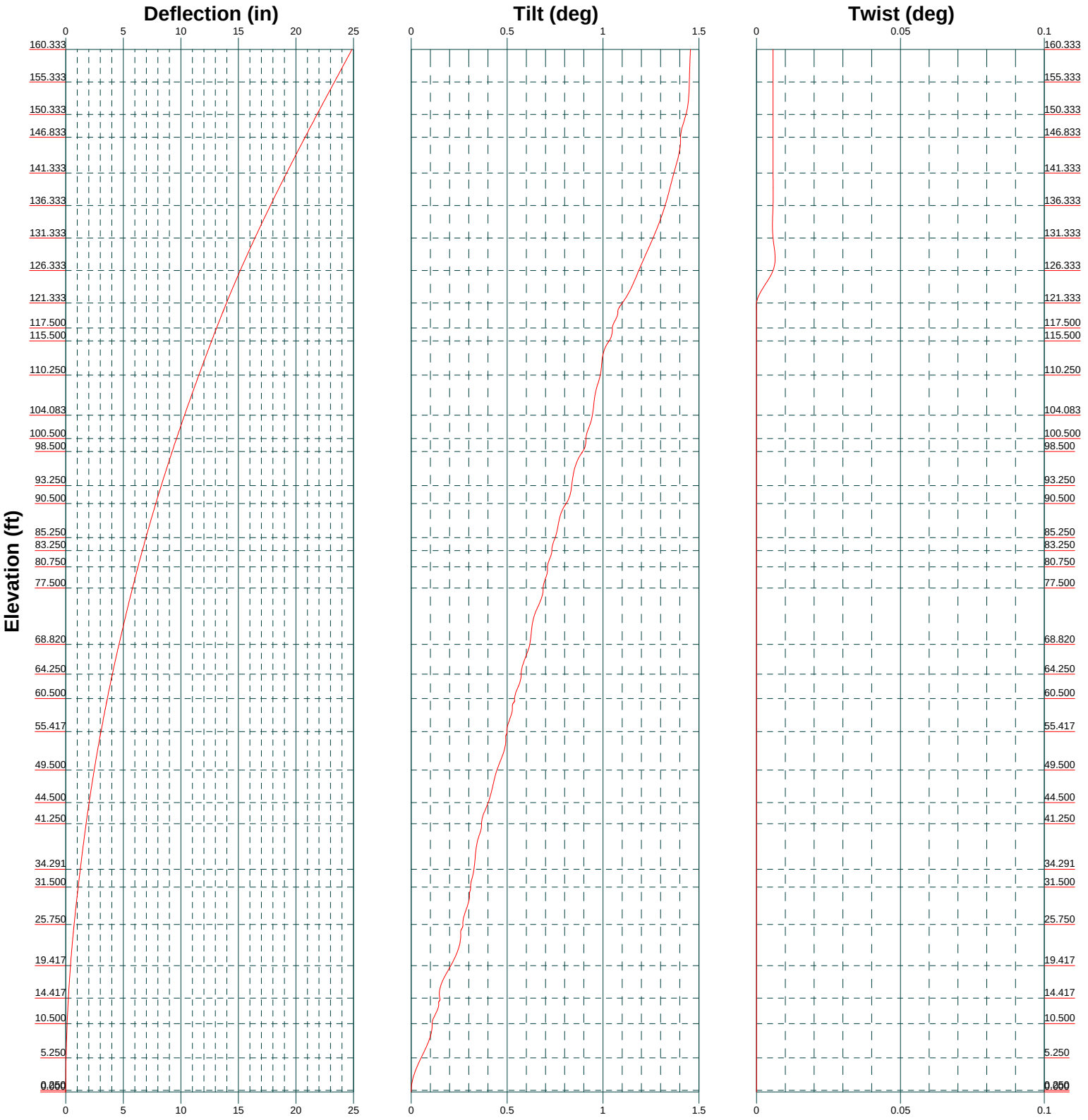
Job: ***127834.003.01 - SOUTHINGTON_SMORON, CT (BU# 87633-***		
Project:		
Client: Crown Castle	Drawn by: GURUPRASAD	App'd:
Code: TIA-222-H	Date: 02/08/21	Scale: NTS
Path:		Dwg No. E-4

TIA-222-H - Service - 60 mph

Maximum Values



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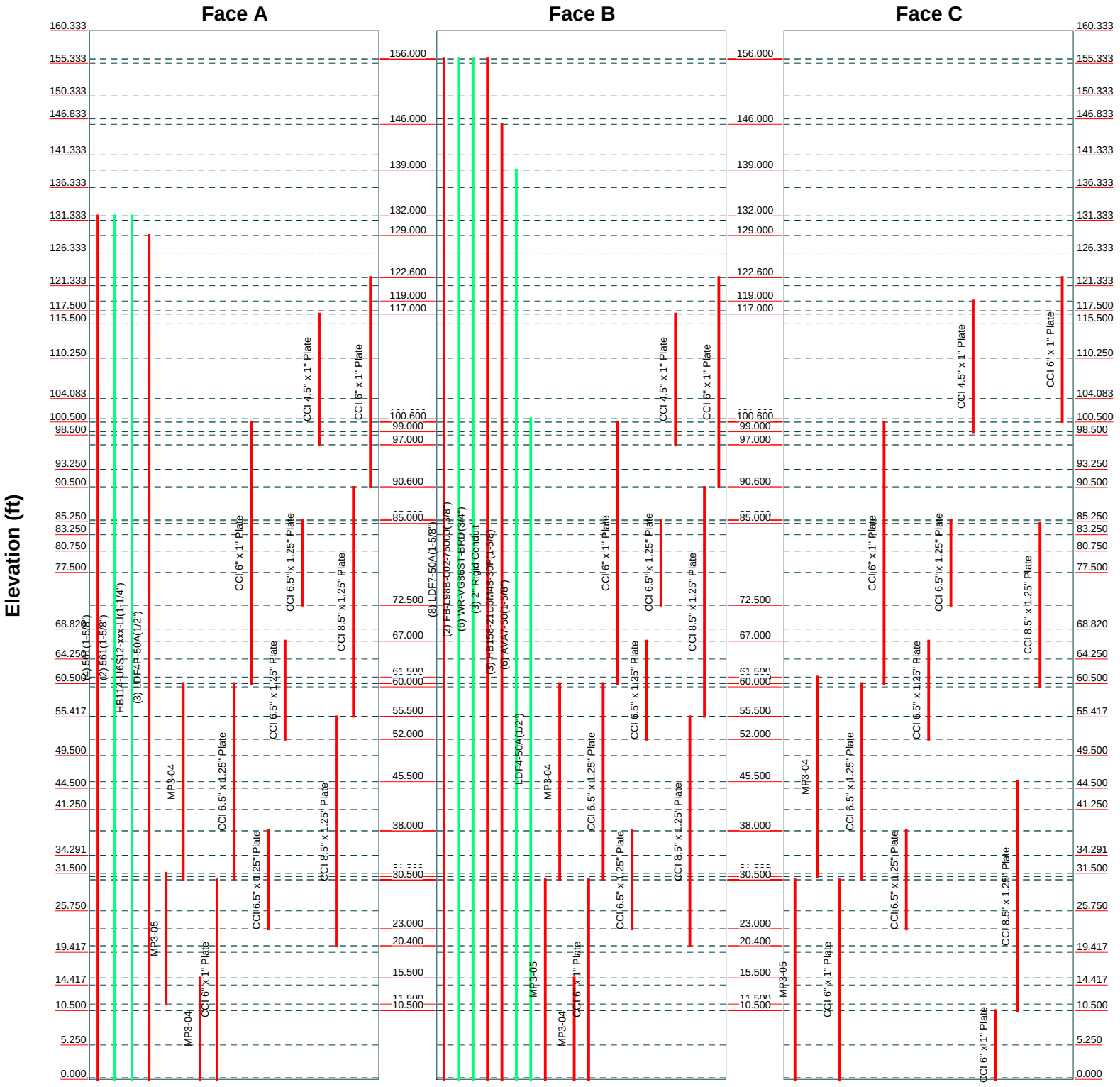
Job: *127834.003.01 - SOUTHINGTON_SMORON, CT (BU# 87633*		
Project:		
Client: Crown Castle	Drawn by: GURUPRASAD	App'd:
Code: TIA-222-H	Date: 02/08/21	Scale: NTS
Path:		Dwg No. E-5

Feed Line Distribution Chart
0' - 160'4"

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



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FAX: (918) 295-0265

Job: 127834.003.01 - SOUTHINGTON_SMORON, CT (BU# 87633		
Project:		
Client: Crown Castle	Drawn by: GURUPRASAD	App'd:
Code: TIA-222-H	Date: 02/08/21	Scale: NTS
Path:		Dwg No. E-7

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

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 Hartford County, Connecticut.
Tower base elevation above sea level: 296.000 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: 99.8%.
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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	160.333-155.333	5.000	0.000	Round	16.000	16.000	0.375		A53-B-35 (35 ksi)
L2	155.333-150.333	5.000	0.000	Round	16.000	16.000	0.375		A53-B-35 (35 ksi)
L3	150.333-146.833	3.500	0.000	Round	16.000	16.000	0.375		A53-B-35 (35 ksi)
L4	146.833-146.333	0.500	0.000	Round	22.000	22.000	0.375		A53-B-35 (35 ksi)
L5	146.333-141.333	5.000	0.000	12	22.000	22.924	0.250	1.000	A607-60 (60 ksi)
L6	141.333-136.333	5.000	0.000	12	22.924	23.848	0.250	1.000	A607-60 (60 ksi)
L7	136.333-131.333	5.000	0.000	12	23.848	24.772	0.250	1.000	A607-60 (60 ksi)
L8	131.333-126.333	5.000	0.000	12	24.772	25.696	0.250	1.000	A607-60 (60 ksi)
L9	126.333-121.333	5.000	0.000	12	25.696	26.620	0.250	1.000	A607-60 (60 ksi)
L10	121.333-120.083	1.250	0.000	12	26.620	26.851	0.250	1.000	A607-60 (60 ksi)
L11	120.083-119.833	0.250	0.000	12	26.851	26.897	0.487	1.950	A607-60 (60 ksi)
L12	119.833-117.500	2.333	0.000	12	26.897	27.328	0.487	1.950	A607-60 (60 ksi)
L13	117.500-117.250	0.250	0.000	12	27.328	27.375	0.500	2.000	A607-60 (60 ksi)
L14	117.250-115.500	1.750	0.000	12	27.375	27.698	0.500	2.000	A607-60 (60 ksi)
L15	115.500-115.250	0.250	0.000	12	27.698	27.744	0.662	2.650	A607-60 (60 ksi)
L16	115.250-110.250	5.000	0.000	12	27.744	28.668	0.650	2.600	A607-60 (60 ksi)
L17	110.250-104.083	6.167	3.737	12	28.668	29.808	0.637	2.550	A607-60 (60 ksi)
L18	104.083-102.820	5.000	0.000	12	28.617	29.541	0.700	2.800	A607-60 (60 ksi)
L19	102.820-100.500	2.320	0.000	12	29.541	29.969	0.688	2.750	A607-60 (60 ksi)
L20	100.500-100.250	0.250	0.000	12	29.969	30.015	0.637	2.550	A607-60 (60 ksi)
L21	100.250-98.500	1.750	0.000	12	30.015	30.338	0.625	2.500	A607-60 (60 ksi)
L22	98.500-98.250	0.250	0.000	12	30.338	30.385	0.662	2.650	A607-60 (60 ksi)
L23	98.250-93.250	5.000	0.000	12	30.385	31.308	0.650	2.600	A607-60 (60 ksi)
L24	93.250-90.500	2.750	0.000	12	31.308	31.816	0.637	2.550	A607-60 (60 ksi)
L25	90.500-90.250	0.250	0.000	12	31.816	31.862	0.688	2.750	A607-60 (60 ksi)
L26	90.250-85.250	5.000	0.000	12	31.862	32.785	0.675	2.700	A607-60 (60 ksi)
L27	85.250-83.500	1.750	0.000	12	32.785	33.108	0.662	2.650	A607-60 (60 ksi)
L28	83.500-83.250	0.250	0.000	12	33.108	33.154	0.912	3.650	A607-60 (60 ksi)
L29	83.250-80.750	2.500	0.000	12	33.154	33.616	0.887	3.550	A607-60 (60 ksi)

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L30	80.750-80.500	0.250	0.000	12	33.616	33.662	1.063	4.250	A607-60 (60 ksi)
L31	80.500-80.250	0.250	0.000	12	33.662	33.708	0.975	3.900	A607-60 (60 ksi)
L32	80.250-77.500	2.750	0.000	12	33.708	34.216	0.963	3.850	A607-60 (60 ksi)
L33	77.500-77.250	0.250	0.000	12	34.216	34.262	0.688	2.750	A607-60 (60 ksi)
L34	77.250-68.820	8.430	4.471	12	34.262	35.819	0.688	2.750	A607-60 (60 ksi)
L35	68.820-68.291	5.000	0.000	12	34.368	35.291	0.750	3.000	A607-60 (60 ksi)
L36	68.291-64.250	4.041	0.000	12	35.291	36.037	0.738	2.950	A607-60 (60 ksi)
L37	64.250-64.000	0.250	0.000	12	36.037	36.084	0.875	3.500	A607-60 (60 ksi)
L38	64.000-60.500	3.500	0.000	12	36.084	36.730	0.863	3.450	A607-60 (60 ksi)
L39	60.500-60.250	0.250	0.000	12	36.730	36.776	0.925	3.700	A607-60 (60 ksi)
L40	60.250-60.083	0.167	0.000	12	36.776	36.807	0.925	3.700	A607-60 (60 ksi)
L41	60.083-59.833	0.250	0.000	12	36.807	36.853	0.975	3.900	A607-60 (60 ksi)
L42	59.833-59.083	0.750	0.000	12	36.853	36.991	0.975	3.900	A607-60 (60 ksi)
L43	59.083-58.833	0.250	0.000	12	36.991	37.037	1.050	4.200	A607-60 (60 ksi)
L44	58.833-55.417	3.416	0.000	12	37.037	37.668	1.025	4.100	A607-60 (60 ksi)
L45	55.417-55.167	0.250	0.000	12	37.668	37.714	1.025	4.100	A607-60 (60 ksi)
L46	55.167-54.750	0.417	0.000	12	37.714	37.791	1.025	4.100	A607-60 (60 ksi)
L47	54.750-54.500	0.250	0.000	12	37.791	37.837	0.825	3.300	A607-60 (60 ksi)
L48	54.500-49.500	5.000	0.000	12	37.837	38.760	0.813	3.250	A607-60 (60 ksi)
L49	49.500-44.500	5.000	0.000	12	38.760	39.683	0.800	3.200	A607-60 (60 ksi)
L50	44.500-41.250	3.250	0.000	12	39.683	40.283	0.787	3.150	A607-60 (60 ksi)
L51	41.250-41.000	0.250	0.000	12	40.283	40.329	0.875	3.500	A607-60 (60 ksi)
L52	41.000-34.291	6.709	4.709	12	40.329	41.568	0.875	3.500	A607-60 (60 ksi)
L53	34.291-33.291	5.709	0.000	12	39.949	40.996	1.175	4.700	A607-65 (65 ksi)
L54	33.291-31.500	1.791	0.000	12	40.996	41.324	1.175	4.700	A607-65 (65 ksi)
L55	31.500-31.250	0.250	0.000	12	41.324	41.370	1.175	4.700	A607-65 (65 ksi)
L56	31.250-30.500	0.750	0.000	12	41.370	41.507	1.175	4.700	A607-65 (65 ksi)
L57	30.500-30.250	0.250	0.000	12	41.507	41.553	1.125	4.500	A607-65 (65 ksi)
L58	30.250-25.750	4.500	0.000	12	41.553	42.378	1.100	4.400	A607-65 (65 ksi)
L59	25.750-25.500	0.250	0.000	12	42.378	42.424	0.825	3.300	A607-65 (65 ksi)
L60	25.500-24.667	0.833	0.000	12	42.424	42.577	0.813	3.250	A607-65

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L61	24.667-24.417	0.250	0.000	12	42.577	42.623	0.713	2.850	(65 ksi) A607-65 (65 ksi)
L62	24.417-19.417	5.000	0.000	12	42.623	43.540	0.700	2.800	A607-65 (65 ksi)
L63	19.417-14.417	5.000	0.000	12	43.540	44.456	0.700	2.800	A607-65 (65 ksi)
L64	14.417-14.083	0.334	0.000	12	44.456	44.518	0.700	2.800	A607-65 (65 ksi)
L65	14.083-13.817	0.266	0.000	12	44.518	44.566	0.725	2.900	A607-65 (65 ksi)
L66	13.817-13.667	0.150	0.000	12	44.566	44.594	0.725	2.900	A607-65 (65 ksi)
L67	13.667-10.500	3.167	0.000	12	44.594	45.175	0.713	2.850	A607-65 (65 ksi)
L68	10.500-10.250	0.250	0.000	12	45.175	45.220	0.713	2.850	A607-65 (65 ksi)
L69	10.250-5.250	5.000	0.000	12	45.220	46.137	0.700	2.800	A607-65 (65 ksi)
L70	5.250-0.250	5.000	0.000	12	46.137	47.054	0.700	2.800	A607-65 (65 ksi)
L71	0.250-0.000	0.250		12	47.054	47.100	0.700	2.800	A607-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	16.000	18.408	562.084	5.526	8.000	70.261	1124.168	9.198	0.000	0
	16.000	18.408	562.084	5.526	8.000	70.261	1124.168	9.198	0.000	0
L2	16.000	18.408	562.084	5.526	8.000	70.261	1124.168	9.198	0.000	0
	16.000	18.408	562.084	5.526	8.000	70.261	1124.168	9.198	0.000	0
L3	16.000	18.408	562.084	5.526	8.000	70.261	1124.168	9.198	0.000	0
	16.000	18.408	562.084	5.526	8.000	70.261	1124.168	9.198	0.000	0
L4	22.000	25.476	1489.670	7.647	11.000	135.425	2979.340	12.731	0.000	0
	22.000	25.476	1489.670	7.647	11.000	135.425	2979.340	12.731	0.000	0
L5	22.688	17.509	1057.206	7.786	11.396	92.770	2142.186	8.617	5.226	20.904
	23.645	18.253	1197.754	8.117	11.875	100.867	2426.974	8.983	5.474	21.895
L6	23.645	18.253	1197.754	8.117	11.875	100.867	2426.974	8.983	5.474	21.895
	24.601	18.996	1350.237	8.448	12.353	109.302	2735.946	9.349	5.721	22.885
L7	24.601	18.996	1350.237	8.448	12.353	109.302	2735.946	9.349	5.721	22.885
	25.558	19.740	1515.142	8.779	12.832	118.076	3070.088	9.716	5.969	23.876
L8	25.558	19.740	1515.142	8.779	12.832	118.076	3070.088	9.716	5.969	23.876
	26.514	20.484	1692.954	9.110	13.311	127.189	3430.384	10.082	6.217	24.866
L9	26.514	20.484	1692.954	9.110	13.311	127.189	3430.384	10.082	6.217	24.866
	27.471	21.228	1884.161	9.441	13.789	136.640	3817.822	10.448	6.464	25.857
L10	27.471	21.228	1884.161	9.441	13.789	136.640	3817.822	10.448	6.464	25.857
	27.710	21.414	1934.113	9.523	13.909	139.056	3919.037	10.539	6.526	26.104
L11	27.626	41.384	3671.401	9.438	13.909	263.961	7439.253	20.368	5.890	12.081
	27.674	41.457	3690.736	9.455	13.933	264.895	7478.433	20.404	5.902	12.107
L12	27.674	41.457	3690.736	9.455	13.933	264.895	7478.433	20.404	5.902	12.107
	28.121	42.134	3874.461	9.609	14.156	273.695	7850.709	20.737	6.018	12.344
L13	28.116	43.194	3968.257	9.605	14.156	280.320	8040.764	21.259	5.984	11.968
	28.164	43.268	3988.793	9.621	14.180	281.296	8082.377	21.295	5.996	11.993
L14	28.164	43.268	3988.793	9.621	14.180	281.296	8082.377	21.295	5.996	11.993
	28.499	43.789	4134.536	9.737	14.348	288.169	8377.691	21.552	6.083	12.166

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L15	28.441	57.674	5380.653	9.679	14.348	375.021	10902.662	28.385	5.648	8.525
	28.489	57.772	5408.285	9.695	14.372	376.319	10958.652	28.434	5.660	8.543
L16	28.494	56.708	5313.593	9.700	14.372	369.730	10766.780	27.910	5.693	8.759
	29.450	58.642	5875.989	10.031	14.850	395.685	11906.346	28.862	5.941	9.14
L17	29.455	57.540	5770.706	10.035	14.850	388.595	11693.014	28.320	5.975	9.372
	30.635	59.880	6503.597	10.443	15.441	421.203	13178.051	29.471	6.280	9.851
L18	30.094	62.926	6259.852	9.994	14.824	422.284	12684.157	30.970	5.793	8.276
	30.336	65.007	6901.696	10.325	15.302	451.030	13984.708	31.994	6.041	8.63
L19	30.340	63.874	6787.269	10.329	15.302	443.552	13752.847	31.437	6.074	8.835
	30.784	64.822	7094.107	10.483	15.524	456.977	14374.583	31.903	6.189	9.002
L20	30.801	60.210	6611.927	10.501	15.524	425.917	13397.557	29.634	6.323	9.919
	30.849	60.305	6643.195	10.517	15.548	427.273	13460.915	29.680	6.336	9.938
L21	30.854	59.148	6521.254	10.522	15.548	419.430	13213.828	29.111	6.369	10.191
	31.188	59.798	6738.733	10.637	15.715	428.801	13654.501	29.431	6.456	10.329
L22	31.175	63.306	7116.047	10.624	15.715	452.811	14419.040	31.157	6.355	9.593
	31.223	63.405	7149.308	10.640	15.739	454.236	14486.436	31.206	6.368	9.611
L23	31.227	62.234	7023.269	10.645	15.739	446.228	14231.047	30.630	6.401	9.848
	32.183	64.167	7698.030	10.976	16.217	474.675	15598.296	31.581	6.648	10.228
L24	32.187	62.959	7559.230	10.980	16.217	466.117	15317.049	30.986	6.682	10.482
	32.713	64.001	7940.953	11.162	16.481	481.839	16090.524	31.499	6.818	10.695
L25	32.695	68.910	8522.638	11.144	16.481	517.135	17269.176	33.915	6.684	9.722
	32.743	69.012	8560.613	11.160	16.504	518.686	17346.122	33.966	6.696	9.74
L26	32.748	67.785	8415.080	11.165	16.504	509.868	17051.233	33.361	6.730	9.97
	33.704	69.791	9184.809	11.495	16.983	540.834	18610.912	34.349	6.977	10.337
L27	33.708	68.526	9025.252	11.500	16.983	531.439	18287.607	33.726	7.011	10.582
	34.042	69.215	9300.380	11.616	17.150	542.294	18845.091	34.065	7.098	10.713
L28	33.954	94.599	12516.124	11.526	17.150	729.800	25361.060	46.559	6.428	7.044
	34.002	94.735	12570.040	11.543	17.174	731.924	25470.310	46.626	6.440	7.057
L29	34.011	92.211	12254.117	11.552	17.174	713.528	24830.162	45.383	6.507	7.332
	34.489	93.530	12787.636	11.717	17.413	734.368	25911.217	46.033	6.631	7.471
L30	34.427	111.374	15064.877	11.654	17.413	865.146	30525.526	54.815	6.162	5.799
	34.475	111.532	15129.059	11.671	17.437	867.640	30655.575	54.893	6.174	5.811
L31	34.506	102.621	13995.227	11.702	17.437	802.616	28358.124	50.507	6.408	6.573
	34.554	102.766	14054.607	11.719	17.461	804.917	28478.444	50.579	6.421	6.585
L32	34.558	101.488	13890.321	11.723	17.461	795.508	28145.555	49.949	6.454	6.706
	35.084	103.061	14546.605	11.905	17.724	820.730	29475.366	50.724	6.590	6.847
L33	35.181	74.224	10650.349	12.003	17.724	600.901	21580.495	36.531	7.327	10.658
	35.228	74.326	10694.402	12.020	17.748	602.573	21669.758	36.581	7.340	10.676
L34	35.228	74.326	10694.402	12.020	17.748	602.573	21669.758	36.581	7.340	10.676
	36.840	77.772	12251.933	12.577	18.554	660.331	24825.737	38.277	7.757	11.283
L35	36.171	81.188	11712.084	12.035	17.803	657.878	23731.858	39.958	7.201	9.601
	36.272	83.418	12703.513	12.366	18.281	694.904	25740.762	41.056	7.448	9.931
L36	36.276	82.057	12505.355	12.370	18.281	684.065	25339.239	40.386	7.482	10.145
	37.049	83.828	13332.906	12.637	18.667	714.235	27016.082	41.258	7.682	10.416
L37	37.000	99.070	15634.570	12.588	18.667	837.534	31679.878	48.759	7.313	8.358
	37.048	99.200	15696.213	12.605	18.691	839.761	31804.783	48.823	7.325	8.372
L38	37.052	97.818	15488.466	12.609	18.691	828.646	31383.831	48.143	7.359	8.532
	37.721	99.612	16356.590	12.840	19.026	859.698	33142.885	49.026	7.532	8.733
L39	37.699	106.644	17450.307	12.818	19.026	917.183	35359.054	52.487	7.365	7.962
	37.747	106.782	17517.873	12.835	19.050	919.579	35495.961	52.555	7.377	7.975
L40	37.747	106.782	17517.873	12.835	19.050	919.579	35495.961	52.555	7.377	7.975
	37.779	106.874	17563.105	12.846	19.066	921.181	35587.611	52.600	7.385	7.984
L41	37.761	112.494	18435.180	12.828	19.066	966.921	37354.672	55.366	7.251	7.437
	37.809	112.638	18506.505	12.844	19.090	969.447	37499.197	55.437	7.264	7.45
L42	37.809	112.638	18506.505	12.844	19.090	969.447	37499.197	55.437	7.264	7.45
	37.952	113.073	18721.585	12.894	19.161	977.043	37935.007	55.651	7.301	7.488
L43	37.926	121.517	20036.015	12.867	19.161	1045.640	40598.399	59.807	7.100	6.762
	37.974	121.673	20113.298	12.883	19.185	1048.366	40754.994	59.884	7.112	6.773
L44	37.982	118.859	19675.357	12.892	19.185	1025.539	39867.608	58.499	7.179	7.004
	38.635	120.941	20727.267	13.118	19.512	1062.279	41999.063	59.523	7.348	7.169
L45	38.635	120.941	20727.267	13.118	19.512	1062.279	41999.063	59.523	7.348	7.169
	38.683	121.093	20805.683	13.135	19.536	1064.993	42157.954	59.598	7.360	7.181

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L46	38.683	121.093	20805.683	13.135	19.536	1064.993	42157.954	59.598	7.360	7.181
	38.763	121.347	20936.815	13.162	19.576	1069.524	42423.664	59.723	7.381	7.201
L47	38.833	98.201	17128.089	13.234	19.576	874.961	34706.152	48.331	7.917	9.596
	38.881	98.323	17192.321	13.250	19.600	877.171	34836.303	48.392	7.929	9.611
L48	38.885	96.866	16948.992	13.255	19.600	864.756	34343.253	47.675	7.963	9.8
	39.841	99.281	18248.467	13.585	20.078	908.885	36976.342	48.863	8.210	10.105
L49	39.845	97.786	17985.483	13.590	20.078	895.787	36443.464	48.127	8.244	10.305
	40.801	100.164	19329.622	13.920	20.556	940.340	39167.056	49.297	8.491	10.614
L50	40.805	98.630	19045.954	13.925	20.556	926.541	38592.266	48.543	8.525	10.825
	41.427	100.152	19940.967	14.140	20.867	955.633	40405.805	49.292	8.685	11.029
L51	41.396	111.033	22009.697	14.108	20.867	1054.773	44597.613	54.647	8.451	9.658
	41.443	111.163	22087.114	14.125	20.891	1057.272	44754.482	54.711	8.463	9.672
L52	41.443	111.163	22087.114	14.125	20.891	1057.272	44754.482	54.711	8.463	9.672
	42.726	114.653	24233.101	14.568	21.532	1125.434	49102.833	56.428	8.795	10.052
L53	41.837	146.700	28150.832	13.881	20.693	1360.376	57041.218	72.201	7.557	6.432
	42.027	150.661	30493.058	14.256	21.236	1435.935	61787.202	74.151	7.838	6.67
L54	42.027	150.661	30493.058	14.256	21.236	1435.935	61787.202	74.151	7.838	6.67
	42.367	151.904	31253.749	14.373	21.406	1460.060	63328.568	74.762	7.926	6.745
L55	42.367	151.904	31253.749	14.373	21.406	1460.060	63328.568	74.762	7.926	6.745
	42.415	152.077	31360.927	14.390	21.430	1463.443	63545.740	74.848	7.938	6.756
L56	42.415	152.077	31360.927	14.390	21.430	1463.443	63545.740	74.848	7.938	6.756
	42.557	152.597	31683.930	14.439	21.501	1473.617	64200.233	75.104	7.975	6.787
L57	42.575	146.285	30448.640	14.457	21.501	1416.164	61697.199	71.997	8.109	7.208
	42.622	146.451	30552.453	14.473	21.525	1419.425	61907.552	72.079	8.121	7.219
L58	42.631	143.285	29928.963	14.482	21.525	1390.458	60644.193	70.521	8.188	7.444
	43.485	146.208	31798.019	14.778	21.952	1448.527	64431.407	71.959	8.409	7.645
L59	43.582	110.386	24328.340	14.876	21.952	1108.254	49295.812	54.329	9.146	11.087
	43.630	110.508	24408.946	14.892	21.976	1110.724	49459.142	54.389	9.159	11.101
L60	43.634	108.866	24060.790	14.897	21.976	1094.881	48753.684	53.581	9.192	11.313
	43.792	109.266	24326.821	14.952	22.055	1103.014	49292.735	53.778	9.233	11.364
L61	43.828	96.048	21486.354	14.987	22.055	974.223	43537.179	47.272	9.501	13.335
	43.875	96.153	21557.014	15.004	22.079	976.376	43680.356	47.323	9.513	13.352
L62	43.879	94.494	21197.777	15.008	22.079	960.105	42952.443	46.507	9.547	13.638
	44.829	96.561	22619.174	15.337	22.554	1002.911	45832.579	47.524	9.793	13.989
L63	44.829	96.561	22619.174	15.337	22.554	1002.911	45832.579	47.524	9.793	13.989
	45.778	98.627	24102.732	15.665	23.028	1046.650	48838.670	48.541	10.038	14.34
L64	45.778	98.627	24102.732	15.665	23.028	1046.650	48838.670	48.541	10.038	14.34
	45.841	98.765	24203.990	15.687	23.060	1049.603	49043.846	48.609	10.055	14.364
L65	45.832	102.234	25025.535	15.678	23.060	1085.229	50708.518	50.316	9.988	13.776
	45.883	102.348	25109.247	15.695	23.085	1087.668	50878.142	50.372	10.001	13.794
L66	45.883	102.348	25109.247	15.695	23.085	1087.668	50878.142	50.372	10.001	13.794
	45.911	102.412	25156.535	15.705	23.100	1089.044	50973.961	50.404	10.008	13.804
L67	45.916	100.675	24743.942	15.710	23.100	1071.182	50137.934	49.549	10.042	14.094
	46.517	102.007	25739.377	15.917	23.400	1099.951	52154.955	50.205	10.197	14.312
L68	46.517	102.007	25739.377	15.917	23.400	1099.951	52154.955	50.205	10.197	14.312
	46.564	102.112	25819.073	15.934	23.424	1102.239	52316.441	50.257	10.210	14.329
L69	46.569	100.349	25387.485	15.938	23.424	1083.814	51441.927	49.389	10.243	14.633
	47.518	102.416	26988.460	16.267	23.899	1129.265	54685.937	50.406	10.489	14.984
L70	47.518	102.416	26988.460	16.267	23.899	1129.265	54685.937	50.406	10.489	14.984
	48.467	104.482	28655.366	16.595	24.374	1175.650	58063.540	51.423	10.735	15.335
L71	48.467	104.482	28655.366	16.595	24.374	1175.650	58063.540	51.423	10.735	15.335
	48.515	104.586	28740.466	16.611	24.398	1177.994	58235.976	51.474	10.747	15.353

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 160.333-155.333				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
L2 155.333-150.333				1	1	1			
L3 150.333-146.833				1	1	1			
L4 146.833-146.333				1	1	1			
L5 146.333-141.333				1	1	1			
L6 141.333-136.333				1	1	1			
L7 136.333-131.333				1	1	1			
L8 131.333-126.333				1	1	1			
L9 126.333-121.333				1	1	1			
L10 121.333-120.083				1	1	1			
L11 120.083-119.833				1	1	0.952241			
L12 119.833-117.500				1	1	0.945183			
L13 117.500-117.250				1	1	1.02541			
L14 117.250-115.500				1	1	1.01916			
L15 115.500-115.250				1	1	0.929133			
L16 115.250-110.250				1	1	0.928031			
L17 110.250-104.083				1	1	0.937076			
L18 104.083-102.820				1	1	0.937686			
L19 102.820-100.500				1	1	0.947009			
L20 100.500-100.250				1	1	0.979272			
L21 100.250-98.50				1	1	0.993012			

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
0									
L22				1	1	0.984646			
98.500-98.250									
L23				1	1	0.987428			
98.250-93.250									
L24				1	1	0.997971			
93.250-90.500									
L25				1	1	1.06041			
90.500-90.250									
L26				1	1	1.06188			
90.250-85.250									
L27				1	1	1.07542			
85.250-83.500									
L28				1	1	0.976487			
83.500-83.250									
L29				1	1	0.994032			
83.250-80.750									
L30				1	1	0.929408			
80.750-80.500									
L31				1	1	0.988425			
80.500-80.250									
L32				1	1	0.990553			
80.250-77.500									
L33				1	1	1.13161			
77.500-77.250									
L34				1	1	1.11718			
77.250-68.820									
L35				1	1	1.10418			
68.820-68.291									
L36				1	1	1.10951			
68.291-64.250									
L37				1	1	1.0126			
64.250-64.000									
L38				1	1	1.01625			
64.000-60.500									
L39				1	1	1.00832			
60.500-60.250									
L40				1	1	1.0078			
60.250-60.083									
L41				1	1	0.993436			
60.083-59.833									
L42				1	1	0.991096			
59.833-59.083									
L43				1	1	0.989483			
59.083-58.833									
L44				1	1	1.00178			
58.833-55.417									
L45				1	1	1.00098			
55.417-55.167									
L46				1	1	0.999648			
55.167-54.750									
L47				1	1	1.05096			
54.750-54.500									
L48				1	1	1.05205			
54.500-49.500									
L49				1	1	1.05391			
49.500-44.500									
L50				1	1	1.06127			
44.500-41.250									

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
L51 41.250-41.000				1	1	1.05236			
L52 41.000-34.291				1	1	1.04658			
L53 34.291-33.291				1	1	0.943825			
L54 33.291-31.500				1	1	0.938715			
L55 31.500-31.250				1	1	0.948018			
L56 31.250-30.500				1	1	0.945874			
L57 30.500-30.250				1	1	0.963144			
L58 30.250-25.750				1	1	0.971561			
L59 25.750-25.500				1	1	1.06504			
L60 25.500-24.667				1	1	1.07883			
L61 24.667-24.417				1	1	1.00522			
L62 24.417-19.417				1	1	1.01244			
L63 19.417-14.417				1	1	1.00245			
L64 14.417-14.083				1	1	1.0018			
L65 14.083-13.817				1	1	0.992842			
L66 13.817-13.667				1	1	0.992544			
L67 13.667-10.500				1	1	1.00336			
L68 10.500-10.250				1	1	0.957507			
L69 10.250-5.250				1	1	0.965481			
L70 5.250-0.250				1	1	0.956981			
L71 0.250-0.000				1	1	0.956565			

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
LDF7-50A(1-5/8")	B	No	Surface Ar (CaAa)	156.000 - 0.000	8	8	-0.360 -0.170	1.980		0.001
2" Rigid Conduit	B	No	Surface Ar (CaAa)	156.000 - 0.000	3	3	-0.160 -0.100	2.000		0.003
*										
HB158-21U6M48-30F(1	B	No	Surface Ar	146.000 -	3	3	-0.100	1.660		0.002

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
-5/8)			(CaAa)	0.000			0.000			
561(1-5/8")	A	No	Surface Ar (CaAa)	132.000 - 0.000	4	4	-0.080 0.000	1.625		0.001
*										
LDF4P-50A(1/2")	A	No	Surface Ar (CaAa)	129.000 - 0.000	3	3	-0.300 -0.250	0.630		0.000
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MP3-05	A	No	Surface Af (CaAa)	31.500 - 11.500	1	1	0.500 0.500	5.330	14.840	0.000
MP3-05	B	No	Surface Af (CaAa)	30.500 - 0.000	1	1	0.500 0.500	5.330	14.840	0.000
MP3-05	C	No	Surface Af (CaAa)	30.500 - 0.000	1	1	0.500 0.500	5.330	14.840	0.000
MP3-04	A	No	Surface Af (CaAa)	60.500 - 30.500	1	1	0.500 0.500	4.780	12.780	0.000
MP3-04	B	No	Surface Af (CaAa)	60.500 - 30.500	1	1	0.500 0.500	4.780	12.780	0.000
MP3-04	C	No	Surface Af (CaAa)	61.500 - 31.000	1	1	0.500 0.500	4.780	12.780	0.000
MP3-04	A	No	Surface Af (CaAa)	15.500 - 0.000	1	1	-0.250 -0.250	4.780	12.780	0.000
MP3-04	B	No	Surface Af (CaAa)	15.500 - 0.000	1	1	0.250 0.250	4.780	12.780	0.000
*										
CCI 6" x 1" Plate	A	No	Surface Af (CaAa)	30.500 - 0.000	1	1	0.000 0.000	6.000	14.000	0.000
CCI 6" x 1" Plate	B	No	Surface Af (CaAa)	30.500 - 0.000	1	1	0.000 0.000	6.000	14.000	0.000
CCI 6" x 1" Plate	C	No	Surface Af (CaAa)	30.500 - 0.000	1	1	-0.250 -0.250	6.000	14.000	0.000
CCI 6.5" x 1.25" Plate	A	No	Surface Af (CaAa)	60.500 - 30.500	1	1	0.000 0.000	6.500	15.500	0.000
CCI 6.5" x 1.25" Plate	B	No	Surface Af (CaAa)	60.500 - 30.500	1	1	0.000 0.000	6.500	15.500	0.000
CCI 6.5" x 1.25" Plate	C	No	Surface Af (CaAa)	60.500 - 30.500	1	1	-0.250 -0.250	6.500	15.500	0.000
CCI 6" x 1" Plate	A	No	Surface Af (CaAa)	100.500 - 60.500	1	1	0.000 0.000	6.000	14.000	0.000
CCI 6" x 1" Plate	B	No	Surface Af (CaAa)	100.500 - 60.500	1	1	0.000 0.000	6.000	14.000	0.000
CCI 6" x 1" Plate	C	No	Surface Af (CaAa)	100.500 - 60.500	1	1	-0.250 -0.250	6.000	14.000	0.000
*										
CCI 6.5" x 1.25" Plate	A	No	Surface Af (CaAa)	38.000 - 23.000	1	1	0.250 0.250	6.500	15.500	0.000
CCI 6.5" x 1.25" Plate	B	No	Surface Af (CaAa)	38.000 - 23.000	1	1	0.250 0.250	6.500	15.500	0.000
CCI 6.5" x 1.25" Plate	C	No	Surface Af (CaAa)	38.000 - 23.000	1	1	0.000 0.000	6.500	15.500	0.000
CCI 6.5" x 1.25" Plate	A	No	Surface Af (CaAa)	67.000 - 52.000	1	1	0.250 0.250	6.500	15.500	0.000
CCI 6.5" x 1.25" Plate	B	No	Surface Af (CaAa)	67.000 - 52.000	1	1	0.250 0.250	6.500	15.500	0.000
CCI 6.5" x 1.25" Plate	C	No	Surface Af	67.000 -	1	1	0.000	6.500	15.500	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
			(CaAa)	52.000			0.000			
CCI 6.5" x 1.25" Plate	A	No	Surface Af (CaAa)	85.500 - 72.500	1	1	0.250 0.250	6.500	15.500	0.000
CCI 6.5" x 1.25" Plate	B	No	Surface Af (CaAa)	85.500 - 72.500	1	1	0.250 0.250	6.500	15.500	0.000
CCI 6.5" x 1.25" Plate	C	No	Surface Af (CaAa)	85.500 - 72.500	1	1	0.000 0.000	6.500	15.500	0.000
*										
CCI 4.5" x 1" Plate	A	No	Surface Af (CaAa)	117.000 - 97.000	1	1	0.250 0.250	4.500	11.000	0.000
CCI 4.5" x 1" Plate	B	No	Surface Af (CaAa)	117.000 - 97.000	1	1	0.250 0.250	4.500	11.000	0.000
CCI 4.5" x 1" Plate	C	No	Surface Af (CaAa)	119.000 - 99.000	1	1	0.250 0.250	4.500	11.000	0.000
*										
CCI 6" x 1" Plate	C	No	Surface Af (CaAa)	10.500 - 0.000	1	1	0.250 0.250	6.000	14.000	0.000
CCI 8.5" x 1.25" Plate	C	No	Surface Af (CaAa)	45.500 - 10.500	1	1	0.250 0.250	8.500	19.500	0.000
CCI 8.5" x 1.25" Plate	C	No	Surface Af (CaAa)	85.000 - 60.000	1	1	0.250 0.250	8.500	19.500	0.000
*										
CCI 8.5" x 1.25" Plate	A	No	Surface Af (CaAa)	55.400 - 20.400	1	1	-0.250 -0.250	8.500	19.500	0.000
CCI 8.5" x 1.25" Plate	B	No	Surface Af (CaAa)	55.400 - 20.400	1	1	-0.250 -0.250	8.500	19.500	0.000
CCI 8.5" x 1.25" Plate	A	No	Surface Af (CaAa)	90.500 - 55.500	1	1	-0.250 -0.250	8.500	19.500	0.000
CCI 8.5" x 1.25" Plate	B	No	Surface Af (CaAa)	90.500 - 55.500	1	1	-0.250 -0.250	8.500	19.500	0.000
CCI 6" x 1" Plate	A	No	Surface Af (CaAa)	122.600 - 90.600	1	1	-0.250 -0.250	6.000	14.000	0.000
CCI 6" x 1" Plate	B	No	Surface Af (CaAa)	122.600 - 90.600	1	1	-0.250 -0.250	6.000	14.000	0.000
CCI 6" x 1" Plate	C	No	Surface Af (CaAa)	122.600 - 100.600	1	1	-0.250 -0.250	6.000	14.000	0.000
*										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
FB-L98B-002-75000 (3/8")	B	No	No	Inside Pole	156.000 - 0.000	2	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.000 0.000 0.000
WR-VG86ST-BRD(3/4")	B	No	No	Inside Pole	156.000 - 0.000	6	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.001 0.001
*									
AVA7-50(1-5/8")	B	No	No	Inside Pole	139.000 - 0.000	6	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.001 0.001
LDF4-50A(1/2")	B	No	No	Inside Pole	101.000 - 0.000	1	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.000 0.000 0.000

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
*									
561(1-5/8")	A	No	No	Inside Pole	132.000 - 0.000	2	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
HB114-U6S12-xxx-LI(1-1/4")	A	No	No	Inside Pole	132.000 - 0.000	1	No Ice	0.000	0.002
							1/2" Ice	0.000	0.002
							1" Ice	0.000	0.002
*									
*									

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	160.333-155.333	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	1.457	0.000	0.012
		C	0.000	0.000	0.000	0.000	0.000
L2	155.333-150.333	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	10.920	0.000	0.093
		C	0.000	0.000	0.000	0.000	0.000
L3	150.333-146.833	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	7.644	0.000	0.065
		C	0.000	0.000	0.000	0.000	0.000
L4	146.833-146.333	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	1.092	0.000	0.009
		C	0.000	0.000	0.000	0.000	0.000
L5	146.333-141.333	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	13.244	0.000	0.126
		C	0.000	0.000	0.000	0.000	0.000
L6	141.333-136.333	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	13.410	0.000	0.140
		C	0.000	0.000	0.000	0.000	0.000
L7	136.333-131.333	A	0.000	0.000	0.434	0.000	0.007
		B	0.000	0.000	13.410	0.000	0.150
		C	0.000	0.000	0.000	0.000	0.000
L8	131.333-126.333	A	0.000	0.000	3.754	0.000	0.050
		B	0.000	0.000	13.410	0.000	0.150
		C	0.000	0.000	0.000	0.000	0.000
L9	126.333-121.333	A	0.000	0.000	5.462	0.000	0.051
		B	0.000	0.000	14.677	0.000	0.150
		C	0.000	0.000	1.267	0.000	0.000
L10	121.333-120.083	A	0.000	0.000	2.299	0.000	0.013
		B	0.000	0.000	4.603	0.000	0.037
		C	0.000	0.000	1.250	0.000	0.000
L11	120.083-119.833	A	0.000	0.000	0.460	0.000	0.003
		B	0.000	0.000	0.920	0.000	0.007
		C	0.000	0.000	0.250	0.000	0.000
L12	119.833-117.500	A	0.000	0.000	4.290	0.000	0.024
		B	0.000	0.000	8.590	0.000	0.070
		C	0.000	0.000	3.458	0.000	0.000
L13	117.500-117.250	A	0.000	0.000	0.460	0.000	0.003
		B	0.000	0.000	0.920	0.000	0.007
		C	0.000	0.000	0.438	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
L14	117.250-115.500	A	0.000	0.000	4.343	0.000	0.018
		B	0.000	0.000	7.569	0.000	0.052
		C	0.000	0.000	3.063	0.000	0.000
L15	115.500-115.250	A	0.000	0.000	0.647	0.000	0.003
		B	0.000	0.000	1.108	0.000	0.007
		C	0.000	0.000	0.438	0.000	0.000
L16	115.250-110.250	A	0.000	0.000	12.945	0.000	0.051
		B	0.000	0.000	22.160	0.000	0.150
		C	0.000	0.000	8.750	0.000	0.000
L17	110.250-104.083	A	0.000	0.000	15.966	0.000	0.063
		B	0.000	0.000	27.332	0.000	0.185
		C	0.000	0.000	10.792	0.000	0.000
L18	104.083-102.820	A	0.000	0.000	3.270	0.000	0.013
		B	0.000	0.000	5.598	0.000	0.038
		C	0.000	0.000	2.210	0.000	0.000
L19	102.820-100.500	A	0.000	0.000	6.006	0.000	0.024
		B	0.000	0.000	10.282	0.000	0.070
		C	0.000	0.000	3.960	0.000	0.000
L20	100.500-100.250	A	0.000	0.000	0.897	0.000	0.003
		B	0.000	0.000	1.358	0.000	0.008
		C	0.000	0.000	0.438	0.000	0.000
L21	100.250-98.500	A	0.000	0.000	6.281	0.000	0.018
		B	0.000	0.000	9.506	0.000	0.053
		C	0.000	0.000	2.688	0.000	0.000
L22	98.500-98.250	A	0.000	0.000	0.897	0.000	0.003
		B	0.000	0.000	1.358	0.000	0.008
		C	0.000	0.000	0.250	0.000	0.000
L23	98.250-93.250	A	0.000	0.000	15.133	0.000	0.051
		B	0.000	0.000	24.348	0.000	0.151
		C	0.000	0.000	5.000	0.000	0.000
L24	93.250-90.500	A	0.000	0.000	7.707	0.000	0.028
		B	0.000	0.000	12.775	0.000	0.083
		C	0.000	0.000	2.750	0.000	0.000
L25	90.500-90.250	A	0.000	0.000	0.814	0.000	0.003
		B	0.000	0.000	1.275	0.000	0.008
		C	0.000	0.000	0.250	0.000	0.000
L26	90.250-85.250	A	0.000	0.000	16.543	0.000	0.051
		B	0.000	0.000	25.758	0.000	0.151
		C	0.000	0.000	5.264	0.000	0.000
L27	85.250-83.500	A	0.000	0.000	7.548	0.000	0.018
		B	0.000	0.000	10.773	0.000	0.053
		C	0.000	0.000	5.726	0.000	0.000
L28	83.500-83.250	A	0.000	0.000	1.078	0.000	0.003
		B	0.000	0.000	1.539	0.000	0.008
		C	0.000	0.000	0.869	0.000	0.000
L29	83.250-80.750	A	0.000	0.000	10.783	0.000	0.026
		B	0.000	0.000	15.390	0.000	0.075
		C	0.000	0.000	8.685	0.000	0.000
L30	80.750-80.500	A	0.000	0.000	1.078	0.000	0.003
		B	0.000	0.000	1.539	0.000	0.008
		C	0.000	0.000	0.869	0.000	0.000
L31	80.500-80.250	A	0.000	0.000	1.078	0.000	0.003
		B	0.000	0.000	1.539	0.000	0.008
		C	0.000	0.000	0.869	0.000	0.000
L32	80.250-77.500	A	0.000	0.000	11.861	0.000	0.028
		B	0.000	0.000	16.929	0.000	0.083
		C	0.000	0.000	9.554	0.000	0.000
L33	77.500-77.250	A	0.000	0.000	1.078	0.000	0.003
		B	0.000	0.000	1.539	0.000	0.008
		C	0.000	0.000	0.869	0.000	0.000
L34	77.250-68.820	A	0.000	0.000	32.468	0.000	0.086

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	48.005	0.000	0.254
		C	0.000	0.000	25.396	0.000	0.000
L35	68.820-68.291	A	0.000	0.000	1.722	0.000	0.005
		B	0.000	0.000	2.697	0.000	0.016
		C	0.000	0.000	1.278	0.000	0.000
L36	68.291-64.250	A	0.000	0.000	16.135	0.000	0.041
		B	0.000	0.000	23.583	0.000	0.122
		C	0.000	0.000	12.745	0.000	0.000
L37	64.250-64.000	A	0.000	0.000	1.085	0.000	0.003
		B	0.000	0.000	1.546	0.000	0.008
		C	0.000	0.000	0.875	0.000	0.000
L38	64.000-60.500	A	0.000	0.000	15.186	0.000	0.036
		B	0.000	0.000	21.637	0.000	0.105
		C	0.000	0.000	13.047	0.000	0.000
L39	60.500-60.250	A	0.000	0.000	1.305	0.000	0.003
		B	0.000	0.000	1.766	0.000	0.008
		C	0.000	0.000	1.095	0.000	0.000
L40	60.250-60.083	A	0.000	0.000	0.872	0.000	0.002
		B	0.000	0.000	1.179	0.000	0.005
		C	0.000	0.000	0.731	0.000	0.000
L41	60.083-59.833	A	0.000	0.000	1.305	0.000	0.003
		B	0.000	0.000	1.766	0.000	0.008
		C	0.000	0.000	0.858	0.000	0.000
L42	59.833-59.083	A	0.000	0.000	3.914	0.000	0.008
		B	0.000	0.000	5.297	0.000	0.023
		C	0.000	0.000	2.223	0.000	0.000
L43	59.083-58.833	A	0.000	0.000	1.305	0.000	0.003
		B	0.000	0.000	1.766	0.000	0.008
		C	0.000	0.000	0.741	0.000	0.000
L44	58.833-55.417	A	0.000	0.000	17.712	0.000	0.035
		B	0.000	0.000	24.008	0.000	0.103
		C	0.000	0.000	10.124	0.000	0.000
L45	55.417-55.167	A	0.000	0.000	1.281	0.000	0.003
		B	0.000	0.000	1.742	0.000	0.008
		C	0.000	0.000	0.741	0.000	0.000
L46	55.167-54.750	A	0.000	0.000	2.175	0.000	0.004
		B	0.000	0.000	2.943	0.000	0.013
		C	0.000	0.000	1.235	0.000	0.000
L47	54.750-54.500	A	0.000	0.000	1.305	0.000	0.003
		B	0.000	0.000	1.766	0.000	0.008
		C	0.000	0.000	0.741	0.000	0.000
L48	54.500-49.500	A	0.000	0.000	23.387	0.000	0.051
		B	0.000	0.000	32.602	0.000	0.151
		C	0.000	0.000	12.108	0.000	0.000
L49	49.500-44.500	A	0.000	0.000	20.678	0.000	0.051
		B	0.000	0.000	29.893	0.000	0.151
		C	0.000	0.000	10.817	0.000	0.000
L50	44.500-41.250	A	0.000	0.000	13.441	0.000	0.033
		B	0.000	0.000	19.431	0.000	0.098
		C	0.000	0.000	10.714	0.000	0.000
L51	41.250-41.000	A	0.000	0.000	1.034	0.000	0.003
		B	0.000	0.000	1.495	0.000	0.008
		C	0.000	0.000	0.824	0.000	0.000
L52	41.000-34.291	A	0.000	0.000	31.764	0.000	0.069
		B	0.000	0.000	44.129	0.000	0.202
		C	0.000	0.000	26.135	0.000	0.000
L53	34.291-33.291	A	0.000	0.000	5.219	0.000	0.010
		B	0.000	0.000	7.062	0.000	0.030
		C	0.000	0.000	4.380	0.000	0.000
L54	33.291-31.500	A	0.000	0.000	9.347	0.000	0.018
		B	0.000	0.000	12.648	0.000	0.054

