QC Development
PO Box 916
Storrs, CT 06268
860-670-9068
Mark.Roberts@QCDevelopment.net

March 30, 2018

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

Notice of Exempt Modification – New Cingular Wireless PCS, LLC (AT&T) – CT1019
240 Kensington Road, Berlin, CT 06037
N 41-37-34.41
W 72-46-32.35

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 151-foot level of the existing 190-foot Monopole at 240 Kensington Road, Berlin, CT. The tower is owned by Crown Castle. The property is owned by the Town of Berlin. AT&T now intends to remove (3) Andrew antennas and replace them with (3) CCI TPA-65R-LCUUUU-H8 antennas. AT&T also intends to swap (3) Ericsson RRUS-12 with (3) RRUS-32 B2 and install (3) RRUs-32 remote radio units (RRU). The new antennas and RRUs will also be installed at the 130-foot level of the tower.

AT&T was unable to find any conditions associated with the original land use approval for this tower. Based on the scope of work, this modification will remain in compliance with any conditions from the original approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the Honorable Mark H. Kaczynski, Mayor of the Town of Berlin, and the Berlin Planning & Zoning Department, 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, AT&T 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).

Please feel free to call me at (860) 670-9068 with any questions regarding this matter. Thank you for your consideration.

Sincerely,

Mark Roberts
QC Development
Consultant for AT&T

Attachments

cc: Mayor Mark H. Kaczynski - as Elected Official and Property Owner
Marek Kozikowski – Town Planner
Crown Castle– as Tower Owner (via e-mail)

Power Density

Existing Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%MPE
Other Carriers*							10.71%
AT&T GSM	2	500	151	0.0171	880	0.5867	0.29%
AT&T GSM	1	500	151	0.0086	1900	1.0000	0.09%
AT&T UMTS	1	427	151	0.0073	1900	1.0000	0.07%
AT&T LTE	1	500	151	0.0086	700	0.4667	0.18%
AT&T LTE	1	500	151	0.0086	1900	1.0000	0.09%
AT&T LTE	1	500	151	0.0086	2300	1.0000	0.09%
Site Total							11.51%

*Per CSC Records (available upon request, includes calculation formulas)

** If a range of frequencies are used, such as 880-894, enter the lowest value, i.e. 880

Proposed Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%MPE
Other Carriers*							10.71%
AT&T UMTS	2	255	151	0.0087	880	0.5667	0.15%
AT&T UMTS	1	342	151	0.0058	1900	1.0000	0.06%
AT&T LTE	1	1476	151	0.0252	700	0.4667	0.54%
AT&T LTE	2	2421	151	0.0828	1900	1.0000	0.83%
AT&T LTE	1	343	151	0.0059	2300	1.0000	0.06%
Site Total							12.35%

*Per CSC Records (available upon request, includes calculation formulas)

** If a range of frequencies are used, such as 880-894, enter the lowest value, i.e. 880

PROJECT INFORMATION

SCOPE OF WORK:

ITEMS TO BE MOUNTED ON THE EXISTING TOWER:

- INSTALL NEW ANTENNA (TPA-65R-LCUUUU-H8) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- INSTALL NEW RRU: RRUS-32 B2 (PCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- INSTALL NEW RRU: RRUS-32 (WCS) (TYP OF 1PER SECTOR, TOTAL OF 3).
- INSTALL NEW DIPLEXER (DBC0061F1V51-2) (TYP. OF 1 PER SECTOR TOTAL OF 3)
- INSTALL NEW SURGE ARRESTOR (DC6-48-60-18-8C)
- NEW JUMPER CABLES: COAX JUMPER (3) PER SECTOR FROM EACH RRU (TOTAL OF 6)
- NEW FIBER JUMPERS: FIBER JUMPERS (3) FROM THE SQUID TO EACH RRU (TOTAL OF 9)
- NEW (2) DC POWER CABLES AND (1) FIBER RUN

ITEMS TO BE MOUNTED INSIDE EXISTING EQUIPMENT SHELTER:

- DUS WITH 5216, ADD XMU IN EXISTING LTE RACK.
- REPLACE GSM DIPLEXERS AND INSTALL (DBC0061F1V51-2) (TYP. OF 1 PER SECTOR, TOTAL OF 3).

ITEMS TO REMAIN:

- (6) ANTENNAS, (6) RRU, (1) SURGE ARRESTOR, (12) COAX (2) DC POWER CABLES, & (1) FIBER RUN.

SQUID ALARMING (NOT TO BE DAISY CHAINED).

- THE 1ST SQUID INSTALLED WILL BE ALARMED TO THE LOWEST BAND (OR FIRST INSTALLED RRH/RRU ON THE ALPHA SECTOR, IN THE EVENT THE ALARM CABLE CANNOT BE CONNECTED TO ALPHA IT WILL BE ACCEPTABLE TO ALARM TO THE CLOSEST PHYSICAL SECTOR ON AN EXCEPTION BASIS.
- 2ND SQUID INSTALLED WILL BE ALARMED TO THE LOWEST BAND (OR FIRST INSTALLED) RRH/RRU ON THE BETA SECTOR.
- 3RD SQUID INSTALLED WILL BE ALARMED TO THE LOWEST BAND (OR FIRST INSTALLED) RRH/RRU ON THE GAMMA SECTOR.

SITE ADDRESS:	240 KENSINGTON ROAD BERLIN, CT 06037
LATITUDE:	41.626186° N 41° 37' 34.26" N
LONGITUDE:	72.775638° W 72° 46' 32.29" W
TYPE OF SITE:	MONOPOLE / INDOOR EQUIPMENT
TOWER HEIGHT:	190'-0"±
RAD CENTER:	151'-0"±
JURISDICTION:	NATIONAL, STATE & LOCAL CODES OR ORDINANCES
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

DRAWING INDEX

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A-3	ANTENNA LAYOUTS & ELEVATION	1
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RF-1	RF PLUMBING DIAGRAM	1
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CCI SITE NAME:NEWINGTON 1
CCI SITE #: 826217

SITE NUMBER: CT1019

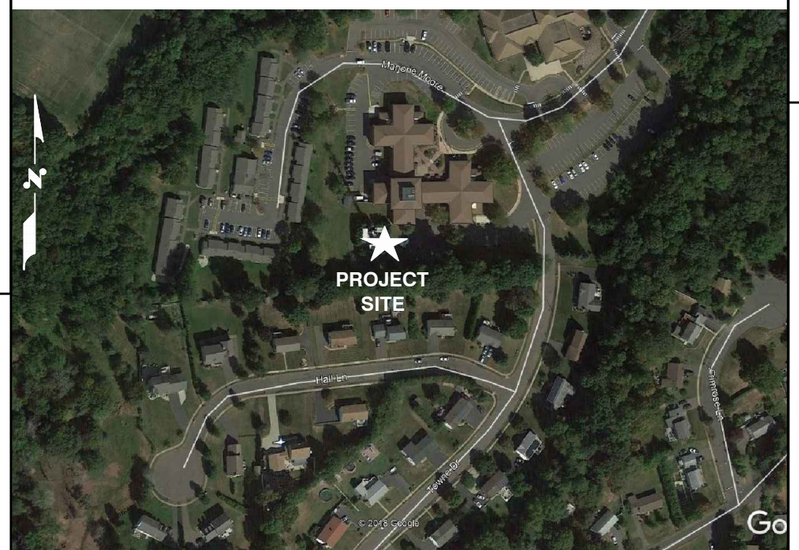
SITE NAME: BERLIN POLICE DEPT

PROJECT: LTE 3C/RETROFIT 2018 UPGRADE

VICINITY MAP

DIRECTIONS TO SITE:

START OUT GOING NORTHEAST ON ENTERPRISE DR TOWARD CAPITOL BLVD. 0.4 MI. TURN LEFT ONTO CAPITOL BLVD. 0.3 MI. TURN LEFT ONTO WEST ST. 0.3 0.4 MI. MERGE ONTO I-91 S VIA THE RAMP ON THE LEFT TOWARD NEW HAVEN. 1.7 MI. MERGE ONTO CT-9 N VIA EXIT 22N TOWARD NEW BRITAIN. 3.1 MI. TAKE EXIT 22 TOWARD US-5 S/CT-15 S/NEW HAVEN. 0.2 MI. TURN RIGHT ONTO FRONTAGE RD. 0.1 MI. TAKE THE 1ST RIGHT ONTO CT-372/WORTHINGTON RDG. 0.08 MI. TURN RIGHT ONTO MILL ST/CT-372. CONTINUE TO FOLLOW CT-372. 1.4 MI. TURN LEFT ONTO MAIN ST. 0.1 MI. TAKE THE 1ST LEFT ONTO KENSINGTON RD. 0.5 MI. 240 KENSINGTON RD IS ON THE RIGHT.



GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T MOBILITY REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
4. CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN.

72 HOURS

CALL
BEFORE YOU DIG
CALL TOLL FREE 1-800-922-4455
OR CALL 811

UNDERGROUND SERVICE ALERT

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: RB

STATE OF CONNECTICUT
DEREK J. CREASER
No. 28555
LICENSED PROFESSIONAL ENGINEER

AT&T

TITLE SHEET
(LTE 3C/RETROFIT)

SITE NUMBER	DRAWING NUMBER	REV
CT1019	T-1	1

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

2. 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.

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

4. 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.

5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.

6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

   CONTRACTOR – SAI
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T MOBILITY

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR 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 CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR 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.

4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

11. SUBCONTRACTOR 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.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

16. CONSTRUCTION SHALL COMPLY WITH LTE SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."

17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

20. APPLICABLE BUILDING CODES:
    SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
    BUILDING CODE: IBC 2012 WITH 2016 CT BUILDING CODE AMENDMENTS
    ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS
    LIGHTENING CODE: REFER TO ELECTRICAL DRAWINGS

    SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

    AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;

    AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

    MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;

    TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G, STRUCTURAL STANDARDS FOR STEEL

    EQUIPMENT AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BTCW	BARE TINNED SOLID COPPER WIRE	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BGR	BURIED GROUND RING	MIN	MINIMUM	TBRR	TO BE REMOVED AND REPLACED
BTS	BASE TRANSCEIVER STATION	P	PROPOSED	TYP	TYPICAL
E	EXISTING	NTS	NOT TO SCALE	UG	UNDER GROUND
EGB	EQUIPMENT GROUND BAR	RAD	RADIATION CENTER LINE (ANTENNA)	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: RB

STATE OF CONNECTICUT
DEREK J. CREASER
No. 27551
LICENSED PROFESSIONAL ENGINEER

AT&T

GENERAL NOTES
(LTE 3C/RETROFIT)

SITE NUMBER	DRAWING NUMBER	REV
CT1019	GN-1	1

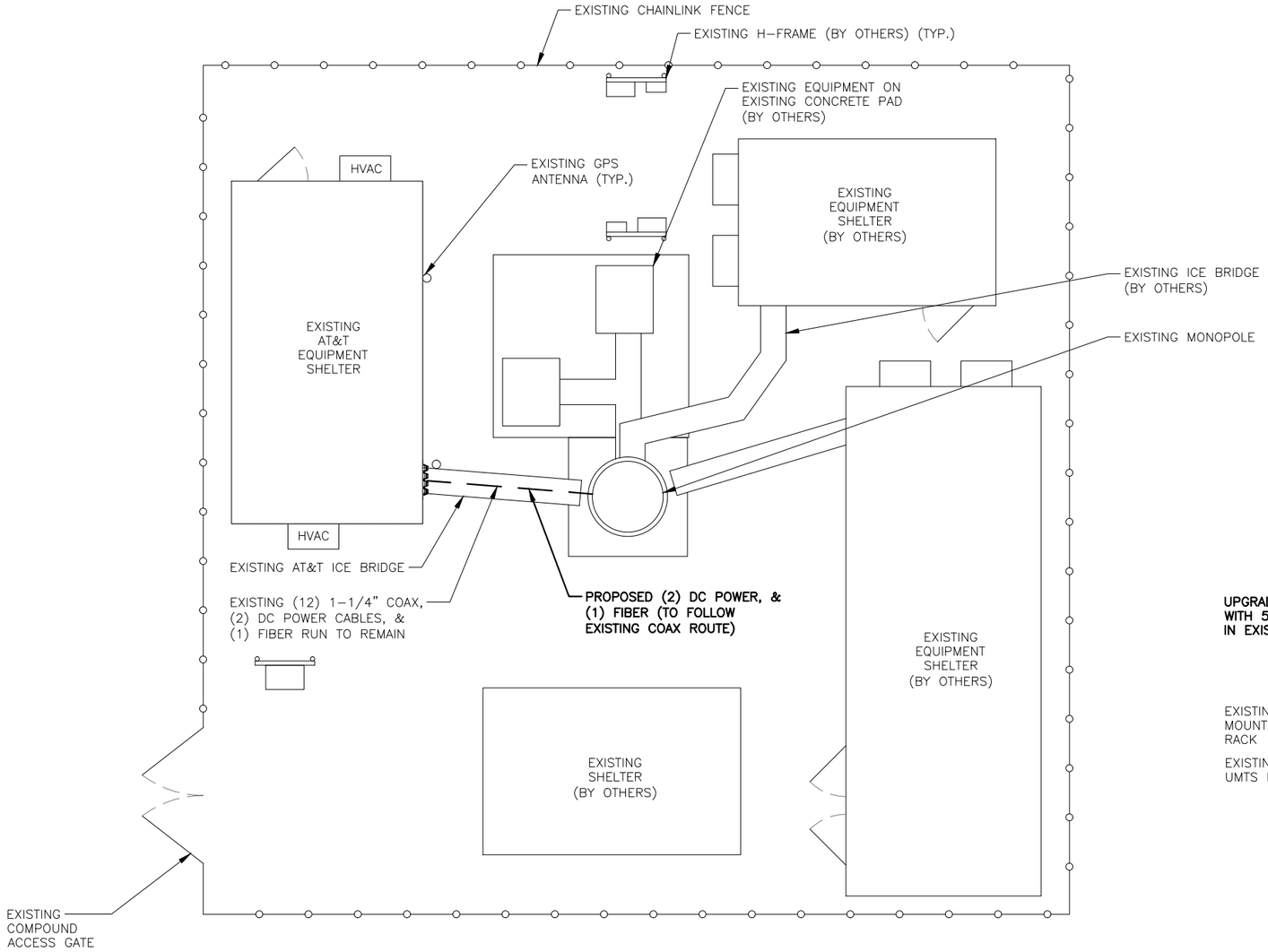
NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC.
DATED: JANUARY 23, 2018
REVISED TO MARCH 9, 2018

NOTE:

ALL ANTENNAS AND LINES TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY CROWN CASTLE AND FINAL AT&T RF DATA SHEET.

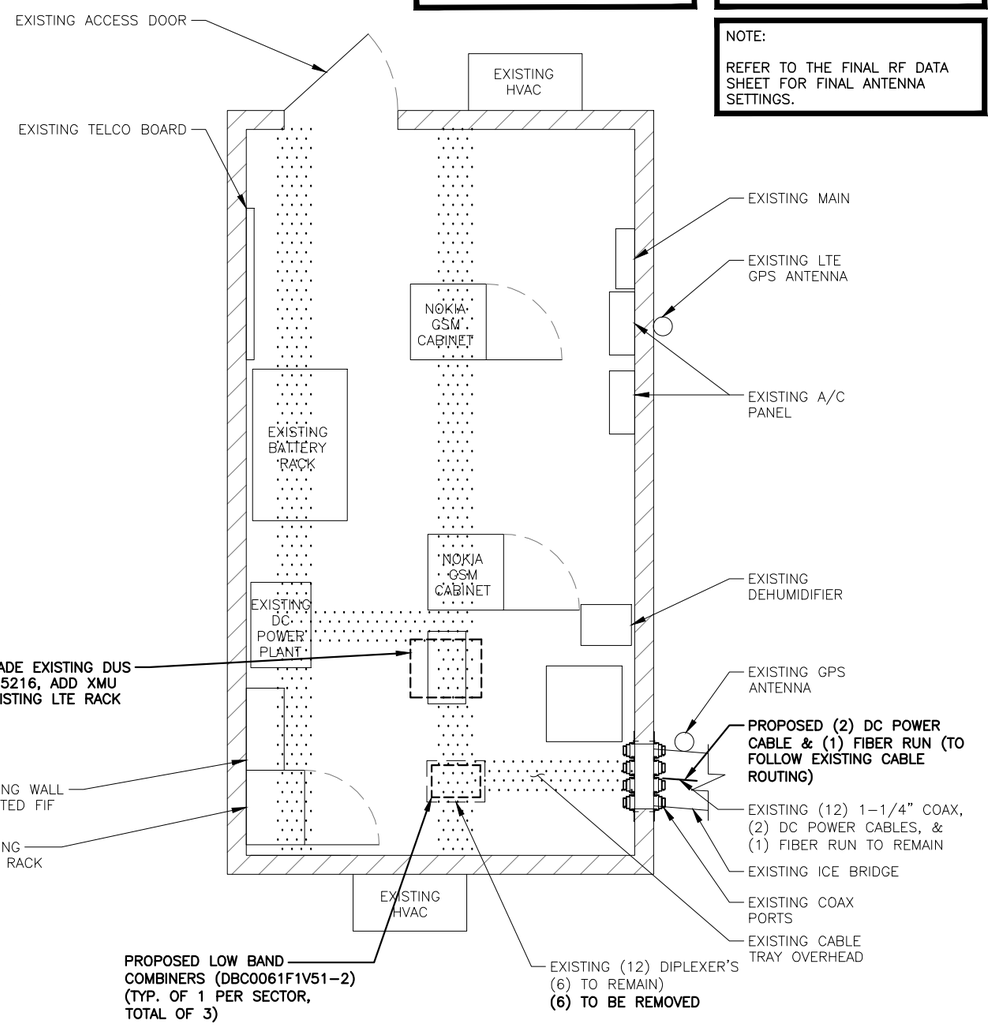
NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.



COMPOUND PLAN (1 / A-1)
22x34 SCALE: 1/4"=1'-0"
11x17 SCALE: 1/8"=1'-0"

0 2'-0" 4'-0" 8'-0" 12'-0"



EQUIPMENT PLAN (2 / A-1)
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"

0 1'-0" 2'-0" 4'-0" 6'-0"

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LICENSED PROFESSIONAL ENGINEER

AT&T

COMPOUND & EQUIPMENT PLANS
(LTE 3C/RETROFIT)

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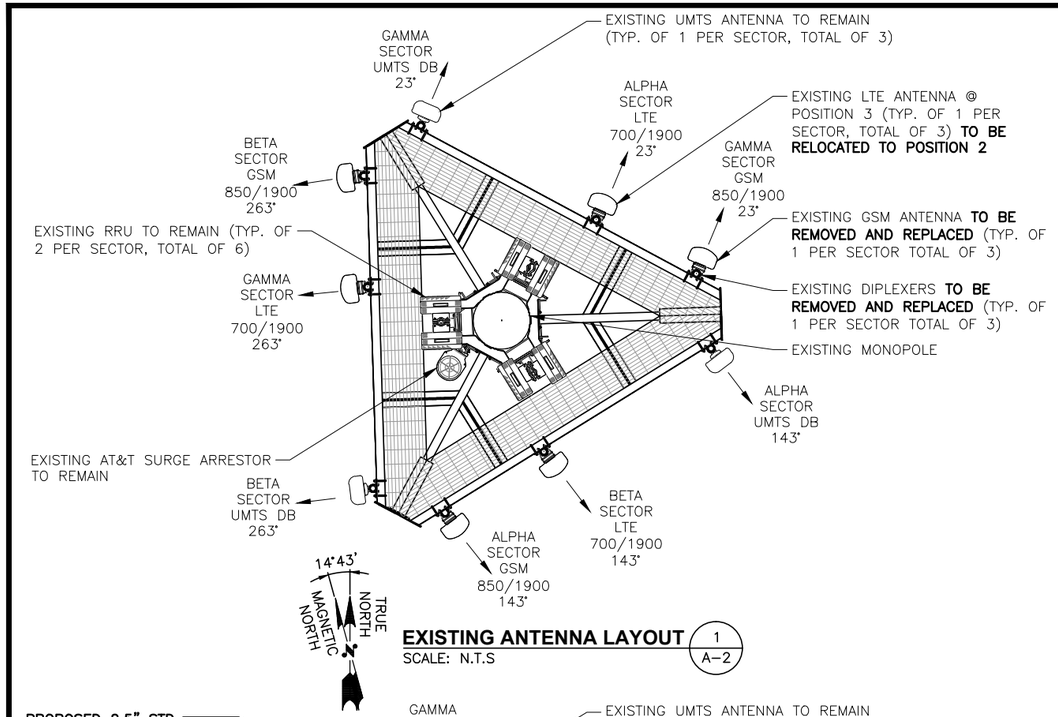
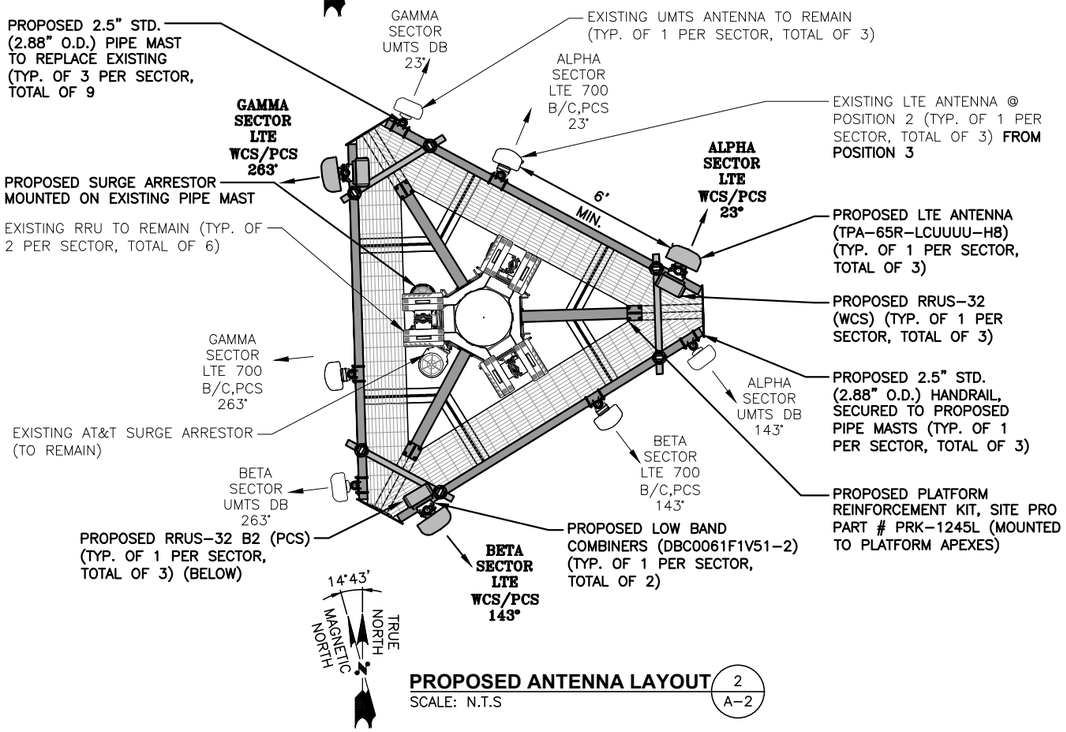


EXISTING ANTENNA LAYOUT (1 / A-2)
SCALE: N.T.S



PROPOSED ANTENNA LAYOUT (2 / A-2)
SCALE: N.T.S

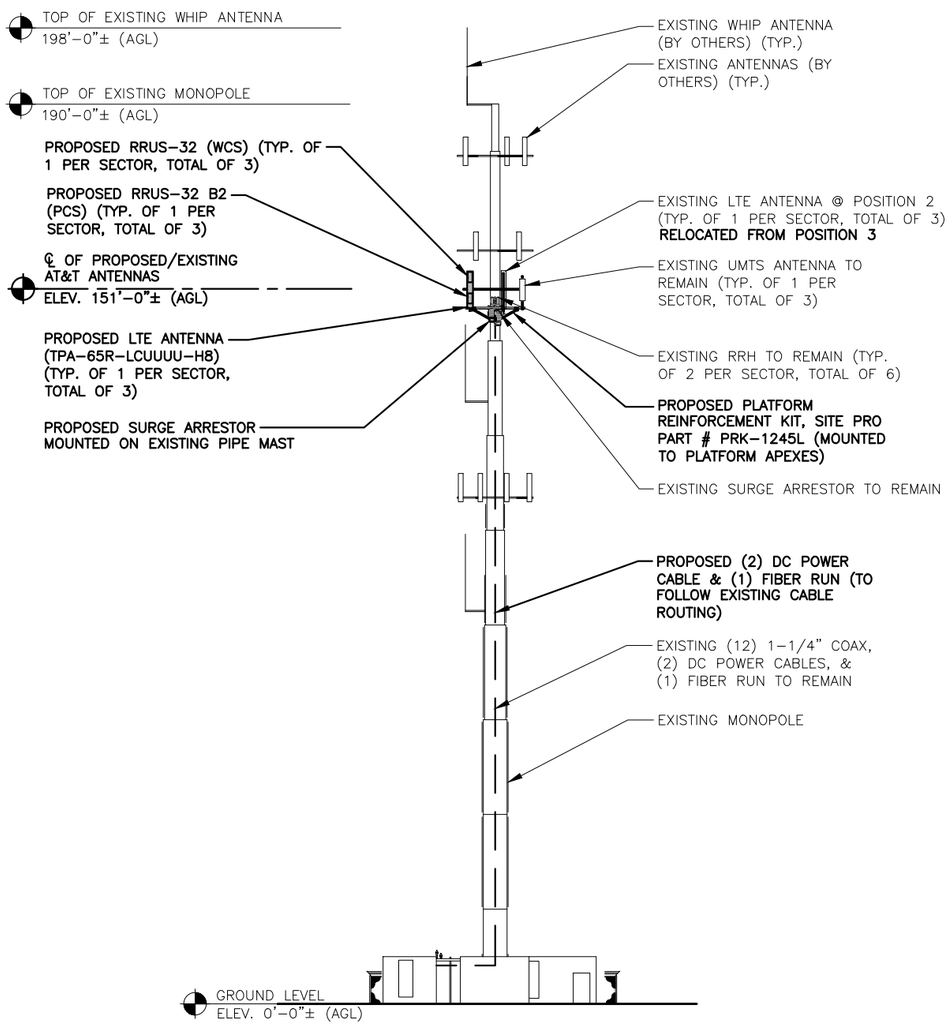
NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC.
DATED: JANUARY 23, 2018
REVISED TO MARCH 9, 2018

NOTE:

ALL ANTENNAS AND LINES TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY CROWN CASTLE AND FINAL AT&T RF DATA SHEET.

NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.



ELEVATION (3 / A-2)
22x34 SCALE: 1/16"=1'-0"
11x17 SCALE: 1/32"=1'-0"

0 8'-0" 16'-0" 32'-0" 48'-0"

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SITE NUMBER: CT1019
SITE NAME: BERLIN POLICE DEPT
CCI SITE #: 826217
240 KENSINGTON ROAD
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HARTFORD COUNTY

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A	01/22/18	ISSUED FOR REVIEW	RB	AT	DJC

SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: RB

STATE OF CONNECTICUT · ROBERT J. FRASER · No. 23551 · LICENSED PROFESSIONAL ENGINEER

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ANTENNA LAYOUTS & ELEVATION
(LTE 3C/RETROFIT)

SITE NUMBER	DRAWING NUMBER	REV
CT1019	A-2	1

*COAX JUMPER NOTE:
COAX JUMPERS (2) PER SECTOR, FROM RRU (TOTAL OF 6).

**FIBER JUMPER NOTE:
FIBER JUMPERS (3) PER SECTOR, FROM THE SQUID TO RRU (TOTAL OF 9).

FINAL ANTENNA SCHEDULE

SECTOR	BAND	ANTENNA		SIZE (INCHES) (L X W X D)	RAD CENTER	AZIMUTH	TMA		DIPLEXER		RRU		SIZE (INCHES) (L X W X D)	COAX JUMPERS	FIBER JUMPERS	COAX
ALPHA	UMTS DB	EXISTING	7770	55X11X5	151'-0"±	143°	EXISTING	DTMABP7819VG12A	–	–	–	–	–	–	–	(2) 1-5/8"
	LTE 700B/C, PCS	EXISTING	SBNH-1D6565C	96.4X11.9X7.1	151'-0"±	23°	–	–	–	–	EXISTING EXISTING	RRUS-11 (700) RRUS-12 (PCS)	– –	– –	– –	–
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	LTE WCS/PCS	PROPOSED	TPA-65R-LCUUUU-H8	96X14.4X8.6	151'-0"±	23°	–	–	PROPOSED	DBC0061F1V51-2	PROPOSED PROPOSED	RRUS-32 B2 (PCS) RRUS-32 (WCS)	27.2x12.1x7.0 27.2x12.1x7.0	1** 1**	2* 1*	(2) 1-5/8"
BETA	UMTS DB	EXISTING	7770	55X11X5	151'-0"±	263°	EXISTING	DTMABP7819VG12A	–	–	–	–	–	–	–	(2) 1-5/8"
	LTE 700B/C, PCS	EXISTING	SBNH-1D6565C	96.4X11.9X7.1	151'-0"±	143°	–	–	–	–	EXISTING EXISTING	RRUS-11 (700) RRUS-12 (PCS)	– –	– –	– –	–
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	LTE WCS/PCS	PROPOSED	TPA-65R-LCUUUU-H8	96X14.4X8.6	151'-0"±	143°	–	–	PROPOSED	DBC0061F1V51-2	PROPOSED PROPOSED	RRUS-32 B2 (PCS) RRUS-32 (WCS)	27.2x12.1x7.0 27.2x12.1x7.0	1** 1**	2* 1*	(2) 1-5/8"
GAMMA	UMTS DB	EXISTING	7770	55X11X5	151'-0"±	23°	EXISTING	DTMABP7819VG12A	–	–	–	–	–	–	–	(2) 1-5/8"
	LTE 700B/C, PCS	EXISTING	SBNH-1D6565C	96.4X11.9X7.1	151'-0"±	263°	–	–	–	–	EXISTING EXISTING	RRUS-11 (700) RRUS-12 (PCS)	– –	– –	– –	–
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	LTE WCS/PCS	PROPOSED	TPA-65R-LCUUUU-H8	96X14.4X8.6	151'-0"±	263°	–	–	PROPOSED	DBC0061F1V51-2	PROPOSED PROPOSED	RRUS-32 B2 (PCS) RRUS-32 (WCS)	27.2x12.1x7.0 27.2x12.1x7.0	1** 1**	2* 1*	(2) 1-5/8"

FINAL ANTENNA CONFIGURATION TABLE (5 / A-3)

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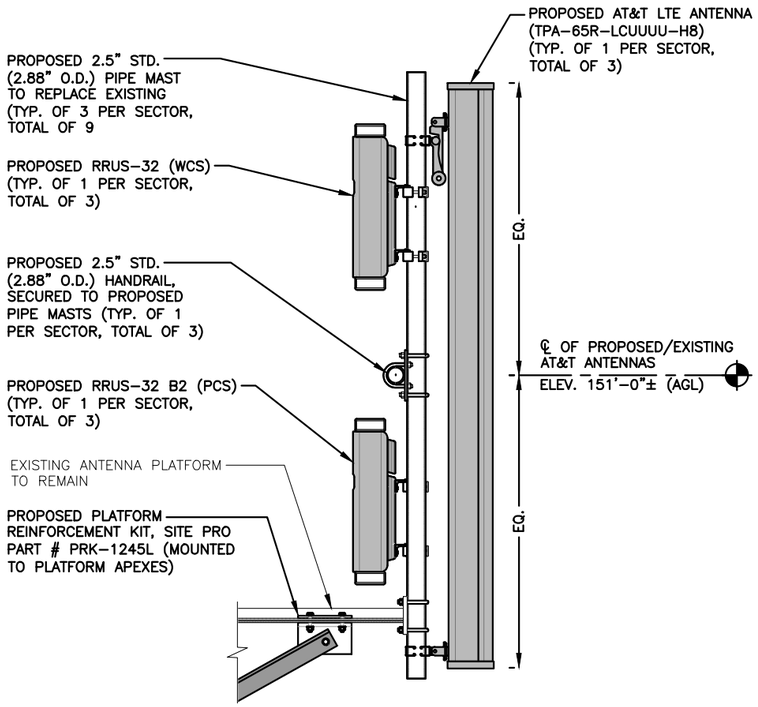
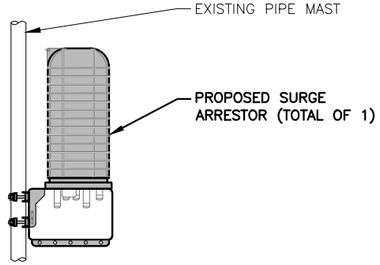
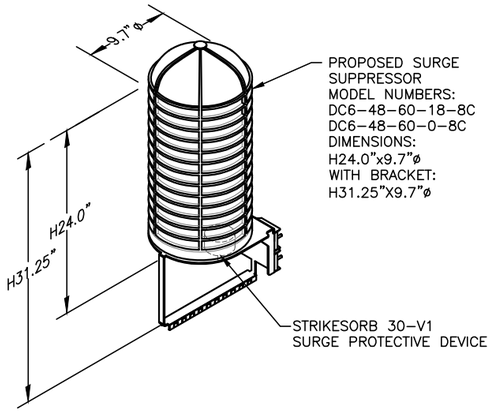


PROPOSED ANTENNA MOUNTING DETAIL (1 / A-3)
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"

0 1'-0" 2'-0" 4'-0" 6'-0"



PROPOSED SURGE ARRESTOR MOUNTING DETAI (2 / A-3)
SCALE: N.T.S



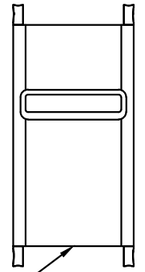
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL (3 / A-3)
SCALE: N.T.S

RRU CHART

QUANTITY	MODEL	L	W	D
3(E)	RRUS-11	19.7"	17.0"	7.2"
3(E)	RRUS-12	20.4"	18.5"	7.5"
6(P)	RRUS-32	27.2"	12.1"	7.0"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS



PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

NOTE:

SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

PROPOSED RRUS DETAIL (4 / A-3)
SCALE: N.T.S

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STATE OF CONNECTICUT
DEREK J. CREASER
No. 24557
LICENSED PROFESSIONAL ENGINEER

AT&T

DETAILS
(LTE 3C/RETROFIT)

SITE NUMBER	DRAWING NUMBER	REV
CT1019	A-3	1

STRUCTURAL NOTES

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, BUILDING CODE (IBC 2012 WITH 2016 CT BUILDING CODE AMENDMENTS), ASCE 7-05, EIA/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
3. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
4. STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
5. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
6. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
7. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
8. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
9. FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
10. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND DI.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". 14TH EDITION.
11. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
12. UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
13. EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-20 AND OR HY-150 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
15. LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
16. WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
17. ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
18. NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
19. SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

SPECIAL INSPECTION CHECKLIST

BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
N/A	ENGINEER OF RECORD APPROVED SHOP DRAWINGS[1]
N/A	MATERIAL SPECIFICATIONS REPORT[2]
N/A	FABRICATOR NDE INSPECTION
N/A	NDE REPORT OF MONOPOLE BASE PLATE (AS REQUIRED)
N/A	PACKING SLIPS[3]
ADDITIONAL TESTING AND INSPECTIONS:	
DURING CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR ROD VERIFICATION
N/A	BASE PLATE GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT
ADDITIONAL TESTING AND INSPECTIONS: STUB - UPS POST ROOF MOD INSPECTIONS.	
AFTER CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS[5]
N/A	POST INSTALLED ANCHOR ROD PULL-OUT TESTING
REQUIRED	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

NOTES:

1. REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
2. PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
3. PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
4. HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
5. ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH HAS BEEN BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO DRY HOLES DRILLED USING A CARBIDE BIT INTO CRACKED CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS REQUIRING CERTIFIED INSTALLATIONS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-11 D.9.2.2. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11 D.8.2.4.
6. AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

GENERAL: WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE INSPECTION CHECKLIST ABOVE.

THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTOR FOR THE WORK DESIGNED BY THEM, PROVIDED THOSE PERSONNEL MEET THE QUALIFICATION REQUIREMENTS.

STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 107.1 AS A CONDITION FOR ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1705.

REPORT REQUIREMENT: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS SHALL BE SUBMITTED.

NOTES:

1. ALL CONNECTIONS TO BE SHOP WELDED & FIELD BOLTED USING 3/4"ø A325-X BOLTS, UNLESS OTHERWISE NOTIFIED.
2. SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED BEFORE ORDERING MATERIAL.
3. SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED PRIOR TO STEEL FABRICATION.
4. VERIFICATION OF EXISTING ROOF CONSTRUCTION IS REQUIRED PRIOR TO THE INSTALLATION OF THE ROOF PLATFORM. ENGINEER OF RECORD IS TO APPROVE EXISTING CONDITIONS IN ORDER TO MOVE FORWARD.
5. CENTERLINE OF PROPOSED STEEL PLATFORM SUPPORT COLUMNS TO BE CENTRALLY LOCATED OVER THE EXISTING BUILDING COLUMNS.
6. EXISTING BRICK MASONRY COLUMNS/BEARING TO BE REPAIRED/REPLACED AT ALL PROPOSED PLATFORM SUPPORT POINT. ENGINEER OF RECORD TO APPROVE.

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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: RB

STATE OF CONNECTICUT · DEREK J. CREASER · No. 25951 · LICENSED PROFESSIONAL ENGINEER

AT&T

STRUCTURAL NOTES
(LTE 3C/RETROFIT)

SITE NUMBER	DRAWING NUMBER	REV
CT1019	SN-1	1

NOTE:

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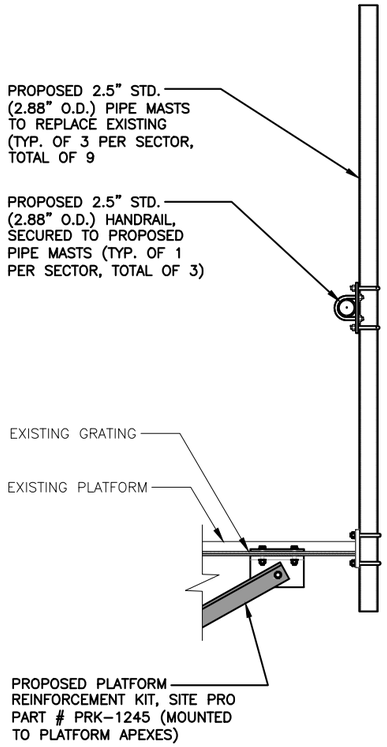
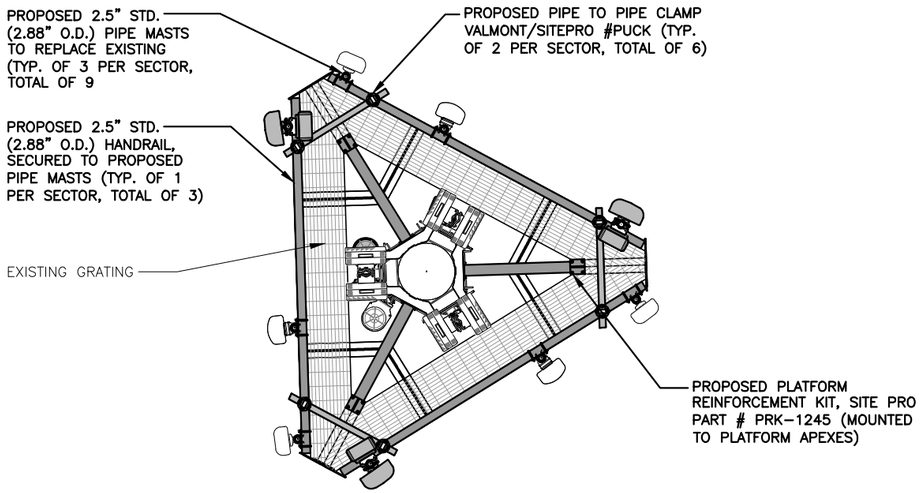


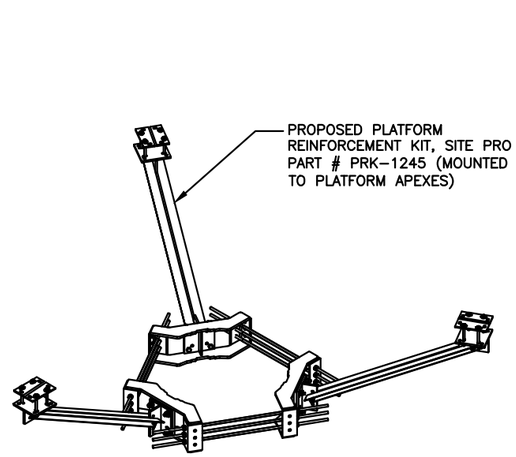
PROPOSED MOUNT MODIFICATION DETAIL (1 / S-1)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

0 0'-6" 1'-0" 2'-0" 3'-0"



PLATFORM REINFORCEMENT PLAN (2 / S-1)
22x34 SCALE: 3/8"=1'-0"
11x17 SCALE: 3/16"=1'-0"

0 1'-4" 2'-8" 5'-4" 8'-0"



PLATFORM REINFORCEMENT MOUNT DETAIL (3 / S-1)
SCALE: N.T.S

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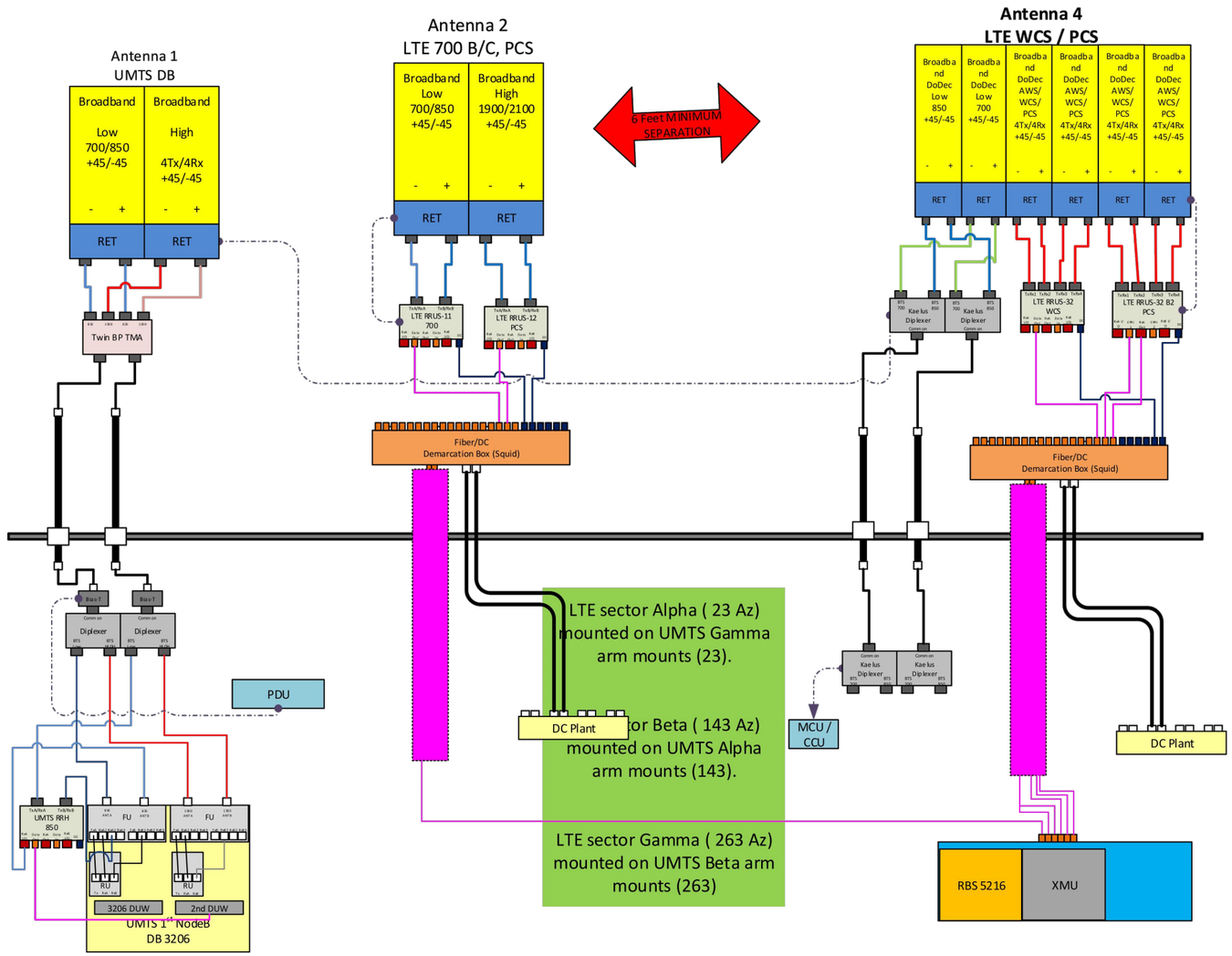
MOUNT MODIFICATION DETAILS
(LTE 3C/RETROFIT)

SITE NUMBER	DRAWING NUMBER	REV
CT1019	S-1	1



RF PLUMBING DIAGRAM 1 / RF–1
SCALE: N.T.S

NOTE:
1. CONTRACTOR TO CONFIRM ALL PARTS.
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS

NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

12 INDUSTRIAL WAY.
SALEM, NH 03079

SITE NUMBER: CT1019
SITE NAME: BERLIN POLICE DEPT
CCI SITE #: 826217
240 KENSINGTON ROAD
BERLIN, CT 06037
HARTFORD COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	03/20/18	ISSUED FOR CONSTRUCTION	SB	AT	DJC
B	03/07/18	ISSUED FOR PERMITTING	MR	AT	DJC
A	01/22/18	ISSUED FOR REVIEW	RB	AT	DJC

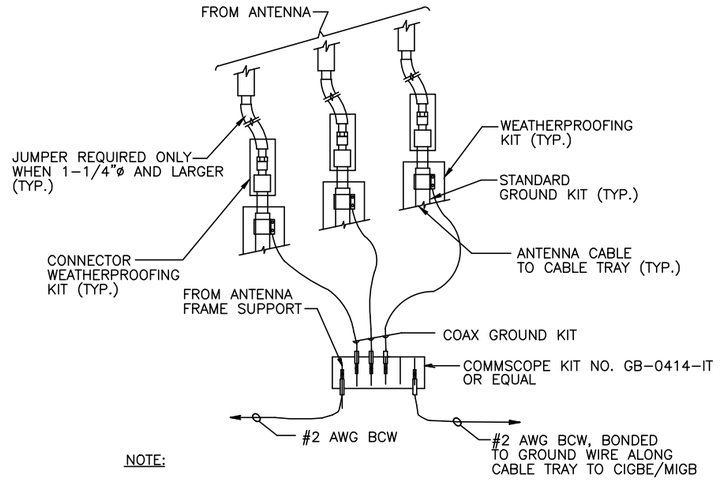
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: RB

STATE OF CONNECTICUT · DEREK J. CREASER · No. 25554 · LICENSED PROFESSIONAL ENGINEER

AT&T

RF PLUMBING DIAGRAM
(LTE 3C/RETROFIT)

SITE NUMBER	DRAWING NUMBER	REV
CT1019	RF–1	1



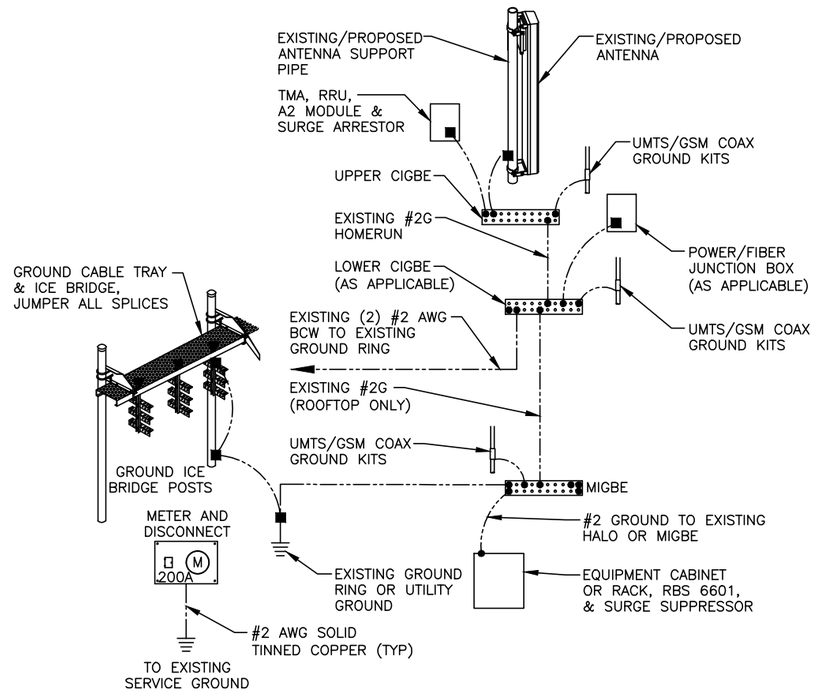
NOTE:

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

GROUND WIRE TO GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

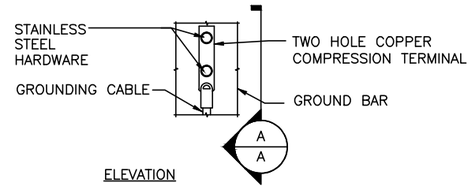
1 / G-1



GROUNDING RISER DIAGRAM

SCALE: N.T.S

2 / G-1



NOTE:

1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATION.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB

TYPICAL GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

3 / G-1

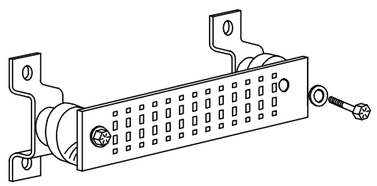
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" – SURGE PRODUCERS

CABLE ENTRY PORTS (HATCH PLATES) (#2)
GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
TELCO GROUND BAR
COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
+24V POWER SUPPLY RETURN BAR (#2)
-48V POWER SUPPLY RETURN BAR (#2)
RECTIFIER FRAMES.

SECTION "A" – SURGE ABSORBERS

INTERIOR GROUND RING (#2)
EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
BUILDING STEEL (IF AVAILABLE) (#2)



GROUND BAR - DETAIL

SCALE: N.T.S

4 / G-1

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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: RB

STATE OF CONNECTICUT
DEREK J. CREASER
No. 29551
LICENSED PROFESSIONAL ENGINEER

AT&T

GROUNDING DETAILS
(LTE 3C/RETROFIT)

SITE NUMBER	DRAWING NUMBER	REV
CT1019	G-1	1

February 23, 2018

Cheryl Schultz
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277
(704) 405-6632

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

Subject:	**Structural Analysis Report**	
Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	CT1019
	Carrier Site Name:	Berlin Police Department
Crown Castle Designation:	**Crown Castle BU Number:**	826217
	Crown Castle Site Name:	Newington_1
	Crown Castle JDE Job Number:	478487
	Crown Castle Work Order Number:	1518323
	Crown Castle Application Number:	421391 Rev. 7
Engineering Firm Designation:	**B+T Group Project Number:**	87581.016.01
Site Data:	**240 Kensington Road, Berlin, Hartford County, CT** **Latitude *41° 37' 34.3"*, Longitude *-72° 46' 32.33"*** **191.667 Foot - Monopole Tower**	

Dear Cheryl Schultz,

B+T Group is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above-mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 1135233, in accordance with application 421391, revision 7.

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: Existing + Reserved + Proposed Equipment **Sufficient Capacity**
Note: See Table 1 and Table 2 for the proposed and existing/reserved loading, respectively.

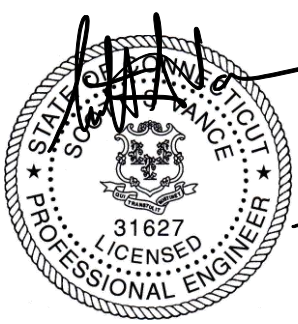
This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second gust wind speed of 97 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category B and Risk Category II were used in this analysis.

All equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

We at *B+T Group* appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Structural analysis prepared by: Jacob Johnson, E.I.T.

Respectfully submitted by: B+T Engineering, Inc.
COA: PEC.0001564 Expires: 02/10/2018



2/23/18

Scott S. Vance, P.E.

tnxTower Report - version 7.0.5.1

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 191.6 ft. Monopole designed by PiROD Manufactures and mapped by TEP in May of 2015. The tower was originally designed for a wind speed of 80 mph per TIA/EIA-222-F. This tower was modified multiple times to accommodate additional loading.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA-222-G Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a 3-second gust wind speed of 97 mph with no ice, 50 mph with 1-inch ice thickness and 60 mph under service loads, exposure category B with topographic category 1 and crest height of 0 feet.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
151.0	151.0	3	CCI Antennas	TPA-65R-LCUUUU-H8	--	--	--
		3	Ericsson	RRUS 32			
		3	Ericsson	RRUS 32 B2			
		3	Kaelus	DBC0062F3V52-1			
		3	--	2.5" Std (2.88" O.D.) Pipe Handrail			
		6	--	2.5" Std (2.88" O.D.) Pipe Masts			
		1	Site Pro 1	PRK-1245			
150.0	152.0	3	Ericsson	RRUS 12	--	--	--
	150.0	3	Ericsson	RRUS 11			

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
192.0	196.0	1	Kathrein	OGB4-900D	1	7/8	1
191.0	196.0	1	Andrew	DB589-A	1	5/16	1
	191.0	1	--	Side Arm Mount [SO 702-1]			
	190.0	1	Motorola	WB2623			
184.0	181.0	3	Ericsson	AIR -32 B2A/B66AA	1	1-5/8	2
		3	Rfs Celwave	APX16DWV-16DWVS-E-A20			
	184.0	1	--	Platform Mount [LP 405-1]	18	1-5/8	1
	181.0	3	Commscope	ATBT-BOTTOM-24V			
		3	Commscope	LNX-6515DS-VTM			
		6	Ericsson	KRY 112 144/1			
160.0	160.0	3	Alcatel Lucent	RRH2X60-AWS	14	1-5/8	1
		3	Alcatel Lucent	RRH2X60-PCS			
		3	Alcatel Lucent	RRH2x40 700			
		4	Andrew	LNX-6514DS-A1M			
		6	Commscope	HBXX-6517DS-VTM			
		2	Commscope	LNX-8513DS-VTM			
		1	Rfs Celwave	DB-T1-6Z-8AB-0Z			
		6	Rfs Celwave	FD9R6004/2C-3L			
		1	--	Platform Mount [LP 303-1]			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
158.0	158.0	1	Decibel	DB205-A	2	7/8	1
		1	Sinclair	SRL-224NM-4			
		2	--	Side Arm Mount [SO 702-1]			
151.0	151.0	**1**	**Andrew**	**SBNH-1D6565C**	**--**	**--**	**4**
		3	**Comm. Comp Inc.**	**DTMABP7819VG12A**			
		4	**Ericsson**	**RRUS 11 B12**			
		2	**Kmw Comm.**	**AM-X-CD-16-65-00T-RET**			
		6	**Powerwave Tech.**	**CM1007-DBPXBC-003**			
		6	**Powerwave Tech.**	**LGP21901**			
		3	Andrew	SBNH-1D6565C	12	1-1/4	1
		3	Comm Comp Inc.	DTMABP7819VG12A			
		3	Powerwave Tech.	7770.00			
		1	Raycap	DC6-48-60-18-8F			
		1	--	Platform Mount [LP 403-1]			
150.0	150.0	**3**	**Ericsson**	**RRUS 11 B12**	**--**	**--**	**4**
		1	Raycap	DC6-48-60-18-8F	2 1	3/4 3/8	1
		1	--	Pipe Mount [PM 601-3]			
		1	--	Side Arm Mount [SO 102-3]			
132.0	132.0	1	Sinclair	SRL-235-2	1	7/8	1
		1	--	Side Arm Mount [SO 702-1]			
124.0	124.0	1	Decibel	PCS 1900 TMA RX	--	--	1
		1	--	Side Arm Mount [SO 104-3]			
116.0	118.0	9	Decibel	844G65VTZAS	--	--	3
	120.0	1	Andrew	VHLP2-18	6 3	5/16 1/2	1
		1	Dragonwave	HORIZON DUO			
	118.0	3	Argus Tech.	LLPX310R			
		3	Samsung Tele.	WIMAX DAP HEAD			
	116.0	1	--	Platform Mount [LP 405-1]			
90.0	99.0	1	Decibel	DB205-A	1 2 1	7/8 1/2 5/16	1
	90.0	1	Andrew	KP2F-34			
		1	MTI Wireless Edge	MT-485002			
		2	--	Side Arm Mount [SO 702-1]			
70.0	70.0	1	Sinclair	SRL-235-2	2	7/8	1
		1	--	Side Arm Mount [SO 701-1]			
33.0	33.0	1	Decibel	DB909XVTE-M	2	1/2	1
		1	--	Side Arm Mount [SO 702-1]			

Notes:
1) Existing Equipment
2) Reserved Equipment
3) Abandoned Equipment; Considered in this analysis
4) Equipment To Be Removed; Not considered in this analysis

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
190.0	190.0	1	Decibel	DB809	1	1-5/8
177.67	177.67	12	EMS	RR90-17-00DP	12	1-5/8
155.0	155.0	2	Decibel	DB205	2	1-5/8
140.0	140.0	2	Decibel	DB205	2	1-5/8
127.67	127.67	12	EMS	RR90-17-00DP	12	1-5/8
117.67	117.67	12	EMS	RR90-17-00DP	12	1-5/8
25.0	25.0	1	Decibel	DB516	2	1-5/8
		1	Decibel	DB809M		
20.0	20.0	1	Decibel	DB205	1	1-5/8

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
Online Application	AT&T Mobility Co-Locate, Rev. 0	421391	CCI Sites
Tower Manufacturer Drawing	PiROD, File No. A-115400	3438498	CCI Sites
Tower Mapping	TEP, Project No. 25651-57340	3438498	CCI Sites
Mount Analysis	HDG LLC, Project No. CT1019	Date: 01/23/2018	---
Tower Modification Drawing	Natcomm Inc., Date: 03/18/2008	3678661	CCI Sites
Tower Modification Drawing	B+T Group, Date: 10/17/2014	4003976	CCI Sites
Post Modification Inspection	SGS, Date: 01/08/2015	5493013	CCI Sites
Tower Modification Drawing	B+T Group, Date: 06/16/2015	5753424	CCI Sites
Post Modification Inspection	SGS, Date: 10/21/2015	5947973	CCI Sites
Foundation Drawing	Pirod, File No. A-115400	3463552	CCI Sites
Geotech Report	French & Parrello, Job No. 98A209ERI	3438510	CCI Sites
	FDH, Project No. 1307031600		
Antenna Configuration	Crown CAD Package	Date: 01/29/2018	CCI Sites

3.1) Analysis Method

tnxTower (version 7.0.5.1), 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.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) Mount areas and weights are assumed based on photographs provided.
5) The existing base plate grout was not considered in this analysis.

