NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Northeast Site Solutions
Denise Sabo
4 Angela's Way, Burlington CT 06013
203-435-3640
denise@northeastsitesolutions.com

May 14, 2021

Members of the Siting Council
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Exempt Modification Application
205 Kaechele Drive, Bridgeport CT 06606
Latitude: 41. 223344
Longitude: -73.216772
T-Mobile Site#: 841288_ Crown_ATT

Dear Ms. Bachman:

AT&T is requesting to file an exempt modification for an existing tower located at 205 Kaechele Drive, Bridgeport CT. AT&T currently maintains nine (9) antenna at the 150-foot level of the existing 150-foot tower. The property is owned by Southern New England Telephone, and the tower is owned by Crown Castle. AT&T now intends to replace three (3) existing antenna with three (3) new 700/850/2100 MHz antenna. The new antennas would be installed at the 150-foot level of the tower. This modification includes B2, B5, and B12 hardware that is both 4G (LTE), and 5GNR capable through remote software configuration and either or both may be turned on or off at various times.

AT&T Planned Modifications:
Remove: None

Remove and Replace:
(3) Powerwave 7770 Antenna (REMOVE) - (3) CCI-DMP65R-BU8DA Antenna 700/850/2100 MHz (REPLACE)
Antenna Mounts (REMOVE) - Site Pro RMQP – 12-H5 Platform Mount w/Support Rails (REPLACE)

Install New:
(3) CCI-DMP65R-BU8DA Antenna 700/850/2100 MHz 5G
(3) RHH 4449 B5/B12

Existing to Remain:
(3) Qs66512-2 -700/850/1900/2300 MHz
(3) CCI HP65R BUU H6 – 700 MHz
(2) 3/8" Fiber Lines
(6) 1-5/8" Coax
(4) 3/4" DC Cables
(6) TMA
(2) Raycap Surge Suppressor

NORTHEAST SITE SOLUTIONS
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This facility was approved by the CT Siting Council. Per the attached Docket No. 45 – Dated September 14, 1984. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.SA. § 16-SOj-73, a copy of this letter is being sent to Mayor Joseph Ganim, Elected Official and Dennis Buckley, Zoning Enforcement Officer for the City of Bridgeport, as well as the property owner and the tower owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

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

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

3. The proposed modifications 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 Communications 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 referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Denise Sabo
Mobile: 203-435-3640
Fax: 413-521-0558
Office: 4 Angela's Way, Burlington CT 06013
Email: denise@northeastsitesolutions.com

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Attachments cc:

Mayor Joseph Ganim (*email only as mayor@bridgeportct.gov*)
City of Bridgeport
999 Broad Street, Bridgeport CT 06604

Dennis Buckley - ZEO (*email only as dennis.buckley@bridgeportct.gov)*
City of Bridgeport
999 Broad Street, Bridgeport CT 06604

Crown Castle – Tower Owner (*email only as AnneMarie.Zsamba@crowncastle.com*)

Southern New England Telephone
c/o Frontier Communications
401 Merritt 7
Norwalk, CT 06851

Exhibit A

DOCKET NO. 45

AN APPLICATION SUBMITTED BY THE SOUTHERN NEW ENGLAND TELEPHONE COMPANY FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION, MAINTENANCE, AND OPERATION OF FACILITIES TO PROVIDE CELLULAR SERVICE IN FAIRFIELD COUNTY.	:	CONNECTICUT SITING COUNCIL
	:	September 14, 1984

DECISION AND ORDER

Pursuant to the foregoing opinion, the Council hereby directs that a certificate of environmental compatibility and public need as required by section 16-50k of the General Statutes of Connecticut, revisions of 1958, revised to 1983, as amended, be issued to the Southern New England Telephone Company for the construction, operation, and maintenance of a telecommunications tower and associated equipment to provide cellular service at each of the following sites:

Kaechele Place, Bridgeport, Connecticut;
Connecticut Avenue, Norwalk, Connecticut;
Nells Rock Road, Shelton, Connecticut;
Newfield Avenue, Stamford, Connecticut; and
Bayberry Lane, (former Nike site), Westport, Connecticut.

The facilities shall be constructed, operated, and maintained as specified in the Council's record on this matter, and subject to the following conditions:

1. The towers shall be no taller than necessary to provide the proposed service, and in no event shall exceed

   a) 167' at the Bridgeport site,
   b) 167' at the Norwalk site,
   c) 189.5' at the Shelton site,
   d) 167' at the Stamford site,
   e) 117' at the Westport site;

2. A fence not lower than eight feet shall surround each tower and its associated equipment;

3. The applicant or its successor shall notify the Council if and when directional antennas or any other equipment is added to any of these facilities;

4. The applicant or its successor shall permit, in accordance with representations made by it during the proceeding, public or private entities to share space on the facilities, for due consideration received, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing;
5. Unless necessary to comply with condition number six, below, no lights shall be installed on any of these towers;
6. The facilities shall be constructed in accordance with all applicable federal, state, and municipal laws and regulations;
7. The applicant shall submit a development and management plan (D&M) for the Bridgeport, Stamford, and Westport sites pursuant to sections 16-50j-85 through 16-50j-87 of the regulations of state agencies, except that irrelevant items in section 16-50j-86 need only be identified as such. The D&M plans shall include appropriate evergreen screening of the sites, erosion control measures, reseeding plans, and tree removal plans. The applicant shall consult with the Stamford Environmental Protection Board in the preparation of a drainage and erosion control plan for the Stamford tower. The applicant shall comply with the reporting requirements of section 16-50j-87 for all sites;
8. Construction activities shall take place during daylight working hours;
9. This decision and order shall be void and the towers and associated equipment approved herein shall be dismantled and

removed, or reapplication for any new use shall be made to the Connecticut Siting Council before any such new use is made, if the towers do not provide or permanently cease to provide cellular service following completion of construction;

10. This decision and order shall be void if all construction authorized is not completed within three years of the issuance of this decision.

Pursuant to section 16-50p of the General Statutes, we hereby direct that a copy of the opinion and decision and order be served on each person listed below. A notice of the issuance shall be published in the Bridgeport Post, the Norwalk Hour, the Stamford Advocate, and the Shelton Suburban News, and the Westport News.

The parties to this proceeding are

The Southern New England Telephone Company Room 314 227 Church Street New Haven, Connecticut 06506	(Applicant)
Attention: Mr. Peter J. Tyrrell Senior Attorney	(its attorney)
Rolnick Observatory 52 Sawyer Road Fairfield, Connecticut	represented by: Frederick H. Bump Director
Mr. Adam Norton 40 Highland Road Westport, Connecticut 06880	
Representative John Wayne Fox 13 Apple Tree Drive Stamford, Connecticut 06906	(service waived)
Mr. George C. Lenfest 4 Highland Road Westport, Connecticut	

Mr. William Seiden
First Selectman
Town of Westport
110 Myrtle Avenue
P.O. Box 549
Westport, Connecticut 06881

Mr. Arthur L. Schimel
174 Bayberry Lane
Westport, Connecticut

Mr. Seymour Bendremer
11 Apache Trail
Westport, Connecticut

Ms. Gladys Floch
32 Woody Lane
Westport, Connecticut

Ms. Helen S. Cohen
15 Highland Road
Westport, Connecticut
(service waived)

Mr. Jack Braverman
226 Bayberry Lane
Westport, Connecticut

Mr. Kevin Gavin
191 Bayberry Lane
Westport, Connecticut
(service waived)

Mr. A.B. Beiser
12 Highland Road
Westport, Connecticut

Mr. Edward V. Polusky
4 Hooper Road
Westport, Connecticut
(service waived)

Ms. Lois Schine
represented by:

Mary D. Mix, Esquire
830 Post Road - East
Suite 100
Westport, Connecticut 06880

Mr. Allen Witt
3 Apache Trail
Westport, Connecticut

Ms. Gayle Shiller
5 Apache Trail
Westport, Connecticut
(service waived)

Mrs. Ronnie Hammer
3 Hooper Road
Westport, Connecticut

Mr. Paul Rosenblatt (service waived)
7 Apache Trail
Westport, Connecticut

Mr. Henry J. Wolfson (service waived)
179 Bayberry Lane
Westport, Connecticut

Mr. Melvin H. Barr (service waived)
Planning Director
Town of Westport
110 Myrtle Avenue
P.O. Box 549
Westport, Connecticut 06881

Mr. Mark Infeld (service waived)
6 Apache Trail
Westport, Connecticut

Ms. Barbara Saipe (service waived)
Representative Town
Meeting Member
District #8
Town Hall
P.O. Box 549
Westport, Connecticut 06881

Ms. Peggy Goldenberg (service waived)
201 Bayberry Lane
Westport, Connecticut

Ms. Martha Hauhuth (service waived)
Board of Selectman
Town Hall
P.O. Box 549
Westport, Connecticut 06881

Ms. Meg Coffee
32 Otter Trail
Westport, Connecticut (service waived)

CERTIFICATION

The undersigned members of the Connecticut Siting Council hereby certify that they have heard this case or read the record thereof, and that we voted as follows:

Dated at New Britain, Connecticut, this 14th day of September, 1984.

Council Members	Vote Cast
Gloria Dibble Pond Chairperson	Yes
Commissioner John Downey Designee: Commissioner Peter G. Boucher	Absent
Commissioner Stanley Pac	Absent
Owen L. Clark	Yes
Fred J. Ddocy	Yes
Mortimer A. Gelston	Yes
James G. Horsfall	Yes
Janet Sitty	Yes
Colin C. Tait	Absent

STATE OF CONNECTICUT)
: ss. New Britain, September 14, 1984
COUNTY OF HARTFORD)

I hereby certify that the foregoing is a true and correct copy of the decision and order issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:

Christopher S. Wood

Christopher S. Wood, Executive Director
Connecticut Siting Council

Exhibit B

205 KAECHELE PL

Location	205 KAECHELE PL	**Mblu**	81/ 2602/ 9/ /
Acct#	R--0148640	**Owner**	SOUTHERN NEW ENGLAND TEL
Assessment	$124,470	**Appraisal**	$177,820
PID	29859	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$53,520	$124,300	$177,820

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$37,460	$87,010	$124,470

Owner of Record

Owner	SOUTHERN NEW ENGLAND TEL	**Sale Price**	$0
Co-Owner	C/O FRONTIER COMMUNICATIONS - TAX DPMT	**Certificate**	
Address	401 MERRITT 7 NORWALK , CT 06851	**Book & Page**	0000/0000
		Sale Date	
		Instrument	

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
SOUTHERN NEW ENGLAND TEL	$0		0000/0000		

Building Information

Building 1 : Section 1

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

Building Photo

Building Layout

Building Attributes	
Field	**Description**
Style:	Vacant Land
Model	
Grade:	
Stories:	
Occupancy:	
Exterior Wall 1:	
Exterior Wall 2:	
Roof Structure:	
Roof Cover:	
Interior Wall 1:	
Interior Wall 2:	
Interior Flr 1:	
Interior Flr 2	
Heat Fuel:	
Heat Type:	
AC Type:	
Total Bedrooms	
Total Full Baths	
Total Half Baths	
Total Xtra Fixtrs:	
Total Rooms	
Bath Style:	
Kitchen Style:	
Num Kitchens	
Fireplaces	
Fin Bsmt Area	
Fin Bsmt Quality	
Num Park	
Bsmt Garages	
.	
Fndtn Cndtn	
Basement	

(ParcelSketch.ashx?pid=29859&bid=29859)

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

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land

Land Use

Use Code	499
Description	Utility Vac Ln
Zone	RA
Neighborhood	20
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	0.15
Frontage	0
Depth	0
Assessed Value	$87,010
Appraised Value	$124,300

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
SHD3	Shed w/ Lt	CM	Comm	384.00 SF	$7,260	1
SHD3	Shed w/ Lt	CM	Comm	384.00 SF	$7,260	1
SHD3	Shed w/ Lt	CM	Comm	576.00 SF	$10,890	1
FN1	Fence, Chain	8	8 ft	350.00 LF	$3,150	1
TWR	Tower			120.00 LF	$24,960	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$51,340	$97,390	$148,730
2018	$51,340	$97,390	$148,730
2017	$51,340	$97,390	$148,730

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$35,950	$68,170	$104,120
2018	$35,950	$68,170	$104,120
2017	$35,950	$68,170	$104,120

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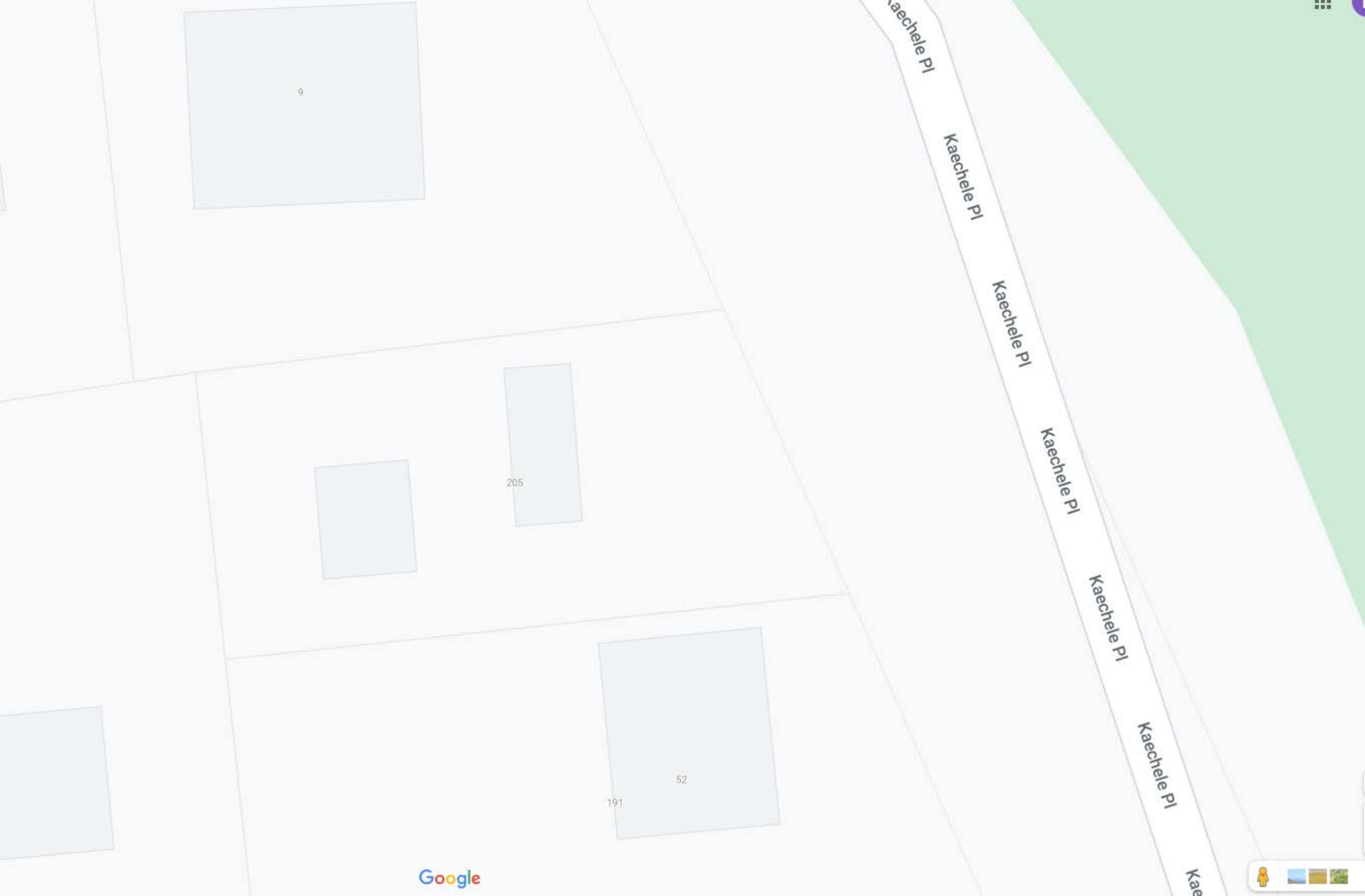

Kaechele Pl
Kaechele Pl
Kaechele Pl
Kaechele Pl
Kaechele Pl
Kaechele Pl
9
205
52
191
Google

Exhibit C

AT&T

AT&T SITE NUMBER:	CT2106	BUSINESS UNIT #:	841288
AT&T SITE NAME:	BRIDGEPORT NORTH	SITE ADDRESS:	205 KAECHELE PLACE BRIDGEPORT, CT 06606
AT&T FA CODE:	10034977	COUNTY:	FAIRFIELD
AT&T PACE NUMBER:	MRCTB048652, MRCTB048663, MRCTB048673, MRCTB048687	SITE TYPE:	MONOPOLE
AT&T PROJECT:	LTE, 5C, 6C, 5G NR 1DR-1, 4TX4RX	TOWER HEIGHT:	150'-0"

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	BRIDGEPORT NORTH
SITE ADDRESS:	205 KAECHELE PLACE BRIDGEPORT, CT 06606
COUNTY:	FAIRFIELD
MAP/PARCEL #:	20-3-44
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41° 13' 24.04"
LONGITUDE:	-73° 13' 00.38"
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	240' (PER GOOGLE EARTH)
CURRENT ZONING:	RA
JURISDICTION:	CITY OF BRIDGEPORT
OCCUPANCY CLASSIFICATION:	U - UNMANNED
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	SOUTHERN NEW ENGLAND TEL 401 MERRITT 7 NORWALK, CT 06851
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	AT&T TOWER ASSET GROUP 575 MOROSGO DRIVE ATLANTA, GA 30324-3300
ELECTRIC PROVIDER:	THE UNITED ILLUMINATING COMPANY (800) 722-5584
TELCO PROVIDER:	VERIZON 1-855-655-2577

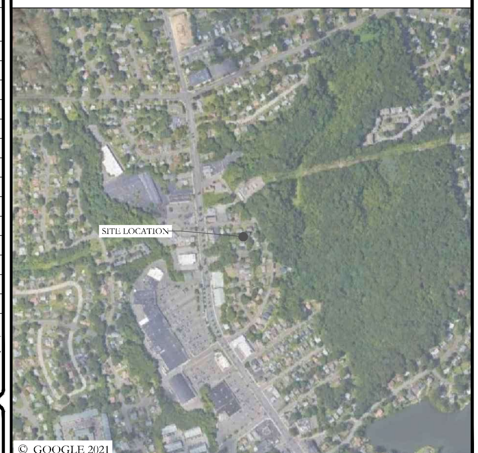
DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
T-3	GENERAL NOTES
C-1.1	SITE PLAN
C-1.2	EXISTING & FINAL EQUIPMENT PLANS
C-2	FINAL ELEVATION & ANTENNA PLANS
C-3	FINAL EQUIPMENT SCHEDULE
C-4	EQUIPMENT MOUNTING DETAILS
C-5	EQUIPMENT DETAILS
G-1	GROUNDING SCHEMATIC
G-2	GROUNDING DETAILS
ATTACHED	PLUMBING DIAGRAM
ATTACHED	MOUNT SPECIFICATIONS

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

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

LOCATION MAP



NO SCALE

SITE PHOTO

PROJECT TEAM

A&E FIRM: GPD ENGINEERING AND ARCHITECTURE PROFESSIONAL CORPORATION
520 SOUTH MAIN STREET
AKRON, OHIO 44311
(330) 572-2101

CROWN CASTLE USA INC. DISTRICT CONTACTS: 3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

VERONICA DELIA - PROJECT MANAGER
VERONICA.DELIA@CROWNCASTLE.COM

JASON D'AMICO - CONSTRUCTION MANAGER
JASON.DAMICO@CROWNCASTLE.COM

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

PROJECT DESCRIPTION

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

TOWER SCOPE OF WORK:
- REMOVE (3) POWERWAVE - 7770 ANTENNAS
- REMOVE (3) ERICSSON - RRUS 11 B12 RRHs
- REMOVE (6) POWER WAVE TT19-08P111-001 TMAs
- REMOVE PLATFORM MOUNT
- INSTALL (3) CCI ANTENNA - DMP65R-BU6DA ANTENNAS
- INSTALL (3) ERICSSON - RADIO 4449 B5/B12 RRHs ON (3) ERICSSON SXK 107 2839 RRH MOUNTS
- INSTALL (3) Y-CABLES
- INSTALL PLATFORM MOUNT PER MOUNT ANALYSIS

GROUND SCOPE OF WORK:
- REMOVE LTE CONVERTER SHELF AND MODS
- REMOVE EXISTING 4-POST RACK
- REMOVE (3) ERICSSON - RRUS 11 B5 RRHs
- INSTALL (1) IDLe CABLE
- INSTALL (1) XMU03
- INSTALL (1) 6630 BASEBAND
- INSTALL (3) ERICSSON - RRUS E2 B29
- INSTALL (2) ERICSSON - RADIO 4478 B14 RRHs
- INSTALL (1) 23" FIF RACK
- INSTALL (1) 23" VERTIV DISTRIBUTION SHELF
- INSTALL (6) VERTIV DC UPCONVERTORS

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

APPLICABLE CODES/REFERENCE DOCUMENTS

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

CODE TYPE	CODE
BUILDING	2018 CONNECTICUT STATE BUIDLING CODE (2015 IBC)
MECHANICAL	2018 CONNECTICUT STATE BUIDLING CODE (2015 IMC)
ELECTRICAL	2018 CONNECTICUT STATE BUIDLING CODE (2017 NEC)

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	BY OTHERS
DATED:	PENDING
MOUNT ANALYSIS:	B+T GROUP
DATED:	03/23/2021 (CONDITIONAL PASSING)
AC ELECTRICAL POWER DESIGN:	BY OTHERS
DATED:	
RFDS REVISION:	3.00
DATED:	03/16/2021
ORDER ID:	527511
REVISION:	3

AT&T
575 MOROSGO DRIVE
ATLANTA, GA 30324-3300

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

GPD Engineering and Architecture Professional Corporation
520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2101

AT&T SITE NUMBER: CT2106

BU #: 841288
BRIDGEPORT NORTH

205 KAECHELE PLACE
BRIDGEPORT, CT 06606

EXISTING 150'-0"
MONOPOLE

GPD JOB #: 2021724.75.841288.08

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	02/10/2021	AJC	PRELIMINARY	MRL
0	04/13/2021	CJM	FINALS	MRL
1	04/23/2021	CJM	REVISED PER CLIENT	MRL
2	04/30/2021	CJM	REVISED PER CLIENT	MRL

STATE OF CONNECTICUT · CHRISTOPHER J. SCHEKS · No. 30286 · LICENSED PROFESSIONAL ENGINEER
04/30/2021

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

SHEET NUMBER:	REVISION:
T-1	2

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: AT&T
   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.
15. SPECIAL INSPECTIONS: UNLESS OTHERWISE SPECIFIED WITHIN THE PLANS OR REQUIRED BY THE BUILDING OFFICIAL, SPECIAL INSPECTIONS AND TESTS ARE NOT REQUIRED FOR GROUP U OCCUPANCIES INCLUDING, BUT NOT LIMITED TO, THOSE LISTED IN SECTION 312.1 (IBC SECTION 1704.2, EXCEPTION 2). CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING IF ANY SPECIAL INSPECTIONS ARE REQUIRED BY THE JURISDICTION HAVING AUTHORITY. IF REQUIRED BY THE JURISDICTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION AND SCHEDULING OF THE SPECIAL INSPECTIONS WITH THE ENGINEER OF RECORD. IN THOSE CASES, SPECIAL INSPECTIONS MUST BE COMPLETED PRIOR TO FINAL INSPECTION APPROVAL.

LOOK UP!

AT&T
575 MOROSGO DRIVE
ATLANTA, GA 30324-3300

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AT&T SITE NUMBER: **CT2106**

BU #: **841288**
BRIDGEPORT NORTH

205 KAECHELE PLACE
BRIDGEPORT, CT 06606

EXISTING 150'-0"
MONOPOLE

GPD JOB #: 2021724.75.841288.08

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	02/10/2021	AJC	PRELIMINARY	MRL
0	04/13/2021	CJM	FINALS	MRL
1	04/23/2021	CJM	REVISED PER CLIENT	MRL
2	04/30/2021	CJM	REVISED PER CLIENT	MRL

STATE OF CONNECTICUT
CHRISTOPHER J. MORRIS
No. 30780
LICENSED
PROFESSIONAL ENGINEER

04/30/2021

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: 2

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 "AT&T".
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

AT&T
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AT&T SITE NUMBER: **CT2106**

BU #: **841288**
BRIDGEPORT NORTH

205 KAECHELE PLACE
BRIDGEPORT, CT 06606

EXISTING 150'-0"
MONOPOLE

GPD JOB #: 2021724.75.841288.08

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1	04/23/2021	CJM	REVISED PER CLIENT	MRL
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04/30/2021

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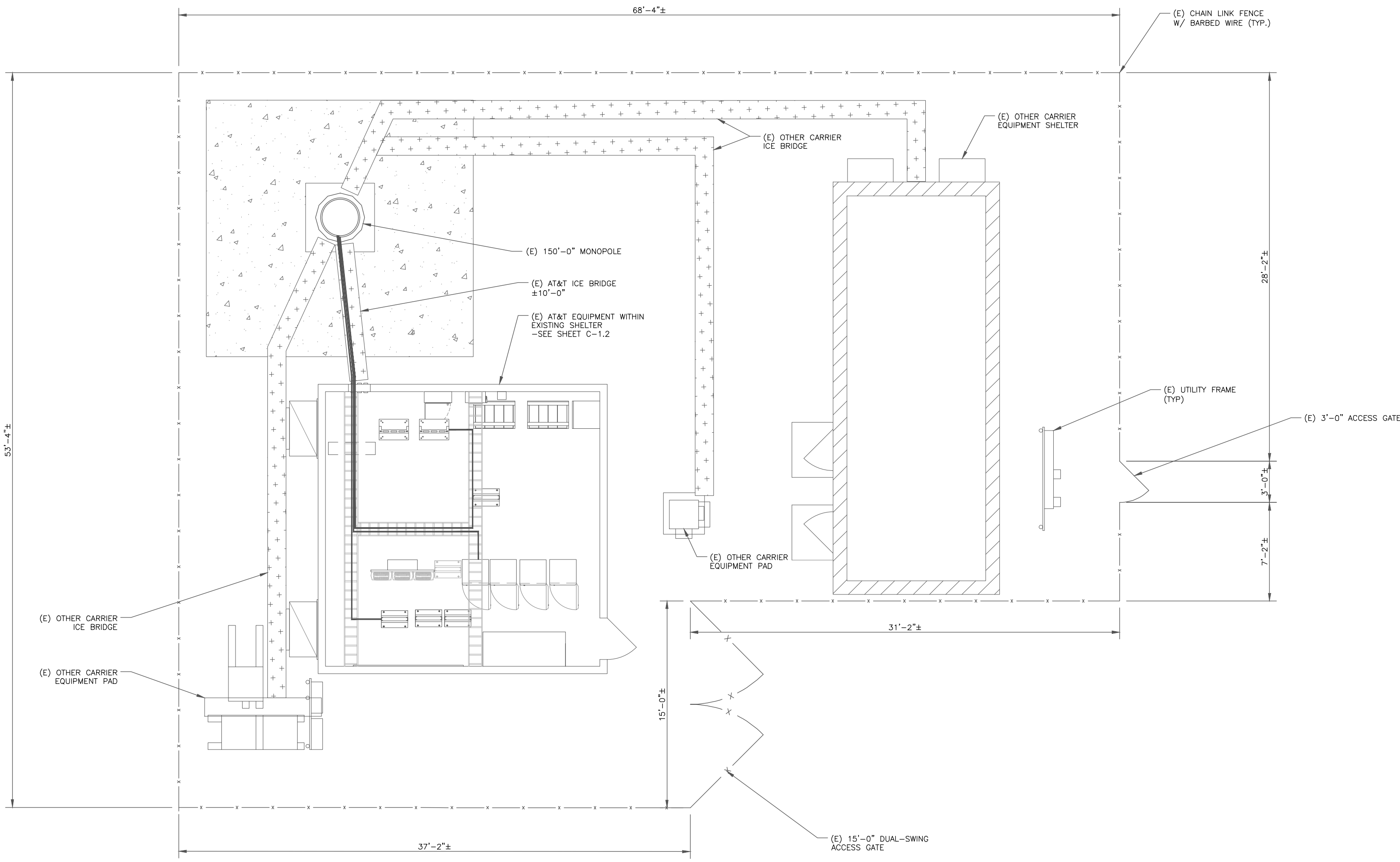
SHEET NUMBER: T-3
REVISION: 2



1 SITE PLAN

SCALE: 4' 3' 2' 1' 0 4' 1/4"=1'-0" (FULL SIZE) 1/8"=1'-0" (11x17)

AT&T

575 MOROSGO DRIVE
ATLANTA, GA 30324-3300

CROWN CASTLE

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AT&T SITE NUMBER: **CT2106**

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BRIDGEPORT NORTH

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BRIDGEPORT, CT 06606

EXISTING 150'-0"
MONOPOLE

GPD JOB #: 2021724.75.841288.08

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	02/10/2021	AJC	PRELIMINARY	MRL
0	04/13/2021	CJM	FINALS	MRL
1	04/23/2021	CJM	REVISED PER CLIENT	MRL
2	04/30/2021	CJM	REVISED PER CLIENT	MRL

STATE OF CONNECTICUT
CHRISTOPHER J. SCHEKS
No. 30086
LICENSED
PROFESSIONAL ENGINEER
04/30/2021

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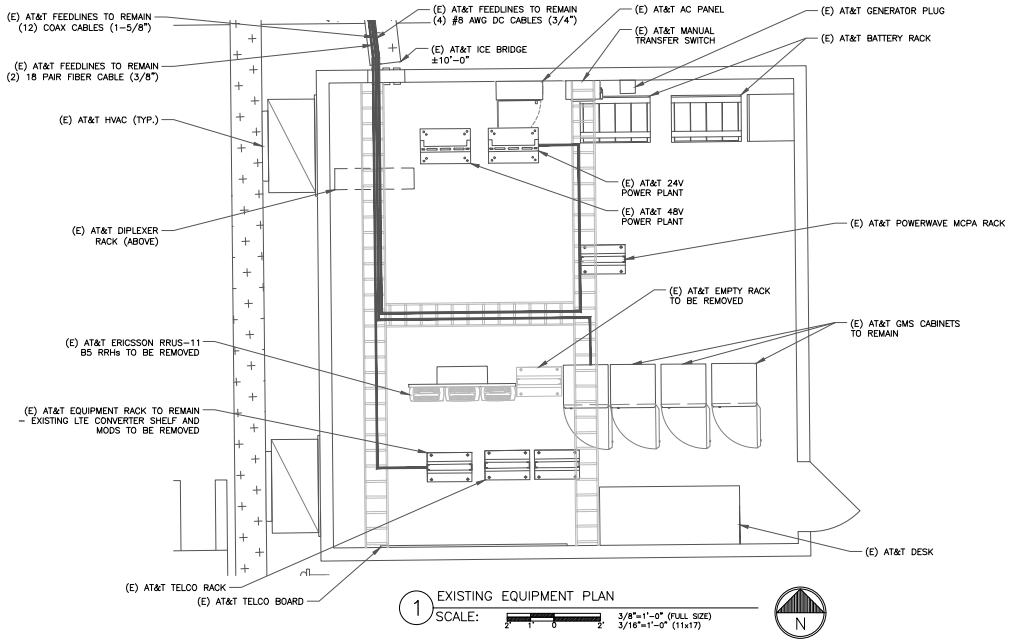
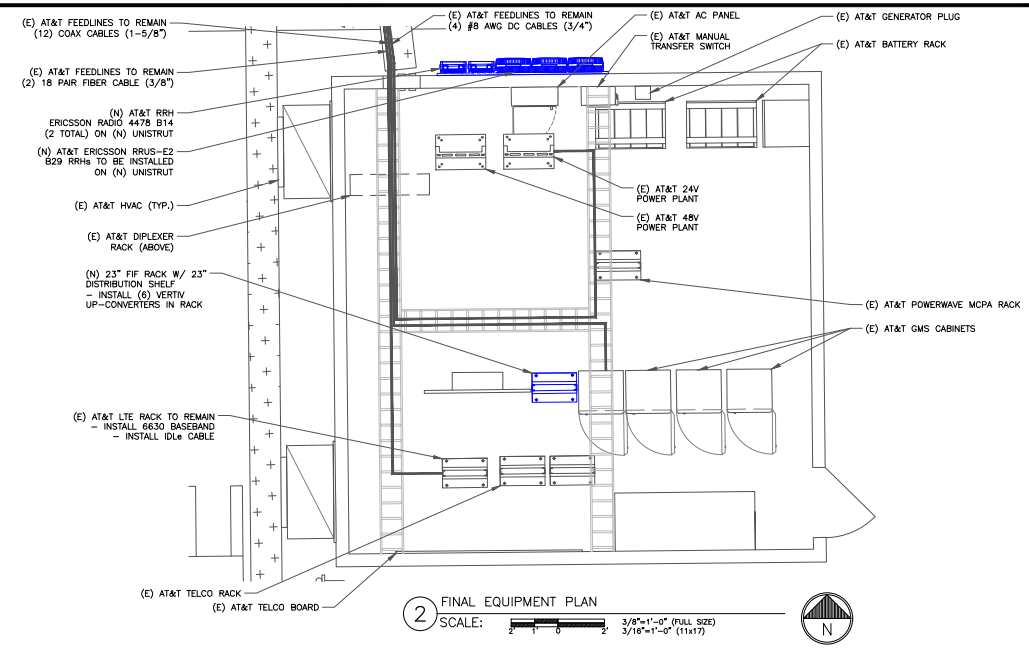
SHEET NUMBER: C-1.1

REVISION: 2



1 EXISTING EQUIPMENT PLAN
SCALE: 3/8"=1'-0" (FULL SIZE) 3/16"=1'-0" (11x17)



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

GROUND SCOPE OF WORK:
- REMOVE (3) ERICSSON - RRUS 11 B5 RRHs
- REMOVE (1) 4-POST RACK
- INSTALL (1) IDLe CABLE
- INSTALL (1) 6630 BASEBAND
- INSTALL (3) ERICSSON - RRUS E2 B29
- INSTALL (1) 23" FIF RACK
- INSTALL (1) 23" VERTIV DISTRIBUTION SHELF
- INSTALL (12) VERTIV DC UPCONVERTORS
- INSTALL (1) DC12 RAYCAP

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

AT&T
575 MOROSGO DRIVE
ATLANTA, GA 30324-3300

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

[redacted]
520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2101

AT&T SITE NUMBER: **CT2106**

BU #: **841288**
BRIDGEPORT NORTH

205 KAECHELE PLACE
BRIDGEPORT, CT 06606

EXISTING 150'-0"
MONOPOLE

GPD JOB #: 2021724.75.841288.08

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STATE OF CONNECTICUT
CHRISTOPHER J. SCHERER
No. 30786
LICENSED
PROFESSIONAL ENGINEER

04/30/2021

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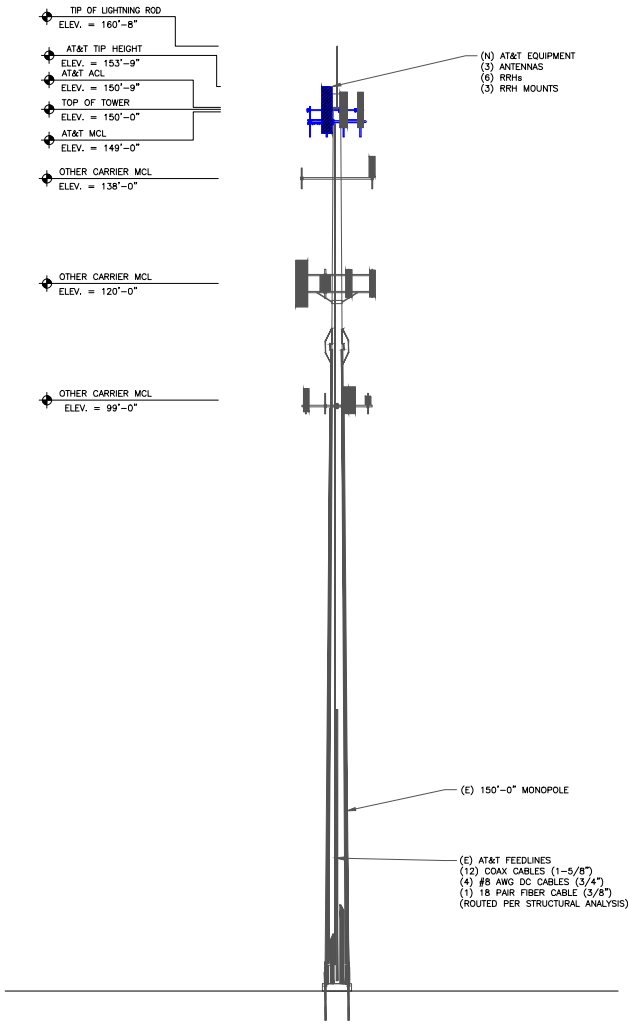
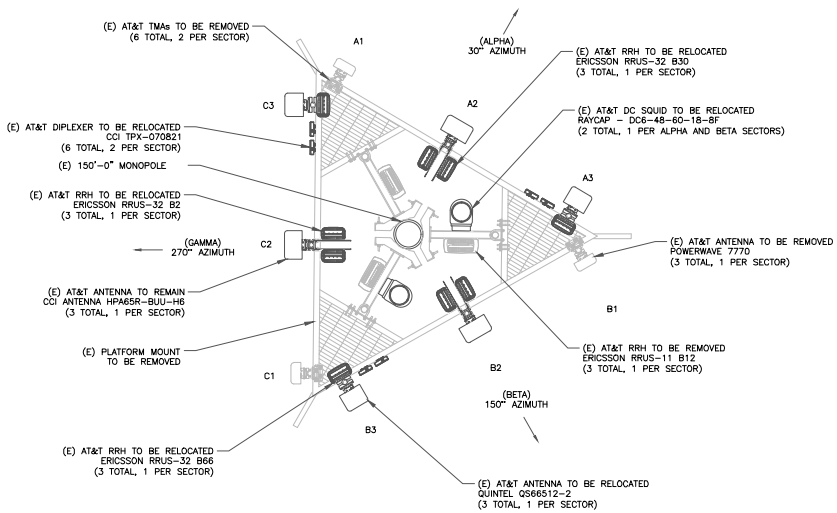
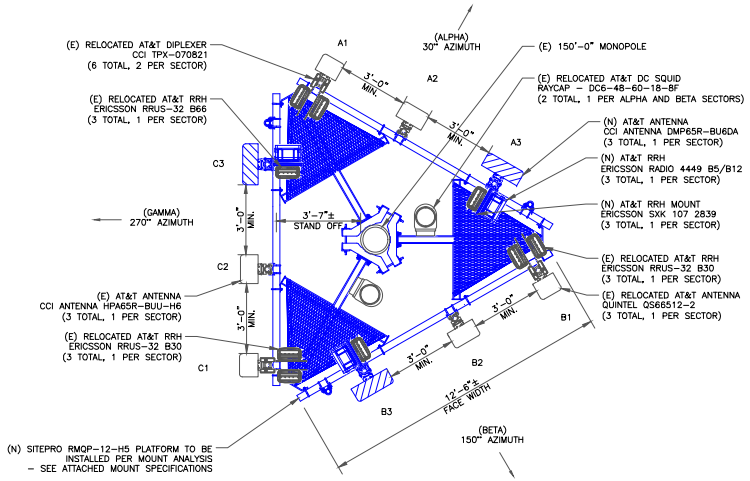
SHEET NUMBER: C-1.2
REVISION: 2



1 FINAL ELEVATION
SCALE: NOT TO SCALE



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



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

"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.

INSTALLER NOTES:

1. REFERENCE C-3 FOR FINAL EQUIPMENT SCHEDULE.
2. REFERENCE C-4 FOR NEW EQUIPMENT SPECIFICATIONS.
3. CONTRACTOR TO VERIFY ALL ANTENNA TIP HEIGHTS DO NOT EXCEED BEACON BASE HEIGHT.
4. 3'-0" MINIMUM DISTANCE REQUIRED BETWEEN LTE ANTENNAS ON SAME SECTOR.
5. 6'-0" MINIMUM DISTANCE REQUIRED BETWEEN 700BC & 700DE ANTENNAS ON SAME SECTOR.
6. 4'-0" MINIMUM DISTANCE REQUIRED BETWEEN LTE 700 ANTENNAS ON OPPOSING SECTORS.
7. ALL ANTENNA MEASUREMENT DISTANCES MUST BE EDGE TO EDGE (RELOCATE ANTENNAS AS NEEDED).
8. 8" MINIMUM DISTANCE REQUIRED BETWEEN ANTENNA & RADIO. SEE GENERIC EXAMPLE DETAIL ON SHEET C-4.

AT&T
575 MOROSGO DRIVE
ATLANTA, GA 30324-3300

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

520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2101

AT&T SITE NUMBER: **CT2106**

BU #: **841288**
BRIDGEPORT NORTH

205 KAECHELE PLACE
BRIDGEPORT, CT 06606

EXISTING 150'-0"
MONOPOLE

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STATE OF CONNECTICUT
CHRISTOPHER J. SCHERF
No. 20786
LICENSED
PROFESSIONAL ENGINEER
04/30/2021

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SHEET NUMBER: C-2
REVISION: 2

FINAL EQUIPMENT SCHEDULE
(VERIFY WITH CURRENT RFDS)

POSITION	ANTENNA				RADIO			DIPLEXER			TMA		SURGE PROTECTION		CABLES			
	TECH.	STATUS/MANUFACTURER MODEL	AZIMUTH	RAD CENTER	QTY.	STATUS/MODEL	LOCATION	QTY.	STATUS	LOCATION	QTY.	STATUS/MANUFACTURER MODEL	QTY.	STATUS/MODEL	QTY.	STATUS/TYPE	SIZE	LENGTH
ALPHA																		
A1	UMTS 850/LTE 700/WCS /1900	(E) QUINTEL QS66512-2	30°	150'-9"	1	(N) ERICSSON – RRUS-E2 B29	GROUND	2	(E) TPX-070821	TOWER	–	–	–	–	2	(E) COAX	1-5/8"	204'-0"
					1	(E) ERICSSON – RRUS-32 B2	TOWER											
					1	(N) ERICSSON – RRUS-32 B30	TOWER	2	(E) TPX-070821	GROUND								
A2	LTE 700	(E) CCI ANTENNAS HPA-65R-BUU-H6	30°	150'-9"	1	(N) ERICSSON – 4478 B14	GROUND	–	–	–	–	–	1	DC6-48-60-18-8F	1	(E) FIBER	18 PAIR	204'-0"
															2	(E) DC	#8	204'-0"
															2	(E) COAX	1-5/8"	204'-0"
A3	LTE 700/850 WCS/ 5G 850	(N) CCI ANTENNAS DMP65R-BU6DA	30°	150'-9"	1	(N) ERICSSON – 4449 B5/B12	TOWER	–	–	–	–	–	–	–	–	–	–	–
					1	(E) ERICSSON – RRUS-32 B66A	TOWER											
BETA																		
B1	UMTS 850/LTE 700/WCS /1900	(E) QUINTEL QS66512-2	150°	150'-9"	1	(N) ERICSSON – RRUS-E2 B29	GROUND	2	(E) TPX-070821	TOWER	–	–	–	–	2	(E) COAX	1-5/8"	204'-0"
					1	(E) ERICSSON – RRUS-32 B2	TOWER											
					1	(N) ERICSSON – RRUS-32 B30	TOWER	2	(E) TPX-070821	GROUND								
B2	LTE 700	(E) CCI ANTENNAS HPA-65R-BUU-H6	150°	150'-9"	1	(N) ERICSSON – 4478 B14	GROUND	–	–	–	–	–	1	DC6-48-60-18-8F	1	(E) FIBER	18 PAIR	204'-0"
															2	(E) DC	#8	204'-0"
															2	(E) COAX	1-5/8"	204'-0"
B3	LTE 700/850 WCS/ 5G 850	(N) CCI ANTENNAS DMP65R-BU6DA	150°	150'-9"	1	(N) ERICSSON – 4449 B5/B12	TOWER	–	–	–	–	–	–	–	–	–	–	–
					1	(E) ERICSSON – RRUS-32 B66A	TOWER											
GAMMA																		
C1	UMTS 850/LTE 700/WCS /1900	(E) QUINTEL QS66512-2	270°	150'-9"	1	(N) ERICSSON – RRUS-E2 B29	GROUND	2	(E) TPX-070821	TOWER	–	–	–	–	2	(E) COAX	1-5/8"	204'-0"
					1	(E) ERICSSON – RRUS-32 B2	TOWER											
					1	(N) ERICSSON – RRUS-32 B30	TOWER	2	(E) TPX-070821	GROUND								
C2	LTE 700	(E) CCI ANTENNAS HPA-65R-BUU-H6	270°	150'-9"	–	–	–	–	–	–	–	–	–	–	2	(E) COAX	1-5/8"	204'-0"
C3	LTE 700/850 WCS/ 5G 850	(N) CCI ANTENNAS DMP65R-BU6DA	270°	150'-9"	1	(N) ERICSSON – 4449 B5/B12	TOWER	–	–	–	–	–	–	–	–	–	–	–
					1	(E) ERICSSON – RRUS-32 B66A	TOWER											
														UNUSED FEEDLINES:	–	–	–	–

NOTE:
(E) – EXISTING
(N) – NEW

1 FINAL EQUIPMENT SCHEDULE
SCALE: NOT TO SCALE

AT&T
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ATLANTA, GA 30324-3300

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CLIFTON PARK, NY 12065

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BU #: **841288**
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EXISTING 150'-0"
MONOPOLE

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STATE OF CONNECTICUT
CHRISTOPHER J. SCHERT
No. 30786
LICENSED
PROFESSIONAL ENGINEER
04/30/2021

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SHEET NUMBER: C-3
REVISION: 2

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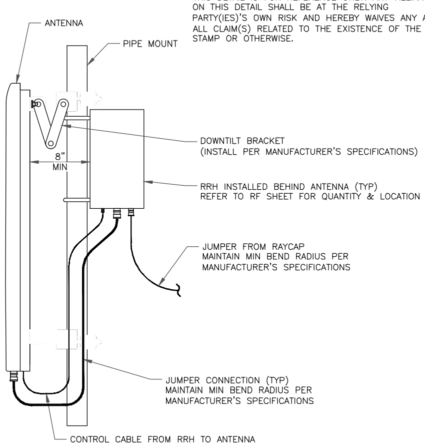

1 GENERIC ANTENNA MOUNTING ELEVATION
SCALE: NOT TO SCALE

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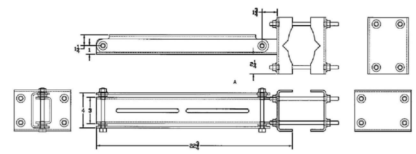
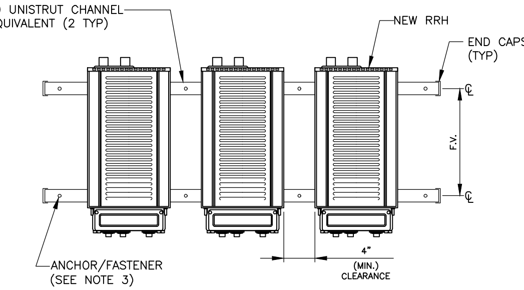


ROSENBERGER – D220RRUDSM
DUAL RRH MOUNT

2 ROSENBERGER D220RRUDSM
SCALE: NOT TO SCALE



ELEVATION

NOTES:

1. A SUPPORT FOR A SINGLE RRH SHALL HAVE A MINIMUM OF TWO ANCHORS/FASTENERS FOR EACH UNISTRUT CHANNEL.
2. INSTALL ANCHORS/FASTENERS A MAXIMUM OF 2'–0" ON CENTERS.
   - WOOD STUDS – 1/4"ø LAG BOLT W/ 1" EMBEDMENT IN WOOD
   - CONCRETE – 1/4"ø HILTI KWIK BOLT III W/ 1–1/2" EMBEDMENT OR EQUIVALENT
   - THROUGH BOLT – 1/4"ø A36/A307 THREADED ROD W/ NUTS AND WASHERS
   - MASONRY – 1/2"ø HILTI HY20 W/6" EMBEDMENT

   ANCHORS AND UNISTRUT CHANNEL SHALL HAVE HOT–DIPPED GALVANIZED FINISH.
4. MOUNT RRH TO UNISTRUT WITH 3/8"ø UNISTRUT BOLTING HARDWARE AND SPRING NUTS. TYPICAL FOUR PER BRACKET. SUBCONTRACTOR SHALL SUPPLY.
5. NO PAINTING OF THE RRH OR SOLAR SHIELD IS ALLOWED.

3 RRH MOUNTING DETAIL
SCALE: NOT TO SCALE

INSTALLER NOTES:

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

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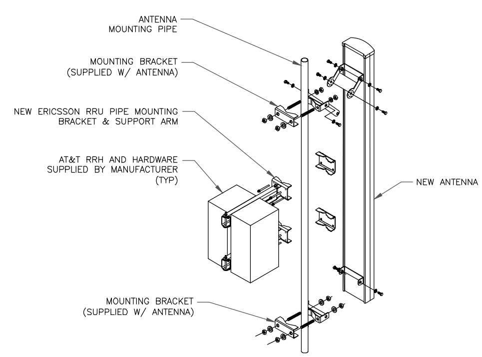

4 ANTENNA WITH DUAL RRH MOUNTING DETAIL
SCALE: NOT TO SCALE

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20–POSITION BULLET BREAKER
DISTRIBUTION PANEL FOR 23" RACK
VERTIV #: 545277
AT&T #: NEQ.13349

5 DC BREAKER PANEL
SCALE: NOT TO SCALE

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AMPHENOL – 23" FIF RACK
PART #: 12623–01
DIMENSIONS (HxW): 84"x23"

6 FIF RACK DETAIL
SCALE: NOT TO SCALE

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520 South Main Street, Suite 2531
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STATE OF CONNECTICUT · CHRISTOPHER J. SCHEKS · No. 30086 · LICENSED · PROFESSIONAL ENGINEER
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SHEET NUMBER: C-4
REVISION: 2

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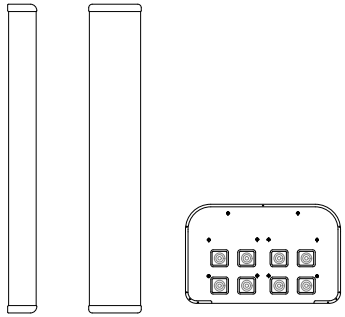

CCI ANTENNAS – DMP65R-BB6D
WEIGHT (WITHOUT MOUNTING HARDWARE): 89.3 LBS
SIZE (HxWxD): 71.2x20.7x7.7 IN.

1 CCI ANTENNA – OPA65R-BU8D
SCALE: NOT TO SCALE

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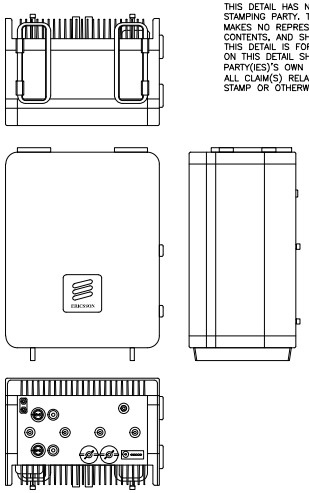

ERICSSON – RADIO 4449
WEIGHT: 70.0 LBS
SIZE (HxWxD): 18.0x13.2x9.4 IN.

2 ERICSSON – RADIO 4449
SCALE: NOT TO SCALE

3 DETAIL NOT USED
SCALE: NOT TO SCALE

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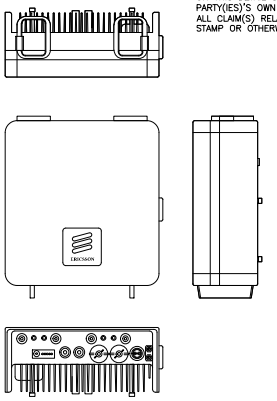

ERICSSON – RADIO 4478
WEIGHT: 60.0 LBS
SIZE (HxWxD): 15.0x13.0x8.0 IN.

4 ERICSSON – RADIO 4478
SCALE: NOT TO SCALE

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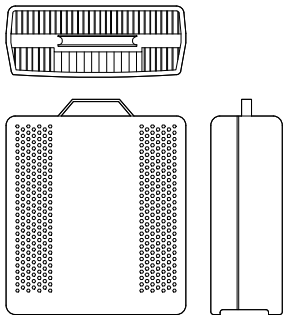

ERICSSON – RRUS E2
WEIGHT (FULLY EQUIPPED): 58.0 LBS
SIZE (HxWxD): 20.4x18.5x7.5 IN.

5 ERICSSON – RRUS E2
SCALE: NOT TO SCALE

6 DETAIL NOT USED
SCALE: NOT TO SCALE

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ISSUED FOR:

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A	02/10/2021	AJC	PRELIMINARY	MRL
0	04/13/2021	CJM	FINALS	MRL
1	04/23/2021	CJM	REVISED PER CLIENT	MRL
2	04/30/2021	CJM	REVISED PER CLIENT	MRL

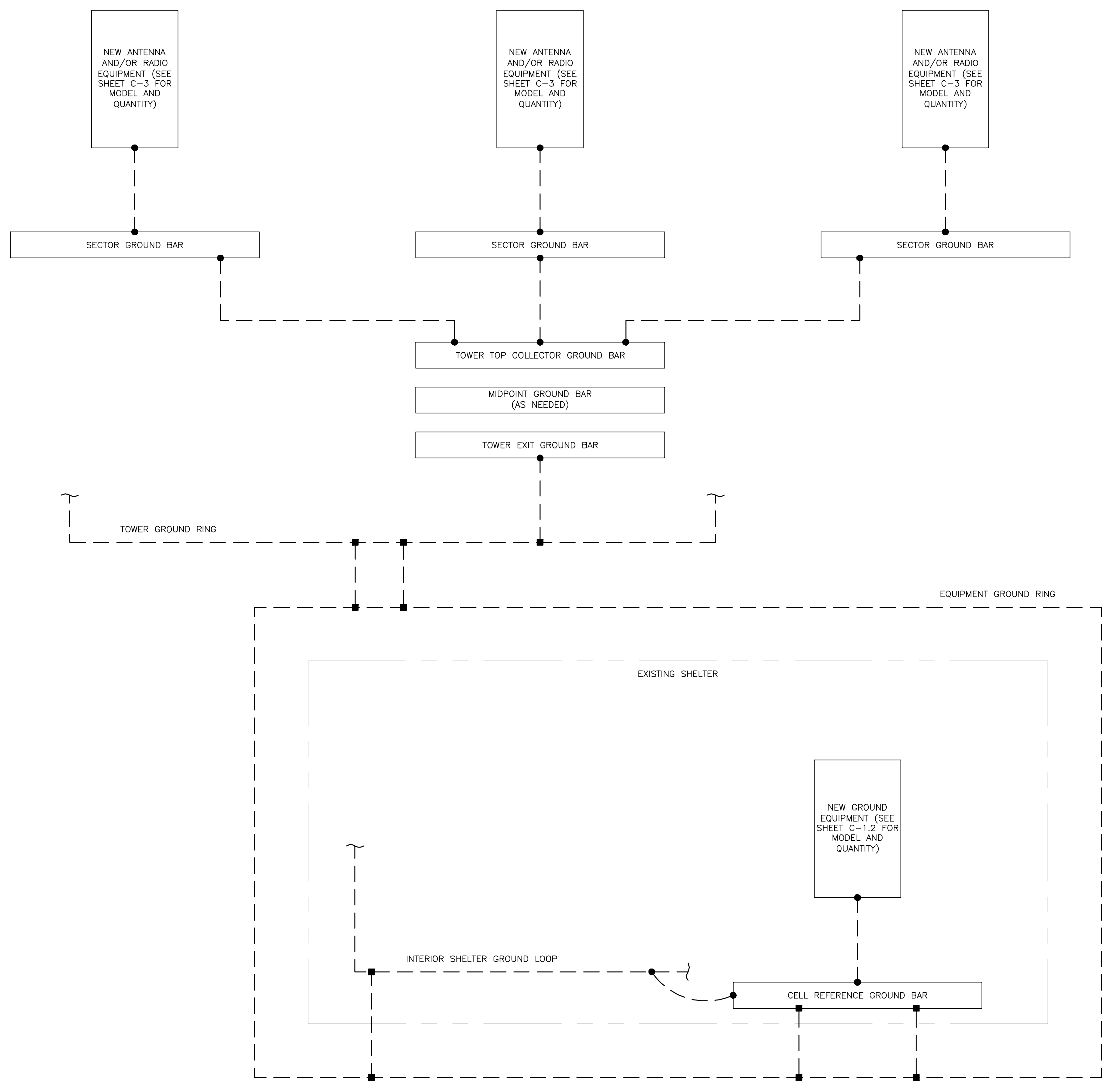
STATE OF CONNECTICUT
CHRISTOPHER J. MORRIS
No. 20786
LICENSED
PROFESSIONAL ENGINEER

04/30/2021

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: C-5

REVISION: 2



1 GROUNDING SCHEMATIC
SCALE: NOT TO SCALE

GROUNDING PLAN LEGEND:

- --- GROUND WIRE
- ■ EXOTHERMIC WELD
- ● MECHANICAL CONNECTION
- COPPER GROUND ROD
- GROUND ROD W/ TEST WELL

CELL REFERENCE GROUND BAR: POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUITS (ATT-TP-76416 7.6.7).

HATCH PLATE GROUND BAR: BOND TO THE INTERIOR GROUND RING WITH (2) #2 STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CELL SITE REFERENCE GROUND BAR MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) #2 STRANDED GREEN INSULATED COPPER CONDUCTORS.

EXTERIOR CABLE ENTRY PORT GROUND BARS: LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE (ATT-TP-76416 7.6.7.2).

DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICES CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR PER TP76300 SECTION H 6 AND TP76416 FIGURE 7-11 REQUIREMENTS.

AT&T
575 MOROSGO DRIVE
ATLANTA, GA 30324-3300

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

GPD Engineering and Architecture Professional Corporation
520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2101

AT&T SITE NUMBER: **CT2106**

BU #: **841288**
BRIDGEPORT NORTH

205 KAECHELE PLACE
BRIDGEPORT, CT 06606

EXISTING 150'-0"
MONOPOLE

GPD JOB #: 2021724.75.841288.08

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
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STATE OF CONNECTICUT STEVEN P. SCHAUB LICENSED PROFESSIONAL ENGINEER
04/30/2021

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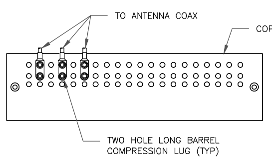
SHEET NUMBER: G-1
REVISION: 2

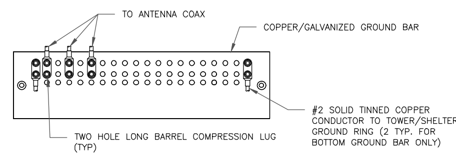
1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



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.

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

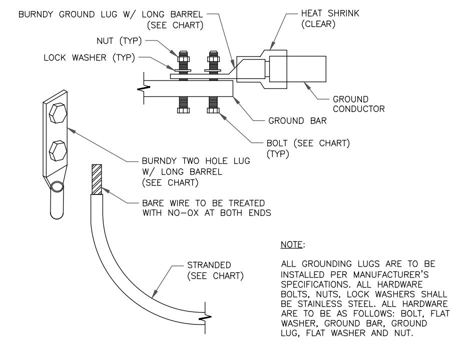


NOTES:

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.

3 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE

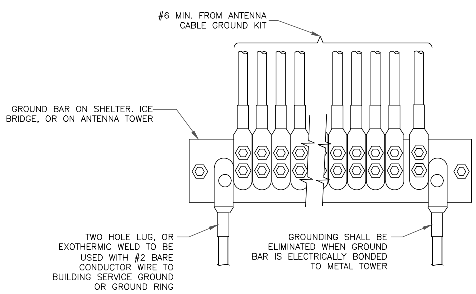
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 SOLID TINNED	YA3C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 STRANDED	YA2C-2TC38	3/8" - 16 NC SS 2 BOLT
#2/0 STRANDED	YA26-2TC38	3/8" - 16 NC SS 2 BOLT
#4/0 STRANDED	YA28-2N	1/2" - 16 NC SS 2 BOLT



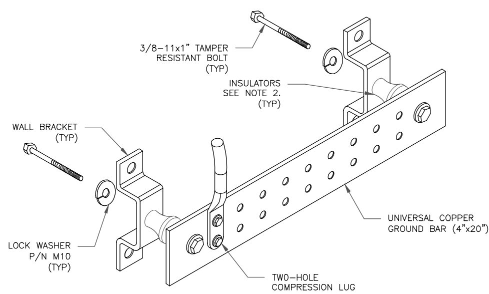
NOTE:

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

4 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



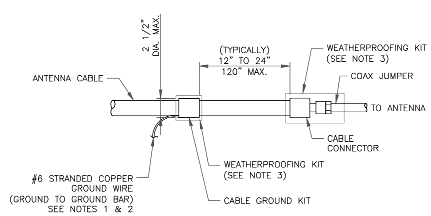
5 GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

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

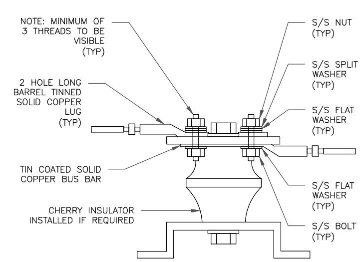
6 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



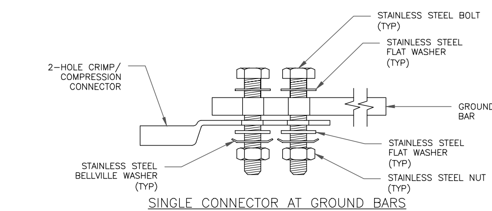
NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO 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.