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	7.845	0.000	0.000
L55	31.500-31.250	A	0.000	0.000	1.527	0.000	0.003
		B	0.000	0.000	1.766	0.000	0.008
		C	0.000	0.000	1.095	0.000	0.000
L56	31.250-30.500	A	0.000	0.000	4.580	0.000	0.008
		B	0.000	0.000	5.297	0.000	0.023
		C	0.000	0.000	2.887	0.000	0.000
L57	30.500-30.250	A	0.000	0.000	1.307	0.000	0.003
		B	0.000	0.000	1.768	0.000	0.008
		C	0.000	0.000	1.097	0.000	0.000
L58	30.250-25.750	A	0.000	0.000	23.523	0.000	0.046
		B	0.000	0.000	31.817	0.000	0.135
		C	0.000	0.000	19.747	0.000	0.000
L59	25.750-25.500	A	0.000	0.000	1.307	0.000	0.003
		B	0.000	0.000	1.768	0.000	0.008
		C	0.000	0.000	1.097	0.000	0.000
L60	25.500-24.667	A	0.000	0.000	4.356	0.000	0.009
		B	0.000	0.000	5.892	0.000	0.025
		C	0.000	0.000	3.657	0.000	0.000
L61	24.667-24.417	A	0.000	0.000	1.307	0.000	0.003
		B	0.000	0.000	1.768	0.000	0.008
		C	0.000	0.000	1.097	0.000	0.000
L62	24.417-19.417	A	0.000	0.000	20.862	0.000	0.051
		B	0.000	0.000	30.077	0.000	0.151
		C	0.000	0.000	18.060	0.000	0.000
L63	19.417-14.417	A	0.000	0.000	14.500	0.000	0.051
		B	0.000	0.000	23.715	0.000	0.151
		C	0.000	0.000	16.525	0.000	0.000
L64	14.417-14.083	A	0.000	0.000	1.176	0.000	0.003
		B	0.000	0.000	1.791	0.000	0.010
		C	0.000	0.000	1.103	0.000	0.000
L65	14.083-13.817	A	0.000	0.000	0.937	0.000	0.003
		B	0.000	0.000	1.428	0.000	0.008
		C	0.000	0.000	0.879	0.000	0.000
L66	13.817-13.667	A	0.000	0.000	0.529	0.000	0.002
		B	0.000	0.000	0.805	0.000	0.005
		C	0.000	0.000	0.496	0.000	0.000
L67	13.667-10.500	A	0.000	0.000	10.272	0.000	0.032
		B	0.000	0.000	16.997	0.000	0.095
		C	0.000	0.000	10.467	0.000	0.000
L68	10.500-10.250	A	0.000	0.000	0.659	0.000	0.003
		B	0.000	0.000	1.342	0.000	0.008
		C	0.000	0.000	0.704	0.000	0.000
L69	10.250-5.250	A	0.000	0.000	13.178	0.000	0.051
		B	0.000	0.000	26.835	0.000	0.151
		C	0.000	0.000	14.085	0.000	0.000
L70	5.250-0.250	A	0.000	0.000	13.178	0.000	0.051
		B	0.000	0.000	26.835	0.000	0.151
		C	0.000	0.000	14.085	0.000	0.000
L71	0.250-0.000	A	0.000	0.000	0.659	0.000	0.003
		B	0.000	0.000	1.342	0.000	0.008
		C	0.000	0.000	0.704	0.000	0.000

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	160.333-155.333	A	0.994	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	2.152	0.000	0.028
		C		0.000	0.000	0.000	0.000	0.000
L2	155.333-150.333	A	0.991	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	16.127	0.000	0.213
		C		0.000	0.000	0.000	0.000	0.000
L3	150.333-146.833	A	0.988	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	11.284	0.000	0.149
		C		0.000	0.000	0.000	0.000	0.000
L4	146.833-146.333	A	0.987	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	1.612	0.000	0.021
		C		0.000	0.000	0.000	0.000	0.000
L5	146.333-141.333	A	0.985	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	20.166	0.000	0.274
		C		0.000	0.000	0.000	0.000	0.000
L6	141.333-136.333	A	0.981	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	20.442	0.000	0.289
		C		0.000	0.000	0.000	0.000	0.000
L7	136.333-131.333	A	0.978	0.000	0.000	0.705	0.000	0.012
		B		0.000	0.000	20.429	0.000	0.299
		C		0.000	0.000	0.000	0.000	0.000
L8	131.333-126.333	A	0.974	0.000	0.000	6.560	0.000	0.095
		B		0.000	0.000	20.415	0.000	0.298
		C		0.000	0.000	0.000	0.000	0.000
L9	126.333-121.333	A	0.970	0.000	0.000	9.182	0.000	0.111
		B		0.000	0.000	21.913	0.000	0.306
		C		0.000	0.000	1.513	0.000	0.008
L10	121.333-120.083	A	0.968	0.000	0.000	3.408	0.000	0.034
		B		0.000	0.000	6.590	0.000	0.083
		C		0.000	0.000	1.492	0.000	0.008
L11	120.083-119.833	A	0.967	0.000	0.000	0.681	0.000	0.007
		B		0.000	0.000	1.318	0.000	0.017
		C		0.000	0.000	0.298	0.000	0.002
L12	119.833-117.500	A	0.966	0.000	0.000	6.357	0.000	0.063
		B		0.000	0.000	12.295	0.000	0.154
		C		0.000	0.000	4.199	0.000	0.024
L13	117.500-117.250	A	0.965	0.000	0.000	0.681	0.000	0.007
		B		0.000	0.000	1.317	0.000	0.016
		C		0.000	0.000	0.534	0.000	0.003
L14	117.250-115.500	A	0.964	0.000	0.000	6.181	0.000	0.056
		B		0.000	0.000	10.634	0.000	0.124
		C		0.000	0.000	3.737	0.000	0.021
L15	115.500-115.250	A	0.963	0.000	0.000	0.916	0.000	0.008
		B		0.000	0.000	1.553	0.000	0.018
		C		0.000	0.000	0.534	0.000	0.003
L16	115.250-110.250	A	0.961	0.000	0.000	18.319	0.000	0.163
		B		0.000	0.000	31.039	0.000	0.356
		C		0.000	0.000	10.672	0.000	0.060
L17	110.250-104.083	A	0.956	0.000	0.000	22.567	0.000	0.200
		B		0.000	0.000	38.249	0.000	0.438
		C		0.000	0.000	13.151	0.000	0.074
L18	104.083-102.820	A	0.953	0.000	0.000	4.622	0.000	0.041
		B		0.000	0.000	7.833	0.000	0.090
		C		0.000	0.000	2.693	0.000	0.015
L19	102.820-100.500	A	0.951	0.000	0.000	8.479	0.000	0.075
		B		0.000	0.000	14.376	0.000	0.164
		C		0.000	0.000	4.824	0.000	0.027
L20	100.500-100.250	A	0.950	0.000	0.000	1.211	0.000	0.010
		B		0.000	0.000	1.846	0.000	0.019
		C		0.000	0.000	0.533	0.000	0.003
L21	100.250-98.500	A	0.949	0.000	0.000	8.475	0.000	0.068

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	12.922	0.000	0.135
		C		0.000	0.000	3.257	0.000	0.018
L22	98.500-98.250	A	0.948	0.000	0.000	1.210	0.000	0.010
		B		0.000	0.000	1.846	0.000	0.019
		C		0.000	0.000	0.297	0.000	0.002
L23	98.250-93.250	A	0.946	0.000	0.000	20.673	0.000	0.173
		B		0.000	0.000	33.373	0.000	0.366
		C		0.000	0.000	5.946	0.000	0.032
L24	93.250-90.500	A	0.942	0.000	0.000	10.596	0.000	0.090
		B		0.000	0.000	17.578	0.000	0.196
		C		0.000	0.000	3.268	0.000	0.018
L25	90.500-90.250	A	0.940	0.000	0.000	1.078	0.000	0.009
		B		0.000	0.000	1.713	0.000	0.018
		C		0.000	0.000	0.297	0.000	0.002
L26	90.250-85.250	A	0.937	0.000	0.000	21.834	0.000	0.177
		B		0.000	0.000	34.525	0.000	0.369
		C		0.000	0.000	6.227	0.000	0.034
L27	85.250-83.500	A	0.934	0.000	0.000	9.561	0.000	0.073
		B		0.000	0.000	14.001	0.000	0.140
		C		0.000	0.000	6.508	0.000	0.036
L28	83.500-83.250	A	0.933	0.000	0.000	1.366	0.000	0.010
		B		0.000	0.000	2.000	0.000	0.020
		C		0.000	0.000	0.987	0.000	0.005
L29	83.250-80.750	A	0.931	0.000	0.000	13.652	0.000	0.104
		B		0.000	0.000	19.993	0.000	0.200
		C		0.000	0.000	9.866	0.000	0.054
L30	80.750-80.500	A	0.929	0.000	0.000	1.365	0.000	0.010
		B		0.000	0.000	1.999	0.000	0.020
		C		0.000	0.000	0.986	0.000	0.005
L31	80.500-80.250	A	0.929	0.000	0.000	1.365	0.000	0.010
		B		0.000	0.000	1.999	0.000	0.020
		C		0.000	0.000	0.986	0.000	0.005
L32	80.250-77.500	A	0.927	0.000	0.000	15.007	0.000	0.114
		B		0.000	0.000	21.980	0.000	0.219
		C		0.000	0.000	10.848	0.000	0.059
L33	77.500-77.250	A	0.926	0.000	0.000	1.364	0.000	0.010
		B		0.000	0.000	1.998	0.000	0.020
		C		0.000	0.000	0.986	0.000	0.005
L34	77.250-68.820	A	0.920	0.000	0.000	41.687	0.000	0.323
		B		0.000	0.000	63.047	0.000	0.644
		C		0.000	0.000	28.967	0.000	0.154
L35	68.820-68.291	A	0.914	0.000	0.000	2.271	0.000	0.018
		B		0.000	0.000	3.612	0.000	0.038
		C		0.000	0.000	1.473	0.000	0.008
L36	68.291-64.250	A	0.911	0.000	0.000	20.674	0.000	0.157
		B		0.000	0.000	30.904	0.000	0.310
		C		0.000	0.000	14.594	0.000	0.076
L37	64.250-64.000	A	0.908	0.000	0.000	1.376	0.000	0.010
		B		0.000	0.000	2.008	0.000	0.020
		C		0.000	0.000	1.000	0.000	0.005
L38	64.000-60.500	A	0.906	0.000	0.000	19.250	0.000	0.142
		B		0.000	0.000	28.106	0.000	0.275
		C		0.000	0.000	14.973	0.000	0.079
L39	60.500-60.250	A	0.903	0.000	0.000	1.639	0.000	0.012
		B		0.000	0.000	2.272	0.000	0.021
		C		0.000	0.000	1.264	0.000	0.007
L40	60.250-60.083	A	0.903	0.000	0.000	1.095	0.000	0.008
		B		0.000	0.000	1.518	0.000	0.014
		C		0.000	0.000	0.845	0.000	0.005
L41	60.083-59.833	A	0.902	0.000	0.000	1.639	0.000	0.012
		B		0.000	0.000	2.272	0.000	0.021

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C		0.000	0.000	0.998	0.000	0.005
L42	59.833-59.083	A	0.902	0.000	0.000	4.917	0.000	0.035
		B		0.000	0.000	6.814	0.000	0.063
		C		0.000	0.000	2.595	0.000	0.014
L43	59.083-58.833	A	0.901	0.000	0.000	1.639	0.000	0.012
		B		0.000	0.000	2.271	0.000	0.021
		C		0.000	0.000	0.865	0.000	0.005
L44	58.833-55.417	A	0.898	0.000	0.000	22.251	0.000	0.158
		B		0.000	0.000	30.888	0.000	0.287
		C		0.000	0.000	11.814	0.000	0.064
L45	55.417-55.167	A	0.895	0.000	0.000	1.611	0.000	0.011
		B		0.000	0.000	2.242	0.000	0.021
		C		0.000	0.000	0.864	0.000	0.005
L46	55.167-54.750	A	0.894	0.000	0.000	2.728	0.000	0.019
		B		0.000	0.000	3.781	0.000	0.035
		C		0.000	0.000	1.440	0.000	0.008
L47	54.750-54.500	A	0.894	0.000	0.000	1.637	0.000	0.012
		B		0.000	0.000	2.269	0.000	0.021
		C		0.000	0.000	0.864	0.000	0.005
L48	54.500-49.500	A	0.890	0.000	0.000	29.664	0.000	0.214
		B		0.000	0.000	42.295	0.000	0.402
		C		0.000	0.000	14.224	0.000	0.077
L49	49.500-44.500	A	0.881	0.000	0.000	26.570	0.000	0.196
		B		0.000	0.000	39.190	0.000	0.384
		C		0.000	0.000	12.754	0.000	0.068
L50	44.500-41.250	A	0.873	0.000	0.000	17.242	0.000	0.127
		B		0.000	0.000	25.438	0.000	0.248
		C		0.000	0.000	12.416	0.000	0.064
L51	41.250-41.000	A	0.869	0.000	0.000	1.325	0.000	0.010
		B		0.000	0.000	1.956	0.000	0.019
		C		0.000	0.000	0.955	0.000	0.005
L52	41.000-34.291	A	0.861	0.000	0.000	40.016	0.000	0.282
		B		0.000	0.000	56.916	0.000	0.531
		C		0.000	0.000	30.091	0.000	0.153
L53	34.291-33.291	A	0.852	0.000	0.000	6.509	0.000	0.045
		B		0.000	0.000	9.028	0.000	0.082
		C		0.000	0.000	5.029	0.000	0.026
L54	33.291-31.500	A	0.848	0.000	0.000	11.628	0.000	0.079
		B		0.000	0.000	16.134	0.000	0.145
		C		0.000	0.000	8.990	0.000	0.045
L55	31.500-31.250	A	0.846	0.000	0.000	1.887	0.000	0.013
		B		0.000	0.000	2.251	0.000	0.020
		C		0.000	0.000	1.254	0.000	0.006
L56	31.250-30.500	A	0.844	0.000	0.000	5.659	0.000	0.037
		B		0.000	0.000	6.752	0.000	0.061
		C		0.000	0.000	3.280	0.000	0.016
L57	30.500-30.250	A	0.843	0.000	0.000	1.624	0.000	0.011
		B		0.000	0.000	2.252	0.000	0.020
		C		0.000	0.000	1.256	0.000	0.006
L58	30.250-25.750	A	0.836	0.000	0.000	29.187	0.000	0.197
		B		0.000	0.000	40.494	0.000	0.362
		C		0.000	0.000	22.586	0.000	0.112
L59	25.750-25.500	A	0.829	0.000	0.000	1.619	0.000	0.011
		B		0.000	0.000	2.247	0.000	0.020
		C		0.000	0.000	1.253	0.000	0.006
L60	25.500-24.667	A	0.827	0.000	0.000	5.396	0.000	0.036
		B		0.000	0.000	7.488	0.000	0.067
		C		0.000	0.000	4.177	0.000	0.020
L61	24.667-24.417	A	0.825	0.000	0.000	1.618	0.000	0.011
		B		0.000	0.000	2.246	0.000	0.020
		C		0.000	0.000	1.253	0.000	0.006

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L62	24.417-19.417	A	0.816	0.000	0.000	26.417	0.000	0.186
		B		0.000	0.000	38.956	0.000	0.368
		C		0.000	0.000	20.687	0.000	0.100
L63	19.417-14.417	A	0.795	0.000	0.000	19.298	0.000	0.152
		B		0.000	0.000	31.811	0.000	0.331
		C		0.000	0.000	18.910	0.000	0.089
L64	14.417-14.083	A	0.782	0.000	0.000	1.533	0.000	0.011
		B		0.000	0.000	2.367	0.000	0.023
		C		0.000	0.000	1.259	0.000	0.006
L65	14.083-13.817	A	0.780	0.000	0.000	1.221	0.000	0.009
		B		0.000	0.000	1.886	0.000	0.018
		C		0.000	0.000	1.004	0.000	0.005
L66	13.817-13.667	A	0.779	0.000	0.000	0.689	0.000	0.005
		B		0.000	0.000	1.063	0.000	0.010
		C		0.000	0.000	0.566	0.000	0.003
L67	13.667-10.500	A	0.769	0.000	0.000	13.461	0.000	0.100
		B		0.000	0.000	22.407	0.000	0.218
		C		0.000	0.000	11.928	0.000	0.054
L68	10.500-10.250	A	0.757	0.000	0.000	0.882	0.000	0.007
		B		0.000	0.000	1.765	0.000	0.017
		C		0.000	0.000	0.800	0.000	0.004
L69	10.250-5.250	A	0.735	0.000	0.000	17.536	0.000	0.135
		B		0.000	0.000	35.151	0.000	0.335
		C		0.000	0.000	15.952	0.000	0.073
L70	5.250-0.250	A	0.663	0.000	0.000	17.210	0.000	0.126
		B		0.000	0.000	34.661	0.000	0.316
		C		0.000	0.000	15.769	0.000	0.065
L71	0.250-0.000	A	0.487	0.000	0.000	0.821	0.000	0.005
		B		0.000	0.000	1.674	0.000	0.014
		C		0.000	0.000	0.766	0.000	0.002

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	160.333-155.333	1.284	-2.006	0.890	-1.360
L2	155.333-150.333	3.521	-5.499	2.617	-4.000
L3	150.333-146.833	3.521	-5.499	2.617	-4.000
L4	146.833-146.333	4.267	-6.663	3.174	-4.851
L5	146.333-141.333	4.199	-5.711	3.681	-4.829
L6	141.333-136.333	4.327	-5.839	3.805	-4.951
L7	136.333-131.333	4.114	-5.948	3.607	-5.045
L8	131.333-126.333	2.204	-5.900	1.661	-4.785
L9	126.333-121.333	1.768	-5.213	1.259	-4.350
L10	121.333-120.083	1.330	-3.923	1.040	-3.594
L11	120.083-119.833	1.335	-3.939	1.044	-3.610
L12	119.833-117.500	0.596	-3.295	0.485	-3.130
L13	117.500-117.250	0.217	-2.973	0.193	-2.888
L14	117.250-115.500	0.971	-3.158	0.799	-3.051
L15	115.500-115.250	1.081	-3.191	0.894	-3.089
L16	115.250-110.250	1.096	-3.235	0.906	-3.131
L17	110.250-104.083	1.127	-3.328	0.931	-3.219
L18	104.083-102.820	1.132	-3.345	0.936	-3.235
L19	102.820-100.500	1.091	-3.424	0.905	-3.302
L20	100.500-100.250	0.974	-4.052	0.836	-3.820
L21	100.250-98.500	1.231	-4.298	1.049	-4.025

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L22	98.500-98.250	1.908	-4.923	1.603	-4.536
L23	98.250-93.250	1.396	-4.981	1.163	-4.561
L24	93.250-90.500	1.275	-5.066	1.057	-4.630
L25	90.500-90.250	0.605	-5.113	0.617	-4.694
L26	90.250-85.250	0.671	-5.074	0.668	-4.684
L27	85.250-83.500	0.290	-2.529	0.350	-2.834
L28	83.500-83.250	0.105	-2.383	0.192	-2.711
L29	83.250-80.750	0.105	-2.397	0.193	-2.728
L30	80.750-80.500	0.105	-2.409	0.194	-2.743
L31	80.500-80.250	0.106	-2.413	0.195	-2.747
L32	80.250-77.500	0.106	-2.429	0.196	-2.766
L33	77.500-77.250	0.111	-2.551	0.197	-2.785
L34	77.250-68.820	-0.383	-3.038	-0.176	-3.194
L35	68.820-68.291	-1.160	-3.748	-0.740	-3.747
L36	68.291-64.250	-0.219	-2.932	-0.032	-3.102
L37	64.250-64.000	0.140	-2.635	0.251	-2.859
L38	64.000-60.500	-0.202	-2.702	-0.052	-2.921
L39	60.500-60.250	0.199	-2.346	0.281	-2.580
L40	60.250-60.083	0.199	-2.348	0.281	-2.583
L41	60.083-59.833	1.095	-3.070	1.019	-3.185
L42	59.833-59.083	1.577	-3.463	1.412	-3.510
L43	59.083-58.833	1.581	-3.470	1.415	-3.517
L44	58.833-55.417	1.632	-3.485	1.458	-3.535
L45	55.417-55.167	1.713	-3.493	1.525	-3.547
L46	55.167-54.750	1.605	-3.524	1.439	-3.573
L47	54.750-54.500	1.607	-3.527	1.440	-3.577
L48	54.500-49.500	1.189	-4.151	1.094	-4.089
L49	49.500-44.500	0.324	-4.625	0.409	-4.477
L50	44.500-41.250	-0.981	-3.501	-0.641	-3.597
L51	41.250-41.000	-0.988	-3.523	-0.645	-3.620
L52	41.000-34.291	-0.272	-2.962	-0.085	-3.163
L53	34.291-33.291	0.214	-2.554	0.308	-2.812
L54	33.291-31.500	0.215	-2.567	0.310	-2.825
L55	31.500-31.250	1.085	-3.390	1.080	-3.548
L56	31.250-30.500	1.871	-3.297	1.790	-3.469
L57	30.500-30.250	0.131	-2.547	0.249	-2.817
L58	30.250-25.750	0.132	-2.568	0.251	-2.840
L59	25.750-25.500	0.132	-2.588	0.254	-2.862
L60	25.500-24.667	0.133	-2.593	0.254	-2.867
L61	24.667-24.417	0.133	-2.597	0.255	-2.872
L62	24.417-19.417	-0.431	-3.209	-0.184	-3.413
L63	19.417-14.417	0.667	-2.714	0.715	-3.054
L64	14.417-14.083	0.619	-1.644	0.674	-2.124
L65	14.083-13.817	0.619	-1.646	0.674	-2.126
L66	13.817-13.667	0.619	-1.647	0.675	-2.127
L67	13.667-10.500	0.228	-1.260	0.349	-1.815
L68	10.500-10.250	0.025	-0.866	0.177	-1.517
L69	10.250-5.250	0.024	-0.872	0.181	-1.529
L70	5.250-0.250	0.023	-0.884	0.192	-1.552
L71	0.250-0.000	0.023	-0.890	0.217	-1.566