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

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	191.667 - 186.667	Pole	P18x0.375	1	-1.781	--	1.7	Pass
L2	186.667 - 181.567	Pole	P24x0.375	2	-11.478	--	2.1	Pass
L3	181.567 - 176.567	Pole	P24x0.375	3	-5.074	--	6.3	Pass
L4	176.567 - 171.567	Pole	P24x0.375	4	-5.780	--	10.7	Pass
L5	171.567 - 166.567	Pole	P24x0.375	5	-6.489	--	15.5	Pass
L6	166.567 - 161.567	Pole	P24x0.375	6	-7.201	--	20.5	Pass
L7	161.567 - 156.567	Pole	P24x0.375	7	-10.921	--	29.0	Pass
L8	156.567 - 151.567	Pole	P24x0.375	8	-11.676	--	39.2	Pass
L9	151.567 - 146.567	Pole	P24x0.375	9	-17.267	--	55.3	Pass
L10	146.567 - 141.567	Pole	P24x0.375	10	-18.160	--	72.1	Pass
L11	141.567 - 141.417	Pole	P24x0.375	11	-18.198	--	72.6	Pass
L12	141.417 - 136.417	Pole	P36x0.375	12	-19.368	--	42.4	Pass
L13	136.417 - 131.417	Pole	P36x0.375	13	-20.996	--	50.8	Pass
L14	131.417 - 126.417	Pole	P36x0.375	14	-22.203	--	59.5	Pass
L15	126.417 - 121.417	Pole	P36x0.375	15	-24.451	--	68.5	Pass
L16	121.417 - 121.167	Pole	P36x0.375	16	-24.531	--	69.0	Pass
L17	121.167 - 116.167	Pole	P42x0.375	17	-26.044	--	58.6	Pass
L18	116.167 - 111.167	Pole	P42x0.375	18	-30.104	--	67.0	Pass
L19	111.167 - 110.042	Pole	P42x0.375	19	-30.416	--	68.8	Pass
L20	110.042 - 109.792	Pole + Reinf.	P42x0.4875	20	-30.506	--	53.7	Pass
L21	109.792 - 105.083	Pole + Reinf.	P42x0.4875	21	-32.148	--	59.8	Pass
L22	105.083 - 104.833	Pole + Reinf.	P42x0.5625	22	-32.260	--	54.6	Pass
L23	104.833 - 100.917	Pole + Reinf.	P42x0.5625	23	-34.682	--	59.3	Pass
L24	100.917 - 100.667	Pole	P48x0.375	24	-34.794	--	65.8	Pass
L25	100.667 - 95.833	Pole	P48x0.375	25	-36.650	--	72.3	Pass
L26	95.833 - 95.583	Pole + Reinf.	P48x0.475	26	-36.748	--	57.8	Pass
L27	95.583 - 90.583	Pole + Reinf.	P48x0.475	27	-38.547	--	63.3	Pass
L28	90.583 - 89.917	Pole + Reinf.	P48x0.475	28	-38.946	--	64.0	Pass
L29	89.917 - 89.667	Pole + Reinf.	P48x0.575	29	-39.061	--	53.4	Pass
L30	89.667 - 84.667	Pole + Reinf.	P48x0.575	30	-41.913	--	58.1	Pass
L31	84.667 - 80.833	Pole + Reinf.	P48x0.575	31	-45.104	--	61.8	Pass
L32	80.833 - 80.583	Pole + Reinf.	P54x0.4875	32	-45.312	--	58.2	Pass
L33	80.583 - 75.583	Pole + Reinf.	P54x0.4875	33	-47.900	--	62.7	Pass
L34	75.583 - 70.583	Pole + Reinf.	P54x0.4875	34	-50.686	--	67.3	Pass
L35	70.583 - 69.5	Pole + Reinf.	P54x0.4875	35	-51.699	--	68.4	Pass
L36	69.5 - 69.25	Pole + Reinf.	P54x0.5875	36	-51.891	--	56.7	Pass
L37	69.25 - 64.25	Pole + Reinf.	P54x0.5875	37	-58.252	--	60.8	Pass
L38	64.25 - 60.583	Pole + Reinf.	P54x0.5875	38	-63.427	--	63.9	Pass
L39	60.583 - 60.333	Pole + Reinf.	P60x0.5125	39	-63.634	--	59.9	Pass
L40	60.333 - 55.333	Pole + Reinf.	P60x0.5125	40	-67.428	--	63.9	Pass
L41	55.333 - 52.167	Pole + Reinf.	P60x0.5125	41	-68.926	--	66.4	Pass
L42	52.167 - 51.917	Pole + Reinf.	P60x0.625	42	-69.072	--	55.6	Pass
L43	51.917 - 46.917	Pole + Reinf.	P60x0.625	43	-72.177	--	59.0	Pass
L44	46.917 - 41.917	Pole + Reinf.	P60x0.625	44	-76.154	--	62.4	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L45	41.917 - 40.333	Pole + Reinf.	P60x0.625	45	-77.404	--	63.5	Pass
L46	40.333 - 40.083	Pole + Reinf.	P60x0.6	46	-77.596	--	64.2	Pass
L47	40.083 - 35.083	Pole + Reinf.	P60x0.6	47	-81.270	--	67.7	Pass
L48	35.083 - 30.083	Pole + Reinf.	P60x0.6	48	-84.501	--	71.2	Pass
L49	30.083 - 28	Pole + Reinf.	P60x0.6	49	-85.624	--	72.7	Pass
L50	28 - 27.75	Pole + Reinf.	P60x0.725	50	-85.790	--	61.2	Pass
L51	27.75 - 22.75	Pole + Reinf.	P60x0.725	51	-89.906	--	64.2	Pass
L52	22.75 - 20.083	Pole + Reinf.	P60x0.725	52	-92.130	--	65.8	Pass
L53	20.083 - 19.833	Pole	P60x0.625	53	-92.328	--	73.4	Pass
L54	19.833 - 17	Pole	P60x0.625	54	-94.473	--	75.3	Pass
L55	17 - 16.75	Pole + Reinf.	P60x0.725	55	-94.698	--	65.2	Pass
L56	16.75 - 11.65	Pole + Reinf.	P60x0.75	56	-98.922	--	66.7	Pass
L57	11.65 - 11.417	Pole + Reinf.	P60x0.75	57	-99.084	--	66.8	Pass
L58	11.417 - 9.375	Pole + Reinf.	P60x0.75	58	-100.447	--	68.0	Pass
L59	9.375 - 9.125	Pole + Reinf.	P60x0.8	59	-100.627	--	67.6	Pass
L60	9.125 - 4.833	Pole + Reinf.	P60x0.8	60	-103.604	--	70.1	Pass
L61	4.833 - 4.583	Pole + Reinf.	P60x0.75	61	-103.781	--	71.7	Pass
L62	4.583 - 0	Pole + Reinf.	P60x0.75	62	-106.910	--	74.4	Pass
							Summary	
						Pole (L54)	75.3	Pass
						Rating =	75.3	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	Capacity	Pass / Fail
1	Flange Connection	180	1.0	Pass
1	Flange Connection	140	47.6	Pass
1	Bridge Stiffener	120	73.5	Pass
	Flange Connections		42.6	Pass
1	Bridge Stiffener	100	71.5	Pass
	Flange Connections		46.7	Pass
1	Bridge Stiffener	80	66.3	Pass
	Flange Connections		43.8	Pass
1	Bridge Stiffener	60	48.1	Pass
	Flange Connections		37.4	Pass
1	Existing Bridge Stiffener	40	59.4	Pass
	New Bridge Stiffener		50.4	Pass
	Flange Connections-53BC		41.3	Pass
	Flange Connections-47BC		37.1	Pass
1	Existing Bridge Stiffener	20	68.4	Pass
	New Bridge Stiffener		60.1	Pass
	Flange Connections-53BC		49.2	Pass
	Flange Connections-47BC		44.2	Pass
1	Anchor Rods	Base	37.8	Pass
1	Base Plate	Base	51.0	Pass

Notes	Component	Elevation (ft)	Capacity	Pass / Fail
1	Base Foundation (Structure)	Base	79.5	Pass
1	Base Foundation (Soil Interaction)	Base	66.5	Pass

Structure Rating (max from all components) =	79.5%

Notes:
1) See additional documentation in “Appendix C – Additional Calculations” for calculations supporting the % capacity consumed.

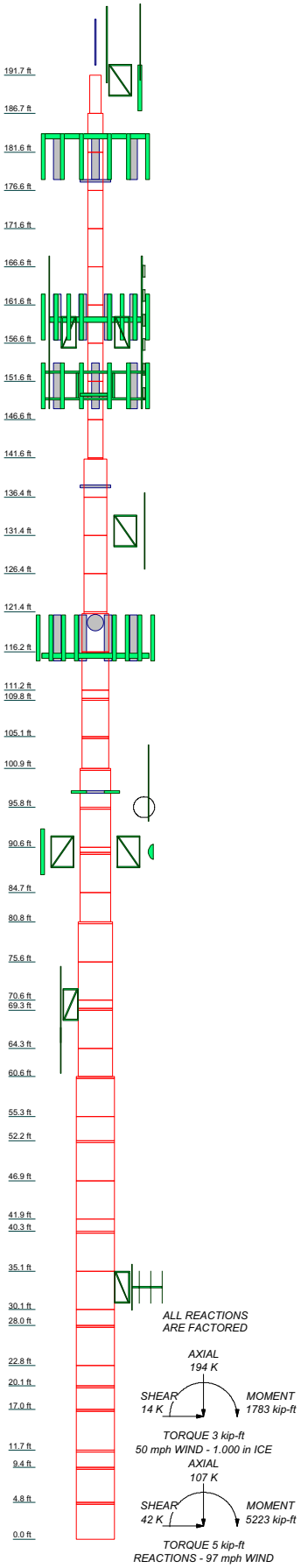
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	Size	Length (ft)	Grade	Weight (K)
1	P18x0.375	5.000	A53-B-42	0.4
2	P24x0.375	5.100		0.5
3	P24x0.375	5.000		0.5
4	P24x0.375	5.000		0.5
5	P24x0.375	5.000		0.5
6	P24x0.375	5.000		0.5
7	P24x0.375	5.000		0.5
8	P24x0.375	5.000		0.5
9	P24x0.375	5.000		0.5
10	P24x0.375	5.000		0.5
11	P24x0.375	5.000		0.5
12	P36x0.375	5.000		0.7
13	P36x0.375	5.000		0.7
14	P36x0.375	5.000		0.7
15	P36x0.375	5.000		0.7
16	P42x0.375	5.000		0.8
17	P42x0.375	5.000		0.8
18	P42x0.375	5.000		0.8
19	P42x0.375	1.500		0.2
20	P42x0.375	3.500		0.5
21	P42x0.375	5.000		0.7
22	P42x0.375	5.000		0.7
23	P42x0.375	5.000		0.7
24	P42x0.375	5.000		0.7
25	P42x0.375	5.000		0.7
26	P42x0.375	5.000		0.7
27	P42x0.375	5.000		0.7
28	P42x0.375	5.000		0.7
29	P42x0.375	5.000		0.7
30	P42x0.375	5.000		0.7
31	P42x0.375	5.000		0.7
32	P42x0.375	5.000		0.7
33	P42x0.375	5.000		0.7
34	P42x0.375	5.000		0.7
35	P42x0.375	5.000		0.7
36	P42x0.375	5.000		0.7
37	P42x0.375	5.000		0.7
38	P42x0.375	5.000		0.7
39	P42x0.375	5.000		0.7
40	P42x0.375	5.000		0.7
41	P42x0.375	5.000		0.7
42	P42x0.375	5.000		0.7
43	P42x0.375	5.000		0.7
44	P42x0.375	5.000		0.7
45	P42x0.375	5.000		0.7
46	P42x0.375	5.000		0.7
47	P60x0.625	5.000		1.9
48	P60x0.625	5.000		1.9
49	P60x0.625	5.000		1.9
50	P60x0.625	5.000		1.9
51	P60x0.625	5.000		1.9
52	P60x0.625	5.000		1.9
53	P60x0.625	5.000		1.9
54	P60x0.625	5.000		1.9
55	P60x0.625	5.000		1.9
56	P60x0.625	5.000		1.9
57	P60x0.625	5.000		1.9
58	P60x0.625	5.000		1.9
59	P60x0.625	5.000		1.9
60	P60x0.625	5.000		1.9
61	P60x0.625	5.000		1.9
62	P60x0.625	4.583		2.3
		480.683		48.0



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
OGB4-900D (E)	192	RRUS 32 (P)	151
6' x 2" Mount Pipe (E-Omni support)	192	RRUS 32 (P)	151
Lightning Rod 5/8" x 4' on 4' Pole (E)	191.667	RRUS 32 (P)	151
DB589-A (E)	191	RRUS 32 B2 (P)	151
WB2623 w/ Mount Pipe (E)	191	RRUS 32 B2 (P)	151
3' x 2" Pipe Mount (E-For Omni)	191	RRUS 32 B2 (P)	151
Side Arm Mount [SO 702-1] (E)	191	DBC0062F3V52-1 (P)	151
LNX-6515DS-VTM w/ Mount Pipe (E)	184	DBC0062F3V52-1 (P)	151
LNX-6515DS-VTM w/ Mount Pipe (E)	184	DBC0062F3V52-1 (P)	151
LNX-6515DS-VTM w/ Mount Pipe (E)	184	(2) 10' x 2.875" Pipe Mount (P)	151
(2) KRY 112 144/1 (E)	184	(2) 10' x 2.875" Pipe Mount (P)	151
(2) KRY 112 144/1 (E)	184	(2) 10' x 2.875" Pipe Mount (P)	151
(2) KRY 112 144/1 (E)	184	Miscellaneous [NA 510-1] (P)	151
ATBT-BOTTOM-24V (E)	184	Miscellaneous [NA 509-3] (P-PRK-1245)	151
ATBT-BOTTOM-24V (E)	184	Platform Mount [LP 403-1] (E)	151
ATBT-BOTTOM-24V (E)	184	7770.00 w/ Mount Pipe (E)	151
AIR -32 B2A/B66AA w/ Mount Pipe (R)	184	RRUS 11 (P)	150
AIR -32 B2A/B66AA w/ Mount Pipe (R)	184	RRUS 11 (P)	150
AIR -32 B2A/B66AA w/ Mount Pipe (R)	184	RRUS 11 (P)	150
APX16DWV-16DWVS-E-A20 w/ Mount Pipe (R)	184	RRUS 12 (P)	150
APX16DWV-16DWVS-E-A20 w/ Mount Pipe (R)	184	RRUS 12 (P)	150
APX16DWV-16DWVS-E-A20 w/ Mount Pipe (R)	184	RRUS 12 (P)	150
Platform Mount [LP 405-1] (E)	184	Side Arm Mount [SO 102-3] (E)	150
4' ICE SHIELDS (E)	178	Pipe Mount [PM 601-3] (E)	150
(2) HBXX-6517DS-VTM w/ Mount Pipe (E)	160	DC6-48-60-18-8F (E)	150
(2) HBXX-6517DS-VTM w/ Mount Pipe (E)	160	4' ICE SHIELDS (E)	138
LNX-6514DS-A1M w/ Mount Pipe (E)	160	Side Arm Mount [SO 702-1] (E)	132
LNX-6514DS-A1M w/ Mount Pipe (E)	160	Side Arm Mount [SO 104-3] (E-Mount Attachment)	132
(2) LNX-6514DS-A1M w/ Mount Pipe (E)	160	SRL-235-2 (E)	132
LNX-8513DS-VTM w/ Mount Pipe (E)	160	4' x 2" Pipe Mount (E-For Omni)	132
LNX-8513DS-VTM w/ Mount Pipe (E)	160	Side Arm Mount [SO 104-3] (E)	124
RRH2x40 700 (E)	160	PCS 1900 TMA RX (E)	124
RRH2x40 700 (E)	160	2' x 2" Pipe Mount (E-For TMA)	124
RRH2x40 700 (E)	160	(3) 844G65VTZAS w/ Mount Pipe (AB)	116
RRH2X60-AWS (E)	160	LLPX310R w/ Mount Pipe (E)	116
RRH2X60-AWS (E)	160	LLPX310R w/ Mount Pipe (E)	116
RRH2X60-AWS (E)	160	LLPX310R w/ Mount Pipe (E)	116
RRH2X60-PCS (E)	160	WIMAX DAP HEAD (E)	116
RRH2X60-PCS (E)	160	WIMAX DAP HEAD (E)	116
RRH2X60-PCS (E)	160	WIMAX DAP HEAD (E)	116
(2) FD9R6004/2C-3L (E)	160	HORIZON DUO (E)	116
(2) FD9R6004/2C-3L (E)	160	Platform Mount [LP 405-1] (E)	116
(2) FD9R6004/2C-3L (E)	160	(3) 844G65VTZAS w/ Mount Pipe (AB)	116
DB-T1-6Z-8AB-0Z (E)	160	(3) 844G65VTZAS w/ Mount Pipe (AB)	116
Platform Mount [LP 303-1] (E)	160	Andrew VHLP2-18 (E)	116
(2) HBXX-6517DS-VTM w/ Mount Pipe (E)	160	4' ICE SHIELDS (E)	98
DB205-A (E)	158	4' ICE SHIELDS (E)	98
4' x 2" Pipe Mount (E-For Omni)	158	4' ICE SHIELDS (E)	98
4' x 2" Pipe Mount (E-For Omni)	158	DB205-A (E-Per Photo)	90
Side Arm Mount [SO 702-1] (E)	158	MT-485002 w/ Mount Pipe (E)	90
Side Arm Mount [SO 702-1] (E)	158	Side Arm Mount [SO 702-1] (E)	90
SRL-224NM-4 (E)	158	Side Arm Mount [SO 702-1] (E)	90
7770.00 w/ Mount Pipe (E)	151	5' x 2" Pipe Mount (E-For Omni)	90
7770.00 w/ Mount Pipe (E)	151	KP2F-34 (E)	90
SBNH-1D6565C w/ Mount Pipe (E)	151	2" x 2' Omni (E-Per Photo)	70
SBNH-1D6565C w/ Mount Pipe (E)	151	6' x 2" Mount Pipe (E-For Omni)	70
SBNH-1D6565C w/ Mount Pipe (E)	151	Side Arm Mount [SO 701-1] (E)	70
DTMABP7819VG12A (E)	151	Side Arm Mount [SO 102-3] (E-Mount Attachment)	70
DTMABP7819VG12A (E)	151	SRL-235-2 (E)	70
DTMABP7819VG12A (E)	151	Side Arm Mount [SO 702-1] (E)	33
DC6-48-60-18-8F (E)	151	6' x 2" Mount Pipe (E-For Yagi)	33
TPA-65R-LCUUUU-H8 (P)	151	DB909XVTE-M (E)	33
TPA-65R-LCUUUU-H8 (P)	151	2" x 4' Omni (E-Per Photo)	33
TPA-65R-LCUUUU-H8 (P)	151		

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 97 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TOWER RATING: 75.3%

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

Job: 87581.016.01 - Newington_1, CT (BU# 826217
Project:
Client: Crown Castle | Drawn by: Deepak | App'd:
Code: TIA-222-G | Date: 02/21/18 | Scale: NTS
Path: | Dwg No. E-1

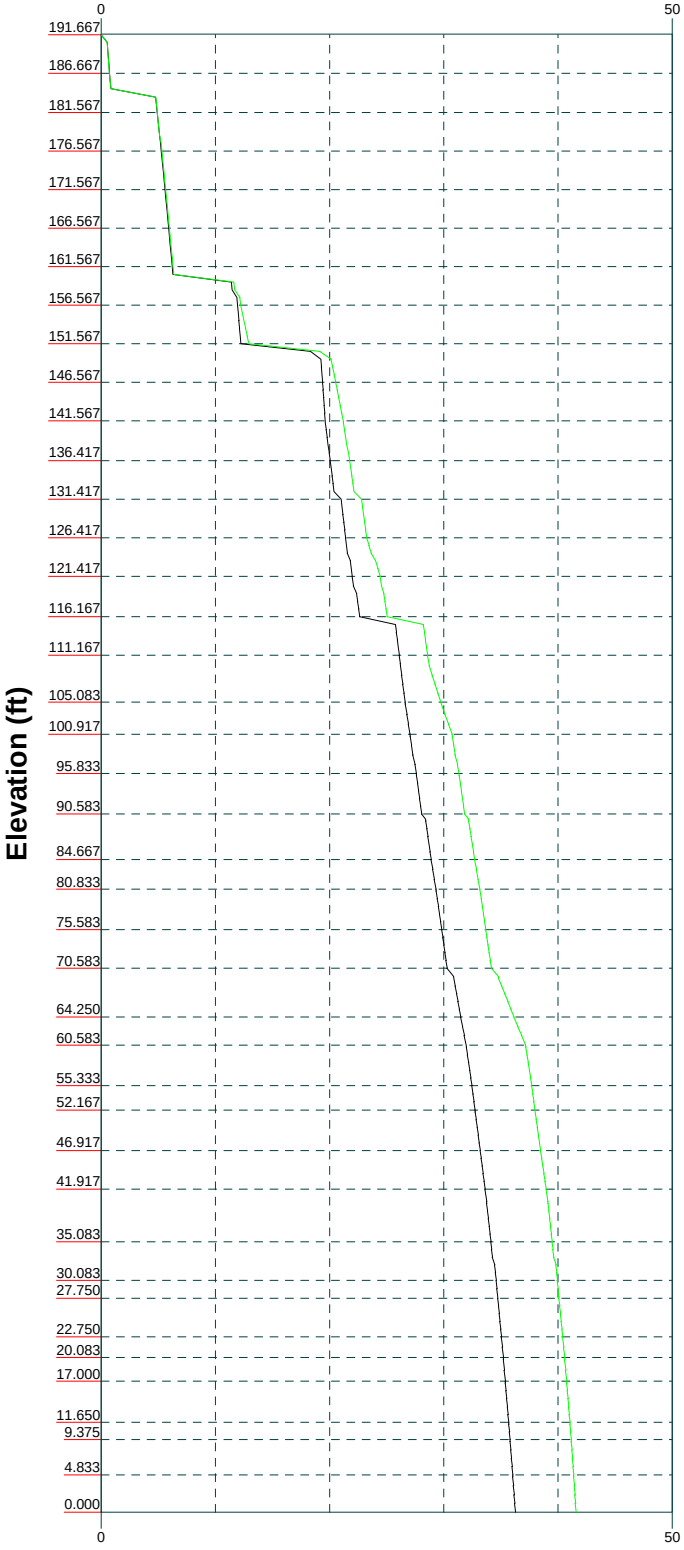
TIA-222-G - 97 mph/50 mph 1.000 in Ice Exposure B

Vx Vz

Maximum Values

Mx Mz

Global Mast Shear (K)



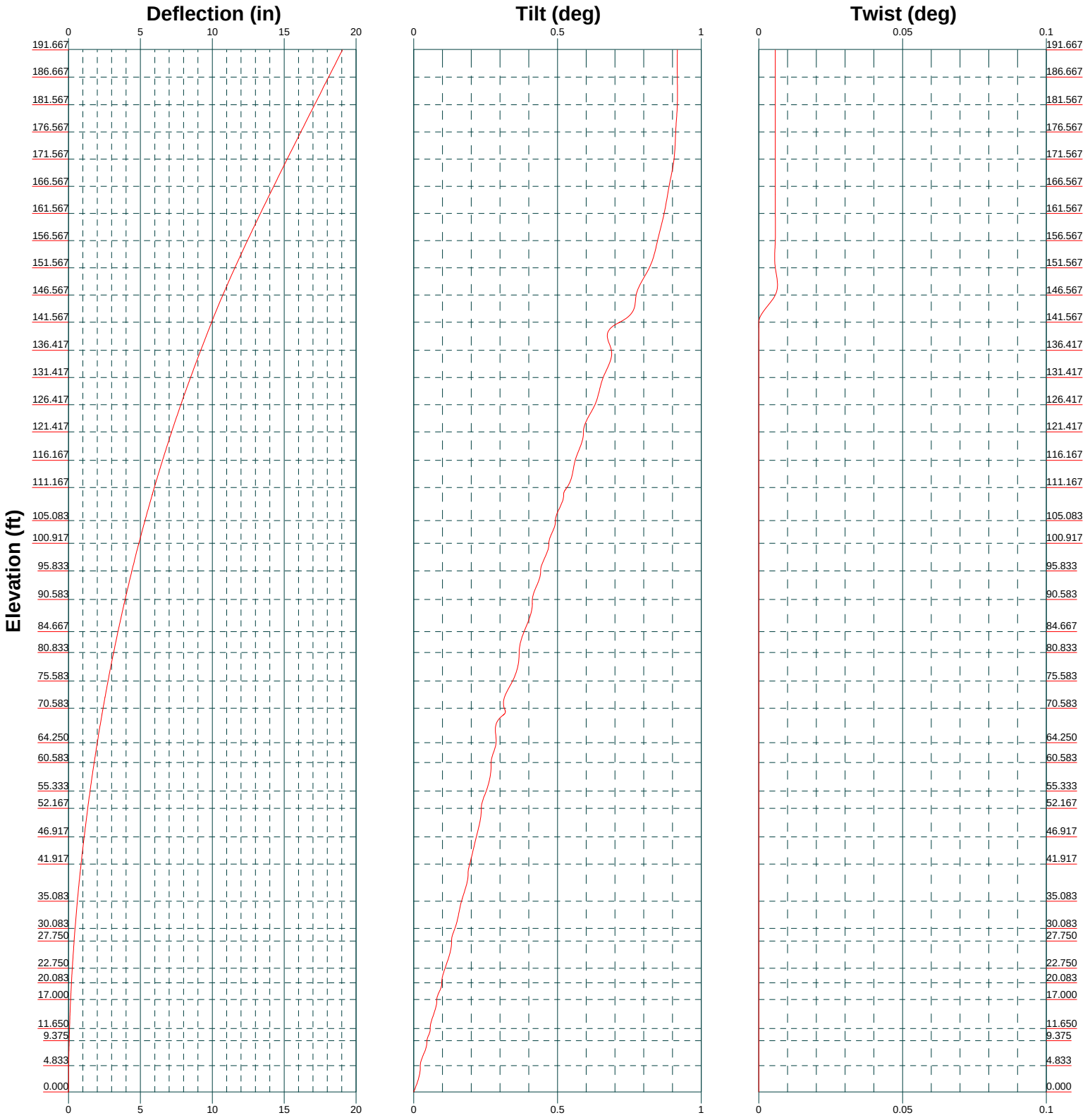
Global Mast Moment (kip-ft)

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

Job: 87581.016.01 - Newington_1, CT (BU# 826217			
Project:			
Client: Crown Castle	Drawn by: Deepak	App'd:	
Code: TIA-222-G	Date: 02/21/18	Scale: NTS	
Path:		Dwg No. E-4	

TIA-222-G - Service - 60 mph

Maximum Values

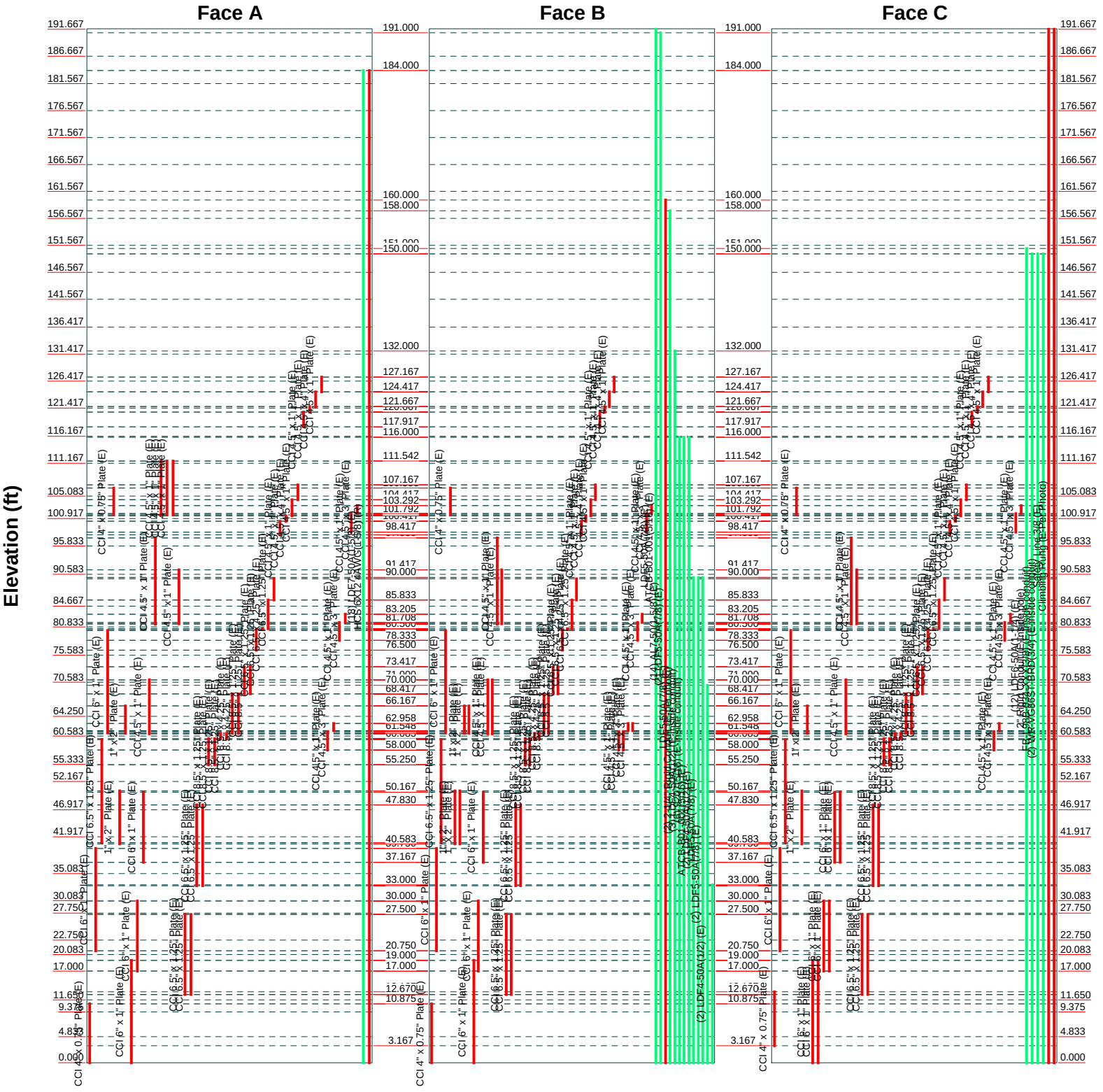


B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job:	***87581.016.01 - Newington_1, CT (BU# 826217***		
Project:			
Client: Crown Castle		Drawn by: Deepak	App'd:
Code: TIA-222-G		Date: 02/21/18	Scale: NTS
Path:			Dwg No. E-5

Feed Line Distribution Chart
0' - 191'8"

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



B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job: *87581.016.01 - Newington_1, CT (BU# 826217*		
	Project:		
	Client: Crown Castle	Drawn by: Deepak	App'd:
	Code: TIA-222-G	Date: 02/21/18	Scale: NTS
	Path:		Dwg No. E-7

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

Tower Input Data

There is a pole section.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in Hartford County, Connecticut.
Basic wind speed of 97 mph.
Structure Class II.
Exposure Category B.
Topographic Category 1.
Crest Height 0.000 ft.
Nominal ice thickness of 1.000 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
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-G Bracing Resist. Exemption
Include Bolts In Member Capacity	Autocalc Torque Arm Areas	Use TIA-222-G 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		

Pole Section Geometry

Section	*Elevation* ft	*Section Length* ft	*Pole Size*	*Pole Grade*	*Socket Length* ft
L1	191.667-186.667	5.000	P18x0.375	A53-B-42 (42 ksi)	
L2	186.667-181.567	5.100	P24x0.375	A53-B-42 (42 ksi)	

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L3	181.567-176.567	5.000	P24x0.375	A53-B-42 (42 ksi)	
L4	176.567-171.567	5.000	P24x0.375	A53-B-42 (42 ksi)	
L5	171.567-166.567	5.000	P24x0.375	A53-B-42 (42 ksi)	
L6	166.567-161.567	5.000	P24x0.375	A53-B-42 (42 ksi)	
L7	161.567-156.567	5.000	P24x0.375	A53-B-42 (42 ksi)	
L8	156.567-151.567	5.000	P24x0.375	A53-B-42 (42 ksi)	
L9	151.567-146.567	5.000	P24x0.375	A53-B-42 (42 ksi)	
L10	146.567-141.567	5.000	P24x0.375	A53-B-42 (42 ksi)	
L11	141.567-141.417	0.150	P24x0.375	A53-B-42 (42 ksi)	
L12	141.417-136.417	5.000	P36x0.375	A53-B-42 (42 ksi)	
L13	136.417-131.417	5.000	P36x0.375	A53-B-42 (42 ksi)	
L14	131.417-126.417	5.000	P36x0.375	A53-B-42 (42 ksi)	
L15	126.417-121.417	5.000	P36x0.375	A53-B-42 (42 ksi)	
L16	121.417-121.167	0.250	P36x0.375	A53-B-42 (42 ksi)	
L17	121.167-116.167	5.000	P42x0.375	A53-B-42 (42 ksi)	
L18	116.167-111.167	5.000	P42x0.375	A53-B-42 (42 ksi)	
L19	111.167-110.042	1.125	P42x0.375	A53-B-42 (42 ksi)	
L20	110.042-109.792	0.250	P42x0.4875	A53-B-42 (42 ksi)	
L21	109.792-105.083	4.709	P42x0.4875	A53-B-42 (42 ksi)	
L22	105.083-104.833	0.250	P42x0.5625	A53-B-42 (42 ksi)	
L23	104.833-100.917	3.916	P42x0.5625	A53-B-42 (42 ksi)	
L24	100.917-100.667	0.250	P48x0.375	A53-B-42 (42 ksi)	
L25	100.667-95.833	4.834	P48x0.375	A53-B-42 (42 ksi)	
L26	95.833-95.583	0.250	P48x0.475	A53-B-42 (42 ksi)	
L27	95.583-90.583	5.000	P48x0.475	A53-B-42 (42 ksi)	
L28	90.583-89.917	0.666	P48x0.475	A53-B-42 (42 ksi)	
L29	89.917-89.667	0.250	P48x0.575	A53-B-42 (42 ksi)	
L30	89.667-84.667	5.000	P48x0.575	A53-B-42 (42 ksi)	
L31	84.667-80.833	3.834	P48x0.575	A53-B-42 (42 ksi)	
L32	80.833-80.583	0.250	P54x0.4875	A53-B-42 (42 ksi)	
L33	80.583-75.583	5.000	P54x0.4875	A53-B-42	

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
				(42 ksi)	
L34	75.583-70.583	5.000	P54x0.4875	A53-B-42 (42 ksi)	
L35	70.583-69.500	1.083	P54x0.4875	A53-B-42 (42 ksi)	
L36	69.500-69.250	0.250	P54x0.5875	A53-B-42 (42 ksi)	
L37	69.250-64.250	5.000	P54x0.5875	A53-B-42 (42 ksi)	
L38	64.250-60.583	3.667	P54x0.5875	A53-B-42 (42 ksi)	
L39	60.583-60.333	0.250	P60x0.5125	A53-B-42 (42 ksi)	
L40	60.333-55.333	5.000	P60x0.5125	A53-B-42 (42 ksi)	
L41	55.333-52.167	3.166	P60x0.5125	A53-B-42 (42 ksi)	
L42	52.167-51.917	0.250	P60x0.625	A53-B-42 (42 ksi)	
L43	51.917-46.917	5.000	P60x0.625	A53-B-42 (42 ksi)	
L44	46.917-41.917	5.000	P60x0.625	A53-B-42 (42 ksi)	
L45	41.917-40.333	1.584	P60x0.625	A53-B-42 (42 ksi)	
L46	40.333-40.083	0.250	P60x0.6	A53-B-42 (42 ksi)	
L47	40.083-35.083	5.000	P60x0.6	A53-B-42 (42 ksi)	
L48	35.083-30.083	5.000	P60x0.6	A53-B-42 (42 ksi)	
L49	30.083-28.000	2.083	P60x0.6	A53-B-42 (42 ksi)	
L50	28.000-27.750	0.250	P60x0.725	A53-B-42 (42 ksi)	
L51	27.750-22.750	5.000	P60x0.725	A53-B-42 (42 ksi)	
L52	22.750-20.083	2.667	P60x0.725	A53-B-42 (42 ksi)	
L53	20.083-19.833	0.250	P60x0.625	A53-B-42 (42 ksi)	
L54	19.833-17.000	2.833	P60x0.625	A53-B-42 (42 ksi)	
L55	17.000-16.750	0.250	P60x0.725	A53-B-42 (42 ksi)	
L56	16.750-11.650	5.100	P60x0.75	A53-B-42 (42 ksi)	
L57	11.650-11.417	0.233	P60x0.75	A53-B-42 (42 ksi)	
L58	11.417-9.375	2.042	P60x0.75	A53-B-42 (42 ksi)	
L59	9.375-9.125	0.250	P60x0.8	A53-B-42 (42 ksi)	
L60	9.125-4.833	4.292	P60x0.8	A53-B-42 (42 ksi)	
L61	4.833-4.583	0.250	P60x0.75	A53-B-42 (42 ksi)	
L62	4.583-0.000	4.583	P60x0.75	A53-B-42 (42 ksi)	

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 191.667-186.667				1	1	1			
L2 186.667-181.567				1	1	1			
L3 181.567-176.567				1	1	1			
L4 176.567-171.567				1	1	1			
L5 171.567-166.567				1	1	1			
L6 166.567-161.567				1	1	1			
L7 161.567-156.567				1	1	1			
L8 156.567-151.567				1	1	1			
L9 151.567-146.567				1	1	1			
L10 146.567-141.567				1	1	1			
L11 141.567-141.417				1	1	1			
L12 141.417-136.417				1	1	1			
L13 136.417-131.417				1	1	1			
L14 131.417-126.417				1	1	1			
L15 126.417-121.417				1	1	1			
L16 121.417-121.167				1	1	1			
L17 121.167-116.167				1	1	1			
L18 116.167-111.167				1	1	1			
L19 111.167-110.042				1	1	1			

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L20 110.042-109.792				1	1	0.983655			
L21 109.792-105.083				1	1	0.983655			
L22 105.083-104.833				1	1	0.976951			
L23 104.833-100.917				1	1	0.976951			
L24 100.917-100.667				1	1	1			
L25 100.667-95.833				1	1	1			
L26 95.833-95.583				1	1	0.981492			
L27 95.583-90.583				1	1	0.981492			
L28 90.583-89.917				1	1	0.981492			
L29 89.917-89.667				1	1	0.97009			
L30 89.667-84.667				1	1	0.97009			
L31 84.667-80.833				1	1	0.97009			
L32 80.833-80.583				1	1	0.990478			
L33 80.583-75.583				1	1	0.990478			
L34 75.583-70.583				1	1	0.990478			
L35 70.583-69.500				1	1	0.990478			
L36 69.500-69.250				1	1	1.00601			
L37 69.250-64.250				1	1	1.00601			
L38 64.250-60.583				1	1	1.00601			
L39 60.583-60.333				1	1	0.987891			
L40 60.333-55.333				1	1	0.987891			
L41 55.333-52.167				1	1	0.987891			
L42 52.167-51.917				1	1	1.01747			
L43 51.917-46.917				1	1	1.01747			
L44 46.917-41.917				1	1	1.01747			
L45 41.917-40.333				1	1	1.01747			
L46				1	1	0.995499			

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
40.333-40.083									
L47				1	1	0.995499			
40.083-35.083									
L48				1	1	0.995499			
35.083-30.083									
L49				1	1	0.995499			
30.083-28.000									
L50				1	1	1.00337			
28.000-27.750									
L51				1	1	1.00337			
27.750-22.750									
L52				1	1	1.00337			
22.750-20.083									
L53				1	1	1			
20.083-19.833									
L54				1	1	1			
19.833-17.000									
L55				1	1	1.04129			
17.000-16.750									
L56				1	1	1.02849			
16.750-11.650									
L57				1	1	1.02849			
11.650-11.417									
L58				1	1	1.02849			
11.417-9.375									
L59				1	1	1.00535			
9.375-9.125									
L60				1	1	1.00535			
9.125-4.833									
L61				1	1	1.04998			
4.833-4.583									
L62				1	1	1.04998			
4.583-0.000									

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
*									
* Reinforcement Plates*									
CCI 4" x 0.75" Plate (E)	A	Surface Af (CaAa)	10.875 - 0.000	1	1	0.400 0.450	4.000	9.500	0.000
CCI 4" x 0.75" Plate (E)	B	Surface Af (CaAa)	10.875 - 0.000	1	1	-0.250 -0.200	4.000	9.500	0.000
CCI 4" x 0.75" Plate (E) **d**	C	Surface Af (CaAa)	13.167 - 3.167	1	1	0.250 0.300	4.000	9.500	0.000
CCI 6" x 1" Plate (E)	A	Surface Af (CaAa)	39.750 - 20.750	1	1	0.400 0.500	6.000	14.000	0.000
CCI 6" x 1" Plate (E)	B	Surface Af (CaAa)	39.750 - 20.750	1	1	0.400 0.500	6.000	14.000	0.000
CCI 6" x 1" Plate (E) **d**	C	Surface Af (CaAa)	39.750 - 20.750	1	1	0.400 0.500	6.000	14.000	0.000

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
CCI 6.5" x 1.25" Plate (E)	A	Surface Af (CaAa)	59.917 - 40.833	1	1	-0.450 -0.400	6.500	15.500	0.000
CCI 6.5" x 1.25" Plate (E)	B	Surface Af (CaAa)	59.917 - 40.833	1	1	-0.450 -0.400	6.500	15.500	0.000
CCI 6.5" x 1.25" Plate (E)	C	Surface Af (CaAa)	59.917 - 40.833	1	1	-0.400 -0.350	6.500	15.500	0.000
d									
CCI 6" x 1" Plate (E)	A	Surface Af (CaAa)	80.167 - 61.167	1	1	-0.450 -0.400	6.000	14.000	0.000
CCI 6" x 1" Plate (E)	B	Surface Af (CaAa)	80.167 - 61.167	1	1	-0.350 -0.300	6.000	14.000	0.000
CCI 6" x 1" Plate (E)	C	Surface Af (CaAa)	80.167 - 61.167	1	1	-0.450 -0.400	6.000	14.000	0.000
d									
CCI 4" x 0.75" Plate (E)	A	Surface Af (CaAa)	106.583 - 101.583	1	1	-0.500 -0.450	4.000	9.500	0.000
CCI 4" x 0.75" Plate (E)	B	Surface Af (CaAa)	106.583 - 101.583	1	1	-0.500 -0.450	4.000	9.500	0.000
CCI 4" x 0.75" Plate (E)	C	Surface Af (CaAa)	106.583 - 101.583	1	1	-0.500 -0.450	4.000	9.500	0.000
d									
1" x 2" Plate (E)	A	Surface Af (CaAa)	50.417 - 40.583	1	1	-0.450 -0.400	1.000	6.000	0.007
1" x 2" Plate (E)	B	Surface Af (CaAa)	50.417 - 40.583	1	1	-0.350 -0.300	1.000	6.000	0.007
1" x 2" Plate (E)	B	Surface Af (CaAa)	50.417 - 40.583	1	1	0.200 0.250	1.000	6.000	0.007
1" x 2" Plate (E)	C	Surface Af (CaAa)	50.417 - 40.583	1	1	-0.350 -0.300	1.000	6.000	0.007
d									
1" x 2" Plate (E)	A	Surface Af (CaAa)	66.167 - 61.083	1	1	-0.350 -0.300	1.000	6.000	0.007
1" x 2" Plate (E)	B	Surface Af (CaAa)	66.167 - 61.083	1	1	-0.450 -0.400	1.000	6.000	0.007
1" x 2" Plate (E)	B	Surface Af (CaAa)	66.167 - 61.083	1	1	0.300 0.350	1.000	6.000	0.007
1" x 2" Plate (E)	C	Surface Af (CaAa)	66.167 - 61.083	1	1	-0.450 -0.400	1.000	6.000	0.007
d									
CCI 6" x 1" Plate (E)	A	Surface Af (CaAa)	19.000 - 0.000	1	1	0.300 0.350	6.000	14.000	0.000
CCI 6" x 1" Plate (E)	B	Surface Af (CaAa)	19.000 - 0.000	1	1	0.400 0.450	6.000	14.000	0.000
CCI 6" x 1" Plate (E)	C	Surface Af (CaAa)	19.000 - 0.000	1	1	0.450 0.500	6.000	14.000	0.000
CCI 6" x 1" Plate (E)	C	Surface Af (CaAa)	19.000 - 0.000	1	1	-0.500 -0.450	6.000	14.000	0.000
d									
CCI 6" x 1" Plate (E)	A	Surface Af (CaAa)	30.000 - 17.000	1	1	-0.150 -0.100	6.000	14.000	0.000
CCI 6" x 1" Plate (E)	B	Surface Af (CaAa)	30.000 - 17.000	1	1	-0.450 -0.400	6.000	14.000	0.000
CCI 6" x 1" Plate (E)	C	Surface Af (CaAa)	30.000 - 17.000	1	1	0.350 0.400	6.000	14.000	0.000
CCI 6" x 1" Plate (E)	C	Surface Af (CaAa)	30.000 - 17.000	1	1	-0.500 -0.450	6.000	14.000	0.000
d									
CCI 6" x 1" Plate (E)	A	Surface Af (CaAa)	50.167 - 37.167	1	1	0.250 0.300	6.000	14.000	0.000
CCI 6" x 1" Plate (E)	B	Surface Af (CaAa)	50.167 - 37.167	1	1	0.100 0.150	6.000	14.000	0.000

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
CCI 6" x 1" Plate (E)	C	Surface Af (CaAa)	50.167 - 37.167	1	1	-0.400 -0.350	6.000	14.000	0.000
CCI 6" x 1" Plate (E) **d**	C	Surface Af (CaAa)	50.167 - 37.167	1	1	0.450 0.500	6.000	14.000	0.000
CCI 4.5" x 1" Plate (E)	A	Surface Af (CaAa)	71.000 - 61.000	1	1	-0.250 -0.200	4.500	11.000	0.000
CCI 4.5" x 1" Plate (E)	B	Surface Af (CaAa)	71.000 - 61.000	1	1	-0.450 -0.400	4.500	11.000	0.000
CCI 4.5" x 1" Plate (E)	B	Surface Af (CaAa)	71.000 - 61.000	1	1	0.400 0.450	4.500	11.000	0.000
CCI 4.5" x 1" Plate (E) **d**	C	Surface Af (CaAa)	71.000 - 61.000	1	1	0.350 0.400	4.500	11.000	0.000
CCI 4.5" x 1" Plate (E)	A	Surface Af (CaAa)	97.333 - 81.333	1	1	-0.500 -0.450	4.500	11.000	0.000
CCI 4.5" x 1" Plate (E)	B	Surface Af (CaAa)	97.333 - 81.333	1	1	-0.500 -0.450	4.500	11.000	0.000
CCI 4.5" x 1" Plate (E) **d**	C	Surface Af (CaAa)	97.333 - 81.333	1	1	-0.500 -0.450	4.500	11.000	0.000
CCI 4.5" x 1" Plate (E)	A	Surface Af (CaAa)	111.542 - 101.542	1	1	-0.350 -0.300	4.500	11.000	0.000
CCI 4.5" x 1" Plate (E)	A	Surface Af (CaAa)	111.542 - 101.542	1	1	-0.350 -0.300	4.500	11.000	0.000
CCI 4.5" x 1" Plate (E) **d**	A	Surface Af (CaAa)	111.542 - 101.542	1	1	-0.350 -0.300	4.500	11.000	0.000
CCI 4.5" x 1" Plate (E)	A	Surface Af (CaAa)	91.417 - 81.417	1	1	-0.150 -0.100	4.500	11.000	0.000
CCI 4.5" x 1" Plate (E)	B	Surface Af (CaAa)	91.417 - 81.417	1	1	-0.150 -0.100	4.500	11.000	0.000
CCI 4.5" x 1" Plate (E) **d** * BS*	C	Surface Af (CaAa)	91.417 - 81.417	1	1	-0.150 -0.100	4.500	11.000	0.000
CCI 6.5" x 1.25" Plate (E)	A	Surface Af (CaAa)	27.500 - 12.670	1	1	0.400 0.450	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate (E)	A	Surface Af (CaAa)	27.500 - 12.670	1	1	-0.250 -0.200	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate (E)	B	Surface Af (CaAa)	27.500 - 12.670	1	1	0.450 0.500	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate (E)	B	Surface Af (CaAa)	27.500 - 12.670	1	1	-0.250 -0.200	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate (E)	C	Surface Af (CaAa)	27.500 - 12.670	1	1	0.350 0.400	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate (E) **d**	C	Surface Af (CaAa)	27.500 - 12.670	1	1	-0.250 -0.200	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate (E)	A	Surface Af (CaAa)	47.830 - 32.830	1	1	0.400 0.450	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate (E)	A	Surface Af (CaAa)	47.830 - 32.830	1	1	-0.400 -0.350	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate (E)	B	Surface Af (CaAa)	47.830 - 32.830	1	1	-0.400 -0.350	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate (E)	B	Surface Af (CaAa)	47.830 - 32.830	1	1	-0.250 -0.200	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate (E)	C	Surface Af (CaAa)	47.830 - 32.830	1	1	-0.400 0.350	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate (E)	C	Surface Af (CaAa)	47.830 - 32.830	1	1	-0.250 -0.200	6.500	15.500	0.028

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
d									
CCI 8.5" x 1.25" Plate	A	Surface Af	60.083 - 55.250	1	1	0.200	8.500	19.500	0.036
(E)		(CaAa)				0.250			
CCI 8.5" x 1.25" Plate	A	Surface Af	60.083 - 55.250	1	1	-0.400	8.500	19.500	0.036
(E)		(CaAa)				-0.350			
CCI 8.5" x 1.25" Plate	B	Surface Af	60.083 - 55.250	1	1	0.150	8.500	19.500	0.036
(E)		(CaAa)				0.200			
CCI 8.5" x 1.25" Plate	B	Surface Af	60.083 - 55.250	1	1	-0.350	8.500	19.500	0.036
(E)		(CaAa)				-0.300			
CCI 8.5" x 1.25" Plate	C	Surface Af	60.083 - 55.250	1	1	0.100	8.500	19.500	0.036
(E)		(CaAa)				0.150			
CCI 8.5" x 1.25" Plate	C	Surface Af	60.083 - 55.250	1	1	-0.500	8.500	19.500	0.036
(E)		(CaAa)				-0.450			
d									
CCI 8.5" x 1.25" Plate	A	Surface Af	61.083 - 60.083	1	1	0.200	8.500	19.500	0.036
(E)		(CaAa)				0.250			
CCI 8.5" x 1.25" Plate	A	Surface Af	61.083 - 60.083	1	1	-0.400	8.500	19.500	0.036
(E)		(CaAa)				-0.350			
CCI 8.5" x 1.25" Plate	B	Surface Af	61.083 - 60.083	1	1	0.150	8.500	19.500	0.036
(E)		(CaAa)				0.200			
CCI 8.5" x 1.25" Plate	B	Surface Af	61.083 - 60.083	1	1	-0.350	8.500	19.500	0.036
(E)		(CaAa)				-0.300			
CCI 8.5" x 1.25" Plate	C	Surface Af	61.083 - 60.083	1	1	0.100	8.500	19.500	0.036
(E)		(CaAa)				0.150			
CCI 8.5" x 1.25" Plate	C	Surface Af	61.083 - 60.083	1	1	-0.500	8.500	19.500	0.036
(E)		(CaAa)				-0.450			
d									
CCI 8.5" x 4.25" Plate	A	Surface Af	68.417 - 61.083	1	1	0.200	8.500	25.500	0.123
(E)		(CaAa)				0.250			
CCI 8.5" x 4.25" Plate	A	Surface Af	68.417 - 61.083	1	1	-0.400	8.500	25.500	0.123
(E)		(CaAa)				-0.350			
CCI 8.5" x 4.25" Plate	B	Surface Af	68.417 - 61.083	1	1	0.150	8.500	25.500	0.123
(E)		(CaAa)				0.200			
CCI 8.5" x 4.25" Plate	B	Surface Af	68.417 - 61.083	1	1	-0.350	8.500	25.500	0.123
(E)		(CaAa)				-0.300			
CCI 8.5" x 4.25" Plate	C	Surface Af	68.417 - 61.083	1	1	0.100	8.500	25.500	0.123
(E)		(CaAa)				0.150			
CCI 8.5" x 4.25" Plate	C	Surface Af	68.417 - 61.083	1	1	-0.500	8.500	25.500	0.123
(E)		(CaAa)				-0.450			
d									
CCI 8.5" x 1.25" Plate	A	Surface Af	73.417 - 68.417	1	1	0.200	8.500	19.500	0.036
(E)		(CaAa)				0.250			
CCI 8.5" x 1.25" Plate	A	Surface Af	73.417 - 68.417	1	1	-0.400	8.500	19.500	0.036
(E)		(CaAa)				-0.350			
CCI 8.5" x 1.25" Plate	B	Surface Af	73.417 - 68.417	1	1	0.150	8.500	19.500	0.036
(E)		(CaAa)				0.200			
CCI 8.5" x 1.25" Plate	B	Surface Af	73.417 - 68.417	1	1	-0.350	8.500	19.500	0.036
(E)		(CaAa)				-0.300			
CCI 8.5" x 1.25" Plate	C	Surface Af	73.417 - 68.417	1	1	0.100	8.500	19.500	0.036
(E)		(CaAa)				0.150			
CCI 8.5" x 1.25" Plate	C	Surface Af	73.417 - 68.417	1	1	-0.500	8.500	19.500	0.036
(E)		(CaAa)				-0.450			
d									
CCI 6.5" x 1.25" Plate	A	Surface Af	80.333 - 76.500	1	1	0.050	6.500	15.500	0.028
(E)		(CaAa)				0.100			
CCI 6.5" x 1.25" Plate	B	Surface Af	80.333 - 76.500	1	1	0.000	6.500	15.500	0.028
(E)		(CaAa)				0.050			
CCI 6.5" x 1.25" Plate	C	Surface Af	80.333 - 76.500	1	1	0.150	6.500	15.500	0.028
(E)		(CaAa)				0.200			
d									
CCI 6.5" x 1.25" Plate	A	Surface Af	80.500 - 80.333	1	1	0.050	6.500	15.500	0.028