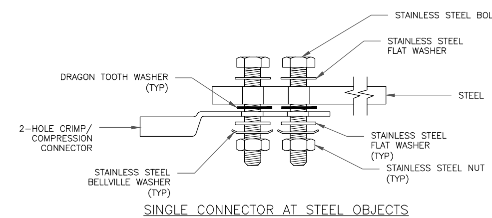
7 LUG DETAIL
SCALE: NOT TO SCALE



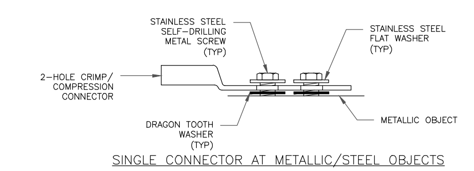
8 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS



SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

AT&T
575 MOROSGO DRIVE
ATLANTA, GA 30324-3300

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

GPD Engineering and Architecture Professional Corporation
520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2101

AT&T SITE NUMBER: **CT2106**

BU #: **841288**
BRIDGEPORT NORTH

205 KAECHELE PLACE
BRIDGEPORT, CT 06606

EXISTING 150'-0"
MONOPOLE

GPD JOB #: 2021724.75.841288.08

ISSUED FOR:

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SHEET NUMBER: G-2

REVISION: 2

Diagram - Sector	A	Diagram File Name - CT2106_ABC_LTE Muti Carrier_Rev.3.vsd					
Atoll Site Name -	CT2106	Location Name -	BRIDGEPORT NORTH	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND
Comments: "Important Note: For cetailed radio to antenna wiring refer to the latest field notice - Antenna_Radio Connection Drawings Playbook v6.0_Ericsson"							

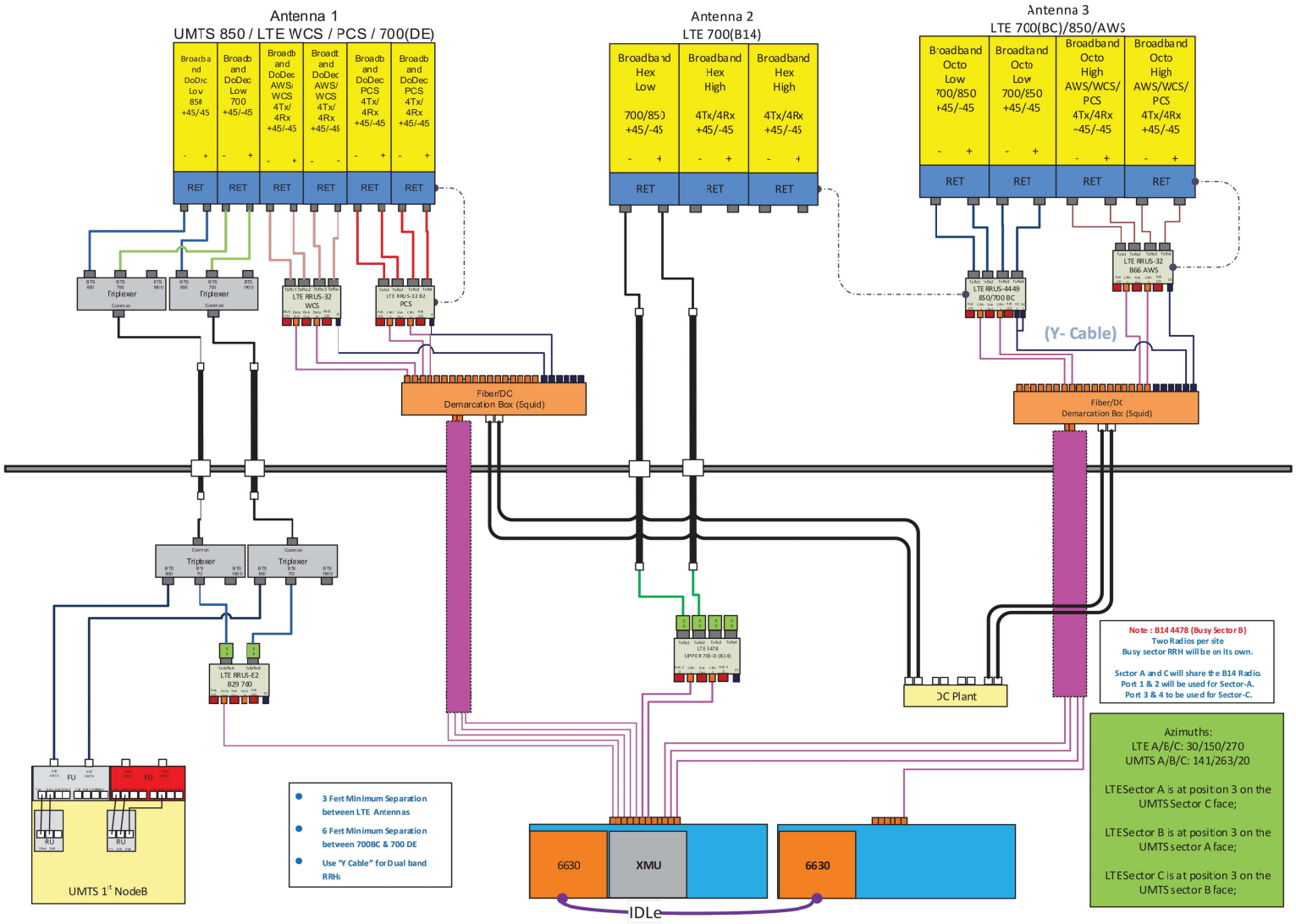


Diagram - Sector	B	Diagram File Name - CT2106_ABC_LTE Multi Carrer_Rev.3.vsd					
Atoll Site Name -	CT2106	Location Name -	BRIDGEPORT NORTH	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND

Comments: "Important Note: For detailed radio to antenna wiring refer to the latest field notice - Antenna_Radio Connection Drawings Playbook v6.0_Ericsson"

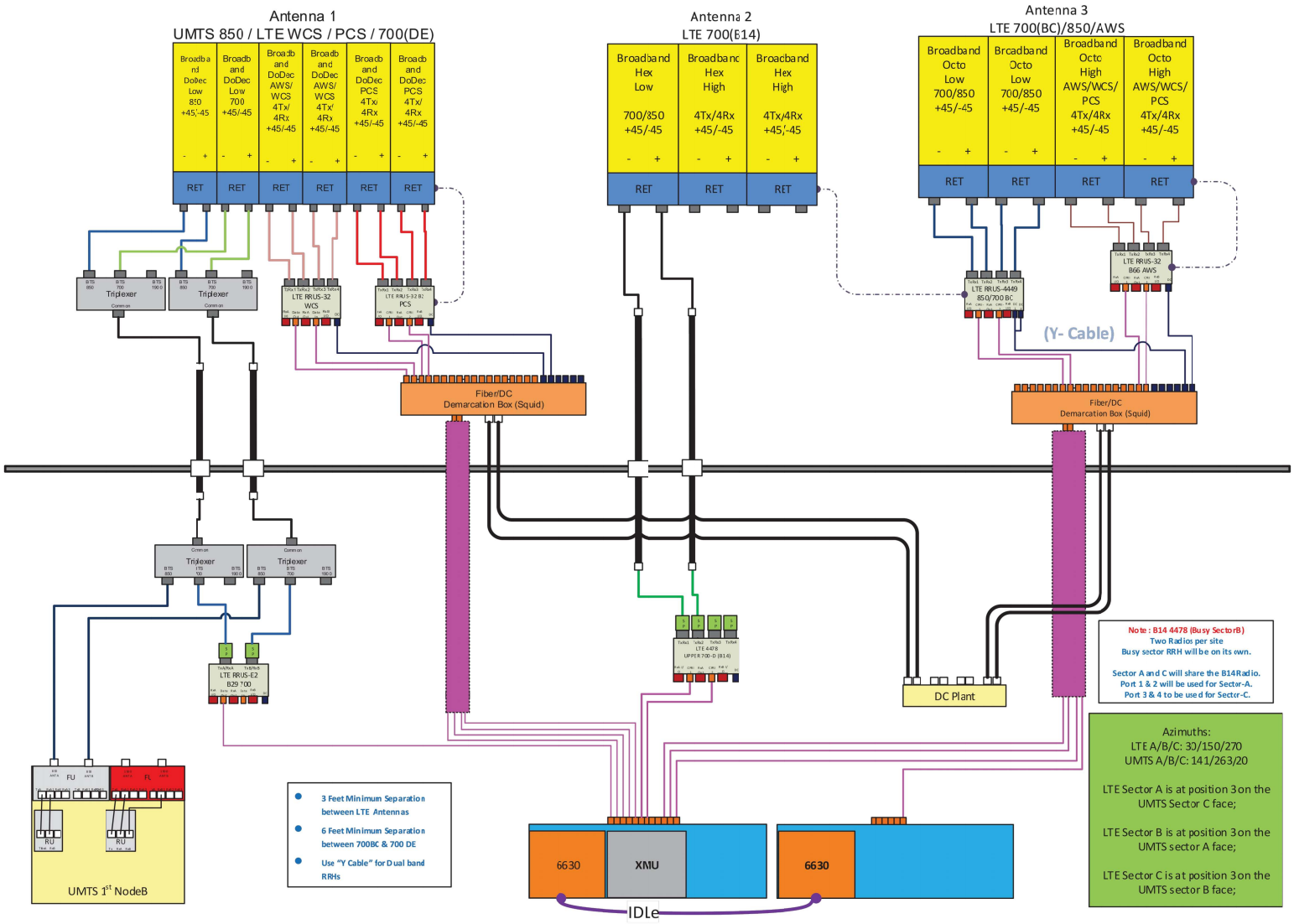
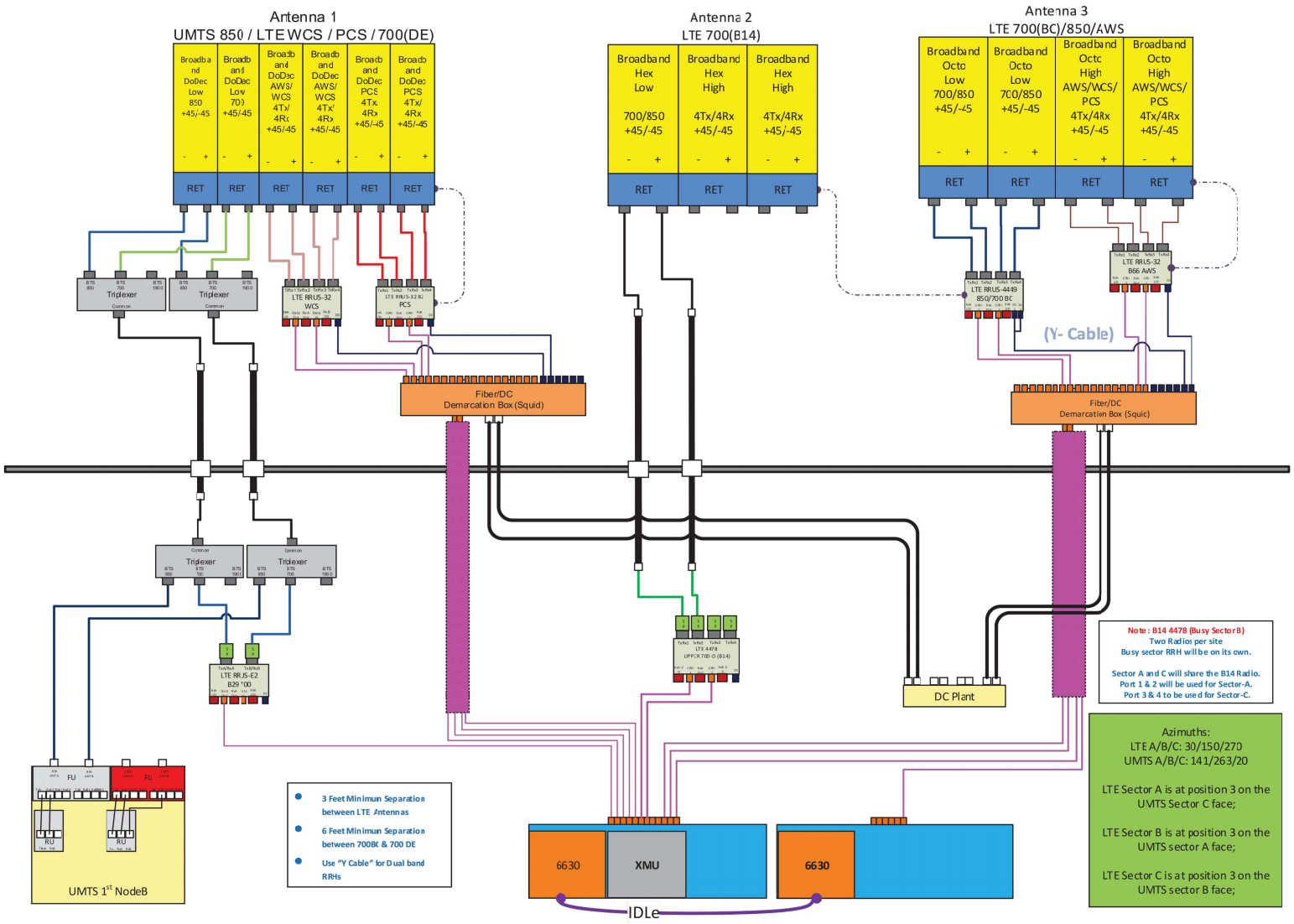
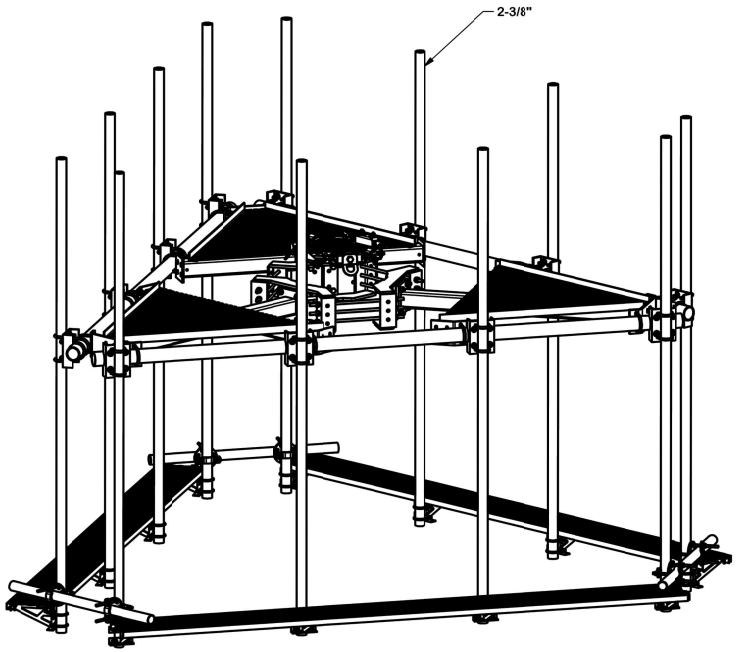


Diagram - Sector	C	Diagram File Name - CT2106_ABC_LTE Multi Carrier_Rev.3.vsd					
Atoll Site Name -	CT2106	Location Name -	BRIDGEPORT NORTH	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND

Comments: "Important Note: For detailed radio to antenna wiring refer to the latest field notice - Antenna_Radio Connection Drawings Playbook v6.0_Ericsson"





FARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	X-SV196	LOW PROFILE PLATFORM CORNER		212.10	636.31
2	3	X-LWRM	RING MOUNT WELDMENT		68.81	206.42
3	12	X-SP219	SMALL SUPPORT CROSS PLATE	8 1/4 in	8.61	103.33
4	12	X-WWSB	WALKWAY SUPPORT BRACKET		6.73	80.75
5	6	X-127594	FLAT DISK CLAMP PLATE 4" CENTERS (GALV.)		2.51	15.04
6	12	X-100064	CLAMP (4" V-CLAMP) GALVANIZED		0.91	10.95
7	12	P2120	2-3/8" x 120" (2" SCH. 40) GALAVANIZED PIPE	120 in	36.61	439.38
8	3	P3150	3-1/2" X 150" (3" SCH 40) GALVANIZED PIPE	150 in	94.80	284.40
9	3	P248	2-3/8" X 63"SCH 40 GALVANIZED PIPE	63 in	20.18	60.55
10	9	G58R-24	5/8" x 24" THREADED ROD (HDG.)	24 in	0.40	3.59
10	9	G58R-48	5/8" x 48" THREADED ROD (HDG.)	48 in	0.40	3.59
11	12	A58234	5/8" x 2-3/4" HDG A325 HEX BOLT	2 3/4 in	0.36	4.27
12	12	A58FW	5/8" HDG A325 FLATWASHER		0.03	0.41
13	30	G58LW	5/8" HDG LOCKWASHER		0.03	0.78
14	30	A58NUT	5/8" HDG A325 HEX NUT		0.13	3.90
15	3	GRS12-12	12" WIDE GRIP STRUT	120 in	31.00	93.00
16	36	X-UB1306	1/2" X 3-5/8" X 6" X 3" U-BOLT (HDG.)		0.83	29.82
17	24	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.63	15.00
18	12	G1204	1/2" x 4" HDG HEX BOLT GR5 FULL THREAD	4 in	0.27	3.24
19	12	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	6 1/2 in	0.41	4.91
20	144	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	4.91
21	144	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	2.00
22	144	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	10.31
23	24	X-UB3212	3/8" X 2-1/2" X 3-5/8" X 1-3/4" U-BOLT (HDG.)		0.29	6.97
24	48	G3802	3/8" x 2" HDG HEX BOLT GR5		0.09	4.21
25	48	SQW38	3/8" SQUARE WASHER	2 in	0.29	13.89
26	96	G38FW	3/8" HDG USS FLATWASHER		0.01	1.13
27	96	G38LW	3/8" HDG LOCKWASHER		0.01	0.64
28	96	G38NUT	3/8" HDG HEAVY 2H HEX NUT		0.03	3.25
29	1	HALO	HALO		40.35	40.35
					TOTAL WT. #	2136.59

TOLERANCE NOTES

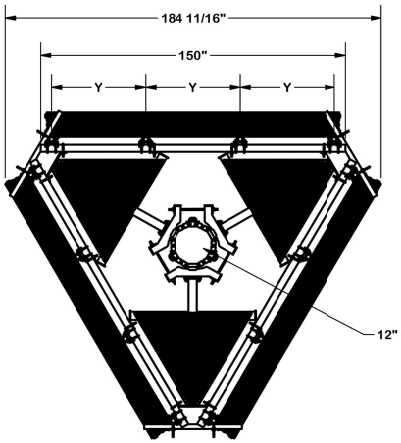
TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

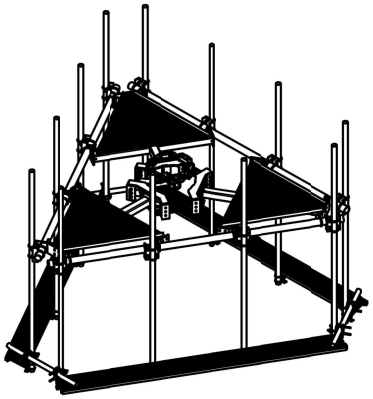
PROPRIETARY NOTE:
THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

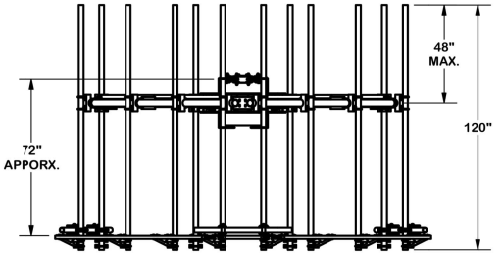
DESCRIPTION: RMQP-12-H5

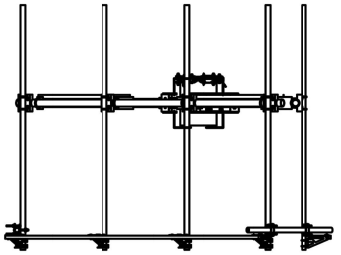
CPD NO.		DRAWN BY	ENG. APPROVAL	PART NO.
		CEK 11/1/2017		RMQP-12-H5
CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
		CUSTOMER		RMQP-12-H5

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









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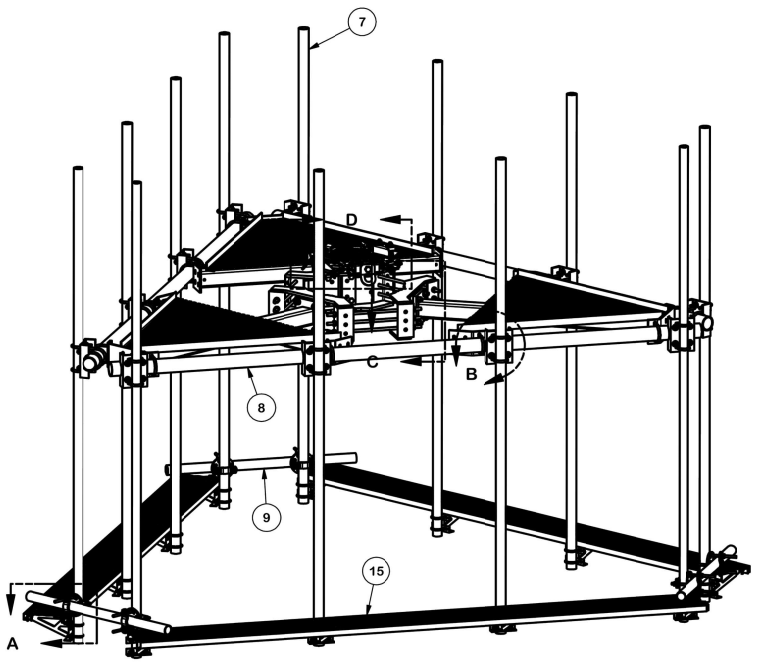
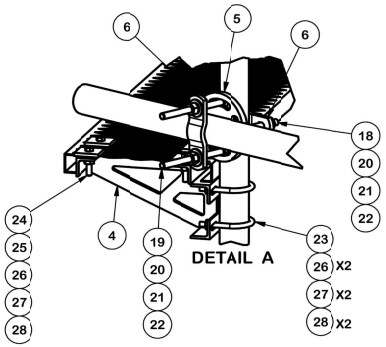
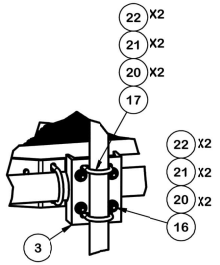
DESCRIPTION: RMQP-12-H5			
CPD NO.	DRAWN BY: CEK 11/1/2017	ENG. APPROVAL	PART NO.: RMQP-12-H5
CLASS / SUB	DRAWING USAGE: CUSTOMER	CHECKED BY	DWG. NO.: RMQP-12-H5

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

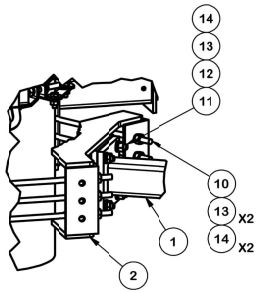




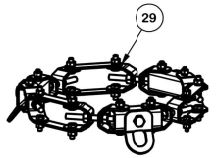
DETAIL A



DETAIL B



DETAIL C



DETAIL D

TOLERANCE NOTES

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LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
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CLASS / SUB	DRAWING USAGE: CUSTOMER	CHECKED BY	DWG. NO.: RMQP-12-H5

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

Exhibit D

Date: **February 26, 2021**

Tower Engineering Professionals
326 Tryon Road
Raleigh, NC 27603
(919) 661-6351

Subject: Structural Analysis Report

Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Site Number:	60393
	Site Name:	CT2106
	FA Number:	10034977
Crown Castle Designation:	**BU Number:**	841288
	Site Name:	BRIDGEPORT NORTH
	JDE Job Number:	617834
	Work Order Number:	1891602
	Order Number:	527511 Rev. 3
Engineering Firm Designation:	**TEP Project Number:**	25567.502325
Site Data:	**205 Kaechele Place, Bridgeport, Fairfield County, CT 06606** **Latitude *41° 13' 24.04"*, Longitude *-73° 13' 0.38"*** **150 Foot - Monopole Tower**	

Tower Engineering Professionals 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 - 86.7%**

This analysis utilizes an ultimate 3-second gust wind speed of 95 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Ihar V. Viarenich, P.E. / JSC

Respectfully submitted by:

Aaron T. Rucker, P.E.

Electronic Copy

02/26/2021

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1) INTRODUCTION

This is a 150-ft monopole tower mapped by GPD in April of 2008. The tower has been modified multiple times in the past to accommodate additional loading.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	B
Topographic Factor:	1.0
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
150.0	154.0	3	Quintel Technology	QS66512-2	4 6 2	3/4 1-5/8 3/8
		3	CCI Antennas	HPA-65R-BUU-H6		
		3	CCI Antennas	DMP65R-BU6D		
		2	Raycap	DC6-48-60-18-8F		
		6	CCI Antennas	TPX-070821		
		3	Ericsson	RRUS 32 B2		
		3	Ericsson	RRUS 32 B30		
		3	Ericsson	RRUS 32 B66a		
		3	Ericsson	RRUS 4449 B5/B12		
	150.0	1	Site Pro 1	HRK12 Rail Support		
		1	Site Pro 1	RMQP-496 Mount		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
138.0	143.0	1	Andrew	VHLP2-23	3 1 2	1-1/4 1-5/8 1/2
		1	Andrew	VHLP2-18		
		2	Dragonwave	Horizon Compact		
		1	Clearwire	CW Junction Box		
	140.0	3	Commscope	NNVV-65B-R4 w/ Mount Pipe		
		3	Nokia	AAHC w/ Mount Pipe		
		6	Alcatel Lucent	RRH2X50-800		
		3	Alcatel Lucent	PCS 1900MHZ 4X45W-65MHZ		
	138.0	1	Tower Mounts	Platform Mount [LP 715-1]		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
120.0	120.0	3	Ericsson	AIR -32 B2A/B66AA	9 1	1-5/8 1-1/2
		3	Ericsson	AIR 21 B2A/B4P		
		3	RFS Celwave	APXVAARR24_43-U-NA20		
		3	Ericsson	AIR6449 B41		
		3	Ericsson	KRY 112 144/1		
		3	Ericsson	Radio 4449 B71 B85A_T-Mobile		
		3	Ericsson	RRUS 4415 B25_CCIV2		
		1	Tower Mounts	Platform Mount [LP 301-1_KCKR]		
99.0	100.0	3	Samsung Telecom.	CBRS w/ Mount Pipe	6 1	1-5/8 1-1/4
		6	Commscope	JAHH-65A-R3B w/ Mount Pipe		
		3	Antel	BXA-70063/4CF w/ Mount Pipe		
		3	Commscope	CBC78T-DS-43-2X		
		3	Samsung Telecom.	RFV01U-D1A		
		3	Samsung Telecom.	RFV01U-D2A		
		3	Samsung Telecom.	20W CBRS		
		1	RFS Celwave	DB-C1-12C-24AB-0Z		
	99.0	1	Tower Mounts	T-Arm Mount [TA 602-3]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
Geotechnical Report	5110784	CCISites
Tower Foundation Mapping	5110783	CCISites
Tower Mapping	4710143	CCISites
Tower Reinforcement Drawings	4945043	CCISites
Tower Reinforcement Drawings	5237204	CCISites
Tower Reinforcement Drawings	5303781	CCISites
Post-Modification Inspection	5401472	CCISites
Post-Modification Inspection	5739992	CCISites
Tower Reinforcement Drawings	6650617	CCISites
Post-Modification Inspection	6894091	CCISites
Tower Reinforcement Drawings	6801057	CCISites
Post-Modification Inspection	7594134	CCISites
Tower Maintenance Drawings	9308609	CCISites

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.

RISA-3D, a commercially available analysis software package, was used to model and analyze the foundation. Selected output from the analysis is included 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.
3) The foundation steel reinforcement was assumed to be the minimum required per ACI 318.
4) The following material grades were assumed:
   a) Anchor bolts: ASTM A615-75
   b) Pole shaft: ASTM A572-50
   c) Base plate: ASTM A572-50
   d) #20 Dywidag Reinforcement: fy= 80 ksi, fu = 100 ksi
   e) Concrete compressive strength: f'c = 3 ksi
   f) Foundation flexural reinforcement: fy = 60 ksi
5) The existing rock anchor rock designed by GPD Group in April of 2013 (CCI Doc# 4945043) were assumed to be sufficiently embedded to develop their full tensile capacity.

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)[1,2]

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
150 - 145	Pole	TP15.732x15x0.2188	Pole	22.1%	Pass
145 - 140	Pole	TP16.463x15.732x0.2188	Pole	33.2%	Pass
140 - 135	Pole	TP17.195x16.463x0.2188	Pole	50.1%	Pass
135 - 130	Pole	TP17.927x17.195x0.2188	Pole	66.2%	Pass
130 - 128.5	Pole	TP18.146x17.927x0.2188	Pole	70.6%	Pass
128.5 - 128.25	Pole + Reinf.	TP18.183x18.146x0.6688	Reinf. 10 Bolt-Shaft Bearing	43.1%	Pass
128.25 - 123.25	Pole + Reinf.	TP18.915x18.183x0.6438	Reinf. 10 Tension Rupture	43.7%	Pass
123.25 - 118.25	Pole + Reinf.	TP19.646x18.915x0.6188	Reinf. 10 Tension Rupture	52.7%	Pass
118.25 - 113.25	Pole + Reinf.	TP20.378x19.646x0.6063	Reinf. 10 Tension Rupture	63.2%	Pass
113.25 - 109	Pole + Reinf.	TP21x20.378x0.5938	Reinf. 10 Bolt-Shaft Bearing	86.7%	Pass
109 - 108.75	Pole + Reinf.	TP21.038x21x0.725	Reinf. 6 Tension Rupture	54.7%	Pass
108.75 - 104.17	Pole + Reinf.	TP21.729x21.038x0.7	Reinf. 6 Tension Rupture	61.5%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
104.17 - 103.92	Pole + Reinf.	TP21.767x21.729x0.975	Reinf. 6 Tension Rupture	55.0%	Pass
103.92 - 103.17	Pole + Reinf.	TP21.88x21.767x0.975	Reinf. 6 Tension Rupture	55.9%	Pass
103.17 - 102.92	Pole + Reinf.	TP21.918x21.88x1.125	Reinf. 6 Tension Rupture	45.4%	Pass
102.92 - 102.42	Pole + Reinf.	TP21.994x21.918x1.125	Reinf. 6 Tension Rupture	46.0%	Pass
102.42 - 102.17	Pole + Reinf.	TP22.031x21.994x0.95	Reinf. 6 Tension Rupture	50.4%	Pass
102.17 - 100.92	Pole + Reinf.	TP22.22x22.031x0.95	Reinf. 6 Tension Rupture	51.8%	Pass
100.92 - 100.67	Pole + Reinf.	TP22.258x22.22x1.025	Reinf. 6 Tension Rupture	51.0%	Pass
100.67 - 99.58	Pole + Reinf.	TP22.422x22.258x1	Reinf. 6 Tension Rupture	52.2%	Pass
99.58 - 99.33	Pole + Reinf.	TP22.46x22.422x1.4	Reinf. 14 Tension Rupture	37.9%	Pass
99.33 - 95.42	Pole + Reinf.	TP23.051x22.46x1.35	Reinf. 14 Tension Rupture	41.7%	Pass
95.42 - 95.17	Pole + Reinf.	TP23.088x23.051x1.05	Reinf. 15 Tension Rupture	51.5%	Pass
95.17 - 90.17	Pole + Reinf.	TP23.843x23.088x1	Reinf. 15 Tension Rupture	56.9%	Pass
90.17 - 85.17	Pole + Reinf.	TP24.598x23.843x0.975	Reinf. 15 Tension Rupture	62.2%	Pass
85.17 - 80.5	Pole + Reinf.	TP25.304x24.598x0.95	Reinf. 15 Tension Rupture	66.9%	Pass
80.5 - 80.25	Pole + Reinf.	TP25.341x25.304x1.3	Reinf. 5 Bolt-Shaft Bearing	58.0%	Pass
80.25 - 75.25	Pole + Reinf.	TP26.096x25.341x1.25	Reinf. 5 Tension Rupture	58.9%	Pass
75.25 - 73.58	Pole + Reinf.	TP26.348x26.096x1.25	Reinf. 5 Tension Rupture	60.2%	Pass
73.58 - 73.33	Pole + Reinf.	TP26.386x26.348x1.225	Reinf. 5 Tension Rupture	60.4%	Pass
73.33 - 72	Pole + Reinf.	TP27.04x26.386x1.225	Reinf. 5 Tension Rupture	61.5%	Pass
72 - 67	Pole + Reinf.	TP26.897x26.087x1.2875	Reinf. 5 Tension Rupture	63.2%	Pass
67 - 66.75	Pole + Reinf.	TP26.937x26.897x1.2875	Reinf. 5 Tension Rupture	63.4%	Pass
66.75 - 66.5	Pole + Reinf.	TP26.978x26.937x1.3625	Reinf. 13 Tension Rupture	56.0%	Pass
66.5 - 61.5	Pole + Reinf.	TP27.788x26.978x1.3125	Reinf. 13 Tension Rupture	59.0%	Pass
61.5 - 56.5	Pole + Reinf.	TP28.598x27.788x1.2875	Reinf. 13 Tension Rupture	61.9%	Pass
56.5 - 51.5	Pole + Reinf.	TP29.408x28.598x1.2375	Reinf. 13 Tension Rupture	64.6%	Pass
51.5 - 48.25	Pole + Reinf.	TP29.934x29.408x1.2125	Reinf. 13 Tension Rupture	66.4%	Pass
48.25 - 48	Pole + Reinf.	TP29.974x29.934x1.6125	Reinf. 1 Compression	53.2%	Pass
48 - 44.25	Pole + Reinf.	TP30.582x29.974x1.5625	Reinf. 1 Compression	54.8%	Pass
44.25 - 44	Pole + Reinf.	TP30.622x30.582x1.6625	Reinf. 1 Compression	51.7%	Pass
44 - 39	Pole + Reinf.	TP31.432x30.622x1.6125	Reinf. 1 Compression	53.6%	Pass
39 - 38.5	Pole + Reinf.	TP31.513x31.432x1.6125	Reinf. 1 Compression	53.8%	Pass
38.5 - 38.25	Pole + Reinf.	TP31.554x31.513x1.6125	Reinf. 1 Compression	53.9%	Pass
38.25 - 34	Pole + Reinf.	TP32.89x31.554x1.5625	Reinf. 1 Compression	55.5%	Pass
34 - 29	Pole + Reinf.	TP32.462x31.617x1.6813	Reinf. 1 Compression	55.0%	Pass
29 - 24	Pole + Reinf.	TP33.306x32.462x1.6313	Reinf. 1 Compression	56.5%	Pass
24 - 23.75	Pole + Reinf.	TP33.348x33.306x1.6313	Reinf. 1 Compression	56.6%	Pass
23.75 - 23.5	Pole + Reinf.	TP33.391x33.348x1.6063	Reinf. 1 Compression	56.7%	Pass
23.5 - 18.5	Pole + Reinf.	TP34.235x33.391x1.5813	Reinf. 1 Compression	58.1%	Pass
18.5 - 13.5	Pole + Reinf.	TP35.08x34.235x1.5313	Reinf. 12 Tension Rupture	59.5%	Pass
13.5 - 8.5	Pole + Reinf.	TP35.924x35.08x1.5063	Reinf. 12 Tension Rupture	60.9%	Pass
8.5 - 3.5	Pole + Reinf.	TP36.769x35.924x1.4563	Reinf. 12 Tension Rupture	62.3%	Pass
3.5 - 0	Pole + Reinf.	TP37.36x36.769x1.4313	Reinf. 12 Tension Rupture	63.2%	Pass
				Summary	

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
			Pole	70.6%	Pass
			Reinforcement	86.7%	Pass
			Overall	**86.7%**	**Pass**

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Flange Connection	109.0	53.3	Pass
1,2	Anchor Rods	-	71.0	Pass
1,2	Base Plate	-	51.0	Pass
1,2	Base Foundation Soil Interaction	-	33.1	Pass
1,2	Base Foundation Structural	-	28.8	Pass

Structure Rating (max from all components) =	**86.7%**

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

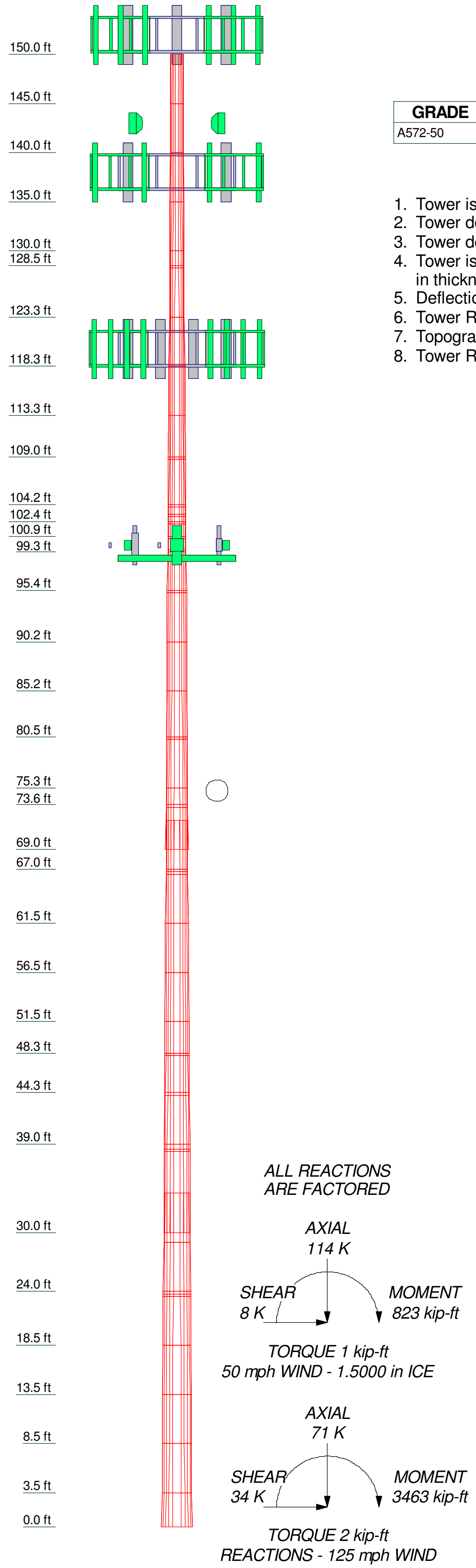
4.1) Recommendations

1) 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	12	0.2188		15.0000	15.7317	A572-50	0.2
2	5.000	12	0.2188		15.7317	16.4634		0.2
3	5.000	12	0.2188		16.4634	17.1951		0.2
4	5.000	12	0.2188		17.1951	[illegible]		0.2
5	[illegible]	12	[illegible]		[illegible]	[illegible]		[illegible]
6	[illegible]	12	[illegible]		[illegible]	[illegible]		[illegible]
7	5.000	12	[illegible]		[illegible]	18.9146		0.6
8	5.000	12	0.6188		18.9146	19.6463		0.6
9	5.000	12	0.6062		19.6463	20.3780		0.6
10	4.250	12	0.5938		20.3780	[illegible]		0.5
11	[illegible]	12	[illegible]		[illegible]	[illegible]		[illegible]
12	[illegible]	12	[illegible]		[illegible]	[illegible]		0.6
13–21	[illegible]	12	[illegible]		[illegible]	[illegible]		[illegible]
22	[illegible]	12	[illegible]		[illegible]	[illegible]		1.0
23	[illegible]	12	[illegible]		[illegible]	[illegible]		[illegible]
24	5.000	12	1.0000		[illegible]	23.8433		1.0
25	5.000	12	0.9750		23.8433	24.5983		1.0
26	4.670	12	0.9500		24.5983	[illegible]		1.0
27	[illegible]	12	[illegible]		[illegible]	[illegible]		[illegible]
28	5.000	12	1.2500		[illegible]	[illegible]		1.4
29–30	[illegible]	12	[illegible]		[illegible]	[illegible]		[illegible]
31	[illegible]	12	[illegible]	3.000	[illegible]	[illegible]		1.2
32–34	[illegible]	12	[illegible]		[illegible]	[illegible]		[illegible]
35	5.000	12	[illegible]		[illegible]	27.7877		1.6
36	5.000	12	1.2875		27.7877	28.5976		1.6
37	5.000	12	1.2375		28.5976	29.4075		1.6
38–44	[illegible]	12	[illegible]		[illegible]	[illegible]		[illegible]
45	[illegible]	12	1.5625	4.000	31.5537	32.8900		3.5
46	[illegible]	12	[illegible]		[illegible]	[illegible]		2.3
47	5.000	12	[illegible]		[illegible]	[illegible]		2.3
48–49	[illegible]	12	[illegible]		[illegible]	[illegible]		[illegible]
50	5.000	12	[illegible]		[illegible]	34.2352		2.3
51	5.000	12	1.5313		34.2352	35.0797		2.3
52	5.000	12	1.5063		35.0797	35.9243		2.4
53	5.000	12	1.4563		35.9243	36.7688		2.4
54	3.500	12	1.4313		36.7688	37.3600		1.7
								43.3



MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi			

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. Tower Rating: 86.7%

Tower Engineering Professionals
326 Tryon Road
Raleigh, NC 27603
Phone: (919) 661-6351
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Job: **Bridgeport North (BU 841288)**	
Project: **TEP No. 25567.502325**	
Client: Crown Castle	Drawn by: Ihar V. Viarenich, P.E. / App'd:
Code: TIA-222-H	Date: 02/26/21 / Scale: NTS
Path: C:\Users\iviarenich\Desktop\25567_Bridgeport North\tnxTower\Mods Final.eri	Dwg No. E-1

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 Fairfield County, Connecticut.
Tower base elevation above sea level: 241.000 ft.
Basic wind speed of 125 mph.
Risk Category II.
Exposure Category B.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.000 ft.
Nominal ice thickness of 1.5000 in.
Ice thickness is considered to increase with height.
Ice density of 56.00 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Tower Rating: 86.7%.
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	150.000-145.000	5.000	0.00	12	15.0000	15.7317	0.2188	0.8750	A572-50 (50 ksi)
L2	145.000-140.000	5.000	0.00	12	15.7317	16.4634	0.2188	0.8750	A572-50 (50 ksi)
L3	140.000-135.000	5.000	0.00	12	16.4634	17.1951	0.2188	0.8750	A572-50 (50 ksi)
L4	135.000-130.000	5.000	0.00	12	17.1951	17.9268	0.2188	0.8750	A572-50 (50 ksi)
L5	130.000-128.500	1.500	0.00	12	17.9268	18.1463	0.2188	0.8750	A572-50 (50 ksi)
L6	128.500-128.250	0.250	0.00	12	18.1463	18.1829	0.6687	2.6750	A572-50 (50 ksi)
L7	128.250-123.250	5.000	0.00	12	18.1829	18.9146	0.6438	2.5750	A572-50 (50 ksi)
L8	123.250-118.250	5.000	0.00	12	18.9146	19.6463	0.6188	2.4750	A572-50 (50 ksi)
L9	118.250-113.250	5.000	0.00	12	19.6463	20.3780	0.6062	2.4250	A572-50 (50 ksi)
L10	113.250-109.000	4.250	0.00	12	20.3780	21.0000	0.5938	2.3750	A572-50 (50 ksi)
L11	109.000-108.750	0.250	0.00	12	21.0000	21.0377	0.7250	2.9000	A572-50 (50 ksi)
L12	108.750-104.170	4.580	0.00	12	21.0377	21.7293	0.7000	2.8000	A572-50 (50 ksi)
L13	104.170-103.920	0.250	0.00	12	21.7293	21.7671	0.9750	3.9000	A572-50 (50 ksi)
L14	103.920-103.170	0.750	0.00	12	21.7671	21.8803	0.9750	3.9000	A572-50 (50 ksi)
L15	103.170-102.920	0.250	0.00	12	21.8803	21.9181	1.1250	4.5000	A572-50 (50 ksi)
L16	102.920-102.420	0.500	0.00	12	21.9181	21.9936	1.1250	4.5000	A572-50 (50 ksi)
L17	102.420-102.170	0.250	0.00	12	21.9936	22.0313	0.9500	3.8000	A572-50 (50 ksi)
L18	102.170-100.920	1.250	0.00	12	22.0313	22.2201	0.9500	3.8000	A572-50 (50 ksi)
L19	100.920-100.670	0.250	0.00	12	22.2201	22.2578	1.0250	4.1000	A572-50 (50 ksi)
L20	100.670-99.580	1.090	0.00	12	22.2578	22.4224	1.0000	4.0000	A572-50 (50 ksi)
L21	99.580-99.330	0.250	0.00	12	22.4224	22.4602	1.4000	5.6000	A572-50 (50 ksi)
L22	99.330-95.420	3.910	0.00	12	22.4602	23.0506	1.3500	5.4000	A572-50 (50 ksi)
L23	95.420-95.170	0.250	0.00	12	23.0506	23.0883	1.0500	4.2000	A572-50 (50 ksi)
L24	95.170-90.170	5.000	0.00	12	23.0883	23.8433	1.0000	4.0000	A572-50 (50 ksi)
L25	90.170-85.170	5.000	0.00	12	23.8433	24.5983	0.9750	3.9000	A572-50 (50 ksi)
L26	85.170-80.500	4.670	0.00	12	24.5983	25.3035	0.9500	3.8000	A572-50 (50 ksi)
L27	80.500-80.250	0.250	0.00	12	25.3035	25.3412	1.3000	5.2000	A572-50 (50 ksi)
L28	80.250-75.250	5.000	0.00	12	25.3412	26.0963	1.2500	5.0000	A572-50 (50 ksi)
L29	75.250-73.580	1.670	0.00	12	26.0963	26.3484	1.2500	5.0000	A572-50 (50 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	73.580-73.330	0.250	0.00	12	26.3484	26.3862	1.2250	4.9000	A572-50 (50 ksi)
L31	73.330-69.000	4.330	3.00	12	26.3862	27.0400	1.2250	4.9000	A572-50 (50 ksi)
L32	69.000-67.000	5.000	0.00	12	26.0870	26.8969	1.2875	5.1500	A572-50 (50 ksi)
L33	67.000-66.750	0.250	0.00	12	26.8969	26.9374	1.2875	5.1500	A572-50 (50 ksi)
L34	66.750-66.500	0.250	0.00	12	26.9374	26.9779	1.3625	5.4500	A572-50 (50 ksi)
L35	66.500-61.500	5.000	0.00	12	26.9779	27.7877	1.3125	5.2500	A572-50 (50 ksi)
L36	61.500-56.500	5.000	0.00	12	27.7877	28.5976	1.2875	5.1500	A572-50 (50 ksi)
L37	56.500-51.500	5.000	0.00	12	28.5976	29.4075	1.2375	4.9500	A572-50 (50 ksi)
L38	51.500-48.250	3.250	0.00	12	29.4075	29.9339	1.2125	4.8500	A572-50 (50 ksi)
L39	48.250-48.000	0.250	0.00	12	29.9339	29.9744	1.6125	6.4500	A572-50 (50 ksi)
L40	48.000-44.250	3.750	0.00	12	29.9744	30.5818	1.5625	6.2500	A572-50 (50 ksi)
L41	44.250-44.000	0.250	0.00	12	30.5818	30.6223	1.6625	6.6500	A572-50 (50 ksi)
L42	44.000-39.000	5.000	0.00	12	30.6223	31.4322	1.6125	6.4500	A572-50 (50 ksi)
L43	39.000-38.500	0.500	0.00	12	31.4322	31.5132	1.6125	6.4500	A572-50 (50 ksi)
L44	38.500-38.250	0.250	0.00	12	31.5132	31.5537	1.6125	6.4500	A572-50 (50 ksi)
L45	38.250-30.000	8.250	4.00	12	31.5537	32.8900	1.5625	6.2500	A572-50 (50 ksi)
L46	30.000-29.000	5.000	0.00	12	31.6171	32.4616	1.6813	6.7252	A572-50 (50 ksi)
L47	29.000-24.000	5.000	0.00	12	32.4616	33.3062	1.6313	6.5252	A572-50 (50 ksi)
L48	24.000-23.750	0.250	0.00	12	33.3062	33.3484	1.6313	6.5252	A572-50 (50 ksi)
L49	23.750-23.500	0.250	0.00	12	33.3484	33.3906	1.6063	6.4252	A572-50 (50 ksi)
L50	23.500-18.500	5.000	0.00	12	33.3906	34.2352	1.5813	6.3252	A572-50 (50 ksi)
L51	18.500-13.500	5.000	0.00	12	34.2352	35.0797	1.5313	6.1252	A572-50 (50 ksi)
L52	13.500-8.500	5.000	0.00	12	35.0797	35.9243	1.5063	6.0252	A572-50 (50 ksi)
L53	8.500-3.500	5.000	0.00	12	35.9243	36.7688	1.4563	5.8252	A572-50 (50 ksi)
L54	3.500-0.000	3.500		12	36.7688	37.3600	1.4313	5.7252	A572-50 (50 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	15.4520	10.4115	290.3510	5.2917	7.7700	37.3682	588.3299	5.1242	3.4337	15.697

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
	16.2095	10.9269	335.6400	5.5536	8.1490	41.1877	680.0976	5.3779	3.6298	16.594
L2	16.2095	10.9269	335.6400	5.5536	8.1490	41.1877	680.0976	5.3779	3.6298	16.594
	16.9670	11.4423	385.4092	5.8156	8.5280	45.1931	780.9436	5.6316	3.8259	17.49
L3	16.9670	11.4423	385.4092	5.8156	8.5280	45.1931	780.9436	5.6316	3.8259	17.49
	17.7245	11.9577	439.8702	6.0775	8.9071	49.3844	891.2963	5.8852	4.0220	18.386
L4	17.7245	11.9577	439.8702	6.0775	8.9071	49.3844	891.2963	5.8852	4.0220	18.386
	18.4821	12.4731	499.2341	6.3395	9.2861	53.7615	1011.5837	6.1389	4.2181	19.283
L5	18.4821	12.4731	499.2341	6.3395	9.2861	53.7615	1011.5837	6.1389	4.2181	19.283
	18.7093	12.6277	518.0310	6.4181	9.3998	55.1108	1049.6712	6.2150	4.2770	19.552
L6	18.5506	37.6358	1467.4063	6.2570	9.3998	156.1103	2973.3629	18.5232	3.0710	4.592
	18.5884	37.7146	1476.6406	6.2701	9.4188	156.7766	2992.0742	18.5620	3.0808	4.607
L7	18.5973	36.3565	1427.5347	6.2790	9.4188	151.5630	2892.5724	17.8936	3.1478	4.89
	19.3548	37.8733	1613.7556	6.5410	9.7978	164.7062	3269.9063	18.6401	3.3439	5.194
L8	19.3636	36.4523	1557.4612	6.5499	9.7978	158.9606	3155.8387	17.9407	3.4109	5.513
	20.1211	37.9101	1751.8967	6.8119	10.1768	172.1460	3549.8176	18.6582	3.6070	5.829
L9	20.1255	37.1686	1719.8900	6.8164	10.1768	169.0010	3484.9634	18.2933	3.6405	6.005
	20.8830	38.5970	1925.8928	7.0783	10.5558	182.4483	3902.3810	18.9963	3.8366	6.328
L10	20.8875	37.8251	1889.7634	7.0828	10.5558	179.0256	3829.1730	18.6164	3.8701	6.518
	21.5313	39.0142	2073.6481	7.3054	10.8780	190.6277	4201.7732	19.2016	4.0367	6.799
L11	21.4850	47.3320	2483.4900	7.2584	10.8780	228.3039	5032.2241	23.2954	3.6850	5.083
	21.5241	47.4201	2497.3879	7.2720	10.8976	229.1696	5060.3849	23.3387	3.6951	5.097
L12	21.5329	45.8413	2420.1851	7.2809	10.8976	222.0852	4903.9511	22.5617	3.7621	5.374
	22.2489	47.4001	2675.5691	7.5285	11.2558	237.7060	5421.4284	23.3289	3.9475	5.639
L13	22.1519	65.1582	3582.3878	7.4301	11.2558	318.2706	7258.8888	32.0689	3.2105	3.293
	22.1910	65.2767	3601.9713	7.4436	11.2753	319.4555	7298.5704	32.1272	3.2206	3.303
L14	22.1910	65.2767	3601.9713	7.4436	11.2753	319.4555	7298.5704	32.1272	3.2206	3.303
	22.3082	65.6323	3661.1500	7.4841	11.3340	323.0233	7418.4824	32.3022	3.2509	3.334
L15	22.2553	75.1862	4134.1218	7.4304	11.3340	364.7536	8376.8517	37.0044	2.8489	2.532
	22.2944	75.3229	4156.7204	7.4439	11.3536	366.1159	8422.6426	37.0717	2.8590	2.541
L16	22.2944	75.3229	4156.7204	7.4439	11.3536	366.1159	8422.6426	37.0717	2.8590	2.541
	22.3726	75.5964	4202.1644	7.4710	11.3927	368.8479	8514.7244	37.2063	2.8793	2.559
L17	22.4343	64.3723	3638.5161	7.5336	11.3927	319.3733	7372.6201	31.6821	3.3483	3.525
	22.4734	64.4878	3658.1326	7.5471	11.4122	320.5450	7412.3685	31.7389	3.3584	3.535
L18	22.4734	64.4878	3658.1326	7.5471	11.4122	320.5450	7412.3685	31.7389	3.3584	3.535
	22.6688	65.0652	3757.2734	7.6147	11.5100	326.4355	7613.2545	32.0231	3.4090	3.588
L19	22.6423	69.9544	4011.1681	7.5878	11.5100	348.4941	8127.7141	34.4294	3.2080	3.13
	22.6814	70.0790	4032.6389	7.6014	11.5296	349.7653	8171.2197	34.4907	3.2181	3.14
L20	22.6902	68.4502	3948.1952	7.6103	11.5296	342.4412	8000.1138	33.6891	3.2851	3.285
	22.8606	68.9802	4040.6144	7.6692	11.6148	347.8846	8187.3803	33.9500	3.3292	3.329
L21	22.7195	94.7691	5345.8649	7.5260	11.6148	460.2627	10832.1717	46.6425	2.2572	1.612
	22.7586	94.9392	5374.7154	7.5395	11.6344	461.9688	10890.6306	46.7262	2.2673	1.62
L22	22.7763	91.7659	5219.7630	7.5574	11.6344	448.6503	10576.6549	45.1644	2.4013	1.779
	23.3875	94.3324	5670.0856	7.7688	11.9402	474.8736	11489.1307	46.4275	2.5596	1.896
L23	23.4933	74.3840	4595.5078	7.8762	11.9402	384.8769	9311.7448	36.6095	3.3636	3.203
	23.5324	74.5116	4619.2043	7.8897	11.9598	386.2290	9359.7601	36.6723	3.3737	3.213
L24	23.5500	71.1244	4429.2528	7.9076	11.9598	370.3465	8974.8670	35.0053	3.5077	3.508
	24.3317	73.5555	4899.1424	8.1779	12.3508	396.6646	9926.9907	36.2018	3.7100	3.71
L25	24.3405	71.7951	4792.3639	8.1869	12.3508	388.0191	9710.6286	35.3354	3.7770	3.874
	25.1221	74.1654	5282.8683	8.4572	12.7419	414.6049	10704.5235	36.5020	3.9794	4.081
L26	25.1309	72.3402	5163.7696	8.4661	12.7419	405.2579	10463.1972	35.6037	4.0464	4.259
	25.8610	74.4974	5639.6166	8.7186	13.1072	430.2682	11427.3923	36.6653	4.2353	4.458
L27	25.7375	100.4787	7389.3951	8.5933	13.1072	563.7655	14972.9179	49.4525	3.2973	2.536
	25.7766	100.6367	7424.3136	8.6068	13.1268	565.5858	15043.6722	49.5303	3.3075	2.544
L28	25.7942	96.9673	7183.3965	8.6247	13.1268	547.2327	14555.5088	47.7243	3.4415	2.753
	26.5759	100.0062	7880.1482	8.8950	13.5179	582.9436	15967.3167	49.2200	3.6438	2.915
L29	26.5759	100.0062	7880.1482	8.8950	13.5179	582.9436	15967.3167	49.2200	3.6438	2.915
	26.8369	101.0211	8122.5236	8.9852	13.6485	595.1229	16458.4350	49.7195	3.7114	2.969
L30	26.8458	99.0993	7983.8834	8.9942	13.6485	584.9650	16177.5123	48.7737	3.7784	3.084
	26.8848	99.2482	8019.9268	9.0077	13.6680	586.7651	16250.5461	48.8470	3.7885	3.093
L31	26.8848	99.2482	8019.9268	9.0077	13.6680	586.7651	16250.5461	48.8470	3.7885	3.093
	27.5617	101.8273	8661.5237	9.2418	14.0067	618.3834	17550.5953	50.1163	3.9637	3.236
L32	27.0561	102.8125	8070.8232	8.8782	13.5131	597.2607	16353.6759	50.6012	3.5408	2.75

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
	27.3915	106.1701	8887.6369	9.1682	13.9326	637.9030	18008.7618	52.2537	3.7579	2.919
L33	27.3915	106.1701	8887.6369	9.1682	13.9326	637.9030	18008.7618	52.2537	3.7579	2.919
	27.4334	106.3380	8929.8635	9.1827	13.9536	639.9703	18094.3244	52.3363	3.7687	2.927
L34	27.4070	112.2034	9367.3963	9.1558	13.9536	671.3266	18980.8844	55.2231	3.5677	2.619
	27.4489	112.3810	9411.9624	9.1703	13.9745	673.5080	19071.1876	55.3105	3.5786	2.626
L35	27.4665	108.4683	9119.7656	9.1882	13.9745	652.5988	18479.1175	53.3848	3.7126	2.829
	28.3050	111.8910	10010.6285	9.4781	14.3941	695.4697	20284.2473	55.0694	3.9296	2.994
L36	28.3138	109.8634	9847.7944	9.4871	14.3941	684.1571	19954.3013	54.0714	3.9966	3.104
	29.1523	113.2210	10778.5517	9.7770	14.8136	727.6132	21840.2679	55.7239	4.2137	3.273
L37	29.1699	109.0233	10416.9731	9.7949	14.8136	703.2046	21107.6118	53.6579	4.3477	3.513
	30.0084	112.2505	11369.6768	10.0849	15.2331	746.3801	23038.0478	55.2463	4.5647	3.689
L38	30.0172	110.0804	11169.6719	10.0938	15.2331	733.2505	22632.7835	54.1782	4.6317	3.82
	30.5622	112.1357	11807.0649	10.2823	15.5058	761.4623	23924.3146	55.1898	4.7728	3.936
L39	30.4211	147.0520	15055.2263	10.1391	15.5058	970.9430	30505.9701	72.3745	3.7008	2.295
	30.4630	147.2622	15119.8966	10.1536	15.5268	973.7964	30637.0098	72.4780	3.7116	2.302
L40	30.4806	142.9475	14728.6856	10.1715	15.5268	948.6004	29844.3101	70.3544	3.8456	2.461
	31.1095	146.0036	15693.6661	10.3889	15.8414	990.6746	31799.6223	71.8585	4.0084	2.565
L41	31.0742	154.8125	16526.0315	10.3531	15.8414	1043.2183	33486.2202	76.1940	3.7404	2.25
	31.1161	155.0292	16595.5500	10.3676	15.8624	1046.2214	33627.0836	76.3007	3.7513	2.256
L42	31.1337	150.6263	16179.9526	10.3855	15.8624	1020.0212	32784.9707	74.1337	3.8853	2.409
	31.9722	154.8314	17573.2456	10.6755	16.2819	1079.3126	35608.1600	76.2033	4.1023	2.544
L43	31.9722	154.8314	17573.2456	10.6755	16.2819	1079.3126	35608.1600	76.2033	4.1023	2.544
	32.0560	155.2519	17716.8177	10.7045	16.3238	1085.3340	35899.0759	76.4103	4.1240	2.558
L44	32.0560	155.2519	17716.8177	10.7045	16.3238	1085.3340	35899.0759	76.4103	4.1240	2.558
	32.0980	155.4622	17788.8960	10.7189	16.3448	1088.3510	36045.1261	76.5138	4.1349	2.564
L45	32.1156	150.8932	17323.8024	10.7368	16.3448	1059.8959	35102.7204	74.2650	4.2689	2.732
	33.4990	157.6165	19744.1783	11.2152	17.0370	1158.8986	40007.0581	77.5740	4.6270	2.961
L46	32.8388	162.0660	18537.8530	10.7170	16.3777	1131.8991	37562.7160	79.7640	3.9675	2.36
	33.0137	166.6382	20151.4952	11.0194	16.8151	1198.4145	40832.3926	82.0142	4.1938	2.494
L47	33.0313	161.9452	19647.6495	11.0373	16.8151	1168.4507	39811.4647	79.7045	4.3278	2.653
	33.9056	166.3814	21306.9258	11.3396	17.2526	1234.9977	43173.6082	81.8879	4.5542	2.792
L48	33.9056	166.3814	21306.9258	11.3396	17.2526	1234.9977	43173.6082	81.8879	4.5542	2.792
	33.9494	166.6032	21392.2552	11.3547	17.2745	1238.3735	43346.5087	81.9970	4.5655	2.799
L49	33.9582	164.1793	21114.2639	11.3637	17.2745	1222.2809	42783.2230	80.8040	4.6325	2.884
	34.0019	164.3977	21198.6424	11.3788	17.2964	1225.6135	42954.1967	80.9115	4.6438	2.891
L50	34.0107	161.9663	20917.9943	11.3877	17.2964	1209.3877	42385.5277	79.7149	4.7108	2.979
	34.8850	166.2666	22628.7538	11.6901	17.7338	1276.0221	45851.9901	81.8314	4.9371	3.122
L51	34.9027	161.2559	22014.0583	11.7080	17.7338	1241.3598	44606.4504	79.3652	5.0711	3.312
	35.7770	165.4201	23763.9521	12.0103	18.1713	1307.7739	48152.2096	81.4148	5.2975	3.459
L52	35.7858	162.8407	23428.2795	12.0193	18.1713	1289.3013	47472.0461	80.1453	5.3645	3.561
	36.6602	166.9370	25241.1535	12.3216	18.6088	1356.4114	51145.4201	82.1613	5.5908	3.712
L53	36.6778	161.6302	24509.8094	12.3395	18.6088	1317.1104	49663.5188	79.5495	5.7248	3.931
	37.5522	165.5905	26355.9548	12.6419	19.0462	1383.7872	53404.3099	81.4986	5.9512	4.086
L54	37.5610	162.8631	25958.5628	12.6508	19.0462	1362.9226	52599.0860	80.1562	6.0182	4.205
	38.1730	165.5877	27283.3066	12.8625	19.3525	1409.8093	55283.3761	81.4972	6.1766	4.315

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 150.000-145.000				1	1	1			
L2 145.000-140.000				1	1	1			
L3 140.000-135.000				1	1	1			
L4				1	1	1			

Tower Elevation ft	Gusset Area (per face) ft²	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
135.000-130.000									
L5				1	1	1			
130.000-128.500									
L6				1	1	0.866566			
128.500-128.250									
L7				1	1	0.876544			
128.250-123.250									
L8				1	1	0.889288			
123.250-118.250									
L9				1	1	0.886814			
118.250-113.250									
L10				1	1	0.88856			
113.250-109.000									
L11				1	1	0.880849			
109.000-108.750									
L12				1	1	0.892966			
108.750-104.170									
L13				1	1	0.971053			
104.170-103.920									
L14				1	1	0.967182			
103.920-103.170									
L15				1	1	0.899658			
103.170-102.920									
L16				1	1	0.897207			
102.920-102.420									
L17				1	1	0.955174			
102.420-102.170									
L18				1	1	0.949033			
102.170-100.920									
L19				1	1	0.970881			
100.920-100.670									
L20				1	1	0.988267			
100.670-99.580									
L21				1	1	0.829123			
99.580-99.330									
L22				1	1	0.839495			
99.330-95.420									
L23				1	1	0.811217			
95.420-95.170									
L24				1	1	0.830024			
95.170-90.170									
L25				1	1	0.831393			

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
90.170-85.170									
L26				1	1	0.835309			
85.170-80.500									
L27				1	1	0.817668			
80.500-80.250									
L28				1	1	0.8289			
80.250-75.250									
L29				1	1	0.822581			
75.250-73.580									
L30				1	1	0.837582			
73.580-73.330									
L31				1	1	0.832565			
73.330-69.000									
L32				1	1	0.836765			
69.000-67.000									
L33				1	1	0.835827			
67.000-66.750									
L34				1	1	0.8358			
66.750-66.500									
L35				1	1	0.846744			
66.500-61.500									
L36				1	1	0.843995			
61.500-56.500									
L37				1	1	0.858553			
56.500-51.500									
L38				1	1	0.864155			
51.500-48.250									
L39				1	1	0.791829			
48.250-48.000									
L40				1	1	0.802841			
48.000-44.250									
L41				1	1	0.804811			
44.250-44.000									
L42				1	1	0.811102			
44.000-39.000									
L43				1	1	0.80943			
39.000-38.500									
L44				1	1	0.808598			
38.500-38.250									
L45				1	1	0.818876			
38.250-30.000									
L46				1	1	0.817385			
30.000-29.000									
L47				1	1	0.825287			
29.000-24.000									
L48				1	1	0.82452			
24.000-23.750									
L49				1	1	0.835917			
23.750-23.500									
L50				1	1	0.833167			
23.500-18.500									
L51				1	1	0.844109			
18.500-13.500									
L52				1	1	0.843058			
13.500-8.500									
L53				1	1	0.856586			
8.500-3.500									
L54				1	1	0.861271			
3.500-0.000									

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 plf
**										
Safety Line 3/8	A	No	Surface Ar (CaAa)	150.000 - 0.000	1	1	-0.250 -0.250	0.3750		0.22
HB114-21U3M12-XXX F(1-1/4)	B	No	Surface Ar (CaAa)	138.000 - 0.000	3	3	0.250 0.250	1.5400		1.22
HB158-21U6S12-60M-01(1-5/8)	B	No	Surface Ar (CaAa)	138.000 - 0.000	1	1	0.250 0.250	1.9900		1.90
***										
AL7-50(1-5/8)	B	No	Surface Ar (CaAa)	120.000 - 0.000	10	5	0.500 0.500	1.9600		0.52
HB114-U6S12-XXX-LI(1-1/4)	B	No	Surface Ar (CaAa)	99.000 - 0.000	1	1	0.000 0.000	1.5400		1.70
LDF7-50A(1-5/8)	B	No	Surface Ar (CaAa)	99.000 - 0.000	3	2	0.000 0.000	1.9800		0.82
***										
#20 Bar	A	No	Surface Ar (CaAa)	51.000 - 0.000	1	1	0.000 0.000	2.5000		0.00
#20 Bar	B	No	Surface Ar (CaAa)	51.000 - 0.000	1	1	-0.250 -0.250	2.5000		0.00
#20 Bar	B	No	Surface Ar (CaAa)	51.000 - 0.000	1	1	0.500 0.500	2.5000		0.00
#20 Bar	C	No	Surface Ar (CaAa)	51.000 - 0.000	1	1	0.250 0.250	2.5000		0.00
***										
(Area) CCI-65FP-065125 (H)	A	No	Surface Af (CaAa)	47.000 - 0.000	1	1	0.250 0.250	6.5000	15.5000	0.00
(Area) CCI-65FP-065125 (H)	B	No	Surface Af (CaAa)	47.000 - 0.000	1	1	0.000 0.000	6.5000	15.5000	0.00
(Area) CCI-65FP-065125 (H)	C	No	Surface Af (CaAa)	47.000 - 0.000	1	1	-0.250 -0.250	6.5000	15.5000	0.00
(Area) CCI-65FP-065125 (H)	C	No	Surface Af (CaAa)	47.000 - 0.000	1	1	0.500 0.500	6.5000	15.5000	0.00
***										
PL 1.25x5	A	No	Surface Af (CaAa)	69.000 - 47.000	1	1	0.250 0.250	5.0000	12.5000	0.00
PL 1.25x5	B	No	Surface Af (CaAa)	69.000 - 47.000	1	1	0.000 0.000	5.0000	12.5000	0.00
PL 1.25x5	C	No	Surface Af (CaAa)	69.000 - 47.000	1	1	-0.250 -0.250	5.0000	12.5000	0.00
PL 1.25x5	C	No	Surface Af (CaAa)	69.000 - 47.000	1	1	0.500 0.500	5.0000	12.5000	0.00
***										
PL 1.25x4	A	No	Surface Af (CaAa)	82.000 - 66.500	1	1	0.000 0.000	4.0000	10.5000	0.00
PL 1.25x4	B	No	Surface Af (CaAa)	82.000 - 66.500	1	1	-0.250 -0.250	4.0000	10.5000	0.00
PL 1.25x4	B	No	Surface Af (CaAa)	82.000 - 66.500	1	1	0.500 0.500	4.0000	10.5000	0.00
PL 1.25x4	C	No	Surface Af (CaAa)	82.000 - 66.500	1	1	0.250 0.250	4.0000	10.5000	0.00
***										
PL 1.25x5	C	No	Surface Af (CaAa)	109.000 - 93.170	1	1	-0.250 -0.250	5.0000	12.5000	0.00