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	1	LDF7-50A(1-5/8")	155.33 - 156.00	1.0000	1.0000
L1	4	2" Rigid Conduit	155.33 - 156.00	1.0000	1.0000
L2	1	LDF7-50A(1-5/8")	150.33 - 155.33	1.0000	1.0000
L2	4	2" Rigid Conduit	150.33 - 155.33	1.0000	1.0000
L3	1	LDF7-50A(1-5/8")	146.83 - 150.33	1.0000	1.0000
L3	4	2" Rigid Conduit	146.83 - 150.33	1.0000	1.0000
L4	1	LDF7-50A(1-5/8")	146.33 - 146.83	1.0000	1.0000
L4	4	2" Rigid Conduit	146.33 - 146.83	1.0000	1.0000
L5	1	LDF7-50A(1-5/8")	141.33 - 146.33	1.0000	1.0000
L5	4	2" Rigid Conduit	141.33 - 146.33	1.0000	1.0000
L5	7	HB158-21U6M48-30F(1-5/8)	141.33 - 146.00	1.0000	1.0000
L6	1	LDF7-50A(1-5/8")	136.33 - 141.33	1.0000	1.0000
L6	4	2" Rigid Conduit	136.33 - 141.33	1.0000	1.0000
L6	7	HB158-21U6M48-30F(1-5/8)	136.33 - 141.33	1.0000	1.0000
L7	1	LDF7-50A(1-5/8")	131.33 - 136.33	1.0000	1.0000
L7	4	2" Rigid Conduit	131.33 - 136.33	1.0000	1.0000
L7	7	HB158-21U6M48-30F(1-5/8)	131.33 - 136.33	1.0000	1.0000
L7	13	561(1-5/8")	131.33 - 132.00	1.0000	1.0000
L8	1	LDF7-50A(1-5/8")	126.33 - 131.33	1.0000	1.0000
L8	4	2" Rigid Conduit	126.33 - 131.33	1.0000	1.0000
L8	7	HB158-21U6M48-30F(1-5/8)	126.33 - 131.33	1.0000	1.0000
L8	13	561(1-5/8")	126.33 - 131.33	1.0000	1.0000
L8	17	LDF4P-50A(1/2")	126.33 - 129.00	1.0000	1.0000
L9	1	LDF7-50A(1-5/8")	121.33 - 126.33	1.0000	1.0000
L9	4	2" Rigid Conduit	121.33 - 126.33	1.0000	1.0000
L9	7	HB158-21U6M48-30F(1-5/8)	121.33 - 126.33	1.0000	1.0000
L9	13	561(1-5/8")	121.33 - 126.33	1.0000	1.0000
L9	17	LDF4P-50A(1/2")	121.33 - 126.33	1.0000	1.0000
L9	105	CCI 6" x 1" Plate	121.33 - 122.60	1.0000	1.0000
L9	106	CCI 6" x 1" Plate	121.33 - 122.60	1.0000	1.0000
L9	107	CCI 6" x 1" Plate	121.33 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			122.60		
L10	1	LDF7-50A(1-5/8")	120.08 - 121.33	1.0000	1.0000
L10	4	2" Rigid Conduit	120.08 - 121.33	1.0000	1.0000
L10	7	HB158-21U6M48-30F(1-5/8)	120.08 - 121.33	1.0000	1.0000
L10	13	561(1-5/8")	120.08 - 121.33	1.0000	1.0000
L10	17	LDF4P-50A(1/2")	120.08 - 121.33	1.0000	1.0000
L10	105	CCI 6" x 1" Plate	120.08 - 121.33	1.0000	1.0000
L10	106	CCI 6" x 1" Plate	120.08 - 121.33	1.0000	1.0000
L10	107	CCI 6" x 1" Plate	120.08 - 121.33	1.0000	1.0000
L11	1	LDF7-50A(1-5/8")	119.83 - 120.08	1.0000	1.0000
L11	4	2" Rigid Conduit	119.83 - 120.08	1.0000	1.0000
L11	7	HB158-21U6M48-30F(1-5/8)	119.83 - 120.08	1.0000	1.0000
L11	13	561(1-5/8")	119.83 - 120.08	1.0000	1.0000
L11	17	LDF4P-50A(1/2")	119.83 - 120.08	1.0000	1.0000
L11	105	CCI 6" x 1" Plate	119.83 - 120.08	1.0000	1.0000
L11	106	CCI 6" x 1" Plate	119.83 - 120.08	1.0000	1.0000
L11	107	CCI 6" x 1" Plate	119.83 - 120.08	1.0000	1.0000
L12	1	LDF7-50A(1-5/8")	117.50 - 119.83	1.0000	1.0000
L12	4	2" Rigid Conduit	117.50 - 119.83	1.0000	1.0000
L12	7	HB158-21U6M48-30F(1-5/8)	117.50 - 119.83	1.0000	1.0000
L12	13	561(1-5/8")	117.50 - 119.83	1.0000	1.0000
L12	17	LDF4P-50A(1/2")	117.50 - 119.83	1.0000	1.0000
L12	95	CCI 4.5" x 1" Plate	117.50 - 119.00	1.0000	1.0000
L12	105	CCI 6" x 1" Plate	117.50 - 119.83	1.0000	1.0000
L12	106	CCI 6" x 1" Plate	117.50 - 119.83	1.0000	1.0000
L12	107	CCI 6" x 1" Plate	117.50 - 119.83	1.0000	1.0000
L13	1	LDF7-50A(1-5/8")	117.25 - 117.50	1.0000	1.0000
L13	4	2" Rigid Conduit	117.25 - 117.50	1.0000	1.0000
L13	7	HB158-21U6M48-30F(1-5/8)	117.25 - 117.50	1.0000	1.0000
L13	13	561(1-5/8")	117.25 - 117.50	1.0000	1.0000
L13	17	LDF4P-50A(1/2")	117.25 - 117.50	1.0000	1.0000
L13	95	CCI 4.5" x 1" Plate	117.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			117.50		
L13	105	CCI 6" x 1" Plate	117.25 - 117.50	1.0000	1.0000
L13	106	CCI 6" x 1" Plate	117.25 - 117.50	1.0000	1.0000
L13	107	CCI 6" x 1" Plate	117.25 - 117.50	1.0000	1.0000
L14	1	LDF7-50A(1-5/8")	115.50 - 117.25	1.0000	1.0000
L14	4	2" Rigid Conduit	115.50 - 117.25	1.0000	1.0000
L14	7	HB158-21U6M48-30F(1-5/8)	115.50 - 117.25	1.0000	1.0000
L14	13	561(1-5/8")	115.50 - 117.25	1.0000	1.0000
L14	17	LDF4P-50A(1/2")	115.50 - 117.25	1.0000	1.0000
L14	93	CCI 4.5" x 1" Plate	115.50 - 117.00	1.0000	1.0000
L14	94	CCI 4.5" x 1" Plate	115.50 - 117.00	1.0000	1.0000
L14	95	CCI 4.5" x 1" Plate	115.50 - 117.25	1.0000	1.0000
L14	105	CCI 6" x 1" Plate	115.50 - 117.25	1.0000	1.0000
L14	106	CCI 6" x 1" Plate	115.50 - 117.25	1.0000	1.0000
L14	107	CCI 6" x 1" Plate	115.50 - 117.25	1.0000	1.0000
L15	1	LDF7-50A(1-5/8")	115.25 - 115.50	1.0000	1.0000
L15	4	2" Rigid Conduit	115.25 - 115.50	1.0000	1.0000
L15	7	HB158-21U6M48-30F(1-5/8)	115.25 - 115.50	1.0000	1.0000
L15	13	561(1-5/8")	115.25 - 115.50	1.0000	1.0000
L15	17	LDF4P-50A(1/2")	115.25 - 115.50	1.0000	1.0000
L15	93	CCI 4.5" x 1" Plate	115.25 - 115.50	1.0000	1.0000
L15	94	CCI 4.5" x 1" Plate	115.25 - 115.50	1.0000	1.0000
L15	95	CCI 4.5" x 1" Plate	115.25 - 115.50	1.0000	1.0000
L15	105	CCI 6" x 1" Plate	115.25 - 115.50	1.0000	1.0000
L15	106	CCI 6" x 1" Plate	115.25 - 115.50	1.0000	1.0000
L15	107	CCI 6" x 1" Plate	115.25 - 115.50	1.0000	1.0000
L16	1	LDF7-50A(1-5/8")	110.25 - 115.25	1.0000	1.0000
L16	4	2" Rigid Conduit	110.25 - 115.25	1.0000	1.0000
L16	7	HB158-21U6M48-30F(1-5/8)	110.25 - 115.25	1.0000	1.0000
L16	13	561(1-5/8")	110.25 - 115.25	1.0000	1.0000
L16	17	LDF4P-50A(1/2")	110.25 - 115.25	1.0000	1.0000
L16	93	CCI 4.5" x 1" Plate	110.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L16	94	CCI 4.5" x 1" Plate	115.25 110.25 - 115.25	1.0000	1.0000
L16	95	CCI 4.5" x 1" Plate	110.25 - 115.25	1.0000	1.0000
L16	105	CCI 6" x 1" Plate	110.25 - 115.25	1.0000	1.0000
L16	106	CCI 6" x 1" Plate	110.25 - 115.25	1.0000	1.0000
L16	107	CCI 6" x 1" Plate	110.25 - 115.25	1.0000	1.0000
L17	1	LDF7-50A(1-5/8")	104.08 - 110.25	1.0000	1.0000
L17	4	2" Rigid Conduit	104.08 - 110.25	1.0000	1.0000
L17	7	HB158-21U6M48-30F(1-5/8)	104.08 - 110.25	1.0000	1.0000
L17	13	561(1-5/8")	104.08 - 110.25	1.0000	1.0000
L17	17	LDF4P-50A(1/2")	104.08 - 110.25	1.0000	1.0000
L17	93	CCI 4.5" x 1" Plate	104.08 - 110.25	1.0000	1.0000
L17	94	CCI 4.5" x 1" Plate	104.08 - 110.25	1.0000	1.0000
L17	95	CCI 4.5" x 1" Plate	104.08 - 110.25	1.0000	1.0000
L17	105	CCI 6" x 1" Plate	104.08 - 110.25	1.0000	1.0000
L17	106	CCI 6" x 1" Plate	104.08 - 110.25	1.0000	1.0000
L17	107	CCI 6" x 1" Plate	104.08 - 110.25	1.0000	1.0000
L18	1	LDF7-50A(1-5/8")	102.82 - 104.08	1.0000	1.0000
L18	4	2" Rigid Conduit	102.82 - 104.08	1.0000	1.0000
L18	7	HB158-21U6M48-30F(1-5/8)	102.82 - 104.08	1.0000	1.0000
L18	13	561(1-5/8")	102.82 - 104.08	1.0000	1.0000
L18	17	LDF4P-50A(1/2")	102.82 - 104.08	1.0000	1.0000
L18	93	CCI 4.5" x 1" Plate	102.82 - 104.08	1.0000	1.0000
L18	94	CCI 4.5" x 1" Plate	102.82 - 104.08	1.0000	1.0000
L18	95	CCI 4.5" x 1" Plate	102.82 - 104.08	1.0000	1.0000
L18	105	CCI 6" x 1" Plate	102.82 - 104.08	1.0000	1.0000
L18	106	CCI 6" x 1" Plate	102.82 - 104.08	1.0000	1.0000
L18	107	CCI 6" x 1" Plate	102.82 - 104.08	1.0000	1.0000
L19	1	LDF7-50A(1-5/8")	100.50 - 102.82	1.0000	1.0000
L19	4	2" Rigid Conduit	100.50 - 102.82	1.0000	1.0000
L19	7	HB158-21U6M48-30F(1-5/8)	100.50 - 102.82	1.0000	1.0000
L19	13	561(1-5/8")	100.50 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			102.82		
L19	17	LDF4P-50A(1/2")	100.50 - 102.82	1.0000	1.0000
L19	93	CCI 4.5" x 1" Plate	100.50 - 102.82	1.0000	1.0000
L19	94	CCI 4.5" x 1" Plate	100.50 - 102.82	1.0000	1.0000
L19	95	CCI 4.5" x 1" Plate	100.50 - 102.82	1.0000	1.0000
L19	105	CCI 6" x 1" Plate	100.50 - 102.82	1.0000	1.0000
L19	106	CCI 6" x 1" Plate	100.50 - 102.82	1.0000	1.0000
L19	107	CCI 6" x 1" Plate	100.60 - 102.82	1.0000	1.0000
L20	1	LDF7-50A(1-5/8")	100.25 - 100.50	1.0000	1.0000
L20	4	2" Rigid Conduit	100.25 - 100.50	1.0000	1.0000
L20	7	HB158-21U6M48-30F(1-5/8)	100.25 - 100.50	1.0000	1.0000
L20	13	561(1-5/8")	100.25 - 100.50	1.0000	1.0000
L20	17	LDF4P-50A(1/2")	100.25 - 100.50	1.0000	1.0000
L20	79	CCI 6" x 1" Plate	100.25 - 100.50	1.0000	1.0000
L20	80	CCI 6" x 1" Plate	100.25 - 100.50	1.0000	1.0000
L20	81	CCI 6" x 1" Plate	100.25 - 100.50	1.0000	1.0000
L20	93	CCI 4.5" x 1" Plate	100.25 - 100.50	1.0000	1.0000
L20	94	CCI 4.5" x 1" Plate	100.25 - 100.50	1.0000	1.0000
L20	95	CCI 4.5" x 1" Plate	100.25 - 100.50	1.0000	1.0000
L20	105	CCI 6" x 1" Plate	100.25 - 100.50	1.0000	1.0000
L20	106	CCI 6" x 1" Plate	100.25 - 100.50	1.0000	1.0000
L21	1	LDF7-50A(1-5/8")	98.50 - 100.25	1.0000	1.0000
L21	4	2" Rigid Conduit	98.50 - 100.25	1.0000	1.0000
L21	7	HB158-21U6M48-30F(1-5/8)	98.50 - 100.25	1.0000	1.0000
L21	13	561(1-5/8")	98.50 - 100.25	1.0000	1.0000
L21	17	LDF4P-50A(1/2")	98.50 - 100.25	1.0000	1.0000
L21	79	CCI 6" x 1" Plate	98.50 - 100.25	1.0000	1.0000
L21	80	CCI 6" x 1" Plate	98.50 - 100.25	1.0000	1.0000
L21	81	CCI 6" x 1" Plate	98.50 - 100.25	1.0000	1.0000
L21	93	CCI 4.5" x 1" Plate	98.50 - 100.25	1.0000	1.0000
L21	94	CCI 4.5" x 1" Plate	98.50 - 100.25	1.0000	1.0000
L21	95	CCI 4.5" x 1" Plate	99.00 - 100.25	1.0000	1.0000
L21	105	CCI 6" x 1" Plate	98.50 - 100.25	1.0000	1.0000
L21	106	CCI 6" x 1" Plate	98.50 - 100.25	1.0000	1.0000
L22	1	LDF7-50A(1-5/8")	98.25 - 98.50	1.0000	1.0000
L22	4	2" Rigid Conduit	98.25 - 98.50	1.0000	1.0000
L22	7	HB158-21U6M48-30F(1-5/8)	98.25 - 98.50	1.0000	1.0000
L22	13	561(1-5/8")	98.25 - 98.50	1.0000	1.0000
L22	17	LDF4P-50A(1/2")	98.25 - 98.50	1.0000	1.0000
L22	79	CCI 6" x 1" Plate	98.25 - 98.50	1.0000	1.0000
L22	80	CCI 6" x 1" Plate	98.25 - 98.50	1.0000	1.0000
L22	81	CCI 6" x 1" Plate	98.25 - 98.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L22	93	CCI 4.5" x 1" Plate	98.25 - 98.50	1.0000	1.0000
L22	94	CCI 4.5" x 1" Plate	98.25 - 98.50	1.0000	1.0000
L22	105	CCI 6" x 1" Plate	98.25 - 98.50	1.0000	1.0000
L22	106	CCI 6" x 1" Plate	98.25 - 98.50	1.0000	1.0000
L23	1	LDF7-50A(1-5/8")	93.25 - 98.25	1.0000	1.0000
L23	4	2" Rigid Conduit	93.25 - 98.25	1.0000	1.0000
L23	7	HB158-21U6M48-30F(1-5/8)	93.25 - 98.25	1.0000	1.0000
L23	13	561(1-5/8")	93.25 - 98.25	1.0000	1.0000
L23	17	LDF4P-50A(1/2")	93.25 - 98.25	1.0000	1.0000
L23	79	CCI 6" x 1" Plate	93.25 - 98.25	1.0000	1.0000
L23	80	CCI 6" x 1" Plate	93.25 - 98.25	1.0000	1.0000
L23	81	CCI 6" x 1" Plate	93.25 - 98.25	1.0000	1.0000
L23	93	CCI 4.5" x 1" Plate	97.00 - 98.25	1.0000	1.0000
L23	94	CCI 4.5" x 1" Plate	97.00 - 98.25	1.0000	1.0000
L23	105	CCI 6" x 1" Plate	93.25 - 98.25	1.0000	1.0000
L23	106	CCI 6" x 1" Plate	93.25 - 98.25	1.0000	1.0000
L24	1	LDF7-50A(1-5/8")	90.50 - 93.25	1.0000	1.0000
L24	4	2" Rigid Conduit	90.50 - 93.25	1.0000	1.0000
L24	7	HB158-21U6M48-30F(1-5/8)	90.50 - 93.25	1.0000	1.0000
L24	13	561(1-5/8")	90.50 - 93.25	1.0000	1.0000
L24	17	LDF4P-50A(1/2")	90.50 - 93.25	1.0000	1.0000
L24	79	CCI 6" x 1" Plate	90.50 - 93.25	1.0000	1.0000
L24	80	CCI 6" x 1" Plate	90.50 - 93.25	1.0000	1.0000
L24	81	CCI 6" x 1" Plate	90.50 - 93.25	1.0000	1.0000
L24	105	CCI 6" x 1" Plate	90.60 - 93.25	1.0000	1.0000
L24	106	CCI 6" x 1" Plate	90.60 - 93.25	1.0000	1.0000
L25	1	LDF7-50A(1-5/8")	90.25 - 90.50	1.0000	1.0000
L25	4	2" Rigid Conduit	90.25 - 90.50	1.0000	1.0000
L25	7	HB158-21U6M48-30F(1-5/8)	90.25 - 90.50	1.0000	1.0000
L25	13	561(1-5/8")	90.25 - 90.50	1.0000	1.0000
L25	17	LDF4P-50A(1/2")	90.25 - 90.50	1.0000	1.0000
L25	79	CCI 6" x 1" Plate	90.25 - 90.50	1.0000	1.0000
L25	80	CCI 6" x 1" Plate	90.25 - 90.50	1.0000	1.0000
L25	81	CCI 6" x 1" Plate	90.25 - 90.50	1.0000	1.0000
L25	103	CCI 8.5" x 1.25" Plate	90.25 - 90.50	1.0000	1.0000
L25	104	CCI 8.5" x 1.25" Plate	90.25 - 90.50	1.0000	1.0000
L26	1	LDF7-50A(1-5/8")	85.25 - 90.25	1.0000	1.0000
L26	4	2" Rigid Conduit	85.25 - 90.25	1.0000	1.0000
L26	7	HB158-21U6M48-30F(1-5/8)	85.25 - 90.25	1.0000	1.0000
L26	13	561(1-5/8")	85.25 - 90.25	1.0000	1.0000
L26	17	LDF4P-50A(1/2")	85.25 - 90.25	1.0000	1.0000
L26	79	CCI 6" x 1" Plate	85.25 - 90.25	1.0000	1.0000
L26	80	CCI 6" x 1" Plate	85.25 - 90.25	1.0000	1.0000
L26	81	CCI 6" x 1" Plate	85.25 - 90.25	1.0000	1.0000
L26	89	CCI 6.5" x 1.25" Plate	85.25 - 85.50	1.0000	1.0000
L26	90	CCI 6.5" x 1.25" Plate	85.25 - 85.50	1.0000	1.0000
L26	91	CCI 6.5" x 1.25" Plate	85.25 - 85.50	1.0000	1.0000
L26	103	CCI 8.5" x 1.25" Plate	85.25 - 90.25	1.0000	1.0000
L26	104	CCI 8.5" x 1.25" Plate	85.25 - 90.25	1.0000	1.0000
L27	1	LDF7-50A(1-5/8")	83.50 - 85.25	1.0000	1.0000
L27	4	2" Rigid Conduit	83.50 - 85.25	1.0000	1.0000
L27	7	HB158-21U6M48-30F(1-5/8)	83.50 - 85.25	1.0000	1.0000
L27	13	561(1-5/8")	83.50 - 85.25	1.0000	1.0000
L27	17	LDF4P-50A(1/2")	83.50 - 85.25	1.0000	1.0000
L27	79	CCI 6" x 1" Plate	83.50 - 85.25	1.0000	1.0000
L27	80	CCI 6" x 1" Plate	83.50 - 85.25	1.0000	1.0000
L27	81	CCI 6" x 1" Plate	83.50 - 85.25	1.0000	1.0000
L27	89	CCI 6.5" x 1.25" Plate	83.50 - 85.25	1.0000	1.0000
L27	90	CCI 6.5" x 1.25" Plate	83.50 - 85.25	1.0000	1.0000
L27	91	CCI 6.5" x 1.25" Plate	83.50 - 85.25	1.0000	1.0000
L27	99	CCI 8.5" x 1.25" Plate	83.50 - 85.00	1.0000	1.0000
L27	103	CCI 8.5" x 1.25" Plate	83.50 - 85.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L27	104	CCI 8.5" x 1.25" Plate	83.50 - 85.25	1.0000	1.0000
L28	1	LDF7-50A(1-5/8")	83.25 - 83.50	1.0000	1.0000
L28	4	2" Rigid Conduit	83.25 - 83.50	1.0000	1.0000
L28	7	HB158-21U6M48-30F(1-5/8)	83.25 - 83.50	1.0000	1.0000
L28	13	561(1-5/8")	83.25 - 83.50	1.0000	1.0000
L28	17	LDF4P-50A(1/2")	83.25 - 83.50	1.0000	1.0000
L28	79	CCI 6" x 1" Plate	83.25 - 83.50	1.0000	1.0000
L28	80	CCI 6" x 1" Plate	83.25 - 83.50	1.0000	1.0000
L28	81	CCI 6" x 1" Plate	83.25 - 83.50	1.0000	1.0000
L28	89	CCI 6.5" x 1.25" Plate	83.25 - 83.50	1.0000	1.0000
L28	90	CCI 6.5" x 1.25" Plate	83.25 - 83.50	1.0000	1.0000
L28	91	CCI 6.5" x 1.25" Plate	83.25 - 83.50	1.0000	1.0000
L28	99	CCI 8.5" x 1.25" Plate	83.25 - 83.50	1.0000	1.0000
L28	103	CCI 8.5" x 1.25" Plate	83.25 - 83.50	1.0000	1.0000
L28	104	CCI 8.5" x 1.25" Plate	83.25 - 83.50	1.0000	1.0000
L29	1	LDF7-50A(1-5/8")	80.75 - 83.25	1.0000	1.0000
L29	4	2" Rigid Conduit	80.75 - 83.25	1.0000	1.0000
L29	7	HB158-21U6M48-30F(1-5/8)	80.75 - 83.25	1.0000	1.0000
L29	13	561(1-5/8")	80.75 - 83.25	1.0000	1.0000
L29	17	LDF4P-50A(1/2")	80.75 - 83.25	1.0000	1.0000
L29	79	CCI 6" x 1" Plate	80.75 - 83.25	1.0000	1.0000
L29	80	CCI 6" x 1" Plate	80.75 - 83.25	1.0000	1.0000
L29	81	CCI 6" x 1" Plate	80.75 - 83.25	1.0000	1.0000
L29	89	CCI 6.5" x 1.25" Plate	80.75 - 83.25	1.0000	1.0000
L29	90	CCI 6.5" x 1.25" Plate	80.75 - 83.25	1.0000	1.0000
L29	91	CCI 6.5" x 1.25" Plate	80.75 - 83.25	1.0000	1.0000
L29	99	CCI 8.5" x 1.25" Plate	80.75 - 83.25	1.0000	1.0000
L29	103	CCI 8.5" x 1.25" Plate	80.75 - 83.25	1.0000	1.0000
L29	104	CCI 8.5" x 1.25" Plate	80.75 - 83.25	1.0000	1.0000
L30	1	LDF7-50A(1-5/8")	80.50 - 80.75	1.0000	1.0000
L30	4	2" Rigid Conduit	80.50 - 80.75	1.0000	1.0000
L30	7	HB158-21U6M48-30F(1-5/8)	80.50 - 80.75	1.0000	1.0000
L30	13	561(1-5/8")	80.50 - 80.75	1.0000	1.0000
L30	17	LDF4P-50A(1/2")	80.50 - 80.75	1.0000	1.0000
L30	79	CCI 6" x 1" Plate	80.50 - 80.75	1.0000	1.0000
L30	80	CCI 6" x 1" Plate	80.50 - 80.75	1.0000	1.0000
L30	81	CCI 6" x 1" Plate	80.50 - 80.75	1.0000	1.0000
L30	89	CCI 6.5" x 1.25" Plate	80.50 - 80.75	1.0000	1.0000
L30	90	CCI 6.5" x 1.25" Plate	80.50 - 80.75	1.0000	1.0000
L30	91	CCI 6.5" x 1.25" Plate	80.50 - 80.75	1.0000	1.0000
L30	99	CCI 8.5" x 1.25" Plate	80.50 - 80.75	1.0000	1.0000
L30	103	CCI 8.5" x 1.25" Plate	80.50 - 80.75	1.0000	1.0000
L30	104	CCI 8.5" x 1.25" Plate	80.50 - 80.75	1.0000	1.0000
L31	1	LDF7-50A(1-5/8")	80.25 - 80.50	1.0000	1.0000
L31	4	2" Rigid Conduit	80.25 - 80.50	1.0000	1.0000
L31	7	HB158-21U6M48-30F(1-5/8)	80.25 - 80.50	1.0000	1.0000
L31	13	561(1-5/8")	80.25 - 80.50	1.0000	1.0000
L31	17	LDF4P-50A(1/2")	80.25 - 80.50	1.0000	1.0000
L31	79	CCI 6" x 1" Plate	80.25 - 80.50	1.0000	1.0000
L31	80	CCI 6" x 1" Plate	80.25 - 80.50	1.0000	1.0000
L31	81	CCI 6" x 1" Plate	80.25 - 80.50	1.0000	1.0000
L31	89	CCI 6.5" x 1.25" Plate	80.25 - 80.50	1.0000	1.0000
L31	90	CCI 6.5" x 1.25" Plate	80.25 - 80.50	1.0000	1.0000
L31	91	CCI 6.5" x 1.25" Plate	80.25 - 80.50	1.0000	1.0000
L31	99	CCI 8.5" x 1.25" Plate	80.25 - 80.50	1.0000	1.0000
L31	103	CCI 8.5" x 1.25" Plate	80.25 - 80.50	1.0000	1.0000
L31	104	CCI 8.5" x 1.25" Plate	80.25 - 80.50	1.0000	1.0000
L32	1	LDF7-50A(1-5/8")	77.50 - 80.25	1.0000	1.0000
L32	4	2" Rigid Conduit	77.50 - 80.25	1.0000	1.0000
L32	7	HB158-21U6M48-30F(1-5/8)	77.50 - 80.25	1.0000	1.0000
L32	13	561(1-5/8")	77.50 - 80.25	1.0000	1.0000
L32	17	LDF4P-50A(1/2")	77.50 - 80.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L32	79	CCI 6" x 1" Plate	77.50 - 80.25	1.0000	1.0000
L32	80	CCI 6" x 1" Plate	77.50 - 80.25	1.0000	1.0000
L32	81	CCI 6" x 1" Plate	77.50 - 80.25	1.0000	1.0000
L32	89	CCI 6.5" x 1.25" Plate	77.50 - 80.25	1.0000	1.0000
L32	90	CCI 6.5" x 1.25" Plate	77.50 - 80.25	1.0000	1.0000
L32	91	CCI 6.5" x 1.25" Plate	77.50 - 80.25	1.0000	1.0000
L32	99	CCI 8.5" x 1.25" Plate	77.50 - 80.25	1.0000	1.0000
L32	103	CCI 8.5" x 1.25" Plate	77.50 - 80.25	1.0000	1.0000
L32	104	CCI 8.5" x 1.25" Plate	77.50 - 80.25	1.0000	1.0000
L33	1	LDF7-50A(1-5/8")	77.25 - 77.50	1.0000	1.0000
L33	4	2" Rigid Conduit	77.25 - 77.50	1.0000	1.0000
L33	7	HB158-21U6M48-30F(1-5/8)	77.25 - 77.50	1.0000	1.0000
L33	13	561(1-5/8")	77.25 - 77.50	1.0000	1.0000
L33	17	LDF4P-50A(1/2")	77.25 - 77.50	1.0000	1.0000
L33	79	CCI 6" x 1" Plate	77.25 - 77.50	1.0000	1.0000
L33	80	CCI 6" x 1" Plate	77.25 - 77.50	1.0000	1.0000
L33	81	CCI 6" x 1" Plate	77.25 - 77.50	1.0000	1.0000
L33	89	CCI 6.5" x 1.25" Plate	77.25 - 77.50	1.0000	1.0000
L33	90	CCI 6.5" x 1.25" Plate	77.25 - 77.50	1.0000	1.0000
L33	91	CCI 6.5" x 1.25" Plate	77.25 - 77.50	1.0000	1.0000
L33	99	CCI 8.5" x 1.25" Plate	77.25 - 77.50	1.0000	1.0000
L33	103	CCI 8.5" x 1.25" Plate	77.25 - 77.50	1.0000	1.0000
L33	104	CCI 8.5" x 1.25" Plate	77.25 - 77.50	1.0000	1.0000
L34	1	LDF7-50A(1-5/8")	68.82 - 77.25	1.0000	1.0000
L34	4	2" Rigid Conduit	68.82 - 77.25	1.0000	1.0000
L34	7	HB158-21U6M48-30F(1-5/8)	68.82 - 77.25	1.0000	1.0000
L34	13	561(1-5/8")	68.82 - 77.25	1.0000	1.0000
L34	17	LDF4P-50A(1/2")	68.82 - 77.25	1.0000	1.0000
L34	79	CCI 6" x 1" Plate	68.82 - 77.25	1.0000	1.0000
L34	80	CCI 6" x 1" Plate	68.82 - 77.25	1.0000	1.0000
L34	81	CCI 6" x 1" Plate	68.82 - 77.25	1.0000	1.0000
L34	89	CCI 6.5" x 1.25" Plate	72.50 - 77.25	1.0000	1.0000
L34	90	CCI 6.5" x 1.25" Plate	72.50 - 77.25	1.0000	1.0000
L34	91	CCI 6.5" x 1.25" Plate	72.50 - 77.25	1.0000	1.0000
L34	99	CCI 8.5" x 1.25" Plate	68.82 - 77.25	1.0000	1.0000
L34	103	CCI 8.5" x 1.25" Plate	68.82 - 77.25	1.0000	1.0000
L34	104	CCI 8.5" x 1.25" Plate	68.82 - 77.25	1.0000	1.0000
L35	1	LDF7-50A(1-5/8")	68.29 - 68.82	1.0000	1.0000
L35	4	2" Rigid Conduit	68.29 - 68.82	1.0000	1.0000
L35	7	HB158-21U6M48-30F(1-5/8)	68.29 - 68.82	1.0000	1.0000
L35	13	561(1-5/8")	68.29 - 68.82	1.0000	1.0000
L35	17	LDF4P-50A(1/2")	68.29 - 68.82	1.0000	1.0000
L35	79	CCI 6" x 1" Plate	68.29 - 68.82	1.0000	1.0000
L35	80	CCI 6" x 1" Plate	68.29 - 68.82	1.0000	1.0000
L35	81	CCI 6" x 1" Plate	68.29 - 68.82	1.0000	1.0000
L35	99	CCI 8.5" x 1.25" Plate	68.29 - 68.82	1.0000	1.0000
L35	103	CCI 8.5" x 1.25" Plate	68.29 - 68.82	1.0000	1.0000
L35	104	CCI 8.5" x 1.25" Plate	68.29 - 68.82	1.0000	1.0000
L36	1	LDF7-50A(1-5/8")	64.25 - 68.29	1.0000	1.0000
L36	4	2" Rigid Conduit	64.25 - 68.29	1.0000	1.0000
L36	7	HB158-21U6M48-30F(1-5/8)	64.25 - 68.29	1.0000	1.0000
L36	13	561(1-5/8")	64.25 - 68.29	1.0000	1.0000
L36	17	LDF4P-50A(1/2")	64.25 - 68.29	1.0000	1.0000
L36	79	CCI 6" x 1" Plate	64.25 - 68.29	1.0000	1.0000
L36	80	CCI 6" x 1" Plate	64.25 - 68.29	1.0000	1.0000
L36	81	CCI 6" x 1" Plate	64.25 - 68.29	1.0000	1.0000
L36	86	CCI 6.5" x 1.25" Plate	64.25 - 67.00	1.0000	1.0000
L36	87	CCI 6.5" x 1.25" Plate	64.25 - 67.00	1.0000	1.0000
L36	88	CCI 6.5" x 1.25" Plate	64.25 - 67.00	1.0000	1.0000
L36	99	CCI 8.5" x 1.25" Plate	64.25 - 68.29	1.0000	1.0000
L36	103	CCI 8.5" x 1.25" Plate	64.25 - 68.29	1.0000	1.0000
L36	104	CCI 8.5" x 1.25" Plate	64.25 - 68.29	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L37	1	LDF7-50A(1-5/8")	64.00 - 64.25	1.0000	1.0000
L37	4	2" Rigid Conduit	64.00 - 64.25	1.0000	1.0000
L37	7	HB158-21U6M48-30F(1-5/8)	64.00 - 64.25	1.0000	1.0000
L37	13	561(1-5/8")	64.00 - 64.25	1.0000	1.0000
L37	17	LDF4P-50A(1/2")	64.00 - 64.25	1.0000	1.0000
L37	79	CCI 6" x 1" Plate	64.00 - 64.25	1.0000	1.0000
L37	80	CCI 6" x 1" Plate	64.00 - 64.25	1.0000	1.0000
L37	81	CCI 6" x 1" Plate	64.00 - 64.25	1.0000	1.0000
L37	86	CCI 6.5" x 1.25" Plate	64.00 - 64.25	1.0000	1.0000
L37	87	CCI 6.5" x 1.25" Plate	64.00 - 64.25	1.0000	1.0000
L37	88	CCI 6.5" x 1.25" Plate	64.00 - 64.25	1.0000	1.0000
L37	99	CCI 8.5" x 1.25" Plate	64.00 - 64.25	1.0000	1.0000
L37	103	CCI 8.5" x 1.25" Plate	64.00 - 64.25	1.0000	1.0000
L37	104	CCI 8.5" x 1.25" Plate	64.00 - 64.25	1.0000	1.0000
L38	1	LDF7-50A(1-5/8")	60.50 - 64.00	1.0000	1.0000
L38	4	2" Rigid Conduit	60.50 - 64.00	1.0000	1.0000
L38	7	HB158-21U6M48-30F(1-5/8)	60.50 - 64.00	1.0000	1.0000
L38	13	561(1-5/8")	60.50 - 64.00	1.0000	1.0000
L38	17	LDF4P-50A(1/2")	60.50 - 64.00	1.0000	1.0000
L38	69	MP3-04	60.50 - 61.50	1.0000	1.0000
L38	79	CCI 6" x 1" Plate	60.50 - 64.00	1.0000	1.0000
L38	80	CCI 6" x 1" Plate	60.50 - 64.00	1.0000	1.0000
L38	81	CCI 6" x 1" Plate	60.50 - 64.00	1.0000	1.0000
L38	86	CCI 6.5" x 1.25" Plate	60.50 - 64.00	1.0000	1.0000
L38	87	CCI 6.5" x 1.25" Plate	60.50 - 64.00	1.0000	1.0000
L38	88	CCI 6.5" x 1.25" Plate	60.50 - 64.00	1.0000	1.0000
L38	99	CCI 8.5" x 1.25" Plate	60.50 - 64.00	1.0000	1.0000
L38	103	CCI 8.5" x 1.25" Plate	60.50 - 64.00	1.0000	1.0000
L38	104	CCI 8.5" x 1.25" Plate	60.50 - 64.00	1.0000	1.0000
L39	1	LDF7-50A(1-5/8")	60.25 - 60.50	1.0000	1.0000
L39	4	2" Rigid Conduit	60.25 - 60.50	1.0000	1.0000
L39	7	HB158-21U6M48-30F(1-5/8)	60.25 - 60.50	1.0000	1.0000
L39	13	561(1-5/8")	60.25 - 60.50	1.0000	1.0000
L39	17	LDF4P-50A(1/2")	60.25 - 60.50	1.0000	1.0000
L39	67	MP3-04	60.25 - 60.50	1.0000	1.0000
L39	68	MP3-04	60.25 - 60.50	1.0000	1.0000
L39	69	MP3-04	60.25 - 60.50	1.0000	1.0000
L39	76	CCI 6.5" x 1.25" Plate	60.25 - 60.50	1.0000	1.0000
L39	77	CCI 6.5" x 1.25" Plate	60.25 - 60.50	1.0000	1.0000
L39	78	CCI 6.5" x 1.25" Plate	60.25 - 60.50	1.0000	1.0000
L39	86	CCI 6.5" x 1.25" Plate	60.25 - 60.50	1.0000	1.0000
L39	87	CCI 6.5" x 1.25" Plate	60.25 - 60.50	1.0000	1.0000
L39	88	CCI 6.5" x 1.25" Plate	60.25 - 60.50	1.0000	1.0000
L39	99	CCI 8.5" x 1.25" Plate	60.25 - 60.50	1.0000	1.0000
L39	103	CCI 8.5" x 1.25" Plate	60.25 - 60.50	1.0000	1.0000
L39	104	CCI 8.5" x 1.25" Plate	60.25 - 60.50	1.0000	1.0000
L40	1	LDF7-50A(1-5/8")	60.08 - 60.25	1.0000	1.0000
L40	4	2" Rigid Conduit	60.08 - 60.25	1.0000	1.0000
L40	7	HB158-21U6M48-30F(1-5/8)	60.08 - 60.25	1.0000	1.0000
L40	13	561(1-5/8")	60.08 - 60.25	1.0000	1.0000
L40	17	LDF4P-50A(1/2")	60.08 - 60.25	1.0000	1.0000
L40	67	MP3-04	60.08 - 60.25	1.0000	1.0000
L40	68	MP3-04	60.08 - 60.25	1.0000	1.0000
L40	69	MP3-04	60.08 - 60.25	1.0000	1.0000
L40	76	CCI 6.5" x 1.25" Plate	60.08 - 60.25	1.0000	1.0000
L40	77	CCI 6.5" x 1.25" Plate	60.08 - 60.25	1.0000	1.0000
L40	78	CCI 6.5" x 1.25" Plate	60.08 - 60.25	1.0000	1.0000
L40	86	CCI 6.5" x 1.25" Plate	60.08 - 60.25	1.0000	1.0000
L40	87	CCI 6.5" x 1.25" Plate	60.08 - 60.25	1.0000	1.0000
L40	88	CCI 6.5" x 1.25" Plate	60.08 - 60.25	1.0000	1.0000
L40	99	CCI 8.5" x 1.25" Plate	60.08 - 60.25	1.0000	1.0000
L40	103	CCI 8.5" x 1.25" Plate	60.08 - 60.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L40	104	CCI 8.5" x 1.25" Plate	60.08 - 60.25	1.0000	1.0000
L41	1	LDF7-50A(1-5/8")	59.83 - 60.08	1.0000	1.0000
L41	4	2" Rigid Conduit	59.83 - 60.08	1.0000	1.0000
L41	7	HB158-21U6M48-30F(1-5/8)	59.83 - 60.08	1.0000	1.0000
L41	13	561(1-5/8")	59.83 - 60.08	1.0000	1.0000
L41	17	LDF4P-50A(1/2")	59.83 - 60.08	1.0000	1.0000
L41	67	MP3-04	59.83 - 60.08	1.0000	1.0000
L41	68	MP3-04	59.83 - 60.08	1.0000	1.0000
L41	69	MP3-04	59.83 - 60.08	1.0000	1.0000
L41	76	CCI 6.5" x 1.25" Plate	59.83 - 60.08	1.0000	1.0000
L41	77	CCI 6.5" x 1.25" Plate	59.83 - 60.08	1.0000	1.0000
L41	78	CCI 6.5" x 1.25" Plate	59.83 - 60.08	1.0000	1.0000
L41	86	CCI 6.5" x 1.25" Plate	59.83 - 60.08	1.0000	1.0000
L41	87	CCI 6.5" x 1.25" Plate	59.83 - 60.08	1.0000	1.0000
L41	88	CCI 6.5" x 1.25" Plate	59.83 - 60.08	1.0000	1.0000
L41	99	CCI 8.5" x 1.25" Plate	60.00 - 60.08	1.0000	1.0000
L41	103	CCI 8.5" x 1.25" Plate	59.83 - 60.08	1.0000	1.0000
L41	104	CCI 8.5" x 1.25" Plate	59.83 - 60.08	1.0000	1.0000
L42	1	LDF7-50A(1-5/8")	59.08 - 59.83	1.0000	1.0000
L42	4	2" Rigid Conduit	59.08 - 59.83	1.0000	1.0000
L42	7	HB158-21U6M48-30F(1-5/8)	59.08 - 59.83	1.0000	1.0000
L42	13	561(1-5/8")	59.08 - 59.83	1.0000	1.0000
L42	17	LDF4P-50A(1/2")	59.08 - 59.83	1.0000	1.0000
L42	67	MP3-04	59.08 - 59.83	1.0000	1.0000
L42	68	MP3-04	59.08 - 59.83	1.0000	1.0000
L42	69	MP3-04	59.08 - 59.83	1.0000	1.0000
L42	76	CCI 6.5" x 1.25" Plate	59.08 - 59.83	1.0000	1.0000
L42	77	CCI 6.5" x 1.25" Plate	59.08 - 59.83	1.0000	1.0000
L42	78	CCI 6.5" x 1.25" Plate	59.08 - 59.83	1.0000	1.0000
L42	86	CCI 6.5" x 1.25" Plate	59.08 - 59.83	1.0000	1.0000
L42	87	CCI 6.5" x 1.25" Plate	59.08 - 59.83	1.0000	1.0000
L42	88	CCI 6.5" x 1.25" Plate	59.08 - 59.83	1.0000	1.0000
L42	103	CCI 8.5" x 1.25" Plate	59.08 - 59.83	1.0000	1.0000
L42	104	CCI 8.5" x 1.25" Plate	59.08 - 59.83	1.0000	1.0000
L43	1	LDF7-50A(1-5/8")	58.83 - 59.08	1.0000	1.0000
L43	4	2" Rigid Conduit	58.83 - 59.08	1.0000	1.0000
L43	7	HB158-21U6M48-30F(1-5/8)	58.83 - 59.08	1.0000	1.0000
L43	13	561(1-5/8")	58.83 - 59.08	1.0000	1.0000
L43	17	LDF4P-50A(1/2")	58.83 - 59.08	1.0000	1.0000
L43	67	MP3-04	58.83 - 59.08	1.0000	1.0000
L43	68	MP3-04	58.83 - 59.08	1.0000	1.0000
L43	69	MP3-04	58.83 - 59.08	1.0000	1.0000
L43	76	CCI 6.5" x 1.25" Plate	58.83 - 59.08	1.0000	1.0000
L43	77	CCI 6.5" x 1.25" Plate	58.83 - 59.08	1.0000	1.0000
L43	78	CCI 6.5" x 1.25" Plate	58.83 - 59.08	1.0000	1.0000
L43	86	CCI 6.5" x 1.25" Plate	58.83 - 59.08	1.0000	1.0000
L43	87	CCI 6.5" x 1.25" Plate	58.83 - 59.08	1.0000	1.0000
L43	88	CCI 6.5" x 1.25" Plate	58.83 - 59.08	1.0000	1.0000
L43	103	CCI 8.5" x 1.25" Plate	58.83 - 59.08	1.0000	1.0000
L43	104	CCI 8.5" x 1.25" Plate	58.83 - 59.08	1.0000	1.0000
L44	1	LDF7-50A(1-5/8")	55.42 - 58.83	1.0000	1.0000
L44	4	2" Rigid Conduit	55.42 - 58.83	1.0000	1.0000
L44	7	HB158-21U6M48-30F(1-5/8)	55.42 - 58.83	1.0000	1.0000
L44	13	561(1-5/8")	55.42 - 58.83	1.0000	1.0000
L44	17	LDF4P-50A(1/2")	55.42 - 58.83	1.0000	1.0000
L44	67	MP3-04	55.42 - 58.83	1.0000	1.0000
L44	68	MP3-04	55.42 - 58.83	1.0000	1.0000
L44	69	MP3-04	55.42 - 58.83	1.0000	1.0000
L44	76	CCI 6.5" x 1.25" Plate	55.42 - 58.83	1.0000	1.0000
L44	77	CCI 6.5" x 1.25" Plate	55.42 - 58.83	1.0000	1.0000
L44	78	CCI 6.5" x 1.25" Plate	55.42 - 58.83	1.0000	1.0000
L44	86	CCI 6.5" x 1.25" Plate	55.42 - 58.83	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L44	87	CCI 6.5" x 1.25" Plate	55.42 - 58.83	1.0000	1.0000
L44	88	CCI 6.5" x 1.25" Plate	55.42 - 58.83	1.0000	1.0000
L44	103	CCI 8.5" x 1.25" Plate	55.50 - 58.83	1.0000	1.0000
L44	104	CCI 8.5" x 1.25" Plate	55.50 - 58.83	1.0000	1.0000
L45	1	LDF7-50A(1-5/8")	55.17 - 55.42	1.0000	1.0000
L45	4	2" Rigid Conduit	55.17 - 55.42	1.0000	1.0000
L45	7	HB158-21U6M48-30F(1-5/8)	55.17 - 55.42	1.0000	1.0000
L45	13	561(1-5/8")	55.17 - 55.42	1.0000	1.0000
L45	17	LDF4P-50A(1/2")	55.17 - 55.42	1.0000	1.0000
L45	67	MP3-04	55.17 - 55.42	1.0000	1.0000
L45	68	MP3-04	55.17 - 55.42	1.0000	1.0000
L45	69	MP3-04	55.17 - 55.42	1.0000	1.0000
L45	76	CCI 6.5" x 1.25" Plate	55.17 - 55.42	1.0000	1.0000
L45	77	CCI 6.5" x 1.25" Plate	55.17 - 55.42	1.0000	1.0000
L45	78	CCI 6.5" x 1.25" Plate	55.17 - 55.42	1.0000	1.0000
L45	86	CCI 6.5" x 1.25" Plate	55.17 - 55.42	1.0000	1.0000
L45	87	CCI 6.5" x 1.25" Plate	55.17 - 55.42	1.0000	1.0000
L45	88	CCI 6.5" x 1.25" Plate	55.17 - 55.42	1.0000	1.0000
L45	101	CCI 8.5" x 1.25" Plate	55.17 - 55.40	1.0000	1.0000
L45	102	CCI 8.5" x 1.25" Plate	55.17 - 55.40	1.0000	1.0000
L46	1	LDF7-50A(1-5/8")	54.75 - 55.17	1.0000	1.0000
L46	4	2" Rigid Conduit	54.75 - 55.17	1.0000	1.0000
L46	7	HB158-21U6M48-30F(1-5/8)	54.75 - 55.17	1.0000	1.0000
L46	13	561(1-5/8")	54.75 - 55.17	1.0000	1.0000
L46	17	LDF4P-50A(1/2")	54.75 - 55.17	1.0000	1.0000
L46	67	MP3-04	54.75 - 55.17	1.0000	1.0000
L46	68	MP3-04	54.75 - 55.17	1.0000	1.0000
L46	69	MP3-04	54.75 - 55.17	1.0000	1.0000
L46	76	CCI 6.5" x 1.25" Plate	54.75 - 55.17	1.0000	1.0000
L46	77	CCI 6.5" x 1.25" Plate	54.75 - 55.17	1.0000	1.0000
L46	78	CCI 6.5" x 1.25" Plate	54.75 - 55.17	1.0000	1.0000
L46	86	CCI 6.5" x 1.25" Plate	54.75 - 55.17	1.0000	1.0000
L46	87	CCI 6.5" x 1.25" Plate	54.75 - 55.17	1.0000	1.0000
L46	88	CCI 6.5" x 1.25" Plate	54.75 - 55.17	1.0000	1.0000
L46	101	CCI 8.5" x 1.25" Plate	54.75 - 55.17	1.0000	1.0000
L46	102	CCI 8.5" x 1.25" Plate	54.75 - 55.17	1.0000	1.0000
L47	1	LDF7-50A(1-5/8")	54.50 - 54.75	1.0000	1.0000
L47	4	2" Rigid Conduit	54.50 - 54.75	1.0000	1.0000
L47	7	HB158-21U6M48-30F(1-5/8)	54.50 - 54.75	1.0000	1.0000
L47	13	561(1-5/8")	54.50 - 54.75	1.0000	1.0000
L47	17	LDF4P-50A(1/2")	54.50 - 54.75	1.0000	1.0000
L47	67	MP3-04	54.50 - 54.75	1.0000	1.0000
L47	68	MP3-04	54.50 - 54.75	1.0000	1.0000
L47	69	MP3-04	54.50 - 54.75	1.0000	1.0000
L47	76	CCI 6.5" x 1.25" Plate	54.50 - 54.75	1.0000	1.0000
L47	77	CCI 6.5" x 1.25" Plate	54.50 - 54.75	1.0000	1.0000
L47	78	CCI 6.5" x 1.25" Plate	54.50 - 54.75	1.0000	1.0000
L47	86	CCI 6.5" x 1.25" Plate	54.50 - 54.75	1.0000	1.0000
L47	87	CCI 6.5" x 1.25" Plate	54.50 - 54.75	1.0000	1.0000
L47	88	CCI 6.5" x 1.25" Plate	54.50 - 54.75	1.0000	1.0000
L47	101	CCI 8.5" x 1.25" Plate	54.50 - 54.75	1.0000	1.0000
L47	102	CCI 8.5" x 1.25" Plate	54.50 - 54.75	1.0000	1.0000
L48	1	LDF7-50A(1-5/8")	49.50 - 54.50	1.0000	1.0000
L48	4	2" Rigid Conduit	49.50 - 54.50	1.0000	1.0000
L48	7	HB158-21U6M48-30F(1-5/8)	49.50 - 54.50	1.0000	1.0000
L48	13	561(1-5/8")	49.50 - 54.50	1.0000	1.0000
L48	17	LDF4P-50A(1/2")	49.50 - 54.50	1.0000	1.0000
L48	67	MP3-04	49.50 - 54.50	1.0000	1.0000
L48	68	MP3-04	49.50 - 54.50	1.0000	1.0000
L48	69	MP3-04	49.50 - 54.50	1.0000	1.0000
L48	76	CCI 6.5" x 1.25" Plate	49.50 - 54.50	1.0000	1.0000
L48	77	CCI 6.5" x 1.25" Plate	49.50 - 54.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L48	78	CCI 6.5" x 1.25" Plate	49.50 - 54.50	1.0000	1.0000
L48	86	CCI 6.5" x 1.25" Plate	52.00 - 54.50	1.0000	1.0000
L48	87	CCI 6.5" x 1.25" Plate	52.00 - 54.50	1.0000	1.0000
L48	88	CCI 6.5" x 1.25" Plate	52.00 - 54.50	1.0000	1.0000
L48	101	CCI 8.5" x 1.25" Plate	49.50 - 54.50	1.0000	1.0000
L48	102	CCI 8.5" x 1.25" Plate	49.50 - 54.50	1.0000	1.0000
L49	1	LDF7-50A(1-5/8")	44.50 - 49.50	1.0000	1.0000
L49	4	2" Rigid Conduit	44.50 - 49.50	1.0000	1.0000
L49	7	HB158-21U6M48-30F(1-5/8)	44.50 - 49.50	1.0000	1.0000
L49	13	561(1-5/8")	44.50 - 49.50	1.0000	1.0000
L49	17	LDF4P-50A(1/2")	44.50 - 49.50	1.0000	1.0000
L49	67	MP3-04	44.50 - 49.50	1.0000	1.0000
L49	68	MP3-04	44.50 - 49.50	1.0000	1.0000
L49	69	MP3-04	44.50 - 49.50	1.0000	1.0000
L49	76	CCI 6.5" x 1.25" Plate	44.50 - 49.50	1.0000	1.0000
L49	77	CCI 6.5" x 1.25" Plate	44.50 - 49.50	1.0000	1.0000
L49	78	CCI 6.5" x 1.25" Plate	44.50 - 49.50	1.0000	1.0000
L49	98	CCI 8.5" x 1.25" Plate	44.50 - 45.50	1.0000	1.0000
L49	101	CCI 8.5" x 1.25" Plate	44.50 - 49.50	1.0000	1.0000
L49	102	CCI 8.5" x 1.25" Plate	44.50 - 49.50	1.0000	1.0000
L50	1	LDF7-50A(1-5/8")	41.25 - 44.50	1.0000	1.0000
L50	4	2" Rigid Conduit	41.25 - 44.50	1.0000	1.0000
L50	7	HB158-21U6M48-30F(1-5/8)	41.25 - 44.50	1.0000	1.0000
L50	13	561(1-5/8")	41.25 - 44.50	1.0000	1.0000
L50	17	LDF4P-50A(1/2")	41.25 - 44.50	1.0000	1.0000
L50	67	MP3-04	41.25 - 44.50	1.0000	1.0000
L50	68	MP3-04	41.25 - 44.50	1.0000	1.0000
L50	69	MP3-04	41.25 - 44.50	1.0000	1.0000
L50	76	CCI 6.5" x 1.25" Plate	41.25 - 44.50	1.0000	1.0000
L50	77	CCI 6.5" x 1.25" Plate	41.25 - 44.50	1.0000	1.0000
L50	78	CCI 6.5" x 1.25" Plate	41.25 - 44.50	1.0000	1.0000
L50	98	CCI 8.5" x 1.25" Plate	41.25 - 44.50	1.0000	1.0000
L50	101	CCI 8.5" x 1.25" Plate	41.25 - 44.50	1.0000	1.0000
L50	102	CCI 8.5" x 1.25" Plate	41.25 - 44.50	1.0000	1.0000
L51	1	LDF7-50A(1-5/8")	41.00 - 41.25	1.0000	1.0000
L51	4	2" Rigid Conduit	41.00 - 41.25	1.0000	1.0000
L51	7	HB158-21U6M48-30F(1-5/8)	41.00 - 41.25	1.0000	1.0000
L51	13	561(1-5/8")	41.00 - 41.25	1.0000	1.0000
L51	17	LDF4P-50A(1/2")	41.00 - 41.25	1.0000	1.0000
L51	67	MP3-04	41.00 - 41.25	1.0000	1.0000
L51	68	MP3-04	41.00 - 41.25	1.0000	1.0000
L51	69	MP3-04	41.00 - 41.25	1.0000	1.0000
L51	76	CCI 6.5" x 1.25" Plate	41.00 - 41.25	1.0000	1.0000
L51	77	CCI 6.5" x 1.25" Plate	41.00 - 41.25	1.0000	1.0000
L51	78	CCI 6.5" x 1.25" Plate	41.00 - 41.25	1.0000	1.0000
L51	98	CCI 8.5" x 1.25" Plate	41.00 - 41.25	1.0000	1.0000
L51	101	CCI 8.5" x 1.25" Plate	41.00 - 41.25	1.0000	1.0000
L51	102	CCI 8.5" x 1.25" Plate	41.00 - 41.25	1.0000	1.0000
L52	1	LDF7-50A(1-5/8")	34.29 - 41.00	1.0000	1.0000
L52	4	2" Rigid Conduit	34.29 - 41.00	1.0000	1.0000
L52	7	HB158-21U6M48-30F(1-5/8)	34.29 - 41.00	1.0000	1.0000
L52	13	561(1-5/8")	34.29 - 41.00	1.0000	1.0000
L52	17	LDF4P-50A(1/2")	34.29 - 41.00	1.0000	1.0000
L52	67	MP3-04	34.29 - 41.00	1.0000	1.0000
L52	68	MP3-04	34.29 - 41.00	1.0000	1.0000
L52	69	MP3-04	34.29 - 41.00	1.0000	1.0000
L52	76	CCI 6.5" x 1.25" Plate	34.29 - 41.00	1.0000	1.0000
L52	77	CCI 6.5" x 1.25" Plate	34.29 - 41.00	1.0000	1.0000
L52	78	CCI 6.5" x 1.25" Plate	34.29 - 41.00	1.0000	1.0000
L52	83	CCI 6.5" x 1.25" Plate	34.29 - 38.00	1.0000	1.0000
L52	84	CCI 6.5" x 1.25" Plate	34.29 - 38.00	1.0000	1.0000
L52	85	CCI 6.5" x 1.25" Plate	34.29 - 38.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L52	98	CCI 8.5" x 1.25" Plate	34.29 - 41.00	1.0000	1.0000
L52	101	CCI 8.5" x 1.25" Plate	34.29 - 41.00	1.0000	1.0000
L52	102	CCI 8.5" x 1.25" Plate	34.29 - 41.00	1.0000	1.0000
L53	1	LDF7-50A(1-5/8")	33.29 - 34.29	1.0000	1.0000
L53	4	2" Rigid Conduit	33.29 - 34.29	1.0000	1.0000
L53	7	HB158-21U6M48-30F(1-5/8)	33.29 - 34.29	1.0000	1.0000
L53	13	561(1-5/8")	33.29 - 34.29	1.0000	1.0000
L53	17	LDF4P-50A(1/2")	33.29 - 34.29	1.0000	1.0000
L53	67	MP3-04	33.29 - 34.29	1.0000	1.0000
L53	68	MP3-04	33.29 - 34.29	1.0000	1.0000
L53	69	MP3-04	33.29 - 34.29	1.0000	1.0000
L53	76	CCI 6.5" x 1.25" Plate	33.29 - 34.29	1.0000	1.0000
L53	77	CCI 6.5" x 1.25" Plate	33.29 - 34.29	1.0000	1.0000
L53	78	CCI 6.5" x 1.25" Plate	33.29 - 34.29	1.0000	1.0000
L53	83	CCI 6.5" x 1.25" Plate	33.29 - 34.29	1.0000	1.0000
L53	84	CCI 6.5" x 1.25" Plate	33.29 - 34.29	1.0000	1.0000
L53	85	CCI 6.5" x 1.25" Plate	33.29 - 34.29	1.0000	1.0000
L53	98	CCI 8.5" x 1.25" Plate	33.29 - 34.29	1.0000	1.0000
L53	101	CCI 8.5" x 1.25" Plate	33.29 - 34.29	1.0000	1.0000
L53	102	CCI 8.5" x 1.25" Plate	33.29 - 34.29	1.0000	1.0000
L54	1	LDF7-50A(1-5/8")	31.50 - 33.29	1.0000	1.0000
L54	4	2" Rigid Conduit	31.50 - 33.29	1.0000	1.0000
L54	7	HB158-21U6M48-30F(1-5/8)	31.50 - 33.29	1.0000	1.0000
L54	13	561(1-5/8")	31.50 - 33.29	1.0000	1.0000
L54	17	LDF4P-50A(1/2")	31.50 - 33.29	1.0000	1.0000
L54	67	MP3-04	31.50 - 33.29	1.0000	1.0000
L54	68	MP3-04	31.50 - 33.29	1.0000	1.0000
L54	69	MP3-04	31.50 - 33.29	1.0000	1.0000
L54	76	CCI 6.5" x 1.25" Plate	31.50 - 33.29	1.0000	1.0000
L54	77	CCI 6.5" x 1.25" Plate	31.50 - 33.29	1.0000	1.0000
L54	78	CCI 6.5" x 1.25" Plate	31.50 - 33.29	1.0000	1.0000
L54	83	CCI 6.5" x 1.25" Plate	31.50 - 33.29	1.0000	1.0000
L54	84	CCI 6.5" x 1.25" Plate	31.50 - 33.29	1.0000	1.0000
L54	85	CCI 6.5" x 1.25" Plate	31.50 - 33.29	1.0000	1.0000
L54	98	CCI 8.5" x 1.25" Plate	31.50 - 33.29	1.0000	1.0000
L54	101	CCI 8.5" x 1.25" Plate	31.50 - 33.29	1.0000	1.0000
L54	102	CCI 8.5" x 1.25" Plate	31.50 - 33.29	1.0000	1.0000
L55	1	LDF7-50A(1-5/8")	31.25 - 31.50	1.0000	1.0000
L55	4	2" Rigid Conduit	31.25 - 31.50	1.0000	1.0000
L55	7	HB158-21U6M48-30F(1-5/8)	31.25 - 31.50	1.0000	1.0000
L55	13	561(1-5/8")	31.25 - 31.50	1.0000	1.0000
L55	17	LDF4P-50A(1/2")	31.25 - 31.50	1.0000	1.0000
L55	64	MP3-05	31.25 - 31.50	1.0000	1.0000
L55	67	MP3-04	31.25 - 31.50	1.0000	1.0000
L55	68	MP3-04	31.25 - 31.50	1.0000	1.0000
L55	69	MP3-04	31.25 - 31.50	1.0000	1.0000
L55	76	CCI 6.5" x 1.25" Plate	31.25 - 31.50	1.0000	1.0000
L55	77	CCI 6.5" x 1.25" Plate	31.25 - 31.50	1.0000	1.0000
L55	78	CCI 6.5" x 1.25" Plate	31.25 - 31.50	1.0000	1.0000
L55	83	CCI 6.5" x 1.25" Plate	31.25 - 31.50	1.0000	1.0000
L55	84	CCI 6.5" x 1.25" Plate	31.25 - 31.50	1.0000	1.0000
L55	85	CCI 6.5" x 1.25" Plate	31.25 - 31.50	1.0000	1.0000
L55	98	CCI 8.5" x 1.25" Plate	31.25 - 31.50	1.0000	1.0000
L55	101	CCI 8.5" x 1.25" Plate	31.25 - 31.50	1.0000	1.0000
L55	102	CCI 8.5" x 1.25" Plate	31.25 - 31.50	1.0000	1.0000
L56	1	LDF7-50A(1-5/8")	30.50 - 31.25	1.0000	1.0000
L56	4	2" Rigid Conduit	30.50 - 31.25	1.0000	1.0000
L56	7	HB158-21U6M48-30F(1-5/8)	30.50 - 31.25	1.0000	1.0000
L56	13	561(1-5/8")	30.50 - 31.25	1.0000	1.0000
L56	17	LDF4P-50A(1/2")	30.50 - 31.25	1.0000	1.0000
L56	64	MP3-05	30.50 - 31.25	1.0000	1.0000
L56	67	MP3-04	30.50 - 31.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L56	68	MP3-04	30.50 - 31.25	1.0000	1.0000
L56	69	MP3-04	31.00 - 31.25	1.0000	1.0000
L56	76	CCI 6.5" x 1.25" Plate	30.50 - 31.25	1.0000	1.0000
L56	77	CCI 6.5" x 1.25" Plate	30.50 - 31.25	1.0000	1.0000
L56	78	CCI 6.5" x 1.25" Plate	30.50 - 31.25	1.0000	1.0000
L56	83	CCI 6.5" x 1.25" Plate	30.50 - 31.25	1.0000	1.0000
L56	84	CCI 6.5" x 1.25" Plate	30.50 - 31.25	1.0000	1.0000
L56	85	CCI 6.5" x 1.25" Plate	30.50 - 31.25	1.0000	1.0000
L56	98	CCI 8.5" x 1.25" Plate	30.50 - 31.25	1.0000	1.0000
L56	101	CCI 8.5" x 1.25" Plate	30.50 - 31.25	1.0000	1.0000
L56	102	CCI 8.5" x 1.25" Plate	30.50 - 31.25	1.0000	1.0000
L57	1	LDF7-50A(1-5/8")	30.25 - 30.50	1.0000	1.0000
L57	4	2" Rigid Conduit	30.25 - 30.50	1.0000	1.0000
L57	7	HB158-21U6M48-30F(1-5/8)	30.25 - 30.50	1.0000	1.0000
L57	13	561(1-5/8")	30.25 - 30.50	1.0000	1.0000
L57	17	LDF4P-50A(1/2")	30.25 - 30.50	1.0000	1.0000
L57	64	MP3-05	30.25 - 30.50	1.0000	1.0000
L57	65	MP3-05	30.25 - 30.50	1.0000	1.0000
L57	66	MP3-05	30.25 - 30.50	1.0000	1.0000
L57	73	CCI 6" x 1" Plate	30.25 - 30.50	1.0000	1.0000
L57	74	CCI 6" x 1" Plate	30.25 - 30.50	1.0000	1.0000
L57	75	CCI 6" x 1" Plate	30.25 - 30.50	1.0000	1.0000
L57	83	CCI 6.5" x 1.25" Plate	30.25 - 30.50	1.0000	1.0000
L57	84	CCI 6.5" x 1.25" Plate	30.25 - 30.50	1.0000	1.0000
L57	85	CCI 6.5" x 1.25" Plate	30.25 - 30.50	1.0000	1.0000
L57	98	CCI 8.5" x 1.25" Plate	30.25 - 30.50	1.0000	1.0000
L57	101	CCI 8.5" x 1.25" Plate	30.25 - 30.50	1.0000	1.0000
L57	102	CCI 8.5" x 1.25" Plate	30.25 - 30.50	1.0000	1.0000
L58	1	LDF7-50A(1-5/8")	25.75 - 30.25	1.0000	1.0000
L58	4	2" Rigid Conduit	25.75 - 30.25	1.0000	1.0000
L58	7	HB158-21U6M48-30F(1-5/8)	25.75 - 30.25	1.0000	1.0000
L58	13	561(1-5/8")	25.75 - 30.25	1.0000	1.0000
L58	17	LDF4P-50A(1/2")	25.75 - 30.25	1.0000	1.0000
L58	64	MP3-05	25.75 - 30.25	1.0000	1.0000
L58	65	MP3-05	25.75 - 30.25	1.0000	1.0000
L58	66	MP3-05	25.75 - 30.25	1.0000	1.0000
L58	73	CCI 6" x 1" Plate	25.75 - 30.25	1.0000	1.0000
L58	74	CCI 6" x 1" Plate	25.75 - 30.25	1.0000	1.0000
L58	75	CCI 6" x 1" Plate	25.75 - 30.25	1.0000	1.0000
L58	83	CCI 6.5" x 1.25" Plate	25.75 - 30.25	1.0000	1.0000
L58	84	CCI 6.5" x 1.25" Plate	25.75 - 30.25	1.0000	1.0000
L58	85	CCI 6.5" x 1.25" Plate	25.75 - 30.25	1.0000	1.0000
L58	98	CCI 8.5" x 1.25" Plate	25.75 - 30.25	1.0000	1.0000
L58	101	CCI 8.5" x 1.25" Plate	25.75 - 30.25	1.0000	1.0000
L58	102	CCI 8.5" x 1.25" Plate	25.75 - 30.25	1.0000	1.0000
L59	1	LDF7-50A(1-5/8")	25.50 - 25.75	1.0000	1.0000
L59	4	2" Rigid Conduit	25.50 - 25.75	1.0000	1.0000
L59	7	HB158-21U6M48-30F(1-5/8)	25.50 - 25.75	1.0000	1.0000
L59	13	561(1-5/8")	25.50 - 25.75	1.0000	1.0000
L59	17	LDF4P-50A(1/2")	25.50 - 25.75	1.0000	1.0000
L59	64	MP3-05	25.50 - 25.75	1.0000	1.0000
L59	65	MP3-05	25.50 - 25.75	1.0000	1.0000
L59	66	MP3-05	25.50 - 25.75	1.0000	1.0000
L59	73	CCI 6" x 1" Plate	25.50 - 25.75	1.0000	1.0000
L59	74	CCI 6" x 1" Plate	25.50 - 25.75	1.0000	1.0000
L59	75	CCI 6" x 1" Plate	25.50 - 25.75	1.0000	1.0000
L59	83	CCI 6.5" x 1.25" Plate	25.50 - 25.75	1.0000	1.0000
L59	84	CCI 6.5" x 1.25" Plate	25.50 - 25.75	1.0000	1.0000
L59	85	CCI 6.5" x 1.25" Plate	25.50 - 25.75	1.0000	1.0000
L59	98	CCI 8.5" x 1.25" Plate	25.50 - 25.75	1.0000	1.0000
L59	101	CCI 8.5" x 1.25" Plate	25.50 - 25.75	1.0000	1.0000
L59	102	CCI 8.5" x 1.25" Plate	25.50 - 25.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L60	1	LDF7-50A(1-5/8")	24.67 - 25.50	1.0000	1.0000
L60	4	2" Rigid Conduit	24.67 - 25.50	1.0000	1.0000
L60	7	HB158-21U6M48-30F(1-5/8)	24.67 - 25.50	1.0000	1.0000
L60	13	561(1-5/8")	24.67 - 25.50	1.0000	1.0000
L60	17	LDF4P-50A(1/2")	24.67 - 25.50	1.0000	1.0000
L60	64	MP3-05	24.67 - 25.50	1.0000	1.0000
L60	65	MP3-05	24.67 - 25.50	1.0000	1.0000
L60	66	MP3-05	24.67 - 25.50	1.0000	1.0000
L60	73	CCI 6" x 1" Plate	24.67 - 25.50	1.0000	1.0000
L60	74	CCI 6" x 1" Plate	24.67 - 25.50	1.0000	1.0000
L60	75	CCI 6" x 1" Plate	24.67 - 25.50	1.0000	1.0000
L60	83	CCI 6.5" x 1.25" Plate	24.67 - 25.50	1.0000	1.0000
L60	84	CCI 6.5" x 1.25" Plate	24.67 - 25.50	1.0000	1.0000
L60	85	CCI 6.5" x 1.25" Plate	24.67 - 25.50	1.0000	1.0000
L60	98	CCI 8.5" x 1.25" Plate	24.67 - 25.50	1.0000	1.0000
L60	101	CCI 8.5" x 1.25" Plate	24.67 - 25.50	1.0000	1.0000
L60	102	CCI 8.5" x 1.25" Plate	24.67 - 25.50	1.0000	1.0000
L61	1	LDF7-50A(1-5/8")	24.42 - 24.67	1.0000	1.0000
L61	4	2" Rigid Conduit	24.42 - 24.67	1.0000	1.0000
L61	7	HB158-21U6M48-30F(1-5/8)	24.42 - 24.67	1.0000	1.0000
L61	13	561(1-5/8")	24.42 - 24.67	1.0000	1.0000
L61	17	LDF4P-50A(1/2")	24.42 - 24.67	1.0000	1.0000
L61	64	MP3-05	24.42 - 24.67	1.0000	1.0000
L61	65	MP3-05	24.42 - 24.67	1.0000	1.0000
L61	66	MP3-05	24.42 - 24.67	1.0000	1.0000
L61	73	CCI 6" x 1" Plate	24.42 - 24.67	1.0000	1.0000
L61	74	CCI 6" x 1" Plate	24.42 - 24.67	1.0000	1.0000
L61	75	CCI 6" x 1" Plate	24.42 - 24.67	1.0000	1.0000
L61	83	CCI 6.5" x 1.25" Plate	24.42 - 24.67	1.0000	1.0000
L61	84	CCI 6.5" x 1.25" Plate	24.42 - 24.67	1.0000	1.0000
L61	85	CCI 6.5" x 1.25" Plate	24.42 - 24.67	1.0000	1.0000
L61	98	CCI 8.5" x 1.25" Plate	24.42 - 24.67	1.0000	1.0000
L61	101	CCI 8.5" x 1.25" Plate	24.42 - 24.67	1.0000	1.0000
L61	102	CCI 8.5" x 1.25" Plate	24.42 - 24.67	1.0000	1.0000
L62	1	LDF7-50A(1-5/8")	19.42 - 24.42	1.0000	1.0000
L62	4	2" Rigid Conduit	19.42 - 24.42	1.0000	1.0000
L62	7	HB158-21U6M48-30F(1-5/8)	19.42 - 24.42	1.0000	1.0000
L62	13	561(1-5/8")	19.42 - 24.42	1.0000	1.0000
L62	17	LDF4P-50A(1/2")	19.42 - 24.42	1.0000	1.0000
L62	64	MP3-05	19.42 - 24.42	1.0000	1.0000
L62	65	MP3-05	19.42 - 24.42	1.0000	1.0000
L62	66	MP3-05	19.42 - 24.42	1.0000	1.0000
L62	73	CCI 6" x 1" Plate	19.42 - 24.42	1.0000	1.0000
L62	74	CCI 6" x 1" Plate	19.42 - 24.42	1.0000	1.0000
L62	75	CCI 6" x 1" Plate	19.42 - 24.42	1.0000	1.0000
L62	83	CCI 6.5" x 1.25" Plate	23.00 - 24.42	1.0000	1.0000
L62	84	CCI 6.5" x 1.25" Plate	23.00 - 24.42	1.0000	1.0000
L62	85	CCI 6.5" x 1.25" Plate	23.00 - 24.42	1.0000	1.0000
L62	98	CCI 8.5" x 1.25" Plate	19.42 - 24.42	1.0000	1.0000
L62	101	CCI 8.5" x 1.25" Plate	20.40 - 24.42	1.0000	1.0000
L62	102	CCI 8.5" x 1.25" Plate	20.40 - 24.42	1.0000	1.0000
L63	1	LDF7-50A(1-5/8")	14.42 - 19.42	1.0000	1.0000
L63	4	2" Rigid Conduit	14.42 - 19.42	1.0000	1.0000
L63	7	HB158-21U6M48-30F(1-5/8)	14.42 - 19.42	1.0000	1.0000
L63	13	561(1-5/8")	14.42 - 19.42	1.0000	1.0000
L63	17	LDF4P-50A(1/2")	14.42 - 19.42	1.0000	1.0000
L63	64	MP3-05	14.42 - 19.42	1.0000	1.0000
L63	65	MP3-05	14.42 - 19.42	1.0000	1.0000
L63	66	MP3-05	14.42 - 19.42	1.0000	1.0000
L63	70	MP3-04	14.42 - 15.50	1.0000	1.0000
L63	71	MP3-04	14.42 - 15.50	1.0000	1.0000
L63	73	CCI 6" x 1" Plate	14.42 - 19.42	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L63	74	CCI 6" x 1" Plate	14.42 - 19.42	1.0000	1.0000
L63	75	CCI 6" x 1" Plate	14.42 - 19.42	1.0000	1.0000
L63	98	CCI 8.5" x 1.25" Plate	14.42 - 19.42	1.0000	1.0000
L64	1	LDF7-50A(1-5/8")	14.08 - 14.42	1.0000	1.0000
L64	4	2" Rigid Conduit	14.08 - 14.42	1.0000	1.0000
L64	7	HB158-21U6M48-30F(1-5/8)	14.08 - 14.42	1.0000	1.0000
L64	13	561(1-5/8")	14.08 - 14.42	1.0000	1.0000
L64	17	LDF4P-50A(1/2")	14.08 - 14.42	1.0000	1.0000
L64	64	MP3-05	14.08 - 14.42	1.0000	1.0000
L64	65	MP3-05	14.08 - 14.42	1.0000	1.0000
L64	66	MP3-05	14.08 - 14.42	1.0000	1.0000
L64	70	MP3-04	14.08 - 14.42	1.0000	1.0000
L64	71	MP3-04	14.08 - 14.42	1.0000	1.0000
L64	73	CCI 6" x 1" Plate	14.08 - 14.42	1.0000	1.0000
L64	74	CCI 6" x 1" Plate	14.08 - 14.42	1.0000	1.0000
L64	75	CCI 6" x 1" Plate	14.08 - 14.42	1.0000	1.0000
L64	98	CCI 8.5" x 1.25" Plate	14.08 - 14.42	1.0000	1.0000
L65	1	LDF7-50A(1-5/8")	13.82 - 14.08	1.0000	1.0000
L65	4	2" Rigid Conduit	13.82 - 14.08	1.0000	1.0000
L65	7	HB158-21U6M48-30F(1-5/8)	13.82 - 14.08	1.0000	1.0000
L65	13	561(1-5/8")	13.82 - 14.08	1.0000	1.0000
L65	17	LDF4P-50A(1/2")	13.82 - 14.08	1.0000	1.0000
L65	64	MP3-05	13.82 - 14.08	1.0000	1.0000
L65	65	MP3-05	13.82 - 14.08	1.0000	1.0000
L65	66	MP3-05	13.82 - 14.08	1.0000	1.0000
L65	70	MP3-04	13.82 - 14.08	1.0000	1.0000
L65	71	MP3-04	13.82 - 14.08	1.0000	1.0000
L65	73	CCI 6" x 1" Plate	13.82 - 14.08	1.0000	1.0000
L65	74	CCI 6" x 1" Plate	13.82 - 14.08	1.0000	1.0000
L65	75	CCI 6" x 1" Plate	13.82 - 14.08	1.0000	1.0000
L65	98	CCI 8.5" x 1.25" Plate	13.82 - 14.08	1.0000	1.0000
L66	1	LDF7-50A(1-5/8")	13.67 - 13.82	1.0000	1.0000
L66	4	2" Rigid Conduit	13.67 - 13.82	1.0000	1.0000
L66	7	HB158-21U6M48-30F(1-5/8)	13.67 - 13.82	1.0000	1.0000
L66	13	561(1-5/8")	13.67 - 13.82	1.0000	1.0000
L66	17	LDF4P-50A(1/2")	13.67 - 13.82	1.0000	1.0000
L66	64	MP3-05	13.67 - 13.82	1.0000	1.0000
L66	65	MP3-05	13.67 - 13.82	1.0000	1.0000
L66	66	MP3-05	13.67 - 13.82	1.0000	1.0000
L66	70	MP3-04	13.67 - 13.82	1.0000	1.0000
L66	71	MP3-04	13.67 - 13.82	1.0000	1.0000
L66	73	CCI 6" x 1" Plate	13.67 - 13.82	1.0000	1.0000
L66	74	CCI 6" x 1" Plate	13.67 - 13.82	1.0000	1.0000
L66	75	CCI 6" x 1" Plate	13.67 - 13.82	1.0000	1.0000
L66	98	CCI 8.5" x 1.25" Plate	13.67 - 13.82	1.0000	1.0000
L67	1	LDF7-50A(1-5/8")	10.50 - 13.67	1.0000	1.0000
L67	4	2" Rigid Conduit	10.50 - 13.67	1.0000	1.0000
L67	7	HB158-21U6M48-30F(1-5/8)	10.50 - 13.67	1.0000	1.0000
L67	13	561(1-5/8")	10.50 - 13.67	1.0000	1.0000
L67	17	LDF4P-50A(1/2")	10.50 - 13.67	1.0000	1.0000
L67	64	MP3-05	11.50 - 13.67	1.0000	1.0000
L67	65	MP3-05	10.50 - 13.67	1.0000	1.0000
L67	66	MP3-05	10.50 - 13.67	1.0000	1.0000
L67	70	MP3-04	10.50 - 13.67	1.0000	1.0000
L67	71	MP3-04	10.50 - 13.67	1.0000	1.0000
L67	73	CCI 6" x 1" Plate	10.50 - 13.67	1.0000	1.0000
L67	74	CCI 6" x 1" Plate	10.50 - 13.67	1.0000	1.0000
L67	75	CCI 6" x 1" Plate	10.50 - 13.67	1.0000	1.0000
L67	98	CCI 8.5" x 1.25" Plate	10.50 - 13.67	1.0000	1.0000
L68	1	LDF7-50A(1-5/8")	10.25 - 10.50	1.0000	1.0000
L68	4	2" Rigid Conduit	10.25 - 10.50	1.0000	1.0000
L68	7	HB158-21U6M48-30F(1-5/8)	10.25 - 10.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L68	13	561(1-5/8")	10.25 - 10.50	1.0000	1.0000
L68	17	LDF4P-50A(1/2")	10.25 - 10.50	1.0000	1.0000
L68	65	MP3-05	10.25 - 10.50	1.0000	1.0000
L68	66	MP3-05	10.25 - 10.50	1.0000	1.0000
L68	70	MP3-04	10.25 - 10.50	1.0000	1.0000
L68	71	MP3-04	10.25 - 10.50	1.0000	1.0000
L68	73	CCI 6" x 1" Plate	10.25 - 10.50	1.0000	1.0000
L68	74	CCI 6" x 1" Plate	10.25 - 10.50	1.0000	1.0000
L68	75	CCI 6" x 1" Plate	10.25 - 10.50	1.0000	1.0000
L68	97	CCI 6" x 1" Plate	10.25 - 10.50	1.0000	1.0000
L69	1	LDF7-50A(1-5/8")	5.25 - 10.25	1.0000	1.0000
L69	4	2" Rigid Conduit	5.25 - 10.25	1.0000	1.0000
L69	7	HB158-21U6M48-30F(1-5/8)	5.25 - 10.25	1.0000	1.0000
L69	13	561(1-5/8")	5.25 - 10.25	1.0000	1.0000
L69	17	LDF4P-50A(1/2")	5.25 - 10.25	1.0000	1.0000
L69	65	MP3-05	5.25 - 10.25	1.0000	1.0000
L69	66	MP3-05	5.25 - 10.25	1.0000	1.0000
L69	70	MP3-04	5.25 - 10.25	1.0000	1.0000
L69	71	MP3-04	5.25 - 10.25	1.0000	1.0000
L69	73	CCI 6" x 1" Plate	5.25 - 10.25	1.0000	1.0000
L69	74	CCI 6" x 1" Plate	5.25 - 10.25	1.0000	1.0000
L69	75	CCI 6" x 1" Plate	5.25 - 10.25	1.0000	1.0000
L69	97	CCI 6" x 1" Plate	5.25 - 10.25	1.0000	1.0000
L70	1	LDF7-50A(1-5/8")	0.25 - 5.25	1.0000	1.0000
L70	4	2" Rigid Conduit	0.25 - 5.25	1.0000	1.0000
L70	7	HB158-21U6M48-30F(1-5/8)	0.25 - 5.25	1.0000	1.0000
L70	13	561(1-5/8")	0.25 - 5.25	1.0000	1.0000
L70	17	LDF4P-50A(1/2")	0.25 - 5.25	1.0000	1.0000
L70	65	MP3-05	0.25 - 5.25	1.0000	1.0000
L70	66	MP3-05	0.25 - 5.25	1.0000	1.0000
L70	70	MP3-04	0.25 - 5.25	1.0000	1.0000
L70	71	MP3-04	0.25 - 5.25	1.0000	1.0000
L70	73	CCI 6" x 1" Plate	0.25 - 5.25	1.0000	1.0000
L70	74	CCI 6" x 1" Plate	0.25 - 5.25	1.0000	1.0000
L70	75	CCI 6" x 1" Plate	0.25 - 5.25	1.0000	1.0000
L70	97	CCI 6" x 1" Plate	0.25 - 5.25	1.0000	1.0000
L71	1	LDF7-50A(1-5/8")	0.00 - 0.25	1.0000	1.0000
L71	4	2" Rigid Conduit	0.00 - 0.25	1.0000	1.0000
L71	7	HB158-21U6M48-30F(1-5/8)	0.00 - 0.25	1.0000	1.0000
L71	13	561(1-5/8")	0.00 - 0.25	1.0000	1.0000
L71	17	LDF4P-50A(1/2")	0.00 - 0.25	1.0000	1.0000
L71	65	MP3-05	0.00 - 0.25	1.0000	1.0000
L71	66	MP3-05	0.00 - 0.25	1.0000	1.0000
L71	70	MP3-04	0.00 - 0.25	1.0000	1.0000
L71	71	MP3-04	0.00 - 0.25	1.0000	1.0000
L71	73	CCI 6" x 1" Plate	0.00 - 0.25	1.0000	1.0000
L71	74	CCI 6" x 1" Plate	0.00 - 0.25	1.0000	1.0000
L71	75	CCI 6" x 1" Plate	0.00 - 0.25	1.0000	1.0000
L71	97	CCI 6" x 1" Plate	0.00 - 0.25	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
L9	105	CCI 6" x 1" Plate	121.33 - 122.60	Auto	0.0000
L9	106	CCI 6" x 1" Plate	121.33 - 122.60	Auto	0.0000
L9	107	CCI 6" x 1" Plate	121.33 - 122.60	Auto	0.0000
L10	105	CCI 6" x 1" Plate	120.08 - 121.33	Auto	0.0000
L10	106	CCI 6" x 1" Plate	120.08 - 121.33	Auto	0.0000
L10	107	CCI 6" x 1" Plate	120.08 - 121.33	Auto	0.0000
L11	105	CCI 6" x 1" Plate	119.83 - 120.08	Auto	0.0174
L11	106	CCI 6" x 1" Plate	119.83 - 120.08	Auto	0.0174
L11	107	CCI 6" x 1" Plate	119.83 - 120.08	Auto	0.0174
L12	95	CCI 4.5" x 1" Plate	117.50 - 119.00	Auto	0.0000
L12	105	CCI 6" x 1" Plate	117.50 - 119.83	Auto	0.0069
L12	106	CCI 6" x 1" Plate	117.50 - 119.83	Auto	0.0069
L12	107	CCI 6" x 1" Plate	117.50 - 119.83	Auto	0.0069
L13	95	CCI 4.5" x 1" Plate	117.25 - 117.50	Auto	0.0000
L13	105	CCI 6" x 1" Plate	117.25 - 117.50	Auto	0.0016
L13	106	CCI 6" x 1" Plate	117.25 - 117.50	Auto	0.0016
L13	107	CCI 6" x 1" Plate	117.25 - 117.50	Auto	0.0016
L14	93	CCI 4.5" x 1" Plate	115.50 - 117.00	Auto	0.0000
L14	94	CCI 4.5" x 1" Plate	115.50 - 117.00	Auto	0.0000
L14	95	CCI 4.5" x 1" Plate	115.50 - 117.25	Auto	0.0000
L14	105	CCI 6" x 1" Plate	115.50 - 117.25	Auto	0.0000
L14	106	CCI 6" x 1" Plate	115.50 - 117.25	Auto	0.0000
L14	107	CCI 6" x 1" Plate	115.50 - 117.25	Auto	0.0000
L15	93	CCI 4.5" x 1" Plate	115.25 - 115.50	Auto	0.0000
L15	94	CCI 4.5" x 1" Plate	115.25 - 115.50	Auto	0.0000
L15	95	CCI 4.5" x 1" Plate	115.25 - 115.50	Auto	0.0000
L15	105	CCI 6" x 1" Plate	115.25 - 115.50	Auto	0.0577
L15	106	CCI 6" x 1" Plate	115.25 - 115.50	Auto	0.0577
L15	107	CCI 6" x 1" Plate	115.25 - 115.50	Auto	0.0577
L16	93	CCI 4.5" x 1" Plate	110.25 - 115.25	Auto	0.0000
L16	94	CCI 4.5" x 1" Plate	110.25 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L16	95	CCI 4.5" x 1" Plate	110.25 - 115.25	Auto	0.0000
L16	105	CCI 6" x 1" Plate	110.25 - 115.25	Auto	0.0305
L16	106	CCI 6" x 1" Plate	110.25 - 115.25	Auto	0.0305
L16	107	CCI 6" x 1" Plate	110.25 - 115.25	Auto	0.0305
L17	93	CCI 4.5" x 1" Plate	104.08 - 110.25	Auto	0.0000
L17	94	CCI 4.5" x 1" Plate	104.08 - 110.25	Auto	0.0000
L17	95	CCI 4.5" x 1" Plate	104.08 - 110.25	Auto	0.0000
L17	105	CCI 6" x 1" Plate	104.08 - 110.25	Auto	0.0002
L17	106	CCI 6" x 1" Plate	104.08 - 110.25	Auto	0.0002
L17	107	CCI 6" x 1" Plate	104.08 - 110.25	Auto	0.0002
L18	93	CCI 4.5" x 1" Plate	102.82 - 104.08	Auto	0.0000
L18	94	CCI 4.5" x 1" Plate	102.82 - 104.08	Auto	0.0000
L18	95	CCI 4.5" x 1" Plate	102.82 - 104.08	Auto	0.0000
L18	105	CCI 6" x 1" Plate	102.82 - 104.08	Auto	0.0006
L18	106	CCI 6" x 1" Plate	102.82 - 104.08	Auto	0.0006
L18	107	CCI 6" x 1" Plate	102.82 - 104.08	Auto	0.0006
L19	93	CCI 4.5" x 1" Plate	100.50 - 102.82	Auto	0.0000
L19	94	CCI 4.5" x 1" Plate	100.50 - 102.82	Auto	0.0000
L19	95	CCI 4.5" x 1" Plate	100.50 - 102.82	Auto	0.0000
L19	105	CCI 6" x 1" Plate	100.50 - 102.82	Auto	0.0000
L19	106	CCI 6" x 1" Plate	100.50 - 102.82	Auto	0.0000
L19	107	CCI 6" x 1" Plate	100.60 - 102.82	Auto	0.0000
L20	79	CCI 6" x 1" Plate	100.25 - 100.50	Manual	1.0000
L20	80	CCI 6" x 1" Plate	100.25 - 100.50	Manual	1.0000
L20	81	CCI 6" x 1" Plate	100.25 - 100.50	Manual	1.0000
L20	93	CCI 4.5" x 1" Plate	100.25 - 100.50	Auto	0.0000
L20	94	CCI 4.5" x 1" Plate	100.25 - 100.50	Auto	0.0000
L20	95	CCI 4.5" x 1" Plate	100.25 - 100.50	Auto	0.0000
L20	105	CCI 6" x 1" Plate	100.25 - 100.50	Auto	0.0000
L20	106	CCI 6" x 1" Plate	100.25 - 100.50	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L21	79	CCI 6" x 1" Plate	98.50 - 100.25	Manual	1.0000
L21	80	CCI 6" x 1" Plate	98.50 - 100.25	Manual	1.0000
L21	81	CCI 6" x 1" Plate	98.50 - 100.25	Manual	1.0000
L21	93	CCI 4.5" x 1" Plate	98.50 - 100.25	Auto	0.0000
L21	94	CCI 4.5" x 1" Plate	98.50 - 100.25	Auto	0.0000
L21	95	CCI 4.5" x 1" Plate	99.00 - 100.25	Auto	0.0000
L21	105	CCI 6" x 1" Plate	98.50 - 100.25	Auto	0.0000
L21	106	CCI 6" x 1" Plate	98.50 - 100.25	Auto	0.0000
L22	79	CCI 6" x 1" Plate	98.25 - 98.50	Manual	1.0000
L22	80	CCI 6" x 1" Plate	98.25 - 98.50	Manual	1.0000
L22	81	CCI 6" x 1" Plate	98.25 - 98.50	Manual	1.0000
L22	93	CCI 4.5" x 1" Plate	98.25 - 98.50	Auto	0.0000
L22	94	CCI 4.5" x 1" Plate	98.25 - 98.50	Auto	0.0000
L22	105	CCI 6" x 1" Plate	98.25 - 98.50	Auto	0.0000
L22	106	CCI 6" x 1" Plate	98.25 - 98.50	Auto	0.0000
L23	79	CCI 6" x 1" Plate	93.25 - 98.25	Manual	1.0000
L23	80	CCI 6" x 1" Plate	93.25 - 98.25	Manual	1.0000
L23	81	CCI 6" x 1" Plate	93.25 - 98.25	Manual	1.0000
L23	93	CCI 4.5" x 1" Plate	97.00 - 98.25	Auto	0.0000
L23	94	CCI 4.5" x 1" Plate	97.00 - 98.25	Auto	0.0000
L23	105	CCI 6" x 1" Plate	93.25 - 98.25	Auto	0.0000
L23	106	CCI 6" x 1" Plate	93.25 - 98.25	Auto	0.0000
L24	79	CCI 6" x 1" Plate	90.50 - 93.25	Manual	1.0000
L24	80	CCI 6" x 1" Plate	90.50 - 93.25	Manual	1.0000
L24	81	CCI 6" x 1" Plate	90.50 - 93.25	Manual	1.0000
L24	105	CCI 6" x 1" Plate	90.60 - 93.25	Auto	0.0000
L24	106	CCI 6" x 1" Plate	90.60 - 93.25	Auto	0.0000
L25	79	CCI 6" x 1" Plate	90.25 - 90.50	Manual	1.0000
L25	80	CCI 6" x 1" Plate	90.25 - 90.50	Manual	1.0000
L25	81	CCI 6" x 1" Plate	90.25 - 90.50	Manual	1.0000
L25	103	CCI 8.5" x 1.25" Plate	90.25 - 90.50	Auto	0.2129
L25	104	CCI 8.5" x 1.25" Plate	90.25 - 90.50	Auto	0.2129
L26	79	CCI 6" x 1" Plate	85.25 - 90.25	Manual	1.0000
L26	80	CCI 6" x 1" Plate	85.25 - 90.25	Manual	1.0000
L26	81	CCI 6" x 1" Plate	85.25 - 90.25	Manual	1.0000
L26	89	CCI 6.5" x 1.25" Plate	85.25 - 85.50	Auto	0.0000
L26	90	CCI 6.5" x 1.25" Plate	85.25 - 85.50	Auto	0.0000
L26	91	CCI 6.5" x 1.25" Plate	85.25 - 85.50	Auto	0.0000
L26	103	CCI 8.5" x 1.25" Plate	85.25 - 90.25	Auto	0.1937
L26	104	CCI 8.5" x 1.25" Plate	85.25 - 90.25	Auto	0.1937
L27	79	CCI 6" x 1" Plate	83.50 - 85.25	Manual	1.0000
L27	80	CCI 6" x 1" Plate	83.50 - 85.25	Manual	1.0000
L27	81	CCI 6" x 1" Plate	83.50 - 85.25	Manual	1.0000
L27	89	CCI 6.5" x 1.25" Plate	83.50 - 85.25	Auto	0.0000
L27	90	CCI 6.5" x 1.25" Plate	83.50 - 85.25	Auto	0.0000
L27	91	CCI 6.5" x 1.25" Plate	83.50 - 85.25	Auto	0.0000
L27	99	CCI 8.5" x 1.25" Plate	83.50 - 85.00	Auto	0.1694
L27	103	CCI 8.5" x 1.25" Plate	83.50 - 85.25	Auto	0.1701
L27	104	CCI 8.5" x 1.25" Plate	83.50 - 85.25	Auto	0.1701
L28	79	CCI 6" x 1" Plate	83.25 - 83.50	Manual	1.0000
L28	80	CCI 6" x 1" Plate	83.25 - 83.50	Manual	1.0000
L28	81	CCI 6" x 1" Plate	83.25 - 83.50	Manual	1.0000
L28	89	CCI 6.5" x 1.25" Plate	83.25 - 83.50	Auto	0.0102
L28	90	CCI 6.5" x 1.25" Plate	83.25 - 83.50	Auto	0.0102
L28	91	CCI 6.5" x 1.25" Plate	83.25 - 83.50	Auto	0.0102
L28	99	CCI 8.5" x 1.25" Plate	83.25 - 83.50	Auto	0.2431
L28	103	CCI 8.5" x 1.25" Plate	83.25 - 83.50	Auto	0.2431
L28	104	CCI 8.5" x 1.25" Plate	83.25 - 83.50	Auto	0.2431
L29	79	CCI 6" x 1" Plate	80.75 - 83.25	Manual	1.0000
L29	80	CCI 6" x 1" Plate	80.75 - 83.25	Manual	1.0000
L29	81	CCI 6" x 1" Plate	80.75 - 83.25	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L29	89	CCI 6.5" x 1.25" Plate	80.75 - 83.25	Auto	0.0000
L29	90	CCI 6.5" x 1.25" Plate	80.75 - 83.25	Auto	0.0000
L29	91	CCI 6.5" x 1.25" Plate	80.75 - 83.25	Auto	0.0000
L29	99	CCI 8.5" x 1.25" Plate	80.75 - 83.25	Auto	0.2272
L29	103	CCI 8.5" x 1.25" Plate	80.75 - 83.25	Auto	0.2272
L29	104	CCI 8.5" x 1.25" Plate	80.75 - 83.25	Auto	0.2272
L30	79	CCI 6" x 1" Plate	80.50 - 80.75	Manual	1.0000
L30	80	CCI 6" x 1" Plate	80.50 - 80.75	Manual	1.0000
L30	81	CCI 6" x 1" Plate	80.50 - 80.75	Manual	1.0000
L30	89	CCI 6.5" x 1.25" Plate	80.50 - 80.75	Auto	0.0511
L30	90	CCI 6.5" x 1.25" Plate	80.50 - 80.75	Auto	0.0511
L30	91	CCI 6.5" x 1.25" Plate	80.50 - 80.75	Auto	0.0511
L30	99	CCI 8.5" x 1.25" Plate	80.50 - 80.75	Auto	0.2744
L30	103	CCI 8.5" x 1.25" Plate	80.50 - 80.75	Auto	0.2744
L30	104	CCI 8.5" x 1.25" Plate	80.50 - 80.75	Auto	0.2744
L31	79	CCI 6" x 1" Plate	80.25 - 80.50	Manual	1.0000
L31	80	CCI 6" x 1" Plate	80.25 - 80.50	Manual	1.0000
L31	81	CCI 6" x 1" Plate	80.25 - 80.50	Manual	1.0000
L31	89	CCI 6.5" x 1.25" Plate	80.25 - 80.50	Auto	0.0131
L31	90	CCI 6.5" x 1.25" Plate	80.25 - 80.50	Auto	0.0131
L31	91	CCI 6.5" x 1.25" Plate	80.25 - 80.50	Auto	0.0131
L31	99	CCI 8.5" x 1.25" Plate	80.25 - 80.50	Auto	0.2453
L31	103	CCI 8.5" x 1.25" Plate	80.25 - 80.50	Auto	0.2453
L31	104	CCI 8.5" x 1.25" Plate	80.25 - 80.50	Auto	0.2453
L32	79	CCI 6" x 1" Plate	77.50 - 80.25	Manual	1.0000
L32	80	CCI 6" x 1" Plate	77.50 - 80.25	Manual	1.0000
L32	81	CCI 6" x 1" Plate	77.50 - 80.25	Manual	1.0000
L32	89	CCI 6.5" x 1.25" Plate	77.50 - 80.25	Auto	0.0012
L32	90	CCI 6.5" x 1.25" Plate	77.50 - 80.25	Auto	0.0012
L32	91	CCI 6.5" x 1.25" Plate	77.50 - 80.25	Auto	0.0012
L32	99	CCI 8.5" x 1.25" Plate	77.50 - 80.25	Auto	0.2327
L32	103	CCI 8.5" x 1.25" Plate	77.50 - 80.25	Auto	0.2327
L32	104	CCI 8.5" x 1.25" Plate	77.50 - 80.25	Auto	0.2327
L33	79	CCI 6" x 1" Plate	77.25 - 77.50	Manual	1.0000
L33	80	CCI 6" x 1" Plate	77.25 - 77.50	Manual	1.0000
L33	81	CCI 6" x 1" Plate	77.25 - 77.50	Manual	1.0000
L33	89	CCI 6.5" x 1.25" Plate	77.25 - 77.50	Auto	0.0000
L33	90	CCI 6.5" x 1.25" Plate	77.25 - 77.50	Auto	0.0000
L33	91	CCI 6.5" x 1.25" Plate	77.25 - 77.50	Auto	0.0000
L33	99	CCI 8.5" x 1.25" Plate	77.25 - 77.50	Auto	0.1372
L33	103	CCI 8.5" x 1.25" Plate	77.25 - 77.50	Auto	0.1372
L33	104	CCI 8.5" x 1.25" Plate	77.25 - 77.50	Auto	0.1372
L34	79	CCI 6" x 1" Plate	68.82 - 77.25	Manual	1.0000
L34	80	CCI 6" x 1" Plate	68.82 - 77.25	Manual	1.0000
L34	81	CCI 6" x 1" Plate	68.82 - 77.25	Manual	1.0000
L34	89	CCI 6.5" x 1.25" Plate	72.50 - 77.25	Auto	0.0000
L34	90	CCI 6.5" x 1.25" Plate	72.50 - 77.25	Auto	0.0000
L34	91	CCI 6.5" x 1.25" Plate	72.50 - 77.25	Auto	0.0000
L34	99	CCI 8.5" x 1.25" Plate	68.82 - 77.25	Auto	0.1120
L34	103	CCI 8.5" x 1.25" Plate	68.82 - 77.25	Auto	0.1120
L34	104	CCI 8.5" x 1.25" Plate	68.82 - 77.25	Auto	0.1120
L35	79	CCI 6" x 1" Plate	68.29 - 68.82	Manual	1.0000
L35	80	CCI 6" x 1" Plate	68.29 - 68.82	Manual	1.0000
L35	81	CCI 6" x 1" Plate	68.29 - 68.82	Manual	1.0000
L35	99	CCI 8.5" x 1.25" Plate	68.29 - 68.82	Auto	0.1253
L35	103	CCI 8.5" x 1.25" Plate	68.29 - 68.82	Auto	0.1253
L35	104	CCI 8.5" x 1.25" Plate	68.29 - 68.82	Auto	0.1253
L36	79	CCI 6" x 1" Plate	64.25 - 68.29	Manual	1.0000
L36	80	CCI 6" x 1" Plate	64.25 - 68.29	Manual	1.0000
L36	81	CCI 6" x 1" Plate	64.25 - 68.29	Manual	1.0000
L36	86	CCI 6.5" x 1.25" Plate	64.25 - 67.00	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L36	87	CCI 6.5" x 1.25" Plate	64.25 - 67.00	Auto	0.0000
L36	88	CCI 6.5" x 1.25" Plate	64.25 - 67.00	Auto	0.0000
L36	99	CCI 8.5" x 1.25" Plate	64.25 - 68.29	Auto	0.1081
L36	103	CCI 8.5" x 1.25" Plate	64.25 - 68.29	Auto	0.1081
L36	104	CCI 8.5" x 1.25" Plate	64.25 - 68.29	Auto	0.1081
L37	79	CCI 6" x 1" Plate	64.00 - 64.25	Manual	1.0000
L37	80	CCI 6" x 1" Plate	64.00 - 64.25	Manual	1.0000
L37	81	CCI 6" x 1" Plate	64.00 - 64.25	Manual	1.0000
L37	86	CCI 6.5" x 1.25" Plate	64.00 - 64.25	Auto	0.0000
L37	87	CCI 6.5" x 1.25" Plate	64.00 - 64.25	Auto	0.0000
L37	88	CCI 6.5" x 1.25" Plate	64.00 - 64.25	Auto	0.0000
L37	99	CCI 8.5" x 1.25" Plate	64.00 - 64.25	Auto	0.1389
L37	103	CCI 8.5" x 1.25" Plate	64.00 - 64.25	Auto	0.1389
L37	104	CCI 8.5" x 1.25" Plate	64.00 - 64.25	Auto	0.1389
L38	69	MP3-04	60.50 - 61.50	Auto	0.0000
L38	79	CCI 6" x 1" Plate	60.50 - 64.00	Manual	1.0000
L38	80	CCI 6" x 1" Plate	60.50 - 64.00	Manual	1.0000
L38	81	CCI 6" x 1" Plate	60.50 - 64.00	Manual	1.0000
L38	86	CCI 6.5" x 1.25" Plate	60.50 - 64.00	Auto	0.0000
L38	87	CCI 6.5" x 1.25" Plate	60.50 - 64.00	Auto	0.0000
L38	88	CCI 6.5" x 1.25" Plate	60.50 - 64.00	Auto	0.0000
L38	99	CCI 8.5" x 1.25" Plate	60.50 - 64.00	Auto	0.1241
L38	103	CCI 8.5" x 1.25" Plate	60.50 - 64.00	Auto	0.1241
L38	104	CCI 8.5" x 1.25" Plate	60.50 - 64.00	Auto	0.1241
L39	67	MP3-04	60.25 - 60.50	Auto	0.0000
L39	68	MP3-04	60.25 - 60.50	Auto	0.0000
L39	69	MP3-04	60.25 - 60.50	Auto	0.0000
L39	76	CCI 6.5" x 1.25" Plate	60.25 - 60.50	Manual	1.0000
L39	77	CCI 6.5" x 1.25" Plate	60.25 - 60.50	Manual	1.0000
L39	78	CCI 6.5" x 1.25" Plate	60.25 - 60.50	Manual	1.0000
L39	86	CCI 6.5" x 1.25" Plate	60.25 - 60.50	Auto	0.0000
L39	87	CCI 6.5" x 1.25" Plate	60.25 - 60.50	Auto	0.0000
L39	88	CCI 6.5" x 1.25" Plate	60.25 - 60.50	Auto	0.0000
L39	99	CCI 8.5" x 1.25" Plate	60.25 - 60.50	Auto	0.1329
L39	103	CCI 8.5" x 1.25" Plate	60.25 - 60.50	Auto	0.1329
L39	104	CCI 8.5" x 1.25" Plate	60.25 - 60.50	Auto	0.1329
L40	67	MP3-04	60.08 - 60.25	Auto	0.0000
L40	68	MP3-04	60.08 - 60.25	Auto	0.0000
L40	69	MP3-04	60.08 - 60.25	Auto	0.0000
L40	76	CCI 6.5" x 1.25" Plate	60.08 - 60.25	Manual	1.0000
L40	77	CCI 6.5" x 1.25" Plate	60.08 - 60.25	Manual	1.0000
L40	78	CCI 6.5" x 1.25" Plate	60.08 - 60.25	Manual	1.0000
L40	86	CCI 6.5" x 1.25" Plate	60.08 - 60.25	Auto	0.0000
L40	87	CCI 6.5" x 1.25" Plate	60.08 - 60.25	Auto	0.0000
L40	88	CCI 6.5" x 1.25" Plate	60.08 - 60.25	Auto	0.0000
L40	99	CCI 8.5" x 1.25" Plate	60.08 - 60.25	Auto	0.1316
L40	103	CCI 8.5" x 1.25" Plate	60.08 - 60.25	Auto	0.1316
L40	104	CCI 8.5" x 1.25" Plate	60.08 - 60.25	Auto	0.1316
L41	67	MP3-04	59.83 - 60.08	Auto	0.0000
L41	68	MP3-04	59.83 - 60.08	Auto	0.0000
L41	69	MP3-04	59.83 - 60.08	Auto	0.0000
L41	76	CCI 6.5" x 1.25" Plate	59.83 - 60.08	Manual	1.0000
L41	77	CCI 6.5" x 1.25" Plate	59.83 - 60.08	Manual	1.0000
L41	78	CCI 6.5" x 1.25" Plate	59.83 - 60.08	Manual	1.0000
L41	86	CCI 6.5" x 1.25" Plate	59.83 - 60.08	Auto	0.0000
L41	87	CCI 6.5" x 1.25" Plate	59.83 - 60.08	Auto	0.0000
L41	88	CCI 6.5" x 1.25" Plate	59.83 - 60.08	Auto	0.0000
L41	99	CCI 8.5" x 1.25" Plate	60.00 - 60.08	Auto	0.1467
L41	103	CCI 8.5" x 1.25" Plate	59.83 - 60.08	Auto	0.1462
L41	104	CCI 8.5" x 1.25" Plate	59.83 - 60.08	Auto	0.1462
L42	67	MP3-04	59.08 - 59.83	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L42	68	MP3-04	59.08 - 59.83	Auto	0.0000
L42	69	MP3-04	59.08 - 59.83	Auto	0.0000
L42	76	CCI 6.5" x 1.25" Plate	59.08 - 59.83	Manual	1.0000
L42	77	CCI 6.5" x 1.25" Plate	59.08 - 59.83	Manual	1.0000
L42	78	CCI 6.5" x 1.25" Plate	59.08 - 59.83	Manual	1.0000
L42	86	CCI 6.5" x 1.25" Plate	59.08 - 59.83	Auto	0.0000
L42	87	CCI 6.5" x 1.25" Plate	59.08 - 59.83	Auto	0.0000
L42	88	CCI 6.5" x 1.25" Plate	59.08 - 59.83	Auto	0.0000
L42	103	CCI 8.5" x 1.25" Plate	59.08 - 59.83	Auto	0.1433
L42	104	CCI 8.5" x 1.25" Plate	59.08 - 59.83	Auto	0.1433
L43	67	MP3-04	58.83 - 59.08	Auto	0.0000
L43	68	MP3-04	58.83 - 59.08	Auto	0.0000
L43	69	MP3-04	58.83 - 59.08	Auto	0.0000
L43	76	CCI 6.5" x 1.25" Plate	58.83 - 59.08	Manual	1.0000
L43	77	CCI 6.5" x 1.25" Plate	58.83 - 59.08	Manual	1.0000
L43	78	CCI 6.5" x 1.25" Plate	58.83 - 59.08	Manual	1.0000
L43	86	CCI 6.5" x 1.25" Plate	58.83 - 59.08	Auto	0.0000
L43	87	CCI 6.5" x 1.25" Plate	58.83 - 59.08	Auto	0.0000
L43	88	CCI 6.5" x 1.25" Plate	58.83 - 59.08	Auto	0.0000
L43	103	CCI 8.5" x 1.25" Plate	58.83 - 59.08	Auto	0.1640
L43	104	CCI 8.5" x 1.25" Plate	58.83 - 59.08	Auto	0.1640
L44	67	MP3-04	55.42 - 58.83	Auto	0.0000
L44	68	MP3-04	55.42 - 58.83	Auto	0.0000
L44	69	MP3-04	55.42 - 58.83	Auto	0.0000
L44	76	CCI 6.5" x 1.25" Plate	55.42 - 58.83	Manual	1.0000
L44	77	CCI 6.5" x 1.25" Plate	55.42 - 58.83	Manual	1.0000
L44	78	CCI 6.5" x 1.25" Plate	55.42 - 58.83	Manual	1.0000
L44	86	CCI 6.5" x 1.25" Plate	55.42 - 58.83	Auto	0.0000
L44	87	CCI 6.5" x 1.25" Plate	55.42 - 58.83	Auto	0.0000
L44	88	CCI 6.5" x 1.25" Plate	55.42 - 58.83	Auto	0.0000
L44	103	CCI 8.5" x 1.25" Plate	55.50 - 58.83	Auto	0.1457
L44	104	CCI 8.5" x 1.25" Plate	55.50 - 58.83	Auto	0.1457
L45	67	MP3-04	55.17 - 55.42	Auto	0.0000
L45	68	MP3-04	55.17 - 55.42	Auto	0.0000
L45	69	MP3-04	55.17 - 55.42	Auto	0.0000
L45	76	CCI 6.5" x 1.25" Plate	55.17 - 55.42	Manual	1.0000
L45	77	CCI 6.5" x 1.25" Plate	55.17 - 55.42	Manual	1.0000
L45	78	CCI 6.5" x 1.25" Plate	55.17 - 55.42	Manual	1.0000
L45	86	CCI 6.5" x 1.25" Plate	55.17 - 55.42	Auto	0.0000
L45	87	CCI 6.5" x 1.25" Plate	55.17 - 55.42	Auto	0.0000
L45	88	CCI 6.5" x 1.25" Plate	55.17 - 55.42	Auto	0.0000
L45	101	CCI 8.5" x 1.25" Plate	55.17 - 55.40	Auto	0.1347
L45	102	CCI 8.5" x 1.25" Plate	55.17 - 55.40	Auto	0.1347
L46	67	MP3-04	54.75 - 55.17	Auto	0.0000
L46	68	MP3-04	54.75 - 55.17	Auto	0.0000
L46	69	MP3-04	54.75 - 55.17	Auto	0.0000
L46	76	CCI 6.5" x 1.25" Plate	54.75 - 55.17	Manual	1.0000
L46	77	CCI 6.5" x 1.25" Plate	54.75 - 55.17	Manual	1.0000
L46	78	CCI 6.5" x 1.25" Plate	54.75 - 55.17	Manual	1.0000
L46	86	CCI 6.5" x 1.25" Plate	54.75 - 55.17	Auto	0.0000
L46	87	CCI 6.5" x 1.25" Plate	54.75 - 55.17	Auto	0.0000
L46	88	CCI 6.5" x 1.25" Plate	54.75 - 55.17	Auto	0.0000
L46	101	CCI 8.5" x 1.25" Plate	54.75 - 55.17	Auto	0.1329
L46	102	CCI 8.5" x 1.25" Plate	54.75 - 55.17	Auto	0.1329
L47	67	MP3-04	54.50 - 54.75	Auto	0.0000
L47	68	MP3-04	54.50 - 54.75	Auto	0.0000
L47	69	MP3-04	54.50 - 54.75	Auto	0.0000
L47	76	CCI 6.5" x 1.25" Plate	54.50 - 54.75	Manual	1.0000
L47	77	CCI 6.5" x 1.25" Plate	54.50 - 54.75	Manual	1.0000
L47	78	CCI 6.5" x 1.25" Plate	54.50 - 54.75	Manual	1.0000
L47	86	CCI 6.5" x 1.25" Plate	54.50 - 54.75	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L47	87	CCI 6.5" x 1.25" Plate	54.50 - 54.75	Auto	0.0000
L47	88	CCI 6.5" x 1.25" Plate	54.50 - 54.75	Auto	0.0000
L47	101	CCI 8.5" x 1.25" Plate	54.50 - 54.75	Auto	0.0679
L47	102	CCI 8.5" x 1.25" Plate	54.50 - 54.75	Auto	0.0679
L48	67	MP3-04	49.50 - 54.50	Auto	0.0000
L48	68	MP3-04	49.50 - 54.50	Auto	0.0000
L48	69	MP3-04	49.50 - 54.50	Auto	0.0000
L48	76	CCI 6.5" x 1.25" Plate	49.50 - 54.50	Manual	1.0000
L48	77	CCI 6.5" x 1.25" Plate	49.50 - 54.50	Manual	1.0000
L48	78	CCI 6.5" x 1.25" Plate	49.50 - 54.50	Manual	1.0000
L48	86	CCI 6.5" x 1.25" Plate	52.00 - 54.50	Auto	0.0000
L48	87	CCI 6.5" x 1.25" Plate	52.00 - 54.50	Auto	0.0000
L48	88	CCI 6.5" x 1.25" Plate	52.00 - 54.50	Auto	0.0000
L48	101	CCI 8.5" x 1.25" Plate	49.50 - 54.50	Auto	0.0486
L48	102	CCI 8.5" x 1.25" Plate	49.50 - 54.50	Auto	0.0486
L49	67	MP3-04	44.50 - 49.50	Auto	0.0000
L49	68	MP3-04	44.50 - 49.50	Auto	0.0000
L49	69	MP3-04	44.50 - 49.50	Auto	0.0000
L49	76	CCI 6.5" x 1.25" Plate	44.50 - 49.50	Manual	1.0000
L49	77	CCI 6.5" x 1.25" Plate	44.50 - 49.50	Manual	1.0000
L49	78	CCI 6.5" x 1.25" Plate	44.50 - 49.50	Manual	1.0000
L49	98	CCI 8.5" x 1.25" Plate	44.50 - 45.50	Auto	0.0040
L49	101	CCI 8.5" x 1.25" Plate	44.50 - 49.50	Auto	0.0156
L49	102	CCI 8.5" x 1.25" Plate	44.50 - 49.50	Auto	0.0156
L50	67	MP3-04	41.25 - 44.50	Auto	0.0000
L50	68	MP3-04	41.25 - 44.50	Auto	0.0000
L50	69	MP3-04	41.25 - 44.50	Auto	0.0000
L50	76	CCI 6.5" x 1.25" Plate	41.25 - 44.50	Manual	1.0000
L50	77	CCI 6.5" x 1.25" Plate	41.25 - 44.50	Manual	1.0000
L50	78	CCI 6.5" x 1.25" Plate	41.25 - 44.50	Manual	1.0000
L50	98	CCI 8.5" x 1.25" Plate	41.25 - 44.50	Auto	0.0000
L50	101	CCI 8.5" x 1.25" Plate	41.25 - 44.50	Auto	0.0000
L50	102	CCI 8.5" x 1.25" Plate	41.25 - 44.50	Auto	0.0000
L51	67	MP3-04	41.00 - 41.25	Auto	0.0000
L51	68	MP3-04	41.00 - 41.25	Auto	0.0000
L51	69	MP3-04	41.00 - 41.25	Auto	0.0000
L51	76	CCI 6.5" x 1.25" Plate	41.00 - 41.25	Manual	1.0000
L51	77	CCI 6.5" x 1.25" Plate	41.00 - 41.25	Manual	1.0000
L51	78	CCI 6.5" x 1.25" Plate	41.00 - 41.25	Manual	1.0000
L51	98	CCI 8.5" x 1.25" Plate	41.00 - 41.25	Auto	0.0050
L51	101	CCI 8.5" x 1.25" Plate	41.00 - 41.25	Auto	0.0050
L51	102	CCI 8.5" x 1.25" Plate	41.00 - 41.25	Auto	0.0050
L52	67	MP3-04	34.29 - 41.00	Auto	0.0000
L52	68	MP3-04	34.29 - 41.00	Auto	0.0000
L52	69	MP3-04	34.29 - 41.00	Auto	0.0000
L52	76	CCI 6.5" x 1.25" Plate	34.29 - 41.00	Manual	1.0000
L52	77	CCI 6.5" x 1.25" Plate	34.29 - 41.00	Manual	1.0000
L52	78	CCI 6.5" x 1.25" Plate	34.29 - 41.00	Manual	1.0000
L52	83	CCI 6.5" x 1.25" Plate	34.29 - 38.00	Auto	0.0000
L52	84	CCI 6.5" x 1.25" Plate	34.29 - 38.00	Auto	0.0000
L52	85	CCI 6.5" x 1.25" Plate	34.29 - 38.00	Auto	0.0000
L52	98	CCI 8.5" x 1.25" Plate	34.29 - 41.00	Auto	0.0002
L52	101	CCI 8.5" x 1.25" Plate	34.29 - 41.00	Auto	0.0002
L52	102	CCI 8.5" x 1.25" Plate	34.29 - 41.00	Auto	0.0002
L53	67	MP3-04	33.29 - 34.29	Auto	0.0000
L53	68	MP3-04	33.29 - 34.29	Auto	0.0000
L53	69	MP3-04	33.29 - 34.29	Auto	0.0000
L53	76	CCI 6.5" x 1.25" Plate	33.29 - 34.29	Manual	1.0000
L53	77	CCI 6.5" x 1.25" Plate	33.29 - 34.29	Manual	1.0000
L53	78	CCI 6.5" x 1.25" Plate	33.29 - 34.29	Manual	1.0000
L53	83	CCI 6.5" x 1.25" Plate	33.29 - 34.29	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L53	84	CCI 6.5" x 1.25" Plate	33.29 - 34.29	Auto	0.0000
L53	85	CCI 6.5" x 1.25" Plate	33.29 - 34.29	Auto	0.0000
L53	98	CCI 8.5" x 1.25" Plate	33.29 - 34.29	Auto	0.0808
L53	101	CCI 8.5" x 1.25" Plate	33.29 - 34.29	Auto	0.0808
L53	102	CCI 8.5" x 1.25" Plate	33.29 - 34.29	Auto	0.0808
L54	67	MP3-04	31.50 - 33.29	Auto	0.0000
L54	68	MP3-04	31.50 - 33.29	Auto	0.0000
L54	69	MP3-04	31.50 - 33.29	Auto	0.0000
L54	76	CCI 6.5" x 1.25" Plate	31.50 - 33.29	Manual	1.0000
L54	77	CCI 6.5" x 1.25" Plate	31.50 - 33.29	Manual	1.0000
L54	78	CCI 6.5" x 1.25" Plate	31.50 - 33.29	Manual	1.0000
L54	83	CCI 6.5" x 1.25" Plate	31.50 - 33.29	Auto	0.0000
L54	84	CCI 6.5" x 1.25" Plate	31.50 - 33.29	Auto	0.0000
L54	85	CCI 6.5" x 1.25" Plate	31.50 - 33.29	Auto	0.0000
L54	98	CCI 8.5" x 1.25" Plate	31.50 - 33.29	Auto	0.0727
L54	101	CCI 8.5" x 1.25" Plate	31.50 - 33.29	Auto	0.0727
L54	102	CCI 8.5" x 1.25" Plate	31.50 - 33.29	Auto	0.0727
L55	64	MP3-05	31.25 - 31.50	Manual	1.0000
L55	67	MP3-04	31.25 - 31.50	Auto	0.0000
L55	68	MP3-04	31.25 - 31.50	Auto	0.0000
L55	69	MP3-04	31.25 - 31.50	Auto	0.0000
L55	76	CCI 6.5" x 1.25" Plate	31.25 - 31.50	Manual	1.0000
L55	77	CCI 6.5" x 1.25" Plate	31.25 - 31.50	Manual	1.0000
L55	78	CCI 6.5" x 1.25" Plate	31.25 - 31.50	Manual	1.0000
L55	83	CCI 6.5" x 1.25" Plate	31.25 - 31.50	Auto	0.0000
L55	84	CCI 6.5" x 1.25" Plate	31.25 - 31.50	Auto	0.0000
L55	85	CCI 6.5" x 1.25" Plate	31.25 - 31.50	Auto	0.0000
L55	98	CCI 8.5" x 1.25" Plate	31.25 - 31.50	Auto	0.0668
L55	101	CCI 8.5" x 1.25" Plate	31.25 - 31.50	Auto	0.0668
L55	102	CCI 8.5" x 1.25" Plate	31.25 - 31.50	Auto	0.0668
L56	64	MP3-05	30.50 - 31.25	Manual	1.0000
L56	67	MP3-04	30.50 - 31.25	Auto	0.0000
L56	68	MP3-04	30.50 - 31.25	Auto	0.0000
L56	69	MP3-04	31.00 - 31.25	Auto	0.0000
L56	76	CCI 6.5" x 1.25" Plate	30.50 - 31.25	Manual	1.0000
L56	77	CCI 6.5" x 1.25" Plate	30.50 - 31.25	Manual	1.0000
L56	78	CCI 6.5" x 1.25" Plate	30.50 - 31.25	Manual	1.0000
L56	83	CCI 6.5" x 1.25" Plate	30.50 - 31.25	Auto	0.0000
L56	84	CCI 6.5" x 1.25" Plate	30.50 - 31.25	Auto	0.0000
L56	85	CCI 6.5" x 1.25" Plate	30.50 - 31.25	Auto	0.0000
L56	98	CCI 8.5" x 1.25" Plate	30.50 - 31.25	Auto	0.0639
L56	101	CCI 8.5" x 1.25" Plate	30.50 - 31.25	Auto	0.0639
L56	102	CCI 8.5" x 1.25" Plate	30.50 - 31.25	Auto	0.0639
L57	64	MP3-05	30.25 - 30.50	Manual	1.0000
L57	65	MP3-05	30.25 - 30.50	Auto	0.0000
L57	66	MP3-05	30.25 - 30.50	Auto	0.0000
L57	73	CCI 6" x 1" Plate	30.25 - 30.50	Manual	1.0000
L57	74	CCI 6" x 1" Plate	30.25 - 30.50	Auto	0.0000
L57	75	CCI 6" x 1" Plate	30.25 - 30.50	Auto	0.0000
L57	83	CCI 6.5" x 1.25" Plate	30.25 - 30.50	Auto	0.0000
L57	84	CCI 6.5" x 1.25" Plate	30.25 - 30.50	Auto	0.0000
L57	85	CCI 6.5" x 1.25" Plate	30.25 - 30.50	Auto	0.0000
L57	98	CCI 8.5" x 1.25" Plate	30.25 - 30.50	Auto	0.0453
L57	101	CCI 8.5" x 1.25" Plate	30.25 - 30.50	Auto	0.0453
L57	102	CCI 8.5" x 1.25" Plate	30.25 - 30.50	Auto	0.0453
L58	64	MP3-05	25.75 - 30.25	Manual	1.0000
L58	65	MP3-05	25.75 - 30.25	Auto	0.0000
L58	66	MP3-05	25.75 - 30.25	Auto	0.0000
L58	73	CCI 6" x 1" Plate	25.75 - 30.25	Manual	1.0000
L58	74	CCI 6" x 1" Plate	25.75 - 30.25	Auto	0.0000
L58	75	CCI 6" x 1" Plate	25.75 - 30.25	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L58	83	CCI 6.5" x 1.25" Plate	25.75 - 30.25	Auto	0.0000
L58	84	CCI 6.5" x 1.25" Plate	25.75 - 30.25	Auto	0.0000
L58	85	CCI 6.5" x 1.25" Plate	25.75 - 30.25	Auto	0.0000
L58	98	CCI 8.5" x 1.25" Plate	25.75 - 30.25	Auto	0.0237
L58	101	CCI 8.5" x 1.25" Plate	25.75 - 30.25	Auto	0.0237
L58	102	CCI 8.5" x 1.25" Plate	25.75 - 30.25	Auto	0.0237
L59	64	MP3-05	25.50 - 25.75	Manual	1.0000
L59	65	MP3-05	25.50 - 25.75	Auto	0.0000
L59	66	MP3-05	25.50 - 25.75	Auto	0.0000
L59	73	CCI 6" x 1" Plate	25.50 - 25.75	Manual	1.0000
L59	74	CCI 6" x 1" Plate	25.50 - 25.75	Auto	0.0000
L59	75	CCI 6" x 1" Plate	25.50 - 25.75	Auto	0.0000
L59	83	CCI 6.5" x 1.25" Plate	25.50 - 25.75	Auto	0.0000
L59	84	CCI 6.5" x 1.25" Plate	25.50 - 25.75	Auto	0.0000
L59	85	CCI 6.5" x 1.25" Plate	25.50 - 25.75	Auto	0.0000
L59	98	CCI 8.5" x 1.25" Plate	25.50 - 25.75	Auto	0.0000
L59	101	CCI 8.5" x 1.25" Plate	25.50 - 25.75	Auto	0.0000
L59	102	CCI 8.5" x 1.25" Plate	25.50 - 25.75	Auto	0.0000
L60	64	MP3-05	24.67 - 25.50	Manual	1.0000
L60	65	MP3-05	24.67 - 25.50	Auto	0.0000
L60	66	MP3-05	24.67 - 25.50	Auto	0.0000
L60	73	CCI 6" x 1" Plate	24.67 - 25.50	Manual	1.0000
L60	74	CCI 6" x 1" Plate	24.67 - 25.50	Auto	0.0000
L60	75	CCI 6" x 1" Plate	24.67 - 25.50	Auto	0.0000
L60	83	CCI 6.5" x 1.25" Plate	24.67 - 25.50	Auto	0.0000
L60	84	CCI 6.5" x 1.25" Plate	24.67 - 25.50	Auto	0.0000
L60	85	CCI 6.5" x 1.25" Plate	24.67 - 25.50	Auto	0.0000
L60	98	CCI 8.5" x 1.25" Plate	24.67 - 25.50	Auto	0.0000
L60	101	CCI 8.5" x 1.25" Plate	24.67 - 25.50	Auto	0.0000
L60	102	CCI 8.5" x 1.25" Plate	24.67 - 25.50	Auto	0.0000
L61	64	MP3-05	24.42 - 24.67	Manual	1.0000
L61	65	MP3-05	24.42 - 24.67	Auto	0.0000
L61	66	MP3-05	24.42 - 24.67	Auto	0.0000
L61	73	CCI 6" x 1" Plate	24.42 - 24.67	Manual	1.0000
L61	74	CCI 6" x 1" Plate	24.42 - 24.67	Auto	0.0000
L61	75	CCI 6" x 1" Plate	24.42 - 24.67	Auto	0.0000
L61	83	CCI 6.5" x 1.25" Plate	24.42 - 24.67	Auto	0.0000
L61	84	CCI 6.5" x 1.25" Plate	24.42 - 24.67	Auto	0.0000
L61	85	CCI 6.5" x 1.25" Plate	24.42 - 24.67	Auto	0.0000
L61	98	CCI 8.5" x 1.25" Plate	24.42 - 24.67	Auto	0.0000
L61	101	CCI 8.5" x 1.25" Plate	24.42 - 24.67	Auto	0.0000
L61	102	CCI 8.5" x 1.25" Plate	24.42 - 24.67	Auto	0.0000
L62	64	MP3-05	19.42 - 24.42	Manual	1.0000
L62	65	MP3-05	19.42 - 24.42	Auto	0.0000
L62	66	MP3-05	19.42 - 24.42	Auto	0.0000
L62	73	CCI 6" x 1" Plate	19.42 - 24.42	Manual	1.0000
L62	74	CCI 6" x 1" Plate	19.42 - 24.42	Auto	0.0000
L62	75	CCI 6" x 1" Plate	19.42 - 24.42	Auto	0.0000
L62	83	CCI 6.5" x 1.25" Plate	23.00 - 24.42	Auto	0.0000
L62	84	CCI 6.5" x 1.25" Plate	23.00 - 24.42	Auto	0.0000
L62	85	CCI 6.5" x 1.25" Plate	23.00 - 24.42	Auto	0.0000
L62	98	CCI 8.5" x 1.25" Plate	19.42 - 24.42	Auto	0.0000
L62	101	CCI 8.5" x 1.25" Plate	20.40 - 24.42	Auto	0.0000
L62	102	CCI 8.5" x 1.25" Plate	20.40 - 24.42	Auto	0.0000
L63	64	MP3-05	14.42 - 19.42	Manual	1.0000
L63	65	MP3-05	14.42 - 19.42	Auto	0.0000
L63	66	MP3-05	14.42 - 19.42	Auto	0.0000
L63	70	MP3-04	14.42 - 15.50	Auto	0.0000
L63	71	MP3-04	14.42 - 15.50	Auto	0.0000
L63	73	CCI 6" x 1" Plate	14.42 - 19.42	Manual	1.0000
L63	74	CCI 6" x 1" Plate	14.42 - 19.42	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L63	75	CCI 6" x 1" Plate	14.42 - 19.42	Auto	0.0000
L63	98	CCI 8.5" x 1.25" Plate	14.42 - 19.42	Auto	0.0000
L64	64	MP3-05	14.08 - 14.42	Manual	1.0000
L64	65	MP3-05	14.08 - 14.42	Auto	0.0000
L64	66	MP3-05	14.08 - 14.42	Auto	0.0000
L64	70	MP3-04	14.08 - 14.42	Auto	0.0000
L64	71	MP3-04	14.08 - 14.42	Auto	0.0000
L64	73	CCI 6" x 1" Plate	14.08 - 14.42	Manual	1.0000
L64	74	CCI 6" x 1" Plate	14.08 - 14.42	Auto	0.0000
L64	75	CCI 6" x 1" Plate	14.08 - 14.42	Auto	0.0000
L64	98	CCI 8.5" x 1.25" Plate	14.08 - 14.42	Auto	0.0000
L65	64	MP3-05	13.82 - 14.08	Manual	1.0000
L65	65	MP3-05	13.82 - 14.08	Auto	0.0000
L65	66	MP3-05	13.82 - 14.08	Auto	0.0000
L65	70	MP3-04	13.82 - 14.08	Auto	0.0000
L65	71	MP3-04	13.82 - 14.08	Auto	0.0000
L65	73	CCI 6" x 1" Plate	13.82 - 14.08	Manual	1.0000
L65	74	CCI 6" x 1" Plate	13.82 - 14.08	Auto	0.0000
L65	75	CCI 6" x 1" Plate	13.82 - 14.08	Auto	0.0000
L65	98	CCI 8.5" x 1.25" Plate	13.82 - 14.08	Auto	0.0000
L66	64	MP3-05	13.67 - 13.82	Manual	1.0000
L66	65	MP3-05	13.67 - 13.82	Auto	0.0000
L66	66	MP3-05	13.67 - 13.82	Auto	0.0000
L66	70	MP3-04	13.67 - 13.82	Auto	0.0000
L66	71	MP3-04	13.67 - 13.82	Auto	0.0000
L66	73	CCI 6" x 1" Plate	13.67 - 13.82	Manual	1.0000
L66	74	CCI 6" x 1" Plate	13.67 - 13.82	Auto	0.0000
L66	75	CCI 6" x 1" Plate	13.67 - 13.82	Auto	0.0000
L66	98	CCI 8.5" x 1.25" Plate	13.67 - 13.82	Auto	0.0000
L67	64	MP3-05	11.50 - 13.67	Manual	1.0000
L67	65	MP3-05	10.50 - 13.67	Auto	0.0000
L67	66	MP3-05	10.50 - 13.67	Auto	0.0000
L67	70	MP3-04	10.50 - 13.67	Auto	0.0000
L67	71	MP3-04	10.50 - 13.67	Auto	0.0000
L67	73	CCI 6" x 1" Plate	10.50 - 13.67	Manual	1.0000
L67	74	CCI 6" x 1" Plate	10.50 - 13.67	Auto	0.0000
L67	75	CCI 6" x 1" Plate	10.50 - 13.67	Auto	0.0000
L67	98	CCI 8.5" x 1.25" Plate	10.50 - 13.67	Auto	0.0000
L68	65	MP3-05	10.25 - 10.50	Auto	0.0000
L68	66	MP3-05	10.25 - 10.50	Auto	0.0000
L68	70	MP3-04	10.25 - 10.50	Auto	0.0000
L68	71	MP3-04	10.25 - 10.50	Auto	0.0000
L68	73	CCI 6" x 1" Plate	10.25 - 10.50	Manual	1.0000
L68	74	CCI 6" x 1" Plate	10.25 - 10.50	Auto	0.0000
L68	75	CCI 6" x 1" Plate	10.25 - 10.50	Auto	0.0000
L68	97	CCI 6" x 1" Plate	10.25 - 10.50	Auto	0.0000
L69	65	MP3-05	5.25 - 10.25	Auto	0.0000
L69	66	MP3-05	5.25 - 10.25	Auto	0.0000
L69	70	MP3-04	5.25 - 10.25	Auto	0.0000
L69	71	MP3-04	5.25 - 10.25	Auto	0.0000
L69	73	CCI 6" x 1" Plate	5.25 - 10.25	Manual	1.0000
L69	74	CCI 6" x 1" Plate	5.25 - 10.25	Auto	0.0000
L69	75	CCI 6" x 1" Plate	5.25 - 10.25	Auto	0.0000
L69	97	CCI 6" x 1" Plate	5.25 - 10.25	Auto	0.0000
L70	65	MP3-05	0.25 - 5.25	Auto	0.0000
L70	66	MP3-05	0.25 - 5.25	Auto	0.0000
L70	70	MP3-04	0.25 - 5.25	Auto	0.0000
L70	71	MP3-04	0.25 - 5.25	Auto	0.0000
L70	73	CCI 6" x 1" Plate	0.25 - 5.25	Manual	1.0000
L70	74	CCI 6" x 1" Plate	0.25 - 5.25	Auto	0.0000
L70	75	CCI 6" x 1" Plate	0.25 - 5.25	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L70	97	CCI 6" x 1" Plate	0.25 - 5.25	Auto	0.0000
L71	65	MP3-05	0.00 - 0.25	Auto	0.0000
L71	66	MP3-05	0.00 - 0.25	Auto	0.0000
L71	70	MP3-04	0.00 - 0.25	Auto	0.0000
L71	71	MP3-04	0.00 - 0.25	Auto	0.0000
L71	73	CCI 6" x 1" Plate	0.00 - 0.25	Manual	1.0000
L71	74	CCI 6" x 1" Plate	0.00 - 0.25	Auto	0.0000
L71	75	CCI 6" x 1" Plate	0.00 - 0.25	Auto	0.0000
L71	97	CCI 6" x 1" Plate	0.00 - 0.25	Auto	0.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
SBNH-1D6565C w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	156.000	No Ice 1/2" Ice 1" Ice	5.560 6.070 6.590	4.470 4.970 5.470	0.085 0.167 0.262
SBNH-1D6565C w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	156.000	No Ice 1/2" Ice 1" Ice	5.560 6.070 6.590	4.470 4.970 5.470	0.085 0.167 0.262
80010798 w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	156.000	No Ice 1/2" Ice 1" Ice	7.790 8.400 9.020	4.900 5.470 6.060	0.114 0.188 0.275
80010966 w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	156.000	No Ice 1/2" Ice 1" Ice	14.610 15.470 16.350	6.840 7.630 8.420	0.159 0.267 0.389
80010966 w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	156.000	No Ice 1/2" Ice 1" Ice	14.610 15.470 16.350	6.840 7.630 8.420	0.159 0.267 0.389
80010965 w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	156.000	No Ice 1/2" Ice 1" Ice	12.260 13.030 13.800	5.790 6.470 7.170	0.136 0.226 0.328
TPA-65R-LCUUUU-H8 w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	156.000	No Ice 1/2" Ice 1" Ice	11.850 12.770 13.710	8.990 9.880 10.790	0.115 0.210 0.319
TPA-65R-LCUUUU-H8 w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	156.000	No Ice 1/2" Ice 1" Ice	11.850 12.770 13.710	8.990 9.880 10.790	0.115 0.210 0.319
AM-X-CD-16-65-00T-RET w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	156.000	No Ice 1/2" Ice 1" Ice	4.630 5.060 5.510	3.270 3.690 4.120	0.074 0.133 0.203
DTMABP7819VG12A	A	From Leg	4.000 0.000 1.000	0.000	156.000	No Ice 1/2" Ice 1" Ice	0.976 1.100 1.232	0.339 0.419 0.510	0.019 0.026 0.036
DTMABP7819VG12A	B	From Leg	4.000 0.000 1.000	0.000	156.000	No Ice 1/2" Ice 1" Ice	0.976 1.100 1.232	0.339 0.419 0.510	0.019 0.026 0.036
DTMABP7819VG12A	C	From Leg	4.000 0.000	0.000	156.000	No Ice 1/2" Ice	0.976 1.100	0.339 0.419	0.019 0.026