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
(E)		(CaAa)				0.100			
CCI 6.5" x 1.25" Plate	B	Surface Af	80.500 - 80.333	1	1	0.000	6.500	15.500	0.028
(E)		(CaAa)				0.050			
CCI 6.5" x 1.25" Plate	C	Surface Af	80.500 - 80.333	1	1	0.150	6.500	15.500	0.028
(E)		(CaAa)				0.200			
d									
CCI 6.5" x 4.25" Plate	A	Surface Af	85.833 - 80.500	1	1	0.050	6.500	21.500	0.094
(E)		(CaAa)				0.100			
CCI 6.5" x 4.25" Plate	B	Surface Af	85.833 - 80.500	1	1	0.000	6.500	21.500	0.094
(E)		(CaAa)				0.050			
CCI 6.5" x 4.25" Plate	C	Surface Af	85.833 - 80.500	1	1	0.150	6.500	21.500	0.094
(E)		(CaAa)				0.200			
d									
CCI 6.5" x 1.25" Plate	A	Surface Af	89.750 - 85.833	1	1	0.050	6.500	15.500	0.028
(E)		(CaAa)				0.100			
CCI 6.5" x 1.25" Plate	B	Surface Af	89.750 - 85.833	1	1	0.000	6.500	15.500	0.028
(E)		(CaAa)				0.050			
CCI 6.5" x 1.25" Plate	C	Surface Af	89.750 - 85.833	1	1	0.150	6.500	15.500	0.028
(E)		(CaAa)				0.200			
d									
CCI 4.5" x 1" Plate	A	Surface Af	100.417 - 97.917	1	1	-0.150	4.500	11.000	0.015
(E)		(CaAa)				-0.100			
CCI 4.5" x 1" Plate	B	Surface Af	100.417 - 97.917	1	1	-0.100	4.500	11.000	0.015
(E)		(CaAa)				-0.050			
CCI 4.5" x 1" Plate	C	Surface Af	100.417 - 97.917	1	1	-0.100	4.500	11.000	0.015
(E)		(CaAa)				-0.050			
d									
CCI 4.5" x 1" Plate	A	Surface Af	101.417 - 100.417	1	1	-0.150	4.500	11.000	0.015
(E)		(CaAa)				-0.100			
CCI 4.5" x 1" Plate	B	Surface Af	101.417 - 100.417	1	1	-0.100	4.500	11.000	0.015
(E)		(CaAa)				-0.050			
CCI 4.5" x 1" Plate	C	Surface Af	101.417 - 100.417	1	1	-0.100	4.500	11.000	0.015
(E)		(CaAa)				-0.050			
d									
CCI 4.5" x 4" Plate	A	Surface Af	104.417 - 101.417	1	1	-0.150	4.500	17.000	0.061
(E)		(CaAa)				-0.100			
CCI 4.5" x 4" Plate	B	Surface Af	104.417 - 101.417	1	1	-0.100	4.500	17.000	0.061
(E)		(CaAa)				-0.050			
CCI 4.5" x 4" Plate	C	Surface Af	104.417 - 101.417	1	1	-0.100	4.500	17.000	0.061
(E)		(CaAa)				-0.050			
d									
CCI 4.5" x 1" Plate	A	Surface Af	107.167 - 104.417	1	1	-0.150	4.500	11.000	0.015
(E)		(CaAa)				-0.100			
CCI 4.5" x 1" Plate	B	Surface Af	107.167 - 104.417	1	1	-0.100	4.500	11.000	0.015
(E)		(CaAa)				-0.050			
CCI 4.5" x 1" Plate	C	Surface Af	107.167 - 104.417	1	1	-0.100	4.500	11.000	0.015
(E)		(CaAa)				-0.050			
d									
CCI 4.5" x 1" Plate	A	Surface Af	120.667 - 117.917	1	1	-0.150	4.500	11.000	0.015
(E)		(CaAa)				-0.100			
CCI 4.5" x 1" Plate	B	Surface Af	120.667 - 117.917	1	1	-0.100	4.500	11.000	0.015
(E)		(CaAa)				-0.050			
CCI 4.5" x 1" Plate	C	Surface Af	120.667 - 117.917	1	1	-0.200	4.500	11.000	0.015
(E)		(CaAa)				-0.150			
d									
CCI 4.5" x 1" Plate	A	Surface Af	121.667 - 120.667	1	1	-0.150	4.500	11.000	0.015
(E)		(CaAa)				-0.100			
CCI 4.5" x 1" Plate	B	Surface Af	121.667 - 120.667	1	1	-0.100	4.500	11.000	0.015
(E)		(CaAa)				-0.050			
CCI 4.5" x 1" Plate	C	Surface Af	121.667 - 120.667	1	1	-0.200	4.500	11.000	0.015
(E)		(CaAa)				-0.150			

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
d									
CCI 4.5" x 4" Plate	A	Surface Af	124.417 - 121.667	1	1	-0.150	4.500	17.000	0.061
(E)		(CaAa)				-0.100			
CCI 4.5" x 4" Plate	B	Surface Af	124.417 - 121.667	1	1	-0.100	4.500	17.000	0.061
(E)		(CaAa)				-0.050			
CCI 4.5" x 4" Plate	C	Surface Af	124.417 - 121.667	1	1	-0.200	4.500	17.000	0.061
(E)		(CaAa)				-0.150			
d									
CCI 4.5" x 1" Plate	A	Surface Af	127.167 - 124.417	1	1	-0.150	4.500	11.000	0.015
(E)		(CaAa)				-0.100			
CCI 4.5" x 1" Plate	B	Surface Af	127.167 - 124.417	1	1	-0.100	4.500	11.000	0.015
(E)		(CaAa)				-0.050			
CCI 4.5" x 1" Plate	C	Surface Af	127.167 - 124.417	1	1	-0.200	4.500	11.000	0.015
(E)		(CaAa)				-0.150			
d									
CCI 4.5" x 1" Plate	A	Surface Af	61.458 - 58.000	1	1	-0.250	4.500	11.000	0.015
(E)		(CaAa)				-0.200			
CCI 4.5" x 1" Plate	B	Surface Af	61.458 - 58.000	1	1	-0.450	4.500	11.000	0.015
(E)		(CaAa)				-0.400			
CCI 4.5" x 1" Plate	B	Surface Af	61.458 - 58.000	1	1	0.400	4.500	11.000	0.015
(E)		(CaAa)				0.450			
CCI 4.5" x 1" Plate	C	Surface Af	61.458 - 58.000	1	1	0.350	4.500	11.000	0.015
(E)		(CaAa)				0.400			
d									
CCI 4.5" x 3" Plate	A	Surface Af	62.958 - 61.548	1	1	-0.250	4.500	15.000	0.046
(E)		(CaAa)				-0.200			
CCI 4.5" x 3" Plate	B	Surface Af	62.958 - 61.548	1	1	-0.450	4.500	15.000	0.046
(E)		(CaAa)				-0.400			
CCI 4.5" x 3" Plate	B	Surface Af	62.958 - 61.548	1	1	0.400	4.500	15.000	0.046
(E)		(CaAa)				0.450			
CCI 4.5" x 3" Plate	C	Surface Af	62.958 - 61.548	1	1	0.350	4.500	15.000	0.046
(E)		(CaAa)				0.400			
d									
CCI 4.5" x 1" Plate	A	Surface Af	81.708 - 78.333	1	1	-0.500	4.500	11.000	0.015
(E)		(CaAa)				-0.450			
CCI 4.5" x 1" Plate	B	Surface Af	81.708 - 78.333	1	1	-0.500	4.500	11.000	0.015
(E)		(CaAa)				-0.450			
CCI 4.5" x 1" Plate	C	Surface Af	81.708 - 78.333	1	1	-0.500	4.500	11.000	0.015
(E)		(CaAa)				-0.450			
d									
CCI 4.5" x 3" Plate	A	Surface Af	83.205 - 81.708	1	1	-0.500	4.500	15.000	0.046
(E)		(CaAa)				-0.450			
CCI 4.5" x 3" Plate	B	Surface Af	83.205 - 81.708	1	1	-0.500	4.500	15.000	0.046
(E)		(CaAa)				-0.450			
CCI 4.5" x 3" Plate	C	Surface Af	83.205 - 81.708	1	1	-0.500	4.500	15.000	0.046
(E)		(CaAa)				-0.450			
d									
CCI 4.5" x 1" Plate	A	Surface Af	101.792 - 98.417	1	1	0.300	4.500	11.000	0.015
(E)		(CaAa)				0.350			
CCI 4.5" x 1" Plate	B	Surface Af	101.792 - 98.417	1	1	0.300	4.500	11.000	0.015
(E)		(CaAa)				0.350			
CCI 4.5" x 1" Plate	C	Surface Af	101.792 - 98.417	1	1	0.300	4.500	11.000	0.015
(E)		(CaAa)				0.350			
d									
CCI 4.5" x 3" Plate	A	Surface Af	103.292 - 101.792	1	1	0.300	4.500	15.000	0.046
(E)		(CaAa)				0.350			
CCI 4.5" x 3" Plate	B	Surface Af	103.292 - 101.792	1	1	0.300	4.500	15.000	0.046
(E)		(CaAa)				0.350			
CCI 4.5" x 3" Plate	C	Surface Af	103.292 - 101.792	1	1	0.300	4.500	15.000	0.046
(E)		(CaAa)				0.350			
HCS 6X12 4AWG(1-5/8)	A	Surface Ar	184.000 - 0.000	1	1	-0.400	1.660		0.002

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
(R) **d**		(CaAa)				-0.360			
AL7-50(1-5/8) (E) **d**	B	Surface Ar (CaAa)	160.000 - 0.000	14	12	-0.150 0.300	1.960		0.001
Safety Line 3/8 (E)	C	Surface Ar (CaAa)	191.667 - 0.000	1	1	0.000 0.010	0.375		0.000
Climbing Rung (E-Per Photo) **d**	C	Surface Ar (CaAa)	191.667 - 0.000	1	1	-0.050 0.050	1.000		0.008

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
* **d** **d**								
LDF5-50A(7/8) (E)	B	No	Inside Pole	191.667 - 0.000	1	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.000 0.000 0.000
d								
ATCB-B01-001(5/16) (E)	B	No	Inside Pole	191.000 - 0.000	1	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.000 0.000 0.000
d								
LDF7-50A(1-5/8) (E)	A	No	Inside Pole	184.000 - 0.000	18	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.001 0.001
d								
LDF5-50A(7/8) (E)	B	No	Inside Pole	158.000 - 0.000	2	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.000 0.000 0.000
d								
LDF6-50A(1-1/4) (E)	C	No	Inside Pole	151.000 - 0.000	12	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.001 0.001
2" Rigid Conduit (E-inside pole)	C	No	Inside Pole	150.000 - 0.000	1	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.003 0.003 0.003
FB-L98B-034-XXX(3/8) (E-inside conduit)	C	No	Inside Pole	150.000 - 0.000	1	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.000 0.000 0.000
WR-VG86ST-BRD(3/4) (E-inside conduit)	C	No	Inside Pole	150.000 - 0.000	2	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.001 0.001
d								
LDF5-50A(7/8) (E)	B	No	Inside Pole	132.000 - 0.000	1	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.000 0.000 0.000
d								
2-1/4" Rigid Conduit (E-per photo)	B	No	Inside Pole	116.000 - 0.000	2	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.003 0.003 0.003
LDF4-50A(1/2) (E-inside conduit)	B	No	Inside Pole	116.000 - 0.000	3	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.000 0.000 0.000

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
9207(5/16)	B	No	Inside Pole	116.000 - 0.000	6	No Ice	0.000	0.001
(E-inside conduit)						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
d								
ATCB-B01-001(5/16)	B	No	Inside Pole	90.000 - 0.000	1	No Ice	0.000	0.000
(E)						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
LDF4-50A(1/2)	B	No	Inside Pole	90.000 - 0.000	2	No Ice	0.000	0.000
(E)						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
LDF5-50A(7/8)	B	No	Inside Pole	90.000 - 0.000	1	No Ice	0.000	0.000
(E)						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
d								
LDF5-50A(7/8)	B	No	Inside Pole	70.000 - 0.000	2	No Ice	0.000	0.000
(E)						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
d								
LDF4-50A(1/2)	B	No	Inside Pole	33.000 - 0.000	2	No Ice	0.000	0.000
(E)						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
d								

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	191.667-186.667	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.002
		C	0.000	0.000	0.688	0.000	0.043
L2	186.667-181.567	A	0.000	0.000	0.404	0.000	0.042
		B	0.000	0.000	0.000	0.000	0.002
		C	0.000	0.000	0.701	0.000	0.044
L3	181.567-176.567	A	0.000	0.000	0.830	0.000	0.086
		B	0.000	0.000	0.000	0.000	0.002
		C	0.000	0.000	0.688	0.000	0.043
L4	176.567-171.567	A	0.000	0.000	0.830	0.000	0.086
		B	0.000	0.000	0.000	0.000	0.002
		C	0.000	0.000	0.688	0.000	0.043
L5	171.567-166.567	A	0.000	0.000	0.830	0.000	0.086
		B	0.000	0.000	0.000	0.000	0.002
		C	0.000	0.000	0.688	0.000	0.043
L6	166.567-161.567	A	0.000	0.000	0.830	0.000	0.086
		B	0.000	0.000	0.000	0.000	0.002
		C	0.000	0.000	0.688	0.000	0.043
L7	161.567-156.567	A	0.000	0.000	0.830	0.000	0.086
		B	0.000	0.000	8.074	0.000	0.028
		C	0.000	0.000	0.688	0.000	0.043
L8	156.567-151.567	A	0.000	0.000	0.830	0.000	0.086
		B	0.000	0.000	11.760	0.000	0.042
		C	0.000	0.000	0.688	0.000	0.043
L9	151.567-146.567	A	0.000	0.000	0.830	0.000	0.086
		B	0.000	0.000	11.760	0.000	0.042
		C	0.000	0.000	0.688	0.000	0.089
L10	146.567-141.567	A	0.000	0.000	0.830	0.000	0.086
		B	0.000	0.000	11.760	0.000	0.042
		C	0.000	0.000	0.688	0.000	0.099

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
L11	141.567-141.417	A	0.000	0.000	0.025	0.000	0.003
		B	0.000	0.000	0.353	0.000	0.001
		C	0.000	0.000	0.021	0.000	0.003
L12	141.417-136.417	A	0.000	0.000	0.830	0.000	0.086
		B	0.000	0.000	11.760	0.000	0.042
		C	0.000	0.000	0.688	0.000	0.099
L13	136.417-131.417	A	0.000	0.000	0.830	0.000	0.086
		B	0.000	0.000	11.760	0.000	0.042
		C	0.000	0.000	0.688	0.000	0.099
L14	131.417-126.417	A	0.000	0.000	1.393	0.000	0.097
		B	0.000	0.000	12.323	0.000	0.055
		C	0.000	0.000	1.250	0.000	0.111
L15	126.417-121.417	A	0.000	0.000	4.580	0.000	0.289
		B	0.000	0.000	15.510	0.000	0.246
		C	0.000	0.000	4.438	0.000	0.302
L16	121.417-121.167	A	0.000	0.000	0.229	0.000	0.008
		B	0.000	0.000	0.775	0.000	0.006
		C	0.000	0.000	0.222	0.000	0.009
L17	121.167-116.167	A	0.000	0.000	3.268	0.000	0.136
		B	0.000	0.000	14.198	0.000	0.093
		C	0.000	0.000	3.125	0.000	0.149
L18	116.167-111.167	A	0.000	0.000	1.674	0.000	0.086
		B	0.000	0.000	11.760	0.000	0.092
		C	0.000	0.000	0.688	0.000	0.099
L19	111.167-110.042	A	0.000	0.000	2.718	0.000	0.019
		B	0.000	0.000	2.646	0.000	0.021
		C	0.000	0.000	0.155	0.000	0.022
L20	110.042-109.792	A	0.000	0.000	0.604	0.000	0.004
		B	0.000	0.000	0.588	0.000	0.005
		C	0.000	0.000	0.034	0.000	0.005
L21	109.792-105.083	A	0.000	0.000	13.940	0.000	0.113
		B	0.000	0.000	13.639	0.000	0.120
		C	0.000	0.000	3.210	0.000	0.125
L22	105.083-104.833	A	0.000	0.000	0.958	0.000	0.008
		B	0.000	0.000	0.942	0.000	0.009
		C	0.000	0.000	0.389	0.000	0.009
L23	104.833-100.917	A	0.000	0.000	14.940	0.000	0.347
		B	0.000	0.000	16.095	0.000	0.353
		C	0.000	0.000	7.423	0.000	0.358
L24	100.917-100.667	A	0.000	0.000	0.416	0.000	0.012
		B	0.000	0.000	0.963	0.000	0.012
		C	0.000	0.000	0.409	0.000	0.013
L25	100.667-95.833	A	0.000	0.000	5.677	0.000	0.160
		B	0.000	0.000	16.245	0.000	0.167
		C	0.000	0.000	5.540	0.000	0.173
L26	95.833-95.583	A	0.000	0.000	0.229	0.000	0.004
		B	0.000	0.000	0.775	0.000	0.005
		C	0.000	0.000	0.222	0.000	0.005
L27	95.583-90.583	A	0.000	0.000	5.205	0.000	0.086
		B	0.000	0.000	16.136	0.000	0.094
		C	0.000	0.000	5.063	0.000	0.099
L28	90.583-89.917	A	0.000	0.000	1.110	0.000	0.011
		B	0.000	0.000	2.565	0.000	0.013
		C	0.000	0.000	1.091	0.000	0.013
L29	89.917-89.667	A	0.000	0.000	0.506	0.000	0.007
		B	0.000	0.000	1.053	0.000	0.007
		C	0.000	0.000	0.499	0.000	0.007
L30	89.667-84.667	A	0.000	0.000	13.747	0.000	0.301
		B	0.000	0.000	24.677	0.000	0.313
		C	0.000	0.000	13.604	0.000	0.315
L31	84.667-80.833	A	0.000	0.000	11.507	0.000	0.508

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	19.888	0.000	0.517
		C	0.000	0.000	11.398	0.000	0.519
L32	80.833-80.583	A	0.000	0.000	0.500	0.000	0.032
		B	0.000	0.000	1.046	0.000	0.032
		C	0.000	0.000	0.493	0.000	0.032
L33	80.583-75.583	A	0.000	0.000	11.525	0.000	0.239
		B	0.000	0.000	22.455	0.000	0.250
		C	0.000	0.000	11.382	0.000	0.252
L34	75.583-70.583	A	0.000	0.000	14.172	0.000	0.291
		B	0.000	0.000	25.415	0.000	0.302
		C	0.000	0.000	14.030	0.000	0.304
L35	70.583-69.500	A	0.000	0.000	5.144	0.000	0.097
		B	0.000	0.000	8.323	0.000	0.100
		C	0.000	0.000	5.113	0.000	0.100
L36	69.500-69.250	A	0.000	0.000	1.187	0.000	0.022
		B	0.000	0.000	1.921	0.000	0.023
		C	0.000	0.000	1.180	0.000	0.023
L37	69.250-64.250	A	0.000	0.000	24.066	0.000	1.184
		B	0.000	0.000	39.066	0.000	1.211
		C	0.000	0.000	23.924	0.000	1.197
L38	64.250-60.583	A	0.000	0.000	18.761	0.000	0.978
		B	0.000	0.000	31.456	0.000	1.088
		C	0.000	0.000	18.656	0.000	0.987
L39	60.583-60.333	A	0.000	0.000	0.937	0.000	0.026
		B	0.000	0.000	1.671	0.000	0.031
		C	0.000	0.000	0.930	0.000	0.027
L40	60.333-55.333	A	0.000	0.000	21.712	0.000	0.483
		B	0.000	0.000	34.392	0.000	0.534
		C	0.000	0.000	21.570	0.000	0.497
L41	55.333-52.167	A	0.000	0.000	4.191	0.000	0.060
		B	0.000	0.000	11.111	0.000	0.070
		C	0.000	0.000	4.100	0.000	0.069
L42	52.167-51.917	A	0.000	0.000	0.312	0.000	0.004
		B	0.000	0.000	0.859	0.000	0.005
		C	0.000	0.000	0.305	0.000	0.005
L43	51.917-46.917	A	0.000	0.000	12.058	0.000	0.160
		B	0.000	0.000	23.572	0.000	0.199
		C	0.000	0.000	15.166	0.000	0.174
L44	46.917-41.917	A	0.000	0.000	22.913	0.000	0.396
		B	0.000	0.000	34.677	0.000	0.445
		C	0.000	0.000	27.771	0.000	0.410
L45	41.917-40.333	A	0.000	0.000	6.676	0.000	0.124
		B	0.000	0.000	10.361	0.000	0.138
		C	0.000	0.000	8.214	0.000	0.128
L46	40.333-40.083	A	0.000	0.000	0.833	0.000	0.018
		B	0.000	0.000	1.380	0.000	0.019
		C	0.000	0.000	1.076	0.000	0.019
L47	40.083-35.083	A	0.000	0.000	19.246	0.000	0.362
		B	0.000	0.000	30.176	0.000	0.377
		C	0.000	0.000	22.020	0.000	0.376
L48	35.083-30.083	A	0.000	0.000	10.711	0.000	0.210
		B	0.000	0.000	21.642	0.000	0.226
		C	0.000	0.000	10.569	0.000	0.224
L49	30.083-28.000	A	0.000	0.000	4.429	0.000	0.036
		B	0.000	0.000	8.982	0.000	0.042
		C	0.000	0.000	6.369	0.000	0.041
L50	28.000-27.750	A	0.000	0.000	0.541	0.000	0.004
		B	0.000	0.000	1.088	0.000	0.005
		C	0.000	0.000	0.784	0.000	0.005
L51	27.750-22.750	A	0.000	0.000	21.122	0.000	0.348
		B	0.000	0.000	32.052	0.000	0.365

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C	0.000	0.000	25.979	0.000	0.362
L52	22.750-20.083	A	0.000	0.000	10.888	0.000	0.193
		B	0.000	0.000	16.718	0.000	0.202
		C	0.000	0.000	13.479	0.000	0.200
L53	20.083-19.833	A	0.000	0.000	0.833	0.000	0.018
		B	0.000	0.000	1.380	0.000	0.019
		C	0.000	0.000	1.076	0.000	0.019
L54	19.833-17.000	A	0.000	0.000	11.441	0.000	0.205
		B	0.000	0.000	17.634	0.000	0.214
		C	0.000	0.000	16.194	0.000	0.213
L55	17.000-16.750	A	0.000	0.000	0.833	0.000	0.018
		B	0.000	0.000	1.380	0.000	0.019
		C	0.000	0.000	1.076	0.000	0.019
L56	16.750-11.650	A	0.000	0.000	14.787	0.000	0.313
		B	0.000	0.000	25.935	0.000	0.330
		C	0.000	0.000	20.753	0.000	0.327
L57	11.650-11.417	A	0.000	0.000	0.272	0.000	0.004
		B	0.000	0.000	0.781	0.000	0.005
		C	0.000	0.000	0.653	0.000	0.005
L58	11.417-9.375	A	0.000	0.000	3.381	0.000	0.035
		B	0.000	0.000	7.845	0.000	0.042
		C	0.000	0.000	5.726	0.000	0.041
L59	9.375-9.125	A	0.000	0.000	0.458	0.000	0.004
		B	0.000	0.000	1.005	0.000	0.005
		C	0.000	0.000	0.701	0.000	0.005
L60	9.125-4.833	A	0.000	0.000	7.866	0.000	0.074
		B	0.000	0.000	17.248	0.000	0.088
		C	0.000	0.000	12.035	0.000	0.085
L61	4.833-4.583	A	0.000	0.000	0.458	0.000	0.004
		B	0.000	0.000	1.005	0.000	0.005
		C	0.000	0.000	0.701	0.000	0.005
L62	4.583-0.000	A	0.000	0.000	8.399	0.000	0.079
		B	0.000	0.000	18.418	0.000	0.093
		C	0.000	0.000	10.740	0.000	0.091

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	191.667-186.667	A	2.382	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.002
		C		0.000	0.000	5.451	0.000	0.132
L2	186.667-181.567	A	2.375	0.000	0.000	1.560	0.000	0.070
		B		0.000	0.000	0.000	0.000	0.002
		C		0.000	0.000	5.547	0.000	0.135
L3	181.567-176.567	A	2.369	0.000	0.000	3.199	0.000	0.144
		B		0.000	0.000	0.000	0.000	0.002
		C		0.000	0.000	5.425	0.000	0.132
L4	176.567-171.567	A	2.362	0.000	0.000	3.192	0.000	0.144
		B		0.000	0.000	0.000	0.000	0.002
		C		0.000	0.000	5.411	0.000	0.131
L5	171.567-166.567	A	2.355	0.000	0.000	3.185	0.000	0.144
		B		0.000	0.000	0.000	0.000	0.002
		C		0.000	0.000	5.397	0.000	0.131
L6	166.567-161.567	A	2.348	0.000	0.000	3.178	0.000	0.143
		B		0.000	0.000	0.000	0.000	0.002
		C		0.000	0.000	5.383	0.000	0.130

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
L7	161.567-156.567	A	2.341	0.000	0.000	3.171	0.000	0.143
		B		0.000	0.000	12.102	0.000	0.240
		C		0.000	0.000	5.369	0.000	0.130
L8	156.567-151.567	A	2.333	0.000	0.000	3.163	0.000	0.143
		B		0.000	0.000	17.616	0.000	0.349
		C		0.000	0.000	5.354	0.000	0.129
L9	151.567-146.567	A	2.326	0.000	0.000	3.156	0.000	0.142
		B		0.000	0.000	17.607	0.000	0.348
		C		0.000	0.000	5.339	0.000	0.174
L10	146.567-141.567	A	2.318	0.000	0.000	3.148	0.000	0.142
		B		0.000	0.000	17.597	0.000	0.347
		C		0.000	0.000	5.323	0.000	0.184
L11	141.567-141.417	A	2.313	0.000	0.000	0.094	0.000	0.004
		B		0.000	0.000	0.528	0.000	0.010
		C		0.000	0.000	0.159	0.000	0.006
L12	141.417-136.417	A	2.309	0.000	0.000	3.139	0.000	0.142
		B		0.000	0.000	17.586	0.000	0.346
		C		0.000	0.000	5.306	0.000	0.184
L13	136.417-131.417	A	2.301	0.000	0.000	3.131	0.000	0.141
		B		0.000	0.000	17.576	0.000	0.345
		C		0.000	0.000	5.289	0.000	0.183
L14	131.417-126.417	A	2.292	0.000	0.000	3.699	0.000	0.166
		B		0.000	0.000	18.142	0.000	0.370
		C		0.000	0.000	5.848	0.000	0.207
L15	126.417-121.417	A	2.283	0.000	0.000	6.941	0.000	0.446
		B		0.000	0.000	21.382	0.000	0.649
		C		0.000	0.000	9.081	0.000	0.487
L16	121.417-121.167	A	2.278	0.000	0.000	0.334	0.000	0.015
		B		0.000	0.000	1.056	0.000	0.025
		C		0.000	0.000	0.441	0.000	0.017
L17	121.167-116.167	A	2.273	0.000	0.000	5.570	0.000	0.247
		B		0.000	0.000	20.009	0.000	0.449
		C		0.000	0.000	7.701	0.000	0.288
L18	116.167-111.167	A	2.263	0.000	0.000	4.219	0.000	0.159
		B		0.000	0.000	17.529	0.000	0.390
		C		0.000	0.000	5.214	0.000	0.181
L19	111.167-110.042	A	2.257	0.000	0.000	4.070	0.000	0.089
		B		0.000	0.000	3.942	0.000	0.088
		C		0.000	0.000	1.170	0.000	0.041
L20	110.042-109.792	A	2.256	0.000	0.000	0.904	0.000	0.020
		B		0.000	0.000	0.876	0.000	0.020
		C		0.000	0.000	0.260	0.000	0.009
L21	109.792-105.083	A	2.251	0.000	0.000	19.806	0.000	0.464
		B		0.000	0.000	19.279	0.000	0.459
		C		0.000	0.000	7.671	0.000	0.261
L22	105.083-104.833	A	2.245	0.000	0.000	1.292	0.000	0.032
		B		0.000	0.000	1.265	0.000	0.031
		C		0.000	0.000	0.648	0.000	0.021
L23	104.833-100.917	A	2.241	0.000	0.000	19.597	0.000	0.735
		B		0.000	0.000	21.040	0.000	0.763
		C		0.000	0.000	11.382	0.000	0.599
L24	100.917-100.667	A	2.236	0.000	0.000	0.528	0.000	0.023
		B		0.000	0.000	1.249	0.000	0.036
		C		0.000	0.000	0.632	0.000	0.025
L25	100.667-95.833	A	2.231	0.000	0.000	8.545	0.000	0.321
		B		0.000	0.000	22.493	0.000	0.561
		C		0.000	0.000	10.563	0.000	0.359
L26	95.833-95.583	A	2.225	0.000	0.000	0.445	0.000	0.011
		B		0.000	0.000	1.166	0.000	0.024
		C		0.000	0.000	0.549	0.000	0.013
L27	95.583-90.583	A	2.219	0.000	0.000	9.724	0.000	0.236

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	24.149	0.000	0.484
		C		0.000	0.000	11.800	0.000	0.276
L28	90.583-89.917	A	2.212	0.000	0.000	1.846	0.000	0.041
		B		0.000	0.000	3.767	0.000	0.074
		C		0.000	0.000	2.122	0.000	0.046
L29	89.917-89.667	A	2.211	0.000	0.000	0.775	0.000	0.019
		B		0.000	0.000	1.496	0.000	0.032
		C		0.000	0.000	0.879	0.000	0.021
L30	89.667-84.667	A	2.204	0.000	0.000	18.868	0.000	0.627
		B		0.000	0.000	33.289	0.000	0.877
		C		0.000	0.000	20.930	0.000	0.667
L31	84.667-80.833	A	2.193	0.000	0.000	15.193	0.000	0.798
		B		0.000	0.000	26.249	0.000	0.989
		C		0.000	0.000	16.765	0.000	0.828
L32	80.833-80.583	A	2.187	0.000	0.000	0.608	0.000	0.045
		B		0.000	0.000	1.329	0.000	0.057
		C		0.000	0.000	0.710	0.000	0.047
L33	80.583-75.583	A	2.180	0.000	0.000	15.274	0.000	0.496
		B		0.000	0.000	29.689	0.000	0.743
		C		0.000	0.000	17.311	0.000	0.534
L34	75.583-70.583	A	2.166	0.000	0.000	17.377	0.000	0.574
		B		0.000	0.000	32.202	0.000	0.827
		C		0.000	0.000	19.400	0.000	0.612
L35	70.583-69.500	A	2.156	0.000	0.000	5.884	0.000	0.196
		B		0.000	0.000	10.077	0.000	0.266
		C		0.000	0.000	6.320	0.000	0.204
L36	69.500-69.250	A	2.154	0.000	0.000	1.358	0.000	0.045
		B		0.000	0.000	2.326	0.000	0.062
		C		0.000	0.000	1.458	0.000	0.047
L37	69.250-64.250	A	2.146	0.000	0.000	28.760	0.000	1.701
		B		0.000	0.000	49.016	0.000	2.064
		C		0.000	0.000	30.764	0.000	1.738
L38	64.250-60.583	A	2.132	0.000	0.000	22.225	0.000	1.398
		B		0.000	0.000	39.158	0.000	1.808
		C		0.000	0.000	23.683	0.000	1.426
L39	60.583-60.333	A	2.125	0.000	0.000	0.891	0.000	0.044
		B		0.000	0.000	1.806	0.000	0.064
		C		0.000	0.000	0.990	0.000	0.046
L40	60.333-55.333	A	2.115	0.000	0.000	23.542	0.000	0.883
		B		0.000	0.000	39.754	0.000	1.200
		C		0.000	0.000	25.515	0.000	0.920
L41	55.333-52.167	A	2.100	0.000	0.000	6.732	0.000	0.155
		B		0.000	0.000	15.846	0.000	0.309
		C		0.000	0.000	7.971	0.000	0.178
L42	52.167-51.917	A	2.093	0.000	0.000	0.515	0.000	0.011
		B		0.000	0.000	1.235	0.000	0.024
		C		0.000	0.000	0.613	0.000	0.013
L43	51.917-46.917	A	2.082	0.000	0.000	18.747	0.000	0.434
		B		0.000	0.000	35.142	0.000	0.739
		C		0.000	0.000	24.684	0.000	0.528
L44	46.917-41.917	A	2.060	0.000	0.000	32.663	0.000	0.866
		B		0.000	0.000	49.898	0.000	1.195
		C		0.000	0.000	40.720	0.000	0.989
L45	41.917-40.333	A	2.045	0.000	0.000	9.451	0.000	0.259
		B		0.000	0.000	14.765	0.000	0.358
		C		0.000	0.000	11.996	0.000	0.298
L46	40.333-40.083	A	2.040	0.000	0.000	1.120	0.000	0.034
		B		0.000	0.000	1.839	0.000	0.046
		C		0.000	0.000	1.521	0.000	0.040
L47	40.083-35.083	A	2.026	0.000	0.000	26.307	0.000	0.720
		B		0.000	0.000	40.684	0.000	0.956

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C		0.000	0.000	31.761	0.000	0.805
L48	35.083-30.083	A	1.997	0.000	0.000	15.779	0.000	0.419
		B		0.000	0.000	30.149	0.000	0.654
		C		0.000	0.000	17.634	0.000	0.454
L49	30.083-28.000	A	1.975	0.000	0.000	6.487	0.000	0.121
		B		0.000	0.000	12.471	0.000	0.218
		C		0.000	0.000	9.689	0.000	0.168
L50	28.000-27.750	A	1.967	0.000	0.000	0.790	0.000	0.015
		B		0.000	0.000	1.508	0.000	0.026
		C		0.000	0.000	1.186	0.000	0.020
L51	27.750-22.750	A	1.947	0.000	0.000	28.344	0.000	0.718
		B		0.000	0.000	42.701	0.000	0.948
		C		0.000	0.000	36.231	0.000	0.832
L52	22.750-20.083	A	1.915	0.000	0.000	14.501	0.000	0.380
		B		0.000	0.000	22.154	0.000	0.501
		C		0.000	0.000	18.682	0.000	0.439
L53	20.083-19.833	A	1.902	0.000	0.000	1.100	0.000	0.032
		B		0.000	0.000	1.817	0.000	0.044
		C		0.000	0.000	1.491	0.000	0.038
L54	19.833-17.000	A	1.887	0.000	0.000	15.182	0.000	0.398
		B		0.000	0.000	23.308	0.000	0.525
		C		0.000	0.000	22.336	0.000	0.491
L55	17.000-16.750	A	1.870	0.000	0.000	1.135	0.000	0.032
		B		0.000	0.000	1.852	0.000	0.043
		C		0.000	0.000	1.563	0.000	0.038
L56	16.750-11.650	A	1.838	0.000	0.000	20.389	0.000	0.561
		B		0.000	0.000	35.005	0.000	0.785
		C		0.000	0.000	30.433	0.000	0.686
L57	11.650-11.417	A	1.800	0.000	0.000	0.438	0.000	0.009
		B		0.000	0.000	1.105	0.000	0.019
		C		0.000	0.000	1.041	0.000	0.017
L58	11.417-9.375	A	1.782	0.000	0.000	5.219	0.000	0.097
		B		0.000	0.000	11.065	0.000	0.184
		C		0.000	0.000	9.095	0.000	0.144
L59	9.375-9.125	A	1.761	0.000	0.000	0.698	0.000	0.012
		B		0.000	0.000	1.414	0.000	0.023
		C		0.000	0.000	1.109	0.000	0.017
L60	9.125-4.833	A	1.712	0.000	0.000	11.889	0.000	0.208
		B		0.000	0.000	24.163	0.000	0.387
		C		0.000	0.000	18.868	0.000	0.291
L61	4.833-4.583	A	1.646	0.000	0.000	0.685	0.000	0.012
		B		0.000	0.000	1.399	0.000	0.022
		C		0.000	0.000	1.085	0.000	0.016
L62	4.583-0.000	A	1.532	0.000	0.000	12.297	0.000	0.202
		B		0.000	0.000	25.361	0.000	0.377
		C		0.000	0.000	16.654	0.000	0.250

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	191.667-186.667	-0.001	0.198	-0.004	0.853
L2	186.667-181.567	-0.111	0.223	-0.254	0.956
L3	181.567-176.567	-0.223	0.247	-0.484	0.947
L4	176.567-171.567	-0.223	0.247	-0.483	0.946
L5	171.567-166.567	-0.223	0.247	-0.483	0.945

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L6	166.567-161.567	-0.223	0.247	-0.482	0.944
L7	161.567-156.567	1.248	-0.384	0.864	0.106
L8	156.567-151.567	1.580	-0.526	1.163	-0.080
L9	151.567-146.567	1.580	-0.526	1.164	-0.081
L10	146.567-141.567	1.580	-0.526	1.165	-0.082
L11	141.567-141.417	1.580	-0.526	1.166	-0.082
L12	141.417-136.417	1.840	-0.609	1.468	-0.079
L13	136.417-131.417	1.840	-0.609	1.470	-0.081
L14	131.417-126.417	1.766	-0.570	1.437	-0.077
L15	126.417-121.417	1.466	-0.415	1.286	-0.053
L16	121.417-121.167	1.463	-0.416	1.295	-0.056
L17	121.167-116.167	1.681	-0.501	1.472	-0.063
L18	116.167-111.167	1.760	-0.510	1.462	0.009
L19	111.167-110.042	0.142	0.659	0.116	0.916
L20	110.042-109.792	0.142	0.659	0.116	0.916
L21	109.792-105.083	0.111	0.587	0.097	0.829
L22	105.083-104.833	0.080	0.501	0.076	0.717
L23	104.833-100.917	0.205	0.364	0.201	0.587
L24	100.917-100.667	1.189	-0.315	1.190	-0.006
L25	100.667-95.833	1.379	-0.404	1.284	-0.032
L26	95.833-95.583	1.512	-0.498	1.289	-0.071
L27	95.583-90.583	1.450	-0.478	1.245	-0.069
L28	90.583-89.917	1.207	-0.397	1.061	-0.060
L29	89.917-89.667	1.019	-0.424	0.951	-0.096
L30	89.667-84.667	0.725	-0.467	0.758	-0.159
L31	84.667-80.833	0.684	-0.447	0.728	-0.163
L32	80.833-80.583	0.911	-0.597	1.013	-0.225
L33	80.583-75.583	1.102	-0.538	1.167	-0.189
L34	75.583-70.583	1.371	-0.481	1.339	-0.168
L35	70.583-69.500	0.603	-0.291	0.547	-0.043
L36	69.500-69.250	0.603	-0.291	0.547	-0.043
L37	69.250-64.250	0.618	-0.282	0.573	-0.032
L38	64.250-60.583	0.317	-0.186	0.365	0.044
L39	60.583-60.333	0.579	-0.345	0.677	-0.065
L40	60.333-55.333	0.852	-0.334	0.885	-0.062
L41	55.333-52.167	1.446	-0.345	1.337	0.052
L42	52.167-51.917	1.458	-0.341	1.344	0.058
L43	51.917-46.917	1.488	-0.668	1.450	-0.255
L44	46.917-41.917	1.330	-0.806	1.336	-0.471
L45	41.917-40.333	1.399	-0.883	1.396	-0.544
L46	40.333-40.083	1.561	-1.126	1.511	-0.835
L47	40.083-35.083	1.314	-0.860	1.262	-0.594
L48	35.083-30.083	1.370	-0.591	1.294	-0.261
L49	30.083-28.000	0.341	-0.977	0.384	-0.626
L50	28.000-27.750	0.305	-0.991	0.352	-0.643
L51	27.750-22.750	0.180	-0.564	0.224	-0.345
L52	22.750-20.083	0.181	-0.568	0.229	-0.350
L53	20.083-19.833	0.204	-0.639	0.260	-0.397
L54	19.833-17.000	0.400	-0.682	0.458	-0.478
L55	17.000-16.750	1.234	-0.348	1.231	-0.153
L56	16.750-11.650	1.234	-0.357	1.223	-0.148
L57	11.650-11.417	1.469	-0.528	1.393	-0.215
L58	11.417-9.375	1.597	-1.104	1.529	-0.821
L59	9.375-9.125	1.639	-1.292	1.575	-1.021
L60	9.125-4.833	1.639	-1.292	1.581	-1.029
L61	4.833-4.583	1.639	-1.292	1.588	-1.040
L62	4.583-0.000	1.961	-1.481	1.916	-1.237

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	213	Safety Line 3/8	186.67 - 191.67	1.0000	1.0000
L1	214	Climbing Rung	186.67 - 191.67	1.0000	1.0000
L2	187	HCS 6X12 4AWG(1-5/8)	181.57 - 184.00	1.0000	1.0000
L2	213	Safety Line 3/8	181.57 - 186.67	1.0000	1.0000
L2	214	Climbing Rung	181.57 - 186.67	1.0000	1.0000
L3	187	HCS 6X12 4AWG(1-5/8)	176.57 - 181.57	1.0000	1.0000
L3	213	Safety Line 3/8	176.57 - 181.57	1.0000	1.0000
L3	214	Climbing Rung	176.57 - 181.57	1.0000	1.0000
L4	187	HCS 6X12 4AWG(1-5/8)	171.57 - 176.57	1.0000	1.0000
L4	213	Safety Line 3/8	171.57 - 176.57	1.0000	1.0000
L4	214	Climbing Rung	171.57 - 176.57	1.0000	1.0000
L5	187	HCS 6X12 4AWG(1-5/8)	166.57 - 171.57	1.0000	1.0000
L5	213	Safety Line 3/8	166.57 - 171.57	1.0000	1.0000
L5	214	Climbing Rung	166.57 - 171.57	1.0000	1.0000
L6	187	HCS 6X12 4AWG(1-5/8)	161.57 - 166.57	1.0000	1.0000
L6	213	Safety Line 3/8	161.57 - 166.57	1.0000	1.0000
L6	214	Climbing Rung	161.57 - 166.57	1.0000	1.0000
L7	187	HCS 6X12 4AWG(1-5/8)	156.57 - 161.57	1.0000	1.0000
L7	189	AL7-50(1-5/8)	156.57 - 160.00	1.0000	1.0000
L7	213	Safety Line 3/8	156.57 - 161.57	1.0000	1.0000
L7	214	Climbing Rung	156.57 - 161.57	1.0000	1.0000
L8	187	HCS 6X12 4AWG(1-5/8)	151.57 - 156.57	1.0000	1.0000
L8	189	AL7-50(1-5/8)	151.57 - 156.57	1.0000	1.0000
L8	213	Safety Line 3/8	151.57 - 156.57	1.0000	1.0000
L8	214	Climbing Rung	151.57 - 156.57	1.0000	1.0000
L9	187	HCS 6X12 4AWG(1-5/8)	146.57 - 151.57	1.0000	1.0000
L9	189	AL7-50(1-5/8)	146.57 - 151.57	1.0000	1.0000
L9	213	Safety Line 3/8	146.57 - 151.57	1.0000	1.0000
L9	214	Climbing Rung	146.57 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			151.57		
L10	187	HCS 6X12 4AWG(1-5/8)	141.57 - 146.57	1.0000	1.0000
L10	189	AL7-50(1-5/8)	141.57 - 146.57	1.0000	1.0000
L10	213	Safety Line 3/8	141.57 - 146.57	1.0000	1.0000
L10	214	Climbing Rung	141.57 - 146.57	1.0000	1.0000
L11	187	HCS 6X12 4AWG(1-5/8)	141.42 - 141.57	1.0000	1.0000
L11	189	AL7-50(1-5/8)	141.42 - 141.57	1.0000	1.0000
L11	213	Safety Line 3/8	141.42 - 141.57	1.0000	1.0000
L11	214	Climbing Rung	141.42 - 141.57	1.0000	1.0000
L12	187	HCS 6X12 4AWG(1-5/8)	136.42 - 141.42	1.0000	1.0000
L12	189	AL7-50(1-5/8)	136.42 - 141.42	1.0000	1.0000
L12	213	Safety Line 3/8	136.42 - 141.42	1.0000	1.0000
L12	214	Climbing Rung	136.42 - 141.42	1.0000	1.0000
L13	187	HCS 6X12 4AWG(1-5/8)	131.42 - 136.42	1.0000	1.0000
L13	189	AL7-50(1-5/8)	131.42 - 136.42	1.0000	1.0000
L13	213	Safety Line 3/8	131.42 - 136.42	1.0000	1.0000
L13	214	Climbing Rung	131.42 - 136.42	1.0000	1.0000
L14	152	CCI 4.5" x 1" Plate	126.42 - 127.17	1.0000	1.0000
L14	153	CCI 4.5" x 1" Plate	126.42 - 127.17	1.0000	1.0000
L14	154	CCI 4.5" x 1" Plate	126.42 - 127.17	1.0000	1.0000
L14	187	HCS 6X12 4AWG(1-5/8)	126.42 - 131.42	1.0000	1.0000
L14	189	AL7-50(1-5/8)	126.42 - 131.42	1.0000	1.0000
L14	213	Safety Line 3/8	126.42 - 131.42	1.0000	1.0000
L14	214	Climbing Rung	126.42 - 131.42	1.0000	1.0000
L15	144	CCI 4.5" x 1" Plate	121.42 - 121.67	1.0000	1.0000
L15	145	CCI 4.5" x 1" Plate	121.42 - 121.67	1.0000	1.0000
L15	146	CCI 4.5" x 1" Plate	121.42 - 121.67	1.0000	1.0000
L15	148	CCI 4.5" x 4" Plate	121.67 - 124.42	1.0000	1.0000
L15	149	CCI 4.5" x 4" Plate	121.67 - 124.42	1.0000	1.0000
L15	150	CCI 4.5" x 4" Plate	121.67 - 124.42	1.0000	1.0000
L15	152	CCI 4.5" x 1" Plate	124.42 - 126.42	1.0000	1.0000
L15	153	CCI 4.5" x 1" Plate	124.42 -	1.0000	1.0000