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 plf
PL 1.25x5	C	No	Surface Af (CaAa)	109.000 - 93.170	1	1	0.500 0.500	5.0000	12.5000	0.00
PL 1.25x5	B	No	Surface Af (CaAa)	103.170 - 93.170	1	1	-0.250 -0.250	5.0000	12.5000	0.00
PL 1.25x5	B	No	Surface Af (CaAa)	109.000 - 100.170	1	1	0.000 0.000	5.0000	12.5000	0.00
PL 1.25x5	A	No	Surface Af (CaAa)	109.000 - 100.170	1	1	0.250 0.250	5.0000	12.5000	0.00
***										
PL 1.25x4	A	No	Surface Af (CaAa)	130.000 - 109.000	1	1	0.250 0.250	4.0000	10.5000	0.00
PL 1.25x4	B	No	Surface Af (CaAa)	130.000 - 109.000	1	1	0.000 0.000	4.0000	10.5000	0.00
PL 1.25x4	C	No	Surface Af (CaAa)	130.000 - 109.000	1	1	-0.250 -0.250	4.0000	10.5000	0.00
PL 1.25x4	C	No	Surface Af (CaAa)	130.000 - 109.000	1	1	0.500 0.500	4.0000	10.5000	0.00
***										
PL 2x6	A	No	Surface Af (CaAa)	108.670 - 0.000	1	1	-0.250 -0.250	6.0000	16.0000	0.00
PL 2x6	C	No	Surface Af (CaAa)	106.000 - 0.000	1	1	0.000 0.000	6.0000	16.0000	0.00
PL 2x6	B	No	Surface Af (CaAa)	108.670 - 0.000	1	1	0.250 0.250	6.0000	16.0000	0.00
PL 2x6	A	No	Surface Af (CaAa)	107.750 - 0.000	1	1	0.500 0.500	6.0000	16.0000	0.00

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 plf
**									
FXL-1873(1-5/8)	C	No	No	Inside Pole	150.000 - 0.000	6	No Ice	0.000	0.67
							1/2" Ice	0.000	0.67
							1" Ice	0.000	0.67
							2" Ice	0.000	0.67
FB-L98B-034-XXX XXX(3/8)	C	No	No	Inside Pole	150.000 - 0.000	2	No Ice	0.000	0.05
							1/2" Ice	0.000	0.05
							1" Ice	0.000	0.05
							2" Ice	0.000	0.05
WR-VG86ST-BRD(3/4)	C	No	No	Inside Pole	150.000 - 0.000	4	No Ice	0.000	0.58
							1/2" Ice	0.000	0.58
							1" Ice	0.000	0.58
							2" Ice	0.000	0.58
2" Flexible Conduit	C	No	No	Inside Pole	150.000 - 0.000	2	No Ice	0.000	0.34
							1/2" Ice	0.000	0.34
							1" Ice	0.000	0.34
							2" Ice	0.000	0.34
***									
EC4-50(1/2)	B	No	No	Inside Pole	138.000 - 0.000	2	No Ice	0.000	0.16
							1/2" Ice	0.000	0.16
							1" Ice	0.000	0.16
							2" Ice	0.000	0.16
***									
LDF7-50A(1-5/8)	B	No	No	Inside Pole	99.000 - 0.000	3	No Ice	0.000	0.82

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
							1/2" Ice	0.000	0.82
							1" Ice	0.000	0.82
							2" Ice	0.000	0.82

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	150.000-145.000	A	0.000	0.000	0.188	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.04
L2	145.000-140.000	A	0.000	0.000	0.188	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.04
L3	140.000-135.000	A	0.000	0.000	0.188	0.000	0.00
		B	0.000	0.000	1.983	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.04
L4	135.000-130.000	A	0.000	0.000	0.188	0.000	0.00
		B	0.000	0.000	3.305	0.000	0.03
		C	0.000	0.000	0.000	0.000	0.04
L5	130.000-128.500	A	0.000	0.000	1.056	0.000	0.00
		B	0.000	0.000	1.992	0.000	0.01
		C	0.000	0.000	2.000	0.000	0.01
L6	128.500-128.250	A	0.000	0.000	0.176	0.000	0.00
		B	0.000	0.000	0.332	0.000	0.00
		C	0.000	0.000	0.333	0.000	0.00
L7	128.250-123.250	A	0.000	0.000	3.521	0.000	0.00
		B	0.000	0.000	6.638	0.000	0.03
		C	0.000	0.000	6.667	0.000	0.04
L8	123.250-118.250	A	0.000	0.000	3.521	0.000	0.00
		B	0.000	0.000	8.353	0.000	0.04
		C	0.000	0.000	6.667	0.000	0.04
L9	118.250-113.250	A	0.000	0.000	3.521	0.000	0.00
		B	0.000	0.000	11.538	0.000	0.06
		C	0.000	0.000	6.667	0.000	0.04
L10	113.250-109.000	A	0.000	0.000	2.993	0.000	0.00
		B	0.000	0.000	9.808	0.000	0.05
		C	0.000	0.000	5.667	0.000	0.03
L11	109.000-108.750	A	0.000	0.000	0.202	0.000	0.00
		B	0.000	0.000	0.603	0.000	0.00
		C	0.000	0.000	0.417	0.000	0.00
L12	108.750-104.170	A	0.000	0.000	11.786	0.000	0.00
		B	0.000	0.000	15.550	0.000	0.05
		C	0.000	0.000	9.463	0.000	0.03
L13	104.170-103.920	A	0.000	0.000	0.702	0.000	0.00
		B	0.000	0.000	0.853	0.000	0.00
		C	0.000	0.000	0.667	0.000	0.00
L14	103.920-103.170	A	0.000	0.000	2.107	0.000	0.00
		B	0.000	0.000	2.559	0.000	0.01
		C	0.000	0.000	2.000	0.000	0.01
L15	103.170-102.920	A	0.000	0.000	0.702	0.000	0.00
		B	0.000	0.000	1.056	0.000	0.00
		C	0.000	0.000	0.667	0.000	0.00

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
L16	102.920-102.420	A	0.000	0.000	1.405	0.000	0.00
		B	0.000	0.000	2.111	0.000	0.01
		C	0.000	0.000	1.333	0.000	0.00
L17	102.420-102.170	A	0.000	0.000	0.702	0.000	0.00
		B	0.000	0.000	1.056	0.000	0.00
		C	0.000	0.000	0.667	0.000	0.00
L18	102.170-100.920	A	0.000	0.000	3.511	0.000	0.00
		B	0.000	0.000	5.278	0.000	0.01
		C	0.000	0.000	3.333	0.000	0.01
L19	100.920-100.670	A	0.000	0.000	0.702	0.000	0.00
		B	0.000	0.000	1.056	0.000	0.00
		C	0.000	0.000	0.667	0.000	0.00
L20	100.670-99.580	A	0.000	0.000	2.607	0.000	0.00
		B	0.000	0.000	4.147	0.000	0.01
		C	0.000	0.000	2.907	0.000	0.01
L21	99.580-99.330	A	0.000	0.000	0.509	0.000	0.00
		B	0.000	0.000	0.863	0.000	0.00
		C	0.000	0.000	0.667	0.000	0.00
L22	99.330-95.420	A	0.000	0.000	7.967	0.000	0.00
		B	0.000	0.000	15.460	0.000	0.07
		C	0.000	0.000	10.427	0.000	0.03
L23	95.420-95.170	A	0.000	0.000	0.509	0.000	0.00
		B	0.000	0.000	1.000	0.000	0.00
		C	0.000	0.000	0.667	0.000	0.00
L24	95.170-90.170	A	0.000	0.000	10.188	0.000	0.00
		B	0.000	0.000	17.574	0.000	0.09
		C	0.000	0.000	8.333	0.000	0.04
L25	90.170-85.170	A	0.000	0.000	10.188	0.000	0.00
		B	0.000	0.000	15.955	0.000	0.09
		C	0.000	0.000	5.000	0.000	0.04
L26	85.170-80.500	A	0.000	0.000	10.515	0.000	0.00
		B	0.000	0.000	16.902	0.000	0.08
		C	0.000	0.000	5.670	0.000	0.03
L27	80.500-80.250	A	0.000	0.000	0.676	0.000	0.00
		B	0.000	0.000	1.131	0.000	0.00
		C	0.000	0.000	0.417	0.000	0.00
L28	80.250-75.250	A	0.000	0.000	13.521	0.000	0.00
		B	0.000	0.000	22.622	0.000	0.09
		C	0.000	0.000	8.333	0.000	0.04
L29	75.250-73.580	A	0.000	0.000	4.516	0.000	0.00
		B	0.000	0.000	7.556	0.000	0.03
		C	0.000	0.000	2.783	0.000	0.01
L30	73.580-73.330	A	0.000	0.000	0.676	0.000	0.00
		B	0.000	0.000	1.131	0.000	0.00
		C	0.000	0.000	0.417	0.000	0.00
L31	73.330-69.000	A	0.000	0.000	11.709	0.000	0.00
		B	0.000	0.000	19.590	0.000	0.08
		C	0.000	0.000	7.217	0.000	0.03
L32	69.000-67.000	A	0.000	0.000	7.075	0.000	0.00
		B	0.000	0.000	10.715	0.000	0.04
		C	0.000	0.000	6.667	0.000	0.01
L33	67.000-66.750	A	0.000	0.000	0.884	0.000	0.00
		B	0.000	0.000	1.339	0.000	0.00
		C	0.000	0.000	0.833	0.000	0.00
L34	66.750-66.500	A	0.000	0.000	0.884	0.000	0.00
		B	0.000	0.000	1.339	0.000	0.00
		C	0.000	0.000	0.833	0.000	0.00
L35	66.500-61.500	A	0.000	0.000	14.354	0.000	0.00
		B	0.000	0.000	20.122	0.000	0.09
		C	0.000	0.000	13.333	0.000	0.04
L36	61.500-56.500	A	0.000	0.000	14.354	0.000	0.00

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	20.122	0.000	0.09
		C	0.000	0.000	13.333	0.000	0.04
L37	56.500-51.500	A	0.000	0.000	14.354	0.000	0.00
		B	0.000	0.000	20.122	0.000	0.09
		C	0.000	0.000	13.333	0.000	0.04
L38	51.500-48.250	A	0.000	0.000	10.018	0.000	0.00
		B	0.000	0.000	14.454	0.000	0.06
		C	0.000	0.000	9.354	0.000	0.02
L39	48.250-48.000	A	0.000	0.000	0.780	0.000	0.00
		B	0.000	0.000	1.131	0.000	0.00
		C	0.000	0.000	0.729	0.000	0.00
L40	48.000-44.250	A	0.000	0.000	12.391	0.000	0.00
		B	0.000	0.000	17.654	0.000	0.07
		C	0.000	0.000	12.313	0.000	0.03
L41	44.250-44.000	A	0.000	0.000	0.843	0.000	0.00
		B	0.000	0.000	1.194	0.000	0.00
		C	0.000	0.000	0.854	0.000	0.00
L42	44.000-39.000	A	0.000	0.000	16.854	0.000	0.00
		B	0.000	0.000	23.872	0.000	0.09
		C	0.000	0.000	17.083	0.000	0.04
L43	39.000-38.500	A	0.000	0.000	1.685	0.000	0.00
		B	0.000	0.000	2.387	0.000	0.01
		C	0.000	0.000	1.708	0.000	0.00
L44	38.500-38.250	A	0.000	0.000	0.843	0.000	0.00
		B	0.000	0.000	1.194	0.000	0.00
		C	0.000	0.000	0.854	0.000	0.00
L45	38.250-30.000	A	0.000	0.000	27.809	0.000	0.00
		B	0.000	0.000	39.388	0.000	0.15
		C	0.000	0.000	28.188	0.000	0.06
L46	30.000-29.000	A	0.000	0.000	3.371	0.000	0.00
		B	0.000	0.000	4.774	0.000	0.02
		C	0.000	0.000	3.417	0.000	0.01
L47	29.000-24.000	A	0.000	0.000	16.854	0.000	0.00
		B	0.000	0.000	23.872	0.000	0.09
		C	0.000	0.000	17.083	0.000	0.04
L48	24.000-23.750	A	0.000	0.000	0.843	0.000	0.00
		B	0.000	0.000	1.194	0.000	0.00
		C	0.000	0.000	0.854	0.000	0.00
L49	23.750-23.500	A	0.000	0.000	0.843	0.000	0.00
		B	0.000	0.000	1.194	0.000	0.00
		C	0.000	0.000	0.854	0.000	0.00
L50	23.500-18.500	A	0.000	0.000	16.854	0.000	0.00
		B	0.000	0.000	23.872	0.000	0.09
		C	0.000	0.000	17.083	0.000	0.04
L51	18.500-13.500	A	0.000	0.000	16.854	0.000	0.00
		B	0.000	0.000	23.872	0.000	0.09
		C	0.000	0.000	17.083	0.000	0.04
L52	13.500-8.500	A	0.000	0.000	16.854	0.000	0.00
		B	0.000	0.000	23.872	0.000	0.09
		C	0.000	0.000	17.083	0.000	0.04
L53	8.500-3.500	A	0.000	0.000	16.854	0.000	0.00
		B	0.000	0.000	23.872	0.000	0.09
		C	0.000	0.000	17.083	0.000	0.04
L54	3.500-0.000	A	0.000	0.000	11.798	0.000	0.00
		B	0.000	0.000	16.710	0.000	0.06
		C	0.000	0.000	11.958	0.000	0.02

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	150.000-145.000	A	1.481	0.000	0.000	1.668	0.000	0.02
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.04
L2	145.000-140.000	A	1.476	0.000	0.000	1.663	0.000	0.02
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.04
L3	140.000-135.000	A	1.471	0.000	0.000	1.658	0.000	0.02
		B		0.000	0.000	4.315	0.000	0.06
		C		0.000	0.000	0.000	0.000	0.04
L4	135.000-130.000	A	1.465	0.000	0.000	1.653	0.000	0.02
		B		0.000	0.000	7.179	0.000	0.11
		C		0.000	0.000	0.000	0.000	0.04
L5	130.000-128.500	A	1.462	0.000	0.000	1.933	0.000	0.02
		B		0.000	0.000	3.590	0.000	0.05
		C		0.000	0.000	2.877	0.000	0.04
L6	128.500-128.250	A	1.461	0.000	0.000	0.322	0.000	0.00
		B		0.000	0.000	0.598	0.000	0.01
		C		0.000	0.000	0.479	0.000	0.01
L7	128.250-123.250	A	1.457	0.000	0.000	6.436	0.000	0.06
		B		0.000	0.000	11.953	0.000	0.15
		C		0.000	0.000	9.582	0.000	0.13
L8	123.250-118.250	A	1.452	0.000	0.000	6.424	0.000	0.06
		B		0.000	0.000	14.712	0.000	0.20
		C		0.000	0.000	9.570	0.000	0.13
L9	118.250-113.250	A	1.445	0.000	0.000	6.412	0.000	0.06
		B		0.000	0.000	19.845	0.000	0.28
		C		0.000	0.000	9.558	0.000	0.13
L10	113.250-109.000	A	1.440	0.000	0.000	5.440	0.000	0.05
		B		0.000	0.000	16.846	0.000	0.23
		C		0.000	0.000	8.114	0.000	0.11
L11	109.000-108.750	A	1.437	0.000	0.000	0.312	0.000	0.00
		B		0.000	0.000	0.983	0.000	0.01
		C		0.000	0.000	0.558	0.000	0.01
L12	108.750-104.170	A	1.433	0.000	0.000	16.114	0.000	0.16
		B		0.000	0.000	23.785	0.000	0.31
		C		0.000	0.000	12.567	0.000	0.15
L13	104.170-103.920	A	1.430	0.000	0.000	0.955	0.000	0.01
		B		0.000	0.000	1.303	0.000	0.02
		C		0.000	0.000	0.879	0.000	0.01
L14	103.920-103.170	A	1.429	0.000	0.000	2.864	0.000	0.03
		B		0.000	0.000	3.909	0.000	0.05
		C		0.000	0.000	2.636	0.000	0.03
L15	103.170-102.920	A	1.429	0.000	0.000	0.955	0.000	0.01
		B		0.000	0.000	1.543	0.000	0.02
		C		0.000	0.000	0.879	0.000	0.01
L16	102.920-102.420	A	1.428	0.000	0.000	1.909	0.000	0.02
		B		0.000	0.000	3.086	0.000	0.04
		C		0.000	0.000	1.757	0.000	0.02
L17	102.420-102.170	A	1.428	0.000	0.000	0.954	0.000	0.01
		B		0.000	0.000	1.543	0.000	0.02
		C		0.000	0.000	0.878	0.000	0.01
L18	102.170-100.920	A	1.427	0.000	0.000	4.771	0.000	0.05
		B		0.000	0.000	7.712	0.000	0.10
		C		0.000	0.000	4.391	0.000	0.05
L19	100.920-100.670	A	1.426	0.000	0.000	0.954	0.000	0.01
		B		0.000	0.000	1.542	0.000	0.02
		C		0.000	0.000	0.878	0.000	0.01
L20	100.670-99.580	A	1.425	0.000	0.000	3.614	0.000	0.03
		B		0.000	0.000	6.177	0.000	0.08
		C		0.000	0.000	3.828	0.000	0.04

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
L21	99.580-99.330	A	1.424	0.000	0.000	0.723	0.000	0.01
		B		0.000	0.000	1.311	0.000	0.02
		C		0.000	0.000	0.878	0.000	0.01
L22	99.330-95.420	A	1.421	0.000	0.000	11.300	0.000	0.11
		B		0.000	0.000	25.100	0.000	0.34
		C		0.000	0.000	13.723	0.000	0.15
L23	95.420-95.170	A	1.418	0.000	0.000	0.722	0.000	0.01
		B		0.000	0.000	1.631	0.000	0.02
		C		0.000	0.000	0.877	0.000	0.01
L24	95.170-90.170	A	1.414	0.000	0.000	14.428	0.000	0.13
		B		0.000	0.000	29.713	0.000	0.42
		C		0.000	0.000	10.860	0.000	0.13
L25	90.170-85.170	A	1.406	0.000	0.000	14.405	0.000	0.13
		B		0.000	0.000	27.742	0.000	0.39
		C		0.000	0.000	6.406	0.000	0.09
L26	85.170-80.500	A	1.398	0.000	0.000	14.851	0.000	0.14
		B		0.000	0.000	28.700	0.000	0.39
		C		0.000	0.000	7.395	0.000	0.10
L27	80.500-80.250	A	1.394	0.000	0.000	0.955	0.000	0.01
		B		0.000	0.000	1.856	0.000	0.02
		C		0.000	0.000	0.556	0.000	0.01
L28	80.250-75.250	A	1.389	0.000	0.000	19.077	0.000	0.17
		B		0.000	0.000	37.073	0.000	0.47
		C		0.000	0.000	11.111	0.000	0.14
L29	75.250-73.580	A	1.383	0.000	0.000	6.364	0.000	0.06
		B		0.000	0.000	12.365	0.000	0.16
		C		0.000	0.000	3.707	0.000	0.05
L30	73.580-73.330	A	1.381	0.000	0.000	0.952	0.000	0.01
		B		0.000	0.000	1.850	0.000	0.02
		C		0.000	0.000	0.555	0.000	0.01
L31	73.330-69.000	A	1.377	0.000	0.000	16.478	0.000	0.15
		B		0.000	0.000	32.013	0.000	0.41
		C		0.000	0.000	9.601	0.000	0.12
L32	69.000-67.000	A	1.371	0.000	0.000	9.829	0.000	0.09
		B		0.000	0.000	17.004	0.000	0.21
		C		0.000	0.000	8.870	0.000	0.09
L33	67.000-66.750	A	1.368	0.000	0.000	1.226	0.000	0.01
		B		0.000	0.000	2.121	0.000	0.03
		C		0.000	0.000	1.107	0.000	0.01
L34	66.750-66.500	A	1.368	0.000	0.000	1.226	0.000	0.01
		B		0.000	0.000	2.121	0.000	0.03
		C		0.000	0.000	1.107	0.000	0.01
L35	66.500-61.500	A	1.362	0.000	0.000	19.803	0.000	0.17
		B		0.000	0.000	32.977	0.000	0.43
		C		0.000	0.000	17.420	0.000	0.19
L36	61.500-56.500	A	1.351	0.000	0.000	19.759	0.000	0.17
		B		0.000	0.000	32.891	0.000	0.43
		C		0.000	0.000	17.387	0.000	0.18
L37	56.500-51.500	A	1.339	0.000	0.000	19.712	0.000	0.17
		B		0.000	0.000	32.799	0.000	0.42
		C		0.000	0.000	17.351	0.000	0.18
L38	51.500-48.250	A	1.329	0.000	0.000	14.203	0.000	0.13
		B		0.000	0.000	24.103	0.000	0.31
		C		0.000	0.000	12.676	0.000	0.13
L39	48.250-48.000	A	1.324	0.000	0.000	1.111	0.000	0.01
		B		0.000	0.000	1.891	0.000	0.02
		C		0.000	0.000	0.994	0.000	0.01
L40	48.000-44.250	A	1.318	0.000	0.000	17.335	0.000	0.15
		B		0.000	0.000	29.018	0.000	0.36
		C		0.000	0.000	16.268	0.000	0.17
L41	44.250-44.000	A	1.313	0.000	0.000	1.171	0.000	0.01

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	1.948	0.000	0.02
		C		0.000	0.000	1.117	0.000	0.01
L42	44.000-39.000	A	1.305	0.000	0.000	23.377	0.000	0.20
		B		0.000	0.000	38.888	0.000	0.48
		C		0.000	0.000	22.301	0.000	0.22
L43	39.000-38.500	A	1.296	0.000	0.000	2.333	0.000	0.02
		B		0.000	0.000	3.880	0.000	0.05
		C		0.000	0.000	2.227	0.000	0.02
L44	38.500-38.250	A	1.294	0.000	0.000	1.166	0.000	0.01
		B		0.000	0.000	1.939	0.000	0.02
		C		0.000	0.000	1.113	0.000	0.01
L45	38.250-30.000	A	1.279	0.000	0.000	38.363	0.000	0.33
		B		0.000	0.000	63.758	0.000	0.78
		C		0.000	0.000	36.630	0.000	0.36
L46	30.000-29.000	A	1.261	0.000	0.000	4.650	0.000	0.04
		B		0.000	0.000	7.728	0.000	0.09
		C		0.000	0.000	4.440	0.000	0.04
L47	29.000-24.000	A	1.247	0.000	0.000	23.091	0.000	0.19
		B		0.000	0.000	38.330	0.000	0.46
		C		0.000	0.000	22.072	0.000	0.21
L48	24.000-23.750	A	1.234	0.000	0.000	1.151	0.000	0.01
		B		0.000	0.000	1.910	0.000	0.02
		C		0.000	0.000	1.101	0.000	0.01
L49	23.750-23.500	A	1.233	0.000	0.000	1.151	0.000	0.01
		B		0.000	0.000	1.910	0.000	0.02
		C		0.000	0.000	1.101	0.000	0.01
L50	23.500-18.500	A	1.219	0.000	0.000	22.947	0.000	0.19
		B		0.000	0.000	38.050	0.000	0.45
		C		0.000	0.000	21.958	0.000	0.21
L51	18.500-13.500	A	1.186	0.000	0.000	22.784	0.000	0.18
		B		0.000	0.000	37.732	0.000	0.44
		C		0.000	0.000	21.827	0.000	0.20
L52	13.500-8.500	A	1.142	0.000	0.000	22.565	0.000	0.17
		B		0.000	0.000	37.306	0.000	0.42
		C		0.000	0.000	21.652	0.000	0.19
L53	8.500-3.500	A	1.075	0.000	0.000	22.229	0.000	0.16
		B		0.000	0.000	36.650	0.000	0.40
		C		0.000	0.000	21.383	0.000	0.18
L54	3.500-0.000	A	0.950	0.000	0.000	15.124	0.000	0.10
		B		0.000	0.000	24.804	0.000	0.25
		C		0.000	0.000	14.619	0.000	0.11

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	150.000-145.000	-0.2287	0.0000	-1.1868	0.0000
L2	145.000-140.000	-0.2287	0.0000	-1.1982	0.0000
L3	140.000-135.000	1.6986	0.0000	1.4618	0.0000
L4	135.000-130.000	2.4001	0.0000	2.4521	0.0000
L5	130.000-128.500	1.6020	-1.5719	1.7183	-1.4217
L6	128.500-128.250	1.6135	-1.5839	1.7300	-1.4323
L7	128.250-123.250	1.6327	-1.6049	1.7551	-1.4555
L8	123.250-118.250	2.1806	-1.1913	2.2661	-1.0187
L9	118.250-113.250	3.0307	-0.5080	3.0103	-0.3351
L10	113.250-109.000	3.0874	-0.5245	3.0801	-0.3488

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L11	109.000-108.750	2.8919	-0.6753	2.9472	-0.2481
L12	108.750-104.170	2.8421	0.1173	2.8972	0.3301
L13	104.170-103.920	2.8321	0.5263	2.8949	0.6781
L14	103.920-103.170	2.8396	0.5275	2.9031	0.6798
L15	103.170-102.920	2.7227	-0.3620	2.8048	-0.0633
L16	102.920-102.420	2.7282	-0.3629	2.8107	-0.0637
L17	102.420-102.170	2.7380	-0.3644	2.8203	-0.0641
L18	102.170-100.920	2.7489	-0.3662	2.8322	-0.0649
L19	100.920-100.670	2.7579	-0.3678	2.8424	-0.0656
L20	100.670-99.580	2.6337	0.3045	2.7478	0.5081
L21	99.580-99.330	2.5020	0.9560	2.6491	1.0512
L22	99.330-95.420	2.9249	0.6279	3.1762	0.5150
L23	95.420-95.170	2.9980	0.6062	3.2585	0.4768
L24	95.170-90.170	3.7375	1.2026	3.9102	0.8903
L25	90.170-85.170	4.4306	1.7429	4.5115	1.2527
L26	85.170-80.500	3.7351	1.7235	3.9136	1.2742
L27	80.500-80.250	2.4959	1.6454	2.7802	1.2687
L28	80.250-75.250	2.5250	1.6666	2.8150	1.2871
L29	75.250-73.580	2.5602	1.6923	2.8577	1.3098
L30	73.580-73.330	2.5710	1.7001	2.8704	1.3166
L31	73.330-69.000	2.5950	1.7176	2.8996	1.3321
L32	69.000-67.000	2.2793	0.3186	2.5627	0.1748
L33	67.000-66.750	2.2916	0.3203	2.5767	0.1766
L34	66.750-66.500	2.2914	0.3202	2.5775	0.1766
L35	66.500-61.500	3.8255	0.1254	4.0634	-0.0338
L36	61.500-56.500	3.9113	0.1273	4.1607	-0.0342
L37	56.500-51.500	3.9971	0.1291	4.2579	-0.0343
L38	51.500-48.250	3.8108	0.1224	3.9709	-0.0314
L39	48.250-48.000	3.7829	0.1212	3.9323	-0.0308
L40	48.000-44.250	3.6783	-0.1472	3.8710	-0.2037
L41	44.250-44.000	3.6593	-0.2394	3.8689	-0.2651
L42	44.000-39.000	3.6998	-0.2427	3.9140	-0.2683
L43	39.000-38.500	3.7406	-0.2460	3.9600	-0.2714
L44	38.500-38.250	3.7462	-0.2465	3.9662	-0.2718
L45	38.250-30.000	3.8102	-0.2517	4.0379	-0.2766
L46	30.000-29.000	3.8211	-0.2527	4.0521	-0.2778
L47	29.000-24.000	3.8682	-0.2565	4.1035	-0.2797
L48	24.000-23.750	3.9080	-0.2598	4.1484	-0.2824
L49	23.750-23.500	3.9125	-0.2602	4.1532	-0.2827
L50	23.500-18.500	3.9528	-0.2635	4.1983	-0.2852
L51	18.500-13.500	4.0291	-0.2697	4.2836	-0.2896
L52	13.500-8.500	4.1040	-0.2759	4.3671	-0.2928
L53	8.500-3.500	4.1761	-0.2818	4.4469	-0.2937
L54	3.500-0.000	4.2338	-0.2866	4.5079	-0.2877

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	2	Safety Line 3/8	145.00 - 150.00	1.0000	1.0000
L2	2	Safety Line 3/8	140.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			145.00		
L3	2	Safety Line 3/8	135.00 - 140.00	1.0000	1.0000
L3	11	HB114-21U3M12-XXXF(1-1/4)	135.00 - 138.00	1.0000	1.0000
L3	12	HB158-21U6S12-60M-01(1-5/8)	135.00 - 138.00	1.0000	1.0000
L4	2	Safety Line 3/8	130.00 - 135.00	1.0000	1.0000
L4	11	HB114-21U3M12-XXXF(1-1/4)	130.00 - 135.00	1.0000	1.0000
L4	12	HB158-21U6S12-60M-01(1-5/8)	130.00 - 135.00	1.0000	1.0000
L5	2	Safety Line 3/8	128.50 - 130.00	1.0000	1.0000
L5	11	HB114-21U3M12-XXXF(1-1/4)	128.50 - 130.00	1.0000	1.0000
L5	12	HB158-21U6S12-60M-01(1-5/8)	128.50 - 130.00	1.0000	1.0000
L5	50	PL 1.25x4	128.50 - 130.00	1.0000	1.0000
L5	51	PL 1.25x4	128.50 - 130.00	1.0000	1.0000
L5	52	PL 1.25x4	128.50 - 130.00	1.0000	1.0000
L5	53	PL 1.25x4	128.50 - 130.00	1.0000	1.0000
L6	2	Safety Line 3/8	128.25 - 128.50	1.0000	1.0000
L6	11	HB114-21U3M12-XXXF(1-1/4)	128.25 - 128.50	1.0000	1.0000
L6	12	HB158-21U6S12-60M-01(1-5/8)	128.25 - 128.50	1.0000	1.0000
L6	50	PL 1.25x4	128.25 - 128.50	1.0000	1.0000
L6	51	PL 1.25x4	128.25 - 128.50	1.0000	1.0000
L6	52	PL 1.25x4	128.25 - 128.50	1.0000	1.0000
L6	53	PL 1.25x4	128.25 - 128.50	1.0000	1.0000
L7	2	Safety Line 3/8	123.25 - 128.25	1.0000	1.0000
L7	11	HB114-21U3M12-XXXF(1-1/4)	123.25 - 128.25	1.0000	1.0000
L7	12	HB158-21U6S12-60M-01(1-5/8)	123.25 - 128.25	1.0000	1.0000
L7	50	PL 1.25x4	123.25 - 128.25	1.0000	1.0000
L7	51	PL 1.25x4	123.25 - 128.25	1.0000	1.0000
L7	52	PL 1.25x4	123.25 - 128.25	1.0000	1.0000
L7	53	PL 1.25x4	123.25 - 128.25	1.0000	1.0000
L8	2	Safety Line 3/8	118.25 - 123.25	1.0000	1.0000
L8	11	HB114-21U3M12-XXXF(1-1/4)	118.25 - 123.25	1.0000	1.0000
L8	12	HB158-21U6S12-60M-01(1-5/8)	118.25 - 123.25	1.0000	1.0000
L8	14	AL7-50(1-5/8)	118.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			120.00		
L8	50	PL 1.25x4	118.25 - 123.25	1.0000	1.0000
L8	51	PL 1.25x4	118.25 - 123.25	1.0000	1.0000
L8	52	PL 1.25x4	118.25 - 123.25	1.0000	1.0000
L8	53	PL 1.25x4	118.25 - 123.25	1.0000	1.0000
L9	2	Safety Line 3/8	113.25 - 118.25	1.0000	1.0000
L9	11	HB114-21U3M12-XXXF(1-1/4)	113.25 - 118.25	1.0000	1.0000
L9	12	HB158-21U6S12-60M-01(1-5/8)	113.25 - 118.25	1.0000	1.0000
L9	14	AL7-50(1-5/8)	113.25 - 118.25	1.0000	1.0000
L9	50	PL 1.25x4	113.25 - 118.25	1.0000	1.0000
L9	51	PL 1.25x4	113.25 - 118.25	1.0000	1.0000
L9	52	PL 1.25x4	113.25 - 118.25	1.0000	1.0000
L9	53	PL 1.25x4	113.25 - 118.25	1.0000	1.0000
L10	2	Safety Line 3/8	109.00 - 113.25	1.0000	1.0000
L10	11	HB114-21U3M12-XXXF(1-1/4)	109.00 - 113.25	1.0000	1.0000
L10	12	HB158-21U6S12-60M-01(1-5/8)	109.00 - 113.25	1.0000	1.0000
L10	14	AL7-50(1-5/8)	109.00 - 113.25	1.0000	1.0000
L10	50	PL 1.25x4	109.00 - 113.25	1.0000	1.0000
L10	51	PL 1.25x4	109.00 - 113.25	1.0000	1.0000
L10	52	PL 1.25x4	109.00 - 113.25	1.0000	1.0000
L10	53	PL 1.25x4	109.00 - 113.25	1.0000	1.0000
L11	2	Safety Line 3/8	108.75 - 109.00	1.0000	1.0000
L11	11	HB114-21U3M12-XXXF(1-1/4)	108.75 - 109.00	1.0000	1.0000
L11	12	HB158-21U6S12-60M-01(1-5/8)	108.75 - 109.00	1.0000	1.0000
L11	14	AL7-50(1-5/8)	108.75 - 109.00	1.0000	1.0000
L11	43	PL 1.25x5	108.75 - 109.00	1.0000	1.0000
L11	44	PL 1.25x5	108.75 - 109.00	1.0000	1.0000
L11	47	PL 1.25x5	108.75 - 109.00	1.0000	1.0000
L11	48	PL 1.25x5	108.75 - 109.00	1.0000	1.0000
L12	2	Safety Line 3/8	104.17 - 108.75	1.0000	1.0000
L12	11	HB114-21U3M12-XXXF(1-1/4)	104.17 - 108.75	1.0000	1.0000
L12	12	HB158-21U6S12-60M-01(1-	104.17 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		5/8)	108.75		
L12	14	AL7-50(1-5/8)	104.17 - 108.75	1.0000	1.0000
L12	43	PL 1.25x5	104.17 - 108.75	1.0000	1.0000
L12	44	PL 1.25x5	104.17 - 108.75	1.0000	1.0000
L12	47	PL 1.25x5	104.17 - 108.75	1.0000	1.0000
L12	48	PL 1.25x5	104.17 - 108.75	1.0000	1.0000
L12	55	PL 2x6	104.17 - 108.67	1.0000	1.0000
L12	56	PL 2x6	104.17 - 106.00	1.0000	1.0000
L12	57	PL 2x6	104.17 - 108.67	1.0000	1.0000
L12	58	PL 2x6	104.17 - 107.75	1.0000	1.0000
L13	2	Safety Line 3/8	103.92 - 104.17	1.0000	1.0000
L13	11	HB114-21U3M12-XXXF(1-1/4)	103.92 - 104.17	1.0000	1.0000
L13	12	HB158-21U6S12-60M-01(1-5/8)	103.92 - 104.17	1.0000	1.0000
L13	14	AL7-50(1-5/8)	103.92 - 104.17	1.0000	1.0000
L13	43	PL 1.25x5	103.92 - 104.17	1.0000	1.0000
L13	44	PL 1.25x5	103.92 - 104.17	1.0000	1.0000
L13	47	PL 1.25x5	103.92 - 104.17	1.0000	1.0000
L13	48	PL 1.25x5	103.92 - 104.17	1.0000	1.0000
L13	55	PL 2x6	103.92 - 104.17	1.0000	1.0000
L13	56	PL 2x6	103.92 - 104.17	1.0000	1.0000
L13	57	PL 2x6	103.92 - 104.17	1.0000	1.0000
L13	58	PL 2x6	103.92 - 104.17	1.0000	1.0000
L14	2	Safety Line 3/8	103.17 - 103.92	1.0000	1.0000
L14	11	HB114-21U3M12-XXXF(1-1/4)	103.17 - 103.92	1.0000	1.0000
L14	12	HB158-21U6S12-60M-01(1-5/8)	103.17 - 103.92	1.0000	1.0000
L14	14	AL7-50(1-5/8)	103.17 - 103.92	1.0000	1.0000
L14	43	PL 1.25x5	103.17 - 103.92	1.0000	1.0000
L14	44	PL 1.25x5	103.17 - 103.92	1.0000	1.0000
L14	47	PL 1.25x5	103.17 - 103.92	1.0000	1.0000
L14	48	PL 1.25x5	103.17 - 103.92	1.0000	1.0000
L14	55	PL 2x6	103.17 - 103.92	1.0000	1.0000
L14	56	PL 2x6	103.17 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			103.92		
L14	57	PL 2x6	103.17 - 103.92	1.0000	1.0000
L14	58	PL 2x6	103.17 - 103.92	1.0000	1.0000
L15	2	Safety Line 3/8	102.92 - 103.17	1.0000	1.0000
L15	11	HB114-21U3M12-XXXF(1-1/4)	102.92 - 103.17	1.0000	1.0000
L15	12	HB158-21U6S12-60M-01(1-5/8)	102.92 - 103.17	1.0000	1.0000
L15	14	AL7-50(1-5/8)	102.92 - 103.17	1.0000	1.0000
L15	43	PL 1.25x5	102.92 - 103.17	1.0000	1.0000
L15	44	PL 1.25x5	102.92 - 103.17	1.0000	1.0000
L15	45	PL 1.25x5	102.92 - 103.17	1.0000	1.0000
L15	47	PL 1.25x5	102.92 - 103.17	1.0000	1.0000
L15	48	PL 1.25x5	102.92 - 103.17	1.0000	1.0000
L15	55	PL 2x6	102.92 - 103.17	1.0000	1.0000
L15	56	PL 2x6	102.92 - 103.17	1.0000	1.0000
L15	57	PL 2x6	102.92 - 103.17	1.0000	1.0000
L15	58	PL 2x6	102.92 - 103.17	1.0000	1.0000
L16	2	Safety Line 3/8	102.42 - 102.92	1.0000	1.0000
L16	11	HB114-21U3M12-XXXF(1-1/4)	102.42 - 102.92	1.0000	1.0000
L16	12	HB158-21U6S12-60M-01(1-5/8)	102.42 - 102.92	1.0000	1.0000
L16	14	AL7-50(1-5/8)	102.42 - 102.92	1.0000	1.0000
L16	43	PL 1.25x5	102.42 - 102.92	1.0000	1.0000
L16	44	PL 1.25x5	102.42 - 102.92	1.0000	1.0000
L16	45	PL 1.25x5	102.42 - 102.92	1.0000	1.0000
L16	47	PL 1.25x5	102.42 - 102.92	1.0000	1.0000
L16	48	PL 1.25x5	102.42 - 102.92	1.0000	1.0000
L16	55	PL 2x6	102.42 - 102.92	1.0000	1.0000
L16	56	PL 2x6	102.42 - 102.92	1.0000	1.0000
L16	57	PL 2x6	102.42 - 102.92	1.0000	1.0000
L16	58	PL 2x6	102.42 - 102.92	1.0000	1.0000
L17	2	Safety Line 3/8	102.17 - 102.42	1.0000	1.0000
L17	11	HB114-21U3M12-XXXF(1-1/4)	102.17 - 102.42	1.0000	1.0000
L17	12	HB158-21U6S12-60M-01(1-	102.17 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		5/8)	102.42		
L17	14	AL7-50(1-5/8)	102.17 - 102.42	1.0000	1.0000
L17	43	PL 1.25x5	102.17 - 102.42	1.0000	1.0000
L17	44	PL 1.25x5	102.17 - 102.42	1.0000	1.0000
L17	45	PL 1.25x5	102.17 - 102.42	1.0000	1.0000
L17	47	PL 1.25x5	102.17 - 102.42	1.0000	1.0000
L17	48	PL 1.25x5	102.17 - 102.42	1.0000	1.0000
L17	55	PL 2x6	102.17 - 102.42	1.0000	1.0000
L17	56	PL 2x6	102.17 - 102.42	1.0000	1.0000
L17	57	PL 2x6	102.17 - 102.42	1.0000	1.0000
L17	58	PL 2x6	102.17 - 102.42	1.0000	1.0000
L18	2	Safety Line 3/8	100.92 - 102.17	1.0000	1.0000
L18	11	HB114-21U3M12-XXXF(1-1/4)	100.92 - 102.17	1.0000	1.0000
L18	12	HB158-21U6S12-60M-01(1-5/8)	100.92 - 102.17	1.0000	1.0000
L18	14	AL7-50(1-5/8)	100.92 - 102.17	1.0000	1.0000
L18	43	PL 1.25x5	100.92 - 102.17	1.0000	1.0000
L18	44	PL 1.25x5	100.92 - 102.17	1.0000	1.0000
L18	45	PL 1.25x5	100.92 - 102.17	1.0000	1.0000
L18	47	PL 1.25x5	100.92 - 102.17	1.0000	1.0000
L18	48	PL 1.25x5	100.92 - 102.17	1.0000	1.0000
L18	55	PL 2x6	100.92 - 102.17	1.0000	1.0000
L18	56	PL 2x6	100.92 - 102.17	1.0000	1.0000
L18	57	PL 2x6	100.92 - 102.17	1.0000	1.0000
L18	58	PL 2x6	100.92 - 102.17	1.0000	1.0000
L19	2	Safety Line 3/8	100.67 - 100.92	1.0000	1.0000
L19	11	HB114-21U3M12-XXXF(1-1/4)	100.67 - 100.92	1.0000	1.0000
L19	12	HB158-21U6S12-60M-01(1-5/8)	100.67 - 100.92	1.0000	1.0000
L19	14	AL7-50(1-5/8)	100.67 - 100.92	1.0000	1.0000
L19	43	PL 1.25x5	100.67 - 100.92	1.0000	1.0000
L19	44	PL 1.25x5	100.67 - 100.92	1.0000	1.0000
L19	45	PL 1.25x5	100.67 - 100.92	1.0000	1.0000
L19	47	PL 1.25x5	100.67 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			100.92		
L19	48	PL 1.25x5	100.67 - 100.92	1.0000	1.0000
L19	55	PL 2x6	100.67 - 100.92	1.0000	1.0000
L19	56	PL 2x6	100.67 - 100.92	1.0000	1.0000
L19	57	PL 2x6	100.67 - 100.92	1.0000	1.0000
L19	58	PL 2x6	100.67 - 100.92	1.0000	1.0000
L20	2	Safety Line 3/8	99.58 - 100.67	1.0000	1.0000
L20	11	HB114-21U3M12-XXXF(1-1/4)	99.58 - 100.67	1.0000	1.0000
L20	12	HB158-21U6S12-60M-01(1-5/8)	99.58 - 100.67	1.0000	1.0000
L20	14	AL7-50(1-5/8)	99.58 - 100.67	1.0000	1.0000
L20	43	PL 1.25x5	99.58 - 100.67	1.0000	1.0000
L20	44	PL 1.25x5	99.58 - 100.67	1.0000	1.0000
L20	45	PL 1.25x5	99.58 - 100.67	1.0000	1.0000
L20	47	PL 1.25x5	100.17 - 100.67	1.0000	1.0000
L20	48	PL 1.25x5	100.17 - 100.67	1.0000	1.0000
L20	55	PL 2x6	99.58 - 100.67	1.0000	1.0000
L20	56	PL 2x6	99.58 - 100.67	1.0000	1.0000
L20	57	PL 2x6	99.58 - 100.67	1.0000	1.0000
L20	58	PL 2x6	99.58 - 100.67	1.0000	1.0000
L21	2	Safety Line 3/8	99.33 - 99.58	1.0000	1.0000
L21	11	HB114-21U3M12-XXXF(1-1/4)	99.33 - 99.58	1.0000	1.0000
L21	12	HB158-21U6S12-60M-01(1-5/8)	99.33 - 99.58	1.0000	1.0000
L21	14	AL7-50(1-5/8)	99.33 - 99.58	1.0000	1.0000
L21	43	PL 1.25x5	99.33 - 99.58	1.0000	1.0000
L21	44	PL 1.25x5	99.33 - 99.58	1.0000	1.0000
L21	45	PL 1.25x5	99.33 - 99.58	1.0000	1.0000
L21	55	PL 2x6	99.33 - 99.58	1.0000	1.0000
L21	56	PL 2x6	99.33 - 99.58	1.0000	1.0000
L21	57	PL 2x6	99.33 - 99.58	1.0000	1.0000
L21	58	PL 2x6	99.33 - 99.58	1.0000	1.0000
L22	2	Safety Line 3/8	95.42 - 99.33	1.0000	1.0000
L22	11	HB114-21U3M12-XXXF(1-1/4)	95.42 - 99.33	1.0000	1.0000
L22	12	HB158-21U6S12-60M-01(1-5/8)	95.42 - 99.33	1.0000	1.0000
L22	14	AL7-50(1-5/8)	95.42 - 99.33	1.0000	1.0000
L22	20	HB114-U6S12-XXX-LI(1-1/4)	95.42 - 99.00	1.0000	1.0000
L22	21	LDF7-50A(1-5/8)	95.42 - 99.00	1.0000	1.0000
L22	43	PL 1.25x5	95.42 - 99.33	1.0000	1.0000
L22	44	PL 1.25x5	95.42 - 99.33	1.0000	1.0000
L22	45	PL 1.25x5	95.42 - 99.33	1.0000	1.0000
L22	55	PL 2x6	95.42 - 99.33	1.0000	1.0000
L22	56	PL 2x6	95.42 - 99.33	1.0000	1.0000
L22	57	PL 2x6	95.42 - 99.33	1.0000	1.0000
L22	58	PL 2x6	95.42 - 99.33	1.0000	1.0000
L23	2	Safety Line 3/8	95.17 - 95.42	1.0000	1.0000
L23	11	HB114-21U3M12-XXXF(1-1/4)	95.17 - 95.42	1.0000	1.0000
L23	12	HB158-21U6S12-60M-01(1-5/8)	95.17 - 95.42	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L23	14	AL7-50(1-5/8)	95.17 - 95.42	1.0000	1.0000
L23	20	HB114-U6S12-XXX-LI(1-1/4)	95.17 - 95.42	1.0000	1.0000
L23	21	LDF7-50A(1-5/8)	95.17 - 95.42	1.0000	1.0000
L23	43	PL 1.25x5	95.17 - 95.42	1.0000	1.0000
L23	44	PL 1.25x5	95.17 - 95.42	1.0000	1.0000
L23	45	PL 1.25x5	95.17 - 95.42	1.0000	1.0000
L23	55	PL 2x6	95.17 - 95.42	1.0000	1.0000
L23	56	PL 2x6	95.17 - 95.42	1.0000	1.0000
L23	57	PL 2x6	95.17 - 95.42	1.0000	1.0000
L23	58	PL 2x6	95.17 - 95.42	1.0000	1.0000
L24	2	Safety Line 3/8	90.17 - 95.17	1.0000	1.0000
L24	11	HB114-21U3M12-XXXF(1-1/4)	90.17 - 95.17	1.0000	1.0000
L24	12	HB158-21U6S12-60M-01(1-5/8)	90.17 - 95.17	1.0000	1.0000
L24	14	AL7-50(1-5/8)	90.17 - 95.17	1.0000	1.0000
L24	20	HB114-U6S12-XXX-LI(1-1/4)	90.17 - 95.17	1.0000	1.0000
L24	21	LDF7-50A(1-5/8)	90.17 - 95.17	1.0000	1.0000
L24	43	PL 1.25x5	93.17 - 95.17	1.0000	1.0000
L24	44	PL 1.25x5	93.17 - 95.17	1.0000	1.0000
L24	45	PL 1.25x5	93.17 - 95.17	1.0000	1.0000
L24	55	PL 2x6	90.17 - 95.17	1.0000	1.0000
L24	56	PL 2x6	90.17 - 95.17	1.0000	1.0000
L24	57	PL 2x6	90.17 - 95.17	1.0000	1.0000
L24	58	PL 2x6	90.17 - 95.17	1.0000	1.0000
L25	2	Safety Line 3/8	85.17 - 90.17	1.0000	1.0000
L25	11	HB114-21U3M12-XXXF(1-1/4)	85.17 - 90.17	1.0000	1.0000
L25	12	HB158-21U6S12-60M-01(1-5/8)	85.17 - 90.17	1.0000	1.0000
L25	14	AL7-50(1-5/8)	85.17 - 90.17	1.0000	1.0000
L25	20	HB114-U6S12-XXX-LI(1-1/4)	85.17 - 90.17	1.0000	1.0000
L25	21	LDF7-50A(1-5/8)	85.17 - 90.17	1.0000	1.0000
L25	55	PL 2x6	85.17 - 90.17	1.0000	1.0000
L25	56	PL 2x6	85.17 - 90.17	1.0000	1.0000
L25	57	PL 2x6	85.17 - 90.17	1.0000	1.0000
L25	58	PL 2x6	85.17 - 90.17	1.0000	1.0000
L26	2	Safety Line 3/8	80.50 - 85.17	1.0000	1.0000
L26	11	HB114-21U3M12-XXXF(1-1/4)	80.50 - 85.17	1.0000	1.0000
L26	12	HB158-21U6S12-60M-01(1-5/8)	80.50 - 85.17	1.0000	1.0000
L26	14	AL7-50(1-5/8)	80.50 - 85.17	1.0000	1.0000
L26	20	HB114-U6S12-XXX-LI(1-1/4)	80.50 - 85.17	1.0000	1.0000
L26	21	LDF7-50A(1-5/8)	80.50 - 85.17	1.0000	1.0000
L26	38	PL 1.25x4	80.50 - 82.00	1.0000	1.0000
L26	39	PL 1.25x4	80.50 - 82.00	1.0000	1.0000
L26	40	PL 1.25x4	80.50 - 82.00	1.0000	1.0000
L26	41	PL 1.25x4	80.50 - 82.00	1.0000	1.0000
L26	55	PL 2x6	80.50 - 85.17	1.0000	1.0000
L26	56	PL 2x6	80.50 - 85.17	1.0000	1.0000
L26	57	PL 2x6	80.50 - 85.17	1.0000	1.0000
L26	58	PL 2x6	80.50 - 85.17	1.0000	1.0000
L27	2	Safety Line 3/8	80.25 - 80.50	1.0000	1.0000
L27	11	HB114-21U3M12-XXXF(1-1/4)	80.25 - 80.50	1.0000	1.0000
L27	12	HB158-21U6S12-60M-01(1-5/8)	80.25 - 80.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L27	14	AL7-50(1-5/8)	80.25 - 80.50	1.0000	1.0000
L27	20	HB114-U6S12-XXX-LI(1-1/4)	80.25 - 80.50	1.0000	1.0000
L27	21	LDF7-50A(1-5/8)	80.25 - 80.50	1.0000	1.0000
L27	38	PL 1.25x4	80.25 - 80.50	1.0000	1.0000
L27	39	PL 1.25x4	80.25 - 80.50	1.0000	1.0000
L27	40	PL 1.25x4	80.25 - 80.50	1.0000	1.0000
L27	41	PL 1.25x4	80.25 - 80.50	1.0000	1.0000
L27	55	PL 2x6	80.25 - 80.50	1.0000	1.0000
L27	56	PL 2x6	80.25 - 80.50	1.0000	1.0000
L27	57	PL 2x6	80.25 - 80.50	1.0000	1.0000
L27	58	PL 2x6	80.25 - 80.50	1.0000	1.0000
L28	2	Safety Line 3/8	75.25 - 80.25	1.0000	1.0000
L28	11	HB114-21U3M12-XXXF(1-1/4)	75.25 - 80.25	1.0000	1.0000
L28	12	HB158-21U6S12-60M-01(1-5/8)	75.25 - 80.25	1.0000	1.0000
L28	14	AL7-50(1-5/8)	75.25 - 80.25	1.0000	1.0000
L28	20	HB114-U6S12-XXX-LI(1-1/4)	75.25 - 80.25	1.0000	1.0000
L28	21	LDF7-50A(1-5/8)	75.25 - 80.25	1.0000	1.0000
L28	38	PL 1.25x4	75.25 - 80.25	1.0000	1.0000
L28	39	PL 1.25x4	75.25 - 80.25	1.0000	1.0000
L28	40	PL 1.25x4	75.25 - 80.25	1.0000	1.0000
L28	41	PL 1.25x4	75.25 - 80.25	1.0000	1.0000
L28	55	PL 2x6	75.25 - 80.25	1.0000	1.0000
L28	56	PL 2x6	75.25 - 80.25	1.0000	1.0000
L28	57	PL 2x6	75.25 - 80.25	1.0000	1.0000
L28	58	PL 2x6	75.25 - 80.25	1.0000	1.0000
L29	2	Safety Line 3/8	73.58 - 75.25	1.0000	1.0000
L29	11	HB114-21U3M12-XXXF(1-1/4)	73.58 - 75.25	1.0000	1.0000
L29	12	HB158-21U6S12-60M-01(1-5/8)	73.58 - 75.25	1.0000	1.0000
L29	14	AL7-50(1-5/8)	73.58 - 75.25	1.0000	1.0000
L29	20	HB114-U6S12-XXX-LI(1-1/4)	73.58 - 75.25	1.0000	1.0000
L29	21	LDF7-50A(1-5/8)	73.58 - 75.25	1.0000	1.0000
L29	38	PL 1.25x4	73.58 - 75.25	1.0000	1.0000
L29	39	PL 1.25x4	73.58 - 75.25	1.0000	1.0000
L29	40	PL 1.25x4	73.58 - 75.25	1.0000	1.0000
L29	41	PL 1.25x4	73.58 - 75.25	1.0000	1.0000
L29	55	PL 2x6	73.58 - 75.25	1.0000	1.0000
L29	56	PL 2x6	73.58 - 75.25	1.0000	1.0000
L29	57	PL 2x6	73.58 - 75.25	1.0000	1.0000
L29	58	PL 2x6	73.58 - 75.25	1.0000	1.0000
L30	2	Safety Line 3/8	73.33 - 73.58	1.0000	1.0000
L30	11	HB114-21U3M12-XXXF(1-1/4)	73.33 - 73.58	1.0000	1.0000
L30	12	HB158-21U6S12-60M-01(1-5/8)	73.33 - 73.58	1.0000	1.0000
L30	14	AL7-50(1-5/8)	73.33 - 73.58	1.0000	1.0000
L30	20	HB114-U6S12-XXX-LI(1-1/4)	73.33 - 73.58	1.0000	1.0000
L30	21	LDF7-50A(1-5/8)	73.33 - 73.58	1.0000	1.0000
L30	38	PL 1.25x4	73.33 - 73.58	1.0000	1.0000
L30	39	PL 1.25x4	73.33 - 73.58	1.0000	1.0000
L30	40	PL 1.25x4	73.33 - 73.58	1.0000	1.0000
L30	41	PL 1.25x4	73.33 - 73.58	1.0000	1.0000
L30	55	PL 2x6	73.33 - 73.58	1.0000	1.0000
L30	56	PL 2x6	73.33 - 73.58	1.0000	1.0000
L30	57	PL 2x6	73.33 - 73.58	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L30	58	PL 2x6	73.33 - 73.58	1.0000	1.0000
L31	2	Safety Line 3/8	69.00 - 73.33	1.0000	1.0000
L31	11	HB114-21U3M12-XXXF(1-1/4)	69.00 - 73.33	1.0000	1.0000
L31	12	HB158-21U6S12-60M-01(1-5/8)	69.00 - 73.33	1.0000	1.0000
L31	14	AL7-50(1-5/8)	69.00 - 73.33	1.0000	1.0000
L31	20	HB114-U6S12-XXX-LI(1-1/4)	69.00 - 73.33	1.0000	1.0000
L31	21	LDF7-50A(1-5/8)	69.00 - 73.33	1.0000	1.0000
L31	38	PL 1.25x4	69.00 - 73.33	1.0000	1.0000
L31	39	PL 1.25x4	69.00 - 73.33	1.0000	1.0000
L31	40	PL 1.25x4	69.00 - 73.33	1.0000	1.0000
L31	41	PL 1.25x4	69.00 - 73.33	1.0000	1.0000
L31	55	PL 2x6	69.00 - 73.33	1.0000	1.0000
L31	56	PL 2x6	69.00 - 73.33	1.0000	1.0000
L31	57	PL 2x6	69.00 - 73.33	1.0000	1.0000
L31	58	PL 2x6	69.00 - 73.33	1.0000	1.0000
L32	2	Safety Line 3/8	67.00 - 69.00	1.0000	1.0000
L32	11	HB114-21U3M12-XXXF(1-1/4)	67.00 - 69.00	1.0000	1.0000
L32	12	HB158-21U6S12-60M-01(1-5/8)	67.00 - 69.00	1.0000	1.0000
L32	14	AL7-50(1-5/8)	67.00 - 69.00	1.0000	1.0000
L32	20	HB114-U6S12-XXX-LI(1-1/4)	67.00 - 69.00	1.0000	1.0000
L32	21	LDF7-50A(1-5/8)	67.00 - 69.00	1.0000	1.0000
L32	33	PL 1.25x5	67.00 - 69.00	1.0000	1.0000
L32	34	PL 1.25x5	67.00 - 69.00	1.0000	1.0000
L32	35	PL 1.25x5	67.00 - 69.00	1.0000	1.0000
L32	36	PL 1.25x5	67.00 - 69.00	1.0000	1.0000
L32	38	PL 1.25x4	67.00 - 69.00	1.0000	1.0000
L32	39	PL 1.25x4	67.00 - 69.00	1.0000	1.0000
L32	40	PL 1.25x4	67.00 - 69.00	1.0000	1.0000
L32	41	PL 1.25x4	67.00 - 69.00	1.0000	1.0000
L32	55	PL 2x6	67.00 - 69.00	1.0000	1.0000
L32	56	PL 2x6	67.00 - 69.00	1.0000	1.0000
L32	57	PL 2x6	67.00 - 69.00	1.0000	1.0000
L32	58	PL 2x6	67.00 - 69.00	1.0000	1.0000
L33	2	Safety Line 3/8	66.75 - 67.00	1.0000	1.0000
L33	11	HB114-21U3M12-XXXF(1-1/4)	66.75 - 67.00	1.0000	1.0000
L33	12	HB158-21U6S12-60M-01(1-5/8)	66.75 - 67.00	1.0000	1.0000
L33	14	AL7-50(1-5/8)	66.75 - 67.00	1.0000	1.0000
L33	20	HB114-U6S12-XXX-LI(1-1/4)	66.75 - 67.00	1.0000	1.0000
L33	21	LDF7-50A(1-5/8)	66.75 - 67.00	1.0000	1.0000
L33	33	PL 1.25x5	66.75 - 67.00	1.0000	1.0000
L33	34	PL 1.25x5	66.75 - 67.00	1.0000	1.0000
L33	35	PL 1.25x5	66.75 - 67.00	1.0000	1.0000
L33	36	PL 1.25x5	66.75 - 67.00	1.0000	1.0000
L33	38	PL 1.25x4	66.75 - 67.00	1.0000	1.0000
L33	39	PL 1.25x4	66.75 - 67.00	1.0000	1.0000
L33	40	PL 1.25x4	66.75 - 67.00	1.0000	1.0000
L33	41	PL 1.25x4	66.75 - 67.00	1.0000	1.0000
L33	55	PL 2x6	66.75 - 67.00	1.0000	1.0000
L33	56	PL 2x6	66.75 - 67.00	1.0000	1.0000
L33	57	PL 2x6	66.75 - 67.00	1.0000	1.0000
L33	58	PL 2x6	66.75 - 67.00	1.0000	1.0000
L34	2	Safety Line 3/8	66.50 - 66.75	1.0000	1.0000
L34	11	HB114-21U3M12-XXXF(1-1	66.50 - 66.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		/4)			
L34	12	HB158-21U6S12-60M-01(1-5/8)	66.50 - 66.75	1.0000	1.0000
L34	14	AL7-50(1-5/8)	66.50 - 66.75	1.0000	1.0000
L34	20	HB114-U6S12-XXX-LI(1-1/4)	66.50 - 66.75	1.0000	1.0000
L34	21	LDF7-50A(1-5/8)	66.50 - 66.75	1.0000	1.0000
L34	33	PL 1.25x5	66.50 - 66.75	1.0000	1.0000
L34	34	PL 1.25x5	66.50 - 66.75	1.0000	1.0000
L34	35	PL 1.25x5	66.50 - 66.75	1.0000	1.0000
L34	36	PL 1.25x5	66.50 - 66.75	1.0000	1.0000
L34	38	PL 1.25x4	66.50 - 66.75	1.0000	1.0000
L34	39	PL 1.25x4	66.50 - 66.75	1.0000	1.0000
L34	40	PL 1.25x4	66.50 - 66.75	1.0000	1.0000
L34	41	PL 1.25x4	66.50 - 66.75	1.0000	1.0000
L34	55	PL 2x6	66.50 - 66.75	1.0000	1.0000
L34	56	PL 2x6	66.50 - 66.75	1.0000	1.0000
L34	57	PL 2x6	66.50 - 66.75	1.0000	1.0000
L34	58	PL 2x6	66.50 - 66.75	1.0000	1.0000
L35	2	Safety Line 3/8	61.50 - 66.50	1.0000	1.0000
L35	11	HB114-21U3M12-XXXF(1-1/4)	61.50 - 66.50	1.0000	1.0000
L35	12	HB158-21U6S12-60M-01(1-5/8)	61.50 - 66.50	1.0000	1.0000
L35	14	AL7-50(1-5/8)	61.50 - 66.50	1.0000	1.0000
L35	20	HB114-U6S12-XXX-LI(1-1/4)	61.50 - 66.50	1.0000	1.0000
L35	21	LDF7-50A(1-5/8)	61.50 - 66.50	1.0000	1.0000
L35	33	PL 1.25x5	61.50 - 66.50	1.0000	1.0000
L35	34	PL 1.25x5	61.50 - 66.50	1.0000	1.0000
L35	35	PL 1.25x5	61.50 - 66.50	1.0000	1.0000
L35	36	PL 1.25x5	61.50 - 66.50	1.0000	1.0000
L35	55	PL 2x6	61.50 - 66.50	1.0000	1.0000
L35	56	PL 2x6	61.50 - 66.50	1.0000	1.0000
L35	57	PL 2x6	61.50 - 66.50	1.0000	1.0000
L35	58	PL 2x6	61.50 - 66.50	1.0000	1.0000
L36	2	Safety Line 3/8	56.50 - 61.50	1.0000	1.0000
L36	11	HB114-21U3M12-XXXF(1-1/4)	56.50 - 61.50	1.0000	1.0000
L36	12	HB158-21U6S12-60M-01(1-5/8)	56.50 - 61.50	1.0000	1.0000
L36	14	AL7-50(1-5/8)	56.50 - 61.50	1.0000	1.0000
L36	20	HB114-U6S12-XXX-LI(1-1/4)	56.50 - 61.50	1.0000	1.0000
L36	21	LDF7-50A(1-5/8)	56.50 - 61.50	1.0000	1.0000
L36	33	PL 1.25x5	56.50 - 61.50	1.0000	1.0000
L36	34	PL 1.25x5	56.50 - 61.50	1.0000	1.0000
L36	35	PL 1.25x5	56.50 - 61.50	1.0000	1.0000
L36	36	PL 1.25x5	56.50 - 61.50	1.0000	1.0000
L36	55	PL 2x6	56.50 - 61.50	1.0000	1.0000
L36	56	PL 2x6	56.50 - 61.50	1.0000	1.0000
L36	57	PL 2x6	56.50 - 61.50	1.0000	1.0000
L36	58	PL 2x6	56.50 - 61.50	1.0000	1.0000
L37	2	Safety Line 3/8	51.50 - 56.50	1.0000	1.0000
L37	11	HB114-21U3M12-XXXF(1-1/4)	51.50 - 56.50	1.0000	1.0000
L37	12	HB158-21U6S12-60M-01(1-5/8)	51.50 - 56.50	1.0000	1.0000
L37	14	AL7-50(1-5/8)	51.50 - 56.50	1.0000	1.0000
L37	20	HB114-U6S12-XXX-LI(1-1/4)	51.50 - 56.50	1.0000	1.0000
L37	21	LDF7-50A(1-5/8)	51.50 - 56.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L37	33	PL 1.25x5	51.50 - 56.50	1.0000	1.0000
L37	34	PL 1.25x5	51.50 - 56.50	1.0000	1.0000
L37	35	PL 1.25x5	51.50 - 56.50	1.0000	1.0000
L37	36	PL 1.25x5	51.50 - 56.50	1.0000	1.0000
L37	55	PL 2x6	51.50 - 56.50	1.0000	1.0000
L37	56	PL 2x6	51.50 - 56.50	1.0000	1.0000
L37	57	PL 2x6	51.50 - 56.50	1.0000	1.0000
L37	58	PL 2x6	51.50 - 56.50	1.0000	1.0000
L38	2	Safety Line 3/8	48.25 - 51.50	1.0000	1.0000
L38	11	HB114-21U3M12-XXXF(1-1/4)	48.25 - 51.50	1.0000	1.0000
L38	12	HB158-21U6S12-60M-01(1-5/8)	48.25 - 51.50	1.0000	1.0000
L38	14	AL7-50(1-5/8)	48.25 - 51.50	1.0000	1.0000
L38	20	HB114-U6S12-XXX-LI(1-1/4)	48.25 - 51.50	1.0000	1.0000
L38	21	LDF7-50A(1-5/8)	48.25 - 51.50	1.0000	1.0000
L38	23	#20 Bar	48.25 - 51.00	1.0000	1.0000
L38	24	#20 Bar	48.25 - 51.00	1.0000	1.0000
L38	25	#20 Bar	48.25 - 51.00	1.0000	1.0000
L38	26	#20 Bar	48.25 - 51.00	1.0000	1.0000
L38	33	PL 1.25x5	48.25 - 51.50	1.0000	1.0000
L38	34	PL 1.25x5	48.25 - 51.50	1.0000	1.0000
L38	35	PL 1.25x5	48.25 - 51.50	1.0000	1.0000
L38	36	PL 1.25x5	48.25 - 51.50	1.0000	1.0000
L38	55	PL 2x6	48.25 - 51.50	1.0000	1.0000
L38	56	PL 2x6	48.25 - 51.50	1.0000	1.0000
L38	57	PL 2x6	48.25 - 51.50	1.0000	1.0000
L38	58	PL 2x6	48.25 - 51.50	1.0000	1.0000
L39	2	Safety Line 3/8	48.00 - 48.25	1.0000	1.0000
L39	11	HB114-21U3M12-XXXF(1-1/4)	48.00 - 48.25	1.0000	1.0000
L39	12	HB158-21U6S12-60M-01(1-5/8)	48.00 - 48.25	1.0000	1.0000
L39	14	AL7-50(1-5/8)	48.00 - 48.25	1.0000	1.0000
L39	20	HB114-U6S12-XXX-LI(1-1/4)	48.00 - 48.25	1.0000	1.0000
L39	21	LDF7-50A(1-5/8)	48.00 - 48.25	1.0000	1.0000
L39	23	#20 Bar	48.00 - 48.25	1.0000	1.0000
L39	24	#20 Bar	48.00 - 48.25	1.0000	1.0000
L39	25	#20 Bar	48.00 - 48.25	1.0000	1.0000
L39	26	#20 Bar	48.00 - 48.25	1.0000	1.0000
L39	33	PL 1.25x5	48.00 - 48.25	1.0000	1.0000
L39	34	PL 1.25x5	48.00 - 48.25	1.0000	1.0000
L39	35	PL 1.25x5	48.00 - 48.25	1.0000	1.0000
L39	36	PL 1.25x5	48.00 - 48.25	1.0000	1.0000
L39	55	PL 2x6	48.00 - 48.25	1.0000	1.0000
L39	56	PL 2x6	48.00 - 48.25	1.0000	1.0000
L39	57	PL 2x6	48.00 - 48.25	1.0000	1.0000
L39	58	PL 2x6	48.00 - 48.25	1.0000	1.0000
L40	2	Safety Line 3/8	44.25 - 48.00	1.0000	1.0000
L40	11	HB114-21U3M12-XXXF(1-1/4)	44.25 - 48.00	1.0000	1.0000
L40	12	HB158-21U6S12-60M-01(1-5/8)	44.25 - 48.00	1.0000	1.0000
L40	14	AL7-50(1-5/8)	44.25 - 48.00	1.0000	1.0000
L40	20	HB114-U6S12-XXX-LI(1-1/4)	44.25 - 48.00	1.0000	1.0000
L40	21	LDF7-50A(1-5/8)	44.25 - 48.00	1.0000	1.0000
L40	23	#20 Bar	44.25 - 48.00	1.0000	1.0000
L40	24	#20 Bar	44.25 - 48.00	1.0000	1.0000
L40	25	#20 Bar	44.25 - 48.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L40	26	#20 Bar	44.25 - 48.00	1.0000	1.0000
L40	28	(Area) CCI-65FP-065125 (H)	44.25 - 47.00	1.0000	1.0000
L40	29	(Area) CCI-65FP-065125 (H)	44.25 - 47.00	1.0000	1.0000
L40	30	(Area) CCI-65FP-065125 (H)	44.25 - 47.00	1.0000	1.0000
L40	31	(Area) CCI-65FP-065125 (H)	44.25 - 47.00	1.0000	1.0000
L40	33	PL 1.25x5	47.00 - 48.00	1.0000	1.0000
L40	34	PL 1.25x5	47.00 - 48.00	1.0000	1.0000
L40	35	PL 1.25x5	47.00 - 48.00	1.0000	1.0000
L40	36	PL 1.25x5	47.00 - 48.00	1.0000	1.0000
L40	55	PL 2x6	44.25 - 48.00	1.0000	1.0000
L40	56	PL 2x6	44.25 - 48.00	1.0000	1.0000
L40	57	PL 2x6	44.25 - 48.00	1.0000	1.0000
L40	58	PL 2x6	44.25 - 48.00	1.0000	1.0000
L41	2	Safety Line 3/8	44.00 - 44.25	1.0000	1.0000
L41	11	HB114-21U3M12-XXXF(1-1/4)	44.00 - 44.25	1.0000	1.0000
L41	12	HB158-21U6S12-60M-01(1-5/8)	44.00 - 44.25	1.0000	1.0000
L41	14	AL7-50(1-5/8)	44.00 - 44.25	1.0000	1.0000
L41	20	HB114-U6S12-XXX-LI(1-1/4)	44.00 - 44.25	1.0000	1.0000
L41	21	LDF7-50A(1-5/8)	44.00 - 44.25	1.0000	1.0000
L41	23	#20 Bar	44.00 - 44.25	1.0000	1.0000
L41	24	#20 Bar	44.00 - 44.25	1.0000	1.0000
L41	25	#20 Bar	44.00 - 44.25	1.0000	1.0000
L41	26	#20 Bar	44.00 - 44.25	1.0000	1.0000
L41	28	(Area) CCI-65FP-065125 (H)	44.00 - 44.25	1.0000	1.0000
L41	29	(Area) CCI-65FP-065125 (H)	44.00 - 44.25	1.0000	1.0000
L41	30	(Area) CCI-65FP-065125 (H)	44.00 - 44.25	1.0000	1.0000
L41	31	(Area) CCI-65FP-065125 (H)	44.00 - 44.25	1.0000	1.0000
L41	55	PL 2x6	44.00 - 44.25	1.0000	1.0000
L41	56	PL 2x6	44.00 - 44.25	1.0000	1.0000
L41	57	PL 2x6	44.00 - 44.25	1.0000	1.0000
L41	58	PL 2x6	44.00 - 44.25	1.0000	1.0000
L42	2	Safety Line 3/8	39.00 - 44.00	1.0000	1.0000
L42	11	HB114-21U3M12-XXXF(1-1/4)	39.00 - 44.00	1.0000	1.0000
L42	12	HB158-21U6S12-60M-01(1-5/8)	39.00 - 44.00	1.0000	1.0000
L42	14	AL7-50(1-5/8)	39.00 - 44.00	1.0000	1.0000
L42	20	HB114-U6S12-XXX-LI(1-1/4)	39.00 - 44.00	1.0000	1.0000
L42	21	LDF7-50A(1-5/8)	39.00 - 44.00	1.0000	1.0000
L42	23	#20 Bar	39.00 - 44.00	1.0000	1.0000
L42	24	#20 Bar	39.00 - 44.00	1.0000	1.0000
L42	25	#20 Bar	39.00 - 44.00	1.0000	1.0000
L42	26	#20 Bar	39.00 - 44.00	1.0000	1.0000
L42	28	(Area) CCI-65FP-065125 (H)	39.00 - 44.00	1.0000	1.0000
L42	29	(Area) CCI-65FP-065125 (H)	39.00 - 44.00	1.0000	1.0000
L42	30	(Area) CCI-65FP-065125 (H)	39.00 - 44.00	1.0000	1.0000
L42	31	(Area) CCI-65FP-065125 (H)	39.00 - 44.00	1.0000	1.0000
L42	55	PL 2x6	39.00 - 44.00	1.0000	1.0000
L42	56	PL 2x6	39.00 - 44.00	1.0000	1.0000
L42	57	PL 2x6	39.00 - 44.00	1.0000	1.0000
L42	58	PL 2x6	39.00 - 44.00	1.0000	1.0000
L43	2	Safety Line 3/8	38.50 - 39.00	1.0000	1.0000
L43	11	HB114-21U3M12-XXXF(1-1/4)	38.50 - 39.00	1.0000	1.0000
L43	12	HB158-21U6S12-60M-01(1-5/8)	38.50 - 39.00	1.0000	1.0000
L43	14	AL7-50(1-5/8)	38.50 - 39.00	1.0000	1.0000
L43	20	HB114-U6S12-XXX-LI(1-1/	38.50 - 39.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		4)			
L43	21	LDF7-50A(1-5/8)	38.50 - 39.00	1.0000	1.0000
L43	23	#20 Bar	38.50 - 39.00	1.0000	1.0000
L43	24	#20 Bar	38.50 - 39.00	1.0000	1.0000
L43	25	#20 Bar	38.50 - 39.00	1.0000	1.0000
L43	26	#20 Bar	38.50 - 39.00	1.0000	1.0000
L43	28	(Area) CCI-65FP-065125 (H)	38.50 - 39.00	1.0000	1.0000
L43	29	(Area) CCI-65FP-065125 (H)	38.50 - 39.00	1.0000	1.0000
L43	30	(Area) CCI-65FP-065125 (H)	38.50 - 39.00	1.0000	1.0000
L43	31	(Area) CCI-65FP-065125 (H)	38.50 - 39.00	1.0000	1.0000
L43	55	PL 2x6	38.50 - 39.00	1.0000	1.0000
L43	56	PL 2x6	38.50 - 39.00	1.0000	1.0000
L43	57	PL 2x6	38.50 - 39.00	1.0000	1.0000
L43	58	PL 2x6	38.50 - 39.00	1.0000	1.0000
L44	2	Safety Line 3/8	38.25 - 38.50	1.0000	1.0000
L44	11	HB114-21U3M12-XXXF(1-1/4)	38.25 - 38.50	1.0000	1.0000
L44	12	HB158-21U6S12-60M-01(1-5/8)	38.25 - 38.50	1.0000	1.0000
L44	14	AL7-50(1-5/8)	38.25 - 38.50	1.0000	1.0000
L44	20	HB114-U6S12-XXX-LI(1-1/4)	38.25 - 38.50	1.0000	1.0000
L44	21	LDF7-50A(1-5/8)	38.25 - 38.50	1.0000	1.0000
L44	23	#20 Bar	38.25 - 38.50	1.0000	1.0000
L44	24	#20 Bar	38.25 - 38.50	1.0000	1.0000
L44	25	#20 Bar	38.25 - 38.50	1.0000	1.0000
L44	26	#20 Bar	38.25 - 38.50	1.0000	1.0000
L44	28	(Area) CCI-65FP-065125 (H)	38.25 - 38.50	1.0000	1.0000
L44	29	(Area) CCI-65FP-065125 (H)	38.25 - 38.50	1.0000	1.0000
L44	30	(Area) CCI-65FP-065125 (H)	38.25 - 38.50	1.0000	1.0000
L44	31	(Area) CCI-65FP-065125 (H)	38.25 - 38.50	1.0000	1.0000
L44	55	PL 2x6	38.25 - 38.50	1.0000	1.0000
L44	56	PL 2x6	38.25 - 38.50	1.0000	1.0000
L44	57	PL 2x6	38.25 - 38.50	1.0000	1.0000
L44	58	PL 2x6	38.25 - 38.50	1.0000	1.0000
L45	2	Safety Line 3/8	30.00 - 38.25	1.0000	1.0000
L45	11	HB114-21U3M12-XXXF(1-1/4)	30.00 - 38.25	1.0000	1.0000
L45	12	HB158-21U6S12-60M-01(1-5/8)	30.00 - 38.25	1.0000	1.0000
L45	14	AL7-50(1-5/8)	30.00 - 38.25	1.0000	1.0000
L45	20	HB114-U6S12-XXX-LI(1-1/4)	30.00 - 38.25	1.0000	1.0000
L45	21	LDF7-50A(1-5/8)	30.00 - 38.25	1.0000	1.0000
L45	23	#20 Bar	30.00 - 38.25	1.0000	1.0000
L45	24	#20 Bar	30.00 - 38.25	1.0000	1.0000
L45	25	#20 Bar	30.00 - 38.25	1.0000	1.0000
L45	26	#20 Bar	30.00 - 38.25	1.0000	1.0000
L45	28	(Area) CCI-65FP-065125 (H)	30.00 - 38.25	1.0000	1.0000
L45	29	(Area) CCI-65FP-065125 (H)	30.00 - 38.25	1.0000	1.0000
L45	30	(Area) CCI-65FP-065125 (H)	30.00 - 38.25	1.0000	1.0000
L45	31	(Area) CCI-65FP-065125 (H)	30.00 - 38.25	1.0000	1.0000
L45	55	PL 2x6	30.00 - 38.25	1.0000	1.0000
L45	56	PL 2x6	30.00 - 38.25	1.0000	1.0000
L45	57	PL 2x6	30.00 - 38.25	1.0000	1.0000
L45	58	PL 2x6	30.00 - 38.25	1.0000	1.0000
L46	2	Safety Line 3/8	29.00 - 30.00	1.0000	1.0000
L46	11	HB114-21U3M12-XXXF(1-1/4)	29.00 - 30.00	1.0000	1.0000
L46	12	HB158-21U6S12-60M-01(1-5/8)	29.00 - 30.00	1.0000	1.0000
L46	14	AL7-50(1-5/8)	29.00 - 30.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L46	20	HB114-U6S12-XXX-LI(1-1/4)	29.00 - 30.00	1.0000	1.0000
L46	21	LDF7-50A(1-5/8)	29.00 - 30.00	1.0000	1.0000
L46	23	#20 Bar	29.00 - 30.00	1.0000	1.0000
L46	24	#20 Bar	29.00 - 30.00	1.0000	1.0000
L46	25	#20 Bar	29.00 - 30.00	1.0000	1.0000
L46	26	#20 Bar	29.00 - 30.00	1.0000	1.0000
L46	28	(Area) CCI-65FP-065125 (H)	29.00 - 30.00	1.0000	1.0000
L46	29	(Area) CCI-65FP-065125 (H)	29.00 - 30.00	1.0000	1.0000
L46	30	(Area) CCI-65FP-065125 (H)	29.00 - 30.00	1.0000	1.0000
L46	31	(Area) CCI-65FP-065125 (H)	29.00 - 30.00	1.0000	1.0000
L46	55	PL 2x6	29.00 - 30.00	1.0000	1.0000
L46	56	PL 2x6	29.00 - 30.00	1.0000	1.0000
L46	57	PL 2x6	29.00 - 30.00	1.0000	1.0000
L46	58	PL 2x6	29.00 - 30.00	1.0000	1.0000
L47	2	Safety Line 3/8	24.00 - 29.00	1.0000	1.0000
L47	11	HB114-21U3M12-XXXF(1-1/4)	24.00 - 29.00	1.0000	1.0000
L47	12	HB158-21U6S12-60M-01(1-5/8)	24.00 - 29.00	1.0000	1.0000
L47	14	AL7-50(1-5/8)	24.00 - 29.00	1.0000	1.0000
L47	20	HB114-U6S12-XXX-LI(1-1/4)	24.00 - 29.00	1.0000	1.0000
L47	21	LDF7-50A(1-5/8)	24.00 - 29.00	1.0000	1.0000
L47	23	#20 Bar	24.00 - 29.00	1.0000	1.0000
L47	24	#20 Bar	24.00 - 29.00	1.0000	1.0000
L47	25	#20 Bar	24.00 - 29.00	1.0000	1.0000
L47	26	#20 Bar	24.00 - 29.00	1.0000	1.0000
L47	28	(Area) CCI-65FP-065125 (H)	24.00 - 29.00	1.0000	1.0000
L47	29	(Area) CCI-65FP-065125 (H)	24.00 - 29.00	1.0000	1.0000
L47	30	(Area) CCI-65FP-065125 (H)	24.00 - 29.00	1.0000	1.0000
L47	31	(Area) CCI-65FP-065125 (H)	24.00 - 29.00	1.0000	1.0000
L47	55	PL 2x6	24.00 - 29.00	1.0000	1.0000
L47	56	PL 2x6	24.00 - 29.00	1.0000	1.0000
L47	57	PL 2x6	24.00 - 29.00	1.0000	1.0000
L47	58	PL 2x6	24.00 - 29.00	1.0000	1.0000
L48	2	Safety Line 3/8	23.75 - 24.00	1.0000	1.0000
L48	11	HB114-21U3M12-XXXF(1-1/4)	23.75 - 24.00	1.0000	1.0000
L48	12	HB158-21U6S12-60M-01(1-5/8)	23.75 - 24.00	1.0000	1.0000
L48	14	AL7-50(1-5/8)	23.75 - 24.00	1.0000	1.0000
L48	20	HB114-U6S12-XXX-LI(1-1/4)	23.75 - 24.00	1.0000	1.0000
L48	21	LDF7-50A(1-5/8)	23.75 - 24.00	1.0000	1.0000
L48	23	#20 Bar	23.75 - 24.00	1.0000	1.0000
L48	24	#20 Bar	23.75 - 24.00	1.0000	1.0000
L48	25	#20 Bar	23.75 - 24.00	1.0000	1.0000
L48	26	#20 Bar	23.75 - 24.00	1.0000	1.0000
L48	28	(Area) CCI-65FP-065125 (H)	23.75 - 24.00	1.0000	1.0000
L48	29	(Area) CCI-65FP-065125 (H)	23.75 - 24.00	1.0000	1.0000
L48	30	(Area) CCI-65FP-065125 (H)	23.75 - 24.00	1.0000	1.0000
L48	31	(Area) CCI-65FP-065125 (H)	23.75 - 24.00	1.0000	1.0000
L48	55	PL 2x6	23.75 - 24.00	1.0000	1.0000
L48	56	PL 2x6	23.75 - 24.00	1.0000	1.0000
L48	57	PL 2x6	23.75 - 24.00	1.0000	1.0000
L48	58	PL 2x6	23.75 - 24.00	1.0000	1.0000
L49	2	Safety Line 3/8	23.50 - 23.75	1.0000	1.0000
L49	11	HB114-21U3M12-XXXF(1-1/4)	23.50 - 23.75	1.0000	1.0000
L49	12	HB158-21U6S12-60M-01(1-5/8)	23.50 - 23.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L49	14	AL7-50(1-5/8)	23.50 - 23.75	1.0000	1.0000
L49	20	HB114-U6S12-XXX-LI(1-1/4)	23.50 - 23.75	1.0000	1.0000
L49	21	LDF7-50A(1-5/8)	23.50 - 23.75	1.0000	1.0000
L49	23	#20 Bar	23.50 - 23.75	1.0000	1.0000
L49	24	#20 Bar	23.50 - 23.75	1.0000	1.0000
L49	25	#20 Bar	23.50 - 23.75	1.0000	1.0000
L49	26	#20 Bar	23.50 - 23.75	1.0000	1.0000
L49	28	(Area) CCI-65FP-065125 (H)	23.50 - 23.75	1.0000	1.0000
L49	29	(Area) CCI-65FP-065125 (H)	23.50 - 23.75	1.0000	1.0000
L49	30	(Area) CCI-65FP-065125 (H)	23.50 - 23.75	1.0000	1.0000
L49	31	(Area) CCI-65FP-065125 (H)	23.50 - 23.75	1.0000	1.0000
L49	55	PL 2x6	23.50 - 23.75	1.0000	1.0000
L49	56	PL 2x6	23.50 - 23.75	1.0000	1.0000
L49	57	PL 2x6	23.50 - 23.75	1.0000	1.0000
L49	58	PL 2x6	23.50 - 23.75	1.0000	1.0000
L50	2	Safety Line 3/8	18.50 - 23.50	1.0000	1.0000
L50	11	HB114-21U3M12-XXXF(1-1/4)	18.50 - 23.50	1.0000	1.0000
L50	12	HB158-21U6S12-60M-01(1-5/8)	18.50 - 23.50	1.0000	1.0000
L50	14	AL7-50(1-5/8)	18.50 - 23.50	1.0000	1.0000
L50	20	HB114-U6S12-XXX-LI(1-1/4)	18.50 - 23.50	1.0000	1.0000
L50	21	LDF7-50A(1-5/8)	18.50 - 23.50	1.0000	1.0000
L50	23	#20 Bar	18.50 - 23.50	1.0000	1.0000
L50	24	#20 Bar	18.50 - 23.50	1.0000	1.0000
L50	25	#20 Bar	18.50 - 23.50	1.0000	1.0000
L50	26	#20 Bar	18.50 - 23.50	1.0000	1.0000
L50	28	(Area) CCI-65FP-065125 (H)	18.50 - 23.50	1.0000	1.0000
L50	29	(Area) CCI-65FP-065125 (H)	18.50 - 23.50	1.0000	1.0000
L50	30	(Area) CCI-65FP-065125 (H)	18.50 - 23.50	1.0000	1.0000
L50	31	(Area) CCI-65FP-065125 (H)	18.50 - 23.50	1.0000	1.0000
L50	55	PL 2x6	18.50 - 23.50	1.0000	1.0000
L50	56	PL 2x6	18.50 - 23.50	1.0000	1.0000
L50	57	PL 2x6	18.50 - 23.50	1.0000	1.0000
L50	58	PL 2x6	18.50 - 23.50	1.0000	1.0000
L51	2	Safety Line 3/8	13.50 - 18.50	1.0000	1.0000
L51	11	HB114-21U3M12-XXXF(1-1/4)	13.50 - 18.50	1.0000	1.0000
L51	12	HB158-21U6S12-60M-01(1-5/8)	13.50 - 18.50	1.0000	1.0000
L51	14	AL7-50(1-5/8)	13.50 - 18.50	1.0000	1.0000
L51	20	HB114-U6S12-XXX-LI(1-1/4)	13.50 - 18.50	1.0000	1.0000
L51	21	LDF7-50A(1-5/8)	13.50 - 18.50	1.0000	1.0000
L51	23	#20 Bar	13.50 - 18.50	1.0000	1.0000
L51	24	#20 Bar	13.50 - 18.50	1.0000	1.0000
L51	25	#20 Bar	13.50 - 18.50	1.0000	1.0000
L51	26	#20 Bar	13.50 - 18.50	1.0000	1.0000
L51	28	(Area) CCI-65FP-065125 (H)	13.50 - 18.50	1.0000	1.0000
L51	29	(Area) CCI-65FP-065125 (H)	13.50 - 18.50	1.0000	1.0000
L51	30	(Area) CCI-65FP-065125 (H)	13.50 - 18.50	1.0000	1.0000
L51	31	(Area) CCI-65FP-065125 (H)	13.50 - 18.50	1.0000	1.0000
L51	55	PL 2x6	13.50 - 18.50	1.0000	1.0000
L51	56	PL 2x6	13.50 - 18.50	1.0000	1.0000
L51	57	PL 2x6	13.50 - 18.50	1.0000	1.0000
L51	58	PL 2x6	13.50 - 18.50	1.0000	1.0000
L52	2	Safety Line 3/8	8.50 - 13.50	1.0000	1.0000
L52	11	HB114-21U3M12-XXXF(1-1/4)	8.50 - 13.50	1.0000	1.0000
L52	12	HB158-21U6S12-60M-01(1-	8.50 - 13.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		5/8)			
L52	14	AL7-50(1-5/8)	8.50 - 13.50	1.0000	1.0000
L52	20	HB114-U6S12-XXX-LI(1-1/4)	8.50 - 13.50	1.0000	1.0000
L52	21	LDF7-50A(1-5/8)	8.50 - 13.50	1.0000	1.0000
L52	23	#20 Bar	8.50 - 13.50	1.0000	1.0000
L52	24	#20 Bar	8.50 - 13.50	1.0000	1.0000
L52	25	#20 Bar	8.50 - 13.50	1.0000	1.0000
L52	26	#20 Bar	8.50 - 13.50	1.0000	1.0000
L52	28	(Area) CCI-65FP-065125 (H)	8.50 - 13.50	1.0000	1.0000
L52	29	(Area) CCI-65FP-065125 (H)	8.50 - 13.50	1.0000	1.0000
L52	30	(Area) CCI-65FP-065125 (H)	8.50 - 13.50	1.0000	1.0000
L52	31	(Area) CCI-65FP-065125 (H)	8.50 - 13.50	1.0000	1.0000
L52	55	PL 2x6	8.50 - 13.50	1.0000	1.0000
L52	56	PL 2x6	8.50 - 13.50	1.0000	1.0000
L52	57	PL 2x6	8.50 - 13.50	1.0000	1.0000
L52	58	PL 2x6	8.50 - 13.50	1.0000	1.0000
L53	2	Safety Line 3/8	3.50 - 8.50	1.0000	1.0000
L53	11	HB114-21U3M12-XXXF(1-1/4)	3.50 - 8.50	1.0000	1.0000
L53	12	HB158-21U6S12-60M-01(1-5/8)	3.50 - 8.50	1.0000	1.0000
L53	14	AL7-50(1-5/8)	3.50 - 8.50	1.0000	1.0000
L53	20	HB114-U6S12-XXX-LI(1-1/4)	3.50 - 8.50	1.0000	1.0000
L53	21	LDF7-50A(1-5/8)	3.50 - 8.50	1.0000	1.0000
L53	23	#20 Bar	3.50 - 8.50	1.0000	1.0000
L53	24	#20 Bar	3.50 - 8.50	1.0000	1.0000
L53	25	#20 Bar	3.50 - 8.50	1.0000	1.0000
L53	26	#20 Bar	3.50 - 8.50	1.0000	1.0000
L53	28	(Area) CCI-65FP-065125 (H)	3.50 - 8.50	1.0000	1.0000
L53	29	(Area) CCI-65FP-065125 (H)	3.50 - 8.50	1.0000	1.0000
L53	30	(Area) CCI-65FP-065125 (H)	3.50 - 8.50	1.0000	1.0000
L53	31	(Area) CCI-65FP-065125 (H)	3.50 - 8.50	1.0000	1.0000
L53	55	PL 2x6	3.50 - 8.50	1.0000	1.0000
L53	56	PL 2x6	3.50 - 8.50	1.0000	1.0000
L53	57	PL 2x6	3.50 - 8.50	1.0000	1.0000
L53	58	PL 2x6	3.50 - 8.50	1.0000	1.0000
L54	2	Safety Line 3/8	0.00 - 3.50	1.0000	1.0000
L54	11	HB114-21U3M12-XXXF(1-1/4)	0.00 - 3.50	1.0000	1.0000
L54	12	HB158-21U6S12-60M-01(1-5/8)	0.00 - 3.50	1.0000	1.0000
L54	14	AL7-50(1-5/8)	0.00 - 3.50	1.0000	1.0000
L54	20	HB114-U6S12-XXX-LI(1-1/4)	0.00 - 3.50	1.0000	1.0000
L54	21	LDF7-50A(1-5/8)	0.00 - 3.50	1.0000	1.0000
L54	23	#20 Bar	0.00 - 3.50	1.0000	1.0000
L54	24	#20 Bar	0.00 - 3.50	1.0000	1.0000
L54	25	#20 Bar	0.00 - 3.50	1.0000	1.0000
L54	26	#20 Bar	0.00 - 3.50	1.0000	1.0000
L54	28	(Area) CCI-65FP-065125 (H)	0.00 - 3.50	1.0000	1.0000
L54	29	(Area) CCI-65FP-065125 (H)	0.00 - 3.50	1.0000	1.0000
L54	30	(Area) CCI-65FP-065125 (H)	0.00 - 3.50	1.0000	1.0000
L54	31	(Area) CCI-65FP-065125 (H)	0.00 - 3.50	1.0000	1.0000
L54	55	PL 2x6	0.00 - 3.50	1.0000	1.0000
L54	56	PL 2x6	0.00 - 3.50	1.0000	1.0000
L54	57	PL 2x6	0.00 - 3.50	1.0000	1.0000
L54	58	PL 2x6	0.00 - 3.50	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
L5	50	PL 1.25x4	128.50 - 130.00	Auto	0.0000
L5	51	PL 1.25x4	128.50 - 130.00	Auto	0.0000
L5	52	PL 1.25x4	128.50 - 130.00	Auto	0.0000
L5	53	PL 1.25x4	128.50 - 130.00	Auto	0.0000
L6	50	PL 1.25x4	128.25 - 128.50	Auto	0.2310
L6	51	PL 1.25x4	128.25 - 128.50	Auto	0.2310
L6	52	PL 1.25x4	128.25 - 128.50	Auto	0.2310
L6	53	PL 1.25x4	128.25 - 128.50	Auto	0.2310
L7	50	PL 1.25x4	123.25 - 128.25	Auto	0.1885
L7	51	PL 1.25x4	123.25 - 128.25	Auto	0.1885
L7	52	PL 1.25x4	123.25 - 128.25	Auto	0.1885
L7	53	PL 1.25x4	123.25 - 128.25	Auto	0.1885
L8	50	PL 1.25x4	118.25 - 123.25	Auto	0.1228
L8	51	PL 1.25x4	118.25 - 123.25	Auto	0.1228
L8	52	PL 1.25x4	118.25 - 123.25	Auto	0.1228
L8	53	PL 1.25x4	118.25 - 123.25	Auto	0.1228
L9	50	PL 1.25x4	113.25 - 118.25	Auto	0.0654
L9	51	PL 1.25x4	113.25 - 118.25	Auto	0.0654
L9	52	PL 1.25x4	113.25 - 118.25	Auto	0.0654
L9	53	PL 1.25x4	113.25 - 118.25	Auto	0.0654
L10	50	PL 1.25x4	109.00 - 113.25	Auto	0.0127
L10	51	PL 1.25x4	109.00 - 113.25	Auto	0.0127
L10	52	PL 1.25x4	109.00 - 113.25	Auto	0.0127
L10	53	PL 1.25x4	109.00 - 113.25	Auto	0.0127
L11	43	PL 1.25x5	108.75 - 109.00	Auto	0.2620
L11	44	PL 1.25x5	108.75 - 109.00	Auto	0.2620
L11	47	PL 1.25x5	108.75 -	Auto	0.2620