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			1.000			1" Ice	1.232	0.510	0.036
RRUS 4478 B14	A	From Leg	4.000	0.000	156.000	No Ice	1.843	1.059	0.060
			0.000			1/2" Ice	2.012	1.197	0.076
			1.000			1" Ice	2.190	1.342	0.094
RRUS 4478 B14	B	From Leg	4.000	0.000	156.000	No Ice	1.843	1.059	0.060
			0.000			1/2" Ice	2.012	1.197	0.076
			1.000			1" Ice	2.190	1.342	0.094
RRUS 4478 B14	C	From Leg	4.000	0.000	156.000	No Ice	1.843	1.059	0.060
			0.000			1/2" Ice	2.012	1.197	0.076
			1.000			1" Ice	2.190	1.342	0.094
RRUS 32 B66	A	From Leg	4.000	0.000	156.000	No Ice	2.743	1.668	0.053
			0.000			1/2" Ice	2.965	1.855	0.074
			1.000			1" Ice	3.194	2.049	0.098
RRUS 32 B66	B	From Leg	4.000	0.000	156.000	No Ice	2.743	1.668	0.053
			0.000			1/2" Ice	2.965	1.855	0.074
			1.000			1" Ice	3.194	2.049	0.098
RRUS 32 B66	C	From Leg	4.000	0.000	156.000	No Ice	2.743	1.668	0.053
			0.000			1/2" Ice	2.965	1.855	0.074
			1.000			1" Ice	3.194	2.049	0.098
RRUS 11	A	From Leg	4.000	0.000	156.000	No Ice	2.784	1.187	0.048
			0.000			1/2" Ice	2.992	1.334	0.068
			1.000			1" Ice	3.207	1.490	0.092
RRUS 11	B	From Leg	4.000	0.000	156.000	No Ice	2.784	1.187	0.048
			0.000			1/2" Ice	2.992	1.334	0.068
			1.000			1" Ice	3.207	1.490	0.092
RRUS 11	C	From Leg	4.000	0.000	156.000	No Ice	2.784	1.187	0.048
			0.000			1/2" Ice	2.992	1.334	0.068
			1.000			1" Ice	3.207	1.490	0.092
RRUS 12	A	From Leg	4.000	0.000	156.000	No Ice	3.145	1.285	0.058
			0.000			1/2" Ice	3.365	1.438	0.081
			1.000			1" Ice	3.592	1.600	0.108
RRUS 12	B	From Leg	4.000	0.000	156.000	No Ice	3.145	1.285	0.058
			0.000			1/2" Ice	3.365	1.438	0.081
			1.000			1" Ice	3.592	1.600	0.108
RRUS 12	C	From Leg	4.000	0.000	156.000	No Ice	3.145	1.285	0.058
			0.000			1/2" Ice	3.365	1.438	0.081
			1.000			1" Ice	3.592	1.600	0.108
RRUS 32 B2	A	From Leg	4.000	0.000	156.000	No Ice	2.731	1.668	0.053
			0.000			1/2" Ice	2.953	1.855	0.074
			1.000			1" Ice	3.182	2.049	0.098
RRUS 32 B2	B	From Leg	4.000	0.000	156.000	No Ice	2.731	1.668	0.053
			0.000			1/2" Ice	2.953	1.855	0.074
			1.000			1" Ice	3.182	2.049	0.098
RRUS 32 B2	C	From Leg	4.000	0.000	156.000	No Ice	2.731	1.668	0.053
			0.000			1/2" Ice	2.953	1.855	0.074
			1.000			1" Ice	3.182	2.049	0.098
RRUS 32	A	From Leg	4.000	0.000	156.000	No Ice	2.857	1.777	0.055
			0.000			1/2" Ice	3.083	1.968	0.077
			1.000			1" Ice	3.316	2.166	0.103
RRUS 32	B	From Leg	4.000	0.000	156.000	No Ice	2.857	1.777	0.055
			0.000			1/2" Ice	3.083	1.968	0.077
			1.000			1" Ice	3.316	2.166	0.103
RRUS 32	C	From Leg	4.000	0.000	156.000	No Ice	2.857	1.777	0.055
			0.000			1/2" Ice	3.083	1.968	0.077
			1.000			1" Ice	3.316	2.166	0.103
DC6-48-60-0-8F	B	From Leg	4.000	0.000	156.000	No Ice	0.917	0.917	0.033
			0.000			1/2" Ice	1.458	1.458	0.051

