March 08, 2022

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

Regarding: Notice of Exempt Modification – AT&T Site CT2019 / FA# 10034982
Address: 170 Ingham Hill Road, Old Saybrook, CT 06475

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC ("AT&T") currently maintains a wireless telecommunications facility on an existing +/- 156' monopole tower at the above-referenced address, latitude 41.3098811, longitude -72.3975269. Said monopole tower is operated by Crown Castle, LLC.

AT&T desires to modify its existing telecommunications facility by swapping three (3) remote radio units, as more particularly detailed and described on the enclosed Construction Drawings prepared by Hudson Design Group, LLC last revised February 22, 2022. The centerline height of the existing antennas is and will remain at 149 feet. This modification/proposal includes B2, B5, and B12 hardware that is both 4G(LTE) and 5GNR capable through remote software configuration and either or both services may be turned on or off at various times

Please accept this letter as notification pursuant to R.C.S.A §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 following individuals: The Honorable Carl Fortuna, Mayor of the Town of Old Saybrook; Christina M. Costa, Zoning Enforcement Officer and Town Planner of the Town of Old Saybrook; Crown Castle, LLC, as tower operator and Carol and Robert Lorenz, as property owner. Please note, the original tower approvals were requested from the Town but were unavailable. A copy of the Siting Council approval of the facility is attached.

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

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

2. The proposed modifications will not require an 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 modified facility will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. *Please see the RF emissions calculation for AT&T's modified facility enclosed herewith.*

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

6. The existing structure and its foundation can support the proposed loading. *Please see the structural analysis dated December 21, 2021 and prepared by B+T Group enclosed herewith.*

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).

Sincerely,

Evan Renwick
Site Acquisition Specialist
Centerline Communications, LLC
750 West Center Street, Suite 301
West Bridgewater, MA 02379
erenwick@clinellc.com

Enclosures:
Exhibit 1 – Construction Drawings
Exhibit 2 – Property Card and GIS
Exhibit 3 – Structural Analysis
Exhibit 4 – Mount Analysis
Exhibit 5 – RF Emissions Analysis Report Evaluation
Exhibit 6 – Original Tower Approval
Exhibit 7 – Notice Delivery Confirmations

cc:
The Honorable Carl Fortuna, Mayor, Town of Old Saybrook, as elected official
Christina M. Costa, Zoning Enforcement Officer and Town Planner, Town of Old Saybrook,
Crown Castle, LLC, as tower operator
Carol and Robert Lorenz, as property owner

EXHIBIT 1

PROJECT INFORMATION

SCOPE OF WORK:	ITEMS TO BE MOUNTED ON THE EXISTING MONOPOLE: • NEW AT&T RRUS: 4415 B25 (PCS) CONNECTED TO EXISTING 12 PORT @ POS. 4 (TYP. OF 1 PER SECTOR, TOTAL OF 3). ITEMS TO BE REMOVED: • EXISTING AT&T RRUS: RRUS–32 B2 (PCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3). ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION: • NONE. ITEMS TO REMAIN: • (9) ANTENNAS, (12) RRU'S, (2) RRU'S (ON GROUND), (3) RRUW (ON GROUND), (3) SURGE ARRESTORS, (12) COAX CABLES, (6) DC POWER & (2) FIBER.
SITE ADDRESS:	170 INGHAM HILL ROAD OLD SAYBROOK, CT 06475
LATITUDE:	41.309881° N, 41° 18' 35.57" N
LONGITUDE:	72.397526° W, 72° 23' 51.10" W
TYPE OF SITE:	MONOPOLE / INDOOR EQUIPMENT
STRUCTURE HEIGHT:	156'–0±
RAD CENTER:	149'–0"±
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

SITE NUMBER: CT2019

SITE NAME: OLD SAYBROOK

FA CODE: 10034982

PACE ID: MRCTB052909

PROJECT: BWE TOWER TOP RRH SWAP 2021 UPGRADE

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CROWN SITE SITE NAME: OLD SAYBROOK
CROWN SITE SITE #: 841289

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 MI. MERGE ONTO I–91 S VIA THE RAMP ON THE LEFT TOWARD NEW HAVEN. 1.4 MI. MERGE ONTO CT–9 S VIA EXIT 22S ON THE LEFT TOWARD MIDDLETOWN/OLD SAYBROOK. 29.3 MI. MERGE ONTO I–95 S / GOVERNOR JOHN DAVIS LODGE TURNPIKE TOWARD NEW HAVEN/N.Y. CITY. 2.1 MI. TAKE THE ELM ST EXIT, EXIT 67. 0.2 MI. TURN RIGHT ONTO ELM ST. 0.0 MI. ELM ST BECOMES INGHAM HILL RD. 0.6 MI. 170 INGHAM HILL 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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750 WEST CENTER STREET, SUITE #301
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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: AR

STATE OF CONNECTICUT · DANIEL P. HAMM · No. 21178 · LICENSED PROFESSIONAL ENGINEER

AT&T

TITLE SHEET

BWE TOWER TOP RRH SWAP 2021 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT2019	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 STANDARDS) 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 AND #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 AWG 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 – CENTERLINE
   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. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

16. CONSTRUCTION SHALL COMPLY WITH 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 2015 WITH 2018 CT STATE BUILDING CODE AMENDMENTS
    ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE (NFPA 70-2017)

    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-H, STRUCTURAL STANDARDS FOR STEEL

    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

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT2019
SITE NAME: OLD SAYBROOK
CROWN SITE SITE # ID: 841289

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at&t
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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: AR

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

GENERAL NOTES

BWE TOWER TOP RRH SWAP 2021 UPGRADE

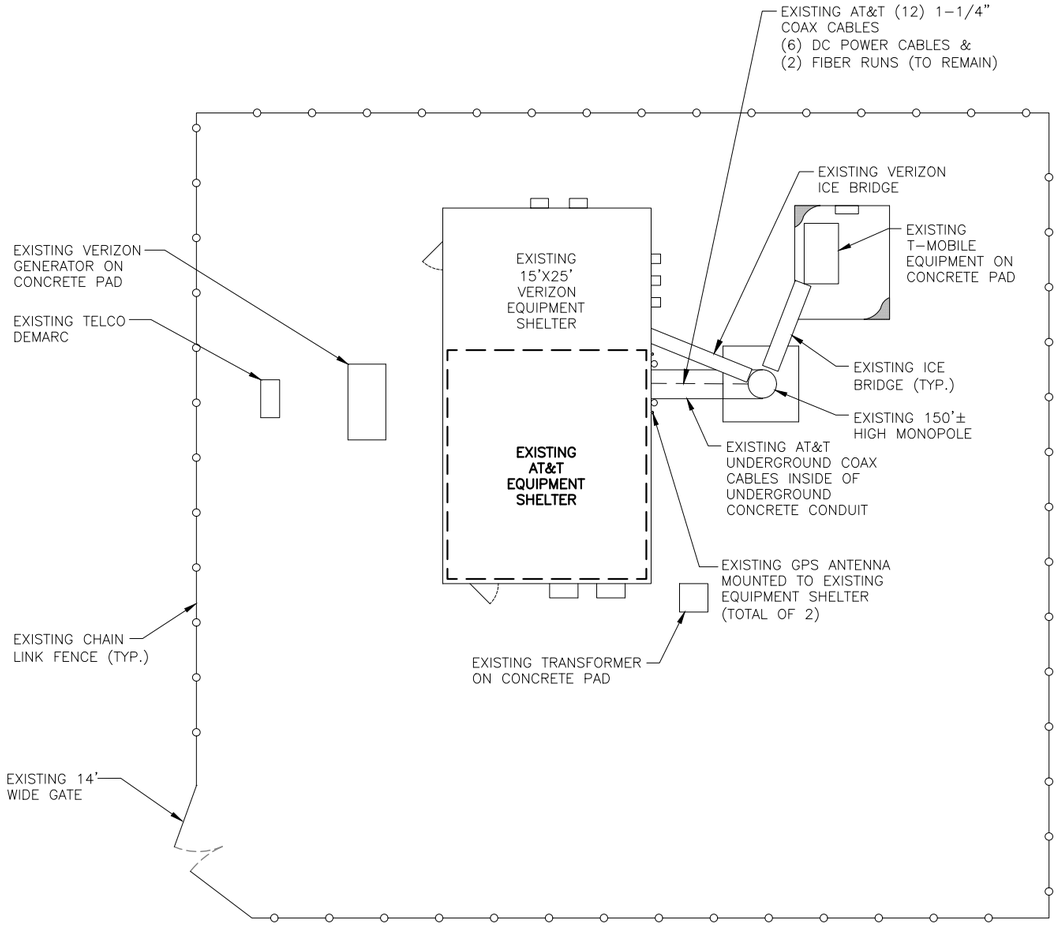
SITE NUMBER	DRAWING NUMBER	REV
CT2019	GN-1	1

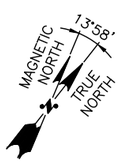
NOTE:

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

NOTE:

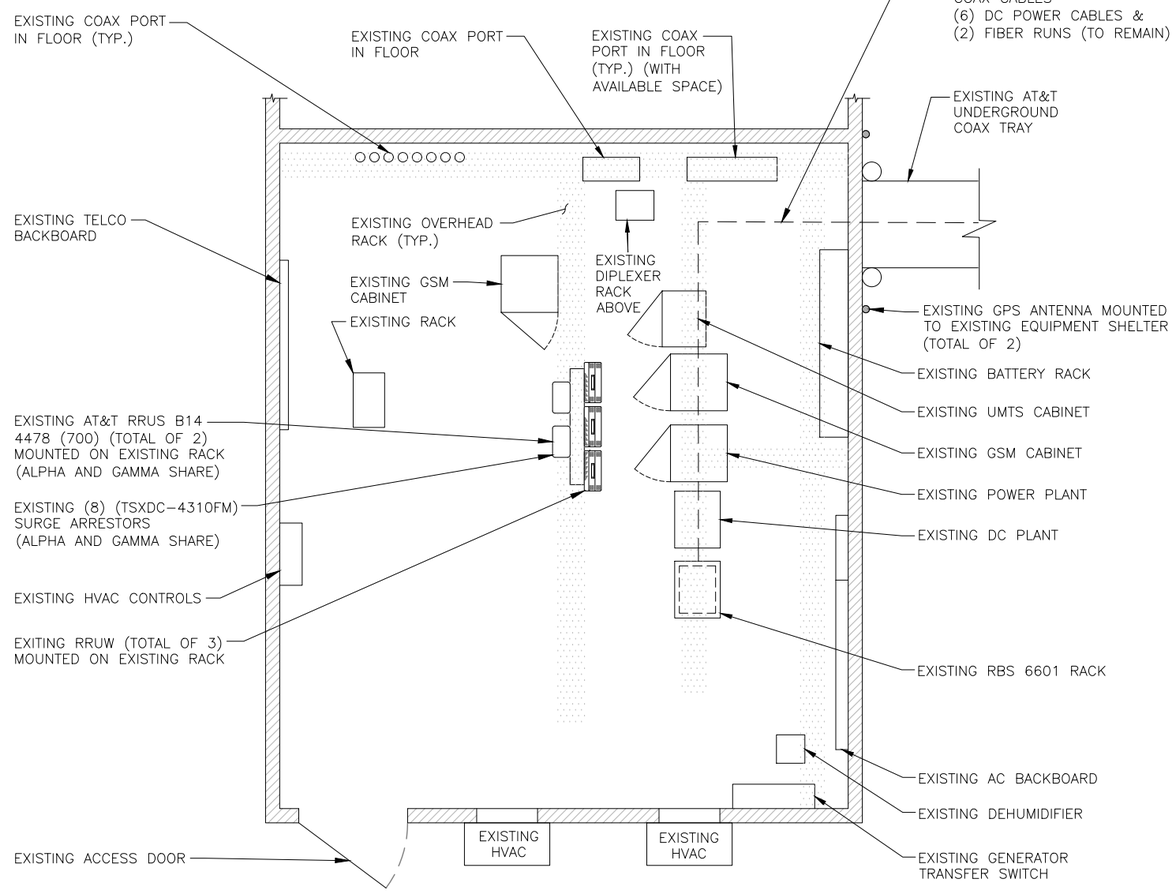
ALL ANTENNAS AND LINES TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY CROWN CASTLE AND FINAL AT&T RF DATA SHEET.

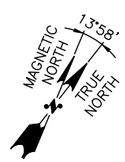




COMPOUND PLAN (1 / A-1)
22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"

0 4'-0" 8'-0" 16'-0" 24'-0"





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

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

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COMPOUND & EQUIPMENT PLANS
BWE TOWER TOP RRH SWAP 2021 UPGRADE

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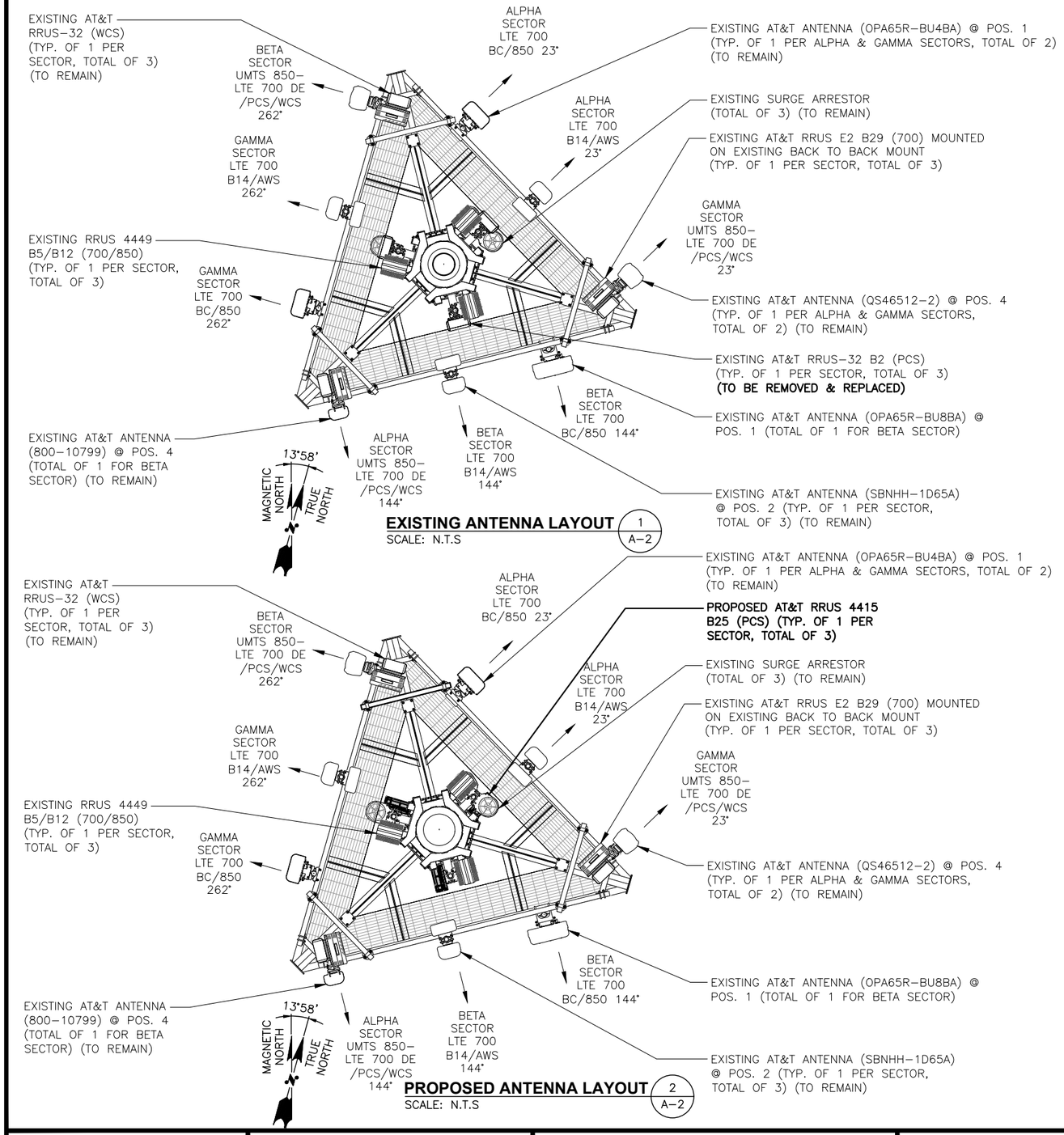
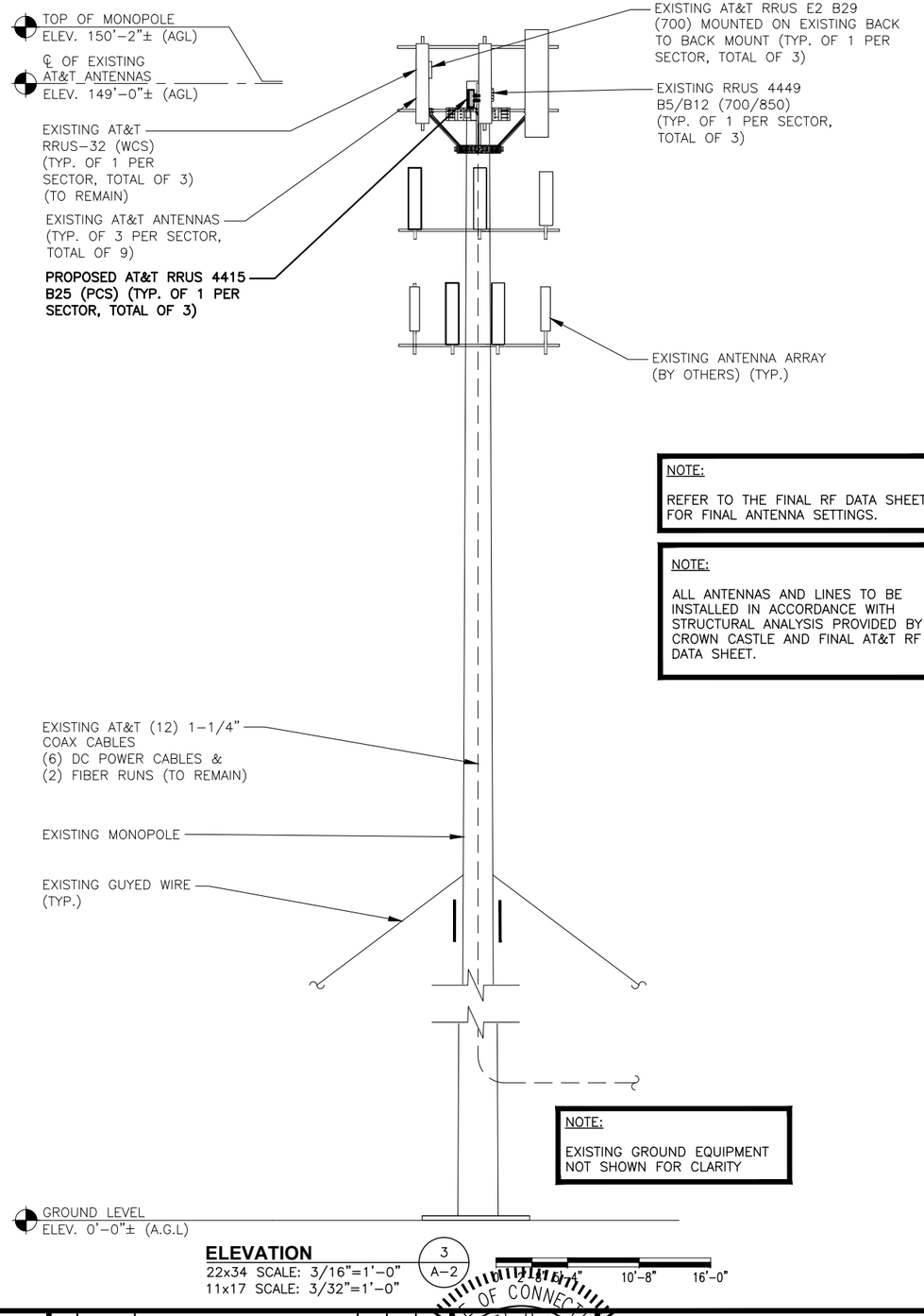


EXISTING ANTENNA LAYOUT (1 / A–2)
SCALE: N.T.S

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



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

0' 2'–4" 5'–4" 10'–8" 16'–0"

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

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:
EXISTING GROUND EQUIPMENT NOT SHOWN FOR CLARITY

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AT&T

ANTENNA LAYOUTS & ELEVATION

BWE TOWER TOP RRH SWAP 2021 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT2019	A–2	1

ANTENNA SCHEDULE

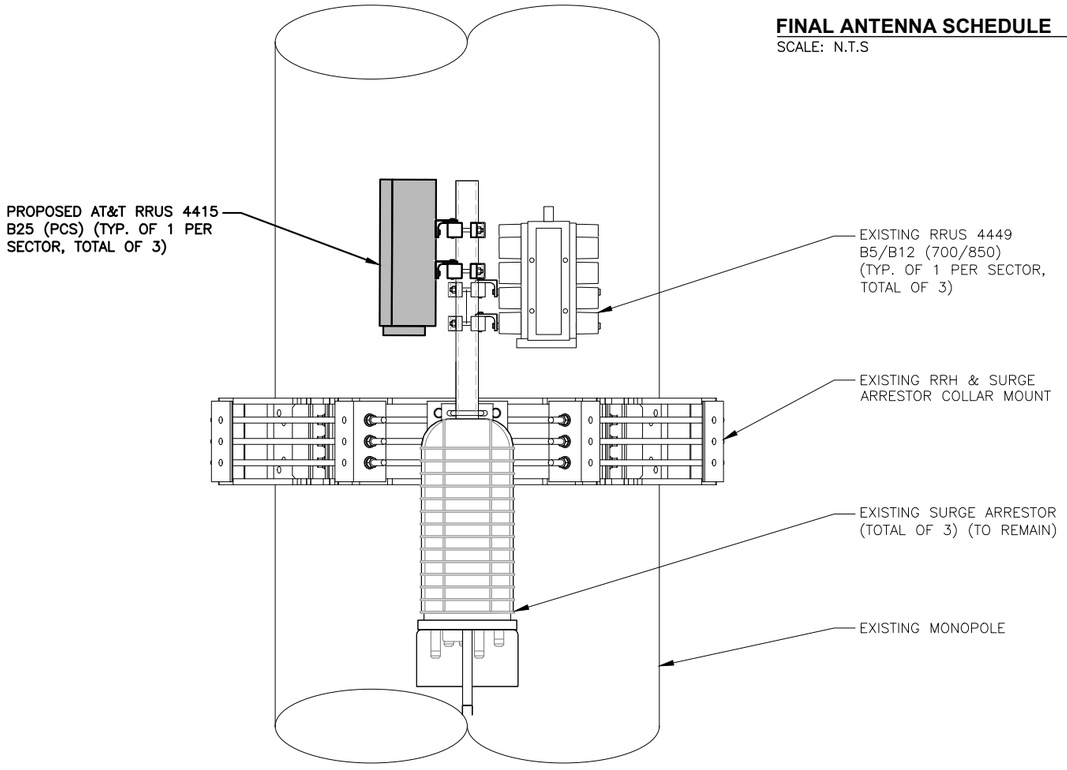
SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	AZIMUTH	TMA	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	EXISTING	LTE 700 BC/850	OPA65R-BU4BA	48X11.7X10.1	149'-0"±	23°	–	(E)(1) 4449 B5/B12 (850/700)	–	(E)(2) DC & (1) FIBER	(E) (1) RAYCAP DC6-48-60-18-8F
A2	EXISTING	LTE 700 B14/AWS	SBNHH-1D65A	55X11.9X7.1	149'-0"±	23°	–	(E)(G)(1) B14 4478 (700) (E)(1) 4426 B66 (AWS)	– –	(2) 1-1/4" COAX	
A3	–	–	–	–	–	–	–	–	–	–	
A4	EXISTING	UMTS 850-LTE 700 DE /PCS/WCS	QS46512-2	52X12X10.8	149'-0"±	23°	–	**(P)(1) 4415 B25 (PCS)** (E)(1) RRUS E2 B29 (700) (E)(1) RRUS-32 B30 (WCS)	**16.5"X13.4"X5.9"** – –	(2) 1-1/4" COAX	
B1	EXISTING	LTE 700 BC/850	OPA65R-BU8BA	95.9X11.7X8.4	149'-0"±	144°	–	(E)(1) 4449 B5/B12 (850/700)	–	–	(E) (1) RAYCAP DC6-48-60-18-8F
B2	EXISTING	LTE 700 B14/AWS	SBNHH-1D65A	55X11.9X7.1	149'-0"±	144°	–	(E)(G)(1) B14 4478 (700) (E)(1) 4426 B66 (AWS)	– –	(2) 1-1/4" COAX	
B3	–	–	–	–	–	–	–	–	–	–	
B4	EXISTING	UMTS 850-LTE 700 DE /PCS/WCS	800-10799	106X14.8X6.7	149'-0"±	144°	–	**(P)(1) 4415 B25 (PCS)** (E)(1) RRUS E2 B29 (700) (E)(1) RRUS-32 B30 (WCS)	**16.5"X13.4"X5.9"** – –	(2) 1-1/4" COAX (E)(2) DC & (1) FIBER	
C1	EXISTING	LTE 700 BC/850	OPA65R-BU4BA	48X11.7X10.1	149'-0"±	262°	–	(E)(1) 4449 B5/B12 (850/700)	–	(E)(2) DC	(E) (1) RAYCAP DC6-48-60-0-8F
C2	EXISTING	LTE 700 B14/AWS	SBNHH-1D65A	55X11.9X7.1	149'-0"±	262°	–	(E)(1) 4426 B66 (AWS)	–	(2) 1-1/4" COAX	
C3	–	–	–	–	–	–	–	–	–	–	
C4	EXISTING	UMTS 850-LTE 700 DE /PCS/WCS	QS46512-2	52X12X10.8	149'-0"±	262°	–	**(P)(1) 4415 B25 (PCS)** (E)(1) RRUS E2 B29 (700) (E)(1) RRUS-32 B30 (WCS)	**16.5"X13.4"X5.9"** – –	(2) 1-1/4" COAX	

NOTE:

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

NOTE:

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



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

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

FINAL ANTENNA SCHEDULE (1 / A-3)
SCALE: N.T.S

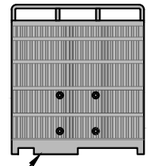
RRU CHART

QUANTITY	MODEL	L	W	D
2(E)(G)	B14 4478	18.1"x13.4"x8.3"		
3(P)	**4415 B25**	**16.5"x13.4"x5.9"**		
3(E)	B2/B66A 8843	14.9"x13.2"x10.9"		
3(E)	4449 (850/700)	17.9"x13.2"x10.4"		
3(E)	E2 B29 (700)	20.4"X18.5"X7.5"		
3(E)(G)	RRUW	23.6"x13.8"x4.4"		

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

NOTE:

SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER



PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

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

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

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT2019
SITE NAME: OLD SAYBROOK
CROWN SITE SITE # ID: 841289

170 INGHAM HILL ROAD
OLD SAYBROOK, CT 06475
MIDDLESEX COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	02/22/22	ISSUED FOR CONSTRUCTION	MB	HC	DPH
A	11/02/21	ISSUED FOR REVIEW	AR	HC	DPH

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

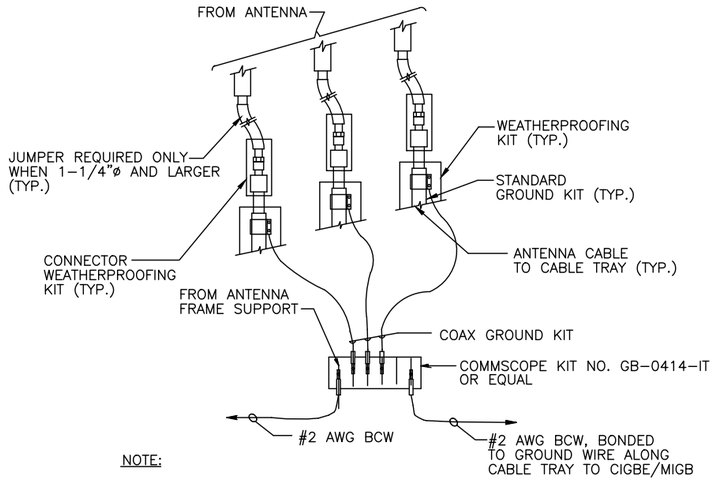
STATE OF CONNECTICUT · DANIEL P. HAMM · No. 21178 · LICENSED PROFESSIONAL ENGINEER

AT&T

DETAILS

DWE TOWER TOP RRH SWAP 2021 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT2019	A-3	1

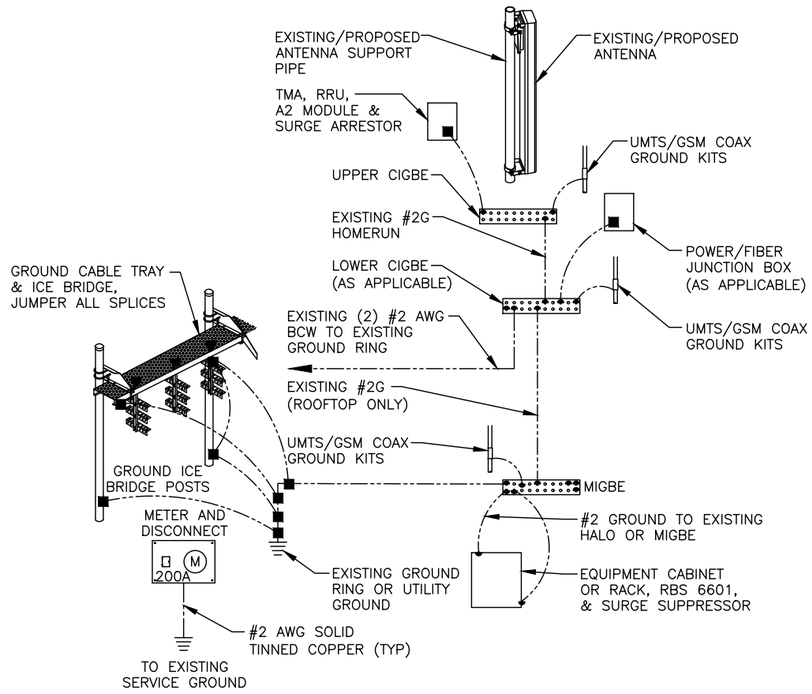


NOTE:

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

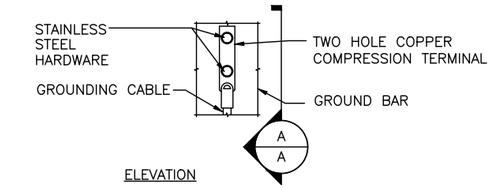
GROUND WIRE TO GROUND BAR CONNECTION DETAIL (1 / G-1)

SCALE: N.T.S



GROUNDING RISER DIAGRAM (2 / G-1)

SCALE: N.T.S



NOTES:
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 (3 / G-1)

SCALE: N.T.S

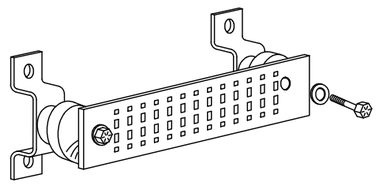
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" – SURGE PRODUCERS

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

SECTION "A" – SURGE ABSORBERS

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



GROUND BAR - DETAIL (AS REQUIRED) (4 / G-1)

SCALE: N.T.S

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

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT2019
SITE NAME: OLD SAYBROOK
CROWN SITE SITE # ID: 841289

170 INGHAM HILL ROAD
OLD SAYBROOK, CT 06475
MIDDLESEX COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	02/22/22	ISSUED FOR CONSTRUCTION	MB	HC	DPH
A	11/02/21	ISSUED FOR REVIEW	AR	HC	DPH

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

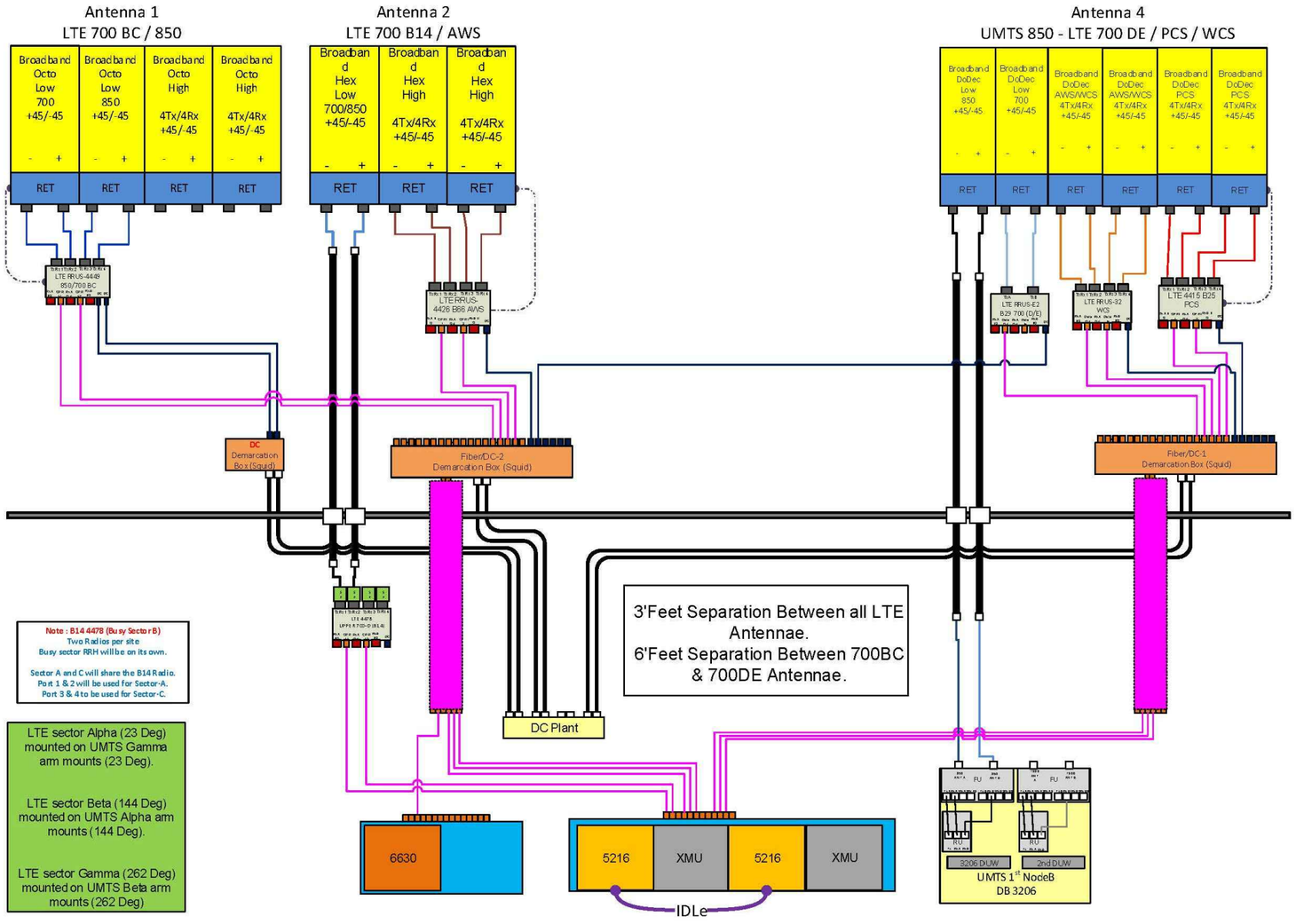
STATE OF CONNECTION — DANIEL P. HAMM — No. 24178 — LICENSED PROFESSIONAL ENGINEER

AT&T

GROUNDING DETAILS

BWE TOWER TOP RRH SWAP 2021 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT2019	G-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

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT2019
SITE NAME: OLD SAYBROOK
CROWN SITE SITE # ID: 841289

170 INGHAM HILL ROAD
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NO.	DATE	REVISIONS	BY	CHK	APP'D
1	02/22/22	ISSUED FOR CONSTRUCTION	MB	HC	DPH
A	11/02/21	ISSUED FOR REVIEW	AR	HC	DPH

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

AT&T

RF PLUMBING DIAGRAM
BWE TOWER TOP RRH SWAP 2021 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT2019	RF–1	1

EXHIBIT 2

170 INGHAM HILL RD

Location	170 INGHAM HILL RD	**MBLU**	051/ 033/ / /
Acct#	00559800	**Owner**	LORENZ CAROL J & ROBERT A
Assessment	$176,700	**Appraisal**	$303,200
PID	3322	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$163,400	$139,800	$303,200

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$114,400	$62,300	$176,700

Owner of Record

Owner	LORENZ CAROL J & ROBERT A	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	P O BOX 351 CENTER OSSIPEE N H, NH 03814-0351	**Book & Page**	0211/0890
		Sale Date	03/15/1984

Ownership History

Ownership History
No Data for Ownership History

Building Information

Building 1 : Section 1

Year Built: 1959
Living Area: 1,383

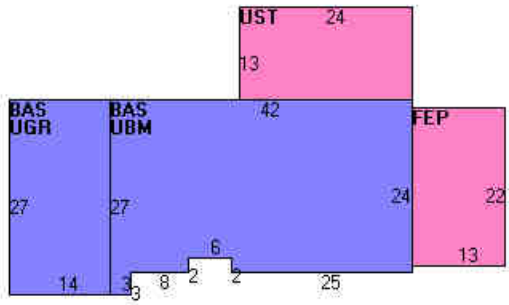
Building Attributes	
Field	**Description**
Style	Ranch
Model	Residential

Grade:	Average
Stories:	1 Story
Occupancy	1
Exterior Wall 1	Vinyl Siding
Exterior Wall 2	
Roof Structure:	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Plastered
Interior Wall 2	
Interior Flr 1	Vinyl/Asphalt
Interior Flr 2	
Heat Fuel	Oil
Heat Type:	Hot Water
AC Type:	None
Total Bedrooms:	3 Bedrooms
Total Bthrms:	1
Total Half Baths:	1
Total Xtra Fixtrs:	
Total Rooms:	6 Rooms
Bath Style:	Average
Kitchen Style:	Modern
Num Kitchens	01
Cndtn	
Usrfld 103	
Usrfld 104	
Usrfld 105	
Usrfld 106	
Usrfld 107	
Num Park	
Fireplaces	
Usrfld 108	
Usrfld 101	
Usrfld 102	
Usrfld 100	
Usrfld 300	
Usrfld 301	

Building Photo

(http://images.vgsi.com/photos/OldSaybrookCTPhotos//\00\01\97\10.jpg)

Building Layout



(http://images.vgsi.com/photos/OldSaybrookCTPhotos//Sketches/3322_33

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	1,383	1,383
FEP	Porch, Enclosed,Framed	286	0
UBM	Basement, Unfinished	1,005	0
UGR	Garage, Unfinished	378	0
UST	Utility, Storage, Unfinished	312	0
		3,364	1,383

Extra Features

Extra Features				Legend
Code	Description	Size	Value	Bldg #

FPL1	FIREPLACE 1 ST	1.00 UNITS	$2,300	1

Land

Land Use

Use Code	1010
Description	Single Family
Zone	AA-1

Land Line Valuation

Size (Acres)	11.8
Depth	0
Assessed Value	$62,300
Appraised Value	$139,800

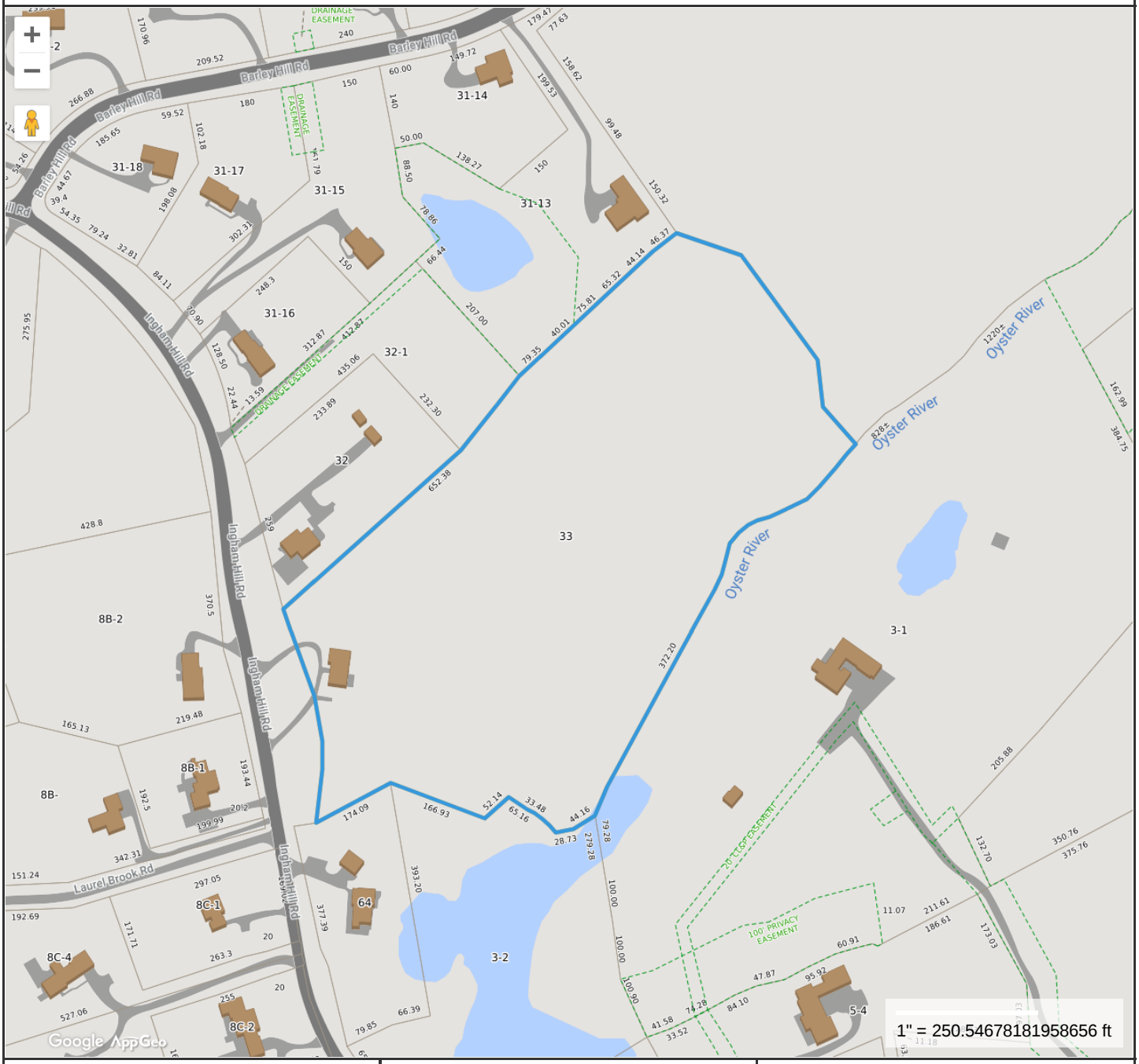
Outbuildings

Outbuildings	Legend
No Data for Outbuildings	

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$163,400	$139,800	$303,200
2018	$163,400	$139,800	$303,200
2016	$147,200	$139,800	$287,000

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$114,400	$62,300	$176,700
2018	$114,400	$62,300	$176,700
2016	$103,000	$62,300	$165,300



Property Information

Property ID	051/033-0000
Location	170 INGHAM HILL RD
Owner	LORENZ CAROL J & ROBERT A

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town of Old Saybrook, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 8/30/2021
Data updated 2021

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

EXHIBIT 3

Date: **December 21, 2021**

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

Subject:	**Structural Analysis Report**	
Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Site Number:	CT2019
	Site Name:	OLD SAYBROOK
	FA Number:	10034982
Crown Castle Designation:	**BU Number:**	841289
	Site Name:	OLD SAYBROOK
	JDE Job Number:	698695
	Work Order Number:	2056613
	Order Number:	598184 Rev. 0
Engineering Firm Designation:	**B+T Group Project Number:**	93496.033.01
Site Data:	**170 Ingham Hill Road, Old Saybrook, Middlesex County, CT** **Latitude *41° 18' 35.55"*, Longitude *-72° 23' 51.13"*** **150.167 Foot - Monopole Tower**	

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

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

LC7: Proposed Equipment Configuration **Sufficient Capacity – 77.6%**

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2015 International Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Massood Sattari

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

Chad E. Tuttle, P.E.

tnxTower Report - version 8.1.1.0

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 150.167 ft. monopole designed by Engineered Endeavors Inc.
The tower has been modified multiple times to accommodate additional loading.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	1 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
149.0	150.0	3	Andrew	SBNHH-1D65A	12 6 3	1-1/4 3/4 3/8
		2	CCI Antennas	OPA65R-BU4B		
		1	CCI Antennas	OPA65R-BU8B		
		3	Ericsson	RADIO 4449 B5/B12		
		3	Ericsson	RRUS 32		
		3	Ericsson	RRUS 4415 B25		
		3	Ericsson	RRUS 4426 B66		
		3	Ericsson	RRUS E2 B29		
		6	Kaelus	DBC0061F1V51-2		
		1	Kathrein	80010799		
		3	Powerwave Tech.	TT19-08BP111-001		
		2	Quintel Tech.	QS46512-2		
		3	Raycap	DC6-48-60-18-8C		
	149.0	1	--	Platform Mount [LP 404-1_KCKR]		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
140.0	141.0	3	Ericsson	AIR 21 B2A/B4P	4 6	1-5/8 1-1/4
		3	Ericsson	AIR 21 B4A/B2P		
		3	Ericsson	KRY 112 144/1		
		3	Ericsson	RADIO 4449 B12/B71		
		3	Rfs Celwave	APXVAALL24_43-U-NA20		
	140.0	1	--	Platform Mount [LP 303-1_HR-1]		
130.0	133.0	3	Antel	BXA-80080/4CF	2 11	1-5/8 1-1/4
		3	Commscope	CBC78T-DS-43-2X		
		2	Commscope	JAHH-45B-R3B		
		4	Commscope	JAHH-65B-R3B		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		1	Raycap	RVZDC-6627-PF-48		
		3	Samsung Telecom.	MT6407-77A		
		3	Samsung Telecom.	RF4439D-25A		
		3	Samsung Telecom.	RF4440D-13A		
	130.0	1	--	Platform Mount [LP 403-1]		
		2	Commscope	BSAMNT-SBS-2-2		
		1	Commscope	BSAMNT-SBS-2-3		
71.0	72.0	2	Kathrein	FMO	2	1/2
	71.0	2	--	Side Arm Mount [SO 305-1]		
22.0	22.0	1	Maxrad	MYA-43012N	1	5/16
		1	--	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
Tower Manufacturer Drawing/Mapping	5204147	CCI Sites
Tower Modification Drawing	4489382	CCI Sites
Post Modification Inspection	4489415	CCI Sites
Tower Modification Drawing	4478711	CCI Sites
Post Modification Inspection	4468635	CCI Sites
Tower Modification Drawing	5293057	CCI Sites
Post Modification Inspection	5874000	CCI Sites
Tower Modification Drawing	6254746	CCI Sites
Post Modification Inspection	6444911	CCI Sites
Tower Modification Drawing	8122612	CCI Sites
Tower Modification Drawing	8292599	CCI Sites
Post Modification Inspection	9017983	CCI Sites
Foundation Mapping	4591935	CCI Sites
Geotech Report	4468634	CCI Sites
Crown CAD Package	Date: 12/16/2021	CCI Sites

3.1) Analysis Method

tnxTower (version 8.1.1.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 standard.

tnxTower was used to determine the loads on the modified structure. Additional calculations were performed to determine the stresses in the pole and in the reinforcing elements. These calculations are presented in Appendix C.