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
			109.00		
L11	48	PL 1.25x5	108.75 - 109.00	Auto	0.2620
L12	43	PL 1.25x5	104.17 - 108.75	Auto	0.2290
L12	44	PL 1.25x5	104.17 - 108.75	Auto	0.2290
L12	47	PL 1.25x5	104.17 - 108.75	Auto	0.2290
L12	48	PL 1.25x5	104.17 - 108.75	Auto	0.2290
L12	55	PL 2x6	104.17 - 108.67	Manual	1.0000
L12	56	PL 2x6	104.17 - 106.00	Manual	1.0000
L12	57	PL 2x6	104.17 - 108.67	Manual	1.0000
L12	58	PL 2x6	104.17 - 107.75	Manual	1.0000
L13	43	PL 1.25x5	103.92 - 104.17	Auto	0.3569
L13	44	PL 1.25x5	103.92 - 104.17	Auto	0.3569
L13	47	PL 1.25x5	103.92 - 104.17	Auto	0.3569
L13	48	PL 1.25x5	103.92 - 104.17	Auto	0.3569
L13	55	PL 2x6	103.92 - 104.17	Manual	1.0000
L13	56	PL 2x6	103.92 - 104.17	Manual	1.0000
L13	57	PL 2x6	103.92 - 104.17	Manual	1.0000
L13	58	PL 2x6	103.92 - 104.17	Manual	1.0000
L14	43	PL 1.25x5	103.17 - 103.92	Auto	0.3528
L14	44	PL 1.25x5	103.17 - 103.92	Auto	0.3528
L14	47	PL 1.25x5	103.17 - 103.92	Auto	0.3528
L14	48	PL 1.25x5	103.17 - 103.92	Auto	0.3528
L14	55	PL 2x6	103.17 - 103.92	Manual	1.0000
L14	56	PL 2x6	103.17 - 103.92	Manual	1.0000
L14	57	PL 2x6	103.17 - 103.92	Manual	1.0000
L14	58	PL 2x6	103.17 - 103.92	Manual	1.0000
L15	43	PL 1.25x5	102.92 - 103.17	Auto	0.4292
L15	44	PL 1.25x5	102.92 - 103.17	Auto	0.4292
L15	45	PL 1.25x5	102.92 - 103.17	Auto	0.4292
L15	47	PL 1.25x5	102.92 - 103.17	Auto	0.4292
L15	48	PL 1.25x5	102.92 - 103.17	Auto	0.4292

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L15	55	PL 2x6	102.92 - 103.17	Manual	1.0000
L15	56	PL 2x6	102.92 - 103.17	Manual	1.0000
L15	57	PL 2x6	102.92 - 103.17	Manual	1.0000
L15	58	PL 2x6	102.92 - 103.17	Manual	1.0000
L16	43	PL 1.25x5	102.42 - 102.92	Auto	0.4262
L16	44	PL 1.25x5	102.42 - 102.92	Auto	0.4262
L16	45	PL 1.25x5	102.42 - 102.92	Auto	0.4262
L16	47	PL 1.25x5	102.42 - 102.92	Auto	0.4262
L16	48	PL 1.25x5	102.42 - 102.92	Auto	0.4262
L16	55	PL 2x6	102.42 - 102.92	Manual	1.0000
L16	56	PL 2x6	102.42 - 102.92	Manual	1.0000
L16	57	PL 2x6	102.42 - 102.92	Manual	1.0000
L16	58	PL 2x6	102.42 - 102.92	Manual	1.0000
L17	43	PL 1.25x5	102.17 - 102.42	Auto	0.3293
L17	44	PL 1.25x5	102.17 - 102.42	Auto	0.3293
L17	45	PL 1.25x5	102.17 - 102.42	Auto	0.3293
L17	47	PL 1.25x5	102.17 - 102.42	Auto	0.3293
L17	48	PL 1.25x5	102.17 - 102.42	Auto	0.3293
L17	55	PL 2x6	102.17 - 102.42	Manual	1.0000
L17	56	PL 2x6	102.17 - 102.42	Manual	1.0000
L17	57	PL 2x6	102.17 - 102.42	Manual	1.0000
L17	58	PL 2x6	102.17 - 102.42	Manual	1.0000
L18	43	PL 1.25x5	100.92 - 102.17	Auto	0.3233
L18	44	PL 1.25x5	100.92 - 102.17	Auto	0.3233
L18	45	PL 1.25x5	100.92 - 102.17	Auto	0.3233
L18	47	PL 1.25x5	100.92 - 102.17	Auto	0.3233
L18	48	PL 1.25x5	100.92 - 102.17	Auto	0.3233
L18	55	PL 2x6	100.92 - 102.17	Manual	1.0000
L18	56	PL 2x6	100.92 - 102.17	Manual	1.0000
L18	57	PL 2x6	100.92 - 102.17	Manual	1.0000
L18	58	PL 2x6	100.92 -	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
			102.17		
L19	43	PL 1.25x5	100.67 - 100.92	Auto	0.3574
L19	44	PL 1.25x5	100.67 - 100.92	Auto	0.3574
L19	45	PL 1.25x5	100.67 - 100.92	Auto	0.3574
L19	47	PL 1.25x5	100.67 - 100.92	Auto	0.3574
L19	48	PL 1.25x5	100.67 - 100.92	Auto	0.3574
L19	55	PL 2x6	100.67 - 100.92	Manual	1.0000
L19	56	PL 2x6	100.67 - 100.92	Manual	1.0000
L19	57	PL 2x6	100.67 - 100.92	Manual	1.0000
L19	58	PL 2x6	100.67 - 100.92	Manual	1.0000
L20	43	PL 1.25x5	99.58 - 100.67	Auto	0.3386
L20	44	PL 1.25x5	99.58 - 100.67	Auto	0.3386
L20	45	PL 1.25x5	99.58 - 100.67	Auto	0.3386
L20	47	PL 1.25x5	100.17 - 100.67	Auto	0.3410
L20	48	PL 1.25x5	100.17 - 100.67	Auto	0.3410
L20	55	PL 2x6	99.58 - 100.67	Manual	1.0000
L20	56	PL 2x6	99.58 - 100.67	Manual	1.0000
L20	57	PL 2x6	99.58 - 100.67	Manual	1.0000
L20	58	PL 2x6	99.58 - 100.67	Manual	1.0000
L21	43	PL 1.25x5	99.33 - 99.58	Auto	0.5475
L21	44	PL 1.25x5	99.33 - 99.58	Auto	0.5475
L21	45	PL 1.25x5	99.33 - 99.58	Auto	0.5475
L21	55	PL 2x6	99.33 - 99.58	Manual	1.0000
L21	56	PL 2x6	99.33 - 99.58	Manual	1.0000
L21	57	PL 2x6	99.33 - 99.58	Manual	1.0000
L21	58	PL 2x6	99.33 - 99.58	Manual	1.0000
L22	43	PL 1.25x5	95.42 - 99.33	Auto	0.5039
L22	44	PL 1.25x5	95.42 - 99.33	Auto	0.5039
L22	45	PL 1.25x5	95.42 - 99.33	Auto	0.5039
L22	55	PL 2x6	95.42 - 99.33	Manual	1.0000
L22	56	PL 2x6	95.42 - 99.33	Manual	1.0000
L22	57	PL 2x6	95.42 - 99.33	Manual	1.0000
L22	58	PL 2x6	95.42 - 99.33	Manual	1.0000
L23	43	PL 1.25x5	95.17 - 95.42	Auto	0.3263
L23	44	PL 1.25x5	95.17 - 95.42	Auto	0.3263
L23	45	PL 1.25x5	95.17 - 95.42	Auto	0.3263
L23	55	PL 2x6	95.17 - 95.42	Manual	1.0000
L23	56	PL 2x6	95.17 - 95.42	Manual	1.0000
L23	57	PL 2x6	95.17 - 95.42	Manual	1.0000
L23	58	PL 2x6	95.17 - 95.42	Manual	1.0000
L24	43	PL 1.25x5	93.17 - 95.17	Auto	0.2904
L24	44	PL 1.25x5	93.17 - 95.17	Auto	0.2904
L24	45	PL 1.25x5	93.17 - 95.17	Auto	0.2904
L24	55	PL 2x6	90.17 - 95.17	Manual	1.0000
L24	56	PL 2x6	90.17 - 95.17	Manual	1.0000
L24	57	PL 2x6	90.17 - 95.17	Manual	1.0000
L24	58	PL 2x6	90.17 - 95.17	Manual	1.0000
L25	55	PL 2x6	85.17 - 90.17	Manual	1.0000
L25	56	PL 2x6	85.17 - 90.17	Manual	1.0000
L25	57	PL 2x6	85.17 - 90.17	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L25	58	PL 2x6	85.17 - 90.17	Manual	1.0000
L26	38	PL 1.25x4	80.50 - 82.00	Auto	0.0000
L26	39	PL 1.25x4	80.50 - 82.00	Auto	0.0000
L26	40	PL 1.25x4	80.50 - 82.00	Auto	0.0000
L26	41	PL 1.25x4	80.50 - 82.00	Auto	0.0000
L26	55	PL 2x6	80.50 - 85.17	Manual	1.0000
L26	56	PL 2x6	80.50 - 85.17	Manual	1.0000
L26	57	PL 2x6	80.50 - 85.17	Manual	1.0000
L26	58	PL 2x6	80.50 - 85.17	Manual	1.0000
L27	38	PL 1.25x4	80.25 - 80.50	Auto	0.1744
L27	39	PL 1.25x4	80.25 - 80.50	Auto	0.1744
L27	40	PL 1.25x4	80.25 - 80.50	Auto	0.1744
L27	41	PL 1.25x4	80.25 - 80.50	Auto	0.1744
L27	55	PL 2x6	80.25 - 80.50	Manual	1.0000
L27	56	PL 2x6	80.25 - 80.50	Manual	1.0000
L27	57	PL 2x6	80.25 - 80.50	Manual	1.0000
L27	58	PL 2x6	80.25 - 80.50	Manual	1.0000
L28	38	PL 1.25x4	75.25 - 80.25	Auto	0.1143
L28	39	PL 1.25x4	75.25 - 80.25	Auto	0.1143
L28	40	PL 1.25x4	75.25 - 80.25	Auto	0.1143
L28	41	PL 1.25x4	75.25 - 80.25	Auto	0.1143
L28	55	PL 2x6	75.25 - 80.25	Manual	1.0000
L28	56	PL 2x6	75.25 - 80.25	Manual	1.0000
L28	57	PL 2x6	75.25 - 80.25	Manual	1.0000
L28	58	PL 2x6	75.25 - 80.25	Manual	1.0000
L29	38	PL 1.25x4	73.58 - 75.25	Auto	0.0806
L29	39	PL 1.25x4	73.58 - 75.25	Auto	0.0806
L29	40	PL 1.25x4	73.58 - 75.25	Auto	0.0806
L29	41	PL 1.25x4	73.58 - 75.25	Auto	0.0806
L29	55	PL 2x6	73.58 - 75.25	Manual	1.0000
L29	56	PL 2x6	73.58 - 75.25	Manual	1.0000
L29	57	PL 2x6	73.58 - 75.25	Manual	1.0000
L29	58	PL 2x6	73.58 - 75.25	Manual	1.0000
L30	38	PL 1.25x4	73.33 - 73.58	Auto	0.0541
L30	39	PL 1.25x4	73.33 - 73.58	Auto	0.0541
L30	40	PL 1.25x4	73.33 - 73.58	Auto	0.0541
L30	41	PL 1.25x4	73.33 - 73.58	Auto	0.0541
L30	55	PL 2x6	73.33 - 73.58	Manual	1.0000
L30	56	PL 2x6	73.33 - 73.58	Manual	1.0000
L30	57	PL 2x6	73.33 - 73.58	Manual	1.0000
L30	58	PL 2x6	73.33 - 73.58	Manual	1.0000
L31	38	PL 1.25x4	69.00 - 73.33	Auto	0.0310
L31	39	PL 1.25x4	69.00 - 73.33	Auto	0.0310
L31	40	PL 1.25x4	69.00 - 73.33	Auto	0.0310
L31	41	PL 1.25x4	69.00 - 73.33	Auto	0.0310
L31	55	PL 2x6	69.00 - 73.33	Manual	1.0000
L31	56	PL 2x6	69.00 - 73.33	Manual	1.0000
L31	57	PL 2x6	69.00 - 73.33	Manual	1.0000
L31	58	PL 2x6	69.00 - 73.33	Manual	1.0000
L32	33	PL 1.25x5	67.00 - 69.00	Auto	0.2571
L32	34	PL 1.25x5	67.00 - 69.00	Auto	0.2571
L32	35	PL 1.25x5	67.00 - 69.00	Auto	0.2571
L32	36	PL 1.25x5	67.00 - 69.00	Auto	0.2571
L32	38	PL 1.25x4	67.00 - 69.00	Auto	0.0714
L32	39	PL 1.25x4	67.00 - 69.00	Auto	0.0714
L32	40	PL 1.25x4	67.00 - 69.00	Auto	0.0714
L32	41	PL 1.25x4	67.00 - 69.00	Auto	0.0714
L32	55	PL 2x6	67.00 - 69.00	Manual	1.0000
L32	56	PL 2x6	67.00 - 69.00	Manual	1.0000
L32	57	PL 2x6	67.00 - 69.00	Manual	1.0000
L32	58	PL 2x6	67.00 - 69.00	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L33	33	PL 1.25x5	66.75 - 67.00	Auto	0.2473
L33	34	PL 1.25x5	66.75 - 67.00	Auto	0.2473
L33	35	PL 1.25x5	66.75 - 67.00	Auto	0.2473
L33	36	PL 1.25x5	66.75 - 67.00	Auto	0.2473
L33	38	PL 1.25x4	66.75 - 67.00	Auto	0.0592
L33	39	PL 1.25x4	66.75 - 67.00	Auto	0.0592
L33	40	PL 1.25x4	66.75 - 67.00	Auto	0.0592
L33	41	PL 1.25x4	66.75 - 67.00	Auto	0.0592
L33	55	PL 2x6	66.75 - 67.00	Manual	1.0000
L33	56	PL 2x6	66.75 - 67.00	Manual	1.0000
L33	57	PL 2x6	66.75 - 67.00	Manual	1.0000
L33	58	PL 2x6	66.75 - 67.00	Manual	1.0000
L34	33	PL 1.25x5	66.50 - 66.75	Auto	0.2854
L34	34	PL 1.25x5	66.50 - 66.75	Auto	0.2854
L34	35	PL 1.25x5	66.50 - 66.75	Auto	0.2854
L34	36	PL 1.25x5	66.50 - 66.75	Auto	0.2854
L34	38	PL 1.25x4	66.50 - 66.75	Auto	0.1067
L34	39	PL 1.25x4	66.50 - 66.75	Auto	0.1067
L34	40	PL 1.25x4	66.50 - 66.75	Auto	0.1067
L34	41	PL 1.25x4	66.50 - 66.75	Auto	0.1067
L34	55	PL 2x6	66.50 - 66.75	Manual	1.0000
L34	56	PL 2x6	66.50 - 66.75	Manual	1.0000
L34	57	PL 2x6	66.50 - 66.75	Manual	1.0000
L34	58	PL 2x6	66.50 - 66.75	Manual	1.0000
L35	33	PL 1.25x5	61.50 - 66.50	Auto	0.2358
L35	34	PL 1.25x5	61.50 - 66.50	Auto	0.2358
L35	35	PL 1.25x5	61.50 - 66.50	Auto	0.2358
L35	36	PL 1.25x5	61.50 - 66.50	Auto	0.2358
L35	55	PL 2x6	61.50 - 66.50	Manual	1.0000
L35	56	PL 2x6	61.50 - 66.50	Manual	1.0000
L35	57	PL 2x6	61.50 - 66.50	Manual	1.0000
L35	58	PL 2x6	61.50 - 66.50	Manual	1.0000
L36	33	PL 1.25x5	56.50 - 61.50	Auto	0.1790
L36	34	PL 1.25x5	56.50 - 61.50	Auto	0.1790
L36	35	PL 1.25x5	56.50 - 61.50	Auto	0.1790
L36	36	PL 1.25x5	56.50 - 61.50	Auto	0.1790
L36	55	PL 2x6	56.50 - 61.50	Manual	1.0000
L36	56	PL 2x6	56.50 - 61.50	Manual	1.0000
L36	57	PL 2x6	56.50 - 61.50	Manual	1.0000
L36	58	PL 2x6	56.50 - 61.50	Manual	1.0000
L37	33	PL 1.25x5	51.50 - 56.50	Auto	0.1088
L37	34	PL 1.25x5	51.50 - 56.50	Auto	0.1088
L37	35	PL 1.25x5	51.50 - 56.50	Auto	0.1088
L37	36	PL 1.25x5	51.50 - 56.50	Auto	0.1088
L37	55	PL 2x6	51.50 - 56.50	Manual	1.0000
L37	56	PL 2x6	51.50 - 56.50	Manual	1.0000
L37	57	PL 2x6	51.50 - 56.50	Manual	1.0000
L37	58	PL 2x6	51.50 - 56.50	Manual	1.0000
L38	33	PL 1.25x5	48.25 - 51.50	Auto	0.0595
L38	34	PL 1.25x5	48.25 - 51.50	Auto	0.0595
L38	35	PL 1.25x5	48.25 - 51.50	Auto	0.0595
L38	36	PL 1.25x5	48.25 - 51.50	Auto	0.0595
L38	55	PL 2x6	48.25 - 51.50	Manual	1.0000
L38	56	PL 2x6	48.25 - 51.50	Manual	1.0000
L38	57	PL 2x6	48.25 - 51.50	Manual	1.0000
L38	58	PL 2x6	48.25 - 51.50	Manual	1.0000
L39	33	PL 1.25x5	48.00 - 48.25	Auto	0.2588
L39	34	PL 1.25x5	48.00 - 48.25	Auto	0.2588
L39	35	PL 1.25x5	48.00 - 48.25	Auto	0.2588
L39	36	PL 1.25x5	48.00 - 48.25	Auto	0.2588
L39	55	PL 2x6	48.00 - 48.25	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L39	56	PL 2x6	48.00 - 48.25	Manual	1.0000
L39	57	PL 2x6	48.00 - 48.25	Manual	1.0000
L39	58	PL 2x6	48.00 - 48.25	Manual	1.0000
L40	28	(Area) CCI-65FP-065125 (H)	44.25 - 47.00	Auto	0.3925
L40	29	(Area) CCI-65FP-065125 (H)	44.25 - 47.00	Auto	0.3925
L40	30	(Area) CCI-65FP-065125 (H)	44.25 - 47.00	Auto	0.3925
L40	31	(Area) CCI-65FP-065125 (H)	44.25 - 47.00	Auto	0.3925
L40	33	PL 1.25x5	47.00 - 48.00	Auto	0.2265
L40	34	PL 1.25x5	47.00 - 48.00	Auto	0.2265
L40	35	PL 1.25x5	47.00 - 48.00	Auto	0.2265
L40	36	PL 1.25x5	47.00 - 48.00	Auto	0.2265
L40	55	PL 2x6	44.25 - 48.00	Manual	1.0000
L40	56	PL 2x6	44.25 - 48.00	Manual	1.0000
L40	57	PL 2x6	44.25 - 48.00	Manual	1.0000
L40	58	PL 2x6	44.25 - 48.00	Manual	1.0000
L41	28	(Area) CCI-65FP-065125 (H)	44.00 - 44.25	Auto	0.4237
L41	29	(Area) CCI-65FP-065125 (H)	44.00 - 44.25	Auto	0.4237
L41	30	(Area) CCI-65FP-065125 (H)	44.00 - 44.25	Auto	0.4237
L41	31	(Area) CCI-65FP-065125 (H)	44.00 - 44.25	Auto	0.4237
L41	55	PL 2x6	44.00 - 44.25	Manual	1.0000
L41	56	PL 2x6	44.00 - 44.25	Manual	1.0000
L41	57	PL 2x6	44.00 - 44.25	Manual	1.0000
L41	58	PL 2x6	44.00 - 44.25	Manual	1.0000
L42	28	(Area) CCI-65FP-065125 (H)	39.00 - 44.00	Auto	0.3856
L42	29	(Area) CCI-65FP-065125 (H)	39.00 - 44.00	Auto	0.3856
L42	30	(Area) CCI-65FP-065125 (H)	39.00 - 44.00	Auto	0.3856
L42	31	(Area) CCI-65FP-065125 (H)	39.00 - 44.00	Auto	0.3856
L42	55	PL 2x6	39.00 - 44.00	Manual	1.0000
L42	56	PL 2x6	39.00 - 44.00	Manual	1.0000
L42	57	PL 2x6	39.00 - 44.00	Manual	1.0000
L42	58	PL 2x6	39.00 - 44.00	Manual	1.0000
L43	28	(Area) CCI-65FP-065125 (H)	38.50 - 39.00	Auto	0.3672
L43	29	(Area) CCI-65FP-065125 (H)	38.50 - 39.00	Auto	0.3672
L43	30	(Area) CCI-65FP-065125 (H)	38.50 - 39.00	Auto	0.3672
L43	31	(Area) CCI-65FP-065125 (H)	38.50 - 39.00	Auto	0.3672
L43	55	PL 2x6	38.50 - 39.00	Manual	1.0000
L43	56	PL 2x6	38.50 - 39.00	Manual	1.0000
L43	57	PL 2x6	38.50 - 39.00	Manual	1.0000
L43	58	PL 2x6	38.50 - 39.00	Manual	1.0000
L44	28	(Area) CCI-65FP-065125 (H)	38.25 - 38.50	Auto	0.3647
L44	29	(Area) CCI-65FP-065125 (H)	38.25 - 38.50	Auto	0.3647
L44	30	(Area) CCI-65FP-065125 (H)	38.25 - 38.50	Auto	0.3647
L44	31	(Area) CCI-65FP-065125 (H)	38.25 - 38.50	Auto	0.3647
L44	55	PL 2x6	38.25 - 38.50	Manual	1.0000
L44	56	PL 2x6	38.25 - 38.50	Manual	1.0000
L44	57	PL 2x6	38.25 - 38.50	Manual	1.0000
L44	58	PL 2x6	38.25 - 38.50	Manual	1.0000
L45	28	(Area) CCI-65FP-065125 (H)	30.00 - 38.25	Auto	0.3157
L45	29	(Area) CCI-65FP-065125 (H)	30.00 - 38.25	Auto	0.3157
L45	30	(Area) CCI-65FP-065125 (H)	30.00 - 38.25	Auto	0.3157
L45	31	(Area) CCI-65FP-065125 (H)	30.00 - 38.25	Auto	0.3157
L45	55	PL 2x6	30.00 - 38.25	Manual	1.0000
L45	56	PL 2x6	30.00 - 38.25	Manual	1.0000
L45	57	PL 2x6	30.00 - 38.25	Manual	1.0000
L45	58	PL 2x6	30.00 - 38.25	Manual	1.0000
L46	28	(Area) CCI-65FP-065125 (H)	29.00 - 30.00	Auto	0.3583
L46	29	(Area) CCI-65FP-065125 (H)	29.00 - 30.00	Auto	0.3583
L46	30	(Area) CCI-65FP-065125 (H)	29.00 - 30.00	Auto	0.3583
L46	31	(Area) CCI-65FP-065125 (H)	29.00 - 30.00	Auto	0.3583
L46	55	PL 2x6	29.00 - 30.00	Manual	1.0000
L46	56	PL 2x6	29.00 - 30.00	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L46	57	PL 2x6	29.00 - 30.00	Manual	1.0000
L46	58	PL 2x6	29.00 - 30.00	Manual	1.0000
L47	28	(Area) CCI-65FP-065125 (H)	24.00 - 29.00	Auto	0.3168
L47	29	(Area) CCI-65FP-065125 (H)	24.00 - 29.00	Auto	0.3168
L47	30	(Area) CCI-65FP-065125 (H)	24.00 - 29.00	Auto	0.3168
L47	31	(Area) CCI-65FP-065125 (H)	24.00 - 29.00	Auto	0.3168
L47	55	PL 2x6	24.00 - 29.00	Manual	1.0000
L47	56	PL 2x6	24.00 - 29.00	Manual	1.0000
L47	57	PL 2x6	24.00 - 29.00	Manual	1.0000
L47	58	PL 2x6	24.00 - 29.00	Manual	1.0000
L48	28	(Area) CCI-65FP-065125 (H)	23.75 - 24.00	Auto	0.2985
L48	29	(Area) CCI-65FP-065125 (H)	23.75 - 24.00	Auto	0.2985
L48	30	(Area) CCI-65FP-065125 (H)	23.75 - 24.00	Auto	0.2985
L48	31	(Area) CCI-65FP-065125 (H)	23.75 - 24.00	Auto	0.2985
L48	55	PL 2x6	23.75 - 24.00	Manual	1.0000
L48	56	PL 2x6	23.75 - 24.00	Manual	1.0000
L48	57	PL 2x6	23.75 - 24.00	Manual	1.0000
L48	58	PL 2x6	23.75 - 24.00	Manual	1.0000
L49	28	(Area) CCI-65FP-065125 (H)	23.50 - 23.75	Auto	0.2864
L49	29	(Area) CCI-65FP-065125 (H)	23.50 - 23.75	Auto	0.2864
L49	30	(Area) CCI-65FP-065125 (H)	23.50 - 23.75	Auto	0.2864
L49	31	(Area) CCI-65FP-065125 (H)	23.50 - 23.75	Auto	0.2864
L49	55	PL 2x6	23.50 - 23.75	Manual	1.0000
L49	56	PL 2x6	23.50 - 23.75	Manual	1.0000
L49	57	PL 2x6	23.50 - 23.75	Manual	1.0000
L49	58	PL 2x6	23.50 - 23.75	Manual	1.0000
L50	28	(Area) CCI-65FP-065125 (H)	18.50 - 23.50	Auto	0.2578
L50	29	(Area) CCI-65FP-065125 (H)	18.50 - 23.50	Auto	0.2578
L50	30	(Area) CCI-65FP-065125 (H)	18.50 - 23.50	Auto	0.2578
L50	31	(Area) CCI-65FP-065125 (H)	18.50 - 23.50	Auto	0.2578
L50	55	PL 2x6	18.50 - 23.50	Manual	1.0000
L50	56	PL 2x6	18.50 - 23.50	Manual	1.0000
L50	57	PL 2x6	18.50 - 23.50	Manual	1.0000
L50	58	PL 2x6	18.50 - 23.50	Manual	1.0000
L51	28	(Area) CCI-65FP-065125 (H)	13.50 - 18.50	Auto	0.2024
L51	29	(Area) CCI-65FP-065125 (H)	13.50 - 18.50	Auto	0.2024
L51	30	(Area) CCI-65FP-065125 (H)	13.50 - 18.50	Auto	0.2024
L51	31	(Area) CCI-65FP-065125 (H)	13.50 - 18.50	Auto	0.2024
L51	55	PL 2x6	13.50 - 18.50	Manual	1.0000
L51	56	PL 2x6	13.50 - 18.50	Manual	1.0000
L51	57	PL 2x6	13.50 - 18.50	Manual	1.0000
L51	58	PL 2x6	13.50 - 18.50	Manual	1.0000
L52	28	(Area) CCI-65FP-065125 (H)	8.50 - 13.50	Auto	0.1573
L52	29	(Area) CCI-65FP-065125 (H)	8.50 - 13.50	Auto	0.1573
L52	30	(Area) CCI-65FP-065125 (H)	8.50 - 13.50	Auto	0.1573
L52	31	(Area) CCI-65FP-065125 (H)	8.50 - 13.50	Auto	0.1573
L52	55	PL 2x6	8.50 - 13.50	Manual	1.0000
L52	56	PL 2x6	8.50 - 13.50	Manual	1.0000
L52	57	PL 2x6	8.50 - 13.50	Manual	1.0000
L52	58	PL 2x6	8.50 - 13.50	Manual	1.0000
L53	28	(Area) CCI-65FP-065125 (H)	3.50 - 8.50	Auto	0.1018
L53	29	(Area) CCI-65FP-065125 (H)	3.50 - 8.50	Auto	0.1018
L53	30	(Area) CCI-65FP-065125 (H)	3.50 - 8.50	Auto	0.1018
L53	31	(Area) CCI-65FP-065125 (H)	3.50 - 8.50	Auto	0.1018
L53	55	PL 2x6	3.50 - 8.50	Manual	1.0000
L53	56	PL 2x6	3.50 - 8.50	Manual	1.0000
L53	57	PL 2x6	3.50 - 8.50	Manual	1.0000
L53	58	PL 2x6	3.50 - 8.50	Manual	1.0000
L54	28	(Area) CCI-65FP-065125 (H)	0.00 - 3.50	Auto	0.0619
L54	29	(Area) CCI-65FP-065125 (H)	0.00 - 3.50	Auto	0.0619
L54	30	(Area) CCI-65FP-065125 (H)	0.00 - 3.50	Auto	0.0619

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L54	31	(Area) CCI-65FP-065125 (H)	0.00 - 3.50	Auto	0.0619
L54	55	PL 2x6	0.00 - 3.50	Manual	1.0000
L54	56	PL 2x6	0.00 - 3.50	Manual	1.0000
L54	57	PL 2x6	0.00 - 3.50	Manual	1.0000
L54	58	PL 2x6	0.00 - 3.50	Manual	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
***									
QS66512-2	A	From Centroid-Leg	4.000 0.00 2.00	0.0000	152.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.010 4.410 4.810 5.650	3.370 3.760 4.150 4.970	0.11 0.17 0.23 0.38
QS66512-2	B	From Centroid-Leg	4.000 0.00 2.00	0.0000	152.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.010 4.410 4.810 5.650	3.370 3.760 4.150 4.970	0.11 0.17 0.23 0.38
QS66512-2	C	From Centroid-Leg	4.000 0.00 2.00	0.0000	152.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.010 4.410 4.810 5.650	3.370 3.760 4.150 4.970	0.11 0.17 0.23 0.38
HPA-65R-BUU-H6	A	From Centroid-Leg	4.000 0.00 2.00	0.0000	152.000	No Ice 1/2" Ice 1" Ice 2" Ice	9.220 10.000 10.790 12.430	4.650 5.360 6.090 7.600	0.05 0.11 0.17 0.32
HPA-65R-BUU-H6	B	From Centroid-Leg	4.000 0.00 2.00	0.0000	152.000	No Ice 1/2" Ice 1" Ice 2" Ice	9.220 10.000 10.790 12.430	4.650 5.360 6.090 7.600	0.05 0.11 0.17 0.32
HPA-65R-BUU-H6	C	From Centroid-Leg	4.000 0.00 2.00	0.0000	152.000	No Ice 1/2" Ice 1" Ice 2" Ice	9.220 10.000 10.790 12.430	4.650 5.360 6.090 7.600	0.05 0.11 0.17 0.32
DMP65R-BU6D	A	From Centroid-Leg	4.000 0.00 2.00	0.0000	152.000	No Ice 1/2" Ice 1" Ice 2" Ice	11.930 12.680 13.450 15.030	4.480 5.120 5.780 7.160	0.09 0.16 0.24 0.43
DMP65R-BU6D	B	From Centroid-Leg	4.000 0.00 2.00	0.0000	152.000	No Ice 1/2" Ice 1" Ice 2" Ice	11.930 12.680 13.450 15.030	4.480 5.120 5.780 7.160	0.09 0.16 0.24 0.43
DMP65R-BU6D	C	From Centroid-Leg	4.000 0.00 2.00	0.0000	152.000	No Ice 1/2" Ice 1" Ice 2" Ice	11.930 12.680 13.450 15.030	4.480 5.120 5.780 7.160	0.09 0.16 0.24 0.43
DC6-48-60-18-8F	A	From Centroid-Leg	4.000 0.00	0.0000	152.000	No Ice 1/2" Ice	1.212 1.892	1.212 1.892	0.03 0.05

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
		g	2.00			1" Ice	2.105	2.105	0.08
						2" Ice	2.570	2.570	0.14
DC6-48-60-18-8F	B	From Centroid-Le g	4.000 0.00 2.00	0.0000	152.000	No Ice 1/2" Ice 1" Ice	1.212 1.892 2.105	1.212 1.892 2.105	0.03 0.05 0.08
						2" Ice	2.570	2.570	0.14
(2) TPX-070821	A	From Centroid-Le g	4.000 0.00 2.00	0.0000	152.000	No Ice 1/2" Ice 1" Ice	0.469 0.559 0.656	0.101 0.147 0.202	0.01 0.01 0.02
						2" Ice	0.872	0.334	0.03
(2) TPX-070821	B	From Centroid-Le g	4.000 0.00 2.00	0.0000	152.000	No Ice 1/2" Ice 1" Ice	0.469 0.559 0.656	0.101 0.147 0.202	0.01 0.01 0.02
						2" Ice	0.872	0.334	0.03
(2) TPX-070821	C	From Centroid-Le g	4.000 0.00 2.00	0.0000	152.000	No Ice 1/2" Ice 1" Ice	0.469 0.559 0.656	0.101 0.147 0.202	0.01 0.01 0.02
						2" Ice	0.872	0.334	0.03
RRUS 32 B2	A	From Centroid-Le g	4.000 0.00 2.00	0.0000	152.000	No Ice 1/2" Ice 1" Ice	2.731 2.953 3.182	1.668 1.855 2.049	0.05 0.07 0.10
						2" Ice	3.663	2.458	0.16
RRUS 32 B2	B	From Centroid-Le g	4.000 0.00 2.00	0.0000	152.000	No Ice 1/2" Ice 1" Ice	2.731 2.953 3.182	1.668 1.855 2.049	0.05 0.07 0.10
						2" Ice	3.663	2.458	0.16
RRUS 32 B2	C	From Centroid-Le g	4.000 0.00 2.00	0.0000	152.000	No Ice 1/2" Ice 1" Ice	2.731 2.953 3.182	1.668 1.855 2.049	0.05 0.07 0.10
						2" Ice	3.663	2.458	0.16
RRUS 32 B30	A	From Centroid-Le g	4.000 0.00 2.00	0.0000	152.000	No Ice 1/2" Ice 1" Ice	2.731 2.953 3.182	1.668 1.855 2.049	0.05 0.07 0.10
						2" Ice	3.663	2.458	0.16
RRUS 32 B30	B	From Centroid-Le g	4.000 0.00 2.00	0.0000	152.000	No Ice 1/2" Ice 1" Ice	2.731 2.953 3.182	1.668 1.855 2.049	0.05 0.07 0.10
						2" Ice	3.663	2.458	0.16
RRUS 32 B30	C	From Centroid-Le g	4.000 0.00 2.00	0.0000	152.000	No Ice 1/2" Ice 1" Ice	2.731 2.953 3.182	1.668 1.855 2.049	0.05 0.07 0.10
						2" Ice	3.663	2.458	0.16
RRUS 32 B66a	A	From Centroid-Le g	4.000 0.00 2.00	0.0000	152.000	No Ice 1/2" Ice 1" Ice	2.852 3.078 3.311	1.780 1.971 2.169	0.06 0.08 0.10
						2" Ice	3.800	2.587	0.16
RRUS 32 B66a	B	From Centroid-Le g	4.000 0.00 2.00	0.0000	152.000	No Ice 1/2" Ice 1" Ice	2.852 3.078 3.311	1.780 1.971 2.169	0.06 0.08 0.10
						2" Ice	3.800	2.587	0.16
RRUS 32 B66a	C	From Centroid-Le g	4.000 0.00 2.00	0.0000	152.000	No Ice 1/2" Ice 1" Ice	2.852 3.078 3.311	1.780 1.971 2.169	0.06 0.08 0.10
						2" Ice	3.800	2.587	0.16
RRUS 4449 B5/B12	A	From Centroid-Le g	4.000 0.00 2.00	0.0000	152.000	No Ice 1/2" Ice 1" Ice	1.968 2.144 2.328	1.408 1.564 1.727	0.07 0.09 0.11