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			1.000			1" Ice	1.643	1.643	0.071
(2) DC6-48-60-18-8F	B	From Leg	4.000	0.000	156.000	No Ice	1.212	1.212	0.033
			0.000			1/2" Ice	1.892	1.892	0.055
			1.000			1" Ice	2.105	2.105	0.080
4' x 2" Pipe Mount	A	From Leg	4.000	0.000	156.000	No Ice	0.785	0.785	0.029
			0.000			1/2" Ice	1.028	1.028	0.035
			1.000			1" Ice	1.281	1.281	0.044
4' x 2" Pipe Mount	B	From Leg	4.000	0.000	156.000	No Ice	0.785	0.785	0.029
			0.000			1/2" Ice	1.028	1.028	0.035
			1.000			1" Ice	1.281	1.281	0.044
4' x 2" Pipe Mount	C	From Leg	4.000	0.000	156.000	No Ice	0.785	0.785	0.029
			0.000			1/2" Ice	1.028	1.028	0.035
			1.000			1" Ice	1.281	1.281	0.044
Sector Mount [SM 502-3]	C	None		0.000	156.000	No Ice	29.820	29.820	1.673
						1/2" Ice	42.210	42.210	2.266
						1" Ice	54.430	54.430	3.052
*									
*									
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	4.000	0.000	146.000	No Ice	5.870	3.270	0.128
			0.000			1/2" Ice	6.233	3.728	0.177
			1.000			1" Ice	6.606	4.203	0.232
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Leg	4.000	0.000	146.000	No Ice	5.870	3.270	0.128
			0.000			1/2" Ice	6.233	3.728	0.177
			1.000			1" Ice	6.606	4.203	0.232
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Leg	4.000	0.000	146.000	No Ice	5.870	3.270	0.128
			0.000			1/2" Ice	6.233	3.728	0.177
			1.000			1" Ice	6.606	4.203	0.232
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	A	From Leg	4.000	0.000	146.000	No Ice	6.290	2.760	0.061
			0.000			1/2" Ice	6.860	3.270	0.105
			1.000			1" Ice	7.450	3.790	0.157
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	B	From Leg	4.000	0.000	146.000	No Ice	6.290	2.760	0.061
			0.000			1/2" Ice	6.860	3.270	0.105
			1.000			1" Ice	7.450	3.790	0.157
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	C	From Leg	4.000	0.000	146.000	No Ice	6.290	2.760	0.061
			0.000			1/2" Ice	6.860	3.270	0.105
			1.000			1" Ice	7.450	3.790	0.157
APXVAALL24_43-U-NA20 _TMO w/ Mount Pipe	A	From Leg	4.000	0.000	146.000	No Ice	14.690	6.870	0.183
			0.000			1/2" Ice	15.460	7.550	0.311
			1.000			1" Ice	16.230	8.250	0.453
APXVAALL24_43-U-NA20 _TMO w/ Mount Pipe	B	From Leg	4.000	0.000	146.000	No Ice	14.690	6.870	0.183
			0.000			1/2" Ice	15.460	7.550	0.311
			1.000			1" Ice	16.230	8.250	0.453
APXVAALL24_43-U-NA20 _TMO w/ Mount Pipe	C	From Leg	4.000	0.000	146.000	No Ice	14.690	6.870	0.183
			0.000			1/2" Ice	15.460	7.550	0.311
			1.000			1" Ice	16.230	8.250	0.453
RADIO 4415 B66A	A	From Leg	4.000	0.000	146.000	No Ice	1.856	0.870	0.050
			0.000			1/2" Ice	2.027	0.997	0.064
			1.000			1" Ice	2.204	1.134	0.081
RADIO 4415 B66A	B	From Leg	4.000	0.000	146.000	No Ice	1.856	0.870	0.050
			0.000			1/2" Ice	2.027	0.997	0.064
			1.000			1" Ice	2.204	1.134	0.081
RADIO 4415 B66A	C	From Leg	4.000	0.000	146.000	No Ice	1.856	0.870	0.050
			0.000			1/2" Ice	2.027	0.997	0.064
			1.000			1" Ice	2.204	1.134	0.081
RADIO 4424 B25_TMO	A	From Leg	4.000	0.000	146.000	No Ice	2.052	1.610	0.086
			0.000			1/2" Ice	2.231	1.772	0.107
			1.000			1" Ice	2.417	1.941	0.131

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
RADIO 4424 B25_TMO	B	From Leg	4.000	0.000	146.000	No Ice	2.052	1.610	0.086
			0.000			1/2" Ice	2.231	1.772	0.107
			1.000			1" Ice	2.417	1.941	0.131
RADIO 4424 B25_TMO	C	From Leg	4.000	0.000	146.000	No Ice	2.052	1.610	0.086
			0.000			1/2" Ice	2.231	1.772	0.107
			1.000			1" Ice	2.417	1.941	0.131
RADIO 4449 B71 B85A_T-MOBILE	A	From Leg	4.000	0.000	146.000	No Ice	1.970	1.587	0.073
			0.000			1/2" Ice	2.147	1.749	0.093
			1.000			1" Ice	2.331	1.918	0.116
RADIO 4449 B71 B85A_T-MOBILE	B	From Leg	4.000	0.000	146.000	No Ice	1.970	1.587	0.073
			0.000			1/2" Ice	2.147	1.749	0.093
			1.000			1" Ice	2.331	1.918	0.116
RADIO 4449 B71 B85A_T-MOBILE	C	From Leg	4.000	0.000	146.000	No Ice	1.970	1.587	0.073
			0.000			1/2" Ice	2.147	1.749	0.093
			1.000			1" Ice	2.331	1.918	0.116
5' x 2" Pipe Mount	A	From Leg	4.000	0.000	146.000	No Ice	1.188	1.188	0.018
			0.000			1/2" Ice	1.496	1.496	0.027
			1.000			1" Ice	1.807	1.807	0.040
5' x 2" Pipe Mount	B	From Leg	4.000	0.000	146.000	No Ice	1.188	1.188	0.018
			0.000			1/2" Ice	1.496	1.496	0.027
			1.000			1" Ice	1.807	1.807	0.040
5' x 2" Pipe Mount	C	From Leg	4.000	0.000	146.000	No Ice	1.188	1.188	0.018
			0.000			1/2" Ice	1.496	1.496	0.027
			1.000			1" Ice	1.807	1.807	0.040
Platform Mount [LP 1201-1]	C	None		0.000	146.000	No Ice	18.380	18.380	2.100
						1/2" Ice	22.110	22.110	2.652
						1" Ice	25.870	25.870	3.263
Miscellaneous [NA 510-1]	C	None		0.000	145.000	No Ice	6.360	6.360	0.256
						1/2" Ice	8.520	8.520	0.344
						1" Ice	10.620	10.620	0.459
*									
APXV18-206517S-C	A	From Leg	2.000	0.000	139.000	No Ice	3.830	1.810	0.026
			0.000			1/2" Ice	4.460	2.410	0.054
			0.000			1" Ice	5.110	3.030	0.087
APXV18-206517S-C	B	From Leg	2.000	0.000	139.000	No Ice	3.830	1.810	0.026
			0.000			1/2" Ice	4.460	2.410	0.054
			0.000			1" Ice	5.110	3.030	0.087
APXV18-206517S-C	C	From Leg	2.000	0.000	139.000	No Ice	3.830	1.810	0.026
			0.000			1/2" Ice	4.460	2.410	0.054
			0.000			1" Ice	5.110	3.030	0.087
Pipe Mount [PM 601-3]	C	None		0.000	139.000	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
*									
(2) SBNHH-1D65B w/ Mount Pipe	A	From Leg	4.000	0.000	132.000	No Ice	4.090	3.300	0.066
			0.000			1/2" Ice	4.490	3.680	0.130
			1.000			1" Ice	4.890	4.070	0.204
(2) SBNHH-1D65B w/ Mount Pipe	B	From Leg	4.000	0.000	132.000	No Ice	4.090	3.300	0.066
			0.000			1/2" Ice	4.490	3.680	0.130
			1.000			1" Ice	4.890	4.070	0.204
(2) SBNHH-1D65B w/ Mount Pipe	C	From Leg	4.000	0.000	132.000	No Ice	4.090	3.300	0.066
			0.000			1/2" Ice	4.490	3.680	0.130
			1.000			1" Ice	4.890	4.070	0.204
(2) BXA-80080-6CF-EDIN-X w/ Mount Pipe	A	From Leg	4.000	0.000	132.000	No Ice	6.006	6.203	0.043
			0.000			1/2" Ice	6.562	7.359	0.098
			2.000			1" Ice	7.083	8.229	0.160
(2)	B	From Leg	4.000	0.000	132.000	No Ice	6.006	6.203	0.043

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
BXA-80080-6CF-EDIN-X w/ Mount Pipe			0.000			1/2" Ice	6.562	7.359	0.098
			2.000			1" Ice	7.083	8.229	0.160
(2) BXA-80080-6CF-EDIN-X w/ Mount Pipe	C	From Leg	4.000	0.000	132.000	No Ice	6.006	6.203	0.043
			0.000			1/2" Ice	6.562	7.359	0.098
			2.000			1" Ice	7.083	8.229	0.160
DB-C1-12C-24AB-0Z	A	From Leg	4.000	0.000	132.000	No Ice	4.056	3.098	0.032
			0.000			1/2" Ice	4.316	3.335	0.068
			1.000			1" Ice	4.582	3.580	0.109
RFV01U-D1A	A	From Leg	4.000	0.000	132.000	No Ice	1.875	1.250	0.084
			0.000			1/2" Ice	2.045	1.393	0.103
			1.000			1" Ice	2.223	1.543	0.124
(2) RFV01U-D1A	B	From Leg	4.000	0.000	132.000	No Ice	1.875	1.250	0.084
			0.000			1/2" Ice	2.045	1.393	0.103
			1.000			1" Ice	2.223	1.543	0.124
(2) RFV01U-D2A	A	From Leg	4.000	0.000	132.000	No Ice	1.875	1.013	0.070
			0.000			1/2" Ice	2.045	1.145	0.087
			1.000			1" Ice	2.223	1.284	0.106
RFV01U-D2A	B	From Leg	4.000	0.000	132.000	No Ice	1.875	1.013	0.070
			0.000			1/2" Ice	2.045	1.145	0.087
			1.000			1" Ice	2.223	1.284	0.106
CBRS w/ Mount Pipe	A	From Leg	4.000	0.000	132.000	No Ice	1.714	1.168	0.032
			0.000			1/2" Ice	1.934	1.437	0.050
			1.000			1" Ice	2.166	1.723	0.072
CBRS w/ Mount Pipe	B	From Leg	4.000	0.000	132.000	No Ice	1.714	1.168	0.032
			0.000			1/2" Ice	1.934	1.437	0.050
			1.000			1" Ice	2.166	1.723	0.072
CBRS w/ Mount Pipe	C	From Leg	4.000	0.000	132.000	No Ice	1.714	1.168	0.032
			0.000			1/2" Ice	1.934	1.437	0.050
			1.000			1" Ice	2.166	1.723	0.072
20W CBRS	A	From Leg	4.000	0.000	132.000	No Ice	0.857	0.420	0.019
			0.000			1/2" Ice	0.975	0.510	0.026
			1.000			1" Ice	1.101	0.608	0.034
20W CBRS	B	From Leg	4.000	0.000	132.000	No Ice	0.857	0.420	0.019
			0.000			1/2" Ice	0.975	0.510	0.026
			1.000			1" Ice	1.101	0.608	0.034
20W CBRS	C	From Leg	4.000	0.000	132.000	No Ice	0.857	0.420	0.019
			0.000			1/2" Ice	0.975	0.510	0.026
			1.000			1" Ice	1.101	0.608	0.034
6' x 2" Horizontal Mount Pipe	A	From Leg	3.000	0.000	131.000	No Ice	1.140	0.010	0.016
			0.000			1/2" Ice	1.760	0.040	0.025
			-1.000			1" Ice	2.140	0.090	0.038
6' x 2" Horizontal Mount Pipe	B	From Leg	3.000	0.000	131.000	No Ice	1.140	0.010	0.016
			0.000			1/2" Ice	1.760	0.040	0.025
			-1.000			1" Ice	2.140	0.090	0.038
6' x 2" Horizontal Mount Pipe	C	From Leg	3.000	0.000	131.000	No Ice	1.140	0.010	0.016
			0.000			1/2" Ice	1.760	0.040	0.025
			-1.000			1" Ice	2.140	0.090	0.038
Platform Mount [LP 1201-1]	C	None		0.000	132.000	No Ice	18.380	18.380	2.100
						1/2" Ice	22.110	22.110	2.652
						1" Ice	25.870	25.870	3.263
Miscellaneous [NA 510-1]	C	None		0.000	131.000	No Ice	6.360	6.360	0.256
						1/2" Ice	8.520	8.520	0.344
						1" Ice	10.620	10.620	0.459
Side Arm Mount [SO 102-3]	C	None		0.000	132.000	No Ice	3.600	3.600	0.075
						1/2" Ice	4.180	4.180	0.105
						1" Ice	4.750	4.750	0.135

*

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
HORIZON COMPACT	A	From Leg	1.000	0.000	129.000	No Ice	0.721	0.368	0.012
			0.000			1/2" Ice	0.828	0.450	0.018
			1.000			1" Ice	0.942	0.539	0.026
HORIZON COMPACT	B	From Leg	1.000	0.000	129.000	No Ice	0.721	0.368	0.012
			0.000			1/2" Ice	0.828	0.450	0.018
			1.000			1" Ice	0.942	0.539	0.026
HORIZON COMPACT	C	From Leg	1.000	0.000	129.000	No Ice	0.721	0.368	0.012
			0.000			1/2" Ice	0.828	0.450	0.018
			1.000			1" Ice	0.942	0.539	0.026
5' x 3.5" Mount Pipe	A	From Leg	0.500	0.000	129.000	No Ice	1.412	1.412	0.038
			0.000			1/2" Ice	1.803	1.803	0.051
			0.000			1" Ice	2.119	2.119	0.067
5' x 3.5" Mount Pipe	B	From Leg	0.500	0.000	129.000	No Ice	1.412	1.412	0.038
			0.000			1/2" Ice	1.803	1.803	0.051
			0.000			1" Ice	2.119	2.119	0.067
5' x 3.5" Mount Pipe	C	From Leg	0.500	0.000	129.000	No Ice	1.412	1.412	0.038
			0.000			1/2" Ice	1.803	1.803	0.051
			0.000			1" Ice	2.119	2.119	0.067
Side Arm Mount [SO 104-3]	C	None		0.000	129.000	No Ice	2.620	2.620	0.288
						1/2" Ice	3.300	3.300	0.408
						1" Ice	3.980	3.980	0.528
*									
58532A	A	From Leg	3.000	0.000	101.000	No Ice	0.189	0.189	0.000
			0.000			1/2" Ice	0.248	0.248	0.003
			1.000			1" Ice	0.315	0.315	0.006
Side Arm Mount [SO 701-1]	A	From Leg	1.500	0.000	101.000	No Ice	0.850	1.670	0.065
			0.000			1/2" Ice	1.140	2.340	0.079
			0.000			1" Ice	1.430	3.010	0.093
*									

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
VHLP800-11	A	Paraboloid w/Shroud (HP)	From Leg	1.000	0.000		129.000	2.917	No Ice	6.681	0.022
				0.000					1/2" Ice	7.069	0.058
				-2.000					1" Ice	7.456	0.094
VHLP800-11	B	Paraboloid w/Shroud (HP)	From Leg	1.000	30.000		129.000	2.917	No Ice	6.681	0.022
				0.000					1/2" Ice	7.069	0.058
				-2.000					1" Ice	7.456	0.094
VHLP2-18	C	Paraboloid w/Shroud (HP)	From Leg	1.000	-90.000		129.000	2.175	No Ice	3.715	0.031
				0.000					1/2" Ice	4.006	0.052
				-2.000					1" Ice	4.296	0.072
*											

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

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	160.333 - 155.333	Pole	Max Tension	8	0.000	0.000	-0.000
			Max. Compression	26	-9.316	-1.717	-0.171
			Max. Mx	8	-4.293	-11.772	-0.255
			Max. My	14	-4.278	-0.496	-11.348
			Max. Vy	20	-7.831	10.479	-0.177
			Max. Vx	14	7.861	-0.496	-11.348
			Max. Torque	15			1.824
L2	155.333 - 150.333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-10.026	-1.891	-0.076
			Max. Mx	8	-4.764	-51.638	-0.334
			Max. My	14	-4.749	-0.705	-51.279
			Max. Vy	20	-8.094	50.235	0.005
			Max. Vx	14	8.125	-0.705	-51.279
			Max. Torque	15			1.824
L3	150.333 - 146.833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-10.523	-2.011	-0.008
			Max. Mx	8	-5.102	-80.311	-0.391
			Max. My	14	-5.087	-0.850	-80.001
			Max. Vy	20	-8.272	78.831	0.135
			Max. Vx	14	8.303	-0.850	-80.001
			Max. Torque	15			1.824
L4	146.833 - 146.333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-10.612	-2.033	0.004
			Max. Mx	8	-5.165	-84.462	-0.398
			Max. My	14	-5.150	-0.873	-84.155
			Max. Vy	20	-8.306	82.968	0.154
			Max. Vx	14	8.337	-0.873	-84.155
			Max. Torque	15			1.824
L5	146.333 - 141.333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-19.555	-2.337	0.177
			Max. Mx	8	-10.125	-154.610	-0.455
			Max. My	14	-10.101	-1.166	-154.318
			Max. Vy	20	-14.024	152.903	0.409
			Max. Vx	14	14.061	-1.166	-154.318
			Max. Torque	15			1.825
L6	141.333 - 136.333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-20.993	-2.656	0.360
			Max. Mx	8	-10.946	-227.615	-0.511
			Max. My	14	-10.920	-1.468	-227.337
			Max. Vy	20	-15.108	225.685	0.673
			Max. Vx	14	15.146	-1.468	-227.337
			Max. Torque	15			1.824
L7	136.333 - 131.333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-29.198	-4.710	2.024
			Max. Mx	8	-15.287	-313.716	0.107
			Max. My	2	-15.260	-1.473	313.230
			Max. Vy	20	-20.405	309.097	1.749
			Max. Vx	14	20.542	-3.020	-311.557
			Max. Torque	25			-2.781
L8	131.333 - 126.333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-31.983	-5.018	2.295
			Max. Mx	8	-16.850	-420.691	-0.270
			Max. My	2	-16.788	-1.076	421.117

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	20	-22.456	415.975	2.486
			Max. Vx	2	-22.920	-1.076	421.117
			Max. Torque	25			-2.918
L9	126.333 - 121.333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-33.039	-5.283	2.553
			Max. Mx	8	-17.615	-534.067	-1.397
			Max. My	2	-17.557	0.252	537.005
			Max. Vy	20	-22.956	529.350	4.926
			Max. Vx	2	-23.418	0.252	537.005
			Max. Torque	25			-2.917
L10	121.333 - 120.083	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-33.325	-5.349	2.619
			Max. Mx	8	-17.808	-562.799	-1.679
			Max. My	2	-17.751	0.584	566.365
			Max. Vy	20	-23.083	558.082	5.535
			Max. Vx	2	-23.545	0.584	566.365
			Max. Torque	25			-2.915
L11	120.083 - 119.833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-33.401	-5.362	2.632
			Max. Mx	8	-17.881	-568.564	-1.734
			Max. My	2	-17.824	0.651	572.256
			Max. Vy	20	-23.098	563.847	5.657
			Max. Vx	2	-23.560	0.651	572.256
			Max. Torque	25			-2.915
L12	119.833 - 117.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-34.116	-5.480	2.744
			Max. Mx	8	-18.381	-622.715	-2.260
			Max. My	2	-18.325	1.271	627.579
			Max. Vy	20	-23.375	617.998	6.796
			Max. Vx	2	-23.837	1.271	627.579
			Max. Torque	25			-2.915
L13	117.5 - 117.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-34.198	-5.493	2.756
			Max. Mx	8	-18.449	-628.556	-2.316
			Max. My	2	-18.393	1.338	633.545
			Max. Vy	20	-23.398	623.838	6.919
			Max. Vx	2	-23.860	1.338	633.545
			Max. Torque	25			-2.914
L14	117.25 - 115.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-34.790	-5.585	2.847
			Max. Mx	8	-18.852	-669.644	-2.710
			Max. My	2	-18.796	1.802	675.515
			Max. Vy	20	-23.616	664.926	7.774
			Max. Vx	2	-24.079	1.802	675.515
			Max. Torque	25			-2.914
L15	115.5 - 115.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-34.884	-5.598	2.860
			Max. Mx	8	-18.934	-675.543	-2.765
			Max. My	2	-18.879	1.869	681.540
			Max. Vy	20	-23.635	670.825	7.896
			Max. Vx	2	-24.099	1.869	681.540
			Max. Torque	25			-2.914
L16	115.25 - 110.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-36.772	-5.866	3.129
			Max. Mx	8	-20.293	-795.153	-3.890
			Max. My	2	-20.239	3.198	803.695

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	20	-24.260	790.434	10.345
			Max. Vx	2	-24.731	3.198	803.695
			Max. Torque	23			-2.959
L17	110.25 - 104.083	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-37.699	-5.998	3.264
			Max. Mx	8	-20.965	-854.403	-4.435
			Max. My	2	-20.912	3.843	864.194
			Max. Vy	20	-24.563	849.682	11.537
			Max. Vx	2	-25.034	3.843	864.194
			Max. Torque	23			-2.994
L18	104.083 - 102.82	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-40.704	-6.273	3.541
			Max. Mx	8	-23.283	-978.913	-5.559
			Max. My	2	-23.231	5.174	991.283
			Max. Vy	20	-25.281	974.194	13.998
			Max. Vx	2	-25.753	5.174	991.283
			Max. Torque	23			-3.066
L19	102.82 - 100.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-41.761	-6.401	3.985
			Max. Mx	8	-24.067	-1037.874	-5.882
			Max. My	2	-24.019	5.792	1051.640
			Max. Vy	20	-25.657	1033.157	15.342
			Max. Vx	2	-26.092	5.792	1051.640
			Max. Torque	23			-3.304
L20	100.5 - 100.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-41.865	-6.415	4.001
			Max. Mx	8	-24.151	-1044.283	-5.937
			Max. My	2	-24.103	5.859	1058.170
			Max. Vy	20	-25.689	1039.568	15.465
			Max. Vx	2	-26.114	5.859	1058.170
			Max. Torque	23			-3.308
L21	100.25 - 98.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-42.587	-6.514	4.118
			Max. Mx	8	-24.662	-1089.364	-6.331
			Max. My	2	-24.615	6.325	1104.091
			Max. Vy	20	-25.982	1084.724	16.329
			Max. Vx	14	26.383	-11.291	-1099.857
			Max. Torque	23			-3.307
L22	98.5 - 98.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-42.693	-6.529	4.136
			Max. Mx	8	-24.756	-1095.835	-6.387
			Max. My	2	-24.710	6.392	1110.682
			Max. Vy	20	-26.008	1091.214	16.452
			Max. Vx	14	26.408	-11.360	-1106.447
			Max. Torque	23			-3.307
L23	98.25 - 93.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-44.766	-6.814	4.475
			Max. Mx	8	-26.325	-1226.857	-7.511
			Max. My	2	-26.281	7.723	1244.104
			Max. Vy	20	-26.818	1223.126	18.921
			Max. Vx	14	27.204	-12.753	-1240.325
			Max. Torque	23			-3.307
L24	93.25 - 90.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-45.909	-6.970	4.658
			Max. Mx	8	-27.202	-1300.227	-8.128
			Max. My	2	-27.159	8.454	1318.793
			Max. Vy	20	-27.263	1297.386	20.279
			Max. Vx	14	27.641	-13.520	-1315.636
			Max. Torque	23			-3.305

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L25	90.5 - 90.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-46.025	-6.985	4.676
			Max. Mx	8	-27.303	-1306.945	-8.183
			Max. My	2	-27.262	8.521	1325.629
			Max. Vy	20	-27.292	1304.197	20.403
			Max. Vx	14	27.669	-13.589	-1322.542
			Max. Torque	23			-3.305
L26	90.25 - 85.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-48.331	-7.265	5.029
			Max. Mx	8	-29.085	-1443.377	-9.303
			Max. My	2	-29.056	9.848	1463.985
			Max. Vy	20	-28.124	1442.575	22.875
			Max. Vx	14	28.491	-14.985	-1462.784
			Max. Torque	23			-3.304
L27	85.25 - 83.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-49.193	-7.364	5.136
			Max. Mx	8	-29.712	-1492.073	-9.694
			Max. My	2	-29.684	10.312	1513.200
			Max. Vy	20	-28.420	1491.980	23.740
			Max. Vx	14	28.784	-15.473	-1512.830
			Max. Torque	23			-3.303
L28	83.5 - 83.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-49.335	-7.378	5.152
			Max. Mx	20	-29.795	1499.079	23.864
			Max. My	2	-29.810	10.379	1520.270
			Max. Vy	20	-28.446	1499.079	23.864
			Max. Vx	14	28.809	-15.543	-1520.020
			Max. Torque	23			-3.305
L29	83.25 - 80.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-50.755	-7.517	5.302
			Max. Mx	20	-30.869	1570.666	25.101
			Max. My	14	-30.831	-16.242	-1592.510
			Max. Vy	20	-28.888	1570.666	25.101
			Max. Vx	14	29.247	-16.242	-1592.510
			Max. Torque	23			-3.327
L30	80.75 - 80.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-50.909	-7.531	5.317
			Max. Mx	20	-30.997	1577.884	25.225
			Max. My	14	-30.960	-16.312	-1599.818
			Max. Vy	20	-28.923	1577.884	25.225
			Max. Vx	14	29.282	-16.312	-1599.818
			Max. Torque	23			-3.327
L31	80.5 - 80.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-51.061	-7.545	5.332
			Max. Mx	20	-31.114	1585.114	25.349
			Max. My	14	-31.077	-16.382	-1607.138
			Max. Vy	20	-28.968	1585.114	25.349
			Max. Vx	14	29.326	-16.382	-1607.138
			Max. Torque	23			-3.327
L32	80.25 - 77.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-52.724	-7.700	5.499
			Max. Mx	20	-32.395	1665.364	26.712
			Max. My	14	-32.359	-17.152	-1688.367
			Max. Vy	20	-29.462	1665.364	26.712
			Max. Vx	14	29.816	-17.152	-1688.367
			Max. Torque	23			-3.327
L33	77.5 - 77.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-52.858	-7.714	5.514
			Max. Mx	20	-32.505	1672.726	26.835
			Max. My	14	-32.469	-17.222	-1695.817
			Max. Vy	20	-29.494	1672.726	26.835

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	29.847	-17.222	-1695.817
			Max. Torque	23			-3.326
L34	77.25 - 68.82	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-54.938	-7.932	5.760
			Max. Mx	20	-34.098	1790.654	28.799
			Max. My	14	-34.064	-18.332	-1815.126
			Max. Vy	20	-30.155	1790.654	28.799
			Max. Vx	14	30.498	-18.332	-1815.126
			Max. Torque	23			-3.326
L35	68.82 - 68.291	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-59.452	-8.207	6.070
			Max. Mx	20	-37.792	1943.653	31.283
			Max. My	14	-37.761	-19.737	-1969.820
			Max. Vy	20	-31.106	1943.653	31.283
			Max. Vx	14	31.440	-19.737	-1969.820
			Max. Torque	23			-3.325
L36	68.291 - 64.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-61.715	-8.433	6.323
			Max. Mx	20	-39.566	2070.519	33.291
			Max. My	14	-39.537	-20.873	-2098.016
			Max. Vy	20	-31.760	2070.519	33.291
			Max. Vx	14	32.084	-20.873	-2098.016
			Max. Torque	23			-3.324
L37	64.25 - 64	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-61.865	-8.448	6.339
			Max. Mx	20	-39.694	2078.453	33.416
			Max. My	14	-39.665	-20.943	-2106.031
			Max. Vy	20	-31.789	2078.453	33.416
			Max. Vx	14	32.113	-20.943	-2106.031
			Max. Torque	23			-3.324
L38	64 - 60.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-63.972	-8.643	6.551
			Max. Mx	20	-41.336	2190.611	35.155
			Max. My	14	-41.308	-21.927	-2219.310
			Max. Vy	20	-32.375	2190.611	35.155
			Max. Vx	14	32.691	-21.927	-2219.310
			Max. Torque	23			-3.323
L39	60.5 - 60.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-64.134	-8.658	6.567
			Max. Mx	20	-41.471	2198.700	35.279
			Max. My	14	-41.443	-21.997	-2227.477
			Max. Vy	20	-32.405	2198.700	35.279
			Max. Vx	14	32.720	-21.997	-2227.477
			Max. Torque	23			-3.323
L40	60.25 - 60.083	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-64.242	-8.668	6.578
			Max. Mx	20	-41.555	2204.108	35.362
			Max. My	14	-41.528	-22.044	-2232.938
			Max. Vy	20	-32.432	2204.108	35.362
			Max. Vx	14	32.747	-22.044	-2232.938
			Max. Torque	23			-3.323
L41	60.083 - 59.833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-64.407	-8.683	6.595
			Max. Mx	20	-41.684	2212.214	35.486
			Max. My	14	-41.657	-22.114	-2241.123
			Max. Vy	20	-32.475	2212.214	35.486
			Max. Vx	14	32.789	-22.114	-2241.123
			Max. Torque	23			-3.323
L42	59.833 - 59.083	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	-64.900	-8.732	6.653
			Max. Mx	20	-42.067	2236.595	35.859
			Max. My	14	-42.040	-22.325	-2265.739
			Max. Vy	20	-32.608	2236.595	35.859
			Max. Vx	14	32.921	-22.325	-2265.739
			Max. Torque	23			-3.323
L43	59.083 - 58.833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-65.074	-8.748	6.672
			Max. Mx	20	-42.209	2244.743	35.983
			Max. My	14	-42.183	-22.396	-2273.965
			Max. Vy	20	-32.645	2244.743	35.983
			Max. Vx	14	32.957	-22.396	-2273.965
			Max. Torque	23			-3.323
L44	58.833 - 55.4167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-67.434	-8.972	6.933
			Max. Mx	20	-44.082	2357.156	37.681
			Max. My	14	-44.056	-23.357	-2387.433
			Max. Vy	20	-33.238	2357.156	37.681
			Max. Vx	14	33.543	-23.357	-2387.433
			Max. Torque	23			-3.322
L45	55.4167 - 55.1667	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-67.607	-8.989	6.953
			Max. Mx	20	-44.229	2365.460	37.805
			Max. My	14	-44.203	-23.427	-2395.813
			Max. Vy	20	-33.269	2365.460	37.805
			Max. Vx	14	33.573	-23.427	-2395.813
			Max. Torque	23			-3.322
L46	55.1667 - 54.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-67.897	-9.016	6.985
			Max. Mx	20	-44.458	2379.324	38.012
			Max. My	14	-44.433	-23.545	-2409.804
			Max. Vy	20	-33.342	2379.324	38.012
			Max. Vx	14	33.645	-23.545	-2409.804
			Max. Torque	23			-3.322
L47	54.75 - 54.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-68.053	-9.033	7.004
			Max. Mx	20	-44.581	2387.656	38.137
			Max. My	14	-44.556	-23.615	-2418.212
			Max. Vy	20	-33.381	2387.656	38.137
			Max. Vx	14	33.684	-23.615	-2418.212
			Max. Torque	23			-3.322
L48	54.5 - 49.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-71.112	-9.350	7.394
			Max. Mx	20	-47.007	2556.382	40.620
			Max. My	14	-46.984	-25.022	-2588.420
			Max. Vy	20	-34.188	2556.382	40.620
			Max. Vx	14	34.478	-25.022	-2588.420
			Max. Torque	23			-3.322
L49	49.5 - 44.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-74.150	-9.650	7.773
			Max. Mx	20	-49.471	2729.034	43.099
			Max. My	14	-49.451	-26.427	-2762.487
			Max. Vy	20	-34.966	2729.034	43.099
			Max. Vx	14	35.242	-26.427	-2762.487
			Max. Torque	23			-3.321
L50	44.5 - 41.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-76.160	-9.829	7.987

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	-51.091	2843.322	44.707
			Max. My	14	-51.073	-27.338	-2877.658
			Max. Vy	20	-35.462	2843.322	44.707
			Max. Vx	14	35.729	-27.338	-2877.658
			Max. Torque	23			-3.320
L51	41.25 - 41	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-76.326	-9.843	8.004
			Max. Mx	20	-51.238	2852.180	44.831
			Max. My	14	-51.220	-27.408	-2886.583
			Max. Vy	20	-35.485	2852.180	44.831
			Max. Vx	14	35.752	-27.408	-2886.583
			Max. Torque	23			-3.319
L52	41 - 34.291	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-77.674	-9.960	8.137
			Max. Mx	20	-52.317	2923.386	45.820
			Max. My	14	-52.299	-27.970	-2958.316
			Max. Vy	20	-35.802	2923.386	45.820
			Max. Vx	14	36.063	-27.970	-2958.316
			Max. Torque	23			-3.319
L53	34.291 - 33.291	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-84.571	-10.262	8.487
			Max. Mx	20	-58.190	3130.530	48.645
			Max. My	14	-58.174	-29.573	-3166.914
			Max. Vy	20	-36.831	3130.530	48.645
			Max. Vx	14	37.079	-29.573	-3166.914
			Max. Torque	23			-3.319
L54	33.291 - 31.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-85.973	-10.360	8.596
			Max. Mx	20	-59.334	3196.660	49.531
			Max. My	14	-59.318	-30.076	-3233.486
			Max. Vy	20	-37.119	3196.660	49.531
			Max. Vx	14	37.363	-30.076	-3233.486
			Max. Torque	23			-3.319
L55	31.5 - 31.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-86.173	-10.373	8.615
			Max. Mx	20	-59.511	3205.930	49.655
			Max. My	14	-59.496	-30.146	-3242.817
			Max. Vy	20	-37.134	3205.930	49.655
			Max. Vx	14	37.379	-30.146	-3242.817
			Max. Torque	23			-3.319
L56	31.25 - 30.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-86.768	-10.415	8.676
			Max. Mx	20	-59.995	3233.797	50.026
			Max. My	14	-59.980	-30.357	-3270.870
			Max. Vy	20	-37.256	3233.797	50.026
			Max. Vx	14	37.504	-30.357	-3270.870
			Max. Torque	23			-3.319
L57	30.5 - 30.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-86.962	-10.429	8.692
			Max. Mx	20	-60.160	3243.104	50.149
			Max. My	14	-60.144	-30.427	-3280.240
			Max. Vy	20	-37.277	3243.104	50.149
			Max. Vx	14	37.533	-30.427	-3280.240
			Max. Torque	23			-3.319
L58	30.25 - 25.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-90.456	-10.677	8.970
			Max. Mx	20	-63.030	3411.825	52.373
			Max. My	14	-63.013	-31.689	-3450.448
			Max. Vy	20	-37.795	3411.825	52.373
			Max. Vx	14	38.200	-31.689	-3450.448

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	23			-3.318
L59	25.75 - 25.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-90.626	-10.691	8.986
			Max. Mx	20	-63.176	3421.264	52.496
			Max. My	14	-63.159	-31.759	-3459.989
			Max. Vy	20	-37.806	3421.264	52.496
			Max. Vx	14	38.219	-31.759	-3459.989
			Max. Torque	23			-3.318
L60	25.5 - 24.6667	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-91.194	-10.737	9.037
			Max. Mx	20	-63.629	3452.770	52.907
			Max. My	14	-63.612	-31.993	-3491.851
			Max. Vy	20	-37.898	3452.770	52.907
			Max. Vx	14	38.339	-31.993	-3491.851
			Max. Torque	23			-3.318
L61	24.6667 - 24.4167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-91.343	-10.751	9.053
			Max. Mx	20	-63.754	3462.234	53.030
			Max. My	14	-63.737	-32.063	-3501.427
			Max. Vy	20	-37.908	3462.234	53.030
			Max. Vx	14	38.357	-32.063	-3501.427
			Max. Torque	23			-3.318
L62	24.4167 - 19.4167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-94.236	-11.017	9.353
			Max. Mx	20	-66.101	3652.609	55.488
			Max. My	14	-66.085	-33.458	-3694.461
			Max. Vy	20	-38.338	3652.609	55.488
			Max. Vx	14	38.953	-33.458	-3694.461
			Max. Torque	23			-3.318
L63	19.4167 - 14.4167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-97.068	-11.306	9.604
			Max. Mx	20	-68.486	3844.943	57.931
			Max. My	14	-68.472	-34.846	-3890.267
			Max. Vy	20	-38.713	3844.943	57.931
			Max. Vx	14	39.488	-34.846	-3890.267
			Max. Torque	23			-3.317
L64	14.4167 - 14.083	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-97.261	-11.325	9.622
			Max. Mx	20	-68.657	3857.846	58.093
			Max. My	14	-68.643	-34.938	-3903.430
			Max. Vy	20	-38.719	3857.846	58.093
			Max. Vx	14	39.504	-34.938	-3903.430
			Max. Torque	23			-3.317
L65	14.083 - 13.817	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-97.417	-11.340	9.636
			Max. Mx	20	-68.789	3868.137	58.222
			Max. My	14	-68.775	-35.012	-3913.931
			Max. Vy	20	-38.737	3868.137	58.222
			Max. Vx	14	39.530	-35.012	-3913.931
			Max. Torque	23			-3.317
L66	13.817 - 13.667	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-97.505	-11.349	9.643
			Max. Mx	20	-68.864	3873.942	58.295
			Max. My	14	-68.851	-35.053	-3919.855
			Max. Vy	20	-38.745	3873.942	58.295

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	39.543	-35.053	-3919.855
			Max. Torque	23			-3.317
L67	13.667 - 10.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-99.356	-11.537	9.794
			Max. Mx	20	-70.411	3996.894	59.833
			Max. My	14	-70.400	-35.927	-4045.332
			Max. Vy	20	-38.999	3996.894	59.833
			Max. Vx	14	39.796	-35.927	-4045.332
			Max. Torque	23			-3.317
L68	10.5 - 10.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-99.497	-11.553	9.804
			Max. Mx	20	-70.542	4006.630	59.954
			Max. My	14	-70.532	-35.996	-4055.267
			Max. Vy	20	-38.996	4006.630	59.954
			Max. Vx	14	39.791	-35.996	-4055.267
			Max. Torque	23			-3.316
L69	10.25 - 5.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-102.293	-11.870	10.013
			Max. Mx	20	-72.920	4202.297	62.368
			Max. My	14	-72.914	-37.368	-4254.906
			Max. Vy	20	-39.373	4202.297	62.368
			Max. Vx	14	40.166	-37.368	-4254.906
			Max. Torque	23			-3.316
L70	5.25 - 0.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-105.058	-12.179	10.224
			Max. Mx	20	-75.334	4399.737	64.763
			Max. My	14	-75.333	-38.730	-4456.301
			Max. Vy	20	-39.728	4399.737	64.763
			Max. Vx	14	40.517	-38.730	-4456.301
			Max. Torque	23			-3.316
L71	0.25 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-105.190	-12.193	10.235
			Max. Mx	20	-75.470	4409.654	64.882
			Max. My	14	-75.470	-38.797	-4466.415
			Max. Vy	20	-39.717	4409.654	64.882
			Max. Vx	14	40.506	-38.797	-4466.415
			Max. Torque	23			-3.316

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	105.190	-0.000	0.000
	Max. H_x	20	75.470	39.717	0.443
	Max. H_z	3	56.603	0.279	37.688
	Max. M_x	2	4319.691	0.279	37.688
	Max. M_z	8	4302.773	-37.820	-0.238
	Max. Torsion	11	3.037	-36.634	-21.688
	Min. Vert	3	56.603	0.279	37.688
	Min. H_x	8	75.470	-37.820	-0.238
	Min. H_z	14	75.470	-0.237	-40.506
	Min. M_x	14	-4466.415	-0.237	-40.506
	Min. M_z	20	-4409.654	39.717	0.443
	Min. Torsion	23	-3.316	37.075	21.894

Tower Mast Reaction Summary

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 Only	62.892	0.000	-0.000	-3.926	-5.039	-0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	75.470	-0.279	-37.688	-4319.691	31.886	2.425
0.9 Dead+1.0 Wind 0 deg - No Ice	56.603	-0.279	-37.688	-4263.111	33.030	2.442
1.2 Dead+1.0 Wind 30 deg - No Ice	75.470	18.285	-32.720	-3740.897	-2080.636	1.287
0.9 Dead+1.0 Wind 30 deg - No Ice	56.603	18.285	-32.720	-3691.767	-2052.422	1.298
1.2 Dead+1.0 Wind 60 deg - No Ice	75.470	32.096	-18.629	-2134.319	-3670.694	-0.040
0.9 Dead+1.0 Wind 60 deg - No Ice	56.603	32.096	-18.629	-2105.743	-3622.064	-0.038
1.2 Dead+1.0 Wind 90 deg - No Ice	75.470	37.820	0.238	27.770	-4302.773	-1.662
0.9 Dead+1.0 Wind 90 deg - No Ice	56.603	37.820	0.238	28.611	-4246.267	-1.670
1.2 Dead+1.0 Wind 120 deg - No Ice	75.470	36.634	21.688	2431.864	-4099.655	-3.021
0.9 Dead+1.0 Wind 120 deg - No Ice	56.603	36.634	21.688	2402.319	-4046.293	-3.037
1.2 Dead+1.0 Wind 150 deg - No Ice	75.470	20.352	35.544	3934.681	-2257.464	-2.933
0.9 Dead+1.0 Wind 150 deg - No Ice	56.603	20.352	35.544	3886.047	-2227.320	-2.952
1.2 Dead+1.0 Wind 180 deg - No Ice	75.470	0.237	40.506	4466.415	-38.797	-2.560
0.9 Dead+1.0 Wind 180 deg - No Ice	56.603	0.237	40.506	4411.257	-36.742	-2.577
1.2 Dead+1.0 Wind 210 deg - No Ice	75.470	-18.547	32.969	3751.437	2095.701	-1.575
0.9 Dead+1.0 Wind 210 deg - No Ice	56.603	-18.547	32.969	3704.657	2070.455	-1.586
1.2 Dead+1.0 Wind 240 deg - No Ice	75.470	-32.311	18.987	2162.893	3670.661	-0.116
0.9 Dead+1.0 Wind 240 deg - No Ice	56.603	-32.311	18.987	2136.419	3625.239	-0.118
1.2 Dead+1.0 Wind 270 deg - No Ice	75.470	-39.717	-0.443	-64.882	4409.654	1.858
0.9 Dead+1.0 Wind 270 deg - No Ice	56.603	-39.717	-0.443	-62.854	4355.511	1.865
1.2 Dead+1.0 Wind 300 deg - No Ice	75.470	-37.075	-21.894	-2461.653	4133.225	3.300
0.9 Dead+1.0 Wind 300 deg - No Ice	56.603	-37.075	-21.894	-2429.412	4082.685	3.316
1.2 Dead+1.0 Wind 330 deg - No Ice	75.470	-20.188	-35.207	-3932.447	2242.252	2.996
0.9 Dead+1.0 Wind 330 deg - No Ice	56.603	-20.188	-35.207	-3881.349	2215.360	3.015
1.2 Dead+1.0 Ice+1.0 Temp	105.190	0.000	-0.000	-10.235	-12.193	-0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	105.190	-0.050	-7.988	-961.744	-5.365	0.501
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	105.190	3.888	-6.917	-834.015	-472.963	0.288
1.2 Dead+1.0 Wind 60 deg+1.0	105.190	6.837	-3.962	-481.525	-824.547	0.027

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Ice+1.0 Temp 1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	105.190	7.916	0.042	-4.395	-953.059	-0.297
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	105.190	7.113	4.200	491.198	-858.275	-0.602
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	105.190	3.980	6.942	815.829	-485.352	-0.585
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	105.190	0.042	8.005	941.622	-18.294	-0.527
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	105.190	-3.910	6.918	813.379	451.281	-0.340
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	105.190	-6.824	3.997	465.454	797.955	-0.054
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	105.190	-7.968	-0.079	-21.409	932.466	0.332
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	105.190	-7.165	-4.221	-513.855	838.957	0.651
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	105.190	-3.982	-6.936	-836.806	461.564	0.595
Dead+Wind 0 deg - Service	62.892	-0.060	-8.178	-933.554	3.045	0.536
Dead+Wind 30 deg - Service	62.892	3.968	-7.100	-808.847	-452.040	0.285
Dead+Wind 60 deg - Service	62.892	6.965	-4.042	-462.743	-794.554	-0.008
Dead+Wind 90 deg - Service	62.892	8.207	0.052	3.007	-930.758	-0.366
Dead+Wind 120 deg - Service	62.892	7.949	4.706	521.077	-887.281	-0.667
Dead+Wind 150 deg - Service	62.892	4.416	7.713	844.809	-490.227	-0.648
Dead+Wind 180 deg - Service	62.892	0.051	8.790	959.350	-12.181	-0.565
Dead+Wind 210 deg - Service	62.892	-4.025	7.154	805.188	447.650	-0.348
Dead+Wind 240 deg - Service	62.892	-7.011	4.120	462.962	786.921	-0.026
Dead+Wind 270 deg - Service	62.892	-8.618	-0.096	-16.951	946.236	0.408
Dead+Wind 300 deg - Service	62.892	-8.045	-4.751	-533.467	886.899	0.728
Dead+Wind 330 deg - Service	62.892	-4.381	-7.640	-850.266	479.297	0.662

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	-62.892	0.000	-0.000	62.892	0.000	0.000%
2	-0.279	-75.470	-37.688	0.279	75.470	37.688	0.000%
3	-0.279	-56.603	-37.688	0.279	56.603	37.688	0.000%
4	18.285	-75.470	-32.720	-18.285	75.470	32.720	0.000%
5	18.285	-56.603	-32.720	-18.285	56.603	32.720	0.000%
6	32.096	-75.470	-18.629	-32.096	75.470	18.629	0.000%
7	32.096	-56.603	-18.629	-32.096	56.603	18.629	0.000%
8	37.820	-75.470	0.238	-37.820	75.470	-0.238	0.000%
9	37.820	-56.603	0.238	-37.820	56.603	-0.238	0.000%
10	36.634	-75.470	21.688	-36.634	75.470	-21.688	0.000%
11	36.634	-56.603	21.688	-36.634	56.603	-21.688	0.000%
12	20.352	-75.470	35.544	-20.352	75.470	-35.544	0.000%
13	20.352	-56.603	35.544	-20.352	56.603	-35.544	0.000%
14	0.237	-75.470	40.506	-0.237	75.470	-40.506	0.000%
15	0.237	-56.603	40.506	-0.237	56.603	-40.506	0.000%
16	-18.547	-75.470	32.969	18.547	75.470	-32.969	0.000%
17	-18.547	-56.603	32.969	18.547	56.603	-32.969	0.000%
18	-32.311	-75.470	18.987	32.311	75.470	-18.987	0.000%
19	-32.311	-56.603	18.987	32.311	56.603	-18.987	0.000%
20	-39.717	-75.470	-0.443	39.717	75.470	0.443	0.000%
21	-39.717	-56.603	-0.443	39.717	56.603	0.443	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
22	-37.075	-75.470	-21.894	37.075	75.470	21.894	0.000%
23	-37.075	-56.603	-21.894	37.075	56.603	21.894	0.000%
24	-20.188	-75.470	-35.207	20.188	75.470	35.207	0.000%
25	-20.188	-56.603	-35.207	20.188	56.603	35.207	0.000%
26	0.000	-105.190	0.000	-0.000	105.190	0.000	0.000%
27	-0.050	-105.190	-7.988	0.050	105.190	7.988	0.000%
28	3.888	-105.190	-6.917	-3.888	105.190	6.917	0.000%
29	6.837	-105.190	-3.962	-6.837	105.190	3.962	0.000%
30	7.916	-105.190	0.042	-7.916	105.190	-0.042	0.000%
31	7.113	-105.190	4.200	-7.113	105.190	-4.200	0.000%
32	3.980	-105.190	6.942	-3.980	105.190	-6.942	0.000%
33	0.042	-105.190	8.005	-0.042	105.190	-8.005	0.000%
34	-3.910	-105.190	6.918	3.910	105.190	-6.918	0.000%
35	-6.824	-105.190	3.997	6.824	105.190	-3.997	0.000%
36	-7.968	-105.190	-0.079	7.968	105.190	0.079	0.000%
37	-7.165	-105.190	-4.221	7.165	105.190	4.221	0.000%
38	-3.982	-105.190	-6.936	3.982	105.190	6.936	0.000%
39	-0.060	-62.892	-8.178	0.060	62.892	8.178	0.000%
40	3.968	-62.892	-7.100	-3.968	62.892	7.100	0.000%
41	6.965	-62.892	-4.042	-6.965	62.892	4.042	0.000%
42	8.207	-62.892	0.052	-8.207	62.892	-0.052	0.000%
43	7.949	-62.892	4.706	-7.949	62.892	-4.706	0.000%
44	4.416	-62.892	7.713	-4.416	62.892	-7.713	0.000%
45	0.051	-62.892	8.790	-0.051	62.892	-8.790	0.000%
46	-4.025	-62.892	7.154	4.025	62.892	-7.154	0.000%
47	-7.011	-62.892	4.120	7.011	62.892	-4.120	0.000%
48	-8.618	-62.892	-0.096	8.618	62.892	0.096	0.000%
49	-8.045	-62.892	-4.751	8.045	62.892	4.751	0.000%
50	-4.381	-62.892	-7.640	4.381	62.892	7.640	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00001127
2	Yes	6	0.00000001	0.00007308
3	Yes	5	0.00000001	0.00060511
4	Yes	7	0.00000001	0.00009705
5	Yes	6	0.00000001	0.00058662
6	Yes	7	0.00000001	0.00009563
7	Yes	6	0.00000001	0.00057812
8	Yes	5	0.00000001	0.00082364
9	Yes	5	0.00000001	0.00037486
10	Yes	7	0.00000001	0.00011092
11	Yes	6	0.00000001	0.00065947
12	Yes	7	0.00000001	0.00010868
13	Yes	6	0.00000001	0.00065245
14	Yes	6	0.00000001	0.00015037
15	Yes	6	0.00000001	0.00005224
16	Yes	7	0.00000001	0.00009345
17	Yes	6	0.00000001	0.00056443
18	Yes	7	0.00000001	0.00009634
19	Yes	6	0.00000001	0.00058314
20	Yes	6	0.00000001	0.00014626
21	Yes	6	0.00000001	0.00005072
22	Yes	7	0.00000001	0.00012059