3.2) Assumptions

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

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	150.17 - 145.17	Pole	TP16.31x15.53x0.25	1	-4.877	--	9.6	Pass
L2	145.17 - 140.17	Pole	TP17.09x16.31x0.25	2	-5.181	--	18.0	Pass
L3	140.17 - 135.17	Pole	TP17.87x17.09x0.25	3	-8.732	--	30.0	Pass
L4	135.17 - 130.17	Pole	TP18.65x17.87x0.25	4	-9.174	--	39.6	Pass
L5	130.17 - 125.17	Pole	TP19.43x18.65x0.25	5	-13.263	--	55.3	Pass
L6	125.17 - 123.75	Pole	TP19.651x19.43x0.25	6	-13.424	--	58.8	Pass
L7	123.75 - 123.5	Pole + Reinf.	TP19.69x19.651x0.513	7	-13.481	--	51.5	Pass
L8	123.5 - 118.5	Pole + Reinf.	TP20.47x19.69x0.5	8	-14.291	--	62.5	Pass
L9	118.5 - 113.5	Pole + Reinf.	TP21.25x20.47x0.488	9	-16.233	--	72.6	Pass
L10	113.5 - 112.17	Pole + Reinf.	TP21.458x21.25x0.488	10	-16.879	--	75.2	Pass
L11	112.17 - 111.92	Pole + Reinf.	TP21.497x21.458x0.7	11	-17.023	--	48.6	Pass
L12	111.92 - 110.17	Pole + Reinf.	TP21.77x21.497x0.7	12	-17.865	--	50.9	Pass
L13	110.17 - 109.92	Pole + Reinf.	TP21.813x21.77x0.625	13	-17.959	--	49.9	Pass
L14	109.92 - 104.92	Pole + Reinf.	TP22.672x21.813x0.6	14	-20.647	--	55.5	Pass
L15	104.92 - 99.92	Pole + Reinf.	TP23.53x22.672x0.588	15	-22.448	--	60.7	Pass
L16	99.92 - 95	Pole + Reinf.	TP24.375x23.53x0.575	16	-23.657	--	65.4	Pass
L17	95 - 94.75	Pole + Reinf.	TP24.418x24.375x0.7	17	-23.738	--	64.5	Pass
L18	94.75 - 89.75	Pole + Reinf.	TP25.277x24.418x0.688	18	-25.125	--	69.1	Pass
L19	89.75 - 85.5	Pole + Reinf.	TP26.007x25.277x0.675	19	-233.796	--	67.9	Pass
		Guy A@88.6875	1 5/8	49	155.416	--	76.1	Pass
		Guy B@88.6875	1 3/8	48	85.618	--	58.6	Pass
		Guy C@88.6875	1 3/8	47	96.299	--	65.9	Pass
L20	85.5 - 85.25	Pole + Reinf.	TP26.049x26.007x0.863	20	-234.556	--	60.6	Pass
L21	85.25 - 85	Pole + Reinf.	TP26.092x26.049x0.863	21	-234.595	--	60.6	Pass
L22	85 - 84.75	Pole + Reinf.	TP26.135x26.092x0.838	22	-234.673	--	62.8	Pass
L23	84.75 - 83	Pole + Reinf.	TP26.436x26.135x0.838	23	-234.750	--	62.7	Pass
L24	83 - 82.65	Pole + Reinf.	TP26.496x26.436x0.713	24	-235.257	--	68.9	Pass
L25	82.65 - 82.42	Pole + Reinf.	TP26.536x26.496x0.713	25	-235.358	--	68.9	Pass
L26	82.42 - 77.42	Pole + Reinf.	TP27.395x26.536x0.688	26	-235.427	--	68.1	Pass
L27	77.42 - 73.75	Pole + Reinf.	TP28.64x27.395x0.688	27	-236.863	--	68.0	Pass
L28	73.75 - 69.17	Pole + Reinf.	TP28.079x27.4x0.725	28	-242.775	--	65.4	Pass
L29	69.17 - 64.17	Pole + Reinf.	TP28.821x28.079x0.713	29	-243.061	--	65.6	Pass
L30	64.17 - 59.17	Pole + Reinf.	TP29.562x28.821x0.725	30	-244.494	--	65.7	Pass
L31	59.17 - 54.17	Pole + Reinf.	TP30.304x29.562x0.713	31	-245.943	--	65.7	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L32	54.17 - 49.17	Pole + Reinf.	TP31.045x30.304x0.7	32	-247.410	--	65.5	Pass
L33	49.17 - 47.17	Pole + Reinf.	TP31.342x31.045x0.7	33	-248.896	--	65.4	Pass
L34	47.17 - 46.92	Pole + Reinf.	TP31.379x31.342x0.788	34	-249.494	--	59.3	Pass
L35	46.92 - 43.42	Pole + Reinf.	TP31.898x31.379x0.775	35	-249.578	--	59.1	Pass
L36	43.42 - 43.17	Pole + Reinf.	TP31.935x31.898x0.65	36	-250.722	--	65.0	Pass
L37	43.17 - 38.17	Pole + Reinf.	TP32.677x31.935x0.65	37	-250.797	--	64.5	Pass
L38	38.17 - 35.75	Pole + Reinf.	TP33.66x32.677x0.65	38	-252.270	--	64.2	Pass
L39	35.75 - 30.54	Pole	TP33.161x32.286x0.438	39	-255.033	--	64.3	Pass
L40	30.54 - 25.54	Pole	TP34.001x33.161x0.438	40	-255.262	--	62.6	Pass
L41	25.54 - 20.54	Pole	TP34.84x34.001x0.438	41	-256.416	--	60.8	Pass
L42	20.54 - 15.54	Pole	TP35.68x34.84x0.438	42	-257.709	--	58.9	Pass
L43	15.54 - 10.54	Pole	TP36.52x35.68x0.438	43	-258.906	--	57.1	Pass
L44	10.54 - 5.54	Pole	TP37.36x36.52x0.438	44	-260.126	--	55.6	Pass
L45	5.54 - 0.54	Pole	TP38.2x37.36x0.438	45	-261.367	--	54.1	Pass
L46	0.54 - 0	Pole	TP38.29x38.2x0.438	46	-262.632	--	53.9	Pass
							Summary	
						Pole (L39)	64.3	Pass
						Guy A (L19)	76.1	Pass
						Guy B (L19)	58.6	Pass
						Guy C (L19)	65.9	Pass
						Reinforcement	75.2	Pass
						Overall	76.1	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Flange Connection	110.2	54.9	Pass
1,2	Guy Wire Bracket	88.8	77.6	Pass
1,2	Anchor Rod Bracket	Base	39.7	Pass
1,2	Anchor Rods	Base	63.3	Pass
1,2	Base Plate	Base	52.5	Pass
1,2	Base Foundation (Structure)	Base	48.0	Pass
1,2	Base Foundation (Soil)	Base	72.1	Pass
1,2	Inner Guy Anchor Foundation (Anchor Shaft)	Base	76.7	Pass
1,2	Inner Guy Anchor Foundation (Structure)	Base	67.8	Pass
1,2	Inner Guy Anchor Foundation (Soil)	Base	67.2	Pass
1,2	Outer Guy Anchor Foundation (Anchor Shaft)	Base	47.6	Pass
1,2	Outer Guy Anchor Foundation (Structure)	Base	31.7	Pass
1,2	Outer Guy Anchor Foundation (Soil)	Base	47.1	Pass

Structure Rating (max from all components) =	77.6%

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

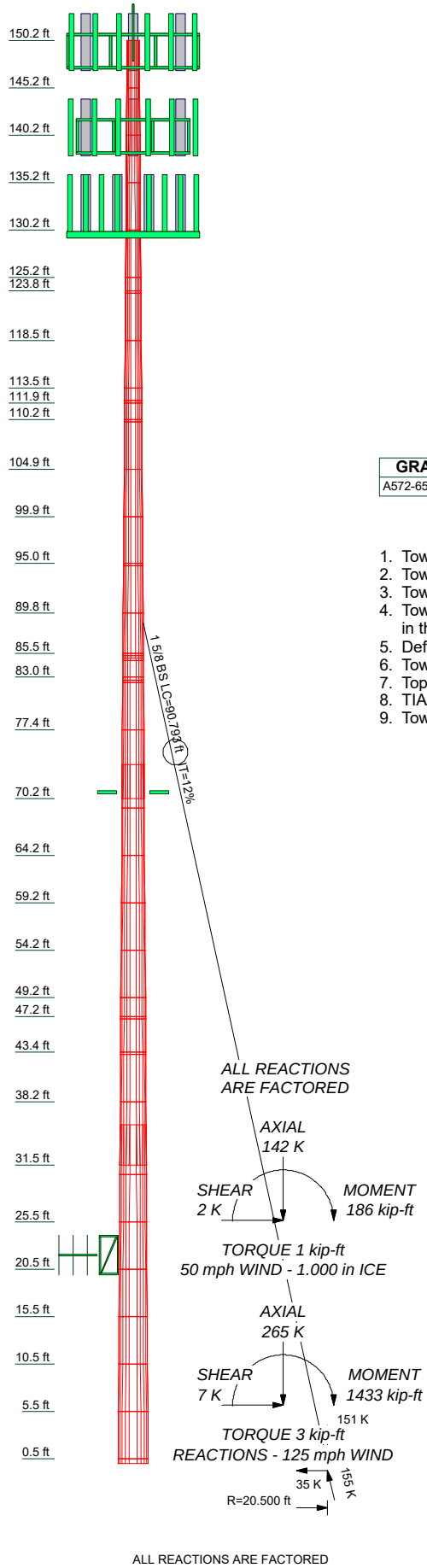
4.1) Recommendations

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

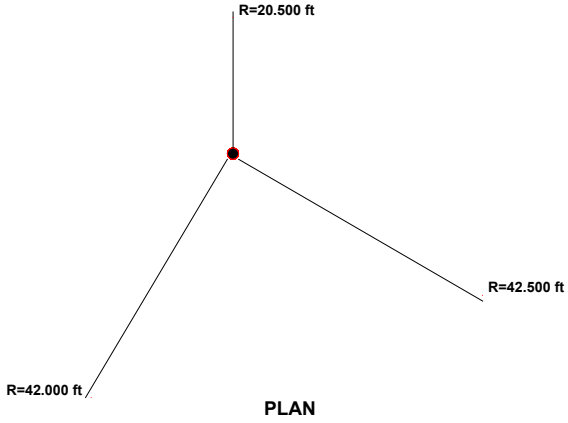
APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.000	12	0.250		15.530	16.310		0.2
2	5.000	12	0.250		16.310	17.090		0.2
3	5.000	12	0.250		17.090	17.870		0.2
4	5.000	12	0.250		17.870	18.650		0.2
5	5.000	12	0.250		18.650	19.430		0.3
6	5.000	12	0.250		19.430	20.210		0.3
7	5.000	12	0.250		20.210	20.990		0.4
8	5.000	12	0.500		20.990	21.770		0.5
9	5.000	12	0.500		21.770	22.550		0.5
10	5.000	12	0.500		22.550	23.330		0.6
11	5.000	12	0.500		23.330	24.110		0.6
12	5.000	12	0.500		24.110	24.890		0.7
13	5.000	12	0.500		24.890	25.670		0.7
14	5.000	12	0.600		25.670	26.450		0.8
15	5.000	12	0.588		26.450	27.230		0.8
16	5.000	12	0.575		27.230	28.010		0.8
17	5.000	12	0.688		28.010	28.790		0.9
18	5.000	12	0.688		28.790	29.570		1.0
19	5.000	12	0.675		29.570	30.350		0.8
20	5.000	12	0.663		30.350	31.130		0.8
21	5.000	12	0.650		31.130	31.910		0.8
22	5.000	12	0.638		31.910	32.690		0.8
23	5.000	12	0.625		32.690	33.470		0.8
24	5.000	12	0.613		33.470	34.250		0.8
25	5.000	12	0.600		34.250	35.030		0.8
26	5.000	12	0.688		35.030	35.810		1.0
27	4.500	12	0.688	3.580	35.810	36.590	A572-65	1.6
28	0.500	12	0.725		36.590	36.840		0.9
29	5.000	12	0.713		36.840	37.620		1.0
30	5.000	12	0.725		37.620	38.400		1.0
31	5.000	12	0.713		38.400	39.180		1.1
32	5.000	12	0.700		39.180	39.960		1.1
33	2.500	12	0.700		39.960	40.210		0.4
35	5.000	12	0.675		40.210	40.990		1.1
36	2.500	12	0.663		40.990	41.240		0.6
37	5.000	12	0.650		41.240	42.020		1.1
38	5.000	12	0.650	4.210	42.020	42.800		1.4
39	2.500	12	0.438		42.800	43.050		0.8
40	5.000	12	0.438		43.050	43.830		0.8
41	5.000	12	0.438		43.830	44.610		0.8
42	5.000	12	0.438		44.610	45.390		0.8
43	5.000	12	0.438		45.390	46.170		0.9
44	5.000	12	0.438		46.170	46.950		0.9
45	5.000	12	0.438		46.950	47.730		0.9
46	0.535	12	0.438		47.730	47.783		0.1



ALL REACTIONS ARE FACTORED



PLAN

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

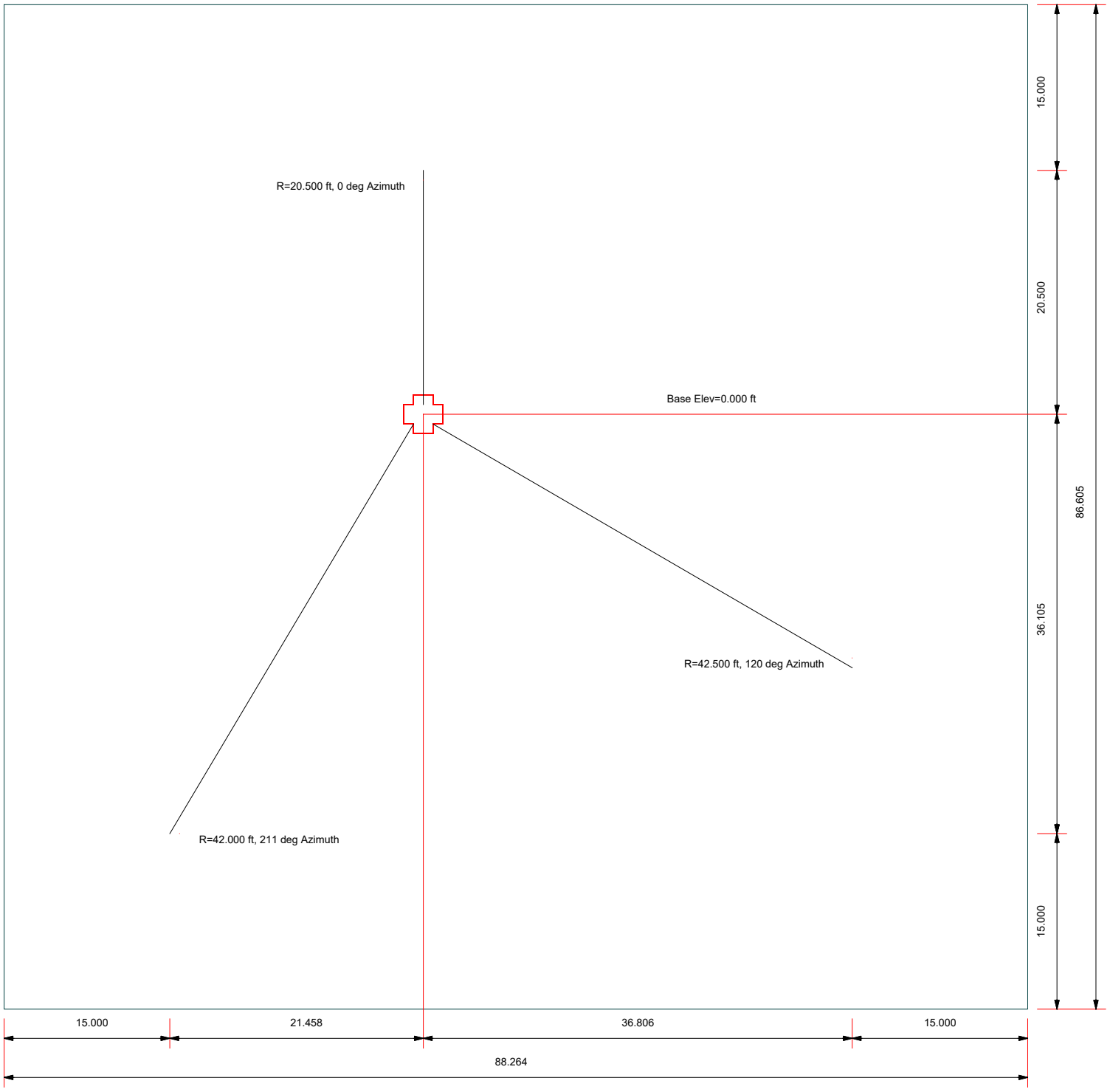
TOWER DESIGN NOTES

1. Tower is located in Middlesex County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TIA-222-H Annex S
9. Tower Rating: 75.2%

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

Job: 93496.033.01 - OLD SAYBROOK, CT (BU# 84128			
Project:			
Client: Crown Castle	Drawn by: Nithish Acharya	App'd:	
Code: TIA-222-H	Date: 12/21/21	Scale: NTS	
Path:		Dwg No. E-1	

Plot Plan
Total Area - 0.18 Acres



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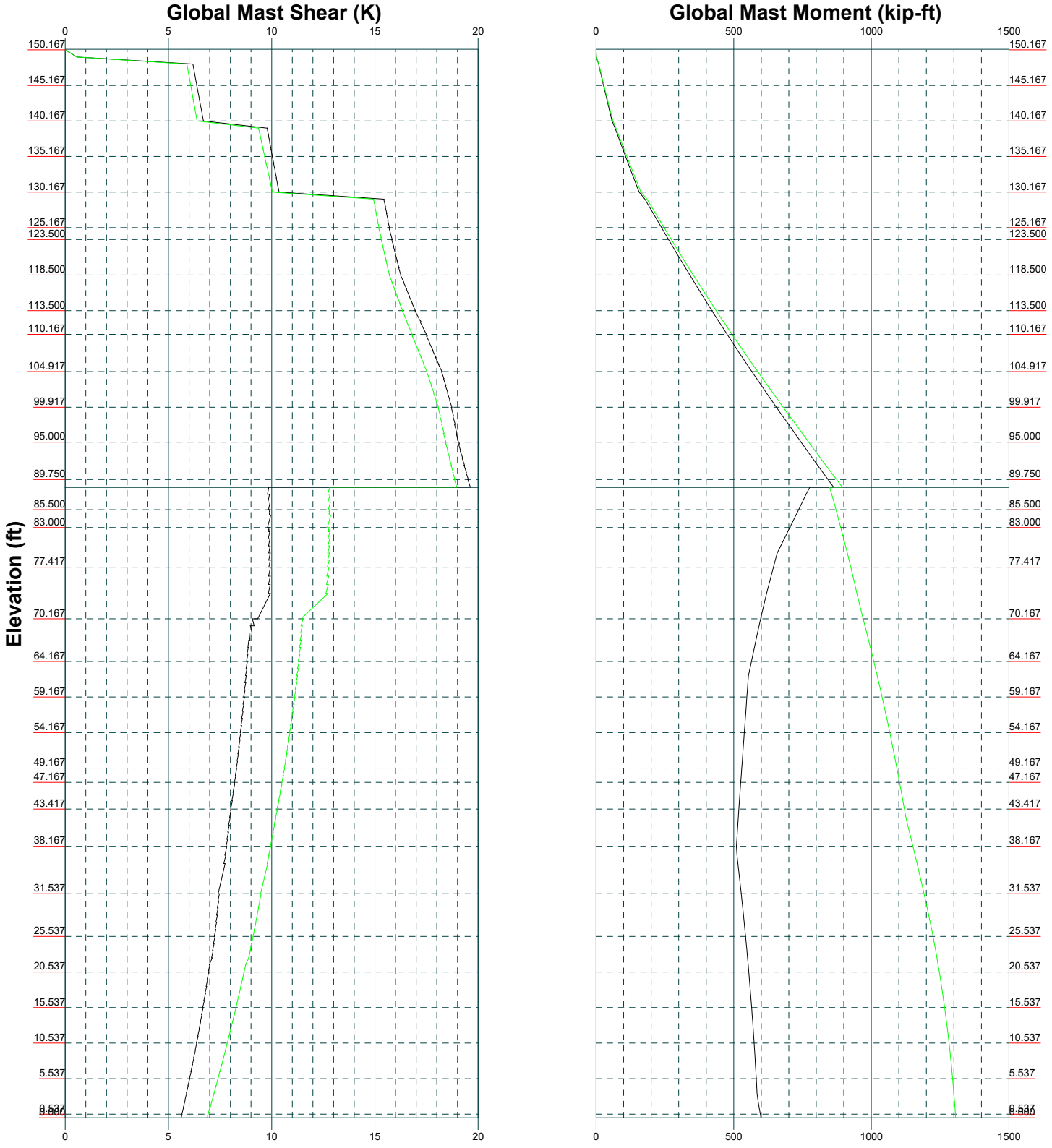
Project:		
Client: Crown Castle	Drawn by: Nithish Acharya	App'd:
Code: TIA-222-H	Date: 12/21/21	Scale: NTS
Path:		Dwg No. E-2

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

Maximum Values

Vx Vz Mx Mz



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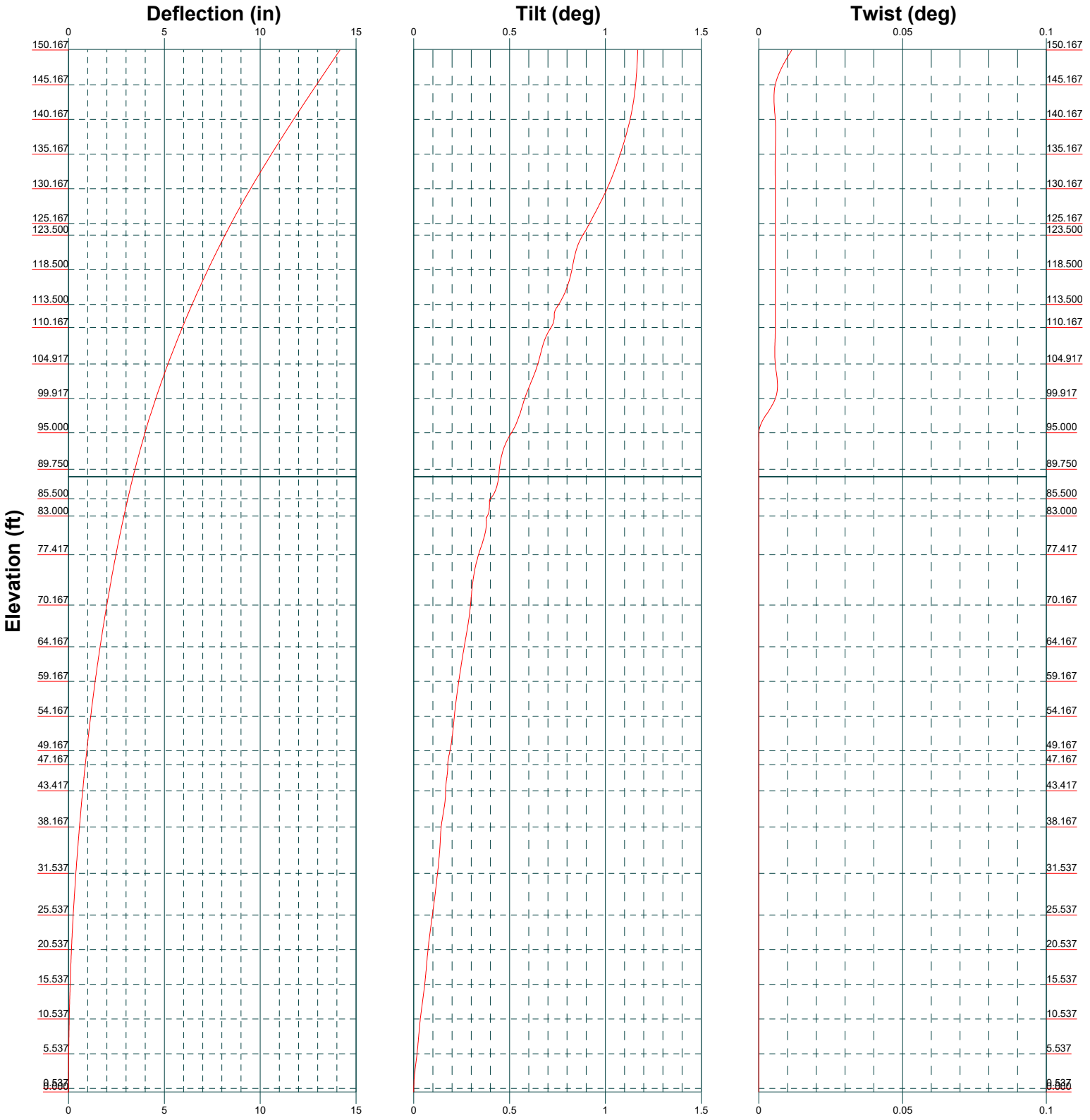
Job: 93496.033.01 - OLD SAYBROOK, CT (BU# 84128			
Project:			
Client: Crown Castle	Drawn by: Nithish Acharya	App'd:	
Code: TIA-222-H	Date: 12/21/21	Scale: NTS	
Path:		Dwg No. E-4	

TIA-222-H - Service - 60 mph

Maximum Values



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Job: 93496.033.01 - OLD SAYBROOK, CT (BU# 84128			
Project:			
Client: Crown Castle	Drawn by: Nithish Acharya	App'd:	
Code: TIA-222-H	Date: 12/21/21	Scale: NTS	
Path:		Dwg No. E-5	

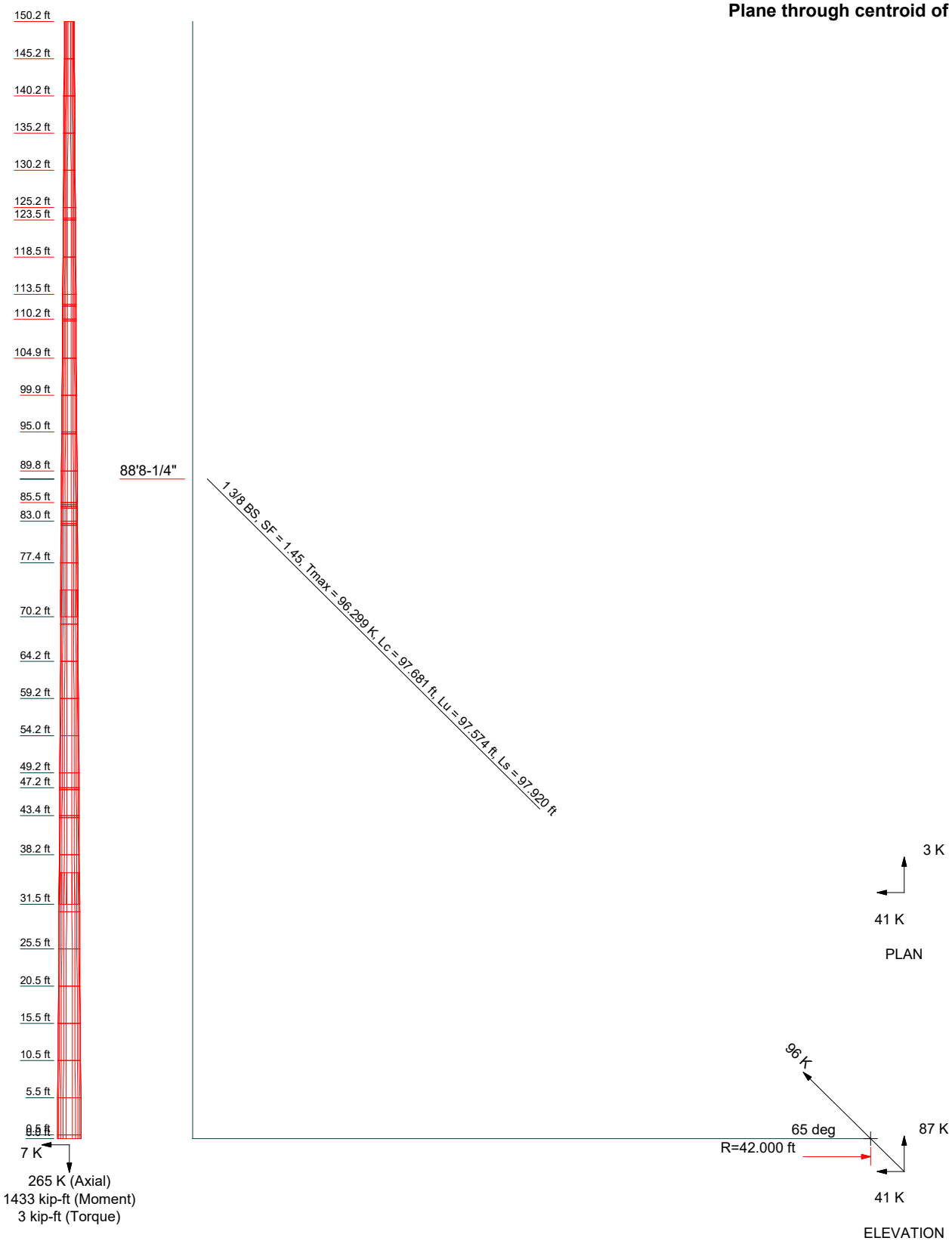
Guy Tensions and Tower Reactions

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

Maximum Values

Anchor 'C'@42 ft Azimuth 211 deg Elev 0 ft

Plane through centroid of tower



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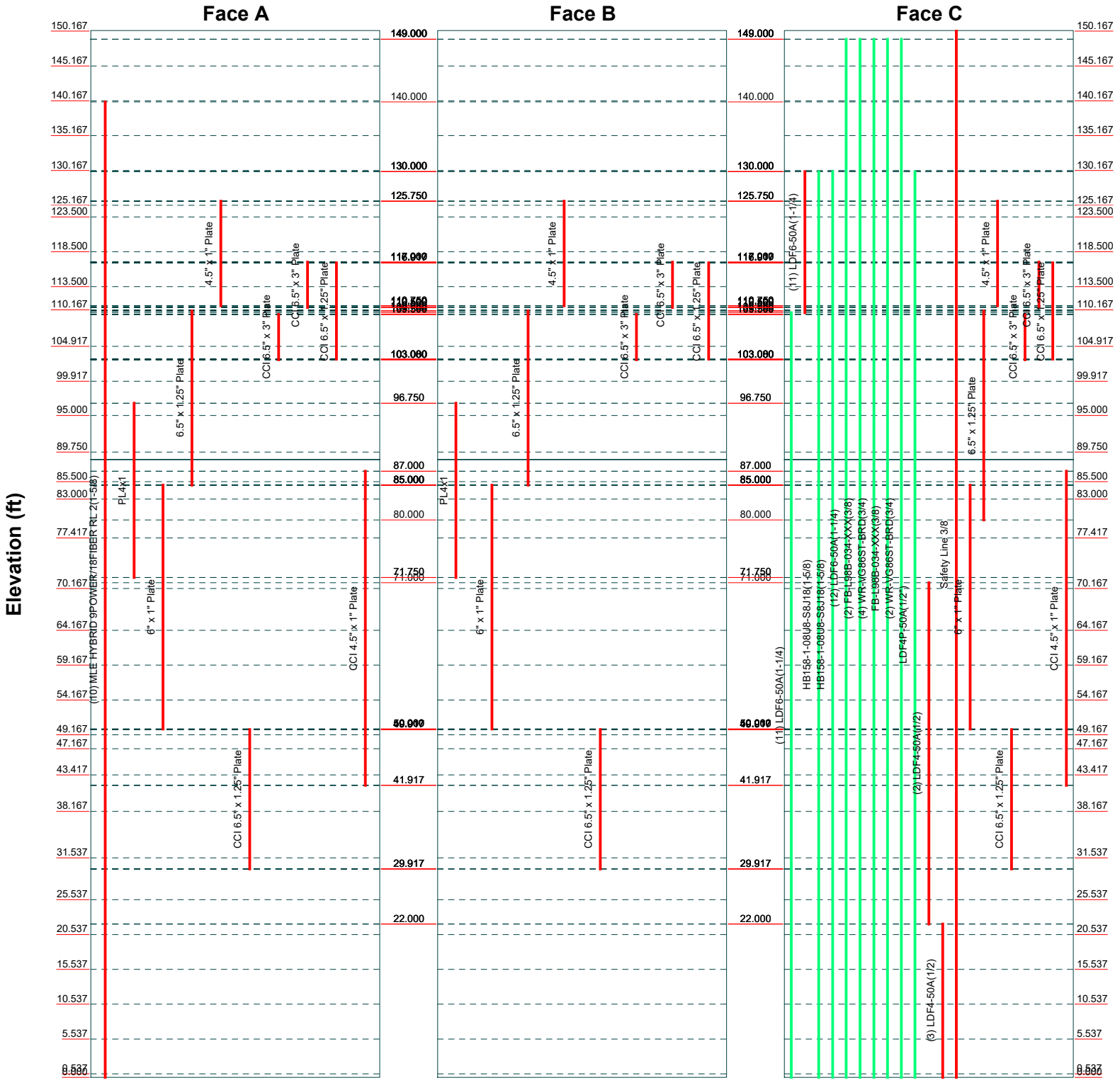
Job: 93496.033.01 - OLD SAYBROOK, CT (BU# 84128			
Project:			
Client: Crown Castle	Drawn by: Nithish Acharya	App'd:	
Code: TIA-222-H	Date: 12/21/21	Scale: NTS	
Path:		Dwg No. E-6	

Feed Line Distribution Chart
0' - 150'2"

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



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Job: 93496.033.01 - OLD SAYBROOK, CT (BU# 84128			
Project:			
Client: Crown Castle	Drawn by: Nithish Acharya	App'd:	
Code: TIA-222-H	Date: 12/21/21	Scale: NTS	
Path:		Dwg No. E-7	

Tower Input Data

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

Tower is located in Middlesex County, Connecticut.
Tower base elevation above sea level: 133.000 ft.
Basic wind speed of 125 mph.
Risk Category II.
Exposure Category B.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.000 ft.
Nominal ice thickness of 1.000 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 60 mph.
TIA-222-H Annex S.
Tower Rating: 75.2%.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Safety factor used in guy design is 1.
Tower analysis based on target reliabilities in accordance with Annex S.
Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
Maximum demand-capacity ratio is: 1.05.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned		Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression
√	Use Code Stress Ratios		Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys	√	Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice	√	Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-H Bracing Resist. Exemption
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-H Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
	Secondary Horizontal Braces Leg		Sort Capacity Reports By Component	√	Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric		Ignore KL/ry For 60 Deg. Angle Legs		Pole Without Linear Attachments
					Pole With Shroud Or No Appurtenances
					Outside and Inside Corner Radii Are Known

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	150.167-145.167	5.000	0.000	12	15.530	16.310	0.250	1.000	A572-65 (65 ksi)
L2	145.167-140.167	5.000	0.000	12	16.310	17.090	0.250	1.000	A572-65 (65 ksi)
L3	140.167-135.167	5.000	0.000	12	17.090	17.870	0.250	1.000	A572-65 (65 ksi)
L4	135.167-130.167	5.000	0.000	12	17.870	18.650	0.250	1.000	A572-65 (65 ksi)
L5	130.167-125.167	5.000	0.000	12	18.650	19.430	0.250	1.000	A572-65 (65 ksi)
L6	125.167-123.750	1.417	0.000	12	19.430	19.651	0.250	1.000	A572-65 (65 ksi)
L7	123.750-123.500	0.250	0.000	12	19.651	19.690	0.512	2.050	A572-65 (65 ksi)
L8	123.500-118.500	5.000	0.000	12	19.690	20.470	0.500	2.000	A572-65 (65 ksi)
L9	118.500-113.500	5.000	0.000	12	20.470	21.250	0.487	1.950	A572-65 (65 ksi)
L10	113.500-112.167	1.333	0.000	12	21.250	21.458	0.487	1.950	A572-65 (65 ksi)
L11	112.167-111.917	0.250	0.000	12	21.458	21.497	0.700	2.800	A572-65 (65 ksi)
L12	111.917-110.167	1.750	0.000	12	21.497	21.770	0.700	2.800	A572-65 (65 ksi)
L13	110.167-109.917	0.250	0.000	12	21.770	21.813	0.625	2.500	A572-65 (65 ksi)
L14	109.917-104.917	5.000	0.000	12	21.813	22.672	0.600	2.400	A572-65 (65 ksi)
L15	104.917-99.917	5.000	0.000	12	22.672	23.530	0.588	2.350	A572-65 (65 ksi)
L16	99.917-95.000	4.917	0.000	12	23.530	24.375	0.575	2.300	A572-65 (65 ksi)
L17	95.000-94.750	0.250	0.000	12	24.375	24.418	0.700	2.800	A572-65 (65 ksi)
L18	94.750-89.750	5.000	0.000	12	24.418	25.277	0.688	2.750	A572-65 (65 ksi)
L19	89.750-85.500	4.250	0.000	12	25.277	26.007	0.675	2.700	A572-65 (65 ksi)
L20	85.500-85.250	0.250	0.000	12	26.007	26.049	0.863	3.450	A572-65 (65 ksi)
L21	85.250-85.000	0.250	0.000	12	26.049	26.092	0.863	3.450	A572-65 (65 ksi)
L22	85.000-84.750	0.250	0.000	12	26.092	26.135	0.838	3.350	A572-65 (65 ksi)
L23	84.750-83.000	1.750	0.000	12	26.135	26.436	0.838	3.350	A572-65 (65 ksi)
L24	83.000-82.650	0.350	0.000	12	26.436	26.496	0.713	2.850	A572-65 (65 ksi)
L25	82.650-82.417	0.233	0.000	12	26.496	26.536	0.713	2.850	A572-65 (65 ksi)
L26	82.417-77.417	5.000	0.000	12	26.536	27.395	0.688	2.750	A572-65 (65 ksi)
L27	77.417-70.167	7.250	3.580	12	27.395	28.640	0.688	2.750	A572-65 (65 ksi)
L28	70.167-69.167	4.580	0.000	12	27.400	28.079	0.725	2.900	A572-65 (65 ksi)

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L29	69.167-64.167	5.000	0.000	12	28.079	28.821	0.713	2.850	A572-65 (65 ksi)
L30	64.167-59.167	5.000	0.000	12	28.821	29.562	0.725	2.900	A572-65 (65 ksi)
L31	59.167-54.167	5.000	0.000	12	29.562	30.304	0.713	2.850	A572-65 (65 ksi)
L32	54.167-49.167	5.000	0.000	12	30.304	31.045	0.700	2.800	A572-65 (65 ksi)
L33	49.167-47.167	2.000	0.000	12	31.045	31.342	0.700	2.800	A572-65 (65 ksi)
L34	47.167-46.917	0.250	0.000	12	31.342	31.379	0.787	3.150	A572-65 (65 ksi)
L35	46.917-43.417	3.500	0.000	12	31.379	31.898	0.775	3.100	A572-65 (65 ksi)
L36	43.417-43.167	0.250	0.000	12	31.898	31.935	0.650	2.600	A572-65 (65 ksi)
L37	43.167-38.167	5.000	0.000	12	31.935	32.677	0.650	2.600	A572-65 (65 ksi)
L38	38.167-31.537	6.630	4.210	12	32.677	33.660	0.650	2.600	A572-65 (65 ksi)
L39	31.537-30.537	5.210	0.000	12	32.286	33.161	0.438	1.750	A572-65 (65 ksi)
L40	30.537-25.537	5.000	0.000	12	33.161	34.001	0.438	1.750	A572-65 (65 ksi)
L41	25.537-20.537	5.000	0.000	12	34.001	34.840	0.438	1.750	A572-65 (65 ksi)
L42	20.537-15.537	5.000	0.000	12	34.840	35.680	0.438	1.750	A572-65 (65 ksi)
L43	15.537-10.537	5.000	0.000	12	35.680	36.520	0.438	1.750	A572-65 (65 ksi)
L44	10.537-5.537	5.000	0.000	12	36.520	37.360	0.438	1.750	A572-65 (65 ksi)
L45	5.537-0.537	5.000	0.000	12	37.360	38.200	0.438	1.750	A572-65 (65 ksi)
L46	0.537-0.000	0.537		12	38.200	38.290	0.438	1.750	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	15.990	12.300	366.566	5.470	8.045	45.567	742.762	6.054	3.492	13.968
	16.797	12.928	425.616	5.749	8.449	50.377	862.414	6.363	3.701	14.804
L2	16.797	12.928	425.616	5.749	8.449	50.377	862.414	6.363	3.701	14.804
	17.605	13.556	490.691	6.029	8.853	55.429	994.273	6.672	3.910	15.64
L3	17.605	13.556	490.691	6.029	8.853	55.429	994.273	6.672	3.910	15.64
	18.412	14.184	562.082	6.308	9.257	60.722	1138.930	6.981	4.119	16.477
L4	18.412	14.184	562.082	6.308	9.257	60.722	1138.930	6.981	4.119	16.477
	19.220	14.812	640.082	6.587	9.661	66.256	1296.979	7.290	4.328	17.313
L5	19.220	14.812	640.082	6.587	9.661	66.256	1296.979	7.290	4.328	17.313
	20.027	15.440	724.983	6.866	10.065	72.032	1469.011	7.599	4.537	18.149
L6	20.027	15.440	724.983	6.866	10.065	72.032	1469.011	7.599	4.537	18.149
	20.256	15.618	750.339	6.946	10.179	73.713	1520.391	7.687	4.596	18.386
L7	20.163	31.583	1476.600	6.852	10.179	145.060	2991.992	15.544	3.893	7.596
	20.204	31.648	1485.646	6.866	10.199	145.659	3010.321	15.576	3.903	7.616
L8	20.208	30.896	1452.246	6.870	10.199	142.385	2942.645	15.206	3.937	7.874