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	2.718	2.075	0.16
RRUS 4449 B5/B12	B	From Centroid-Leg	4.000 0.00 2.00	0.0000	152.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.968 2.144 2.328 2.718	1.408 1.564 1.727 2.075	0.07 0.09 0.11 0.16
RRUS 4449 B5/B12	C	From Centroid-Leg	4.000 0.00 2.00	0.0000	152.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.968 2.144 2.328 2.718	1.408 1.564 1.727 2.075	0.07 0.09 0.11 0.16
Platform Mount [LP 301-1]	C	None		0.0000	152.000	No Ice 1/2" Ice 1" Ice 2" Ice	23.810 30.240 36.330 48.050	23.810 30.240 36.330 48.050	1.59 2.10 2.73 4.34
*** ***									
NNVV-65B-R4 w/ Mount Pipe	A	From Centroid-Leg	4.000 0.00 2.00	0.0000	138.000	No Ice 1/2" Ice 1" Ice 2" Ice	7.550 8.040 8.530 9.560	4.230 4.670 5.120 6.050	0.11 0.20 0.30 0.53
NNVV-65B-R4 w/ Mount Pipe	B	From Centroid-Leg	4.000 0.00 2.00	0.0000	138.000	No Ice 1/2" Ice 1" Ice 2" Ice	7.550 8.040 8.530 9.560	4.230 4.670 5.120 6.050	0.11 0.20 0.30 0.53
NNVV-65B-R4 w/ Mount Pipe	C	From Centroid-Leg	4.000 0.00 2.00	0.0000	138.000	No Ice 1/2" Ice 1" Ice 2" Ice	7.550 8.040 8.530 9.560	4.230 4.670 5.120 6.050	0.11 0.20 0.30 0.53
AAHC w/ Mount Pipe	A	From Centroid-Leg	4.000 0.00 2.00	0.0000	138.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.409 4.727 5.055 5.743	2.691 3.079 3.486 4.359	0.12 0.16 0.20 0.31
AAHC w/ Mount Pipe	B	From Centroid-Leg	4.000 0.00 2.00	0.0000	138.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.409 4.727 5.055 5.743	2.691 3.079 3.486 4.359	0.12 0.16 0.20 0.31
AAHC w/ Mount Pipe	C	From Centroid-Leg	4.000 0.00 2.00	0.0000	138.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.409 4.727 5.055 5.743	2.691 3.079 3.486 4.359	0.12 0.16 0.20 0.31
HORIZON COMPACT	B	From Centroid-Leg	4.000 0.00 5.00	0.0000	138.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.721 0.828 0.942 1.193	0.372 0.454 0.543 0.745	0.01 0.02 0.03 0.05
HORIZON COMPACT	C	From Centroid-Leg	4.000 0.00 5.00	0.0000	138.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.721 0.828 0.942 1.193	0.372 0.454 0.543 0.745	0.01 0.02 0.03 0.05
CW JUNCTION BOX	C	From Centroid-Leg	4.000 0.00 5.00	0.0000	138.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.200 1.337 1.481 1.793	0.600 0.704 0.815 1.059	0.00 0.01 0.02 0.05
(3) RRH2X50-800	A	From Centroid-Leg	4.000 0.00 2.00	0.0000	138.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.134 2.320 2.512 2.920	1.773 1.946 2.127 2.510	0.05 0.07 0.10 0.16
(3) RRH2X50-800	C	From Centroid-Le	4.000 0.00	0.0000	138.000	No Ice 1/2" Ice	2.134 2.320	1.773 1.946	0.05 0.07

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
		g	2.00			1" Ice	2.512	2.127	0.10
						2" Ice	2.920	2.510	0.16
(3) PCS 1900MHZ 4X45W-65MHZ	B	From Centroid-Le g	4.000 0.00 2.00	0.0000	138.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.322 2.527 2.739 3.185	2.238 2.441 2.651 3.093	0.06 0.08 0.11 0.17
Platform Mount [LP 715-1]	C	None		0.0000	138.000	No Ice 1/2" Ice 1" Ice 2" Ice	46.770 50.250 53.970 62.220	46.770 50.250 53.970 62.220	1.77 2.88 4.09 6.81
***									
AIR -32 B2A/B66AA	A	From Centroid-Fa ce	4.000 0.00 0.00	0.0000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.860 4.230 4.610 5.410	2.510 2.860 3.220 3.970	0.17 0.22 0.27 0.40
AIR -32 B2A/B66AA	B	From Centroid-Fa ce	4.000 0.00 0.00	0.0000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.860 4.230 4.610 5.410	2.510 2.860 3.220 3.970	0.17 0.22 0.27 0.40
AIR -32 B2A/B66AA	C	From Centroid-Fa ce	4.000 0.00 0.00	0.0000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.860 4.230 4.610 5.410	2.510 2.860 3.220 3.970	0.17 0.22 0.27 0.40
AIR 21 B2A/B4P	A	From Centroid-Fa ce	4.000 0.00 0.00	0.0000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.190 3.510 3.850 4.530	1.980 2.280 2.580 3.230	0.08 0.12 0.17 0.28
AIR 21 B2A/B4P	B	From Centroid-Fa ce	4.000 0.00 0.00	0.0000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.190 3.510 3.850 4.530	1.980 2.280 2.580 3.230	0.08 0.12 0.17 0.28
AIR 21 B2A/B4P	C	From Centroid-Fa ce	4.000 0.00 0.00	0.0000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.190 3.510 3.850 4.530	1.980 2.280 2.580 3.230	0.08 0.12 0.17 0.28
APXVAARR24_43-U-NA20	A	From Centroid-Fa ce	4.000 0.00 0.00	0.0000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	14.670 15.430 16.210 17.810	5.320 5.990 6.680 8.080	0.15 0.27 0.39 0.66
APXVAARR24_43-U-NA20	B	From Centroid-Fa ce	4.000 0.00 0.00	0.0000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	14.670 15.430 16.210 17.810	5.320 5.990 6.680 8.080	0.15 0.27 0.39 0.66
APXVAARR24_43-U-NA20	C	From Centroid-Fa ce	4.000 0.00 0.00	0.0000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	14.670 15.430 16.210 17.810	5.320 5.990 6.680 8.080	0.15 0.27 0.39 0.66
AIR6449 B41	A	From Centroid-Fa ce	4.000 0.00 0.00	0.0000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	5.682 5.984 6.294 6.935	2.491 2.718 2.952 3.442	0.10 0.14 0.19 0.29
AIR6449 B41	B	From Centroid-Fa ce	4.000 0.00 0.00	0.0000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	5.682 5.984 6.294 6.935	2.491 2.718 2.952 3.442	0.10 0.14 0.19 0.29
AIR6449 B41	C	From Centroid-Fa	4.000 0.00	0.0000	120.000	No Ice 1/2" Ice	5.682 5.984	2.491 2.718	0.10 0.14

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
		ce	0.00			1" Ice	6.294	2.952	0.19
						2" Ice	6.935	3.442	0.29
KRY 112 144/1	A	From Centroid-Face	4.000 0.00 0.00	0.0000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.350 0.426 0.509 0.698	0.175 0.234 0.301 0.456	0.01 0.01 0.02 0.03
KRY 112 144/1	B	From Centroid-Face	4.000 0.00 0.00	0.0000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.350 0.426 0.509 0.698	0.175 0.234 0.301 0.456	0.01 0.01 0.02 0.03
KRY 112 144/1	C	From Centroid-Face	4.000 0.00 0.00	0.0000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.350 0.426 0.509 0.698	0.175 0.234 0.301 0.456	0.01 0.01 0.02 0.03
RADIO 4449 B71 B85A_T-MOBILE	A	From Centroid-Face	4.000 0.00 0.00	0.0000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.970 2.147 2.331 2.721	1.587 1.749 1.918 2.280	0.07 0.09 0.12 0.17
RADIO 4449 B71 B85A_T-MOBILE	B	From Centroid-Face	4.000 0.00 0.00	0.0000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.970 2.147 2.331 2.721	1.587 1.749 1.918 2.280	0.07 0.09 0.12 0.17
RADIO 4449 B71 B85A_T-MOBILE	C	From Centroid-Face	4.000 0.00 0.00	0.0000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.970 2.147 2.331 2.721	1.587 1.749 1.918 2.280	0.07 0.09 0.12 0.17
RRUS 4415 B25_CCIV2	A	From Centroid-Face	4.000 0.00 0.00	0.0000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.843 2.012 2.190 2.566	0.820 0.943 1.075 1.368	0.05 0.06 0.08 0.12
RRUS 4415 B25_CCIV2	B	From Centroid-Face	4.000 0.00 0.00	0.0000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.843 2.012 2.190 2.566	0.820 0.943 1.075 1.368	0.05 0.06 0.08 0.12
RRUS 4415 B25_CCIV2	C	From Centroid-Face	4.000 0.00 0.00	0.0000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.843 2.012 2.190 2.566	0.820 0.943 1.075 1.368	0.05 0.06 0.08 0.12
Platform Mount [LP 301-1_KCKR]	C	None		0.0000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	35.030 44.460 53.720 72.290	35.030 44.460 53.720 72.290	1.86 2.52 3.33 5.42
***									
CBRS w/ Mount Pipe	A	From Face	4.000 0.00 1.00	0.0000	99.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.714 1.934 2.166 2.664	1.168 1.437 1.723 2.351	0.03 0.05 0.07 0.13
CBRS w/ Mount Pipe	B	From Face	4.000 0.00 1.00	0.0000	99.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.714 1.934 2.166 2.664	1.168 1.437 1.723 2.351	0.03 0.05 0.07 0.13
CBRS w/ Mount Pipe	C	From Face	4.000 0.00 1.00	0.0000	99.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.714 1.934 2.166 2.664	1.168 1.437 1.723 2.351	0.03 0.05 0.07 0.13
(2) JAHH-65A-R3B w/ Mount Pipe	A	From Face	4.000 0.00	0.0000	99.000	No Ice 1/2" Ice	3.350 3.640	2.610 2.890	0.07 0.13

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
			1.00			1" Ice	3.950	3.180	0.19
						2" Ice	4.590	3.790	0.35
(2) JAHH-65A-R3B w/ Mount Pipe	B	From Face	4.000 0.00 1.00	0.0000	99.000	No Ice 1/2" Ice 1" Ice	3.350 3.640 3.950	2.610 2.890 3.180	0.07 0.13 0.19
						2" Ice	4.590	3.790	0.35
(2) JAHH-65A-R3B w/ Mount Pipe	C	From Face	4.000 0.00 1.00	0.0000	99.000	No Ice 1/2" Ice 1" Ice	3.350 3.640 3.950	2.610 2.890 3.180	0.07 0.13 0.19
						2" Ice	4.590	3.790	0.35
BXA-70063/4CF w/ Mount Pipe	A	From Face	4.000 0.00 1.00	0.0000	99.000	No Ice 1/2" Ice 1" Ice	4.833 5.185 5.545	3.464 4.039 4.631	0.03 0.07 0.11
						2" Ice	6.289	5.850	0.23
BXA-70063/4CF w/ Mount Pipe	B	From Face	4.000 0.00 1.00	0.0000	99.000	No Ice 1/2" Ice 1" Ice	4.833 5.185 5.545	3.464 4.039 4.631	0.03 0.07 0.11
						2" Ice	6.289	5.850	0.23
BXA-70063/4CF w/ Mount Pipe	C	From Face	4.000 0.00 1.00	0.0000	99.000	No Ice 1/2" Ice 1" Ice	4.833 5.185 5.545	3.464 4.039 4.631	0.03 0.07 0.11
						2" Ice	6.289	5.850	0.23
(2) CBC78T-DS-43-2X	A	From Face	4.000 0.00 1.00	0.0000	99.000	No Ice 1/2" Ice 1" Ice	0.368 0.446 0.531	0.512 0.605 0.705	0.02 0.03 0.04
						2" Ice	0.723	0.927	0.06
CBC78T-DS-43-2X	B	From Face	4.000 0.00 1.00	0.0000	99.000	No Ice 1/2" Ice 1" Ice	0.368 0.446 0.531	0.512 0.605 0.705	0.02 0.03 0.04
						2" Ice	0.723	0.927	0.06
RFV01U-D1A	A	From Face	4.000 0.00 1.00	0.0000	99.000	No Ice 1/2" Ice 1" Ice	1.875 2.045 2.223	1.250 1.393 1.543	0.08 0.10 0.12
						2" Ice	2.601	1.865	0.18
RFV01U-D1A	B	From Face	4.000 0.00 1.00	0.0000	99.000	No Ice 1/2" Ice 1" Ice	1.875 2.045 2.223	1.250 1.393 1.543	0.08 0.10 0.12
						2" Ice	2.601	1.865	0.18
RFV01U-D1A	C	From Face	4.000 0.00 1.00	0.0000	99.000	No Ice 1/2" Ice 1" Ice	1.875 2.045 2.223	1.250 1.393 1.543	0.08 0.10 0.12
						2" Ice	2.601	1.865	0.18
RFV01U-D2A	A	From Face	4.000 0.00 1.00	0.0000	99.000	No Ice 1/2" Ice 1" Ice	1.875 2.045 2.223	1.013 1.145 1.284	0.07 0.09 0.11
						2" Ice	2.601	1.585	0.15
RFV01U-D2A	B	From Face	4.000 0.00 1.00	0.0000	99.000	No Ice 1/2" Ice 1" Ice	1.875 2.045 2.223	1.013 1.145 1.284	0.07 0.09 0.11
						2" Ice	2.601	1.585	0.15
RFV01U-D2A	C	From Face	4.000 0.00 1.00	0.0000	99.000	No Ice 1/2" Ice 1" Ice	1.875 2.045 2.223	1.013 1.145 1.284	0.07 0.09 0.11
						2" Ice	2.601	1.585	0.15
20W CBRS	A	From Face	4.000 0.00 1.00	0.0000	99.000	No Ice 1/2" Ice 1" Ice	0.857 0.975 1.101	0.420 0.510 0.608	0.02 0.03 0.03

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	1.374	0.833	0.06
(2) 20W CBRS	C	From Face	4.000 0.00 1.00	0.0000	99.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.857 0.975 1.101 1.374	0.420 0.510 0.608 0.833	0.02 0.03 0.03 0.06
DB-C1-12C-24AB-0Z	A	From Face	4.000 0.00 1.00	0.0000	99.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.056 4.316 4.582 5.138	3.098 3.335 3.580 4.092	0.03 0.07 0.11 0.20
T-Arm Mount [TA 602-3]	C	None		0.0000	99.000	No Ice 1/2" Ice 1" Ice 2" Ice	13.400 16.440 19.700 25.860	13.400 16.440 19.700 25.860	0.77 1.00 1.29 2.05
***									
Bridge Stiffener (76" x 10.5" x 1.25")	A	From Leg	0.500 0.00 0.00	0.0000	109.500	No Ice 1/2" Ice 1" Ice 2" Ice	1.319 2.041 2.775 3.929	7.802 8.288 8.766 9.742	0.28 0.31 0.35 0.45
Bridge Stiffener (76" x 10.5" x 1.25")	B	From Leg	0.500 0.00 0.00	0.0000	109.500	No Ice 1/2" Ice 1" Ice 2" Ice	1.319 2.041 2.775 3.929	7.802 8.288 8.766 9.742	0.28 0.31 0.35 0.45
Bridge Stiffener (76" x 10.5" x 1.25")	C	From Leg	0.500 0.00 0.00	0.0000	109.500	No Ice 1/2" Ice 1" Ice 2" Ice	1.319 2.041 2.775 3.929	7.802 8.288 8.766 9.742	0.28 0.31 0.35 0.45
***									

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
VHLP2-23	B	Paraboloid w/Shroud (HP)	From Centroid -Leg	4.000 0.00 5.00	60.0000		138.000	2.175	No Ice 1/2" Ice 1" Ice 2" Ice	3.720 4.010 4.300 4.880	0.03 0.05 0.07 0.11
VHLP2-18	C	Paraboloid w/Shroud (HP)	From Centroid -Leg	4.000 0.00 5.00	60.0000		138.000	2.175	No Ice 1/2" Ice 1" Ice 2" Ice	3.720 4.010 4.300 4.880	0.03 0.05 0.07 0.11

Load Combinations

Comb. No.	Description

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 Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 145	20.687	39	1.4554	0.0052
L2	145 - 140	19.177	39	1.4254	0.0052
L3	140 - 135	17.709	39	1.3758	0.0045

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L4	135 - 130	16.303	39	1.3060	0.0034
L5	130 - 128.5	14.983	39	1.2105	0.0023
L6	128.5 - 128.25	14.608	39	1.1783	0.0020
L7	128.25 - 123.25	14.546	39	1.1763	0.0020
L8	123.25 - 118.25	13.337	39	1.1318	0.0017
L9	118.25 - 113.25	12.179	39	1.0798	0.0014
L10	113.25 - 109	11.079	39	1.0197	0.0011
L11	109 - 108.75	10.196	39	0.9625	0.0009
L12	108.75 - 104.17	10.146	39	0.9595	0.0009
L13	104.17 - 103.92	9.253	39	0.9024	0.0007
L14	103.92 - 103.17	9.206	39	0.9000	0.0007
L15	103.17 - 102.92	9.065	39	0.8929	0.0007
L16	102.92 - 102.42	9.018	39	0.8907	0.0007
L17	102.42 - 102.17	8.925	39	0.8864	0.0007
L18	102.17 - 100.92	8.879	39	0.8839	0.0007
L19	100.92 - 100.67	8.649	39	0.8715	0.0007
L20	100.67 - 99.58	8.603	39	0.8691	0.0007
L21	99.58 - 99.33	8.406	39	0.8586	0.0006
L22	99.33 - 95.42	8.361	39	0.8568	0.0006
L23	95.42 - 95.17	7.672	39	0.8262	0.0006
L24	95.17 - 90.17	7.629	39	0.8237	0.0006
L25	90.17 - 85.17	6.794	39	0.7711	0.0006
L26	85.17 - 80.5	6.015	39	0.7155	0.0006
L27	80.5 - 80.25	5.342	39	0.6610	0.0005
L28	80.25 - 75.25	5.307	39	0.6588	0.0005
L29	75.25 - 73.58	4.642	39	0.6119	0.0005
L30	73.58 - 73.33	4.431	39	0.5963	0.0005
L31	73.33 - 69	4.399	39	0.5939	0.0005
L32	72 - 67	4.236	39	0.5811	0.0004
L33	67 - 66.75	3.642	39	0.5468	0.0004
L34	66.75 - 66.5	3.614	39	0.5443	0.0004
L35	66.5 - 61.5	3.585	39	0.5420	0.0004
L36	61.5 - 56.5	3.043	39	0.4938	0.0004
L37	56.5 - 51.5	2.551	39	0.4450	0.0003
L38	51.5 - 48.25	2.112	39	0.3950	0.0003
L39	48.25 - 48	1.854	39	0.3621	0.0003
L40	48 - 44.25	1.835	39	0.3602	0.0003
L41	44.25 - 44	1.564	39	0.3299	0.0003
L42	44 - 39	1.547	39	0.3280	0.0002
L43	39 - 38.5	1.224	39	0.2892	0.0002
L44	38.5 - 38.25	1.194	39	0.2853	0.0002
L45	38.25 - 30	1.179	39	0.2834	0.0002
L46	34 - 29	0.941	39	0.2500	0.0002
L47	29 - 24	0.690	39	0.2268	0.0002
L48	24 - 23.75	0.473	39	0.1880	0.0001
L49	23.75 - 23.5	0.463	39	0.1861	0.0001
L50	23.5 - 18.5	0.453	39	0.1841	0.0001
L51	18.5 - 13.5	0.281	39	0.1451	0.0001
L52	13.5 - 8.5	0.150	39	0.1058	0.0001
L53	8.5 - 3.5	0.059	39	0.0668	0.0000
L54	3.5 - 0	0.010	39	0.0275	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
152.000	QS66512-2	39	20.687	1.4554	0.0052	7108
143.000	VHLP2-23	39	18.584	1.4083	0.0050	5826
138.000	NNVV-65B-R4 w/ Mount Pipe	39	17.138	1.3498	0.0041	4195
120.000	AIR -32 B2A/B66AA	39	12.578	1.0986	0.0015	5379
109.500	Bridge Stiffener (76" x 10.5" x 1.25")	39	10.298	0.9685	0.0009	4411
99.000	CBRS w/ Mount Pipe	39	8.302	0.8544	0.0006	6671

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 145	96.006	2	6.7643	0.0239
L2	145 - 140	89.002	2	6.6263	0.0239
L3	140 - 135	82.191	2	6.3965	0.0208
L4	135 - 130	75.664	2	6.0713	0.0156
L5	130 - 128.5	69.541	2	5.6264	0.0107
L6	128.5 - 128.25	67.799	2	5.4762	0.0094
L7	128.25 - 123.25	67.513	2	5.4669	0.0093
L8	123.25 - 118.25	61.903	2	5.2596	0.0078
L9	118.25 - 113.25	56.526	2	5.0179	0.0064
L10	113.25 - 109	51.421	2	4.7381	0.0051
L11	109 - 108.75	47.325	2	4.4718	0.0041
L12	108.75 - 104.17	47.091	2	4.4583	0.0041
L13	104.17 - 103.92	42.945	2	4.1926	0.0034
L14	103.92 - 103.17	42.726	2	4.1815	0.0034
L15	103.17 - 102.92	42.072	2	4.1481	0.0033
L16	102.92 - 102.42	41.856	2	4.1381	0.0033
L17	102.42 - 102.17	41.424	2	4.1181	0.0033
L18	102.17 - 100.92	41.208	2	4.1065	0.0032
L19	100.92 - 100.67	40.142	2	4.0487	0.0031
L20	100.67 - 99.58	39.930	2	4.0377	0.0031
L21	99.58 - 99.33	39.015	2	3.9887	0.0030
L22	99.33 - 95.42	38.806	2	3.9801	0.0030
L23	95.42 - 95.17	35.607	2	3.8378	0.0029
L24	95.17 - 90.17	35.407	2	3.8264	0.0029
L25	90.17 - 85.17	31.530	2	3.5819	0.0028
L26	85.17 - 80.5	27.916	2	3.3232	0.0026
L27	80.5 - 80.25	24.790	2	3.0698	0.0024
L28	80.25 - 75.25	24.630	2	3.0594	0.0024
L29	75.25 - 73.58	21.541	2	2.8414	0.0022
L30	73.58 - 73.33	20.560	2	2.7691	0.0021
L31	73.33 - 69	20.416	2	2.7579	0.0021
L32	72 - 67	19.656	2	2.6982	0.0021
L33	67 - 66.75	16.900	2	2.5388	0.0020
L34	66.75 - 66.5	16.768	2	2.5274	0.0019
L35	66.5 - 61.5	16.636	2	2.5165	0.0019
L36	61.5 - 56.5	14.119	2	2.2924	0.0018
L37	56.5 - 51.5	11.837	2	2.0659	0.0016
L38	51.5 - 48.25	9.796	2	1.8334	0.0014
L39	48.25 - 48	8.600	2	1.6807	0.0013
L40	48 - 44.25	8.513	2	1.6716	0.0013
L41	44.25 - 44	7.255	2	1.5310	0.0012
L42	44 - 39	7.175	2	1.5222	0.0012
L43	39 - 38.5	5.676	2	1.3418	0.0010

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L44	38.5 - 38.25	5.536	2	1.3240	0.0010
L45	38.25 - 30	5.467	2	1.3151	0.0010
L46	34 - 29	4.366	2	1.1600	0.0009
L47	29 - 24	3.200	2	1.0524	0.0008
L48	24 - 23.75	2.193	2	0.8720	0.0007
L49	23.75 - 23.5	2.147	2	0.8631	0.0006
L50	23.5 - 18.5	2.102	2	0.8541	0.0006
L51	18.5 - 13.5	1.303	2	0.6730	0.0005
L52	13.5 - 8.5	0.694	2	0.4908	0.0004
L53	8.5 - 3.5	0.275	2	0.3098	0.0002
L54	3.5 - 0	0.047	2	0.1273	0.0001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
152.000	QS66512-2	2	96.006	6.7643	0.0239	1583
143.000	VHLP2-23	2	86.248	6.5474	0.0230	1294
138.000	NNVV-65B-R4 w/ Mount Pipe	2	79.540	6.2754	0.0188	931
120.000	AIR -32 B2A/B66AA	2	58.379	5.1051	0.0068	1175
109.500	Bridge Stiffener (76" x 10.5" x 1.25")	2	47.795	4.4999	0.0042	959
99.000	CBRS w/ Mount Pipe	2	38.532	3.9692	0.0030	1447

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	150 - 149	TP15.7317x15x0.2188	5.000	0.000	0.0	10.5146	-3.24	473.16	0.007
	149 - 148					10.6177	-3.28	477.80	0.007
	148 - 147					10.7208	-3.33	482.44	0.007
	147 - 146					10.8239	-3.35	487.07	0.007
	146 - 145					10.9269	-3.40	491.71	0.007
L2	145 - 144	TP16.4634x15.7317x0.2188	5.000	0.000	0.0	11.0300	-3.45	496.35	0.007
	144 - 143					11.1331	-3.50	500.99	0.007
	143 - 142					11.2362	-3.59	505.63	0.007
	142 - 141					11.3393	-3.67	510.27	0.007
	141 - 140					11.4423	-3.72	514.90	0.007
L3	140 - 139	TP17.1951x16.4634x0.2188	5.000	0.000	0.0	11.5454	-3.78	519.54	0.007
	139 - 138					11.6485	-3.84	524.18	0.007
	138 - 137					11.7516	-7.06	528.82	0.013
	137 - 136					11.8547	-7.13	533.46	0.013
	136 - 135					11.9577	-7.15	538.10	0.013
L4	135 - 134	TP17.9268x17.1951x0.2188	5.000	0.000	0.0	12.0608	-7.22	542.74	0.013
	134 - 133					12.1639	-7.29	547.38	0.013
	133 - 132					12.2670	-7.36	552.01	0.013

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	132 - 131					12.3700	-7.43	556.65	0.013
	131 - 130					12.4731	-7.50	561.29	0.013
L5	130 - 128.5 (5)	TP18.1463x17.9268x0.2188	1.500	0.000	0.0	12.6277	-7.61	568.25	0.013
L6	128.5 - 128.25 (6)	TP18.1829x18.1463x0.6688	0.250	0.000	0.0	37.7146	-7.66	1697.16	0.005
L7	128.25 - 127.25	TP18.9146x18.1829x0.6438	5.000	0.000	0.0	36.6599	-7.80	1649.69	0.005
	127.25 - 126.25					36.9632	-7.95	1663.34	0.005
	126.25 - 125.25					37.2666	-8.10	1677.00	0.005
	125.25 - 124.25					37.5699	-8.25	1690.65	0.005
	124.25 - 123.25					37.8733	-8.40	1704.30	0.005
L8	123.25 - 122.25	TP19.6463x18.9146x0.6188	5.000	0.000	0.0	36.7438	-8.55	1653.47	0.005
	122.25 - 121.25					37.0354	-8.70	1666.59	0.005
	121.25 - 120.25					37.3270	-8.85	1679.71	0.005
	120.25 - 119.25					37.6185	-13.19	1692.83	0.008
	119.25 - 118.25					37.9101	-13.35	1705.95	0.008
L9	118.25 - 117.25	TP20.378x19.6463x0.6063	5.000	0.000	0.0	37.4543	-13.51	1685.44	0.008
	117.25 - 116.25					37.7400	-13.68	1698.30	0.008
	116.25 - 115.25					38.0257	-13.84	1711.16	0.008
	115.25 - 114.25					38.3113	-14.01	1724.01	0.008
	114.25 - 113.25					38.5970	-14.18	1736.87	0.008
L10	113.25 - 112.188	TP21x20.378x0.5938	4.250	0.000	0.0	38.1224	-14.35	1715.51	0.008
	112.188 - 111.125					38.4197	-14.53	1728.88	0.008
	111.125 - 110.063					38.7169	-14.72	1742.26	0.008
	110.063 - 109					39.0142	-15.86	1755.64	0.009
L11	109 - 108.75 (11)	TP21.0378x21x0.725	0.250	0.000	0.0	47.4201	-15.92	2133.91	0.007
L12	108.75 - 107.605	TP21.7293x21.0378x0.7	4.580	0.000	0.0	46.2310	-16.14	2080.39	0.008
	107.605 - 106.46					46.6207	-16.37	2097.93	0.008
	106.46 - 105.315					47.0104	-16.60	2115.47	0.008
	105.315 - 104.17					47.4001	-16.83	2133.01	0.008
L13	104.17 - 103.92 (13)	TP21.7671x21.7293x0.975	0.250	0.000	0.0	65.2767	-16.91	2937.45	0.006
L14	103.92 - 103.17 (14)	TP21.8803x21.7671x0.975	0.750	0.000	0.0	65.6323	-17.12	2953.45	0.006
L15	103.17 - 102.92 (15)	TP21.9181x21.8803x1.125	0.250	0.000	0.0	75.3229	-17.20	3389.53	0.005
L16	102.92 - 102.42 (16)	TP21.9936x21.9181x1.125	0.500	0.000	0.0	75.5964	-17.35	3401.84	0.005

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L17	102.42 - 102.17 (17)	TP22.0313x21.9936x0.95	0.250	0.000	0.0	64.4878	-17.42	2901.95	0.006
L18	102.17 - 100.92 (18)	TP22.2201x22.0313x0.95	1.250	0.000	0.0	65.0652	-17.76	2927.93	0.006
L19	100.92 - 100.67 (19)	TP22.2578x22.2201x1.025	0.250	0.000	0.0	70.0790	-17.84	3153.55	0.006
L20	100.67 - 99.58 (20)	TP22.4224x22.2578x1	1.090	0.000	0.0	68.9802	-18.16	3104.11	0.006
L21	99.58 - 99.33 (21)	TP22.4602x22.4224x1.4	0.250	0.000	0.0	94.9392	-18.26	4272.27	0.004
L22	99.33 - 98.0267	TP23.0506x22.4602x1.35	3.910	0.000	0.0	92.6214	-20.95	4167.96	0.005
	98.0267 - 96.7233					93.4769	-21.40	4206.46	0.005
	96.7233 - 95.42					94.3324	-21.87	4244.96	0.005
L23	95.42 - 95.17 (23)	TP23.0883x23.0506x1.05	0.250	0.000	0.0	74.5116	-21.94	3353.02	0.007
L24	95.17 - 94.17	TP23.8433x23.0883x1	5.000	0.000	0.0	71.6106	-22.22	3222.48	0.007
	94.17 - 93.17					72.0969	-22.50	3244.36	0.007
	93.17 - 92.17					72.5831	-22.78	3266.24	0.007
	92.17 - 91.17					73.0693	-23.07	3288.12	0.007
	91.17 - 90.17					73.5555	-23.36	3310.00	0.007
L25	90.17 - 89.17	TP24.5983x23.8433x0.975	5.000	0.000	0.0	72.2692	-23.64	3252.11	0.007
	89.17 - 88.17					72.7432	-23.93	3273.45	0.007
	88.17 - 87.17					73.2173	-24.22	3294.78	0.007
	87.17 - 86.17					73.6914	-24.51	3316.11	0.007
	86.17 - 85.17					74.1654	-24.81	3337.45	0.007
L26	85.17 - 84.0025	TP25.3035x24.5983x0.95	4.670	0.000	0.0	72.8795	-25.14	3279.58	0.008
	84.0025 - 82.835					73.4188	-25.49	3303.85	0.008
	82.835 - 81.6675					73.9581	-25.83	3328.11	0.008
	81.6675 - 80.5					74.4974	-26.18	3352.38	0.008
L27	80.5 - 80.25 (27)	TP25.3413x25.3035x1.3	0.250	0.000	0.0	100.6370	-26.28	4528.65	0.006
L28	80.25 - 79.25	TP26.0963x25.3413x1.25	5.000	0.000	0.0	97.5751	-26.65	4390.88	0.006
	79.25 - 78.25					98.1828	-27.02	4418.23	0.006
	78.25 - 77.25					98.7906	-27.39	4445.58	0.006
	77.25 - 76.25					99.3984	-27.77	4472.93	0.006
	76.25 - 75.25					100.0060	-28.15	4500.28	0.006
L29	75.25 - 73.58 (29)	TP26.3484x26.0963x1.25	1.670	0.000	0.0	101.0210	-28.77	4545.95	0.006
L30	73.58 - 73.33 (30)	TP26.3862x26.3484x1.225	0.250	0.000	0.0	99.2482	-28.88	4466.17	0.006
L31	73.33 - 72	TP27.04x26.3862x1.225	4.330	0.000	0.0	100.0400	-29.38	4501.82	0.007
	72 - 69					101.8270	-15.58	4582.23	0.003
L32	72 - 69	TP26.8969x26.087x1.2875	5.000	0.000	0.0	104.8270	-15.99	4717.22	0.003
	69 - 68					105.4990	-31.98	4747.44	0.007
	68 - 67					106.1700	-32.38	4777.65	0.007
L33	67 - 66.75 (33)	TP26.9374x26.8969x1.2875	0.250	0.000	0.0	106.3380	-32.49	4785.21	0.007
L34	66.75 - 66.5	TP26.9779x26.9374x1.3625	0.250	0.000	0.0	112.381	-32.60	5057.15	0.006

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	(34)					0			
L35	66.5 - 65.5	TP27.7878x26.9779x1.3125	5.000	0.000	0.0	109.153 0	-33.01	4911.88	0.007
	65.5 - 64.5					109.837 0	-33.43	4942.68	0.007
	64.5 - 63.5					110.522 0	-33.86	4973.49	0.007
	63.5 - 62.5					111.206 0	-34.29	5004.29	0.007
	62.5 - 61.5					111.891 0	-34.72	5035.10	0.007
L36	61.5 - 60.5	TP28.5976x27.7878x1.2875	5.000	0.000	0.0	110.535 0	-35.14	4974.07	0.007
	60.5 - 59.5					111.206 0	-35.57	5004.29	0.007
	59.5 - 58.5					111.878 0	-36.00	5034.51	0.007
	58.5 - 57.5					112.549 0	-36.43	5064.73	0.007
	57.5 - 56.5					113.221 0	-36.87	5094.94	0.007
L37	56.5 - 55.5	TP29.4075x28.5976x1.2375	5.000	0.000	0.0	109.669 0	-37.30	4935.09	0.008
	55.5 - 54.5					110.314 0	-37.73	4964.14	0.008
	54.5 - 53.5					110.960 0	-38.17	4993.18	0.008
	53.5 - 52.5					111.605 0	-38.61	5022.23	0.008
	52.5 - 51.5					112.250 0	-39.05	5051.27	0.008
L38	51.5 - 50.4167	TP29.9339x29.4075x1.2125	3.250	0.000	0.0	110.765 0	-39.52	4984.45	0.008
	50.4167 - 49.3333					111.451 0	-40.00	5015.28	0.008
	49.3333 - 48.25					112.136 0	-40.48	5046.10	0.008
L39	48.25 - 48 (39)	TP29.9744x29.9339x1.6125	0.250	0.000	0.0	147.262 0	-40.62	6626.80	0.006
L40	48 - 46.75	TP30.5818x29.9744x1.5625	3.750	0.000	0.0	143.966 0	-41.25	6478.48	0.006
	46.75 - 45.5					144.985 0	-41.90	6524.32	0.006
	45.5 - 44.25					146.004 0	-42.55	6570.16	0.006
L41	44.25 - 44 (41)	TP30.6223x30.5818x1.6625	0.250	0.000	0.0	155.029 0	-42.70	6976.32	0.006
L42	44 - 43	TP31.4322x30.6223x1.6125	5.000	0.000	0.0	151.467 0	-43.24	6816.03	0.006
	43 - 42					152.308 0	-43.79	6853.88	0.006
	42 - 41					153.149 0	-44.34	6891.72	0.006
	41 - 40					153.990 0	-44.89	6929.57	0.006
	40 - 39					154.831 0	-45.45	6967.41	0.007
L43	39 - 38.5 (43)	TP31.5132x31.4322x1.6125	0.500	0.000	0.0	155.252 0	-45.73	6986.34	0.007
L44	38.5 - 38.25	TP31.5537x31.5132x1.6125	0.250	0.000	0.0	155.462	-45.87	6995.80	0.007

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	(44)					0			
L45	38.25 - 37.1875	TP32.89x31.5537x1.5625	8.250	0.000	0.0	151.759 0	-46.45	6829.16	0.007
	37.1875 - 36.125					152.625 0	-47.04	6868.12	0.007
	36.125 - 35.0625					153.491 0	-47.64	6907.09	0.007
	35.0625 - 34					154.357 0	-48.23	6946.05	0.007
	34 - 30					157.616 0	-25.70	7092.74	0.004
L46	34 - 30	TP32.4616x31.6171x1.6813	5.000	0.000	0.0	165.724 0	-26.94	7457.57	0.004
	30 - 29					166.638 0	-53.26	7498.72	0.007
L47	29 - 28	TP33.3062x32.4616x1.6313	5.000	0.000	0.0	162.832 0	-53.85	7327.46	0.007
	28 - 27					163.720 0	-54.45	7367.39	0.007
	27 - 26					164.607 0	-55.05	7407.31	0.007
	26 - 25					165.494 0	-55.65	7447.24	0.007
	25 - 24					166.381 0	-56.26	7487.16	0.008
L48	24 - 23.75 (48)	TP33.3484x33.3062x1.6313	0.250	0.000	0.0	166.603 0	-56.42	7497.14	0.008
L49	23.75 - 23.5 (49)	TP33.3906x33.3484x1.6063	0.250	0.000	0.0	164.398 0	-56.57	7397.90	0.008
L50	23.5 - 22.5	TP34.2352x33.3906x1.5813	5.000	0.000	0.0	162.826 0	-57.16	7327.19	0.008
	22.5 - 21.5					163.686 0	-57.77	7365.89	0.008
	21.5 - 20.5					164.546 0	-58.37	7404.59	0.008
	20.5 - 19.5					165.407 0	-58.98	7443.29	0.008
	19.5 - 18.5					166.267 0	-59.60	7482.00	0.008
L51	18.5 - 17.5	TP35.0797x34.2352x1.5313	5.000	0.000	0.0	162.089 0	-60.20	7293.99	0.008
	17.5 - 16.5					162.922 0	-60.81	7331.47	0.008
	16.5 - 15.5					163.754 0	-61.42	7368.95	0.008
	15.5 - 14.5					164.587 0	-62.04	7406.43	0.008
	14.5 - 13.5					165.420 0	-62.66	7443.91	0.008
L52	13.5 - 12.5	TP35.9243x35.0797x1.5063	5.000	0.000	0.0	163.660 0	-63.27	7364.70	0.009
	12.5 - 11.5					164.479 0	-63.88	7401.57	0.009
	11.5 - 10.5					165.299 0	-64.50	7438.43	0.009
	10.5 - 9.5					166.118 0	-65.12	7475.30	0.009
	9.5 - 8.5					166.937 0	-65.75	7512.17	0.009
L53	8.5 - 7.5	TP36.7688x35.9243x1.4563	5.000	0.000	0.0	162.422	-66.36	7309.00	0.009

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
						0			
	7.5 - 6.5					163.214	-66.98	7344.64	0.009
						0			
	6.5 - 5.5					164.006	-67.61	7380.29	0.009
						0			
	5.5 - 4.5					164.798	-68.23	7415.93	0.009
						0			
	4.5 - 3.5					165.590	-68.86	7451.57	0.009
						0			
L54	3.5 - 2.33333	TP37.36x36.7688x1.4313	3.500	0.000	0.0	163.771	-69.59	7369.71	0.009
						0			
	2.33333 - 1.16667					164.679	-70.32	7410.58	0.009
						0			
	1.16667 - 0					165.588	-71.06	7451.45	0.010
						0			

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	150 - 149	TP15.7317x15x0.2188	22.58	180.10	0.125	0.00	180.10	0.000
	149 - 148		27.88	183.68	0.152	0.00	183.68	0.000
	148 - 147		33.23	187.29	0.177	0.00	187.29	0.000
	147 - 146		38.66	190.93	0.202	0.00	190.93	0.000
	146 - 145		44.15	194.61	0.227	0.00	194.61	0.000
L2	145 - 144	TP16.4634x15.7317x0.2188	49.70	198.33	0.251	0.00	198.33	0.000
	144 - 143		55.31	202.08	0.274	0.00	202.08	0.000
	143 - 142		61.27	205.86	0.298	0.00	205.86	0.000
	142 - 141		67.30	209.68	0.321	0.00	209.68	0.000
	141 - 140		73.41	213.54	0.344	0.00	213.54	0.000
L3	140 - 139	TP17.1951x16.4634x0.2188	79.59	217.43	0.366	0.00	217.43	0.000
	139 - 138		85.82	221.35	0.388	0.00	221.35	0.000
	138 - 137		99.75	225.31	0.443	0.00	225.31	0.000
	137 - 136		110.10	229.31	0.480	0.00	229.31	0.000
	136 - 135		120.52	233.34	0.517	0.00	233.34	0.000
L4	135 - 134	TP17.9268x17.1951x0.2188	131.04	237.41	0.552	0.00	237.41	0.000
	134 - 133		141.65	241.51	0.587	0.00	241.51	0.000
	133 - 132		152.35	245.65	0.620	0.00	245.65	0.000
	132 - 131		163.18	249.82	0.653	0.00	249.82	0.000
	131 - 130		174.11	254.02	0.685	0.00	254.02	0.000
L5	130 - 128.5 (5)	TP18.1463x17.9268x0.2188	190.66	260.40	0.732	0.00	260.40	0.000
L6	128.5 - 128.25 (6)	TP18.1829x18.1463x0.6688	193.44	740.77	0.261	0.00	740.77	0.000
L7	128.25 - 127.25	TP18.9146x18.1829x0.6438	204.63	728.35	0.281	0.00	728.35	0.000
	127.25 - 126.25		215.92	740.67	0.292	0.00	740.67	0.000
	126.25 - 125.25		227.32	753.09	0.302	0.00	753.09	0.000
	125.25 - 124.25		238.82	765.61	0.312	0.00	765.61	0.000
	124.25 - 123.25		250.44	778.24	0.322	0.00	778.24	0.000
L8	123.25 - 122.25	TP19.6463x18.9146x0.6188	262.16	763.35	0.343	0.00	763.35	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 $\frac{M_{uy}}{\phi M_{ny}}$
	122.25 - 121.25		273.99	775.71	0.353	0.00	775.71	0.000
	121.25 - 120.25		285.93	788.17	0.363	0.00	788.17	0.000
	120.25 - 119.25		301.06	800.73	0.376	0.00	800.73	0.000
	119.25 - 118.25		317.32	813.39	0.390	0.00	813.39	0.000
L9	118.25 - 117.25	TP20.378x19.6463x0.6063	333.70	811.04	0.411	0.00	811.04	0.000
	117.25 - 116.25		350.18	823.65	0.425	0.00	823.65	0.000
	116.25 - 115.25		366.78	836.36	0.439	0.00	836.36	0.000
	115.25 - 114.25		383.49	849.17	0.452	0.00	849.17	0.000
	114.25 - 113.25		400.30	862.07	0.464	0.00	862.07	0.000
L10	113.25 - 112.188	TP21x20.378x0.5938	418.29	859.44	0.487	0.00	859.44	0.000
	112.188 - 111.125		436.40	873.09	0.500	0.00	873.09	0.000
	111.125 - 110.063		454.63	886.85	0.513	0.00	886.85	0.000
	110.063 - 109		473.30	900.72	0.525	0.00	900.72	0.000
L11	109 - 108.75 (11)	TP21.0378x21x0.725	477.80	1082.83	0.441	0.00	1082.83	0.000
L12	108.75 - 107.605	TP21.7293x21.0378x0.7	498.48	1067.57	0.467	0.00	1067.57	0.000
	107.605 - 106.46		519.33	1085.94	0.478	0.00	1085.94	0.000
	106.46 - 105.315		540.35	1104.47	0.489	0.00	1104.47	0.000
	105.315 - 104.17		561.54	1123.16	0.500	0.00	1123.16	0.000
L13	104.17 - 103.92 (13)	TP21.7671x21.7293x0.975	566.19	1509.43	0.375	0.00	1509.43	0.000
L14	103.92 - 103.17 (14)	TP21.8803x21.7671x0.975	580.20	1526.28	0.380	0.00	1526.28	0.000
L15	103.17 - 102.92 (15)	TP21.9181x21.8803x1.125	584.88	1729.90	0.338	0.00	1729.90	0.000
L16	102.92 - 102.42 (16)	TP21.9936x21.9181x1.125	594.29	1742.81	0.341	0.00	1742.81	0.000
L17	102.42 - 102.17 (17)	TP22.0313x21.9936x0.95	599.00	1514.58	0.395	0.00	1514.58	0.000
L18	102.17 - 100.92 (18)	TP22.2201x22.0313x0.95	622.71	1542.41	0.404	0.00	1542.41	0.000
L19	100.92 - 100.67 (19)	TP22.2578x22.2201x1.025	627.48	1652.64	0.380	0.00	1652.64	0.000
L20	100.67 - 99.58 (20)	TP22.4224x22.2578x1	648.38	1643.76	0.394	0.00	1643.76	0.000
L21	99.58 - 99.33 (21)	TP22.4602x22.4224x1.4	653.20	2182.80	0.299	0.00	2182.80	0.000
L22	99.33 - 98.0267	TP23.0506x22.4602x1.35	682.34	2160.78	0.316	0.00	2160.78	0.000
	98.0267 - 96.7233		710.84	2202.08	0.323	0.00	2202.08	0.000
	96.7233 - 95.42		739.60	2243.78	0.330	0.00	2243.78	0.000
L23	95.42 - 95.17	TP23.0883x23.0506x1.05	745.14	1824.93	0.408	0.00	1824.93	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 $\frac{M_{uy}}{\phi M_{ny}}$
	(23)							
L24	95.17 - 94.17	TP23.8433x23.0883x1	767.42	1774.42	0.432	0.00	1774.42	0.000
	94.17 - 93.17		789.85	1799.12	0.439	0.00	1799.12	0.000
	93.17 - 92.17		812.41	1823.98	0.445	0.00	1823.98	0.000
	92.17 - 91.17		835.13	1849.03	0.452	0.00	1849.03	0.000
	91.17 - 90.17		857.98	1874.24	0.458	0.00	1874.24	0.000
L25	90.17 - 89.17	TP24.5983x23.8433x0.975	880.98	1858.18	0.474	0.00	1858.18	0.000
	89.17 - 88.17		904.11	1883.13	0.480	0.00	1883.13	0.000
	88.17 - 87.17		927.38	1908.26	0.486	0.00	1908.26	0.000
	87.17 - 86.17		950.79	1933.55	0.492	0.00	1933.55	0.000
	86.17 - 85.17		974.35	1959.01	0.497	0.00	1959.01	0.000
L26	85.17 - 84.0025	TP25.3035x24.5983x0.95	1002.03	1944.06	0.515	0.00	1944.06	0.000
	84.0025 - 82.835		1029.88	1973.49	0.522	0.00	1973.49	0.000
	82.835 - 81.6675		1057.93	2003.14	0.528	0.00	2003.14	0.000
	81.6675 - 80.5		1086.16	2033.02	0.534	0.00	2033.02	0.000
L27	80.5 - 80.25	TP25.3413x25.3035x1.3	1092.22	2672.39	0.409	0.00	2672.39	0.000
	(27)							
L28	80.25 - 79.25	TP26.0963x25.3413x1.25	1116.59	2618.99	0.426	0.00	2618.99	0.000
	79.25 - 78.25		1141.11	2652.53	0.430	0.00	2652.53	0.000
	78.25 - 77.25		1165.76	2686.28	0.434	0.00	2686.28	0.000
	77.25 - 76.25		1190.56	2720.23	0.438	0.00	2720.23	0.000
	76.25 - 75.25		1215.50	2754.41	0.441	0.00	2754.41	0.000
L29	75.25 - 73.58	TP26.3484x26.0963x1.25	1257.47	2811.96	0.447	0.00	2811.96	0.000
	(29)							
L30	73.58 - 73.33	TP26.3862x26.3484x1.225	1263.79	2772.47	0.456	0.00	2772.47	0.000
	(30)							
L31	73.33 - 72	TP27.04x26.3862x1.225	1297.55	2817.93	0.460	0.00	2817.93	0.000
	72 - 69		692.53	2921.86	0.237	0.00	2921.86	0.000
L32	72 - 69	TP26.8969x26.087x1.2875	682.18	2936.52	0.232	0.00	2936.52	0.000
	69 - 68		1400.75	2975.18	0.471	0.00	2975.18	0.000
	68 - 67		1426.93	3014.09	0.473	0.00	3014.09	0.000
L33	67 - 66.75 (33)	TP26.9374x26.8969x1.2875	1433.50	3023.86	0.474	0.00	3023.86	0.000
L34	66.75 - 66.5	TP26.9779x26.9374x1.3625	1440.08	3182.32	0.453	0.00	3182.32	0.000
	(34)							
L35	66.5 - 65.5	TP27.7878x26.9779x1.3125	1466.46	3123.53	0.469	0.00	3123.53	0.000
	65.5 - 64.5		1492.97	3163.78	0.472	0.00	3163.78	0.000
	64.5 - 63.5		1519.63	3204.29	0.474	0.00	3204.29	0.000
	63.5 - 62.5		1546.42	3245.07	0.477	0.00	3245.07	0.000
	62.5 - 61.5		1573.34	3286.09	0.479	0.00	3286.09	0.000
L36	61.5 - 60.5	TP28.5976x27.7878x1.2875	1600.40	3273.20	0.489	0.00	3273.20	0.000
	60.5 - 59.5		1627.59	3314.02	0.491	0.00	3314.02	0.000
	59.5 - 58.5		1654.91	3355.08	0.493	0.00	3355.08	0.000
	58.5 - 57.5		1682.36	3396.40	0.495	0.00	3396.40	0.000
	57.5 - 56.5		1709.94	3437.97	0.497	0.00	3437.97	0.000
L37	56.5 - 55.5	TP29.4075x28.5976x1.2375	1737.65	3362.96	0.517	0.00	3362.96	0.000
	55.5 - 54.5		1765.48	3403.52	0.519	0.00	3403.52	0.000
	54.5 - 53.5		1793.45	3444.32	0.521	0.00	3444.32	0.000
	53.5 - 52.5		1821.53	3485.36	0.523	0.00	3485.36	0.000
	52.5 - 51.5		1849.74	3526.65	0.525	0.00	3526.65	0.000
L38	51.5 - 50.4167	TP29.9339x29.4075x1.2125	1880.44	3508.76	0.536	0.00	3508.76	0.000
	50.4167 - 49.3333		1911.28	3553.19	0.538	0.00	3553.19	0.000
	49.3333 - 48.25		1942.27	3597.91	0.540	0.00	3597.91	0.000
L39	48.25 - 48 (39)	TP29.9744x29.9339x1.6125	1949.44	4601.19	0.424	0.00	4601.19	0.000
L40	48 - 46.75	TP30.5818x29.9744x1.5625	1985.41	4547.93	0.437	0.00	4547.93	0.000
	46.75 - 45.5		2021.58	4614.19	0.438	0.00	4614.19	0.000

Section No.	Elevation	Size	M_{ux}	ϕM_{nx}	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy}	ϕM_{ny}	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	ft		kip-ft	kip-ft		kip-ft	kip-ft	
	45.5 - 44.25		2057.96	4680.94	0.440	0.00	4680.94	0.000
L41	44.25 - 44 (41)	TP30.6223x30.5818x1.6625	2065.26	4943.40	0.418	0.00	4943.40	0.000
L42	44 - 43	TP31.4322x30.6223x1.6125	2094.53	4875.00	0.430	0.00	4875.00	0.000
	43 - 42		2123.93	4930.71	0.431	0.00	4930.71	0.000
	42 - 41		2153.47	4986.74	0.432	0.00	4986.74	0.000
	41 - 40		2183.12	5043.08	0.433	0.00	5043.08	0.000
	40 - 39		2212.89	5099.75	0.434	0.00	5099.75	0.000
L43	39 - 38.5 (43)	TP31.5132x31.4322x1.6125	2227.83	5128.20	0.434	0.00	5128.20	0.000
L44	38.5 - 38.25 (44)	TP31.5537x31.5132x1.6125	2235.31	5142.46	0.435	0.00	5142.46	0.000
L45	38.25 - 37.1875	TP32.89x31.5537x1.5625	2267.18	5067.08	0.447	0.00	5067.08	0.000
	37.1875 - 36.125		2299.18	5126.50	0.448	0.00	5126.50	0.000
	36.125 - 35.0625		2331.31	5186.27	0.450	0.00	5186.27	0.000
	35.0625 - 34		2363.57	5246.38	0.451	0.00	5246.38	0.000
	34 - 30		1242.14	5475.79	0.227	0.00	5475.79	0.000
L46	34 - 30	TP32.4616x31.6171x1.6813	1244.27	5598.93	0.222	0.00	5598.93	0.000
	30 - 29		2517.46	5662.51	0.445	0.00	5662.51	0.000
L47	29 - 28	TP33.3062x32.4616x1.6313	2548.62	5583.12	0.456	0.00	5583.12	0.000
	28 - 27		2579.88	5645.66	0.457	0.00	5645.66	0.000
	27 - 26		2611.25	5708.54	0.457	0.00	5708.54	0.000
	26 - 25		2642.72	5771.78	0.458	0.00	5771.78	0.000
	25 - 24		2674.31	5835.37	0.458	0.00	5835.37	0.000
L48	24 - 23.75 (48)	TP33.3484x33.3062x1.6313	2682.22	5851.32	0.458	0.00	5851.32	0.000
L49	23.75 - 23.5 (49)	TP33.3906x33.3484x1.6063	2690.14	5791.02	0.465	0.00	5791.02	0.000
L50	23.5 - 22.5	TP34.2352x33.3906x1.5813	2721.89	5776.65	0.471	0.00	5776.65	0.000
	22.5 - 21.5		2753.74	5839.28	0.472	0.00	5839.28	0.000
	21.5 - 20.5		2785.69	5902.25	0.472	0.00	5902.25	0.000
	20.5 - 19.5		2817.75	5965.56	0.472	0.00	5965.56	0.000
	19.5 - 18.5		2849.92	6029.21	0.473	0.00	6029.21	0.000
L51	18.5 - 17.5	TP35.0797x34.2352x1.5313	2882.18	5927.53	0.486	0.00	5927.53	0.000
	17.5 - 16.5		2914.56	5989.97	0.487	0.00	5989.97	0.000
	16.5 - 15.5		2947.03	6052.72	0.487	0.00	6052.72	0.000
	15.5 - 14.5		2979.61	6115.82	0.487	0.00	6115.82	0.000
	14.5 - 13.5		3012.29	6179.23	0.487	0.00	6179.23	0.000
L52	13.5 - 12.5	TP35.9243x35.0797x1.5063	3045.07	6154.72	0.495	0.00	6154.72	0.000
	12.5 - 11.5		3077.96	6217.82	0.495	0.00	6217.82	0.000
	11.5 - 10.5		3110.94	6281.24	0.495	0.00	6281.24	0.000
	10.5 - 9.5		3144.03	6344.98	0.496	0.00	6344.98	0.000
	9.5 - 8.5		3177.22	6409.04	0.496	0.00	6409.04	0.000
L53	8.5 - 7.5	TP36.7688x35.9243x1.4563	3210.51	6285.73	0.511	0.00	6285.73	0.000
	7.5 - 6.5		3243.89	6348.43	0.511	0.00	6348.43	0.000
	6.5 - 5.5		3277.38	6411.44	0.511	0.00	6411.44	0.000
	5.5 - 4.5		3310.97	6474.76	0.511	0.00	6474.76	0.000
	4.5 - 3.5		3344.65	6538.39	0.512	0.00	6538.39	0.000
L54	3.5 - 2.33333	TP37.36x36.7688x1.4313	3384.07	6513.24	0.520	0.00	6513.24	0.000
	2.33333 - 1.16667		3423.63	6587.08	0.520	0.00	6587.08	0.000
	1.16667 - 0		3463.32	6661.35	0.520	0.00	6661.35	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	150 - 149	TP15.7317x15x0.2188	5.27	141.95	0.037	0.00	186.39	0.000
	149 - 148		5.33	143.34	0.037	0.00	190.06	0.000
	148 - 147		5.39	144.73	0.037	0.00	193.77	0.000
	147 - 146		5.46	144.73	0.038	0.20	197.51	0.001
	146 - 145		5.52	146.12	0.038	0.20	201.29	0.001
L2	145 - 144	TP16.4634x15.7317x0.2188	5.58	147.51	0.038	0.20	205.11	0.001
	144 - 143		5.64	148.91	0.038	0.20	208.96	0.001
	143 - 142		6.00	151.69	0.040	0.11	212.85	0.001
	142 - 141		6.08	153.08	0.040	0.06	216.77	0.000
	141 - 140		6.14	154.47	0.040	0.06	220.73	0.000
L3	140 - 139	TP17.1951x16.4634x0.2188	6.20	155.86	0.040	0.06	224.72	0.000
	139 - 138		6.27	157.26	0.040	0.06	228.75	0.000
	138 - 137		10.33	158.65	0.065	0.06	232.82	0.000
	137 - 136		10.38	160.04	0.065	0.06	236.92	0.000
	136 - 135		10.48	161.43	0.065	0.21	241.06	0.001
L4	135 - 134	TP17.9268x17.1951x0.2188	10.57	162.82	0.065	0.22	245.24	0.001
	134 - 133		10.67	164.21	0.065	0.24	249.44	0.001
	133 - 132		10.79	165.60	0.065	0.49	253.69	0.002
	132 - 131		10.88	167.00	0.065	0.50	257.97	0.002
	131 - 130		10.97	168.39	0.065	0.52	262.29	0.002
L5	130 - 128.5 (5)	TP18.1463x17.9268x0.2188	11.11	170.47	0.065	0.53	268.83	0.002
L6	128.5 - 128.25 (6)	TP18.1829x18.1463x0.6688	11.13	509.15	0.022	0.53	784.39	0.001
L7	128.25 - 127.25	TP18.9146x18.1829x0.6438	11.24	494.91	0.023	0.53	769.91	0.001
	127.25 - 126.25		11.34	499.00	0.023	0.53	782.71	0.001
	126.25 - 125.25		11.45	503.10	0.023	0.54	795.61	0.001
	125.25 - 124.25		11.56	507.19	0.023	0.54	808.61	0.001
	124.25 - 123.25		11.67	511.29	0.023	0.55	821.72	0.001
L8	123.25 - 122.25	TP19.6463x18.9146x0.6188	11.78	496.04	0.024	0.55	804.70	0.001
	122.25 - 121.25		11.89	499.98	0.024	0.56	817.52	0.001
	121.25 - 120.25		12.00	503.91	0.024	0.57	830.44	0.001
	120.25 - 119.25		16.21	507.85	0.032	0.57	843.47	0.001
	119.25 - 118.25		16.32	511.79	0.032	0.58	856.59	0.001
L9	118.25 - 117.25	TP20.378x19.6463x0.6063	16.43	505.63	0.032	0.59	853.36	0.001
	117.25 - 116.25		16.54	509.49	0.032	0.60	866.42	0.001
	116.25 - 115.25		16.65	513.35	0.032	0.61	879.59	0.001
	115.25 - 114.25		16.76	517.20	0.032	0.62	892.86	0.001
	114.25 - 113.25		16.87	521.06	0.032	0.63	906.22	0.001
L10	113.25 - 112.188	TP21x20.378x0.5938	16.99	514.65	0.033	0.64	902.68	0.001
	112.188 - 111.125		17.11	518.66	0.033	0.65	916.82	0.001
	111.125 - 110.063		17.22	522.68	0.033	0.66	931.06	0.001
	110.063 - 109		17.96	526.69	0.034	0.67	945.41	0.001