Tower Section	*Feed Line Record No.*	*Description*	*Feed Line Segment Elev.*	*K_a No Ice*	*K_a Ice*
			126.42		
L15	154	CCI 4.5" x 1" Plate	124.42 - 126.42	1.0000	1.0000
L15	187	HCS 6X12 4AWG(1-5/8)	121.42 - 126.42	1.0000	1.0000
L15	189	AL7-50(1-5/8)	121.42 - 126.42	1.0000	1.0000
L15	213	Safety Line 3/8	121.42 - 126.42	1.0000	1.0000
L15	214	Climbing Rung	121.42 - 126.42	1.0000	1.0000
L16	144	CCI 4.5" x 1" Plate	121.17 - 121.42	1.0000	1.0000
L16	145	CCI 4.5" x 1" Plate	121.17 - 121.42	1.0000	1.0000
L16	146	CCI 4.5" x 1" Plate	121.17 - 121.42	1.0000	1.0000
L16	187	HCS 6X12 4AWG(1-5/8)	121.17 - 121.42	1.0000	1.0000
L16	189	AL7-50(1-5/8)	121.17 - 121.42	1.0000	1.0000
L16	213	Safety Line 3/8	121.17 - 121.42	1.0000	1.0000
L16	214	Climbing Rung	121.17 - 121.42	1.0000	1.0000
L17	140	CCI 4.5" x 1" Plate	117.92 - 120.67	1.0000	1.0000
L17	141	CCI 4.5" x 1" Plate	117.92 - 120.67	1.0000	1.0000
L17	142	CCI 4.5" x 1" Plate	117.92 - 120.67	1.0000	1.0000
L17	144	CCI 4.5" x 1" Plate	120.67 - 121.17	1.0000	1.0000
L17	145	CCI 4.5" x 1" Plate	120.67 - 121.17	1.0000	1.0000
L17	146	CCI 4.5" x 1" Plate	120.67 - 121.17	1.0000	1.0000
L17	187	HCS 6X12 4AWG(1-5/8)	116.17 - 121.17	1.0000	1.0000
L17	189	AL7-50(1-5/8)	116.17 - 121.17	1.0000	1.0000
L17	213	Safety Line 3/8	116.17 - 121.17	1.0000	1.0000
L17	214	Climbing Rung	116.17 - 121.17	1.0000	1.0000
L18	57	CCI 4.5" x 1" Plate	111.17 - 111.54	1.0000	1.0000
L18	58	CCI 4.5" x 1" Plate	111.17 - 111.54	1.0000	1.0000
L18	59	CCI 4.5" x 1" Plate	111.17 - 111.54	1.0000	1.0000
L18	187	HCS 6X12 4AWG(1-5/8)	111.17 - 116.17	1.0000	1.0000
L18	189	AL7-50(1-5/8)	111.17 - 116.17	1.0000	1.0000
L18	213	Safety Line 3/8	111.17 - 116.17	1.0000	1.0000
L18	214	Climbing Rung	111.17 - 116.17	1.0000	1.0000
L19	57	CCI 4.5" x 1" Plate	110.04 - 111.17	1.0000	1.0000
L19	58	CCI 4.5" x 1" Plate	110.04 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L19	59	CCI 4.5" x 1" Plate	110.04 - 111.17	1.0000	1.0000
L19	187	HCS 6X12 4AWG(1-5/8)	110.04 - 111.17	1.0000	1.0000
L19	189	AL7-50(1-5/8)	110.04 - 111.17	1.0000	1.0000
L19	213	Safety Line 3/8	110.04 - 111.17	1.0000	1.0000
L19	214	Climbing Rung	110.04 - 111.17	1.0000	1.0000
L20	57	CCI 4.5" x 1" Plate	109.79 - 110.04	1.0000	1.0000
L20	58	CCI 4.5" x 1" Plate	109.79 - 110.04	1.0000	1.0000
L20	59	CCI 4.5" x 1" Plate	109.79 - 110.04	1.0000	1.0000
L20	187	HCS 6X12 4AWG(1-5/8)	109.79 - 110.04	1.0000	1.0000
L20	189	AL7-50(1-5/8)	109.79 - 110.04	1.0000	1.0000
L20	213	Safety Line 3/8	109.79 - 110.04	1.0000	1.0000
L20	214	Climbing Rung	109.79 - 110.04	1.0000	1.0000
L21	19	CCI 4" x 0.75" Plate	105.08 - 106.58	1.0000	1.0000
L21	20	CCI 4" x 0.75" Plate	105.08 - 106.58	1.0000	1.0000
L21	21	CCI 4" x 0.75" Plate	105.08 - 106.58	1.0000	1.0000
L21	57	CCI 4.5" x 1" Plate	105.08 - 109.79	1.0000	1.0000
L21	58	CCI 4.5" x 1" Plate	105.08 - 109.79	1.0000	1.0000
L21	59	CCI 4.5" x 1" Plate	105.08 - 109.79	1.0000	1.0000
L21	136	CCI 4.5" x 1" Plate	105.08 - 107.17	1.0000	1.0000
L21	137	CCI 4.5" x 1" Plate	105.08 - 107.17	1.0000	1.0000
L21	138	CCI 4.5" x 1" Plate	105.08 - 107.17	1.0000	1.0000
L21	187	HCS 6X12 4AWG(1-5/8)	105.08 - 109.79	1.0000	1.0000
L21	189	AL7-50(1-5/8)	105.08 - 109.79	1.0000	1.0000
L21	213	Safety Line 3/8	105.08 - 109.79	1.0000	1.0000
L21	214	Climbing Rung	105.08 - 109.79	1.0000	1.0000
L22	19	CCI 4" x 0.75" Plate	104.83 - 105.08	1.0000	1.0000
L22	20	CCI 4" x 0.75" Plate	104.83 - 105.08	1.0000	1.0000
L22	21	CCI 4" x 0.75" Plate	104.83 - 105.08	1.0000	1.0000
L22	57	CCI 4.5" x 1" Plate	104.83 - 105.08	1.0000	1.0000
L22	58	CCI 4.5" x 1" Plate	104.83 - 105.08	1.0000	1.0000
L22	59	CCI 4.5" x 1" Plate	104.83 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L22	136	CCI 4.5" x 1" Plate	104.83 - 105.08	1.0000	1.0000
L22	137	CCI 4.5" x 1" Plate	104.83 - 105.08	1.0000	1.0000
L22	138	CCI 4.5" x 1" Plate	104.83 - 105.08	1.0000	1.0000
L22	187	HCS 6X12 4AWG(1-5/8)	104.83 - 105.08	1.0000	1.0000
L22	189	AL7-50(1-5/8)	104.83 - 105.08	1.0000	1.0000
L22	213	Safety Line 3/8	104.83 - 105.08	1.0000	1.0000
L22	214	Climbing Rung	104.83 - 105.08	1.0000	1.0000
L23	19	CCI 4" x 0.75" Plate	101.58 - 104.83	1.0000	1.0000
L23	20	CCI 4" x 0.75" Plate	101.58 - 104.83	1.0000	1.0000
L23	21	CCI 4" x 0.75" Plate	101.58 - 104.83	1.0000	1.0000
L23	57	CCI 4.5" x 1" Plate	101.54 - 104.83	1.0000	1.0000
L23	58	CCI 4.5" x 1" Plate	101.54 - 104.83	1.0000	1.0000
L23	59	CCI 4.5" x 1" Plate	101.54 - 104.83	1.0000	1.0000
L23	128	CCI 4.5" x 1" Plate	100.92 - 101.42	1.0000	1.0000
L23	129	CCI 4.5" x 1" Plate	100.92 - 101.42	1.0000	1.0000
L23	130	CCI 4.5" x 1" Plate	100.92 - 101.42	1.0000	1.0000
L23	132	CCI 4.5" x 4" Plate	101.42 - 104.42	1.0000	1.0000
L23	133	CCI 4.5" x 4" Plate	101.42 - 104.42	1.0000	1.0000
L23	134	CCI 4.5" x 4" Plate	101.42 - 104.42	1.0000	1.0000
L23	136	CCI 4.5" x 1" Plate	104.42 - 104.83	1.0000	1.0000
L23	137	CCI 4.5" x 1" Plate	104.42 - 104.83	1.0000	1.0000
L23	138	CCI 4.5" x 1" Plate	104.42 - 104.83	1.0000	1.0000
L23	174	CCI 4.5" x 1" Plate	100.92 - 101.79	1.0000	1.0000
L23	175	CCI 4.5" x 1" Plate	100.92 - 101.79	1.0000	1.0000
L23	176	CCI 4.5" x 1" Plate	100.92 - 101.79	1.0000	1.0000
L23	178	CCI 4.5" x 3" Plate	101.79 - 103.29	1.0000	1.0000
L23	179	CCI 4.5" x 3" Plate	101.79 - 103.29	1.0000	1.0000
L23	180	CCI 4.5" x 3" Plate	101.79 - 103.29	1.0000	1.0000
L23	187	HCS 6X12 4AWG(1-5/8)	100.92 - 104.83	1.0000	1.0000
L23	189	AL7-50(1-5/8)	100.92 - 104.83	1.0000	1.0000
L23	213	Safety Line 3/8	100.92 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			104.83		
L23	214	Climbing Rung	100.92 - 104.83	1.0000	1.0000
L24	128	CCI 4.5" x 1" Plate	100.67 - 100.92	1.0000	1.0000
L24	129	CCI 4.5" x 1" Plate	100.67 - 100.92	1.0000	1.0000
L24	130	CCI 4.5" x 1" Plate	100.67 - 100.92	1.0000	1.0000
L24	174	CCI 4.5" x 1" Plate	100.67 - 100.92	1.0000	1.0000
L24	175	CCI 4.5" x 1" Plate	100.67 - 100.92	1.0000	1.0000
L24	176	CCI 4.5" x 1" Plate	100.67 - 100.92	1.0000	1.0000
L24	187	HCS 6X12 4AWG(1-5/8)	100.67 - 100.92	1.0000	1.0000
L24	189	AL7-50(1-5/8)	100.67 - 100.92	1.0000	1.0000
L24	213	Safety Line 3/8	100.67 - 100.92	1.0000	1.0000
L24	214	Climbing Rung	100.67 - 100.92	1.0000	1.0000
L25	53	CCI 4.5" x 1" Plate	95.83 - 97.33	1.0000	1.0000
L25	54	CCI 4.5" x 1" Plate	95.83 - 97.33	1.0000	1.0000
L25	55	CCI 4.5" x 1" Plate	95.83 - 97.33	1.0000	1.0000
L25	124	CCI 4.5" x 1" Plate	97.92 - 100.42	1.0000	1.0000
L25	125	CCI 4.5" x 1" Plate	97.92 - 100.42	1.0000	1.0000
L25	126	CCI 4.5" x 1" Plate	97.92 - 100.42	1.0000	1.0000
L25	128	CCI 4.5" x 1" Plate	100.42 - 100.67	1.0000	1.0000
L25	129	CCI 4.5" x 1" Plate	100.42 - 100.67	1.0000	1.0000
L25	130	CCI 4.5" x 1" Plate	100.42 - 100.67	1.0000	1.0000
L25	174	CCI 4.5" x 1" Plate	98.42 - 100.67	1.0000	1.0000
L25	175	CCI 4.5" x 1" Plate	98.42 - 100.67	1.0000	1.0000
L25	176	CCI 4.5" x 1" Plate	98.42 - 100.67	1.0000	1.0000
L25	187	HCS 6X12 4AWG(1-5/8)	95.83 - 100.67	1.0000	1.0000
L25	189	AL7-50(1-5/8)	95.83 - 100.67	1.0000	1.0000
L25	213	Safety Line 3/8	95.83 - 100.67	1.0000	1.0000
L25	214	Climbing Rung	95.83 - 100.67	1.0000	1.0000
L26	53	CCI 4.5" x 1" Plate	95.58 - 95.83	1.0000	1.0000
L26	54	CCI 4.5" x 1" Plate	95.58 - 95.83	1.0000	1.0000
L26	55	CCI 4.5" x 1" Plate	95.58 - 95.83	1.0000	1.0000
L26	187	HCS 6X12 4AWG(1-5/8)	95.58 - 95.83	1.0000	1.0000
L26	189	AL7-50(1-5/8)	95.58 - 95.83	1.0000	1.0000
L26	213	Safety Line 3/8	95.58 - 95.83	1.0000	1.0000
L26	214	Climbing Rung	95.58 - 95.83	1.0000	1.0000
L27	53	CCI 4.5" x 1" Plate	90.58 - 95.58	1.0000	1.0000
L27	54	CCI 4.5" x 1" Plate	90.58 - 95.58	1.0000	1.0000
L27	55	CCI 4.5" x 1" Plate	90.58 - 95.58	1.0000	1.0000
L27	61	CCI 4.5" x 1" Plate	90.58 - 91.42	1.0000	1.0000
L27	62	CCI 4.5" x 1" Plate	90.58 - 91.42	1.0000	1.0000
L27	63	CCI 4.5" x 1" Plate	90.58 - 91.42	1.0000	1.0000
L27	187	HCS 6X12 4AWG(1-5/8)	90.58 - 95.58	1.0000	1.0000
L27	189	AL7-50(1-5/8)	90.58 - 95.58	1.0000	1.0000
L27	213	Safety Line 3/8	90.58 - 95.58	1.0000	1.0000
L27	214	Climbing Rung	90.58 - 95.58	1.0000	1.0000
L28	53	CCI 4.5" x 1" Plate	89.92 - 90.58	1.0000	1.0000
L28	54	CCI 4.5" x 1" Plate	89.92 - 90.58	1.0000	1.0000
L28	55	CCI 4.5" x 1" Plate	89.92 - 90.58	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L28	61	CCI 4.5" x 1" Plate	89.92 - 90.58	1.0000	1.0000
L28	62	CCI 4.5" x 1" Plate	89.92 - 90.58	1.0000	1.0000
L28	63	CCI 4.5" x 1" Plate	89.92 - 90.58	1.0000	1.0000
L28	187	HCS 6X12 4AWG(1-5/8)	89.92 - 90.58	1.0000	1.0000
L28	189	AL7-50(1-5/8)	89.92 - 90.58	1.0000	1.0000
L28	213	Safety Line 3/8	89.92 - 90.58	1.0000	1.0000
L28	214	Climbing Rung	89.92 - 90.58	1.0000	1.0000
L29	53	CCI 4.5" x 1" Plate	89.67 - 89.92	1.0000	1.0000
L29	54	CCI 4.5" x 1" Plate	89.67 - 89.92	1.0000	1.0000
L29	55	CCI 4.5" x 1" Plate	89.67 - 89.92	1.0000	1.0000
L29	61	CCI 4.5" x 1" Plate	89.67 - 89.92	1.0000	1.0000
L29	62	CCI 4.5" x 1" Plate	89.67 - 89.92	1.0000	1.0000
L29	63	CCI 4.5" x 1" Plate	89.67 - 89.92	1.0000	1.0000
L29	120	CCI 6.5" x 1.25" Plate	89.67 - 89.75	1.0000	1.0000
L29	121	CCI 6.5" x 1.25" Plate	89.67 - 89.75	1.0000	1.0000
L29	122	CCI 6.5" x 1.25" Plate	89.67 - 89.75	1.0000	1.0000
L29	187	HCS 6X12 4AWG(1-5/8)	89.67 - 89.92	1.0000	1.0000
L29	189	AL7-50(1-5/8)	89.67 - 89.92	1.0000	1.0000
L29	213	Safety Line 3/8	89.67 - 89.92	1.0000	1.0000
L29	214	Climbing Rung	89.67 - 89.92	1.0000	1.0000
L30	53	CCI 4.5" x 1" Plate	84.67 - 89.67	1.0000	1.0000
L30	54	CCI 4.5" x 1" Plate	84.67 - 89.67	1.0000	1.0000
L30	55	CCI 4.5" x 1" Plate	84.67 - 89.67	1.0000	1.0000
L30	61	CCI 4.5" x 1" Plate	84.67 - 89.67	1.0000	1.0000
L30	62	CCI 4.5" x 1" Plate	84.67 - 89.67	1.0000	1.0000
L30	63	CCI 4.5" x 1" Plate	84.67 - 89.67	1.0000	1.0000
L30	116	CCI 6.5" x 4.25" Plate	84.67 - 85.83	1.0000	1.0000
L30	117	CCI 6.5" x 4.25" Plate	84.67 - 85.83	1.0000	1.0000
L30	118	CCI 6.5" x 4.25" Plate	84.67 - 85.83	1.0000	1.0000
L30	120	CCI 6.5" x 1.25" Plate	85.83 - 89.67	1.0000	1.0000
L30	121	CCI 6.5" x 1.25" Plate	85.83 - 89.67	1.0000	1.0000
L30	122	CCI 6.5" x 1.25" Plate	85.83 - 89.67	1.0000	1.0000
L30	187	HCS 6X12 4AWG(1-5/8)	84.67 - 89.67	1.0000	1.0000
L30	189	AL7-50(1-5/8)	84.67 - 89.67	1.0000	1.0000
L30	213	Safety Line 3/8	84.67 - 89.67	1.0000	1.0000
L30	214	Climbing Rung	84.67 - 89.67	1.0000	1.0000
L31	53	CCI 4.5" x 1" Plate	81.33 - 84.67	1.0000	1.0000
L31	54	CCI 4.5" x 1" Plate	81.33 - 84.67	1.0000	1.0000
L31	55	CCI 4.5" x 1" Plate	81.33 - 84.67	1.0000	1.0000
L31	61	CCI 4.5" x 1" Plate	81.42 - 84.67	1.0000	1.0000
L31	62	CCI 4.5" x 1" Plate	81.42 - 84.67	1.0000	1.0000
L31	63	CCI 4.5" x 1" Plate	81.42 - 84.67	1.0000	1.0000
L31	116	CCI 6.5" x 4.25" Plate	80.83 - 84.67	1.0000	1.0000
L31	117	CCI 6.5" x 4.25" Plate	80.83 - 84.67	1.0000	1.0000
L31	118	CCI 6.5" x 4.25" Plate	80.83 - 84.67	1.0000	1.0000
L31	166	CCI 4.5" x 1" Plate	80.83 - 81.71	1.0000	1.0000
L31	167	CCI 4.5" x 1" Plate	80.83 - 81.71	1.0000	1.0000
L31	168	CCI 4.5" x 1" Plate	80.83 - 81.71	1.0000	1.0000
L31	170	CCI 4.5" x 3" Plate	81.71 - 83.20	1.0000	1.0000
L31	171	CCI 4.5" x 3" Plate	81.71 - 83.20	1.0000	1.0000
L31	172	CCI 4.5" x 3" Plate	81.71 - 83.20	1.0000	1.0000
L31	187	HCS 6X12 4AWG(1-5/8)	80.83 - 84.67	1.0000	1.0000
L31	189	AL7-50(1-5/8)	80.83 - 84.67	1.0000	1.0000
L31	213	Safety Line 3/8	80.83 - 84.67	1.0000	1.0000
L31	214	Climbing Rung	80.83 - 84.67	1.0000	1.0000
L32	116	CCI 6.5" x 4.25" Plate	80.58 - 80.83	1.0000	1.0000
L32	117	CCI 6.5" x 4.25" Plate	80.58 - 80.83	1.0000	1.0000
L32	118	CCI 6.5" x 4.25" Plate	80.58 - 80.83	1.0000	1.0000
L32	166	CCI 4.5" x 1" Plate	80.58 - 80.83	1.0000	1.0000
L32	167	CCI 4.5" x 1" Plate	80.58 - 80.83	1.0000	1.0000
L32	168	CCI 4.5" x 1" Plate	80.58 - 80.83	1.0000	1.0000
L32	187	HCS 6X12 4AWG(1-5/8)	80.58 - 80.83	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L32	189	AL7-50(1-5/8)	80.58 - 80.83	1.0000	1.0000
L32	213	Safety Line 3/8	80.58 - 80.83	1.0000	1.0000
L32	214	Climbing Rung	80.58 - 80.83	1.0000	1.0000
L33	15	CCI 6" x 1" Plate	75.58 - 80.17	1.0000	1.0000
L33	16	CCI 6" x 1" Plate	75.58 - 80.17	1.0000	1.0000
L33	17	CCI 6" x 1" Plate	75.58 - 80.17	1.0000	1.0000
L33	108	CCI 6.5" x 1.25" Plate	76.50 - 80.33	1.0000	1.0000
L33	109	CCI 6.5" x 1.25" Plate	76.50 - 80.33	1.0000	1.0000
L33	110	CCI 6.5" x 1.25" Plate	76.50 - 80.33	1.0000	1.0000
L33	112	CCI 6.5" x 1.25" Plate	80.33 - 80.50	1.0000	1.0000
L33	113	CCI 6.5" x 1.25" Plate	80.33 - 80.50	1.0000	1.0000
L33	114	CCI 6.5" x 1.25" Plate	80.33 - 80.50	1.0000	1.0000
L33	116	CCI 6.5" x 4.25" Plate	80.50 - 80.58	1.0000	1.0000
L33	117	CCI 6.5" x 4.25" Plate	80.50 - 80.58	1.0000	1.0000
L33	118	CCI 6.5" x 4.25" Plate	80.50 - 80.58	1.0000	1.0000
L33	166	CCI 4.5" x 1" Plate	78.33 - 80.58	1.0000	1.0000
L33	167	CCI 4.5" x 1" Plate	78.33 - 80.58	1.0000	1.0000
L33	168	CCI 4.5" x 1" Plate	78.33 - 80.58	1.0000	1.0000
L33	187	HCS 6X12 4AWG(1-5/8)	75.58 - 80.58	1.0000	1.0000
L33	189	AL7-50(1-5/8)	75.58 - 80.58	1.0000	1.0000
L33	213	Safety Line 3/8	75.58 - 80.58	1.0000	1.0000
L33	214	Climbing Rung	75.58 - 80.58	1.0000	1.0000
L34	15	CCI 6" x 1" Plate	70.58 - 75.58	1.0000	1.0000
L34	16	CCI 6" x 1" Plate	70.58 - 75.58	1.0000	1.0000
L34	17	CCI 6" x 1" Plate	70.58 - 75.58	1.0000	1.0000
L34	48	CCI 4.5" x 1" Plate	70.58 - 71.00	1.0000	1.0000
L34	49	CCI 4.5" x 1" Plate	70.58 - 71.00	1.0000	1.0000
L34	50	CCI 4.5" x 1" Plate	70.58 - 71.00	1.0000	1.0000
L34	51	CCI 4.5" x 1" Plate	70.58 - 71.00	1.0000	1.0000
L34	101	CCI 8.5" x 1.25" Plate	70.58 - 73.42	1.0000	1.0000
L34	102	CCI 8.5" x 1.25" Plate	70.58 - 73.42	1.0000	1.0000
L34	103	CCI 8.5" x 1.25" Plate	70.58 - 73.42	1.0000	1.0000
L34	104	CCI 8.5" x 1.25" Plate	70.58 - 73.42	1.0000	1.0000
L34	105	CCI 8.5" x 1.25" Plate	70.58 - 73.42	1.0000	1.0000
L34	106	CCI 8.5" x 1.25" Plate	70.58 - 73.42	1.0000	1.0000
L34	187	HCS 6X12 4AWG(1-5/8)	70.58 - 75.58	1.0000	1.0000
L34	189	AL7-50(1-5/8)	70.58 - 75.58	1.0000	1.0000
L34	213	Safety Line 3/8	70.58 - 75.58	1.0000	1.0000
L34	214	Climbing Rung	70.58 - 75.58	1.0000	1.0000
L35	15	CCI 6" x 1" Plate	69.50 - 70.58	1.0000	1.0000
L35	16	CCI 6" x 1" Plate	69.50 - 70.58	1.0000	1.0000
L35	17	CCI 6" x 1" Plate	69.50 - 70.58	1.0000	1.0000
L35	48	CCI 4.5" x 1" Plate	69.50 - 70.58	1.0000	1.0000
L35	49	CCI 4.5" x 1" Plate	69.50 - 70.58	1.0000	1.0000
L35	50	CCI 4.5" x 1" Plate	69.50 - 70.58	1.0000	1.0000
L35	51	CCI 4.5" x 1" Plate	69.50 - 70.58	1.0000	1.0000
L35	101	CCI 8.5" x 1.25" Plate	69.50 - 70.58	1.0000	1.0000
L35	102	CCI 8.5" x 1.25" Plate	69.50 - 70.58	1.0000	1.0000
L35	103	CCI 8.5" x 1.25" Plate	69.50 - 70.58	1.0000	1.0000
L35	104	CCI 8.5" x 1.25" Plate	69.50 - 70.58	1.0000	1.0000
L35	105	CCI 8.5" x 1.25" Plate	69.50 - 70.58	1.0000	1.0000
L35	106	CCI 8.5" x 1.25" Plate	69.50 - 70.58	1.0000	1.0000
L35	187	HCS 6X12 4AWG(1-5/8)	69.50 - 70.58	1.0000	1.0000
L35	189	AL7-50(1-5/8)	69.50 - 70.58	1.0000	1.0000
L35	213	Safety Line 3/8	69.50 - 70.58	1.0000	1.0000
L35	214	Climbing Rung	69.50 - 70.58	1.0000	1.0000
L36	15	CCI 6" x 1" Plate	69.25 - 69.50	1.0000	1.0000
L36	16	CCI 6" x 1" Plate	69.25 - 69.50	1.0000	1.0000
L36	17	CCI 6" x 1" Plate	69.25 - 69.50	1.0000	1.0000
L36	48	CCI 4.5" x 1" Plate	69.25 - 69.50	1.0000	1.0000
L36	49	CCI 4.5" x 1" Plate	69.25 - 69.50	1.0000	1.0000
L36	50	CCI 4.5" x 1" Plate	69.25 - 69.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L36	51	CCI 4.5" x 1" Plate	69.25 - 69.50	1.0000	1.0000
L36	101	CCI 8.5" x 1.25" Plate	69.25 - 69.50	1.0000	1.0000
L36	102	CCI 8.5" x 1.25" Plate	69.25 - 69.50	1.0000	1.0000
L36	103	CCI 8.5" x 1.25" Plate	69.25 - 69.50	1.0000	1.0000
L36	104	CCI 8.5" x 1.25" Plate	69.25 - 69.50	1.0000	1.0000
L36	105	CCI 8.5" x 1.25" Plate	69.25 - 69.50	1.0000	1.0000
L36	106	CCI 8.5" x 1.25" Plate	69.25 - 69.50	1.0000	1.0000
L36	187	HCS 6X12 4AWG(1-5/8)	69.25 - 69.50	1.0000	1.0000
L36	189	AL7-50(1-5/8)	69.25 - 69.50	1.0000	1.0000
L36	213	Safety Line 3/8	69.25 - 69.50	1.0000	1.0000
L36	214	Climbing Rung	69.25 - 69.50	1.0000	1.0000
L37	15	CCI 6" x 1" Plate	64.25 - 69.25	1.0000	1.0000
L37	16	CCI 6" x 1" Plate	64.25 - 69.25	1.0000	1.0000
L37	17	CCI 6" x 1" Plate	64.25 - 69.25	1.0000	1.0000
L37	28	1" x 2" Plate	64.25 - 66.17	1.0000	1.0000
L37	29	1" x 2" Plate	64.25 - 66.17	1.0000	1.0000
L37	30	1" x 2" Plate	64.25 - 66.17	1.0000	1.0000
L37	31	1" x 2" Plate	64.25 - 66.17	1.0000	1.0000
L37	48	CCI 4.5" x 1" Plate	64.25 - 69.25	1.0000	1.0000
L37	49	CCI 4.5" x 1" Plate	64.25 - 69.25	1.0000	1.0000
L37	50	CCI 4.5" x 1" Plate	64.25 - 69.25	1.0000	1.0000
L37	51	CCI 4.5" x 1" Plate	64.25 - 69.25	1.0000	1.0000
L37	94	CCI 8.5" x 4.25" Plate	64.25 - 68.42	1.0000	1.0000
L37	95	CCI 8.5" x 4.25" Plate	64.25 - 68.42	1.0000	1.0000
L37	96	CCI 8.5" x 4.25" Plate	64.25 - 68.42	1.0000	1.0000
L37	97	CCI 8.5" x 4.25" Plate	64.25 - 68.42	1.0000	1.0000
L37	98	CCI 8.5" x 4.25" Plate	64.25 - 68.42	1.0000	1.0000
L37	99	CCI 8.5" x 4.25" Plate	64.25 - 68.42	1.0000	1.0000
L37	101	CCI 8.5" x 1.25" Plate	68.42 - 69.25	1.0000	1.0000
L37	102	CCI 8.5" x 1.25" Plate	68.42 - 69.25	1.0000	1.0000
L37	103	CCI 8.5" x 1.25" Plate	68.42 - 69.25	1.0000	1.0000
L37	104	CCI 8.5" x 1.25" Plate	68.42 - 69.25	1.0000	1.0000
L37	105	CCI 8.5" x 1.25" Plate	68.42 - 69.25	1.0000	1.0000
L37	106	CCI 8.5" x 1.25" Plate	68.42 - 69.25	1.0000	1.0000
L37	187	HCS 6X12 4AWG(1-5/8)	64.25 - 69.25	1.0000	1.0000
L37	189	AL7-50(1-5/8)	64.25 - 69.25	1.0000	1.0000
L37	213	Safety Line 3/8	64.25 - 69.25	1.0000	1.0000
L37	214	Climbing Rung	64.25 - 69.25	1.0000	1.0000
L38	15	CCI 6" x 1" Plate	61.17 - 64.25	1.0000	1.0000
L38	16	CCI 6" x 1" Plate	61.17 - 64.25	1.0000	1.0000
L38	17	CCI 6" x 1" Plate	61.17 - 64.25	1.0000	1.0000
L38	28	1" x 2" Plate	61.08 - 64.25	1.0000	1.0000
L38	29	1" x 2" Plate	61.08 - 64.25	1.0000	1.0000
L38	30	1" x 2" Plate	61.08 - 64.25	1.0000	1.0000
L38	31	1" x 2" Plate	61.08 - 64.25	1.0000	1.0000
L38	48	CCI 4.5" x 1" Plate	61.00 - 64.25	1.0000	1.0000
L38	49	CCI 4.5" x 1" Plate	61.00 - 64.25	1.0000	1.0000
L38	50	CCI 4.5" x 1" Plate	61.00 - 64.25	1.0000	1.0000
L38	51	CCI 4.5" x 1" Plate	61.00 - 64.25	1.0000	1.0000
L38	87	CCI 8.5" x 1.25" Plate	60.58 - 61.08	1.0000	1.0000
L38	88	CCI 8.5" x 1.25" Plate	60.58 - 61.08	1.0000	1.0000
L38	89	CCI 8.5" x 1.25" Plate	60.58 - 61.08	1.0000	1.0000
L38	90	CCI 8.5" x 1.25" Plate	60.58 - 61.08	1.0000	1.0000
L38	91	CCI 8.5" x 1.25" Plate	60.58 - 61.08	1.0000	1.0000
L38	92	CCI 8.5" x 1.25" Plate	60.58 - 61.08	1.0000	1.0000
L38	94	CCI 8.5" x 4.25" Plate	61.08 - 64.25	1.0000	1.0000
L38	95	CCI 8.5" x 4.25" Plate	61.08 - 64.25	1.0000	1.0000
L38	96	CCI 8.5" x 4.25" Plate	61.08 - 64.25	1.0000	1.0000
L38	97	CCI 8.5" x 4.25" Plate	61.08 - 64.25	1.0000	1.0000
L38	98	CCI 8.5" x 4.25" Plate	61.08 - 64.25	1.0000	1.0000
L38	99	CCI 8.5" x 4.25" Plate	61.08 - 64.25	1.0000	1.0000
L38	156	CCI 4.5" x 1" Plate	60.58 - 61.46	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L38	157	CCI 4.5" x 1" Plate	60.58 - 61.46	1.0000	1.0000
L38	158	CCI 4.5" x 1" Plate	60.58 - 61.46	1.0000	1.0000
L38	159	CCI 4.5" x 1" Plate	60.58 - 61.46	1.0000	1.0000
L38	161	CCI 4.5" x 3" Plate	61.55 - 62.96	1.0000	1.0000
L38	162	CCI 4.5" x 3" Plate	61.55 - 62.96	1.0000	1.0000
L38	163	CCI 4.5" x 3" Plate	61.55 - 62.96	1.0000	1.0000
L38	164	CCI 4.5" x 3" Plate	61.55 - 62.96	1.0000	1.0000
L38	187	HCS 6X12 4AWG(1-5/8)	60.58 - 64.25	1.0000	1.0000
L38	189	AL7-50(1-5/8)	60.58 - 64.25	1.0000	1.0000
L38	213	Safety Line 3/8	60.58 - 64.25	1.0000	1.0000
L38	214	Climbing Rung	60.58 - 64.25	1.0000	1.0000
L39	87	CCI 8.5" x 1.25" Plate	60.33 - 60.58	1.0000	1.0000
L39	88	CCI 8.5" x 1.25" Plate	60.33 - 60.58	1.0000	1.0000
L39	89	CCI 8.5" x 1.25" Plate	60.33 - 60.58	1.0000	1.0000
L39	90	CCI 8.5" x 1.25" Plate	60.33 - 60.58	1.0000	1.0000
L39	91	CCI 8.5" x 1.25" Plate	60.33 - 60.58	1.0000	1.0000
L39	92	CCI 8.5" x 1.25" Plate	60.33 - 60.58	1.0000	1.0000
L39	156	CCI 4.5" x 1" Plate	60.33 - 60.58	1.0000	1.0000
L39	157	CCI 4.5" x 1" Plate	60.33 - 60.58	1.0000	1.0000
L39	158	CCI 4.5" x 1" Plate	60.33 - 60.58	1.0000	1.0000
L39	159	CCI 4.5" x 1" Plate	60.33 - 60.58	1.0000	1.0000
L39	187	HCS 6X12 4AWG(1-5/8)	60.33 - 60.58	1.0000	1.0000
L39	189	AL7-50(1-5/8)	60.33 - 60.58	1.0000	1.0000
L39	213	Safety Line 3/8	60.33 - 60.58	1.0000	1.0000
L39	214	Climbing Rung	60.33 - 60.58	1.0000	1.0000
L40	11	CCI 6.5" x 1.25" Plate	55.33 - 59.92	1.0000	1.0000
L40	12	CCI 6.5" x 1.25" Plate	55.33 - 59.92	1.0000	1.0000
L40	13	CCI 6.5" x 1.25" Plate	55.33 - 59.92	1.0000	1.0000
L40	80	CCI 8.5" x 1.25" Plate	55.33 - 60.08	1.0000	1.0000
L40	81	CCI 8.5" x 1.25" Plate	55.33 - 60.08	1.0000	1.0000
L40	82	CCI 8.5" x 1.25" Plate	55.33 - 60.08	1.0000	1.0000
L40	83	CCI 8.5" x 1.25" Plate	55.33 - 60.08	1.0000	1.0000
L40	84	CCI 8.5" x 1.25" Plate	55.33 - 60.08	1.0000	1.0000
L40	85	CCI 8.5" x 1.25" Plate	55.33 - 60.08	1.0000	1.0000
L40	87	CCI 8.5" x 1.25" Plate	60.08 - 60.33	1.0000	1.0000
L40	88	CCI 8.5" x 1.25" Plate	60.08 - 60.33	1.0000	1.0000
L40	89	CCI 8.5" x 1.25" Plate	60.08 - 60.33	1.0000	1.0000
L40	90	CCI 8.5" x 1.25" Plate	60.08 - 60.33	1.0000	1.0000
L40	91	CCI 8.5" x 1.25" Plate	60.08 - 60.33	1.0000	1.0000
L40	92	CCI 8.5" x 1.25" Plate	60.08 - 60.33	1.0000	1.0000
L40	156	CCI 4.5" x 1" Plate	58.00 - 60.33	1.0000	1.0000
L40	157	CCI 4.5" x 1" Plate	58.00 - 60.33	1.0000	1.0000
L40	158	CCI 4.5" x 1" Plate	58.00 - 60.33	1.0000	1.0000
L40	159	CCI 4.5" x 1" Plate	58.00 - 60.33	1.0000	1.0000
L40	187	HCS 6X12 4AWG(1-5/8)	55.33 - 60.33	1.0000	1.0000
L40	189	AL7-50(1-5/8)	55.33 - 60.33	1.0000	1.0000
L40	213	Safety Line 3/8	55.33 - 60.33	1.0000	1.0000
L40	214	Climbing Rung	55.33 - 60.33	1.0000	1.0000
L41	11	CCI 6.5" x 1.25" Plate	52.17 - 55.33	1.0000	1.0000
L41	12	CCI 6.5" x 1.25" Plate	52.17 - 55.33	1.0000	1.0000
L41	13	CCI 6.5" x 1.25" Plate	52.17 - 55.33	1.0000	1.0000
L41	80	CCI 8.5" x 1.25" Plate	55.25 - 55.33	1.0000	1.0000
L41	81	CCI 8.5" x 1.25" Plate	55.25 - 55.33	1.0000	1.0000
L41	82	CCI 8.5" x 1.25" Plate	55.25 - 55.33	1.0000	1.0000
L41	83	CCI 8.5" x 1.25" Plate	55.25 - 55.33	1.0000	1.0000
L41	84	CCI 8.5" x 1.25" Plate	55.25 - 55.33	1.0000	1.0000
L41	85	CCI 8.5" x 1.25" Plate	55.25 - 55.33	1.0000	1.0000
L41	187	HCS 6X12 4AWG(1-5/8)	52.17 - 55.33	1.0000	1.0000
L41	189	AL7-50(1-5/8)	52.17 - 55.33	1.0000	1.0000
L41	213	Safety Line 3/8	52.17 - 55.33	1.0000	1.0000
L41	214	Climbing Rung	52.17 - 55.33	1.0000	1.0000
L42	11	CCI 6.5" x 1.25" Plate	51.92 - 52.17	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L42	12	CCI 6.5" x 1.25" Plate	51.92 - 52.17	1.0000	1.0000
L42	13	CCI 6.5" x 1.25" Plate	51.92 - 52.17	1.0000	1.0000
L42	187	HCS 6X12 4AWG(1-5/8)	51.92 - 52.17	1.0000	1.0000
L42	189	AL7-50(1-5/8)	51.92 - 52.17	1.0000	1.0000
L42	213	Safety Line 3/8	51.92 - 52.17	1.0000	1.0000
L42	214	Climbing Rung	51.92 - 52.17	1.0000	1.0000
L43	11	CCI 6.5" x 1.25" Plate	46.92 - 51.92	1.0000	1.0000
L43	12	CCI 6.5" x 1.25" Plate	46.92 - 51.92	1.0000	1.0000
L43	13	CCI 6.5" x 1.25" Plate	46.92 - 51.92	1.0000	1.0000
L43	23	1" x 2" Plate	46.92 - 50.42	1.0000	1.0000
L43	24	1" x 2" Plate	46.92 - 50.42	1.0000	1.0000
L43	25	1" x 2" Plate	46.92 - 50.42	1.0000	1.0000
L43	26	1" x 2" Plate	46.92 - 50.42	1.0000	1.0000
L43	43	CCI 6" x 1" Plate	46.92 - 50.17	1.0000	1.0000
L43	44	CCI 6" x 1" Plate	46.92 - 50.17	1.0000	1.0000
L43	45	CCI 6" x 1" Plate	46.92 - 50.17	1.0000	1.0000
L43	46	CCI 6" x 1" Plate	46.92 - 50.17	1.0000	1.0000
L43	73	CCI 6.5" x 1.25" Plate	46.92 - 47.83	1.0000	1.0000
L43	74	CCI 6.5" x 1.25" Plate	46.92 - 47.83	1.0000	1.0000
L43	75	CCI 6.5" x 1.25" Plate	46.92 - 47.83	1.0000	1.0000
L43	76	CCI 6.5" x 1.25" Plate	46.92 - 47.83	1.0000	1.0000
L43	77	CCI 6.5" x 1.25" Plate	46.92 - 47.83	1.0000	1.0000
L43	78	CCI 6.5" x 1.25" Plate	46.92 - 47.83	1.0000	1.0000
L43	187	HCS 6X12 4AWG(1-5/8)	46.92 - 51.92	1.0000	1.0000
L43	189	AL7-50(1-5/8)	46.92 - 51.92	1.0000	1.0000
L43	213	Safety Line 3/8	46.92 - 51.92	1.0000	1.0000
L43	214	Climbing Rung	46.92 - 51.92	1.0000	1.0000
L44	11	CCI 6.5" x 1.25" Plate	41.92 - 46.92	1.0000	1.0000
L44	12	CCI 6.5" x 1.25" Plate	41.92 - 46.92	1.0000	1.0000
L44	13	CCI 6.5" x 1.25" Plate	41.92 - 46.92	1.0000	1.0000
L44	23	1" x 2" Plate	41.92 - 46.92	1.0000	1.0000
L44	24	1" x 2" Plate	41.92 - 46.92	1.0000	1.0000
L44	25	1" x 2" Plate	41.92 - 46.92	1.0000	1.0000
L44	26	1" x 2" Plate	41.92 - 46.92	1.0000	1.0000
L44	43	CCI 6" x 1" Plate	41.92 - 46.92	1.0000	1.0000
L44	44	CCI 6" x 1" Plate	41.92 - 46.92	1.0000	1.0000
L44	45	CCI 6" x 1" Plate	41.92 - 46.92	1.0000	1.0000
L44	46	CCI 6" x 1" Plate	41.92 - 46.92	1.0000	1.0000
L44	73	CCI 6.5" x 1.25" Plate	41.92 - 46.92	1.0000	1.0000
L44	74	CCI 6.5" x 1.25" Plate	41.92 - 46.92	1.0000	1.0000
L44	75	CCI 6.5" x 1.25" Plate	41.92 - 46.92	1.0000	1.0000
L44	76	CCI 6.5" x 1.25" Plate	41.92 - 46.92	1.0000	1.0000
L44	77	CCI 6.5" x 1.25" Plate	41.92 - 46.92	1.0000	1.0000
L44	78	CCI 6.5" x 1.25" Plate	41.92 - 46.92	1.0000	1.0000
L44	187	HCS 6X12 4AWG(1-5/8)	41.92 - 46.92	1.0000	1.0000
L44	189	AL7-50(1-5/8)	41.92 - 46.92	1.0000	1.0000
L44	213	Safety Line 3/8	41.92 - 46.92	1.0000	1.0000
L44	214	Climbing Rung	41.92 - 46.92	1.0000	1.0000
L45	11	CCI 6.5" x 1.25" Plate	40.83 - 41.92	1.0000	1.0000
L45	12	CCI 6.5" x 1.25" Plate	40.83 - 41.92	1.0000	1.0000
L45	13	CCI 6.5" x 1.25" Plate	40.83 - 41.92	1.0000	1.0000
L45	23	1" x 2" Plate	40.58 - 41.92	1.0000	1.0000
L45	24	1" x 2" Plate	40.58 - 41.92	1.0000	1.0000
L45	25	1" x 2" Plate	40.58 - 41.92	1.0000	1.0000
L45	26	1" x 2" Plate	40.58 - 41.92	1.0000	1.0000
L45	43	CCI 6" x 1" Plate	40.33 - 41.92	1.0000	1.0000
L45	44	CCI 6" x 1" Plate	40.33 - 41.92	1.0000	1.0000
L45	45	CCI 6" x 1" Plate	40.33 - 41.92	1.0000	1.0000
L45	46	CCI 6" x 1" Plate	40.33 - 41.92	1.0000	1.0000
L45	73	CCI 6.5" x 1.25" Plate	40.33 - 41.92	1.0000	1.0000
L45	74	CCI 6.5" x 1.25" Plate	40.33 - 41.92	1.0000	1.0000
L45	75	CCI 6.5" x 1.25" Plate	40.33 - 41.92	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L45	76	CCI 6.5" x 1.25" Plate	40.33 - 41.92	1.0000	1.0000
L45	77	CCI 6.5" x 1.25" Plate	40.33 - 41.92	1.0000	1.0000
L45	78	CCI 6.5" x 1.25" Plate	40.33 - 41.92	1.0000	1.0000
L45	187	HCS 6X12 4AWG(1-5/8)	40.33 - 41.92	1.0000	1.0000
L45	189	AL7-50(1-5/8)	40.33 - 41.92	1.0000	1.0000
L45	213	Safety Line 3/8	40.33 - 41.92	1.0000	1.0000
L45	214	Climbing Rung	40.33 - 41.92	1.0000	1.0000
L46	43	CCI 6" x 1" Plate	40.08 - 40.33	1.0000	1.0000
L46	44	CCI 6" x 1" Plate	40.08 - 40.33	1.0000	1.0000
L46	45	CCI 6" x 1" Plate	40.08 - 40.33	1.0000	1.0000
L46	46	CCI 6" x 1" Plate	40.08 - 40.33	1.0000	1.0000
L46	73	CCI 6.5" x 1.25" Plate	40.08 - 40.33	1.0000	1.0000
L46	74	CCI 6.5" x 1.25" Plate	40.08 - 40.33	1.0000	1.0000
L46	75	CCI 6.5" x 1.25" Plate	40.08 - 40.33	1.0000	1.0000
L46	76	CCI 6.5" x 1.25" Plate	40.08 - 40.33	1.0000	1.0000
L46	77	CCI 6.5" x 1.25" Plate	40.08 - 40.33	1.0000	1.0000
L46	78	CCI 6.5" x 1.25" Plate	40.08 - 40.33	1.0000	1.0000
L46	187	HCS 6X12 4AWG(1-5/8)	40.08 - 40.33	1.0000	1.0000
L46	189	AL7-50(1-5/8)	40.08 - 40.33	1.0000	1.0000
L46	213	Safety Line 3/8	40.08 - 40.33	1.0000	1.0000
L46	214	Climbing Rung	40.08 - 40.33	1.0000	1.0000
L47	7	CCI 6" x 1" Plate	35.08 - 39.75	1.0000	1.0000
L47	8	CCI 6" x 1" Plate	35.08 - 39.75	1.0000	1.0000
L47	9	CCI 6" x 1" Plate	35.08 - 39.75	1.0000	1.0000
L47	43	CCI 6" x 1" Plate	37.17 - 40.08	1.0000	1.0000
L47	44	CCI 6" x 1" Plate	37.17 - 40.08	1.0000	1.0000
L47	45	CCI 6" x 1" Plate	37.17 - 40.08	1.0000	1.0000
L47	46	CCI 6" x 1" Plate	37.17 - 40.08	1.0000	1.0000
L47	73	CCI 6.5" x 1.25" Plate	35.08 - 40.08	1.0000	1.0000
L47	74	CCI 6.5" x 1.25" Plate	35.08 - 40.08	1.0000	1.0000
L47	75	CCI 6.5" x 1.25" Plate	35.08 - 40.08	1.0000	1.0000
L47	76	CCI 6.5" x 1.25" Plate	35.08 - 40.08	1.0000	1.0000
L47	77	CCI 6.5" x 1.25" Plate	35.08 - 40.08	1.0000	1.0000
L47	78	CCI 6.5" x 1.25" Plate	35.08 - 40.08	1.0000	1.0000
L47	187	HCS 6X12 4AWG(1-5/8)	35.08 - 40.08	1.0000	1.0000
L47	189	AL7-50(1-5/8)	35.08 - 40.08	1.0000	1.0000
L47	213	Safety Line 3/8	35.08 - 40.08	1.0000	1.0000
L47	214	Climbing Rung	35.08 - 40.08	1.0000	1.0000
L48	7	CCI 6" x 1" Plate	30.08 - 35.08	1.0000	1.0000
L48	8	CCI 6" x 1" Plate	30.08 - 35.08	1.0000	1.0000
L48	9	CCI 6" x 1" Plate	30.08 - 35.08	1.0000	1.0000
L48	73	CCI 6.5" x 1.25" Plate	32.83 - 35.08	1.0000	1.0000
L48	74	CCI 6.5" x 1.25" Plate	32.83 - 35.08	1.0000	1.0000
L48	75	CCI 6.5" x 1.25" Plate	32.83 - 35.08	1.0000	1.0000
L48	76	CCI 6.5" x 1.25" Plate	32.83 - 35.08	1.0000	1.0000
L48	77	CCI 6.5" x 1.25" Plate	32.83 - 35.08	1.0000	1.0000
L48	78	CCI 6.5" x 1.25" Plate	32.83 - 35.08	1.0000	1.0000
L48	187	HCS 6X12 4AWG(1-5/8)	30.08 - 35.08	1.0000	1.0000
L48	189	AL7-50(1-5/8)	30.08 - 35.08	1.0000	1.0000
L48	213	Safety Line 3/8	30.08 - 35.08	1.0000	1.0000
L48	214	Climbing Rung	30.08 - 35.08	1.0000	1.0000
L49	7	CCI 6" x 1" Plate	28.00 - 30.08	1.0000	1.0000
L49	8	CCI 6" x 1" Plate	28.00 - 30.08	1.0000	1.0000
L49	9	CCI 6" x 1" Plate	28.00 - 30.08	1.0000	1.0000
L49	38	CCI 6" x 1" Plate	28.00 - 30.00	1.0000	1.0000
L49	39	CCI 6" x 1" Plate	28.00 - 30.00	1.0000	1.0000
L49	40	CCI 6" x 1" Plate	28.00 - 30.00	1.0000	1.0000
L49	41	CCI 6" x 1" Plate	28.00 - 30.00	1.0000	1.0000
L49	187	HCS 6X12 4AWG(1-5/8)	28.00 - 30.08	1.0000	1.0000
L49	189	AL7-50(1-5/8)	28.00 - 30.08	1.0000	1.0000
L49	213	Safety Line 3/8	28.00 - 30.08	1.0000	1.0000
L49	214	Climbing Rung	28.00 - 30.08	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L50	7	CCI 6" x 1" Plate	27.75 - 28.00	1.0000	1.0000
L50	8	CCI 6" x 1" Plate	27.75 - 28.00	1.0000	1.0000
L50	9	CCI 6" x 1" Plate	27.75 - 28.00	1.0000	1.0000
L50	38	CCI 6" x 1" Plate	27.75 - 28.00	1.0000	1.0000
L50	39	CCI 6" x 1" Plate	27.75 - 28.00	1.0000	1.0000
L50	40	CCI 6" x 1" Plate	27.75 - 28.00	1.0000	1.0000
L50	41	CCI 6" x 1" Plate	27.75 - 28.00	1.0000	1.0000
L50	187	HCS 6X12 4AWG(1-5/8)	27.75 - 28.00	1.0000	1.0000
L50	189	AL7-50(1-5/8)	27.75 - 28.00	1.0000	1.0000
L50	213	Safety Line 3/8	27.75 - 28.00	1.0000	1.0000
L50	214	Climbing Rung	27.75 - 28.00	1.0000	1.0000
L51	7	CCI 6" x 1" Plate	22.75 - 27.75	1.0000	1.0000
L51	8	CCI 6" x 1" Plate	22.75 - 27.75	1.0000	1.0000
L51	9	CCI 6" x 1" Plate	22.75 - 27.75	1.0000	1.0000
L51	38	CCI 6" x 1" Plate	22.75 - 27.75	1.0000	1.0000
L51	39	CCI 6" x 1" Plate	22.75 - 27.75	1.0000	1.0000
L51	40	CCI 6" x 1" Plate	22.75 - 27.75	1.0000	1.0000
L51	41	CCI 6" x 1" Plate	22.75 - 27.75	1.0000	1.0000
L51	66	CCI 6.5" x 1.25" Plate	22.75 - 27.50	1.0000	1.0000
L51	67	CCI 6.5" x 1.25" Plate	22.75 - 27.50	1.0000	1.0000
L51	68	CCI 6.5" x 1.25" Plate	22.75 - 27.50	1.0000	1.0000
L51	69	CCI 6.5" x 1.25" Plate	22.75 - 27.50	1.0000	1.0000
L51	70	CCI 6.5" x 1.25" Plate	22.75 - 27.50	1.0000	1.0000
L51	71	CCI 6.5" x 1.25" Plate	22.75 - 27.50	1.0000	1.0000
L51	187	HCS 6X12 4AWG(1-5/8)	22.75 - 27.75	1.0000	1.0000
L51	189	AL7-50(1-5/8)	22.75 - 27.75	1.0000	1.0000
L51	213	Safety Line 3/8	22.75 - 27.75	1.0000	1.0000
L51	214	Climbing Rung	22.75 - 27.75	1.0000	1.0000
L52	7	CCI 6" x 1" Plate	20.75 - 22.75	1.0000	1.0000
L52	8	CCI 6" x 1" Plate	20.75 - 22.75	1.0000	1.0000
L52	9	CCI 6" x 1" Plate	20.75 - 22.75	1.0000	1.0000
L52	38	CCI 6" x 1" Plate	20.08 - 22.75	1.0000	1.0000
L52	39	CCI 6" x 1" Plate	20.08 - 22.75	1.0000	1.0000
L52	40	CCI 6" x 1" Plate	20.08 - 22.75	1.0000	1.0000
L52	41	CCI 6" x 1" Plate	20.08 - 22.75	1.0000	1.0000
L52	66	CCI 6.5" x 1.25" Plate	20.08 - 22.75	1.0000	1.0000
L52	67	CCI 6.5" x 1.25" Plate	20.08 - 22.75	1.0000	1.0000
L52	68	CCI 6.5" x 1.25" Plate	20.08 - 22.75	1.0000	1.0000
L52	69	CCI 6.5" x 1.25" Plate	20.08 - 22.75	1.0000	1.0000
L52	70	CCI 6.5" x 1.25" Plate	20.08 - 22.75	1.0000	1.0000
L52	71	CCI 6.5" x 1.25" Plate	20.08 - 22.75	1.0000	1.0000
L52	187	HCS 6X12 4AWG(1-5/8)	20.08 - 22.75	1.0000	1.0000
L52	189	AL7-50(1-5/8)	20.08 - 22.75	1.0000	1.0000
L52	213	Safety Line 3/8	20.08 - 22.75	1.0000	1.0000
L52	214	Climbing Rung	20.08 - 22.75	1.0000	1.0000
L53	38	CCI 6" x 1" Plate	19.83 - 20.08	1.0000	1.0000
L53	39	CCI 6" x 1" Plate	19.83 - 20.08	1.0000	1.0000
L53	40	CCI 6" x 1" Plate	19.83 - 20.08	1.0000	1.0000
L53	41	CCI 6" x 1" Plate	19.83 - 20.08	1.0000	1.0000
L53	66	CCI 6.5" x 1.25" Plate	19.83 - 20.08	1.0000	1.0000
L53	67	CCI 6.5" x 1.25" Plate	19.83 - 20.08	1.0000	1.0000
L53	68	CCI 6.5" x 1.25" Plate	19.83 - 20.08	1.0000	1.0000
L53	69	CCI 6.5" x 1.25" Plate	19.83 - 20.08	1.0000	1.0000
L53	70	CCI 6.5" x 1.25" Plate	19.83 - 20.08	1.0000	1.0000
L53	71	CCI 6.5" x 1.25" Plate	19.83 - 20.08	1.0000	1.0000
L53	187	HCS 6X12 4AWG(1-5/8)	19.83 - 20.08	1.0000	1.0000
L53	189	AL7-50(1-5/8)	19.83 - 20.08	1.0000	1.0000
L53	213	Safety Line 3/8	19.83 - 20.08	1.0000	1.0000
L53	214	Climbing Rung	19.83 - 20.08	1.0000	1.0000
L54	33	CCI 6" x 1" Plate	17.00 - 19.00	1.0000	1.0000
L54	34	CCI 6" x 1" Plate	17.00 - 19.00	1.0000	1.0000
L54	35	CCI 6" x 1" Plate	17.00 - 19.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L54	36	CCI 6" x 1" Plate	17.00 - 19.00	1.0000	1.0000
L54	38	CCI 6" x 1" Plate	17.00 - 19.83	1.0000	1.0000
L54	39	CCI 6" x 1" Plate	17.00 - 19.83	1.0000	1.0000
L54	40	CCI 6" x 1" Plate	17.00 - 19.83	1.0000	1.0000
L54	41	CCI 6" x 1" Plate	17.00 - 19.83	1.0000	1.0000
L54	66	CCI 6.5" x 1.25" Plate	17.00 - 19.83	1.0000	1.0000
L54	67	CCI 6.5" x 1.25" Plate	17.00 - 19.83	1.0000	1.0000
L54	68	CCI 6.5" x 1.25" Plate	17.00 - 19.83	1.0000	1.0000
L54	69	CCI 6.5" x 1.25" Plate	17.00 - 19.83	1.0000	1.0000
L54	70	CCI 6.5" x 1.25" Plate	17.00 - 19.83	1.0000	1.0000
L54	71	CCI 6.5" x 1.25" Plate	17.00 - 19.83	1.0000	1.0000
L54	187	HCS 6X12 4AWG(1-5/8)	17.00 - 19.83	1.0000	1.0000
L54	189	AL7-50(1-5/8)	17.00 - 19.83	1.0000	1.0000
L54	213	Safety Line 3/8	17.00 - 19.83	1.0000	1.0000
L54	214	Climbing Rung	17.00 - 19.83	1.0000	1.0000
L55	33	CCI 6" x 1" Plate	16.75 - 17.00	1.0000	1.0000
L55	34	CCI 6" x 1" Plate	16.75 - 17.00	1.0000	1.0000
L55	35	CCI 6" x 1" Plate	16.75 - 17.00	1.0000	1.0000
L55	36	CCI 6" x 1" Plate	16.75 - 17.00	1.0000	1.0000
L55	66	CCI 6.5" x 1.25" Plate	16.75 - 17.00	1.0000	1.0000
L55	67	CCI 6.5" x 1.25" Plate	16.75 - 17.00	1.0000	1.0000
L55	68	CCI 6.5" x 1.25" Plate	16.75 - 17.00	1.0000	1.0000
L55	69	CCI 6.5" x 1.25" Plate	16.75 - 17.00	1.0000	1.0000
L55	70	CCI 6.5" x 1.25" Plate	16.75 - 17.00	1.0000	1.0000
L55	71	CCI 6.5" x 1.25" Plate	16.75 - 17.00	1.0000	1.0000
L55	187	HCS 6X12 4AWG(1-5/8)	16.75 - 17.00	1.0000	1.0000
L55	189	AL7-50(1-5/8)	16.75 - 17.00	1.0000	1.0000
L55	213	Safety Line 3/8	16.75 - 17.00	1.0000	1.0000
L55	214	Climbing Rung	16.75 - 17.00	1.0000	1.0000
L56	5	CCI 4" x 0.75" Plate	11.65 - 13.17	1.0000	1.0000
L56	33	CCI 6" x 1" Plate	11.65 - 16.75	1.0000	1.0000
L56	34	CCI 6" x 1" Plate	11.65 - 16.75	1.0000	1.0000
L56	35	CCI 6" x 1" Plate	11.65 - 16.75	1.0000	1.0000
L56	36	CCI 6" x 1" Plate	11.65 - 16.75	1.0000	1.0000
L56	66	CCI 6.5" x 1.25" Plate	12.67 - 16.75	1.0000	1.0000
L56	67	CCI 6.5" x 1.25" Plate	12.67 - 16.75	1.0000	1.0000
L56	68	CCI 6.5" x 1.25" Plate	12.67 - 16.75	1.0000	1.0000
L56	69	CCI 6.5" x 1.25" Plate	12.67 - 16.75	1.0000	1.0000
L56	70	CCI 6.5" x 1.25" Plate	12.67 - 16.75	1.0000	1.0000
L56	71	CCI 6.5" x 1.25" Plate	12.67 - 16.75	1.0000	1.0000
L56	187	HCS 6X12 4AWG(1-5/8)	11.65 - 16.75	1.0000	1.0000
L56	189	AL7-50(1-5/8)	11.65 - 16.75	1.0000	1.0000
L56	213	Safety Line 3/8	11.65 - 16.75	1.0000	1.0000
L56	214	Climbing Rung	11.65 - 16.75	1.0000	1.0000
L57	5	CCI 4" x 0.75" Plate	11.42 - 11.65	1.0000	1.0000
L57	33	CCI 6" x 1" Plate	11.42 - 11.65	1.0000	1.0000
L57	34	CCI 6" x 1" Plate	11.42 - 11.65	1.0000	1.0000
L57	35	CCI 6" x 1" Plate	11.42 - 11.65	1.0000	1.0000
L57	36	CCI 6" x 1" Plate	11.42 - 11.65	1.0000	1.0000
L57	187	HCS 6X12 4AWG(1-5/8)	11.42 - 11.65	1.0000	1.0000
L57	189	AL7-50(1-5/8)	11.42 - 11.65	1.0000	1.0000
L57	213	Safety Line 3/8	11.42 - 11.65	1.0000	1.0000
L57	214	Climbing Rung	11.42 - 11.65	1.0000	1.0000
L58	3	CCI 4" x 0.75" Plate	9.38 - 10.88	1.0000	1.0000
L58	4	CCI 4" x 0.75" Plate	9.38 - 10.88	1.0000	1.0000
L58	5	CCI 4" x 0.75" Plate	9.38 - 11.42	1.0000	1.0000
L58	33	CCI 6" x 1" Plate	9.38 - 11.42	1.0000	1.0000
L58	34	CCI 6" x 1" Plate	9.38 - 11.42	1.0000	1.0000
L58	35	CCI 6" x 1" Plate	9.38 - 11.42	1.0000	1.0000
L58	36	CCI 6" x 1" Plate	9.38 - 11.42	1.0000	1.0000
L58	187	HCS 6X12 4AWG(1-5/8)	9.38 - 11.42	1.0000	1.0000
L58	189	AL7-50(1-5/8)	9.38 - 11.42	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L58	213	Safety Line 3/8	9.38 - 11.42	1.0000	1.0000
L58	214	Climbing Rung	9.38 - 11.42	1.0000	1.0000
L59	3	CCI 4" x 0.75" Plate	9.13 - 9.38	1.0000	1.0000
L59	4	CCI 4" x 0.75" Plate	9.13 - 9.38	1.0000	1.0000
L59	5	CCI 4" x 0.75" Plate	9.13 - 9.38	1.0000	1.0000
L59	33	CCI 6" x 1" Plate	9.13 - 9.38	1.0000	1.0000
L59	34	CCI 6" x 1" Plate	9.13 - 9.38	1.0000	1.0000
L59	35	CCI 6" x 1" Plate	9.13 - 9.38	1.0000	1.0000
L59	36	CCI 6" x 1" Plate	9.13 - 9.38	1.0000	1.0000
L59	187	HCS 6X12 4AWG(1-5/8)	9.13 - 9.38	1.0000	1.0000
L59	189	AL7-50(1-5/8)	9.13 - 9.38	1.0000	1.0000
L59	213	Safety Line 3/8	9.13 - 9.38	1.0000	1.0000
L59	214	Climbing Rung	9.13 - 9.38	1.0000	1.0000
L60	3	CCI 4" x 0.75" Plate	4.83 - 9.13	1.0000	1.0000
L60	4	CCI 4" x 0.75" Plate	4.83 - 9.13	1.0000	1.0000
L60	5	CCI 4" x 0.75" Plate	4.83 - 9.13	1.0000	1.0000
L60	33	CCI 6" x 1" Plate	4.83 - 9.13	1.0000	1.0000
L60	34	CCI 6" x 1" Plate	4.83 - 9.13	1.0000	1.0000
L60	35	CCI 6" x 1" Plate	4.83 - 9.13	1.0000	1.0000
L60	36	CCI 6" x 1" Plate	4.83 - 9.13	1.0000	1.0000
L60	187	HCS 6X12 4AWG(1-5/8)	4.83 - 9.13	1.0000	1.0000
L60	189	AL7-50(1-5/8)	4.83 - 9.13	1.0000	1.0000
L60	213	Safety Line 3/8	4.83 - 9.13	1.0000	1.0000
L60	214	Climbing Rung	4.83 - 9.13	1.0000	1.0000
L61	3	CCI 4" x 0.75" Plate	4.58 - 4.83	1.0000	1.0000
L61	4	CCI 4" x 0.75" Plate	4.58 - 4.83	1.0000	1.0000
L61	5	CCI 4" x 0.75" Plate	4.58 - 4.83	1.0000	1.0000
L61	33	CCI 6" x 1" Plate	4.58 - 4.83	1.0000	1.0000
L61	34	CCI 6" x 1" Plate	4.58 - 4.83	1.0000	1.0000
L61	35	CCI 6" x 1" Plate	4.58 - 4.83	1.0000	1.0000
L61	36	CCI 6" x 1" Plate	4.58 - 4.83	1.0000	1.0000
L61	187	HCS 6X12 4AWG(1-5/8)	4.58 - 4.83	1.0000	1.0000
L61	189	AL7-50(1-5/8)	4.58 - 4.83	1.0000	1.0000
L61	213	Safety Line 3/8	4.58 - 4.83	1.0000	1.0000
L61	214	Climbing Rung	4.58 - 4.83	1.0000	1.0000
L62	3	CCI 4" x 0.75" Plate	0.00 - 4.58	1.0000	1.0000
L62	4	CCI 4" x 0.75" Plate	0.00 - 4.58	1.0000	1.0000
L62	5	CCI 4" x 0.75" Plate	3.17 - 4.58	1.0000	1.0000
L62	33	CCI 6" x 1" Plate	0.00 - 4.58	1.0000	1.0000
L62	34	CCI 6" x 1" Plate	0.00 - 4.58	1.0000	1.0000
L62	35	CCI 6" x 1" Plate	0.00 - 4.58	1.0000	1.0000
L62	36	CCI 6" x 1" Plate	0.00 - 4.58	1.0000	1.0000
L62	187	HCS 6X12 4AWG(1-5/8)	0.00 - 4.58	1.0000	1.0000
L62	189	AL7-50(1-5/8)	0.00 - 4.58	1.0000	1.0000
L62	213	Safety Line 3/8	0.00 - 4.58	1.0000	1.0000
L62	214	Climbing Rung	0.00 - 4.58	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Lightning Rod 5/8" x 4' on 4' Pole	B	From Leg	1.000 0.000	0.000	191.667	No Ice 1/2" Ice	1.393 2.131	1.393 2.131	0.066 0.087
(E)			4.000			1" Ice	2.702	2.702	0.112
d									
OGB4-900D	A	From Leg	1.000	0.000	192.000	No Ice	0.785	0.785	0.010
(E)			0.000 4.000			1/2" Ice 1" Ice	1.028 1.281	1.028 1.281	0.016 0.025
6' x 2" Mount Pipe	A	From Leg	0.500	0.000	192.000	No Ice	1.425	1.425	0.022
(E-Omni support)			0.000 0.000			1/2" Ice 1" Ice	1.925 2.294	1.925 2.294	0.033 0.048
d									
DB589-A	B	From Leg	6.000	0.000	191.000	No Ice	2.763	2.763	0.012
(E)			0.000 5.000			1/2" Ice 1" Ice	4.170 5.593	4.170 5.593	0.033 0.063
WB2623 w/ Mount Pipe	B	From Leg	6.000	0.000	191.000	No Ice	1.929	0.866	0.020
(E)			0.000 -1.000			1/2" Ice 1" Ice	2.158 2.399	1.110 1.369	0.038 0.058
3' x 2" Pipe Mount	B	From Leg	6.000	0.000	191.000	No Ice	0.583	0.583	0.011
(E-For Omni)			0.000 -1.000			1/2" Ice 1" Ice	0.770 0.967	0.770 0.967	0.017 0.024
Side Arm Mount [SO 702-1]	B	From Leg	3.000	0.000	191.000	No Ice	1.000	1.430	0.027
(E)			0.000 0.000			1/2" Ice 1" Ice	1.250 1.500	2.050 2.670	0.038 0.049
d									
LNX-6515DS-VTM w/ Mount Pipe	A	From Leg	4.000 0.000	0.000	184.000	No Ice 1/2" Ice	11.683 12.404	9.842 11.366	0.083 0.173
(E)			-3.000			1" Ice	13.135	12.914	0.273
LNX-6515DS-VTM w/ Mount Pipe	B	From Leg	4.000 0.000	0.000	184.000	No Ice 1/2" Ice	11.683 12.404	9.842 11.366	0.083 0.173
(E)			-3.000			1" Ice	13.135	12.914	0.273
LNX-6515DS-VTM w/ Mount Pipe	C	From Leg	4.000 0.000	0.000	184.000	No Ice 1/2" Ice	11.683 12.404	9.842 11.366	0.083 0.173
(E)			-3.000			1" Ice	13.135	12.914	0.273
(2) KRY 112 144/1	A	From Leg	4.000	0.000	184.000	No Ice	0.350	0.175	0.011
(E)			0.000 -3.000			1/2" Ice 1" Ice	0.426 0.509	0.234 0.301	0.014 0.019
(2) KRY 112 144/1	B	From Leg	4.000	0.000	184.000	No Ice	0.350	0.175	0.011
(E)			0.000 -3.000			1/2" Ice 1" Ice	0.426 0.509	0.234 0.301	0.014 0.019
(2) KRY 112 144/1	C	From Leg	4.000	0.000	184.000	No Ice	0.350	0.175	0.011
(E)			0.000 -3.000			1/2" Ice 1" Ice	0.426 0.509	0.234 0.301	0.014 0.019
ATBT-BOTTOM-24V	A	From Leg	4.000	0.000	184.000	No Ice	0.104	0.065	0.003
(E)			0.000 -3.000			1/2" Ice 1" Ice	0.148 0.199	0.102 0.147	0.004 0.006
ATBT-BOTTOM-24V	B	From Leg	4.000	0.000	184.000	No Ice	0.104	0.065	0.003
(E)			0.000 -3.000			1/2" Ice 1" Ice	0.148 0.199	0.102 0.147	0.004 0.006
ATBT-BOTTOM-24V	C	From Leg	4.000	0.000	184.000	No Ice	0.104	0.065	0.003
(E)			0.000 -3.000			1/2" Ice 1" Ice	0.148 0.199	0.102 0.147	0.004 0.006
AIR -32 B2A/B66AA w/ Mount Pipe	A	From Leg	4.000 0.000	0.000	184.000	No Ice 1/2" Ice	6.747 7.202	6.070 6.867	0.153 0.214
(R)			-3.000			1" Ice	7.648	7.583	0.282
AIR -32 B2A/B66AA w/ Mount Pipe	B	From Leg	4.000 0.000	0.000	184.000	No Ice 1/2" Ice	6.747 7.202	6.070 6.867	0.153 0.214
(R)			-3.000			1" Ice	7.648	7.583	0.282