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
	21.016	32.152	1636.626	7.149	10.603	154.348	3316.248	15.824	4.146	8.292
L9	21.020	31.368	1598.709	7.154	10.603	150.772	3239.417	15.438	4.179	8.573
	21.828	32.592	1793.324	7.433	11.008	162.918	3633.760	16.041	4.389	9.002
L10	21.828	32.592	1793.324	7.433	11.008	162.918	3633.760	16.041	4.389	9.002
	22.043	32.918	1847.748	7.507	11.115	166.236	3744.039	16.201	4.444	9.116
L11	21.968	46.789	2573.335	7.431	11.115	231.514	5214.275	23.028	3.875	5.535
	22.008	46.876	2587.867	7.445	11.135	232.399	5243.720	23.071	3.885	5.55
L12	22.008	46.876	2587.867	7.445	11.135	232.399	5243.720	23.071	3.885	5.55
	22.291	47.492	2691.123	7.543	11.277	238.641	5452.944	23.374	3.958	5.655
L13	22.317	42.554	2428.538	7.570	11.277	215.356	4920.876	20.944	4.159	6.655
	22.362	42.641	2443.362	7.585	11.299	216.244	4950.915	20.986	4.171	6.673
L14	22.371	40.983	2353.941	7.594	11.299	208.330	4769.722	20.171	4.238	7.063
	23.260	42.643	2651.549	7.902	11.744	225.780	5372.758	20.987	4.468	7.447
L15	23.264	41.778	2600.722	7.906	11.744	221.452	5269.768	20.562	4.502	7.662
	24.153	43.402	2916.062	8.214	12.189	239.242	5908.732	21.361	4.732	8.054
L16	24.158	42.502	2858.686	8.218	12.189	234.534	5792.472	20.918	4.765	8.287
	25.032	44.066	3185.934	8.520	12.626	252.327	6455.567	21.688	4.991	8.681
L17	24.988	53.363	3817.738	8.476	12.626	302.366	7735.772	26.264	4.656	6.652
	25.032	53.460	3838.547	8.491	12.648	303.480	7777.938	26.311	4.668	6.669
L18	25.037	52.533	3775.966	8.495	12.648	298.532	7651.130	25.855	4.701	6.839
	25.926	54.434	4200.911	8.803	13.093	320.845	8512.184	26.791	4.932	7.173
L19	25.930	53.472	4130.824	8.807	13.093	315.492	8370.170	26.317	4.965	7.356
	26.686	55.058	4509.530	9.069	13.471	334.748	9137.530	27.098	5.161	7.646
L20	26.620	69.831	5635.170	9.002	13.471	418.306	11418.382	34.369	4.658	5.401
	26.664	69.951	5664.088	9.017	13.494	419.760	11476.978	34.428	4.670	5.414
L21	26.664	69.951	5664.088	9.017	13.494	419.760	11476.978	34.428	4.670	5.414
	26.709	70.070	5693.105	9.032	13.516	421.216	11535.774	34.486	4.681	5.428
L22	26.717	68.106	5544.537	9.041	13.516	410.224	11234.735	33.520	4.748	5.67
	26.762	68.222	5572.865	9.057	13.538	411.642	11292.135	33.577	4.760	5.683
L23	26.762	68.222	5572.865	9.057	13.538	411.642	11292.135	33.577	4.760	5.683
	27.073	69.033	5773.867	9.164	13.694	421.641	11699.419	33.976	4.840	5.779
L24	27.117	59.016	4984.406	9.209	13.694	363.990	10099.759	29.046	5.175	7.264
	27.179	59.154	5019.432	9.231	13.725	365.716	10170.730	29.114	5.191	7.286
L25	27.179	59.154	5019.432	9.231	13.725	365.716	10170.730	29.114	5.191	7.286
	27.221	59.246	5042.870	9.245	13.746	366.869	10218.221	29.159	5.202	7.301
L26	27.230	57.222	4880.073	9.254	13.746	355.025	9888.351	28.163	5.269	7.664
	28.119	59.123	5382.792	9.561	14.191	379.323	10906.996	29.099	5.499	7.999
L27	28.119	59.123	5382.792	9.561	14.191	379.323	10906.996	29.099	5.499	7.999
	29.408	61.880	6171.298	10.007	14.836	415.981	12504.722	30.455	5.833	8.484
L28	28.661	62.273	5655.874	9.550	14.193	398.490	11460.334	30.649	5.400	7.449
	28.814	63.859	6099.014	9.793	14.545	419.317	12358.255	31.429	5.582	7.7
L29	28.819	62.786	6002.079	9.797	14.545	412.653	12161.839	30.902	5.616	7.882
	29.586	64.488	6503.303	10.063	14.929	435.609	13177.455	31.739	5.814	8.161
L30	29.582	65.590	6608.571	10.058	14.929	442.660	13390.758	32.281	5.781	7.974
	30.349	67.321	7145.749	10.324	15.313	466.636	14479.224	33.133	5.980	8.248
L31	30.354	66.189	7031.682	10.328	15.313	459.187	14248.094	32.576	6.013	8.44
	31.122	67.890	7587.933	10.594	15.697	483.387	15375.209	33.413	6.212	8.719
L32	31.126	66.727	7464.262	10.598	15.697	475.509	15124.619	32.841	6.245	8.922
	31.894	68.399	8039.320	10.864	16.082	499.910	16289.842	33.664	6.444	9.206
L33	31.894	68.399	8039.320	10.864	16.082	499.910	16289.842	33.664	6.444	9.206
	32.201	69.067	8277.404	10.970	16.235	509.843	16772.266	33.993	6.524	9.32
L34	32.170	77.479	9232.534	10.939	16.235	568.674	18707.617	38.133	6.289	7.986
	32.208	77.573	9266.184	10.952	16.254	570.072	18775.801	38.179	6.299	7.999
L35	32.213	76.373	9130.285	10.956	16.254	561.712	18500.432	37.588	6.333	8.171
	32.750	77.668	9602.770	11.142	16.523	581.166	19457.815	38.226	6.472	8.351
L36	32.794	65.402	8151.367	11.187	16.523	493.326	16516.880	32.189	6.807	10.472
	32.833	65.480	8180.416	11.200	16.542	494.510	16575.741	32.227	6.817	10.487
L37	32.833	65.480	8180.416	11.200	16.542	494.510	16575.741	32.227	6.817	10.487
	33.600	67.032	8775.981	11.466	16.927	518.473	17782.517	32.991	7.015	10.793
L38	33.600	67.032	8775.981	11.466	16.927	518.473	17782.517	32.991	7.015	10.793
	34.618	69.090	9609.300	11.818	17.436	551.122	19471.047	34.004	7.279	11.198
L39	34.002	44.866	5808.611	11.402	16.724	347.323	11769.821	22.082	7.480	17.097

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
	34.176	46.099	6300.710	11.715	17.177	366.805	12766.947	22.688	7.715	17.633
L40	34.176	46.099	6300.710	11.715	17.177	366.805	12766.947	22.688	7.715	17.633
	35.046	47.282	6798.389	12.016	17.612	386.002	13775.380	23.271	7.940	18.148
L41	35.046	47.282	6798.389	12.016	17.612	386.002	13775.380	23.271	7.940	18.148
	35.915	48.465	7321.609	12.316	18.047	405.689	14835.565	23.853	8.165	18.662
L42	35.915	48.465	7321.609	12.316	18.047	405.689	14835.565	23.853	8.165	18.662
	36.785	49.648	7871.008	12.617	18.482	425.865	15948.796	24.435	8.390	19.177
L43	36.785	49.648	7871.008	12.617	18.482	425.865	15948.796	24.435	8.390	19.177
	37.654	50.831	8447.225	12.918	18.917	446.532	17116.369	25.018	8.615	19.691
L44	37.654	50.831	8447.225	12.918	18.917	446.532	17116.369	25.018	8.615	19.691
	38.524	52.015	9050.900	13.218	19.352	467.687	18339.578	25.600	8.840	20.206
L45	38.524	52.015	9050.900	13.218	19.352	467.687	18339.578	25.600	8.840	20.206
	39.393	53.198	9682.672	13.519	19.787	489.333	19619.719	26.182	9.065	20.72
L46	39.393	53.198	9682.672	13.519	19.787	489.333	19619.719	26.182	9.065	20.72
	39.486	53.325	9752.222	13.551	19.834	491.687	19760.646	26.245	9.089	20.775

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 150.167-145.167				1	1	1			
L2 145.167-140.167				1	1	1			
L3 140.167-135.167				1	1	1			
L4 135.167-130.167				1	1	1			
L5 130.167-125.167				1	1	1			
L6 125.167-123.750				1	1	1			
L7 123.750-123.500				1	1	0.921664			
L8 123.500-118.500				1	1	0.926745			
L9 118.500-113.500				1	1	0.933492			
L10 113.500-112.167				1	1	0.929321			
L11 112.167-111.917				1	1	0.8856			
L12 111.917-110.167				1	1	0.878753			
L13 110.167-109.917				1	1	1.07983			
L14				1	1	1.10005			

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
109.917-104.917									
L15				1	1	1.1007			
104.917-99.917									
L16				1	1	1.10342			
99.917-95.000									
L17				1	1	1.06018			
95.000-94.750									
L18				1	1	1.05709			
94.750-89.750									
L19				1	1	1.05845			
89.750-85.500									
L20				1	1	0.962568			
85.500-85.250									
L21				1	1	0.961546			
85.250-85.000									
L22				1	1	0.925837			
85.000-84.750									
L23				1	1	0.919348			
84.750-83.000									
L24				1	1	1.03793			
83.000-82.650									
L25				1	1	1.037			
82.650-82.417									
L26				1	1	1.05376			
82.417-77.417									
L27				1	1	1.03994			
77.417-70.167									
L28				1	1	0.947274			
70.167-69.167									
L29				1	1	0.95192			
69.167-64.167									
L30				1	1	0.925158			
64.167-59.167									
L31				1	1	0.93059			
59.167-54.167									
L32				1	1	0.936763			
54.167-49.167									
L33				1	1	0.93288			
49.167-47.167									
L34				1	1	0.913469			
47.167-46.917									
L35				1	1	0.92042			
46.917-43.417									
L36				1	1	0.954778			
43.417-43.167									
L37				1	1	0.94603			
43.167-38.167									
L38				1	1	0.94194			
38.167-31.537									
L39				1	1	1			
31.537-30.537									
L40				1	1	1			
30.537-25.537									
L41				1	1	1			
25.537-20.537									
L42				1	1	1			
20.537-15.537									

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
L43 15.537-10.537				1	1	1			
L44 10.537-5.537				1	1	1			
L45 5.537-0.537				1	1	1			
L46 0.537-0.000				1	1	1			

Guy Data

Guy Elevation ft	Guy Grade		Guy Size	Initial Tension K	%	Guy Modulus ksi	Guy Weight plf	L_u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
88.6875	BS	A	1 5/8	38.880	12%	24000.000	5.550	90.700	20.500	0.000	0.000	100%
		B	1 3/8	27.840	12%	24000.000	3.970	97.790	42.500	0.000	0.000	100%
		C	1 3/8	27.840	12%	24000.000	3.970	97.580	42.000	-30.000	0.000	100%

Guy Data *(cont'd)*

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
88.6875	Corner						

Guy Data *(cont'd)*

Guy Elevation ft	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-Off Grade	Pull-Off Type	Pull-Off Size
88.688	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Solid Round	

Guy Data *(cont'd)*

Guy Elevation ft	Cable Weight A K	Cable Weight B K	Cable Weight C K	Cable Weight D K	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft

Guy Elevation ft	Cable Weight A K	Cable Weight B K	Cable Weight C K	Cable Weight D K	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
88.6875	0.503	0.388	0.387		0.584 1.3 sec/pulse	0.678 1.4 sec/pulse	0.675 1.4 sec/pulse	

Guy Data *(cont'd)*

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm K_x	Torque Arm K_y	Pull Off K_x	Pull Off K_y	Diagonal K_x	Diagonal K_y
88.6875	No	No			1	1	1	1

Guy Data *(cont'd)*

Guy Elevation ft	Torque-Arm Bolt Size in	Torque-Arm Number	Torque-Arm Net Width Deduct in	Torque-Arm U	Pull Off Bolt Size in	Pull Off Number	Pull Off Net Width Deduct in	Pull Off U	Diagonal Bolt Size in	Diagonal Number	Diagonal Net Width Deduct in	Diagonal U
88.6875	0.625 A325N	0	0.000	0.75	0.625 A325N	0	0.000	0.75	0.625 A325N	0	0.000	0.75

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q_z ksf	q_z Ice ksf	Ice Thickness in
88.6875	A	44.344	0.028	0.005	0.875
	B	44.344	0.028	0.005	0.875
	C	44.344	0.028	0.005	0.875

Guy-Mast Forces (Excluding Wind) - No Ice

Guy Elevation ft	Guy Location	Chord Angle °	Guy Tension Top Bottom K	F_x K	F_y K	F_z K	M_x kip-ft	M_y kip-ft	M_z kip-ft
88.6875	A	77.637	39.372 38.880	0.000	38.470	-8.377	-40.809	0.000	0.000
	B	64.956	28.192 27.840	10.271	25.576	5.930	13.565	0.000	-23.496
	C	65.221	28.192 27.840	-5.999	25.630	10.094	23.372	0.000	13.890
			Sum:	**4.272**	89.676	**7.646**	**-3.871**	0.000	**-9.605**

Guy-Mast Forces (Excluding Wind) - Ice

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
88.6875	A	77.637	51.915 51.186	0.000	50.728	-11.037	-53.812	0.000	0.000
	B	64.956	37.144 36.579	13.513	33.708	7.802	17.879	0.000	-30.967
	C	65.221	37.144 36.579	-7.893	33.779	13.280	30.803	0.000	18.307
			Sum:	**5.621**	118.214	**10.045**	**-5.130**	0.000	**-12.660**

Guy-Mast Forces (Excluding Wind) - Service

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
88.6875	A	77.637	39.372 38.880	0.000	38.470	-8.377	-40.809	0.000	0.000
	B	64.956	28.192 27.840	10.271	25.576	5.930	13.565	0.000	-23.496
	C	65.221	28.192 27.840	-5.999	25.630	10.094	23.372	0.000	13.890
			Sum:	**4.272**	89.676	**7.646**	**-3.871**	0.000	**-9.605**

Guy-Tensioning Information

				Temperature At Time Of Tensioning													
				0 F		20 F		40 F		60 F		80 F		100 F		120 F	
Guy Elevation		H	V	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept
ft		ft	ft	K	ft	K	ft	K	ft	K	ft	K	ft	K	ft	K	ft
88.6875	A	19.44	88.69	39.563	0.57	39.335	0.58	39.108	0.58	38.880	0.58	38.653	0.59	38.425	0.59	38.198	0.59
	B	41.44	88.69	29.734	0.64	29.102	0.65	28.471	0.66	27.840	0.68	27.209	0.69	26.579	0.71	25.949	0.73
	C	40.94	88.69	29.696	0.63	29.077	0.65	28.458	0.66	27.840	0.68	27.222	0.69	26.604	0.71	25.987	0.72

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
LDF6-50A(1-1/4)	C	No	Surface Ar (CaAa)	130.000 - 109.750	11	6	-0.140 -0.070	1.550		0.001
*										
MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	A	No	Surface Ar (CaAa)	140.000 - 0.000	10	5	-0.350 -0.050	1.625		0.001
*										
LDF4-50A(1/2)	C	No	Surface Ar (CaAa)	71.000 - 22.000	2	2	-0.050 0.000	0.630		0.000
LDF4-50A(1/2)	C	No	Surface Ar (CaAa)	22.000 - 0.000	3	3	-0.050 0.000	0.630		0.000
*										
Safety Line 3/8	C	No	Surface Ar (CaAa)	150.167 - 0.000	1	1	-0.210 -0.200	0.375		0.000
*										
2011 Mod										
PL4x1	A	No	Surface Af (CaAa)	96.750 - 71.750	1	1	0.100 0.150	4.000	10.000	0.000
PL4x1	B	No	Surface Af (CaAa)	96.750 - 71.750	1	1	0.100 0.150	4.000	10.000	0.000
*										
2014 Mod										
6" x 1" Plate	A	No	Surface Af (CaAa)	85.000 - 50.000	1	1	0.000 0.100	6.000	14.000	0.000
6" x 1" Plate	B	No	Surface Af (CaAa)	85.000 - 50.000	1	1	0.000 0.100	6.000	14.000	0.000
6" x 1" Plate	C	No	Surface Af (CaAa)	85.000 - 50.000	1	1	0.000 0.100	6.000	14.000	0.000
*										
6.5" x 1.25" Plate	A	No	Surface Af (CaAa)	110.000 - 85.000	1	1	0.000 0.100	6.500	15.500	0.000
6.5" x 1.25" Plate	B	No	Surface Af (CaAa)	110.000 - 85.000	1	1	0.000 0.100	6.500	15.500	0.000
6.5" x 1.25" Plate	C	No	Surface Af (CaAa)	110.000 - 80.000	1	1	0.100 0.150	6.500	15.500	0.000
*										
4.5" x 1" Plate	A	No	Surface Af (CaAa)	125.750 - 110.750	1	1	0.000 0.100	4.500	11.000	0.000
4.5" x 1" Plate	B	No	Surface Af (CaAa)	125.750 - 110.750	1	1	0.000 0.100	4.500	11.000	0.000
4.5" x 1" Plate	C	No	Surface Af (CaAa)	125.750 - 110.750	1	1	0.000 0.100	4.500	11.000	0.000
*										
2016 Mod										
CCI 6.5" x 1.25" Plate	A	No	Surface Af (CaAa)	49.917 - 29.917	1	1	0.000 0.100	6.500	15.500	0.000
CCI 6.5" x 1.25" Plate	B	No	Surface Af (CaAa)	49.917 - 29.917	1	1	0.000 0.100	6.500	15.500	0.000
CCI 6.5" x 1.25" Plate	C	No	Surface Af (CaAa)	49.917 - 29.917	1	1	0.000 0.100	6.500	15.500	0.000
*										
CCI 6.5" x 3" Plate	A	No	Surface Af (CaAa)	109.500 - 103.000	1	1	0.000 0.100	6.500	19.000	0.061
CCI 6.5" x 3" Plate	B	No	Surface Af (CaAa)	109.500 - 103.000	1	1	0.000 0.100	6.500	19.000	0.061
CCI 6.5" x 3" Plate	C	No	Surface Af (CaAa)	109.500 - 103.000	1	1	0.000 0.100	6.500	19.000	0.061
*										
CCI 6.5" x 3" Plate	A	No	Surface Af (CaAa)	117.000 - 110.500	1	1	0.000 0.100	6.500	19.000	0.061

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
CCI 6.5" x 3" Plate	B	No	Surface Af (CaAa)	117.000 - 110.500	1	1	0.000 0.100	6.500	19.000	0.061
CCI 6.5" x 3" Plate	C	No	Surface Af (CaAa)	117.000 - 110.500	1	1	0.000 0.100	6.500	19.000	0.061
*										
CCI 6.5" x 1.25" Plate	A	No	Surface Af (CaAa)	116.917 - 103.080	1	1	0.000 0.100	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate	B	No	Surface Af (CaAa)	116.917 - 103.080	1	1	0.000 0.100	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate	C	No	Surface Af (CaAa)	116.917 - 103.080	1	1	0.000 0.100	6.500	15.500	0.028
*										
CCI 4.5" x 1" Plate	A	No	Surface Af (CaAa)	87.000 - 41.917	1	1	0.300 0.350	4.500	11.000	0.000
CCI 4.5" x 1" Plate	C	No	Surface Af (CaAa)	87.000 - 41.917	1	1	0.300 0.350	4.500	11.000	0.000
*										
*										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
LDF6-50A(1-1/4)	C	No	No	Inside Pole	109.750 - 0.000	11	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
HB158-1-08U8-S8J 18(1-5/8)	C	No	No	Inside Pole	130.000 - 0.000	1	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
HB158-1-08U8-S8J 18(1-5/8)	C	No	No	Inside Pole	130.000 - 0.000	1	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
*									
LDF6-50A(1-1/4)	C	No	No	Inside Pole	149.000 - 0.000	12	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
FB-L98B-034-XXX(3/8)	C	No	No	Inside Pole	149.000 - 0.000	2	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
WR-VG86ST-BRD(3/4)	C	No	No	Inside Pole	149.000 - 0.000	4	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
FB-L98B-034-XXX(3/8)	C	No	No	Inside Pole	149.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
WR-VG86ST-BRD(3/4)	C	No	No	Inside Pole	149.000 - 0.000	2	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
*									
LDF4P-50A(1/2")	C	No	No	Inside Pole	130.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
*									
*									
*									

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C_AA_A ft^2/ft	Weight klf
*								

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	150.167-145.167	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.188	0.000	0.043
L2	145.167-140.167	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.188	0.000	0.055
L3	140.167-135.167	A	0.000	0.000	3.927	0.000	0.052
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.188	0.000	0.055
L4	135.167-130.167	A	0.000	0.000	4.063	0.000	0.053
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.188	0.000	0.055
L5	130.167-125.167	A	0.000	0.000	4.500	0.000	0.053
		B	0.000	0.000	0.437	0.000	0.000
		C	0.000	0.000	5.119	0.000	0.101
L6	125.167-123.750	A	0.000	0.000	2.214	0.000	0.015
		B	0.000	0.000	1.063	0.000	0.000
		C	0.000	0.000	2.434	0.000	0.029
L7	123.750-123.500	A	0.000	0.000	0.391	0.000	0.003
		B	0.000	0.000	0.188	0.000	0.000
		C	0.000	0.000	0.429	0.000	0.005
L8	123.500-118.500	A	0.000	0.000	7.813	0.000	0.053
		B	0.000	0.000	3.750	0.000	0.000
		C	0.000	0.000	8.588	0.000	0.102
L9	118.500-113.500	A	0.000	0.000	14.414	0.000	0.362
		B	0.000	0.000	10.352	0.000	0.309
		C	0.000	0.000	15.189	0.000	0.411
L10	113.500-112.167	A	0.000	0.000	4.632	0.000	0.133
		B	0.000	0.000	3.548	0.000	0.119
		C	0.000	0.000	4.838	0.000	0.146
L11	112.167-111.917	A	0.000	0.000	0.869	0.000	0.025
		B	0.000	0.000	0.666	0.000	0.022
		C	0.000	0.000	0.907	0.000	0.027
L12	111.917-110.167	A	0.000	0.000	5.367	0.000	0.154
		B	0.000	0.000	3.945	0.000	0.135
		C	0.000	0.000	5.638	0.000	0.171
L13	110.167-109.917	A	0.000	0.000	0.564	0.000	0.010
		B	0.000	0.000	0.361	0.000	0.007
		C	0.000	0.000	0.603	0.000	0.012
L14	109.917-104.917	A	0.000	0.000	18.694	0.000	0.473
		B	0.000	0.000	14.631	0.000	0.419
		C	0.000	0.000	14.974	0.000	0.521
L15	104.917-99.917	A	0.000	0.000	13.058	0.000	0.222
		B	0.000	0.000	8.995	0.000	0.168
		C	0.000	0.000	9.183	0.000	0.270
L16	99.917-95.000	A	0.000	0.000	10.488	0.000	0.053
		B	0.000	0.000	6.493	0.000	0.000

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C	0.000	0.000	5.511	0.000	0.100
L17	95.000-94.750	A	0.000	0.000	0.641	0.000	0.003
		B	0.000	0.000	0.438	0.000	0.000
		C	0.000	0.000	0.280	0.000	0.005
L18	94.750-89.750	A	0.000	0.000	12.813	0.000	0.053
		B	0.000	0.000	8.750	0.000	0.000
		C	0.000	0.000	5.604	0.000	0.102
L19	89.750-85.500	A	0.000	0.000	12.016	0.000	0.045
		B	0.000	0.000	7.438	0.000	0.000
		C	0.000	0.000	5.889	0.000	0.087
L20	85.500-85.250	A	0.000	0.000	0.828	0.000	0.003
		B	0.000	0.000	0.438	0.000	0.000
		C	0.000	0.000	0.468	0.000	0.005
L21	85.250-85.000	A	0.000	0.000	0.828	0.000	0.003
		B	0.000	0.000	0.438	0.000	0.000
		C	0.000	0.000	0.468	0.000	0.005
L22	85.000-84.750	A	0.000	0.000	0.807	0.000	0.003
		B	0.000	0.000	0.417	0.000	0.000
		C	0.000	0.000	0.718	0.000	0.005
L23	84.750-83.000	A	0.000	0.000	5.651	0.000	0.019
		B	0.000	0.000	2.917	0.000	0.000
		C	0.000	0.000	5.024	0.000	0.036
L24	83.000-82.650	A	0.000	0.000	1.130	0.000	0.004
		B	0.000	0.000	0.583	0.000	0.000
		C	0.000	0.000	1.005	0.000	0.007
L25	82.650-82.417	A	0.000	0.000	0.753	0.000	0.002
		B	0.000	0.000	0.389	0.000	0.000
		C	0.000	0.000	0.670	0.000	0.005
L26	82.417-77.417	A	0.000	0.000	16.146	0.000	0.053
		B	0.000	0.000	8.333	0.000	0.000
		C	0.000	0.000	11.556	0.000	0.102
L27	77.417-70.167	A	0.000	0.000	22.355	0.000	0.078
		B	0.000	0.000	11.028	0.000	0.000
		C	0.000	0.000	13.064	0.000	0.148
L28	70.167-69.167	A	0.000	0.000	2.563	0.000	0.011
		B	0.000	0.000	1.000	0.000	0.000
		C	0.000	0.000	1.914	0.000	0.021
L29	69.167-64.167	A	0.000	0.000	12.813	0.000	0.053
		B	0.000	0.000	5.000	0.000	0.000
		C	0.000	0.000	9.568	0.000	0.104
L30	64.167-59.167	A	0.000	0.000	12.813	0.000	0.053
		B	0.000	0.000	5.000	0.000	0.000
		C	0.000	0.000	9.568	0.000	0.104
L31	59.167-54.167	A	0.000	0.000	12.813	0.000	0.053
		B	0.000	0.000	5.000	0.000	0.000
		C	0.000	0.000	9.568	0.000	0.104
L32	54.167-49.167	A	0.000	0.000	12.792	0.000	0.053
		B	0.000	0.000	4.979	0.000	0.000
		C	0.000	0.000	9.547	0.000	0.104
L33	49.167-47.167	A	0.000	0.000	5.292	0.000	0.021
		B	0.000	0.000	2.167	0.000	0.000
		C	0.000	0.000	3.994	0.000	0.041
L34	47.167-46.917	A	0.000	0.000	0.661	0.000	0.003
		B	0.000	0.000	0.271	0.000	0.000
		C	0.000	0.000	0.499	0.000	0.005
L35	46.917-43.417	A	0.000	0.000	9.260	0.000	0.037
		B	0.000	0.000	3.792	0.000	0.000
		C	0.000	0.000	6.989	0.000	0.073
L36	43.417-43.167	A	0.000	0.000	0.661	0.000	0.003
		B	0.000	0.000	0.271	0.000	0.000
		C	0.000	0.000	0.499	0.000	0.005

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
L37	43.167-38.167	A	0.000	0.000	10.416	0.000	0.053
		B	0.000	0.000	5.417	0.000	0.000
		C	0.000	0.000	7.171	0.000	0.104
L38	38.167-31.537	A	0.000	0.000	12.569	0.000	0.071
		B	0.000	0.000	7.182	0.000	0.000
		C	0.000	0.000	8.266	0.000	0.137
L39	31.537-30.537	A	0.000	0.000	1.896	0.000	0.011
		B	0.000	0.000	1.083	0.000	0.000
		C	0.000	0.000	1.247	0.000	0.021
L40	30.537-25.537	A	0.000	0.000	4.734	0.000	0.053
		B	0.000	0.000	0.672	0.000	0.000
		C	0.000	0.000	1.489	0.000	0.104
L41	25.537-20.537	A	0.000	0.000	4.063	0.000	0.053
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.910	0.000	0.104
L42	20.537-15.537	A	0.000	0.000	4.063	0.000	0.053
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	1.133	0.000	0.104
L43	15.537-10.537	A	0.000	0.000	4.063	0.000	0.053
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	1.133	0.000	0.104
L44	10.537-5.537	A	0.000	0.000	4.063	0.000	0.053
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	1.133	0.000	0.104
L45	5.537-0.537	A	0.000	0.000	4.063	0.000	0.053
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	1.133	0.000	0.104
L46	0.537-0.000	A	0.000	0.000	0.436	0.000	0.006
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.122	0.000	0.011

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	150.167-145.167	A	0.987	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	1.175	0.000	0.051
L2	145.167-140.167	A	0.984	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	1.171	0.000	0.064
L3	140.167-135.167	A	0.980	0.000	0.000	6.093	0.000	0.106
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	1.168	0.000	0.064
L4	135.167-130.167	A	0.977	0.000	0.000	6.299	0.000	0.110
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	1.164	0.000	0.063
L5	130.167-125.167	A	0.973	0.000	0.000	6.845	0.000	0.113
		B		0.000	0.000	0.551	0.000	0.003
		C		0.000	0.000	8.505	0.000	0.169
L6	125.167-123.750	A	0.971	0.000	0.000	3.121	0.000	0.039
		B		0.000	0.000	1.338	0.000	0.008
		C		0.000	0.000	3.657	0.000	0.056
L7	123.750-123.500	A	0.970	0.000	0.000	0.551	0.000	0.007
		B		0.000	0.000	0.236	0.000	0.001
		C		0.000	0.000	0.645	0.000	0.010
L8	123.500-118.500	A	0.968	0.000	0.000	11.006	0.000	0.137

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	4.718	0.000	0.028
		C		0.000	0.000	12.896	0.000	0.196
L9	118.500-113.500	A	0.964	0.000	0.000	18.333	0.000	0.500
		B		0.000	0.000	12.050	0.000	0.391
		C		0.000	0.000	20.218	0.000	0.559
L10	113.500-112.167	A	0.961	0.000	0.000	5.761	0.000	0.176
		B		0.000	0.000	4.087	0.000	0.147
		C		0.000	0.000	6.263	0.000	0.191
L11	112.167-111.917	A	0.961	0.000	0.000	1.080	0.000	0.033
		B		0.000	0.000	0.766	0.000	0.027
		C		0.000	0.000	1.174	0.000	0.036
L12	111.917-110.167	A	0.960	0.000	0.000	6.701	0.000	0.204
		B		0.000	0.000	4.503	0.000	0.166
		C		0.000	0.000	7.359	0.000	0.225
L13	110.167-109.917	A	0.959	0.000	0.000	0.716	0.000	0.015
		B		0.000	0.000	0.403	0.000	0.009
		C		0.000	0.000	0.811	0.000	0.018
L14	109.917-104.917	A	0.956	0.000	0.000	22.870	0.000	0.637
		B		0.000	0.000	16.596	0.000	0.529
		C		0.000	0.000	17.974	0.000	0.641
L15	104.917-99.917	A	0.952	0.000	0.000	16.609	0.000	0.341
		B		0.000	0.000	10.341	0.000	0.233
		C		0.000	0.000	11.480	0.000	0.342
L16	99.917-95.000	A	0.947	0.000	0.000	13.915	0.000	0.150
		B		0.000	0.000	7.756	0.000	0.043
		C		0.000	0.000	7.374	0.000	0.143
L17	95.000-94.750	A	0.945	0.000	0.000	0.845	0.000	0.008
		B		0.000	0.000	0.532	0.000	0.003
		C		0.000	0.000	0.375	0.000	0.007
L18	94.750-89.750	A	0.942	0.000	0.000	16.890	0.000	0.168
		B		0.000	0.000	10.634	0.000	0.060
		C		0.000	0.000	7.488	0.000	0.145
L19	89.750-85.500	A	0.937	0.000	0.000	15.749	0.000	0.150
		B		0.000	0.000	9.031	0.000	0.050
		C		0.000	0.000	7.763	0.000	0.131
L20	85.500-85.250	A	0.935	0.000	0.000	1.078	0.000	0.010
		B		0.000	0.000	0.531	0.000	0.003
		C		0.000	0.000	0.608	0.000	0.009
L21	85.250-85.000	A	0.934	0.000	0.000	1.077	0.000	0.010
		B		0.000	0.000	0.531	0.000	0.003
		C		0.000	0.000	0.608	0.000	0.009
L22	85.000-84.750	A	0.934	0.000	0.000	1.057	0.000	0.010
		B		0.000	0.000	0.510	0.000	0.003
		C		0.000	0.000	0.905	0.000	0.010
L23	84.750-83.000	A	0.933	0.000	0.000	7.395	0.000	0.067
		B		0.000	0.000	3.570	0.000	0.020
		C		0.000	0.000	6.330	0.000	0.071
L24	83.000-82.650	A	0.932	0.000	0.000	1.479	0.000	0.013
		B		0.000	0.000	0.714	0.000	0.004
		C		0.000	0.000	1.266	0.000	0.014
L25	82.650-82.417	A	0.932	0.000	0.000	0.985	0.000	0.009
		B		0.000	0.000	0.476	0.000	0.003
		C		0.000	0.000	0.844	0.000	0.009
L26	82.417-77.417	A	0.929	0.000	0.000	21.108	0.000	0.189
		B		0.000	0.000	10.191	0.000	0.056
		C		0.000	0.000	14.790	0.000	0.184
L27	77.417-70.167	A	0.921	0.000	0.000	29.213	0.000	0.265
		B		0.000	0.000	13.407	0.000	0.073
		C		0.000	0.000	17.289	0.000	0.244
L28	70.167-69.167	A	0.916	0.000	0.000	3.364	0.000	0.033
		B		0.000	0.000	1.184	0.000	0.006

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C		0.000	0.000	2.728	0.000	0.036
L29	69.167-64.167	A	0.912	0.000	0.000	16.792	0.000	0.163
		B		0.000	0.000	5.912	0.000	0.031
		C		0.000	0.000	13.601	0.000	0.178
L30	64.167-59.167	A	0.905	0.000	0.000	16.769	0.000	0.162
		B		0.000	0.000	5.905	0.000	0.031
		C		0.000	0.000	13.571	0.000	0.178
L31	59.167-54.167	A	0.897	0.000	0.000	16.744	0.000	0.161
		B		0.000	0.000	5.897	0.000	0.030
		C		0.000	0.000	13.538	0.000	0.177
L32	54.167-49.167	A	0.889	0.000	0.000	16.682	0.000	0.160
		B		0.000	0.000	5.854	0.000	0.030
		C		0.000	0.000	13.468	0.000	0.176
L33	49.167-47.167	A	0.883	0.000	0.000	6.847	0.000	0.065
		B		0.000	0.000	2.520	0.000	0.013
		C		0.000	0.000	5.558	0.000	0.071
L34	47.167-46.917	A	0.881	0.000	0.000	0.855	0.000	0.008
		B		0.000	0.000	0.315	0.000	0.002
		C		0.000	0.000	0.694	0.000	0.009
L35	46.917-43.417	A	0.877	0.000	0.000	11.967	0.000	0.113
		B		0.000	0.000	4.406	0.000	0.022
		C		0.000	0.000	9.709	0.000	0.124
L36	43.417-43.167	A	0.873	0.000	0.000	0.854	0.000	0.008
		B		0.000	0.000	0.315	0.000	0.002
		C		0.000	0.000	0.693	0.000	0.009
L37	43.167-38.167	A	0.868	0.000	0.000	13.602	0.000	0.142
		B		0.000	0.000	6.285	0.000	0.032
		C		0.000	0.000	10.367	0.000	0.158
L38	38.167-31.537	A	0.855	0.000	0.000	16.465	0.000	0.178
		B		0.000	0.000	8.315	0.000	0.041
		C		0.000	0.000	12.158	0.000	0.200
L39	31.537-30.537	A	0.845	0.000	0.000	2.484	0.000	0.027
		B		0.000	0.000	1.254	0.000	0.006
		C		0.000	0.000	1.834	0.000	0.030
L40	30.537-25.537	A	0.836	0.000	0.000	6.899	0.000	0.106
		B		0.000	0.000	0.775	0.000	0.004
		C		0.000	0.000	3.632	0.000	0.123
L41	25.537-20.537	A	0.820	0.000	0.000	6.103	0.000	0.102
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	2.935	0.000	0.120
L42	20.537-15.537	A	0.800	0.000	0.000	6.078	0.000	0.101
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	3.169	0.000	0.121
L43	15.537-10.537	A	0.775	0.000	0.000	6.046	0.000	0.099
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	3.112	0.000	0.121
L44	10.537-5.537	A	0.738	0.000	0.000	6.001	0.000	0.097
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	3.029	0.000	0.120
L45	5.537-0.537	A	0.669	0.000	0.000	5.915	0.000	0.094
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	2.875	0.000	0.118
L46	0.537-0.000	A	0.525	0.000	0.000	0.616	0.000	0.009
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.274	0.000	0.012

Feed Line Center of Pressure

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L1	150.167-145.167	0.095	0.208	0.385	0.840
L2	145.167-140.167	0.095	0.208	0.387	0.845
L3	140.167-135.167	-3.102	-0.213	-3.014	0.148
L4	135.167-130.167	-3.207	-0.224	-3.130	0.139
L5	130.167-125.167	-1.721	2.344	-1.568	2.461
L6	125.167-123.750	-1.121	1.601	-1.115	1.828
L7	123.750-123.500	-1.127	1.610	-1.121	1.838
L8	123.500-118.500	-1.143	1.632	-1.135	1.863
L9	118.500-113.500	-0.705	1.008	-0.778	1.279
L10	113.500-112.167	-0.610	0.872	-0.690	1.133
L11	112.167-111.917	-0.610	0.872	-0.691	1.135
L12	111.917-110.167	-0.684	0.978	-0.769	1.264
L13	110.167-109.917	-1.035	1.235	-1.105	1.571
L14	109.917-104.917	-1.143	-0.111	-1.314	0.004
L15	104.917-99.917	-1.656	-0.206	-1.852	-0.050
L16	99.917-95.000	-1.922	-0.657	-2.062	-0.448
L17	95.000-94.750	-1.373	-1.205	-1.522	-1.025
L18	94.750-89.750	-1.390	-1.222	-1.540	-1.038
L19	89.750-85.500	-1.705	-1.498	-1.838	-1.313
L20	85.500-85.250	-2.160	-1.894	-2.269	-1.715
L21	85.250-85.000	-2.163	-1.897	-2.271	-1.717
L22	85.000-84.750	-2.295	-0.336	-2.361	-0.288
L23	84.750-83.000	-2.307	-0.338	-2.372	-0.290
L24	83.000-82.650	-2.319	-0.339	-2.383	-0.291
L25	82.650-82.417	-2.322	-0.340	-2.386	-0.292
L26	82.417-77.417	-2.088	-1.103	-2.178	-0.980
L27	77.417-70.167	-2.051	-1.772	-2.150	-1.503
L28	70.167-69.167	-2.783	-0.947	-2.692	-0.374
L29	69.167-64.167	-2.814	-0.959	-2.721	-0.382
L30	64.167-59.167	-2.867	-0.978	-2.768	-0.392
L31	59.167-54.167	-2.919	-0.997	-2.814	-0.402
L32	54.167-49.167	-2.973	-1.017	-2.865	-0.413
L33	49.167-47.167	-2.904	-0.994	-2.829	-0.411
L34	47.167-46.917	-2.916	-0.999	-2.839	-0.414
L35	46.917-43.417	-2.934	-1.005	-2.856	-0.418
L36	43.417-43.167	-2.952	-1.012	-2.871	-0.422
L37	43.167-38.167	-2.293	-0.177	-2.283	0.393
L38	38.167-31.537	-2.054	0.165	-2.076	0.720
L39	31.537-30.537	-2.049	0.164	-2.072	0.718
L40	30.537-25.537	-3.521	0.283	-3.134	1.072
L41	25.537-20.537	-3.895	0.401	-3.389	1.213
L42	20.537-15.537	-3.856	0.602	-3.383	1.355
L43	15.537-10.537	-3.872	0.606	-3.416	1.347
L44	10.537-5.537	-3.887	0.610	-3.451	1.327
L45	5.537-0.537	-3.902	0.614	-3.493	1.277
L46	0.537-0.000	-3.910	0.616	-3.543	1.144