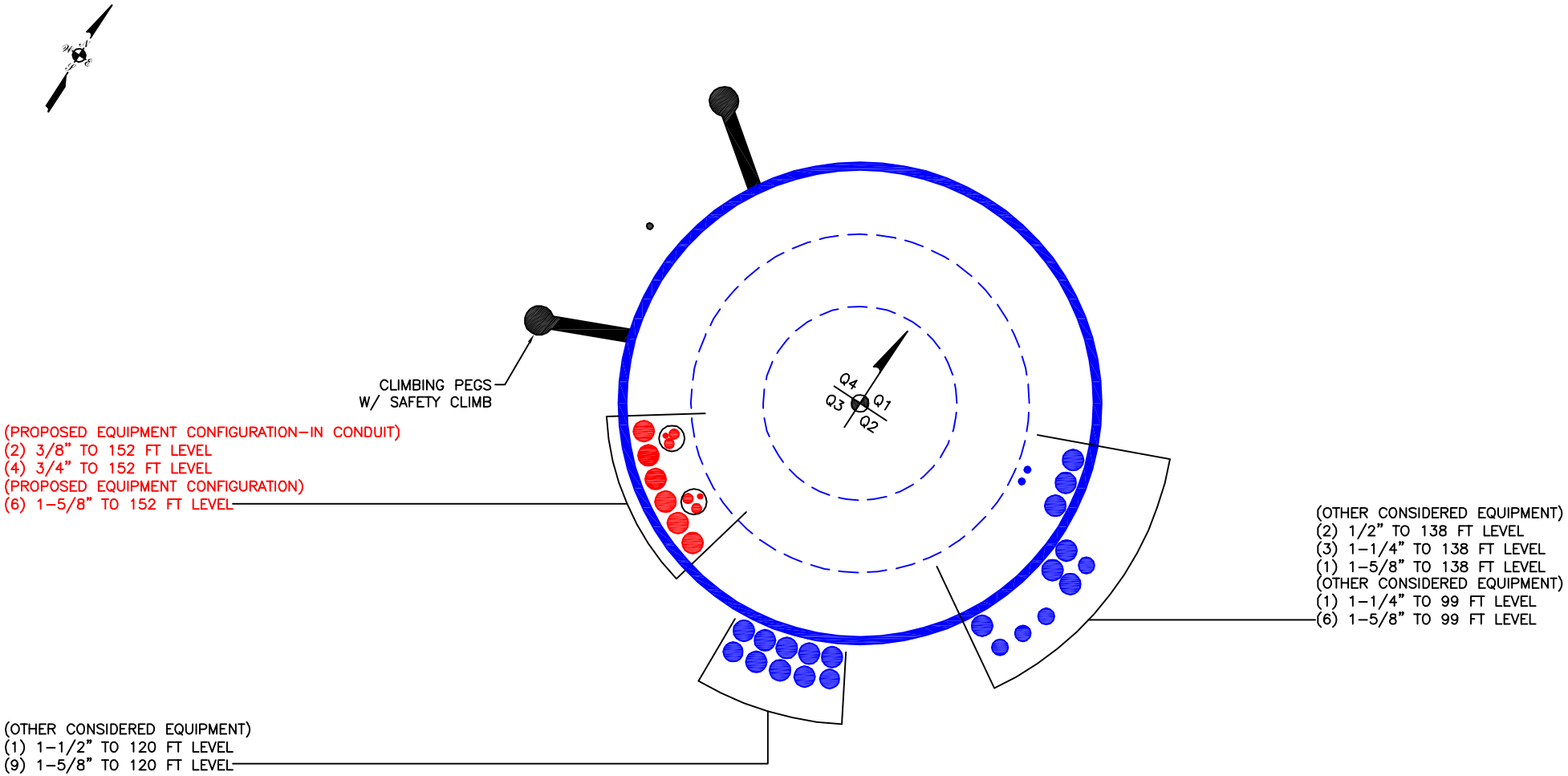
Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L11	109 - 108.75 (11)	TP21.0378x21x0.725	17.98	640.17	0.028	0.68	1143.84	0.001
L12	108.75 - 107.605	TP21.7293x21.0378x0.7	18.14	624.12	0.029	0.69	1126.02	0.001
	107.605 - 106.46		18.29	629.38	0.029	0.71	1145.08	0.001
	106.46 - 105.315		18.44	634.64	0.029	0.72	1164.31	0.001
	105.315 - 104.17		18.59	639.90	0.029	0.74	1183.69	0.001
L13	104.17 - 103.92 (13)	TP21.7671x21.7293x0.975	18.62	881.24	0.021	0.74	1611.72	0.000
L14	103.92 - 103.17 (14)	TP21.8803x21.7671x0.975	18.73	886.04	0.021	0.75	1629.33	0.000
L15	103.17 - 102.92 (15)	TP21.9181x21.8803x1.125	18.77	1016.86	0.018	0.76	1859.86	0.000
L16	102.92 - 102.42 (16)	TP21.9936x21.9181x1.125	18.84	1020.55	0.018	0.76	1873.39	0.000
L17	102.42 - 102.17 (17)	TP22.0313x21.9936x0.95	18.88	870.59	0.022	0.77	1614.39	0.000
L18	102.17 - 100.92 (18)	TP22.2201x22.0313x0.95	19.06	878.38	0.022	0.78	1643.43	0.000
L19	100.92 - 100.67 (19)	TP22.2578x22.2201x1.025	19.09	946.07	0.020	0.78	1766.97	0.000
L20	100.67 - 99.58 (20)	TP22.4224x22.2578x1	19.26	931.23	0.021	0.80	1754.79	0.000
L21	99.58 - 99.33 (21)	TP22.4602x22.4224x1.4	19.29	1281.68	0.015	0.80	2374.33	0.000
L22	99.33 - 98.0267	TP23.0506x22.4602x1.35	21.76	1250.39	0.017	0.80	2343.51	0.000
	98.0267 - 96.7233		21.96	1261.94	0.017	0.31	2387.00	0.000
	96.7233 - 95.42		22.17	1273.49	0.017	0.33	2430.89	0.000
L23	95.42 - 95.17 (23)	TP23.0883x23.0506x1.05	22.20	1005.91	0.022	0.34	1950.01	0.000
L24	95.17 - 94.17	TP23.8433x23.0883x1	22.35	966.74	0.023	0.36	1891.18	0.000
	94.17 - 93.17		22.49	973.31	0.023	0.38	1916.95	0.000
	93.17 - 92.17		22.64	979.87	0.023	0.40	1942.89	0.000
	92.17 - 91.17		22.78	986.44	0.023	0.42	1969.01	0.000
	91.17 - 90.17		22.93	993.00	0.023	0.45	1995.30	0.000
L25	90.17 - 89.17	TP24.5983x23.8433x0.975	23.07	975.63	0.024	0.47	1975.51	0.000
	89.17 - 88.17		23.20	982.03	0.024	0.50	2001.52	0.000
	88.17 - 87.17		23.34	988.43	0.024	0.52	2027.68	0.000
	87.17 - 86.17		23.48	994.83	0.024	0.55	2054.03	0.000
	86.17 - 85.17		23.63	1001.23	0.024	0.58	2080.54	0.000
L26	85.17 - 84.0025	TP25.3035x24.5983x0.95	23.79	983.87	0.024	0.60	2061.89	0.000
	84.0025 - 82.835		23.95	991.15	0.024	0.63	2092.52	0.000
	82.835 - 81.6675		24.10	998.43	0.024	0.65	2123.37	0.000
	81.6675 - 80.5		24.26	1005.71	0.024	0.67	2154.45	0.000
L27	80.5 - 80.25 (27)	TP25.3413x25.3035x1.3	24.29	1358.60	0.018	0.68	2873.07	0.000
L28	80.25 - 79.25	TP26.0963x25.3413x1.25	24.44	1317.26	0.019	0.69	2808.96	0.000
	79.25 - 78.25		24.58	1325.47	0.019	0.70	2844.06	0.000
	78.25 - 77.25		24.73	1333.67	0.019	0.72	2879.38	0.000
	77.25 - 76.25		24.87	1341.88	0.019	0.73	2914.92	0.000
	76.25 - 75.25		25.02	1350.08	0.019	0.74	2950.68	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 $\frac{T_u}{\phi T_n}$
L29	75.25 - 73.58 (29)	TP26.3484x26.0963x1.25	25.26	1363.79	0.019	0.77	3010.88	0.000
L30	73.58 - 73.33 (30)	TP26.3862x26.3484x1.225	25.28	1339.85	0.019	0.77	2965.43	0.000
L31	73.33 - 72	TP27.04x26.3862x1.225	25.48	1350.55	0.019	0.79	3012.96	0.000
	72 - 69		13.19	1374.67	0.010	0.43	3121.55	0.000
L32	72 - 69	TP26.8969x26.087x1.2875	12.79	1415.17	0.009	0.40	3147.58	0.000
	69 - 68		26.11	1424.23	0.018	0.84	3188.04	0.000
	68 - 67		26.25	1433.30	0.018	0.85	3228.75	0.000
L33	67 - 66.75 (33)	TP26.9374x26.8969x1.2875	26.28	1435.56	0.018	0.85	3238.97	0.000
L34	66.75 - 66.5 (34)	TP26.9779x26.9374x1.3625	26.31	1517.14	0.017	0.86	3418.43	0.000
L35	66.5 - 65.5	TP27.7878x26.9779x1.3125	26.45	1473.56	0.018	0.88	3347.72	0.000
	65.5 - 64.5		26.59	1482.80	0.018	0.89	3389.83	0.000
	64.5 - 63.5		26.72	1492.05	0.018	0.91	3432.22	0.000
	63.5 - 62.5		26.86	1501.29	0.018	0.93	3474.87	0.000
	62.5 - 61.5		27.00	1510.53	0.018	0.95	3517.78	0.000
L36	61.5 - 60.5	TP28.5976x27.7878x1.2875	27.13	1492.22	0.018	0.97	3499.69	0.000
	60.5 - 59.5		27.26	1501.29	0.018	0.99	3542.34	0.000
	59.5 - 58.5		27.39	1510.35	0.018	1.01	3585.25	0.000
	58.5 - 57.5		27.52	1519.42	0.018	1.03	3628.42	0.000
	57.5 - 56.5		27.65	1528.48	0.018	1.05	3671.84	0.000
L37	56.5 - 55.5	TP29.4075x28.5976x1.2375	27.78	1480.53	0.019	1.07	3584.25	0.000
	55.5 - 54.5		27.90	1489.24	0.019	1.09	3626.56	0.000
	54.5 - 53.5		28.03	1497.95	0.019	1.11	3669.13	0.000
	53.5 - 52.5		28.15	1506.67	0.019	1.13	3711.93	0.000
	52.5 - 51.5		28.28	1515.38	0.019	1.14	3754.99	0.000
L38	51.5 - 50.4167	TP29.9339x29.4075x1.2125	28.41	1495.33	0.019	1.16	3731.68	0.000
	50.4167 - 49.3333		28.54	1504.58	0.019	1.18	3777.99	0.000
	49.3333 - 48.25		28.67	1513.83	0.019	1.20	3824.57	0.000
L39	48.25 - 48 (39)	TP29.9744x29.9339x1.6125	28.69	1988.04	0.014	1.21	4959.76	0.000
L40	48 - 46.75	TP30.5818x29.9744x1.5625	28.86	1943.54	0.015	1.23	4891.92	0.000
	46.75 - 45.5		29.02	1957.30	0.015	1.25	4961.38	0.000
	45.5 - 44.25		29.19	1971.05	0.015	1.27	5031.35	0.000
L41	44.25 - 44 (41)	TP30.6223x30.5818x1.6625	29.21	2092.89	0.014	1.27	5331.43	0.000
L42	44 - 43	TP31.4322x30.6223x1.6125	29.34	2044.81	0.014	1.29	5247.06	0.000
	43 - 42		29.47	2056.16	0.014	1.31	5305.49	0.000
	42 - 41		29.59	2067.52	0.014	1.32	5364.24	0.000
	41 - 40		29.72	2078.87	0.014	1.34	5423.32	0.000
	40 - 39		29.84	2090.22	0.014	1.35	5482.73	0.000
L43	39 - 38.5 (43)	TP31.5132x31.4322x1.6125	29.90	2095.90	0.014	1.36	5512.54	0.000
L44	38.5 - 38.25 (44)	TP31.5537x31.5132x1.6125	29.93	2098.74	0.014	1.37	5527.48	0.000
L45	38.25 - 37.1875	TP32.89x31.5537x1.5625	30.06	2048.75	0.015	1.38	5435.84	0.000
	37.1875 - 36.125		30.18	2060.44	0.015	1.40	5498.05	0.000
	36.125 - 35.0625		30.30	2072.13	0.015	1.42	5560.61	0.000
	35.0625 - 34		30.43	2083.82	0.015	1.43	5623.52	0.000
	34 - 30		15.62	2127.82	0.007	0.76	5863.56	0.000
L46	34 - 30	TP32.4616x31.6171x1.6813	15.39	2237.27	0.007	0.73	6024.23	0.000
	30 - 29		31.11	2249.62	0.014	1.51	6090.90	0.000
L47	29 - 28	TP33.3062x32.4616x1.6313	31.21	2198.24	0.014	1.53	5994.12	0.000
	28 - 27		31.32	2210.22	0.014	1.54	6059.62	0.000
	27 - 26		31.43	2222.19	0.014	1.56	6125.47	0.000
	26 - 25		31.54	2234.17	0.014	1.57	6191.69	0.000
	25 - 24		31.64	2246.15	0.014	1.59	6258.26	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 $\frac{T_u}{\phi T_n}$
L48	24 - 23.75 (48)	TP33.3484x33.3062x1.6313	31.66	2249.14	0.014	1.59	6274.96	0.000
L49	23.75 - 23.5 (49)	TP33.3906x33.3484x1.6063	31.69	2219.37	0.014	1.60	6205.01	0.000
L50	23.5 - 22.5	TP34.2352x33.3906x1.5813	31.80	2198.16	0.014	1.61	6183.20	0.000
	22.5 - 21.5		31.91	2209.77	0.014	1.63	6248.69	0.000
	21.5 - 20.5		32.01	2221.38	0.014	1.65	6314.52	0.000
	20.5 - 19.5		32.12	2232.99	0.014	1.66	6380.71	0.000
	19.5 - 18.5		32.22	2244.60	0.014	1.68	6447.23	0.000
L51	18.5 - 17.5	TP35.0797x34.2352x1.5313	32.33	2188.20	0.015	1.69	6327.37	0.000
	17.5 - 16.5		32.43	2199.44	0.015	1.71	6392.56	0.000
	16.5 - 15.5		32.53	2210.68	0.015	1.73	6458.08	0.000
	15.5 - 14.5		32.63	2221.93	0.015	1.74	6523.94	0.000
	14.5 - 13.5		32.74	2233.17	0.015	1.76	6590.13	0.000
L52	13.5 - 12.5	TP35.9243x35.0797x1.5063	32.84	2209.41	0.015	1.78	6557.70	0.000
	12.5 - 11.5		32.94	2220.47	0.015	1.79	6623.52	0.000
	11.5 - 10.5		33.04	2231.53	0.015	1.81	6689.66	0.000
	10.5 - 9.5		33.14	2242.59	0.015	1.83	6756.13	0.000
	9.5 - 8.5		33.24	2253.65	0.015	1.84	6822.94	0.000
L53	8.5 - 7.5	TP36.7688x35.9243x1.4563	33.34	2192.70	0.015	1.86	6680.64	0.000
	7.5 - 6.5		33.44	2203.39	0.015	1.88	6745.95	0.000
	6.5 - 5.5		33.54	2214.09	0.015	1.90	6811.59	0.000
	5.5 - 4.5		33.64	2224.78	0.015	1.91	6877.54	0.000
	4.5 - 3.5		33.74	2235.47	0.015	1.93	6943.81	0.000
L54	3.5 - 2.33333	TP37.36x36.7688x1.4313	33.86	2210.91	0.015	1.95	6910.71	0.000
	2.33333 - 1.16667		33.97	2223.17	0.015	1.97	6987.57	0.000
	1.16667 - 0		34.09	2235.43	0.015	1.99	7064.85	0.000

APPENDIX B

BASE LEVEL DRAWING


CLIMBING PEGS
W/ SAFETY CLIMB
(PROPOSED EQUIPMENT CONFIGURATION–IN CONDUIT)
(2) 3/8" TO 152 FT LEVEL
(4) 3/4" TO 152 FT LEVEL
(PROPOSED EQUIPMENT CONFIGURATION)
(6) 1–5/8" TO 152 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1–1/2" TO 120 FT LEVEL
(9) 1–5/8" TO 120 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(2) 1/2" TO 138 FT LEVEL
(3) 1–1/4" TO 138 FT LEVEL
(1) 1–5/8" TO 138 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1–1/4" TO 99 FT LEVEL
(6) 1–5/8" TO 99 FT LEVEL
Q1
Q2
Q3
Q4

APPENDIX C

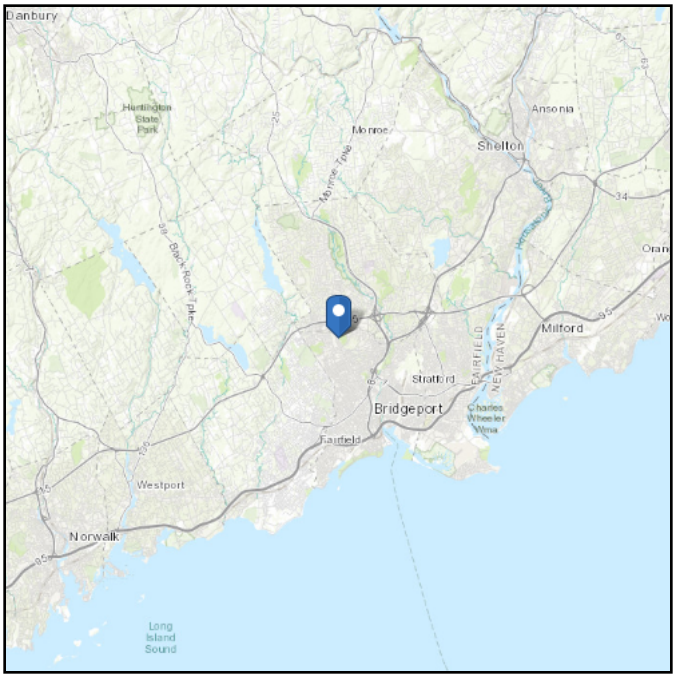
ADDITIONAL CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 240.76 ft (NAVD 88)
Latitude: 41.223344
Longitude: -73.216772



Wind

Results:

Wind Speed:	122 Vmph	125 Vmph per Local Jurisdiction
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, and Section 26.5.2, incorporating errata of March 12, 2014

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.

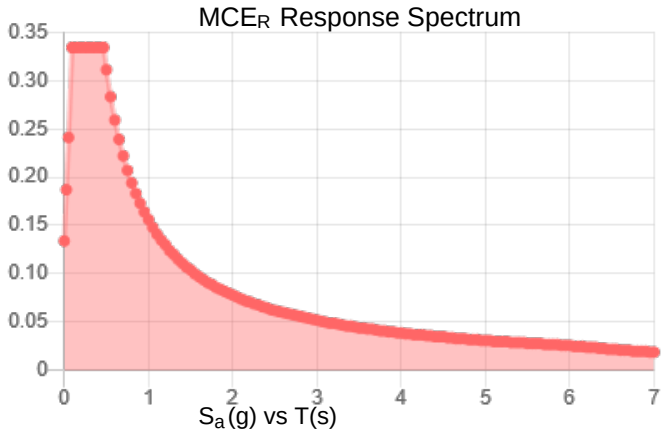
Seismic

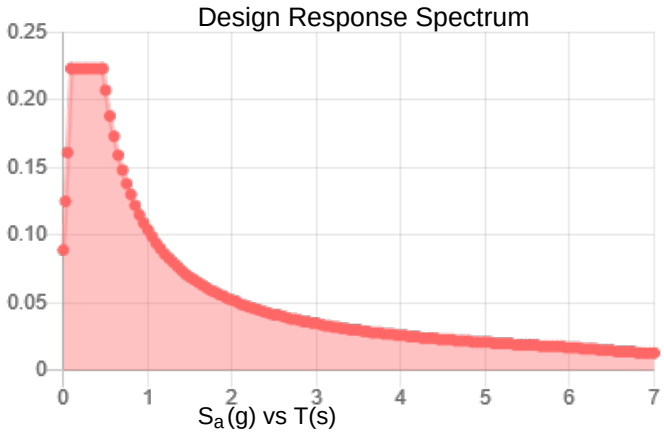
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.209	S_{DS} :	0.223
S_1 :	0.065	S_{D1} :	0.104
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.113
S_{MS} :	0.334	PGA_M :	0.178
S_{M1} :	0.156	F_{PGA} :	1.573
		I_e :	1

Seismic Design Category B





Data Accessed: Mon Feb 22 2021

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

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Mon Feb 22 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.

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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CCIpole

per TIA-222- H

Site BU: 841288

Work Order: 1891602

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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	150	41	0	12	15	21	0.21875	Auto	A572-50
2	109	40	3	12	21.00	27.04	0.25	Auto	A572-50
3	72	42	4	12	26.09	32.89	0.3125	Auto	A572-50
4	34	34	0	12	31.62	37.36	0.4063	Auto	A572-50

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	48.25	solid round	Dywidag #20	4			x			x			x			x
2	0	23.75	plate	PL 6.5x1.25	4		x			x			x			x	
3	23.75	44.25	plate	PL 6.5x1.25	4		x			x			x			x	
4	44.25	66.75	plate	PL 5x1.25	4		x			x			x			x	
5	66.75	80.5	plate	PL 4x1.25	4			x			x			x			x
6	95.42	109	plate	PL 5x1.25	2		x			x							
7	95.42	100.92	plate	PL 5x1.25	1									x			
8	100.92	109	plate	PL 5x1.25	1								x				
9	102.42	109	plate	PL 5x1.25	1											x	
10	109	128.5	plate	PL 4x1.25	4		x			x			x			x	
11	0	38.5	plate	(1) PL 6x1 w/ PL 4.5x1	1	x											
12	0	38.5	plate	(2) PL 6x1 w/ PL 4.5x1	3				x			x				x	
13	38.5	73.58	plate	(3) PL 6x1 w/ PL 4.5x1	4	x			x			x				x	
14	73.58	104.17	plate	(3) PL 6x1 w/ PL 4.5x1	2	x										x	
15	73.58	99.58	plate	(3) PL 6x1 w/ PL 4.5x1	1				x								
16	73.58	103.17	plate	(3) PL 6x1 w/ PL 4.5x1	1							x					
17																	

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	-	-	4.90874	3	None	n/a	None	n/a	34.400	4.909	0.0000	Dywidag
2	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	33	PC 8.8 - M20 (100)	33.000	19.000	6.563	1.1875	A572-65
3	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	33	PC 8.8 - M20 (100)	33.000	19.000	6.563	1.1875	A572-65
4	5	1.25	6.25	0.625	PC 8.8 - M20 (100)	27	PC 8.8 - M20 (100)	27.000	18.000	4.688	1.1875	A572-65
5	4	1.25	5	0.625	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	18.000	3.438	1.1875	A572-65
6	5	1.25	6.25	0.625	PC 8.8 - M20 (100)	27	PC 8.8 - M20 (100)	27.000	18.000	4.688	1.1875	A572-65
7	5	1.25	6.25	0.625	PC 8.8 - M20 (100)	27	PC 8.8 - M20 (100)	27.000	18.000	4.688	1.1875	A572-65
8	5	1.25	6.25	0.625	PC 8.8 - M20 (100)	27	PC 8.8 - M20 (100)	27.000	18.000	4.688	1.1875	A572-65
9	5	1.25	6.25	0.625	PC 8.8 - M20 (100)	27	PC 8.8 - M20 (100)	27.000	18.000	4.688	1.1875	A572-65
10	4	1.25	5	0.625	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	18.000	3.438	1.1875	A572-65
11	5.40899	1.94121	10.5	1.07	FORGBolt - M20 (A)	45	FORGBolt - M20 (A)	54.000	20.000	8.000	1.1875	A572-65
12	5.40899	1.94121	10.5	1.07	FORGBolt - M20 (A)	39	FORGBolt - M20 (A)	54.000	20.000	8.000	1.1875	A572-65
13	5.40899	1.94121	10.5	1.07	FORGBolt - M20 (A)	54	FORGBolt - M20 (A)	54.000	20.000	8.000	1.1875	A572-65
14	5.40899	1.94121	10.5	1.07	FORGBolt - M20 (A)	54	FORGBolt - M20 (A)	54.000	20.000	8.000	1.1875	A572-65
15	5.40899	1.94121	10.5	1.07	FORGBolt - M20 (A)	54	FORGBolt - M20 (A)	54.000	20.000	8.000	1.1875	A572-65
16	5.40899	1.94121	10.5	1.07	FORGBolt - M20 (A)	54	FORGBolt - M20 (A)	54.000	20.000	8.000	1.1875	A572-65

Connection Details for Custom Reinforcements

Reinforcement	End	# Bolts	N or X	Bolt Spacing (in)	Edge Dist (in)	Weld Grade (ksi)	Transverse (Horiz.) Weld Type	Horiz. Weld Length (in)	Horiz. Groove Depth (in)	Horiz. Groove Angle (deg)	Horiz. Fillet Size (in)	Vertical Weld Length (in)	Vertical Fillet Size (in)	Rev H Connection Capacity (kip)
Dywidag #20	Top	-	-	-	-				-	-		-	-	-
	Bottom	-	-	-	-				-	-		-	-	-
PL 6.5x1.25	Top	11	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	11	N	3	3	-	-	-	-	-	-	-	-	-
PL 5x1.25	Top	9	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	9	N	3	3	-	-	-	-	-	-	-	-	-
PL 4x1.25	Top	6	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	6	N	3	3	-	-	-	-	-	-	-	-	-
(1) PL 6x1 w/ PL 4.5x1	Top	18	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	15	N	3	3	-	-	-	-	-	-	-	-	-
(2) PL 6x1 w/ PL 4.5x1	Top	18	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	13	N	3	3	-	-	-	-	-	-	-	-	-
(3) PL 6x1 w/ PL 4.5x1	Top	18	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	18	N	3	3	-	-	-	-	-	-	-	-	-

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	150 - 145	5		12	15.000	15.732	0.21875	A572-50	1.000
2	145 - 140	5		12	15.732	16.463	0.21875	A572-50	1.000
3	140 - 135	5		12	16.463	17.195	0.21875	A572-50	1.000
4	135 - 130	5		12	17.195	17.927	0.21875	A572-50	1.000
5	130 - 128.5	1.5		12	17.927	18.146	0.21875	A572-50	1.000
6	128.5 - 128.25	0.25		12	18.146	18.183	0.66875	A572-50	0.867
7	128.25 - 123.25	5		12	18.183	18.915	0.64375	A572-50	0.877
8	123.25 - 118.25	5		12	18.915	19.646	0.61875	A572-50	0.889
9	118.25 - 113.25	5		12	19.646	20.378	0.60625	A572-50	0.887
10	113.25 - 109	4.25	0	12	20.378	21.000	0.59375	A572-50	0.889
11	109 - 108.75	0.25		12	21.000	21.038	0.725	A572-50	0.881
12	108.75 - 104.17	4.58		12	21.038	21.729	0.7	A572-50	0.893
13	104.17 - 103.92	0.25		12	21.729	21.767	0.975	A572-50	0.971
14	103.92 - 103.17	0.75		12	21.767	21.880	0.975	A572-50	0.967
15	103.17 - 102.92	0.25		12	21.880	21.918	1.125	A572-50	0.900
16	102.92 - 102.42	0.5		12	21.918	21.994	1.125	A572-50	0.897
17	102.42 - 102.17	0.25		12	21.994	22.031	0.95	A572-50	0.955
18	102.17 - 100.92	1.25		12	22.031	22.220	0.95	A572-50	0.949
19	100.92 - 100.67	0.25		12	22.220	22.258	1.025	A572-50	0.971
20	100.67 - 99.58	1.09		12	22.258	22.422	1	A572-50	0.988
21	99.58 - 99.33	0.25		12	22.422	22.460	1.4	A572-50	0.829
22	99.33 - 95.42	3.91		12	22.460	23.051	1.35	A572-50	0.839
23	95.42 - 95.17	0.25		12	23.051	23.088	1.05	A572-50	0.811
24	95.17 - 90.17	5		12	23.088	23.843	1	A572-50	0.830
25	90.17 - 85.17	5		12	23.843	24.598	0.975	A572-50	0.831
26	85.17 - 80.5	4.67		12	24.598	25.304	0.95	A572-50	0.835
27	80.5 - 80.25	0.25		12	25.304	25.341	1.3	A572-50	0.818
28	80.25 - 75.25	5		12	25.341	26.096	1.25	A572-50	0.829
29	75.25 - 73.58	1.67		12	26.096	26.348	1.25	A572-50	0.823
30	73.58 - 73.33	0.25		12	26.348	26.386	1.225	A572-50	0.838
31	73.33 - 72	4.33	3	12	26.386	27.040	1.225	A572-50	0.833
32	72 - 67	5		12	26.087	26.897	1.2875	A572-50	0.837
33	67 - 66.75	0.25		12	26.897	26.937	1.2875	A572-50	0.836
34	66.75 - 66.5	0.25		12	26.937	26.978	1.3625	A572-50	0.836
35	66.5 - 61.5	5		12	26.978	27.788	1.3125	A572-50	0.847
36	61.5 - 56.5	5		12	27.788	28.598	1.2875	A572-50	0.844
37	56.5 - 51.5	5		12	28.598	29.408	1.2375	A572-50	0.859
38	51.5 - 48.25	3.25		12	29.408	29.934	1.2125	A572-50	0.864
39	48.25 - 48	0.25		12	29.934	29.974	1.6125	A572-50	0.792
40	48 - 44.25	3.75		12	29.974	30.582	1.5625	A572-50	0.803
41	44.25 - 44	0.25		12	30.582	30.622	1.6625	A572-50	0.805
42	44 - 39	5		12	30.622	31.432	1.6125	A572-50	0.811
43	39 - 38.5	0.5		12	31.432	31.513	1.6125	A572-50	0.809
44	38.5 - 38.25	0.25		12	31.513	31.554	1.6125	A572-50	0.809
45	38.25 - 34	8.25	4	12	31.554	32.890	1.5625	A572-50	0.819
46	34 - 29	5		12	31.617	32.462	1.6813	A572-50	0.817
47	29 - 24	5		12	32.462	33.306	1.6313	A572-50	0.825
48	24 - 23.75	0.25		12	33.306	33.348	1.6313	A572-50	0.825
49	23.75 - 23.5	0.25		12	33.348	33.391	1.6063	A572-50	0.836
50	23.5 - 18.5	5		12	33.391	34.235	1.5813	A572-50	0.833
51	18.5 - 13.5	5		12	34.235	35.080	1.5313	A572-50	0.844
52	13.5 - 8.5	5		12	35.080	35.924	1.5063	A572-50	0.843
53	8.5 - 3.5	5		12	35.924	36.769	1.4563	A572-50	0.857
54	3.5 - 0	3.5		12	36.769	37.360	1.4313	A572-50	0.861

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	150 - 145	3.40	44.15	5.52
2	145 - 140	3.72	73.41	6.14
3	140 - 135	7.15	120.52	10.48
4	135 - 130	7.50	174.11	10.97
5	130 - 128.5	7.61	190.66	11.11
6	128.5 - 128.25	7.66	193.44	11.13
7	128.25 - 123.25	8.40	250.44	11.67
8	123.25 - 118.25	13.35	317.32	16.32
9	118.25 - 113.25	14.18	400.30	16.87
10	113.25 - 109	15.86	473.30	17.96
11	109 - 108.75	15.92	477.80	17.98
12	108.75 - 104.17	16.83	561.54	18.59
13	104.17 - 103.92	16.91	566.19	18.62
14	103.92 - 103.17	17.12	580.20	18.73
15	103.17 - 102.92	17.20	584.88	18.77
16	102.92 - 102.42	17.35	594.29	18.84
17	102.42 - 102.17	17.42	599.00	18.88
18	102.17 - 100.92	17.76	622.71	19.06
19	100.92 - 100.67	17.84	627.48	19.09
20	100.67 - 99.58	18.16	648.38	19.26
21	99.58 - 99.33	18.26	653.20	19.29
22	99.33 - 95.42	21.87	739.60	22.17
23	95.42 - 95.17	21.94	745.15	22.20
24	95.17 - 90.17	23.36	857.98	22.93
25	90.17 - 85.17	24.81	974.35	23.63
26	85.17 - 80.5	26.18	1086.16	24.26
27	80.5 - 80.25	26.28	1092.23	24.29
28	80.25 - 75.25	28.15	1215.50	25.02
29	75.25 - 73.58	28.77	1257.48	25.26
30	73.58 - 73.33	28.88	1263.79	25.28
31	73.33 - 72	29.38	1297.55	25.48
32	72 - 67	32.38	1426.93	26.25
33	67 - 66.75	32.49	1433.50	26.28
34	66.75 - 66.5	32.60	1440.07	26.31
35	66.5 - 61.5	34.72	1573.34	27.00
36	61.5 - 56.5	36.87	1709.94	27.65
37	56.5 - 51.5	39.05	1849.74	28.28
38	51.5 - 48.25	40.48	1942.27	28.67
39	48.25 - 48	40.62	1949.44	28.69
40	48 - 44.25	42.55	2057.96	29.19
41	44.25 - 44	42.70	2065.26	29.21
42	44 - 39	45.45	2212.89	29.84
43	39 - 38.5	45.73	2227.83	29.90
44	38.5 - 38.25	45.87	2235.31	29.93
45	38.25 - 34	48.23	2363.57	30.43
46	34 - 29	53.26	2517.46	31.11
47	29 - 24	56.26	2674.31	31.64
48	24 - 23.75	56.42	2682.22	31.66
49	23.75 - 23.5	56.57	2690.14	31.69
50	23.5 - 18.5	59.60	2849.92	32.22
51	18.5 - 13.5	62.66	3012.29	32.74
52	13.5 - 8.5	65.75	3177.22	33.24
53	8.5 - 3.5	68.86	3344.65	33.74
54	3.5 - 0	71.06	3463.32	34.09

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
150 - 145	Pole	TP15.732x15x0.2188	Pole	22.1%	Pass
145 - 140	Pole	TP16.463x15.732x0.2188	Pole	33.2%	Pass
140 - 135	Pole	TP17.195x16.463x0.2188	Pole	50.1%	Pass
135 - 130	Pole	TP17.927x17.195x0.2188	Pole	66.2%	Pass
130 - 128.5	Pole	TP18.146x17.927x0.2188	Pole	70.6%	Pass
128.5 - 128.25	Pole + Reinf.	TP18.183x18.146x0.6688	Reinf. 10 Bolt-Shaft Bearing	43.1%	Pass
128.25 - 123.25	Pole + Reinf.	TP18.915x18.183x0.6438	Reinf. 10 Tension Rupture	43.7%	Pass
123.25 - 118.25	Pole + Reinf.	TP19.646x18.915x0.6188	Reinf. 10 Tension Rupture	52.7%	Pass
118.25 - 113.25	Pole + Reinf.	TP20.378x19.646x0.6063	Reinf. 10 Tension Rupture	63.2%	Pass
113.25 - 109	Pole + Reinf.	TP21x20.378x0.5938	Reinf. 10 Bolt-Shaft Bearing	86.7%	Pass
109 - 108.75	Pole + Reinf.	TP21.038x21x0.725	Reinf. 6 Tension Rupture	54.7%	Pass
108.75 - 104.17	Pole + Reinf.	TP21.729x21.038x0.7	Reinf. 6 Tension Rupture	61.5%	Pass
104.17 - 103.92	Pole + Reinf.	TP21.767x21.729x0.975	Reinf. 6 Tension Rupture	55.0%	Pass
103.92 - 103.17	Pole + Reinf.	TP21.88x21.767x0.975	Reinf. 6 Tension Rupture	55.9%	Pass
103.17 - 102.92	Pole + Reinf.	TP21.918x21.88x1.125	Reinf. 6 Tension Rupture	45.4%	Pass
102.92 - 102.42	Pole + Reinf.	TP21.994x21.918x1.125	Reinf. 6 Tension Rupture	46.0%	Pass
102.42 - 102.17	Pole + Reinf.	TP22.031x21.994x0.95	Reinf. 6 Tension Rupture	50.4%	Pass
102.17 - 100.92	Pole + Reinf.	TP22.22x22.031x0.95	Reinf. 6 Tension Rupture	51.8%	Pass
100.92 - 100.67	Pole + Reinf.	TP22.258x22.22x1.025	Reinf. 6 Tension Rupture	51.0%	Pass
100.67 - 99.58	Pole + Reinf.	TP22.422x22.258x1	Reinf. 6 Tension Rupture	52.2%	Pass
99.58 - 99.33	Pole + Reinf.	TP22.46x22.422x1.4	Reinf. 14 Tension Rupture	37.9%	Pass
99.33 - 95.42	Pole + Reinf.	TP23.051x22.46x1.35	Reinf. 14 Tension Rupture	41.7%	Pass
95.42 - 95.17	Pole + Reinf.	TP23.088x23.051x1.05	Reinf. 15 Tension Rupture	51.5%	Pass
95.17 - 90.17	Pole + Reinf.	TP23.843x23.088x1	Reinf. 15 Tension Rupture	56.9%	Pass
90.17 - 85.17	Pole + Reinf.	TP24.598x23.843x0.975	Reinf. 15 Tension Rupture	62.2%	Pass
85.17 - 80.5	Pole + Reinf.	TP25.304x24.598x0.95	Reinf. 15 Tension Rupture	66.9%	Pass
80.5 - 80.25	Pole + Reinf.	TP25.341x25.304x1.3	Reinf. 5 Bolt-Shaft Bearing	58.0%	Pass
80.25 - 75.25	Pole + Reinf.	TP26.096x25.341x1.25	Reinf. 5 Tension Rupture	58.9%	Pass
75.25 - 73.58	Pole + Reinf.	TP26.348x26.096x1.25	Reinf. 5 Tension Rupture	60.2%	Pass
73.58 - 73.33	Pole + Reinf.	TP26.386x26.348x1.225	Reinf. 5 Tension Rupture	60.4%	Pass
73.33 - 72	Pole + Reinf.	TP27.04x26.386x1.225	Reinf. 5 Tension Rupture	61.5%	Pass
72 - 67	Pole + Reinf.	TP26.897x26.087x1.2875	Reinf. 5 Tension Rupture	63.2%	Pass
67 - 66.75	Pole + Reinf.	TP26.937x26.897x1.2875	Reinf. 5 Tension Rupture	63.4%	Pass
66.75 - 66.5	Pole + Reinf.	TP26.978x26.937x1.3625	Reinf. 13 Tension Rupture	56.0%	Pass
66.5 - 61.5	Pole + Reinf.	TP27.788x26.978x1.3125	Reinf. 13 Tension Rupture	59.0%	Pass
61.5 - 56.5	Pole + Reinf.	TP28.598x27.788x1.2875	Reinf. 13 Tension Rupture	61.9%	Pass
56.5 - 51.5	Pole + Reinf.	TP29.408x28.598x1.2375	Reinf. 13 Tension Rupture	64.6%	Pass
51.5 - 48.25	Pole + Reinf.	TP29.934x29.408x1.2125	Reinf. 13 Tension Rupture	66.4%	Pass
48.25 - 48	Pole + Reinf.	TP29.974x29.934x1.6125	Reinf. 1 Compression	53.2%	Pass
48 - 44.25	Pole + Reinf.	TP30.582x29.974x1.5625	Reinf. 1 Compression	54.8%	Pass
44.25 - 44	Pole + Reinf.	TP30.622x30.582x1.6625	Reinf. 1 Compression	51.7%	Pass
44 - 39	Pole + Reinf.	TP31.432x30.622x1.6125	Reinf. 1 Compression	53.6%	Pass
39 - 38.5	Pole + Reinf.	TP31.513x31.432x1.6125	Reinf. 1 Compression	53.8%	Pass
38.5 - 38.25	Pole + Reinf.	TP31.554x31.513x1.6125	Reinf. 1 Compression	53.9%	Pass
38.25 - 34	Pole + Reinf.	TP32.89x31.554x1.5625	Reinf. 1 Compression	55.5%	Pass
34 - 29	Pole + Reinf.	TP32.462x31.617x1.6813	Reinf. 1 Compression	55.0%	Pass
29 - 24	Pole + Reinf.	TP33.306x32.462x1.6313	Reinf. 1 Compression	56.5%	Pass
24 - 23.75	Pole + Reinf.	TP33.348x33.306x1.6313	Reinf. 1 Compression	56.6%	Pass
23.75 - 23.5	Pole + Reinf.	TP33.391x33.348x1.6063	Reinf. 1 Compression	56.7%	Pass
23.5 - 18.5	Pole + Reinf.	TP34.235x33.391x1.5813	Reinf. 1 Compression	58.1%	Pass
18.5 - 13.5	Pole + Reinf.	TP35.08x34.235x1.5313	Reinf. 12 Tension Rupture	59.5%	Pass
13.5 - 8.5	Pole + Reinf.	TP35.924x35.08x1.5063	Reinf. 12 Tension Rupture	60.9%	Pass
8.5 - 3.5	Pole + Reinf.	TP36.769x35.924x1.4563	Reinf. 12 Tension Rupture	62.3%	Pass
3.5 - 0	Pole + Reinf.	TP37.36x36.769x1.4313	Reinf. 12 Tension Rupture	63.2%	Pass
				Summary	
			Pole	70.6%	Pass
			Reinforcement	86.7%	Pass
			Overall	86.7%	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
150 - 145	336	n/a	336	10.91	n/a	10.91	22.1%																
145 - 140	386	n/a	386	11.43	n/a	11.43	33.2%																
140 - 135	440	n/a	440	11.94	n/a	11.94	50.1%																
135 - 130	500	n/a	500	12.46	n/a	12.46	66.2%																
130 - 128.5	519	n/a	519	12.61	n/a	12.61	70.6%																
128.5 - 128.25	522	959	1481	12.64	20.00	32.64	24.4%										43.1%						
128.25 - 123.25	588	1031	1619	13.15	20.00	33.15	29.9%										43.7%						
123.25 - 118.25	660	1106	1766	13.66	20.00	33.66	36.3%										52.7%						
118.25 - 113.25	738	1184	1922	14.18	20.00	34.18	43.6%										63.2%						
113.25 - 109	808	1252	2060	14.62	20.00	34.62	49.8%										86.7%						
109 - 108.75	924	1580	2504	16.71	25.00	41.71	41.2%						54.7%		54.7%	54.7%							
108.75 - 104.17	1020	1678	2697	17.27	25.00	42.27	46.3%						61.5%		61.5%	61.5%							
104.17 - 103.92	1157	2598	3755	17.30	46.00	63.30	42.6%						55.0%		44.3%	34.0%					36.0%		
103.92 - 103.17	1175	2623	3798	17.39	46.00	63.39	43.4%						55.9%		45.1%	34.7%					36.6%		
103.17 - 102.92	1087	3113	4200	17.42	50.25	67.67	36.6%						45.4%			34.6%					40.3%		37.4%
102.92 - 102.42	1099	3132	4231	17.48	50.25	67.73	37.0%						46.0%			35.1%					40.8%		37.8%
102.42 - 102.17	1069	2600	3669	17.51	44.00	61.51	39.7%						50.4%								50.3%		38.0%
102.17 - 100.92	1097	2640	3737	17.66	44.00	61.66	40.9%						51.8%								51.7%		39.1%
100.92 - 100.67	1123	2913	4036	17.69	50.25	67.94	40.2%						51.0%	36.9%							42.2%		37.6%
100.67 - 99.58	1148	2952	4100	17.82	50.25	68.07	41.2%						52.2%	37.8%							43.2%		38.5%
99.58 - 99.33	1128	4237	5365	17.85	60.75	78.60	29.3%						35.3%	33.5%							37.9%	33.4%	36.8%
99.33 - 95.42	1220	4441	5661	18.33	60.75	79.08	32.3%						38.8%	36.9%							41.7%	36.8%	40.5%
95.42 - 95.17	1226	3399	4625	18.36	42.00	60.36	38.1%														51.5%	51.5%	51.5%
95.17 - 90.17	1351	3602	4954	18.97	42.00	60.97	42.5%														56.9%	56.9%	56.9%
90.17 - 85.17	1485	3811	5296	19.57	42.00	61.57	47.0%														62.2%	62.2%	62.2%
85.17 - 80.5	1618	4012	5630	20.14	42.00	62.14	51.1%														66.9%	66.9%	66.9%
80.5 - 80.25	1625	5805	7430	20.17	62.00	82.17	39.0%					58.0%									51.1%	51.1%	51.1%
80.25 - 75.25	1776	6128	7904	20.78	62.00	82.78	42.4%					58.9%									54.9%	54.9%	54.9%
75.25 - 73.58	1829	6237	8066	20.98	62.00	82.98	43.6%					60.2%									56.1%	56.1%	56.1%
73.58 - 73.33	1837	6254	8091	21.01	62.00	83.01	43.7%					60.4%								56.3%			
73.33 - 72	1880	6342	8222	21.17	62.00	83.17	44.6%					61.5%								57.3%			
72 - 67	2416	6480	8896	26.71	62.00	88.71	44.1%					63.2%								58.9%			
67 - 66.75	2427	6498	8925	26.75	62.00	88.75	44.3%					63.4%								59.0%			
66.75 - 66.5	2439	7027	9465	26.79	67.00	93.79	42.0%				55.2%									56.0%			
66.5 - 61.5	2668	7423	10090	27.61	67.00	94.61	44.3%				58.2%									59.0%			
61.5 - 56.5	2910	7830	10740	28.42	67.00	95.42	46.6%				61.0%									61.9%			
56.5 - 51.5	3168	8248	11415	29.23	67.00	96.23	48.8%				63.8%									64.6%			
51.5 - 48.25	3343	8525	11868	29.76	67.00	96.76	50.4%				65.6%									66.4%			
48.25 - 48	3356	11731	15088	29.80	86.63	116.44	39.9%	53.2%			51.9%									52.5%			
48 - 44.25	3567	12166	15733	30.41	86.63	117.05	41.5%	54.8%			53.5%									54.2%			
44.25 - 44	3581	13179	16760	30.46	94.13	124.59	39.1%	51.7%		46.9%										51.1%			
44 - 39	3876	13821	17697	31.27	94.13	125.40	41.1%	53.6%		48.8%										53.1%			
39 - 38.5	3906	13886	17792	31.35	94.13	125.49	41.3%	53.8%		49.0%										53.3%			
38.5 - 38.25	3922	13918	17840	31.39	94.13	125.53	41.4%	53.9%		49.1%								53.4%	53.4%				
38.25 - 34	4187	14478	18664	32.08	94.13	126.22	43.1%	55.5%		50.7%								55.1%	55.1%				
34 - 29	5508	14659	20166	41.88	94.13	136.01	41.5%	55.0%		50.3%								54.7%	54.7%				
29 - 24	5955	15365	21319	42.98	94.13	137.12	42.8%	56.5%		51.9%								56.3%	56.3%				
24 - 23.75	5978	15400	21378	43.04	94.13	137.17	42.9%	56.6%		51.9%								56.4%	56.4%				
23.75 - 23.5	6001	15436	21437	43.09	94.13	137.23	43.0%	56.7%	52.0%									56.5%	56.5%				
23.5 - 18.5	6474	16161	22634	44.19	94.13	138.33	44.2%	58.1%	53.5%									58.0%	58.0%				
18.5 - 13.5	6971	16902	23872	45.30	94.13	139.43	45.4%	59.5%	54.9%									59.5%	59.5%				
13.5 - 8.5	7492	17660	25152	46.40	94.13	140.54	46.6%	60.8%	56.2%									60.9%	60.9%				
8.5 - 3.5	8040	18435	26474	47.50	94.13	141.64	47.7%	62.0%	57.5%									62.3%	62.3%				
3.5 - 0	8438	18987	27425	48.28	94.13	142.41	48.4%	62.8%	58.4%									63.2%	63.2%				

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

TOWER ENGINEERING PROFESSIONALS

Bridgeport North (BU 841288)

TEP #: 25567.502325

Analysis: IVV 2/26/2021

Check: JSC 2/26/2021

Elevation: 109.00-ft

Loads	
Axial:	15.9 k
Moment:	473.3 k·ft
Shear:	18.0 k
Torsion:	0.7 k·ft

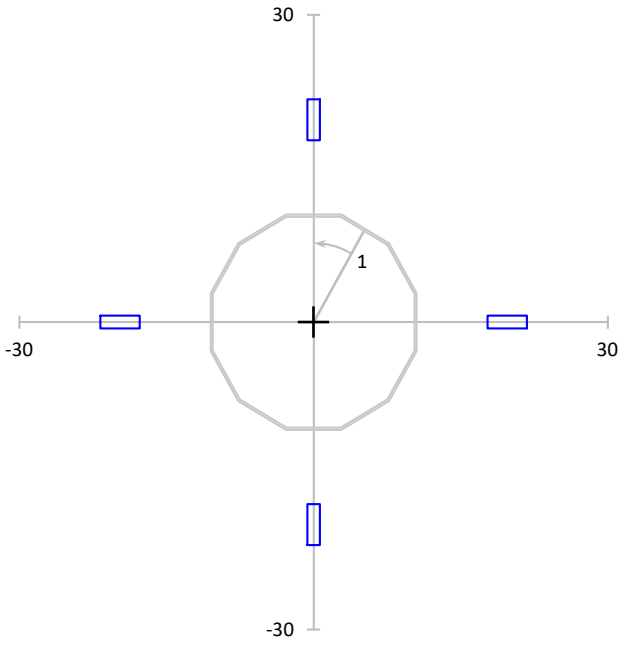
Pole Info	
OD:	21.00 in
t:	0.2188 in
Pole A_G:	0.00 in^2
Pole I_G:	0.0 in^4

Equivalent Loads to Pole	
Axial:	0.0 k
Moment:	0.0 k·ft
Shear:	0.0 k
Torsion:	0.0 k·ft

Controlling	
Angle:	**30.00°**
I_G:	3,915.3 in^4
A_G:	20.00 in^2

Shear Flow	
Controlling Mod:	1
q:	0.453 k/in
Bolt/Weld Cap:	1000.0 k/bolt
Max Spacing:	2207.41 in
Stitch:	15.00 in
Capacity:	**0.7%**

Minimum	
Angle:	**162.20°**
I_{MIN}:	3,915.3 in^4
t_{EFF}:	1.2335 in



Pole Segment: L1, F_Y = 50 ksi

POLE CAPACITY

Angle (°)	y_{CONT} (in)	I (in^4)	σ_A (ksi)	σ_B (ksi)	σ_V (ksi)	σ_T (ksi)	ϕF_A (ksi)	ϕF_B (ksi)	ϕF_V (ksi)	ϕF_T (ksi)	Capacity
345.00	10.88	3915.3	0.000	0.000	0.000	0.000	45.000	56.348	13.500	28.500	**0.0%**

MODIFICATION CAPACITIES

Mod Number	#	Angle (°)	$\bar{y}_{CONT}$ (in)	I (in^4)	σ_A (ksi)	σ_B (ksi)	σ_V (ksi)	ϕF_A (ksi)	ϕF_B (ksi)	ϕF_V (ksi)	Capacity
1	1	**30.00**	19.75	3915.3	0.793	28.650	0.898	52.663	52.663	29.250	**53.3%**
1	2	**120.00**	19.75	3915.3	0.793	28.650	0.898	52.663	52.663	29.250	**53.3%**
1	3	**210.00**	19.75	3915.3	0.793	28.650	0.898	52.663	52.663	29.250	**53.3%**
1	4	**300.00**	19.75	3915.3	0.793	28.650	0.898	52.663	52.663	29.250	**53.3%**

Tower Engineering Professionals, Inc.

326 Tryon Road|Raleigh, NC 27603-3530|Office: (919) 661-6351|Fax: (919) 661-6350|www.tepgroup.net

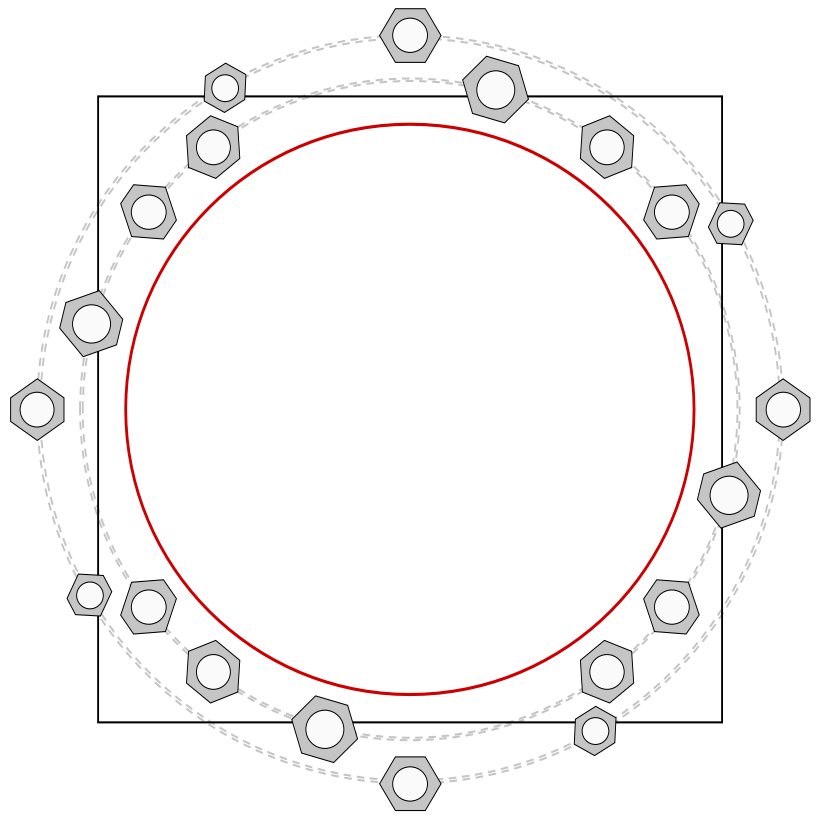
Monopole Base Plate Connection

Site Info	
BU #	841288
Site Name	Bridgeport North
Order #	527511 Rev. 3

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

Applied Loads	
Moment (kip-ft)	3463.00
Axial Force (kips)	71.00
Shear Force (kips)	34.00

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

GROUP 1: (8) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 43" BC
Anchor Spacing: 6 in
GROUP 2: (4) 2-1/4" ø bolts (A193 Gr. B7 N; Fy=105 ksi, Fu=125 ksi) on 49" BC
GROUP 3: (4) 1-3/4" ø bolts (A193 Gr. B7 N; Fy=105 ksi, Fu=125 ksi) on 48.63" BC
GROUP 4: (4) 2-1/2" ø bolts (Dywidag N; Fy=80 ksi, Fu=100 ksi) on 43.36" BC

Base Plate Data

41" W x 2.75" Plate (A572-50; Fy=50 ksi, Fu=65 ksi); Clip: 0 in

Stiffener Data

N/A

Pole Data

37.36" x 0.4063" 12-sided pole (A572-50; Fy=50 ksi, Fu=65 ksi)

Analysis Results

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

GROUP 1:		
Pu_c = 181.69	ϕPn_c = 268.39	**Stress Rating**
Vu = 4.25	ϕVn = 120.77	**64.6%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 2:		
Pu_c = 197.05	ϕPn_c = 375.74	**Stress Rating**
Vu = 0	ϕVn = 169.08	**49.9%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 3:		
Pu_c = 114.33	ϕPn_c = 227.3	**Stress Rating**
Vu = 0	ϕVn = 102.28	**47.9%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 4:		
Pu_c = 263.43	ϕPn_c = 353.52	**Stress Rating**
Vu = 0	ϕVn = 159.08	**71.0%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	24.11	(Flexural)
Allowable Stress (ksi):	45	
Stress Rating:	**51.0%**	**Pass**

CCIplate

Elevation (ft)	0	*(Base)*

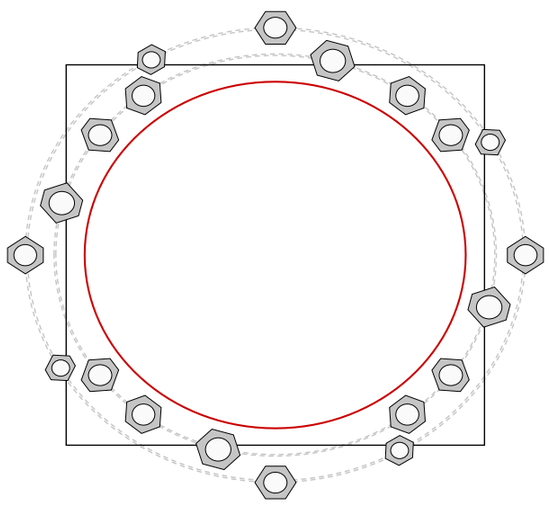
note: Bending interaction not considered when Grout Considered = "Yes"

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

Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η:	I_{ar} (in):	Thread Type	Area Override, in^2	Tension Only
1	1	36.979067	2.25	A615-75	43	0.5	2.25	N-Included		No
2	1	53.020933	2.25	A615-75	43	0.5	2.25	N-Included		No
3	1	126.97907	2.25	A615-75	43	0.5	2.25	N-Included		No
4	1	143.02093	2.25	A615-75	43	0.5	2.25	N-Included		No
5	1	216.97907	2.25	A615-75	43	0.5	2.25	N-Included		No
6	1	233.02093	2.25	A615-75	43	0.5	2.25	N-Included		No
7	1	306.97907	2.25	A615-75	43	0.5	2.25	N-Included		No
8	1	323.02093	2.25	A615-75	43	0.5	2.25	N-Included		No
9	2	90	2.25	A193 Gr. B7	49	0.5	0	N-Included		No
10	2	180	2.25	A193 Gr. B7	49	0.5	0	N-Included		No
11	2	270	2.25	A193 Gr. B7	49	0.5	0	N-Included		No
12	2	360	2.25	A193 Gr. B7	49	0.5	0	N-Included		No
13	3	30	1.75	A193 Gr. B7	48.63	0.5	0	N-Included		No
14	3	120	1.75	A193 Gr. B7	48.63	0.5	0	N-Included		No
15	3	210	1.75	A193 Gr. B7	48.63	0.5	0	N-Included		No
16	3	300	1.75	A193 Gr. B7	48.63	0.5	0	N-Included		No
17	4	75	2.5	Dywidag	43.36	0.5	0	N-Included	4.91	No
18	4	165	2.5	Dywidag	43.36	0.5	0	N-Included	4.91	No
19	4	255	2.5	Dywidag	43.36	0.5	0	N-Included	4.91	No
20	4	345	2.5	Dywidag	43.36	0.5	0	N-Included	4.91	No

Plot Graphic



Monopole on Mat Foundation with Rock Anchors - TIA-222-H

Site Data	
Site Name:	Bridgeport North
CCI Number:	BU 841288
TEP Job Number:	25567.502325

Factored Reactions from TNX		
Axial	71	k
Shear	34	k
Moment	3463	k-ft

Mat and Pier Properties		
Mat Width	18.0	ft
Mat Length	20.0	ft
Mat Thickness	6.8	ft
Pier Type	Square	
Pier Width/Diam.	0.0	ft
Pier Height	0.0	ft

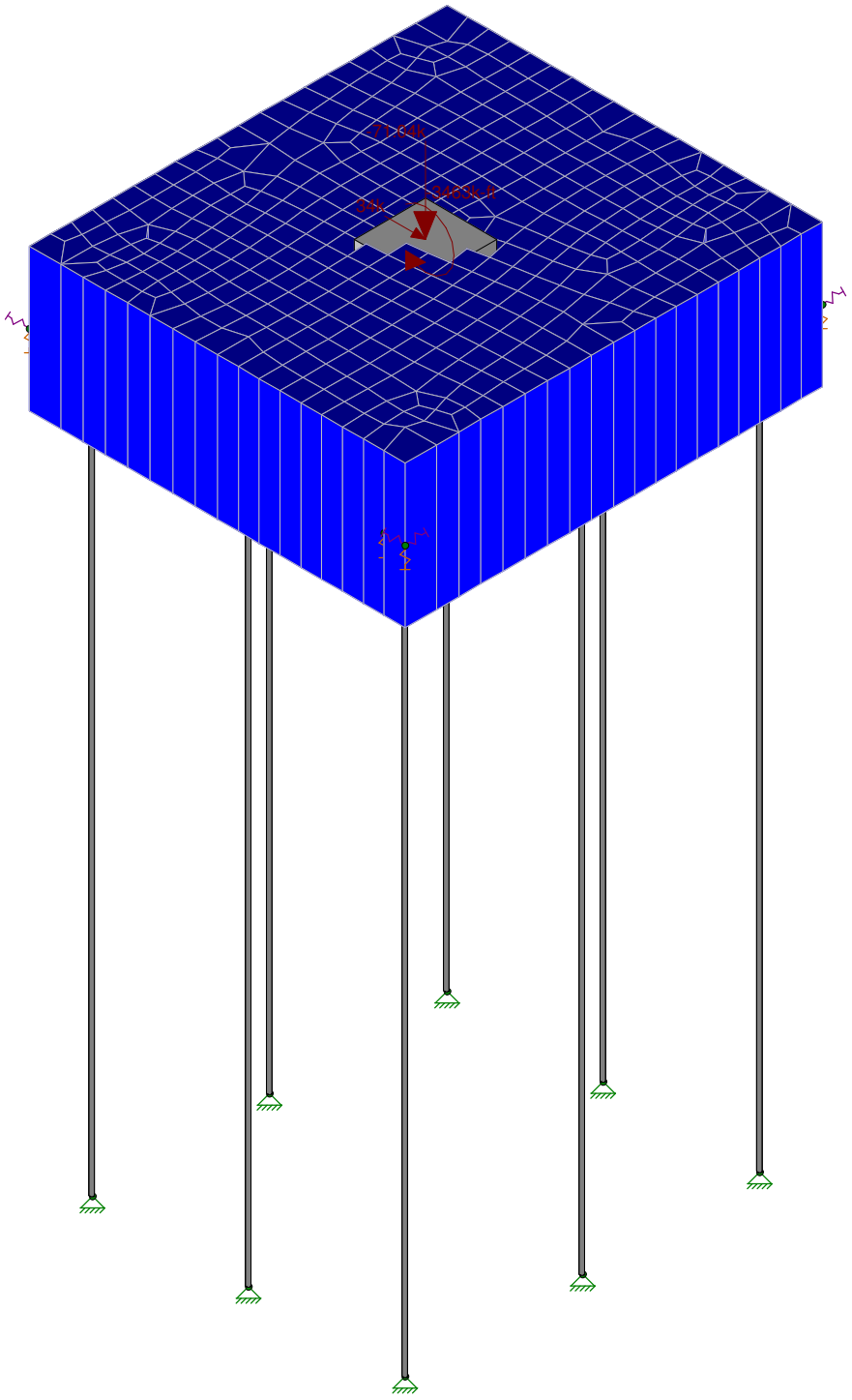
Mat Foundation Results		
Bearing Stress	7.4	ksf
Bearing Capacity, ϕq_{allow}	22.5	ksf
% Capacity	33.1%	**Pass**

Soil Properties		
q_{allow}	10.0	ksf
FS	3.0	
Subgrade Mod.	360	kcf

Mat and Pier Structural Results		
Bending Moment	1658.2	kft
Clearance	3	in
Rebar Fy	60	ksi
Rebar Diameter	1	in
Rebar Spacing	12	in
Concrete F'c	3	ksi
Flexural Capacity, ϕMn	5763.1	kft
% Capacity	28.8%	**Pass**

Rock Anchor Properties		
Type of Bar	WilliamsForm150	
Bar Size	1.75	in
Net Area	2.60	in^2
Ultimate Stress, Fu	150.0	ksi
Yield Stress, Fy	120.0	ksi
Bar Diameter	1.750	in

Rock Anchor Steel Results		
Max Tension Force	32.8	k
Anchor Capacity, ϕPn	280.8	k
% Capacity	11.7%	**Pass**



Loads: LC 1, 1.2D+Wind 0
Envelope Only Solution

Crown Castle	Bridgeport North (BU 841288)	SK - 1
IVV		Feb 26, 2021 at 3:47 PM
TEP No. 25567.502325		841288_Fdn.r3d

Exhibit E

Date: March 23, 2021

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

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

Subject:	**Mount Replacement Analysis Report**	
Carrier Designation:	**AT&T Mobility Equipment Change-Out**	
	Carrier Site Number:	10034977
	Carrier Site Name:	CT2106
Crown Castle Designation:	**Crown Castle BU Number:**	841288
	Crown Castle Site Name:	Bridgeport North
	Crown Castle JDE Job Number:	617834
	Crown Castle Order Number:	527511, Rev.3
Engineering Firm Designation:	**B+T Group Report Designation:**	126536.010.01 R2
Site Data:	**205 Kaechele Place, Bridgeport, CT, Fairfield, 06606** **Latitude 41° 13' 24.04" Longitude -73° 13' 0.38"**	
Structure Information:	**Tower Height & Type:**	**150 ft. Monopole**
	Mount Elevation:	**150 ft.**
	Mount Type:	**12.5 ft. Platform Mount**

Dear Ms. Tarr,

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

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

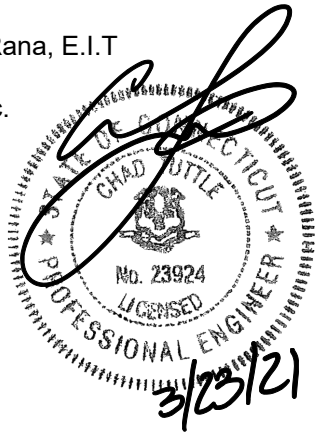
Platform Mount **Sufficient**

***Sufficient upon completion of the changes listed in the 'Recommendations' section of this report.**

This analysis has been performed in accordance with the 2018 International Building Code based upon an ultimate 3-second gust wind speed of 118 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount structural analysis prepared by: Suman Rana, E.I.T

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



Chad E. Tuttle, P.E.

TABLE OF CONTENTS

1) INTRODUCTION

This is a proposed 12.5' Platform Mount, designed by Site Pro1, (Part# RMQP-12-H5) without the catwalk platform but with modified handrail kit and mount pipes as shown in Appendix. We are considering the ring mount of the platform to be installed 1'-0" below the top of the tower. Hence, the MCL is considered as 150 ft. To maintain the RAD center line of 154 ft. the antennas are considered vertically eccentric in the analysis.

2) ANALYSIS CRITERIA

Building Code:	2018 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	118 mph
Exposure Category:	C
Topographic Factor at Base:	1
Topographic Factor at Mount:	1
Ice Thickness:	1 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.212
Seismic S_1:	0.054
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 and Existing Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Qty.	Manufacturer	Model / Type	Mount / Modification Details
150	154	3	CCI	DMP65R-BU6D	12.5 ft. Platform Mount
		3	CCI	HPA-65R-BUU-H6	
		3	Quintel	QS66512-2	
		6	CCI	TPX-070821	
		3	Ericsson	RRUS 32 B2	
		3	Ericsson	RRUS 32 B30	
		3	Ericsson	RRUS 32 B66A	
		3	Ericsson	RRUS 4449 B5/B12	
		2	Raycap	DC6-48-60-18-8F	

Note: The antennas are considered centered between the bottom face horizontal and the support rail.

Table 2 - Documents Provided

Document	Remarks	Reference	Source
CCI Order	Existing Loading Proposed Loading	Date: 10/07/2020	Crown Castle
RFDS		Date: 09/30/2020	
Mount Information	RMQP-12-H5	-	-

3) ANALYSIS PROCEDURE

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.

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

This analysis was performed in accordance with Crown Castle's ENG-SOW-10208 *Tower Mount Analysis* (Revision D). In addition, this analysis is in accordance with AT&T's Mount Technical Directive – R15.

Manufactures drawing were used to create the model.

3.2) Assumptions

1. The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design, TIA Standards, and/or manufacturer's specifications.
2. The mount has been maintained in accordance with the manufacturer's specifications and is free of damage.
3. The configuration of antennas, mounts, and other appurtenances are as specified in Table-1.
4. All mount components have been assumed to be in sufficient condition to carry their full design capacity for the analysis.
5. Mount areas and weights are determined from field measurements, standard material properties, and/or manufacturer product data.
   The following assumptions have been included in the analysis of the mount

Component	Section	Length	Note
RRU Pipe	2" Std. Pipe	8'-0"	On Support Tubes

6. Serviceability with respect to antenna twist, tilt, roll or lateral translation is not checked and is left to the carrier or tower owner to ensure conformance.
7. All prior structural modifications, if any are assumed to be correctly installed and fully effective.
8. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
9. The analysis will be required to be revised if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.
10. The following material grades were assumed (Unless Noted Otherwise):
    (a) Connection Bolts : ASTM A325
    (b) Steel Pipe : ASTM A53 (GR. 35)
    (c) HSS (Round) : ASTM 500 (GR. B-42)
    (d) HSS (Rectangular) : ASTM 500 (GR. B-46)
    (e) Channel : ASTM A36 (GR. 36)
    (f) Steel Solid Rod : ASTM A36 (GR. 36)
    (g) Steel Plate : ASTM A36 (GR. 36)
    (h) Steel Angle : ASTM A36 (GR. 36)
    (i) UNISTRUT : ASTM A570 (GR. 33)

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

4) ANALYSIS RESULTS

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

Notes	Component	Centerline (ft)	Critical Member	% Capacity	Pass / Fail
1,2	Main Horizontals	150	1	22.5	Pass
	Support Rails	150	81	38.5	Pass

	Support Tubes	150	7	96.1	Pass
	Mount Pipes	150	97	49.2	Pass
	Connection Plates	150	52	60.3	Pass
	Support Angles	150	48	39.4	Pass
	Connection Angles	150	45	46.7	Pass
3	Connection Bolts	-	-	36.64	Pass

Structure Rating (max from all components) =	**96.1%**

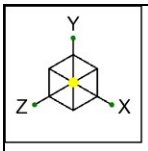
Notes:
1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
2) All sectors are typical
3) See additional documentation in "Appendix D - Additional Calculations" for calculations supporting the % capacity reported.

4.1) Recommendations

The 12.5’ platform mount, designed by Site Pro1, (Part# RMQP-12-H5) without the catwalk platform and modified as shown in Appendix A has sufficient capacity to carry the proposed loading configuration. No modifications are required at this time.