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
AIR -32 B2A/B66AA w/	C	From Leg	4.000		0.000	184.000	No Ice	6.747	6.070	0.153
Mount Pipe			0.000				1/2" Ice	7.202	6.867	0.214
(R)			-3.000				1" Ice	7.648	7.583	0.282
APX16DWV-16DWVS-E-A	A	From Leg	4.000		0.000	184.000	No Ice	7.233	3.782	0.064
20 w/ Mount Pipe			0.000				1/2" Ice	7.712	4.643	0.115
(R)			-3.000				1" Ice	8.176	5.382	0.173
APX16DWV-16DWVS-E-A	B	From Leg	4.000		0.000	184.000	No Ice	7.233	3.782	0.064
20 w/ Mount Pipe			0.000				1/2" Ice	7.712	4.643	0.115
(R)			-3.000				1" Ice	8.176	5.382	0.173
APX16DWV-16DWVS-E-A	C	From Leg	4.000		0.000	184.000	No Ice	7.233	3.782	0.064
20 w/ Mount Pipe			0.000				1/2" Ice	7.712	4.643	0.115
(R)			-3.000				1" Ice	8.176	5.382	0.173
Platform Mount [LP 405-1]	C	None			0.000	184.000	No Ice	20.800	20.800	1.800
(E)							1/2" Ice	28.100	28.100	2.066
							1" Ice	35.400	35.400	2.332
d										
(2) HBXX-6517DS-VTM w/	A	From Leg	4.000		0.000	160.000	No Ice	8.765	6.963	0.069
Mount Pipe			0.000				1/2" Ice	9.342	8.182	0.139
(E)			0.000				1" Ice	9.889	9.144	0.217
(2) HBXX-6517DS-VTM w/	B	From Leg	4.000		0.000	160.000	No Ice	8.765	6.963	0.069
Mount Pipe			0.000				1/2" Ice	9.342	8.182	0.139
(E)			0.000				1" Ice	9.889	9.144	0.217
(2) HBXX-6517DS-VTM w/	C	From Leg	4.000		0.000	160.000	No Ice	8.765	6.963	0.069
Mount Pipe			0.000				1/2" Ice	9.342	8.182	0.139
(E)			0.000				1" Ice	9.889	9.144	0.217
LNX-6514DS-A1M w/	A	From Leg	4.000		0.000	160.000	No Ice	8.411	7.082	0.065
Mount Pipe			0.000				1/2" Ice	8.975	8.273	0.134
(E)			0.000				1" Ice	9.505	9.185	0.211
LNX-6514DS-A1M w/	B	From Leg	4.000		0.000	160.000	No Ice	8.411	7.082	0.065
Mount Pipe			0.000				1/2" Ice	8.975	8.273	0.134
(E)			0.000				1" Ice	9.505	9.185	0.211
(2) LNX-6514DS-A1M w/	C	From Leg	4.000		0.000	160.000	No Ice	8.411	7.082	0.065
Mount Pipe			0.000				1/2" Ice	8.975	8.273	0.134
(E)			0.000				1" Ice	9.505	9.185	0.211
LNX-8513DS-VTM w/	A	From Leg	4.000		0.000	160.000	No Ice	8.411	7.082	0.065
Mount Pipe			0.000				1/2" Ice	8.975	8.273	0.134
(E)			0.000				1" Ice	9.505	9.185	0.211
LNX-8513DS-VTM w/	B	From Leg	4.000		0.000	160.000	No Ice	8.411	7.082	0.065
Mount Pipe			0.000				1/2" Ice	8.975	8.273	0.134
(E)			0.000				1" Ice	9.505	9.185	0.211
RRH2x40 700	A	From Leg	4.000		0.000	160.000	No Ice	1.962	1.034	0.050
(E)			0.000				1/2" Ice	2.137	1.168	0.067
			0.000				1" Ice	2.318	1.311	0.086
RRH2x40 700	B	From Leg	4.000		0.000	160.000	No Ice	1.962	1.034	0.050
(E)			0.000				1/2" Ice	2.137	1.168	0.067
			0.000				1" Ice	2.318	1.311	0.086
RRH2x40 700	C	From Leg	4.000		0.000	160.000	No Ice	1.962	1.034	0.050
(E)			0.000				1/2" Ice	2.137	1.168	0.067
			0.000				1" Ice	2.318	1.311	0.086
RRH2X60-AWS	A	From Leg	4.000		0.000	160.000	No Ice	3.500	1.816	0.060
(E)			0.000				1/2" Ice	3.761	2.052	0.083
			0.000				1" Ice	4.029	2.289	0.109
RRH2X60-AWS	B	From Leg	4.000		0.000	160.000	No Ice	3.500	1.816	0.060
(E)			0.000				1/2" Ice	3.761	2.052	0.083
			0.000				1" Ice	4.029	2.289	0.109
RRH2X60-AWS	C	From Leg	4.000		0.000	160.000	No Ice	3.500	1.816	0.060
(E)			0.000				1/2" Ice	3.761	2.052	0.083

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1" Ice	4.029	2.289	0.109
RRH2X60-PCS	A	From Leg	4.000	0.000	160.000	No Ice	2.200	1.723	0.055
(E)			0.000			1/2" Ice	2.393	1.901	0.075
			0.000			1" Ice	2.593	2.087	0.099
RRH2X60-PCS	B	From Leg	4.000	0.000	160.000	No Ice	2.200	1.723	0.055
(E)			0.000			1/2" Ice	2.393	1.901	0.075
			0.000			1" Ice	2.593	2.087	0.099
RRH2X60-PCS	C	From Leg	4.000	0.000	160.000	No Ice	2.200	1.723	0.055
(E)			0.000			1/2" Ice	2.393	1.901	0.075
			0.000			1" Ice	2.593	2.087	0.099
(2) FD9R6004/2C-3L	A	From Leg	4.000	0.000	160.000	No Ice	0.314	0.076	0.003
(E)			0.000			1/2" Ice	0.386	0.119	0.005
			0.000			1" Ice	0.466	0.169	0.009
(2) FD9R6004/2C-3L	B	From Leg	4.000	0.000	160.000	No Ice	0.314	0.076	0.003
(E)			0.000			1/2" Ice	0.386	0.119	0.005
			0.000			1" Ice	0.466	0.169	0.009
(2) FD9R6004/2C-3L	C	From Leg	4.000	0.000	160.000	No Ice	0.314	0.076	0.003
(E)			0.000			1/2" Ice	0.386	0.119	0.005
			0.000			1" Ice	0.466	0.169	0.009
DB-T1-6Z-8AB-0Z	A	From Leg	4.000	0.000	160.000	No Ice	4.800	2.000	0.044
(E)			0.000			1/2" Ice	5.070	2.193	0.080
			0.000			1" Ice	5.348	2.393	0.120
Platform Mount [LP 303-1]	C	None		0.000	160.000	No Ice	14.660	14.660	1.250
(E)						1/2" Ice	18.870	18.870	1.481
						1" Ice	23.080	23.080	1.713
d									
SRL-224NM-4	B	From Leg	6.000	0.000	158.000	No Ice	2.600	2.600	0.035
(E)			0.000			1/2" Ice	4.680	4.680	0.045
			0.000			1" Ice	6.760	6.760	0.056
DB205-A	C	From Leg	6.000	0.000	158.000	No Ice	1.200	1.200	0.038
(E)			0.000			1/2" Ice	2.160	2.160	0.049
			0.000			1" Ice	3.120	3.120	0.061
4' x 2" Pipe Mount	B	From Leg	6.000	0.000	158.000	No Ice	0.785	0.785	0.029
(E-For Omni)			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
4' x 2" Pipe Mount	C	From Leg	6.000	0.000	158.000	No Ice	0.785	0.785	0.029
(E-For Omni)			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
Side Arm Mount [SO 702-1]	B	From Leg	3.000	0.000	158.000	No Ice	1.000	1.430	0.027
(E)			0.000			1/2" Ice	1.250	2.050	0.038
			0.000			1" Ice	1.500	2.670	0.049
Side Arm Mount [SO 702-1]	C	From Leg	3.000	0.000	158.000	No Ice	1.000	1.430	0.027
(E)			0.000			1/2" Ice	1.250	2.050	0.038
			0.000			1" Ice	1.500	2.670	0.049
d									
7770.00 w/ Mount Pipe	A	From Leg	4.000	0.000	151.000	No Ice	5.746	4.254	0.055
(E)			0.000			1/2" Ice	6.179	5.014	0.103
			0.000			1" Ice	6.607	5.711	0.157
7770.00 w/ Mount Pipe	B	From Leg	4.000	0.000	151.000	No Ice	5.746	4.254	0.055
(E)			0.000			1/2" Ice	6.179	5.014	0.103
			0.000			1" Ice	6.607	5.711	0.157
7770.00 w/ Mount Pipe	C	From Leg	4.000	0.000	151.000	No Ice	5.746	4.254	0.055
(E)			0.000			1/2" Ice	6.179	5.014	0.103
			0.000			1" Ice	6.607	5.711	0.157
SBNH-1D6565C w/ Mount Pipe	A	From Leg	4.000	0.000	151.000	No Ice	11.683	9.842	0.099
			0.000			1/2" Ice	12.404	11.366	0.189
(E)			0.000			1" Ice	13.135	12.914	0.288

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
SBNH-1D6565C w/ Mount Pipe	B	From Leg	4.000 0.000	0.000	151.000	No Ice 1/2" Ice	11.683 12.404	9.842 11.366	0.099 0.189
(E)			0.000			1" Ice	13.135	12.914	0.288
SBNH-1D6565C w/ Mount Pipe	C	From Leg	4.000 0.000	0.000	151.000	No Ice 1/2" Ice	11.683 12.404	9.842 11.366	0.099 0.189
(E)			0.000			1" Ice	13.135	12.914	0.288
DTMABP7819VG12A	A	From Leg	4.000	0.000	151.000	No Ice	0.976	0.339	0.019
(E)			0.000 0.000			1/2" Ice 1" Ice	1.100 1.232	0.419 0.510	0.026 0.036
DTMABP7819VG12A	B	From Leg	4.000	0.000	151.000	No Ice	0.976	0.339	0.019
(E)			0.000 0.000			1/2" Ice 1" Ice	1.100 1.232	0.419 0.510	0.026 0.036
DTMABP7819VG12A	C	From Leg	4.000	0.000	151.000	No Ice	0.976	0.339	0.019
(E)			0.000 0.000			1/2" Ice 1" Ice	1.100 1.232	0.419 0.510	0.026 0.036
DC6-48-60-18-8F	A	From Leg	4.000	0.000	151.000	No Ice	1.212	1.212	0.033
(E)			0.000 0.000			1/2" Ice 1" Ice	1.892 2.105	1.892 2.105	0.055 0.080
TPA-65R-LCUUUU-H8	A	From Leg	4.000	0.000	151.000	No Ice	13.298	8.822	0.082
(P)			0.000 0.000			1/2" Ice 1" Ice	13.897 14.504	9.421 10.026	0.161 0.248
TPA-65R-LCUUUU-H8	B	From Leg	4.000	0.000	151.000	No Ice	13.298	8.822	0.082
(P)			0.000 0.000			1/2" Ice 1" Ice	13.897 14.504	9.421 10.026	0.161 0.248
TPA-65R-LCUUUU-H8	C	From Leg	4.000	0.000	151.000	No Ice	13.298	8.822	0.082
(P)			0.000 0.000			1/2" Ice 1" Ice	13.897 14.504	9.421 10.026	0.161 0.248
RRUS 32	A	From Leg	4.000	0.000	151.000	No Ice	2.857	1.777	0.055
(P)			0.000 0.000			1/2" Ice 1" Ice	3.083 3.316	1.968 2.166	0.077 0.103
RRUS 32	B	From Leg	4.000	0.000	151.000	No Ice	2.857	1.777	0.055
(P)			0.000 0.000			1/2" Ice 1" Ice	3.083 3.316	1.968 2.166	0.077 0.103
RRUS 32	C	From Leg	4.000	0.000	151.000	No Ice	2.857	1.777	0.055
(P)			0.000 0.000			1/2" Ice 1" Ice	3.083 3.316	1.968 2.166	0.077 0.103
RRUS 32 B2	A	From Leg	4.000	0.000	151.000	No Ice	2.731	1.668	0.053
(P)			0.000 0.000			1/2" Ice 1" Ice	2.953 3.182	1.855 2.049	0.074 0.098
RRUS 32 B2	B	From Leg	4.000	0.000	151.000	No Ice	2.731	1.668	0.053
(P)			0.000 0.000			1/2" Ice 1" Ice	2.953 3.182	1.855 2.049	0.074 0.098
RRUS 32 B2	C	From Leg	4.000	0.000	151.000	No Ice	2.731	1.668	0.053
(P)			0.000 0.000			1/2" Ice 1" Ice	2.953 3.182	1.855 2.049	0.074 0.098
DBC0062F3V52-1	A	From Leg	4.000	0.000	151.000	No Ice	0.711	0.220	0.013
(P)			0.000 0.000			1/2" Ice 1" Ice	0.818 0.932	0.289 0.366	0.018 0.025
DBC0062F3V52-1	B	From Leg	4.000	0.000	151.000	No Ice	0.711	0.220	0.013
(P)			0.000 0.000			1/2" Ice 1" Ice	0.818 0.932	0.289 0.366	0.018 0.025
DBC0062F3V52-1	C	From Leg	4.000	0.000	151.000	No Ice	0.711	0.220	0.013
(P)			0.000 0.000			1/2" Ice 1" Ice	0.818 0.932	0.289 0.366	0.018 0.025
(2) 10' x 2.875" Pipe Mount	A	From Leg	4.000	0.000	151.000	No Ice	2.875	2.875	0.085
(P)			0.000 0.000			1/2" Ice 1" Ice	3.907 4.956	3.907 4.956	0.106 0.134

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) 10' x 2.875" Pipe Mount	B	From Leg	4.000	0.000	151.000	No Ice	2.875	2.875	0.085
(P)			0.000			1/2" Ice	3.907	3.907	0.106
			0.000			1" Ice	4.956	4.956	0.134
(2) 10' x 2.875" Pipe Mount	C	From Leg	4.000	0.000	151.000	No Ice	2.875	2.875	0.085
(P)			0.000			1/2" Ice	3.907	3.907	0.106
			0.000			1" Ice	4.956	4.956	0.134
Miscellaneous [NA 510-1]	C	None		0.000	151.000	No Ice	6.000	6.000	0.256
(P)						1/2" Ice	8.500	8.500	0.340
						1" Ice	11.000	11.000	0.423
Miscellaneous [NA 509-3]	C	None		0.000	151.000	No Ice	11.840	11.840	0.275
(P-PRK-1245)						1/2" Ice	16.960	16.960	0.296
						1" Ice	22.080	22.080	0.317
Platform Mount [LP 403-1]	C	None		0.000	151.000	No Ice	18.850	18.850	1.500
(E)						1/2" Ice	24.300	24.300	1.797
						1" Ice	29.750	29.750	2.093
d									
DC6-48-60-18-8F	C	From Leg	1.000	0.000	150.000	No Ice	1.212	1.212	0.033
(E)			0.000			1/2" Ice	1.892	1.892	0.055
			0.000			1" Ice	2.105	2.105	0.080
RRUS 11	A	From Leg	1.000	0.000	150.000	No Ice	2.784	1.187	0.048
(P)			0.000			1/2" Ice	2.992	1.334	0.068
			0.000			1" Ice	3.207	1.490	0.092
RRUS 11	B	From Leg	1.000	0.000	150.000	No Ice	2.784	1.187	0.048
(P)			0.000			1/2" Ice	2.992	1.334	0.068
			0.000			1" Ice	3.207	1.490	0.092
RRUS 11	C	From Leg	1.000	0.000	150.000	No Ice	2.784	1.187	0.048
(P)			0.000			1/2" Ice	2.992	1.334	0.068
			0.000			1" Ice	3.207	1.490	0.092
RRUS 12	A	From Leg	1.000	0.000	150.000	No Ice	3.145	1.285	0.058
(P)			0.000			1/2" Ice	3.365	1.438	0.081
			2.000			1" Ice	3.592	1.600	0.108
RRUS 12	B	From Leg	1.000	0.000	150.000	No Ice	3.145	1.285	0.058
(P)			0.000			1/2" Ice	3.365	1.438	0.081
			2.000			1" Ice	3.592	1.600	0.108
RRUS 12	C	From Leg	1.000	0.000	150.000	No Ice	3.145	1.285	0.058
(P)			0.000			1/2" Ice	3.365	1.438	0.081
			2.000			1" Ice	3.592	1.600	0.108
Side Arm Mount [SO 102-3]	C	None		0.000	150.000	No Ice	3.000	3.000	0.081
(E)						1/2" Ice	3.480	3.480	0.111
						1" Ice	3.960	3.960	0.141
Pipe Mount [PM 601-3]	C	None		0.000	150.000	No Ice	4.390	4.390	0.195
(E)						1/2" Ice	5.480	5.480	0.237
						1" Ice	6.570	6.570	0.280
d									
SRL-235-2	B	From Leg	6.000	0.000	132.000	No Ice	7.000	7.000	0.076
(E)			0.000			1/2" Ice	9.037	9.037	0.125
			0.000			1" Ice	11.092	11.092	0.187
4' x 2" Pipe Mount	B	From Leg	6.000	0.000	132.000	No Ice	0.785	0.785	0.029
(E-For Omni)			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
Side Arm Mount [SO 702-1]	B	From Leg	3.000	0.000	132.000	No Ice	1.000	1.430	0.027
(E)			0.000			1/2" Ice	1.250	2.050	0.038
			0.000			1" Ice	1.500	2.670	0.049
Side Arm Mount [SO 104-3]	C	None		0.000	132.000	No Ice	3.300	3.300	0.287
(E-Mount Attachment)						1/2" Ice	4.130	4.130	0.317
						1" Ice	4.960	4.960	0.347
d									

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
PCS 1900 TMA RX	A	From Leg	2.000	0.000	0.000	124.000	No Ice	0.539	0.529	0.018
(E)			0.000				1/2" Ice	0.638	0.628	0.023
			0.000				1" Ice	0.745	0.734	0.031
2' x 2" Pipe Mount	A	From Leg	2.000	0.000	0.000	124.000	No Ice	0.023	0.023	0.007
(E-For TMA)			0.000				1/2" Ice	0.049	0.049	0.008
			0.000				1" Ice	0.085	0.085	0.009
Side Arm Mount [SO 104-3]	C	None			0.000	124.000	No Ice	3.300	3.300	0.287
(E)							1/2" Ice	4.130	4.130	0.317
							1" Ice	4.960	4.960	0.347
d										
* Sprint*										
(3) 844G65VTZAS w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	116.000	No Ice	5.486	4.984	0.034
(AB)			0.000				1/2" Ice	5.876	5.600	0.086
			2.000				1" Ice	6.273	6.227	0.144
(3) 844G65VTZAS w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	116.000	No Ice	5.486	4.984	0.034
(AB)			0.000				1/2" Ice	5.876	5.600	0.086
			2.000				1" Ice	6.273	6.227	0.144
(3) 844G65VTZAS w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	116.000	No Ice	5.486	4.984	0.034
(AB)			0.000				1/2" Ice	5.876	5.600	0.086
			2.000				1" Ice	6.273	6.227	0.144
*										
* Clear Wire*										
LLPX310R w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	116.000	No Ice	4.538	2.985	0.045
(E)			0.000				1/2" Ice	4.892	3.528	0.083
			2.000				1" Ice	5.254	4.087	0.126
LLPX310R w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	116.000	No Ice	4.538	2.985	0.045
(E)			0.000				1/2" Ice	4.892	3.528	0.083
			2.000				1" Ice	5.254	4.087	0.126
LLPX310R w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	116.000	No Ice	4.538	2.985	0.045
(E)			0.000				1/2" Ice	4.892	3.528	0.083
			2.000				1" Ice	5.254	4.087	0.126
WIMAX DAP HEAD	A	From Leg	4.000	0.000	0.000	116.000	No Ice	1.547	0.684	0.033
(E)			0.000				1/2" Ice	1.704	0.800	0.045
			2.000				1" Ice	1.868	0.923	0.058
WIMAX DAP HEAD	B	From Leg	4.000	0.000	0.000	116.000	No Ice	1.547	0.684	0.033
(E)			0.000				1/2" Ice	1.704	0.800	0.045
			2.000				1" Ice	1.868	0.923	0.058
WIMAX DAP HEAD	C	From Leg	4.000	0.000	0.000	116.000	No Ice	1.547	0.684	0.033
(E)			0.000				1/2" Ice	1.704	0.800	0.045
			2.000				1" Ice	1.868	0.923	0.058
HORIZON DUO	A	From Leg	4.000	0.000	0.000	116.000	No Ice	0.469	0.294	0.007
(E)			0.000				1/2" Ice	0.556	0.365	0.012
			4.000				1" Ice	0.650	0.444	0.018
Platform Mount [LP 405-1]	C	None			0.000	116.000	No Ice	20.800	20.800	1.800
(E)							1/2" Ice	28.100	28.100	2.066
							1" Ice	35.400	35.400	2.332
d										
DB205-A	B	From Leg	6.000	0.000	0.000	90.000	No Ice	1.200	1.200	0.038
(E-Per Photo)			0.000				1/2" Ice	2.160	2.160	0.049
			9.000				1" Ice	3.120	3.120	0.061
MT-485002 w/ Mount Pipe	C	From Leg	6.000	0.000	0.000	90.000	No Ice	1.372	0.473	0.011
(E)			0.000				1/2" Ice	1.574	0.681	0.022
			0.000				1" Ice	1.788	0.902	0.037
5' x 2" Pipe Mount	B	From Leg	6.000	0.000	0.000	90.000	No Ice	1.000	1.000	0.029
(E-For Omni)			0.000				1/2" Ice	1.393	1.393	0.037
			0.000				1" Ice	1.703	1.703	0.048
Side Arm Mount [SO 702-1]	B	From Leg	3.000	0.000	0.000	90.000	No Ice	1.000	1.430	0.027

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(E)			0.000				1/2" Ice	1.250	2.050	0.038
			0.000				1" Ice	1.500	2.670	0.049
Side Arm Mount [SO 702-1]	C	From Leg	3.000		0.000	90.000	No Ice	1.000	1.430	0.027
(E)			0.000				1/2" Ice	1.250	2.050	0.038
			0.000				1" Ice	1.500	2.670	0.049
d										
SRL-235-2	C	From Leg	3.000		0.000	70.000	No Ice	7.000	7.000	0.076
(E)			0.000				1/2" Ice	9.037	9.037	0.125
			0.000				1" Ice	11.092	11.092	0.187
2" x 2' Omni	C	From Leg	3.000		0.000	70.000	No Ice	0.304	0.304	0.005
(E-Per Photo)			0.000				1/2" Ice	0.432	0.432	0.008
			-6.000				1" Ice	0.578	0.578	0.013
6' x 2" Mount Pipe	C	From Leg	3.000		0.000	70.000	No Ice	1.425	1.425	0.022
(E-For Omni)			0.000				1/2" Ice	1.925	1.925	0.033
			0.000				1" Ice	2.294	2.294	0.048
Side Arm Mount [SO 701-1]	C	From Leg	1.500		0.000	70.000	No Ice	0.850	1.670	0.065
(E)			0.000				1/2" Ice	1.140	2.340	0.079
			0.000				1" Ice	1.430	3.010	0.093
Side Arm Mount [SO 102-3]	C	None			0.000	70.000	No Ice	3.000	3.000	0.081
(E-Mount Attachment)							1/2" Ice	3.480	3.480	0.111
							1" Ice	3.960	3.960	0.141
d										
DB909XVTE-M	B	From Leg	3.000		0.000	33.000	No Ice	1.943	1.943	0.024
(E)			0.000				1/2" Ice	2.622	2.622	0.047
			0.000				1" Ice	2.952	2.952	0.073
2" x 4' Omni	B	From Leg	3.000		0.000	33.000	No Ice	0.304	0.304	0.005
(E-Per Photo)			0.000				1/2" Ice	0.432	0.432	0.008
			0.000				1" Ice	0.578	0.578	0.013
6' x 2" Mount Pipe	B	From Leg	3.000		0.000	33.000	No Ice	1.425	1.425	0.022
(E-For Yagi)			0.000				1/2" Ice	1.925	1.925	0.033
			0.000				1" Ice	2.294	2.294	0.048
Side Arm Mount [SO 702-1]	B	From Leg	1.500		0.000	33.000	No Ice	1.000	1.430	0.027
(E)			0.000				1/2" Ice	1.250	2.050	0.038
			0.000				1" Ice	1.500	2.670	0.049
d										
4' ICE SHIELDS	A	From Leg	0.500		0.000	178.000	No Ice	1.400	0.467	0.030
(E)			0.000				1/2" Ice	1.884	0.640	0.095
			0.000				1" Ice	2.377	0.821	0.167
4' ICE SHIELDS	A	From Leg	0.500		0.000	138.000	No Ice	1.400	0.467	0.030
(E)			0.000				1/2" Ice	1.884	0.640	0.095
			0.000				1" Ice	2.377	0.821	0.167
4' ICE SHIELDS	A	From Leg	0.500		0.000	98.000	No Ice	1.400	0.467	0.030
(E)			0.000				1/2" Ice	1.884	0.640	0.095
			0.000				1" Ice	2.377	0.821	0.167
4' ICE SHIELDS	B	From Leg	0.500		0.000	98.000	No Ice	1.400	0.467	0.030
(E)			0.000				1/2" Ice	1.884	0.640	0.095
			0.000				1" Ice	2.377	0.821	0.167
4' ICE SHIELDS	C	From Leg	0.500		0.000	98.000	No Ice	1.400	0.467	0.030
(E)			0.000				1/2" Ice	1.884	0.640	0.095
			0.000				1" Ice	2.377	0.821	0.167
d										

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral / Vert (ft)	Azimuth Adjustment (°)	3 dB Beam Width (°)	Elevation (ft)	Outside Diameter (ft)		Aperture Area (ft^2)	Weight (K)
Andrew VHLP2-18 (E) **d**	A	Paraboloid w/Shroud (HP)	From Leg	4.000 0.000 4.000	90.000		116.000	2.175	No Ice 1/2" Ice 1" Ice	3.715 4.006 4.296	0.031 0.052 0.072
KP2F-34 (E) **d**	B	Grid	From Leg	6.000 0.000 0.000	5.000		90.000	2.000	No Ice 1/2" Ice 1" Ice	3.140 3.410 3.680	0.005 0.023 0.040

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 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

Comb. No.	Description
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	191.667 - 186.667	Pole	Max Tension	36	0.000	-0.000	0.000
			Max. Compression	26	-1.790	-3.079	-1.607
			Max. Mx	30	-1.780	-5.052	-1.576
			Max. My	14	-0.628	-0.451	-4.093
			Max. Vy	8	0.728	-4.358	-0.277
			Max. Vx	14	0.716	-0.451	-4.093
			Max. Torque	5			-1.659
L2	186.667 - 181.567	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-11.524	-3.068	-1.776
			Max. Mx	8	-4.364	-10.393	-0.405
			Max. My	14	-4.339	-0.516	-10.184
			Max. Vy	8	4.908	-10.393	-0.405
			Max. Vx	14	4.916	-0.516	-10.184
			Max. Torque	5			-1.660
L3	181.567 - 176.567	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-13.192	-3.039	-1.338
			Max. Mx	8	-5.104	-35.777	-0.486
			Max. My	14	-5.074	-0.582	-35.699
			Max. Vy	8	5.263	-35.777	-0.486
			Max. Vx	14	5.318	-0.582	-35.699
			Max. Torque	5			-1.660
L4	176.567 - 171.567	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-14.444	-3.014	-1.521
			Max. Mx	8	-5.812	-62.889	-0.620
			Max. My	14	-5.780	-0.647	-63.171
			Max. Vy	8	5.588	-62.889	-0.620
			Max. Vx	14	5.648	-0.647	-63.171
			Max. Torque	5			-1.644
L5	171.567 - 166.567	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-15.694	-2.991	-1.705
			Max. Mx	8	-6.522	-91.616	-0.754
			Max. My	14	-6.488	-0.714	-92.275
			Max. Vy	8	5.909	-91.616	-0.754
			Max. Vx	14	5.972	-0.714	-92.275
			Max. Torque	5			-1.644
L6	166.567 - 161.567	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-16.941	-2.970	-1.887

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	8	-7.235	-121.927	-0.888
			Max. My	14	-7.200	-0.780	-122.983
			Max. Vy	8	6.223	-121.927	-0.888
			Max. Vx	14	6.289	-0.780	-122.983
			Max. Torque	5			-1.644
L7	161.567 - 156.567	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-29.693	-3.196	-2.312
			Max. Mx	8	-10.995	-171.672	-1.382
			Max. My	14	-10.918	-0.838	-174.115
			Max. Vy	8	11.943	-171.672	-1.382
			Max. Vx	14	12.211	-0.838	-174.115
			Max. Torque	5			-2.345
L8	156.567 - 151.567	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-31.292	-3.600	-2.352
			Max. Mx	8	-11.780	-232.134	-1.503
			Max. My	14	-11.673	-0.952	-237.004
			Max. Vy	8	12.233	-232.134	-1.503
			Max. Vx	14	12.933	-0.952	-237.004
			Max. Torque	5			-2.345
L9	151.567 - 146.567	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-47.295	-3.737	-1.714
			Max. Mx	8	-17.431	-324.116	-1.481
			Max. My	14	-17.264	-1.013	-333.577
			Max. Vy	8	19.392	-324.116	-1.481
			Max. Vx	14	20.545	-1.013	-333.577
			Max. Torque	5			-2.344
L10	146.567 - 141.567	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-48.955	-4.167	-1.757
			Max. Mx	8	-18.346	-421.652	-1.604
			Max. My	14	-18.160	-1.135	-437.937
			Max. Vy	8	19.621	-421.652	-1.604
			Max. Vx	14	21.196	-1.135	-437.937
			Max. Torque	14			2.248
L11	141.567 - 141.417	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-49.005	-4.180	-1.759
			Max. Mx	8	-18.383	-424.595	-1.608
			Max. My	14	-18.198	-1.139	-441.118
			Max. Vy	8	19.620	-424.595	-1.608
			Max. Vx	14	21.208	-1.139	-441.118
			Max. Torque	14			2.252
L12	141.417 - 136.417	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-51.521	-4.733	-1.012
			Max. Mx	8	-19.557	-523.816	-1.681
			Max. My	14	-19.368	-1.283	-548.460
			Max. Vy	8	20.062	-523.816	-1.681
			Max. Vx	14	21.762	-1.283	-548.460
			Max. Torque	14			2.252
L13	136.417 - 131.417	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-54.726	-9.049	-3.240
			Max. Mx	8	-21.184	-626.430	-2.294
			Max. My	14	-20.992	-2.235	-659.368
			Max. Vy	8	21.016	-626.430	-2.294
			Max. Vx	14	22.797	-2.235	-659.368
			Max. Torque	5			-4.945

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L14	131.417 - 126.417	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-56.914	-9.613	-3.297
			Max. Mx	8	-22.389	-732.509	-2.395
			Max. My	14	-22.199	-2.344	-774.538
			Max. Vy	8	21.403	-732.509	-2.395
			Max. Vx	14	23.256	-2.344	-774.538
			Max. Torque	5			-4.945
L15	126.417 - 121.417	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-60.618	-10.340	-3.085
			Max. Mx	8	-24.661	-841.132	-2.410
			Max. My	14	-24.448	-2.563	-893.709
			Max. Vy	8	21.980	-841.132	-2.410
			Max. Vx	14	24.428	-2.563	-893.709
			Max. Torque	5			-4.944
L16	121.417 - 121.167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-60.750	-10.372	-3.089
			Max. Mx	8	-24.739	-846.632	-2.415
			Max. My	14	-24.527	-2.570	-899.820
			Max. Vy	8	21.994	-846.632	-2.415
			Max. Vx	14	24.445	-2.570	-899.820
			Max. Torque	5			-4.903
L17	121.167 - 116.167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-63.555	-11.043	-2.406
			Max. Mx	8	-26.247	-958.409	-2.354
			Max. My	14	-26.041	-2.769	-1023.542
			Max. Vy	20	-22.639	954.726	-0.622
			Max. Vx	14	25.054	-2.769	-1023.542
			Max. Torque	15			4.940
L18	116.167 - 111.167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-73.612	-11.620	-2.232
			Max. Mx	8	-30.314	-1091.393	-2.417
			Max. My	14	-30.101	-2.960	-1168.980
			Max. Vy	20	-26.107	1087.782	-0.629
			Max. Vx	14	28.591	-2.960	-1168.980
			Max. Torque	15			4.940
L19	111.167 - 110.042	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-74.205	-11.663	-2.327
			Max. Mx	8	-30.625	-1120.776	-2.441
			Max. My	14	-30.412	-3.002	-1201.218
			Max. Vy	20	-26.199	1117.182	-0.640
			Max. Vx	14	28.711	-3.002	-1201.218
			Max. Torque	15			4.939
L20	110.042 - 109.792	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-74.350	-11.674	-2.348
			Max. Mx	8	-30.714	-1127.320	-2.447
			Max. My	14	-30.502	-3.013	-1208.401
			Max. Vy	20	-26.214	1123.729	-0.643
			Max. Vx	14	28.733	-3.013	-1208.401
			Max. Torque	15			4.939
L21	109.792 - 105.083	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-77.381	-11.847	-2.768
			Max. Mx	8	-32.378	-1251.570	-2.562
			Max. My	14	-32.148	-3.186	-1346.140

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	20	-26.619	1248.054	-0.705
			Max. Vx	14	29.745	-3.186	-1346.140
			Max. Torque	15			4.950
L22	105.083 - 104.833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-77.574	-11.857	-2.793
			Max. Mx	8	-32.489	-1258.219	-2.570
			Max. My	14	-32.260	-3.196	-1353.586
			Max. Vy	20	-26.635	1254.707	-0.710
			Max. Vx	14	29.793	-3.196	-1353.586
			Max. Torque	15			4.950
L23	104.833 - 100.917	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-81.502	-12.029	-3.190
			Max. Mx	8	-34.926	-1363.177	-2.741
			Max. My	14	-34.682	-3.322	-1472.209
			Max. Vy	20	-27.042	1359.761	-0.837
			Max. Vx	14	30.730	-3.322	-1472.209
			Max. Torque	15			4.971
L24	100.917 - 100.667	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-81.684	-12.062	-3.197
			Max. Mx	8	-35.035	-1369.932	-2.749
			Max. My	14	-34.794	-3.332	-1479.899
			Max. Vy	20	-27.060	1366.520	-0.842
			Max. Vx	14	30.751	-3.332	-1479.899
			Max. Torque	15			4.971
L25	100.667 - 95.833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-85.951	-12.684	-3.298
			Max. Mx	8	-36.884	-1501.865	-2.883
			Max. My	14	-36.650	-3.514	-1630.000
			Max. Vy	20	-27.597	1498.520	-0.921
			Max. Vx	14	31.333	-3.514	-1630.000
			Max. Torque	15			4.971
L26	95.833 - 95.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-86.107	-12.718	-3.302
			Max. Mx	8	-36.980	-1508.759	-2.889
			Max. My	14	-36.748	-3.524	-1637.838
			Max. Vy	20	-27.614	1505.417	-0.925
			Max. Vx	14	31.351	-3.524	-1637.838
			Max. Torque	15			4.970
L27	95.583 - 90.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-89.259	-13.365	-3.364
			Max. Mx	8	-38.769	-1647.815	-3.006
			Max. My	14	-38.547	-3.715	-1795.845
			Max. Vy	20	-28.067	1644.533	-0.985
			Max. Vx	14	31.831	-3.715	-1795.845
			Max. Torque	15			4.970
L28	90.583 - 89.917	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-90.234	-14.713	-5.241
			Max. Mx	8	-39.167	-1667.465	-3.554
			Max. My	14	-38.946	-4.222	-1818.082
			Max. Vy	20	-28.404	1663.177	-1.527
			Max. Vx	14	32.160	-4.222	-1818.082
			Max. Torque	15			5.743
L29	89.917 - 89.667	Pole	Max Tension	1	0.000	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	26	-90.429	-14.742	-5.241
			Max. Mx	8	-39.281	-1674.558	-3.557
			Max. My	14	-39.061	-4.228	-1826.125
			Max. Vy	20	-28.425	1670.279	-1.531
			Max. Vx	14	32.183	-4.228	-1826.125
			Max. Torque	15			5.743
L30	89.667 - 84.667	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-95.159	-15.040	-5.041
			Max. Mx	8	-42.126	-1817.473	-3.458
			Max. My	14	-41.913	-4.157	-1988.226
			Max. Vy	20	-28.898	1813.744	-1.453
			Max. Vx	14	32.709	-4.157	-1988.226
			Max. Torque	15			5.743
L31	84.667 - 80.833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-99.899	-15.024	-4.704
			Max. Mx	8	-45.309	-1928.526	-3.212
			Max. My	14	-45.104	-3.875	-2114.204
			Max. Vy	20	-29.316	1925.671	-1.223
			Max. Vx	14	33.158	-3.875	-2114.204
			Max. Torque	15			5.742
L32	80.833 - 80.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-100.187	-15.024	-4.680
			Max. Mx	8	-45.515	-1935.820	-3.194
			Max. My	14	-45.312	-3.855	-2122.476
			Max. Vy	20	-29.336	1933.028	-1.206
			Max. Vx	14	33.180	-3.855	-2122.476
			Max. Torque	15			5.742
L33	80.583 - 75.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-104.514	-15.569	-4.558
			Max. Mx	8	-48.094	-2083.432	-3.176
			Max. My	14	-47.900	-3.883	-2289.573
			Max. Vy	20	-29.827	2080.987	-1.209
			Max. Vx	14	33.680	-3.883	-2289.573
			Max. Torque	15			5.742
L34	75.583 - 70.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-109.106	-16.620	-4.436
			Max. Mx	8	-50.869	-2233.777	-3.150
			Max. My	14	-50.686	-4.258	-2459.155
			Max. Vy	20	-30.295	2230.987	-1.205
			Max. Vx	14	34.183	-4.258	-2459.155
			Max. Torque	15			5.741
L35	70.583 - 69.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-111.258	-13.896	-6.086
			Max. Mx	8	-51.881	-2266.035	-3.580
			Max. My	14	-51.698	-3.605	-2496.848
			Max. Vy	20	-30.863	2264.734	-1.627
			Max. Vx	14	34.783	-3.605	-2496.848
			Max. Torque	15			5.740
L36	69.5 - 69.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-111.563	-13.942	-6.078
			Max. Mx	8	-52.072	-2273.763	-3.578
			Max. My	14	-51.891	-3.635	-2505.539
			Max. Vy	20	-30.880	2272.429	-1.619
			Max. Vx	14	34.804	-3.635	-2505.539
			Max. Torque	7			-4.498
L37	69.25 - 64.25	Pole	Max Tension	1	0.000	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	26	-120.545	-15.667	-5.495
			Max. Mx	8	-58.441	-2430.654	-3.105
			Max. My	14	-58.252	-4.982	-2682.358
			Max. Vy	20	-31.490	2427.152	-1.040
			Max. Vx	14	36.150	-4.982	-2682.358
			Max. Torque	7			-4.498
L38	64.25 - 60.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-127.809	-16.317	-5.265
			Max. Mx	8	-63.618	-2547.230	-2.888
			Max. My	14	-63.427	-5.518	-2816.484
			Max. Vy	20	-31.964	2543.046	-0.746
			Max. Vx	14	37.171	-5.518	-2816.484
			Max. Torque	7			-4.498
L39	60.583 - 60.333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-128.116	-16.336	-5.264
			Max. Mx	8	-63.823	-2555.208	-2.892
			Max. My	14	-63.634	-5.523	-2825.777
			Max. Vy	20	-31.980	2551.040	-0.744
			Max. Vx	14	37.190	-5.523	-2825.777
			Max. Torque	7			-4.498
L40	60.333 - 55.333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-134.158	-17.183	-5.137
			Max. Mx	8	-67.606	-2716.319	-2.889
			Max. My	14	-67.428	-5.910	-3012.940
			Max. Vy	20	-32.466	2711.908	-0.635
			Max. Vx	14	37.719	-5.910	-3012.940
			Max. Torque	7			-4.498
L41	55.333 - 52.167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-136.568	-17.641	-5.202
			Max. Mx	8	-69.095	-2819.440	-2.990
			Max. My	14	-68.926	-6.072	-3132.805
			Max. Vy	20	-32.740	2815.041	-0.669
			Max. Vx	14	37.988	-6.072	-3132.805
			Max. Torque	7			-4.497
L42	52.167 - 51.917	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-136.780	-17.678	-5.208
			Max. Mx	8	-69.240	-2827.619	-2.999
			Max. My	14	-69.072	-6.084	-3142.307
			Max. Vy	20	-32.755	2823.222	-0.672
			Max. Vx	14	38.003	-6.084	-3142.307
			Max. Torque	7			-4.497
L43	51.917 - 46.917	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-141.798	-18.806	-5.183
			Max. Mx	8	-72.335	-2992.497	-3.164
			Max. My	14	-72.177	-6.466	-3333.584
			Max. Vy	20	-33.200	2987.864	-0.732
			Max. Vx	14	38.483	-6.466	-3333.584
			Max. Torque	7			-4.497
L44	46.917 - 41.917	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-148.301	-20.340	-4.730
			Max. Mx	8	-76.299	-3159.763	-3.110
			Max. My	14	-76.154	-7.083	-3527.049
			Max. Vy	20	-33.623	3154.425	-0.573
			Max. Vx	14	38.972	-7.083	-3527.049
			Max. Torque	7			-4.497

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L45	41.917 - 40.333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-150.306	-20.804	-4.572
			Max. Mx	8	-77.545	-3213.178	-3.090
			Max. My	14	-77.404	-7.271	-3588.832
			Max. Vy	20	-33.756	3207.631	-0.518
			Max. Vx	14	39.123	-7.271	-3588.832
			Max. Torque	7			-4.497
L46	40.333 - 40.083	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-150.590	-20.866	-4.539
			Max. Mx	8	-77.735	-3221.621	-3.083
			Max. My	14	-77.596	-7.295	-3598.600
			Max. Vy	20	-33.762	3216.052	-0.507
			Max. Vx	14	39.128	-7.295	-3598.600
			Max. Torque	7			-4.497
L47	40.083 - 35.083	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-156.337	-21.986	-3.970
			Max. Mx	8	-81.395	-3391.451	-2.951
			Max. My	14	-81.270	-7.775	-3794.933
			Max. Vy	20	-34.136	3385.445	-0.270
			Max. Vx	14	39.502	-7.775	-3794.933
			Max. Torque	7			-4.497
L48	35.083 - 30.083	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-161.373	-24.317	-4.695
			Max. Mx	8	-84.609	-3563.680	-3.194
			Max. My	14	-84.502	-8.502	-3993.775
			Max. Vy	20	-34.600	3556.694	-0.440
			Max. Vx	14	39.959	-8.502	-3993.775
			Max. Torque	7			-5.149
L49	30.083 - 28	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-163.164	-24.443	-4.612
			Max. Mx	8	-85.725	-3635.801	-3.251
			Max. My	14	-85.624	-8.590	-4077.137
			Max. Vy	20	-34.724	3628.832	-0.475
			Max. Vx	14	40.077	-8.590	-4077.137
			Max. Torque	7			-5.149
L50	28 - 27.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-163.404	-24.459	-4.602
			Max. Mx	8	-85.888	-3644.474	-3.257
			Max. My	14	-85.790	-8.601	-4087.159
			Max. Vy	20	-34.729	3637.507	-0.479
			Max. Vx	14	40.080	-8.601	-4087.159
			Max. Torque	7			-5.149
L51	27.75 - 22.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-169.619	-24.691	-4.611
			Max. Mx	8	-89.990	-3818.749	-3.534
			Max. My	14	-89.906	-8.774	-4288.613
			Max. Vy	20	-35.059	3811.899	-0.706
			Max. Vx	14	40.423	-8.774	-4288.613
			Max. Torque	7			-5.149
L52	22.75 - 20.083	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-172.920	-24.814	-4.624
			Max. Mx	8	-92.206	-3912.349	-3.685
			Max. My	14	-92.130	-8.865	-4396.739
			Max. Vy	20	-35.228	3905.564	-0.830
			Max. Vx	14	40.599	-8.865	-4396.739
			Max. Torque	7			-5.148
L53	20.083 -	Pole	Max Tension	1	0.000	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
	19.833						
			Max. Compression	26	-173.201	-24.825	-4.625
			Max. Mx	8	-92.401	-3921.145	-3.699
			Max. My	14	-92.328	-8.873	-4406.897
			Max. Vy	20	-35.228	3914.366	-0.842
			Max. Vx	14	40.597	-8.873	-4406.897
			Max. Torque	7			-5.148
L54	19.833 - 17	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-176.493	-25.024	-4.600
			Max. Mx	8	-94.538	-4021.056	-3.859
			Max. My	14	-94.473	-8.969	-4522.254
			Max. Vy	20	-35.399	4014.346	-0.974
			Max. Vx	14	40.775	-8.969	-4522.254
			Max. Torque	7			-5.148
L55	17 - 16.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-176.796	-25.060	-4.608
			Max. Mx	8	-94.759	-4029.893	-3.873
			Max. My	14	-94.698	-8.977	-4532.455
			Max. Vy	20	-35.393	4023.190	-0.985
			Max. Vx	14	40.766	-8.977	-4532.455
			Max. Torque	7			-5.148
L56	16.75 - 11.65	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-182.721	-25.737	-4.752
			Max. Mx	8	-98.967	-4210.958	-4.130
			Max. My	14	-98.922	-9.155	-4741.289
			Max. Vy	20	-35.692	4204.365	-1.193
			Max. Vx	14	41.063	-9.155	-4741.289
			Max. Torque	7			-5.148
L57	11.65 - 11.417	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-182.937	-25.765	-4.753
			Max. Mx	8	-99.127	-4219.267	-4.136
			Max. My	14	-99.084	-9.164	-4750.858
			Max. Vy	20	-35.692	4212.675	-1.196
			Max. Vx	14	41.061	-9.164	-4750.858
			Max. Torque	7			-5.148
L58	11.417 - 9.375	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-184.857	-26.042	-4.666
			Max. Mx	8	-100.484	-4292.201	-4.190
			Max. My	14	-100.447	-9.248	-4834.835
			Max. Vy	20	-35.813	4285.629	-1.230
			Max. Vx	14	41.174	-9.248	-4834.835
			Max. Torque	7			-5.148
L59	9.375 - 9.125	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-185.099	-26.078	-4.652
			Max. Mx	8	-100.662	-4301.145	-4.197
			Max. My	14	-100.627	-9.258	-4845.130
			Max. Vy	20	-35.813	4294.575	-1.235
			Max. Vx	14	41.172	-9.258	-4845.130
			Max. Torque	7			-5.148
L60	9.125 - 4.833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-189.210	-26.669	-4.412
			Max. Mx	8	-103.624	-4455.216	-4.309
			Max. My	14	-103.604	-9.432	-5022.351
			Max. Vy	20	-36.051	4448.687	-1.306
			Max. Vx	14	41.394	-9.432	-5022.351
			Max. Torque	7			-5.148
L61	4.833 - 4.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-189.444	-26.702	-4.399
			Max. Mx	8	-103.799	-4464.220	-4.315
			Max. My	14	-103.781	-9.442	-5032.701
			Max. Vy	20	-36.050	4457.693	-1.310

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	14	41.390	-9.442	-5032.701
			Max. Torque	7			-5.148
L62	4.583 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-193.596	-27.352	-4.139
			Max. Mx	8	-106.913	-4629.794	-4.434
			Max. My	14	-106.910	-9.626	-5222.897
			Max. Vy	20	-36.280	4623.310	-1.385
			Max. Vx	14	41.600	-9.626	-5222.897
			Max. Torque	7			-5.148

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	193.596	-0.000	-0.000
	Max. H_x	20	106.920	36.257	0.003
	Max. H_z	2	106.920	-0.010	41.574
	Max. M_x	2	5217.359	-0.010	41.574
	Max. M_z	8	4629.794	-36.218	-0.006
	Max. Torsion	15	4.902	-0.026	-41.574
	Min. Vert	19	80.190	31.187	-18.042
	Min. H_x	8	106.920	-36.218	-0.006
	Min. H_z	14	106.920	-0.026	-41.574
	Min. M_x	14	-5222.897	-0.026	-41.574
	Min. M_z	20	-4623.310	36.257	0.003
	Min. Torsion	7	-5.148	-31.152	18.030

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	89.100	0.000	0.000	2.211	-4.551	-0.000
1.2 Dead+1.6 Wind 0 deg - No Ice	106.920	0.010	-41.574	-5217.359	-6.035	4.711
0.9 Dead+1.6 Wind 0 deg - No Ice	80.190	0.010	-41.574	-5168.818	-4.586	4.713
1.2 Dead+1.6 Wind 30 deg - No Ice	106.920	18.403	-31.939	-4052.382	-2338.374	5.106
0.9 Dead+1.6 Wind 30 deg - No Ice	80.190	18.403	-31.939	-4014.247	-2314.595	5.110
1.2 Dead+1.6 Wind 60 deg - No Ice	106.920	31.152	-18.030	-2308.293	-3994.057	5.143
0.9 Dead+1.6 Wind 60 deg - No Ice	80.190	31.152	-18.030	-2286.746	-3954.207	5.148
1.2 Dead+1.6 Wind 90 deg - No Ice	106.920	36.218	0.006	4.434	-4629.794	3.726
0.9 Dead+1.6 Wind 90 deg - No Ice	80.190	36.218	0.006	3.693	-4583.896	3.731
1.2 Dead+1.6 Wind 120 deg - No Ice	106.920	32.851	19.021	2394.437	-4129.884	1.021
0.9 Dead+1.6 Wind 120 deg -	80.190	32.851	19.021	2370.934	-4089.182	1.025