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	26	Safety Line 3/8	145.17 - 150.17	1.0000	1.0000
L2	26	Safety Line 3/8	140.17 - 145.17	1.0000	1.0000
L3	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	135.17 - 140.00	1.0000	1.0000
L3	26	Safety Line 3/8	135.17 - 140.17	1.0000	1.0000
L4	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	130.17 - 135.17	1.0000	1.0000
L4	26	Safety Line 3/8	130.17 - 135.17	1.0000	1.0000
L5	3	LDF6-50A(1-1/4)	125.17 - 130.00	1.0000	1.0000
L5	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	125.17 - 130.17	1.0000	1.0000
L5	26	Safety Line 3/8	125.17 - 130.17	1.0000	1.0000
L5	41	4.5" x 1" Plate	125.17 - 125.75	1.0000	1.0000
L5	42	4.5" x 1" Plate	125.17 - 125.75	1.0000	1.0000
L5	43	4.5" x 1" Plate	125.17 - 125.75	1.0000	1.0000
L6	3	LDF6-50A(1-1/4)	123.75 - 125.17	1.0000	1.0000
L6	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	123.75 - 125.17	1.0000	1.0000
L6	26	Safety Line 3/8	123.75 - 125.17	1.0000	1.0000
L6	41	4.5" x 1" Plate	123.75 - 125.17	1.0000	1.0000
L6	42	4.5" x 1" Plate	123.75 - 125.17	1.0000	1.0000
L6	43	4.5" x 1" Plate	123.75 - 125.17	1.0000	1.0000
L7	3	LDF6-50A(1-1/4)	123.50 - 123.75	1.0000	1.0000
L7	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	123.50 - 123.75	1.0000	1.0000
L7	26	Safety Line 3/8	123.50 - 123.75	1.0000	1.0000
L7	41	4.5" x 1" Plate	123.50 - 123.75	1.0000	1.0000
L7	42	4.5" x 1" Plate	123.50 - 123.75	1.0000	1.0000
L7	43	4.5" x 1" Plate	123.50 - 123.75	1.0000	1.0000
L8	3	LDF6-50A(1-1/4)	118.50 - 123.50	1.0000	1.0000
L8	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	118.50 - 123.50	1.0000	1.0000
L8	26	Safety Line 3/8	118.50 - 123.50	1.0000	1.0000
L8	41	4.5" x 1" Plate	118.50 - 123.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L8	42	4.5" x 1" Plate	118.50 - 123.50	1.0000	1.0000
L8	43	4.5" x 1" Plate	118.50 - 123.50	1.0000	1.0000
L9	3	LDF6-50A(1-1/4)	113.50 - 118.50	1.0000	1.0000
L9	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	113.50 - 118.50	1.0000	1.0000
L9	26	Safety Line 3/8	113.50 - 118.50	1.0000	1.0000
L9	41	4.5" x 1" Plate	113.50 - 118.50	1.0000	1.0000
L9	42	4.5" x 1" Plate	113.50 - 118.50	1.0000	1.0000
L9	43	4.5" x 1" Plate	113.50 - 118.50	1.0000	1.0000
L9	54	CCI 6.5" x 3" Plate	113.50 - 117.00	1.0000	1.0000
L9	55	CCI 6.5" x 3" Plate	113.50 - 117.00	1.0000	1.0000
L9	56	CCI 6.5" x 3" Plate	113.50 - 117.00	1.0000	1.0000
L9	58	CCI 6.5" x 1.25" Plate	113.50 - 116.92	1.0000	1.0000
L9	59	CCI 6.5" x 1.25" Plate	113.50 - 116.92	1.0000	1.0000
L9	60	CCI 6.5" x 1.25" Plate	113.50 - 116.92	1.0000	1.0000
L10	3	LDF6-50A(1-1/4)	112.17 - 113.50	1.0000	1.0000
L10	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	112.17 - 113.50	1.0000	1.0000
L10	26	Safety Line 3/8	112.17 - 113.50	1.0000	1.0000
L10	41	4.5" x 1" Plate	112.17 - 113.50	1.0000	1.0000
L10	42	4.5" x 1" Plate	112.17 - 113.50	1.0000	1.0000
L10	43	4.5" x 1" Plate	112.17 - 113.50	1.0000	1.0000
L10	54	CCI 6.5" x 3" Plate	112.17 - 113.50	1.0000	1.0000
L10	55	CCI 6.5" x 3" Plate	112.17 - 113.50	1.0000	1.0000
L10	56	CCI 6.5" x 3" Plate	112.17 - 113.50	1.0000	1.0000
L10	58	CCI 6.5" x 1.25" Plate	112.17 - 113.50	1.0000	1.0000
L10	59	CCI 6.5" x 1.25" Plate	112.17 - 113.50	1.0000	1.0000
L10	60	CCI 6.5" x 1.25" Plate	112.17 - 113.50	1.0000	1.0000
L11	3	LDF6-50A(1-1/4)	111.92 - 112.17	1.0000	1.0000
L11	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	111.92 - 112.17	1.0000	1.0000
L11	26	Safety Line 3/8	111.92 - 112.17	1.0000	1.0000
L11	41	4.5" x 1" Plate	111.92 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			112.17		
L11	42	4.5" x 1" Plate	111.92 - 112.17	1.0000	1.0000
L11	43	4.5" x 1" Plate	111.92 - 112.17	1.0000	1.0000
L11	54	CCI 6.5" x 3" Plate	111.92 - 112.17	1.0000	1.0000
L11	55	CCI 6.5" x 3" Plate	111.92 - 112.17	1.0000	1.0000
L11	56	CCI 6.5" x 3" Plate	111.92 - 112.17	1.0000	1.0000
L11	58	CCI 6.5" x 1.25" Plate	111.92 - 112.17	1.0000	1.0000
L11	59	CCI 6.5" x 1.25" Plate	111.92 - 112.17	1.0000	1.0000
L11	60	CCI 6.5" x 1.25" Plate	111.92 - 112.17	1.0000	1.0000
L12	3	LDF6-50A(1-1/4)	110.17 - 111.92	1.0000	1.0000
L12	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	110.17 - 111.92	1.0000	1.0000
L12	26	Safety Line 3/8	110.17 - 111.92	1.0000	1.0000
L12	41	4.5" x 1" Plate	110.75 - 111.92	1.0000	1.0000
L12	42	4.5" x 1" Plate	110.75 - 111.92	1.0000	1.0000
L12	43	4.5" x 1" Plate	110.75 - 111.92	1.0000	1.0000
L12	54	CCI 6.5" x 3" Plate	110.50 - 111.92	1.0000	1.0000
L12	55	CCI 6.5" x 3" Plate	110.50 - 111.92	1.0000	1.0000
L12	56	CCI 6.5" x 3" Plate	110.50 - 111.92	1.0000	1.0000
L12	58	CCI 6.5" x 1.25" Plate	110.17 - 111.92	1.0000	1.0000
L12	59	CCI 6.5" x 1.25" Plate	110.17 - 111.92	1.0000	1.0000
L12	60	CCI 6.5" x 1.25" Plate	110.17 - 111.92	1.0000	1.0000
L13	3	LDF6-50A(1-1/4)	109.92 - 110.17	1.0000	1.0000
L13	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	109.92 - 110.17	1.0000	1.0000
L13	26	Safety Line 3/8	109.92 - 110.17	1.0000	1.0000
L13	37	6.5" x 1.25" Plate	109.92 - 110.00	1.0000	1.0000
L13	38	6.5" x 1.25" Plate	109.92 - 110.00	1.0000	1.0000
L13	39	6.5" x 1.25" Plate	109.92 - 110.00	1.0000	1.0000
L13	58	CCI 6.5" x 1.25" Plate	109.92 - 110.17	1.0000	1.0000
L13	59	CCI 6.5" x 1.25" Plate	109.92 - 110.17	1.0000	1.0000
L13	60	CCI 6.5" x 1.25" Plate	109.92 - 110.17	1.0000	1.0000
L14	3	LDF6-50A(1-1/4)	109.75 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			109.92		
L14	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	104.92 - 109.92	1.0000	1.0000
L14	26	Safety Line 3/8	104.92 - 109.92	1.0000	1.0000
L14	37	6.5" x 1.25" Plate	104.92 - 109.92	1.0000	1.0000
L14	38	6.5" x 1.25" Plate	104.92 - 109.92	1.0000	1.0000
L14	39	6.5" x 1.25" Plate	104.92 - 109.92	1.0000	1.0000
L14	50	CCI 6.5" x 3" Plate	104.92 - 109.50	1.0000	1.0000
L14	51	CCI 6.5" x 3" Plate	104.92 - 109.50	1.0000	1.0000
L14	52	CCI 6.5" x 3" Plate	104.92 - 109.50	1.0000	1.0000
L14	58	CCI 6.5" x 1.25" Plate	104.92 - 109.92	1.0000	1.0000
L14	59	CCI 6.5" x 1.25" Plate	104.92 - 109.92	1.0000	1.0000
L14	60	CCI 6.5" x 1.25" Plate	104.92 - 109.92	1.0000	1.0000
L15	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	99.92 - 104.92	1.0000	1.0000
L15	26	Safety Line 3/8	99.92 - 104.92	1.0000	1.0000
L15	37	6.5" x 1.25" Plate	99.92 - 104.92	1.0000	1.0000
L15	38	6.5" x 1.25" Plate	99.92 - 104.92	1.0000	1.0000
L15	39	6.5" x 1.25" Plate	99.92 - 104.92	1.0000	1.0000
L15	50	CCI 6.5" x 3" Plate	103.00 - 104.92	1.0000	1.0000
L15	51	CCI 6.5" x 3" Plate	103.00 - 104.92	1.0000	1.0000
L15	52	CCI 6.5" x 3" Plate	103.00 - 104.92	1.0000	1.0000
L15	58	CCI 6.5" x 1.25" Plate	103.08 - 104.92	1.0000	1.0000
L15	59	CCI 6.5" x 1.25" Plate	103.08 - 104.92	1.0000	1.0000
L15	60	CCI 6.5" x 1.25" Plate	103.08 - 104.92	1.0000	1.0000
L16	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	95.00 - 99.92	1.0000	1.0000
L16	26	Safety Line 3/8	95.00 - 99.92	1.0000	1.0000
L16	29	PL4x1	95.00 - 96.75	1.0000	1.0000
L16	30	PL4x1	95.00 - 96.75	1.0000	1.0000
L16	37	6.5" x 1.25" Plate	95.00 - 99.92	1.0000	1.0000
L16	38	6.5" x 1.25" Plate	95.00 - 99.92	1.0000	1.0000
L16	39	6.5" x 1.25" Plate	95.00 - 99.92	1.0000	1.0000
L17	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	94.75 - 95.00	1.0000	1.0000
L17	26	Safety Line 3/8	94.75 - 95.00	1.0000	1.0000
L17	29	PL4x1	94.75 - 95.00	1.0000	1.0000
L17	30	PL4x1	94.75 - 95.00	1.0000	1.0000
L17	37	6.5" x 1.25" Plate	94.75 - 95.00	1.0000	1.0000
L17	38	6.5" x 1.25" Plate	94.75 - 95.00	1.0000	1.0000
L17	39	6.5" x 1.25" Plate	94.75 - 95.00	1.0000	1.0000
L18	17	MLE HYBRID	89.75 - 94.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		9POWER/18FIBER RL 2(1-5/8)			
L18	26	Safety Line 3/8	89.75 - 94.75	1.0000	1.0000
L18	29	PL4x1	89.75 - 94.75	1.0000	1.0000
L18	30	PL4x1	89.75 - 94.75	1.0000	1.0000
L18	37	6.5" x 1.25" Plate	89.75 - 94.75	1.0000	1.0000
L18	38	6.5" x 1.25" Plate	89.75 - 94.75	1.0000	1.0000
L18	39	6.5" x 1.25" Plate	89.75 - 94.75	1.0000	1.0000
L19	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	85.50 - 89.75	1.0000	1.0000
L19	26	Safety Line 3/8	85.50 - 89.75	1.0000	1.0000
L19	29	PL4x1	85.50 - 89.75	1.0000	1.0000
L19	30	PL4x1	85.50 - 89.75	1.0000	1.0000
L19	37	6.5" x 1.25" Plate	85.50 - 89.75	1.0000	1.0000
L19	38	6.5" x 1.25" Plate	85.50 - 89.75	1.0000	1.0000
L19	39	6.5" x 1.25" Plate	85.50 - 89.75	1.0000	1.0000
L19	62	CCI 4.5" x 1" Plate	85.50 - 87.00	1.0000	1.0000
L19	64	CCI 4.5" x 1" Plate	85.50 - 87.00	1.0000	1.0000
L20	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	85.25 - 85.50	1.0000	1.0000
L20	26	Safety Line 3/8	85.25 - 85.50	1.0000	1.0000
L20	29	PL4x1	85.25 - 85.50	1.0000	1.0000
L20	30	PL4x1	85.25 - 85.50	1.0000	1.0000
L20	37	6.5" x 1.25" Plate	85.25 - 85.50	1.0000	1.0000
L20	38	6.5" x 1.25" Plate	85.25 - 85.50	1.0000	1.0000
L20	39	6.5" x 1.25" Plate	85.25 - 85.50	1.0000	1.0000
L20	62	CCI 4.5" x 1" Plate	85.25 - 85.50	1.0000	1.0000
L20	64	CCI 4.5" x 1" Plate	85.25 - 85.50	1.0000	1.0000
L21	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	85.00 - 85.25	1.0000	1.0000
L21	26	Safety Line 3/8	85.00 - 85.25	1.0000	1.0000
L21	29	PL4x1	85.00 - 85.25	1.0000	1.0000
L21	30	PL4x1	85.00 - 85.25	1.0000	1.0000
L21	37	6.5" x 1.25" Plate	85.00 - 85.25	1.0000	1.0000
L21	38	6.5" x 1.25" Plate	85.00 - 85.25	1.0000	1.0000
L21	39	6.5" x 1.25" Plate	85.00 - 85.25	1.0000	1.0000
L21	62	CCI 4.5" x 1" Plate	85.00 - 85.25	1.0000	1.0000
L21	64	CCI 4.5" x 1" Plate	85.00 - 85.25	1.0000	1.0000
L22	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	84.75 - 85.00	1.0000	1.0000
L22	26	Safety Line 3/8	84.75 - 85.00	1.0000	1.0000
L22	29	PL4x1	84.75 - 85.00	1.0000	1.0000
L22	30	PL4x1	84.75 - 85.00	1.0000	1.0000
L22	33	6" x 1" Plate	84.75 - 85.00	1.0000	1.0000
L22	34	6" x 1" Plate	84.75 - 85.00	1.0000	1.0000
L22	35	6" x 1" Plate	84.75 - 85.00	1.0000	1.0000
L22	39	6.5" x 1.25" Plate	84.75 - 85.00	1.0000	1.0000
L22	62	CCI 4.5" x 1" Plate	84.75 - 85.00	1.0000	1.0000
L22	64	CCI 4.5" x 1" Plate	84.75 - 85.00	1.0000	1.0000
L23	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	83.00 - 84.75	1.0000	1.0000
L23	26	Safety Line 3/8	83.00 - 84.75	1.0000	1.0000
L23	29	PL4x1	83.00 - 84.75	1.0000	1.0000
L23	30	PL4x1	83.00 - 84.75	1.0000	1.0000
L23	33	6" x 1" Plate	83.00 - 84.75	1.0000	1.0000
L23	34	6" x 1" Plate	83.00 - 84.75	1.0000	1.0000
L23	35	6" x 1" Plate	83.00 - 84.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L23	39	6.5" x 1.25" Plate	83.00 - 84.75	1.0000	1.0000
L23	62	CCI 4.5" x 1" Plate	83.00 - 84.75	1.0000	1.0000
L23	64	CCI 4.5" x 1" Plate	83.00 - 84.75	1.0000	1.0000
L24	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	82.65 - 83.00	1.0000	1.0000
L24	26	Safety Line 3/8	82.65 - 83.00	1.0000	1.0000
L24	29	PL4x1	82.65 - 83.00	1.0000	1.0000
L24	30	PL4x1	82.65 - 83.00	1.0000	1.0000
L24	33	6" x 1" Plate	82.65 - 83.00	1.0000	1.0000
L24	34	6" x 1" Plate	82.65 - 83.00	1.0000	1.0000
L24	35	6" x 1" Plate	82.65 - 83.00	1.0000	1.0000
L24	39	6.5" x 1.25" Plate	82.65 - 83.00	1.0000	1.0000
L24	62	CCI 4.5" x 1" Plate	82.65 - 83.00	1.0000	1.0000
L24	64	CCI 4.5" x 1" Plate	82.65 - 83.00	1.0000	1.0000
L25	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	82.42 - 82.65	1.0000	1.0000
L25	26	Safety Line 3/8	82.42 - 82.65	1.0000	1.0000
L25	29	PL4x1	82.42 - 82.65	1.0000	1.0000
L25	30	PL4x1	82.42 - 82.65	1.0000	1.0000
L25	33	6" x 1" Plate	82.42 - 82.65	1.0000	1.0000
L25	34	6" x 1" Plate	82.42 - 82.65	1.0000	1.0000
L25	35	6" x 1" Plate	82.42 - 82.65	1.0000	1.0000
L25	39	6.5" x 1.25" Plate	82.42 - 82.65	1.0000	1.0000
L25	62	CCI 4.5" x 1" Plate	82.42 - 82.65	1.0000	1.0000
L25	64	CCI 4.5" x 1" Plate	82.42 - 82.65	1.0000	1.0000
L26	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	77.42 - 82.42	1.0000	1.0000
L26	26	Safety Line 3/8	77.42 - 82.42	1.0000	1.0000
L26	29	PL4x1	77.42 - 82.42	1.0000	1.0000
L26	30	PL4x1	77.42 - 82.42	1.0000	1.0000
L26	33	6" x 1" Plate	77.42 - 82.42	1.0000	1.0000
L26	34	6" x 1" Plate	77.42 - 82.42	1.0000	1.0000
L26	35	6" x 1" Plate	77.42 - 82.42	1.0000	1.0000
L26	39	6.5" x 1.25" Plate	80.00 - 82.42	1.0000	1.0000
L26	62	CCI 4.5" x 1" Plate	77.42 - 82.42	1.0000	1.0000
L26	64	CCI 4.5" x 1" Plate	77.42 - 82.42	1.0000	1.0000
L27	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	70.17 - 77.42	1.0000	1.0000
L27	22	LDF4-50A(1/2)	70.17 - 71.00	1.0000	1.0000
L27	26	Safety Line 3/8	70.17 - 77.42	1.0000	1.0000
L27	29	PL4x1	71.75 - 77.42	1.0000	1.0000
L27	30	PL4x1	71.75 - 77.42	1.0000	1.0000
L27	33	6" x 1" Plate	70.17 - 77.42	1.0000	1.0000
L27	34	6" x 1" Plate	70.17 - 77.42	1.0000	1.0000
L27	35	6" x 1" Plate	70.17 - 77.42	1.0000	1.0000
L27	62	CCI 4.5" x 1" Plate	70.17 - 77.42	1.0000	1.0000
L27	64	CCI 4.5" x 1" Plate	70.17 - 77.42	1.0000	1.0000
L28	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	69.17 - 70.17	1.0000	1.0000
L28	22	LDF4-50A(1/2)	69.17 - 70.17	1.0000	1.0000
L28	26	Safety Line 3/8	69.17 - 70.17	1.0000	1.0000
L28	33	6" x 1" Plate	69.17 - 70.17	1.0000	1.0000
L28	34	6" x 1" Plate	69.17 - 70.17	1.0000	1.0000
L28	35	6" x 1" Plate	69.17 - 70.17	1.0000	1.0000
L28	62	CCI 4.5" x 1" Plate	69.17 - 70.17	1.0000	1.0000
L28	64	CCI 4.5" x 1" Plate	69.17 - 70.17	1.0000	1.0000
L29	17	MLE HYBRID	64.17 - 69.17	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		9POWER/18FIBER RL 2(1-5/8)			
L29	22	LDF4-50A(1/2)	64.17 - 69.17	1.0000	1.0000
L29	26	Safety Line 3/8	64.17 - 69.17	1.0000	1.0000
L29	33	6" x 1" Plate	64.17 - 69.17	1.0000	1.0000
L29	34	6" x 1" Plate	64.17 - 69.17	1.0000	1.0000
L29	35	6" x 1" Plate	64.17 - 69.17	1.0000	1.0000
L29	62	CCI 4.5" x 1" Plate	64.17 - 69.17	1.0000	1.0000
L29	64	CCI 4.5" x 1" Plate	64.17 - 69.17	1.0000	1.0000
L30	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	59.17 - 64.17	1.0000	1.0000
L30	22	LDF4-50A(1/2)	59.17 - 64.17	1.0000	1.0000
L30	26	Safety Line 3/8	59.17 - 64.17	1.0000	1.0000
L30	33	6" x 1" Plate	59.17 - 64.17	1.0000	1.0000
L30	34	6" x 1" Plate	59.17 - 64.17	1.0000	1.0000
L30	35	6" x 1" Plate	59.17 - 64.17	1.0000	1.0000
L30	62	CCI 4.5" x 1" Plate	59.17 - 64.17	1.0000	1.0000
L30	64	CCI 4.5" x 1" Plate	59.17 - 64.17	1.0000	1.0000
L31	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	54.17 - 59.17	1.0000	1.0000
L31	22	LDF4-50A(1/2)	54.17 - 59.17	1.0000	1.0000
L31	26	Safety Line 3/8	54.17 - 59.17	1.0000	1.0000
L31	33	6" x 1" Plate	54.17 - 59.17	1.0000	1.0000
L31	34	6" x 1" Plate	54.17 - 59.17	1.0000	1.0000
L31	35	6" x 1" Plate	54.17 - 59.17	1.0000	1.0000
L31	62	CCI 4.5" x 1" Plate	54.17 - 59.17	1.0000	1.0000
L31	64	CCI 4.5" x 1" Plate	54.17 - 59.17	1.0000	1.0000
L32	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	49.17 - 54.17	1.0000	1.0000
L32	22	LDF4-50A(1/2)	49.17 - 54.17	1.0000	1.0000
L32	26	Safety Line 3/8	49.17 - 54.17	1.0000	1.0000
L32	33	6" x 1" Plate	50.00 - 54.17	1.0000	1.0000
L32	34	6" x 1" Plate	50.00 - 54.17	1.0000	1.0000
L32	35	6" x 1" Plate	50.00 - 54.17	1.0000	1.0000
L32	46	CCI 6.5" x 1.25" Plate	49.17 - 49.92	1.0000	1.0000
L32	47	CCI 6.5" x 1.25" Plate	49.17 - 49.92	1.0000	1.0000
L32	48	CCI 6.5" x 1.25" Plate	49.17 - 49.92	1.0000	1.0000
L32	62	CCI 4.5" x 1" Plate	49.17 - 54.17	1.0000	1.0000
L32	64	CCI 4.5" x 1" Plate	49.17 - 54.17	1.0000	1.0000
L33	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	47.17 - 49.17	1.0000	1.0000
L33	22	LDF4-50A(1/2)	47.17 - 49.17	1.0000	1.0000
L33	26	Safety Line 3/8	47.17 - 49.17	1.0000	1.0000
L33	46	CCI 6.5" x 1.25" Plate	47.17 - 49.17	1.0000	1.0000
L33	47	CCI 6.5" x 1.25" Plate	47.17 - 49.17	1.0000	1.0000
L33	48	CCI 6.5" x 1.25" Plate	47.17 - 49.17	1.0000	1.0000
L33	62	CCI 4.5" x 1" Plate	47.17 - 49.17	1.0000	1.0000
L33	64	CCI 4.5" x 1" Plate	47.17 - 49.17	1.0000	1.0000
L34	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	46.92 - 47.17	1.0000	1.0000
L34	22	LDF4-50A(1/2)	46.92 - 47.17	1.0000	1.0000
L34	26	Safety Line 3/8	46.92 - 47.17	1.0000	1.0000
L34	46	CCI 6.5" x 1.25" Plate	46.92 - 47.17	1.0000	1.0000
L34	47	CCI 6.5" x 1.25" Plate	46.92 - 47.17	1.0000	1.0000
L34	48	CCI 6.5" x 1.25" Plate	46.92 - 47.17	1.0000	1.0000
L34	62	CCI 4.5" x 1" Plate	46.92 - 47.17	1.0000	1.0000
L34	64	CCI 4.5" x 1" Plate	46.92 - 47.17	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L35	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	43.42 - 46.92	1.0000	1.0000
L35	22	LDF4-50A(1/2)	43.42 - 46.92	1.0000	1.0000
L35	26	Safety Line 3/8	43.42 - 46.92	1.0000	1.0000
L35	46	CCI 6.5" x 1.25" Plate	43.42 - 46.92	1.0000	1.0000
L35	47	CCI 6.5" x 1.25" Plate	43.42 - 46.92	1.0000	1.0000
L35	48	CCI 6.5" x 1.25" Plate	43.42 - 46.92	1.0000	1.0000
L35	62	CCI 4.5" x 1" Plate	43.42 - 46.92	1.0000	1.0000
L35	64	CCI 4.5" x 1" Plate	43.42 - 46.92	1.0000	1.0000
L36	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	43.17 - 43.42	1.0000	1.0000
L36	22	LDF4-50A(1/2)	43.17 - 43.42	1.0000	1.0000
L36	26	Safety Line 3/8	43.17 - 43.42	1.0000	1.0000
L36	46	CCI 6.5" x 1.25" Plate	43.17 - 43.42	1.0000	1.0000
L36	47	CCI 6.5" x 1.25" Plate	43.17 - 43.42	1.0000	1.0000
L36	48	CCI 6.5" x 1.25" Plate	43.17 - 43.42	1.0000	1.0000
L36	62	CCI 4.5" x 1" Plate	43.17 - 43.42	1.0000	1.0000
L36	64	CCI 4.5" x 1" Plate	43.17 - 43.42	1.0000	1.0000
L37	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	38.17 - 43.17	1.0000	1.0000
L37	22	LDF4-50A(1/2)	38.17 - 43.17	1.0000	1.0000
L37	26	Safety Line 3/8	38.17 - 43.17	1.0000	1.0000
L37	46	CCI 6.5" x 1.25" Plate	38.17 - 43.17	1.0000	1.0000
L37	47	CCI 6.5" x 1.25" Plate	38.17 - 43.17	1.0000	1.0000
L37	48	CCI 6.5" x 1.25" Plate	38.17 - 43.17	1.0000	1.0000
L37	62	CCI 4.5" x 1" Plate	41.92 - 43.17	1.0000	1.0000
L37	64	CCI 4.5" x 1" Plate	41.92 - 43.17	1.0000	1.0000
L38	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	31.54 - 38.17	1.0000	1.0000
L38	22	LDF4-50A(1/2)	31.54 - 38.17	1.0000	1.0000
L38	26	Safety Line 3/8	31.54 - 38.17	1.0000	1.0000
L38	46	CCI 6.5" x 1.25" Plate	31.54 - 38.17	1.0000	1.0000
L38	47	CCI 6.5" x 1.25" Plate	31.54 - 38.17	1.0000	1.0000
L38	48	CCI 6.5" x 1.25" Plate	31.54 - 38.17	1.0000	1.0000
L39	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	30.54 - 31.54	1.0000	1.0000
L39	22	LDF4-50A(1/2)	30.54 - 31.54	1.0000	1.0000
L39	26	Safety Line 3/8	30.54 - 31.54	1.0000	1.0000
L39	46	CCI 6.5" x 1.25" Plate	30.54 - 31.54	1.0000	1.0000
L39	47	CCI 6.5" x 1.25" Plate	30.54 - 31.54	1.0000	1.0000
L39	48	CCI 6.5" x 1.25" Plate	30.54 - 31.54	1.0000	1.0000
L40	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	25.54 - 30.54	1.0000	1.0000
L40	22	LDF4-50A(1/2)	25.54 - 30.54	1.0000	1.0000
L40	26	Safety Line 3/8	25.54 - 30.54	1.0000	1.0000
L40	46	CCI 6.5" x 1.25" Plate	29.92 - 30.54	1.0000	1.0000
L40	47	CCI 6.5" x 1.25" Plate	29.92 - 30.54	1.0000	1.0000
L40	48	CCI 6.5" x 1.25" Plate	29.92 - 30.54	1.0000	1.0000
L41	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	20.54 - 25.54	1.0000	1.0000
L41	22	LDF4-50A(1/2)	22.00 - 25.54	1.0000	1.0000
L41	23	LDF4-50A(1/2)	20.54 - 22.00	1.0000	1.0000
L41	26	Safety Line 3/8	20.54 - 25.54	1.0000	1.0000
L42	17	MLE HYBRID 9POWER/18FIBER RL	15.54 - 20.54	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		2(1-5/8)			
L42	23	LDF4-50A(1/2)	15.54 - 20.54	1.0000	1.0000
L42	26	Safety Line 3/8	15.54 - 20.54	1.0000	1.0000
L43	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	10.54 - 15.54	1.0000	1.0000
L43	23	LDF4-50A(1/2)	10.54 - 15.54	1.0000	1.0000
L43	26	Safety Line 3/8	10.54 - 15.54	1.0000	1.0000
L44	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	5.54 - 10.54	1.0000	1.0000
L44	23	LDF4-50A(1/2)	5.54 - 10.54	1.0000	1.0000
L44	26	Safety Line 3/8	5.54 - 10.54	1.0000	1.0000
L45	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	0.54 - 5.54	1.0000	1.0000
L45	23	LDF4-50A(1/2)	0.54 - 5.54	1.0000	1.0000
L45	26	Safety Line 3/8	0.54 - 5.54	1.0000	1.0000
L46	17	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	0.00 - 0.54	1.0000	1.0000
L46	23	LDF4-50A(1/2)	0.00 - 0.54	1.0000	1.0000
L46	26	Safety Line 3/8	0.00 - 0.54	1.0000	1.0000

Effective Width of Flat Linear Attachments / Feed Lines

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L5	41	4.5" x 1" Plate	125.17 - 125.75	Auto	0.0000
L5	42	4.5" x 1" Plate	125.17 - 125.75	Auto	0.0000
L5	43	4.5" x 1" Plate	125.17 - 125.75	Auto	0.0000
L6	41	4.5" x 1" Plate	123.75 - 125.17	Auto	0.0000
L6	42	4.5" x 1" Plate	123.75 - 125.17	Auto	0.0000
L6	43	4.5" x 1" Plate	123.75 - 125.17	Auto	0.0000
L7	41	4.5" x 1" Plate	123.50 - 123.75	Auto	0.1337
L7	42	4.5" x 1" Plate	123.50 - 123.75	Auto	0.1337
L7	43	4.5" x 1" Plate	123.50 - 123.75	Auto	0.1337
L8	41	4.5" x 1" Plate	118.50 - 123.50	Auto	0.1019
L8	42	4.5" x 1" Plate	118.50 - 123.50	Auto	0.1019
L8	43	4.5" x 1" Plate	118.50 - 123.50	Auto	0.1019
L9	41	4.5" x 1" Plate	113.50 -	Auto	0.0480

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L9	42	4.5" x 1" Plate	113.50 - 118.50	Auto	0.0480
L9	43	4.5" x 1" Plate	113.50 - 118.50	Auto	0.0480
L9	54	CCI 6.5" x 3" Plate	113.50 - 117.00	Auto	0.3361
L9	55	CCI 6.5" x 3" Plate	113.50 - 117.00	Auto	0.3361
L9	56	CCI 6.5" x 3" Plate	113.50 - 117.00	Auto	0.3361
L9	58	CCI 6.5" x 1.25" Plate	113.50 - 116.92	Auto	0.3358
L9	59	CCI 6.5" x 1.25" Plate	113.50 - 116.92	Auto	0.3358
L9	60	CCI 6.5" x 1.25" Plate	113.50 - 116.92	Auto	0.3358
L10	41	4.5" x 1" Plate	112.17 - 113.50	Auto	0.0186
L10	42	4.5" x 1" Plate	112.17 - 113.50	Auto	0.0186
L10	43	4.5" x 1" Plate	112.17 - 113.50	Auto	0.0186
L10	54	CCI 6.5" x 3" Plate	112.17 - 113.50	Auto	0.3206
L10	55	CCI 6.5" x 3" Plate	112.17 - 113.50	Auto	0.3206
L10	56	CCI 6.5" x 3" Plate	112.17 - 113.50	Auto	0.3206
L10	58	CCI 6.5" x 1.25" Plate	112.17 - 113.50	Auto	0.3206
L10	59	CCI 6.5" x 1.25" Plate	112.17 - 113.50	Auto	0.3206
L10	60	CCI 6.5" x 1.25" Plate	112.17 - 113.50	Auto	0.3206
L11	41	4.5" x 1" Plate	111.92 - 112.17	Auto	0.1378
L11	42	4.5" x 1" Plate	111.92 - 112.17	Auto	0.1378
L11	43	4.5" x 1" Plate	111.92 - 112.17	Auto	0.1378
L11	54	CCI 6.5" x 3" Plate	111.92 - 112.17	Auto	0.4031
L11	55	CCI 6.5" x 3" Plate	111.92 - 112.17	Auto	0.4031
L11	56	CCI 6.5" x 3" Plate	111.92 - 112.17	Auto	0.4031
L11	58	CCI 6.5" x 1.25" Plate	111.92 - 112.17	Auto	0.4031
L11	59	CCI 6.5" x 1.25" Plate	111.92 - 112.17	Auto	0.4031
L11	60	CCI 6.5" x 1.25" Plate	111.92 - 112.17	Auto	0.4031
L12	41	4.5" x 1" Plate	110.75 - 111.92	Auto	0.1312
L12	42	4.5" x 1" Plate	110.75 - 111.92	Auto	0.1312
L12	43	4.5" x 1" Plate	110.75 - 111.92	Auto	0.1312
L12	54	CCI 6.5" x 3" Plate	110.50 - 111.92	Auto	0.3977

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L12	55	CCI 6.5" x 3" Plate	110.50 - 111.92	Auto	0.3977
L12	56	CCI 6.5" x 3" Plate	110.50 - 111.92	Auto	0.3977
L12	58	CCI 6.5" x 1.25" Plate	110.17 - 111.92	Auto	0.3966
L12	59	CCI 6.5" x 1.25" Plate	110.17 - 111.92	Auto	0.3966
L12	60	CCI 6.5" x 1.25" Plate	110.17 - 111.92	Auto	0.3966
L13	37	6.5" x 1.25" Plate	109.92 - 110.00	Auto	0.3586
L13	38	6.5" x 1.25" Plate	109.92 - 110.00	Auto	0.3586
L13	39	6.5" x 1.25" Plate	109.92 - 110.00	Auto	0.3586
L13	58	CCI 6.5" x 1.25" Plate	109.92 - 110.17	Auto	0.3592
L13	59	CCI 6.5" x 1.25" Plate	109.92 - 110.17	Auto	0.3592
L13	60	CCI 6.5" x 1.25" Plate	109.92 - 110.17	Auto	0.3592
L14	37	6.5" x 1.25" Plate	104.92 - 109.92	Auto	0.3303
L14	38	6.5" x 1.25" Plate	104.92 - 109.92	Auto	0.3303
L14	39	6.5" x 1.25" Plate	104.92 - 109.92	Auto	0.3303
L14	50	CCI 6.5" x 3" Plate	104.92 - 109.50	Auto	0.3288
L14	51	CCI 6.5" x 3" Plate	104.92 - 109.50	Auto	0.3288
L14	52	CCI 6.5" x 3" Plate	104.92 - 109.50	Auto	0.3288
L14	58	CCI 6.5" x 1.25" Plate	104.92 - 109.92	Auto	0.3303
L14	59	CCI 6.5" x 1.25" Plate	104.92 - 109.92	Auto	0.3303
L14	60	CCI 6.5" x 1.25" Plate	104.92 - 109.92	Auto	0.3303
L15	37	6.5" x 1.25" Plate	99.92 - 104.92	Auto	0.2898
L15	38	6.5" x 1.25" Plate	99.92 - 104.92	Auto	0.2898
L15	39	6.5" x 1.25" Plate	99.92 - 104.92	Auto	0.2898
L15	50	CCI 6.5" x 3" Plate	103.00 - 104.92	Auto	0.3007
L15	51	CCI 6.5" x 3" Plate	103.00 - 104.92	Auto	0.3007
L15	52	CCI 6.5" x 3" Plate	103.00 - 104.92	Auto	0.3007
L15	58	CCI 6.5" x 1.25" Plate	103.08 - 104.92	Auto	0.3010
L15	59	CCI 6.5" x 1.25" Plate	103.08 - 104.92	Auto	0.3010
L15	60	CCI 6.5" x 1.25" Plate	103.08 - 104.92	Auto	0.3010
L16	29	PL4x1	95.00 - 96.75	Manual	1.0000
L16	30	PL4x1	95.00 - 96.75	Manual	1.0000
L16	37	6.5" x 1.25" Plate	95.00 - 99.92	Auto	0.2495
L16	38	6.5" x 1.25" Plate	95.00 - 99.92	Auto	0.2495
L16	39	6.5" x 1.25" Plate	95.00 - 99.92	Auto	0.2495
L17	29	PL4x1	94.75 - 95.00	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L17	30	PL4x1	94.75 - 95.00	Manual	1.0000
L17	37	6.5" x 1.25" Plate	94.75 - 95.00	Auto	0.2827
L17	38	6.5" x 1.25" Plate	94.75 - 95.00	Auto	0.2827
L17	39	6.5" x 1.25" Plate	94.75 - 95.00	Auto	0.2827
L18	29	PL4x1	89.75 - 94.75	Manual	1.0000
L18	30	PL4x1	89.75 - 94.75	Manual	1.0000
L18	37	6.5" x 1.25" Plate	89.75 - 94.75	Auto	0.2590
L18	38	6.5" x 1.25" Plate	89.75 - 94.75	Auto	0.2590
L18	39	6.5" x 1.25" Plate	89.75 - 94.75	Auto	0.2590
L19	29	PL4x1	85.50 - 89.75	Manual	1.0000
L19	30	PL4x1	85.50 - 89.75	Manual	1.0000
L19	37	6.5" x 1.25" Plate	85.50 - 89.75	Auto	0.2211
L19	38	6.5" x 1.25" Plate	85.50 - 89.75	Auto	0.2211
L19	39	6.5" x 1.25" Plate	85.50 - 89.75	Auto	0.2211
L19	62	CCI 4.5" x 1" Plate	85.50 - 87.00	Auto	0.0000
L19	64	CCI 4.5" x 1" Plate	85.50 - 87.00	Auto	0.0000
L20	29	PL4x1	85.25 - 85.50	Manual	1.0000
L20	30	PL4x1	85.25 - 85.50	Manual	1.0000
L20	37	6.5" x 1.25" Plate	85.25 - 85.50	Auto	0.2825
L20	38	6.5" x 1.25" Plate	85.25 - 85.50	Auto	0.2825
L20	39	6.5" x 1.25" Plate	85.25 - 85.50	Auto	0.2825
L20	62	CCI 4.5" x 1" Plate	85.25 - 85.50	Auto	0.0000
L20	64	CCI 4.5" x 1" Plate	85.25 - 85.50	Auto	0.0000
L21	29	PL4x1	85.00 - 85.25	Manual	1.0000
L21	30	PL4x1	85.00 - 85.25	Manual	1.0000
L21	37	6.5" x 1.25" Plate	85.00 - 85.25	Auto	0.2807
L21	38	6.5" x 1.25" Plate	85.00 - 85.25	Auto	0.2807
L21	39	6.5" x 1.25" Plate	85.00 - 85.25	Auto	0.2807
L21	62	CCI 4.5" x 1" Plate	85.00 - 85.25	Auto	0.0000
L21	64	CCI 4.5" x 1" Plate	85.00 - 85.25	Auto	0.0000
L22	29	PL4x1	84.75 - 85.00	Manual	1.0000
L22	30	PL4x1	84.75 - 85.00	Manual	1.0000
L22	33	6" x 1" Plate	84.75 - 85.00	Auto	0.2077
L22	34	6" x 1" Plate	84.75 - 85.00	Auto	0.2077
L22	35	6" x 1" Plate	84.75 - 85.00	Auto	0.2077
L22	39	6.5" x 1.25" Plate	84.75 - 85.00	Auto	0.2686
L22	62	CCI 4.5" x 1" Plate	84.75 - 85.00	Auto	0.0000
L22	64	CCI 4.5" x 1" Plate	84.75 - 85.00	Auto	0.0000
L23	29	PL4x1	83.00 - 84.75	Manual	1.0000
L23	30	PL4x1	83.00 - 84.75	Manual	1.0000
L23	33	6" x 1" Plate	83.00 - 84.75	Auto	0.2000
L23	34	6" x 1" Plate	83.00 - 84.75	Auto	0.2000
L23	35	6" x 1" Plate	83.00 - 84.75	Auto	0.2000
L23	39	6.5" x 1.25" Plate	83.00 - 84.75	Auto	0.2615
L23	62	CCI 4.5" x 1" Plate	83.00 - 84.75	Auto	0.0000
L23	64	CCI 4.5" x 1" Plate	83.00 - 84.75	Auto	0.0000
L24	29	PL4x1	82.65 - 83.00	Manual	1.0000
L24	30	PL4x1	82.65 - 83.00	Manual	1.0000
L24	33	6" x 1" Plate	82.65 - 83.00	Auto	0.1361
L24	34	6" x 1" Plate	82.65 - 83.00	Auto	0.1361
L24	35	6" x 1" Plate	82.65 - 83.00	Auto	0.1361
L24	39	6.5" x 1.25" Plate	82.65 - 83.00	Auto	0.2026
L24	62	CCI 4.5" x 1" Plate	82.65 - 83.00	Auto	0.0000
L24	64	CCI 4.5" x 1" Plate	82.65 - 83.00	Auto	0.0000
L25	29	PL4x1	82.42 - 82.65	Manual	1.0000
L25	30	PL4x1	82.42 - 82.65	Manual	1.0000
L25	33	6" x 1" Plate	82.42 - 82.65	Auto	0.1339
L25	34	6" x 1" Plate	82.42 - 82.65	Auto	0.1339
L25	35	6" x 1" Plate	82.42 - 82.65	Auto	0.1339
L25	39	6.5" x 1.25" Plate	82.42 - 82.65	Auto	0.2005
L25	62	CCI 4.5" x 1" Plate	82.42 - 82.65	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L25	64	CCI 4.5" x 1" Plate	82.42 - 82.65	Auto	0.0000
L26	29	PL4x1	77.42 - 82.42	Manual	1.0000
L26	30	PL4x1	77.42 - 82.42	Manual	1.0000
L26	33	6" x 1" Plate	77.42 - 82.42	Auto	0.1026
L26	34	6" x 1" Plate	77.42 - 82.42	Auto	0.1026
L26	35	6" x 1" Plate	77.42 - 82.42	Auto	0.1026
L26	39	6.5" x 1.25" Plate	80.00 - 82.42	Auto	0.1808
L26	62	CCI 4.5" x 1" Plate	77.42 - 82.42	Auto	0.0000
L26	64	CCI 4.5" x 1" Plate	77.42 - 82.42	Auto	0.0000
L27	29	PL4x1	71.75 - 77.42	Manual	1.0000
L27	30	PL4x1	71.75 - 77.42	Manual	1.0000
L27	33	6" x 1" Plate	70.17 - 77.42	Auto	0.0556
L27	34	6" x 1" Plate	70.17 - 77.42	Auto	0.0556
L27	35	6" x 1" Plate	70.17 - 77.42	Auto	0.0556
L27	62	CCI 4.5" x 1" Plate	70.17 - 77.42	Auto	0.0000
L27	64	CCI 4.5" x 1" Plate	70.17 - 77.42	Auto	0.0000
L28	33	6" x 1" Plate	69.17 - 70.17	Auto	0.0729
L28	34	6" x 1" Plate	69.17 - 70.17	Auto	0.0729
L28	35	6" x 1" Plate	69.17 - 70.17	Auto	0.0729
L28	62	CCI 4.5" x 1" Plate	69.17 - 70.17	Auto	0.0000
L28	64	CCI 4.5" x 1" Plate	69.17 - 70.17	Auto	0.0000
L29	33	6" x 1" Plate	64.17 - 69.17	Auto	0.0475
L29	34	6" x 1" Plate	64.17 - 69.17	Auto	0.0475
L29	35	6" x 1" Plate	64.17 - 69.17	Auto	0.0475
L29	62	CCI 4.5" x 1" Plate	64.17 - 69.17	Auto	0.0000
L29	64	CCI 4.5" x 1" Plate	64.17 - 69.17	Auto	0.0000
L30	33	6" x 1" Plate	59.17 - 64.17	Auto	0.0199
L30	34	6" x 1" Plate	59.17 - 64.17	Auto	0.0199
L30	35	6" x 1" Plate	59.17 - 64.17	Auto	0.0199
L30	62	CCI 4.5" x 1" Plate	59.17 - 64.17	Auto	0.0000
L30	64	CCI 4.5" x 1" Plate	59.17 - 64.17	Auto	0.0000
L31	33	6" x 1" Plate	54.17 - 59.17	Auto	0.0000
L31	34	6" x 1" Plate	54.17 - 59.17	Auto	0.0000
L31	35	6" x 1" Plate	54.17 - 59.17	Auto	0.0000
L31	62	CCI 4.5" x 1" Plate	54.17 - 59.17	Auto	0.0000
L31	64	CCI 4.5" x 1" Plate	54.17 - 59.17	Auto	0.0000
L32	33	6" x 1" Plate	50.00 - 54.17	Auto	0.0000
L32	34	6" x 1" Plate	50.00 - 54.17	Auto	0.0000
L32	35	6" x 1" Plate	50.00 - 54.17	Auto	0.0000
L32	46	CCI 6.5" x 1.25" Plate	49.17 - 49.92	Auto	0.0109
L32	47	CCI 6.5" x 1.25" Plate	49.17 - 49.92	Auto	0.0109
L32	48	CCI 6.5" x 1.25" Plate	49.17 - 49.92	Auto	0.0109
L32	62	CCI 4.5" x 1" Plate	49.17 - 54.17	Auto	0.0000
L32	64	CCI 4.5" x 1" Plate	49.17 - 54.17	Auto	0.0000
L33	46	CCI 6.5" x 1.25" Plate	47.17 - 49.17	Auto	0.0030
L33	47	CCI 6.5" x 1.25" Plate	47.17 - 49.17	Auto	0.0030
L33	48	CCI 6.5" x 1.25" Plate	47.17 - 49.17	Auto	0.0030
L33	62	CCI 4.5" x 1" Plate	47.17 - 49.17	Auto	0.0000
L33	64	CCI 4.5" x 1" Plate	47.17 - 49.17	Auto	0.0000
L34	46	CCI 6.5" x 1.25" Plate	46.92 - 47.17	Auto	0.0317
L34	47	CCI 6.5" x 1.25" Plate	46.92 - 47.17	Auto	0.0317
L34	48	CCI 6.5" x 1.25" Plate	46.92 - 47.17	Auto	0.0317
L34	62	CCI 4.5" x 1" Plate	46.92 - 47.17	Auto	0.0000
L34	64	CCI 4.5" x 1" Plate	46.92 - 47.17	Auto	0.0000
L35	46	CCI 6.5" x 1.25" Plate	43.42 - 46.92	Auto	0.0151
L35	47	CCI 6.5" x 1.25" Plate	43.42 - 46.92	Auto	0.0151
L35	48	CCI 6.5" x 1.25" Plate	43.42 - 46.92	Auto	0.0151
L35	62	CCI 4.5" x 1" Plate	43.42 - 46.92	Auto	0.0000
L35	64	CCI 4.5" x 1" Plate	43.42 - 46.92	Auto	0.0000
L36	46	CCI 6.5" x 1.25" Plate	43.17 - 43.42	Auto	0.0000
L36	47	CCI 6.5" x 1.25" Plate	43.17 - 43.42	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L36	48	CCI 6.5" x 1.25" Plate	43.17 - 43.42	Auto	0.0000
L36	62	CCI 4.5" x 1" Plate	43.17 - 43.42	Auto	0.0000
L36	64	CCI 4.5" x 1" Plate	43.17 - 43.42	Auto	0.0000
L37	46	CCI 6.5" x 1.25" Plate	38.17 - 43.17	Auto	0.0000
L37	47	CCI 6.5" x 1.25" Plate	38.17 - 43.17	Auto	0.0000
L37	48	CCI 6.5" x 1.25" Plate	38.17 - 43.17	Auto	0.0000
L37	62	CCI 4.5" x 1" Plate	41.92 - 43.17	Auto	0.0000
L37	64	CCI 4.5" x 1" Plate	41.92 - 43.17	Auto	0.0000
L38	46	CCI 6.5" x 1.25" Plate	31.54 - 38.17	Auto	0.0000
L38	47	CCI 6.5" x 1.25" Plate	31.54 - 38.17	Auto	0.0000
L38	48	CCI 6.5" x 1.25" Plate	31.54 - 38.17	Auto	0.0000
L39	46	CCI 6.5" x 1.25" Plate	30.54 - 31.54	Auto	0.0000
L39	47	CCI 6.5" x 1.25" Plate	30.54 - 31.54	Auto	0.0000
L39	48	CCI 6.5" x 1.25" Plate	30.54 - 31.54	Auto	0.0000
L40	46	CCI 6.5" x 1.25" Plate	29.92 - 30.54	Auto	0.0000
L40	47	CCI 6.5" x 1.25" Plate	29.92 - 30.54	Auto	0.0000
L40	48	CCI 6.5" x 1.25" Plate	29.92 - 30.54	Auto	0.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Pipe Mount [PM 701-1]	C	None		0.000	151.000	No Ice	10.610	10.610	0.278
						1/2" Ice	12.540	12.540	0.370
						1" Ice	14.470	14.470	0.462
*									
*									
OPA65R-BU4B w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	149.000	No Ice 1/2" Ice 1" Ice	4.000 4.410 4.840	4.240 4.660 5.090	0.076 0.125 0.182
OPA65R-BU4B w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	149.000	No Ice 1/2" Ice 1" Ice	4.000 4.410 4.840	4.240 4.660 5.090	0.076 0.125 0.182
OPA65R-BU8B w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	149.000	No Ice 1/2" Ice 1" Ice	8.870 9.680 10.510	7.930 8.730 9.550	0.107 0.192 0.291
SBNHH-1D65A w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	149.000	No Ice 1/2" Ice 1" Ice	3.040 3.340 3.650	2.450 2.750 3.050	0.054 0.104 0.162
SBNHH-1D65A w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	149.000	No Ice 1/2" Ice 1" Ice	3.040 3.340 3.650	2.450 2.750 3.050	0.054 0.104 0.162
SBNHH-1D65A w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	149.000	No Ice 1/2" Ice 1" Ice	3.040 3.340 3.650	2.450 2.750 3.050	0.054 0.104 0.162
QS46512-2 w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	149.000	No Ice 1/2" Ice 1" Ice	2.950 3.250 3.550	3.330 3.630 3.940	0.095 0.149 0.212
QS46512-2 w/ Mount Pipe	C	From Leg	4.000	0.000	149.000	No Ice	2.950	3.330	0.095