APPENDIX A

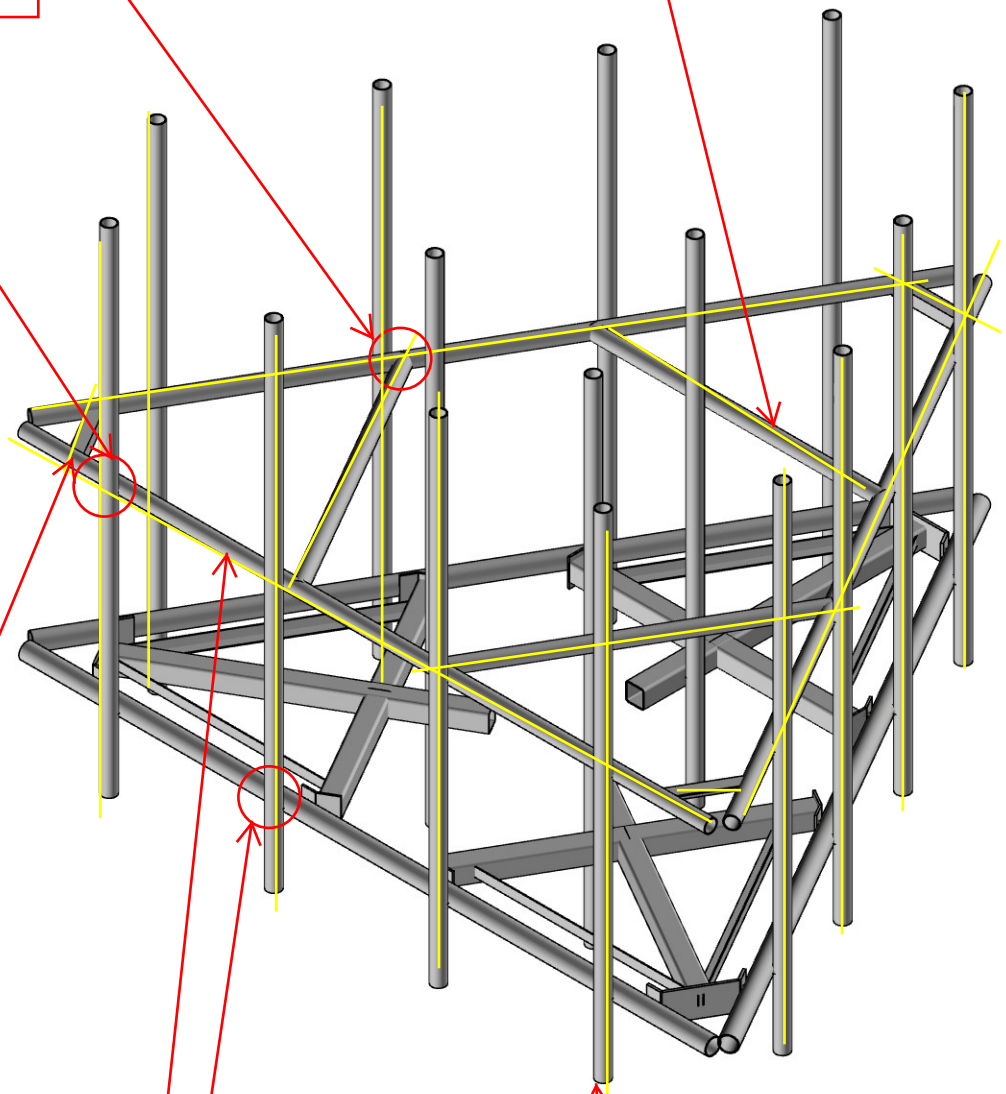
WIRE FRAME AND RENDERED MODELS



NEW SITEPRO1 ADJUSTABLE CLAMP ASSEMBLY, PART# PUCK OR EQUIVALENT (TYP. 6 PLACES)

NEW 2.5" STD. PIPE x 5'-6" LONG (TYP. 3 PLACES)

NEW CROSSOVER PLATE KIT, SITEPRO1 # SCX23-K (TYP. 12 PLACES)



NGLE HANDRAIL
R PLATE,
O1 # X-AHCP
UIVALENT
PLACES) WITH
OLTS

NEW CROSSOVER PLATE KIT, SITEPRO1 # SCX45-K (TYP. 12 PLACES)

NEW 2.5" STD. PIPE x 12'-6" LONG (TYP. 3 PLACES)

NEW 2.5" STD. x 9'-0" LONG MOUNT PIPE (TYP. 12 PLACES)

M
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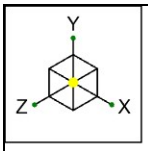
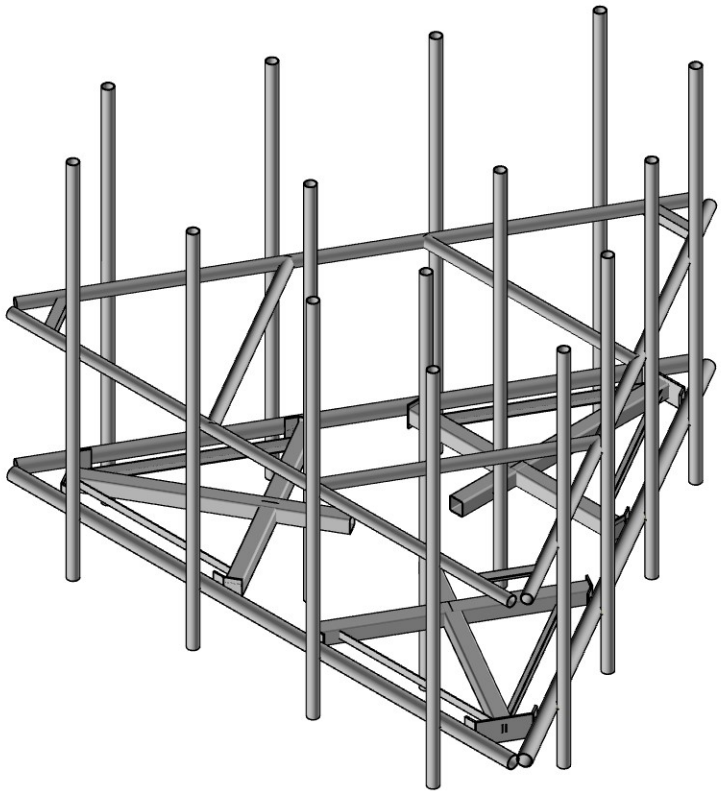
B+T Group	MODIFIED PLATFORM	
SR		Feb 15, 2021
126536.010.01		126536_010_01_Bridgeport North…





Member Code Checks Displayed (Enveloped)
Envelope Only Solution

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SR		Feb 15, 2021
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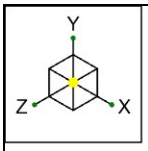

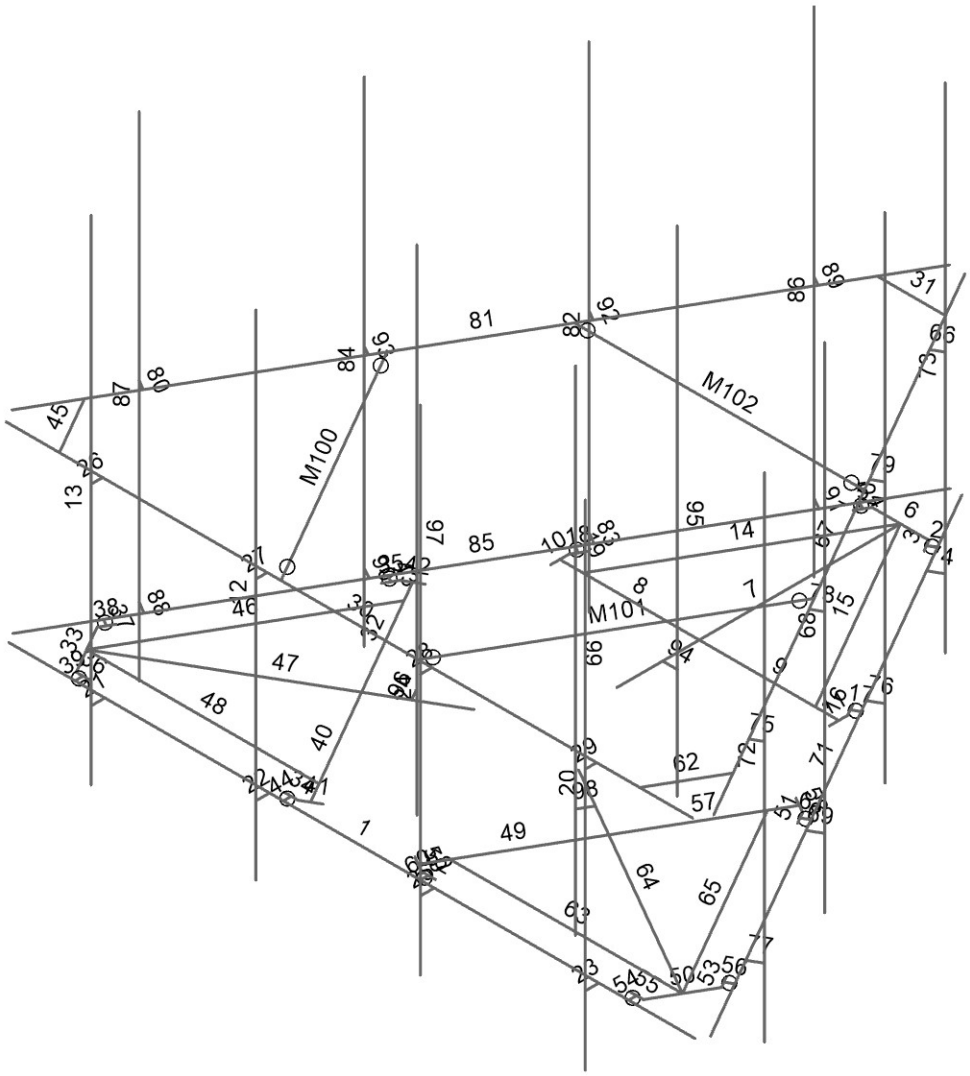

Envelope Only Solution

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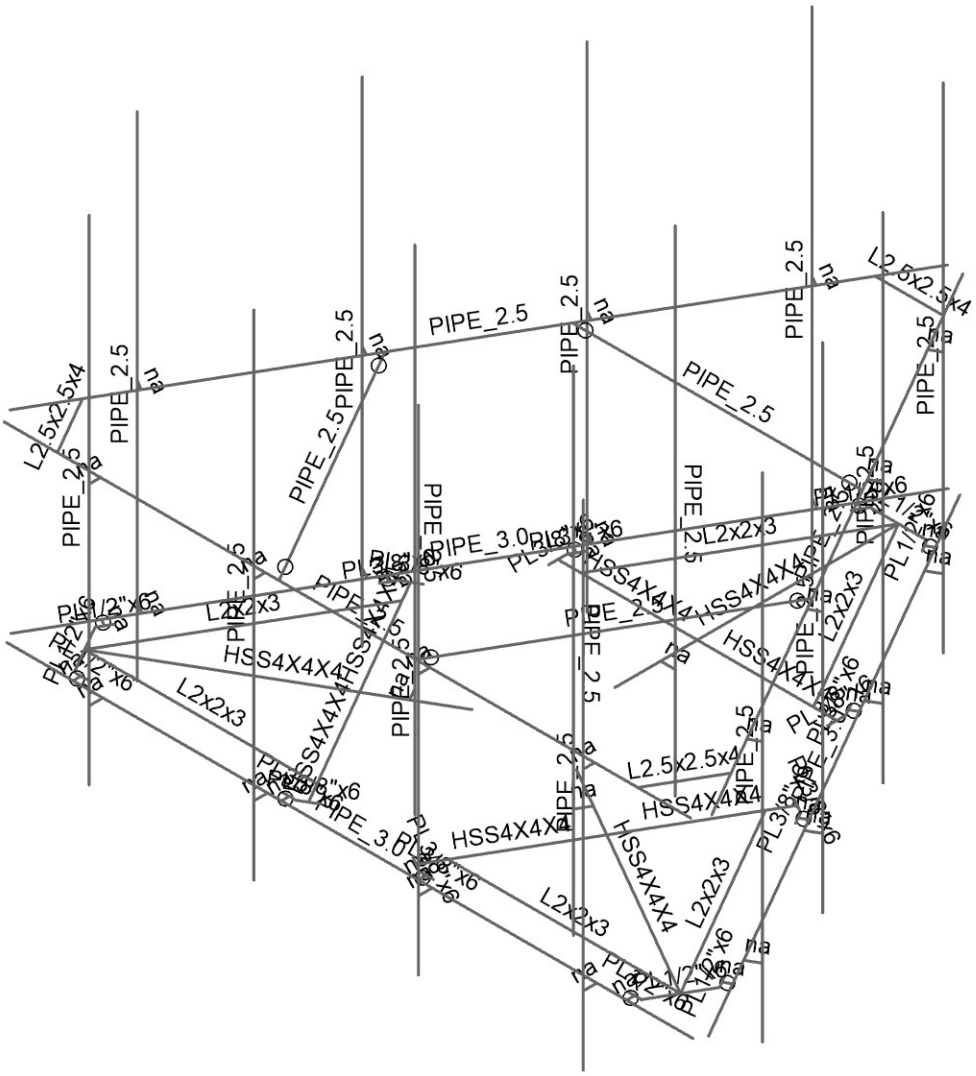


Envelope Only Solution

B+T Group	841288 - Bridgeport North	SK-4
SR		Feb 15, 2021
126536.010.01		126536_010_01_Bridgeport North…

APPENDIX B

SOFTWARE INPUT CALCULATIONS

PROJECT	**126536.010.01 - Bridgeport I**		**SR**
SUBJECT	**Platform Mount Mount Analysis**		
DATE	**02/15/21**	PAGE	OF

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74159
(918) 587-4630

Tower Type		:	Monopole		
Ground Elevation	z_s	:	241	ft	[ASCE7 Hazard Tool]
Tower Height		:	150.00	ft	
Mount Elevation		:	150.00	ft	
Antenna Elevation		:	154.00	ft	
Crest Height		:	0	ft	
Risk Category		:	II		[Table 2-1]
Exposure Category		:	C		[Sec. 2.6.5.1.2]
Topography Category		:	1.00		[Sec. 2.6.6.2]
Wind Velocity	V	:	118	mph	[ASCE7 Hazard Tool]
Ice wind Velocity	V_i	:	50	mph	[ASCE7 Hazard Tool]
Service Velocity	V_s	:	30	mph	[ASCE7 Hazard Tool]
Base Ice thickness	t_i	:	1.00	in	[ASCE7 Hazard Tool]
Seismic Design Cat.		:	B		[ASCE7 Hazard Tool]
	S_S	:	0.21		
	S_1	:	0.05		
	S_{DS}	:	0.23		
	S_{D1}	:	0.09		

Gust Factor	G_h	:	1.00		[Sec. 16.6]
Pressure Coefficient	K_z	:	1.39		[Sec. 2.6.5.2]
Topography Factor	K_{zt}	:	1.00		[Sec. 2.6.6]
Elevation Factor	K_e	:	0.99		[Sec. 2.6.8]
Directionality Factor	K_d	:	0.95		[Sec. 16.6]
Shielding Factor	K_a	:	0.90		[Sec. 16.6]
Design Ice Thickness	t_{iz}	:	1.17	in	[Sec. 2.6.10]

Importance Factor	I_e	:	1		[Table 2-3]
Response Coefficient	C_s	:	0.114		[Sec. 2.7.7.1]
Amplification	A_s	:	2.973333		[Sec. 16.7]
	q_z	:	46.21	psf	

PROJECT	**126536.010.01 - Bridgeport I**		**SR**
SUBJECT	**Platform Mount Mount Analysis**		
DATE	**02/15/21**	PAGE	OF

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74159
(918) 587-4630

Manufacturer	Model	Qty	Aspect Ratio	C_a flat/round	EPA_N (ft^2)	EPA_T (ft^2)	$EPA_{N\text{-}Ice}$ (ft^2)	$EPA_{T\text{-}Ice}$ (ft^2)	$F_{A\ No\ Ice\ (N)}$	$F_{A\ No\ Ice\ (T)}$	$F_{A\ Ice\ (N)}$	$F_{A\ Ice\ (T)}$
UINTEL TECHNOLOG	QS66512-2	0.5	6.00	2.41	3.00	2.40	3.70	3.08	0.09	0.08	0.02	0.02
UINTEL TECHNOLOG	QS66512-2	0.5	6.00	1.36	3.00	2.40	3.70	3.08	0.09	0.08	0.02	0.02
CCI ANTENNAS	TPX-070821	2	0.60	1.20	0.78	0.17	1.36	0.50	0.04	0.01	0.01	0.00
CCI ANTENNAS	HPA-65R-BUU-H6	0.5	4.86	1.31	3.70	2.25	4.42	2.92	0.21	0.11	0.05	0.03
CCI ANTENNAS	HPA-65R-BUU-H6	0.5	4.86	1.31	3.70	2.25	4.42	2.92	0.21	0.11	0.05	0.03
CCI ANTENNAS	DMP65R-BU6DA	0.5	3.44	1.24	5.12	1.90	5.88	2.56	0.27	0.10	0.05	0.02
CCI ANTENNAS	DMP65R-BU6DA	0.5	3.44	1.24	5.12	1.90	5.88	2.56	0.27	0.10	0.05	0.02
UINTEL TECHNOLOG	QS66512-2	0.5	6.00	1.36	3.00	2.40	3.70	3.08	0.09	0.08	0.02	0.02
UINTEL TECHNOLOG	QS66512-2	0.5	6.00	1.36	3.00	2.40	3.70	3.08	0.09	0.08	0.02	0.02
CCI ANTENNAS	TPX-070821	2	0.60	1.20	0.78	0.17	1.36	0.50	0.04	0.01	0.01	0.00
CCI ANTENNAS	HPA-65R-BUU-H6	0.5	4.86	1.31	3.70	2.25	4.42	2.92	0.21	0.11	0.05	0.03
CCI ANTENNAS	HPA-65R-BUU-H6	0.5	4.86	1.31	3.70	2.25	4.42	2.92	0.21	0.11	0.05	0.03
CCI ANTENNAS	DMP65R-BU6DA	0.5	3.44	1.24	5.12	1.90	5.88	2.56	0.27	0.10	0.05	0.02
CCI ANTENNAS	DMP65R-BU6DA	0.5	3.44	1.24	5.12	1.90	5.88	2.56	0.27	0.10	0.05	0.02

PROJECT	126536.010.01 - Bridgeport I	SR
SUBJECT	Platform Mount Mount Analysis	
DATE	02/15/21	PAGE 3 OF

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74159
(918) 587-4630

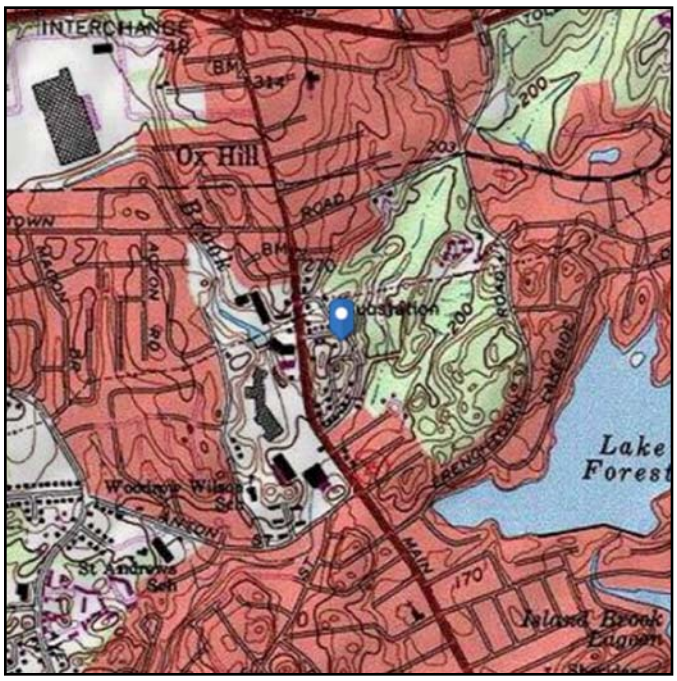
Manufacturer	Model	Qty	Aspect Ratio	C_a flat/round	EPA_N (ft^2)	EPA_T (ft^2)	$EPA_{N\text{-}Ice}$ (ft^2)	$EPA_{T\text{-}Ice}$ (ft^2)	$F_{A\ No\ Ice\ (N)}$	$F_{A\ No\ Ice\ (T)}$	$F_{A\ Ice\ (N)}$	$F_{A\ Ice\ (T)}$
UINTEL TECHNOLOG	QS66512-2	0.5	6.00	1.36	3.00	2.40	3.70	3.08	0.00	0.08	0.02	0.02
UINTEL TECHNOLOG	QS66512-2	0.5	6.00	1.36	3.00	2.40	3.70	3.08	0.00	0.08	0.02	0.02
CCI ANTENNAS	TPX-070821	2	0.60	1.20	0.78	0.17	1.36	0.50	0.00	0.01	0.01	0.00
CCI ANTENNAS	HPA-65R-BUU-H6	0.5	4.86	1.31	3.70	2.25	4.42	2.92	0.00	0.11	0.05	0.03
CCI ANTENNAS	HPA-65R-BUU-H6	0.5	4.86	1.31	3.70	2.25	4.42	2.92	0.00	0.11	0.05	0.03
CCI ANTENNAS	DMP65R-BU6DA	0.5	3.44	1.24	5.12	1.90	5.88	2.56	0.00	0.10	0.05	0.02
CCI ANTENNAS	DMP65R-BU6DA	0.5	3.44	1.24	5.12	1.90	5.88	2.56	0.00	0.10	0.05	0.02
ERICSSON	TME-RRUS 32 B2	1	3.89	1.26	1.32	2.28	1.91	2.95	0.00	0.12	0.01	0.02
ERICSSON	TME-RRUS-32 B30	1	3.15	1.23	1.97	2.76	2.65	3.50	0.00	0.14	0.02	0.03
ERICSSON	RRUS 32 B66A	1	3.72	1.25	1.42	2.39	2.02	3.07	0.00	0.13	0.01	0.02
ERICSSON	RRUS 4449 B5/B12	1	1.90	1.20	1.17	1.64	1.65	2.18	0.00	0.08	0.01	0.01
RAYCAP	TME-DC6-48-60-18-8F	1	2.84	0.51	2.39	2.39	3.11	3.11	0.00	0.05	0.01	0.01
ERICSSON	TME-RRUS 32 B2	1	3.89	1.26	1.32	2.28	1.91	2.95	0.00	0.12	0.01	0.02
ERICSSON	TME-RRUS-32 B30	1	3.15	1.23	1.97	2.76	2.65	3.50	0.00	0.14	0.02	0.03
ERICSSON	RRUS 32 B66A	1	3.72	1.25	1.42	2.39	2.02	3.07	0.00	0.13	0.01	0.02
ERICSSON	RRUS 4449 B5/B12	1	1.90	1.20	1.17	1.64	1.65	2.18	0.00	0.08	0.01	0.01
RAYCAP	TME-DC6-48-60-18-8F	1	2.84	0.51	2.39	2.39	3.11	3.11	0.00	0.05	0.01	0.01
ERICSSON	TME-RRUS 32 B2	1	3.89	1.26	1.32	2.28	1.91	2.95	0.00	0.12	0.01	0.02
ERICSSON	TME-RRUS-32 B30	1	3.15	1.23	1.97	2.76	2.65	3.50	0.00	0.14	0.02	0.03
ERICSSON	RRUS 32 B66A	1	3.72	1.25	1.42	2.39	2.02	3.07	0.00	0.13	0.01	0.02
ERICSSON	RRUS 4449 B5/B12	1	1.90	1.20	1.17	1.64	1.65	2.18	0.00	0.08	0.01	0.01

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see Section 11.4.3)

Elevation: 240.76 ft (NAVD 88)
Latitude: 41.223344
Longitude: -73.216772



Wind

Results:

Wind Speed:	118 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	98 Vmph
Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4
Date Accessed:	Fri Oct 09 2020

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 7-16 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 7-16 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.

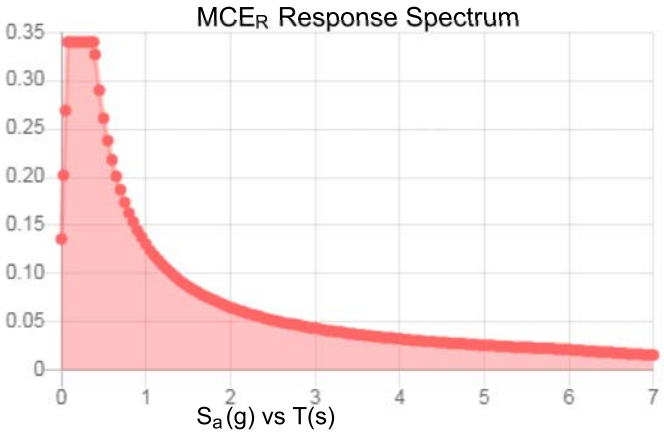
Seismic

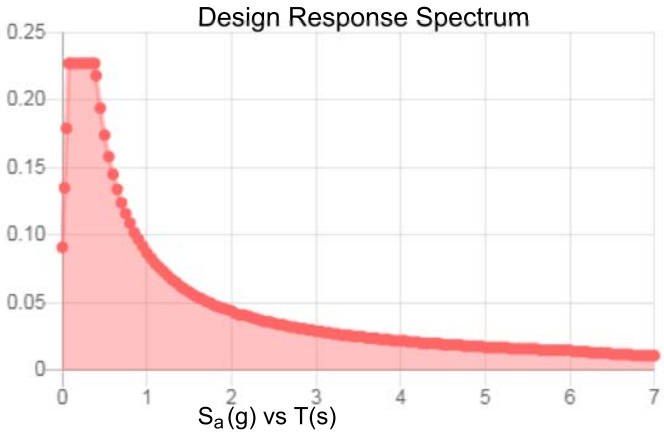
Site Soil Class: D - Default (see Section 11.4.3)

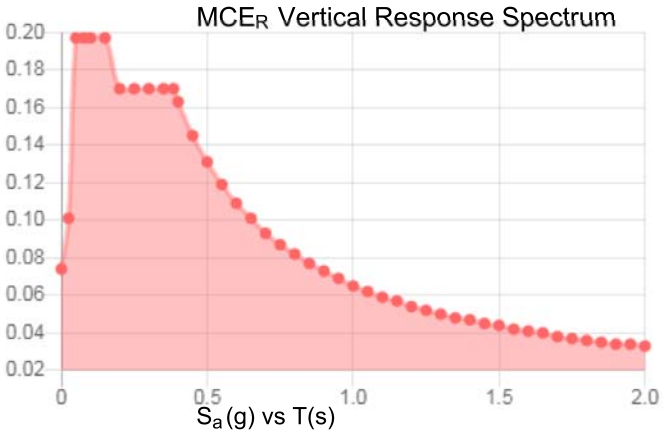
Results:

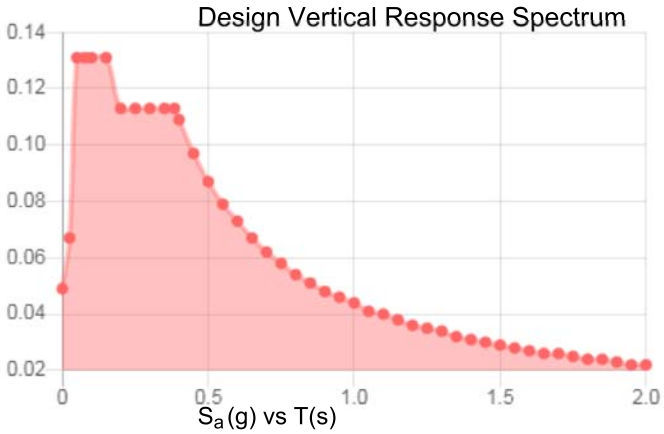
S_S :	0.212	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.121
F_v :	2.4	PGA_M :	0.189
S_{MS} :	0.34	F_{PGA} :	1.558
S_{M1} :	0.131	I_e :	1
S_{DS} :	0.227	C_v :	0.725

Seismic Design Category B









Data Accessed: Fri Oct 09 2020

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Fri Oct 09 2020

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

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

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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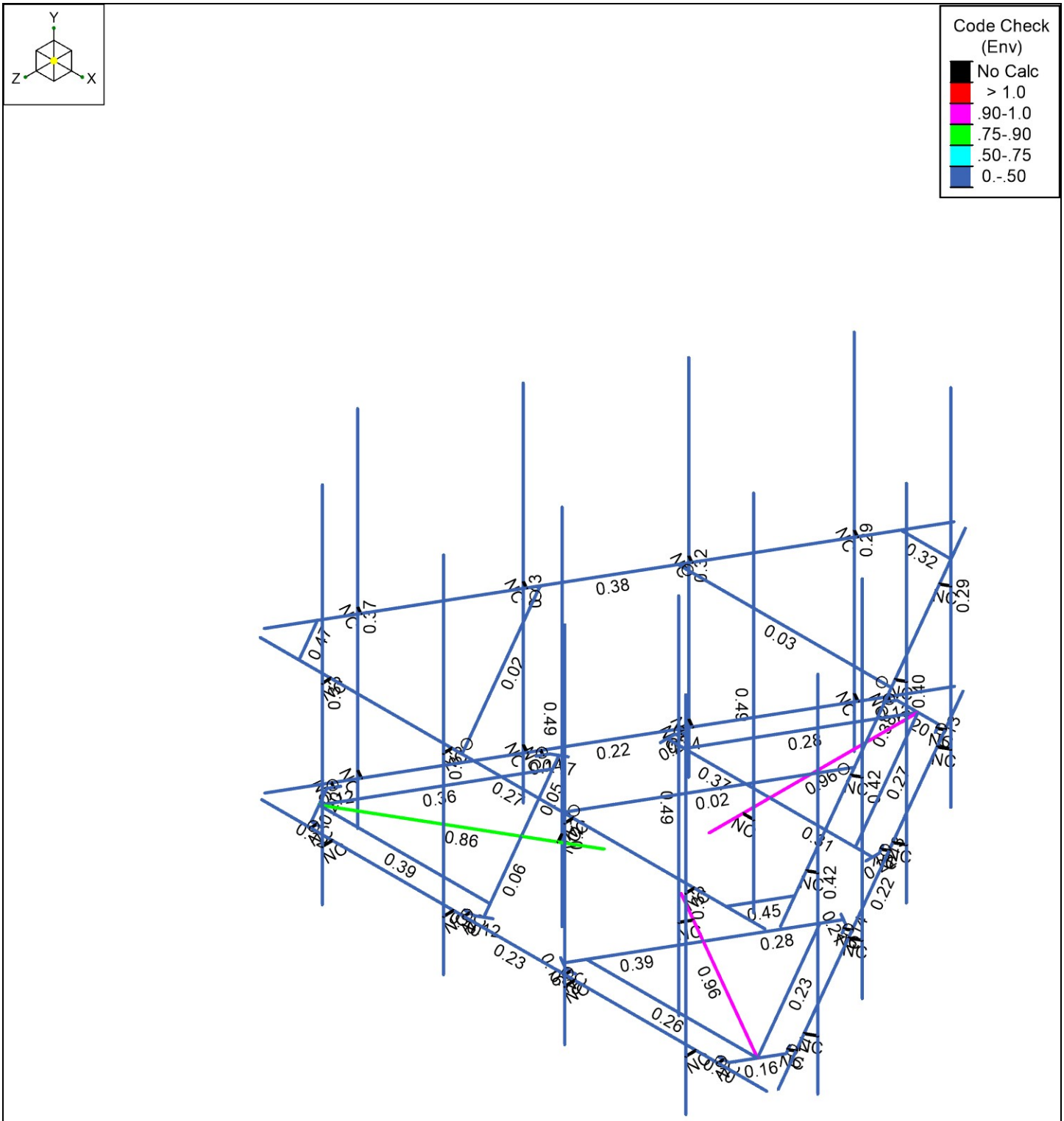
In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.

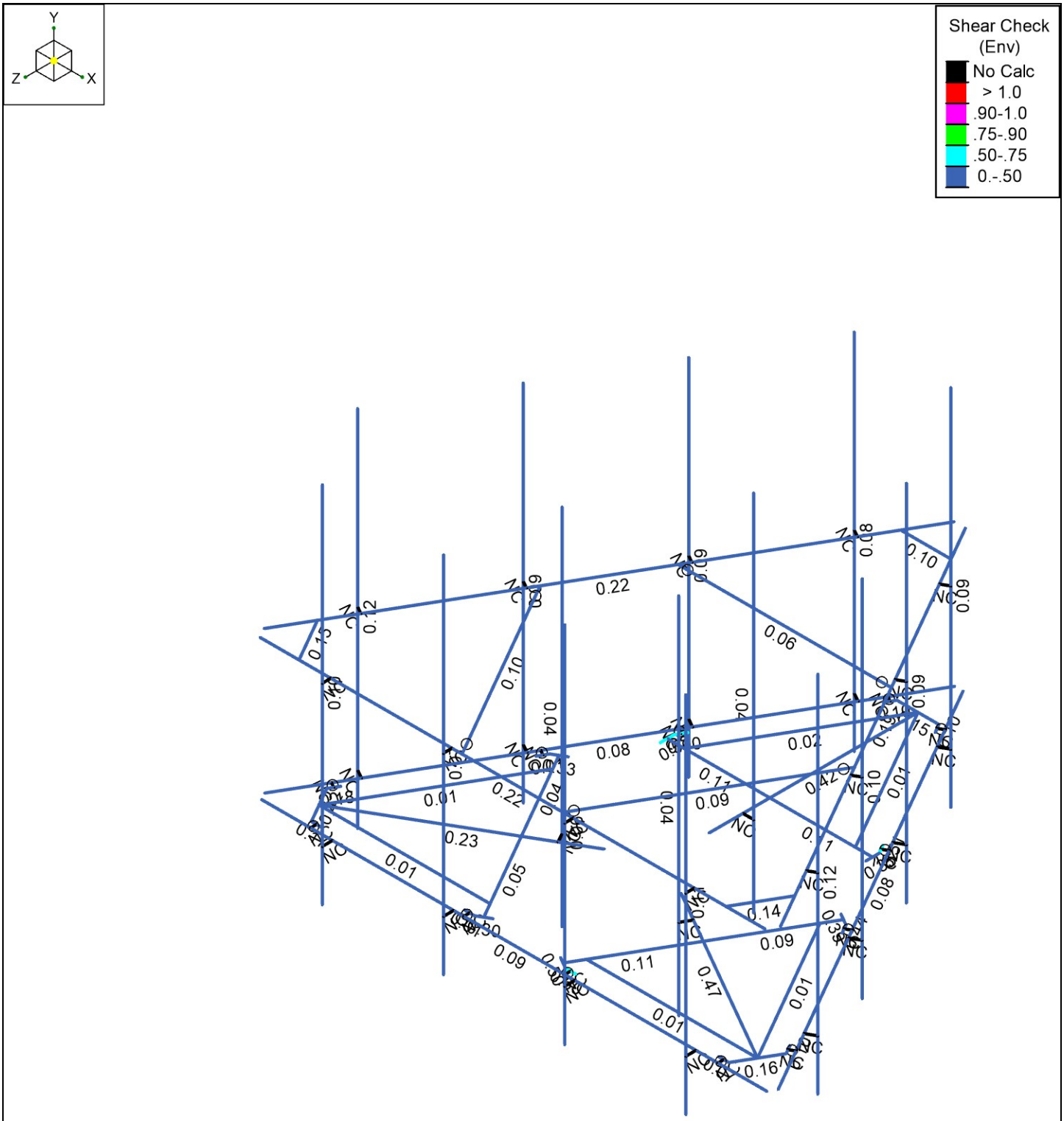
APPENDIX C

SOFTWARE ANALYSIS OUTPUT



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	841288 - Bridgeport North	SK-5
SR		Feb 15, 2021
126536.010.01		126536_010_01_Bridgeport North…



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	841288 - Bridgeport North	SK-6
SR		Feb 15, 2021
126536.010.01		126536_010_01_Bridgeport North…

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	1	-6.24964	0	3.729133	
2	2	6.25036	0	3.729133	
3	3	0.70815	0	-6.231715	
4	4	0.581858	0	-6.1588	
5	5	0.644358	0	-6.050546	
6	6	0.519358	0	-6.267053	
7	7	-0.70815	0	-6.231715	
8	8	-0.581858	0	-6.1588	
9	9	-0.644358	0	-6.050546	
10	10	-0.519358	0	-6.267053	
11	11	-0.	0	-6.267053	
12	12	-0.	0	-1.100353	
13	13	-0.	0	-2.600353	
14	14	-2.54129	0	-2.600353	
15	15	2.54129	0	-2.600353	
16	16	-4.5	0	3.979133	
17	17	-1.5	0	3.979133	
18	18	-2.54129	0	-2.433653	
19	19	2.54129	0	-2.433653	
20	20	-4.5	7.75	3.979133	
21	21	-1.5	7.75	3.979133	
22	22	-4.5	-1.2497	3.979133	
23	23	-1.5	-1.25	3.979133	
24	24	-2.11697	0	-2.600353	
25	25	2.11697	0	-2.600353	
26	26	2.54129	0	-2.764962	
27	27	-2.54129	0	-2.764962	
28	28	2.41629	0	-2.981469	
29	29	2.47879	0	-2.873215	
30	30	2.605083	0	-2.94613	
31	31	-2.41629	0	-2.981469	
32	32	-2.47879	0	-2.873215	
33	33	-2.605083	0	-2.94613	
34	34	4.5	0	3.979133	
35	35	4.5	7.75	3.979133	
36	36	4.5	-1.2497	3.979133	
37	37	-4.5	0	3.729133	
38	38	-1.5	0	3.729133	
39	39	4.5	0	3.729133	
40	40	1.5	0	3.979133	
41	41	1.5	7.75	3.979133	
42	42	1.5	-1.25	3.979133	
43	43	1.5	0	3.729133	
44	44	-4.5	3.5	3.979133	
45	45	-1.5	3.5	3.979133	
46	46	4.5	3.5	3.979133	
47	47	1.5	3.5	3.979133	
48	48	-6.25	3.5	3.770803	
49	49	6.25	3.5	3.770803	
50	50	-4.5	3.5	3.770803	
51	51	-1.5	3.5	3.770803	
52	52	4.5	3.5	3.770803	
53	53	1.5	3.5	3.770803	
54	54	0.622557	3.5	-6.463305	
55	55	-0.622557	3.5	-6.463305	
56	56	0	0	0	
57	57	-5.427427	0	3.133526	
58	58	-5.908665	3.5	2.692502	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
59	59	-1.248882	0	3.583303	
60	60	-5.624606	0	2.575496	
61	61	-1.193486	0	3.133526	
62	62	-3.665173	0	-0.818341	
63	63	-0.981326	0	3.500998	
64	64	-5.750898	0	2.502582	
65	65	-5.562106	0	2.467243	
66	66	-5.687106	0	2.68375	
67	67	-5.042748	0	3.729133	
68	68	-5.042748	0	3.583303	
69	69	-4.917748	0	3.583303	
70	70	-5.167748	0	3.583303	
71	71	-3.310457	0	-0.533174	
72	72	-0.952933	0	0.550176	
73	73	-2.251972	0	1.300176	
74	74	-3.522617	0	-0.900646	
75	75	-0.83696	0	3.417648	
76	76	-3.37825	0	-0.983996	
77	77	-1.123882	0	3.583303	
78	78	-3.790173	0	-0.601835	
79	79	-3.727673	0	-0.710088	
80	80	-3.853965	0	-0.783003	
81	81	-1.373882	0	3.583303	
82	82	-1.248882	0	3.729133	
83	83	-5.286108	3.5	3.770803	
84	84	5.427427	0	3.133526	
85	85	5.286108	3.5	3.770803	
86	86	3.727673	0	-0.710088	
87	87	5.042748	0	3.583303	
88	88	3.310457	0	-0.533174	
89	89	1.123882	0	3.583303	
90	90	3.522617	0	-0.900646	
91	91	5.042748	0	3.729133	
92	92	4.917748	0	3.583303	
93	93	5.167748	0	3.583303	
94	94	5.750898	0	2.502582	
95	95	5.624606	0	2.575496	
96	96	5.562106	0	2.467243	
97	97	5.687106	0	2.68375	
98	98	1.193486	0	3.133526	
99	99	0.952933	0	0.550176	
100	100	2.251972	0	1.300176	
101	101	0.981326	0	3.500998	
102	102	3.37825	0	-0.983996	
103	103	0.83696	0	3.417648	
104	104	3.665173	0	-0.818341	
105	105	1.373882	0	3.583303	
106	106	1.248882	0	3.583303	
107	107	1.248882	0	3.729133	
108	108	3.790173	0	-0.601835	
109	109	3.853965	0	-0.783003	
110	110	5.908665	3.5	2.692502	
111	111	0.104344	0	-7.277537	
112	112	5.69603	0	1.907548	
113	113	4.19603	0	-0.690528	
114	114	5.515611	3.5	2.011713	
115	115	1.19603	0	-5.886681	
116	116	4.015611	3.5	-0.586363	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
117	117	6.354344	0	3.547781	
118	118	4.19603	-1.25	-0.690528	
119	119	5.69603	7.75	1.907548	
120	120	0.979524	0	-5.761681	
121	121	5.69603	-1.2497	1.907548	
122	122	4.19603	7.75	-0.690528	
123	123	1.19603	-1.2497	-5.886681	
124	124	1.19603	7.75	-5.886681	
125	125	5.479524	0	2.032548	
126	126	3.979524	0	-0.565528	
127	127	2.69603	0	-3.288605	
128	128	2.69603	7.75	-3.288605	
129	129	2.69603	-1.25	-3.288605	
130	130	2.479524	0	-3.163605	
131	131	5.69603	3.5	1.907548	
132	132	4.19603	3.5	-0.690528	
133	133	1.19603	3.5	-5.886681	
134	134	2.69603	3.5	-3.288605	
135	135	6.390611	3.5	3.527257	
136	136	0.140611	3.5	-7.29806	
137	137	1.015611	3.5	-5.782516	
138	138	2.515611	3.5	-3.18444	
139	139	-6.354704	0	3.548404	
140	140	-1.19603	0	-5.886681	
141	141	-2.69603	0	-3.288605	
142	142	-1.015611	3.5	-5.782516	
143	143	-5.69603	0	1.907548	
144	144	-2.515611	3.5	-3.18444	
145	145	-0.104704	0	-7.276914	
146	146	-2.69603	-1.25	-3.288605	
147	147	-1.19603	7.75	-5.886681	
148	148	-5.479524	0	2.032548	
149	149	-1.19603	-1.2497	-5.886681	
150	150	-2.69603	7.75	-3.288605	
151	151	-5.69603	-1.2497	1.907548	
152	152	-5.69603	7.75	1.907548	
153	153	-0.979524	0	-5.761681	
154	154	-2.479524	0	-3.163605	
155	155	-4.19603	0	-0.690528	
156	156	-4.19603	7.75	-0.690528	
157	157	-4.19603	-1.25	-0.690528	
158	158	-3.979524	0	-0.565528	
159	159	-1.19603	3.5	-5.886681	
160	160	-2.69603	3.5	-3.288605	
161	161	-5.69603	3.5	1.907548	
162	162	-4.19603	3.5	-0.690528	
163	163	-0.140611	3.5	-7.29806	
164	164	-6.390611	3.5	3.527257	
165	165	-5.515611	3.5	2.011713	
166	166	-4.015611	3.5	-0.586363	
167	167	-0.	0	-1.933353	
168	168	0.265625	0	-1.933353	
169	169	0.265625	7	-1.933353	
170	170	0.265625	-2	-1.933353	
171	171	-1.674333	0	0.966676	
172	172	-1.807145	0	0.736638	
173	173	-1.807145	7	0.736638	
174	174	-1.807145	-2	0.736638	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
175	175	1.674333	0	0.966676	
176	176	1.54152	0	1.196714	
177	177	1.54152	7	1.196714	
178	178	1.54152	-2	1.196714	
179	N179	-1.25	3.5	3.770803	
180	N180	1.25	3.5	3.770803	
181	N182	3.890611	3.5	-0.80287	
182	N183	2.640611	3.5	-2.967933	
183	N185	-2.640611	3.5	-2.967933	
184	N186	-3.890611	3.5	-0.80287	

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	MF-H1	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	MF-H2	PIPE_2.5	Beam	HSS Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
3	SF-H1	HSS4X4X4	Beam	Tube	A53 Gr.B	Typical	3.37	7.8	7.8	12.8
4	MF-P1	PIPE_2.5	Column	HSS Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
5	MF-CP1	PL3/8"x6	Beam	RECT	A36 Gr.36	Typical	2.25	0.026	6.75	0.101
6	MF-CP2	PL1/2"x6	Beam	RECT	A36 Gr.36	Typical	3	0.063	9	0.237
7	SF-H2	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	0.722	0.271	0.271	0.009
8	SF-H3	L2.5x2.5x4	Beam	Single Angle	A36 Gr.36	Typical	1.19	0.692	0.692	0.026
9	connection pipe	PIPE_2.5	Beam	HSS Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
10	HR10	PIPE_2.5	Beam	HSS Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
1	1	MF-H1	12.5	Lbyy	Lateral
2	3	MF-CP2	0.25	Lbyy	Lateral
3	5	MF-CP2	0.25	Lbyy	Lateral
4	6	MF-CP2	1.039	Lbyy	Lateral
5	7	SF-H1	5.167	Lbyy	Lateral
6	8	SF-H1	2.541	Lbyy	Lateral
7	9	SF-H1	2.541	Lbyy	Lateral
8	10	MF-CP1	0.331	Lbyy	Lateral
9	11	MF-CP1	0.331	Lbyy	Lateral
10	12	MF-P1	9	Lbyy	Lateral
11	13	MF-P1	9	Lbyy	Lateral
12	14	SF-H2	4.234	Lbyy	Lateral
13	15	SF-H2	4.234	Lbyy	Lateral
14	16	MF-CP1	0.25	Lbyy	Lateral
15	18	MF-CP1	0.25	Lbyy	Lateral
16	20	MF-P1	9	Lbyy	Lateral
17	24	MF-P1	9	Lbyy	Lateral
18	30	MF-H2	12.5	Lbyy	Lateral
19	31	SF-H3	1.245	Lbyy	Lateral
20	32	SF-H1	2.541	Lbyy	Lateral
21	33	MF-CP2	1.039	Lbyy	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
22	34	MF-CP1	0.25	Lbyy	Lateral
23	35	MF-CP1	0.25	Lbyy	Lateral
24	36	MF-CP2	0.25	Lbyy	Lateral
25	38	MF-CP2	0.25	Lbyy	Lateral
26	40	SF-H1	2.541	Lbyy	Lateral
27	41	MF-CP1	0.331	Lbyy	Lateral
28	42	MF-CP1	0.331	Lbyy	Lateral
29	45	SF-H3	1.245	Lbyy	Lateral
30	46	SF-H2	4.234	Lbyy	Lateral
31	47	SF-H1	5.167	Lbyy	Lateral
32	48	SF-H2	4.234	Lbyy	Lateral
33	49	SF-H1	2.541	Lbyy	Lateral
34	50	MF-CP2	1.039	Lbyy	Lateral
35	51	MF-CP1	0.25	Lbyy	Lateral
36	52	MF-CP1	0.25	Lbyy	Lateral
37	53	MF-CP2	0.25	Lbyy	Lateral
38	55	MF-CP2	0.25	Lbyy	Lateral
39	57	SF-H1	2.541	Lbyy	Lateral
40	58	MF-CP1	0.331	Lbyy	Lateral
41	59	MF-CP1	0.331	Lbyy	Lateral
42	62	SF-H3	1.245	Lbyy	Lateral
43	63	SF-H2	4.234	Lbyy	Lateral
44	64	SF-H1	5.167	Lbyy	Lateral
45	65	SF-H2	4.234	Lbyy	Lateral
46	67	MF-H2	12.5	Lbyy	Lateral
47	68	MF-P1	9	Lbyy	Lateral
48	70	MF-P1	9	Lbyy	Lateral
49	71	MF-H1	12.5	Lbyy	Lateral
50	72	MF-P1	9	Lbyy	Lateral
51	73	MF-P1	9	Lbyy	Lateral
52	81	MF-H2	12.5	Lbyy	Lateral
53	82	MF-P1	9	Lbyy	Lateral
54	84	MF-P1	9	Lbyy	Lateral
55	85	MF-H1	12.5	Lbyy	Lateral
56	86	MF-P1	9	Lbyy	Lateral
57	87	MF-P1	9	Lbyy	Lateral
58	95	MF-P1	9	Lbyy	Lateral
59	97	MF-P1	9	Lbyy	Lateral
60	99	MF-P1	9	Lbyy	Lateral
61	M100	connection pipe	5.281	Lbyy	Lateral
62	M101	connection pipe	5.281	Lbyy	Lateral
63	M102	connection pipe	5.281	Lbyy	Lateral

Node Loads and Enforced Displacements (BLC 11 : Live Load a)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	37	L	Y	-0.5
2	153	L	Y	-0.5
3	125	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 12 : Live Load b)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	38	L	Y	-0.5
2	154	L	Y	-0.5
3	126	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 13 : Live Load c)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	43	L	Y	-0.5
2	158	L	Y	-0.5
3	130	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 14 : Live Load d)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	39	L	Y	-0.5
2	148	L	Y	-0.5
3	120	L	Y	-0.5

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	Y	-0.056	%15
2	20	Y	-0.056	%85
3	20	Y	-0.015	%60
4	20	Y	0	0
5	20	Y	0	0
6	24	Y	-0.024	%15
7	24	Y	-0.024	%85
8	24	Y	0	0
9	24	Y	0	0
10	24	Y	0	0
11	12	Y	-0.045	%15
12	12	Y	-0.045	%85
13	12	Y	0	0
14	12	Y	0	0
15	12	Y	0	0
16	87	Y	-0.056	%15
17	87	Y	-0.056	%85
18	87	Y	-0.015	%60
19	87	Y	0	0
20	87	Y	0	0
21	84	Y	-0.024	%15
22	84	Y	-0.024	%85
23	84	Y	0	0
24	84	Y	0	0
25	84	Y	0	0
26	82	Y	-0.045	%15
27	82	Y	-0.045	%85
28	82	Y	0	0
29	82	Y	0	0
30	82	Y	0	0
31	73	Y	-0.056	%15
32	73	Y	-0.056	%85
33	73	Y	-0.015	%60
34	73	Y	0	0
35	73	Y	0	0
36	70	Y	-0.024	%15
37	70	Y	-0.024	%85
38	70	Y	0	0
39	70	Y	0	0
40	70	Y	0	0
41	68	Y	-0.045	%15
42	68	Y	-0.045	%85
43	68	Y	0	0
44	68	Y	0	0
45	68	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
46	97	Y	-0.053	%30
47	97	Y	-0.077	%30
48	97	Y	-0.055	%60
49	97	Y	-0.071	%60
50	97	Y	-0.033	%10
51	95	Y	-0.053	%30
52	95	Y	-0.077	%30
53	95	Y	-0.055	%60
54	95	Y	-0.071	%60
55	95	Y	-0.033	%10
56	99	Y	-0.053	%30
57	99	Y	-0.077	%30
58	99	Y	-0.055	%60
59	99	Y	-0.071	%60
60	99	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	Z	-0.093	%15
2	20	Z	-0.093	%85
3	20	Z	-0.039	%60
4	20	Z	0	0
5	20	Z	0	0
6	24	Z	-0.215	%15
7	24	Z	-0.215	%85
8	24	Z	0	0
9	24	Z	0	0
10	24	Z	0	0
11	12	Z	-0.266	%15
12	12	Z	-0.266	%85
13	12	Z	0	0
14	12	Z	0	0
15	12	Z	0	0
16	87	Z	-0.093	%15
17	87	Z	-0.093	%85
18	87	Z	-0.039	%60
19	87	Z	0	0
20	87	Z	0	0
21	84	Z	-0.215	%15
22	84	Z	-0.215	%85
23	84	Z	0	0
24	84	Z	0	0
25	84	Z	0	0
26	82	Z	-0.266	%15
27	82	Z	-0.266	%85
28	82	Z	0	0
29	82	Z	0	0
30	82	Z	0	0
31	73	Z	-0.093	%15
32	73	Z	-0.093	%85
33	73	Z	-0.039	%60
34	73	Z	0	0
35	73	Z	0	0
36	70	Z	-0.215	%15
37	70	Z	-0.215	%85
38	70	Z	0	0
39	70	Z	0	0
40	70	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
41	68	Z	-0.266	%15
42	68	Z	-0.266	%85
43	68	Z	0	0
44	68	Z	0	0
45	68	Z	0	0
46	97	Z	-0.07	%30
47	97	Z	-0.102	%30
48	97	Z	-0.075	%60
49	97	Z	-0.059	%60
50	97	Z	0	%10
51	95	Z	-0.07	%30
52	95	Z	-0.102	%30
53	95	Z	-0.075	%60
54	95	Z	-0.059	%60
55	95	Z	0	%10
56	99	Z	-0.07	%30
57	99	Z	-0.102	%30
58	99	Z	-0.075	%60
59	99	Z	-0.059	%60
60	99	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	X	-0.078	%15
2	20	X	-0.078	%85
3	20	X	-0.008	%60
4	20	X	0	0
5	20	X	0	0
6	24	X	-0.108	%15
7	24	X	-0.108	%85
8	24	X	0	0
9	24	X	0	0
10	24	X	0	0
11	12	X	-0.099	%15
12	12	X	-0.099	%85
13	12	X	0	0
14	12	X	0	0
15	12	X	0	0
16	87	X	-0.078	%15
17	87	X	-0.078	%85
18	87	X	-0.008	%60
19	87	X	0	0
20	87	X	0	0
21	84	X	-0.108	%15
22	84	X	-0.108	%85
23	84	X	0	0
24	84	X	0	0
25	84	X	0	0
26	82	X	-0.099	%15
27	82	X	-0.099	%85
28	82	X	0	0
29	82	X	0	0
30	82	X	0	0
31	73	X	-0.078	%15
32	73	X	-0.078	%85
33	73	X	-0.008	%60
34	73	X	0	0
35	73	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
36	70	X	-0.108	%15
37	70	X	-0.108	%85
38	70	X	0	0
39	70	X	0	0
40	70	X	0	0
41	68	X	-0.099	%15
42	68	X	-0.099	%85
43	68	X	0	0
44	68	X	0	0
45	68	X	0	0
46	97	X	-0.12	%30
47	97	X	-0.142	%30
48	97	X	-0.125	%60
49	97	X	-0.082	%60
50	97	X	0	%10
51	95	X	-0.12	%30
52	95	X	-0.142	%30
53	95	X	-0.125	%60
54	95	X	-0.082	%60
55	95	X	0	%10
56	99	X	-0.12	%30
57	99	X	-0.142	%30
58	99	X	-0.125	%60
59	99	X	-0.082	%60
60	99	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	Z	-0.02	%15
2	20	Z	-0.02	%85
3	20	Z	-0.007	%60
4	20	Z	0	0
5	20	Z	0	0
6	24	Z	-0.045	%15
7	24	Z	-0.045	%85
8	24	Z	0	0
9	24	Z	0	0
10	24	Z	0	0
11	12	Z	-0.048	%15
12	12	Z	-0.048	%85
13	12	Z	0	0
14	12	Z	0	0
15	12	Z	0	0
16	87	Z	-0.02	%15
17	87	Z	-0.02	%85
18	87	Z	-0.007	%60
19	87	Z	0	0
20	87	Z	0	0
21	84	Z	-0.045	%15
22	84	Z	-0.045	%85
23	84	Z	0	0
24	84	Z	0	0
25	84	Z	0	0
26	82	Z	-0.048	%15
27	82	Z	-0.048	%85
28	82	Z	0	0
29	82	Z	0	0
30	82	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
31	73	Z	-0.02	%15
32	73	Z	-0.02	%85
33	73	Z	-0.007	%60
34	73	Z	0	0
35	73	Z	0	0
36	70	Z	-0.045	%15
37	70	Z	-0.045	%85
38	70	Z	0	0
39	70	Z	0	0
40	70	Z	0	0
41	68	Z	-0.048	%15
42	68	Z	-0.048	%85
43	68	Z	0	0
44	68	Z	0	0
45	68	Z	0	0
46	97	Z	-0.013	%30
47	97	Z	-0.018	%30
48	97	Z	-0.013	%60
49	97	Z	-0.011	%60
50	97	Z	0	%10
51	95	Z	-0.013	%30
52	95	Z	-0.018	%30
53	95	Z	-0.013	%60
54	95	Z	-0.011	%60
55	95	Z	0	%10
56	99	Z	-0.013	%30
57	99	Z	-0.018	%30
58	99	Z	-0.013	%60
59	99	Z	-0.011	%60
60	99	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	X	-0.017	%15
2	20	X	-0.017	%85
3	20	X	-0.002	%60
4	20	X	0	0
5	20	X	0	0
6	24	X	-0.025	%15
7	24	X	-0.025	%85
8	24	X	0	0
9	24	X	0	0
10	24	X	0	0
11	12	X	-0.018	%15
12	12	X	-0.018	%85
13	12	X	0	0
14	12	X	0	0
15	12	X	0	0
16	87	X	-0.017	%15
17	87	X	-0.017	%85
18	87	X	-0.002	%60
19	87	X	0	0
20	87	X	0	0
21	84	X	-0.025	%15
22	84	X	-0.025	%85
23	84	X	0	0
24	84	X	0	0
25	84	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
26	82	X	-0.018	%15
27	82	X	-0.018	%85
28	82	X	0	0
29	82	X	0	0
30	82	X	0	0
31	73	X	-0.017	%15
32	73	X	-0.017	%85
33	73	X	-0.002	%60
34	73	X	0	0
35	73	X	0	0
36	70	X	-0.025	%15
37	70	X	-0.025	%85
38	70	X	0	0
39	70	X	0	0
40	70	X	0	0
41	68	X	-0.018	%15
42	68	X	-0.018	%85
43	68	X	0	0
44	68	X	0	0
45	68	X	0	0
46	97	X	-0.022	%30
47	97	X	-0.026	%30
48	97	X	-0.023	%60
49	97	X	-0.015	%60
50	97	X	0	%10
51	95	X	-0.022	%30
52	95	X	-0.026	%30
53	95	X	-0.023	%60
54	95	X	-0.015	%60
55	95	X	0	%10
56	99	X	-0.022	%30
57	99	X	-0.026	%30
58	99	X	-0.023	%60
59	99	X	-0.015	%60
60	99	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	Z	-0.006	%15
2	20	Z	-0.006	%85
3	20	Z	-0.003	%60
4	20	Z	0	0
5	20	Z	0	0
6	24	Z	-0.014	%15
7	24	Z	-0.014	%85
8	24	Z	0	0
9	24	Z	0	0
10	24	Z	0	0
11	12	Z	-0.017	%15
12	12	Z	-0.017	%85
13	12	Z	0	0
14	12	Z	0	0
15	12	Z	0	0
16	87	Z	-0.006	%15
17	87	Z	-0.006	%85
18	87	Z	-0.003	%60
19	87	Z	0	0
20	87	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
21	84	Z	-0.014	%15
22	84	Z	-0.014	%85
23	84	Z	0	0
24	84	Z	0	0
25	84	Z	0	0
26	82	Z	-0.017	%15
27	82	Z	-0.017	%85
28	82	Z	0	0
29	82	Z	0	0
30	82	Z	0	0
31	73	Z	-0.006	%15
32	73	Z	-0.006	%85
33	73	Z	-0.003	%60
34	73	Z	0	0
35	73	Z	0	0
36	70	Z	-0.014	%15
37	70	Z	-0.014	%85
38	70	Z	0	0
39	70	Z	0	0
40	70	Z	0	0
41	68	Z	-0.017	%15
42	68	Z	-0.017	%85
43	68	Z	0	0
44	68	Z	0	0
45	68	Z	0	0
46	97	Z	-0.005	%30
47	97	Z	-0.007	%30
48	97	Z	-0.005	%60
49	97	Z	-0.004	%60
50	97	Z	0	%10
51	95	Z	-0.005	%30
52	95	Z	-0.007	%30
53	95	Z	-0.005	%60
54	95	Z	-0.004	%60
55	95	Z	0	%10
56	99	Z	-0.005	%30
57	99	Z	-0.007	%30
58	99	Z	-0.005	%60
59	99	Z	-0.004	%60
60	99	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	X	-0.005	%15
2	20	X	-0.005	%85
3	20	X	-0.0005	%60
4	20	X	0	0
5	20	X	0	0
6	24	X	-0.007	%15
7	24	X	-0.007	%85
8	24	X	0	0
9	24	X	0	0
10	24	X	0	0
11	12	X	-0.006	%15
12	12	X	-0.006	%85
13	12	X	0	0
14	12	X	0	0
15	12	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
16	87	X	-0.005	%15
17	87	X	-0.005	%85
18	87	X	-0.0005	%60
19	87	X	0	0
20	87	X	0	0
21	84	X	-0.007	%15
22	84	X	-0.007	%85
23	84	X	0	0
24	84	X	0	0
25	84	X	0	0
26	82	X	-0.006	%15
27	82	X	-0.006	%85
28	82	X	0	0
29	82	X	0	0
30	82	X	0	0
31	73	X	-0.005	%15
32	73	X	-0.005	%85
33	73	X	-0.0005	%60
34	73	X	0	0
35	73	X	0	0
36	70	X	-0.007	%15
37	70	X	-0.007	%85
38	70	X	0	0
39	70	X	0	0
40	70	X	0	0
41	68	X	-0.006	%15
42	68	X	-0.006	%85
43	68	X	0	0
44	68	X	0	0
45	68	X	0	0
46	97	X	-0.008	%30
47	97	X	-0.009	%30
48	97	X	-0.008	%60
49	97	X	-0.005	%60
50	97	X	0	%10
51	95	X	-0.008	%30
52	95	X	-0.009	%30
53	95	X	-0.008	%60
54	95	X	-0.005	%60
55	95	X	0	%10
56	99	X	-0.008	%30
57	99	X	-0.009	%30
58	99	X	-0.008	%60
59	99	X	-0.005	%60
60	99	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	Y	-0.116	%15
2	20	Y	-0.116	%85
3	20	Y	-0.015	%60
4	20	Y	0	0
5	20	Y	0	0
6	24	Y	-0.084	%15
7	24	Y	-0.084	%85
8	24	Y	0	0
9	24	Y	0	0
10	24	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
11	12	Y	-0.098	%15
12	12	Y	-0.098	%85
13	12	Y	0	0
14	12	Y	0	0
15	12	Y	0	0
16	87	Y	-0.116	%15
17	87	Y	-0.116	%85
18	87	Y	-0.015	%60
19	87	Y	0	0
20	87	Y	0	0
21	84	Y	-0.084	%15
22	84	Y	-0.084	%85
23	84	Y	0	0
24	84	Y	0	0
25	84	Y	0	0
26	82	Y	-0.098	%15
27	82	Y	-0.098	%85
28	82	Y	0	0
29	82	Y	0	0
30	82	Y	0	0
31	73	Y	-0.116	%15
32	73	Y	-0.116	%85
33	73	Y	-0.015	%60
34	73	Y	0	0
35	73	Y	0	0
36	70	Y	-0.084	%15
37	70	Y	-0.084	%85
38	70	Y	0	0
39	70	Y	0	0
40	70	Y	0	0
41	68	Y	-0.098	%15
42	68	Y	-0.098	%85
43	68	Y	0	0
44	68	Y	0	0
45	68	Y	0	0
46	97	Y	-0.049	%30
47	97	Y	-0.062	%30
48	97	Y	-0.051	%60
49	97	Y	-0.037	%60
50	97	Y	-0.045	%10
51	95	Y	-0.049	%30
52	95	Y	-0.062	%30
53	95	Y	-0.051	%60
54	95	Y	-0.037	%60
55	95	Y	-0.045	%10
56	99	Y	-0.049	%30
57	99	Y	-0.062	%30
58	99	Y	-0.051	%60
59	99	Y	-0.037	%60
60	99	Y	0	0

Member Point Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	Z	-0.038	%15
2	20	Z	-0.038	%85
3	20	Z	-0.003	%60
4	20	Z	0	0
5	20	Z	0	0

Member Point Loads (BLC 9 : 0 Seismic) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
6	24	Z	-0.016	%15
7	24	Z	-0.016	%85
8	24	Z	0	0
9	24	Z	0	0
10	24	Z	0	0
11	12	Z	-0.03	%15
12	12	Z	-0.03	%85
13	12	Z	0	0
14	12	Z	0	0
15	12	Z	0	0
16	87	Z	-0.038	%15
17	87	Z	-0.038	%85
18	87	Z	-0.003	%60
19	87	Z	0	0
20	87	Z	0	0
21	84	Z	-0.016	%15
22	84	Z	-0.016	%85
23	84	Z	0	0
24	84	Z	0	0
25	84	Z	0	0
26	82	Z	-0.03	%15
27	82	Z	-0.03	%85
28	82	Z	0	0
29	82	Z	0	0
30	82	Z	0	0
31	73	Z	-0.038	%15
32	73	Z	-0.038	%85
33	73	Z	-0.003	%60
34	73	Z	0	0
35	73	Z	0	0
36	70	Z	-0.016	%15
37	70	Z	-0.016	%85
38	70	Z	0	0
39	70	Z	0	0
40	70	Z	0	0
41	68	Z	-0.03	%15
42	68	Z	-0.03	%85
43	68	Z	0	0
44	68	Z	0	0
45	68	Z	0	0
46	97	Z	-0.018	%30
47	97	Z	-0.026	%30
48	97	Z	-0.019	%60
49	97	Z	-0.024	%60
50	97	Z	-0.011	%10
51	95	Z	-0.018	%30
52	95	Z	-0.026	%30
53	95	Z	-0.019	%60
54	95	Z	-0.024	%60
55	95	Z	-0.011	%10
56	99	Z	-0.018	%30
57	99	Z	-0.026	%30
58	99	Z	-0.019	%60
59	99	Z	-0.024	%60
60	99	Z	0	0

Member Point Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	20	X	-0.038	%15
2	20	X	-0.038	%85
3	20	X	-0.003	%60
4	20	X	0	0
5	20	X	0	0
6	24	X	-0.016	%15
7	24	X	-0.016	%85
8	24	X	0	0
9	24	X	0	0
10	24	X	0	0
11	12	X	-0.03	%15
12	12	X	-0.03	%85
13	12	X	0	0
14	12	X	0	0
15	12	X	0	0
16	87	X	-0.038	%15
17	87	X	-0.038	%85
18	87	X	-0.003	%60
19	87	X	0	0
20	87	X	0	0
21	84	X	-0.016	%15
22	84	X	-0.016	%85
23	84	X	0	0
24	84	X	0	0
25	84	X	0	0
26	82	X	-0.03	%15
27	82	X	-0.03	%85
28	82	X	0	0
29	82	X	0	0
30	82	X	0	0
31	73	X	-0.038	%15
32	73	X	-0.038	%85
33	73	X	-0.003	%60
34	73	X	0	0
35	73	X	0	0
36	70	X	-0.016	%15
37	70	X	-0.016	%85
38	70	X	0	0
39	70	X	0	0
40	70	X	0	0
41	68	X	-0.03	%15
42	68	X	-0.03	%85
43	68	X	0	0
44	68	X	0	0
45	68	X	0	0
46	97	X	-0.018	%30
47	97	X	-0.026	%30
48	97	X	-0.019	%60
49	97	X	-0.024	%60
50	97	X	-0.011	%10
51	95	X	-0.018	%30
52	95	X	-0.026	%30
53	95	X	-0.019	%60
54	95	X	-0.024	%60
55	95	X	-0.011	%10
56	99	X	-0.018	%30
57	99	X	-0.026	%30
58	99	X	-0.019	%60

Member Point Loads (BLC 10 : 90 Seismic) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
59	99	X	-0.024	%60
60	99	X	0	0

Member Point Loads (BLC 15 : Maint LL 1)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	1	Y	-0.25	%5

Member Point Loads (BLC 16 : Maint LL 2)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	1	Y	-0.25	%95

Member Point Loads (BLC 17 : Maint LL 3)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	30	Y	-0.25	%5

Member Point Loads (BLC 18 : Maint LL 4)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	30	Y	-0.25	%95

Member Point Loads (BLC 19 : Maint LL 5)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	81	Y	-0.25	%95

Member Point Loads (BLC 20 : Maint LL 6)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	81	Y	-0.25	%5

Member Point Loads (BLC 21 : Maint LL 7)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	85	Y	-0.25	%5

Member Point Loads (BLC 22 : Maint LL 8)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	85	Y	-0.25	%95

Member Point Loads (BLC 23 : Maint LL 9)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	67	Y	-0.25	%95

Member Point Loads (BLC 24 : Maint LL 10)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	67	Y	-0.25	%5

Member Point Loads (BLC 25 : Maint LL 11)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	71	Y	-0.25	%5

Member Point Loads (BLC 26 : Maint LL 12)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	71	Y	-0.25	%95

Member Point Loads (BLC 27 : Maint LL 13)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	7	Y	-0.25	%95

Member Point Loads (BLC 28 : Maint LL 14)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	47	Y	-0.25	%95

Member Point Loads (BLC 29 : Maint LL 15)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	64	Y	-0.25	%95

Wall Panel Point Loads

No Data to Print...