23	Yes	6	0.00000001	0.00071802
24	Yes	7	0.00000001	0.00010038
25	Yes	6	0.00000001	0.00060112
26	Yes	5	0.00000001	0.00021360
27	Yes	6	0.00000001	0.00094936
28	Yes	7	0.00000001	0.00010724
29	Yes	7	0.00000001	0.00010696
30	Yes	6	0.00000001	0.00094459
31	Yes	7	0.00000001	0.00011004
32	Yes	7	0.00000001	0.00010607
33	Yes	6	0.00000001	0.00092488
34	Yes	6	0.00000001	0.00099994
35	Yes	6	0.00000001	0.00099664
36	Yes	6	0.00000001	0.00091060
37	Yes	7	0.00000001	0.00010956
38	Yes	7	0.00000001	0.00010522
39	Yes	5	0.00000001	0.00011295
40	Yes	5	0.00000001	0.00039121
41	Yes	5	0.00000001	0.00037176
42	Yes	5	0.00000001	0.00009564
43	Yes	5	0.00000001	0.00044544
44	Yes	5	0.00000001	0.00046884
45	Yes	5	0.00000001	0.00012625
46	Yes	5	0.00000001	0.00033811
47	Yes	5	0.00000001	0.00036179
48	Yes	5	0.00000001	0.00010941
49	Yes	5	0.00000001	0.00054450
50	Yes	5	0.00000001	0.00037718

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	160.333 - 155.333	24.863	43	1.453	0.008
L2	155.333 - 150.333	23.342	43	1.452	0.008
L3	150.333 - 146.833	21.829	43	1.433	0.006
L4	146.833 - 146.333	20.788	43	1.407	0.005
L5	146.333 - 141.333	20.641	43	1.405	0.005
L6	141.333 - 136.333	19.187	43	1.370	0.005
L7	136.333 - 131.333	17.779	49	1.322	0.004
L8	131.333 - 126.333	16.434	49	1.261	0.004
L9	126.333 - 121.333	15.157	49	1.187	0.003
L10	121.333 - 120.083	13.963	49	1.100	0.003
L11	120.083 - 119.833	13.679	49	1.077	0.002
L12	119.833 - 117.5	13.623	49	1.075	0.002
L13	117.5 - 117.25	13.104	49	1.051	0.002
L14	117.25 - 115.5	13.050	49	1.048	0.002
L15	115.5 - 115.25	12.669	49	1.030	0.002
L16	115.25 - 110.25	12.616	49	1.028	0.002
L17	110.25 - 104.083	11.563	49	0.985	0.002
L18	107.82 - 102.82	11.067	49	0.963	0.002
L19	102.82 - 100.5	10.072	49	0.934	0.002
L20	100.5 - 100.25	9.624	49	0.912	0.002
L21	100.25 - 98.5	9.576	49	0.909	0.002
L22	98.5 - 98.25	9.246	49	0.891	0.002
L23	98.25 - 93.25	9.200	49	0.888	0.002
L24	93.25 - 90.5	8.296	49	0.837	0.001
L25	90.5 - 90.25	7.823	49	0.807	0.001
L26	90.25 - 85.25	7.781	49	0.805	0.001

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L27	85.25 - 83.5	6.965	49	0.753	0.001
L28	83.5 - 83.25	6.693	49	0.735	0.001
L29	83.25 - 80.75	6.654	49	0.733	0.001
L30	80.75 - 80.5	6.276	49	0.712	0.001
L31	80.5 - 80.25	6.239	49	0.710	0.001
L32	80.25 - 77.5	6.202	49	0.709	0.001
L33	77.5 - 77.25	5.800	49	0.688	0.001
L34	77.25 - 68.82	5.764	49	0.685	0.001
L35	73.291 - 68.291	5.213	49	0.644	0.001
L36	68.291 - 64.25	4.552	49	0.615	0.001
L37	64.25 - 64	4.049	49	0.573	0.001
L38	64 - 60.5	4.019	49	0.571	0.001
L39	60.5 - 60.25	3.612	49	0.540	0.001
L40	60.25 - 60.083	3.584	49	0.538	0.001
L41	60.083 - 59.833	3.565	49	0.536	0.001
L42	59.833 - 59.083	3.537	49	0.534	0.001
L43	59.083 - 58.833	3.454	49	0.528	0.001
L44	58.833 - 55.4167	3.426	49	0.527	0.001
L45	55.4167 - 55.1667	3.059	49	0.501	0.001
L46	55.1667 - 54.75	3.032	49	0.499	0.001
L47	54.75 - 54.5	2.989	49	0.495	0.001
L48	54.5 - 49.5	2.963	49	0.493	0.001
L49	49.5 - 44.5	2.471	49	0.446	0.001
L50	44.5 - 41.25	2.029	49	0.399	0.000
L51	41.25 - 41	1.768	49	0.368	0.000
L52	41 - 34.291	1.749	49	0.366	0.000
L53	39 - 33.291	1.599	49	0.348	0.000
L54	33.291 - 31.5	1.196	49	0.324	0.000
L55	31.5 - 31.25	1.077	49	0.312	0.000
L56	31.25 - 30.5	1.060	49	0.310	0.000
L57	30.5 - 30.25	1.012	49	0.305	0.000
L58	30.25 - 25.75	0.996	49	0.303	0.000
L59	25.75 - 25.5	0.726	49	0.271	0.000
L60	25.5 - 24.6667	0.712	49	0.268	0.000
L61	24.6667 - 24.4167	0.666	49	0.260	0.000
L62	24.4167 - 19.4167	0.652	49	0.258	0.000
L63	19.4167 - 14.4167	0.411	49	0.203	0.000
L64	14.4167 - 14.083	0.226	49	0.150	0.000
L65	14.083 - 13.817	0.215	49	0.146	0.000
L66	13.817 - 13.667	0.207	49	0.144	0.000
L67	13.667 - 10.5	0.203	49	0.142	0.000
L68	10.5 - 10.25	0.119	49	0.109	0.000
L69	10.25 - 5.25	0.114	49	0.107	0.000
L70	5.25 - 0.25	0.030	49	0.054	0.000
L71	0.25 - 0	0.000	1	0.000	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
156.000	SBNH-1D6565C w/ Mount Pipe	43	23.545	1.453	0.008	34731
146.000	AIR6449 B41_T-MOBILE w/ Mount Pipe	43	20.543	1.403	0.005	8546
145.000	Miscellaneous [NA 510-1]	43	20.250	1.398	0.005	8434
139.000	APXV18-206517S-C	43	18.522	1.349	0.005	5966
132.000	(2) SBNHH-1D65B w/ Mount Pipe	49	16.610	1.270	0.004	4375

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
131.000	6' x 2" Horizontal Mount Pipe	49	16.347	1.257	0.004	4204
129.000	HORIZON COMPACT	49	15.829	1.228	0.004	3895
127.000	VHLP800-11	49	15.323	1.197	0.003	3630
101.000	58532A	49	9.719	0.917	0.002	6127

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	160.333 - 155.333	115.372	22	6.711	0.036
L2	155.333 - 150.333	108.373	22	6.708	0.035
L3	150.333 - 146.833	101.408	22	6.630	0.029
L4	146.833 - 146.333	96.607	22	6.512	0.025
L5	146.333 - 141.333	95.928	22	6.504	0.025
L6	141.333 - 136.333	89.217	22	6.349	0.022
L7	136.333 - 131.333	82.702	22	6.128	0.020
L8	131.333 - 126.333	76.446	22	5.851	0.018
L9	126.333 - 121.333	70.507	22	5.513	0.015
L10	121.333 - 120.083	64.952	22	5.115	0.012
L11	120.083 - 119.833	63.629	22	5.009	0.011
L12	119.833 - 117.5	63.368	22	4.998	0.011
L13	117.5 - 117.25	60.958	22	4.888	0.010
L14	117.25 - 115.5	60.703	22	4.876	0.010
L15	115.5 - 115.25	58.934	22	4.794	0.010
L16	115.25 - 110.25	58.684	22	4.784	0.010
L17	110.25 - 104.083	53.786	22	4.587	0.009
L18	107.82 - 102.82	51.482	22	4.484	0.008
L19	102.82 - 100.5	46.853	22	4.350	0.008
L20	100.5 - 100.25	44.768	22	4.247	0.007
L21	100.25 - 98.5	44.546	22	4.235	0.007
L22	98.5 - 98.25	43.012	22	4.151	0.007
L23	98.25 - 93.25	42.795	22	4.139	0.007
L24	93.25 - 90.5	38.593	22	3.897	0.006
L25	90.5 - 90.25	36.391	22	3.759	0.006
L26	90.25 - 85.25	36.195	22	3.747	0.006
L27	85.25 - 83.5	32.401	22	3.506	0.005
L28	83.5 - 83.25	31.133	22	3.420	0.005
L29	83.25 - 80.75	30.954	22	3.411	0.005
L30	80.75 - 80.5	29.195	22	3.316	0.005
L31	80.5 - 80.25	29.022	22	3.308	0.005
L32	80.25 - 77.5	28.849	22	3.299	0.005
L33	77.5 - 77.25	26.978	22	3.202	0.004
L34	77.25 - 68.82	26.811	22	3.190	0.004
L35	73.291 - 68.291	24.248	22	2.997	0.004
L36	68.291 - 64.25	21.175	22	2.864	0.004
L37	64.25 - 64	18.835	22	2.669	0.003
L38	64 - 60.5	18.696	22	2.659	0.003
L39	60.5 - 60.25	16.802	22	2.513	0.003
L40	60.25 - 60.083	16.670	22	2.503	0.003
L41	60.083 - 59.833	16.583	22	2.496	0.003
L42	59.833 - 59.083	16.453	22	2.487	0.003
L43	59.083 - 58.833	16.064	22	2.459	0.003
L44	58.833 - 55.4167	15.936	22	2.451	0.003
L45	55.4167 - 55.1667	14.226	22	2.330	0.003
L46	55.1667 - 54.75	14.105	22	2.321	0.003

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L47	54.75 - 54.5	13.903	22	2.306	0.003
L48	54.5 - 49.5	13.783	22	2.295	0.003
L49	49.5 - 44.5	11.495	22	2.077	0.002
L50	44.5 - 41.25	9.436	22	1.856	0.002
L51	41.25 - 41	8.222	22	1.712	0.002
L52	41 - 34.291	8.133	22	1.702	0.002
L53	39 - 33.291	7.437	22	1.621	0.002
L54	33.291 - 31.5	5.561	22	1.506	0.002
L55	31.5 - 31.25	5.006	22	1.449	0.001
L56	31.25 - 30.5	4.931	22	1.441	0.001
L57	30.5 - 30.25	4.706	22	1.418	0.001
L58	30.25 - 25.75	4.632	22	1.409	0.001
L59	25.75 - 25.5	3.375	22	1.259	0.001
L60	25.5 - 24.6667	3.310	22	1.248	0.001
L61	24.6667 - 24.4167	3.095	22	1.211	0.001
L62	24.4167 - 19.4167	3.032	22	1.199	0.001
L63	19.4167 - 14.4167	1.909	22	0.946	0.001
L64	14.4167 - 14.083	1.049	22	0.697	0.001
L65	14.083 - 13.817	1.001	22	0.681	0.001
L66	13.817 - 13.667	0.964	22	0.668	0.001
L67	13.667 - 10.5	0.943	22	0.661	0.001
L68	10.5 - 10.25	0.555	22	0.507	0.000
L69	10.25 - 5.25	0.529	22	0.495	0.000
L70	5.25 - 0.25	0.138	22	0.252	0.000
L71	0.25 - 0	0.000	22	0.012	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
156.000	SBNH-1D6565C w/ Mount Pipe	22	109.306	6.710	0.036	8406
146.000	AIR6449 B41_T-MOBILE w/ Mount Pipe	22	95.477	6.498	0.025	1941
145.000	Miscellaneous [NA 510-1]	22	94.124	6.476	0.024	1909
139.000	APXV18-206517S-C	22	86.149	6.251	0.021	1335
132.000	(2) SBNHH-1D65B w/ Mount Pipe	22	77.263	5.892	0.018	975
131.000	6' x 2" Horizontal Mount Pipe	22	76.039	5.830	0.018	937
129.000	HORIZON COMPACT	22	73.631	5.699	0.017	867
127.000	VHLP800-11	22	71.279	5.560	0.015	807
101.000	58532A	22	45.213	4.271	0.008	1341

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	160.333 -	TP16x16x0.375	5.000	0.000	0.0	18.408	-4.223	579.845	0.007

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	155.333 (1)								
L2	155.333 - 150.333 (2)	TP16x16x0.375	5.000	0.000	0.0	18.408	-4.652	579.845	0.008
L3	150.333 - 146.833 (3)	TP16x16x0.375	3.500	0.000	0.0	18.408	-4.963	579.845	0.009
L4	146.833 - 146.333 (4)	TP22x22x0.375	0.500	0.000	0.0	25.476	-5.026	802.505	0.006
L5	146.333 - 141.333 (5)	TP22.924x22x0.25	5.000	0.000	0.0	18.253	-9.926	985.640	0.010
L6	141.333 - 136.333 (6)	TP23.848x22.924x0.25	5.000	0.000	0.0	18.996	-10.730	1025.810	0.010
L7	136.333 - 131.333 (7)	TP24.772x23.848x0.25	5.000	0.000	0.0	19.740	-15.018	1065.970	0.014
L8	131.333 - 126.333 (8)	TP25.696x24.772x0.25	5.000	0.000	0.0	20.484	-16.551	1106.140	0.015
L9	126.333 - 121.333 (9)	TP26.62x25.696x0.25	5.000	0.000	0.0	21.228	-17.319	1146.310	0.015
L10	121.333 - 120.083 (10)	TP26.851x26.62x0.25	1.250	0.000	0.0	21.414	-17.512	1156.350	0.015
L11	120.083 - 119.833 (11)	TP26.897x26.851x0.488	0.250	0.000	0.0	41.457	-17.587	2238.670	0.008
L12	119.833 - 117.5 (12)	TP27.328x26.897x0.488	2.333	0.000	0.0	42.134	-18.075	2275.220	0.008
L13	117.5 - 117.25 (13)	TP27.375x27.328x0.5	0.250	0.000	0.0	43.268	-18.143	2336.480	0.008
L14	117.25 - 115.5 (14)	TP27.698x27.375x0.5	1.750	0.000	0.0	43.789	-18.537	2364.600	0.008
L15	115.5 - 115.25 (15)	TP27.744x27.698x0.663	0.250	0.000	0.0	57.772	-18.620	3119.700	0.006
L16	115.25 - 110.25 (16)	TP28.668x27.744x0.65	5.000	0.000	0.0	58.642	-19.956	3166.690	0.006
L17	110.25 - 104.083 (17)	TP29.808x28.668x0.638	6.167	0.000	0.0	58.462	-20.619	3156.950	0.007
L18	104.083 - 102.82 (18)	TP29.541x28.617x0.7	5.000	0.000	0.0	65.007	-22.913	3510.370	0.007
L19	102.82 - 100.5 (19)	TP29.969x29.541x0.688	2.320	0.000	0.0	64.822	-23.672	3500.390	0.007
L20	100.5 - 100.25 (20)	TP30.015x29.969x0.638	0.250	0.000	0.0	60.305	-23.756	3256.480	0.007
L21	100.25 - 98.5 (21)	TP30.338x30.015x0.625	1.750	0.000	0.0	59.798	-24.266	3229.100	0.008
L22	98.5 - 98.25 (22)	TP30.385x30.338x0.663	0.250	0.000	0.0	63.405	-24.363	3423.850	0.007
L23	98.25 - 93.25 (23)	TP31.308x30.385x0.65	5.000	0.000	0.0	64.167	-25.934	3465.010	0.007
L24	93.25 - 90.5 (24)	TP31.816x31.308x0.638	2.750	0.000	0.0	64.001	-26.813	3456.050	0.008
L25	90.5 - 90.25 (25)	TP31.862x31.816x0.688	0.250	0.000	0.0	69.012	-26.919	3726.650	0.007
L26	90.25 - 85.25 (26)	TP32.785x31.862x0.675	5.000	0.000	0.0	69.791	-28.716	3768.730	0.008
L27	85.25 - 83.5 (27)	TP33.108x32.785x0.663	1.750	0.000	0.0	69.215	-29.347	3737.600	0.008
L28	83.5 - 83.25 (28)	TP33.154x33.108x0.913	0.250	0.000	0.0	94.735	-29.477	5115.680	0.006
L29	83.25 - 80.75 (29)	TP33.616x33.154x0.888	2.500	0.000	0.0	93.530	-30.550	5050.620	0.006
L30	80.75 - 80.5 (30)	TP33.662x33.616x1.063	0.250	0.000	0.0	111.532	-30.680	6022.710	0.005
L31	80.5 - 80.25	TP33.708x33.662x0.975	0.250	0.000	0.0	102.766	-30.798	5549.390	0.006

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	(31)								
L32	80.25 - 77.5 (32)	TP34.216x33.708x0.963	2.750	0.000	0.0	103.061	-32.084	5565.320	0.006
L33	77.5 - 77.25 (33)	TP34.262x34.216x0.688	0.250	0.000	0.0	74.326	-32.197	4013.620	0.008
L34	77.25 - 68.82 (34)	TP35.819x34.262x0.688	8.430	0.000	0.0	75.945	-33.803	4101.010	0.008
L35	68.82 - 68.291 (35)	TP35.291x34.368x0.75	5.000	0.000	0.0	83.418	-37.509	4504.550	0.008
L36	68.291 - 64.25 (36)	TP36.037x35.291x0.738	4.041	0.000	0.0	83.828	-39.298	4526.740	0.009
L37	64.25 - 64 (37)	TP36.084x36.037x0.875	0.250	0.000	0.0	99.200	-39.429	5356.810	0.007
L38	64 - 60.5 (38)	TP36.73x36.084x0.863	3.500	0.000	0.0	99.612	-41.081	5379.060	0.008
L39	60.5 - 60.25 (39)	TP36.776x36.73x0.925	0.250	0.000	0.0	106.782	-41.219	5766.210	0.007
L40	60.25 - 60.083 (40)	TP36.807x36.776x0.925	0.167	0.000	0.0	106.874	-41.304	5771.170	0.007
L41	60.083 - 59.833 (41)	TP36.853x36.807x0.975	0.250	0.000	0.0	112.638	-41.434	6082.470	0.007
L42	59.833 - 59.083 (42)	TP36.991x36.853x0.975	0.750	0.000	0.0	113.073	-41.818	6105.950	0.007
L43	59.083 - 58.833 (43)	TP37.037x36.991x1.05	0.250	0.000	0.0	121.673	-41.962	6570.370	0.006
L44	58.833 - 55.4167 (44)	TP37.668x37.037x1.025	3.416	0.000	0.0	120.941	-43.843	6530.790	0.007
L45	55.4167 - 55.1667 (45)	TP37.714x37.668x1.025	0.250	0.000	0.0	121.093	-43.993	6539.010	0.007
L46	55.1667 - 54.75 (46)	TP37.791x37.714x1.025	0.417	0.000	0.0	121.347	-44.223	6552.720	0.007
L47	54.75 - 54.5 (47)	TP37.837x37.791x0.825	0.250	0.000	0.0	98.323	-44.347	5309.450	0.008
L48	54.5 - 49.5 (48)	TP38.76x37.837x0.813	5.000	0.000	0.0	99.281	-46.791	5361.180	0.009
L49	49.5 - 44.5 (49)	TP39.683x38.76x0.8	5.000	0.000	0.0	100.164	-49.276	5408.830	0.009
L50	44.5 - 41.25 (50)	TP40.283x39.683x0.788	3.250	0.000	0.0	100.152	-50.910	5408.180	0.009
L51	41.25 - 41 (51)	TP40.329x40.283x0.875	0.250	0.000	0.0	111.163	-51.060	6002.800	0.009
L52	41 - 34.291 (52)	TP41.568x40.329x0.875	6.709	0.000	0.0	112.203	-52.145	6058.980	0.009
L53	34.291 - 33.291 (53)	TP40.996x39.949x1.175	5.709	0.000	0.0	150.661	-58.028	8813.670	0.007
L54	33.291 - 31.5 (54)	TP41.324x40.996x1.175	1.791	0.000	0.0	151.904	-59.176	8886.360	0.007
L55	31.5 - 31.25 (55)	TP41.37x41.324x1.175	0.250	0.000	0.0	152.077	-59.357	8896.500	0.007
L56	31.25 - 30.5 (56)	TP41.507x41.37x1.175	0.750	0.000	0.0	152.597	-59.842	8926.940	0.007
L57	30.5 - 30.25 (57)	TP41.553x41.507x1.125	0.250	0.000	0.0	146.451	-60.008	8567.380	0.007
L58	30.25 - 25.75 (58)	TP42.378x41.553x1.1	4.500	0.000	0.0	146.208	-62.890	8553.150	0.007
L59	25.75 - 25.5 (59)	TP42.424x42.378x0.825	0.250	0.000	0.0	110.508	-63.039	6464.730	0.010
L60	25.5 - 24.6667 (60)	TP42.577x42.424x0.813	0.833	0.000	0.0	109.266	-63.494	6392.070	0.010
L61	24.6667 - 24.4167 (61)	TP42.623x42.577x0.713	0.250	0.000	0.0	96.153	-63.621	5624.930	0.011
L62	24.4167 - 19.4167 (62)	TP43.54x42.623x0.7	5.000	0.000	0.0	96.561	-65.993	5648.790	0.012
L63	19.4167 - 14.4167 (63)	TP44.456x43.54x0.7	5.000	0.000	0.0	98.627	-68.404	5769.680	0.012

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L64	14.4167 - 14.083 (64)	TP44.518x44.456x0.7	0.334	0.000	0.0	98.765	-68.579	5777.750	0.012
L65	14.083 - 13.817 (65)	TP44.566x44.518x0.725	0.266	0.000	0.0	102.348	-68.713	5987.350	0.011
L66	13.817 - 13.667 (66)	TP44.594x44.566x0.725	0.150	0.000	0.0	102.412	-68.789	5991.100	0.011
L67	13.667 - 10.5 (67)	TP45.175x44.594x0.713	3.167	0.000	0.0	102.007	-70.350	5967.430	0.012
L68	10.5 - 10.25 (68)	TP45.22x45.175x0.713	0.250	0.000	0.0	102.112	-70.485	5973.580	0.012
L69	10.25 - 5.25 (69)	TP46.137x45.22x0.7	5.000	0.000	0.0	102.416	-72.888	5991.320	0.012
L70	5.25 - 0.25 (70)	TP47.054x46.137x0.7	5.000	0.000	0.0	104.482	-75.329	6112.210	0.012
L71	0.25 - 0 (71)	TP47.1x47.054x0.7	0.250	0.000	0.0	104.586	-75.466	6118.260	0.012

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	160.333 - 155.333 (1)	TP16x16x0.375	11.835	240.372	0.049	0.000	240.372	0.000
L2	155.333 - 150.333 (2)	TP16x16x0.375	52.838	240.372	0.220	0.000	240.372	0.000
L3	150.333 - 146.833 (3)	TP16x16x0.375	83.326	240.372	0.347	0.000	240.372	0.000
L4	146.833 - 146.333 (4)	TP22x22x0.375	87.796	460.380	0.191	0.000	460.380	0.000
L5	146.333 - 141.333 (5)	TP22.924x22x0.25	161.631	561.216	0.288	0.000	561.216	0.000
L6	141.333 - 136.333 (6)	TP23.848x22.924x0.25	238.985	600.296	0.398	0.000	600.296	0.000
L7	136.333 - 131.333 (7)	TP24.772x23.848x0.25	329.582	639.998	0.515	0.000	639.998	0.000
L8	131.333 - 126.333 (8)	TP25.696x24.772x0.25	442.652	680.253	0.651	0.000	680.253	0.000
L9	126.333 - 121.333 (9)	TP26.62x25.696x0.25	563.381	720.983	0.781	0.000	720.983	0.000
L10	121.333 - 120.083 (10)	TP26.851x26.62x0.25	594.048	731.232	0.812	0.000	731.232	0.000
L11	120.083 - 119.833 (11)	TP26.897x26.851x0.488	600.207	1501.958	0.400	0.000	1501.958	0.000
L12	119.833 - 117.5 (12)	TP27.328x26.897x0.488	658.221	1551.850	0.424	0.000	1551.850	0.000
L13	117.5 - 117.25 (13)	TP27.375x27.328x0.5	664.497	1594.942	0.417	0.000	1594.942	0.000
L14	117.25 - 115.5 (14)	TP27.698x27.375x0.5	708.767	1633.917	0.434	0.000	1633.917	0.000
L15	115.5 - 115.25 (15)	TP27.744x27.698x0.663	715.139	2133.733	0.335	0.000	2133.733	0.000
L16	115.25 - 110.25 (16)	TP28.668x27.744x0.65	845.142	2243.533	0.377	0.000	2243.533	0.000
L17	110.25 - 104.083 (17)	TP29.808x28.668x0.638	910.100	2275.292	0.400	0.000	2275.292	0.000
L18	104.083 - 102.82 (18)	TP29.541x28.617x0.7	1047.717	2557.342	0.410	0.000	2557.342	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L19	102.82 - 100.5 (19)	TP29.969x29.541x0.688	1113.250	2591.058	0.430	0.000	2591.058	0.000
L20	100.5 - 100.25 (20)	TP30.015x29.969x0.638	1120.433	2422.642	0.462	0.000	2422.642	0.000
L21	100.25 - 98.5 (21)	TP30.338x30.015x0.625	1170.983	2431.300	0.482	0.000	2431.300	0.000
L22	98.5 - 98.25 (22)	TP30.385x30.338x0.663	1178.242	2575.517	0.457	0.000	2575.517	0.000
L23	98.25 - 93.25 (23)	TP31.308x30.385x0.65	1325.575	2691.408	0.493	0.000	2691.408	0.000
L24	93.25 - 90.5 (24)	TP31.816x31.308x0.638	1408.325	2732.025	0.515	0.000	2732.025	0.000
L25	90.5 - 90.25 (25)	TP31.862x31.816x0.688	1415.908	2940.950	0.481	0.000	2940.950	0.000
L26	90.25 - 85.25 (26)	TP32.785x31.862x0.675	1569.700	3066.525	0.512	0.000	3066.525	0.000
L27	85.25 - 83.5 (27)	TP33.108x32.785x0.663	1624.492	3074.808	0.528	0.000	3074.808	0.000
L28	83.5 - 83.25 (28)	TP33.154x33.108x0.913	1632.358	4150.008	0.393	0.000	4150.008	0.000
L29	83.25 - 80.75 (29)	TP33.616x33.154x0.888	1711.792	4163.867	0.411	0.000	4163.867	0.000
L30	80.75 - 80.5 (30)	TP33.662x33.616x1.063	1719.808	4919.517	0.350	0.000	4919.517	0.000
L31	80.5 - 80.25 (31)	TP33.708x33.662x0.975	1727.833	4563.883	0.379	0.000	4563.883	0.000
L32	80.25 - 77.5 (32)	TP34.216x33.708x0.963	1816.842	4653.542	0.390	0.000	4653.542	0.000
L33	77.5 - 77.25 (33)	TP34.262x34.216x0.688	1824.992	3416.592	0.534	0.000	3416.592	0.000
L34	77.25 - 68.82 (34)	TP35.819x34.262x0.688	1955.517	3568.517	0.548	0.000	3568.517	0.000
L35	68.82 - 68.291 (35)	TP35.291x34.368x0.75	2124.425	3940.108	0.539	0.000	3940.108	0.000
L36	68.291 - 64.25 (36)	TP36.037x35.291x0.738	2264.142	4049.717	0.559	0.000	4049.717	0.000
L37	64.25 - 64 (37)	TP36.084x36.037x0.875	2272.867	4761.442	0.477	0.000	4761.442	0.000
L38	64 - 60.5 (38)	TP36.73x36.084x0.863	2396.133	4874.483	0.492	0.000	4874.483	0.000
L39	60.5 - 60.25 (39)	TP36.776x36.73x0.925	2405.017	5214.017	0.461	0.000	5214.017	0.000
L40	60.25 - 60.083 (40)	TP36.807x36.776x0.925	2410.958	5223.100	0.462	0.000	5223.100	0.000
L41	60.083 - 59.833 (41)	TP36.853x36.807x0.975	2419.850	5496.767	0.440	0.000	5496.767	0.000
L42	59.833 - 59.083 (42)	TP36.991x36.853x0.975	2446.608	5539.833	0.442	0.000	5539.833	0.000
L43	59.083 - 58.833 (43)	TP37.037x36.991x1.05	2455.550	5944.233	0.413	0.000	5944.233	0.000
L44	58.833 - 55.4167 (44)	TP37.668x37.037x1.025	2578.783	6023.125	0.428	0.000	6023.125	0.000
L45	55.4167 - 55.1667 (45)	TP37.714x37.668x1.025	2587.875	6038.508	0.429	0.000	6038.508	0.000
L46	55.1667 - 54.75 (46)	TP37.791x37.714x1.025	2603.058	6064.200	0.429	0.000	6064.200	0.000
L47	54.75 - 54.5 (47)	TP37.837x37.791x0.825	2612.183	4973.558	0.525	0.000	4973.558	0.000
L48	54.5 - 49.5 (48)	TP38.76x37.837x0.813	2796.708	5153.383	0.543	0.000	5153.383	0.000
L49	49.5 - 44.5 (49)	TP39.683x38.76x0.8	2985.117	5331.733	0.560	0.000	5331.733	0.000
L50	44.5 - 41.25 (50)	TP40.283x39.683x0.788	3109.617	5418.442	0.574	0.000	5418.442	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 $\frac{M_{uy}}{\phi M_{ny}}$
L51	41.25 - 41 (51)	TP40.329x40.283x0.875	3119.267	5994.733	0.520	0.000	5994.733	0.000
L52	41 - 34.291 (52)	TP41.568x40.329x0.875	3196.750	6108.683	0.523	0.000	6108.683	0.000
L53	34.291 - 33.291 (53)	TP40.996x39.949x1.175	3421.817	8820.250	0.388	0.000	8820.250	0.000
L54	33.291 - 31.5 (54)	TP41.324x40.996x1.175	3493.567	8968.417	0.390	0.000	8968.417	0.000
L55	31.5 - 31.25 (55)	TP41.37x41.324x1.175	3503.625	8989.167	0.390	0.000	8989.167	0.000
L56	31.25 - 30.5 (56)	TP41.507x41.37x1.175	3533.842	9051.667	0.390	0.000	9051.667	0.000
L57	30.5 - 30.25 (57)	TP41.553x41.507x1.125	3543.933	8718.833	0.406	0.000	8718.833	0.000
L58	30.25 - 25.75 (58)	TP42.378x41.553x1.1	3726.992	8897.583	0.419	0.000	8897.583	0.000
L59	25.75 - 25.5 (59)	TP42.424x42.378x0.825	3737.233	6822.625	0.548	0.000	6822.625	0.000
L60	25.5 - 24.6667 (60)	TP42.577x42.424x0.813	3771.442	6775.267	0.557	0.000	6775.267	0.000
L61	24.6667 - 24.4167 (61)	TP42.623x42.577x0.713	3781.717	5997.391	0.631	0.000	5997.391	0.000
L62	24.4167 - 19.4167 (62)	TP43.54x42.623x0.7	3988.542	6160.383	0.647	0.000	6160.383	0.000
L63	19.4167 - 14.4167 (63)	TP44.456x43.54x0.7	4197.567	6429.050	0.653	0.000	6429.050	0.000
L64	14.4167 - 14.083 (64)	TP44.518x44.456x0.7	4211.583	6447.183	0.653	0.000	6447.183	0.000
L65	14.083 - 13.817 (65)	TP44.566x44.518x0.725	4222.767	6681.000	0.632	0.000	6681.000	0.000
L66	13.817 - 13.667 (66)	TP44.594x44.566x0.725	4229.075	6689.450	0.632	0.000	6689.450	0.000
L67	13.667 - 10.5 (67)	TP45.175x44.594x0.713	4362.658	6756.450	0.646	0.000	6756.450	0.000
L68	10.5 - 10.25 (68)	TP45.22x45.175x0.713	4373.233	6770.500	0.646	0.000	6770.500	0.000
L69	10.25 - 5.25 (69)	TP46.137x45.22x0.7	4585.725	6936.508	0.661	0.000	6936.508	0.000
L70	5.25 - 0.25 (70)	TP47.054x46.137x0.7	4799.983	7221.433	0.665	0.000	7221.433	0.000
L71	0.25 - 0 (71)	TP47.1x47.054x0.7	4810.750	7235.833	0.665	0.000	7235.833	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	160.333 - 155.333 (1)	TP16x16x0.375	7.891	173.953	0.045	1.244	238.964	0.005
L2	155.333 - 150.333 (2)	TP16x16x0.375	8.497	173.953	0.049	1.335	238.964	0.006
L3	150.333 - 146.833 (3)	TP16x16x0.375	8.913	173.953	0.051	1.399	238.964	0.006
L4	146.833 - 146.333 (4)	TP22x22x0.375	8.953	240.752	0.037	1.398	457.725	0.003
L5	146.333 - 141.333 (5)	TP22.924x22x0.25	14.837	295.692	0.050	1.397	589.750	0.002
L6	141.333 -	TP23.848x22.924x0.25	16.049	307.742	0.052	1.396	638.797	0.002

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 $\frac{T_u}{\phi T_n}$
L7	136.333 (6) 136.333 - 131.333 (7)	TP24.772x23.848x0.25	21.549	319.792	0.067	2.516	689.803	0.004
L8	131.333 - 126.333 (8)	TP25.696x24.772x0.25	23.846	331.843	0.072	2.536	742.768	0.003
L9	126.333 - 121.333 (9)	TP26.62x25.696x0.25	24.463	343.893	0.071	2.534	797.692	0.003
L10	121.333 - 120.083 (10)	TP26.851x26.62x0.25	24.626	346.905	0.071	2.534	811.728	0.003
L11	120.083 - 119.833 (11)	TP26.897x26.851x0.488	24.649	671.601	0.037	2.534	1560.183	0.002
L12	119.833 - 117.5 (12)	TP27.328x26.897x0.488	25.087	682.565	0.037	2.564	1611.542	0.002
L13	117.5 - 117.25 (13)	TP27.375x27.328x0.5	25.128	700.945	0.036	2.567	1657.017	0.002
L14	117.25 - 115.5 (14)	TP27.698x27.375x0.5	25.471	709.380	0.036	2.591	1697.142	0.002
L15	115.5 - 115.25 (15)	TP27.744x27.698x0.663	25.509	935.910	0.027	2.594	2229.517	0.001
L16	115.25 - 110.25 (16)	TP28.668x27.744x0.65	26.494	950.006	0.028	2.665	2341.358	0.001
L17	110.25 - 104.083 (17)	TP29.808x28.668x0.638	26.970	947.086	0.028	2.699	2372.617	0.001
L18	104.083 - 102.82 (18)	TP29.541x28.617x0.7	28.058	1053.110	0.027	2.772	2671.650	0.001
L19	102.82 - 100.5 (19)	TP29.969x29.541x0.688	28.715	1050.120	0.027	3.288	2704.783	0.001
L20	100.5 - 100.25 (20)	TP30.015x29.969x0.638	28.758	976.943	0.029	3.292	2524.575	0.001
L21	100.25 - 98.5 (21)	TP30.338x30.015x0.625	29.052	968.731	0.030	3.292	2531.950	0.001
L22	98.5 - 98.25 (22)	TP30.385x30.338x0.663	29.078	1027.150	0.028	3.291	2685.433	0.001
L23	98.25 - 93.25 (23)	TP31.308x30.385x0.65	29.889	1039.500	0.029	3.290	2803.283	0.001
L24	93.25 - 90.5 (24)	TP31.816x31.308x0.638	30.335	1036.820	0.029	3.289	2843.492	0.001
L25	90.5 - 90.25 (25)	TP31.862x31.816x0.688	30.363	1118.000	0.027	3.289	3065.750	0.001
L26	90.25 - 85.25 (26)	TP32.785x31.862x0.675	31.188	1130.620	0.028	3.287	3193.433	0.001
L27	85.25 - 83.5 (27)	TP33.108x32.785x0.663	31.483	1121.280	0.028	3.287	3200.158	0.001
L28	83.5 - 83.25 (28)	TP33.154x33.108x0.913	31.518	1534.700	0.021	3.289	4352.558	0.001
L29	83.25 - 80.75 (29)	TP33.616x33.154x0.888	32.059	1515.190	0.021	3.311	4362.067	0.001
L30	80.75 - 80.5 (30)	TP33.662x33.616x1.063	32.094	1806.810	0.018	3.311	5181.158	0.001
L31	80.5 - 80.25 (31)	TP33.708x33.662x0.975	32.139	1664.820	0.019	3.311	4793.542	0.001
L32	80.25 - 77.5 (32)	TP34.216x33.708x0.963	32.630	1669.600	0.020	3.311	4883.725	0.001
L33	77.5 - 77.25 (33)	TP34.262x34.216x0.688	32.661	1204.090	0.027	3.310	3556.083	0.001
L34	77.25 - 68.82 (34)	TP35.819x34.262x0.688	33.317	1230.300	0.027	3.309	3712.625	0.001
L35	68.82 - 68.291 (35)	TP35.291x34.368x0.75	34.273	1351.360	0.025	3.309	4105.942	0.001
L36	68.291 - 64.25	TP36.037x35.291x0.738	34.921	1358.020	0.026	3.308	4216.775	0.001

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
	(36)							
L37	64.25 - 64 (37)	TP36.084x36.037x0.875	34.949	1607.040	0.022	3.307	4977.092	0.001
L38	64 - 60.5 (38)	TP36.73x36.084x0.863	35.530	1613.720	0.022	3.307	5091.250	0.001
L39	60.5 - 60.25 (39)	TP36.776x36.73x0.925	35.559	1729.860	0.021	3.307	5455.208	0.001
L40	60.25 - 60.083 (40)	TP36.807x36.776x0.925	35.586	1731.350	0.021	3.307	5464.592	0.001
L41	60.083 - 59.833 (41)	TP36.853x36.807x0.975	35.628	1824.740	0.020	3.307	5758.741	0.001
L42	59.833 - 59.083 (42)	TP36.991x36.853x0.975	35.760	1831.780	0.020	3.307	5803.267	0.001
L43	59.083 - 58.833 (43)	TP37.037x36.991x1.05	35.796	1971.110	0.018	3.306	6239.667	0.001
L44	58.833 - 55.4167 (44)	TP37.668x37.037x1.025	36.386	1959.240	0.019	3.306	6315.083	0.001
L45	55.4167 - 55.1667 (45)	TP37.714x37.668x1.025	36.416	1961.700	0.019	3.306	6331.000	0.001
L46	55.1667 - 54.75 (46)	TP37.791x37.714x1.025	36.488	1965.820	0.019	3.306	6357.575	0.001
L47	54.75 - 54.5 (47)	TP37.837x37.791x0.825	36.527	1592.840	0.023	3.306	5185.817	0.001
L48	54.5 - 49.5 (48)	TP38.76x37.837x0.813	37.326	1608.350	0.023	3.305	5368.692	0.001
L49	49.5 - 44.5 (49)	TP39.683x38.76x0.8	38.095	1622.650	0.023	3.304	5549.942	0.001
L50	44.5 - 41.25 (50)	TP40.283x39.683x0.788	38.585	1622.460	0.024	3.303	5636.683	0.001
L51	41.25 - 41 (51)	TP40.329x40.283x0.875	38.607	1800.840	0.021	3.303	6249.875	0.001
L52	41 - 34.291 (52)	TP41.568x40.329x0.875	38.921	1817.690	0.021	3.303	6367.400	0.001
L53	34.291 - 33.291 (53)	TP40.996x39.949x1.175	39.954	2644.100	0.015	3.303	9261.583	0.000
L54	33.291 - 31.5 (54)	TP41.324x40.996x1.175	40.239	2665.910	0.015	3.302	9415.000	0.000
L55	31.5 - 31.25 (55)	TP41.37x41.324x1.175	40.252	2668.950	0.015	3.302	9436.500	0.000
L56	31.25 - 30.5 (56)	TP41.507x41.37x1.175	40.373	2678.080	0.015	3.302	9501.167	0.000
L57	30.5 - 30.25 (57)	TP41.553x41.507x1.125	40.399	2570.210	0.016	3.302	9140.167	0.000
L58	30.25 - 25.75 (58)	TP42.378x41.553x1.1	41.005	2565.950	0.016	3.302	9316.833	0.000
L59	25.75 - 25.5 (59)	TP42.424x42.378x0.825	41.019	1939.420	0.021	3.302	7096.683	0.000
L60	25.5 - 24.6667 (60)	TP42.577x42.424x0.813	41.128	1917.620	0.021	3.302	7044.817	0.000
L61	24.6667 - 24.4167 (61)	TP42.623x42.577x0.713	41.141	1687.480	0.024	3.302	6220.983	0.001
L62	24.4167 - 19.4167 (62)	TP43.54x42.623x0.7	41.647	1694.640	0.025	3.301	6385.900	0.001
L63	19.4167 - 14.4167 (63)	TP44.456x43.54x0.7	42.044	1730.900	0.024	3.301	6662.158	0.000
L64	14.4167 - 14.083 (64)	TP44.518x44.456x0.7	42.050	1733.330	0.024	3.301	6680.808	0.000
L65	14.083 - 13.817 (65)	TP44.566x44.518x0.725	42.068	1796.200	0.023	3.300	6926.917	0.000
L66	13.817 - 13.667 (66)	TP44.594x44.566x0.725	42.076	1797.330	0.023	3.300	6935.617	0.000
L67	13.667 - 10.5 (67)	TP45.175x44.594x0.713	42.344	1790.230	0.024	3.300	7001.625	0.000
L68	10.5 - 10.25 (68)	TP45.22x45.175x0.713	42.338	1792.070	0.024	3.300	7016.067	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 $\frac{T_u}{\phi T_n}$
L69	10.25 - 5.25 (69)	TP46.137x45.22x0.7	42.720	1797.400	0.024	3.300	7183.833	0.000
L70	5.25 - 0.25 (70)	TP47.054x46.137x0.7	43.072	1833.660	0.023	3.300	7476.675	0.000
L71	0.25 - 0 (71)	TP47.1x47.054x0.7	43.065	1835.480	0.023	3.300	7491.467	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	160.333 - 155.333 (1)	0.007	0.049	0.000	0.045	0.005	0.059 ✔	1.050	4.8.2 ✔
L2	155.333 - 150.333 (2)	0.008	0.220	0.000	0.049	0.006	0.231 ✔	1.050	4.8.2 ✔
L3	150.333 - 146.833 (3)	0.009	0.347	0.000	0.051	0.006	0.358 ✔	1.050	4.8.2 ✔
L4	146.833 - 146.333 (4)	0.006	0.191	0.000	0.037	0.003	0.199 ✔	1.050	4.8.2 ✔
L5	146.333 - 141.333 (5)	0.010	0.288	0.000	0.050	0.002	0.301 ✔	1.050	4.8.2 ✔
L6	141.333 - 136.333 (6)	0.010	0.398	0.000	0.052	0.002	0.412 ✔	1.050	4.8.2 ✔
L7	136.333 - 131.333 (7)	0.014	0.515	0.000	0.067	0.004	0.534 ✔	1.050	4.8.2 ✔
L8	131.333 - 126.333 (8)	0.015	0.651	0.000	0.072	0.003	0.671 ✔	1.050	4.8.2 ✔
L9	126.333 - 121.333 (9)	0.015	0.781	0.000	0.071	0.003	0.802 ✔	1.050	4.8.2 ✔
L10	121.333 - 120.083 (10)	0.015	0.812	0.000	0.071	0.003	0.833 ✔	1.050	4.8.2 ✔
L11	120.083 - 119.833 (11)	0.008	0.400	0.000	0.037	0.002	0.409 ✔	1.050	4.8.2 ✔
L12	119.833 - 117.5 (12)	0.008	0.424	0.000	0.037	0.002	0.434 ✔	1.050	4.8.2 ✔
L13	117.5 - 117.25 (13)	0.008	0.417	0.000	0.036	0.002	0.426 ✔	1.050	4.8.2 ✔
L14	117.25 - 115.5 (14)	0.008	0.434	0.000	0.036	0.002	0.443 ✔	1.050	4.8.2 ✔
L15	115.5 - 115.25 (15)	0.006	0.335	0.000	0.027	0.001	0.342 ✔	1.050	4.8.2 ✔
L16	115.25 - 110.25 (16)	0.006	0.377	0.000	0.028	0.001	0.384 ✔	1.050	4.8.2 ✔
L17	110.25 - 104.083 (17)	0.007	0.400	0.000	0.028	0.001	0.407 ✔	1.050	4.8.2 ✔
L18	104.083 - 102.82 (18)	0.007	0.410	0.000	0.027	0.001	0.417 ✔	1.050	4.8.2 ✔
L19	102.82 - 100.5 (19)	0.007	0.430	0.000	0.027	0.001	0.437 ✔	1.050	4.8.2 ✔
L20	100.5 - 100.25	0.007	0.462	0.000	0.029	0.001	0.471	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
	(20)						✔		
L21	100.25 - 98.5 (21)	0.008	0.482	0.000	0.030	0.001	0.490 ✔	1.050	4.8.2 ✔
L22	98.5 - 98.25 (22)	0.007	0.457	0.000	0.028	0.001	0.465 ✔	1.050	4.8.2 ✔
L23	98.25 - 93.25 (23)	0.007	0.493	0.000	0.029	0.001	0.501 ✔	1.050	4.8.2 ✔
L24	93.25 - 90.5 (24)	0.008	0.515	0.000	0.029	0.001	0.524 ✔	1.050	4.8.2 ✔
L25	90.5 - 90.25 (25)	0.007	0.481	0.000	0.027	0.001	0.489 ✔	1.050	4.8.2 ✔
L26	90.25 - 85.25 (26)	0.008	0.512	0.000	0.028	0.001	0.520 ✔	1.050	4.8.2 ✔
L27	85.25 - 83.5 (27)	0.008	0.528	0.000	0.028	0.001	0.537 ✔	1.050	4.8.2 ✔
L28	83.5 - 83.25 (28)	0.006	0.393	0.000	0.021	0.001	0.400 ✔	1.050	4.8.2 ✔
L29	83.25 - 80.75 (29)	0.006	0.411	0.000	0.021	0.001	0.418 ✔	1.050	4.8.2 ✔
L30	80.75 - 80.5 (30)	0.005	0.350	0.000	0.018	0.001	0.355 ✔	1.050	4.8.2 ✔
L31	80.5 - 80.25 (31)	0.006	0.379	0.000	0.019	0.001	0.385 ✔	1.050	4.8.2 ✔
L32	80.25 - 77.5 (32)	0.006	0.390	0.000	0.020	0.001	0.397 ✔	1.050	4.8.2 ✔
L33	77.5 - 77.25 (33)	0.008	0.534	0.000	0.027	0.001	0.543 ✔	1.050	4.8.2 ✔
L34	77.25 - 68.82 (34)	0.008	0.548	0.000	0.027	0.001	0.557 ✔	1.050	4.8.2 ✔
L35	68.82 - 68.291 (35)	0.008	0.539	0.000	0.025	0.001	0.548 ✔	1.050	4.8.2 ✔
L36	68.291 - 64.25 (36)	0.009	0.559	0.000	0.026	0.001	0.568 ✔	1.050	4.8.2 ✔
L37	64.25 - 64 (37)	0.007	0.477	0.000	0.022	0.001	0.485 ✔	1.050	4.8.2 ✔
L38	64 - 60.5 (38)	0.008	0.492	0.000	0.022	0.001	0.500 ✔	1.050	4.8.2 ✔
L39	60.5 - 60.25 (39)	0.007	0.461	0.000	0.021	0.001	0.469 ✔	1.050	4.8.2 ✔
L40	60.25 - 60.083 (40)	0.007	0.462	0.000	0.021	0.001	0.469 ✔	1.050	4.8.2 ✔
L41	60.083 - 59.833 (41)	0.007	0.440	0.000	0.020	0.001	0.447 ✔	1.050	4.8.2 ✔
L42	59.833 - 59.083 (42)	0.007	0.442	0.000	0.020	0.001	0.449 ✔	1.050	4.8.2 ✔
L43	59.083 - 58.833 (43)	0.006	0.413	0.000	0.018	0.001	0.420 ✔	1.050	4.8.2 ✔
L44	58.833 - 55.4167 (44)	0.007	0.428	0.000	0.019	0.001	0.435 ✔	1.050	4.8.2 ✔
L45	55.4167 - 55.1667 (45)	0.007	0.429	0.000	0.019	0.001	0.436 ✔	1.050	4.8.2 ✔
L46	55.1667 -	0.007	0.429	0.000	0.019	0.001	0.436	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
	54.75 (46)						✔		
L47	54.75 - 54.5 (47)	0.008	0.525	0.000	0.023	0.001	0.534 ✔	1.050	4.8.2 ✔
L48	54.5 - 49.5 (48)	0.009	0.543	0.000	0.023	0.001	0.552 ✔	1.050	4.8.2 ✔
L49	49.5 - 44.5 (49)	0.009	0.560	0.000	0.023	0.001	0.570 ✔	1.050	4.8.2 ✔
L50	44.5 - 41.25 (50)	0.009	0.574	0.000	0.024	0.001	0.584 ✔	1.050	4.8.2 ✔
L51	41.25 - 41 (51)	0.009	0.520	0.000	0.021	0.001	0.529 ✔	1.050	4.8.2 ✔
L52	41 - 34.291 (52)	0.009	0.523	0.000	0.021	0.001	0.532 ✔	1.050	4.8.2 ✔
L53	34.291 - 33.291 (53)	0.007	0.388	0.000	0.015	0.000	0.395 ✔	1.050	4.8.2 ✔
L54	33.291 - 31.5 (54)	0.007	0.390	0.000	0.015	0.000	0.396 ✔	1.050	4.8.2 ✔
L55	31.5 - 31.25 (55)	0.007	0.390	0.000	0.015	0.000	0.397 ✔	1.050	4.8.2 ✔
L56	31.25 - 30.5 (56)	0.007	0.390	0.000	0.015	0.000	0.397 ✔	1.050	4.8.2 ✔
L57	30.5 - 30.25 (57)	0.007	0.406	0.000	0.016	0.000	0.414 ✔	1.050	4.8.2 ✔
L58	30.25 - 25.75 (58)	0.007	0.419	0.000	0.016	0.000	0.426 ✔	1.050	4.8.2 ✔
L59	25.75 - 25.5 (59)	0.010	0.548	0.000	0.021	0.000	0.558 ✔	1.050	4.8.2 ✔
L60	25.5 - 24.6667 (60)	0.010	0.557	0.000	0.021	0.000	0.567 ✔	1.050	4.8.2 ✔
L61	24.6667 - 24.4167 (61)	0.011	0.631	0.000	0.024	0.001	0.642 ✔	1.050	4.8.2 ✔
L62	24.4167 - 19.4167 (62)	0.012	0.647	0.000	0.025	0.001	0.660 ✔	1.050	4.8.2 ✔
L63	19.4167 - 14.4167 (63)	0.012	0.653	0.000	0.024	0.000	0.665 ✔	1.050	4.8.2 ✔
L64	14.4167 - 14.083 (64)	0.012	0.653	0.000	0.024	0.000	0.666 ✔	1.050	4.8.2 ✔
L65	14.083 - 13.817 (65)	0.011	0.632	0.000	0.023	0.000	0.644 ✔	1.050	4.8.2 ✔
L66	13.817 - 13.667 (66)	0.011	0.632	0.000	0.023	0.000	0.644 ✔	1.050	4.8.2 ✔
L67	13.667 - 10.5 (67)	0.012	0.646	0.000	0.024	0.000	0.658 ✔	1.050	4.8.2 ✔
L68	10.5 - 10.25 (68)	0.012	0.646	0.000	0.024	0.000	0.658 ✔	1.050	4.8.2 ✔
L69	10.25 - 5.25 (69)	0.012	0.661	0.000	0.024	0.000	0.674 ✔	1.050	4.8.2 ✔
L70	5.25 - 0.25 (70)	0.012	0.665	0.000	0.023	0.000	0.678 ✔	1.050	4.8.2 ✔
L71	0.25 - 0 (71)	0.012	0.665	0.000	0.023	0.000	0.678 ✔	1.050	4.8.2 ✔