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1/2" Ice	3.250	3.630	0.149
			1.000			1" Ice	3.550	3.940	0.212
80010799 w/ Mount Pipe	B	From Leg	4.000	0.000	149.000	No Ice	9.910	6.150	0.144
			0.000			1/2" Ice	10.670	6.870	0.243
			1.000			1" Ice	11.440	7.600	0.356
TT19-08BP111-001	A	From Leg	4.000	0.000	149.000	No Ice	0.545	0.442	0.016
			0.000			1/2" Ice	0.641	0.530	0.022
			1.000			1" Ice	0.743	0.626	0.029
TT19-08BP111-001	B	From Leg	4.000	0.000	149.000	No Ice	0.545	0.442	0.016
			0.000			1/2" Ice	0.641	0.530	0.022
			1.000			1" Ice	0.743	0.626	0.029
TT19-08BP111-001	C	From Leg	4.000	0.000	149.000	No Ice	0.545	0.442	0.016
			0.000			1/2" Ice	0.641	0.530	0.022
			1.000			1" Ice	0.743	0.626	0.029
(2) DBC0061F1V51-2	A	From Leg	4.000	0.000	149.000	No Ice	0.413	0.433	0.025
			0.000			1/2" Ice	0.496	0.518	0.031
			1.000			1" Ice	0.586	0.609	0.038
(2) DBC0061F1V51-2	B	From Leg	4.000	0.000	149.000	No Ice	0.413	0.433	0.025
			0.000			1/2" Ice	0.496	0.518	0.031
			1.000			1" Ice	0.586	0.609	0.038
(2) DBC0061F1V51-2	C	From Leg	4.000	0.000	149.000	No Ice	0.413	0.433	0.025
			0.000			1/2" Ice	0.496	0.518	0.031
			1.000			1" Ice	0.586	0.609	0.038
RADIO 4449 B5/B12	A	From Leg	4.000	0.000	149.000	No Ice	1.644	1.300	0.073
			0.000			1/2" Ice	1.804	1.445	0.090
			1.000			1" Ice	1.972	1.597	0.110
RADIO 4449 B5/B12	B	From Leg	4.000	0.000	149.000	No Ice	1.644	1.300	0.073
			0.000			1/2" Ice	1.804	1.445	0.090
			1.000			1" Ice	1.972	1.597	0.110
RADIO 4449 B5/B12	C	From Leg	4.000	0.000	149.000	No Ice	1.644	1.300	0.073
			0.000			1/2" Ice	1.804	1.445	0.090
			1.000			1" Ice	1.972	1.597	0.110
DC6-48-60-18-8C	A	From Leg	4.000	0.000	149.000	No Ice	2.737	2.737	0.026
			0.000			1/2" Ice	2.963	2.963	0.052
			1.000			1" Ice	3.196	3.196	0.082
DC6-48-60-18-8C	B	From Leg	4.000	0.000	149.000	No Ice	2.737	2.737	0.026
			0.000			1/2" Ice	2.963	2.963	0.052
			1.000			1" Ice	3.196	3.196	0.082
RRUS 4426 B66	A	From Leg	4.000	0.000	149.000	No Ice	1.644	0.725	0.048
			0.000			1/2" Ice	1.804	0.842	0.061
			1.000			1" Ice	1.972	0.969	0.076
RRUS 4426 B66	B	From Leg	4.000	0.000	149.000	No Ice	1.644	0.725	0.048
			0.000			1/2" Ice	1.804	0.842	0.061
			1.000			1" Ice	1.972	0.969	0.076
RRUS 4426 B66	C	From Leg	4.000	0.000	149.000	No Ice	1.644	0.725	0.048
			0.000			1/2" Ice	1.804	0.842	0.061
			1.000			1" Ice	1.972	0.969	0.076
RRUS 32	A	From Leg	4.000	0.000	149.000	No Ice	2.857	1.777	0.055
			0.000			1/2" Ice	3.083	1.968	0.077
			1.000			1" Ice	3.316	2.166	0.103
RRUS 32	B	From Leg	4.000	0.000	149.000	No Ice	2.857	1.777	0.055
			0.000			1/2" Ice	3.083	1.968	0.077
			1.000			1" Ice	3.316	2.166	0.103
RRUS 32	C	From Leg	4.000	0.000	149.000	No Ice	2.857	1.777	0.055
			0.000			1/2" Ice	3.083	1.968	0.077
			1.000			1" Ice	3.316	2.166	0.103
RRUS E2 B29	A	From Leg	4.000	0.000	149.000	No Ice	3.145	1.285	0.060

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			1/2" Ice	3.365	1.438	0.083
			1.000			1" Ice	3.592	1.600	0.110
RRUS E2 B29	B	From Leg	4.000	0.000	149.000	No Ice	3.145	1.285	0.060
			0.000			1/2" Ice	3.365	1.438	0.083
			1.000			1" Ice	3.592	1.600	0.110
RRUS E2 B29	C	From Leg	4.000	0.000	149.000	No Ice	3.145	1.285	0.060
			0.000			1/2" Ice	3.365	1.438	0.083
			1.000			1" Ice	3.592	1.600	0.110
RRUS 4415 B25	A	From Leg	4.000	0.000	149.000	No Ice	1.644	0.679	0.044
			0.000			1/2" Ice	1.804	0.791	0.056
			1.000			1" Ice	1.972	0.913	0.071
RRUS 4415 B25	B	From Leg	4.000	0.000	149.000	No Ice	1.644	0.679	0.044
			0.000			1/2" Ice	1.804	0.791	0.056
			1.000			1" Ice	1.972	0.913	0.071
RRUS 4415 B25	C	From Leg	4.000	0.000	149.000	No Ice	1.644	0.679	0.044
			0.000			1/2" Ice	1.804	0.791	0.056
			1.000			1" Ice	1.972	0.913	0.071
DC6-48-60-18-8C	C	From Leg	4.000	0.000	149.000	No Ice	2.737	2.737	0.026
			0.000			1/2" Ice	2.963	2.963	0.052
			1.000			1" Ice	3.196	3.196	0.082
6' x 2" Mount Pipe	A	From Leg	4.000	0.000	149.000	No Ice	1.425	1.425	0.022
			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
6' x 2" Mount Pipe	B	From Leg	4.000	0.000	149.000	No Ice	1.425	1.425	0.022
			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
6' x 2" Mount Pipe	C	From Leg	4.000	0.000	149.000	No Ice	1.425	1.425	0.022
			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
5' x 2" Pipe Mount	A	From Leg	1.000	0.000	149.000	No Ice	1.188	1.188	0.018
			0.000			1/2" Ice	1.496	1.496	0.027
			1.000			1" Ice	1.807	1.807	0.040
5' x 2" Pipe Mount	B	From Leg	1.000	0.000	149.000	No Ice	1.188	1.188	0.018
			0.000			1/2" Ice	1.496	1.496	0.027
			0.000			1" Ice	1.807	1.807	0.040
5' x 2" Pipe Mount	C	From Leg	1.000	0.000	149.000	No Ice	1.188	1.188	0.018
			0.000			1/2" Ice	1.496	1.496	0.027
			0.000			1" Ice	1.807	1.807	0.040
Platform Mount [LP 404-1_KCKR]	C	None		0.000	149.000	No Ice	35.820	35.820	2.318
						1/2" Ice	45.850	45.850	3.016
						1" Ice	55.760	55.760	3.886
*									
AIR 21 B2A/B4P w/ Mount Pipe	A	From Leg	4.000	0.000	140.000	No Ice	3.140	2.580	0.103
			0.000			1/2" Ice	3.450	2.880	0.154
			1.000			1" Ice	3.760	3.180	0.214
AIR 21 B2A/B4P w/ Mount Pipe	B	From Leg	4.000	0.000	140.000	No Ice	3.140	2.580	0.103
			0.000			1/2" Ice	3.450	2.880	0.154
			1.000			1" Ice	3.760	3.180	0.214
AIR 21 B2A/B4P w/ Mount Pipe	C	From Leg	4.000	0.000	140.000	No Ice	3.140	2.580	0.103
			0.000			1/2" Ice	3.450	2.880	0.154
			1.000			1" Ice	3.760	3.180	0.214
AIR 21 B4A/B2P w/ Mount Pipe	A	From Leg	4.000	0.000	140.000	No Ice	3.140	2.580	0.103
			0.000			1/2" Ice	3.450	2.880	0.154
			1.000			1" Ice	3.760	3.180	0.214
AIR 21 B4A/B2P w/ Mount Pipe	B	From Leg	4.000	0.000	140.000	No Ice	3.140	2.580	0.103
			0.000			1/2" Ice	3.450	2.880	0.154
			1.000			1" Ice	3.760	3.180	0.214

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 21 B4A/B2P w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	140.000	No Ice 1/2" Ice 1" Ice	3.140 3.450 3.760	2.580 2.880 3.180	0.103 0.154 0.214
APXVAALL24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	140.000	No Ice 1/2" Ice 1" Ice	14.690 15.460 16.230	6.870 7.550 8.250	0.183 0.311 0.453
APXVAALL24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	140.000	No Ice 1/2" Ice 1" Ice	14.690 15.460 16.230	6.870 7.550 8.250	0.183 0.311 0.453
APXVAALL24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	140.000	No Ice 1/2" Ice 1" Ice	14.690 15.460 16.230	6.870 7.550 8.250	0.183 0.311 0.453
KRY 112 144/1	A	From Leg	4.000 0.000 1.000	0.000	140.000	No Ice 1/2" Ice 1" Ice	0.350 0.426 0.509	0.175 0.234 0.301	0.011 0.014 0.019
KRY 112 144/1	B	From Leg	4.000 0.000 1.000	0.000	140.000	No Ice 1/2" Ice 1" Ice	0.350 0.426 0.509	0.175 0.234 0.301	0.011 0.014 0.019
KRY 112 144/1	C	From Leg	4.000 0.000 1.000	0.000	140.000	No Ice 1/2" Ice 1" Ice	0.350 0.426 0.509	0.175 0.234 0.301	0.011 0.014 0.019
RADIO 4449 B12/B71	A	From Leg	4.000 0.000 1.000	0.000	140.000	No Ice 1/2" Ice 1" Ice	1.650 1.810 1.978	1.163 1.301 1.447	0.074 0.090 0.109
RADIO 4449 B12/B71	B	From Leg	4.000 0.000 1.000	0.000	140.000	No Ice 1/2" Ice 1" Ice	1.650 1.810 1.978	1.163 1.301 1.447	0.074 0.090 0.109
RADIO 4449 B12/B71	C	From Leg	4.000 0.000 1.000	0.000	140.000	No Ice 1/2" Ice 1" Ice	1.650 1.810 1.978	1.163 1.301 1.447	0.074 0.090 0.109
Platform Mount [LP 303-1_HR-1] *	C	None		0.000	140.000	No Ice 1/2" Ice 1" Ice	17.090 21.470 25.720	17.090 21.470 25.720	1.495 1.881 2.346
BXA-80080/4CF w/ Mount Pipe	A	From Leg	4.000 0.000 3.000	0.000	130.000	No Ice 1/2" Ice 1" Ice	5.037 5.421 5.813	4.033 4.655 5.281	0.033 0.077 0.127
BXA-80080/4CF w/ Mount Pipe	B	From Leg	4.000 0.000 3.000	0.000	130.000	No Ice 1/2" Ice 1" Ice	5.037 5.421 5.813	4.033 4.655 5.281	0.033 0.077 0.127
BXA-80080/4CF w/ Mount Pipe	C	From Leg	4.000 0.000 3.000	0.000	130.000	No Ice 1/2" Ice 1" Ice	5.037 5.421 5.813	4.033 4.655 5.281	0.033 0.077 0.127
(2) JAHH-65B-R3B w/ Mount Pipe	A	From Leg	4.000 0.000 3.000	0.000	130.000	No Ice 1/2" Ice 1" Ice	5.500 5.970 6.450	4.380 4.840 5.300	0.096 0.169 0.254
(2) JAHH-45B-R3B w/ Mount Pipe	B	From Leg	4.000 0.000 3.000	0.000	130.000	No Ice 1/2" Ice 1" Ice	8.260 8.830 9.410	4.390 4.910 5.430	0.123 0.201 0.290
(2) JAHH-65B-R3B w/ Mount Pipe	C	From Leg	4.000 0.000 3.000	0.000	130.000	No Ice 1/2" Ice 1" Ice	5.500 5.970 6.450	4.380 4.840 5.300	0.096 0.169 0.254
MT6407-77A w/ Mount Pipe	A	From Leg	4.000 0.000 3.000	0.000	130.000	No Ice 1/2" Ice 1" Ice	4.907 5.256 5.615	2.682 3.145 3.624	0.096 0.136 0.180
MT6407-77A w/ Mount Pipe	B	From Leg	4.000 0.000	0.000	130.000	No Ice 1/2" Ice	4.907 5.256	2.682 3.145	0.096 0.136

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
			3.000			1" Ice	5.615	3.624	0.180
MT6407-77A w/ Mount Pipe	C	From Leg	4.000	0.000	130.000	No Ice	4.907	2.682	0.096
			0.000			1/2" Ice	5.256	3.145	0.136
			3.000			1" Ice	5.615	3.624	0.180
CBC78T-DS-43-2X	A	From Leg	4.000	0.000	130.000	No Ice	0.368	0.512	0.021
			0.000			1/2" Ice	0.446	0.605	0.027
			3.000			1" Ice	0.531	0.705	0.035
CBC78T-DS-43-2X	B	From Leg	4.000	0.000	130.000	No Ice	0.368	0.512	0.021
			0.000			1/2" Ice	0.446	0.605	0.027
			3.000			1" Ice	0.531	0.705	0.035
CBC78T-DS-43-2X	C	From Leg	4.000	0.000	130.000	No Ice	0.368	0.512	0.021
			0.000			1/2" Ice	0.446	0.605	0.027
			3.000			1" Ice	0.531	0.705	0.035
RF4440D-13A	A	From Leg	4.000	0.000	130.000	No Ice	1.865	1.129	0.073
			0.000			1/2" Ice	2.035	1.267	0.090
			3.000			1" Ice	2.212	1.411	0.110
RF4440D-13A	B	From Leg	4.000	0.000	130.000	No Ice	1.865	1.129	0.073
			0.000			1/2" Ice	2.035	1.267	0.090
			3.000			1" Ice	2.212	1.411	0.110
RF4440D-13A	C	From Leg	4.000	0.000	130.000	No Ice	1.865	1.129	0.073
			0.000			1/2" Ice	2.035	1.267	0.090
			3.000			1" Ice	2.212	1.411	0.110
RVZDC-6627-PF-48	A	From Leg	4.000	0.000	130.000	No Ice	3.792	2.514	0.032
			0.000			1/2" Ice	4.044	2.727	0.063
			3.000			1" Ice	4.303	2.947	0.099
RF4439D-25A	A	From Leg	4.000	0.000	130.000	No Ice	1.865	1.252	0.075
			0.000			1/2" Ice	2.035	1.394	0.093
			3.000			1" Ice	2.212	1.544	0.114
RF4439D-25A	B	From Leg	4.000	0.000	130.000	No Ice	1.865	1.252	0.075
			0.000			1/2" Ice	2.035	1.394	0.093
			3.000			1" Ice	2.212	1.544	0.114
RF4439D-25A	C	From Leg	4.000	0.000	130.000	No Ice	1.865	1.252	0.075
			0.000			1/2" Ice	2.035	1.394	0.093
			3.000			1" Ice	2.212	1.544	0.114
Side Arm Mount [SO 102-3]	C	None		0.000	130.000	No Ice	3.600	3.600	0.075
						1/2" Ice	4.180	4.180	0.105
						1" Ice	4.750	4.750	0.135
Platform Mount [LP 403-1]	C	None		0.000	130.000	No Ice	18.940	18.940	1.500
						1/2" Ice	23.310	23.310	1.902
						1" Ice	27.740	27.740	2.374
Mount Reinforcement Specifications	C	None		0.000	130.000	No Ice	28.630	28.630	0.280
						1/2" Ice	37.310	37.310	0.670
						1" Ice	45.800	45.800	0.940
*									
GPS (3"x7")	C	From Leg	4.000	0.000	134.000	No Ice	0.175	0.175	0.008
			0.000			1/2" Ice	0.234	0.234	0.010
			4.000			1" Ice	0.301	0.301	0.013
*									
FMO	B	From Leg	4.000	0.000	71.000	No Ice	8.400	8.400	0.010
			0.000			1/2" Ice	8.815	8.815	0.181
			1.000			1" Ice	9.237	9.237	0.361
10' x 2" Mount Pipe	B	From Leg	4.000	0.000	71.000	No Ice	2.375	2.375	0.037
			0.000			1/2" Ice	3.403	3.403	0.054
			0.000			1" Ice	4.448	4.448	0.079
6' x 2" Mount Pipe	B	From Leg	1.000	0.000	71.000	No Ice	1.425	1.425	0.022
			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048

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
Side Arm Mount [SO 305-1]	B	From Leg	2.000	0.000	71.000	No Ice	0.530	1.520	0.030
			0.000			1/2" Ice	0.780	2.070	0.044
			0.000			1" Ice	1.060	2.660	0.064
FMO	C	From Leg	4.000	0.000	71.000	No Ice	8.400	8.400	0.010
			0.000			1/2" Ice	8.815	8.815	0.181
			1.000			1" Ice	9.237	9.237	0.361
10' x 2" Mount Pipe	C	From Leg	4.000	0.000	71.000	No Ice	2.375	2.375	0.037
			0.000			1/2" Ice	3.403	3.403	0.054
			0.000			1" Ice	4.448	4.448	0.079
6' x 2" Mount Pipe	C	From Leg	1.000	0.000	71.000	No Ice	1.425	1.425	0.022
			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 305-1]	C	From Leg	2.000	0.000	71.000	No Ice	0.530	1.520	0.030
			0.000			1/2" Ice	0.780	2.070	0.044
			0.000			1" Ice	1.060	2.660	0.064
*									
*									
MYA-43012N	C	From Leg	3.000	0.000	22.000	No Ice	0.620	0.620	0.005
			0.000			1/2" Ice	1.116	1.116	0.006
			0.000			1" Ice	1.612	1.612	0.008
4' x 2" Pipe Mount	C	From Leg	3.000	0.000	22.000	No Ice	0.785	0.785	0.029
			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 701-1]	C	From Leg	1.500	0.000	22.000	No Ice	0.850	1.670	0.065
			0.000			1/2" Ice	1.140	2.340	0.079
			0.000			1" Ice	1.430	3.010	0.093
*									

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice+1.0 Guy
3	1.2 Dead+1.0 Wind 30 deg - No Ice+1.0 Guy
4	1.2 Dead+1.0 Wind 60 deg - No Ice+1.0 Guy
5	1.2 Dead+1.0 Wind 90 deg - No Ice+1.0 Guy
6	1.2 Dead+1.0 Wind 120 deg - No Ice+1.0 Guy
7	1.2 Dead+1.0 Wind 150 deg - No Ice+1.0 Guy
8	1.2 Dead+1.0 Wind 180 deg - No Ice+1.0 Guy
9	1.2 Dead+1.0 Wind 210 deg - No Ice+1.0 Guy
10	1.2 Dead+1.0 Wind 240 deg - No Ice+1.0 Guy
11	1.2 Dead+1.0 Wind 270 deg - No Ice+1.0 Guy
12	1.2 Dead+1.0 Wind 300 deg - No Ice+1.0 Guy
13	1.2 Dead+1.0 Wind 330 deg - No Ice+1.0 Guy
14	1.2 Dead+1.0 Ice+1.0 Temp+Guy
15	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy
16	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy
17	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy
18	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy
19	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy

Comb. No.	Description
20	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy
21	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy
22	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy
23	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy
24	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy
25	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy
26	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy
27	Dead+Wind 0 deg - Service+Guy
28	Dead+Wind 30 deg - Service+Guy
29	Dead+Wind 60 deg - Service+Guy
30	Dead+Wind 90 deg - Service+Guy
31	Dead+Wind 120 deg - Service+Guy
32	Dead+Wind 150 deg - Service+Guy
33	Dead+Wind 180 deg - Service+Guy
34	Dead+Wind 210 deg - Service+Guy
35	Dead+Wind 240 deg - Service+Guy
36	Dead+Wind 270 deg - Service+Guy
37	Dead+Wind 300 deg - Service+Guy
38	Dead+Wind 330 deg - Service+Guy

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	150.167 - 145.167	Pole	Max Tension	4	0.000	-0.001	-0.000
			Max. Compression	14	-9.792	-1.133	-0.681
			Max. Mx	5	-5.055	-28.478	-1.022
			Max. My	8	-5.299	-0.823	-27.083
			Max. Vy	5	6.376	-28.478	-1.022
			Max. Vx	8	6.079	-0.823	-27.083
			Max. Torque	9			1.199
L2	145.167 - 140.167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-10.246	-1.206	-0.758
			Max. Mx	5	-5.367	-61.152	-2.049
			Max. My	8	-5.623	-1.388	-58.249
			Max. Vy	5	6.698	-61.152	-2.049
			Max. Vx	8	6.390	-1.388	-58.249
			Max. Torque	9			1.198
L3	140.167 - 135.167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-16.743	-1.232	-0.825
			Max. Mx	5	-8.934	-111.845	-3.399
			Max. My	8	-9.303	-1.969	-106.992
			Max. Vy	5	10.038	-111.845	-3.399
			Max. Vx	8	9.666	-1.969	-106.992
			Max. Torque	9			1.198
L4	135.167 - 130.167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-17.366	-1.193	-0.926
			Max. Mx	5	-9.386	-162.765	-4.807
			Max. My	8	-9.759	-2.511	-156.269
			Max. Vy	5	10.359	-162.765	-4.807
			Max. Vx	8	10.040	-2.511	-156.269
			Max. Torque	9			1.198
L5	130.167 - 125.167	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	14	-25.554	-1.604	-0.832
			Max. Mx	5	-13.497	-247.068	-7.273
			Max. My	8	-14.063	-4.055	-237.740
			Max. Vy	5	15.709	-247.068	-7.273
			Max. Vx	8	15.207	-4.055	-237.740
			Max. Torque	9			1.180
L6	125.167 - 123.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-25.790	-1.622	-0.891
			Max. Mx	5	-13.659	-269.367	-7.909
			Max. My	8	-14.228	-4.351	-259.342
			Max. Vy	5	15.814	-269.367	-7.909
			Max. Vx	8	15.307	-4.351	-259.342
			Max. Torque	8			1.008
L7	123.75 - 123.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-25.846	-1.625	-0.902
			Max. Mx	5	-13.717	-273.319	-8.040
			Max. My	8	-14.285	-4.403	-263.167
			Max. Vy	5	15.840	-273.319	-8.040
			Max. Vx	8	15.308	-4.403	-263.167
			Max. Torque	8			1.008
L8	123.5 - 118.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-26.962	-1.687	-1.112
			Max. Mx	5	-14.528	-353.432	-10.310
			Max. My	8	-15.109	-5.448	-340.712
			Max. Vy	5	16.258	-353.432	-10.310
			Max. Vx	8	15.712	-5.448	-340.712
			Max. Torque	8			1.008
L9	118.5 - 113.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-29.369	-1.753	-1.333
			Max. Mx	5	-16.463	-436.386	-12.697
			Max. My	8	-17.066	-6.502	-420.821
			Max. Vy	5	16.965	-436.386	-12.697
			Max. Vx	8	16.345	-6.502	-420.821
			Max. Torque	8			1.007
L10	113.5 - 112.167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-30.164	-1.772	-1.395
			Max. Mx	5	-17.110	-459.109	-13.360
			Max. My	8	-17.720	-6.787	-442.720
			Max. Vy	5	17.176	-459.109	-13.360
			Max. Vx	8	16.532	-6.787	-442.720
			Max. Torque	8			0.993
L11	112.167 - 111.917	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-30.324	-1.776	-1.407
			Max. Mx	5	-17.254	-463.405	-13.511
			Max. My	8	-17.864	-6.840	-446.854
			Max. Vy	5	17.236	-463.405	-13.511
			Max. Vx	8	16.553	-6.840	-446.854
			Max. Torque	8			0.989
L12	111.917 - 110.167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-31.355	-1.802	-1.489
			Max. Mx	5	-18.094	-493.728	-14.385
			Max. My	8	-18.713	-7.217	-476.042
			Max. Vy	5	17.493	-493.728	-14.385
			Max. Vx	8	16.812	-7.217	-476.042
			Max. Torque	8			0.989
L13	110.167 - 109.917	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	14	-31.456	-1.806	-1.501
			Max. Mx	5	-18.188	-498.101	-14.537
			Max. My	8	-18.808	-7.271	-480.244
			Max. Vy	5	17.540	-498.101	-14.537
			Max. Vx	8	16.818	-7.271	-480.244
			Max. Torque	8			0.984
L14	109.917 - 104.917	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-34.623	-1.885	-1.650
			Max. Mx	5	-20.849	-587.403	-17.190
			Max. My	8	-21.487	-8.363	-566.062
			Max. Vy	5	18.249	-587.403	-17.190
			Max. Vx	8	17.530	-8.363	-566.062
			Max. Torque	8			0.984
L15	104.917 - 99.917	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-36.772	-1.973	-1.808
			Max. Mx	5	-22.660	-679.723	-20.030
			Max. My	8	-23.305	-9.474	-655.007
			Max. Vy	5	18.731	-679.723	-20.030
			Max. Vx	8	18.085	-9.474	-655.007
			Max. Torque	8			0.960
L16	99.917 - 95	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-38.242	-2.065	-1.960
			Max. Mx	5	-23.880	-772.470	-22.919
			Max. My	8	-24.530	-10.571	-744.704
			Max. Vy	5	19.053	-772.470	-22.919
			Max. Vx	8	18.444	-10.571	-744.704
			Max. Torque	8			0.934
L17	95 - 94.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-38.328	-2.070	-1.967
			Max. Mx	5	-23.961	-777.232	-23.090
			Max. My	8	-24.611	-10.627	-749.311
			Max. Vy	5	19.100	-777.232	-23.090
			Max. Vx	8	18.447	-10.627	-749.311
			Max. Torque	2			-0.933
L18	94.75 - 89.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-40.038	-2.171	-2.109
			Max. Mx	5	-25.357	-873.583	-26.097
			Max. My	8	-26.020	-11.746	-842.566
			Max. Vy	5	19.527	-873.583	-26.097
			Max. Vx	8	18.882	-11.746	-842.566
			Max. Torque	2			-0.933
L19	89.75 - 85.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-239.795	-770.616	-345.780
			Max. Mx	5	-25.657	-894.350	-26.752
			Max. My	8	-26.323	-11.984	-862.653
			Max. Vy	5	19.622	-894.350	-26.752
			Max. Vx	8	18.970	-11.984	-862.653
			Max. Torque	7			3.382
		Guy A	Bottom Tension	7	154.936		
			Top Tension	7	155.416		
			Top Cable Vert	7	151.380		
			Top Cable Norm	7	35.010		
			Top Cable Tan	7	3.542		
			Bot Cable Vert	7	-150.796		
			Bot Cable Norm	7	35.381		
			Bot Cable Tan	7	3.766		
		Guy B	Bottom Tension	11	85.269		
			Top Tension	11	85.618		
			Top Cable Vert	11	77.515		

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Top Cable Norm	11	36.353		
			Top Cable Tan	11	0.506		
			Bot Cable Vert	11	-76.998		
			Bot Cable Norm	11	36.628		
			Bot Cable Tan	11	0.700		
		Guy C	Bottom Tension	4	95.953		
			Top Tension	4	96.299		
			Top Cable Vert	4	87.310		
			Top Cable Norm	4	40.597		
			Top Cable Tan	4	1.570		
			Bot Cable Vert	4	-86.794		
			Bot Cable Norm	4	40.875		
			Bot Cable Tan	4	1.759		
L20	85.5 - 85.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-239.877	-772.983	-346.728
			Max. Mx	5	-237.068	-873.250	-1.513
			Max. My	2	-137.041	4.936	735.854
			Max. Vy	12	9.910	636.899	373.147
			Max. Vx	2	12.806	4.936	735.854
			Max. Torque	7			3.378
L21	85.25 - 85	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-239.955	-775.340	-347.662
			Max. Mx	5	-237.145	-874.999	-3.604
			Max. My	2	-137.116	4.776	732.656
			Max. Vy	12	9.906	634.427	371.416
			Max. Vx	2	12.803	4.776	732.656
			Max. Torque	7			3.378
L22	85 - 84.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-240.029	-777.693	-348.595
			Max. Mx	5	-237.219	-876.744	-5.694
			Max. My	2	-137.192	4.615	729.458
			Max. Vy	12	9.903	631.956	369.685
			Max. Vx	2	12.800	4.615	729.458
			Max. Torque	7			3.378
L23	84.75 - 83	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-240.543	-794.030	-355.071
			Max. Mx	5	-237.729	-888.841	-20.314
			Max. My	2	-137.257	4.454	726.262
			Max. Vy	12	9.956	629.487	367.955
			Max. Vx	2	12.869	4.454	726.262
			Max. Torque	7			3.380
L24	83 - 82.65	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-240.649	-797.272	-356.367
			Max. Mx	5	-237.834	-891.241	-23.257
			Max. My	2	-137.763	3.329	703.902
			Max. Vy	12	9.875	612.227	355.859
			Max. Vx	2	12.786	3.329	703.902
			Max. Torque	7			3.376
L25	82.65 - 82.4167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-240.718	-799.426	-357.228
			Max. Mx	5	-237.901	-892.833	-25.220
			Max. My	2	-137.860	3.105	699.434
			Max. Vy	12	9.874	608.780	353.442
			Max. Vx	2	12.774	3.105	699.434
			Max. Torque	7			3.376
L26	82.4167 - 77.4167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-242.168	-844.126	-375.049
			Max. Mx	5	-239.343	-925.361	-66.999
			Max. My	2	-137.922	2.954	696.457

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	12	9.935	566.990	324.145
			Max. Vx	2	12.820	2.954	696.457
			Max. Torque	7			3.377
L27	77.4167 - 70.167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-243.246	-875.286	-387.549
			Max. Mx	5	-240.415	-947.504	-97.539
			Max. My	8	-168.003	-21.592	-644.219
			Max. Vy	12	9.941	557.106	317.217
			Max. Vx	2	12.785	-0.272	632.686
			Max. Torque	7			3.374
L28	70.167 - 69.167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-245.649	-915.409	-404.520
			Max. Mx	5	-242.820	-976.697	-135.882
			Max. My	8	-171.194	-26.984	-597.597
			Max. Vy	6	9.153	-915.409	-404.520
			Max. Vx	2	11.516	-4.962	542.082
			Max. Torque	4			-2.625
L29	69.167 - 64.167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-247.091	-959.359	-423.263
			Max. Mx	5	-244.255	-1009.062	-176.940
			Max. My	8	-171.474	-27.722	-592.039
			Max. Vy	6	9.051	-924.401	-408.339
			Max. Vx	2	11.490	-5.611	530.617
			Max. Torque	4			-2.624
L30	64.167 - 59.167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-248.549	-1000.890	-441.175
			Max. Mx	5	-245.708	-1039.094	-217.300
			Max. My	8	-172.879	-31.362	-564.378
			Max. Vy	12	8.827	433.914	229.574
			Max. Vx	2	11.335	-8.845	473.707
			Max. Torque	4			-2.623
L31	59.167 - 54.167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-250.025	-1040.117	-458.312
			Max. Mx	5	-247.180	-1066.972	-256.840
			Max. My	7	-214.911	-698.441	-547.835
			Max. Vy	12	8.684	390.302	198.418
			Max. Vx	2	11.132	-12.063	417.672
			Max. Torque	4			-2.622
L32	54.167 - 49.167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-251.518	-1077.087	-474.693
			Max. Mx	5	-248.670	-1092.794	-295.442
			Max. My	7	-216.375	-736.927	-538.514
			Max. Vy	12	8.510	347.471	167.765
			Max. Vx	2	10.896	-15.256	362.717
			Max. Torque	4			-2.621
L33	49.167 - 47.1667	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-252.122	-1091.262	-481.043
			Max. Mx	5	-249.273	-1102.577	-310.601
			Max. My	7	-217.858	-774.064	-529.225
			Max. Vy	12	8.308	305.566	137.712
			Max. Vx	2	10.630	-18.419	309.002
			Max. Torque	4			-2.620
L34	47.1667 - 46.9167	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	6	-252.207	-1093.012	-481.833
			Max. Mx	5	-249.356	-1103.784	-312.494
			Max. My	7	-218.457	-788.541	-525.544
			Max. Vy	12	8.211	289.092	125.878
			Max. Vx	2	10.504	-19.675	287.896
			Max. Torque	4			-2.619
L35	46.9167 - 43.4167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-253.356	-1117.032	-492.694
			Max. Mx	5	-250.504	-1120.229	-338.592
			Max. My	7	-218.540	-790.340	-525.091
			Max. Vy	12	8.210	287.046	124.407
			Max. Vx	2	10.500	-19.831	285.275
			Max. Torque	4			-2.620
L36	43.4167 - 43.1667	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-253.432	-1118.717	-493.464
			Max. Mx	5	-250.580	-1121.381	-340.445
			Max. My	7	-219.685	-815.191	-518.798
			Max. Vy	12	8.030	258.707	104.010
			Max. Vx	2	10.272	-22.013	248.978
			Max. Torque	4			-2.619
L37	43.1667 - 38.1667	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-254.910	-1151.167	-508.372
			Max. Mx	6	-254.910	-1151.167	-508.372
			Max. My	7	-219.760	-816.949	-518.360
			Max. Vy	11	8.028	386.827	-118.672
			Max. Vx	2	10.265	-22.168	246.415
			Max. Torque	4			-2.620
L38	38.1667 - 31.537	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-255.634	-1166.061	-515.314
			Max. Mx	6	-255.634	-1166.061	-515.314
			Max. My	6	-255.634	-1166.061	-515.314
			Max. Vy	11	7.830	347.360	-134.692
			Max. Vx	2	9.952	-25.247	195.954
			Max. Torque	4			-2.619
L39	31.537 - 30.537	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-257.912	-1197.261	-530.058
			Max. Mx	6	-257.912	-1197.261	-530.058
			Max. My	6	-257.912	-1197.261	-530.058
			Max. Vy	11	7.472	296.800	-155.475
			Max. Vx	2	9.491	-29.262	131.571
			Max. Torque	4			-2.619
L40	30.537 - 25.537	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-259.075	-1224.157	-543.088
			Max. Mx	6	-259.075	-1224.157	-543.088
			Max. My	6	-259.075	-1224.157	-543.088
			Max. Vy	11	7.440	289.383	-158.571
			Max. Vx	2	9.429	-29.862	122.127
			Max. Torque	4			-2.619
L41	25.537 - 20.537	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-260.376	-1246.778	-554.831
			Max. Mx	6	-260.376	-1246.778	-554.831
			Max. My	6	-260.376	-1246.778	-554.831
			Max. Vy	11	7.255	252.810	-173.693
			Max. Vx	2	9.105	-32.808	75.850

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	4			-2.619
L42	20.537 - 15.537	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-261.582	-1266.274	-565.121
			Max. Mx	6	-261.582	-1266.274	-565.121
			Max. My	6	-261.582	-1266.274	-565.121
			Max. Vy	11	6.955	217.719	-188.401
			Max. Vx	2	8.665	-35.293	31.183
			Max. Torque	4			-2.617
L43	15.537 - 10.537	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-262.809	-1282.354	-574.116
			Max. Mx	6	-262.809	-1282.354	-574.116
			Max. My	6	-262.809	-1282.354	-574.116
			Max. Vy	11	6.683	183.760	-202.254
			Max. Vx	2	8.271	-38.006	-11.120
			Max. Torque	4			-2.617
L44	10.537 - 5.537	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-264.058	-1295.311	-581.943
			Max. Mx	6	-264.058	-1295.311	-581.943
			Max. My	6	-264.058	-1295.311	-581.943
			Max. Vy	11	6.374	151.246	-215.483
			Max. Vx	2	7.847	-40.625	-51.385
			Max. Torque	4			-2.616
L45	5.537 - 0.537	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-265.330	-1305.424	-588.727
			Max. Mx	6	-265.330	-1305.424	-588.727
			Max. My	5	-262.469	-1231.853	-596.672
			Max. Vy	11	6.031	120.352	-228.086
			Max. Vx	2	7.397	-43.148	-89.472
			Max. Torque	4			-2.616
L46	0.537 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	6	-265.469	-1306.353	-589.399
			Max. Mx	6	-265.469	-1306.353	-589.399
			Max. My	5	-262.608	-1232.063	-598.976
			Max. Vy	11	5.660	91.237	-240.061
			Max. Vx	2	6.922	-45.571	-125.244
			Max. Torque	4			-2.616

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Mast	Max. Vert	6	265.469	-1.721	-1.250
	Max. H_x	3	144.864	2.151	-5.943
	Max. H_z	8	190.988	-0.398	2.986
	Max. M_x	21	-45.187	-0.354	0.585
	Max. M_z	6	1306.353	-1.721	-1.250
	Max. Torsion	11	2.196	-5.613	-2.329
	Min. Vert	32	120.088	0.132	0.079
	Min. H_x	11	203.067	-5.613	-2.329
	Min. H_z	2	162.334	-0.493	-6.876
	Min. M_x	5	-598.975	-0.390	-4.279
	Min. M_z	9	-265.449	-1.466	1.769
	Min. Torsion	4	-2.616	0.462	-6.245
Guy C @ 42 ft	Max. Vert	9	-0.365	-0.039	0.062

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Elev 0 ft Azimuth 211 deg					
	Max. H_x	10	-0.543	-0.010	0.191
	Max. H_z	4	-86.794	-22.395	34.239
	Min. Vert	4	-86.794	-22.395	34.239
	Min. H_x	5	-84.212	-22.790	32.559
	Min. H_z	9	-0.365	-0.039	0.062
Guy B @ 42.5 ft Elev 0 ft Azimuth 120 deg	Max. Vert	6	-0.202	0.001	0.002
	Max. H_x	11	-76.998	32.071	17.708
	Max. H_z	11	-76.998	32.071	17.708
	Min. Vert	11	-76.998	32.071	17.708
	Min. H_x	6	-0.202	0.001	0.002
	Min. H_z	7	-0.329	0.106	-0.037
Guy A @ 20.5 ft Elev 0 ft Azimuth 0 deg	Max. Vert	2	-4.579	-0.004	-0.820
	Max. H_x	10	-118.421	1.387	-27.284
	Max. H_z	2	-4.579	-0.004	-0.820
	Min. Vert	7	-150.796	-3.766	-35.381
	Min. H_x	6	-150.362	-5.032	-35.296
	Min. H_z	7	-150.796	-3.766	-35.381

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	125.837	0.405	0.946	72.171	-45.252	-0.013
1.2 Dead+1.0 Wind 0 deg - No Ice+1.0 Guy	162.334	0.493	6.876	128.943	-45.825	0.784
1.2 Dead+1.0 Wind 30 deg - No Ice+1.0 Guy	144.864	-2.151	5.943	126.286	-76.684	2.067
1.2 Dead+1.0 Wind 60 deg - No Ice+1.0 Guy	209.303	-0.462	6.245	405.242	-710.375	2.616
1.2 Dead+1.0 Wind 90 deg - No Ice+1.0 Guy	262.608	0.390	4.279	598.975	-1232.063	1.036
1.2 Dead+1.0 Wind 120 deg - No Ice+1.0 Guy	265.469	1.721	1.250	589.399	-1306.353	-0.925
1.2 Dead+1.0 Wind 150 deg - No Ice+1.0 Guy	231.758	3.436	-1.410	448.977	-1048.122	-1.918
1.2 Dead+1.0 Wind 180 deg - No Ice+1.0 Guy	190.988	0.398	-2.986	281.855	-67.705	-0.908
1.2 Dead+1.0 Wind 210 deg - No Ice+1.0 Guy	234.011	1.466	-1.769	396.903	265.449	-0.903
1.2 Dead+1.0 Wind 240 deg - No Ice+1.0 Guy	236.046	4.194	0.175	366.471	214.383	-1.712
1.2 Dead+1.0 Wind 270 deg - No Ice+1.0 Guy	203.067	5.613	2.329	241.307	88.220	-2.196
1.2 Dead+1.0 Wind 300 deg - No Ice+1.0 Guy	164.612	5.357	3.956	110.822	-35.660	-1.810
1.2 Dead+1.0 Wind 330 deg - No Ice+1.0 Guy	166.774	3.360	6.085	125.747	-37.851	-0.720
1.2 Dead+1.0 Ice+1.0 Temp+Guy	133.134	0.322	0.690	57.095	-35.108	-0.008
1.2 Dead+1.0 Wind 0 deg+1.0	137.417	0.335	2.007	72.892	-34.788	0.145

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Ice+1.0 Temp+1.0 Guy 1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy	134.674	-0.282	1.841	71.685	-38.740	0.402
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy	134.728	-0.522	1.451	77.843	-66.232	0.549
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy	141.502	-0.113	1.083	102.766	-140.473	0.500
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy	142.046	0.185	0.497	101.587	-155.416	0.305
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy	135.359	0.216	-0.188	72.605	-101.948	0.079
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy	129.786	0.354	-0.585	45.187	-40.676	-0.167
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy	132.554	0.925	-0.427	46.271	-31.526	-0.394
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy	135.930	1.383	0.065	51.590	-30.403	-0.543
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy	138.367	1.566	0.711	58.171	-31.308	-0.546
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy	139.562	1.398	1.350	65.283	-32.333	-0.401
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy	139.325	0.962	1.836	70.811	-33.220	-0.159
Dead+Wind 0 deg - Service+Guy	130.369	0.427	2.187	85.439	-45.475	0.166
Dead+Wind 30 deg - Service+Guy	127.240	-0.153	1.989	82.410	-48.962	0.398
Dead+Wind 60 deg - Service+Guy	123.925	-0.589	1.554	79.823	-50.372	0.526
Dead+Wind 90 deg - Service+Guy	123.334	-0.599	1.009	80.758	-69.440	0.484
Dead+Wind 120 deg - Service+Guy	122.831	-0.362	0.444	77.157	-75.435	0.302
Dead+Wind 150 deg - Service+Guy	120.088	-0.132	-0.079	64.058	-53.964	0.069
Dead+Wind 180 deg - Service+Guy	121.273	0.389	-0.278	59.776	-45.580	-0.194
Dead+Wind 210 deg - Service+Guy	124.388	0.964	-0.094	62.257	-41.730	-0.400
Dead+Wind 240 deg - Service+Guy	127.939	1.416	0.346	65.506	-41.951	-0.529
Dead+Wind 270 deg - Service+Guy	130.855	1.593	0.965	72.551	-41.660	-0.515
Dead+Wind 300 deg - Service+Guy	132.280	1.420	1.568	79.435	-42.368	-0.363
Dead+Wind 330 deg - Service+Guy	132.302	1.007	2.013	83.471	-42.863	-0.123

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.000	-45.676	0.000	0.000	45.676	0.000	0.001%
2	-0.180	-54.667	-27.753	0.180	54.667	27.753	0.000%
3	14.123	-54.618	-24.534	-14.123	54.618	24.534	0.000%
4	23.299	-54.559	-13.285	-23.299	54.559	13.285	0.000%
5	27.313	-54.506	0.183	-27.313	54.506	-0.183	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
6	23.191	-54.461	13.431	-23.191	54.461	-13.431	0.000%
7	14.063	-54.433	24.064	-14.063	54.433	-24.064	0.000%
8	0.180	-54.444	27.918	-0.180	54.444	-27.918	0.000%
9	-14.169	-54.493	24.613	14.169	54.493	-24.613	0.000%
10	-23.373	-54.553	13.328	23.373	54.553	-13.328	0.000%
11	-27.146	-54.605	-0.183	27.146	54.605	0.183	0.000%
12	-23.189	-54.651	-13.430	23.189	54.651	13.430	0.000%
13	-14.056	-54.679	-24.052	14.056	54.679	24.052	0.000%
14	0.000	-75.894	0.000	0.000	75.894	0.000	0.000%
15	-0.030	-75.937	-5.878	0.030	75.937	5.878	0.000%
16	2.954	-75.919	-5.130	-2.954	75.919	5.130	0.000%
17	5.070	-75.896	-2.900	-5.070	75.896	2.900	0.000%
18	5.849	-75.875	0.031	-5.849	75.875	-0.031	0.000%
19	5.027	-75.857	2.910	-5.027	75.857	-2.910	0.000%
20	2.967	-75.846	5.090	-2.967	75.846	-5.091	0.000%
21	0.030	-75.850	5.891	-0.030	75.850	-5.891	0.000%
22	-2.960	-75.868	5.141	2.960	75.868	-5.141	0.000%
23	-5.065	-75.891	2.898	5.065	75.891	-2.898	0.000%
24	-5.843	-75.912	-0.031	5.843	75.912	0.031	0.000%
25	-5.031	-75.930	-2.913	5.031	75.930	2.913	0.000%
26	-2.969	-75.941	-5.095	2.969	75.941	5.095	0.000%
27	-0.039	-45.700	-6.022	0.039	45.700	6.022	0.000%
28	3.065	-45.690	-5.324	-3.065	45.690	5.324	0.000%
29	5.056	-45.677	-2.883	-5.056	45.677	2.883	0.000%
30	5.927	-45.665	0.040	-5.927	45.665	-0.040	0.000%
31	5.032	-45.656	2.914	-5.032	45.656	-2.914	0.000%
32	3.052	-45.650	5.222	-3.052	45.650	-5.222	0.000%
33	0.039	-45.652	6.058	-0.039	45.652	-6.058	0.000%
34	-3.075	-45.663	5.341	3.075	45.663	-5.341	0.000%
35	-5.072	-45.676	2.892	5.072	45.676	-2.892	0.000%
36	-5.891	-45.687	-0.040	5.891	45.687	0.040	0.000%
37	-5.032	-45.697	-2.914	5.032	45.697	2.914	0.000%
38	-3.050	-45.703	-5.219	3.050	45.703	5.219	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	5	0.00000001	0.00052170
2	Yes	6	0.00000001	0.00049119
3	Yes	7	0.00000001	0.00011756
4	Yes	9	0.00000001	0.00076828
5	Yes	11	0.00000001	0.00088021
6	Yes	12	0.00000001	0.00040391
7	Yes	10	0.00000001	0.00091048
8	Yes	8	0.00000001	0.00014436
9	Yes	9	0.00000001	0.00021503
10	Yes	9	0.00000001	0.00019738
11	Yes	8	0.00000001	0.00019489
12	Yes	7	0.00000001	0.00007128
13	Yes	7	0.00000001	0.00008809
14	Yes	6	0.00000001	0.00014838
15	Yes	6	0.00000001	0.00044629
16	Yes	6	0.00000001	0.00068570
17	Yes	8	0.00000001	0.00022645
18	Yes	9	0.00000001	0.00025772