Diaphragm Point Loads

No Data to Print...

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.014	-0.014	0	%100
2	3	Z	-0.025	-0.025	0	%100
3	5	Z	-0.025	-0.025	0	%100
4	6	Z	-0.025	-0.025	0	%100
5	7	Z	-0.023	-0.023	0	%100
6	8	Z	-0.019	-0.019	0	%100
7	9	Z	-0.019	-0.019	0	%100
8	10	Z	-0.025	-0.025	0	%100
9	11	Z	-0.025	-0.025	0	%100
10	12	Z	-0.012	-0.012	0	%100
11	13	Z	-0.012	-0.012	0	%100
12	14	Z	-0.014	-0.014	0	%100
13	15	Z	-0.014	-0.014	0	%100
14	16	Z	-0.025	-0.025	0	%100
15	18	Z	-0.025	-0.025	0	%100
16	20	Z	-0.012	-0.012	0	%100
17	24	Z	-0.012	-0.012	0	%100
18	30	Z	-0.012	-0.012	0	%100
19	31	Z	-0.012	-0.012	0	%100
20	32	Z	-0.019	-0.019	0	%100
21	33	Z	-0.025	-0.025	0	%100
22	34	Z	-0.025	-0.025	0	%100
23	35	Z	-0.025	-0.025	0	%100
24	36	Z	-0.025	-0.025	0	%100
25	38	Z	-0.025	-0.025	0	%100
26	40	Z	-0.019	-0.019	0	%100
27	41	Z	-0.025	-0.025	0	%100
28	42	Z	-0.025	-0.025	0	%100
29	45	Z	-0.012	-0.012	0	%100
30	46	Z	-0.014	-0.014	0	%100
31	47	Z	-0.023	-0.023	0	%100
32	48	Z	-0.014	-0.014	0	%100
33	49	Z	-0.019	-0.019	0	%100
34	50	Z	-0.025	-0.025	0	%100
35	51	Z	-0.025	-0.025	0	%100
36	52	Z	-0.025	-0.025	0	%100
37	53	Z	-0.025	-0.025	0	%100
38	55	Z	-0.025	-0.025	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
37	53	Z	-0.025	-0.025	0	%100
38	55	Z	-0.025	-0.025	0	%100
39	57	Z	-0.019	-0.019	0	%100
40	58	Z	-0.025	-0.025	0	%100
41	59	Z	-0.025	-0.025	0	%100
42	62	Z	-0.012	-0.012	0	%100
43	63	Z	-0.014	-0.014	0	%100
44	64	Z	-0.023	-0.023	0	%100
45	65	Z	-0.014	-0.014	0	%100
46	67	Z	-0.012	-0.012	0	%100
47	68	Z	-0.012	-0.012	0	%100
48	70	Z	-0.012	-0.012	0	%100
49	71	Z	-0.014	-0.014	0	%100
50	72	Z	-0.012	-0.012	0	%100
51	73	Z	-0.012	-0.012	0	%100
52	81	Z	-0.012	-0.012	0	%100
53	82	Z	-0.012	-0.012	0	%100
54	84	Z	-0.012	-0.012	0	%100
55	85	Z	-0.014	-0.014	0	%100
56	86	Z	-0.012	-0.012	0	%100
57	87	Z	-0.012	-0.012	0	%100
58	95	Z	-0.012	-0.012	0	%100
59	97	Z	-0.012	-0.012	0	%100
60	99	Z	-0.012	-0.012	0	%100
61	M100	Z	-0.011	-0.011	0	%100
62	M101	Z	-0.011	-0.011	0	%100
63	M102	Z	-0.011	-0.011	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.014	-0.014	0	%100
2	3	X	-0.025	-0.025	0	%100
3	5	X	-0.025	-0.025	0	%100
4	6	X	-0.025	-0.025	0	%100
5	7	X	-0.023	-0.023	0	%100
6	8	X	-0.019	-0.019	0	%100
7	9	X	-0.019	-0.019	0	%100
8	10	X	-0.025	-0.025	0	%100
9	11	X	-0.025	-0.025	0	%100
10	12	X	-0.012	-0.012	0	%100
11	13	X	-0.012	-0.012	0	%100
12	14	X	-0.014	-0.014	0	%100
13	15	X	-0.014	-0.014	0	%100
14	16	X	-0.025	-0.025	0	%100
15	18	X	-0.025	-0.025	0	%100
16	20	X	-0.012	-0.012	0	%100
17	24	X	-0.012	-0.012	0	%100
18	30	X	-0.012	-0.012	0	%100
19	31	X	-0.012	-0.012	0	%100
20	32	X	-0.019	-0.019	0	%100
21	33	X	-0.025	-0.025	0	%100
22	34	X	-0.025	-0.025	0	%100
23	35	X	-0.025	-0.025	0	%100
24	36	X	-0.025	-0.025	0	%100
25	38	X	-0.025	-0.025	0	%100
26	40	X	-0.019	-0.019	0	%100
27	41	X	-0.025	-0.025	0	%100
28	42	X	-0.025	-0.025	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
29	45	X	-0.012	-0.012	0	%100
30	46	X	-0.014	-0.014	0	%100
31	47	X	-0.023	-0.023	0	%100
32	48	X	-0.014	-0.014	0	%100
33	49	X	-0.019	-0.019	0	%100
34	50	X	-0.025	-0.025	0	%100
35	51	X	-0.025	-0.025	0	%100
36	52	X	-0.025	-0.025	0	%100
37	53	X	-0.025	-0.025	0	%100
38	55	X	-0.025	-0.025	0	%100
39	57	X	-0.019	-0.019	0	%100
40	58	X	-0.025	-0.025	0	%100
41	59	X	-0.025	-0.025	0	%100
42	62	X	-0.012	-0.012	0	%100
43	63	X	-0.014	-0.014	0	%100
44	64	X	-0.023	-0.023	0	%100
45	65	X	-0.014	-0.014	0	%100
46	67	X	-0.012	-0.012	0	%100
47	68	X	-0.012	-0.012	0	%100
48	70	X	-0.012	-0.012	0	%100
49	71	X	-0.014	-0.014	0	%100
50	72	X	-0.012	-0.012	0	%100
51	73	X	-0.012	-0.012	0	%100
52	81	X	-0.012	-0.012	0	%100
53	82	X	-0.012	-0.012	0	%100
54	84	X	-0.012	-0.012	0	%100
55	85	X	-0.014	-0.014	0	%100
56	86	X	-0.012	-0.012	0	%100
57	87	X	-0.012	-0.012	0	%100
58	95	X	-0.012	-0.012	0	%100
59	97	X	-0.012	-0.012	0	%100
60	99	X	-0.012	-0.012	0	%100
61	M100	X	-0.011	-0.011	0	%100
62	M101	X	-0.011	-0.011	0	%100
63	M102	X	-0.011	-0.011	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.002	-0.002	0	%100
2	3	Z	-0.011	-0.011	0	%100
3	5	Z	-0.011	-0.011	0	%100
4	6	Z	-0.007	-0.007	0	%100
5	7	Z	-0.007	-0.007	0	%100
6	8	Z	-0.006	-0.006	0	%100
7	9	Z	-0.006	-0.006	0	%100
8	10	Z	-0.01	-0.01	0	%100
9	11	Z	-0.01	-0.01	0	%100
10	12	Z	-0.002	-0.002	0	%100
11	13	Z	-0.002	-0.002	0	%100
12	14	Z	-0.006	-0.006	0	%100
13	15	Z	-0.006	-0.006	0	%100
14	16	Z	-0.011	-0.011	0	%100
15	18	Z	-0.011	-0.011	0	%100
16	20	Z	-0.002	-0.002	0	%100
17	24	Z	-0.002	-0.002	0	%100
18	30	Z	-0.002	-0.002	0	%100
19	31	Z	-0.005	-0.005	0	%100
20	32	Z	-0.006	-0.006	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
21	33	Z	-0.007	-0.007	0	%100
22	34	Z	-0.011	-0.011	0	%100
23	35	Z	-0.011	-0.011	0	%100
24	36	Z	-0.011	-0.011	0	%100
25	38	Z	-0.011	-0.011	0	%100
26	40	Z	-0.006	-0.006	0	%100
27	41	Z	-0.01	-0.01	0	%100
28	42	Z	-0.01	-0.01	0	%100
29	45	Z	-0.005	-0.005	0	%100
30	46	Z	-0.006	-0.006	0	%100
31	47	Z	-0.007	-0.007	0	%100
32	48	Z	-0.006	-0.006	0	%100
33	49	Z	-0.006	-0.006	0	%100
34	50	Z	-0.007	-0.007	0	%100
35	51	Z	-0.011	-0.011	0	%100
36	52	Z	-0.011	-0.011	0	%100
37	53	Z	-0.011	-0.011	0	%100
38	55	Z	-0.011	-0.011	0	%100
39	57	Z	-0.006	-0.006	0	%100
40	58	Z	-0.01	-0.01	0	%100
41	59	Z	-0.01	-0.01	0	%100
42	62	Z	-0.005	-0.005	0	%100
43	63	Z	-0.006	-0.006	0	%100
44	64	Z	-0.007	-0.007	0	%100
45	65	Z	-0.006	-0.006	0	%100
46	67	Z	-0.002	-0.002	0	%100
47	68	Z	-0.002	-0.002	0	%100
48	70	Z	-0.002	-0.002	0	%100
49	71	Z	-0.002	-0.002	0	%100
50	72	Z	-0.002	-0.002	0	%100
51	73	Z	-0.002	-0.002	0	%100
52	81	Z	-0.002	-0.002	0	%100
53	82	Z	-0.002	-0.002	0	%100
54	84	Z	-0.002	-0.002	0	%100
55	85	Z	-0.002	-0.002	0	%100
56	86	Z	-0.002	-0.002	0	%100
57	87	Z	-0.002	-0.002	0	%100
58	95	Z	-0.002	-0.002	0	%100
59	97	Z	-0.002	-0.002	0	%100
60	99	Z	-0.002	-0.002	0	%100
61	M100	Z	-0.002	-0.002	0	%100
62	M101	Z	-0.002	-0.002	0	%100
63	M102	Z	-0.002	-0.002	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.002	-0.002	0	%100
2	3	X	-0.011	-0.011	0	%100
3	5	X	-0.011	-0.011	0	%100
4	6	X	-0.007	-0.007	0	%100
5	7	X	-0.007	-0.007	0	%100
6	8	X	-0.006	-0.006	0	%100
7	9	X	-0.006	-0.006	0	%100
8	10	X	-0.01	-0.01	0	%100
9	11	X	-0.01	-0.01	0	%100
10	12	X	-0.002	-0.002	0	%100
11	13	X	-0.002	-0.002	0	%100
12	14	X	-0.006	-0.006	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
13	15	X	-0.006	-0.006	0	%100
14	16	X	-0.011	-0.011	0	%100
15	18	X	-0.011	-0.011	0	%100
16	20	X	-0.002	-0.002	0	%100
17	24	X	-0.002	-0.002	0	%100
18	30	X	-0.002	-0.002	0	%100
19	31	X	-0.005	-0.005	0	%100
20	32	X	-0.006	-0.006	0	%100
21	33	X	-0.007	-0.007	0	%100
22	34	X	-0.011	-0.011	0	%100
23	35	X	-0.011	-0.011	0	%100
24	36	X	-0.011	-0.011	0	%100
25	38	X	-0.011	-0.011	0	%100
26	40	X	-0.006	-0.006	0	%100
27	41	X	-0.01	-0.01	0	%100
28	42	X	-0.01	-0.01	0	%100
29	45	X	-0.005	-0.005	0	%100
30	46	X	-0.006	-0.006	0	%100
31	47	X	-0.007	-0.007	0	%100
32	48	X	-0.006	-0.006	0	%100
33	49	X	-0.006	-0.006	0	%100
34	50	X	-0.007	-0.007	0	%100
35	51	X	-0.011	-0.011	0	%100
36	52	X	-0.011	-0.011	0	%100
37	53	X	-0.011	-0.011	0	%100
38	55	X	-0.011	-0.011	0	%100
39	57	X	-0.006	-0.006	0	%100
40	58	X	-0.01	-0.01	0	%100
41	59	X	-0.01	-0.01	0	%100
42	62	X	-0.005	-0.005	0	%100
43	63	X	-0.006	-0.006	0	%100
44	64	X	-0.007	-0.007	0	%100
45	65	X	-0.006	-0.006	0	%100
46	67	X	-0.002	-0.002	0	%100
47	68	X	-0.002	-0.002	0	%100
48	70	X	-0.002	-0.002	0	%100
49	71	X	-0.002	-0.002	0	%100
50	72	X	-0.002	-0.002	0	%100
51	73	X	-0.002	-0.002	0	%100
52	81	X	-0.002	-0.002	0	%100
53	82	X	-0.002	-0.002	0	%100
54	84	X	-0.002	-0.002	0	%100
55	85	X	-0.002	-0.002	0	%100
56	86	X	-0.002	-0.002	0	%100
57	87	X	-0.002	-0.002	0	%100
58	95	X	-0.002	-0.002	0	%100
59	97	X	-0.002	-0.002	0	%100
60	99	X	-0.002	-0.002	0	%100
61	M100	X	-0.002	-0.002	0	%100
62	M101	X	-0.002	-0.002	0	%100
63	M102	X	-0.002	-0.002	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.0005	-0.0005	0	%100
2	3	Z	-0.002	-0.002	0	%100
3	5	Z	-0.002	-0.002	0	%100
4	6	Z	-0.002	-0.002	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
5	7	Z	-0.002	-0.002	0	%100
6	8	Z	-0.001	-0.001	0	%100
7	9	Z	-0.001	-0.001	0	%100
8	10	Z	-0.002	-0.002	0	%100
9	11	Z	-0.002	-0.002	0	%100
10	12	Z	-0.0004	-0.0004	0	%100
11	13	Z	-0.0004	-0.0004	0	%100
12	14	Z	-0.0009	-0.0009	0	%100
13	15	Z	-0.0009	-0.0009	0	%100
14	16	Z	-0.002	-0.002	0	%100
15	18	Z	-0.002	-0.002	0	%100
16	20	Z	-0.0004	-0.0004	0	%100
17	24	Z	-0.0004	-0.0004	0	%100
18	30	Z	-0.0004	-0.0004	0	%100
19	31	Z	-0.0007	-0.0007	0	%100
20	32	Z	-0.001	-0.001	0	%100
21	33	Z	-0.002	-0.002	0	%100
22	34	Z	-0.002	-0.002	0	%100
23	35	Z	-0.002	-0.002	0	%100
24	36	Z	-0.002	-0.002	0	%100
25	38	Z	-0.002	-0.002	0	%100
26	40	Z	-0.001	-0.001	0	%100
27	41	Z	-0.002	-0.002	0	%100
28	42	Z	-0.002	-0.002	0	%100
29	45	Z	-0.0007	-0.0007	0	%100
30	46	Z	-0.0009	-0.0009	0	%100
31	47	Z	-0.002	-0.002	0	%100
32	48	Z	-0.0009	-0.0009	0	%100
33	49	Z	-0.001	-0.001	0	%100
34	50	Z	-0.002	-0.002	0	%100
35	51	Z	-0.002	-0.002	0	%100
36	52	Z	-0.002	-0.002	0	%100
37	53	Z	-0.002	-0.002	0	%100
38	55	Z	-0.002	-0.002	0	%100
39	57	Z	-0.001	-0.001	0	%100
40	58	Z	-0.002	-0.002	0	%100
41	59	Z	-0.002	-0.002	0	%100
42	62	Z	-0.0007	-0.0007	0	%100
43	63	Z	-0.0009	-0.0009	0	%100
44	64	Z	-0.002	-0.002	0	%100
45	65	Z	-0.0009	-0.0009	0	%100
46	67	Z	-0.0004	-0.0004	0	%100
47	68	Z	-0.0004	-0.0004	0	%100
48	70	Z	-0.0004	-0.0004	0	%100
49	71	Z	-0.0005	-0.0005	0	%100
50	72	Z	-0.0004	-0.0004	0	%100
51	73	Z	-0.0004	-0.0004	0	%100
52	81	Z	-0.0004	-0.0004	0	%100
53	82	Z	-0.0004	-0.0004	0	%100
54	84	Z	-0.0004	-0.0004	0	%100
55	85	Z	-0.0005	-0.0005	0	%100
56	86	Z	-0.0004	-0.0004	0	%100
57	87	Z	-0.0004	-0.0004	0	%100
58	95	Z	-0.0004	-0.0004	0	%100
59	97	Z	-0.0004	-0.0004	0	%100
60	99	Z	-0.0004	-0.0004	0	%100
61	M100	Z	-0.0004	-0.0004	0	%100
62	M101	Z	-0.0004	-0.0004	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
63	M102	Z	-0.0004	-0.0004	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.0005	-0.0005	0	%100
2	3	X	-0.002	-0.002	0	%100
3	5	X	-0.002	-0.002	0	%100
4	6	X	-0.002	-0.002	0	%100
5	7	X	-0.002	-0.002	0	%100
6	8	X	-0.001	-0.001	0	%100
7	9	X	-0.001	-0.001	0	%100
8	10	X	-0.002	-0.002	0	%100
9	11	X	-0.002	-0.002	0	%100
10	12	X	-0.0004	-0.0004	0	%100
11	13	X	-0.0004	-0.0004	0	%100
12	14	X	-0.0009	-0.0009	0	%100
13	15	X	-0.0009	-0.0009	0	%100
14	16	X	-0.002	-0.002	0	%100
15	18	X	-0.002	-0.002	0	%100
16	20	X	-0.0004	-0.0004	0	%100
17	24	X	-0.0004	-0.0004	0	%100
18	30	X	-0.0004	-0.0004	0	%100
19	31	X	-0.0007	-0.0007	0	%100
20	32	X	-0.001	-0.001	0	%100
21	33	X	-0.002	-0.002	0	%100
22	34	X	-0.002	-0.002	0	%100
23	35	X	-0.002	-0.002	0	%100
24	36	X	-0.002	-0.002	0	%100
25	38	X	-0.002	-0.002	0	%100
26	40	X	-0.001	-0.001	0	%100
27	41	X	-0.002	-0.002	0	%100
28	42	X	-0.002	-0.002	0	%100
29	45	X	-0.0007	-0.0007	0	%100
30	46	X	-0.0009	-0.0009	0	%100
31	47	X	-0.002	-0.002	0	%100
32	48	X	-0.0009	-0.0009	0	%100
33	49	X	-0.001	-0.001	0	%100
34	50	X	-0.002	-0.002	0	%100
35	51	X	-0.002	-0.002	0	%100
36	52	X	-0.002	-0.002	0	%100
37	53	X	-0.002	-0.002	0	%100
38	55	X	-0.002	-0.002	0	%100
39	57	X	-0.001	-0.001	0	%100
40	58	X	-0.002	-0.002	0	%100
41	59	X	-0.002	-0.002	0	%100
42	62	X	-0.0007	-0.0007	0	%100
43	63	X	-0.0009	-0.0009	0	%100
44	64	X	-0.002	-0.002	0	%100
45	65	X	-0.0009	-0.0009	0	%100
46	67	X	-0.0004	-0.0004	0	%100
47	68	X	-0.0004	-0.0004	0	%100
48	70	X	-0.0004	-0.0004	0	%100
49	71	X	-0.0005	-0.0005	0	%100
50	72	X	-0.0004	-0.0004	0	%100
51	73	X	-0.0004	-0.0004	0	%100
52	81	X	-0.0004	-0.0004	0	%100
53	82	X	-0.0004	-0.0004	0	%100
54	84	X	-0.0004	-0.0004	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
55	85	X	-0.0005	-0.0005	0	%100
56	86	X	-0.0004	-0.0004	0	%100
57	87	X	-0.0004	-0.0004	0	%100
58	95	X	-0.0004	-0.0004	0	%100
59	97	X	-0.0004	-0.0004	0	%100
60	99	X	-0.0004	-0.0004	0	%100
61	M100	X	-0.0004	-0.0004	0	%100
62	M101	X	-0.0004	-0.0004	0	%100
63	M102	X	-0.0004	-0.0004	0	%100

Member Distributed Loads (BLC 8 : Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.007	-0.007	0	%100
2	3	Y	-0.011	-0.011	0	%100
3	5	Y	-0.011	-0.011	0	%100
4	6	Y	-0.011	-0.011	0	%100
5	7	Y	-0.01	-0.01	0	%100
6	8	Y	-0.01	-0.01	0	%100
7	9	Y	-0.01	-0.01	0	%100
8	10	Y	-0.01	-0.01	0	%100
9	11	Y	-0.01	-0.01	0	%100
10	12	Y	-0.006	-0.006	0	%100
11	13	Y	-0.006	-0.006	0	%100
12	14	Y	-0.006	-0.006	0	%100
13	15	Y	-0.006	-0.006	0	%100
14	16	Y	-0.01	-0.01	0	%100
15	18	Y	-0.01	-0.01	0	%100
16	20	Y	-0.006	-0.006	0	%100
17	24	Y	-0.006	-0.006	0	%100
18	30	Y	-0.006	-0.006	0	%100
19	31	Y	-0.007	-0.007	0	%100
20	32	Y	-0.01	-0.01	0	%100
21	33	Y	-0.011	-0.011	0	%100
22	34	Y	-0.01	-0.01	0	%100
23	35	Y	-0.01	-0.01	0	%100
24	36	Y	-0.011	-0.011	0	%100
25	38	Y	-0.011	-0.011	0	%100
26	40	Y	-0.01	-0.01	0	%100
27	41	Y	-0.01	-0.01	0	%100
28	42	Y	-0.01	-0.01	0	%100
29	45	Y	-0.007	-0.007	0	%100
30	46	Y	-0.006	-0.006	0	%100
31	47	Y	-0.01	-0.01	0	%100
32	48	Y	-0.006	-0.006	0	%100
33	49	Y	-0.01	-0.01	0	%100
34	50	Y	-0.011	-0.011	0	%100
35	51	Y	-0.01	-0.01	0	%100
36	52	Y	-0.01	-0.01	0	%100
37	53	Y	-0.011	-0.011	0	%100
38	55	Y	-0.011	-0.011	0	%100
39	57	Y	-0.01	-0.01	0	%100
40	58	Y	-0.01	-0.01	0	%100
41	59	Y	-0.01	-0.01	0	%100
42	62	Y	-0.007	-0.007	0	%100
43	63	Y	-0.006	-0.006	0	%100
44	64	Y	-0.01	-0.01	0	%100
45	65	Y	-0.006	-0.006	0	%100
46	67	Y	-0.006	-0.006	0	%100

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
47	68	Y	-0.006	-0.006	0	%100
48	70	Y	-0.006	-0.006	0	%100
49	71	Y	-0.007	-0.007	0	%100
50	72	Y	-0.006	-0.006	0	%100
51	73	Y	-0.006	-0.006	0	%100
52	81	Y	-0.006	-0.006	0	%100
53	82	Y	-0.006	-0.006	0	%100
54	84	Y	-0.006	-0.006	0	%100
55	85	Y	-0.007	-0.007	0	%100
56	86	Y	-0.006	-0.006	0	%100
57	87	Y	-0.006	-0.006	0	%100
58	95	Y	-0.006	-0.006	0	%100
59	97	Y	-0.006	-0.006	0	%100
60	99	Y	-0.006	-0.006	0	%100
61	M100	Y	-0.006	-0.006	0	%100
62	M101	Y	-0.006	-0.006	0	%100
63	M102	Y	-0.006	-0.006	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.003	-0.003	0	%100
2	3	Z	-0.003	-0.003	0	%100
3	5	Z	-0.003	-0.003	0	%100
4	6	Z	-0.003	-0.003	0	%100
5	7	Z	-0.004	-0.004	0	%100
6	8	Z	-0.004	-0.004	0	%100
7	9	Z	-0.004	-0.004	0	%100
8	10	Z	-0.002	-0.002	0	%100
9	11	Z	-0.002	-0.002	0	%100
10	12	Z	-0.002	-0.002	0	%100
11	13	Z	-0.002	-0.002	0	%100
12	14	Z	-0.0008	-0.0008	0	%100
13	15	Z	-0.0008	-0.0008	0	%100
14	16	Z	-0.002	-0.002	0	%100
15	18	Z	-0.002	-0.002	0	%100
16	20	Z	-0.002	-0.002	0	%100
17	24	Z	-0.002	-0.002	0	%100
18	30	Z	-0.002	-0.002	0	%100
19	31	Z	-0.001	-0.001	0	%100
20	32	Z	-0.004	-0.004	0	%100
21	33	Z	-0.003	-0.003	0	%100
22	34	Z	-0.002	-0.002	0	%100
23	35	Z	-0.002	-0.002	0	%100
24	36	Z	-0.003	-0.003	0	%100
25	38	Z	-0.003	-0.003	0	%100
26	40	Z	-0.004	-0.004	0	%100
27	41	Z	-0.002	-0.002	0	%100
28	42	Z	-0.002	-0.002	0	%100
29	45	Z	-0.001	-0.001	0	%100
30	46	Z	-0.0008	-0.0008	0	%100
31	47	Z	-0.004	-0.004	0	%100
32	48	Z	-0.0008	-0.0008	0	%100
33	49	Z	-0.004	-0.004	0	%100
34	50	Z	-0.003	-0.003	0	%100
35	51	Z	-0.002	-0.002	0	%100
36	52	Z	-0.002	-0.002	0	%100
37	53	Z	-0.003	-0.003	0	%100
38	55	Z	-0.003	-0.003	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
39	57	Z	-0.004	-0.004	0	%100
40	58	Z	-0.002	-0.002	0	%100
41	59	Z	-0.002	-0.002	0	%100
42	62	Z	-0.001	-0.001	0	%100
43	63	Z	-0.0008	-0.0008	0	%100
44	64	Z	-0.004	-0.004	0	%100
45	65	Z	-0.0008	-0.0008	0	%100
46	67	Z	-0.002	-0.002	0	%100
47	68	Z	-0.002	-0.002	0	%100
48	70	Z	-0.002	-0.002	0	%100
49	71	Z	-0.003	-0.003	0	%100
50	72	Z	-0.002	-0.002	0	%100
51	73	Z	-0.002	-0.002	0	%100
52	81	Z	-0.002	-0.002	0	%100
53	82	Z	-0.002	-0.002	0	%100
54	84	Z	-0.002	-0.002	0	%100
55	85	Z	-0.003	-0.003	0	%100
56	86	Z	-0.002	-0.002	0	%100
57	87	Z	-0.002	-0.002	0	%100
58	95	Z	-0.002	-0.002	0	%100
59	97	Z	-0.002	-0.002	0	%100
60	99	Z	-0.002	-0.002	0	%100
61	M100	Z	-0.002	-0.002	0	%100
62	M101	Z	-0.002	-0.002	0	%100
63	M102	Z	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.003	-0.003	0	%100
2	3	X	-0.003	-0.003	0	%100
3	5	X	-0.003	-0.003	0	%100
4	6	X	-0.003	-0.003	0	%100
5	7	X	-0.004	-0.004	0	%100
6	8	X	-0.004	-0.004	0	%100
7	9	X	-0.004	-0.004	0	%100
8	10	X	-0.002	-0.002	0	%100
9	11	X	-0.002	-0.002	0	%100
10	12	X	-0.002	-0.002	0	%100
11	13	X	-0.002	-0.002	0	%100
12	14	X	-0.0008	-0.0008	0	%100
13	15	X	-0.0008	-0.0008	0	%100
14	16	X	-0.002	-0.002	0	%100
15	18	X	-0.002	-0.002	0	%100
16	20	X	-0.002	-0.002	0	%100
17	24	X	-0.002	-0.002	0	%100
18	30	X	-0.002	-0.002	0	%100
19	31	X	-0.001	-0.001	0	%100
20	32	X	-0.004	-0.004	0	%100
21	33	X	-0.003	-0.003	0	%100
22	34	X	-0.002	-0.002	0	%100
23	35	X	-0.002	-0.002	0	%100
24	36	X	-0.003	-0.003	0	%100
25	38	X	-0.003	-0.003	0	%100
26	40	X	-0.004	-0.004	0	%100
27	41	X	-0.002	-0.002	0	%100
28	42	X	-0.002	-0.002	0	%100
29	45	X	-0.001	-0.001	0	%100
30	46	X	-0.0008	-0.0008	0	%100

Member Distributed Loads (BLC 10 : 90 Seismic) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
31	47	X	-0.004	-0.004	0	%100
32	48	X	-0.0008	-0.0008	0	%100
33	49	X	-0.004	-0.004	0	%100
34	50	X	-0.003	-0.003	0	%100
35	51	X	-0.002	-0.002	0	%100
36	52	X	-0.002	-0.002	0	%100
37	53	X	-0.003	-0.003	0	%100
38	55	X	-0.003	-0.003	0	%100
39	57	X	-0.004	-0.004	0	%100
40	58	X	-0.002	-0.002	0	%100
41	59	X	-0.002	-0.002	0	%100
42	62	X	-0.001	-0.001	0	%100
43	63	X	-0.0008	-0.0008	0	%100
44	64	X	-0.004	-0.004	0	%100
45	65	X	-0.0008	-0.0008	0	%100
46	67	X	-0.002	-0.002	0	%100
47	68	X	-0.002	-0.002	0	%100
48	70	X	-0.002	-0.002	0	%100
49	71	X	-0.003	-0.003	0	%100
50	72	X	-0.002	-0.002	0	%100
51	73	X	-0.002	-0.002	0	%100
52	81	X	-0.002	-0.002	0	%100
53	82	X	-0.002	-0.002	0	%100
54	84	X	-0.002	-0.002	0	%100
55	85	X	-0.003	-0.003	0	%100
56	86	X	-0.002	-0.002	0	%100
57	87	X	-0.002	-0.002	0	%100
58	95	X	-0.002	-0.002	0	%100
59	97	X	-0.002	-0.002	0	%100
60	99	X	-0.002	-0.002	0	%100
61	M100	X	-0.002	-0.002	0	%100
62	M101	X	-0.002	-0.002	0	%100
63	M102	X	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 30 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	32	Y	-0.009	-0.009	0	0.969
2	40	Y	-0.009	-0.009	1.573	2.541
3	46	Y	-0.001	-0.005	0	2.117
4	46	Y	-0.005	-0.008	2.117	4.234
5	47	Y	-0.011	-0.011	2.424	4.115
6	48	Y	-0.009	-0.005	0	2.117
7	48	Y	-0.005	-0.001	2.117	4.234
8	7	Y	-0.011	-0.011	2.424	4.115
9	8	Y	-0.009	-0.009	1.573	2.541
10	9	Y	-0.009	-0.009	0	0.969
11	14	Y	-0.009	-0.005	0	2.117
12	14	Y	-0.005	-0.001	2.117	4.234
13	15	Y	-0.001	-0.005	0	2.117
14	15	Y	-0.005	-0.008	2.117	4.234
15	49	Y	-0.009	-0.009	0	0.969
16	57	Y	-0.009	-0.009	1.573	2.541
17	63	Y	-0.001	-0.005	0	2.117
18	63	Y	-0.005	-0.008	2.117	4.234
19	64	Y	-0.011	-0.011	2.424	4.115
20	65	Y	-0.009	-0.005	0	2.117
21	65	Y	-0.005	-0.001	2.117	4.234

Member Distributed Loads (BLC 31 : BLC 8 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	32	Y	-0.005	-0.005	0	0.969
2	40	Y	-0.005	-0.005	1.573	2.541
3	46	Y	-0.000874	-0.003	0	2.117
4	46	Y	-0.003	-0.005	2.117	4.234
5	47	Y	-0.007	-0.007	2.424	4.115
6	48	Y	-0.005	-0.003	0	2.117
7	48	Y	-0.003	-0.0008379	2.117	4.234
8	7	Y	-0.007	-0.007	2.424	4.115
9	8	Y	-0.005	-0.005	1.573	2.541
10	9	Y	-0.005	-0.005	0	0.969
11	14	Y	-0.005	-0.003	0	2.117
12	14	Y	-0.003	-0.0008379	2.117	4.234
13	15	Y	-0.000874	-0.003	0	2.117
14	15	Y	-0.003	-0.005	2.117	4.234
15	49	Y	-0.005	-0.005	0	0.969
16	57	Y	-0.005	-0.005	1.573	2.541
17	63	Y	-0.000874	-0.003	0	2.117
18	63	Y	-0.003	-0.005	2.117	4.234
19	64	Y	-0.007	-0.007	2.424	4.115
20	65	Y	-0.005	-0.003	0	2.117
21	65	Y	-0.003	-0.0008378	2.117	4.234

Wall Panel Distributed Loads

No Data to Print...

Diaphragm Distributed Loads

No Data to Print...

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

No Data to Print...

Envelope Node Reactions

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	12	max	1.339	5	4.297	2	4.206	2	11.548	2	1.135	11	2.852	11
2		min	-1.343	11	-0.883	8	-4.269	8	-6.621	8	-1.13	5	-3.605	5
3	72	max	3.138	6	2.296	6	2.301	13	3.159	13	1.26	3	4.762	12
4		min	-3.184	12	-0.244	12	-2.271	7	-5.451	7	-1.257	9	-9.062	6
5	99	max	3.13	4	3.896	21	2.347	3	3.365	2	1.252	7	8.576	10
6		min	-3.081	10	-0.542	3	-2.309	9	-6.691	8	-1.256	13	-4.847	4
7	Totals:	max	7.184	5	9.017	14	8.512	2						
8		min	-7.184	11	4.388	8	-8.512	8						

APPENDIX D

ADDITIONAL CALCULATIONS

PROJECT	**126536.010.01 - Bridgeport North, CT SR**				
SUBJECT	**Platform Mount Mount Analysis**				
DATE	**02/15/21**	PAGE	1	OF	1

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

[REF: AISC 360-05]

Reactions at Bolted Connection

Tension	:	2.301	k
Vertical Shear	:	2.296	k
Horizontal Shear	:	3.138	k
Torsion	:	4.762	k.ft
Moment from Horizontal Forces	:	1.26	k.ft
Moment from Vertical Forces	:	3.159	k.ft

Bolt Parameters

Bolt Grade	:	A325	
Bolt Diameter	:	0.625	in
Nominal Bolt Area	:	0.307	in^2
Bolt spacing, Horizontal	:	6	in
Bolt spacing, Vertical	:	6	in
Bolt edge distance, plate height	:	1.5	in
Bolt edge distance, plate width	:	1.5	in
Total Number of Bolts	:	4	bolts

Summary of Forces

Shear Resultant Force	:	3.89	k
Force from Horz. Moment	:	2.28	k
Force from Vert. Moment	:	5.72	k
Shear Load / Bolt	:	0.97	k
Tension Load / Bolt	:	0.58	k
Resultant from Moments / Bolt	:	3.08	k

Bolt Checks

Nominal Tensile Stress, F_{nt}	:	90.00	ksi	[AISC Table J3.2]
Available Tensile Stress, ΦR_{nt}	:	20.72	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	**17.64%**		**OKAY**
Nominal Shear Stress, F_{nv}	:	48.00	ksi	[AISC Table J3.2]
Available Shear Stress, ΦR_{nv}	:	11.05	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	**14.00%**		**OKAY**
Unity Check, Combined	:	**31.64%**		**OKAY**
Available Bearing Strength, ΦR_n	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	**2.80%**		**OKAY**

PROJECT	**126536.010.01 - Bridgeport North, CT SR**				
SUBJECT	**Platform Mount Mount Analysis**				
DATE	**02/15/21**	PAGE	1	OF	1

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

[REF: AISC 360-05]

Connecting Member Parameters

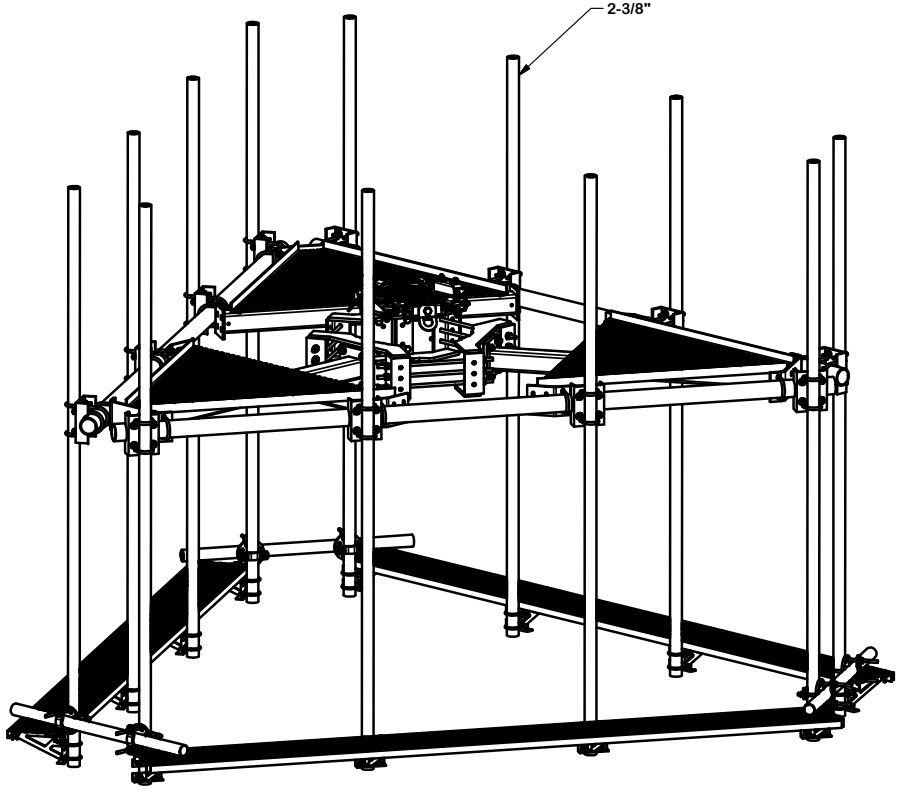
Plate Yield Strength, F_y	:	36.00	ksi	[AISC Table 2-5]
Plate Tensile Strength, F_u	:	58.00	ksi	[AISC Table 2-5]
Plate Height	:	9.00	in	
Plate Width	:	9.00	in	
Plate Thickness	:	0.50	in	
Edge Distance	:	1.06	in	
Gross Tension Area, A_{gt}	:	4.50	in^2	
Gross Shear Area, A_{gv}	:	0.75	in^2	
Net Area for tension, A_{nv}	:	4.16	in^2	
Net Area for shear, A_{nt}	:	3.00	in^2	

Plate Check

Available Tensile Yield	:	145.80	k	[Eq. J4-1]
Available Tensile Rupture	:	180.80	k	[Eq. J4-2]
Unity Check, Plate Tension	:	**2.51%**		**OKAY**
Available Shear Yield	:	16.20	k	[Eq. J4-3]
Available Shear Rupture	:	104.40	k	[Eq. J4-4]
Unity Check, Plate Shear	:	**24.00%**		**OKAY**
Available Block Shear, ΦRn	:	77.40	k	[Eq. J4-5]
Unity Check, Block Shear	:	**5.02%**		**OKAY**

APPENDIX E

SUPPLEMENTAL DRAWINGS



PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	X-SV196	LOW PROFILE PLATFORM CORNER		212.10	636.31
2	3	X-LWRM	RING MOUNT WELDMENT		68.81	206.42
3	12	X-SP219	SMALL SUPPORT CROSS PLATE	8 1/4 in	8.61	103.33
4	12	X-WWSB	WALKWAY SUPPORT BRACKET		6.73	80.75
5	6	X-127594	FLAT DISK CLAMP PLATE 4" CENTERS (GALV.)		2.51	15.04
6	12	X-100064	CLAMP (4" V-CLAMP) GALVANIZED		0.91	10.95
7	12	P2120	2-3/8" x 120" (2" SCH. 40) GALAVANIZED PIPE	120 in	36.61	439.38
8	3	P3150	3-1/2" X 150" (3" SCH 40) GALVANIZED PIPE	150 in	94.80	284.40
9	3	P248	2-3/8" X 63"SCH 40 GALVANIZED PIPE	63 in	20.18	60.55
10	9	G58R-24	5/8" x 24" THREADED ROD (HDG.)	24 in	0.40	3.59
10	9	G58R-48	5/8" x 48" THREADED ROD (HDG.)	48 in	0.40	3.59
11	12	A58234	5/8" x 2-3/4" HDG A325 HEX BOLT	2 3/4 in	0.36	4.27
12	12	A58FW	5/8" HDG A325 FLATWASHER		0.03	0.41
13	30	G58LW	5/8" HDG LOCKWASHER		0.03	0.78
14	30	A58NUT	5/8" HDG A325 HEX NUT		0.13	3.90
15	3	GRS12-12	12" WIDE GRIP STRUT	120 in	31.00	93.00
16	36	X-UB1306	1/2" X 3-5/8" X 6" X 3" U-BOLT (HDG.)		0.83	29.82
17	24	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.63	15.00
18	12	G1204	1/2" x 4" HDG HEX BOLT GR5 FULL THREAD	4 in	0.27	3.24
19	12	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	6 1/2 in	0.41	4.91
20	144	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	4.91
21	144	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	2.00
22	144	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	10.31
23	24	X-UB3212	3/8" X 2-1/2" X 3-5/8" X 1-3/4" U-BOLT (HDG.)		0.29	6.97
24	48	G3802	3/8" x 2" HDG HEX BOLT GR5		0.09	4.21
25	48	SQW38	3/8" SQUARE WASHER	2 in	0.29	13.89
26	96	G38FW	3/8" HDG USS FLATWASHER		0.01	1.13
27	96	G38LW	3/8" HDG LOCKWASHER		0.01	0.64
28	96	G38NUT	3/8" HDG HEAVY 2H HEX NUT		0.03	3.25
29	1	HALO	HALO		40.35	40.35
					TOTAL WT. #	2136.59

TOLERANCE NOTES

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

PROPRIETARY NOTE:
THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

DESCRIPTION: RMQP-12-H5

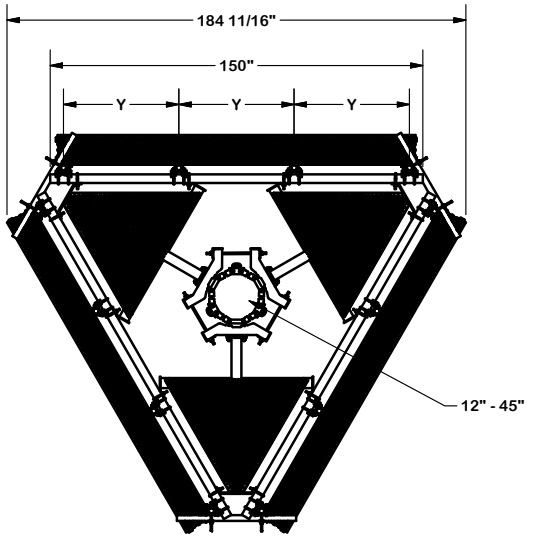
SITE PRO 1 — A valmont COMPANY

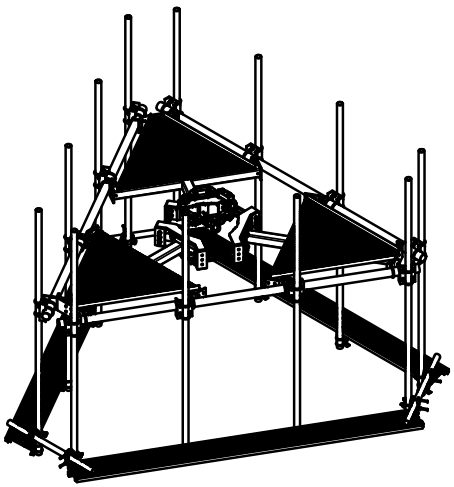
Engineering Support Team: 1-888-753-7446

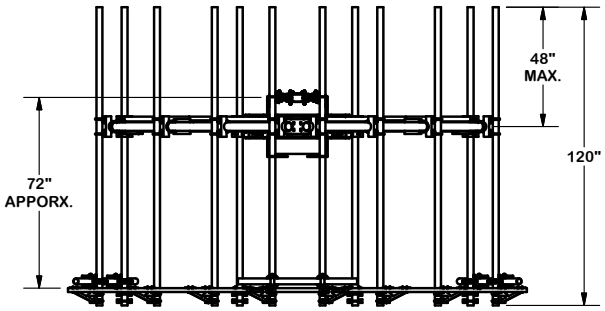
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

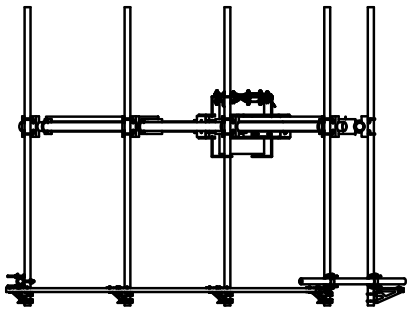
CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
	CEK 11/1/2017		RMQP-12-H5

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
		CUSTOMER		RMQP-12-H5









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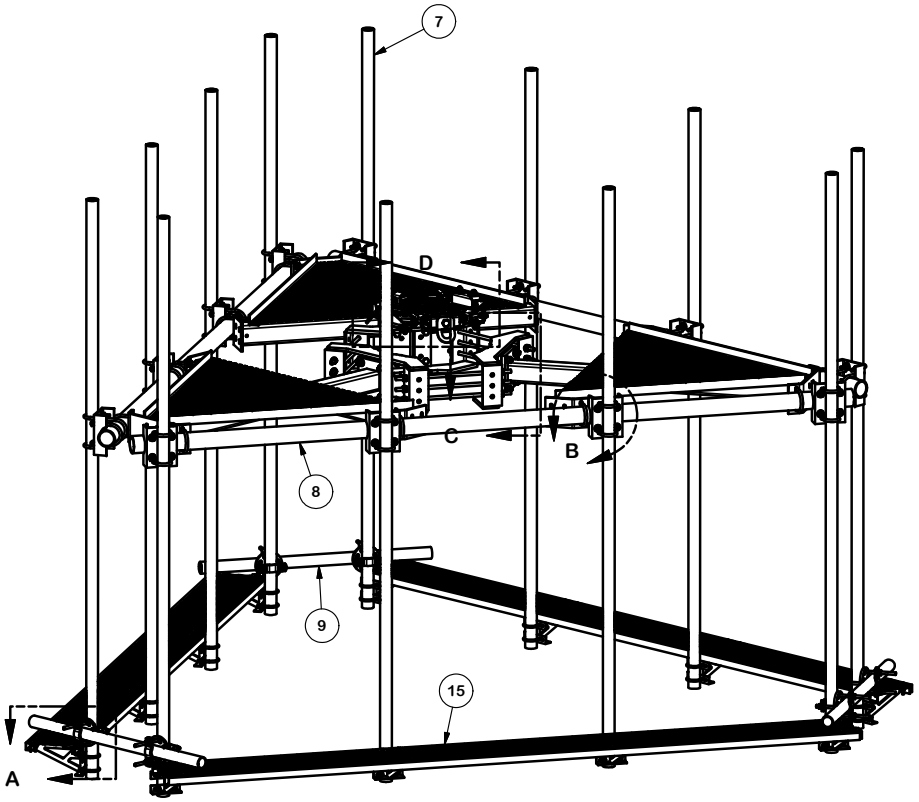
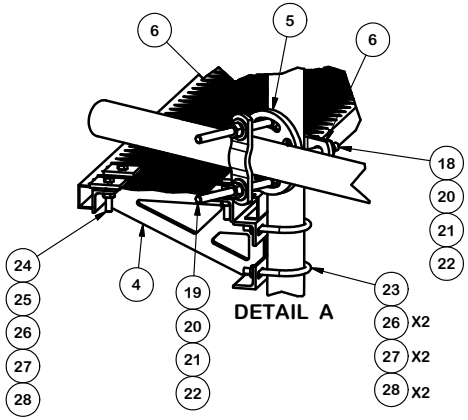
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

PROPRIETARY NOTE:
THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

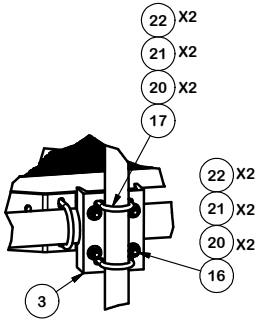
DESCRIPTION: RMQP-12-H5			
CPD NO.	DRAWN BY: CEK 11/1/2017	ENG. APPROVAL	PART NO.: RMQP-12-H5
CLASS / SUB	DRAWING USAGE: CUSTOMER	CHECKED BY	DWG. NO.: RMQP-12-H5

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

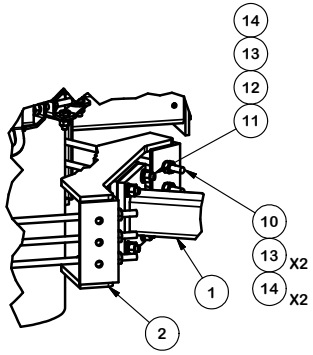




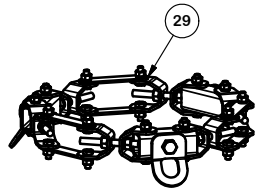
DETAIL A



DETAIL B



DETAIL C



DETAIL D

TOLERANCE NOTES

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

PROPRIETARY NOTE:
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DESCRIPTION: RMQP-12-H5			
CPD NO.	DRAWN BY: CEK 11/1/2017	ENG. APPROVAL	PART NO.: RMQP-12-H5
CLASS / SUB	DRAWING USAGE: CUSTOMER	CHECKED BY	DWG. NO.: RMQP-12-H5

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

Exhibit F

EBI Consulting

environmental | engineering | due diligence

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

AT&T Existing Facility

Site ID: 841288 / CT2106

Bridgeport North
205 Kaechele Place
Bridgeport, Connecticut 06606

March 15, 2021

EBI Project Number: 6221001217

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**54.45%**

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

March 15, 2021

Emissions Analysis for Site: 841288 / CT2106 - Bridgeport North

EBI Consulting was directed to analyze the proposed AT&T facility located at **205 Kaechele Place** in **Bridgeport, Connecticut** for the purpose of determining whether the emissions from the Proposed AT&T 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 AT&T Wireless antenna facility located at 205 Kaechele Place in Bridgeport, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T 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 all calculations, all equipment was calculated using the following assumptions:

1) 4 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

2) 2 LTE DE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

3) 4 LTE FN channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

4) 2 UMTS channels (850 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

5) 4 LTE / 5G channels (850 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

6) 4 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

7) 4 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

8) 4 LTE channels (WCS Band – 2300 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 25 Watts per Channel.

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 Quintel QS66512-2 for the 850 MHz / 700 MHz / 1900 MHz / 2300 MHz channel(s), the CCI HPA-65R-BUU-H6 for the 700 MHz channel(s), the CCI DMP65R-BU6DA for the 700 MHz / 850 MHz / 2100 MHz channel(s) in Sector A, the Quintel QS66512-2 for the 850 MHz / 700 MHz / 1900 MHz / 2300 MHz channel(s), the CCI HPA-65R-BUU-H6 for the 700 MHz channel(s), the CCI DMP65R-BU6DA for the 700 MHz / 850 MHz / 2100 MHz channel(s) in Sector B, the Quintel QS66512-2 for the 850 MHz / 700 MHz / 1900 MHz / 2300 MHz channel(s), the CCI HPA-65R-BUU-H6 for the 700 MHz channel(s), the CCI DMP65R-BU6DA for the 700 MHz / 850 MHz / 2100 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 154 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.

AT&T Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Quintel QS66512-2	Make / Model:	Quintel QS66512-2	Make / Model:	Quintel QS66512-2
Frequency Bands:	850 MHz / 700 MHz / 1900 MHz / 2300 MHz	Frequency Bands:	850 MHz / 700 MHz / 1900 MHz / 2300 MHz	Frequency Bands:	850 MHz / 700 MHz / 1900 MHz / 2300 MHz
Gain:	11.35 dBd / 11.05 dBd / 13.85 dBd / 14.85 dBd	Gain:	11.35 dBd / 11.05 dBd / 13.85 dBd / 14.85 dBd	Gain:	11.35 dBd / 11.05 dBd / 13.85 dBd / 14.85 dBd
Height (AGL):	154 feet	Height (AGL):	154 feet	Height (AGL):	154 feet
Channel Count:	12	Channel Count:	12	Channel Count:	12
Total TX Power (W):	420 Watts	Total TX Power (W):	420 Watts	Total TX Power (W):	420 Watts
ERP (W):	9,047.97	ERP (W):	9,047.97	ERP (W):	9,047.97
Antenna A1 MPE %:	**1.81%**	Antenna B1 MPE %:	**1.81%**	Antenna C1 MPE %:	**1.81%**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	CCI HPA-65R-BUU-H6	Make / Model:	CCI HPA-65R-BUU-H6	Make / Model:	CCI HPA-65R-BUU-H6
Frequency Bands:	700 MHz	Frequency Bands:	700 MHz	Frequency Bands:	700 MHz
Gain:	11.95 dBd	Gain:	11.95 dBd	Gain:	11.95 dBd
Height (AGL):	154 feet	Height (AGL):	154 feet	Height (AGL):	154 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	160 Watts	Total TX Power (W):	160 Watts	Total TX Power (W):	160 Watts
ERP (W):	2,506.80	ERP (W):	2,506.80	ERP (W):	2,506.80
Antenna A2 MPE %:	**0.88%**	Antenna B2 MPE %:	**0.88%**	Antenna C2 MPE %:	**0.88%**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	CCI DMP65R-BU6DA	Make / Model:	CCI DMP65R-BU6DA	Make / Model:	CCI DMP65R-BU6DA
Frequency Bands:	700 MHz / 850 MHz / 2100 MHz	Frequency Bands:	700 MHz / 850 MHz / 2100 MHz	Frequency Bands:	700 MHz / 850 MHz / 2100 MHz
Gain:	11.85 dBd / 12.45 dBd / 15.95 dBd	Gain:	11.85 dBd / 12.45 dBd / 15.95 dBd	Gain:	11.85 dBd / 12.45 dBd / 15.95 dBd
Height (AGL):	154 feet	Height (AGL):	154 feet	Height (AGL):	154 feet
Channel Count:	12	Channel Count:	12	Channel Count:	12
Total TX Power (W):	480 Watts	Total TX Power (W):	480 Watts	Total TX Power (W):	480 Watts
ERP (W):	11,559.22	ERP (W):	11,559.22	ERP (W):	11,559.22
Antenna A3 MPE %:	**2.71%**	Antenna B3 MPE %:	**2.71%**	Antenna C3 MPE %:	**2.71%**

Site Composite MPE %	
Carrier	**MPE %**
AT&T (Max at Sector A):	5.40%
Verizon	29.65%
Sprint	4.28%
T-Mobile	15.12%
Site Total MPE % :	54.45%

AT&T MPE % Per Sector	
AT&T Sector A Total:	5.40%
AT&T Sector B Total:	5.40%
AT&T Sector C Total:	5.40%
Site Total MPE % :	54.45%

AT&T Maximum MPE Power Values (Sector A)

AT&T 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
AT&T 850 MHz UMTS	2	545.83	154.0	1.79	850 MHz UMTS	567	0.32%
AT&T 700 MHz LTE DE	2	509.40	154.0	1.67	700 MHz LTE DE	467	0.36%
AT&T 1900 MHz LTE	4	970.64	154.0	6.37	1900 MHz LTE	1000	0.64%
AT&T 2300 MHz LTE	4	763.73	154.0	5.01	2300 MHz LTE	1000	0.50%
AT&T 700 MHz LTE FN	4	626.70	154.0	4.11	700 MHz LTE FN	467	0.88%
AT&T 700 MHz LTE	4	612.43	154.0	4.02	700 MHz LTE	467	0.86%
AT&T 850 MHz LTE / 5G	4	703.17	154.0	4.62	850 MHz LTE / 5G	567	0.81%
AT&T 2100 MHz LTE	4	1574.20	154.0	10.34	2100 MHz LTE	1000	1.03%
						Total:	**5.40%**

• 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.

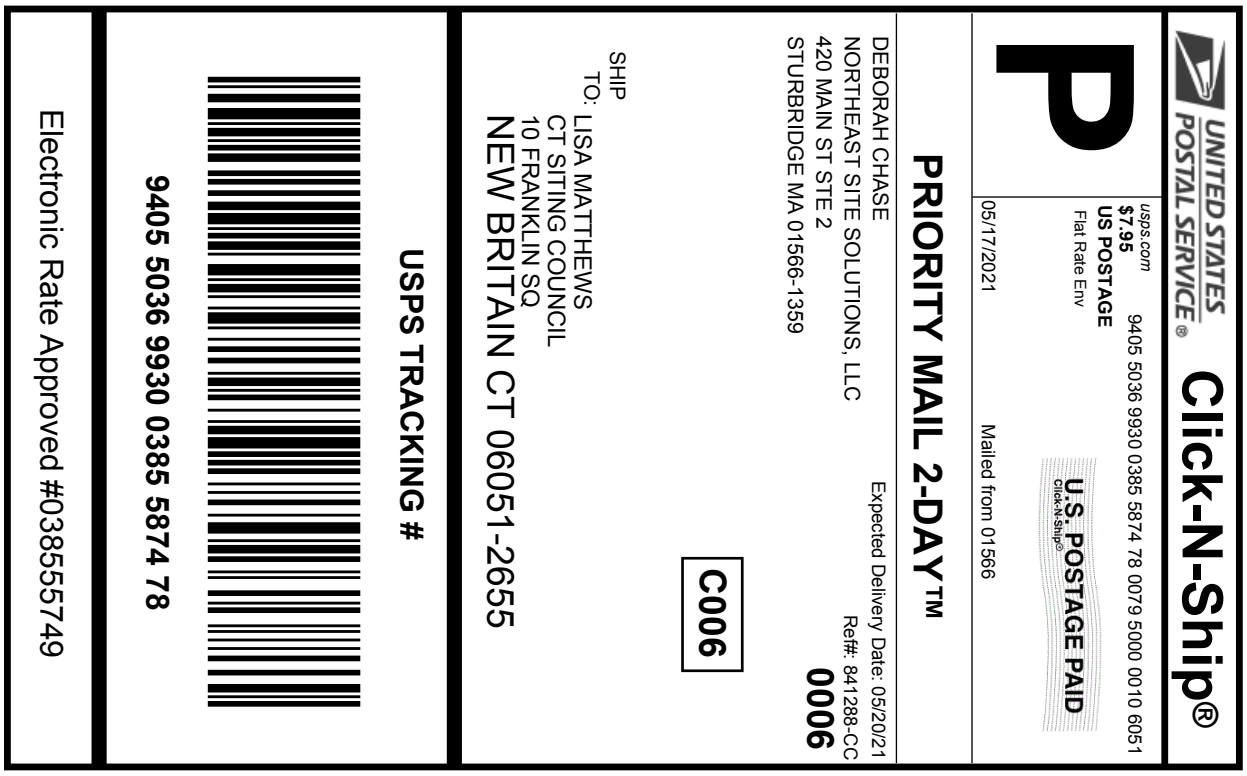
The anticipated maximum composite contributions from the AT&T facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector A:	5.40%
Sector B:	5.40%
Sector C:	5.40%
AT&T Maximum MPE % (Sector A):	5.40%
Site Total:	54.45%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **54.45%** 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.

Exhibit G



Cut on dotted line.

Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
2. **Place your label so it does not wrap around the edge of the package.**
3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0385 5874 78

Trans. #:	533585092
Print Date:	05/14/2021
Ship Date:	05/17/2021
Expected Delivery Date:	05/20/2021

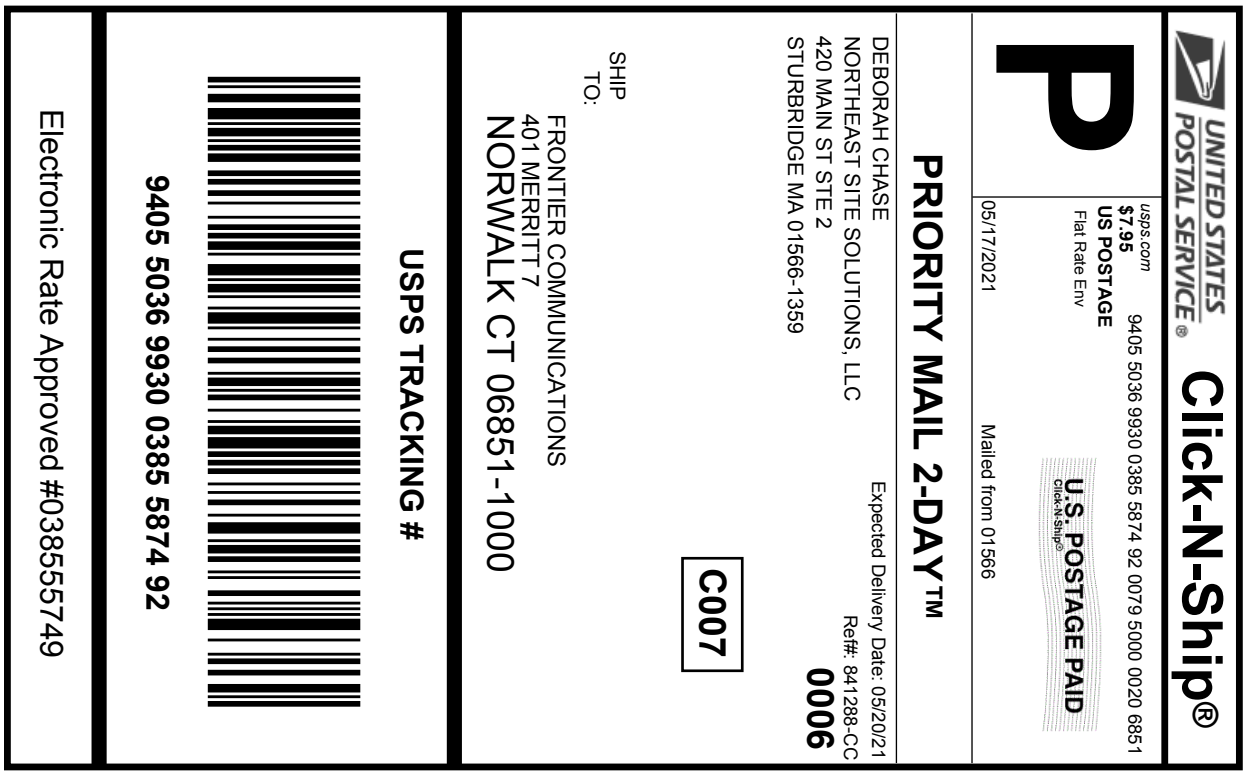
Priority Mail® Postage:	**$7.95**
Total:	**$7.95**

From: DEBORAH CHASE Ref#: 841288-CC
NORTHEAST SITE SOLUTIONS, LLC
420 MAIN ST STE 2
STURBRIDGE MA 01566-1359

To: LISA MATTHEWS
CT SITING COUNCIL
10 FRANKLIN SQ
NEW BRITAIN CT 06051-2655

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com



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9405 5036 9930 0385 5874 92

Trans. #:	533585092
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Ship Date:	05/17/2021
Expected Delivery Date:	05/20/2021

Priority Mail® Postage:	**$7.95**
Total:	**$7.95**

From: DEBORAH CHASE Ref#: 841288-CC
NORTHEAST SITE SOLUTIONS, LLC
420 MAIN ST STE 2
STURBRIDGE MA 01566-1359

To: FRONTIER COMMUNICATIONS
401 MERRITT 7
NORWALK CT 06851-1000

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com

Exhibit H

Deborah Chase

From: Deborah Chase
Sent: Wednesday, May 19, 2021 10:51 AM
To: 'mayor@bridgeportct.gov'
Subject: 205 Kaechele Drive, Bridgeport CT 06606 EM APPLICATION (Crown ATT-841288)
Attachments: 205 KAECHELE DRIVE BRIDGEPORT CT 06606 EM APPLICATION (Crown ATT -841288).pdf

Dear Mayor Ganim,

Attached please find AT&T's exempt modification application that is being submitted to the Connecticut Siting Council today, May 19 ,2021.

In light of the present circumstances with Covid-19, The Council has advised that electronic notification of this filing is acceptable.

If you could kindly confirm receipt.

Thank you very much

Deborah Chase
Senior Project Coordinator & Analyst
Mobile: 860-490-8839

Save a tree. Refuse.Reduce. Reuse. Recycle.

Deborah Chase

From: Deborah Chase
Sent: Wednesday, May 19, 2021 10:53 AM
To: 'dennis.buckley@bridgeportct.gov'
Subject: 205 Kaechele Drive, Bridgeport CT 06606 EM APPLICATION (CROWN ATT- 841288)
Attachments: 205 KAECHELE DRIVE BRIDGEPORT CT 06606 EM APPLICATION (Crown ATT -841288).pdf

Dear Mr. Buckley,

Attached please find AT&T's exempt modification application that is being submitted to the Connecticut Siting Council today, May 19, 2021.

In light of the present circumstances with Covid-19, The Council has advised that electronic notification of this filing is acceptable.

If you could kindly confirm receipt.

Thank you very much

Deborah Chase
Senior Project Coordinator & Analyst
Mobile: 860-490-8839

Save a tree. Refuse.Reduce. Reuse. Recycle.