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
No Ice						
1.2 Dead+1.6 Wind 150 deg - No Ice	106.920	20.875	36.218	4522.643	-2608.002	-2.727
0.9 Dead+1.6 Wind 150 deg - No Ice	80.190	20.875	36.218	4479.336	-2582.047	-2.726
1.2 Dead+1.6 Wind 180 deg - No Ice	106.920	0.026	41.574	5222.897	-9.625	-4.900
0.9 Dead+1.6 Wind 180 deg - No Ice	80.190	0.026	41.574	5172.916	-8.128	-4.902
1.2 Dead+1.6 Wind 210 deg - No Ice	106.920	-18.432	31.935	4057.228	2330.847	-4.877
0.9 Dead+1.6 Wind 210 deg - No Ice	80.190	-18.432	31.935	4017.663	2309.954	-4.881
1.2 Dead+1.6 Wind 240 deg - No Ice	106.920	-31.187	18.042	2315.183	3987.201	-4.877
0.9 Dead+1.6 Wind 240 deg - No Ice	80.190	-31.187	18.042	2292.192	3950.235	-4.882
1.2 Dead+1.6 Wind 270 deg - No Ice	106.920	-36.257	-0.003	1.385	4623.310	-3.533
0.9 Dead+1.6 Wind 270 deg - No Ice	80.190	-36.257	-0.003	0.688	4580.298	-3.538
1.2 Dead+1.6 Wind 300 deg - No Ice	106.920	-32.885	-19.025	-2389.568	4122.945	-0.846
0.9 Dead+1.6 Wind 300 deg - No Ice	80.190	-32.885	-19.025	-2367.500	4085.131	-0.850
1.2 Dead+1.6 Wind 330 deg - No Ice	106.920	-20.907	-36.208	-4515.793	2600.810	2.920
0.9 Dead+1.6 Wind 330 deg - No Ice	80.190	-20.907	-36.208	-4473.942	2577.736	2.918
1.2 Dead+1.0 Ice+1.0 Temp	193.596	0.000	0.000	4.139	-27.352	-0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	193.596	-0.021	-13.828	-1760.064	-26.577	2.118
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	193.596	6.262	-10.921	-1416.845	-841.914	2.751
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	193.596	10.594	-6.156	-803.813	-1415.342	2.830
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	193.596	12.957	-0.010	2.550	-1716.948	2.161
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	193.596	11.256	6.533	842.798	-1470.529	0.809
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	193.596	6.932	12.081	1536.274	-905.159	-0.908
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	193.596	-0.004	13.815	1767.286	-26.749	-2.219
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	193.596	-6.275	10.916	1424.672	787.920	-2.693
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	193.596	-10.626	6.139	810.661	1363.238	-2.720
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	193.596	-12.980	-0.015	3.505	1663.943	-1.987
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	193.596	-11.276	-6.547	-835.713	1417.286	-0.732
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	193.596	-6.963	-12.081	-1527.830	852.984	0.866
Dead+Wind 0 deg - Service	89.100	0.002	-8.895	-1108.161	-4.779	0.850
Dead+Wind 30 deg - Service	89.100	3.938	-6.834	-860.195	-500.845	1.094
Dead+Wind 60 deg - Service	89.100	6.665	-3.858	-489.225	-852.959	1.105
Dead+Wind 90 deg - Service	89.100	7.749	0.001	2.648	-988.176	0.800
Dead+Wind 120 deg - Service	89.100	7.029	4.070	510.998	-881.918	0.239
Dead+Wind 150 deg - Service	89.100	4.466	7.749	963.792	-558.288	-0.406
Dead+Wind 180 deg - Service	89.100	0.005	8.895	1112.748	-5.542	-0.891

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead+Wind 210 deg - Service	89.100	-3.944	6.833	864.637	492.259	-1.045
Dead+Wind 240 deg - Service	89.100	-6.673	3.860	494.104	844.518	-1.048
Dead+Wind 270 deg - Service	89.100	-7.758	-0.001	2.001	979.818	-0.759
Dead+Wind 300 deg - Service	89.100	-7.036	-4.071	-506.555	873.462	-0.201
Dead+Wind 330 deg - Service	89.100	-4.473	-7.747	-958.929	549.773	0.448

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.000	-89.100	0.000	0.000	89.100	0.000	0.000%
2	0.010	-106.920	-41.574	-0.010	106.920	41.574	0.000%
3	0.010	-80.190	-41.574	-0.010	80.190	41.574	0.000%
4	18.403	-106.920	-31.939	-18.403	106.920	31.939	0.000%
5	18.403	-80.190	-31.939	-18.403	80.190	31.939	0.000%
6	31.152	-106.920	-18.030	-31.152	106.920	18.030	0.000%
7	31.152	-80.190	-18.030	-31.152	80.190	18.030	0.000%
8	36.218	-106.920	0.006	-36.218	106.920	-0.006	0.000%
9	36.218	-80.190	0.006	-36.218	80.190	-0.006	0.000%
10	32.851	-106.920	19.021	-32.851	106.920	-19.021	0.000%
11	32.851	-80.190	19.021	-32.851	80.190	-19.021	0.000%
12	20.875	-106.920	36.218	-20.875	106.920	-36.218	0.000%
13	20.875	-80.190	36.218	-20.875	80.190	-36.218	0.000%
14	0.026	-106.920	41.574	-0.026	106.920	-41.574	0.000%
15	0.026	-80.190	41.574	-0.026	80.190	-41.574	0.000%
16	-18.432	-106.920	31.935	18.432	106.920	-31.935	0.000%
17	-18.432	-80.190	31.935	18.432	80.190	-31.935	0.000%
18	-31.187	-106.920	18.042	31.187	106.920	-18.042	0.000%
19	-31.187	-80.190	18.042	31.187	80.190	-18.042	0.000%
20	-36.257	-106.920	-0.003	36.257	106.920	0.003	0.000%
21	-36.257	-80.190	-0.003	36.257	80.190	0.003	0.000%
22	-32.885	-106.920	-19.025	32.885	106.920	19.025	0.000%
23	-32.885	-80.190	-19.025	32.885	80.190	19.025	0.000%
24	-20.907	-106.920	-36.208	20.907	106.920	36.208	0.000%
25	-20.907	-80.190	-36.208	20.907	80.190	36.208	0.000%
26	0.000	-193.596	0.000	-0.000	193.596	-0.000	0.000%
27	-0.021	-193.596	-13.828	0.021	193.596	13.828	0.000%
28	6.262	-193.596	-10.921	-6.262	193.596	10.921	0.000%
29	10.594	-193.596	-6.156	-10.594	193.596	6.156	0.000%
30	12.957	-193.596	-0.010	-12.957	193.596	0.010	0.000%
31	11.256	-193.596	6.533	-11.256	193.596	-6.533	0.000%
32	6.932	-193.596	12.081	-6.932	193.596	-12.081	0.000%
33	-0.004	-193.596	13.815	0.004	193.596	-13.815	0.000%
34	-6.274	-193.596	10.916	6.275	193.596	-10.916	0.000%
35	-10.626	-193.596	6.139	10.626	193.596	-6.139	0.000%
36	-12.980	-193.596	-0.015	12.980	193.596	0.015	0.000%
37	-11.276	-193.596	-6.547	11.276	193.596	6.547	0.000%
38	-6.963	-193.596	-12.081	6.963	193.596	12.081	0.000%
39	0.002	-89.100	-8.895	-0.002	89.100	8.895	0.000%
40	3.938	-89.100	-6.834	-3.938	89.100	6.834	0.000%
41	6.665	-89.100	-3.858	-6.665	89.100	3.858	0.000%
42	7.749	-89.100	0.001	-7.749	89.100	-0.001	0.000%
43	7.029	-89.100	4.070	-7.029	89.100	-4.070	0.000%
44	4.466	-89.100	7.749	-4.466	89.100	-7.749	0.000%
45	0.005	-89.100	8.895	-0.005	89.100	-8.895	0.000%
46	-3.944	-89.100	6.833	3.944	89.100	-6.833	0.000%
47	-6.673	-89.100	3.860	6.673	89.100	-3.860	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
48	-7.758	-89.100	-0.001	7.758	89.100	0.001	0.000%
49	-7.036	-89.100	-4.071	7.036	89.100	4.071	0.000%
50	-4.473	-89.100	-7.747	4.473	89.100	7.747	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000136
2	Yes	5	0.00000001	0.00072432
3	Yes	5	0.00000001	0.00036216
4	Yes	6	0.00000001	0.00020150
5	Yes	6	0.00000001	0.00007437
6	Yes	6	0.00000001	0.00016863
7	Yes	6	0.00000001	0.00006161
8	Yes	5	0.00000001	0.00044155
9	Yes	5	0.00000001	0.00021943
10	Yes	6	0.00000001	0.00019069
11	Yes	6	0.00000001	0.00006960
12	Yes	6	0.00000001	0.00023932
13	Yes	6	0.00000001	0.00008623
14	Yes	5	0.00000001	0.00075883
15	Yes	5	0.00000001	0.00037975
16	Yes	6	0.00000001	0.00017073
17	Yes	6	0.00000001	0.00006226
18	Yes	6	0.00000001	0.00019588
19	Yes	6	0.00000001	0.00007240
20	Yes	5	0.00000001	0.00041195
21	Yes	5	0.00000001	0.00020355
22	Yes	6	0.00000001	0.00018851
23	Yes	6	0.00000001	0.00006892
24	Yes	6	0.00000001	0.00021544
25	Yes	6	0.00000001	0.00007720
26	Yes	5	0.00000001	0.00024296
27	Yes	6	0.00000001	0.00098949
28	Yes	7	0.00000001	0.00012194
29	Yes	7	0.00000001	0.00011942
30	Yes	6	0.00000001	0.00099521
31	Yes	7	0.00000001	0.00012404
32	Yes	7	0.00000001	0.00013031
33	Yes	7	0.00000001	0.00011560
34	Yes	7	0.00000001	0.00011798
35	Yes	7	0.00000001	0.00011692
36	Yes	6	0.00000001	0.00095380
37	Yes	7	0.00000001	0.00011796
38	Yes	7	0.00000001	0.00012424
39	Yes	4	0.00000001	0.00096466
40	Yes	5	0.00000001	0.00006658
41	Yes	5	0.00000001	0.00005248
42	Yes	4	0.00000001	0.00080168
43	Yes	5	0.00000001	0.00005763
44	Yes	5	0.00000001	0.00007241
45	Yes	4	0.00000001	0.00098774
46	Yes	5	0.00000001	0.00005288
47	Yes	5	0.00000001	0.00006360
48	Yes	4	0.00000001	0.00078238

49	Yes	5	0.00000001	0.00005560
50	Yes	5	0.00000001	0.00006220

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	191.667 - 186.667	19.049	45	0.917	0.007
L2	186.667 - 181.567	18.090	45	0.915	0.006
L3	181.567 - 176.567	17.113	45	0.914	0.006
L4	176.567 - 171.567	16.158	45	0.911	0.005
L5	171.567 - 166.567	15.209	45	0.903	0.005
L6	166.567 - 161.567	14.270	45	0.890	0.005
L7	161.567 - 156.567	13.346	45	0.873	0.004
L8	156.567 - 151.567	12.442	45	0.851	0.004
L9	151.567 - 146.567	11.568	45	0.818	0.003
L10	146.567 - 141.567	10.733	45	0.774	0.003
L11	141.567 - 141.417	9.952	45	0.714	0.002
L12	141.417 - 136.417	9.930	45	0.712	0.002
L13	136.417 - 131.417	9.196	45	0.689	0.002
L14	131.417 - 126.417	8.488	45	0.662	0.002
L15	126.417 - 121.417	7.812	45	0.629	0.002
L16	121.417 - 121.167	7.173	45	0.591	0.002
L17	121.167 - 116.167	7.142	45	0.589	0.002
L18	116.167 - 111.167	6.539	45	0.562	0.001
L19	111.167 - 110.042	5.967	45	0.530	0.001
L20	110.042 - 109.792	5.843	45	0.523	0.001
L21	109.792 - 105.083	5.816	45	0.521	0.001
L22	105.083 - 104.833	5.315	45	0.495	0.001
L23	104.833 - 100.917	5.289	45	0.493	0.001
L24	100.917 - 100.667	4.893	45	0.472	0.001
L25	100.667 - 95.833	4.868	45	0.471	0.001
L26	95.833 - 95.583	4.406	45	0.442	0.001
L27	95.583 - 90.583	4.383	45	0.441	0.001
L28	90.583 - 89.917	3.935	45	0.415	0.001
L29	89.917 - 89.667	3.877	45	0.411	0.001
L30	89.667 - 84.667	3.856	45	0.410	0.001
L31	84.667 - 80.833	3.439	45	0.386	0.001
L32	80.833 - 80.583	3.137	45	0.366	0.001
L33	80.583 - 75.583	3.117	45	0.365	0.001
L34	75.583 - 70.583	2.747	45	0.342	0.001
L35	70.583 - 69.5	2.401	45	0.318	0.001
L36	69.5 - 69.25	2.329	45	0.312	0.001
L37	69.25 - 64.25	2.313	45	0.311	0.001
L38	64.25 - 60.583	1.999	44	0.289	0.000
L39	60.583 - 60.333	1.784	44	0.272	0.000
L40	60.333 - 55.333	1.769	44	0.271	0.000
L41	55.333 - 52.167	1.497	44	0.250	0.000
L42	52.167 - 51.917	1.336	44	0.236	0.000
L43	51.917 - 46.917	1.324	44	0.235	0.000
L44	46.917 - 41.917	1.088	44	0.216	0.000
L45	41.917 - 40.333	0.872	44	0.196	0.000
L46	40.333 - 40.083	0.808	44	0.189	0.000
L47	40.083 - 35.083	0.798	44	0.188	0.000
L48	35.083 - 30.083	0.613	44	0.165	0.000
L49	30.083 - 28	0.453	44	0.141	0.000
L50	28 - 27.75	0.393	44	0.131	0.000
L51	27.75 - 22.75	0.387	44	0.130	0.000
L52	22.75 - 20.083	0.261	44	0.109	0.000

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L53	20.083 - 19.833	0.204	44	0.097	0.000
L54	19.833 - 17	0.199	44	0.096	0.000
L55	17 - 16.75	0.147	44	0.081	0.000
L56	16.75 - 11.65	0.142	44	0.079	0.000
L57	11.65 - 11.417	0.070	44	0.056	0.000
L58	11.417 - 9.375	0.067	44	0.055	0.000
L59	9.375 - 9.125	0.046	44	0.045	0.000
L60	9.125 - 4.833	0.043	44	0.044	0.000
L61	4.833 - 4.583	0.012	44	0.025	0.000
L62	4.583 - 0	0.011	44	0.023	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
192.000	OGB4-900D	45	19.049	0.917	0.007	197693
191.667	Lightning Rod 5/8" x 4' on 4' Pole	45	19.049	0.917	0.007	197693
191.000	DB589-A	45	18.921	0.917	0.006	197693
184.000	LNX-6515DS-VTM w/ Mount Pipe	45	17.579	0.915	0.006	175827
178.000	4' ICE SHIELDS	45	16.431	0.912	0.005	61892
160.000	(2) HBXX-6517DS-VTM w/ Mount Pipe	45	13.060	0.867	0.004	13155
158.000	SRL-224NM-4	45	12.699	0.858	0.004	11473
151.000	7770.00 w/ Mount Pipe	45	11.471	0.814	0.003	7288
150.000	DC6-48-60-18-8F	45	11.301	0.806	0.003	6827
138.000	4' ICE SHIELDS	45	9.426	0.692	0.002	11067
132.000	SRL-235-2	45	8.570	0.666	0.002	9717
124.000	PCS 1900 TMA RX	45	7.498	0.611	0.002	7845
120.000	Andrew VHLP2-18	45	6.999	0.581	0.002	9246
116.000	(3) 844G65VTZAS w/ Mount Pipe	45	6.520	0.561	0.001	9706
98.000	4' ICE SHIELDS	45	4.610	0.454	0.001	9975
90.000	KP2F-34	45	3.884	0.412	0.001	11386
70.000	SRL-235-2	45	2.362	0.315	0.001	12023
33.000	DB909XVTE-M	44	0.544	0.156	0.000	12054

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	191.667 - 186.667	89.376	14	4.294	0.031
L2	186.667 - 181.567	84.885	14	4.290	0.028
L3	181.567 - 176.567	80.309	14	4.286	0.026
L4	176.567 - 171.567	75.832	14	4.269	0.024
L5	171.567 - 166.567	71.383	14	4.233	0.023
L6	166.567 - 161.567	66.982	14	4.176	0.021
L7	161.567 - 156.567	62.651	14	4.098	0.020
L8	156.567 - 151.567	58.416	14	3.991	0.018
L9	151.567 - 146.567	54.315	14	3.841	0.016
L10	146.567 - 141.567	50.397	14	3.634	0.014
L11	141.567 - 141.417	46.736	14	3.351	0.012

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L12	141.417 - 136.417	46.631	14	3.342	0.012
L13	136.417 - 131.417	43.187	14	3.236	0.011
L14	131.417 - 126.417	39.865	14	3.107	0.010
L15	126.417 - 121.417	36.691	14	2.954	0.009
L16	121.417 - 121.167	33.690	14	2.776	0.008
L17	121.167 - 116.167	33.545	14	2.766	0.008
L18	116.167 - 111.167	30.715	14	2.638	0.007
L19	111.167 - 110.042	28.029	14	2.491	0.006
L20	110.042 - 109.792	27.447	14	2.455	0.006
L21	109.792 - 105.083	27.318	14	2.449	0.006
L22	105.083 - 104.833	24.965	14	2.324	0.005
L23	104.833 - 100.917	24.843	14	2.318	0.005
L24	100.917 - 100.667	22.983	14	2.217	0.005
L25	100.667 - 95.833	22.868	14	2.211	0.005
L26	95.833 - 95.583	20.697	14	2.076	0.004
L27	95.583 - 90.583	20.588	14	2.071	0.004
L28	90.583 - 89.917	18.483	14	1.949	0.004
L29	89.917 - 89.667	18.213	14	1.932	0.004
L30	89.667 - 84.667	18.112	14	1.926	0.004
L31	84.667 - 80.833	16.153	14	1.814	0.003
L32	80.833 - 80.583	14.734	14	1.721	0.003
L33	80.583 - 75.583	14.644	14	1.716	0.003
L34	75.583 - 70.583	12.903	14	1.609	0.003
L35	70.583 - 69.5	11.278	14	1.494	0.003
L36	69.5 - 69.25	10.942	14	1.468	0.002
L37	69.25 - 64.25	10.866	14	1.462	0.002
L38	64.25 - 60.583	9.389	14	1.358	0.002
L39	60.583 - 60.333	8.377	14	1.276	0.002
L40	60.333 - 55.333	8.310	14	1.271	0.002
L41	55.333 - 52.167	7.030	14	1.173	0.002
L42	52.167 - 51.917	6.274	14	1.108	0.002
L43	51.917 - 46.917	6.216	14	1.104	0.002
L44	46.917 - 41.917	5.107	14	1.014	0.002
L45	41.917 - 40.333	4.094	14	0.919	0.001
L46	40.333 - 40.083	3.795	14	0.888	0.001
L47	40.083 - 35.083	3.748	14	0.883	0.001
L48	35.083 - 30.083	2.879	14	0.776	0.001
L49	30.083 - 28	2.125	14	0.664	0.001
L50	28 - 27.75	1.846	14	0.616	0.001
L51	27.75 - 22.75	1.814	14	0.611	0.001
L52	22.75 - 20.083	1.227	14	0.510	0.001
L53	20.083 - 19.833	0.957	14	0.455	0.001
L54	19.833 - 17	0.933	14	0.448	0.001
L55	17 - 16.75	0.688	14	0.378	0.001
L56	16.75 - 11.65	0.668	14	0.373	0.001
L57	11.65 - 11.417	0.328	14	0.263	0.000
L58	11.417 - 9.375	0.315	14	0.258	0.000
L59	9.375 - 9.125	0.215	14	0.213	0.000
L60	9.125 - 4.833	0.204	14	0.207	0.000
L61	4.833 - 4.583	0.059	14	0.115	0.000
L62	4.583 - 0	0.053	14	0.109	0.000

Critical Deflections and Radius of Curvature - Design 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
192.000	OGB4-900D	14	89.376	4.294	0.031	45534
191.667	Lightning Rod 5/8" x 4' on 4' Pole	14	89.376	4.294	0.031	45534
191.000	DB589-A	14	88.776	4.293	0.030	45534
184.000	LNX-6515DS-VTM w/ Mount Pipe	14	82.492	4.288	0.027	44445
178.000	4' ICE SHIELDS	14	77.114	4.276	0.025	14034
160.000	(2) HBXX-6517DS-VTM w/ Mount Pipe	14	61.312	4.068	0.019	2858
158.000	SRL-224NM-4	14	59.618	4.026	0.019	2493
151.000	7770.00 w/ Mount Pipe	14	53.860	3.821	0.016	1576
150.000	DC6-48-60-18-8F	14	53.064	3.783	0.015	1475
138.000	4' ICE SHIELDS	14	44.265	3.248	0.011	2375
132.000	SRL-235-2	14	40.245	3.126	0.011	2088
124.000	PCS 1900 TMA RX	14	35.217	2.872	0.009	1686
120.000	Andrew VHLP2-18	14	32.872	2.728	0.008	1984
116.000	(3) 844G65VTZAS w/ Mount Pipe	14	30.623	2.634	0.007	2081
98.000	4' ICE SHIELDS	14	21.653	2.135	0.005	2130
90.000	KP2F-34	14	18.246	1.934	0.004	2431
70.000	SRL-235-2	14	11.097	1.479	0.002	2563
33.000	DB909XVTE-M	14	2.551	0.731	0.001	2565

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	191.667 - 186.667 (1)	P18x0.375	5.000	0.000	0.0	20.764	-1.781	784.878	0.002
L2	186.667 - 181.567 (2)	P24x0.375	5.100	0.000	0.0	27.833	-11.478	1052.070	0.011
L3	181.567 - 176.567 (3)	P24x0.375	5.000	0.000	0.0	27.833	-5.074	1052.070	0.005
L4	176.567 - 171.567 (4)	P24x0.375	5.000	0.000	0.0	27.833	-5.780	1052.070	0.005
L5	171.567 - 166.567 (5)	P24x0.375	5.000	0.000	0.0	27.833	-6.489	1052.070	0.006
L6	166.567 - 161.567 (6)	P24x0.375	5.000	0.000	0.0	27.833	-7.201	1052.070	0.007
L7	161.567 - 156.567 (7)	P24x0.375	5.000	0.000	0.0	27.833	-10.921	1052.070	0.010
L8	156.567 - 151.567 (8)	P24x0.375	5.000	0.000	0.0	27.833	-11.676	1052.070	0.011
L9	151.567 - 146.567 (9)	P24x0.375	5.000	0.000	0.0	27.833	-17.267	1052.070	0.016
L10	146.567 - 141.567 (10)	P24x0.375	5.000	0.000	0.0	27.833	-18.160	1052.070	0.017
L11	141.567 - 141.417 (11)	P24x0.375	0.150	0.000	0.0	27.833	-18.198	1052.070	0.017
L12	141.417 - 136.417 (12)	P36x0.375	5.000	0.000	0.0	41.970	-19.368	1490.100	0.013
L13	136.417 - 131.417 (13)	P36x0.375	5.000	0.000	0.0	41.970	-20.996	1490.100	0.014
L14	131.417 -	P36x0.375	5.000	0.000	0.0	41.970	-22.203	1490.100	0.015

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L15	126.417 (14) 126.417 - 121.417 (15)	P36x0.375	5.000	0.000	0.0	41.970	-24.451	1490.100	0.016
L16	121.417 - 121.167 (16)	P36x0.375	0.250	0.000	0.0	41.970	-24.531	1490.100	0.016
L17	121.167 - 116.167 (17)	P42x0.375	5.000	0.000	0.0	49.038	-26.044	1668.870	0.016
L18	116.167 - 111.167 (18)	P42x0.375	5.000	0.000	0.0	49.038	-30.104	1668.870	0.018
L19	111.167 - 110.042 (19)	P42x0.375	1.125	0.000	0.0	49.038	-30.416	1668.870	0.018
L20	110.042 - 109.792 (20)	P42x0.4875	0.250	0.000	0.0	63.577	-30.506	2332.130	0.013
L21	109.792 - 105.083 (21)	P42x0.4875	4.709	0.000	0.0	63.577	-32.148	2332.130	0.014
L22	105.083 - 104.833 (22)	P42x0.5625	0.250	0.000	0.0	73.226	-32.260	2767.950	0.012
L23	104.833 - 100.917 (23)	P42x0.5625	3.916	0.000	0.0	73.226	-34.682	2767.950	0.013
L24	100.917 - 100.667 (24)	P48x0.375	0.250	0.000	0.0	56.107	-34.794	1847.490	0.019
L25	100.667 - 95.833 (25)	P48x0.375	4.834	0.000	0.0	56.107	-36.650	1847.490	0.020
L26	95.833 - 95.583 (26)	P48x0.475	0.250	0.000	0.0	70.920	-36.748	2481.390	0.015
L27	95.583 - 90.583 (27)	P48x0.475	5.000	0.000	0.0	70.920	-38.547	2481.390	0.016
L28	90.583 - 89.917 (28)	P48x0.475	0.666	0.000	0.0	70.920	-38.946	2481.390	0.016
L29	89.917 - 89.667 (29)	P48x0.575	0.250	0.000	0.0	85.669	-39.061	3174.020	0.012
L30	89.667 - 84.667 (30)	P48x0.575	5.000	0.000	0.0	85.669	-41.913	3174.020	0.013
L31	84.667 - 80.833 (31)	P48x0.575	3.834	0.000	0.0	85.669	-45.104	3174.020	0.014
L32	80.833 - 80.583 (32)	P54x0.4875	0.250	0.000	0.0	81.956	-45.312	2797.170	0.016
L33	80.583 - 75.583 (33)	P54x0.4875	5.000	0.000	0.0	81.956	-47.900	2797.170	0.017
L34	75.583 - 70.583 (34)	P54x0.4875	5.000	0.000	0.0	81.956	-50.686	2797.170	0.018
L35	70.583 - 69.5 (35)	P54x0.4875	1.083	0.000	0.0	81.956	-51.699	2797.170	0.018
L36	69.5 - 69.25 (36)	P54x0.5875	0.250	0.000	0.0	98.583	-51.891	3545.230	0.015
L37	69.25 - 64.25 (37)	P54x0.5875	5.000	0.000	0.0	98.583	-58.252	3545.230	0.016
L38	64.25 - 60.583 (38)	P54x0.5875	3.667	0.000	0.0	98.583	-63.427	3545.230	0.018
L39	60.583 - 60.333 (39)	P60x0.5125	0.250	0.000	0.0	95.779	-63.634	3222.890	0.020
L40	60.333 - 55.333 (40)	P60x0.5125	5.000	0.000	0.0	95.779	-67.428	3222.890	0.021
L41	55.333 - 52.167 (41)	P60x0.5125	3.166	0.000	0.0	95.779	-68.926	3222.890	0.021
L42	52.167 - 51.917 (42)	P60x0.625	0.250	0.000	0.0	116.583	-69.072	4139.150	0.017
L43	51.917 - 46.917 (43)	P60x0.625	5.000	0.000	0.0	116.583	-72.177	4139.150	0.017
L44	46.917 -	P60x0.625	5.000	0.000	0.0	116.583	-76.154	4139.150	0.018

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	41.917 (44)								
L45	41.917 - 40.333 (45)	P60x0.625	1.584	0.000	0.0	116.583	-77.404	4139.150	0.019
L46	40.333 - 40.083 (46)	P60x0.6	0.250	0.000	0.0	111.966	-77.596	3929.110	0.020
L47	40.083 - 35.083 (47)	P60x0.6	5.000	0.000	0.0	111.966	-81.270	3929.110	0.021
L48	35.083 - 30.083 (48)	P60x0.6	5.000	0.000	0.0	111.966	-84.501	3929.110	0.022
L49	30.083 - 28 (49)	P60x0.6	2.083	0.000	0.0	111.966	-85.624	3929.110	0.022
L50	28 - 27.75 (50)	P60x0.725	0.250	0.000	0.0	135.008	-85.790	5015.910	0.017
L51	27.75 - 22.75 (51)	P60x0.725	5.000	0.000	0.0	135.008	-89.906	5015.910	0.018
L52	22.75 - 20.083 (52)	P60x0.725	2.667	0.000	0.0	135.008	-92.130	5015.910	0.018
L53	20.083 - 19.833 (53)	P60x0.625	0.250	0.000	0.0	116.583	-92.328	4139.150	0.022
L54	19.833 - 17 (54)	P60x0.625	2.833	0.000	0.0	116.583	-94.473	4139.150	0.023
L55	17 - 16.75 (55)	P60x0.725	0.250	0.000	0.0	135.008	-94.698	5015.910	0.019
L56	16.75 - 11.65 (56)	P60x0.75	5.100	0.000	0.0	139.605	-98.922	5244.230	0.019
L57	11.65 - 11.417 (57)	P60x0.75	0.233	0.000	0.0	139.605	-99.084	5244.230	0.019
L58	11.417 - 9.375 (58)	P60x0.75	2.042	0.000	0.0	139.605	-100.447	5244.230	0.019
L59	9.375 - 9.125 (59)	P60x0.8	0.250	0.000	0.0	148.786	-100.627	5624.100	0.018
L60	9.125 - 4.833 (60)	P60x0.8	4.292	0.000	0.0	148.786	-103.604	5624.100	0.018
L61	4.833 - 4.583 (61)	P60x0.75	0.250	0.000	0.0	139.605	-103.781	5244.230	0.020
L62	4.583 - 0 (62)	P60x0.75	4.583	0.000	0.0	139.605	-106.910	5244.230	0.020

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	191.667 - 186.667 (1)	P18x0.375	5.351	367.000	0.015	0.000	367.000	0.000
L2	186.667 - 181.567 (2)	P24x0.375	8.810	623.717	0.014	0.000	623.717	0.000
L3	181.567 - 176.567 (3)	P24x0.375	36.078	623.717	0.058	0.000	623.717	0.000
L4	176.567 - 171.567 (4)	P24x0.375	63.551	623.717	0.102	0.000	623.717	0.000
L5	171.567 - 166.567 (5)	P24x0.375	92.657	623.717	0.149	0.000	623.717	0.000
L6	166.567 - 161.567 (6)	P24x0.375	123.367	623.717	0.198	0.000	623.717	0.000
L7	161.567 - 156.567 (7)	P24x0.375	174.367	623.717	0.280	0.000	623.717	0.000
L8	156.567 - 151.567 (8)	P24x0.375	237.158	623.717	0.380	0.000	623.717	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 $\frac{M_{uy}}{\phi M_{ny}}$
L9	151.567 - 146.567 (9)	P24x0.375	333.633	623.717	0.535	0.000	623.717	0.000
L10	146.567 - 141.567 (10)	P24x0.375	437.939	623.717	0.702	0.000	623.717	0.000
L11	141.567 - 141.417 (11)	P24x0.375	441.119	623.717	0.707	0.000	623.717	0.000
L12	141.417 - 136.417 (12)	P36x0.375	548.461	1338.808	0.410	0.000	1338.808	0.000
L13	136.417 - 131.417 (13)	P36x0.375	659.612	1338.808	0.493	0.000	1338.808	0.000
L14	131.417 - 126.417 (14)	P36x0.375	774.680	1338.808	0.579	0.000	1338.808	0.000
L15	126.417 - 121.417 (15)	P36x0.375	893.867	1338.808	0.668	0.000	1338.808	0.000
L16	121.417 - 121.167 (16)	P36x0.375	899.975	1338.808	0.672	0.000	1338.808	0.000
L17	121.167 - 116.167 (17)	P42x0.375	1023.808	1796.558	0.570	0.000	1796.558	0.000
L18	116.167 - 111.167 (18)	P42x0.375	1169.342	1796.558	0.651	0.000	1796.558	0.000
L19	111.167 - 110.042 (19)	P42x0.375	1201.592	1796.558	0.669	0.000	1796.558	0.000
L20	110.042 - 109.792 (20)	P42x0.4875	1208.767	2395.433	0.505	0.000	2395.433	0.000
L21	109.792 - 105.083 (21)	P42x0.4875	1346.142	2395.433	0.562	0.000	2395.433	0.000
L22	105.083 - 104.833 (22)	P42x0.5625	1353.592	2809.308	0.482	0.000	2809.308	0.000
L23	104.833 - 100.917 (23)	P42x0.5625	1472.217	2809.308	0.524	0.000	2809.308	0.000
L24	100.917 - 100.667 (24)	P48x0.375	1479.900	2321.108	0.638	0.000	2321.108	0.000
L25	100.667 - 95.833 (25)	P48x0.375	1630.000	2321.108	0.702	0.000	2321.108	0.000
L26	95.833 - 95.583 (26)	P48x0.475	1637.842	2999.958	0.546	0.000	2999.958	0.000
L27	95.583 - 90.583 (27)	P48x0.475	1795.850	2999.958	0.599	0.000	2999.958	0.000
L28	90.583 - 89.917 (28)	P48x0.475	1818.083	2999.958	0.606	0.000	2999.958	0.000
L29	89.917 - 89.667 (29)	P48x0.575	1826.133	3702.967	0.493	0.000	3702.967	0.000
L30	89.667 - 84.667 (30)	P48x0.575	1988.233	3702.967	0.537	0.000	3702.967	0.000
L31	84.667 - 80.833 (31)	P48x0.575	2114.208	3702.967	0.571	0.000	3702.967	0.000
L32	80.833 - 80.583 (32)	P54x0.4875	2122.483	3864.467	0.549	0.000	3864.467	0.000
L33	80.583 - 75.583 (33)	P54x0.4875	2289.575	3864.467	0.592	0.000	3864.467	0.000
L34	75.583 - 70.583 (34)	P54x0.4875	2459.158	3864.467	0.636	0.000	3864.467	0.000
L35	70.583 - 69.5 (35)	P54x0.4875	2496.850	3864.467	0.646	0.000	3864.467	0.000
L36	69.5 - 69.25 (36)	P54x0.5875	2505.542	4739.867	0.529	0.000	4739.867	0.000
L37	69.25 - 64.25 (37)	P54x0.5875	2682.358	4739.867	0.566	0.000	4739.867	0.000
L38	64.25 - 60.583 (38)	P54x0.5875	2816.492	4739.867	0.594	0.000	4739.867	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 $\frac{M_{uy}}{\phi M_{ny}}$
L39	60.583 - 60.333 (39)	P60x0.5125	2825.783	4992.042	0.566	0.000	4992.042	0.000
L40	60.333 - 55.333 (40)	P60x0.5125	3012.950	4992.042	0.604	0.000	4992.042	0.000
L41	55.333 - 52.167 (41)	P60x0.5125	3132.808	4992.042	0.628	0.000	4992.042	0.000
L42	52.167 - 51.917 (42)	P60x0.625	3142.308	6198.183	0.507	0.000	6198.183	0.000
L43	51.917 - 46.917 (43)	P60x0.625	3333.592	6198.183	0.538	0.000	6198.183	0.000
L44	46.917 - 41.917 (44)	P60x0.625	3527.058	6198.183	0.569	0.000	6198.183	0.000
L45	41.917 - 40.333 (45)	P60x0.625	3588.842	6198.183	0.579	0.000	6198.183	0.000
L46	40.333 - 40.083 (46)	P60x0.6	3598.608	5926.841	0.607	0.000	5926.841	0.000
L47	40.083 - 35.083 (47)	P60x0.6	3794.942	5926.841	0.640	0.000	5926.841	0.000
L48	35.083 - 30.083 (48)	P60x0.6	3993.783	5926.841	0.674	0.000	5926.841	0.000
L49	30.083 - 28 (49)	P60x0.6	4077.150	5926.841	0.688	0.000	5926.841	0.000
L50	28 - 27.75 (50)	P60x0.725	4087.167	7302.233	0.560	0.000	7302.233	0.000
L51	27.75 - 22.75 (51)	P60x0.725	4288.625	7302.233	0.587	0.000	7302.233	0.000
L52	22.75 - 20.083 (52)	P60x0.725	4396.750	7302.233	0.602	0.000	7302.233	0.000
L53	20.083 - 19.833 (53)	P60x0.625	4406.908	6198.183	0.711	0.000	6198.183	0.000
L54	19.833 - 17 (54)	P60x0.625	4522.267	6198.183	0.730	0.000	6198.183	0.000
L55	17 - 16.75 (55)	P60x0.725	4532.467	7302.233	0.621	0.000	7302.233	0.000
L56	16.75 - 11.65 (56)	P60x0.75	4741.300	7582.875	0.625	0.000	7582.875	0.000
L57	11.65 - 11.417 (57)	P60x0.75	4750.867	7582.875	0.627	0.000	7582.875	0.000
L58	11.417 - 9.375 (58)	P60x0.75	4834.842	7582.875	0.638	0.000	7582.875	0.000
L59	9.375 - 9.125 (59)	P60x0.8	4845.142	8149.650	0.595	0.000	8149.650	0.000
L60	9.125 - 4.833 (60)	P60x0.8	5022.358	8149.650	0.616	0.000	8149.650	0.000
L61	4.833 - 4.583 (61)	P60x0.75	5032.708	7582.875	0.664	0.000	7582.875	0.000
L62	4.583 - 0 (62)	P60x0.75	5222.908	7582.875	0.689	0.000	7582.875	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	191.667 - 186.667 (1)	P18x0.375	0.343	392.439	0.001	0.060	564.642	0.000
L2	186.667 - 181.567 (2)	P24x0.375	1.881	526.035	0.004	0.367	1019.708	0.000
L3	181.567 -	P24x0.375	5.322	526.035	0.010	0.962	1019.708	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 $\frac{T_u}{\phi T_n}$
	176.567 (3)							
L4	176.567 - 171.567 (4)	P24x0.375	5.651	526.035	0.011	0.962	1019.708	0.001
L5	171.567 - 166.567 (5)	P24x0.375	5.975	526.035	0.011	0.962	1019.708	0.001
L6	166.567 - 161.567 (6)	P24x0.375	6.293	526.035	0.012	0.962	1019.708	0.001
L7	161.567 - 156.567 (7)	P24x0.375	12.188	526.035	0.023	0.928	1019.708	0.001
L8	156.567 - 151.567 (8)	P24x0.375	12.913	526.035	0.025	1.082	1019.708	0.001
L9	151.567 - 146.567 (9)	P24x0.375	20.527	526.035	0.039	1.256	1019.708	0.001
L10	146.567 - 141.567 (10)	P24x0.375	21.196	526.035	0.040	2.248	1019.708	0.002
L11	141.567 - 141.417 (11)	P24x0.375	21.208	526.035	0.040	2.252	1019.708	0.002
L12	141.417 - 136.417 (12)	P36x0.375	21.762	745.048	0.029	2.251	2189.067	0.001
L13	136.417 - 131.417 (13)	P36x0.375	22.771	745.048	0.031	2.811	2189.067	0.001
L14	131.417 - 126.417 (14)	P36x0.375	23.234	745.048	0.031	2.811	2189.067	0.001
L15	126.417 - 121.417 (15)	P36x0.375	24.418	745.048	0.033	3.024	2189.067	0.001
L16	121.417 - 121.167 (16)	P36x0.375	24.437	745.048	0.033	3.023	2189.067	0.001
L17	121.167 - 116.167 (17)	P42x0.375	25.072	834.437	0.030	3.695	2868.842	0.001
L18	116.167 - 111.167 (18)	P42x0.375	28.605	834.437	0.034	3.723	2868.842	0.001
L19	111.167 - 110.042 (19)	P42x0.375	28.708	834.437	0.034	3.722	2868.842	0.001
L20	110.042 - 109.792 (20)	P42x0.4875	28.727	1166.060	0.025	3.722	3987.583	0.001
L21	109.792 - 105.083 (21)	P42x0.4875	29.745	1166.060	0.026	4.943	3987.583	0.001
L22	105.083 - 104.833 (22)	P42x0.5625	29.793	1383.970	0.022	4.944	4715.900	0.001
L23	104.833 - 100.917 (23)	P42x0.5625	30.730	1383.970	0.022	4.965	4715.900	0.001
L24	100.917 - 100.667 (24)	P48x0.375	30.751	923.745	0.033	4.965	3637.700	0.001
L25	100.667 - 95.833 (25)	P48x0.375	31.333	923.745	0.034	4.964	3637.700	0.001
L26	95.833 - 95.583 (26)	P48x0.475	31.351	1240.700	0.025	4.964	4865.533	0.001
L27	95.583 - 90.583 (27)	P48x0.475	31.831	1240.700	0.026	4.963	4865.533	0.001
L28	90.583 - 89.917 (28)	P48x0.475	32.160	1240.700	0.026	5.738	4865.533	0.001
L29	89.917 - 89.667 (29)	P48x0.575	32.183	1587.010	0.020	5.738	6197.767	0.001
L30	89.667 - 84.667 (30)	P48x0.575	32.709	1587.010	0.021	5.737	6197.767	0.001
L31	84.667 - 80.833 (31)	P48x0.575	33.158	1587.010	0.021	5.737	6197.767	0.001
L32	80.833 - 80.583 (32)	P54x0.4875	33.180	1398.580	0.024	5.737	6181.017	0.001
L33	80.583 -	P54x0.4875	33.680	1398.580	0.024	5.736	6181.017	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 $\frac{T_u}{\phi T_n}$
L34	75.583 (33) - 70.583 (34)	P54x0.4875	34.183	1398.580	0.024	5.736	6181.017	0.001
L35	70.583 - 69.5 (35)	P54x0.4875	34.783	1398.580	0.025	5.736	6181.017	0.001
L36	69.5 - 69.25 (36)	P54x0.5875	34.804	1772.620	0.020	4.126	7805.091	0.001
L37	69.25 - 64.25 (37)	P54x0.5875	36.150	1772.620	0.020	4.211	7805.091	0.001
L38	64.25 - 60.583 (38)	P54x0.5875	37.171	1772.620	0.021	4.249	7805.091	0.001
L39	60.583 - 60.333 (39)	P60x0.5125	37.190	1611.450	0.023	4.249	7920.767	0.001
L40	60.333 - 55.333 (40)	P60x0.5125	37.719	1611.450	0.023	4.249	7920.767	0.001
L41	55.333 - 52.167 (41)	P60x0.5125	37.988	1611.450	0.024	4.249	7920.767	0.001
L42	52.167 - 51.917 (42)	P60x0.625	38.003	2069.580	0.018	4.249	10134.583	0.000
L43	51.917 - 46.917 (43)	P60x0.625	38.483	2069.580	0.019	4.248	10134.583	0.000
L44	46.917 - 41.917 (44)	P60x0.625	38.972	2069.580	0.019	4.248	10134.583	0.000
L45	41.917 - 40.333 (45)	P60x0.625	39.123	2069.580	0.019	4.248	10134.583	0.000
L46	40.333 - 40.083 (46)	P60x0.6	39.128	1964.560	0.020	4.248	9628.250	0.000
L47	40.083 - 35.083 (47)	P60x0.6	39.502	1964.560	0.020	4.248	9628.250	0.000
L48	35.083 - 30.083 (48)	P60x0.6	39.959	1964.560	0.020	4.901	9628.250	0.001
L49	30.083 - 28 (49)	P60x0.6	40.077	1964.560	0.020	4.901	9628.250	0.001
L50	28 - 27.75 (50)	P60x0.725	40.080	2507.960	0.016	4.901	12240.416	0.000
L51	27.75 - 22.75 (51)	P60x0.725	40.423	2507.960	0.016	4.901	12240.416	0.000
L52	22.75 - 20.083 (52)	P60x0.725	40.599	2507.960	0.016	4.900	12240.416	0.000
L53	20.083 - 19.833 (53)	P60x0.625	40.597	2069.580	0.020	4.900	10134.583	0.000
L54	19.833 - 17 (54)	P60x0.625	40.775	2069.580	0.020	4.900	10134.583	0.000
L55	17 - 16.75 (55)	P60x0.725	40.766	2507.960	0.016	4.900	12240.416	0.000
L56	16.75 - 11.65 (56)	P60x0.75	41.063	2622.110	0.016	4.900	12786.916	0.000
L57	11.65 - 11.417 (57)	P60x0.75	41.061	2622.110	0.016	4.900	12786.916	0.000
L58	11.417 - 9.375 (58)	P60x0.75	41.174	2622.110	0.016	4.900	12786.916	0.000
L59	9.375 - 9.125 (59)	P60x0.8	41.172	2812.050	0.015	4.900	13690.333	0.000
L60	9.125 - 4.833 (60)	P60x0.8	41.394	2812.050	0.015	4.900	13690.333	0.000
L61	4.833 - 4.583 (61)	P60x0.75	41.390	2622.110	0.016	4.900	12786.916	0.000
L62	4.583 - 0 (62)	P60x0.75	41.600	2622.110	0.016	4.900	12786.916	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	191.667 - 186.667 (1)	0.002	0.015	0.000	0.001	0.000	0.017 ✔	1.000	4.8.2 ✔
L2	186.667 - 181.567 (2)	0.011	0.014	0.000	0.004	0.000	0.025 ✔	1.000	4.8.2 ✔
L3	181.567 - 176.567 (3)	0.005	0.058	0.000	0.010	0.001	0.063 ✔	1.000	4.8.2 ✔
L4	176.567 - 171.567 (4)	0.005	0.102	0.000	0.011	0.001	0.108 ✔	1.000	4.8.2 ✔
L5	171.567 - 166.567 (5)	0.006	0.149	0.000	0.011	0.001	0.155 ✔	1.000	4.8.2 ✔
L6	166.567 - 161.567 (6)	0.007	0.198	0.000	0.012	0.001	0.205 ✔	1.000	4.8.2 ✔
L7	161.567 - 156.567 (7)	0.010	0.280	0.000	0.023	0.001	0.291 ✔	1.000	4.8.2 ✔
L8	156.567 - 151.567 (8)	0.011	0.380	0.000	0.025	0.001	0.392 ✔	1.000	4.8.2 ✔
L9	151.567 - 146.567 (9)	0.016	0.535	0.000	0.039	0.001	0.553 ✔	1.000	4.8.2 ✔
L10	146.567 - 141.567 (10)	0.017	0.702	0.000	0.040	0.002	0.721 ✔	1.000	4.8.2 ✔
L11	141.567 - 141.417 (11)	0.017	0.707	0.000	0.040	0.002	0.726 ✔	1.000	4.8.2 ✔
L12	141.417 - 136.417 (12)	0.013	0.410	0.000	0.029	0.001	0.424 ✔	1.000	4.8.2 ✔
L13	136.417 - 131.417 (13)	0.014	0.493	0.000	0.031	0.001	0.508 ✔	1.000	4.8.2 ✔
L14	131.417 - 126.417 (14)	0.015	0.579	0.000	0.031	0.001	0.595 ✔	1.000	4.8.2 ✔
L15	126.417 - 121.417 (15)	0.016	0.668	0.000	0.033	0.001	0.685 ✔	1.000	4.8.2 ✔
L16	121.417 - 121.167 (16)	0.016	0.672	0.000	0.033	0.001	0.690 ✔	1.000	4.8.2 ✔
L17	121.167 - 116.167 (17)	0.016	0.570	0.000	0.030	0.001	0.586 ✔	1.000	4.8.2 ✔
L18	116.167 - 111.167 (18)	0.018	0.651	0.000	0.034	0.001	0.670 ✔	1.000	4.8.2 ✔
L19	111.167 - 110.042 (19)	0.018	0.669	0.000	0.034	0.001	0.688 ✔	1.000	4.8.2 ✔
L20	110.042 - 109.792 (20)	0.013	0.505	0.000	0.025	0.001	0.518 ✔	1.000	4.8.2 ✔
L21	109.792 - 105.083 (21)	0.014	0.562	0.000	0.026	0.001	0.576 ✔	1.000	4.8.2 ✔
L22	105.083 - 104.833 (22)	0.012	0.482	0.000	0.022	0.001	0.494 ✔	1.000	4.8.2 ✔
L23	104.833 - 100.917 (23)	0.013	0.524	0.000	0.022	0.001	0.537 ✔	1.000	4.8.2 ✔
L24	100.917 - 100.667 (24)	0.019	0.638	0.000	0.033	0.001	0.658 ✔	1.000	4.8.2 ✔

Section No.	Elevation ft	Ratio $P_u/\phi P_n$	Ratio $M_{ux}/\phi M_{nx}$	Ratio $M_{uy}/\phi M_{ny}$	Ratio $V_u/\phi V_n$	Ratio $T_u/\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L25	100.667 - 95.833 (25)	0.020	0.702	0.000	0.034	0.001	0.723 ✔	1.000	4.8.2 ✔
L26	95.833 - 95.583 (26)	0.015	0.546	0.000	0.025	0.001	0.561 ✔	1.000	4.8.2 ✔
L27	95.583 - 90.583 (27)	0.016	0.599	0.000	0.026	0.001	0.615 ✔	1.000	4.8.2 ✔
L28	90.583 - 89.917 (28)	0.016	0.606	0.000	0.026	0.001	0.622 ✔	1.000	4.8.2 ✔
L29	89.917 - 89.667 (29)	0.012	0.493	0.000	0.020	0.001	0.506 ✔	1.000	4.8.2 ✔
L30	89.667 - 84.667 (30)	0.013	0.537	0.000	0.021	0.001	0.551 ✔	1.000	4.8.2 ✔
L31	84.667 - 80.833 (31)	0.014	0.571	0.000	0.021	0.001	0.586 ✔	1.000	4.8.2 ✔
L32	80.833 - 80.583 (32)	0.016	0.549	0.000	0.024	0.001	0.566 ✔	1.000	4.8.2 ✔
L33	80.583 - 75.583 (33)	0.017	0.592	0.000	0.024	0.001	0.610 ✔	1.000	4.8.2 ✔
L34	75.583 - 70.583 (34)	0.018	0.636	0.000	0.024	0.001	0.655 ✔	1.000	4.8.2 ✔
L35	70.583 - 69.5 (35)	0.018	0.646	0.000	0.025	0.001	0.665 ✔	1.000	4.8.2 ✔
L36	69.5 - 69.25 (36)	0.015	0.529	0.000	0.020	0.001	0.544 ✔	1.000	4.8.2 ✔
L37	69.25 - 64.25 (37)	0.016	0.566	0.000	0.020	0.001	0.583 ✔	1.000	4.8.2 ✔
L38	64.25 - 60.583 (38)	0.018	0.594	0.000	0.021	0.001	0.613 ✔	1.000	4.8.2 ✔
L39	60.583 - 60.333 (39)	0.020	0.566	0.000	0.023	0.001	0.586 ✔	1.000	4.8.2 ✔
L40	60.333 - 55.333 (40)	0.021	0.604	0.000	0.023	0.001	0.625 ✔	1.000	4.8.2 ✔
L41	55.333 - 52.167 (41)	0.021	0.628	0.000	0.024	0.001	0.650 ✔	1.000	4.8.2 ✔
L42	52.167 - 51.917 (42)	0.017	0.507	0.000	0.018	0.000	0.524 ✔	1.000	4.8.2 ✔
L43	51.917 - 46.917 (43)	0.017	0.538	0.000	0.019	0.000	0.556 ✔	1.000	4.8.2 ✔
L44	46.917 - 41.917 (44)	0.018	0.569	0.000	0.019	0.000	0.588 ✔	1.000	4.8.2 ✔
L45	41.917 - 40.333 (45)	0.019	0.579	0.000	0.019	0.000	0.598 ✔	1.000	4.8.2 ✔
L46	40.333 - 40.083 (46)	0.020	0.607	0.000	0.020	0.000	0.627 ✔	1.000	4.8.2 ✔
L47	40.083 - 35.083 (47)	0.021	0.640	0.000	0.020	0.000	0.661 ✔	1.000	4.8.2 ✔
L48	35.083 - 30.083 (48)	0.022	0.674	0.000	0.020	0.001	0.696 ✔	1.000	4.8.2 ✔
L49	30.083 - 28 (49)	0.022	0.688	0.000	0.020	0.001	0.710 ✔	1.000	4.8.2 ✔
L50	28 - 27.75 (50)	0.017	0.560	0.000	0.016	0.000	0.577 ✔	1.000	4.8.2 ✔

Section No.	Elevation ft	Ratio $P_u/\phi P_n$	Ratio $M_{ux}/\phi M_{nx}$	Ratio $M_{uy}/\phi M_{ny}$	Ratio $V_u/\phi V_n$	Ratio $T_u/\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L51	27.75 - 22.75 (51)	0.018	0.587	0.000	0.016	0.000	0.605 ✔	1.000	4.8.2 ✔
L52	22.75 - 20.083 (52)	0.018	0.602	0.000	0.016	0.000	0.621 ✔	1.000	4.8.2 ✔
L53	20.083 - 19.833 (53)	0.022	0.711	0.000	0.020	0.000	0.734 ✔	1.000	4.8.2 ✔
L54	19.833 - 17 (54)	0.023	0.730	0.000	0.020	0.000	0.753 ✔	1.000	4.8.2 ✔
L55	17 - 16.75 (55)	0.019	0.621	0.000	0.016	0.000	0.640 ✔	1.000	4.8.2 ✔
L56	16.75 - 11.65 (56)	0.019	0.625	0.000	0.016	0.000	0.644 ✔	1.000	4.8.2 ✔
L57	11.65 - 11.417 (57)	0.019	0.627	0.000	0.016	0.000	0.646 ✔	1.000	4.8.2 ✔
L58	11.417 - 9.375 (58)	0.019	0.638	0.000	0.016	0.000	0.657 ✔	1.000	4.8.2 ✔
L59	9.375 - 9.125 (59)	0.018	0.595	0.000	0.015	0.000	0.613 ✔	1.000	4.8.2 ✔
L60	9.125 - 4.833 (60)	0.018	0.616	0.000	0.015	0.000	0.635 ✔	1.000	4.8.2 ✔
L61	4.833 - 4.583 (61)	0.020	0.664	0.000	0.016	0.000	0.684 ✔	1.000	4.8.2 ✔
L62	4.583 - 0 (62)	0.020	0.689	0.000	0.016	0.000	0.709 ✔	1.000	4.8.2 ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	191.667 - 186.667	Pole	P18x0.375	1	-1.781	784.878	1.7	Pass
L2	186.667 - 181.567	Pole	P24x0.375	2	-11.478	1052.070	2.5	Pass
L3	181.567 - 176.567	Pole	P24x0.375	3	-5.074	1052.070	6.3	Pass
L4	176.567 - 171.567	Pole	P24x0.375	4	-5.780	1052.070	10.8	Pass
L5	171.567 - 166.567	Pole	P24x0.375	5	-6.489	1052.070	15.5	Pass
L6	166.567 - 161.567	Pole	P24x0.375	6	-7.201	1052.070	20.5	Pass
L7	161.567 - 156.567	Pole	P24x0.375	7	-10.921	1052.070	29.1	Pass
L8	156.567 - 151.567	Pole	P24x0.375	8	-11.676	1052.070	39.2	Pass
L9	151.567 - 146.567	Pole	P24x0.375	9	-17.267	1052.070	55.3	Pass
L10	146.567 - 141.567	Pole	P24x0.375	10	-18.160	1052.070	72.1	Pass
L11	141.567 -	Pole	P24x0.375	11	-18.198	1052.070	72.6	Pass

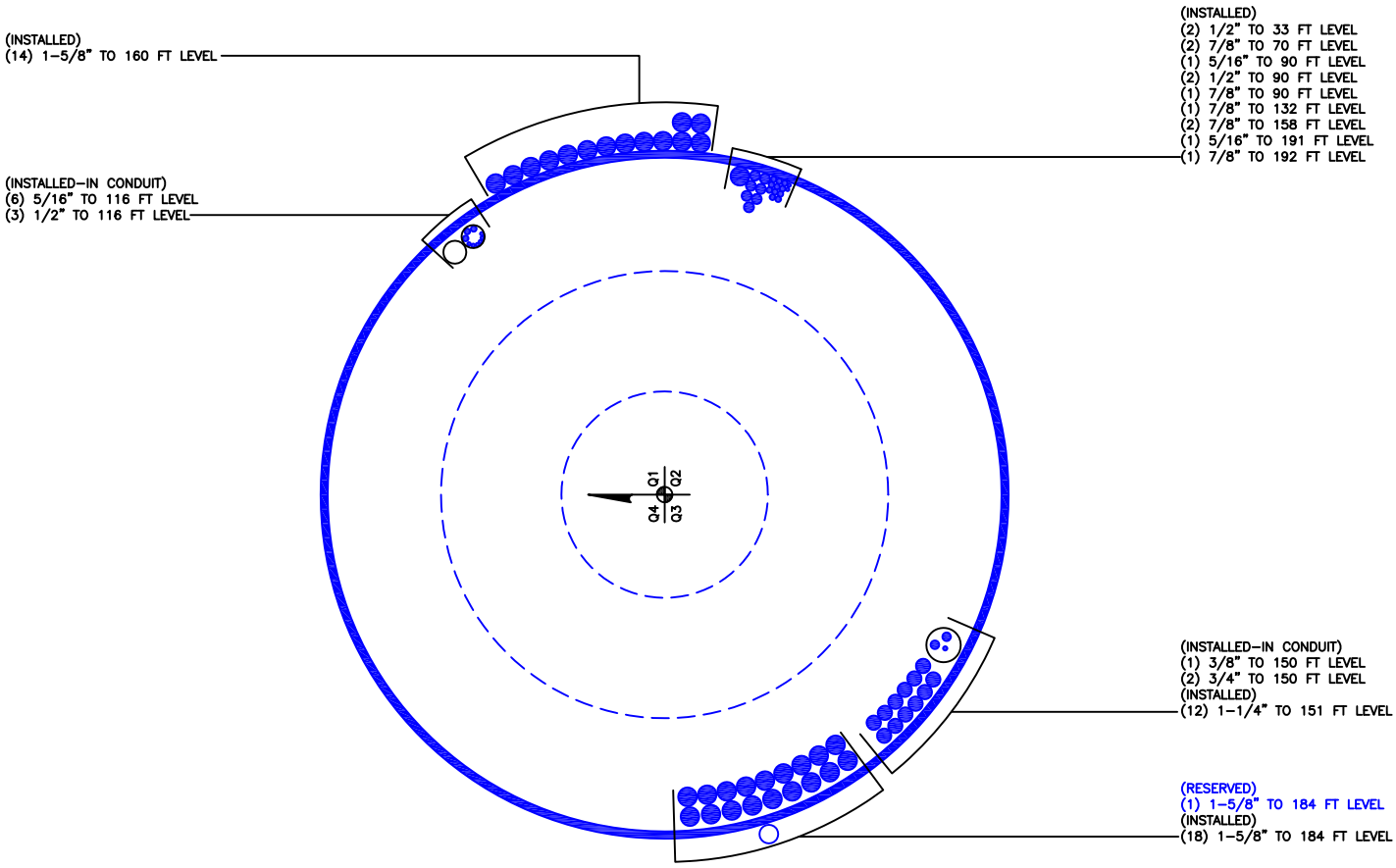
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
	141.417							
L12	141.417 - 136.417	Pole	P36x0.375	12	-19.368	1490.100	42.4	Pass
L13	136.417 - 131.417	Pole	P36x0.375	13	-20.996	1490.100	50.8	Pass
L14	131.417 - 126.417	Pole	P36x0.375	14	-22.203	1490.100	59.5	Pass
L15	126.417 - 121.417	Pole	P36x0.375	15	-24.451	1490.100	68.5	Pass
L16	121.417 - 121.167	Pole	P36x0.375	16	-24.531	1490.100	69.0	Pass
L17	121.167 - 116.167	Pole	P42x0.375	17	-26.044	1668.870	58.6	Pass
L18	116.167 - 111.167	Pole	P42x0.375	18	-30.104	1668.870	67.0	Pass
L19	111.167 - 110.042	Pole	P42x0.375	19	-30.416	1668.870	68.8	Pass
L20	110.042 - 109.792	Pole	P42x0.4875	20	-30.506	2332.130	51.8	Pass
L21	109.792 - 105.083	Pole	P42x0.4875	21	-32.148	2332.130	57.6	Pass
L22	105.083 - 104.833	Pole	P42x0.5625	22	-32.260	2767.950	49.4	Pass
L23	104.833 - 100.917	Pole	P42x0.5625	23	-34.682	2767.950	53.7	Pass
L24	100.917 - 100.667	Pole	P48x0.375	24	-34.794	1847.490	65.8	Pass
L25	100.667 - 95.833	Pole	P48x0.375	25	-36.650	1847.490	72.3	Pass
L26	95.833 - 95.583	Pole	P48x0.475	26	-36.748	2481.390	56.1	Pass
L27	95.583 - 90.583	Pole	P48x0.475	27	-38.547	2481.390	61.5	Pass
L28	90.583 - 89.917	Pole	P48x0.475	28	-38.946	2481.390	62.2	Pass
L29	89.917 - 89.667	Pole	P48x0.575	29	-39.061	3174.020	50.6	Pass
L30	89.667 - 84.667	Pole	P48x0.575	30	-41.913	3174.020	55.1	Pass
L31	84.667 - 80.833	Pole	P48x0.575	31	-45.104	3174.020	58.6	Pass
L32	80.833 - 80.583	Pole	P54x0.4875	32	-45.312	2797.170	56.6	Pass
L33	80.583 - 75.583	Pole	P54x0.4875	33	-47.900	2797.170	61.0	Pass
L34	75.583 - 70.583	Pole	P54x0.4875	34	-50.686	2797.170	65.5	Pass
L35	70.583 - 69.5	Pole	P54x0.4875	35	-51.699	2797.170	66.5	Pass
L36	69.5 - 69.25	Pole	P54x0.5875	36	-51.891	3545.230	54.4	Pass
L37	69.25 - 64.25	Pole	P54x0.5875	37	-58.252	3545.230	58.3	Pass
L38	64.25 - 60.583	Pole	P54x0.5875	38	-63.427	3545.230	61.3	Pass
L39	60.583 - 60.333	Pole	P60x0.5125	39	-63.634	3222.890	58.6	Pass
L40	60.333 - 55.333	Pole	P60x0.5125	40	-67.428	3222.890	62.5	Pass
L41	55.333 - 52.167	Pole	P60x0.5125	41	-68.926	3222.890	65.0	Pass
L42	52.167 - 51.917	Pole	P60x0.625	42	-69.072	4139.150	52.4	Pass
L43	51.917 - 46.917	Pole	P60x0.625	43	-72.177	4139.150	55.6	Pass
L44	46.917 - 41.917	Pole	P60x0.625	44	-76.154	4139.150	58.8	Pass
L45	41.917 - 40.333	Pole	P60x0.625	45	-77.404	4139.150	59.8	Pass
L46	40.333 - 40.083	Pole	P60x0.6	46	-77.596	3929.110	62.7	Pass
L47	40.083 - 35.083	Pole	P60x0.6	47	-81.270	3929.110	66.1	Pass
L48	35.083 - 30.083	Pole	P60x0.6	48	-84.501	3929.110	69.6	Pass
L49	30.083 - 28	Pole	P60x0.6	49	-85.624	3929.110	71.0	Pass
L50	28 - 27.75	Pole	P60x0.725	50	-85.790	5015.910	57.7	Pass
L51	27.75 - 22.75	Pole	P60x0.725	51	-89.906	5015.910	60.5	Pass
L52	22.75 - 20.083	Pole	P60x0.725	52	-92.130	5015.910	62.1	Pass
L53	20.083 - 19.833	Pole	P60x0.625	53	-92.328	4139.150	73.4	Pass
L54	19.833 - 17	Pole	P60x0.625	54	-94.473	4139.150	75.3	Pass
L55	17 - 16.75	Pole	P60x0.725	55	-94.698	5015.910	64.0	Pass
L56	16.75 - 11.65	Pole	P60x0.75	56	-98.922	5244.230	64.4	Pass
L57	11.65 - 11.417	Pole	P60x0.75	57	-99.084	5244.230	64.6	Pass
L58	11.417 - 9.375	Pole	P60x0.75	58	-100.447	5244.230	65.7	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L59	9.375 - 9.125	Pole	P60x0.8	59	-100.627	5624.100	61.3	Pass
L60	9.125 - 4.833	Pole	P60x0.8	60	-103.604	5624.100	63.5	Pass
L61	4.833 - 4.583	Pole	P60x0.75	61	-103.781	5244.230	68.4	Pass
L62	4.583 - 0	Pole	P60x0.75	62	-106.910	5244.230	70.9	Pass
							Summary	
						Pole (L54)	75.3	Pass
						RATING =	**75.3**	**Pass**

Note: These values are approximate for more accurate results see CCI pole output in Appendix C.