19	Yes	9	0.00000001	0.00028315
20	Yes	8	0.00000001	0.00084945
21	Yes	7	0.00000001	0.00011544
22	Yes	6	0.00000001	0.00094507
23	Yes	6	0.00000001	0.00092360
24	Yes	6	0.00000001	0.00064245
25	Yes	6	0.00000001	0.00053407
26	Yes	6	0.00000001	0.00046183
27	Yes	5	0.00000001	0.00027067
28	Yes	5	0.00000001	0.00044967
29	Yes	5	0.00000001	0.00066481
30	Yes	7	0.00000001	0.00018231
31	Yes	7	0.00000001	0.00030700
32	Yes	6	0.00000001	0.00019824
33	Yes	5	0.00000001	0.00043601
34	Yes	5	0.00000001	0.00037275
35	Yes	5	0.00000001	0.00049596
36	Yes	5	0.00000001	0.00037952
37	Yes	5	0.00000001	0.00026107
38	Yes	5	0.00000001	0.00022705

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150.167 - 145.167	14.158	31	1.168	0.009
L2	145.167 - 140.167	12.939	31	1.158	0.008
L3	140.167 - 135.167	11.741	31	1.128	0.007
L4	135.167 - 130.167	10.585	31	1.078	0.006
L5	130.167 - 125.167	9.491	31	1.009	0.005
L6	125.167 - 123.75	8.481	31	0.917	0.004
L7	123.75 - 123.5	8.214	31	0.888	0.004
L8	123.5 - 118.5	8.167	31	0.885	0.004
L9	118.5 - 113.5	7.272	31	0.824	0.004
L10	113.5 - 112.167	6.446	31	0.754	0.004
L11	112.167 - 111.917	6.238	31	0.735	0.003
L12	111.917 - 110.167	6.200	31	0.732	0.003
L13	110.167 - 109.917	5.935	31	0.714	0.003
L14	109.917 - 104.917	5.898	31	0.711	0.003
L15	104.917 - 99.917	5.188	31	0.646	0.003
L16	99.917 - 95	4.548	31	0.579	0.003
L17	95 - 94.75	3.989	31	0.509	0.003
L18	94.75 - 89.75	3.963	31	0.506	0.003
L19	89.75 - 85.5	3.466	31	0.445	0.002
L20	85.5 - 85.25	3.093	31	0.400	0.002
L21	85.25 - 85	3.072	31	0.398	0.002
L22	85 - 84.75	3.051	31	0.396	0.002
L23	84.75 - 83	3.030	31	0.394	0.002
L24	83 - 82.65	2.889	31	0.381	0.002
L25	82.65 - 82.4167	2.861	31	0.378	0.002
L26	82.4167 - 77.4167	2.843	31	0.376	0.002
L27	77.4167 - 70.167	2.472	31	0.336	0.002
L28	73.747 - 69.167	2.225	31	0.309	0.002
L29	69.167 - 64.167	1.936	31	0.291	0.002
L30	64.167 - 59.167	1.648	31	0.261	0.002
L31	59.167 - 54.167	1.390	31	0.234	0.002
L32	54.167 - 49.167	1.158	31	0.209	0.001
L33	49.167 - 47.1667	0.951	31	0.187	0.001
L34	47.1667 - 46.9167	0.875	31	0.179	0.001

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L35	46.9167 - 43.4167	0.865	31	0.178	0.001
L36	43.4167 - 43.1667	0.740	31	0.165	0.001
L37	43.1667 - 38.1667	0.731	31	0.164	0.001
L38	38.1667 - 31.537	0.570	31	0.144	0.001
L39	35.747 - 30.537	0.499	31	0.136	0.001
L40	30.537 - 25.537	0.358	31	0.122	0.001
L41	25.537 - 20.537	0.243	31	0.097	0.001
L42	20.537 - 15.537	0.153	31	0.075	0.000
L43	15.537 - 10.537	0.085	31	0.055	0.000
L44	10.537 - 5.537	0.038	31	0.036	0.000
L45	5.537 - 0.537	0.010	31	0.018	0.000
L46	0.537 - 0	0.000	1	0.000	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
151.000	Pipe Mount [PM 701-1]	31	14.158	1.168	0.009	12047
149.000	OPA65R-BU4B w/ Mount Pipe	31	13.873	1.167	0.009	12047
140.000	AIR 21 B2A/B4P w/ Mount Pipe	31	11.701	1.127	0.007	6656
134.000	GPS (3"x7")	31	10.323	1.063	0.006	4317
130.000	BXA-80080/4CF w/ Mount Pipe	31	9.456	1.006	0.005	3478
88.688	Guy	31	3.369	0.433	0.002	4077
71.000	FMO	31	2.049	0.298	0.002	11364
22.000	MYA-43012N	31	0.177	0.081	0.001	13011

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150.167 - 145.167	113.323	6	7.481	0.117
L2	145.167 - 140.167	105.542	6	7.436	0.113
L3	140.167 - 135.167	97.858	6	7.297	0.107
L4	135.167 - 130.167	90.366	6	7.060	0.099
L5	130.167 - 125.167	83.168	6	6.733	0.089
L6	125.167 - 123.75	76.363	6	6.297	0.079
L7	123.75 - 123.5	74.521	6	6.157	0.076
L8	123.5 - 118.5	74.200	6	6.144	0.076
L9	118.5 - 113.5	67.935	6	5.853	0.069
L10	113.5 - 112.167	61.994	6	5.521	0.062
L11	112.167 - 111.917	60.470	6	5.429	0.060
L12	111.917 - 110.167	60.186	6	5.416	0.060
L13	110.167 - 109.917	58.223	6	5.327	0.058
L14	109.917 - 104.917	57.945	6	5.313	0.058
L15	104.917 - 99.917	52.554	6	5.005	0.051
L16	99.917 - 95	47.493	6	4.679	0.045
L17	95 - 94.75	42.853	6	4.345	0.038
L18	94.75 - 89.75	42.626	6	4.331	0.037
L19	89.75 - 85.5	38.249	6	4.040	0.031
L20	85.5 - 85.25	34.765	6	3.804	0.027

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L21	85.25 - 85	34.567	6	3.794	0.026
L22	85 - 84.75	34.368	6	3.783	0.026
L23	84.75 - 83	34.171	6	3.772	0.026
L24	83 - 82.65	32.804	6	3.698	0.025
L25	82.65 - 82.4167	32.533	6	3.681	0.024
L26	82.4167 - 77.4167	32.354	6	3.669	0.024
L27	77.4167 - 70.167	28.648	6	3.419	0.020
L28	73.747 - 69.167	26.090	6	3.243	0.018
L29	69.167 - 64.167	23.036	6	3.112	0.016
L30	64.167 - 59.167	19.902	6	2.879	0.013
L31	59.167 - 54.167	17.006	6	2.657	0.011
L32	54.167 - 49.167	14.339	6	2.440	0.009
L33	49.167 - 47.1667	11.897	6	2.228	0.008
L34	47.1667 - 46.9167	10.981	6	2.145	0.007
L35	46.9167 - 43.4167	10.869	6	2.136	0.007
L36	43.4167 - 43.1667	9.352	6	2.008	0.007
L37	43.1667 - 38.1667	9.247	6	1.997	0.006
L38	38.1667 - 31.537	7.266	6	1.789	0.005
L39	35.747 - 30.537	6.385	6	1.691	0.005
L40	30.537 - 25.537	4.612	6	1.531	0.004
L41	25.537 - 20.537	3.161	6	1.243	0.003
L42	20.537 - 15.537	2.004	6	0.970	0.002
L43	15.537 - 10.537	1.124	6	0.713	0.002
L44	10.537 - 5.537	0.507	6	0.469	0.001
L45	5.537 - 0.537	0.137	6	0.239	0.001
L46	0.537 - 0	0.001	6	0.022	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
151.000	Pipe Mount [PM 701-1]	6	113.323	7.481	0.117	2852
149.000	OPA65R-BU4B w/ Mount Pipe	6	111.503	7.475	0.117	2852
140.000	AIR 21 B2A/B4P w/ Mount Pipe	6	97.604	7.290	0.108	1554
134.000	GPS (3"x7")	6	88.657	6.991	0.099	971
130.000	BXA-80080/4CF w/ Mount Pipe	6	82.934	6.721	0.092	774
88.688	Guy	6	37.359	3.975	0.030	1038
71.000	FMO	6	24.240	3.165	0.017	1578
22.000	MYA-43012N	6	2.313	1.046	0.003	1056

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T_u K	Allowable ϕT_n K	Required S.F.	Actual S.F.
L19	88.688 (A) (49)	1 5/8 BS	38.880	324.001	155.416	204.120	0.952	1.251 ✔
	88.688 (B) (48)	1 3/8 BS	27.840	232.000	85.618	146.160	0.952	1.626 ✔
	88.688 (C) (47)	1 3/8 BS	27.840	232.000	96.299	146.160	0.952	1.445 ✔

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	150.167 - 149.167	TP16.31x15.53x0.25	5.000	0.000	0.0	12.426	-0.323	726.920	0.000
	149.167 - 148.167					12.552	-4.853	734.266	0.007
	148.167 - 147.167					12.677	-4.908	741.613	0.007
	147.167 - 146.167					12.803	-4.963	748.959	0.007
	146.167 - 145.167					12.928	-5.020	756.306	0.007
L2	145.167 - 144.167	TP17.09x16.31x0.25	5.000	0.000	0.0	13.054	-5.080	763.652	0.007
	144.167 - 143.167					13.179	-5.142	770.998	0.007
	143.167 - 142.167					13.305	-5.204	778.345	0.007
	142.167 - 141.167					13.431	-5.267	785.691	0.007
	141.167 - 140.167					13.556	-5.331	793.038	0.007
L3	140.167 - 139.167	TP17.87x17.09x0.25	5.000	0.000	0.0	13.682	-8.552	800.384	0.011
	139.167 - 138.167					13.807	-8.633	807.731	0.011
	138.167 - 137.167					13.933	-8.715	815.077	0.011
	137.167 - 136.167					14.059	-8.798	822.423	0.011
	136.167 - 135.167					14.184	-8.883	829.770	0.011
L4	135.167 - 134.167	TP18.65x17.87x0.25	5.000	0.000	0.0	14.310	-8.969	837.116	0.011
	134.167 - 133.167					14.435	-9.065	844.463	0.011
	133.167 - 132.167					14.561	-9.154	851.809	0.011
	132.167 - 131.167					14.686	-9.244	859.156	0.011
	131.167 - 130.167					14.812	-9.335	866.502	0.011
L5	130.167 - 129.167	TP19.43x18.65x0.25	5.000	0.000	0.0	14.938	-12.964	873.848	0.015
	129.167 - 128.167					15.063	-13.076	881.195	0.015
	128.167 - 127.167					15.189	-13.190	888.541	0.015
	127.167 - 126.167					15.314	-13.306	895.888	0.015
	126.167 -					15.440	-13.424	903.234	0.015

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	125.167								
L6	125.167 - 123.75 (6)	TP19.651x19.43x0.25	1.417	0.000	0.0	15.618	-13.588	913.644	0.015
L7	123.75 - 123.5 (7)	TP19.69x19.651x0.513	0.250	0.000	0.0	31.648	-13.646	1851.390	0.007
L8	123.5 - 122.5	TP20.47x19.69x0.5	5.000	0.000	0.0	31.147	-13.803	1822.110	0.008
	122.5 - 121.5					31.398	-13.966	1836.800	0.008
	121.5 - 120.5					31.649	-14.131	1851.490	0.008
	120.5 - 119.5					31.901	-14.297	1866.190	0.008
	119.5 - 118.5					32.152	-14.465	1880.880	0.008
L9	118.5 - 117.5	TP21.25x20.47x0.488	5.000	0.000	0.0	31.612	-14.852	1849.330	0.008
	117.5 - 116.5					31.857	-15.241	1863.660	0.008
	116.5 - 115.5					32.102	-15.632	1877.980	0.008
	115.5 - 114.5					32.347	-16.024	1892.310	0.008
	114.5 - 113.5					32.592	-16.418	1906.630	0.009
L10	113.5 - 112.167 (10)	TP21.458x21.25x0.488	1.333	0.000	0.0	32.918	-17.066	1925.730	0.009
L11	112.167 - 111.917 (11)	TP21.497x21.458x0.7	0.250	0.000	0.0	46.876	-17.210	2742.270	0.006
L12	111.917 - 110.167 (12)	TP21.77x21.497x0.7	1.750	0.000	0.0	47.492	-18.055	2778.270	0.006
L13	110.167 - 109.917 (13)	TP21.813x21.77x0.625	0.250	0.000	0.0	42.641	-18.150	2494.480	0.007
L14	109.917 - 108.917	TP22.672x21.813x0.6	5.000	0.000	0.0	41.315	-18.672	2416.940	0.008
	108.917 - 107.917					41.647	-19.203	2436.350	0.008
	107.917 - 106.917					41.979	-19.736	2455.760	0.008
	106.917 - 105.917					42.311	-20.271	2475.170	0.008
	105.917 - 104.917					42.643	-20.808	2494.590	0.008
L15	104.917 - 103.917	TP23.53x22.672x0.588	5.000	0.000	0.0	42.103	-21.207	2463.010	0.009
	103.917 - 102.917					42.428	-21.568	2482.010	0.009
	102.917 - 101.917					42.752	-21.930	2501.020	0.009
	101.917 - 100.917					43.077	-22.294	2520.030	0.009
	100.917 - 99.917					43.402	-22.660	2539.030	0.009
L16	99.917 - 98.6877	TP24.375x23.53x0.575	4.917	0.000	0.0	42.893	-22.959	2509.230	0.009
	98.6877 - 97.4585					43.284	-23.263	2532.100	0.009
	97.4585 - 96.2292					43.675	-23.570	2554.970	0.009
	96.2292 - 95					44.066	-23.880	2577.840	0.009
L17	95 - 94.75 (17)	TP24.418x24.375x0.7	0.250	0.000	0.0	53.460	-23.961	3127.410	0.008
L18	94.75 - 93.75	TP25.277x24.418x0.688	5.000	0.000	0.0	52.913	-24.231	3095.430	0.008
	93.75 - 92.75					53.293	-24.510	3117.670	0.008
	92.75 - 91.75					53.674	-24.790	3139.910	0.008
	91.75 - 90.75					54.054	-25.073	3162.160	0.008
	90.75 - 89.75					54.434	-25.357	3184.400	0.008
L19	89.75 - 88.6875	TP26.007x25.277x0.675	4.250	0.000	0.0	53.868	-25.657	3151.290	0.008
	88.6875 - 87.625					53.868	-236.265	3151.290	0.075

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	87.625 - 86.5625					54.265	-236.554	3174.500	0.075
	86.5625 - 85.5					54.661	-236.845	3197.700	0.074
L20	85.5 - 85.25 (20)	TP26.049x26.007x0.863	0.250	0.000	0.0	69.831	-236.991	4085.130	0.058
L21	85.25 - 85 (21)	TP26.092x26.049x0.863	0.250	0.000	0.0	69.951	-237.069	4092.110	0.058
L22	85 - 84.75 (22)	TP26.135x26.092x0.838	0.250	0.000	0.0	68.106	-237.147	3984.220	0.060
L23	84.75 - 83 (23)	TP26.436x26.135x0.838	1.750	0.000	0.0	68.222	-237.224	3990.990	0.059
L24	83 - 82.65 (24)	TP26.496x26.436x0.713	0.350	0.000	0.0	59.016	-237.735	3452.440	0.069
L25	82.65 - 82.4167 (25)	TP26.536x26.496x0.713	0.233	0.000	0.0	59.154	-237.835	3460.500	0.069
L26	82.4167 - 81.4167	TP27.395x26.536x0.688	5.000	0.000	0.0	57.222	-237.905	3347.510	0.071
	81.4167 - 80.4167					57.603	-238.191	3369.750	0.071
	80.4167 - 79.4167					57.983	-238.478	3391.990	0.070
	79.4167 - 78.4167					58.363	-238.766	3414.240	0.070
	78.4167 - 77.4167					58.743	-239.057	3436.480	0.070
L27	77.4167 - 76.1935	TP28.64x27.395x0.688	7.250	0.000	0.0	59.123	-239.349	3458.720	0.069
	76.1935 - 74.9702					59.589	-242.534	3485.930	0.070
	74.9702 - 73.747					60.054	-242.893	3513.140	0.069
	73.747 - 70.167					60.519	-119.900	3540.340	0.034
L28	73.747 - 70.167	TP28.079x27.4x0.725	4.580	0.000	0.0	62.273	-123.357	3642.980	0.034
	70.167 - 69.167					63.513	-245.370	3715.480	0.066
L29	69.167 - 68.167	TP28.821x28.079x0.713	5.000	0.000	0.0	62.786	-245.657	3673.010	0.067
	68.167 - 67.167					63.127	-245.943	3692.910	0.067
	67.167 - 66.167					63.467	-246.230	3712.810	0.066
	66.167 - 65.167					63.807	-246.518	3732.720	0.066
	65.167 - 64.167					64.147	-246.808	3752.620	0.066
L30	64.167 - 63.167	TP29.562x28.821x0.725	5.000	0.000	0.0	65.590	-247.098	3837.000	0.064
	63.167 - 62.167					65.936	-247.387	3857.260	0.064
	62.167 - 61.167					66.282	-247.678	3877.510	0.064
	61.167 - 60.167					66.629	-247.969	3897.770	0.064
	60.167 - 59.167					66.975	-248.262	3918.020	0.063
L31	59.167 - 58.167	TP30.304x29.562x0.713	5.000	0.000	0.0	66.189	-248.556	3872.050	0.064
	58.167 - 57.167					66.529	-248.848	3891.950	0.064
	57.167 - 56.167					66.869	-249.142	3911.860	0.064
	56.167 -					67.210	-249.437	3931.760	0.063

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	55.167								
	55.167 - 54.167					67.550	-249.734	3951.670	0.063
L32	54.167 - 53.167	TP31.045x30.304x0.7	5.000	0.000	0.0	66.727	-250.031	3903.540	0.064
	53.167 - 52.167					67.062	-250.327	3923.100	0.064
	52.167 - 51.167					67.396	-250.625	3942.650	0.064
	51.167 - 50.167					67.730	-250.923	3962.210	0.063
	50.167 - 49.167					68.064	-251.223	3981.760	0.063
L33	49.167 - 48.1668	TP31.342x31.045x0.7	2.000	0.000	0.0	68.399	-251.524	4001.320	0.063
	48.1668 - 47.1667					68.733	-251.825	4020.870	0.063
L34	47.1667 - 46.9167 (34)	TP31.379x31.342x0.788	0.250	0.000	0.0	77.479	-252.126	4532.510	0.056
L35	46.9167 - 45.75	TP31.898x31.379x0.775	3.500	0.000	0.0	76.373	-252.210	4467.800	0.056
	45.75 - 44.5834					76.804	-252.592	4493.060	0.056
	44.5834 - 43.4167					77.236	-252.976	4518.320	0.056
L36	43.4167 - 43.1667 (36)	TP31.935x31.898x0.65	0.250	0.000	0.0	65.402	-253.359	3826.050	0.066
L37	43.1667 - 42.1667	TP32.677x31.935x0.65	5.000	0.000	0.0	65.480	-253.435	3830.590	0.066
	42.1667 - 41.1667					65.790	-253.729	3848.740	0.066
	41.1667 - 40.1667					66.101	-254.024	3866.900	0.066
	40.1667 - 39.1667					66.411	-254.320	3885.060	0.065
	39.1667 - 38.1667					66.722	-254.617	3903.220	0.065
L38	38.1667 - 36.9569	TP33.66x32.677x0.65	6.630	0.000	0.0	67.032	-254.916	3921.380	0.065
	36.9569 - 35.747					67.408	-255.277	3943.350	0.065
	35.747 - 31.537					67.783	-153.720	3965.310	0.039
L39	35.747 - 31.537	TP33.161x32.286x0.438	5.210	0.000	0.0	44.866	-101.923	2624.670	0.039
	31.537 - 30.537					45.862	-257.689	2682.940	0.096
L40	30.537 - 29.537	TP34.001x33.161x0.438	5.000	0.000	0.0	46.099	-257.919	2696.790	0.096
	29.537 - 28.537					46.335	-258.150	2710.630	0.095
	28.537 - 27.537					46.572	-258.381	2724.470	0.095
	27.537 - 26.537					46.809	-258.614	2738.310	0.094
	26.537 - 25.537					47.045	-258.847	2752.160	0.094
L41	25.537 - 24.537	TP34.84x34.001x0.438	5.000	0.000	0.0	47.282	-259.081	2766.000	0.094
	24.537 -					47.519	-259.316	2779.840	0.093

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	23.537								
	23.537 - 22.537					47.755	-259.551	2793.680	0.093
	22.537 - 21.537					47.992	-259.788	2807.530	0.093
	21.537 - 20.537					48.229	-260.143	2821.370	0.092
L42	20.537 - 19.537	TP35.68x34.84x0.438	5.000	0.000	0.0	48.465	-260.381	2835.210	0.092
	19.537 - 18.537					48.702	-260.620	2849.050	0.091
	18.537 - 17.537					48.938	-260.860	2862.900	0.091
	17.537 - 16.537					49.175	-261.101	2876.740	0.091
	16.537 - 15.537					49.412	-261.343	2890.580	0.090
L43	15.537 - 14.537	TP36.52x35.68x0.438	5.000	0.000	0.0	49.648	-261.585	2904.420	0.090
	14.537 - 13.537					49.885	-261.829	2918.270	0.090
	13.537 - 12.537					50.121	-262.073	2932.110	0.089
	12.537 - 11.537					50.358	-262.318	2945.950	0.089
	11.537 - 10.537					50.595	-262.565	2959.790	0.089
L44	10.537 - 9.537	TP37.36x36.52x0.438	5.000	0.000	0.0	50.831	-262.812	2973.640	0.088
	9.537 - 8.537					51.068	-263.060	2987.480	0.088
	8.537 - 7.537					51.305	-263.308	3001.320	0.088
	7.537 - 6.537					51.541	-263.558	3015.160	0.087
	6.537 - 5.537					51.778	-263.809	3029.010	0.087
L45	5.537 - 4.537	TP38.2x37.36x0.438	5.000	0.000	0.0	52.014	-264.060	3042.850	0.087
	4.537 - 3.537					52.251	-264.313	3056.690	0.086
	3.537 - 2.537					52.488	-264.566	3070.530	0.086
	2.537 - 1.537					52.724	-264.820	3084.380	0.086
	1.537 - 0.537					52.961	-265.076	3098.220	0.086
L46	0.537 - 0 (46)	TP38.29x38.2x0.438	0.537	0.000	0.0	53.198	-265.331	3112.060	0.085

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	150.167 - 149.167	TP16.31x15.53x0.25	0.926	285.687	0.003	0.000	285.687	0.000
	149.167 - 148.167		9.804	291.537	0.034	0.000	291.537	0.000
	148.167 - 147.167		16.097	297.446	0.054	0.000	297.446	0.000
	147.167 - 146.167		22.453	303.414	0.074	0.000	303.414	0.000
	146.167 - 145.167		28.873	309.443	0.093	0.000	309.443	0.000
L2	145.167 - 144.167	TP17.09x16.31x0.25	35.356	315.530	0.112	0.000	315.530	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 $\frac{M_{uy}}{\phi M_{ny}}$
	144.167 - 143.167		41.904	321.677	0.130	0.000	321.677	0.000
	143.167 - 142.167		48.517	327.882	0.148	0.000	327.882	0.000
	142.167 - 141.167		55.194	334.147	0.165	0.000	334.147	0.000
	141.167 - 140.167		61.935	340.472	0.182	0.000	340.472	0.000
L3	140.167 - 139.167	TP17.87x17.09x0.25	73.124	346.856	0.211	0.000	346.856	0.000
	139.167 - 138.167		83.020	353.299	0.235	0.000	353.299	0.000
	138.167 - 137.167		92.980	359.802	0.258	0.000	359.802	0.000
	137.167 - 136.167		103.003	366.363	0.281	0.000	366.363	0.000
	136.167 - 135.167		113.089	372.984	0.303	0.000	372.984	0.000
L4	135.167 - 134.167	TP18.65x17.87x0.25	123.238	379.664	0.325	0.000	379.664	0.000
	134.167 - 133.167		133.463	386.404	0.345	0.000	386.404	0.000
	133.167 - 132.167		143.746	393.203	0.366	0.000	393.203	0.000
	132.167 - 131.167		154.090	400.062	0.385	0.000	400.062	0.000
	131.167 - 130.167		164.498	406.979	0.404	0.000	406.979	0.000
L5	130.167 - 129.167	TP19.43x18.65x0.25	186.853	413.956	0.451	0.000	413.956	0.000
	129.167 - 128.167		202.472	420.992	0.481	0.000	420.992	0.000
	128.167 - 127.167		218.146	428.087	0.510	0.000	428.087	0.000
	127.167 - 126.167		233.875	435.243	0.537	0.000	435.243	0.000
	126.167 - 125.167		249.659	442.456	0.564	0.000	442.456	0.000
L6	125.167 - 123.75 (6)	TP19.651x19.43x0.25	272.117	452.780	0.601	0.000	452.780	0.000
L7	123.75 - 123.5 (7)	TP19.69x19.651x0.513	276.101	894.717	0.309	0.000	894.717	0.000
L8	123.5 - 122.5	TP20.47x19.69x0.5	292.031	889.058	0.328	0.000	889.058	0.000
	122.5 - 121.5		308.039	903.633	0.341	0.000	903.633	0.000
	121.5 - 120.5		324.116	918.333	0.353	0.000	918.333	0.000
	120.5 - 119.5		340.262	933.150	0.365	0.000	933.150	0.000
	119.5 - 118.5		356.477	948.083	0.376	0.000	948.083	0.000
L9	118.5 - 117.5	TP21.25x20.47x0.488	372.777	940.808	0.396	0.000	940.808	0.000
	117.5 - 116.5		389.181	955.617	0.407	0.000	955.617	0.000
	116.5 - 115.5		405.688	970.533	0.418	0.000	970.533	0.000
	115.5 - 114.5		422.296	985.567	0.428	0.000	985.567	0.000
	114.5 - 113.5		439.007	1000.725	0.439	0.000	1000.725	0.000
L10	113.5 - 112.167 (10)	TP21.458x21.25x0.488	461.472	1021.100	0.452	0.000	1021.100	0.000
L11	112.167 - 111.917 (11)	TP21.497x21.458x0.7	465.725	1427.508	0.326	0.000	1427.508	0.000
L12	111.917 - 110.167 (12)	TP21.77x21.497x0.7	495.615	1465.850	0.338	0.000	1465.850	0.000
L13	110.167 - 109.917 (13)	TP21.813x21.77x0.625	499.926	1328.275	0.376	0.000	1328.275	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 $\frac{M_{uy}}{\phi M_{ny}}$
L14	109.917 - 108.917	TP22.672x21.813x0.6	517.195	1300.758	0.398	0.000	1300.758	0.000
	108.917 - 107.917		534.617	1322.025	0.404	0.000	1322.025	0.000
	107.917 - 106.917		552.181	1343.458	0.411	0.000	1343.458	0.000
	106.917 - 105.917		569.887	1365.075	0.417	0.000	1365.075	0.000
	105.917 - 104.917		587.735	1386.858	0.424	0.000	1386.858	0.000
L15	104.917 - 103.917	TP23.53x22.672x0.588	605.934	1381.792	0.439	0.000	1381.792	0.000
	103.917 - 102.917		624.311	1403.475	0.445	0.000	1403.475	0.000
	102.917 - 101.917		642.784	1425.325	0.451	0.000	1425.325	0.000
	101.917 - 100.917		661.352	1447.350	0.457	0.000	1447.350	0.000
	100.917 - 99.917		680.018	1469.542	0.463	0.000	1469.542	0.000
L16	99.917 - 98.6877	TP24.375x23.53x0.575	703.069	1467.575	0.479	0.000	1467.575	0.000
	98.6877 - 97.4585		726.218	1494.775	0.486	0.000	1494.775	0.000
	97.4585 - 96.2292		749.465	1522.225	0.492	0.000	1522.225	0.000
	96.2292 - 95		772.810	1549.917	0.499	0.000	1549.917	0.000
L17	95 - 94.75 (17)	TP24.418x24.375x0.7	777.575	1864.125	0.417	0.000	1864.125	0.000
L18	94.75 - 93.75	TP25.277x24.418x0.688	796.669	1860.750	0.428	0.000	1860.750	0.000
	93.75 - 92.75		815.858	1887.958	0.432	0.000	1887.958	0.000
	92.75 - 91.75		835.142	1915.375	0.436	0.000	1915.375	0.000
	91.75 - 90.75		854.508	1942.983	0.440	0.000	1942.983	0.000
	90.75 - 89.75		873.975	1970.792	0.443	0.000	1970.792	0.000
L19	89.75 - 88.6875	TP26.007x25.277x0.675	894.750	1967.150	0.455	0.000	1967.150	0.000
	88.6875 - 87.625		848.975	1967.150	0.432	0.000	1967.150	0.000
	87.625 - 86.5625		856.517	1996.608	0.429	0.000	1996.608	0.000
	86.5625 - 85.5		864.017	2026.292	0.426	0.000	2026.292	0.000
L20	85.5 - 85.25 (20)	TP26.049x26.007x0.863	871.475	2569.450	0.339	0.000	2569.450	0.000
L21	85.25 - 85 (21)	TP26.092x26.049x0.863	873.233	2578.375	0.339	0.000	2578.375	0.000
L22	85 - 84.75 (22)	TP26.135x26.092x0.838	874.983	2519.800	0.347	0.000	2519.800	0.000
L23	84.75 - 83 (23)	TP26.436x26.135x0.838	876.750	2528.517	0.347	0.000	2528.517	0.000
L24	83 - 82.65 (24)	TP26.496x26.436x0.713	889.067	2235.808	0.398	0.000	2235.808	0.000
L25	82.65 - 82.4167 (25)	TP26.536x26.496x0.713	891.525	2246.408	0.397	0.000	2246.408	0.000
L26	82.4167 - 81.4167	TP27.395x26.536x0.688	893.175	2180.742	0.410	0.000	2180.742	0.000
	81.4167 - 80.4167		900.183	2210.200	0.407	0.000	2210.200	0.000
	80.4167 - 79.4167		907.150	2239.850	0.405	0.000	2239.850	0.000
	79.4167 - 78.4167		914.067	2269.700	0.403	0.000	2269.700	0.000
	78.4167 - 77.4167		920.942	2299.742	0.400	0.000	2299.742	0.000
L27	77.4167 - 76.1935	TP28.64x27.395x0.688	927.775	2329.992	0.398	0.000	2329.992	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 $\frac{M_{uy}}{\phi M_{ny}}$
	76.1935 - 74.9702		935.033	2367.250	0.395	0.000	2367.250	0.000
	74.9702 - 73.747		946.217	2404.817	0.393	0.000	2404.817	0.000
	73.747 - 70.167		484.691	2442.675	0.198	0.000	2442.675	0.000
L28	73.747 - 70.167	TP28.079x27.4x0.725	472.553	2447.725	0.193	0.000	2447.725	0.000
	70.167 - 69.167		990.925	2547.442	0.389	0.000	2547.442	0.000
L29	69.167 - 68.167	TP28.821x28.079x0.713	1000.800	2534.717	0.395	0.000	2534.717	0.000
	68.167 - 67.167		1010.567	2562.617	0.394	0.000	2562.617	0.000
	67.167 - 66.167		1020.225	2590.667	0.394	0.000	2590.667	0.000
	66.167 - 65.167		1029.783	2618.867	0.393	0.000	2618.867	0.000
	65.167 - 64.167		1039.233	2647.225	0.393	0.000	2647.225	0.000
L30	64.167 - 63.167	TP29.562x28.821x0.725	1048.575	2719.042	0.386	0.000	2719.042	0.000
	63.167 - 62.167		1057.817	2748.183	0.385	0.000	2748.183	0.000
	62.167 - 61.167		1066.958	2777.483	0.384	0.000	2777.483	0.000
	61.167 - 60.167		1076.008	2806.942	0.383	0.000	2806.942	0.000
	60.167 - 59.167		1084.950	2836.550	0.382	0.000	2836.550	0.000
L31	59.167 - 58.167	TP30.304x29.562x0.713	1093.808	2820.558	0.388	0.000	2820.558	0.000
	58.167 - 57.167		1102.558	2849.983	0.387	0.000	2849.983	0.000
	57.167 - 56.167		1111.217	2879.558	0.386	0.000	2879.558	0.000
	56.167 - 55.167		1119.775	2909.292	0.385	0.000	2909.292	0.000
	55.167 - 54.167		1128.242	2939.167	0.384	0.000	2939.167	0.000
L32	54.167 - 53.167	TP31.045x30.304x0.7	1136.608	2920.817	0.389	0.000	2920.817	0.000
	53.167 - 52.167		1144.892	2950.492	0.388	0.000	2950.492	0.000
	52.167 - 51.167		1153.067	2980.317	0.387	0.000	2980.317	0.000
	51.167 - 50.167		1161.158	3010.292	0.386	0.000	3010.292	0.000
	50.167 - 49.167		1169.150	3040.425	0.385	0.000	3040.425	0.000
L33	49.167 - 48.1668	TP31.342x31.045x0.7	1177.050	3070.700	0.383	0.000	3070.700	0.000
	48.1668 - 47.1667		1184.858	3101.133	0.382	0.000	3101.133	0.000
L34	47.1667 - 46.9167 (34)	TP31.379x31.342x0.788	1192.575	3493.083	0.341	0.000	3493.083	0.000
L35	46.9167 - 45.75	TP31.898x31.379x0.775	1194.500	3450.317	0.346	0.000	3450.317	0.000
	45.75 - 44.5834		1203.383	3489.925	0.345	0.000	3489.925	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 $\frac{M_{uy}}{\phi M_{ny}}$
	44.5834 - 43.4167		1212.167	3529.758	0.343	0.000	3529.758	0.000
L36	43.4167 - 43.1667 (36)	TP31.935x31.898x0.65	1220.858	3030.258	0.403	0.000	3030.258	0.000
L37	43.1667 - 42.1667	TP32.677x31.935x0.65	1222.708	3037.525	0.403	0.000	3037.525	0.000
	42.1667 - 41.1667		1230.050	3066.683	0.401	0.000	3066.683	0.000
	41.1667 - 40.1667		1237.283	3095.983	0.400	0.000	3095.983	0.000
	40.1667 - 39.1667		1244.425	3125.425	0.398	0.000	3125.425	0.000
	39.1667 - 38.1667		1251.467	3155.008	0.397	0.000	3155.008	0.000
L38	38.1667 - 36.9569	TP33.66x32.677x0.65	1258.425	3184.725	0.395	0.000	3184.725	0.000
	36.9569 - 35.747		1266.708	3220.867	0.393	0.000	3220.867	0.000
	35.747 - 31.537		775.992	3257.208	0.238	0.000	3257.208	0.000
L39	35.747 - 31.537	TP33.161x32.286x0.438	498.858	2133.433	0.234	0.000	2133.433	0.000
	31.537 - 30.537		1302.825	2229.875	0.584	0.000	2229.875	0.000
L40	30.537 - 29.537	TP34.001x33.161x0.438	1309.350	2253.100	0.581	0.000	2253.100	0.000
	29.537 - 28.537		1315.683	2276.442	0.578	0.000	2276.442	0.000
	28.537 - 27.537		1321.833	2299.908	0.575	0.000	2299.908	0.000
	27.537 - 26.537		1327.808	2323.492	0.571	0.000	2323.492	0.000
	26.537 - 25.537		1333.600	2347.192	0.568	0.000	2347.192	0.000
L41	25.537 - 24.537	TP34.84x34.001x0.438	1339.217	2371.017	0.565	0.000	2371.017	0.000
	24.537 - 23.537		1344.667	2394.967	0.561	0.000	2394.967	0.000
	23.537 - 22.537		1349.942	2419.025	0.558	0.000	2419.025	0.000
	22.537 - 21.537		1355.050	2443.217	0.555	0.000	2443.217	0.000
	21.537 - 20.537		1359.792	2467.517	0.551	0.000	2467.517	0.000
L42	20.537 - 19.537	TP35.68x34.84x0.438	1364.658	2491.942	0.548	0.000	2491.942	0.000
	19.537 - 18.537		1369.367	2516.492	0.544	0.000	2516.492	0.000
	18.537 - 17.537		1373.917	2541.158	0.541	0.000	2541.158	0.000
	17.537 - 16.537		1378.308	2565.942	0.537	0.000	2565.942	0.000
	16.537 - 15.537		1382.558	2590.850	0.534	0.000	2590.850	0.000
L43	15.537 - 14.537	TP36.52x35.68x0.438	1386.658	2615.875	0.530	0.000	2615.875	0.000
	14.537 - 13.537		1390.608	2641.025	0.527	0.000	2641.025	0.000
	13.537 - 12.537		1394.417	2666.292	0.523	0.000	2666.292	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 $\frac{M_{uy}}{\phi M_{ny}}$
	12.537 - 11.537		1398.083	2691.683	0.519	0.000	2691.683	0.000
	11.537 - 10.537		1401.608	2717.192	0.516	0.000	2717.192	0.000
L44	10.537 - 9.537	TP37.36x36.52x0.438	1405.008	2738.708	0.513	0.000	2738.708	0.000
	9.537 - 8.537		1408.267	2760.625	0.510	0.000	2760.625	0.000
	8.537 - 7.537		1411.400	2782.592	0.507	0.000	2782.592	0.000
	7.537 - 6.537		1414.400	2804.600	0.504	0.000	2804.600	0.000
	6.537 - 5.537		1417.275	2826.667	0.501	0.000	2826.667	0.000
L45	5.537 - 4.537	TP38.2x37.36x0.438	1420.033	2848.775	0.498	0.000	2848.775	0.000
	4.537 - 3.537		1422.667	2870.933	0.496	0.000	2870.933	0.000
	3.537 - 2.537		1425.175	2893.142	0.493	0.000	2893.142	0.000
	2.537 - 1.537		1427.575	2915.392	0.490	0.000	2915.392	0.000
	1.537 - 0.537		1429.867	2937.692	0.487	0.000	2937.692	0.000
L46	0.537 - 0 (46)	TP38.29x38.2x0.438	1432.042	2960.033	0.484	0.000	2960.033	0.000

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Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	150.167 - 149.167	TP16.31x15.53x0.25	0.571	218.076	0.003	0.003	296.103	0.000
	149.167 - 148.167		6.263	220.280	0.028	0.004	302.118	0.000
	148.167 - 147.167		6.327	222.484	0.028	0.004	308.193	0.000
	147.167 - 146.167		6.391	224.688	0.028	0.004	314.330	0.000
	146.167 - 145.167		6.455	226.892	0.028	0.004	320.527	0.000
L2	145.167 - 144.167	TP17.09x16.31x0.25	6.519	229.096	0.028	0.004	326.783	0.000
	144.167 - 143.167		6.584	231.300	0.028	0.004	333.102	0.000
	143.167 - 142.167		6.648	233.503	0.028	0.004	339.479	0.000
	142.167 - 141.167		6.713	235.707	0.028	0.004	345.918	0.000
	141.167 - 140.167		6.778	237.911	0.028	0.004	352.418	0.000
L3	140.167 - 139.167	TP17.87x17.09x0.25	9.880	240.115	0.041	0.005	358.977	0.000
	139.167 - 138.167		9.944	242.319	0.041	0.005	365.597	0.000
	138.167 - 137.167		10.008	244.523	0.041	0.005	372.277	0.000
	137.167 - 136.167		10.072	246.727	0.041	0.005	379.018	0.000
	136.167 - 135.167		10.136	248.931	0.041	0.005	385.820	0.000
L4	135.167 - 134.167	TP18.65x17.87x0.25	10.199	251.135	0.041	0.005	392.682	0.000
	134.167 - 133.167		10.270	253.339	0.041	0.037	399.604	0.000
	133.167 -		10.333	255.543	0.040	0.037	406.587	0.000

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
	132.167							
	132.167 - 131.167		10.396	257.747	0.040	0.037	413.631	0.000
	131.167 - 130.167		10.458	259.951	0.040	0.038	420.735	0.000
L5	130.167 - 129.167	TP19.43x18.65x0.25	15.610	262.155	0.060	0.308	427.899	0.001
	129.167 - 128.167		15.667	264.358	0.059	0.308	435.124	0.001
	128.167 - 127.167		15.723	266.562	0.059	0.307	442.410	0.001
	127.167 - 126.167		15.779	268.766	0.059	0.307	449.756	0.001
	126.167 - 125.167		15.834	270.970	0.058	0.306	457.162	0.001
L6	125.167 - 123.75 (6)	TP19.651x19.43x0.25	15.913	274.093	0.058	0.306	467.760	0.001
L7	123.75 - 123.5 (7)	TP19.69x19.651x0.513	16.003	555.418	0.029	0.305	936.942	0.000
L8	123.5 - 122.5	TP20.47x19.69x0.5	15.994	546.632	0.029	0.305	930.225	0.000
	122.5 - 121.5		16.063	551.040	0.029	0.304	945.283	0.000
	121.5 - 120.5		16.133	555.448	0.029	0.304	960.467	0.000
	120.5 - 119.5		16.202	559.856	0.029	0.304	975.775	0.000
	119.5 - 118.5		16.271	564.264	0.029	0.303	991.200	0.000
L9	118.5 - 117.5	TP21.25x20.47x0.488	16.375	554.799	0.030	0.303	982.800	0.000
	117.5 - 116.5		16.478	559.097	0.029	0.302	998.083	0.000
	116.5 - 115.5		16.581	563.395	0.029	0.302	1013.483	0.000
	115.5 - 114.5		16.683	567.692	0.029	0.301	1029.008	0.000
	114.5 - 113.5		16.785	571.990	0.029	0.301	1044.642	0.000
L10	113.5 - 112.167 (10)	TP21.458x21.25x0.488	16.971	577.719	0.029	0.300	1065.675	0.000
L11	112.167 - 111.917 (11)	TP21.497x21.458x0.7	17.108	822.682	0.021	0.296	1504.983	0.000
L12	111.917 - 110.167 (12)	TP21.77x21.497x0.7	17.217	833.481	0.021	0.295	1544.758	0.000
L13	110.167 - 109.917 (13)	TP21.813x21.77x0.625	17.326	748.345	0.023	0.294	1394.733	0.000
L14	109.917 - 108.917	TP22.672x21.813x0.6	17.380	725.082	0.024	0.294	1363.925	0.000
	108.917 - 107.917		17.523	730.906	0.024	0.292	1385.917	0.000
	107.917 - 106.917		17.665	736.729	0.024	0.291	1408.092	0.000
	106.917 - 105.917		17.808	742.552	0.024	0.289	1430.442	0.000
	105.917 - 104.917		17.950	748.376	0.024	0.287	1452.967	0.000
L15	104.917 - 103.917	TP23.53x22.672x0.588	18.355	738.902	0.025	0.188	1446.550	0.000
	103.917 - 102.917		18.452	744.604	0.025	0.187	1468.958	0.000
	102.917 - 101.917		18.548	750.306	0.025	0.185	1491.542	0.000
	101.917 - 100.917		18.645	756.008	0.025	0.184	1514.300	0.000
	100.917 - 99.917		18.741	761.710	0.025	0.182	1537.233	0.000
L16	99.917 - 98.6877	TP24.375x23.53x0.575	18.823	752.770	0.025	0.181	1533.992	0.000
	98.6877 -		18.903	759.630	0.025	0.179	1562.083	0.000