Section Capacity Table

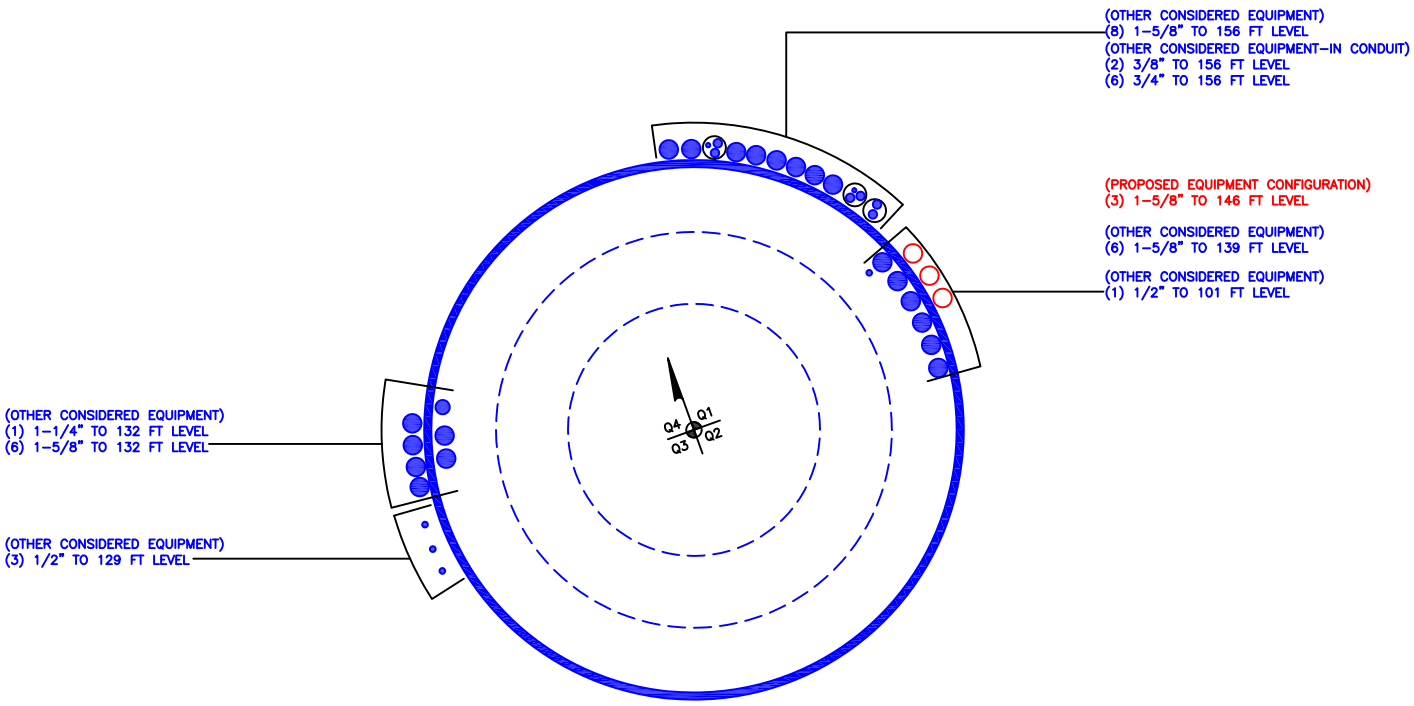
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	øP$_{allow}$ K	% Capacity	Pass Fail
L1	160.333 - 155.333	Pole	TP16x16x0.375	1	-4.223	608.837	**	**
L2	155.333 - 150.333	Pole	TP16x16x0.375	2	-4.652	608.837	**	**
L3	150.333 - 146.833	Pole	TP16x16x0.375	3	-4.963	608.837	**	**
L4	146.833 - 146.333	Pole	TP22x22x0.375	4	-5.026	842.630	**	**
L5	146.333 - 141.333	Pole	TP22.924x22x0.25	5	-9.926	1034.922	**	**
L6	141.333 - 136.333	Pole	TP23.848x22.924x0.25	6	-10.730	1077.100	**	**
L7	136.333 - 131.333	Pole	TP24.772x23.848x0.25	7	-15.018	1119.268	**	**
L8	131.333 - 126.333	Pole	TP25.696x24.772x0.25	8	-16.551	1161.447	**	**
L9	126.333 - 121.333	Pole	TP26.62x25.696x0.25	9	-17.319	1203.625	**	**
L10	121.333 - 120.083	Pole	TP26.851x26.62x0.25	10	-17.512	1214.167	**	**
L11	120.083 - 119.833	Pole	TP26.897x26.851x0.488	11	-17.587	2350.603	**	**
L12	119.833 - 117.5	Pole	TP27.328x26.897x0.488	12	-18.075	2388.981	**	**
L13	117.5 - 117.25	Pole	TP27.375x27.328x0.5	13	-18.143	2453.304	**	**
L14	117.25 - 115.5	Pole	TP27.698x27.375x0.5	14	-18.537	2482.830	**	**
L15	115.5 - 115.25	Pole	TP27.744x27.698x0.663	15	-18.620	3275.685	**	**
L16	115.25 - 110.25	Pole	TP28.668x27.744x0.65	16	-19.956	3325.024	**	**
L17	110.25 - 104.083	Pole	TP29.808x28.668x0.638	17	-20.619	3314.797	**	**
L18	104.083 - 102.82	Pole	TP29.541x28.617x0.7	18	-22.913	3685.888	**	**
L19	102.82 - 100.5	Pole	TP29.969x29.541x0.688	19	-23.672	3675.409	**	**
L20	100.5 - 100.25	Pole	TP30.015x29.969x0.638	20	-23.756	3419.304	**	**
L21	100.25 - 98.5	Pole	TP30.338x30.015x0.625	21	-24.266	3390.555	**	**
L22	98.5 - 98.25	Pole	TP30.385x30.338x0.663	22	-24.363	3595.042	**	**
L23	98.25 - 93.25	Pole	TP31.308x30.385x0.65	23	-25.934	3638.260	**	**
L24	93.25 - 90.5	Pole	TP31.816x31.308x0.638	24	-26.813	3628.852	**	**
L25	90.5 - 90.25	Pole	TP31.862x31.816x0.688	25	-26.919	3912.982	**	**
L26	90.25 - 85.25	Pole	TP32.785x31.862x0.675	26	-28.716	3957.166	**	**
L27	85.25 - 83.5	Pole	TP33.108x32.785x0.663	27	-29.347	3924.480	**	**
L28	83.5 - 83.25	Pole	TP33.154x33.108x0.913	28	-29.477	5371.464	**	**
L29	83.25 - 80.75	Pole	TP33.616x33.154x0.888	29	-30.550	5303.151	**	**
L30	80.75 - 80.5	Pole	TP33.662x33.616x1.063	30	-30.680	6323.845	**	**
L31	80.5 - 80.25	Pole	TP33.708x33.662x0.975	31	-30.798	5826.859	**	**
L32	80.25 - 77.5	Pole	TP34.216x33.708x0.963	32	-32.084	5843.586	**	**
L33	77.5 - 77.25	Pole	TP34.262x34.216x0.688	33	-32.197	4214.301	**	**
L34	77.25 - 68.82	Pole	TP35.819x34.262x0.688	34	-33.803	4306.060	**	**
L35	68.82 - 68.291	Pole	TP35.291x34.368x0.75	35	-37.509	4729.777	**	**
L36	68.291 - 64.25	Pole	TP36.037x35.291x0.738	36	-39.298	4753.077	**	**
L37	64.25 - 64	Pole	TP36.084x36.037x0.875	37	-39.429	5624.650	**	**
L38	64 - 60.5	Pole	TP36.73x36.084x0.863	38	-41.081	5648.013	**	**
L39	60.5 - 60.25	Pole	TP36.776x36.73x0.925	39	-41.219	6054.520	**	**
L40	60.25 - 60.083	Pole	TP36.807x36.776x0.925	40	-41.304	6059.728	**	**
L41	60.083 - 59.833	Pole	TP36.853x36.807x0.975	41	-41.434	6386.593	**	**
L42	59.833 - 59.083	Pole	TP36.991x36.853x0.975	42	-41.818	6411.247	**	**
L43	59.083 - 58.833	Pole	TP37.037x36.991x1.05	43	-41.962	6898.888	**	**
L44	58.833 - 55.4167	Pole	TP37.668x37.037x1.025	44	-43.843	6857.329	**	**
L45	55.4167 - 55.1667	Pole	TP37.714x37.668x1.025	45	-43.993	6865.960	**	**
L46	55.1667 - 54.75	Pole	TP37.791x37.714x1.025	46	-44.223	6880.356	**	**
L47	54.75 - 54.5	Pole	TP37.837x37.791x0.825	47	-44.347	5574.922	**	**
L48	54.5 - 49.5	Pole	TP38.76x37.837x0.813	48	-46.791	5629.239	**	**
L49	49.5 - 44.5	Pole	TP39.683x38.76x0.8	49	-49.276	5679.271	**	**
L50	44.5 - 41.25	Pole	TP40.283x39.683x0.788	50	-50.910	5678.589	**	**
L51	41.25 - 41	Pole	TP40.329x40.283x0.875	51	-51.060	6302.940	**	**
L52	41 - 34.291	Pole	TP41.568x40.329x0.875	52	-52.145	6361.929	**	**
L53	34.291 - 33.291	Pole	TP40.996x39.949x1.175	53	-58.028	9254.353	**	**

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L54	33.291 - 31.5	Pole	TP41.324x40.996x1.175	54	-59.176	9330.678	**	**
L55	31.5 - 31.25	Pole	TP41.37x41.324x1.175	55	-59.357	9341.325	**	**
L56	31.25 - 30.5	Pole	TP41.507x41.37x1.175	56	-59.842	9373.287	**	**
L57	30.5 - 30.25	Pole	TP41.553x41.507x1.125	57	-60.008	8995.749	**	**
L58	30.25 - 25.75	Pole	TP42.378x41.553x1.1	58	-62.890	8980.807	**	**
L59	25.75 - 25.5	Pole	TP42.424x42.378x0.825	59	-63.039	6787.966	**	**
L60	25.5 - 24.6667	Pole	TP42.577x42.424x0.813	60	-63.494	6711.673	**	**
L61	24.6667 - 24.4167	Pole	TP42.623x42.577x0.713	61	-63.621	5906.176	**	**
L62	24.4167 - 19.4167	Pole	TP43.54x42.623x0.7	62	-65.993	5931.229	**	**
L63	19.4167 - 14.4167	Pole	TP44.456x43.54x0.7	63	-68.404	6058.164	**	**
L64	14.4167 - 14.083	Pole	TP44.518x44.456x0.7	64	-68.579	6066.637	**	**
L65	14.083 - 13.817	Pole	TP44.566x44.518x0.725	65	-68.713	6286.717	**	**
L66	13.817 - 13.667	Pole	TP44.594x44.566x0.725	66	-68.789	6290.655	**	**
L67	13.667 - 10.5	Pole	TP45.175x44.594x0.713	67	-70.350	6265.801	**	**
L68	10.5 - 10.25	Pole	TP45.22x45.175x0.713	68	-70.485	6272.259	**	**
L69	10.25 - 5.25	Pole	TP46.137x45.22x0.7	69	-72.888	6290.886	**	**
L70	5.25 - 0.25	Pole	TP47.054x46.137x0.7	70	-75.329	6417.820	**	**
L71	0.25 - 0	Pole	TP47.1x47.054x0.7	71	-75.466	6424.173	**	**
							Summary	
						Pole	**	**
						RATING =	**	**

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

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876334

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 876334

Work Order: 1919210

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	160.333	13.5	0	0	16	16	0.375		A53-B-35
2	146.833	0.5	0	0	22.00	22	0.375		A53-B-35
3	146.333	42.25	3.737	12	22.00	29.808	0.25	Auto	A607-60
4	107.82	39	4.471	12	28.62	35.819	0.3125	Auto	A607-60
5	73.291	39	4.709	12	34.37	41.568	0.375	Auto	A607-60
6	39	39	0	12	39.95	47.1	0.375	Auto	A607-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12
1	0	14.083	channel	MP3-04 (1.1875in)	2						E1		E1				
2	0	30.5	channel	MP3-05 (1.1875in)	2			E1								E1	
3	30.5	59.083	channel	MP3-04 (1.1875in)	2			E1								E1	
4	13.917	31.5	channel	MP3-05 (1.1875in)	1							E1					
5	31.5	60.083	channel	MP3-04 (1.1875in)	1							E1					
6	0	30.5	plate	MS-600 (1.1875")	3		E2			E2				E2			
7	30.5	60.5	plate	MS-650 (1.1875")	3		E2			E2				E2			
8	60.5	80.5	plate	MS-600 (1.1875")	3		E2			E2				E2			
9	80.5	98.5	plate	MS-600 (1.1875")	2					E2				E2			
10	80.5	100.5	plate	MS-650 (1.1875")	1		E2										
11	100.5	117.5	plate	CCI-SFP-045100	1				E3								
12	98.5	115.5	plate	CCI-SFP-045100	2								E3				E3
13	0	10.5	plate	CCI-AFP-060100	1												E4
14	10.5	41.25	plate	CCI-AFP-085125	1												E4
15	64.25	80.75	plate	CCI-AFP-085125	1												E4
16	24.6667	55.41667	plate	CCI-AFP-085125	2						E5				E5		
17	55.41667	90.5	plate	CCI-AFP-085125	2						E5				E5		
18	90.5	120.083	plate	CCI-AFP-060100	2						E5				E5		
19	100.5	120.083	plate	CCI-AFP-060100	1		E5										
20	25.75	35.25	plate	MS-650 (1.1875")	3	E2			E2				E2				
21	54.75	64.25	plate	MS-600 (1.1875")	3	E2			E2				E2				
22	77.5	83.5	plate	MS-600 (1.1875")	3	E2			E2				E2				
23																	

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	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
2	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
3	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
4	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
5	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
6	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.375	4.750	1.1875	A572-65
7	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	33	PC 8.8 - M20 (100)	33.000	19.250	6.563	1.1875	A572-65
8	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.375	4.750	1.1875	A572-65
9	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.375	4.750	1.1875	A572-65
10	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	33	PC 8.8 - M20 (100)	33.000	19.250	6.563	1.1875	A572-65
11	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	20.000	3.250	1.1875	A572-65
12	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	20.000	3.250	1.1875	A572-65
13	6	1	6	0.5	PC 8.8 - M20 (100)	30	PC 8.8 - M20 (100)	30.000	16.000	4.750	1.1875	A572-65
14	8.5	1.25	10.625	0.625	PC 8.8 - M20 (100)	51	PC 8.8 - M20 (100)	51.000	17.000	9.063	1.1875	A572-65
15	8.5	1.25	10.625	0.625	PC 8.8 - M20 (100)	51	PC 8.8 - M20 (100)	51.000	17.000	9.063	1.1875	A572-65
16	8.5	1.25	10.625	0.625	PC 8.8 - M20 (100)	51	PC 8.8 - M20 (100)	51.000	17.000	9.063	1.1875	A572-65
17	8.5	1.25	10.625	0.625	PC 8.8 - M20 (100)	51	PC 8.8 - M20 (100)	51.000	17.000	9.063	1.1875	A572-65
18	6	1	6	0.5	PC 8.8 - M20 (100)	30	PC 8.8 - M20 (100)	30.000	16.000	4.750	1.1875	A572-65
19	6	1	6	0.5	PC 8.8 - M20 (100)	30	PC 8.8 - M20 (100)	30.000	16.000	4.750	1.1875	A572-65
20	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	33	PC 8.8 - M20 (100)	33.000	19.250	6.563	1.1875	A572-65
21	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.375	4.750	1.1875	A572-65
22	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.375	4.750	1.1875	A572-65

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	160.333 - 155.333	5		0	16.000	16.000	0.375	A53-B-35	1.000
2	155.333 - 150.333	5		0	16.000	16.000	0.375	A53-B-35	1.000
3	150.333 - 146.833	3.5	0	0	16.000	16.000	0.375	A53-B-35	1.000
4	146.833 - 146.333	0.5	0	0	22.000	22.000	0.375	A53-B-35	1.000
5	146.333 - 141.333	5		12	22.000	22.924	0.25	A607-60	1.000
6	141.333 - 136.333	5		12	22.924	23.848	0.25	A607-60	1.000
7	136.333 - 131.333	5		12	23.848	24.772	0.25	A607-60	1.000
8	131.333 - 126.333	5		12	24.772	25.696	0.25	A607-60	1.000
9	126.333 - 121.333	5		12	25.696	26.620	0.25	A607-60	1.000
10	121.333 - 120.083	1.25		12	26.620	26.851	0.25	A607-60	1.000
11	120.083 - 119.833	0.25		12	26.851	26.897	0.4875	A607-60	0.952
12	119.833 - 117.5	2.333		12	26.897	27.328	0.4875	A607-60	0.945
13	117.5 - 117.25	0.25		12	27.328	27.375	0.5	A607-60	1.025
14	117.25 - 115.5	1.75		12	27.375	27.698	0.5	A607-60	1.019
15	115.5 - 115.25	0.25		12	27.698	27.744	0.6625	A607-60	0.929
16	115.25 - 110.25	5		12	27.744	28.668	0.65	A607-60	0.928
17	110.25 - 107.82	6.167	3.737	12	28.668	29.808	0.6375	A607-60	0.937
18	107.82 - 102.82	5		12	28.617	29.541	0.7	A607-60	0.938
19	102.82 - 100.5	2.32		12	29.541	29.969	0.6875	A607-60	0.947
20	100.5 - 100.25	0.25		12	29.969	30.015	0.6375	A607-60	0.979
21	100.25 - 98.5	1.75		12	30.015	30.338	0.625	A607-60	0.993
22	98.5 - 98.25	0.25		12	30.338	30.385	0.6625	A607-60	0.985
23	98.25 - 93.25	5		12	30.385	31.308	0.65	A607-60	0.987
24	93.25 - 90.5	2.75		12	31.308	31.816	0.6375	A607-60	0.998
25	90.5 - 90.25	0.25		12	31.816	31.862	0.6875	A607-60	1.060
26	90.25 - 85.25	5		12	31.862	32.785	0.675	A607-60	1.062
27	85.25 - 83.5	1.75		12	32.785	33.108	0.6625	A607-60	1.075
28	83.5 - 83.25	0.25		12	33.108	33.154	0.9125	A607-60	0.976
29	83.25 - 80.75	2.5		12	33.154	33.616	0.8875	A607-60	0.994
30	80.75 - 80.5	0.25		12	33.616	33.662	1.0625	A607-60	0.929
31	80.5 - 80.25	0.25		12	33.662	33.708	0.975	A607-60	0.988
32	80.25 - 77.5	2.75		12	33.708	34.216	0.9625	A607-60	0.991
33	77.5 - 77.25	0.25		12	34.216	34.262	0.6875	A607-60	1.132
34	77.25 - 73.291	8.43	4.471	12	34.262	35.819	0.6875	A607-60	1.117
35	73.291 - 68.291	5		12	34.368	35.291	0.75	A607-60	1.104
36	68.291 - 64.25	4.041		12	35.291	36.037	0.7375	A607-60	1.110
37	64.25 - 64	0.25		12	36.037	36.084	0.875	A607-60	1.013
38	64 - 60.5	3.5		12	36.084	36.730	0.8625	A607-60	1.016
39	60.5 - 60.25	0.25		12	36.730	36.776	0.925	A607-60	1.008
40	60.25 - 60.083	0.167		12	36.776	36.807	0.925	A607-60	1.008
41	60.083 - 59.833	0.25		12	36.807	36.853	0.975	A607-60	0.993
42	59.833 - 59.083	0.75		12	36.853	36.991	0.975	A607-60	0.991
43	59.083 - 58.833	0.25		12	36.991	37.037	1.05	A607-60	0.989
44	58.833 - 55.41667	3.41633		12	37.037	37.668	1.025	A607-60	1.002
45	55.41667 - 55.16667	0.25		12	37.668	37.714	1.025	A607-60	1.001
46	55.16667 - 54.75	0.41667		12	37.714	37.791	1.025	A607-60	1.000
47	54.75 - 54.5	0.25		12	37.791	37.837	0.825	A607-60	1.051
48	54.5 - 49.5	5		12	37.837	38.760	0.8125	A607-60	1.052
49	49.5 - 44.5	5		12	38.760	39.683	0.8	A607-60	1.054
50	44.5 - 41.25	3.25		12	39.683	40.283	0.7875	A607-60	1.061
51	41.25 - 41	0.25		12	40.283	40.329	0.875	A607-60	1.052
52	41 - 39	6.709	4.709	12	40.329	41.568	0.875	A607-60	1.047
53	39 - 33.291	5.709		12	39.949	40.996	1.175	A607-65	0.944
54	33.291 - 31.5	1.791		12	40.996	41.324	1.175	A607-65	0.939
55	31.5 - 31.25	0.25		12	41.324	41.370	1.175	A607-65	0.948
56	31.25 - 30.5	0.75		12	41.370	41.507	1.175	A607-65	0.946
57	30.5 - 30.25	0.25		12	41.507	41.553	1.125	A607-65	0.963
58	30.25 - 25.75	4.5		12	41.553	42.378	1.1	A607-65	0.972
59	25.75 - 25.5	0.25		12	42.378	42.424	0.825	A607-65	1.065
60	25.5 - 24.6667	0.8333		12	42.424	42.577	0.8125	A607-65	1.079
61	24.6667 - 24.4167	0.25		12	42.577	42.623	0.7125	A607-65	1.005
62	24.4167 - 19.4167	5		12	42.623	43.540	0.7	A607-65	1.012
63	19.4167 - 14.4167	5		12	43.540	44.456	0.7	A607-65	1.002
64	14.4167 - 14.083	0.3337		12	44.456	44.518	0.7	A607-65	1.002
65	14.083 - 13.817	0.266		12	44.518	44.566	0.725	A607-65	0.993
66	13.817 - 13.667	0.15		12	44.566	44.594	0.725	A607-65	0.993
67	13.667 - 10.5	3.167		12	44.594	45.175	0.7125	A607-65	1.003
68	10.5 - 10.25	0.25		12	45.175	45.220	0.7125	A607-65	0.958
69	10.25 - 5.25	5		12	45.220	46.137	0.7	A607-65	0.965
70	5.25 - 0.25	5		12	46.137	47.054	0.7	A607-65	0.957
71	0.25 - 0	0.25		12	47.054	47.100	0.7	A607-65	0.957

TNX Section Forces

Increment (ft): 5

	Section Height (ft)	TNX Output		
		P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	160.333 - 155.333	4.22	11.83	7.89
2	155.333 - 150.333	4.65	52.84	8.50
3	150.333 - 146.833	4.96	83.33	8.91
4	146.833 - 146.333	5.03	87.80	8.95
5	146.333 - 141.333	9.93	161.63	14.84
6	141.333 - 136.333	10.73	238.98	16.05
7	136.333 - 131.333	15.02	329.58	21.55
8	131.333 - 126.333	16.55	442.65	23.85
9	126.333 - 121.333	17.32	563.38	24.46
10	121.333 - 120.083	17.51	594.05	24.63
11	120.083 - 119.833	17.59	600.21	24.65
12	119.833 - 117.5	18.08	658.22	25.09
13	117.5 - 117.25	18.14	664.50	25.13
14	117.25 - 115.5	18.54	708.77	25.47
15	115.5 - 115.25	18.62	715.14	25.51
16	115.25 - 110.25	19.96	845.14	26.49
17	110.25 - 107.82	20.62	910.10	26.97
18	107.82 - 102.82	22.91	1047.71	28.06
19	102.82 - 100.5	23.69	1113.27	28.59
20	100.5 - 100.25	23.76	1120.43	28.76
21	100.25 - 98.5	24.27	1170.98	29.05
22	98.5 - 98.25	24.36	1178.24	29.08
23	98.25 - 93.25	25.93	1325.58	29.89
24	93.25 - 90.5	26.81	1408.32	30.33
25	90.5 - 90.25	26.92	1415.91	30.36
26	90.25 - 85.25	28.72	1569.70	31.19
27	85.25 - 83.5	29.35	1624.49	31.48
28	83.5 - 83.25	29.48	1632.36	31.52
29	83.25 - 80.75	30.55	1711.79	32.06
30	80.75 - 80.5	30.68	1719.80	32.09
31	80.5 - 80.25	30.80	1727.83	32.14
32	80.25 - 77.5	32.08	1816.84	32.63
33	77.5 - 77.25	32.20	1825.00	32.66
34	77.25 - 73.291	33.80	1955.52	33.32
35	73.291 - 68.291	37.51	2124.42	34.27
36	68.291 - 64.25	39.30	2264.14	34.92
37	64.25 - 64	39.43	2272.87	34.95
38	64 - 60.5	41.08	2396.14	35.53
39	60.5 - 60.25	41.22	2405.02	35.56
40	60.25 - 60.083	41.30	2410.95	35.59
41	60.083 - 59.833	41.43	2419.85	35.63
42	59.833 - 59.083	41.82	2446.61	35.76
43	59.083 - 58.833	41.96	2455.55	35.80
44	58.833 - 55.41667	43.84	2578.78	36.39
45	55.41667 - 55.16667	43.99	2587.88	36.42
46	55.16667 - 54.75	44.22	2603.06	36.49
47	54.75 - 54.5	44.35	2612.18	36.53
48	54.5 - 49.5	46.79	2796.71	37.33
49	49.5 - 44.5	49.28	2985.12	38.10
50	44.5 - 41.25	50.91	3109.62	38.59
51	41.25 - 41	51.06	3119.26	38.61
52	41 - 39	52.14	3196.75	38.92
53	39 - 33.291	58.03	3421.82	39.95
54	33.291 - 31.5	59.18	3493.57	40.24
55	31.5 - 31.25	59.36	3503.62	40.25
56	31.25 - 30.5	59.84	3533.84	40.37
57	30.5 - 30.25	60.01	3543.94	40.40
58	30.25 - 25.75	62.89	3726.99	41.01
59	25.75 - 25.5	63.04	3737.23	41.02
60	25.5 - 24.6667	63.49	3771.44	41.13
61	24.6667 - 24.4167	63.62	3781.72	41.14
62	24.4167 - 19.4167	65.99	3988.54	41.65
63	19.4167 - 14.4167	68.40	4197.56	42.04
64	14.4167 - 14.083	68.58	4211.58	42.05
65	14.083 - 13.817	68.71	4222.77	42.07
66	13.817 - 13.667	68.79	4229.07	42.08
67	13.667 - 10.5	70.35	4362.66	42.34
68	10.5 - 10.25	70.48	4373.24	42.34
69	10.25 - 5.25	72.89	4585.73	42.72
70	5.25 - 0.25	75.33	4799.99	43.07
71	0.25 - 0	75.47	4810.75	43.07

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
160.33 - 155.33	Pole	TP16x16x0.375	Pole	5.5%	Pass
155.33 - 150.33	Pole	TP16x16x0.375	Pole	21.8%	Pass
150.33 - 146.83	Pole	TP16x16x0.375	Pole	33.9%	Pass
146.83 - 146.33	Pole	TP22x22x0.375	Pole	18.8%	Pass
146.33 - 141.33	Pole	TP22.924x22x0.25	Pole	28.2%	Pass
141.33 - 136.33	Pole	TP23.848x22.924x0.25	Pole	38.7%	Pass
136.33 - 131.33	Pole	TP24.772x23.848x0.25	Pole	50.1%	Pass
131.33 - 126.33	Pole	TP25.696x24.772x0.25	Pole	63.1%	Pass
126.33 - 121.33	Pole	TP26.62x25.696x0.25	Pole	75.6%	Pass
121.33 - 120.08	Pole	TP26.851x26.62x0.25	Pole	78.5%	Pass
120.08 - 119.83	Pole + Reinf.	TP26.897x26.851x0.4875	Reinf. 18 Tension Rupture	54.9%	Pass
119.83 - 117.5	Pole + Reinf.	TP27.328x26.897x0.4875	Reinf. 18 Tension Rupture	58.7%	Pass
117.5 - 117.25	Pole + Reinf.	TP27.375x27.328x0.5	Reinf. 19 Tension Rupture	54.7%	Pass
117.25 - 115.5	Pole + Reinf.	TP27.698x27.375x0.5	Reinf. 19 Tension Rupture	57.3%	Pass
115.5 - 115.25	Pole + Reinf.	TP27.744x27.698x0.6625	Reinf. 11 Tension Rupture	50.6%	Pass
115.25 - 110.25	Pole + Reinf.	TP28.668x27.744x0.65	Reinf. 11 Tension Rupture	57.0%	Pass
110.25 - 107.82	Pole + Reinf.	TP29.808x28.668x0.6375	Reinf. 11 Tension Rupture	60.1%	Pass
107.82 - 102.82	Pole + Reinf.	TP29.541x28.617x0.7	Reinf. 11 Tension Rupture	61.6%	Pass
102.82 - 100.5	Pole + Reinf.	TP29.969x29.541x0.6875	Reinf. 11 Tension Rupture	64.1%	Pass
100.5 - 100.25	Pole + Reinf.	TP30.015x29.969x0.6375	Reinf. 18 Tension Rupture	65.5%	Pass
100.25 - 98.5	Pole + Reinf.	TP30.338x30.015x0.625	Reinf. 18 Tension Rupture	67.3%	Pass
98.5 - 98.25	Pole + Reinf.	TP30.385x30.338x0.6625	Reinf. 10 Tension Rupture	64.4%	Pass
98.25 - 93.25	Pole + Reinf.	TP31.308x30.385x0.65	Reinf. 10 Tension Rupture	69.3%	Pass
93.25 - 90.5	Pole + Reinf.	TP31.816x31.308x0.6375	Reinf. 10 Tension Rupture	71.8%	Pass
90.5 - 90.25	Pole + Reinf.	TP31.862x31.816x0.6875	Reinf. 10 Tension Rupture	70.9%	Pass
90.25 - 85.25	Pole + Reinf.	TP32.785x31.862x0.675	Reinf. 10 Tension Rupture	75.2%	Pass
85.25 - 83.5	Pole + Reinf.	TP33.108x32.785x0.6625	Reinf. 10 Tension Rupture	76.7%	Pass
83.5 - 83.25	Pole + Reinf.	TP33.154x33.108x0.9125	Reinf. 22 Tension Rupture	58.2%	Pass
83.25 - 80.75	Pole + Reinf.	TP33.616x33.154x0.8875	Reinf. 22 Tension Rupture	59.8%	Pass
80.75 - 80.5	Pole + Reinf.	TP33.662x33.616x1.0625	Reinf. 22 Tension Rupture	49.2%	Pass
80.5 - 80.25	Pole + Reinf.	TP33.708x33.662x0.975	Reinf. 8 Tension Rupture	53.0%	Pass
80.25 - 77.5	Pole + Reinf.	TP34.216x33.708x0.9625	Reinf. 8 Tension Rupture	54.6%	Pass
77.5 - 77.25	Pole + Reinf.	TP34.262x34.216x0.6875	Reinf. 8 Tension Rupture	76.4%	Pass
77.25 - 73.29	Pole + Reinf.	TP35.819x34.262x0.6875	Reinf. 8 Tension Rupture	79.3%	Pass
73.29 - 68.29	Pole + Reinf.	TP35.291x34.368x0.75	Reinf. 8 Tension Rupture	77.6%	Pass
68.29 - 64.25	Pole + Reinf.	TP36.037x35.291x0.7375	Reinf. 8 Tension Rupture	80.1%	Pass
64.25 - 64	Pole + Reinf.	TP36.084x36.037x0.875	Reinf. 21 Tension Rupture	70.6%	Pass
64 - 60.5	Pole + Reinf.	TP36.73x36.084x0.8625	Reinf. 21 Tension Rupture	72.5%	Pass
60.5 - 60.25	Pole + Reinf.	TP36.776x36.73x0.925	Reinf. 21 Tension Rupture	68.5%	Pass
60.25 - 60.08	Pole + Reinf.	TP36.807x36.776x0.925	Reinf. 21 Tension Rupture	68.5%	Pass
60.08 - 59.83	Pole + Reinf.	TP36.853x36.807x0.975	Reinf. 21 Tension Rupture	66.3%	Pass
59.83 - 59.08	Pole + Reinf.	TP36.991x36.853x0.975	Reinf. 21 Tension Rupture	66.7%	Pass
59.08 - 58.83	Pole + Reinf.	TP37.037x36.991x1.05	Reinf. 21 Tension Rupture	60.7%	Pass
58.83 - 55.42	Pole + Reinf.	TP37.668x37.037x1.025	Reinf. 21 Tension Rupture	62.3%	Pass
55.42 - 55.17	Pole + Reinf.	TP37.714x37.668x1.025	Reinf. 21 Tension Rupture	62.4%	Pass
55.17 - 54.75	Pole + Reinf.	TP37.791x37.714x1.025	Reinf. 21 Tension Rupture	62.6%	Pass
54.75 - 54.5	Pole + Reinf.	TP37.837x37.791x0.825	Reinf. 7 Tension Rupture	76.0%	Pass
54.5 - 49.5	Pole + Reinf.	TP38.76x37.837x0.8125	Reinf. 7 Tension Rupture	78.5%	Pass
49.5 - 44.5	Pole + Reinf.	TP39.683x38.76x0.8	Reinf. 7 Tension Rupture	80.8%	Pass
44.5 - 41.25	Pole + Reinf.	TP40.283x39.683x0.7875	Reinf. 7 Tension Rupture	82.3%	Pass
41.25 - 41	Pole + Reinf.	TP40.329x40.283x0.875	Reinf. 7 Tension Rupture	72.2%	Pass
41 - 39	Pole + Reinf.	TP41.568x40.329x0.875	Reinf. 7 Tension Rupture	73.0%	Pass
39 - 33.29	Pole + Reinf.	TP40.996x39.949x1.175	Reinf. 7 Tension Rupture	57.1%	Pass
33.29 - 31.5	Pole + Reinf.	TP41.324x40.996x1.175	Reinf. 7 Tension Rupture	57.7%	Pass
31.5 - 31.25	Pole + Reinf.	TP41.37x41.324x1.175	Reinf. 7 Tension Rupture	57.4%	Pass
31.25 - 30.5	Pole + Reinf.	TP41.507x41.37x1.175	Reinf. 7 Tension Rupture	57.7%	Pass
30.5 - 30.25	Pole + Reinf.	TP41.553x41.507x1.125	Reinf. 6 Tension Rupture	60.5%	Pass
30.25 - 25.75	Pole + Reinf.	TP42.378x41.553x1.1	Reinf. 6 Tension Rupture	62.0%	Pass
25.75 - 25.5	Pole + Reinf.	TP42.424x42.378x0.825	Reinf. 6 Tension Rupture	84.5%	Pass
25.5 - 24.67	Pole + Reinf.	TP42.577x42.424x0.8125	Reinf. 6 Tension Rupture	84.8%	Pass
24.67 - 24.42	Pole + Reinf.	TP42.623x42.577x0.7125	Reinf. 6 Tension Rupture	95.6%	Pass
24.42 - 19.42	Pole + Reinf.	TP43.54x42.623x0.7	Reinf. 6 Tension Rupture	97.5%	Pass
19.42 - 14.42	Pole + Reinf.	TP44.456x43.54x0.7	Reinf. 6 Tension Rupture	99.4%	Pass
14.42 - 14.08	Pole + Reinf.	TP44.518x44.456x0.7	Reinf. 6 Tension Rupture	99.5%	Pass
14.08 - 13.82	Pole + Reinf.	TP44.566x44.518x0.725	Reinf. 6 Tension Rupture	95.4%	Pass
13.82 - 13.67	Pole + Reinf.	TP44.594x44.566x0.725	Reinf. 6 Tension Rupture	95.5%	Pass
13.67 - 10.5	Pole + Reinf.	TP45.175x44.594x0.7125	Reinf. 6 Tension Rupture	96.6%	Pass
10.5 - 10.25	Pole + Reinf.	TP45.22x45.175x0.7125	Reinf. 6 Tension Rupture	96.6%	Pass
10.25 - 5.25	Pole + Reinf.	TP46.137x45.22x0.7	Reinf. 6 Tension Rupture	98.2%	Pass
5.25 - 0.25	Pole + Reinf.	TP47.054x46.137x0.7	Reinf. 6 Tension Rupture	99.7%	Pass
0.25 - 0	Pole + Reinf.	TP47.1x47.054x0.7	Reinf. 6 Tension Rupture	99.8%	Pass
				Summary	
			Pole	78.5%	Pass
			Reinforcement	99.8%	Pass
			Overall	99.8%	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	R14	R15	R16	R17	R18	R19	R20	R21	R22
160.33 - 155.33	562	n/a	562	18.41	n/a	18.41	5.5%																						
155.33 - 150.33	562	n/a	562	18.41	n/a	18.41	21.8%																						
150.33 - 146.83	562	n/a	562	18.41	n/a	18.41	33.9%																						
146.83 - 146.33	1490	n/a	1490	25.48	n/a	25.48	18.8%																						
146.33 - 141.33	1199	n/a	1199	18.23	n/a	18.23	28.2%																						
141.33 - 136.33	1352	n/a	1352	18.97	n/a	18.97	38.7%																						
136.33 - 131.33	1517	n/a	1517	19.71	n/a	19.71	50.1%																						
131.33 - 126.33	1695	n/a	1695	20.45	n/a	20.45	63.1%																						
126.33 - 121.33	1887	n/a	1887	21.20	n/a	21.20	75.6%																						
121.33 - 120.08	1937	n/a	1937	21.38	n/a	21.38	78.5%																						
120.08 - 119.83	1947	1779	3726	21.42	18.00	39.42	40.1%																		54.9%	54.9%			
119.83 - 117.5	2043	1833	3876	21.77	18.00	39.77	43.1%																		58.7%	58.7%			
117.5 - 117.25	2059	1936	3995	21.80	22.50	44.30	45.1%											48.2%							54.7%	54.7%			
117.25 - 115.5	2133	1980	4113	22.06	22.50	44.56	47.4%											50.6%							57.3%	57.3%			
115.5 - 115.25	2138	3293	5431	22.10	31.50	53.60	34.2%											50.6%	50.6%						46.2%	46.2%			
115.25 - 110.25	2361	3506	5867	22.84	31.50	54.34	39.1%											57.0%	57.0%						52.1%	52.1%			
110.25 - 107.82	2475	3611	6086	23.20	31.50	54.70	41.5%											60.1%	60.1%						54.9%	54.9%			
107.82 - 102.82	3211	3712	6924	29.37	31.50	60.87	39.3%											61.6%	61.6%						56.3%	56.3%			
102.82 - 100.5	3355	3816	7171	29.80	31.50	61.30	41.1%											64.1%	64.1%						58.5%	58.5%			
100.5 - 100.25	3399	3242	6642	29.85	29.13	58.97	49.1%										57.5%		63.2%						65.5%				
100.25 - 98.5	3511	3310	6821	30.17	29.13	59.30	50.7%										59.1%		65.0%						67.3%				
98.5 - 98.25	3521	3649	7170	30.22	32.13	62.34	48.1%									57.0%	64.4%								60.7%				
98.25 - 93.25	3854	3863	7718	31.14	32.13	63.27	52.3%									61.4%	69.3%								65.3%				
93.25 - 90.5	4046	3984	8030	31.65	32.13	63.78	54.5%									63.7%	71.8%								67.7%				
90.5 - 90.25	4144	4476	8620	31.70	41.38	73.08	53.9%									53.5%	70.9%							52.1%					
90.25 - 85.25	4516	4725	9241	32.63	41.38	74.00	57.8%									57.0%	75.2%							55.5%					
85.25 - 83.5	4651	4814	9465	32.95	41.38	74.33	59.2%									58.2%	76.7%							56.6%					
83.5 - 83.25	4619	7929	12548	33.00	59.38	92.37	43.4%									48.5%	53.8%							46.9%					58.2%
83.25 - 80.75	4816	8141	12957	33.46	59.38	92.84	45.0%									49.9%	55.4%							48.2%					59.8%
80.75 - 80.5	4781	10391	15173	33.51	70.00	103.51	37.0%									48.6%	48.7%					40.3%		43.2%					49.2%
80.5 - 80.25	4797	9281	14078	33.56	67.88	101.43	39.8%								53.0%							41.4%		43.5%					50.9%
80.25 - 77.5	5019	9548	14568	34.07	67.88	101.94	41.3%								54.6%							42.8%		44.9%					52.5%
77.5 - 77.25	5071	5733	10804	34.11	49.88	83.99	57.8%								76.4%							51.7%		53.1%					
77.25 - 73.29	5405	5966	11371	34.85	49.88	84.72	60.6%								79.3%							53.9%		55.2%					
73.29 - 68.29	6612	6069	12681	42.10	49.88	91.98	55.6%								77.6%							53.8%		55.3%					
68.29 - 64.25	7044	6314	13358	43.00	49.88	92.88	57.8%								80.1%							55.7%		57.2%					
64.25 - 64	7153	8681	15835	43.06	57.25	100.31	50.0%								67.5%									54.5%				70.6%	
64 - 60.5	7547	8983	16530	43.84	57.25	101.09	51.7%								69.4%									56.0%				72.5%	
60.5 - 60.25	7570	9940	17510	43.89	63.63	107.52	49.8%							63.3%										53.5%				68.5%	
60.25 - 60.08	7590	9956	17545	43.93	63.63	107.55	49.9%							63.4%										53.6%				68.5%	
60.08 - 59.83	7732	11052	18784	43.98	67.76	111.74	48.3%					49.5%		61.8%										53.2%				66.3%	
59.83 - 59.08	7819	11133	18952	44.15	67.76	111.91	48.6%					49.8%		62.2%										53.5%				66.7%	
59.08 - 58.83	7709	12407	20116	44.21	76.02	120.22	44.3%			53.7%		49.5%		56.5%										48.4%				60.7%	
58.83 - 55.42	8112	12816	20928	44.97	76.02	120.98	45.8%			55.1%		50.8%		58.0%										49.7%				62.3%	
55.42 - 55.17	8142	12846	20988	45.02	76.02	121.04	45.9%			55.2%		50.9%		58.1%									49.8%					62.4%	
55.17 - 54.75	8192	12896	21089	45.12	76.02	121.13	46.0%			55.4%		51.1%		58.3%									50.0%					62.6%	
54.75 - 54.5	8279	9040	17319	45.17	58.02	103.19	57.9%			65.9%		61.9%		76.0%									57.9%						
54.5 - 49.5	8902	9468	18371	46.28	58.02	104.30	60.3%			68.1%		64.0%		78.5%									59.9%						
49.5 - 44.5	9556	9908	19464	47.40	58.02	105.41	62.7%			70.3%		66.0%		80.8%									61.9%						
44.5 - 41.25	9997	10199	20196	48.12	58.02	106.14	64.2%			71.6%		67.3%		82.3%									63.1%						
41.25 - 41	9877	12299	22176	48.18	68.64	116.82	55.3%			69.0%		62.5%		72.2%								55.9%		57.0%					
41 - 39	10153	12515	22668	48.62	68.64	117.26	56.1%			69.8%		63.2%		73.0%								56.5%		57.6%					
39 - 33.29	10346	20123	30469	48.98	93.02	141.99	40.4%			55.7%		53.4%		57.1%								50.6%		51.6%			56.3%		
33.29 - 31.5	10599	20434	31033	49.38	93.02	142.39	41.0%			56.2%		54.0%		57.7%								51.2%		52.1%			56.8%		
31.5 - 31.25	10641	20876	31516	49.43	94.54	143.97	41.7%			56.3%	51.0%			57.4%								50.9%		52.1%			56.9%		
31.25 - 30.5	10748	21009	31757	49.60	94.54	144.13	42.0%			56.5%	51.2%			57.7%								51.1%		52.3%			57.2%		
30.5 - 30.25	10780	19841	30621	49.65	91.20	140.85	43.5%		57.2%		53.4%		60.5%									51.2%		53.3%			59.0%		
30.25 - 25.75	11441	20606	32046	50.65	91.20	141.85	44.9%		58.6%		54.8%		62.0%									52.5%		54.6%			60.5%		
25.75 - 25.5	11519	12766	24284	50.70	66.83	117.53	61.2%		78.3%		68.9%		84.5%									62.1%		63.9%					
25.5 - 24.67	11645	12854	24499	50.89	66.83	117.71	61.5%		78.6%		69.1%		84.8%									62.3%		64.2%					
24.67 - 24.42	11660	9895	21555	50.94	45.58	96.52	69.4%		84.9%		88.7%		95.6%									73.3%							
24.42 - 19.42	12435	10309	22744	52.05	45.58	97.62	71.6%		86.7%		90.5%		97.5%									75.0%							
19.42 - 14.42	13244	10732	23976	53.15	45.58	98.73	73.7%		88.3%		92.1%		99.4%									76.5%							
14.42 - 14.08	13299	10761	24060	53.23	45.58	98.80	73.8%		88.4%		92.2%		99.5%									76.6%							
14.08 - 13.82	13331	11624	24955	53.28	48.19	101.47	70.9%	93.3%	85.8%				95.4%									76.3%							
13.82 - 13.67	13356	11638	24994	53.32	48.19	101.50	70.9%	93.3%	85.9%				95.5%									76.3%							
13.67 - 10.5	13888	11933	25821	54.02	48.19	102.20	72.2%	94.4%	86.9%				96.6%									77.2%							
10.5 - 10.25	13928	11902	25830	54.07	43.56	97.63	72.3%	94.7%	87.1%				96.6%							94.3%									
10.25 - 5.25	14799	12375	27175	55.18	43.56	98.74	74.2%	96.2%	88.5%				98.2%							95.9%									
5.25 - 0.25	15706	12858	28564	56.28	43.56	99.84	76.1%	97.6%	89.9%				99.7%							97.3%									
0.25 - 0	15753	12882	28635	56.34	43.56	99.90	76.2%	97.7%	89.9%				99.8%							97.4%									

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

Monopole Flange Plate Connection

Elevation = 146.333 ft.