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT:826217

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- G

Site BU: 826217

Work Order: 1518323

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	191.667	10.084		0	18	18	0.375	n/a	A53-B-42
2	181.583	40.166		0	24.00	24	0.375	n/a	A53-B-42
3	141.417	20.25		0	36.00	36	0.375	n/a	A53-B-42
4	121.167	20.25		0	42.00	42	0.375	n/a	A53-B-42
5	100.917	20.084		0	48.00	48	0.375	n/a	A53-B-42
6	80.833	20.25		0	54.00	54	0.375	n/a	A53-B-42
7	60.583	20.25		0	60.00	60	0.375	n/a	A53-B-42
8	40.333	20.25		0	60.00	60	0.5	n/a	A53-B-42
9	20.083	20.083		0	60.00	60	0.625	n/a	A53-B-42

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	0	9.375	plate	CCI-AFP-040075	2				70												313		
2	20.083	40.333	plate	CCI-SFP-060100	3				66						189						312		
3	40.333	60.583	plate	CCI-SFP-065125	3				67.5						188						307		
4	60.583	80.833	plate	CCI-SFP-060100	3				67.5						190						307		
5	80.833	89.917	plate	CCI-SFP-045100	3				72						192						312		
6	100.917	105.083	plate	CCI-AFP-040075	3			53						178							303		
7	4.833	11.667	plate	CCI-AFP-040075	1										198								
8	0	17	plate	CCI-SFP-060100	4		36				113						223			294			
9	20.083	28	plate	CCI-SFP-060100	4			53					157					247				339	
10	40.333	52.167	plate	CCI-SFP-060100	4		36					126					234			294			
11	60.583	69.5	plate	CCI-SFP-045100	4				80				155					254					341
12	80.833	95.833	plate	CCI-SFP-045100	3					93						213						333	
13	100.917	110.042	plate	CCI-SFP-045100	3		30						150						270				
14																							

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Length (in)	Top Termination Length (in)	L_u (in)	Net Area (in^2)	Bolt Hole Size (in)	Reinforcement Material
1	4	0.75	3	0.375	18.000	18.000	16.000	2.063	1.1875	A572-65
2	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
3	6.5	1.25	8.125	0.625	33.000	33.000	19.000	6.563	1.1875	A572-65
4	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
5	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
6	4	0.75	3	0.375	18.000	18.000	16.000	2.063	1.1875	A572-65
7	4	0.75	3	0.375	18.000	18.000	16.000	2.063	1.1875	A572-65
8	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
9	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
10	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
11	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
12	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
13	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65

TNX Geometry Input

Increment (ft): 5

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	191.667 - 186.667	5	0	0	18.000	18.000	0.375	A53-B-42	1.000
2	186.667 - 181.567	5.1		0	24.000	24.000	0.375	A53-B-42	1.000
3	181.567 - 176.567	5		0	24.000	24.000	0.375	A53-B-42	1.000
4	176.567 - 171.567	5		0	24.000	24.000	0.375	A53-B-42	1.000
5	171.567 - 166.567	5		0	24.000	24.000	0.375	A53-B-42	1.000
6	166.567 - 161.567	5		0	24.000	24.000	0.375	A53-B-42	1.000
7	161.567 - 156.567	5		0	24.000	24.000	0.375	A53-B-42	1.000
8	156.567 - 151.567	5		0	24.000	24.000	0.375	A53-B-42	1.000
9	151.567 - 146.567	5		0	24.000	24.000	0.375	A53-B-42	1.000
10	146.567 - 141.567	5		0	24.000	24.000	0.375	A53-B-42	1.000
11	141.567 - 141.417	0.15	0	0	24.000	24.000	0.375	A53-B-42	1.000
12	141.417 - 136.417	5		0	36.000	36.000	0.375	A53-B-42	1.000
13	136.417 - 131.417	5		0	36.000	36.000	0.375	A53-B-42	1.000
14	131.417 - 126.417	5		0	36.000	36.000	0.375	A53-B-42	1.000
15	126.417 - 121.417	5		0	36.000	36.000	0.375	A53-B-42	1.000
16	121.417 - 121.167	0.25	0	0	36.000	36.000	0.375	A53-B-42	1.000
17	121.167 - 116.167	5		0	42.000	42.000	0.375	A53-B-42	1.000
18	116.167 - 111.167	5		0	42.000	42.000	0.375	A53-B-42	1.000
19	111.167 - 110.042	1.125		0	42.000	42.000	0.375	A53-B-42	1.000
20	110.042 - 109.792	0.25		0	42.000	42.000	0.4875	A53-B-42	0.984
21	109.792 - 105.083	4.709		0	42.000	42.000	0.4875	A53-B-42	0.984
22	105.083 - 104.833	0.25		0	42.000	42.000	0.5625	A53-B-42	0.977
23	104.833 - 100.917	3.916	0	0	42.000	42.000	0.5625	A53-B-42	0.977
24	100.917 - 100.667	0.25		0	48.000	48.000	0.375	A53-B-42	1.000
25	100.667 - 95.833	4.834		0	48.000	48.000	0.375	A53-B-42	1.000
26	95.833 - 95.583	0.25		0	48.000	48.000	0.475	A53-B-42	0.981
27	95.583 - 90.583	5		0	48.000	48.000	0.475	A53-B-42	0.981
28	90.583 - 89.917	0.666		0	48.000	48.000	0.475	A53-B-42	0.981
29	89.917 - 89.667	0.25		0	48.000	48.000	0.575	A53-B-42	0.970
30	89.667 - 84.667	5		0	48.000	48.000	0.575	A53-B-42	0.970
31	84.667 - 80.833	3.834	0	0	48.000	48.000	0.575	A53-B-42	0.970
32	80.833 - 80.583	0.25		0	54.000	54.000	0.4875	A53-B-42	0.990
33	80.583 - 75.583	5		0	54.000	54.000	0.4875	A53-B-42	0.990
34	75.583 - 70.583	5		0	54.000	54.000	0.4875	A53-B-42	0.990
35	70.583 - 69.5	1.083		0	54.000	54.000	0.4875	A53-B-42	0.990
36	69.5 - 69.25	0.25		0	54.000	54.000	0.5875	A53-B-42	1.006
37	69.25 - 64.25	5		0	54.000	54.000	0.5875	A53-B-42	1.006
38	64.25 - 60.583	3.667	0	0	54.000	54.000	0.5875	A53-B-42	1.006
39	60.583 - 60.333	0.25		0	60.000	60.000	0.5125	A53-B-42	0.988
40	60.333 - 55.333	5		0	60.000	60.000	0.5125	A53-B-42	0.988
41	55.333 - 52.167	3.166		0	60.000	60.000	0.5125	A53-B-42	0.988
42	52.167 - 51.917	0.25		0	60.000	60.000	0.625	A53-B-42	1.017
43	51.917 - 46.917	5		0	60.000	60.000	0.625	A53-B-42	1.017
44	46.917 - 41.917	5		0	60.000	60.000	0.625	A53-B-42	1.017
45	41.917 - 40.333	1.584	0	0	60.000	60.000	0.625	A53-B-42	1.017
46	40.333 - 40.083	0.25		0	60.000	60.000	0.6	A53-B-42	0.995
47	40.083 - 35.083	5		0	60.000	60.000	0.6	A53-B-42	0.995
48	35.083 - 30.083	5		0	60.000	60.000	0.6	A53-B-42	0.995
49	30.083 - 28	2.083		0	60.000	60.000	0.6	A53-B-42	0.995
50	28 - 27.75	0.25		0	60.000	60.000	0.725	A53-B-42	1.003
51	27.75 - 22.75	5		0	60.000	60.000	0.725	A53-B-42	1.003
52	22.75 - 20.083	2.667	0	0	60.000	60.000	0.725	A53-B-42	1.003
53	20.083 - 19.833	0.25		0	60.000	60.000	0.625	A53-B-42	1.000
54	19.833 - 17	2.833		0	60.000	60.000	0.625	A53-B-42	1.000
55	17 - 16.75	0.25		0	60.000	60.000	0.725	A53-B-42	1.041
56	16.75 - 11.65	5.1		0	60.000	60.000	0.75	A53-B-42	1.028
57	11.65 - 11.417	0.233		0	60.000	60.000	0.75	A53-B-42	1.028
58	11.417 - 9.375	2.042		0	60.000	60.000	0.75	A53-B-42	1.028
59	9.375 - 9.125	0.25		0	60.000	60.000	0.8	A53-B-42	1.005
60	9.125 - 4.833	4.292		0	60.000	60.000	0.8	A53-B-42	1.005
61	4.833 - 4.583	0.25		0	60.000	60.000	0.75	A53-B-42	1.050
62	4.583 - 0	4.583		0	60.000	60.000	0.75	A53-B-42	1.050

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	191.667 - 186.667	1.78	5.35	0.34
2	186.667 - 181.567	4.36	10.57	4.92
3	181.567 - 176.567	5.07	36.08	5.32
4	176.567 - 171.567	5.78	63.55	5.65
5	171.567 - 166.567	6.49	92.66	5.98
6	166.567 - 161.567	7.20	123.37	6.29
7	161.567 - 156.567	10.92	174.37	12.19
8	156.567 - 151.567	11.68	237.16	12.91
9	151.567 - 146.567	17.27	333.63	20.53
10	146.567 - 141.567	18.16	437.94	21.20
11	141.567 - 141.417	18.20	441.12	21.21
12	141.417 - 136.417	19.37	548.46	21.76
13	136.417 - 131.417	21.00	659.61	22.77
14	131.417 - 126.417	22.20	774.68	23.23
15	126.417 - 121.417	24.45	893.86	24.42
16	121.417 - 121.167	24.53	899.97	24.44
17	121.167 - 116.167	26.04	1023.81	25.07
18	116.167 - 111.167	30.10	1169.34	28.60
19	111.167 - 110.042	30.42	1201.59	28.71
20	110.042 - 109.792	30.51	1208.77	28.73
21	109.792 - 105.083	32.15	1346.14	29.74
22	105.083 - 104.833	32.26	1353.59	29.79
23	104.833 - 100.917	34.68	1472.21	30.73
24	100.917 - 100.667	34.79	1479.90	30.75
25	100.667 - 95.833	36.65	1630.00	31.33
26	95.833 - 95.583	36.75	1637.84	31.35
27	95.583 - 90.583	38.55	1795.85	31.83
28	90.583 - 89.917	38.95	1818.09	32.16
29	89.917 - 89.667	39.06	1826.13	32.18
30	89.667 - 84.667	41.91	1988.23	32.71
31	84.667 - 80.833	45.10	2114.21	33.16
32	80.833 - 80.583	45.31	2122.48	33.18
33	80.583 - 75.583	47.90	2289.58	33.68
34	75.583 - 70.583	50.69	2459.16	34.18
35	70.583 - 69.5	51.70	2496.85	34.78
36	69.5 - 69.25	51.89	2505.54	34.80
37	69.25 - 64.25	58.25	2682.36	36.15
38	64.25 - 60.583	63.43	2816.49	37.17
39	60.583 - 60.333	63.63	2825.78	37.19
40	60.333 - 55.333	67.43	3012.95	37.72
41	55.333 - 52.167	68.93	3132.81	37.99
42	52.167 - 51.917	69.07	3142.31	38.00
43	51.917 - 46.917	72.18	3333.59	38.48
44	46.917 - 41.917	76.15	3527.06	38.97
45	41.917 - 40.333	77.40	3588.84	39.12
46	40.333 - 40.083	77.60	3598.61	39.13
47	40.083 - 35.083	81.27	3794.94	39.50
48	35.083 - 30.083	84.50	3993.78	39.96
49	30.083 - 28	85.62	4077.15	40.08
50	28 - 27.75	85.79	4087.17	40.08
51	27.75 - 22.75	89.91	4288.62	40.42
52	22.75 - 20.083	92.13	4396.75	40.60
53	20.083 - 19.833	92.33	4406.91	40.60
54	19.833 - 17	94.47	4522.26	40.78
55	17 - 16.75	94.70	4532.46	40.77
56	16.75 - 11.65	98.92	4741.30	41.06
57	11.65 - 11.417	99.08	4750.87	41.06
58	11.417 - 9.375	100.45	4834.84	41.17
59	9.375 - 9.125	100.63	4845.14	41.17
60	9.125 - 4.833	103.60	5022.36	41.39
61	4.833 - 4.583	103.78	5032.71	41.39
62	4.583 - 0	106.91	5222.91	41.60

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
191.67 - 186.67	Pole	TP18x18x0.375	Pole	1.7%	Pass
186.67 - 181.57	Pole	TP24x24x0.375	Pole	2.1%	Pass
181.57 - 176.57	Pole	TP24x24x0.375	Pole	6.3%	Pass
176.57 - 171.57	Pole	TP24x24x0.375	Pole	10.7%	Pass
171.57 - 166.57	Pole	TP24x24x0.375	Pole	15.5%	Pass
166.57 - 161.57	Pole	TP24x24x0.375	Pole	20.5%	Pass
161.57 - 156.57	Pole	TP24x24x0.375	Pole	29.0%	Pass
156.57 - 151.57	Pole	TP24x24x0.375	Pole	39.2%	Pass
151.57 - 146.57	Pole	TP24x24x0.375	Pole	55.3%	Pass
146.57 - 141.57	Pole	TP24x24x0.375	Pole	72.1%	Pass
141.57 - 141.42	Pole	TP24x24x0.375	Pole	72.6%	Pass
141.42 - 136.42	Pole	TP36x36x0.375	Pole	42.4%	Pass
136.42 - 131.42	Pole	TP36x36x0.375	Pole	50.8%	Pass
131.42 - 126.42	Pole	TP36x36x0.375	Pole	59.5%	Pass
126.42 - 121.42	Pole	TP36x36x0.375	Pole	68.5%	Pass
121.42 - 121.17	Pole	TP36x36x0.375	Pole	69.0%	Pass
121.17 - 116.17	Pole	TP42x42x0.375	Pole	58.6%	Pass
116.17 - 111.17	Pole	TP42x42x0.375	Pole	67.0%	Pass
111.17 - 110.04	Pole	TP42x42x0.375	Pole	68.8%	Pass
110.04 - 109.79	Pole + Reinf.	TP42x42x0.4875	Reinf. 13 Tension Rupture	53.7%	Pass
109.79 - 105.08	Pole + Reinf.	TP42x42x0.4875	Reinf. 13 Tension Rupture	59.8%	Pass
105.08 - 104.83	Pole + Reinf.	TP42x42x0.5625	Reinf. 6 Tension Rupture	54.6%	Pass
104.83 - 100.92	Pole + Reinf.	TP42x42x0.5625	Reinf. 6 Tension Rupture	59.3%	Pass
100.92 - 100.67	Pole	TP48x48x0.375	Pole	65.8%	Pass
100.67 - 95.83	Pole	TP48x48x0.375	Pole	72.3%	Pass
95.83 - 95.58	Pole + Reinf.	TP48x48x0.475	Pole	57.8%	Pass
95.58 - 90.58	Pole + Reinf.	TP48x48x0.475	Pole	63.3%	Pass
90.58 - 89.92	Pole + Reinf.	TP48x48x0.475	Pole	64.0%	Pass
89.92 - 89.67	Pole + Reinf.	TP48x48x0.575	Pole	53.4%	Pass
89.67 - 84.67	Pole + Reinf.	TP48x48x0.575	Pole	58.1%	Pass
84.67 - 80.83	Pole + Reinf.	TP48x48x0.575	Pole	61.8%	Pass
80.83 - 80.58	Pole + Reinf.	TP54x54x0.4875	Pole	58.2%	Pass
80.58 - 75.58	Pole + Reinf.	TP54x54x0.4875	Pole	62.7%	Pass
75.58 - 70.58	Pole + Reinf.	TP54x54x0.4875	Pole	67.3%	Pass
70.58 - 69.5	Pole + Reinf.	TP54x54x0.4875	Pole	68.4%	Pass
69.5 - 69.25	Pole + Reinf.	TP54x54x0.5875	Pole	56.7%	Pass
69.25 - 64.25	Pole + Reinf.	TP54x54x0.5875	Pole	60.8%	Pass
64.25 - 60.58	Pole + Reinf.	TP54x54x0.5875	Pole	63.9%	Pass
60.58 - 60.33	Pole + Reinf.	TP60x60x0.5125	Pole	59.9%	Pass
60.33 - 55.33	Pole + Reinf.	TP60x60x0.5125	Pole	63.9%	Pass
55.33 - 52.17	Pole + Reinf.	TP60x60x0.5125	Pole	66.4%	Pass
52.17 - 51.92	Pole + Reinf.	TP60x60x0.625	Pole	55.6%	Pass
51.92 - 46.92	Pole + Reinf.	TP60x60x0.625	Pole	59.0%	Pass
46.92 - 41.92	Pole + Reinf.	TP60x60x0.625	Pole	62.4%	Pass
41.92 - 40.33	Pole + Reinf.	TP60x60x0.625	Pole	63.5%	Pass
40.33 - 40.08	Pole + Reinf.	TP60x60x0.6	Pole	64.2%	Pass
40.08 - 35.08	Pole + Reinf.	TP60x60x0.6	Pole	67.7%	Pass
35.08 - 30.08	Pole + Reinf.	TP60x60x0.6	Pole	71.2%	Pass
30.08 - 28	Pole + Reinf.	TP60x60x0.6	Pole	72.7%	Pass
28 - 27.75	Pole + Reinf.	TP60x60x0.725	Pole	61.2%	Pass
27.75 - 22.75	Pole + Reinf.	TP60x60x0.725	Pole	64.2%	Pass
22.75 - 20.08	Pole + Reinf.	TP60x60x0.725	Pole	65.8%	Pass
20.08 - 19.83	Pole	TP60x60x0.625	Pole	73.4%	Pass
19.83 - 17	Pole	TP60x60x0.625	Pole	75.3%	Pass
17 - 16.75	Pole + Reinf.	TP60x60x0.725	Pole	65.2%	Pass
16.75 - 11.65	Pole + Reinf.	TP60x60x0.75	Pole	66.7%	Pass
11.65 - 11.42	Pole + Reinf.	TP60x60x0.75	Pole	66.8%	Pass
11.42 - 9.38	Pole + Reinf.	TP60x60x0.75	Pole	68.0%	Pass
9.38 - 9.13	Pole + Reinf.	TP60x60x0.8	Reinf. 7 Tension Rupture	67.6%	Pass
9.13 - 4.83	Pole + Reinf.	TP60x60x0.8	Reinf. 7 Tension Rupture	70.1%	Pass
4.83 - 4.58	Pole + Reinf.	TP60x60x0.75	Pole	71.7%	Pass
4.58 - 0	Pole + Reinf.	TP60x60x0.75	Pole	74.4%	Pass
				Summary	
			Pole	75.3%	Pass
			Reinforcement	72.4%	Pass
			Overall	75.3%	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
191.67 - 186.67	807	n/a	807	20.76	n/a	20.76	1.7%													
186.67 - 181.57	1942	n/a	1942	27.83	n/a	27.83	2.1%													
181.57 - 176.57	1942	n/a	1942	27.83	n/a	27.83	6.3%													
176.57 - 171.57	1942	n/a	1942	27.83	n/a	27.83	10.8%													
171.57 - 166.57	1942	n/a	1942	27.83	n/a	27.83	15.5%													
166.57 - 161.57	1942	n/a	1942	27.83	n/a	27.83	20.5%													
161.57 - 156.57	1942	n/a	1942	27.83	n/a	27.83	29.0%													
156.57 - 151.57	1942	n/a	1942	27.83	n/a	27.83	39.2%													
151.57 - 146.57	1942	n/a	1942	27.83	n/a	27.83	55.3%													
146.57 - 141.57	1942	n/a	1942	27.83	n/a	27.83	72.1%													
141.57 - 141.42	1942	n/a	1942	27.83	n/a	27.83	72.6%													
141.42 - 136.42	6659	n/a	6659	41.97	n/a	41.97	42.4%													
136.42 - 131.42	6659	n/a	6659	41.97	n/a	41.97	50.8%													
131.42 - 126.42	6659	n/a	6659	41.97	n/a	41.97	59.5%													
126.42 - 121.42	6659	n/a	6659	41.97	n/a	41.97	68.5%													
121.42 - 121.17	6659	n/a	6659	41.97	n/a	41.97	69.0%													
121.17 - 116.17	10622	n/a	10622	49.04	n/a	49.04	58.6%													
116.17 - 111.17	10622	n/a	10622	49.04	n/a	49.04	67.0%													
111.17 - 110.04	10622	n/a	10622	49.04	n/a	49.04	68.8%													
110.04 - 109.79	10622	3132	13754	49.04	13.50	62.54	53.4%													53.7%
109.79 - 105.08	10622	3132	13754	49.04	13.50	62.54	59.3%													59.8%
105.08 - 104.83	10622	5106	15728	49.04	22.50	71.54	52.3%						54.6%							52.9%
104.83 - 100.92	10622	5106	15728	49.04	22.50	71.54	56.9%						59.3%							57.5%
100.92 - 100.67	15908	n/a	15908	56.11	n/a	56.11	65.8%													
100.67 - 95.83	15908	n/a	15908	56.11	n/a	56.11	72.3%													
95.83 - 95.58	15908	4064	19972	56.11	13.50	69.61	57.8%												57.2%	
95.58 - 90.58	15908	4064	19972	56.11	13.50	69.61	63.3%												62.6%	
90.58 - 89.92	15908	4064	19972	56.11	13.50	69.61	64.0%												63.4%	
89.92 - 89.67	15908	8127	24036	56.11	27.00	83.11	53.4%					52.8%							52.8%	
89.67 - 84.67	15908	8127	24036	56.11	27.00	83.11	58.1%					57.5%							57.5%	
84.67 - 80.83	15908	8127	24036	56.11	27.00	83.11	61.8%					61.2%							61.2%	
80.83 - 80.58	22710	6614	29324	63.18	18.00	81.18	58.2%				51.6%									
80.58 - 75.58	22710	6614	29324	63.18	18.00	81.18	62.7%				55.6%									
75.58 - 70.58	22710	6614	29324	63.18	18.00	81.18	67.3%				59.7%									
70.58 - 69.5	22710	6614	29324	63.18	18.00	81.18	68.4%				60.7%									
69.5 - 69.25	22710	12687	35397	63.18	36.00	99.18	56.7%				50.4%							54.4%		
69.25 - 64.25	22710	12687	35397	63.18	36.00	99.18	60.8%				54.0%							58.3%		
64.25 - 60.58	22710	12687	35397	63.18	36.00	99.18	63.9%				56.8%							61.3%		
60.58 - 60.33	31217	11364	42581	70.24	24.38	94.62	59.9%			52.1%										
60.33 - 55.33	31217	11364	42581	70.24	24.38	94.62	63.9%			55.5%										
55.33 - 52.17	31217	11364	42581	70.24	24.38	94.62	66.4%			57.7%										
52.17 - 51.92	31219	19812	51030	70.24	48.38	118.62	55.6%			48.0%							47.3%			
51.92 - 46.92	31219	19812	51030	70.24	48.38	118.62	59.0%			50.9%							50.1%			
46.92 - 41.92	31219	19812	51030	70.24	48.38	118.62	62.4%			53.8%							53.0%			
41.92 - 40.33	31219	19812	51030	70.24	48.38	118.62	63.5%			54.8%							53.9%			
40.33 - 40.08	41363	7892	49255	93.46	18.00	111.46	64.2%		57.8%											
40.08 - 35.08	41363	7892	49255	93.46	18.00	111.46	67.7%		60.9%											
35.08 - 30.08	41363	7892	49255	93.46	18.00	111.46	71.2%		64.1%											
30.08 - 28	41363	7892	49255	93.46	18.00	111.46	72.7%		65.4%											
28 - 27.75	41368	17587	58955	93.46	42.00	135.46	61.2%		53.8%							54.0%				
27.75 - 22.75	41368	17587	58955	93.46	42.00	135.46	64.2%		56.5%							56.7%				
22.75 - 20.08	41368	17587	58955	93.46	42.00	135.46	65.8%		57.9%							58.1%				
20.08 - 19.83	51381	n/a	51381	116.58	n/a	116.58	73.4%													
19.83 - 17	51381	n/a	51381	116.58	n/a	116.58	75.3%													
17 - 16.75	51383	8145	59528	116.58	24.00	140.58	65.2%								57.4%					
16.75 - 11.65	51395	9920	61315	116.58	27.00	143.58	66.7%							66.4%	59.6%					
11.65 - 11.42	51395	9920	61315	116.58	27.00	143.58	66.8%							66.6%	59.7%					
11.42 - 9.38	51395	9920	61315	116.58	27.00	143.58	68.0%							67.7%	60.8%					
9.38 - 9.13	51382	13787	65169	116.58	33.00	149.58	63.6%	67.1%						67.6%	57.8%					
9.13 - 4.83	51382	13787	65169	116.58	33.00	149.58	66.0%	69.5%						70.1%	59.9%					
4.83 - 4.58	51446	9839	61284	116.58	30.00	146.58	71.7%	69.8%							62.4%					
4.58 - 0	51446	9839	61284	116.58	30.00	146.58	74.4%	72.4%							64.8%					

Note: Section capacity checked in 5 degree increments.

Stiffened or Unstiffened, Exterior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Reactions		
Mu	8.81	ft-kips
Axial, Pu:	11.478	kips
Shear, Vu:	1.881	kips
Elevation:	180	feet

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
38.88

Pole Manufacturer:	Pirod

If No stiffeners, Criteria:	TIA G	<-Only Applcable to Unstiffened Cases

Bolt Data			
Qty:	16		
Diameter (in.):	1	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle (in.):	21		

Plate Data		
Diam:	24	in
Thick, t:	1.25	in
Grade (Fy):	36	ksi
Strength, Fu:	58	ksi
Single-Rod B-eff:	3.53	in

Stiffener Data (Welding at Both Sides)		
Config:	2	*
Weld Type:	Fillet	
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:	0.3125	in
Fillet V. Weld:	0.3125	in
Width:	3	in
Height:	5	in
Thick:	0.625	in
Notch:		in
Grade:	36	ksi
Weld str.:	70	ksi

Pole Data		
Diam:	18	in
Thick:	0.375	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	60	ksi
Reinf. Fillet Weld	0	"0" if None

Flange Bolt Results

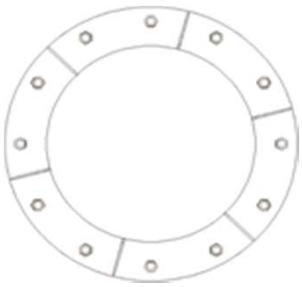
			Rigid
Bolt Tension Capacity, φ*Tn,**B1**:	54.54	kips	φ*Tn
Adjusted φ*Tn (due to Vu=Vu/Qty), **B**:	54.54	kips	φTn[(1-(Vu/φVn)^2]^0.5
Max Bolt directly applied Tu:	0.54	Kips	
Min. PL "tc" for **B** cap. **w/o** Pry:	1.087	in	
Min PL "treq" for actual **T w/ Pry**:	0.083	in	
Min PL "t1" for actual **T w/o Pry**:	0.108	in	
T allowable w/o Prying:	54.54	kips	α'<0 case
Prying Force, q:	0.00	kips	
Total Bolt Tension=Tu+q:	0.54	kips	
Non-Prying Bolt Stress Ratio, Tu/B:	1.0%	**Pass**	

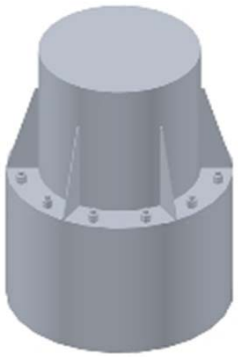
Exterior Flange Plate Results — Flexural Check — Rigid

Compression Side Plate Stress:	Rohn/Pirod, OK	TIA G
Allowable Plate Stress:	32.4 ksi	φ*Fy
Compression Plate Stress Ratio:	Rohn/Pirod, OK	Comp. Y.L. Length:
No Prying		10.82
Tension Side Stress Ratio, (treq/t)^2:	0.4% **Pass**	

b/Le>2, Stiffeners are not fully effective

Stiffener Results	N/A for Rohn / Pirod
Horizontal Weld :	N/A
Vertical Weld:	N/A
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	N/A
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	N/A
Plate Comp. (AISC Bracket):	N/A
Pole Results	
Pole Punching Shear Check:	N/A





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt
** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Stiffened or Unstiffened, Exterior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Reactions		
Mu	441.119	ft-kips
Axial, Pu:	18.198	kips
Shear, Vu:	21.208	kips
Elevation:	140	feet

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
38.88

Pole Manufacturer:	Pirod

If No stiffeners, Criteria: TIA G <-Only Applcable to Unstiffened Cases

Bolt Data			
Qty:	24		
Diameter (in.):	1	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle (in.):	33		

Plate Data		
Diam:	36.375	in
Thick, t:	1.25	in
Grade (Fy):	36	ksi
Strength, Fu:	58	ksi
Single-Rod B-eff:	3.14	in

Stiffener Data (Welding at Both Sides)		
Config:	2	*
Weld Type:	Fillet	
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:	0.3125	in
Fillet V. Weld:	0.3125	in
Width:	6	in
Height:	8	in
Thick:	1	in
Notch:	1	in
Grade:	36	ksi
Weld str.:	70	ksi

Pole Data		
Diam:	24	in
Thick:	0.375	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi
Reinf. Fillet Weld	0	"0" if None

Flange Bolt Results — Stiffened

Bolt Tension Capacity, φ*Tn,**B1**:	54.54	kips	φ*Tn
Adjusted φ*Tn (due to Vu=Vu/Qty), **B**:	54.53	kips	φTn[(1-(Vu/φVn)^2]^0.5
Max Bolt directly applied Tu:	25.98	Kips	
Min. PL "tc" for **B** cap. **w/o** Pry:	Stiffened	in	
Min PL "treq" for actual **T w/ Pry**:	Stiffened	in	
Min PL "t1" for actual **T w/o Pry**:	Stiffened	in	
T allowable	54.54	kips	<-- B, Stiffened
Prying Force, q:	0.00	kips	Stiffened
Total Bolt Tension=Tu+q:	25.98	kips	
Non-Prying Bolt Stress Ratio, Tu/B:	47.6%	**Pass**	

Exterior Flange Plate Results — Flexural Check — Stiffened

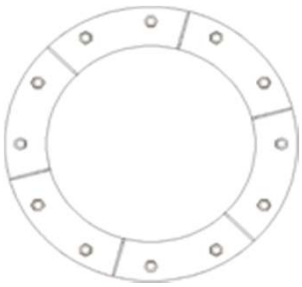
Compression Side Plate Stress:	Rohn/Pirod,	OK	TIA G
Allowable Plate Stress:	32.4	ksi	φ*Fy
Compression Plate Stress Ratio:	Rohn/Pirod,	OK	Comp. Y.L. Length:
Stiffened			N/A, Roark
Tension Side Stress Ratio, (treq/t)^2:	N/A		

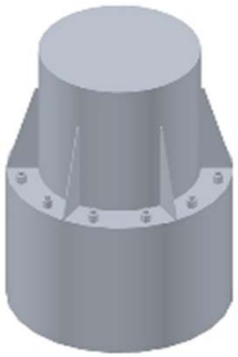
Stiffener Results — N/A for Rohn / Pirod

Horizontal Weld :	N/A
Vertical Weld:	N/A
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	N/A
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	N/A
Plate Comp. (AISC Bracket):	N/A

Pole Results

Pole Punching Shear Check: N/A





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

PROJECT	**87581.016.01 - Newington_1, CT**				
SUBJECT	**Bridge Stiffeners @120'**				
DATE	**02-21-18**	PAGE	1	OF	1

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

0

Determine Load to Bridge Stiffener:

M =	**900.0 k-ft**	From Risa Model	**Stiffener Width**	**4.500 in**
I =	**7461.4 in^4**	From AutoCAD Sketch	**Stiffener Thickness**	**1.000 in**
ybar =	**22.000 in**		**Stiffener Height**	**39.000 in**
S =	339.15 in^3	I/y	**Fy**	**65 ksi**
fc =	31.84 ksi	M/S	**Fu**	**80 ksi**
Ag =	4.500 in^2		**Step Width**	**3.00 in**
Pu =	143.29 k	fc x Ag	**Bolt Circle**	**39.00 in**
			Number of Bolts	**28**
			Bolt Size	**1**
			Gap @ Flange	**6.00 in**

Determine ΦPn (Allowable Axial Load):

Pn = Fcr x Ag		Eqn E3-1, AISC 13th Edition, Section E3.
K =	0.99	
l =	16.000 in	Unsupported Length
Iy =	.375 in^4	Local Weak Axis Moment of Intertia
Ag =	4.500 in^2	Stiffener Cross Sectional Area
ry =	.289 in	Radius of Gyration (Weak Axis)
kl/r =	54.87	
4.71 x √(E/Fy) =	99.49	Limit State Equation for Flexural Buckling - AISC 13th Edition, Section E3.
Fe =	95.06 ksi	Eqn E3-4 - AISC 13th Edition, Section E3. Elastic Critical Buckling Stress
Fcr =	48.82 ksi	Eqn E3-2, AISC 13th Edition, Section E3 Critical Buckling Stress
Pn =	219.70 k	Nominal Compressive Strength
ΦPn =	197.73 k	Allowable Compressive Strength

Unity% = 72.5 %

Tension Rupture Check:

AISC 13th Edition, Chapter J4.1

Hole Size	1.25	
U =	1	Shear Lag Factor - Table D3.1 and TIA222-G
Ag =	4.500 in^2	Gross Area
An =	3.250 in^2	Net Area
Ae =	3.250 in^2	Effective Area
ΦRn =	263.25 k	Tension Yielding: Eqn J4-1
ΦRn =	195.00 k	Tension Rupture: Eqn J4-2
ΦRn(Equiv)	195.00 ksi	

Unity% 73.48 %

Moment to Existing Bolt Group:

S_{BG} =	382.64 in^3	# Bolts Acting	7
ft =	28.22 ksi		
Ab =	.785 in^2		
T =	155.17 k		
Arm =	39.00 ksi		
M_{EQ} =	504.3 k-ft	**<-------Insert into Flange Spreadsheet**	

Stiffened or Unstiffened, Exterior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Reactions		
Mu	504.3	ft-kips
Axial, Pu:	24.531	kips
Shear, Vu:	23.437	kips
Elevation:	120	feet

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
38.88

Pole Manufacturer:	Other

If No stiffeners, Criteria: TIA G <-Only Applcable to Unstiffened Cases

Bolt Data			
Qty:	28		
Diameter (in.):	1	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle (in.):	39		

Plate Data		
Diam:	42	in
Thick, t:	1.25	in
Grade (Fy):	36	ksi
Strength, Fu:	58	ksi
Single-Rod B-eff:	4.04	in

Stiffener Data (Welding at Both Sides)		
Config:	2	*
Weld Type:	Fillet	
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:	0.3125	in
Fillet V. Weld:	0.3125	in
Width:	3	in
Height:	5	in
Thick:	0.625	in
Notch:		in
Grade:	36	ksi
Weld str.:	70	ksi

Pole Data		
Diam:	36	in
Thick:	0.375	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi
Reinf. Fillet Weld	0	"0" if None

Flange Bolt Results

			Rigid
Bolt Tension Capacity, φ*Tn,**B1**:	54.54	kips	φ*Tn
Adjusted φ*Tn (due to Vu=Vu/Qty), **B**:	54.53	kips	φTn[(1-(Vu/φVn)^2]^0.5
Max Bolt directly applied Tu:	21.29	Kips	
Min. PL "tc" for **B** cap. **w/o** Pry:	1.017	in	
Min PL "treq" for actual **T w/ Pry**:	0.482	in	
Min PL "t1" for actual **T w/o Pry**:	0.635	in	
T allowable w/o Prying:	54.54	kips	α'<0 case
Prying Force, q:	0.00	kips	
Total Bolt Tension=Tu+q:	21.29	kips	
Non-Prying Bolt Stress Ratio, Tu/B:	39.0%	**Pass**	

Exterior Flange Plate Results Flexural Check

			Rigid
Compression Side Plate Stress:	13.8	ksi	TIA G
Allowable Plate Stress:	32.4	ksi	φ*Fy
Compression Plate Stress Ratio:	42.6%	**Pass**	Comp. Y.L. Length:
No Prying			15.00
Tension Side Stress Ratio, (treq/t)^2:	14.9%	**Pass**	

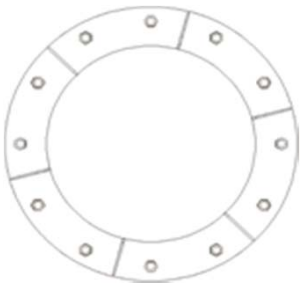
b/Le>2, Stiffeners are not fully effective

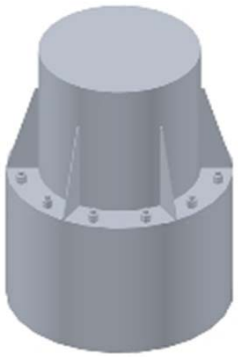
Stiffener Results

Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt
** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Stiffened or Unstiffened, Interior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Manufacturer:	Other

Reactions

Moment:	50.43	ft-kips
Axial:	24.531	kips
Shear:	23.437	kips
Exterior Flange Run, T+q:	21.29	kips

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
38.88

Elevation: 120 feet

Bolt Data

Qty:	28		
Diam:	1	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle:	39	in	

Interior Flange Bolt Results

Maximum Bolt Tension, Tu:	21.3	Kips, Ext. Flange Tu+q
Adjusted φ*Tn (due to Vu=Vu/Qty),	54.5	Kips
Bolt Stress Ratio:	39.0%	**Pass**

Plate Data

Plate Outer Diam:	41.25	in
Plate Inner Diam:	36	in (Hole @ Ctr)
Thick:	1.25	in
Grade:	36	ksi
Effective Width:	4.63	in

Interior Flange Plate Results Flexural Check

Controlling Bolt Axial Force:	21.3	Kips, Ext. Flange Tu+q
Plate Stress:	13.2	ksi
Allowable Plate Stress, φ*Fy:	32.4	ksi
Plate Stress Ratio:	40.9%	**Pass**

Stiffener Data (Welding at Both Sides)

Config:	0	*
Weld Type:		
Groove Depth:		in **
Groove Angle:		degrees
Fillet H. Weld:		<-- Disregard
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

n/a

Stiffener Results

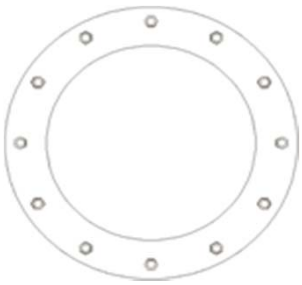
Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

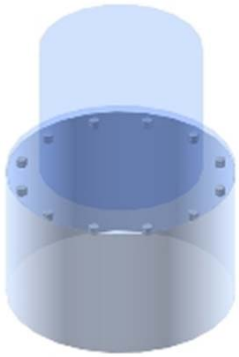
Pole Results

Pole Punching Shear Check: n/a

Pole Data

Pole OuterDiam:	42	in
Thick:	0.375	in
Pole Inner Diam:	41.25	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

PROJECT	**87581.016.01 - Newington_1, CT**				
SUBJECT	**Bridge Stiffeners @100'**				
DATE	**02-21-18**	PAGE	1	OF	1

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

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Determine Load to Bridge Stiffener:

M =	**1479.9 k-ft**	From Risa Model	**Stiffener Width**	**4.500 in**
I =	**14381.2 in^4**	From AutoCAD Sketch	**Stiffener Thickness**	**1.000 in**
ybar =	**25.000 in**		**Stiffener Height**	**58.500 in**
S =	575.25 in^3	I/y	**Fy**	**65 ksi**
fc =	30.87 ksi	M/S	**Fu**	**80 ksi**
Ag =	4.500 in^2		**Step Width**	**3.00 in**
Pu =	138.92 k	fc x Ag	**Bolt Circle**	**45.00 in**
			Number of Bolts	**32**
			Bolt Size	**1**
			Gap @ Flange	**6.00 in**

Determine ΦPn (Allowable Axial Load):

Pn = Fcr x Ag — Eqn E3-1, AISC 13th Edition, Section E3.

K =	0.99	
l =	16.500 in	Unsupported Length
Iy =	.375 in^4	Local Weak Axis Moment of Intertia
Ag =	4.500 in^2	Stiffener Cross Sectional Area
ry =	.289 in	Radius of Gyration (Weak Axis)
kl/r =	56.59	
4.71 x √(E/Fy) =	99.49	Limit State Equation for Flexural Buckling - AISC 13th Edition, Section E3.
Fe =	89.39 ksi	Eqn E3-4 - AISC 13th Edition, Section E3. Elastic Critical Buckling Stress
Fcr =	47.94 ksi	Eqn E3-2, AISC 13th Edition, Section E3 Critical Buckling Stress
Pn =	215.75 k	Nominal Compressive Strength
ΦPn =	194.17 k	Allowable Compressive Strength

Unity% = 71.5 %

Tension Rupture Check:

AISC 13th Edition, Chapter J4.1

Hole Size	1.25	
U =	1	Shear Lag Factor - Table D3.1 and TIA222-G
Ag =	4.500 in^2	Gross Area
An =	3.250 in^2	Net Area
Ae =	3.250 in^2	Effective Area
ΦRn =	263.25 k	Tension Yielding: Eqn J4-1
ΦRn =	195.00 k	Tension Rupture: Eqn J4-2
ΦRn(Equiv)	195.00 ksi	

Unity% 71.24 %

Moment to Existing Bolt Group:

S_{BG} =	639.16 in^3	# Bolts Acting	8
ft =	27.78 ksi		
Ab =	.785 in^2		
T =	174.57 k		
Arm =	45.00 ksi		
M_{EQ} =	654.7 k-ft	**<-------Insert into Flange Spreadsheet**	

Stiffened or Unstiffened, Exterior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Reactions		
Mu	654.7	ft-kips
Axial, Pu:	34.794	kips
Shear, Vu:	30.751	kips
Elevation:	100	feet

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
38.88

Pole Manufacturer:	Other

If No stiffeners, Criteria: TIA G <-Only Applcable to Unstiffened Cases

Bolt Data			
Qty:	32		
Diameter (in.):	1	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle (in.):	45		

Plate Data		
Diam:	48	in
Thick, t:	1.25	in
Grade (Fy):	36	ksi
Strength, Fu:	58	ksi
Single-Rod B-eff:	4.12	in

Stiffener Data (Welding at Both Sides)		
Config:	1	*
Weld Type:	Fillet	
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:	0.3125	in
Fillet V. Weld:	0.3125	in
Width:	3	in
Height:	5	in
Thick:	0.625	in
Notch:		in
Grade:	36	ksi
Weld str.:	70	ksi

Pole Data		
Diam:	42	in
Thick:	0.375	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi
Reinf. Fillet Weld	0	"0" if None

Flange Bolt Results

			Stiffened
Bolt Tension Capacity, φ*Tn,**B1**:	54.54	kips	φ*Tn
Adjusted φ*Tn (due to Vu=Vu/Qty), **B**:	54.52	kips	φTn[(1-(Vu/φVn)^2]^0.5
Max Bolt directly applied Tu:	20.74	Kips	
Min. PL "tc" for **B** cap. **w/o** Pry:	Stiffened	in	
Min PL "treq" for actual **T w/ Pry**:	Stiffened	in	
Min PL "t1" for actual **T w/o Pry**:	Stiffened	in	
T allowable	54.54	kips	<-- B, Stiffened
Prying Force, q:	0.00	kips	Stiffened
Total Bolt Tension=Tu+q:	20.74	kips	
Non-Prying Bolt Stress Ratio, Tu/B:	38.0%	**Pass**	

Exterior Flange Plate Results Flexural Check

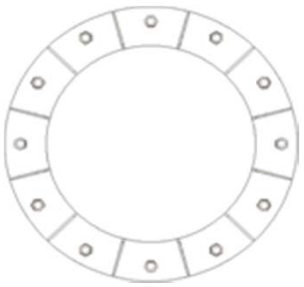
			Stiffened
Compression Side Plate Stress:	13.6	ksi	TIA G
Allowable Plate Stress:	32.4	ksi	φ*Fy
Compression Plate Stress Ratio:	41.9%	**Pass**	Comp. Y.L. Length:
Stiffened			N/A, Roark
Tension Side Stress Ratio, (treq/t)^2:	N/A		

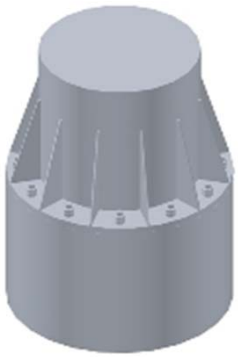
Stiffener Results

Horizontal Weld :	35.3%	**Pass**
Vertical Weld:	26.0%	**Pass**
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	16.8%	**Pass**
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	24.9%	**Pass**
Plate Comp. (AISC Bracket):	46.7%	**Pass**

Pole Results

Pole Punching Shear Check:	14.2%	**Pass**





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt
** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Stiffened or Unstiffened, Interior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Manufacturer:	Other

Reactions		
Moment:	654.7	ft-kips
Axial:	34.794	kips
Shear:	30.751	kips
Exterior Flange Run, T+q:	20.74	kips

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
38.88

Elevation: 100 feet

Bolt Data			
Qty:	32		
Diam:	1	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle:	45	in	

Interior Flange Bolt Results

Maximum Bolt Tension, Tu:	20.7	Kips, Ext. Flange Tu+q
Adjusted φ*Tn (due to Vu=Vu/Qty),	54.5	Kips
Bolt Stress Ratio:	38.0%	**Pass**

Plate Data		
Plate Outer Diam:	47.25	in
Plate Inner Diam:	42	in (Hole @ Ctr)
Thick:	1.25	in
Grade:	36	ksi
Effective Width:	4.64	in

Interior Flange Plate Results Flexural Check

Controlling Bolt Axial Force:	22.9	Kips, Ext. Cu=Interior Cu
Plate Stress:	14.2	ksi
Allowable Plate Stress, φ*Fy:	32.4	ksi
Plate Stress Ratio:	43.9%	**Pass**

Stiffener Data (Welding at Both Sides)		
Config:	0	*
Weld Type:		
Groove Depth:		in **
Groove Angle:		degrees
Fillet H. Weld:		<-- Disregard
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

n/a

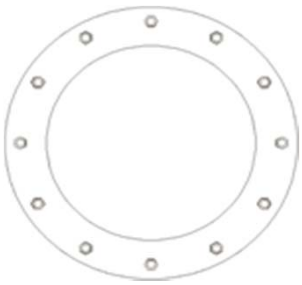
Stiffener Results

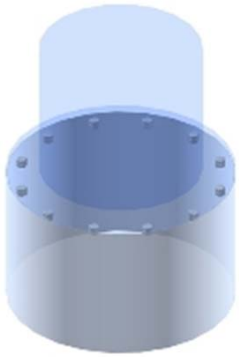
Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a

Pole Data		
Pole OuterDiam:	48	in
Thick:	0.375	in
Pole Inner Diam:	47.25	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

PROJECT	**87581.016.01 - Newington_1, CT**				
SUBJECT	**Bridge Stiffeners @80'**				
DATE	**02-21-18**	PAGE	1	OF	1

B+T GRP
1717 S. Boulder, Suite 300
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Determine Load to Bridge Stiffener:

M =	**2122.5 k-ft**	From Risa Model	**Stiffener Width**	**4.500 in**
I =	**24813.4 in^4**	From AutoCAD Sketch	**Stiffener Thickness**	**1.000 in**
ybar =	**28.000 in**		**Stiffener Height**	**111.000 in**
S =	886.19 in^3	I/y	**Fy**	**65 ksi**
fc =	28.74 ksi	M/S	**Fu**	**80 ksi**
Ag =	4.500 in^2		**Step Width**	**3.00 in**
Pu =	129.33 k	fc x Ag	**Bolt Circle**	**51.00 in**
			Number of Bolts	**36**
			Bolt Size	**1**
			Gap @ Flange	**6.00 in**

Determine ΦPn (Allowable Axial Load):

Pn = Fcr x Ag		Eqn E3-1, AISC 13th Edition, Section E3.
K =	0.99	
l =	16.000 in	Unsupported Length
Iy =	.375 in^4	Local Weak Axis Moment of Intertia
Ag =	4.500 in^2	Stiffener Cross Sectional Area
ry =	.289 in	Radius of Gyration (Weak Axis)
kl/r =	54.87	
4.71 x √(E/Fy) =	99.49	Limit State Equation for Flexural Buckling - AISC 13th Edition, Section E3.
Fe =	95.06 ksi	Eqn E3-4 - AISC 13th Edition, Section E3. Elastic Critical Buckling Stress
Fcr =	48.82 ksi	Eqn E3-2, AISC 13th Edition, Section E3 Critical Buckling Stress
Pn =	219.70 k	Nominal Compressive Strength
ΦPn =	197.73 k	Allowable Compressive Strength