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
	97.4585							
	97.4585 - 96.2292		18.983	766.491	0.025	0.177	1590.425	0.000
	96.2292 - 95		19.063	773.351	0.025	0.175	1619.017	0.000
L17	95 - 94.75 (17)	TP24.418x24.375x0.7	19.119	938.224	0.020	0.174	1957.408	0.000
L18	94.75 - 93.75	TP25.277x24.418x0.688	19.173	928.629	0.021	0.173	1952.442	0.000
	93.75 - 92.75		19.264	935.301	0.021	0.172	1980.600	0.000
	92.75 - 91.75		19.355	941.974	0.021	0.170	2008.967	0.000
	91.75 - 90.75		19.446	948.647	0.020	0.169	2037.525	0.000
	90.75 - 89.75		19.538	955.320	0.020	0.168	2066.292	0.000
L19	89.75 - 88.6875	TP26.007x25.277x0.675	19.633	945.388	0.021	0.166	2061.025	0.000
	88.6875 - 87.625		11.173	952.349	0.012	1.347	2061.025	0.001
	87.625 - 86.5625		11.099	959.310	0.012	1.348	2091.483	0.001
	86.5625 - 85.5		11.027	966.270	0.011	1.350	2122.175	0.001
L20	85.5 - 85.25 (20)	TP26.049x26.007x0.863	11.216	1227.630	0.009	1.352	2710.583	0.000
L21	85.25 - 85 (21)	TP26.092x26.049x0.863	11.208	1229.730	0.009	1.352	2719.850	0.000
L22	85 - 84.75 (22)	TP26.135x26.092x0.838	11.192	1197.300	0.009	1.352	2655.275	0.001
L23	84.75 - 83 (23)	TP26.436x26.135x0.838	10.952	1211.520	0.009	1.350	2664.317	0.001
L24	83 - 82.65 (24)	TP26.496x26.436x0.713	10.962	1038.150	0.011	1.354	2343.558	0.001
L25	82.65 - 82.4167 (25)	TP26.536x26.496x0.713	11.087	1039.760	0.011	1.354	2354.525	0.001
L26	82.4167 - 81.4167	TP27.395x26.536x0.688	10.810	1010.930	0.011	1.354	2283.392	0.001
	81.4167 - 80.4167		10.734	1017.600	0.011	1.354	2313.833	0.001
	80.4167 - 79.4167		10.659	1024.270	0.010	1.355	2344.483	0.001
	79.4167 - 78.4167		10.585	1030.940	0.010	1.356	2375.325	0.001
	78.4167 - 77.4167		10.512	1037.620	0.010	1.357	2406.375	0.001
L27	77.4167 - 76.1935	TP28.64x27.395x0.688	10.433	1045.780	0.010	1.357	2437.625	0.001
	76.1935 - 74.9702		9.227	1053.940	0.009	3.154	2476.133	0.001
	74.9702 - 73.747		9.098	1062.100	0.009	3.154	2514.933	0.001
	73.747 - 70.167		5.491	1085.990	0.005	1.817	2554.042	0.001
L28	73.747 - 70.167	TP28.079x27.4x0.725	4.636	1114.650	0.004	1.337	2564.392	0.001
	70.167 - 69.167		9.945	1120.720	0.009	1.192	2667.483	0.000
L29	69.167 - 68.167	TP28.821x28.079x0.713	9.837	1107.870	0.009	1.192	2652.575	0.000
	68.167 - 67.167		9.729	1113.840	0.009	1.192	2681.400	0.000
	67.167 - 66.167		9.623	1119.820	0.009	1.192	2710.383	0.000
	66.167 - 65.167		9.517	1125.790	0.008	1.192	2739.525	0.000
	65.167 - 64.167		9.414	1131.760	0.008	1.192	2768.817	0.000
L30	64.167 - 63.167	TP29.562x28.821x0.725	9.311	1157.180	0.008	1.192	2844.825	0.000
	63.167 -		9.211	1163.250	0.008	1.192	2874.942	0.000

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
	62.167							
	62.167 - 61.167		9.112	1169.330	0.008	1.192	2905.208	0.000
	61.167 - 60.167		9.015	1175.410	0.008	1.192	2935.642	0.000
	60.167 - 59.167		8.920	1181.480	0.008	1.191	2966.225	0.000
L31	59.167 - 58.167	TP30.304x29.562x0.713	8.822	1167.590	0.008	1.191	2947.858	0.000
	58.167 - 57.167		8.724	1173.560	0.007	1.191	2978.242	0.000
	57.167 - 56.167		8.627	1179.530	0.007	1.191	3008.783	0.000
	56.167 - 55.167		8.532	1185.500	0.007	1.191	3039.475	0.000
	55.167 - 54.167		8.439	1191.470	0.007	1.191	3070.325	0.000
L32	54.167 - 53.167	TP31.045x30.304x0.7	8.343	1176.930	0.007	1.191	3049.500	0.000
	53.167 - 52.167		8.247	1182.800	0.007	1.191	3080.133	0.000
	52.167 - 51.167		8.152	1188.660	0.007	1.191	3110.917	0.000
	51.167 - 50.167		8.060	1194.530	0.007	1.191	3141.850	0.000
	50.167 - 49.167		7.968	1200.400	0.007	1.191	3172.942	0.000
L33	49.167 - 48.1668	TP31.342x31.045x0.7	7.876	1206.260	0.007	1.191	3204.183	0.000
	48.1668 - 47.1667		7.786	1212.130	0.006	1.191	3235.583	0.000
L34	47.1667 - 46.9167 (34)	TP31.379x31.342x0.788	7.738	1361.400	0.006	1.190	3654.567	0.000
L35	46.9167 - 45.75	TP31.898x31.379x0.775	7.689	1347.920	0.006	1.190	3608.233	0.000
	45.75 - 44.5834		7.606	1355.500	0.006	1.190	3649.150	0.000
	44.5834 - 43.4167		7.525	1363.070	0.006	1.190	3690.292	0.000
L36	43.4167 - 43.1667 (36)	TP31.935x31.898x0.65	7.461	1149.180	0.006	1.190	3154.975	0.000
L37	43.1667 - 42.1667	TP32.677x31.935x0.65	7.401	1154.620	0.006	1.190	3162.467	0.000
	42.1667 - 41.1667		7.303	1160.070	0.006	1.190	3192.525	0.000
	41.1667 - 40.1667		7.206	1165.520	0.006	1.190	3222.717	0.000
	40.1667 - 39.1667		7.111	1170.970	0.006	1.190	3253.058	0.000
	39.1667 - 38.1667		7.017	1176.410	0.006	1.190	3283.533	0.000
L38	38.1667 - 36.9569	TP33.66x32.677x0.65	6.920	1183.000	0.006	1.190	3314.158	0.000
	36.9569 - 35.747		6.807	1189.590	0.006	1.190	3351.392	0.000
	35.747 - 31.537		4.248	1212.530	0.004	0.724	3388.842	0.000
L39	35.747 - 31.537	TP33.161x32.286x0.438	2.613	804.883	0.003	0.466	2205.867	0.000
	31.537 -		6.583	809.036	0.008	1.190	2304.908	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 $\frac{T_u}{\phi T_n}$
	30.537							
L40	30.537 - 29.537	TP34.001x33.161x0.438	6.398	813.188	0.008	1.190	2328.758	0.001
	29.537 - 28.537		6.215	817.341	0.008	1.190	2352.725	0.001
	28.537 - 27.537		6.035	821.494	0.007	1.190	2376.817	0.001
	27.537 - 26.537		5.858	825.647	0.007	1.189	2401.025	0.000
	26.537 - 25.537		5.684	829.799	0.007	1.189	2425.367	0.000
L41	25.537 - 24.537	TP34.84x34.001x0.438	5.512	833.952	0.007	1.189	2449.825	0.000
	24.537 - 23.537		5.343	838.105	0.006	1.189	2474.408	0.000
	23.537 - 22.537		5.177	842.258	0.006	1.189	2499.108	0.000
	22.537 - 21.537		5.095	846.410	0.006	1.189	2523.942	0.000
	21.537 - 20.537		4.934	850.563	0.006	0.925	2548.892	0.000
L42	20.537 - 19.537	TP35.68x34.84x0.438	4.776	854.716	0.006	0.925	2573.958	0.000
	19.537 - 18.537		4.621	858.869	0.005	0.925	2599.158	0.000
	18.537 - 17.537		4.468	863.022	0.005	0.925	2624.475	0.000
	17.537 - 16.537		4.318	867.174	0.005	0.925	2649.917	0.000
	16.537 - 15.537		4.171	871.327	0.005	0.925	2675.483	0.000
L43	15.537 - 14.537	TP36.52x35.68x0.438	4.026	875.480	0.005	0.925	2701.167	0.000
	14.537 - 13.537		3.885	879.633	0.004	0.925	2726.975	0.000
	13.537 - 12.537		3.745	883.785	0.004	0.925	2752.908	0.000
	12.537 - 11.537		3.609	887.938	0.004	0.925	2778.958	0.000
	11.537 - 10.537		3.475	892.091	0.004	0.925	2805.142	0.000
L44	10.537 - 9.537	TP37.36x36.52x0.438	3.343	896.244	0.004	0.925	2831.442	0.000
	9.537 - 8.537		3.215	900.396	0.004	0.925	2857.858	0.000
	8.537 - 7.537		3.089	904.549	0.003	0.925	2884.408	0.000
	7.537 - 6.537		2.965	908.702	0.003	0.925	2911.075	0.000
	6.537 - 5.537		2.844	912.855	0.003	0.925	2937.867	0.000
L45	5.537 - 4.537	TP38.2x37.36x0.438	2.726	917.008	0.003	0.925	2964.775	0.000
	4.537 - 3.537		2.610	921.160	0.003	0.925	2991.817	0.000
	3.537 - 2.537		2.497	925.313	0.003	0.925	3018.975	0.000
	2.537 - 1.537		2.387	929.466	0.003	0.925	3046.258	0.000
	1.537 - 0.537		2.279	933.619	0.002	0.925	3073.658	0.000
L46	0.537 - 0 (46)	TP38.29x38.2x0.438	2.178	935.849	0.002	0.925	3101.183	0.000

Pole Interaction Design Data

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
L1	150.167 - 149.167	0.000	0.003	0.000	0.003	0.000	0.004 ✔	1.050	4.8.2 ✔
	149.167 - 148.167	0.007	0.034	0.000	0.028	0.000	0.041 ✔	1.050	4.8.2 ✔
	148.167 - 147.167	0.007	0.054	0.000	0.028	0.000	0.062 ✔	1.050	4.8.2 ✔
	147.167 - 146.167	0.007	0.074	0.000	0.028	0.000	0.081 ✔	1.050	4.8.2 ✔
	146.167 - 145.167	0.007	0.093	0.000	0.028	0.000	0.101 ✔	1.050	4.8.2 ✔
L2	145.167 - 144.167	0.007	0.112	0.000	0.028	0.000	0.120 ✔	1.050	4.8.2 ✔
	144.167 - 143.167	0.007	0.130	0.000	0.028	0.000	0.138 ✔	1.050	4.8.2 ✔
	143.167 - 142.167	0.007	0.148	0.000	0.028	0.000	0.155 ✔	1.050	4.8.2 ✔
	142.167 - 141.167	0.007	0.165	0.000	0.028	0.000	0.173 ✔	1.050	4.8.2 ✔
	141.167 - 140.167	0.007	0.182	0.000	0.028	0.000	0.189 ✔	1.050	4.8.2 ✔
L3	140.167 - 139.167	0.011	0.211	0.000	0.041	0.000	0.223 ✔	1.050	4.8.2 ✔
	139.167 - 138.167	0.011	0.235	0.000	0.041	0.000	0.247 ✔	1.050	4.8.2 ✔
	138.167 - 137.167	0.011	0.258	0.000	0.041	0.000	0.271 ✔	1.050	4.8.2 ✔
	137.167 - 136.167	0.011	0.281	0.000	0.041	0.000	0.294 ✔	1.050	4.8.2 ✔
	136.167 - 135.167	0.011	0.303	0.000	0.041	0.000	0.316 ✔	1.050	4.8.2 ✔
L4	135.167 - 134.167	0.011	0.325	0.000	0.041	0.000	0.337 ✔	1.050	4.8.2 ✔
	134.167 - 133.167	0.011	0.345	0.000	0.041	0.000	0.358 ✔	1.050	4.8.2 ✔
	133.167 - 132.167	0.011	0.366	0.000	0.040	0.000	0.378 ✔	1.050	4.8.2 ✔
	132.167 - 131.167	0.011	0.385	0.000	0.040	0.000	0.398 ✔	1.050	4.8.2 ✔
	131.167 - 130.167	0.011	0.404	0.000	0.040	0.000	0.417 ✔	1.050	4.8.2 ✔
L5	130.167 - 129.167	0.015	0.451	0.000	0.060	0.001	0.470 ✔	1.050	4.8.2 ✔
	129.167 - 128.167	0.015	0.481	0.000	0.059	0.001	0.499 ✔	1.050	4.8.2 ✔
	128.167 - 127.167	0.015	0.510	0.000	0.059	0.001	0.528 ✔	1.050	4.8.2 ✔
	127.167 - 126.167	0.015	0.537	0.000	0.059	0.001	0.556 ✔	1.050	4.8.2 ✔
	126.167 - 125.167	0.015	0.564	0.000	0.058	0.001	0.583 ✔	1.050	4.8.2 ✔
L6	125.167 - 123.75 (6)	0.015	0.601	0.000	0.058	0.001	0.619 ✔	1.050	4.8.2 ✔

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L7	123.75 - 123.5 (7)	0.007	0.309	0.000	0.029	0.000	0.317 ✔	1.050	4.8.2 ✔
L8	123.5 - 122.5	0.008	0.328	0.000	0.029	0.000	0.337 ✔	1.050	4.8.2 ✔
	122.5 - 121.5	0.008	0.341	0.000	0.029	0.000	0.349 ✔	1.050	4.8.2 ✔
	121.5 - 120.5	0.008	0.353	0.000	0.029	0.000	0.361 ✔	1.050	4.8.2 ✔
	120.5 - 119.5	0.008	0.365	0.000	0.029	0.000	0.373 ✔	1.050	4.8.2 ✔
	119.5 - 118.5	0.008	0.376	0.000	0.029	0.000	0.385 ✔	1.050	4.8.2 ✔
L9	118.5 - 117.5	0.008	0.396	0.000	0.030	0.000	0.405 ✔	1.050	4.8.2 ✔
	117.5 - 116.5	0.008	0.407	0.000	0.029	0.000	0.416 ✔	1.050	4.8.2 ✔
	116.5 - 115.5	0.008	0.418	0.000	0.029	0.000	0.427 ✔	1.050	4.8.2 ✔
	115.5 - 114.5	0.008	0.428	0.000	0.029	0.000	0.438 ✔	1.050	4.8.2 ✔
	114.5 - 113.5	0.009	0.439	0.000	0.029	0.000	0.448 ✔	1.050	4.8.2 ✔
L10	113.5 - 112.167 (10)	0.009	0.452	0.000	0.029	0.000	0.462 ✔	1.050	4.8.2 ✔
L11	112.167 - 111.917 (11)	0.006	0.326	0.000	0.021	0.000	0.333 ✔	1.050	4.8.2 ✔
L12	111.917 - 110.167 (12)	0.006	0.338	0.000	0.021	0.000	0.345 ✔	1.050	4.8.2 ✔
L13	110.167 - 109.917 (13)	0.007	0.376	0.000	0.023	0.000	0.384 ✔	1.050	4.8.2 ✔
L14	109.917 - 108.917	0.008	0.398	0.000	0.024	0.000	0.406 ✔	1.050	4.8.2 ✔
	108.917 - 107.917	0.008	0.404	0.000	0.024	0.000	0.413 ✔	1.050	4.8.2 ✔
	107.917 - 106.917	0.008	0.411	0.000	0.024	0.000	0.420 ✔	1.050	4.8.2 ✔
	106.917 - 105.917	0.008	0.417	0.000	0.024	0.000	0.426 ✔	1.050	4.8.2 ✔
	105.917 - 104.917	0.008	0.424	0.000	0.024	0.000	0.433 ✔	1.050	4.8.2 ✔
L15	104.917 - 103.917	0.009	0.439	0.000	0.025	0.000	0.448 ✔	1.050	4.8.2 ✔
	103.917 - 102.917	0.009	0.445	0.000	0.025	0.000	0.454 ✔	1.050	4.8.2 ✔
	102.917 - 101.917	0.009	0.451	0.000	0.025	0.000	0.460 ✔	1.050	4.8.2 ✔
	101.917 - 100.917	0.009	0.457	0.000	0.025	0.000	0.466 ✔	1.050	4.8.2 ✔
	100.917 - 99.917	0.009	0.463	0.000	0.025	0.000	0.472 ✔	1.050	4.8.2 ✔
L16	99.917 - 98.6877	0.009	0.479	0.000	0.025	0.000	0.489 ✔	1.050	4.8.2 ✔

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	98.6877 - 97.4585	0.009	0.486	0.000	0.025	0.000	0.496 ✔	1.050	4.8.2 ✔
	97.4585 - 96.2292	0.009	0.492	0.000	0.025	0.000	0.502 ✔	1.050	4.8.2 ✔
	96.2292 - 95	0.009	0.499	0.000	0.025	0.000	0.508 ✔	1.050	4.8.2 ✔
L17	95 - 94.75 (17)	0.008	0.417	0.000	0.020	0.000	0.425 ✔	1.050	4.8.2 ✔
L18	94.75 - 93.75	0.008	0.428	0.000	0.021	0.000	0.436 ✔	1.050	4.8.2 ✔
	93.75 - 92.75	0.008	0.432	0.000	0.021	0.000	0.440 ✔	1.050	4.8.2 ✔
	92.75 - 91.75	0.008	0.436	0.000	0.021	0.000	0.444 ✔	1.050	4.8.2 ✔
	91.75 - 90.75	0.008	0.440	0.000	0.020	0.000	0.448 ✔	1.050	4.8.2 ✔
	90.75 - 89.75	0.008	0.443	0.000	0.020	0.000	0.452 ✔	1.050	4.8.2 ✔
L19	89.75 - 88.6875	0.008	0.455	0.000	0.021	0.000	0.463 ✔	1.050	4.8.2 ✔
	88.6875 - 87.625	0.075	0.432	0.000	0.012	0.001	0.507 ✔	1.050	4.8.2 ✔
	87.625 - 86.5625	0.075	0.429	0.000	0.012	0.001	0.504 ✔	1.050	4.8.2 ✔
	86.5625 - 85.5	0.074	0.426	0.000	0.011	0.001	0.501 ✔	1.050	4.8.2 ✔
L20	85.5 - 85.25 (20)	0.058	0.339	0.000	0.009	0.000	0.397 ✔	1.050	4.8.2 ✔
L21	85.25 - 85 (21)	0.058	0.339	0.000	0.009	0.000	0.397 ✔	1.050	4.8.2 ✔
L22	85 - 84.75 (22)	0.060	0.347	0.000	0.009	0.001	0.407 ✔	1.050	4.8.2 ✔
L23	84.75 - 83 (23)	0.059	0.347	0.000	0.009	0.001	0.406 ✔	1.050	4.8.2 ✔
L24	83 - 82.65 (24)	0.069	0.398	0.000	0.011	0.001	0.467 ✔	1.050	4.8.2 ✔
L25	82.65 - 82.4167 (25)	0.069	0.397	0.000	0.011	0.001	0.466 ✔	1.050	4.8.2 ✔
L26	82.4167 - 81.4167	0.071	0.410	0.000	0.011	0.001	0.481 ✔	1.050	4.8.2 ✔
	81.4167 - 80.4167	0.071	0.407	0.000	0.011	0.001	0.478 ✔	1.050	4.8.2 ✔
	80.4167 - 79.4167	0.070	0.405	0.000	0.010	0.001	0.475 ✔	1.050	4.8.2 ✔
	79.4167 - 78.4167	0.070	0.403	0.000	0.010	0.001	0.473 ✔	1.050	4.8.2 ✔
	78.4167 - 77.4167	0.070	0.400	0.000	0.010	0.001	0.470 ✔	1.050	4.8.2 ✔
L27	77.4167 - 76.1935	0.069	0.398	0.000	0.010	0.001	0.468 ✔	1.050	4.8.2 ✔
	76.1935 - 74.9702	0.070	0.395	0.000	0.009	0.001	0.465 ✔	1.050	4.8.2 ✔

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	74.9702 - 73.747	0.069	0.393	0.000	0.009	0.001	0.463 ✔	1.050	4.8.2 ✔
	73.747 - 70.167	0.034	0.198	0.000	0.005	0.001	0.232 ✔	1.050	4.8.2 ✔
L28	73.747 - 70.167	0.034	0.193	0.000	0.004	0.001	0.227 ✔	1.050	4.8.2 ✔
	70.167 - 69.167	0.066	0.389	0.000	0.009	0.000	0.455 ✔	1.050	4.8.2 ✔
L29	69.167 - 68.167	0.067	0.395	0.000	0.009	0.000	0.462 ✔	1.050	4.8.2 ✔
	68.167 - 67.167	0.067	0.394	0.000	0.009	0.000	0.461 ✔	1.050	4.8.2 ✔
	67.167 - 66.167	0.066	0.394	0.000	0.009	0.000	0.460 ✔	1.050	4.8.2 ✔
	66.167 - 65.167	0.066	0.393	0.000	0.008	0.000	0.459 ✔	1.050	4.8.2 ✔
	65.167 - 64.167	0.066	0.393	0.000	0.008	0.000	0.458 ✔	1.050	4.8.2 ✔
L30	64.167 - 63.167	0.064	0.386	0.000	0.008	0.000	0.450 ✔	1.050	4.8.2 ✔
	63.167 - 62.167	0.064	0.385	0.000	0.008	0.000	0.449 ✔	1.050	4.8.2 ✔
	62.167 - 61.167	0.064	0.384	0.000	0.008	0.000	0.448 ✔	1.050	4.8.2 ✔
	61.167 - 60.167	0.064	0.383	0.000	0.008	0.000	0.447 ✔	1.050	4.8.2 ✔
	60.167 - 59.167	0.063	0.382	0.000	0.008	0.000	0.446 ✔	1.050	4.8.2 ✔
L31	59.167 - 58.167	0.064	0.388	0.000	0.008	0.000	0.452 ✔	1.050	4.8.2 ✔
	58.167 - 57.167	0.064	0.387	0.000	0.007	0.000	0.451 ✔	1.050	4.8.2 ✔
	57.167 - 56.167	0.064	0.386	0.000	0.007	0.000	0.450 ✔	1.050	4.8.2 ✔
	56.167 - 55.167	0.063	0.385	0.000	0.007	0.000	0.448 ✔	1.050	4.8.2 ✔
	55.167 - 54.167	0.063	0.384	0.000	0.007	0.000	0.447 ✔	1.050	4.8.2 ✔
L32	54.167 - 53.167	0.064	0.389	0.000	0.007	0.000	0.453 ✔	1.050	4.8.2 ✔
	53.167 - 52.167	0.064	0.388	0.000	0.007	0.000	0.452 ✔	1.050	4.8.2 ✔
	52.167 - 51.167	0.064	0.387	0.000	0.007	0.000	0.451 ✔	1.050	4.8.2 ✔
	51.167 - 50.167	0.063	0.386	0.000	0.007	0.000	0.449 ✔	1.050	4.8.2 ✔
	50.167 - 49.167	0.063	0.385	0.000	0.007	0.000	0.448 ✔	1.050	4.8.2 ✔
L33	49.167 - 48.1668	0.063	0.383	0.000	0.007	0.000	0.446 ✔	1.050	4.8.2 ✔
	48.1668 - 47.1667	0.063	0.382	0.000	0.006	0.000	0.445 ✔	1.050	4.8.2 ✔

Section No.	Elevation ft	Ratio $P_u/\phi P_n$	Ratio $M_{ux}/\phi M_{nx}$	Ratio $M_{uy}/\phi M_{ny}$	Ratio $V_u/\phi V_n$	Ratio $T_u/\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L34	47.1667 - 46.9167 (34)	0.056	0.341	0.000	0.006	0.000	0.397 ✔	1.050	4.8.2 ✔
L35	46.9167 - 45.75	0.056	0.346	0.000	0.006	0.000	0.403 ✔	1.050	4.8.2 ✔
	45.75 - 44.5834	0.056	0.345	0.000	0.006	0.000	0.401 ✔	1.050	4.8.2 ✔
	44.5834 - 43.4167	0.056	0.343	0.000	0.006	0.000	0.399 ✔	1.050	4.8.2 ✔
L36	43.4167 - 43.1667 (36)	0.066	0.403	0.000	0.006	0.000	0.469 ✔	1.050	4.8.2 ✔
L37	43.1667 - 42.1667	0.066	0.403	0.000	0.006	0.000	0.469 ✔	1.050	4.8.2 ✔
	42.1667 - 41.1667	0.066	0.401	0.000	0.006	0.000	0.467 ✔	1.050	4.8.2 ✔
	41.1667 - 40.1667	0.066	0.400	0.000	0.006	0.000	0.465 ✔	1.050	4.8.2 ✔
	40.1667 - 39.1667	0.065	0.398	0.000	0.006	0.000	0.464 ✔	1.050	4.8.2 ✔
	39.1667 - 38.1667	0.065	0.397	0.000	0.006	0.000	0.462 ✔	1.050	4.8.2 ✔
L38	38.1667 - 36.9569	0.065	0.395	0.000	0.006	0.000	0.460 ✔	1.050	4.8.2 ✔
	36.9569 - 35.747	0.065	0.393	0.000	0.006	0.000	0.458 ✔	1.050	4.8.2 ✔
	35.747 - 31.537	0.039	0.238	0.000	0.004	0.000	0.277 ✔	1.050	4.8.2 ✔
L39	35.747 - 31.537	0.039	0.234	0.000	0.003	0.000	0.273 ✔	1.050	4.8.2 ✔
	31.537 - 30.537	0.096	0.584	0.000	0.008	0.001	0.680 ✔	1.050	4.8.2 ✔
L40	30.537 - 29.537	0.096	0.581	0.000	0.008	0.001	0.677 ✔	1.050	4.8.2 ✔
	29.537 - 28.537	0.095	0.578	0.000	0.008	0.001	0.673 ✔	1.050	4.8.2 ✔
	28.537 - 27.537	0.095	0.575	0.000	0.007	0.001	0.670 ✔	1.050	4.8.2 ✔
	27.537 - 26.537	0.094	0.571	0.000	0.007	0.000	0.666 ✔	1.050	4.8.2 ✔
	26.537 - 25.537	0.094	0.568	0.000	0.007	0.000	0.662 ✔	1.050	4.8.2 ✔
L41	25.537 - 24.537	0.094	0.565	0.000	0.007	0.000	0.659 ✔	1.050	4.8.2 ✔
	24.537 - 23.537	0.093	0.561	0.000	0.006	0.000	0.655 ✔	1.050	4.8.2 ✔
	23.537 - 22.537	0.093	0.558	0.000	0.006	0.000	0.651 ✔	1.050	4.8.2 ✔
	22.537 - 21.537	0.093	0.555	0.000	0.006	0.000	0.647 ✔	1.050	4.8.2 ✔
	21.537 - 20.537	0.092	0.551	0.000	0.006	0.000	0.643 ✔	1.050	4.8.2 ✔
L42	20.537 - 19.537	0.092	0.548	0.000	0.006	0.000	0.640 ✔	1.050	4.8.2 ✔

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	19.537 - 18.537	0.091	0.544	0.000	0.005	0.000	0.636 ✔	1.050	4.8.2 ✔
	18.537 - 17.537	0.091	0.541	0.000	0.005	0.000	0.632 ✔	1.050	4.8.2 ✔
	17.537 - 16.537	0.091	0.537	0.000	0.005	0.000	0.628 ✔	1.050	4.8.2 ✔
	16.537 - 15.537	0.090	0.534	0.000	0.005	0.000	0.624 ✔	1.050	4.8.2 ✔
L43	15.537 - 14.537	0.090	0.530	0.000	0.005	0.000	0.620 ✔	1.050	4.8.2 ✔
	14.537 - 13.537	0.090	0.527	0.000	0.004	0.000	0.616 ✔	1.050	4.8.2 ✔
	13.537 - 12.537	0.089	0.523	0.000	0.004	0.000	0.612 ✔	1.050	4.8.2 ✔
	12.537 - 11.537	0.089	0.519	0.000	0.004	0.000	0.608 ✔	1.050	4.8.2 ✔
	11.537 - 10.537	0.089	0.516	0.000	0.004	0.000	0.605 ✔	1.050	4.8.2 ✔
L44	10.537 - 9.537	0.088	0.513	0.000	0.004	0.000	0.601 ✔	1.050	4.8.2 ✔
	9.537 - 8.537	0.088	0.510	0.000	0.004	0.000	0.598 ✔	1.050	4.8.2 ✔
	8.537 - 7.537	0.088	0.507	0.000	0.003	0.000	0.595 ✔	1.050	4.8.2 ✔
	7.537 - 6.537	0.087	0.504	0.000	0.003	0.000	0.592 ✔	1.050	4.8.2 ✔
	6.537 - 5.537	0.087	0.501	0.000	0.003	0.000	0.589 ✔	1.050	4.8.2 ✔
L45	5.537 - 4.537	0.087	0.498	0.000	0.003	0.000	0.585 ✔	1.050	4.8.2 ✔
	4.537 - 3.537	0.086	0.496	0.000	0.003	0.000	0.582 ✔	1.050	4.8.2 ✔
	3.537 - 2.537	0.086	0.493	0.000	0.003	0.000	0.579 ✔	1.050	4.8.2 ✔
	2.537 - 1.537	0.086	0.490	0.000	0.003	0.000	0.576 ✔	1.050	4.8.2 ✔
	1.537 - 0.537	0.086	0.487	0.000	0.002	0.000	0.572 ✔	1.050	4.8.2 ✔
L46	0.537 - 0 (46)	0.085	0.484	0.000	0.002	0.000	0.569 ✔	1.050	4.8.2 ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	150.167 - 145.167	Pole	TP16.31x15.53x0.25	1	-5.020	794.121	**	**

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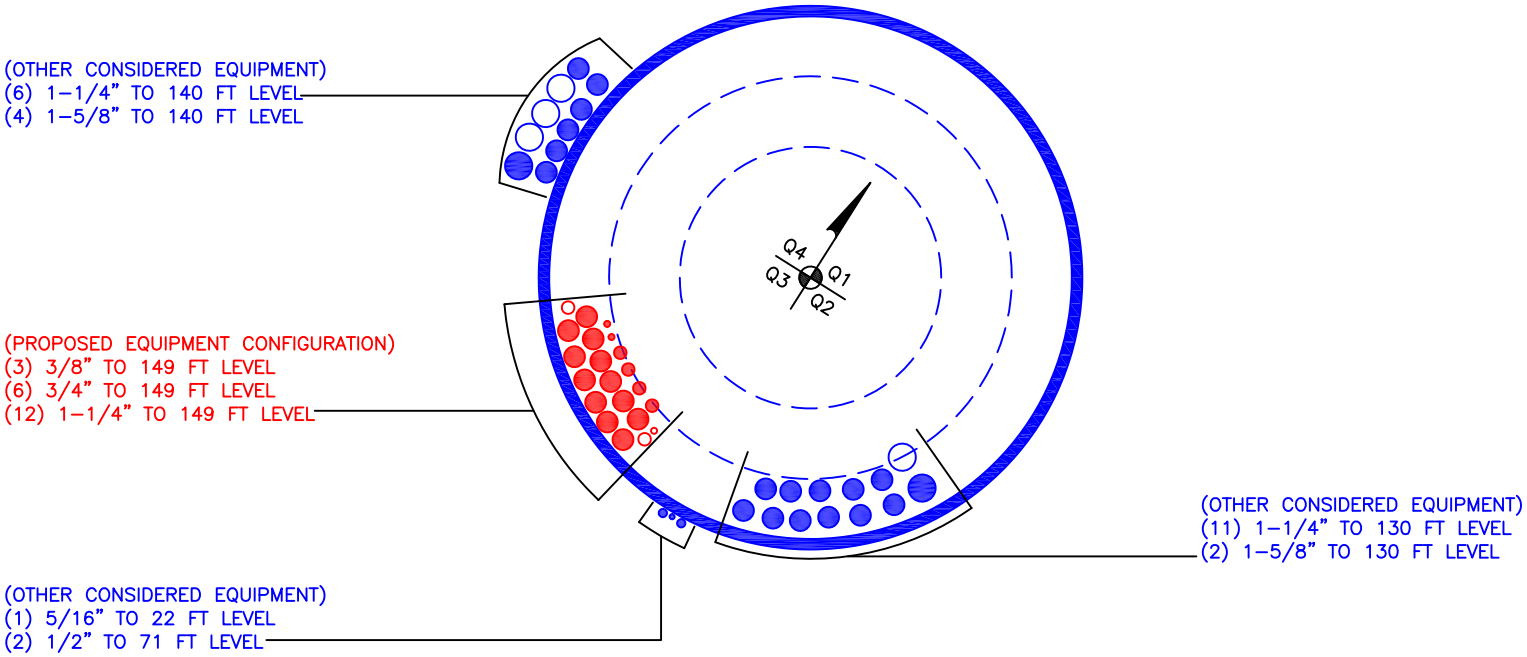
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L2	145.167 - 140.167	Pole	TP17.09x16.31x0.25	2	-5.331	832.690	**	**
L3	140.167 - 135.167	Pole	TP17.87x17.09x0.25	3	-8.883	871.258	**	**
L4	135.167 - 130.167	Pole	TP18.65x17.87x0.25	4	-9.335	909.827	**	**
L5	130.167 - 125.167	Pole	TP19.43x18.65x0.25	5	-13.424	948.396	**	**
L6	125.167 - 123.75	Pole	TP19.651x19.43x0.25	6	-13.588	959.326	**	**
L7	123.75 - 123.5	Pole	TP19.69x19.651x0.513	7	-13.646	1943.959	**	**
L8	123.5 - 118.5	Pole	TP20.47x19.69x0.5	8	-14.465	1974.924	**	**
L9	118.5 - 113.5	Pole	TP21.25x20.47x0.488	9	-16.418	2001.961	**	**
L10	113.5 - 112.167	Pole	TP21.458x21.25x0.488	10	-17.066	2022.016	**	**
L11	112.167 - 111.917	Pole	TP21.497x21.458x0.7	11	-17.210	2879.383	**	**
L12	111.917 - 110.167	Pole	TP21.77x21.497x0.7	12	-18.055	2917.183	**	**
L13	110.167 - 109.917	Pole	TP21.813x21.77x0.625	13	-18.150	2619.204	**	**
L14	109.917 - 104.917	Pole	TP22.672x21.813x0.6	14	-20.808	2619.319	**	**
L15	104.917 - 99.917	Pole	TP23.53x22.672x0.588	15	-22.660	2665.981	**	**
L16	99.917 - 95	Pole	TP24.375x23.53x0.575	16	-23.880	2706.732	**	**
L17	95 - 94.75	Pole	TP24.418x24.375x0.7	17	-23.961	3283.780	**	**
L18	94.75 - 89.75	Pole	TP25.277x24.418x0.688	18	-25.357	3343.620	**	**
L19	89.75 - 85.5	Pole	TP26.007x25.277x0.675	19	-236.265	3308.854	**	**
		Guy A@88.6875	1 5/8	49	155.416	204.120	**	**
		Guy B@88.6875	1 3/8	48	85.618	146.160	**	**
		Guy C@88.6875	1 3/8	47	96.299	146.160	**	**
L20	85.5 - 85.25	Pole	TP26.049x26.007x0.863	20	-236.991	4289.386	**	**
L21	85.25 - 85	Pole	TP26.092x26.049x0.863	21	-237.069	4296.715	**	**
L22	85 - 84.75	Pole	TP26.135x26.092x0.838	22	-237.147	4183.431	**	**
L23	84.75 - 83	Pole	TP26.436x26.135x0.838	23	-237.224	4190.539	**	**
L24	83 - 82.65	Pole	TP26.496x26.436x0.713	24	-237.735	3625.062	**	**
L25	82.65 - 82.4167	Pole	TP26.536x26.496x0.713	25	-237.835	3633.525	**	**
L26	82.4167 - 77.4167	Pole	TP27.395x26.536x0.688	26	-237.905	3514.885	**	**
L27	77.4167 - 70.167	Pole	TP28.64x27.395x0.688	27	-239.349	3631.656	**	**
L28	70.167 - 69.167	Pole	TP28.079x27.4x0.725	28	-245.370	3901.254	**	**
L29	69.167 - 64.167	Pole	TP28.821x28.079x0.713	29	-245.657	3856.660	**	**
L30	64.167 - 59.167	Pole	TP29.562x28.821x0.725	30	-247.098	4028.850	**	**
L31	59.167 - 54.167	Pole	TP30.304x29.562x0.713	31	-248.556	4065.652	**	**
L32	54.167 - 49.167	Pole	TP31.045x30.304x0.7	32	-250.031	4098.717	**	**
L33	49.167 - 47.1667	Pole	TP31.342x31.045x0.7	33	-251.524	4201.386	**	**
L34	47.1667 - 46.9167	Pole	TP31.379x31.342x0.788	34	-252.126	4759.135	**	**
L35	46.9167 - 43.4167	Pole	TP31.898x31.379x0.775	35	-252.210	4691.190	**	**
L36	43.4167 - 43.1667	Pole	TP31.935x31.898x0.65	36	-253.359	4017.352	**	**
L37	43.1667 - 38.1667	Pole	TP32.677x31.935x0.65	37	-253.435	4022.119	**	**
L38	38.1667 - 31.537	Pole	TP33.66x32.677x0.65	38	-254.916	4117.449	**	**
L39	31.537 - 30.537	Pole	TP33.161x32.286x0.438	39	-257.689	2817.087	**	**
L40	30.537 - 25.537	Pole	TP34.001x33.161x0.438	40	-257.919	2831.629	**	**
L41	25.537 - 20.537	Pole	TP34.84x34.001x0.438	41	-259.081	2904.300	**	**
L42	20.537 - 15.537	Pole	TP35.68x34.84x0.438	42	-260.381	2976.970	**	**
L43	15.537 - 10.537	Pole	TP36.52x35.68x0.438	43	-261.585	3049.641	**	**
L44	10.537 - 5.537	Pole	TP37.36x36.52x0.438	44	-262.812	3122.322	**	**
L45	5.537 - 0.537	Pole	TP38.2x37.36x0.438	45	-264.060	3194.992	**	**
L46	0.537 - 0	Pole	TP38.29x38.2x0.438	46	-265.331	3267.663	**	**

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
							Summary	
						Pole (L39)	**	**
						Guy A (L19)	**	**
						Guy B (L19)	**	**
						Guy C (L19)	**	**
						RATING =	**	**

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

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 841289

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 841289

Work Order: 2056613

Pole Geometry

	Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1	150.167	40	0	12	15.53	21.77	0.25	Auto	A572-65
2	110.167	40	3.58	12	21.77	28.64	0.3125	Auto	A572-65
3	73.747	42.21	4.21	12	27.40	33.66	0.375	Auto	A572-65
4	35.747	35.747	0	12	32.29	38.29	0.4375	Auto	A572-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12
1	73	95	plate	PL-4x1	2			E1				E1					
2	47.1667	85	plate	CCI-SFP-060100	2		E2				E2						
3	47.1667	83	plate	CCI-SFP-060100	1										E2		
4	85	110.167	plate	CCI-SFP-065125	2		E2				E2						
5	82.6667	110.167	plate	PL-6.5x1.25	1											E2	
6	112.167	123.75	plate	CCI-AFP-045100	3		E2				E2				E2		
7	32.6667	47.1667	plate	CCI-CFP-065125	3		E3				E3				E3		
8	110.167	112.167	plate	BS-6.5x1.25	3	E2				E2				E2			
9	43.4167	85.5	plate	CCI-SFP-045100	2				E4				E4				
10																	

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Type	Bottom Termination Length (in)	Top Termination Type	Top Termination Length (in)	Lu (in)	Net Area (in2)	Bolt Hole Size (in)	Reinforcement Material
1	4	1	4	0.5	Welded	n/a	PC 8.8 - M20 (100)	21.000	18.000	2.750	1.1875	A572-65
2	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.000	4.750	1.1875	A572-65
3	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.000	4.750	1.1875	A572-65
4	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	33	PC 8.8 - M20 (100)	33.000	19.000	6.563	1.1875	A572-65
5	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	33	PC 8.8 - M20 (100)	33.000	19.000	6.563	1.1875	A572-65
6	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	20.000	3.250	1.1875	A572-65
7	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	33	PC 8.8 - M20 (100)	33.000	19.000	6.563	1.1875	A572-65
8	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	30	PC 8.8 - M20 (100)	30.000	16.000	6.563	1.1875	A572-65
9	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	20.000	3.250	1.1875	A572-65

Connection Details for Custom Reinforcements

Reinforcement	End	# Bolts	N or X	Bolt Spacing (in)	Edge Dist (in)	Weld Grade (ksi)	Transverse (Horiz.) Weld Type	Horiz. Weld Length (in)	Horiz. Groove Depth (in)	Horiz. Groove Angle (deg)	Horiz. Fillet Size (in)	Vertical Weld Length (in)	Vertical Fillet Size (in)	Rev H Connection Capacity (kip)
PL-4x1	Top	7	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	70	None	-	-	-	-	15	0.313	-
PL-6.5x1.25	Top	11	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	11	N	3	3	-	-	-	-	-	-	-	-	-
CCI-CFP-065125	Top	11	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	11	N	3	3	-	-	-	-	-	-	-	-	-
BS-6.5x1.25	Top	10	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	10	N	3	3	-	-	-	-	-	-	-	-	-

TNX Geometry Input

Increment (ft): 5 Export to TNX

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	150.167 - 145.167	5		12	15.530	16.310	0.25	A572-65	1.000
2	145.167 - 140.167	5		12	16.310	17.090	0.25	A572-65	1.000
3	140.167 - 135.167	5		12	17.090	17.870	0.25	A572-65	1.000
4	135.167 - 130.167	5		12	17.870	18.650	0.25	A572-65	1.000
5	130.167 - 125.167	5		12	18.650	19.430	0.25	A572-65	1.000
6	125.167 - 123.75	1.417		12	19.430	19.651	0.25	A572-65	1.000
7	123.75 - 123.5	0.25		12	19.651	19.690	0.5125	A572-65	0.922
8	123.5 - 118.5	5		12	19.690	20.470	0.5	A572-65	0.927
9	118.5 - 113.5	5		12	20.470	21.250	0.4875	A572-65	0.933
10	113.5 - 112.167	1.333		12	21.250	21.458	0.4875	A572-65	0.929
11	112.167 - 111.917	0.25		12	21.458	21.497	0.7	A572-65	0.886
12	111.917 - 110.167	1.75	0	12	21.497	21.770	0.7	A572-65	0.879
13	110.167 - 109.917	0.25		12	21.770	21.813	0.625	A572-65	1.080
14	109.917 - 104.917	5		12	21.813	22.672	0.6	A572-65	1.100
15	104.917 - 99.917	5		12	22.672	23.530	0.5875	A572-65	1.101
16	99.917 - 95	4.917		12	23.530	24.375	0.575	A572-65	1.103
17	95 - 94.75	0.25		12	24.375	24.418	0.7	A572-65	1.060
18	94.75 - 89.75	5		12	24.418	25.277	0.6875	A572-65	1.057
19	89.75 - 85.5	4.25		12	25.277	26.007	0.675	A572-65	1.058
20	85.5 - 85.25	0.25		12	26.007	26.049	0.8625	A572-65	0.963
21	85.25 - 85	0.25		12	26.049	26.092	0.8625	A572-65	0.962
22	85 - 84.75	0.25		12	26.092	26.135	0.8375	A572-65	0.926
23	84.75 - 83	1.75		12	26.135	26.436	0.8375	A572-65	0.919
24	83 - 82.65	0.35		12	26.436	26.496	0.7125	A572-65	1.038
25	82.65 - 82.4167	0.2333		12	26.496	26.536	0.7125	A572-65	1.037
26	82.4167 - 77.4167	5		12	26.536	27.395	0.6875	A572-65	1.054
27	77.4167 - 73.747	7.2497	3.58	12	27.395	28.640	0.6875	A572-65	1.040
28	73.747 - 69.167	4.58		12	27.400	28.079	0.725	A572-65	0.947
29	69.167 - 64.167	5		12	28.079	28.821	0.7125	A572-65	0.952
30	64.167 - 59.167	5		12	28.821	29.562	0.725	A572-65	0.925
31	59.167 - 54.167	5		12	29.562	30.304	0.7125	A572-65	0.931
32	54.167 - 49.167	5		12	30.304	31.045	0.7	A572-65	0.937
33	49.167 - 47.1667	2.0003		12	31.045	31.342	0.7	A572-65	0.933
34	47.1667 - 46.9167	0.25		12	31.342	31.379	0.7875	A572-65	0.913
35	46.9167 - 43.4167	3.5		12	31.379	31.898	0.775	A572-65	0.920
36	43.4167 - 43.1667	0.25		12	31.898	31.935	0.65	A572-65	0.955
37	43.1667 - 38.1667	5		12	31.935	32.677	0.65	A572-65	0.946
38	38.1667 - 35.747	6.6297	4.21	12	32.677	33.660	0.65	A572-65	0.942
39	35.747 - 30.537	5.21		12	32.286	33.161	0.4375	A572-65	1.000
40	30.537 - 25.537	5		12	33.161	34.001	0.4375	A572-65	1.000
41	25.537 - 20.537	5		12	34.001	34.840	0.4375	A572-65	1.000
42	20.537 - 15.537	5		12	34.840	35.680	0.4375	A572-65	1.000
43	15.537 - 10.537	5		12	35.680	36.520	0.4375	A572-65	1.000
44	10.537 - 5.537	5		12	36.520	37.360	0.4375	A572-65	1.000
45	5.537 - 0.537	5		12	37.360	38.200	0.4375	A572-65	1.000
46	0.537 - 0	0.537		12	38.200	38.290	0.4375	A572-65	1.000