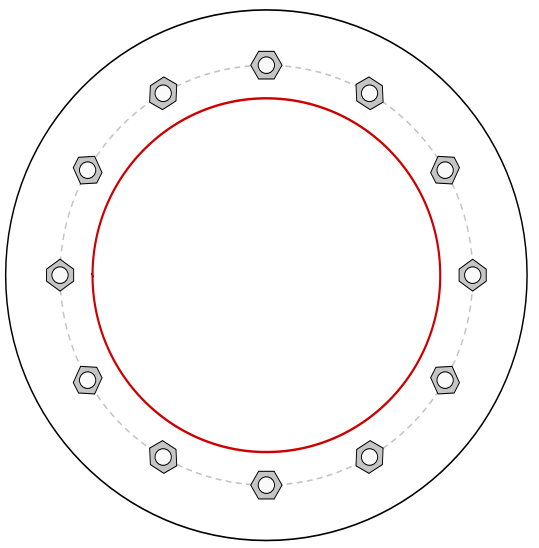
BU #	876334
Site Name	JTHINGTON, SMORON
Order #	538762 Rev#0

TIA-222 Revision	H

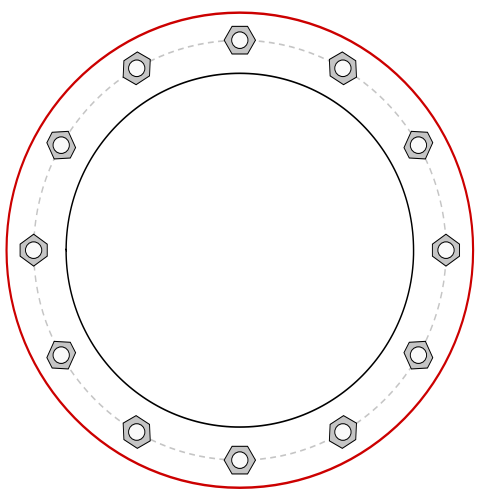
Applied Loads	
Moment (kip-ft)	87.80
Axial Force (kips)	5.03
Shear Force (kips)	8.95

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - Internal



Connection Properties

Bolt Data

(12) 3/4" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 19" BC

Top Plate Data

24" OD x 1.5" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Top Stiffener Data

N/A

Top Pole Data

16" x 0.375" round pole (A53-B-35; Fy=35 ksi, Fu=60 ksi)

Bottom Plate Data

16" ID x 0.75" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

22" x 0.25" 12-sided pole (A607-60; Fy=60 ksi, Fu=75 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	18.05	
Allowable (kips)	30.04	
Stress Rating:	**57.2%**	**Pass**

Top Plate Capacity

Max Stress (ksi):	7.45	(Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	**15.8%**	**Pass**
Tension Side Stress Rating:	**7.8%**	**Pass**

Bottom Plate Capacity

Max Stress (ksi):	29.20	(Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	**61.8%**	**Pass**
Tension Side Stress Rating:	**N/A**	

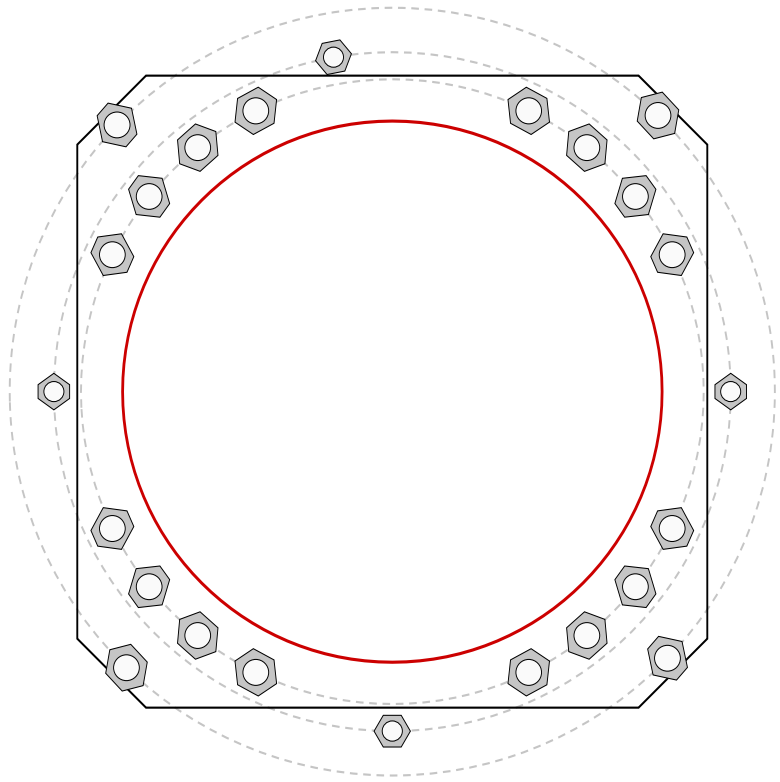
Monopole Base Plate Connection

Site Info	
BU #	876334
Site Name	UTHINGTON, SMORON
Order #	538762 Rev#0

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

Applied Loads	
Moment (kip-ft)	4810.75
Axial Force (kips)	75.47
Shear Force (kips)	43.07

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

GROUP 1: (16) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 54.375" BC
Anchor Spacing: 6 in
GROUP 2: (4) 1-3/4" ø bolts (F1554-105 N; Fy=105 ksi, Fu=125 ksi) on 59.1" BC
pos. (deg): 0, 100, 180, 270

GROUP 3: (4) 2-1/4" ø bolts (A193 Gr. B7 N; Fy=105 ksi, Fu=125 ksi) on 66.8125" BC

Base Plate Data

55" W x 3" Plate (A572-50; Fy=50 ksi, Fu=65 ksi); Clip: 6 in

Stiffener Data

N/A

Pole Data

47.1" x 0.375" 12-sided pole (A607-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

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

GROUP 1:		
Pu_c = 178.07	ϕPn_c = 268.39	**Stress Rating**
Vu = 2.69	ϕVn = 120.77	**63.2%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 2:		
Pu_c = 109.05	ϕPn_c = 227.3	**Stress Rating**
Vu = 0	ϕVn = 102.28	**45.7%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 3:		
Pu_c = 212.92	ϕPn_c = 375.74	**Stress Rating**
Vu = 0	ϕVn = 169.08	**54.0%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	28.35	(Flexural)
Allowable Stress (ksi):	45	
Stress Rating:	**60.0%**	**Pass**

CCIplate

Elevation (ft)	0	*(Base)*

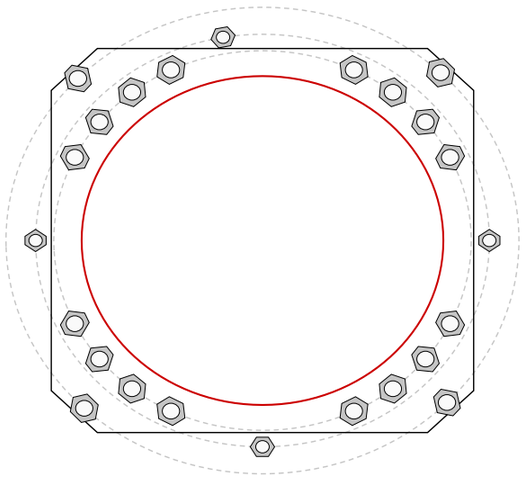
note: Bending interaction not considered when Grout Considered = "Yes"

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	

Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η:	l_{ar} (in):	Thread Type	Area Override, in^2	Tension Only
1	1	25.994419	2.25	A615-75	54.375	0.5	1.875	N-Included		No
2	1	38.664806	2.25	A615-75	54.375	0.5	1.875	N-Included		No
3	1	51.335194	2.25	A615-75	54.375	0.5	1.875	N-Included		No
4	1	64.005581	2.25	A615-75	54.375	0.5	1.875	N-Included		No
5	1	115.99442	2.25	A615-75	54.375	0.5	1.875	N-Included		No
6	1	128.66481	2.25	A615-75	54.375	0.5	1.875	N-Included		No
7	1	141.33519	2.25	A615-75	54.375	0.5	1.875	N-Included		No
8	1	154.00558	2.25	A615-75	54.375	0.5	1.875	N-Included		No
9	1	205.99442	2.25	A615-75	54.375	0.5	1.875	N-Included		No
10	1	218.66481	2.25	A615-75	54.375	0.5	1.875	N-Included		No
11	1	231.33519	2.25	A615-75	54.375	0.5	1.875	N-Included		No
12	1	244.00558	2.25	A615-75	54.375	0.5	1.875	N-Included		No
13	1	295.99442	2.25	A615-75	54.375	0.5	1.875	N-Included		No
14	1	308.66481	2.25	A615-75	54.375	0.5	1.875	N-Included		No
15	1	321.33519	2.25	A615-75	54.375	0.5	1.875	N-Included		No
16	1	334.00558	2.25	A615-75	54.375	0.5	1.875	N-Included		No
17	2	0	1.75	F1554-105	59.1	0.5	0	N-Included		No
18	2	100	1.75	F1554-105	59.1	0.5	0	N-Included		No
19	2	180	1.75	F1554-105	59.1	0.5	0	N-Included		No
20	2	270	1.75	F1554-105	59.1	0.5	0	N-Included		No
21	3	46	2.25	A193 Gr. B7	66.8125	0.5	0	N-Included		No
22	3	136	2.25	A193 Gr. B7	66.8125	0.5	0	N-Included		No
23	3	226	2.25	A193 Gr. B7	66.8125	0.5	0	N-Included		No
24	3	316	2.25	A193 Gr. B7	66.8125	0.5	0	N-Included		No

Plot Graphic



PROJECT	**127834.003.01 - SOUTHINGTON, SMORON, CT**
SUBJECT	**Anchor Rod Bracket Analysis**
DATE	**02/08/21**
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	109.05	kips
AR Capacity	227.3	kips

Tower Type	Monopole

Manufacturers Tower Prop.		
Pole Thickness	0.375	in
Pole Grade	Custom	
Fy	65	ksi
Fu	80	ksi
Base Plate Gr.	A572-50	
Fy	50	ksi
Fu	65	ksi

Post-Installed Adhesive AR Mod.		
ARB Type	Welded	
Size	1.75	in
Grade	F1554-105	
Fy	105	ksi
Fu	125	ksi

Anchor Rod Bracket Analysis Checks		
Tube Bearing	27.8%	-
Tube Compression	41.7%	-
Gusset Shear	19.2%	-
Gusset Flexure	N/A	-
Welds: Gusset to Tower and BP	33.3%	-
Welds: Gusset to Tube	46.0%	-
Welds: Geometry	N/A	
Tower Punching	7.9%	-
Tube Punching	33.2%	-
Utilization	**46.0%**	

Bracket Properties

Gusset			Pipe/Tube			Weld - Gusset to Pipe/Tube		
Thickness	1.25	in	Size	HSS4x4x1/2		FEXX	80	ksi
Width at Tube	4	in	Total Length	12	in	Weld Type	PJP - Double Bevel	
Height at Pole	42	in	Length above Gusset	0	in	Fillet Size	3/8	in
Height at Tube	12	in	Length below Gusset	0	in	Bevel Depth	1/4	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	80	ksi	FEXX	80	ksi
Weld Type	Double Fillet		Weld Type	CJP - Double Bevel	
Fillet Size	3/8	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	**127834.003.01 - SOUTHINGTON, SMORON, CT**
SUBJECT	**Anchor Rod Bracket Analysis**
DATE	**02/08/21**
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	212.92	kips
AR Capacity	375.7	kips

Tower Type	Monopole

Manufacturers Tower Prop.		
Pole Thickness	0.375	in
Pole Grade	Custom	
Fy	65	ksi
Fu	80	ksi
Base Plate Gr.	A572-50	
Fy	50	ksi
Fu	65	ksi

Post-Installed Adhesive AR Mod.		
ARB Type	Welded	
Size	2.25	in
Grade	A193 Gr B7	
Fy	105	ksi
Fu	125	ksi

Anchor Rod Bracket Analysis Checks		
Tube Bearing	38.1%	-
Tube Compression	57.2%	-
Gusset Shear	15.0%	-
Gusset Flexure	0.1%	-
Welds: Gusset to Tower and BP	45.5%	-
Welds: Gusset to Tube	40.5%	-
Welds: Geometry	N/A	
Tower Punching	0.4%	-
Tube Punching	12.1%	-
Utilization	**57.2%**	

Bracket Properties

Gusset			Pipe/Tube			Weld - Gusset to Pipe/Tube		
Thickness	1.25	in	Size	HSS5x5x1/2		FEXX	70	ksi
Width at Tube	5.875	in	Total Length	33	in	Weld Type	Double Fillet	
Height at Pole	306	in	Length above Gusset	0	in	Fillet Size	3/8	in
Height at Tube	30	in	Length below Gusset	3	in			
Grade	A572-65		Grade	A500 Grade C (Square)				
Fy	65	ksi	Fy	50	ksi			
Fu	80	ksi	Fu	62	ksi			

Weld - Gusset to Tower			Weld - Gusset to Base Plate	
FEXX	70	ksi		
Weld Type	Double Fillet		Weld Type	Floating
Fillet Size	1/4	in		

PROJECT	**127834.003.01 - SOUTHINGTON, SMORON, CT**
SUBJECT	**Anchor Rod Bracket Analysis**
DATE	**02/08/21**
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	212.92	kips
AR Capacity	375.7	kips

Tower Type	Monopole

Manufacturers Tower Prop.		
Pole Thickness	0.375	in
Pole Grade	Custom	
Fy	65	ksi
Fu	80	ksi
Base Plate Gr.	A572-50	
Fy	50	ksi
Fu	65	ksi

Post-Installed Adhesive AR Mod.		
ARB Type	Welded	
Size	2.25	in
Grade	A193 Gr B7	
Fy	105	ksi
Fu	125	ksi

Anchor Rod Bracket Analysis Checks		
Tube Bearing	38.1%	-
Tube Compression	57.2%	-
Gusset Shear	18.4%	-
Gusset Flexure	16.6%	-
Welds: Gusset to Tower and BP	76.8%	-
Welds: Gusset to Tube	49.6%	-
Welds: Geometry	N/A	
Tower Punching	45.1%	-
Tube Punching	18.2%	-
Utilization	**76.8%**	

Bracket Properties

Gusset			Pipe/Tube			Weld - Gusset to Pipe/Tube		
Thickness	1.25	in	Size	HSS5x5x1/2		FEXX	70	ksi
Width at Tube	6.5	in	Total Length	33.5	in	Weld Type	Double Fillet	
Height at Pole	30	in	Length above Gusset	3	in	Fillet Size	3/8	in
Height at Tube	24.5	in	Length below Gusset	6	in			
Grade	A572-65		Grade	A500 Grade C (Square)				
Fy	65	ksi	Fy	50	ksi			
Fu	80	ksi	Fu	62	ksi			

Weld - Gusset to Tower			Weld - Gusset to Base Plate	
FEXX	70	ksi		
Weld Type	Double Fillet		Weld Type	Floating
Fillet Size	1/4	in		

Drilled Pier Foundation

BU # :	876334
Site Name:	SOUTHINGTON, SMC
Order Number:	538762 Rev#0

TIA-222 Revison:	H
Tower Type:	Monopole

Applied Loads	Comp.	Uplift
Moment (kip-ft)	4811	
Axial Force (kips)	75	
Shear Force (kips)	43	

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

Pier Design Data		
Depth	20.5	ft
Ext. Above Grade	1	ft
Pier Section 1		
From 1' above grade to 3' below grade		
Pier Diameter	26.04675	ft
Rebar Quantity	32	
Rebar Size	11	
Clear Cover to Ties	100.5	in
Tie Size	5	
Tie Spacing	6	in

Rebar & Pier Options

Embedded Pole Inputs

Belled Pier Inputs

Pier Section 2		
From 3' below grade to 20.5' below grade		
Pier Diameter	7	ft
Rebar Quantity	32	
Rebar Size	11	
Clear Cover to Ties	4	in
Tie Size	5	
Tie Spacing	18	in

Analysis Results		
Soil Lateral Check	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	5.92	-
Soil Safety Factor	1.48	-
Max Moment (kip-ft)	5099.05	-
Rating*	*85.6%*	-
Soil Vertical Check	*Compression*	*Uplift*
Skin Friction (kips)	277.73	-
End Bearing (kips)	1663.01	-
Weight of Concrete (kips)	504.78	-
Total Capacity (kips)	1940.74	-
Axial (kips)	579.78	-
Rating*	*28.5%*	-
Reinforced Concrete Flexure	*Compression*	*Uplift*
Critical Depth (ft from TOC)	5.73	-
Critical Moment (kip-ft)	5098.45	-
Critical Moment Capacity	8089.39	-
Rating*	*60.0%*	-
Reinforced Concrete Shear	*Compression*	*Uplift*
Critical Depth (ft from TOC)	15.62	-
Critical Shear (kip)	659.79	-
Critical Shear Capacity	644.61	-
Rating*	*97.5%*	-

Soil Interaction Rating*	**85.6%**
Structural Foundation Rating*	**97.5%**

*Rating per TIA-222-H Section 15.5

Check Limitation	
Apply TIA-222-H Section 15.5:	☑
N/A	☐
Shear Design Options	
Check Shear along Depth of Pier:	☑
Utilize Shear-Friction Methodology:	☐
Override Critical Depth:	☐

Go to Soil Calculations

Soil Profile

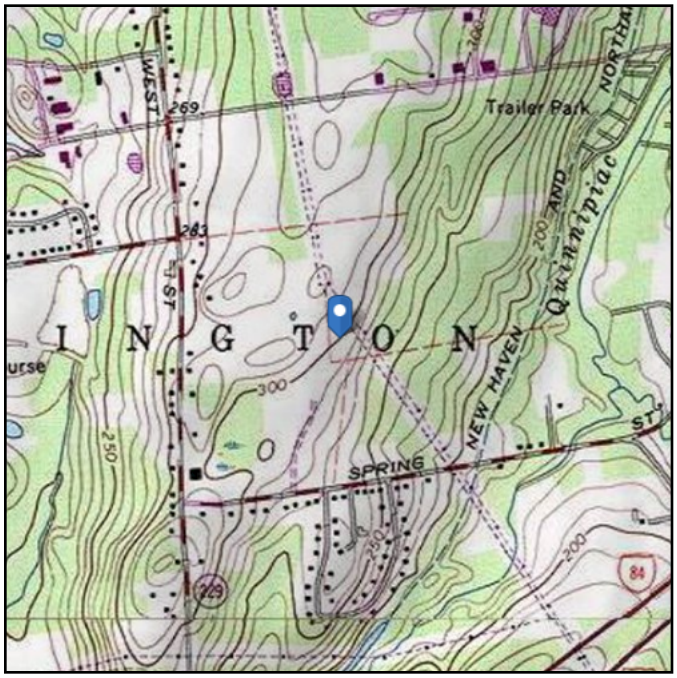
Groundwater Depth	N/A	# of Layers	9

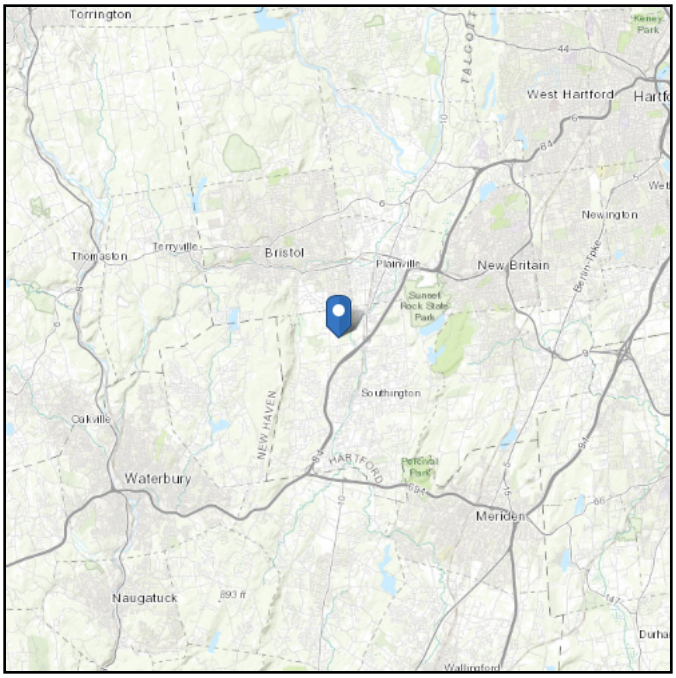
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Net Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	1	1	100	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	1	2	1	110	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
3	2	3.3	1.3	130	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
4	3.3	5	1.7	130	150	0	36	0.000	0.000	0.00	0.00			Cohesionless
5	5	6	1	130	150	0	36	0.000	0.000	0.65	0.65			Cohesionless
6	6	8	2	120	150	0	30	0.000	0.000	0.90	0.90			Cohesionless
7	8	12.4	4.4	130	150	0	36	0.00	0.00	1.38	1.38			Cohesionless
8	12.4	14.5	2.1	145	150	0	40	0.00	0.00	3.97	3.97			Cohesionless
9	14.5	20.5	6	145	150	0	40	0.00	0.00	0.00	0.00	54.9		Cohesionless

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-10	**Elevation:**	296.07 ft (NAVD 88)
Risk Category:	II	**Latitude:**	41.632472
Soil Class:	D - Stiff Soil	**Longitude:**	-72.89425





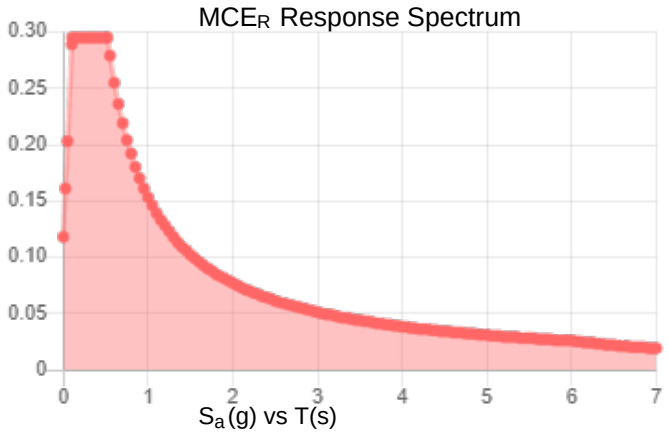
Seismic

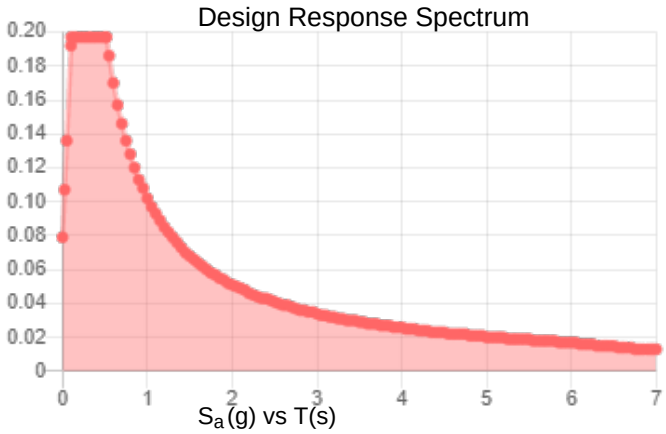
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.185	S_{DS} :	0.197
S_1 :	0.064	S_{D1} :	0.102
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.094
S_{MS} :	0.295	PGA_M :	0.151
S_{M1} :	0.153	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Fri Feb 05 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:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Fri Feb 05 2021

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

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

Exhibit E

Mount Analysis

Date: **February 1, 2021**

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:	CTHA479A
	Carrier Site Name:	N/A
Crown Castle Designation:	**Crown Castle BU Number:**	876334
	Crown Castle Site Name:	SOUTHINGTON, SMORON
	Crown Castle JDE Job Number:	628842
	Crown Castle Order Number:	538762 Rev. 0
Engineering Firm Designation:	**Infinigy Engineering, PLLC Report Designation:** 1039-Z0001-B	
Site Data:	**625 Spring Street**, **Southington**, **Hartford County**, **CT**, **06489** **Latitude 41°37'56.90", Longitude -72°53'39.30"**	
Structure Information:	**Tower Height & Type:**	**160.0 ft Monopole**
	Mount Elevation:	**146.0 ft**
	Mount Type:	**13.0 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.

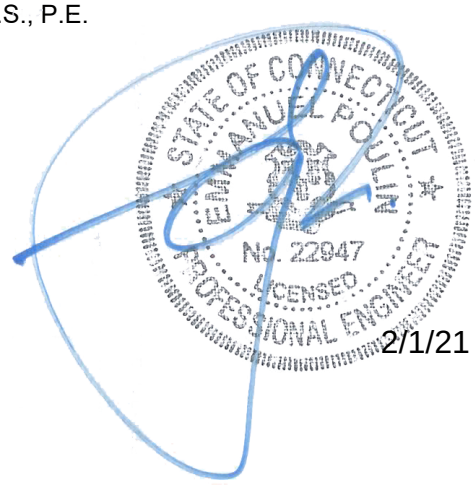
The purpose of the analysis is to determine acceptability of the mount stress level. Based on our analysis we have determined the mount stress level to be:

Platform	**Sufficient - 93.9%**

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 13.0 ft Platform, mapped by FDH Velocitel.

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:	2.0 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.185
Seismic S_1:	0.064
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
146.0	147.0	3	Ericsson	AIR6449 B41_T-MOBILE	13.0 ft Platform Addition of (1) 8' pipe mount per sector
		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	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	Sprint PCS Application	538762 Rev. 0	CCI Sites
Loading Document	Sprint PCS	RFDS Version: 1	TSA
Tower Mapping Documents	FDH Velocitel	1614569	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)	MP11	146.0	72.1	Pass
	Horizontal(s)	M1		93.9	Pass
	Handrail(s)	M4		79.8	Pass
	Standoff(s)	M21		67.8	Pass
	Mount Connection(s)	-		52.7	Pass

Structure Rating (max from all components) =	93.9%

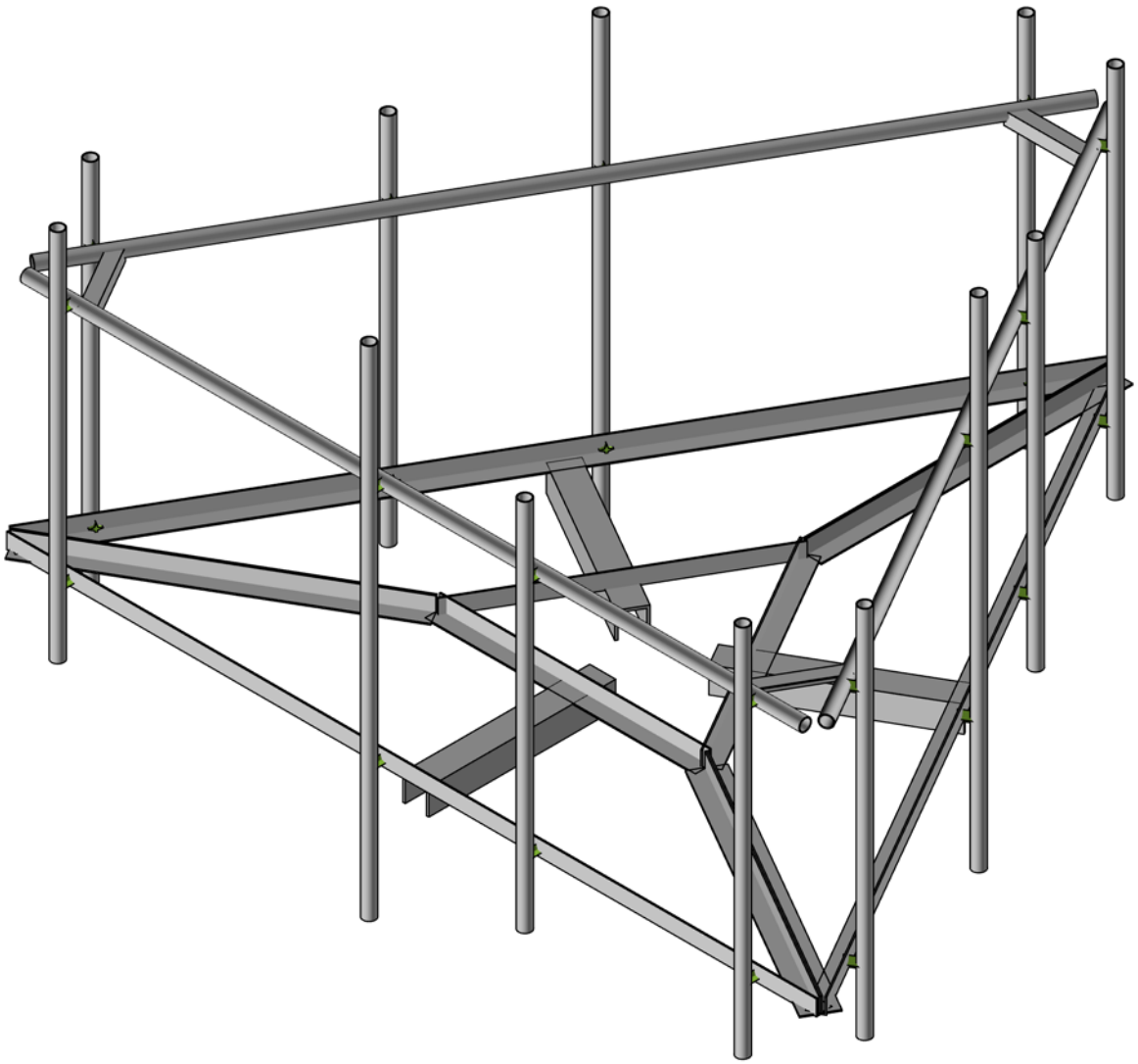
Notes:
1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
2) See additional documentation in “Appendix D - Additional Calculations” for detailed mount connection calculations.

4.1) Recommendations

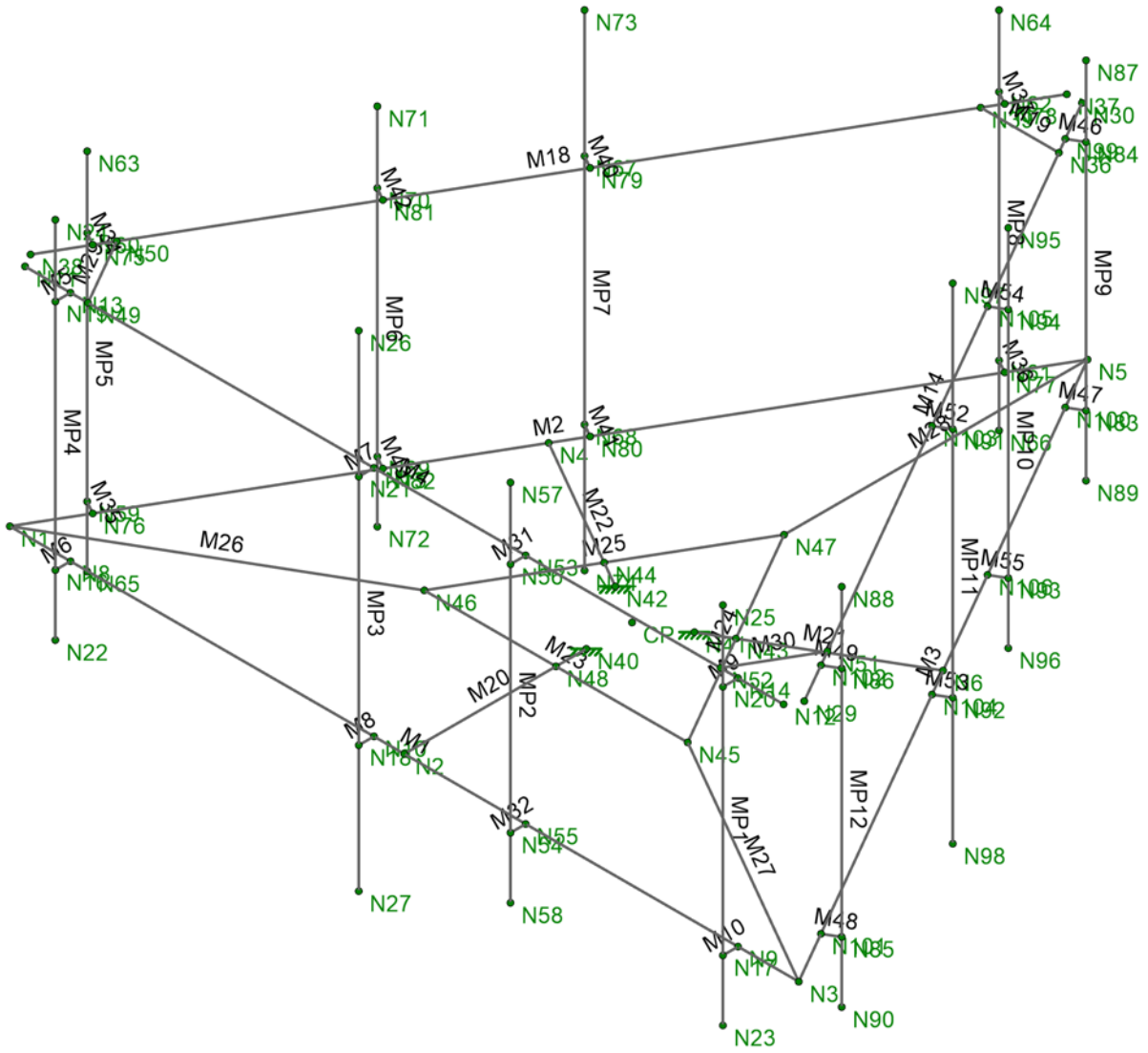
The mount has sufficient capacity to carry the proposed loading configuration. No modifications are required at this time.

APPENDIX A

WIRE FRAME AND RENDERED MODELS



Infinigy Engineering, PLLC	876334	Render
JG		Feb 01, 2021
1039-Z0001-B		876334_loaded.r3d



Infinigy Engineering, PLLC	876334	Wireframe
JG		Feb 01, 2021
1039-Z0001-B		876334_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:	296.07	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Platform	
Num Sectors:	3	
Centerline AGL:	146.0	ft
Tower Height AGL:	160.0	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):	0.99	*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):	2.0	in
Flat Pressure:	103.05	psf
Round Pressure:	61.83	psf
Ice Wind Pressure:	9.89	psf

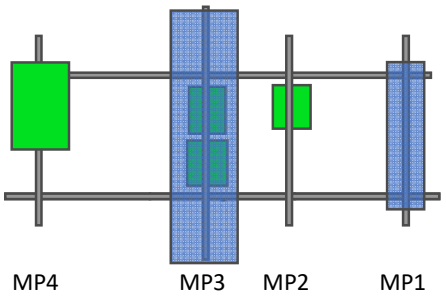
SEISMIC DATA		
Short-Period Accel. (S_s):	0.185	g
1-Second Accel. (S_1):	0.064	g
Short-Period Design (S_{DS}):	0.20	
1-Second Design (S_{D1}):	0.10	
Short-Period Coeff. (F_a):	1.60	
1-Second Coeff. (F_v):	2.40	
Amplification Factor (a_p):	1.00	
Response Mod. (R_p):	2.50	
Overstrength (Ω_o):	1.00	

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

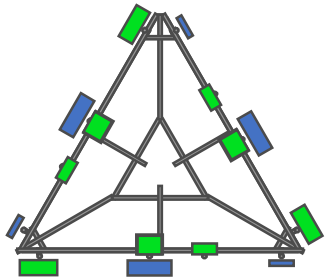
Infinigy Load Calculator V2.1.4

Program Inputs

ELEVATION VIEW



PLAN VIEW



INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

Infinigy Load Calculator V2.1.4

APPURTENANCE INFORMATION

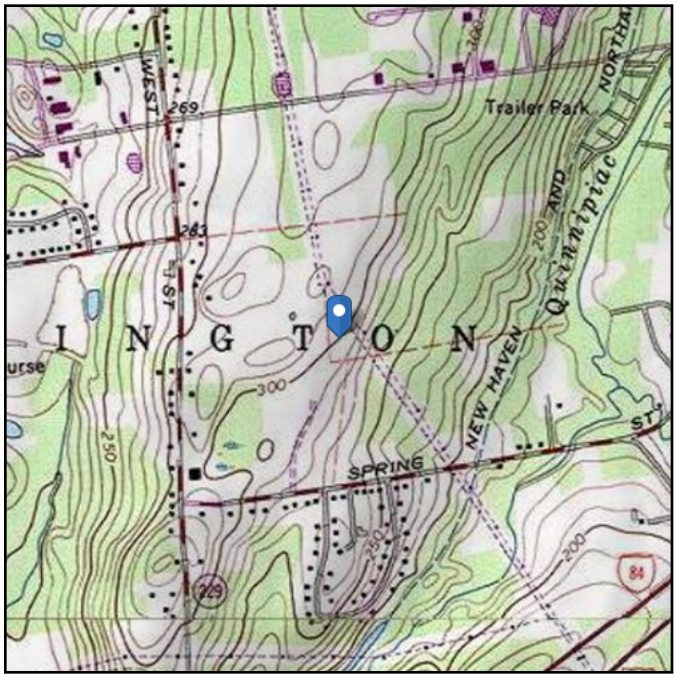
Appurtenance Name	Elevation	Qty.	K_a	q_z (psf)	EPA_N (ft^2)	EPA_T (ft^2)	Wind F_z (lbs)	Wind F_x (lbs)	Weight (lbs)	Seismic F (lbs)	Member (α sector)
ERICSSON AIR6449 B41_T-MOBILE	147.0	3	0.90	51.60	5.66	2.48	262.81	115.01	114.63	11.31	MP4
RFS/CELWAVE APX16DWV-16DWV-S-E-A20	147.0	3	0.90	51.60	6.26	1.50	290.72	69.66	40.70	4.02	MP1
RFS/CELWAVE APXVAALL24_43-U-NA20_TMO	147.0	3	0.90	51.60	14.67	5.32	681.29	247.06	149.90	14.79	MP3
ERICSSON RADIO 4415 B66A	147.0	3	0.90	51.60	1.86	0.87	86.21	40.41	49.60	4.89	MP2
ERICSSON RADIO 4424 B25_TMO	147.0	3	0.90	51.60	2.05	1.61	95.30	74.78	86.00	8.49	MP3
ERICSSON RADIO 4449 B71 B85A_T-MOBILE	147.0	3	0.90	51.60	1.97	1.59	91.49	73.68	73.21	7.22	MP3

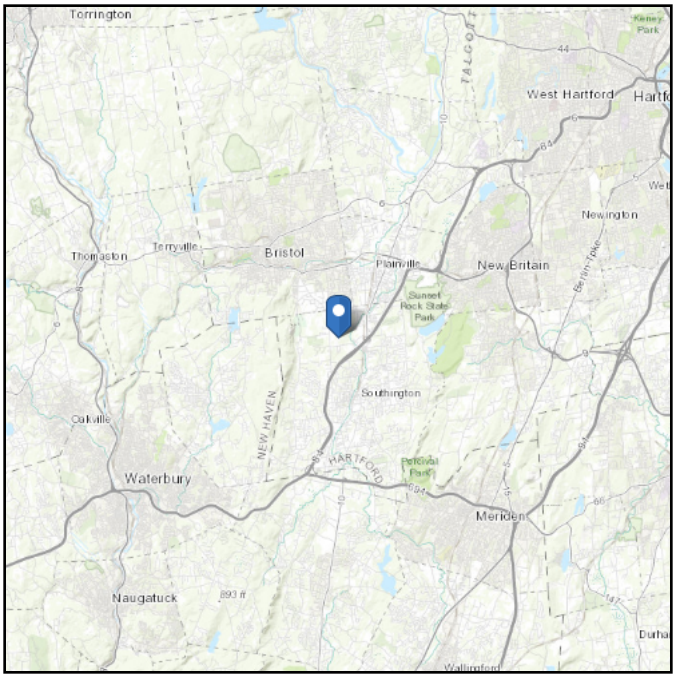
ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 296.07 ft (NAVD 88)
Latitude: 41.632472
Longitude: -72.89425





Wind

Results:

Wind Speed:	125 Vmph per 2018 Connecticut State Building Code and Appendix N
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	92 Vmph
100-year MRI	99 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.

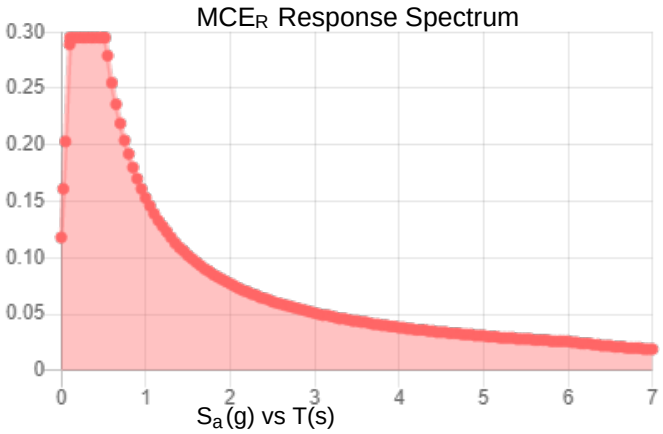
Seismic

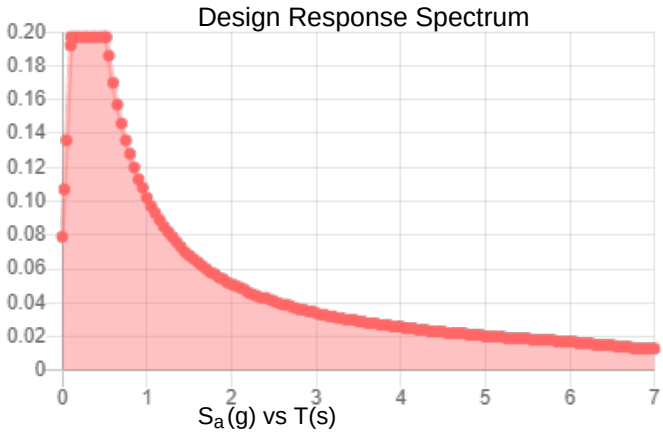
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.185	S_{DS} :	0.197
S_1 :	0.064	S_{D1} :	0.102
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.094
S_{MS} :	0.295	PGA_M :	0.151
S_{M1} :	0.153	F_{PGA} :	1.6
		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:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	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	N1	N3	270	Horizontals	Beam	Single Angle	A36 Gr.36	Typical
2	M2	N1	N5		Horizontals	Beam	Single Angle	A36 Gr.36	Typical
3	M3	N5	N3		Horizontals	Beam	Single Angle	A36 Gr.36	Typical
4	M4	N11	N12		Handrails	Beam	Pipe	A53 Gr.B	Typical
5	M5	N13	N19		RIGID	None	None	RIGID	Typical
6	M6	N8	N16		RIGID	None	None	RIGID	Typical
7	M7	N15	N21		RIGID	None	None	RIGID	Typical
8	M8	N10	N18		RIGID	None	None	RIGID	Typical
9	M9	N14	N20		RIGID	None	None	RIGID	Typical
10	M10	N9	N17		RIGID	None	None	RIGID	Typical
11	MP4	N24	N22		STD 2.0 Pipe Mounts	Column	Pipe	A53 Gr.B	Typical
12	MP1	N25	N23		STD 2.0 Pipe Mounts	Column	Pipe	A53 Gr.B	Typical
13	MP3	N26	N27		STD 2.0 Pipe Mounts	Column	Pipe	A53 Gr.B	Typical
14	M14	N29	N30		Handrails	Beam	Pipe	A53 Gr.B	Typical
15	M18	N37	N38		Handrails	Beam	Pipe	A53 Gr.B	Typical
16	M19	N39	N36	180	Corner Plates	Column	Single Angle	A36 Gr.36	Typical
17	M20	N40	N2	90	Standoffs	Beam	Channel	A36 Gr.36	Typical
18	M21	N41	N6	90	Standoffs	Beam	Channel	A36 Gr.36	Typical
19	M22	N42	N4	90	Standoffs	Beam	Channel	A36 Gr.36	Typical
20	M23	N45	N46	270	Horizontals	Beam	Single Angle	A36 Gr.36	Typical
21	M24	N47	N45	270	Horizontals	Beam	Single Angle	A36 Gr.36	Typical
22	M25	N46	N47	270	Horizontals	Beam	Single Angle	A36 Gr.36	Typical
23	M26	N1	N46	180	Corner Horizontals	Column	Double Angle (No Gap)	A36 Gr.36	Typical
24	M27	N3	N45	180	Corner Horizontals	Column	Double Angle (No Gap)	A36 Gr.36	Typical
25	M28	N5	N47	180	Corner Horizontals	Column	Double Angle (No Gap)	A36 Gr.36	Typical
26	M29	N49	N50	180	Corner Plates	Column	Single Angle	A36 Gr.36	Typical
27	M30	N51	N52	180	Corner Plates	Column	Single Angle	A36 Gr.36	Typical
28	M31	N53	N56		RIGID	None	None	RIGID	Typical
29	M32	N55	N54		RIGID	None	None	RIGID	Typical
30	MP2	N57	N58		STD 2.0 Pipe Mounts	Column	Pipe	A53 Gr.B	Typical
31	M34	N75	N60		RIGID	None	None	RIGID	Typical
32	M35	N76	N59		RIGID	None	None	RIGID	Typical
33	M36	N77	N61		RIGID	None	None	RIGID	Typical
34	M37	N78	N62		RIGID	None	None	RIGID	Typical
35	MP5	N63	N65		STD 2.0 Pipe Mounts	Column	Pipe	A53 Gr.B	Typical
36	MP8	N64	N66		STD 2.0 Pipe Mounts	Column	Pipe	A53 Gr.B	Typical
37	M40	N79	N67		RIGID	None	None	RIGID	Typical
38	M41	N80	N68		RIGID	None	None	RIGID	Typical
39	M42	N81	N70		RIGID	None	None	RIGID	Typical
40	M43	N82	N69		RIGID	None	None	RIGID	Typical
41	MP6	N71	N72		STD 2.0 Pipe Mounts	Column	Pipe	A53 Gr.B	Typical
42	MP7	N73	N74		STD 2.0 Pipe Mounts	Column	Pipe	A53 Gr.B	Typical
43	M46	N99	N84		RIGID	None	None	RIGID	Typical
44	M47	N100	N83		RIGID	None	None	RIGID	Typical
45	M48	N101	N85		RIGID	None	None	RIGID	Typical
46	M49	N102	N86		RIGID	None	None	RIGID	Typical
47	MP9	N87	N89		STD 2.0 Pipe Mounts	Column	Pipe	A53 Gr.B	Typical
48	MP12	N88	N90		STD 2.0 Pipe Mounts	Column	Pipe	A53 Gr.B	Typical
49	M52	N103	N91		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	M53	N104	N92		RIGID	None	None	RIGID	Typical
51	M54	N105	N94		RIGID	None	None	RIGID	Typical
52	M55	N106	N93		RIGID	None	None	RIGID	Typical
53	MP10	N95	N96		STD 2.0 Pipe Mounts	Column	Pipe	A53 Gr.B	Typical
54	MP11	N97	N98		STD 2.0 Pipe Mounts	Column	Pipe	A53 Gr.B	Typical

Material Take-Off

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General Members				
2	RIGID		24	72	0
3	Total General		24	72	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	C5X5	3	108	198.352
7	A36 Gr.36	L2.5x2.5x3	3	46.4	11.853
8	A36 Gr.36	L3X3X4	6	624.2	254.894
9	A36 Gr.36	LL3x3x4x0	3	180	147
10	A53 Gr.B	PIPE_2.0	15	1386	400.882
11	Total HR Steel		30	2344.6	1012.981

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Point	Distributed	Area(Member)
1	Self Weight	DL		-1			36		3
2	Wind Load AZI 0	WLZ					72		
3	Wind Load AZI 30	None					72		
4	Wind Load AZI 60	None					72		
5	Wind Load AZI 90	WLX					72		
6	Wind Load AZI 120	None					72		
7	Wind Load AZI 150	None					72		
8	Wind Load AZI 180	None					72		
9	Wind Load AZI 210	None					72		
10	Wind Load AZI 240	None					72		
11	Wind Load AZI 270	None					72		
12	Wind Load AZI 300	None					72		
13	Wind Load AZI 330	None					72		
14	Distr. Wind Load Z	WLZ						54	
15	Distr. Wind Load X	WLX						54	
16	Ice Weight	OL1					36	54	3
17	Ice Wind Load AZI 0	OL2					72		
18	Ice Wind Load AZI 30	None					72		
19	Ice Wind Load AZI 60	None					72		
20	Ice Wind Load AZI 90	OL3					72		
21	Ice Wind Load AZI 120	None					72		
22	Ice Wind Load AZI 150	None					72		
23	Ice Wind Load AZI 180	None					72		
24	Ice Wind Load AZI 210	None					72		
25	Ice Wind Load AZI 240	None					72		
26	Ice Wind Load AZI 270	None					72		

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Point	Distributed	Area(Member)
27	Ice Wind Load AZI 300	None					72		
28	Ice Wind Load AZI 330	None					72		
29	Distr. Ice Wind Load Z	OL2						54	
30	Distr. Ice Wind Load X	OL3						54	
31	Seismic Load Z	ELZ			-0.099		36		
32	Seismic Load X	ELX	-0.099				36		
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	BLC 1 Transient Area Loads	None						24	
47	BLC 16 Transient Area Loads	None						24	

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		
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		

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
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	1.239	31	1	32					
40	(1.2 + 0.2Sds)DL + 1.0E AZI 30	Yes	Y	1	1.239	31	0.866	32	0.5				
41	(1.2 + 0.2Sds)DL + 1.0E AZI 60	Yes	Y	1	1.239	31	0.5	32	0.866				
42	(1.2 + 0.2Sds)DL + 1.0E AZI 90	Yes	Y	1	1.239	31		32	1				
43	(1.2 + 0.2Sds)DL + 1.0E AZI 120	Yes	Y	1	1.239	31	-0.5	32	0.866				
44	(1.2 + 0.2Sds)DL + 1.0E AZI 150	Yes	Y	1	1.239	31	-0.866	32	0.5				
45	(1.2 + 0.2Sds)DL + 1.0E AZI 180	Yes	Y	1	1.239	31	-1	32					
46	(1.2 + 0.2Sds)DL + 1.0E AZI 210	Yes	Y	1	1.239	31	-0.866	32	-0.5				
47	(1.2 + 0.2Sds)DL + 1.0E AZI 240	Yes	Y	1	1.239	31	-0.5	32	-0.866				
48	(1.2 + 0.2Sds)DL + 1.0E AZI 270	Yes	Y	1	1.239	31		32	-1				
49	(1.2 + 0.2Sds)DL + 1.0E AZI 300	Yes	Y	1	1.239	31	0.5	32	-0.866				
50	(1.2 + 0.2Sds)DL + 1.0E AZI 330	Yes	Y	1	1.239	31	0.866	32	-0.5				
51	(0.9 - 0.2Sds)DL + 1.0E AZI 0	Yes	Y	1	0.861	31	1	32					
52	(0.9 - 0.2Sds)DL + 1.0E AZI 30	Yes	Y	1	0.861	31	0.866	32	0.5				
53	(0.9 - 0.2Sds)DL + 1.0E AZI 60	Yes	Y	1	0.861	31	0.5	32	0.866				
54	(0.9 - 0.2Sds)DL + 1.0E AZI 90	Yes	Y	1	0.861	31		32	1				
55	(0.9 - 0.2Sds)DL + 1.0E AZI 120	Yes	Y	1	0.861	31	-0.5	32	0.866				
56	(0.9 - 0.2Sds)DL + 1.0E AZI 150	Yes	Y	1	0.861	31	-0.866	32	0.5				
57	(0.9 - 0.2Sds)DL + 1.0E AZI 180	Yes	Y	1	0.861	31	-1	32					
58	(0.9 - 0.2Sds)DL + 1.0E AZI 210	Yes	Y	1	0.861	31	-0.866	32	-0.5				
59	(0.9 - 0.2Sds)DL + 1.0E AZI 240	Yes	Y	1	0.861	31	-0.5	32	-0.866				
60	(0.9 - 0.2Sds)DL + 1.0E AZI 270	Yes	Y	1	0.861	31		32	-1				
61	(0.9 - 0.2Sds)DL + 1.0E AZI 300	Yes	Y	1	0.861	31	0.5	32	-0.866				
62	(0.9 - 0.2Sds)DL + 1.0E AZI 330	Yes	Y	1	0.861	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

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
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
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

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
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
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

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
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	
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

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	N40	max	2081.989	4	4331.055	33	1256.013	2	2536.884	14	829.827	11	1092.306	11
2		min	-2080.684	10	-1176.311	14	-1129.837	20	-11002.531	33	-819.478	5	-1097.982	5
3	N41	max	1771.299	5	4319.116	37	2245.48	14	5480.531	38	928.141	23	9524.31	37
4		min	-1654.933	23	-1147.226	18	-2296.278	8	-1200.83	19	-920.066	17	-2195.405	18
5	N42	max	1701.808	17	4319.054	29	2135.643	14	5581.638	28	1225.862	11	2039.327	22
6		min	-1801.201	11	-1147.458	22	-2215.838	8	-1541.713	21	-1225.609	17	-9473.727	29
7	Totals:	max	5491.486	17	11608.179	33	5625.305	2						
8		min	-5491.491	11	2296.674	51	-5625.315	8						

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	M1	L3X3X4	0.939	78	33	0.799	78	z	8	42699.855	46656	1688.138	3755.745	1.5	H2-1
2	M2	L3X3X4	0.934	78	29	0.788	78	y	4	46398.339	46656	1688.138	3755.745	1.141	H2-1
3	M3	L3X3X4	0.934	78	37	0.787	78	y	12	42699.855	46656	1688.138	3755.745	1.5	H2-1
4	M4	PIPE_2.0	0.798	68.75	8	0.309	137.5		8	6295.422	32130	1871.625	1871.625	2.416	H3-6
5	M18	PIPE_2.0	0.787	68.75	4	0.306	137.5		4	6295.422	32130	1871.625	1871.625	2.42	H3-6
6	M14	PIPE_2.0	0.786	68.75	12	0.304	137.5		12	6295.422	32130	1871.625	1871.625	2.41	H3-6
7	MP11	PIPE_2.0	0.721	71	2	0.128	71		4	14916.096	32130	1871.625	1871.625	3	H1-1b
8	MP7	PIPE_2.0	0.719	71	6	0.125	71		8	14916.096	32130	1871.625	1871.625	2.584	H1-1b
9	MP3	PIPE_2.0	0.712	71	10	0.125	71		12	14916.096	32130	1871.625	1871.625	3	H1-1b
10	M19	L2.5x2.5x3	0.706	15.464	5	0.186	15.464	y	11	27355.832	29192.4	872.574	1971.83	1.5	H2-1
11	M30	L2.5x2.5x3	0.705	15.464	13	0.187	15.464	y	7	27355.832	29192.4	872.574	1971.83	1.5	H2-1
12	M29	L2.5x2.5x3	0.703	15.464	9	0.187	15.464	y	3	27355.832	29192.4	872.574	1971.83	1.5	H2-1
13	M21	C5X5	0.678	0	10	0.285	6	z	3	184778.219	209848.32	22491.521	33362.107	2.595	H1-1b
14	M22	C5X5	0.675	0	2	0.286	6	z	13	184778.219	209848.32	22491.521	33362.107	2.374	H1-1b
15	M20	C5X5	0.671	0	6	0.279	6	z	5	184778.219	209848.32	22491.521	33362.107	2.168	H1-1b
16	MP6	PIPE_2.0	0.65	60	2	0.23	60		4	20866.733	32130	1871.625	1871.625	1.804	H1-1b
17	MP10	PIPE_2.0	0.649	60	10	0.228	60		12	20866.733	32130	1871.625	1871.625	1.664	H1-1b
18	MP2	PIPE_2.0	0.639	60	6	0.234	60		8	20866.733	32130	1871.625	1871.625	1.736	H1-1b
19	M23	L3X3X4	0.606	26.038	8	0.05	26.038	z	10	30741.499	46656	1688.138	3471.036	1.216	H2-1
20	M25	L3X3X4	0.603	26.038	4	0.05	26.038	z	6	30741.499	46656	1688.138	3469.887	1.214	H2-1
21	M24	L3X3X4	0.6	26.038	13	0.051	26.038	z	2	30741.499	46656	1688.138	3483.536	1.239	H2-1
22	MP8	PIPE_2.0	0.599	60	5	0.209	60		4	20866.733	32130	1871.625	1871.625	1.64	H1-1b
23	MP12	PIPE_2.0	0.599	60	13	0.212	60		12	20866.733	32130	1871.625	1871.625	1.728	H1-1b
24	MP4	PIPE_2.0	0.594	60	9	0.211	60		8	20866.733	32130	1871.625	1871.625	1.703	H1-1b
25	MP5	PIPE_2.0	0.465	14.25	3	0.223	60		3	20866.733	32130	1871.625	1871.625	1.795	H1-1b
26	MP9	PIPE_2.0	0.464	14.25	11	0.221	60		11	20866.733	32130	1871.625	1871.625	1.702	H1-1b
27	MP1	PIPE_2.0	0.461	14.25	7	0.224	60		7	20866.733	32130	1871.625	1871.625	1.706	H1-1b
28	M26	LL3x3x4x0	0.26	60	6	0.03	60	z	9	74744.205	93312	6480	4311.257	1.969	H1-1b
29	M28	LL3x3x4x0	0.259	60	2	0.03	60	z	5	74744.205	93312	6480	4311.257	1.05	H1-1b
30	M27	LL3x3x4x0	0.257	60	10	0.03	60	z	13	74744.205	93312	6480	4311.257	2.205	H1-1b

APPENDIX D

ADDITIONAL CALCUATIONS

INFINIGY

FROM ZERO TO INFINIGY

the solutions are endless

Bolt Calculation Tool, V1.4

PROJECT DATA	
Site Name:	SOUTHINGTON, SMORON
Site Number:	876334
Job Code:	1039-Z0001-B
Connection Description:	Standoff to Collar

APPLIED LOADS		
Bolt Tension:	28746.42	lbs
Bolt Shear:	133.15	lbs

BOLT PROPERTIES		
Bolt Type:	Bolt	-
Bolt Diameter:	1	in
Bolt Grade:	A325	-
# of Bolts:	2	-
Threads Excluded?	No	-

BOLT CHECK		
Tensile Strength	54516.96	
Shear Strength	35342.92	
Tensile Usage	52.7%	
Shear Usage	0.4%	
Interaction Check	0.28	***≤1.05***
Result	Pass	

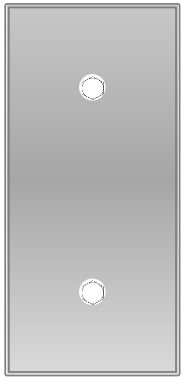


Exhibit F

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: CTHA479A

625 Spring Street
Southington, Connecticut 06489

March 12, 2021

EBI Project Number: 6221001214

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**20.06%**

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

March 12, 2021

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

Emissions Analysis for Site: CTHA479A

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **625 Spring Street** in **Southington, 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 625 Spring Street in Southington, 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 147 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):	147 feet	Height (AGL):	147 feet	Height (AGL):	147 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 %:	**0.84%**	Antenna B1 MPE %:	**0.84%**	Antenna C1 MPE %:	**0.84%**
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):	147 feet	Height (AGL):	147 feet	Height (AGL):	147 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 %:	**3.31%**	Antenna B2 MPE %:	**3.31%**	Antenna C2 MPE %:	**3.31%**
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):	147 feet	Height (AGL):	147 feet	Height (AGL):	147 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 %:	**2.33%**	Antenna B3 MPE %:	**2.33%**	Antenna C3 MPE %:	**2.33%**

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	6.48%
Sprint	0.94%
Metro PCS	0.69%
Verizon	6.22%
Nextel	0.48%
AT&T	5.25%
Site Total MPE % :	20.06%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	6.48%
T-Mobile Sector B Total:	6.48%
T-Mobile Sector C Total:	6.48%
Site Total MPE % :	20.06%

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	147.0	8.44	2100 MHz LTE	1000	0.84%
T-Mobile 600 MHz LTE	2	591.73	147.0	2.14	600 MHz LTE	400	0.54%
T-Mobile 600 MHz NR	1	1577.94	147.0	2.85	600 MHz NR	400	0.71%
T-Mobile 700 MHz LTE	2	695.22	147.0	2.51	700 MHz LTE	467	0.54%
T-Mobile 1900 MHz GSM	4	1052.26	147.0	7.61	1900 MHz GSM	1000	0.76%
T-Mobile 1900 MHz LTE	2	2104.51	147.0	7.61	1900 MHz LTE	1000	0.76%
T-Mobile 2500 MHz LTE	1	6444.38	147.0	11.65	2500 MHz LTE	1000	1.17%
T-Mobile 2500 MHz NR	1	6444.38	147.0	11.65	2500 MHz NR	1000	1.17%
						Total:	**6.48%**

• 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:	6.48%
Sector B:	6.48%
Sector C:	6.48%
T-Mobile Maximum MPE % (Sector A):	6.48%
Site Total:	20.06%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **20.06%** 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.