Unity% = 65.4 %

Tension Rupture Check:

AISC 13th Edition, Chapter J4.1

Hole Size	1.25	
U =	1	Shear Lag Factor - Table D3.1 and TIA222-G
Ag =	4.500 in^2	Gross Area
An =	3.250 in^2	Net Area
Ae =	3.250 in^2	Effective Area
ΦRn =	263.25 k	Tension Yielding: Eqn J4-1
ΦRn =	195.00 k	Tension Rupture: Eqn J4-2
ΦRn(Equiv)	195.00 ksi	

Unity% 66.32 %

Moment to Existing Bolt Group:

S_{BG} =	973.07 in^3	# Bolts Acting	9
ft =	26.17 ksi		
Ab =	.785 in^2		
T =	185.02 k		
Arm =	51.00 ksi		
M_{EQ} =	786.3 k-ft	**<-------Insert into Flange Spreadsheet**	

Stiffened or Unstiffened, Exterior Flange Plate - Any Bolt Material TIA Rev G

Reactions		
Mu	786.3	ft-kips
Axial, Pu:	45.312	kips
Shear, Vu:	33.18	kips
Elevation:	80	feet

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
38.88

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Pole Manufacturer:	Other

If No stiffeners, Criteria:	TIA G	<-Only Applcable to Unstiffened Cases

Bolt Data			
Qty:	36		
Diameter (in.):	1	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle (in.):	51		

Plate Data		
Diam:	54	in
Thick, t:	1.25	in
Grade (Fy):	36	ksi
Strength, Fu:	58	ksi
Single-Rod B-eff:	4.19	in

Stiffener Data (Welding at Both Sides)		
Config:	1	*
Weld Type:	Fillet	
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:	0.3125	in
Fillet V. Weld:	0.3125	in
Width:	3	in
Height:	5	in
Thick:	0.625	in
Notch:		in
Grade:	36	ksi
Weld str.:	70	ksi

Pole Data		
Diam:	48	in
Thick:	0.375	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi
Reinf. Fillet Weld	0	"0" if None

Flange Bolt Results

			Stiffened
Bolt Tension Capacity, φ*Tn,**B1**:	54.54	kips	φ*Tn
Adjusted φ*Tn (due to Vu=Vu/Qty), **B**:	54.52	kips	φTn[(1-(Vu/φVn)^2]^0.5
Max Bolt directly applied Tu:	19.30	Kips	
Min. PL "tc" for **B** cap. **w/o** Pry:	Stiffened	in	
Min PL "treq" for actual **T w/ Pry**:	Stiffened	in	
Min PL "t1" for actual **T w/o Pry**:	Stiffened	in	
T allowable	54.54	kips	<-- B, Stiffened
Prying Force, q:	0.00	kips	Stiffened
Total Bolt Tension=Tu+q:	19.30	kips	
Non-Prying Bolt Stress Ratio, Tu/B:	35.4%	**Pass**	

Exterior Flange Plate Results Flexural Check

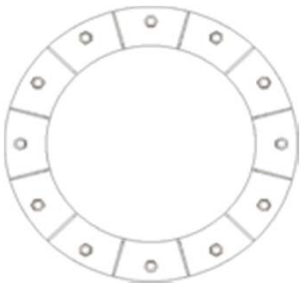
			Stiffened
Compression Side Plate Stress:	12.9	ksi	TIA G
Allowable Plate Stress:	32.4	ksi	φ*Fy
Compression Plate Stress Ratio:	39.9%	**Pass**	Comp. Y.L. Length:
Stiffened			N/A, Roark
Tension Side Stress Ratio, (treq/t)^2:	N/A		

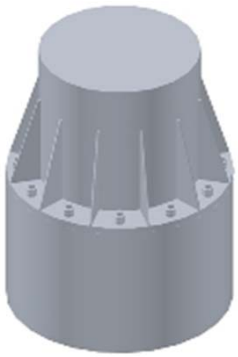
Stiffener Results

Horizontal Weld :	33.1%	**Pass**
Vertical Weld:	24.4%	**Pass**
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	15.5%	**Pass**
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	23.2%	**Pass**
Plate Comp. (AISC Bracket):	43.8%	**Pass**

Pole Results

Pole Punching Shear Check:	13.3%	**Pass**





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt
** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Stiffened or Unstiffened, Interior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Manufacturer:	Other

Reactions		
Moment:	786.3	ft-kips
Axial:	45.312	kips
Shear:	33.18	kips
Exterior Flange Run, T+q:	19.3	kips

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
38.88

Elevation: 80 feet

Bolt Data			
Qty:	36		
Diam:	1	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle:	51	in	

Interior Flange Bolt Results

Maximum Bolt Tension, Tu:	19.3	Kips, Ext. Flange Tu+q
Adjusted φ*Tn (due to Vu=Vu/Qty),	54.5	Kips
Bolt Stress Ratio:	35.4%	**Pass**

Plate Data		
Plate Outer Diam:	53.25	in
Plate Inner Diam:	48	in (Hole @ Ctr)
Thick:	1.25	in
Grade:	36	ksi
Effective Width:	4.65	in

Interior Flange Plate Results Flexural Check

Controlling Bolt Axial Force:	21.8	Kips, Ext. Cu=Interior Cu
Plate Stress:	13.5	ksi
Allowable Plate Stress, φ*Fy:	32.4	ksi
Plate Stress Ratio:	41.7%	**Pass**

Stiffener Data (Welding at Both Sides)		
Config:	0	*
Weld Type:		
Groove Depth:		in **
Groove Angle:		degrees
Fillet H. Weld:		<-- Disregard
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

n/a

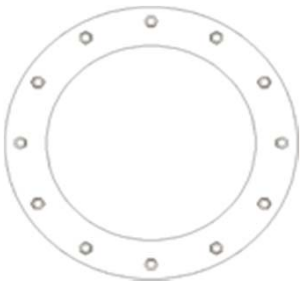
Stiffener Results

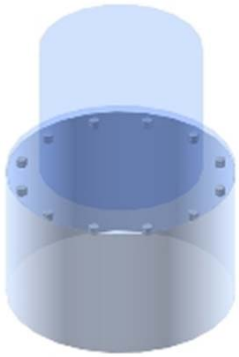
Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a

Pole Data		
Pole OuterDiam:	54	in
Thick:	0.375	in
Pole Inner Diam:	53.25	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

PROJECT	**87581.016.01 - Newington_1, CT**				
SUBJECT	**Existing and New Bridge Stiffeners @ 60'**				
DATE	**02-21-18**	PAGE	1	OF	1

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Determine Load to Bridge Stiffener:

M =	**2825.8 k-ft**	From Risa Model	**Stiffener Width**	**4.500 in**
I =	**50598.5 in^4**	From AutoCAD Sketch	**Stiffener Thickness**	**1.000 in**
ybar =	**31.000 in**		**Stiffener Height**	**159.000 in**
S =	1632.21 in^3	I/y	**Fy**	**65 ksi**
fc =	20.78 ksi	M/S	**Fu**	**80 ksi**
Ag =	4.500 in^2		**Step Width**	**3.00 in**
Pu =	93.49 k	fc x Ag	**Bolt Circle**	**57.00 in**
			Number of Bolts	**48**
			Bolt Size	**1**
			Gap @ Flange	**6.00 in**

Determine ΦPn (Allowable Axial Load):

Pn = Fcr x Ag		Eqn E3-1, AISC 13th Edition, Section E3.
K =	0.99	
l =	16.500 in	Unsupported Length
Iy =	.375 in^4	Local Weak Axis Moment of Intertia
Ag =	4.500 in^2	Stiffener Cross Sectional Area
ry =	.289 in	Radius of Gyration (Weak Axis)
kl/r =	56.59	
4.71 x √(E/Fy) =	99.49	Limit State Equation for Flexural Buckling - AISC 13th Edition, Section E3.
Fe =	89.39 ksi	Eqn E3-4 - AISC 13th Edition, Section E3. Elastic Critical Buckling Stress
Fcr =	47.94 ksi	Eqn E3-2, AISC 13th Edition, Section E3 Critical Buckling Stress
Pn =	215.75 k	Nominal Compressive Strength
ΦPn =	194.17 k	Allowable Compressive Strength

Unity% = 48.1 %

Tension Rupture Check:

AISC 13th Edition, Chapter J4.1

Hole Size	1.25	
U =	1	Shear Lag Factor - Table D3.1 and TIA222-G
Ag =	4.500 in^2	Gross Area
An =	3.250 in^2	Net Area
Ae =	3.250 in^2	Effective Area
ΦRn =	263.25 k	Tension Yielding: Eqn J4-1
ΦRn =	195.00 k	Tension Rupture: Eqn J4-2
ΦRn(Equiv)	195.00 ksi	

Unity% 47.94 %

Moment to Existing Bolt Group:

S_{BG} =	1775.38 in^3	# Bolts Acting	12
ft =	19.10 ksi		
Ab =	.785 in^2		
T =	180.01 k		
Arm =	57.00 ksi		
M_{EQ} =	855.1 k-ft	**<-------Insert into Flange Spreadsheet**	

Stiffened or Unstiffened, Exterior Flange Plate - Any Bolt Material TIA Rev G

Reactions		
Mu	855.1	ft-kips
Axial, Pu:	63.634	kips
Shear, Vu:	37.19	kips
Elevation:	60	feet

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
38.88

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Pole Manufacturer:	Other

If No stiffeners, Criteria:	TIA G	<-Only Applcable to Unstiffened Cases

Bolt Data			
Qty:	48		
Diameter (in.):	1	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle (in.):	57		

Plate Data		
Diam:	60	in
Thick, t:	1.25	in
Grade (Fy):	36	ksi
Strength, Fu:	58	ksi
Single-Rod B-eff:	3.53	in

Stiffener Data (Welding at Both Sides)		
Config:	0	*
Weld Type:	Fillet	
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:		in
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

Pole Data		
Diam:	54	in
Thick:	0.375	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi
Reinf. Fillet Weld	0	"0" if None

Flange Bolt Results

			Rigid
Bolt Tension Capacity, φ*Tn,**B1**:	54.54	kips	φ*Tn
Adjusted φ*Tn (due to Vu=Vu/Qty), **B**:	54.53	kips	φTn[(1-(Vu/φVn)^2]^0.5
Max Bolt directly applied Tu:	13.68	Kips	
Min. PL "tc" for **B** cap. **w/o** Pry:	1.087	in	
Min PL "treq" for actual **T w/ Pry**:	0.418	in	
Min PL "t1" for actual **T w/o Pry**:	0.544	in	
T allowable w/o Prying:	54.54	kips	α'<0 case
Prying Force, q:	0.00	kips	
Total Bolt Tension=Tu+q:	13.68	kips	
Non-Prying Bolt Stress Ratio, Tu/B:	25.1%	**Pass**	

Exterior Flange Plate Results Flexural Check

			Rigid
Compression Side Plate Stress:	11.5	ksi	TIA G
Allowable Plate Stress:	32.4	ksi	φ*Fy
Compression Plate Stress Ratio:	35.5%	**Pass**	Comp. Y.L. Length:
No Prying			18.25
Tension Side Stress Ratio, (treq/t)^2:	11.2%	**Pass**	

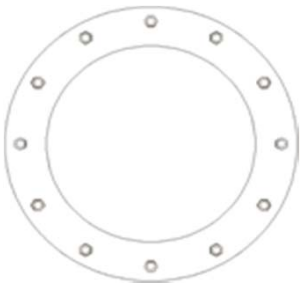
n/a

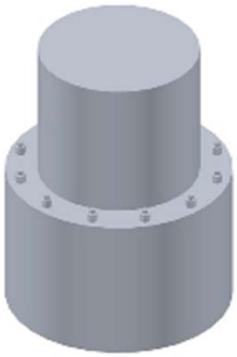
Stiffener Results

Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Stiffened or Unstiffened, Interior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Manufacturer:	Other

Reactions		
Moment:	855.1	ft-kips
Axial:	63.634	kips
Shear:	37.19	kips
Exterior Flange Run, T+q:	13.68	kips

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
38.88

Elevation: 60 feet

Bolt Data			
Qty:	48		
Diam:	1	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle:	57	in	

Plate Data		
Plate Outer Diam:	59.25	in
Plate Inner Diam:	54	in (Hole @ Ctr)
Thick:	1.25	in
Grade:	36	ksi
Effective Width:	3.88	in

Stiffener Data (Welding at Both Sides)		
Config:	0	*
Weld Type:		
Groove Depth:		in **
Groove Angle:		degrees
Fillet H. Weld:		<-- Disregard
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

Pole Data		
Pole OuterDiam:	60	in
Thick:	0.375	in
Pole Inner Diam:	59.25	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi

Interior Flange Bolt Results

Maximum Bolt Tension, Tu:	13.7	Kips, Ext. Flange Tu+q
Adjusted φ*Tn (due to Vu=Vu/Qty),	54.5	Kips
Bolt Stress Ratio:	25.1%	**Pass**

Interior Flange Plate Results Flexural Check

Controlling Bolt Axial Force:	16.3	Kips, Ext. Cu=Interior Cu
Plate Stress:	12.1	ksi
Allowable Plate Stress, φ*Fy:	32.4	ksi
Plate Stress Ratio:	37.4%	**Pass**

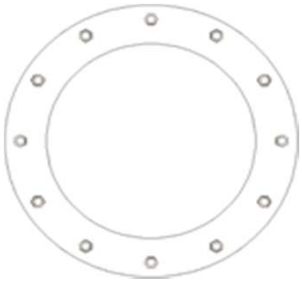
n/a

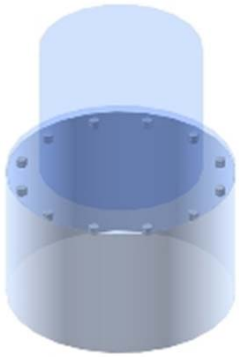
Stiffener Results

Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

PROJECT	**87581.016.01 - Newington_1, CT**				
SUBJECT	**Existing Bridge Stiffeners @ 40'**				
DATE	**02-21-18**	PAGE	1	OF	1

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0

Determine Load to Bridge Stiffener:

M =	**3598.6 k-ft**	From Risa Model	**Stiffener Width**	**6.500 in**
I =	**60442.4 in^4**	From AutoCAD Sketch	**Stiffener Thickness**	**1.250 in**
ybar =	**31.125 in**		**Stiffener Height**	**179.000 in**
S =	1941.92 in^3	I/y	**Fy**	**65 ksi**
fc =	22.24 ksi	M/S	**Fu**	**80 ksi**
Ag =	8.125 in^2		**Step Width**	**.00 in**
Pu =	180.68 k	fc x Ag	**Bolt Circle**	**50.00 in**
			Number of Bolts	**64**
			Bolt Size	**1 1/4**
			Gap @ Flange	**6.00 in**

Determine ΦPn (Allowable Axial Load):

Pn = Fcr x Ag — Eqn E3-1, AISC 13th Edition, Section E3.

K =	0.99	
l =	25.000 in	Unsupported Length
Iy =	1.058 in^4	Local Weak Axis Moment of Intertia
Ag =	8.125 in^2	Stiffener Cross Sectional Area
ry =	.361 in	Radius of Gyration (Weak Axis)
kl/r =	68.59	
4.71 x √(E/Fy) =	99.49	Limit State Equation for Flexural Buckling - AISC 13th Edition, Section E3.
Fe =	60.84 ksi	Eqn E3-4 - AISC 13th Edition, Section E3. Elastic Critical Buckling Stress
Fcr =	41.56 ksi	Eqn E3-2, AISC 13th Edition, Section E3 Critical Buckling Stress
Pn =	337.70 k	Nominal Compressive Strength
ΦPn =	303.93 k	Allowable Compressive Strength

Unity% = 59.4 %

Tension Rupture Check: AISC 13th Edition, Chapter J4.1

Hole Size	1.25	
U =	1	Shear Lag Factor - Table D3.1 and TIA222-G
Ag =	8.125 in^2	Gross Area
An =	6.563 in^2	Net Area
Ae =	6.563 in^2	Effective Area
ΦRn =	475.31 k	Tension Yielding: Eqn J4-1
ΦRn =	393.75 k	Tension Rupture: Eqn J4-2
ΦRn(Equiv)	393.75 ksi	

Unity% 45.89 %

Moment to Existing Bolt Group:

S_{BG} =	2417.70 in^3	# Bolts Acting	16
ft =	17.86 ksi		
Ab =	1.227 in^2		
T =	350.71 k		
Arm =	50.00 ksi		
M_{EQ} =	1461.3 k-ft	**<-------Insert into Flange Spreadsheet**	

PROJECT	**87581.016.01 - Newington_1, CT**				
SUBJECT	**New Bridge Stiffeners @ 40'**				
DATE	**02-21-18**	PAGE	1	OF	1

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

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Determine Load to Bridge Stiffener:

M =	**3598.6 k-ft**	From Risa Model	**Stiffener Width**	**6.000 in**
I =	**60442.4 in^4**	From AutoCAD Sketch	**Stiffener Thickness**	**1.000 in**
ybar =	**31.000 in**		**Stiffener Height**	**156.000 in**
S =	1949.75 in^3	I/y	**Fy**	**65 ksi**
fc =	22.15 ksi	M/S	**Fu**	**80 ksi**
Ag =	6.000 in^2		**Step Width**	**.00 in**
Pu =	132.89 k	fc x Ag	**Bolt Circle**	**50.00 in**
			Number of Bolts	**64**
			Bolt Size	**1 1/4**
			Gap @ Flange	**6.00 in**

Determine ΦPn (Allowable Axial Load):

Pn = Fcr x Ag — Eqn E3-1, AISC 13th Edition, Section E3.

K =	0.99	
l =	16.000 in	Unsupported Length
Iy =	.500 in^4	Local Weak Axis Moment of Intertia
Ag =	6.000 in^2	Stiffener Cross Sectional Area
ry =	.289 in	Radius of Gyration (Weak Axis)
kl/r =	54.87	

4.71 x √(E/Fy) = 99.49 — Limit State Equation for Flexural Buckling - AISC 13th Edition, Section E3.

Fe =	95.06 ksi	Eqn E3-4 - AISC 13th Edition, Section E3. Elastic Critical Buckling Stress
Fcr =	48.82 ksi	Eqn E3-2, AISC 13th Edition, Section E3 Critical Buckling Stress
Pn =	292.94 k	Nominal Compressive Strength
ΦPn =	263.64 k	Allowable Compressive Strength

Unity% = 50.4 %

Tension Rupture Check: AISC 13th Edition, Chapter J4.1

Hole Size	1.25	
U =	1	Shear Lag Factor - Table D3.1 and TIA222-G
Ag =	6.000 in^2	Gross Area
An =	4.750 in^2	Net Area
Ae =	4.750 in^2	Effective Area
ΦRn =	351.00 k	Tension Yielding: Eqn J4-1
ΦRn =	285.00 k	Tension Rupture: Eqn J4-2
ΦRn(Equiv)	285.00 ksi	

Unity% 46.63 %

Moment to Existing Bolt Group:

S_{BG} =	2417.70 in^3	# Bolts Acting	16
ft =	17.86 ksi		
Ab =	1.227 in^2		
T =	350.71 k		
Arm =	50.00 ksi		
M_{EQ} =	1461.3 k-ft	**<-------Insert into Flange Spreadsheet**	

Stiffened or Unstiffened, Interior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Manufacturer:	Other

Reactions		
Moment:	818.01	ft-kips
Axial:	77.596	kips
Shear:	39.128	kips
Exterior Flange Run, T+q:	0	kips

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
53.15

Elevation: 40-53BC feet

Bolt Data			
Qty:	32		
Diam:	1.25	Bolt Fu:	105
Bolt Material:	A325	Bolt Fy:	81
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle:	53	in	

Interior Flange Bolt Results

Maximum Bolt Tension, Tu:	20.7	Kips, Ext. Tu=Interior Tu
Adjusted φ*Tn (due to Vu=Vu/Qty),	76.3	Kips
Bolt Stress Ratio:	27.2%	**Pass**

Plate Data		
Plate Outer Diam:	59	in
Plate Inner Diam:	45	in (Hole @ Ctr)
Thick:	1.25	in
Grade:	36	ksi
Effective Width:	5.79	in

Interior Flange Plate Results Flexural Check

Controlling Bolt Axial Force:	25.6	Kips, Ext. Cu=Interior Cu
Plate Stress:	13.4	ksi
Allowable Plate Stress, φ*Fy:	32.4	ksi
Plate Stress Ratio:	41.3%	**Pass**

Stiffener Data (Welding at Both Sides)		
Config:	1	*
Weld Type:	Fillet	
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:	0.3125	in
Fillet V. Weld:	0.3125	in
Width:	3	in
Height:	6	in
Thick:	0.5	in
Notch:	0.5	in
Grade:	36	ksi
Weld str.:	70	ksi

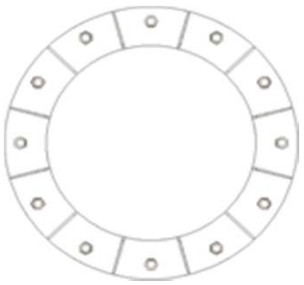
Stiffener Results

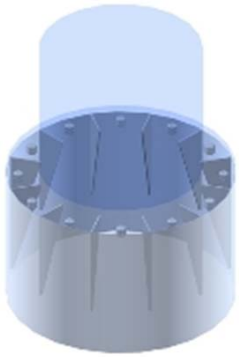
Horizontal Weld :	21.1%	**Pass**
Vertical Weld:	11.3%	**Pass**
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	7.6%	**Pass**
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	18.0%	**Pass**
Plate Comp. (AISC Bracket):	24.0%	**Pass**

Pole Results

Pole Punching Shear Check:	4.3%	**Pass**

Pole Data		
Pole OuterDiam:	60	in
Thick:	0.5	in
Pole Inner Diam:	59	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Stiffened or Unstiffened, Interior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Manufacturer:	Other

Reactions		
Moment:	643.29	ft-kips
Axial:	77.596	kips
Shear:	39.128	kips
Exterior Flange Run, T+q:	0	kips

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
53.15

Elevation: 40-47BC feet

Bolt Data			
Qty:	32		
Diam:	1.25	Bolt Fu:	105
Bolt Material:	A325	Bolt Fy:	81
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle:	47	in	

Interior Flange Bolt Results

Maximum Bolt Tension, Tu:	18.1	Kips, Ext. Tu=Interior Tu
Adjusted φ*Tn (due to Vu=Vu/Qty),	76.3	Kips
Bolt Stress Ratio:	23.7%	**Pass**

Plate Data		
Plate Outer Diam:	59	in
Plate Inner Diam:	45	in (Hole @ Ctr)
Thick:	1.25	in
Grade:	36	ksi
Effective Width:	5.79	in

Interior Flange Plate Results Flexural Check

Controlling Bolt Axial Force:	23.0	Kips, Ext. Cu=Interior Cu
Plate Stress:	12.0	ksi
Allowable Plate Stress, φ*Fy:	32.4	ksi
Plate Stress Ratio:	37.1%	**Pass**

Stiffener Data (Welding at Both Sides)		
Config:	1	*
Weld Type:	Fillet	
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:	0.3125	in
Fillet V. Weld:	0.3125	in
Width:	3	in
Height:	6	in
Thick:	0.5	in
Notch:	0.5	in
Grade:	36	ksi
Weld str.:	70	ksi

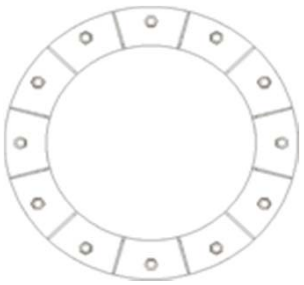
Stiffener Results

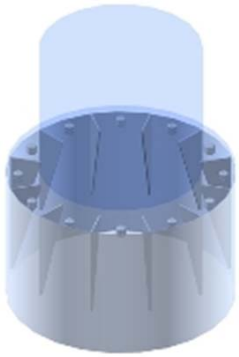
Horizontal Weld :	17.1%	**Pass**
Vertical Weld:	9.1%	**Pass**
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	5.9%	**Pass**
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	14.4%	**Pass**
Plate Comp. (AISC Bracket):	19.4%	**Pass**

Pole Results

Pole Punching Shear Check:	3.5%	**Pass**

Pole Data		
Pole OuterDiam:	60	in
Thick:	0.5	in
Pole Inner Diam:	59	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

PROJECT	**87581.016.01 - Newington_1, CT**				
SUBJECT	**Existing Bridge Stiffeners @ 20'**				
DATE	**02-21-18**	PAGE	1	OF	1

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Determine Load to Bridge Stiffener:

M =	**4396.8 k-ft**	From Risa Model	**Stiffener Width**	**6.500 in**
I =	**61968.8 in^4**	From AutoCAD Sketch	**Stiffener Thickness**	**1.250 in**
ybar =	**31.125 in**		**Stiffener Height**	**178.000 in**
S =	1990.96 in^3	I/y	**Fy**	**65 ksi**
fc =	26.50 ksi	M/S	**Fu**	**80 ksi**
Ag =	8.125 in^2		**Step Width**	**.00 in**
Pu =	215.31 k	fc x Ag	**Bolt Circle**	**50.00 in**
			Number of Bolts	**64**
			Bolt Size	**1 1/4**
			Gap @ Flange	**6.00 in**

Determine ΦPn (Allowable Axial Load):

Pn = Fcr x Ag		Eqn E3-1, AISC 13th Edition, Section E3.
K =	0.99	
l =	24.000 in	Unsupported Length
Iy =	1.058 in^4	Local Weak Axis Moment of Intertia
Ag =	8.125 in^2	Stiffener Cross Sectional Area
ry =	.361 in	Radius of Gyration (Weak Axis)
kl/r =	65.85	
4.71 x √(E/Fy) =	99.49	Limit State Equation for Flexural Buckling - AISC 13th Edition, Section E3.
Fe =	66.02 ksi	Eqn E3-4 - AISC 13th Edition, Section E3. Elastic Critical Buckling Stress
Fcr =	43.05 ksi	Eqn E3-2, AISC 13th Edition, Section E3 Critical Buckling Stress
Pn =	349.75 k	Nominal Compressive Strength
ΦPn =	314.78 k	Allowable Compressive Strength

Unity% = 68.4 %

Tension Rupture Check: AISC 13th Edition, Chapter J4.1

Hole Size	1.25	
U =	1	Shear Lag Factor - Table D3.1 and TIA222-G
Ag =	8.125 in^2	Gross Area
An =	6.563 in^2	Net Area
Ae =	6.563 in^2	Effective Area
ΦRn =	475.31 k	Tension Yielding: Eqn J4-1
ΦRn =	393.75 k	Tension Rupture: Eqn J4-2
ΦRn(Equiv)	393.75 ksi	

Unity% 54.68 %

Moment to Existing Bolt Group:

S_{BG} =	2478.75 in^3	# Bolts Acting	16
ft =	21.29 ksi		
Ab =	1.227 in^2		
T =	417.94 k		
Arm =	50.00 ksi		
M_{EQ} =	1741.4 k-ft	**<-------Insert into Flange Spreadsheet**	

PROJECT	**87581.016.01 - Newington_1, CT**				
SUBJECT	**New Bridge Stiffeners @ 20'**				
DATE	**02-21-18**	PAGE	1	OF	1

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Determine Load to Bridge Stiffener:

M =	**4396.8 k-ft**	From Risa Model	**Stiffener Width**	**6.000 in**
I =	**61968.8 in^4**	From AutoCAD Sketch	**Stiffener Thickness**	**1.000 in**
ybar =	**31.000 in**		**Stiffener Height**	**156.000 in**
S =	1998.99 in^3	I/y	**Fy**	**65 ksi**
fc =	26.39 ksi	M/S	**Fu**	**80 ksi**
Ag =	6.000 in^2		**Step Width**	**.00 in**
Pu =	158.36 k	fc x Ag	**Bolt Circle**	**50.00 in**
			Number of Bolts	**64**
			Bolt Size	**1 1/4**
			Gap @ Flange	**6.00 in**

Determine ΦPn (Allowable Axial Load):

Pn = Fcr x Ag — Eqn E3-1, AISC 13th Edition, Section E3.

K =	0.99	
l =	16.000 in	Unsupported Length
Iy =	.500 in^4	Local Weak Axis Moment of Intertia
Ag =	6.000 in^2	Stiffener Cross Sectional Area
ry =	.289 in	Radius of Gyration (Weak Axis)
kl/r =	54.87	

4.71 x √(E/Fy) = 99.49 — Limit State Equation for Flexural Buckling - AISC 13th Edition, Section E3.

Fe =	95.06 ksi	Eqn E3-4 - AISC 13th Edition, Section E3. Elastic Critical Buckling Stress
Fcr =	48.82 ksi	Eqn E3-2, AISC 13th Edition, Section E3 Critical Buckling Stress
Pn =	292.94 k	Nominal Compressive Strength
ΦPn =	263.64 k	Allowable Compressive Strength

Unity% = 60.1 %

Tension Rupture Check: AISC 13th Edition, Chapter J4.1

Hole Size	1.25	
U =	1	Shear Lag Factor - Table D3.1 and TIA222-G
Ag =	6.000 in^2	Gross Area
An =	4.750 in^2	Net Area
Ae =	4.750 in^2	Effective Area
ΦRn =	351.00 k	Tension Yielding: Eqn J4-1
ΦRn =	285.00 k	Tension Rupture: Eqn J4-2
ΦRn(Equiv)	285.00 ksi	

Unity% 55.57 %

Moment to Existing Bolt Group:

S_{BG} =	2478.75 in^3	# Bolts Acting	16
ft =	21.29 ksi		
Ab =	1.227 in^2		
T =	417.94 k		
Arm =	50.00 ksi		
M_{EQ} =	1741.4 k-ft	**<-------Insert into Flange Spreadsheet**	

Stiffened or Unstiffened, Interior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Manufacturer:	Other

Reactions		
Moment:	974.81	ft-kips
Axial:	92.13	kips
Shear:	40.599	kips
Exterior Flange Run, T+q:	0	kips

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
53.15

Elevation: 20-53BC feet

Bolt Data			
Qty:	32		
Diam:	1.25	Bolt Fu:	105
Bolt Material:	A325	Bolt Fy:	81
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle:	53	in	

Interior Flange Bolt Results

Maximum Bolt Tension, Tu:	24.7	Kips, Ext. Tu=Interior Tu
Adjusted φ*Tn (due to Vu=Vu/Qty),	76.3	Kips
Bolt Stress Ratio:	32.4%	**Pass**

Plate Data		
Plate Outer Diam:	58.75	in
Plate Inner Diam:	45	in (Hole @ Ctr)
Thick:	1.25	in
Grade:	36	ksi
Effective Width:	5.77	in

Interior Flange Plate Results Flexural Check

Controlling Bolt Axial Force:	30.5	Kips, Ext. Cu=Interior Cu
Plate Stress:	15.9	ksi
Allowable Plate Stress, φ*Fy:	32.4	ksi
Plate Stress Ratio:	49.2%	**Pass**

Stiffener Data (Welding at Both Sides)		
Config:	1	*
Weld Type:	Fillet	
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:	0.3125	in
Fillet V. Weld:	0.3125	in
Width:	3	in
Height:	6	in
Thick:	0.5	in
Notch:	0.5	in
Grade:	36	ksi
Weld str.:	70	ksi

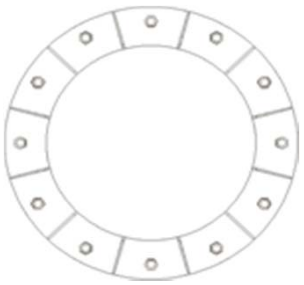
Stiffener Results

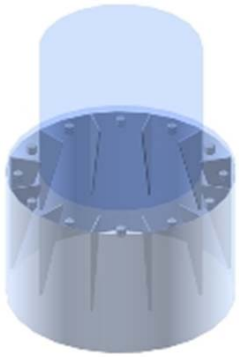
Horizontal Weld :	21.3%	**Pass**
Vertical Weld:	11.4%	**Pass**
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	7.7%	**Pass**
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	18.3%	**Pass**
Plate Comp. (AISC Bracket):	24.3%	**Pass**

Pole Results

Pole Punching Shear Check:	3.5%	**Pass**

Pole Data		
Pole OuterDiam:	60	in
Thick:	0.625	in
Pole Inner Diam:	58.75	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Stiffened or Unstiffened, Interior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Manufacturer:	Other

Reactions		
Moment:	766.59	ft-kips
Axial:	92.13	kips
Shear:	40.599	kips
Exterior Flange Run, T+q:	0	kips

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
53.15

Elevation: 20-47BC feet

Bolt Data			
Qty:	32		
Diam:	1.25	Bolt Fu:	105
Bolt Material:	A325	Bolt Fy:	81
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle:	47	in	

Interior Flange Bolt Results

Maximum Bolt Tension, Tu:	21.6	Kips, Ext. Tu=Interior Tu
Adjusted φ*Tn (due to Vu=Vu/Qty),	76.3	Kips
Bolt Stress Ratio:	28.3%	**Pass**

Plate Data		
Plate Outer Diam:	58.75	in
Plate Inner Diam:	45	in (Hole @ Ctr)
Thick:	1.25	in
Grade:	36	ksi
Effective Width:	5.77	in

Interior Flange Plate Results Flexural Check

Controlling Bolt Axial Force:	27.3	Kips, Ext. Cu=Interior Cu
Plate Stress:	14.3	ksi
Allowable Plate Stress, φ*Fy:	32.4	ksi
Plate Stress Ratio:	44.2%	**Pass**

Stiffener Data (Welding at Both Sides)		
Config:	1	*
Weld Type:	Fillet	
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:	0.3125	in
Fillet V. Weld:	0.3125	in
Width:	3	in
Height:	6	in
Thick:	0.5	in
Notch:	0.5	in
Grade:	36	ksi
Weld str.:	70	ksi

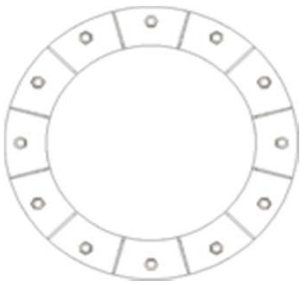
Stiffener Results

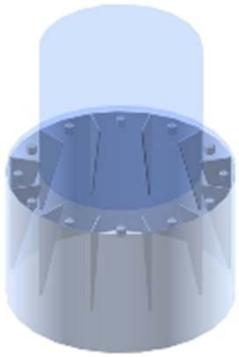
Horizontal Weld :	17.2%	**Pass**
Vertical Weld:	9.2%	**Pass**
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	6.0%	**Pass**
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	14.6%	**Pass**
Plate Comp. (AISC Bracket):	19.6%	**Pass**

Pole Results

Pole Punching Shear Check:	2.8%	**Pass**

Pole Data		
Pole OuterDiam:	60	in
Thick:	0.625	in
Pole Inner Diam:	58.75	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Anchor Rod Information for TIA/EIA-222-F and TIA-222-G-2

Site Information	
ID:	826217
Name:	Newington_1
App. #:	421391 Rev. 7

AeroSolutions LLC
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Base Reactions		
Moment:	5223	ft-kip
Axial:	107	kip
Shear:	42	kip
Base Plate Type:	Circular	

Design Information	
TIA Code:	G
ASIF:	1.000
Failure:	105%
eta Factor:	0.50

Original Anchor Rod Data

Quantity:	52	
Diameter:	1.25	in
Material:	A687	
Bolt Circle:	67.0	in
Bolt Spacing:		in
Bolt Group Area:	63.81	in^2
Bolt Group MOIx:	35807	in^4

Reactions Seen by Original AR Group

Moment:	2393.1	kip-ft
Axial:	107.0	kip
Shear:	42.0	kip

Original AR Capacity Check

Combined Load:	36.6	kip
Allowable load:	116.3	kip
AR Capacity:	31.5%	Pass

First Added Anchor Rod Data

Quantity:	10	
Diameter:	2.25	in
Material:	A687	
Bolt Circle:	92.3	in
Bolt Group Area:	39.76	in^2
Bolt Group MOIx:	42342	in^4

Reactions Seen by First Added AR Group

Moment:	2829.9	kip-ft
Axial:	0.0	kip
Shear:	0.0	kip

First Added AR Capacity Check

Combined Load:	147.2	kip
Allowable load:	389.7	kip
AR Capacity:	37.8%	Pass

Second Added Anchor Rod Data

Quantity:		
Diameter:		in
Material:		
Bolt Circle:		in
Bolt Group Area:	0.00	in^2
Bolt Group MOIx:	0	in^4

Reactions Seen by Second Added AR Group

Moment:	0.0	kip-ft
Axial:	0.0	kip
Shear:	0.0	kip

Second Added AR Capacity Check

Combined Load:	0.0	kip
Allowable load:	0.0	kip
AR Capacity:	0.0%	

Third Added Anchor Rod Data

Quantity:		
Diameter:		in
Material:		
Bolt Circle:		in
Bolt Group Area:	0.00	in^2
Bolt Group MOIx:	0	in^4

Reactions Seen by Second Added AR Group

Moment:	0.0	kip-ft
Axial:	0.0	kip
Shear:	0.0	kip

Second Added AR Capacity Check

Combined Load:	0.0	kip
Allowable load:	0.0	kip
AR Capacity:	0.0%	

Rev.4.1

Stiffened or Unstiffened, Ungrouted, Circular Base Plate - Any Rod Material

TIA Rev G Assumption: Clear space between bottom of leveling nut and top of concrete **not** exceeding (1)*(Rod Diameter)

Site Data

BU#:	*826217*
Site Name:	*Newington_1*
App #:	*421391 Rev. 7*
Pole Manufacturer:	*Other*

Reactions		
Mu:	2393.1	ft-kips
Axial, Pu:	107	kips
Shear, Vu:	42	kips
Eta Factor, η	0.5	TIA G (Fig. 4-4)

Anchor Rod Data		
Qty:	52	
Diam:	1.25	in
Rod Material:	Other	
Strength (Fu):	150	ksi
Yield (Fy):	105	ksi
Bolt Circle:	67	in

If No stiffeners, Criteria: AISC LRFD <-Only Applcable to Unstiffened Cases

Plate Data		
Diam:	70	in
Thick:	1.25	in
Grade:	36	ksi
Single-Rod B-eff:	3.62	in

Stiffener Data (Welding at both sides)		
Config:	1	*
Weld Type:	Fillet	
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:	0.3125	in
Fillet V. Weld:	0.3125	in
Width:	3	in
Height:	6	in
Thick:	0.5	in
Notch:	0.5	in
Grade:	36	ksi
Weld str.:	70	ksi

Pole Data		
Diam:	60	in
Thick:	0.625	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	57	ksi
Reinf. Fillet Weld	0	"0" if None

Anchor Rod Results

		Stiffened
Max Rod (Cu+ Vu/ή):	36.6 Kips	AISC LRFD
Allowable Axial, Φ*Fu*Anet:	116.3 Kips	φ*Tn
Anchor Rod Stress Ratio:	31.5% **Pass**	

Base Plate Results Shear Check Only

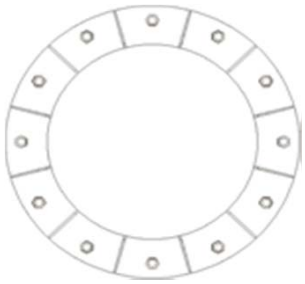
		Stiffened
Base Plate Stress:	4.7 ksi	AISC LRFD
Allowable Plate Stress:	19.4 ksi	φ*Fy
Base Plate Stress Ratio:	24.0% **Pass**	Y.L. Length: N/A, Roark

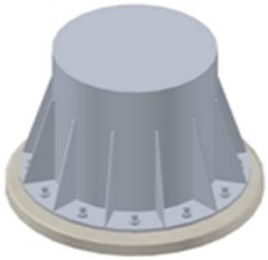
Stiffener Results

Horizontal Weld :	44.7% **Pass**
Vertical Weld:	23.9% **Pass**
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	20.0% **Pass**
Plate Tension+Shear, ft/Ft+(fv/Fv)^2	41.8% **Pass**
Plate Comp. (AISC Bracket):	51.0% **Pass**

Pole Results

Pole Punching Shear Check:	7.3% **Pass**





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Pier and Pad Foundation

BU # :	826217
Site Name:	Newington_1, CT
App. Number:	421391 Rev. 7

TIA-222 Revision:	G
Tower Type:	Monopole

Block Foundation?: ☐

Superstructure Analysis Reactions

Compression, P_{comp}:	107	kips
Base Shear, Vu_comp:	42	kips
Moment, M_u:	4023	ft-kips
Tower Height, **H**:	191.667	ft
BP Dist. Above Fdn, bp_{dist}:	3	in

Pier Properties

Pier Shape:	Circular	
Pier Diameter, **dpier**:	7.0	ft
Ext. Above Grade, **E**:	0.50	ft
Pier Rebar Size, **Sc**:	9	
Pier Rebar Quantity, **mc**:	34	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	11	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties

Depth, **D**:	9.0	ft
Pad Width, **W**:	20.5	ft
Pad Thickness, **T**:	2.5	ft
Pad Rebar Size, **Sp**:	11	
Pad Rebar Quantity, **mp**:	30	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties

Rebar Grade, **Fy**:	60000	psi
Concrete Compressive Strength, **F'c**:	3000	psi
Dry Concrete Density, δ**c**:	150	pcf

Soil Properties

Total Soil Unit Weight, γ:	130	pcf
Ultimate Gross Bearing, Qult:	16.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	36	degrees
SPT Blow Count, N_{blows}:		
Base Friction, μ:	0.35	
Neglected Depth, **N**:	3.33	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	None	ft

<--Toggle between Gross and Net

Foundation Analysis Checks

	Capacity	Demand	Rating	Check
Lateral (Sliding) (kips)	334.15	42.00	**12.6%**	**Pass**
Bearing Pressure (ksf)	12.00	3.90	**32.5%**	**Pass**
*Overturning (kip*ft)*	6666.47	4432.50	**66.5%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	5538.56	4317.00	**77.9%**	**Pass**
Pier Compression (kip)	18370.97	155.49	**0.8%**	**Pass**
*Pad Flexure (kip*ft)*	4769.42	1998.97	**41.9%**	**Pass**
Pad Shear - 1-way (kips)	502.95	399.67	**79.5%**	**Pass**
Pad Shear - 2-way (ksi)	0.16	0.00	**0.0%**	**Pass**

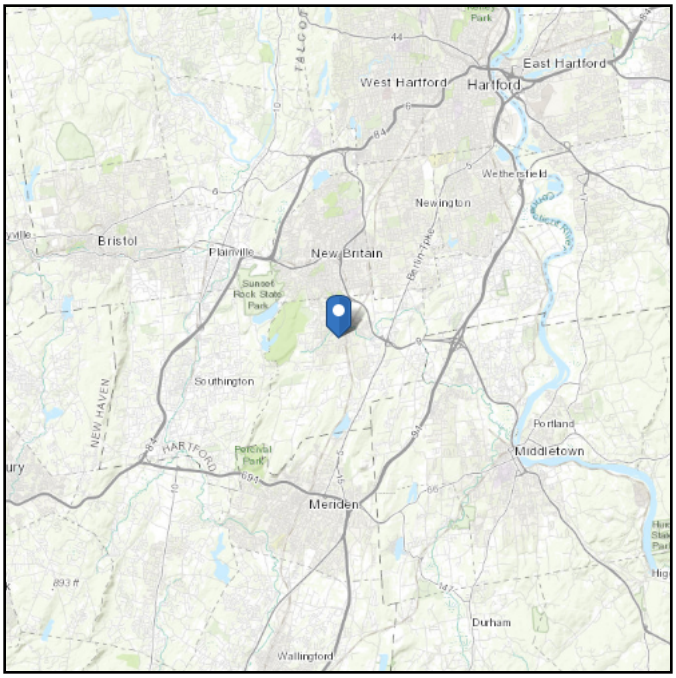
Soil Rating:	**66.5%**
Structural Rating:	**79.5%**

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 133.49 ft (NAVD 88)
Latitude: 41.626194
Longitude: -72.775647



Wind

Results:

Wind Speed:	123 Vmph
10-year MRI	77 Vmph
25-year MRI	86 Vmph
50-year MRI	93 Vmph
100-year MRI	100 Vmph
Data Source:	ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, incorporating errata of March 12, 2014
Date Accessed:	Wed Feb 21 2018

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).

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

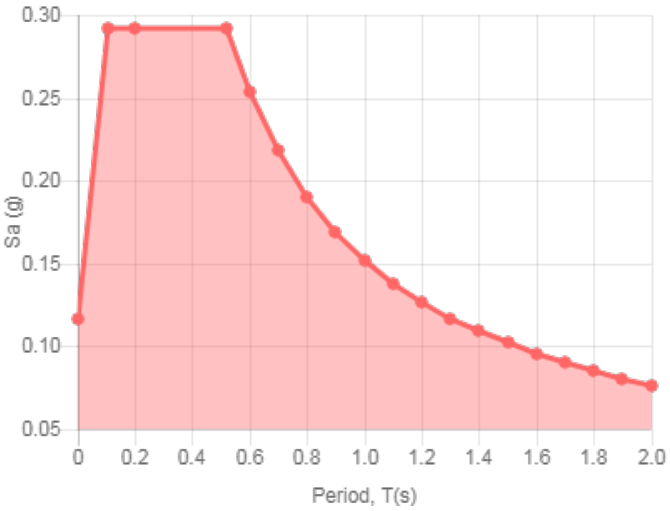
Seismic

Site Soil Class: D - Stiff Soil

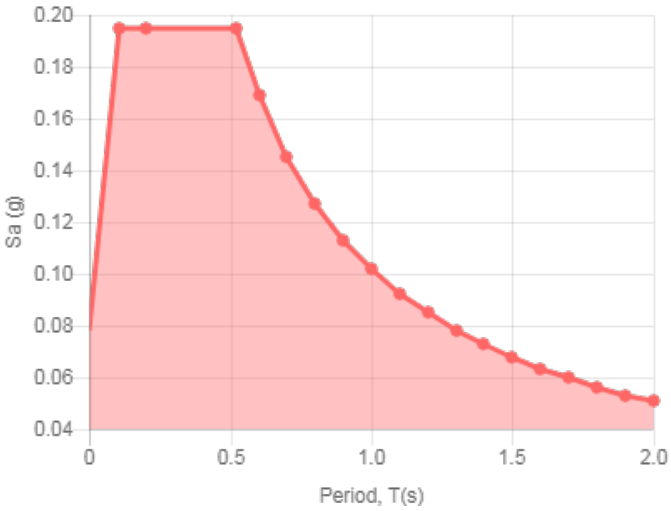
Results:

S_S:	0.183
S_1:	0.063
S_{MS}:	0.292
S_{M1}:	0.152
S_{DS}:	0.195
S_{D1}:	0.102

MCEr Spectrum



Design Response Spectrum



Data Source: USGS Seismic Design Maps

Date Accessed: Wed Feb 21 2018

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Wed Feb 21 2018

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.

Town of Berlin, CT

Property Listing Report | Map Block Lot 9-3-54-29-8026 | Account 1101150

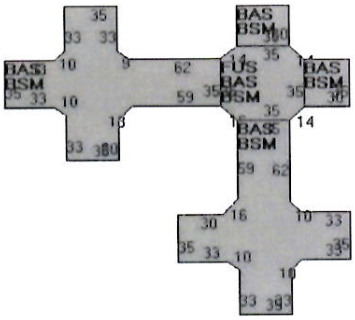
Property Information

Property Location	240 KENSINGTON RD
Owner	BERLIN TOWN OF
Co-Owner	TOWN HALL COMPLEX
Mailing Address	240 KENSINGTON ROAD KENSINGTON CT 06037
Land Use	903I Municipal MDL-96
Land Class	E
Zoning Code	R-15
Census Tract	

Street Index	7
Acreage	25.1
Utilities	All Public
Lot Setting/Desc	Level
Additional Info	

Photo

Sketch



Primary Construction Details

Year Built	1975
Stories	1
Building Style	Other Municip
Building Use	Comm/Ind
Building Condition	B
Floors	Carpet
Total Rooms	

Bedrooms	
Full Bathrooms	2
Half Bathrooms	
Bath Style	
Kitchen Style	
Roof Style	Gable/Hip
Roof Cover	Asph/F Gls/Cmp

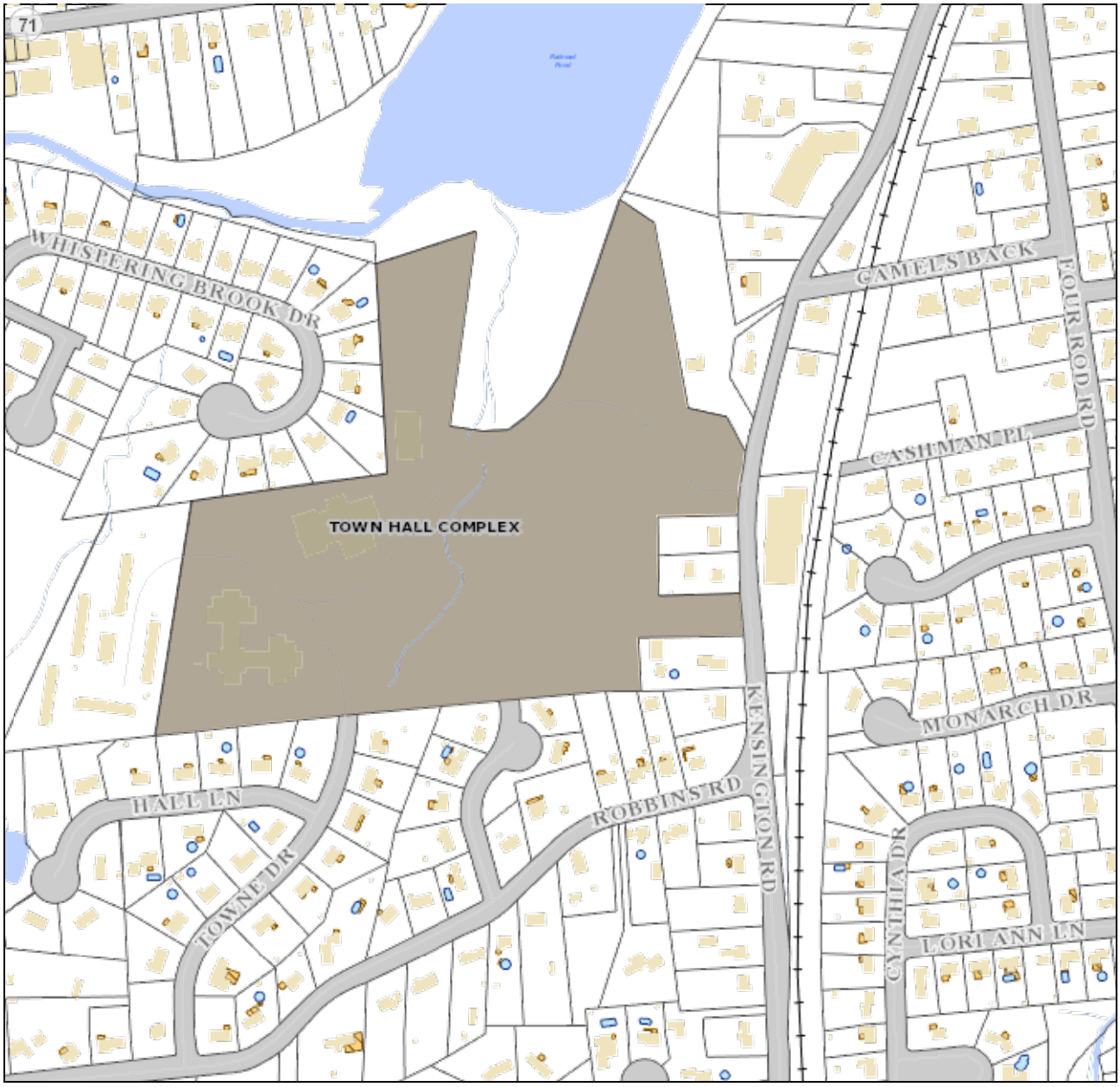
Exterior Walls	Brick Veneer
Interior Walls	Drywall/Plaste
Heating Type	Hot Water
Heating Fuel	Oil/Gas
AC Type	Central
Gross Bldg Area	44670
Total Living Area	23770

Report Created On 3/22/2018

Town of Berlin

Geographic Information System (GIS)

Date Printed: 3/22/2018



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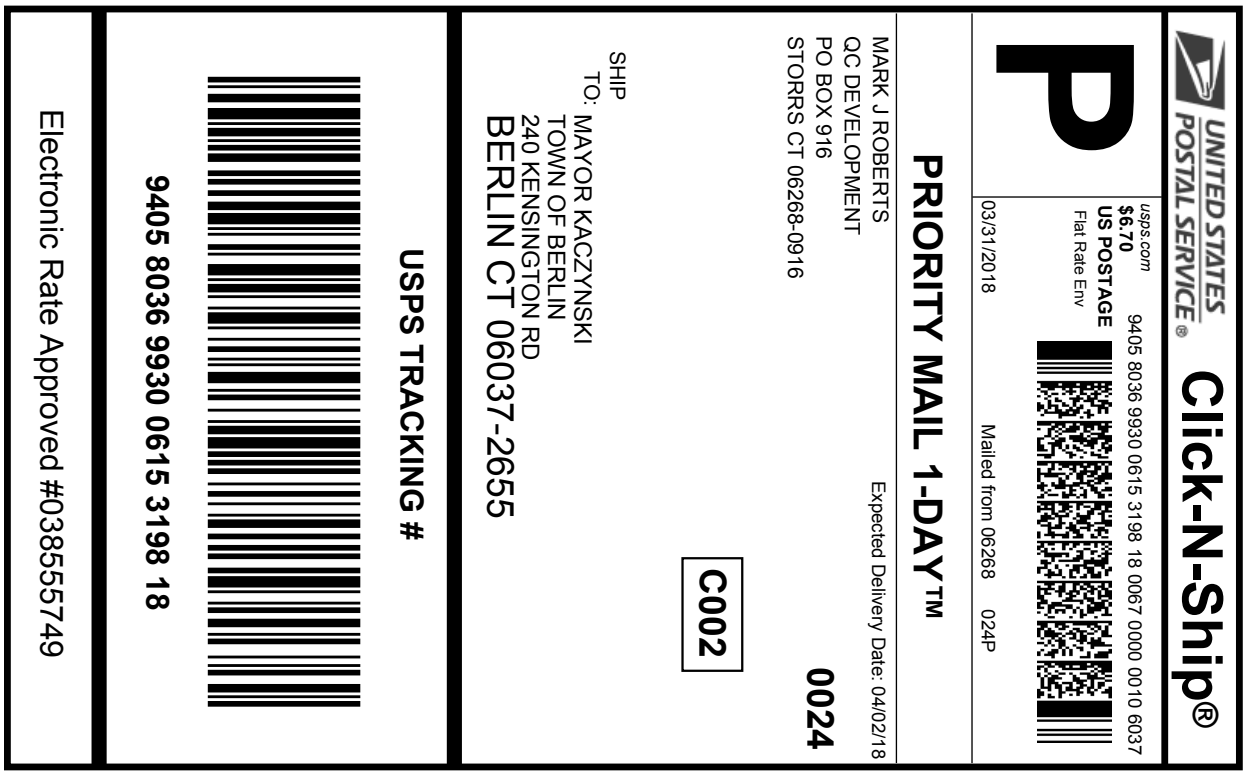
Approximate Scale: 1 inch = 400 feet

0 400 Feet

N W E S



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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.**

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USPS TRACKING # / Insurance Number:
9405 8036 9930 0615 3198 18

Trans. #:	431300899
Print Date:	03/30/2018
Ship Date:	03/31/2018
Expected Delivery Date:	04/02/2018
Insured Value:	$50.00

Priority Mail® Postage:	**$6.70**
Insurance Fee	**$0.00**
Total	**$6.70**

From: MARK J ROBERTS
QC DEVELOPMENT
PO BOX 916
STORRS CT 06268-0916

To: MAYOR KACZYNSKI
TOWN OF BERLIN
240 KENSINGTON RD
BERLIN CT 06037-2655

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