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	150.167 - 145.167	5.02	28.87	6.45
2	145.167 - 140.167	5.33	61.94	6.78
3	140.167 - 135.167	8.88	113.09	10.14
4	135.167 - 130.167	9.33	164.50	10.46
5	130.167 - 125.167	13.42	249.66	15.83
6	125.167 - 123.75	13.59	272.12	15.91
7	123.75 - 123.5	13.65	276.10	16.00
8	123.5 - 118.5	14.47	356.48	16.27
9	118.5 - 113.5	16.42	439.01	16.79
10	113.5 - 112.167	17.07	461.47	16.97
11	112.167 - 111.917	17.21	465.72	17.11
12	111.917 - 110.167	18.05	495.61	17.22
13	110.167 - 109.917	18.15	499.93	17.33
14	109.917 - 104.917	20.81	587.74	17.95
15	104.917 - 99.917	22.66	680.02	18.74
16	99.917 - 95	23.88	772.81	19.06
17	95 - 94.75	23.96	777.57	19.12
18	94.75 - 89.75	25.36	873.97	19.54
19	89.75 - 85.5	25.66	894.75	19.63
20	85.5 - 85.25	237.07	873.25	11.22
21	85.25 - 85	237.15	875.01	11.21
22	85 - 84.75	237.22	876.76	11.19
23	84.75 - 83	237.73	889.07	10.95
24	83 - 82.65	237.83	891.54	10.96
25	82.65 - 82.4167	237.90	893.19	11.09
26	82.4167 - 77.4167	239.34	927.78	10.51
27	77.4167 - 73.747	243.25	957.25	9.10
28	73.747 - 69.167	245.65	1000.80	9.95
29	69.167 - 64.167	247.09	1048.58	9.41
30	64.167 - 59.167	248.55	1093.81	8.92
31	59.167 - 54.167	250.02	1136.62	8.44
32	54.167 - 49.167	251.52	1177.05	7.97
33	49.167 - 47.1667	252.12	1192.58	7.79
34	47.1667 - 46.9167	252.21	1194.50	7.74
35	46.9167 - 43.4167	253.36	1220.86	7.52
36	43.4167 - 43.1667	253.43	1222.72	7.46
37	43.1667 - 38.1667	254.91	1258.42	7.02
38	38.1667 - 35.747	255.63	1274.85	6.81
39	35.747 - 30.537	257.91	1309.35	6.58
40	30.537 - 25.537	259.08	1339.22	5.68
41	25.537 - 20.537	260.38	1364.66	4.93
42	20.537 - 15.537	261.58	1386.65	4.17
43	15.537 - 10.537	262.81	1405.01	3.47
44	10.537 - 5.537	264.06	1420.03	2.84
45	5.537 - 0.537	265.33	1432.04	2.28
46	0.537 - 0	265.47	1433.16	2.18

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
150.17 - 145.17	Pole	TP16.31x15.53x0.25	Pole	9.6%	Pass
145.17 - 140.17	Pole	TP17.09x16.31x0.25	Pole	18.0%	Pass
140.17 - 135.17	Pole	TP17.87x17.09x0.25	Pole	30.0%	Pass
135.17 - 130.17	Pole	TP18.65x17.87x0.25	Pole	39.6%	Pass
130.17 - 125.17	Pole	TP19.43x18.65x0.25	Pole	55.3%	Pass
125.17 - 123.75	Pole	TP19.651x19.43x0.25	Pole	58.8%	Pass
123.75 - 123.5	Pole + Reinf.	TP19.69x19.651x0.5125	Reinf. 6 Tension Rupture	51.5%	Pass
123.5 - 118.5	Pole + Reinf.	TP20.47x19.69x0.5	Reinf. 6 Tension Rupture	62.5%	Pass
118.5 - 113.5	Pole + Reinf.	TP21.25x20.47x0.4875	Reinf. 6 Tension Rupture	72.6%	Pass
113.5 - 112.17	Pole + Reinf.	TP21.458x21.25x0.4875	Reinf. 6 Tension Rupture	75.2%	Pass
112.17 - 111.92	Pole + Reinf.	TP21.497x21.458x0.7	Reinf. 8 Tension Rupture	48.6%	Pass
111.92 - 110.17	Pole + Reinf.	TP21.77x21.497x0.7	Reinf. 8 Tension Rupture	50.9%	Pass
110.17 - 109.92	Pole + Reinf.	TP21.813x21.77x0.625	Reinf. 4 Tension Rupture	49.9%	Pass
109.92 - 104.92	Pole + Reinf.	TP22.672x21.813x0.6	Reinf. 4 Tension Rupture	55.5%	Pass
104.92 - 99.92	Pole + Reinf.	TP23.53x22.672x0.5875	Reinf. 4 Tension Rupture	60.7%	Pass
99.92 - 95	Pole + Reinf.	TP24.375x23.53x0.575	Reinf. 4 Tension Rupture	65.4%	Pass
95 - 94.75	Pole + Reinf.	TP24.418x24.375x0.7	Reinf. 1 Tension Rupture	64.5%	Pass
94.75 - 89.75	Pole + Reinf.	TP25.277x24.418x0.6875	Reinf. 1 Tension Rupture	69.1%	Pass
89.75 - 85.5	Pole + Reinf.	TP26.007x25.277x0.675	Reinf. 1 Tension Rupture	67.9%	Pass
85.5 - 85.25	Pole + Reinf.	TP26.049x26.007x0.8625	Reinf. 5 Tension Rupture	60.6%	Pass
85.25 - 85	Pole + Reinf.	TP26.092x26.049x0.8625	Reinf. 5 Tension Rupture	60.6%	Pass
85 - 84.75	Pole + Reinf.	TP26.135x26.092x0.8375	Reinf. 1 Tension Rupture	62.8%	Pass
84.75 - 83	Pole + Reinf.	TP26.436x26.135x0.8375	Reinf. 1 Tension Rupture	62.7%	Pass
83 - 82.65	Pole + Reinf.	TP26.496x26.436x0.7125	Reinf. 3 Tension Rupture	68.9%	Pass
82.65 - 82.42	Pole + Reinf.	TP26.536x26.496x0.7125	Reinf. 3 Tension Rupture	68.9%	Pass
82.42 - 77.42	Pole + Reinf.	TP27.395x26.536x0.6875	Reinf. 3 Tension Rupture	68.1%	Pass
77.42 - 73.75	Pole + Reinf.	TP28.64x27.395x0.6875	Reinf. 3 Tension Rupture	68.0%	Pass
73.75 - 69.17	Pole + Reinf.	TP28.079x27.4x0.725	Reinf. 2 Tension Rupture	65.4%	Pass
69.17 - 64.17	Pole + Reinf.	TP28.821x28.079x0.7125	Reinf. 2 Tension Rupture	65.6%	Pass
64.17 - 59.17	Pole + Reinf.	TP29.562x28.821x0.725	Reinf. 9 Tension Rupture	65.7%	Pass
59.17 - 54.17	Pole + Reinf.	TP30.304x29.562x0.7125	Reinf. 9 Tension Rupture	65.7%	Pass
54.17 - 49.17	Pole + Reinf.	TP31.045x30.304x0.7	Reinf. 9 Tension Rupture	65.5%	Pass
49.17 - 47.17	Pole + Reinf.	TP31.342x31.045x0.7	Reinf. 9 Tension Rupture	65.4%	Pass
47.17 - 46.92	Pole + Reinf.	TP31.379x31.342x0.7875	Reinf. 9 Tension Rupture	59.3%	Pass
46.92 - 43.42	Pole + Reinf.	TP31.898x31.379x0.775	Reinf. 9 Tension Rupture	59.1%	Pass
43.42 - 43.17	Pole + Reinf.	TP31.935x31.898x0.65	Reinf. 7 Tension Rupture	65.0%	Pass
43.17 - 38.17	Pole + Reinf.	TP32.677x31.935x0.65	Reinf. 7 Tension Rupture	64.5%	Pass
38.17 - 35.75	Pole + Reinf.	TP33.66x32.677x0.65	Reinf. 7 Tension Rupture	64.2%	Pass
35.75 - 30.54	Pole	TP33.161x32.286x0.4375	Pole	64.3%	Pass
30.54 - 25.54	Pole	TP34.001x33.161x0.4375	Pole	62.6%	Pass
25.54 - 20.54	Pole	TP34.84x34.001x0.4375	Pole	60.8%	Pass
20.54 - 15.54	Pole	TP35.68x34.84x0.4375	Pole	58.9%	Pass
15.54 - 10.54	Pole	TP36.52x35.68x0.4375	Pole	57.1%	Pass
10.54 - 5.54	Pole	TP37.36x36.52x0.4375	Pole	55.6%	Pass
5.54 - 0.54	Pole	TP38.2x37.36x0.4375	Pole	54.1%	Pass
0.54 - 0	Pole	TP38.29x38.2x0.4375	Pole	53.9%	Pass
				Summary	
			Pole	64.3%	Pass
			Reinforcement	75.2%	Pass
			Overall	75.2%	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
150.17 - 145.17	426	n/a	426	12.91	n/a	12.91	9.6%									
145.17 - 140.17	491	n/a	491	13.54	n/a	13.54	18.0%									
140.17 - 135.17	563	n/a	563	14.16	n/a	14.16	30.0%									
135.17 - 130.17	641	n/a	641	14.79	n/a	14.79	39.6%									
130.17 - 125.17	726	n/a	726	15.42	n/a	15.42	55.3%									
125.17 - 123.75	751	n/a	751	15.60	n/a	15.60	58.8%									
123.75 - 123.5	756	734	1490	15.63	13.50	29.13	29.2%						51.5%			
123.5 - 118.5	851	790	1640	16.25	13.50	29.75	35.4%						62.5%			
118.5 - 113.5	953	847	1800	16.88	13.50	30.38	41.5%						72.6%			
113.5 - 112.17	981	863	1845	17.05	13.50	30.55	43.1%						75.2%			
112.17 - 111.92	987	1621	2608	17.08	24.38	41.45	30.8%								48.6%	
111.92 - 110.17	1025	1659	2685	17.30	24.38	41.67	32.4%								50.9%	
110.17 - 109.92	1296	1153	2449	21.60	24.38	45.98	39.3%				49.9%	46.1%				
109.92 - 104.92	1457	1237	2694	22.47	24.38	46.84	43.6%				55.5%	51.3%				
104.92 - 99.92	1631	1324	2954	23.33	24.38	47.70	47.7%				60.7%	56.1%				
99.92 - 95	1814	1412	3227	24.18	24.38	48.55	51.3%				65.4%	60.5%				
95 - 94.75	1832	2065	3897	24.22	32.38	56.60	42.8%	64.5%			51.0%	58.9%				
94.75 - 89.75	2034	2203	4237	25.08	32.38	57.46	45.7%	69.1%			54.6%	62.9%				
89.75 - 85.5	2217	2323	4540	25.82	32.38	58.19	44.9%	67.9%			53.7%	61.8%				
85.5 - 85.25	2243	3459	5702	25.86	41.38	67.24	41.4%	58.2%			50.2%	60.6%				58.8%
85.25 - 85	2254	3470	5724	25.90	41.38	67.28	41.4%	58.2%			50.1%	60.6%				58.8%
85 - 84.75	2226	3386	5612	25.95	37.13	63.07	40.3%	62.8%	55.8%			62.1%				62.2%
84.75 - 83	2305	3460	5765	26.25	37.13	63.37	40.3%	62.7%	55.7%			62.0%				62.1%
83 - 82.65	2381	2683	5063	26.31	35.00	61.31	49.2%	63.6%	60.2%	68.9%						60.5%
82.65 - 82.42	2392	2690	5082	26.35	35.00	61.35	49.2%	63.6%	60.2%	68.9%						60.5%
82.42 - 77.42	2632	2860	5492	27.21	35.00	62.21	49.2%	63.1%	59.7%	68.1%						60.1%
77.42 - 73.75	2818	2988	5806	27.85	35.00	62.85	49.4%	63.1%	59.7%	68.0%						60.1%
73.75 - 69.17	3301	2835	6136	33.41	27.00	60.41	45.9%		65.4%	65.4%						65.3%
69.17 - 64.17	3573	2980	6553	34.30	27.00	61.30	46.1%		65.6%	65.6%						65.6%
64.17 - 59.17	3852	3327	7179	35.19	27.00	62.19	44.2%		65.7%	65.7%						65.7%
59.17 - 54.17	4152	3490	7642	36.09	27.00	63.09	44.1%		65.5%	65.5%						65.7%
54.17 - 49.17	4468	3656	8124	36.98	27.00	63.98	44.0%		65.3%	65.3%						65.5%
49.17 - 47.17	4599	3723	8322	37.34	27.00	64.34	44.0%		65.1%	65.1%						65.4%
47.17 - 46.92	4613	4639	9251	37.38	33.38	70.76	39.6%							57.9%		59.3%
46.92 - 43.42	4848	4786	9634	38.01	33.38	71.38	39.7%							57.7%		59.1%
43.42 - 43.17	4852	3400	8252	38.05	24.38	62.43	44.0%							65.0%		
43.17 - 38.17	5202	3552	8753	38.95	24.38	63.32	43.9%							64.5%		
38.17 - 35.75	5377	3626	9003	39.38	24.38	63.76	43.9%							64.2%		
35.75 - 30.54	6309	n/a	6309	46.03	n/a	46.03	64.3%									
30.54 - 25.54	6808	n/a	6808	47.21	n/a	47.21	62.6%									
25.54 - 20.54	7332	n/a	7332	48.40	n/a	48.40	60.8%									
20.54 - 15.54	7882	n/a	7882	49.58	n/a	49.58	58.9%									
15.54 - 10.54	8459	n/a	8459	50.76	n/a	50.76	57.1%									
10.54 - 5.54	9063	n/a	9063	51.94	n/a	51.94	55.6%									
5.54 - 0.54	9696	n/a	9696	53.12	n/a	53.12	54.1%									
0.54 - 0	9766	n/a	9766	53.25	n/a	53.25	53.9%									

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

Monopole Flange Plate Connection

Elevation = 110.167 ft.

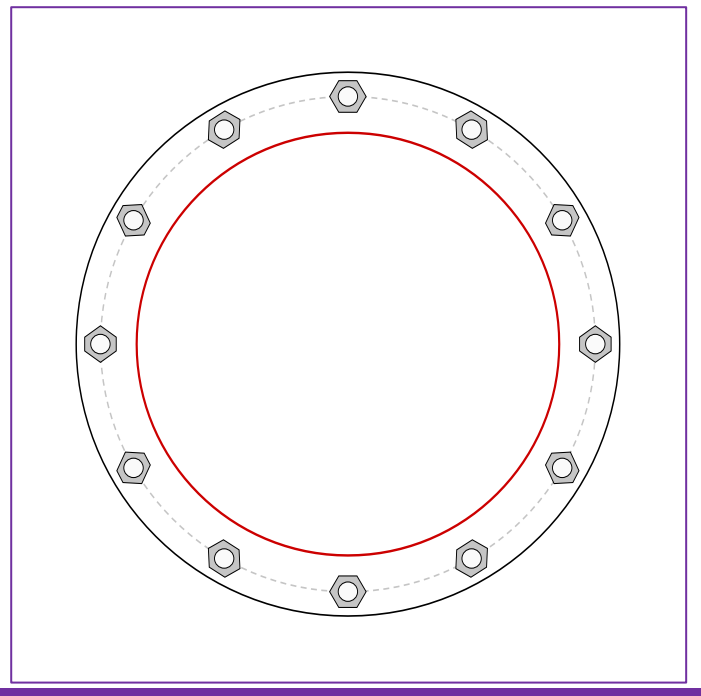
BU #	841289
Site Name	OLD SAYBROOK, CT
Order #	598184, Rev. 0

TIA-222 Revision	H

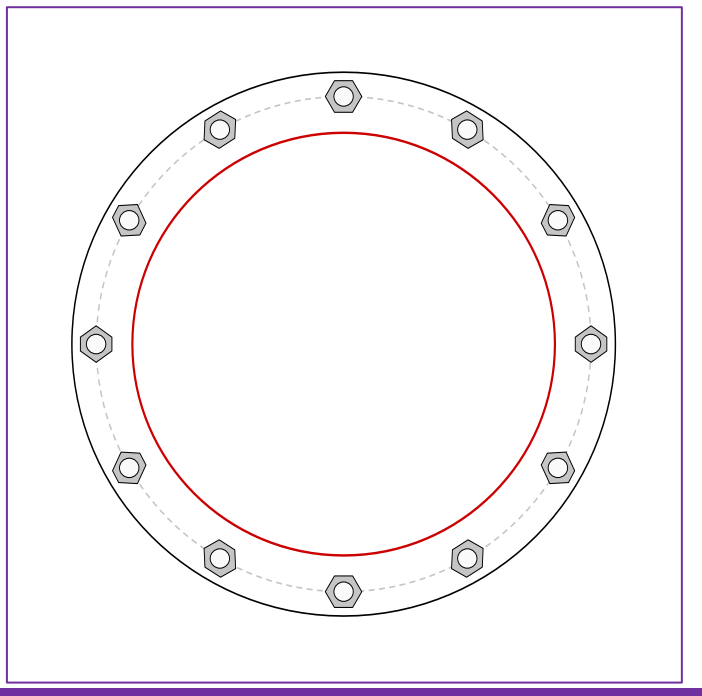
Applied Loads to Flange Connections		Applied Loads to Bridge Stiffeners	
Moment (kip-ft)	98.31	Moment (kip-ft)	397.30
Axial Force (kips)	18.05	Axial Force (kips)	0.00
Shear Force (kips)	17.22	Shear Force (kips)	0.00

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(12) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 25.5" BC

Top Plate Data

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

Bottom Plate Data

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

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

21.77" x 0.25" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Bottom Pole Data

21.77" x 0.3125" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Bridge Stiffener Group 1 Data

(3) Bolted, 6.5''x1.25'', A572-65, Lu=16", Neglect Flange in MOI: No

Analysis Results

Bolt Capacity

Max Load (kips)	13.91	
Allowable (kips)	54.50	
Stress Rating:	**24.3%**	**Pass**

Top Plate Capacity

Max Stress (ksi):	14.13	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**41.5%**	**Pass**
Tension Side Stress Rating:	**13.4%**	**Pass**

Bottom Plate Capacity

Max Stress (ksi):	3.53	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**10.4%**	**Pass**
Tension Side Stress Rating:	**3.3%**	**Pass**

Bridge Stiffener Group 1 Analysis Capacity

Max Compression (kip):	227.03	
Max Tension (kip):	227.03	
Comp. Capacity (kip):	394.29	
Tens. Capacity (kip):	393.75	(Rupture)
Comp. Stress Rating:	**54.8%**	**Pass**
Tens. Stress Rating:	**54.9%**	**Pass**

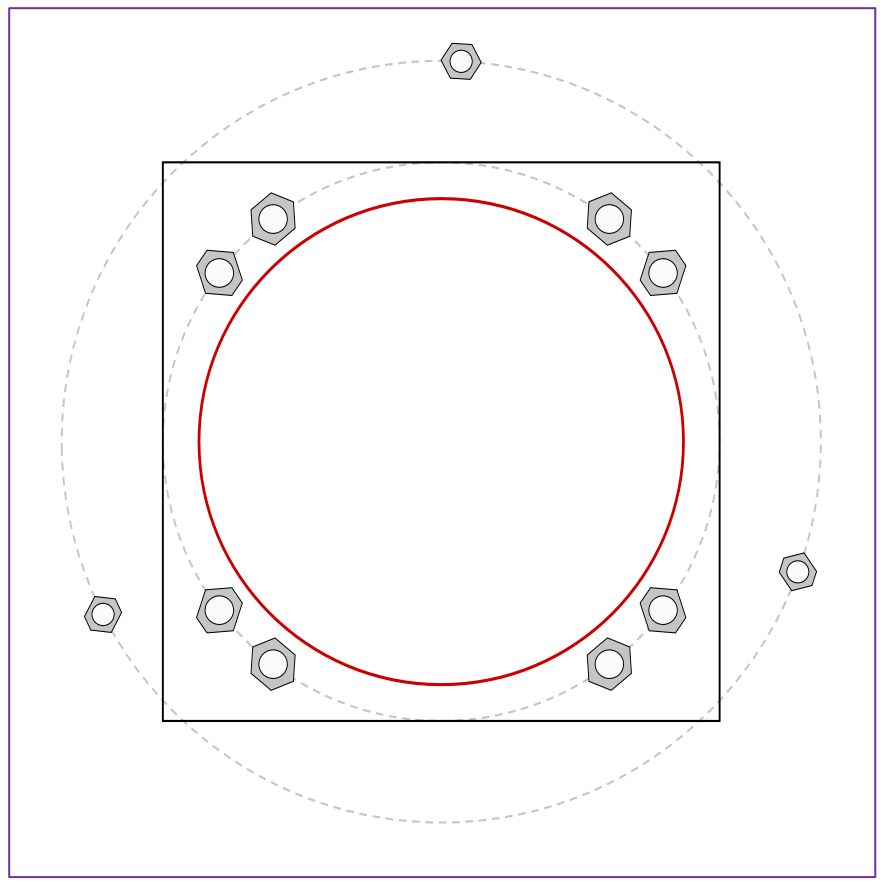
Monopole Base Plate Connection

Site Info	
BU #	841289
Site Name	OLD SAYBROOK, CT
Order #	598184, Rev. 0

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

Applied Loads	
Moment (kip-ft)	1433.16
Axial Force (kips)	265.47
Shear Force (kips)	2.18

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

GROUP 1: (8) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 44" BC
Anchor Spacing: 6 in
GROUP 2: (3) 1-3/4" ø bolts (F1554-105 N; Fy=105 ksi, Fu=125 ksi) on 60" BC
pos. (deg): 87, 207, 340

Base Plate Data

44" W x 2.5" Plate (A572-50; Fy=50 ksi, Fu=65 ksi); Clip: 0 in

Stiffener Data

N/A

Pole Data

38.29" x 0.4375" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

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

GROUP 1:		
Pu_c = 178.33	ϕPn_c = 268.39	**Stress Rating**
Vu = 0.27	ϕVn = 120.77	**63.3%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 2:		
Pu_t = 113.06	ϕPn_t = 178.13	**Stress Rating**
Vu = 0	ϕVn = 112.75	**60.5%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	24.81	(Flexural)
Allowable Stress (ksi):	45	
Stress Rating:	**52.5%**	**Pass**

CCIplate

Elevation (ft)	0	*(Base)*

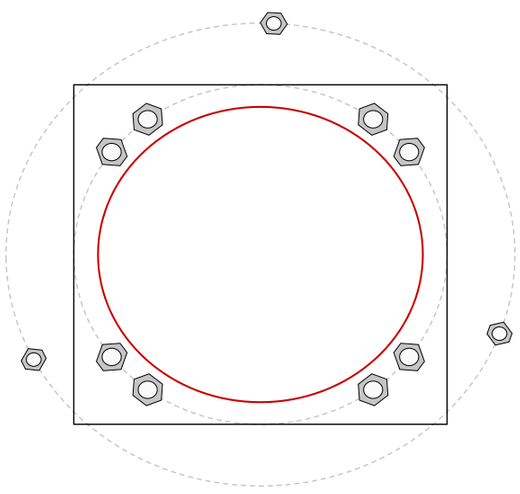
note: Bending interaction not considered when Grout Considered = "Yes"

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

Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η:	l_{ar} (in):	Thread Type	Area Override, in^2	Tension Only
1	1	37.16252	2.25	A615-75	44	0.5	0	N-Included		No
2	1	52.83748	2.25	A615-75	44	0.5	0	N-Included		No
3	1	127.16252	2.25	A615-75	44	0.5	0	N-Included		No
4	1	142.83748	2.25	A615-75	44	0.5	0	N-Included		No
5	1	217.16252	2.25	A615-75	44	0.5	0	N-Included		No
6	1	232.83748	2.25	A615-75	44	0.5	0	N-Included		No
7	1	307.16252	2.25	A615-75	44	0.5	0	N-Included		No
8	1	322.83748	2.25	A615-75	44	0.5	0	N-Included		No
9	2	87	1.75	F1554-105	60	0.5	0	N-Included		No
10	2	207	1.75	F1554-105	60	0.5	0	N-Included		No
11	2	340	1.75	F1554-105	60	0.5	0	N-Included		No

Plot Graphic



PROJECT	**93496.033.01 - OLD SAYBROOK, CT**
SUBJECT	**Anchor Rod Bracket Analysis**
DATE	**12-21-21**
v4.6.1	

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

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Analysis Criteria		
Design/Analysis	Analysis	
Load Type	Current Load	
Current load	113.06	kips
AR Capacity	227.3	kips

Tower Type	Monopole	

Manufacturers Tower Prop.		
Pole Thickness	0.4375	in
Pole Grade	A572-65	
Fy	65	ksi
Fu	80	ksi
Base Plate Gr.	A572-50	
Fy	50	ksi
Fu	65	ksi

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

Anchor Rod Bracket Analysis Checks		
Tube Bearing	26.5%	-
Tube Compression	39.7%	-
Gusset Shear	10.0%	-
Gusset Flexure	N/A	-
Welds: Gusset to Tower and BP	24.3%	-
Welds: Gusset to Tube	26.9%	-
Welds: Geometry	N/A	
Tower Punching	24.2%	-
Tube Punching	8.0%	-
Utilization	**39.7%**	

Bracket Properties

Gusset			Pipe/Tube			Weld - Gusset to Pipe/Tube		
Thickness	1.25	in	Size	HSS4x4x1/2		FEXX	70	ksi
Width at Tube	8.625	in	Total Length	30	in	Weld Type	Double Fillet	
Height at Pole	30	in	Length above Gusset	3	in	Fillet Size	3/8	in
Height at Tube	24	in	Length below Gusset	3	in			
Grade	A572-65		Grade	A500 Grade C (Square)				
Fy	65	ksi	Fy	50	ksi			
Fu	80	ksi	Fu	62	ksi			

Weld - Gusset to Tower			Weld - Gusset to Base Plate		
FEXX	70	ksi	FEXX	70	ksi
Weld Type	Double Fillet		Weld Type	PJP - Double Bevel	
Fillet Size	7/16	in	Fillet Size	5/8	in
			Bevel Depth	5/8	in
			Gap	1.25	in
			Notch (horiz)	0.75	in
			Notch (vert)	0.75	in
			Pipe/Tube Welded to Base/Footpad?	No	

Pier and Pad Foundation

BU # :	841289
Site Name:	OLD SAYBROOK,
App. Number:	598184, Rev. 0

TIA-222 Revision:	H
Tower Type:	Monopole

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

Superstructure Analysis Reactions

Compression, P_{comp}:	265.47	kips
Base Shear, Vu_comp:	7	kips
Moment, M_u:	1433.16	ft-kips
Tower Height, **H**:	150	ft
BP Dist. Above Fdn, bp_{dist}:	2.25	in

Pier Properties

Pier Shape:	Square	
Pier Diameter, **dpier**:	8	ft
Ext. Above Grade, **E**:	0.3	ft
Pier Rebar Size, **Sc**:	11	
Pier Rebar Quantity, **mc**:	44	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	7	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties

Depth, **D**:	8.7	ft
Pad Width, W_1:	12	ft
Pad Thickness, **T**:	2.5	ft
Pad Rebar Size (Bottom dir. 2), Sp_2:	7	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	13	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties

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

Soil Properties

Total Soil Unit Weight, γ:	124	pcf
Ultimate Gross Bearing, Qult:	30.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	42	degrees
SPT Blow Count, N_{blows}:		
Base Friction, μ:	0.4	
Neglected Depth, **N**:	3.33	ft
Foundation Bearing on Rock?	Yes	
Groundwater Depth, **gw**:	2.7	ft

<--Toggle between Gross and Net

Foundation Analysis Checks

	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	203.87	7.00	**3.3%**	**Pass**
Bearing Pressure (ksf)	22.50	10.84	**48.2%**	**Pass**
*Overturning (kip*ft)*	2076.62	1497.47	**72.1%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	12394.41	1478.66	**11.4%**	**Pass**
Pier Compression (kip)	22913.28	323.58	**1.3%**	**Pass**
*Pad Flexure (kip*ft)*	879.26	268.79	**29.1%**	**Pass**
Pad Shear - 1-way (kips)	303.90	0.00	**0.0%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.164	0.000	**0.0%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	1758.53	887.20	**48.0%**	**Pass**

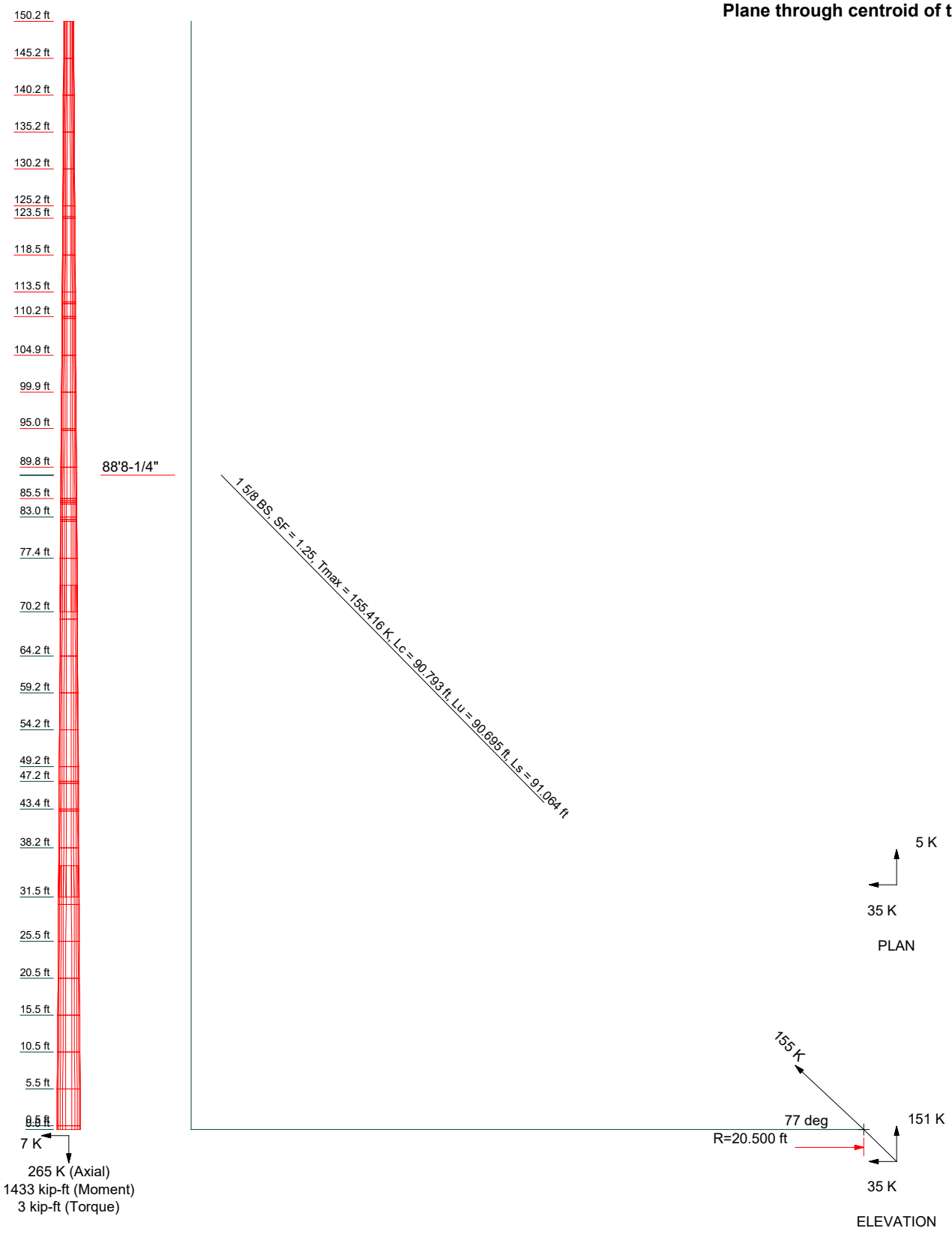
**Rating per TIA-222-H Section 15.5*

Structural Rating*:	**48.0%**
Soil Rating*:	**72.1%**

Guy Tensions and Tower Reactions

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

Maximum Values
Anchor 'A'@20.5 ft Azimuth 0 deg Elev 0 ft
Plane through centroid of tower



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Job: *93496.033.01 - OLD SAYBROOK, CT (BU# 84128*9			
Project:			
Client: Crown Castle	Drawn by: Nithish Acharya	App'd:	
Code: TIA-222-H	Date: 12/21/21	Scale: NTS	
Path:		Dwg No. E-6	

Guyed Anchor Block Foundation

Checks capacity of anchor blocks for a guyed tower.

BU#:	841289
Site Name:	OLD SAYBROOK, CT
Order Number:	598184, Rev. 0
Location:	*Inner*

TIA-222 Revision:	H

Design Reactions		
Shear, **S**:	35.00	kips
Uplift, **Ua**:	151.00	kips
Resultant Force, **Rf**:	155.00	kips
Tower Height, **H**:	150.00	ft
Guy Anchor Radius, **R**:	20.50	ft
Resultant Angle to Horizontal, **θ**:	76.9	deg

Guy Anchor Properties		
Depth to Bottom of Deadman, **Da**:	8	ft
Anchor Width, **Wa**:	5	ft
Anchor Thickness, **Ta**:	2	ft
Anchor Length, **La**:	37	ft
Concrete Volume, **Vc**:	13.7	yd^3
Toe Width, **toe**:	0	ft
Guyed Anchor Top Rebar Size, **Sat**:	9	
No. of Bars in Top of Block:	12	
Guyed Anchor Front Rebar Size, **Saf**:	9	
No. of Bars in Front of Block:	3	
Stirrup Size:	4	
Anchor Shaft Diameter, **ds**:	1.75	in
Anchor Shaft Quantity. **n**:	2	
Anchor Shaft Area Override:		in^2
Shear Lag Factor, **u**:	1	

Material Properties		
Rebar Grade, **Fy**:	60	ksi
Concrete Strength, **F'c**:	4	ksi
Wt. Avg.Concrete Density, **δx**:	0.088	kcf
Clear Cover, **cc**:	3	in
Anchor Shaft Grade, **Fy'**:	50	ksi
Anchor Shaft Ultimate Strength, **Fu'**:	65	ksi

Design Checks	Capacity	Demand	Rating*	Check
Lateral Capacity (kips):	243.58	35.00	**13.7%**	**Pass**
Uplift Capacity (kips):	213.85	151.00	**67.2%**	**Pass**
*Lateral Flexural Capacity (ft*kips):*	740.25	161.88	**20.8%**	**Pass**
*Uplift Flexural Capacity (ft*kips):*	981.25	698.38	**67.8%**	**Pass**
Anchor Shaft (kips):	192.42	155.00	**76.7%**	**Pass**

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

Anchor Shaft Rating:	**76.7%**
Structural Rating:	**67.8%**
Soil Rating:	**67.2%**

Neglect Depth, **Neg**:	3.33	ft
Groundwater Level, **gw**:	2.7	ft

Soil Properties:			No. of Soil Layers:	4		
Layer	**φ, deg**	**cu, ksf**	**δ, pcf**		**Ultimate fs (ksf)**	**N (blows/ft)**
1	0	0.000	110	2.70	0.000	
2	0	0.000	47.6	3.33		
3	31	0.000	47.6	4.00		80
4	42	0.000	72.6	8.00		100

*key: φ = *Internal Angle of Friction*
cu = Cohesion / Undrained Shear Strength
δ = *Buoyant Soil Unit Weight*
d = Depth to Bottom of Layer
Ultimate fs = Geotechnical Report-provided skin friction / adhesion
N = SPT Blow Count

Version 4.0.0

PROJECT	BU_841289_B+T_93496.033.01_OLD SAY BROOK
SUBJECT	GUY WIRE BRACKET ANALYSIS
DATE	12/21/2021 PAGE 1 OF 6

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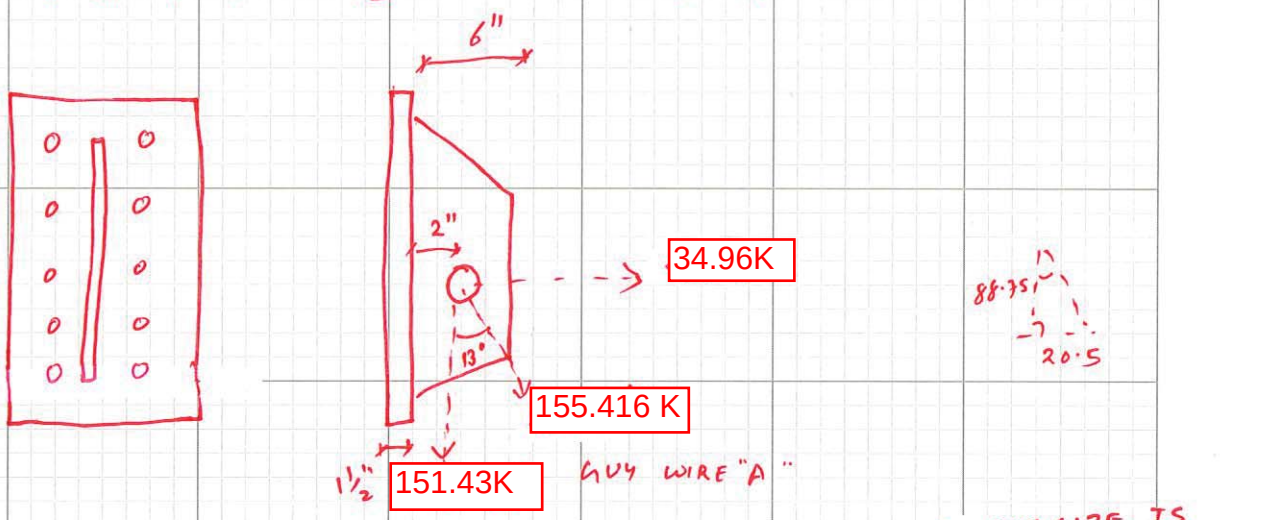
CHECK ONLY FOR 1 5/8 BS WIRE GOVERNING.

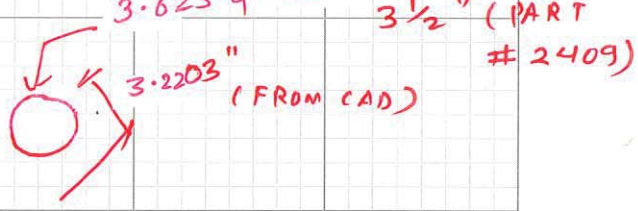


$M = 198^{K} \times 3.5^{IN}$

$= 693^{K-IN}$

SHEAR ON BOLTS = $V = 198^{K}$

TENSION " " = $T = 46^{K}$



HOLE BEARING AND TEARING CHECK. (GUY WIRE CONNECTION)

$\phi R_n = \phi\, 1.2(L_c + d/4)\, t\, F_u$

(TEARING)

$= 0.8 \times 1.2 * \left(\left(3.2203 - \frac{3.625}{2}\right) + \frac{3.5}{4}\right) * 1.5 \times 58^{KSI}$

$= 0.96 * (1.4078 + 0.875) * 1.5 * 58^{KSI}$

$= 190.66^{K}$

$\phi R_n = \phi\, 2.4 * d * t * F_u$

(BEARING)

$= 0.8 * 2.4 * 3.5 * 1.5 * 58$

$= 584.6^{K}$

4.9.8 (GUY ASSEMBLY LINK PLATE)

$t = 1.5^{IN}$

$b_{eff} = 2t + 0.625^{IN}$

$= 2 * 1.5 + 0.625$

$= 3.625^{IN}$

PROJECT	BU_841289_B+T_93496.033.01
SUBJECT	EXISTING GUY WIRE BRACKET CHECK
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$A_{sf} = 2t\left(a + \frac{d}{2}\right)$

$= 2 * 1.5 * \left(\left(3.2203 - \frac{3.625}{2}\right) + \frac{3.5}{2}\right)$

$= 9.4734 \text{ IN}^2$

$\phi R_{nk} = \phi\, 2t\, b_{eff} * F_u$

$= 0.75 * 2 * 1.5 * 3.625 * 58$

$= 473.06^{k}$

$\phi R_{nk} = \phi\, 0.6 A_{sf} F_u$

$= 0.75 * 0.6 * 9.4734 * 58$

$= 247.25^{k}$

$\phi R_{nk} = \phi\, 1.8 d t F_y$

$= 0.9 * 1.8 * 3.5 * 1.5 * 58$

$= 493.29^{k}$

YIELDING OF GROSS AREA IS NOT CONSIDERED

$\text{RATING} = \frac{155.416}{190.6^{k}} \times \frac{1}{1.05\ (\text{Rev. H})} = 77.65\%$

FOR GUY LUG ⇒ MIN. EDGE PER MAPPING_5204147_ IS 3.5 IN WHICH IS GREATER THAN 3.2203" USED IN ABOVE CAL. SO IT IS NOT GOVERNING.

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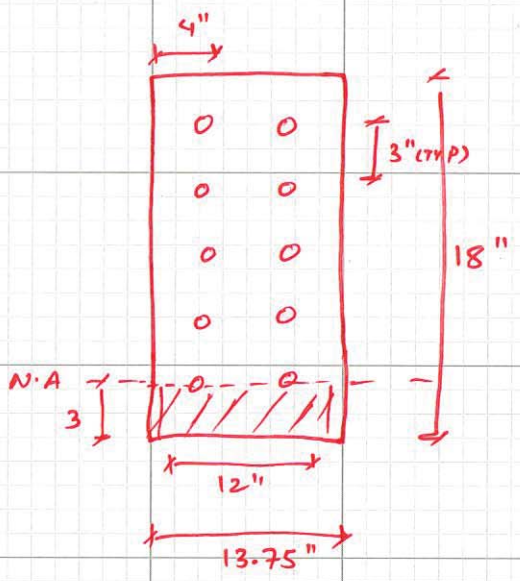
CHECK FOR TENSION / SHEAR.

CASE I: AISC 14TH EDITION (Pg 7-4)

$$r_{ut} = \left(\frac{P_u e c}{I_x}\right) A_b$$

ACC. TO AISC P7-10, A TRIAL POSITION FOR N.A. CAN BE SELECTED. AT 1/6 of total bracket depth.

$= \frac{1}{6} * 18 = 3^{IN}$



EFF. WIDTH OF COMPRESSION BLOCK

$b_{eff} = 8 * t_t < b_f$

$b_{eff} = 8 * 1.5$

$= 12^{IN}$

BRACKET THICKNESS CHECK, $t = 1.5^{IN}$ PROVIDED.

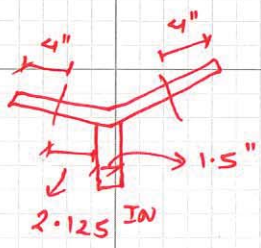
PRYING ACTION.

$$t_{MIN} = \sqrt{\frac{4Tb'}{\phi p F_u}}$$

$$= \sqrt{\frac{4 * 29.8 * 1.53}{0.9 * 3 * 58}}$$

$= 1.079 < 1.5^{IN}$ PROVIDED.

ok.



T = BOLT STRENGTH (TENSILE)

3/4" ϕ A325N ⇒ BLIND BOLTS

$= 29.8^k$

PULL OUT CAPACITY OF MONOPOLE WALL (5/16")

$= \phi r_n = \phi F_u (0.6 \pi d_w t)$

$= 0.67 * 80 * (0.6 * \pi * 1.5 * \frac{5}{16})$

$= 47.36^k$

$b' = (b - d_b/2)$ ← BOLT DIA.

$= (2.125 - 1.1875/2)$

$= 1.53$

PROJECT	BG_841289_B+T_ 93496.033.01
SUBJECT	EXISTING GUY BRACKET ANALYSIS
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$P_u = 187.5^k$

e = distance of centroid of bolt grap to center of load

$= 3.5^{IN}$

c = distance from N.A. to the most remote bolt in the grap

$= 12^{IN}$

CALCULATION OF I_x

$A_{bolt} = \frac{\pi}{4} * 0.75^2 = 0.44^{IN^2}$

$(I_{c.g.})_{BOLT} = \frac{\pi}{64} * d^4 = 0.0155^{IN^4}$

$(I_{c.g.})_{comp} = \frac{12 * 3^3}{12} = 27^{IN^4}$

$I_{N.A} = \left[27 + 12*3*\left(\frac{3}{2}\right)^2\right] + \left[8 * 0.0155 + 2*0.44*\left(3^2+6^2+9^2+12^2\right)\right]$

$= 108 + 0.124 + 237.6$

$= 345.7^{IN^4}$

$r_{ut} = \left(\frac{P_u \, @ \, c}{I_x}\right) A_b$

$= \frac{151.43^k * 3.5 * 12}{345.7^{IN^4}} * \frac{\pi}{4} * 0.75^2$

$= 8.127^k$

tension → FROM GUY WIRE

$= 34.96^k$

tension additional on each bolt $= \frac{34.96}{10} = 3.496^k$

∴ $r_{ut} = 8.127 + 3.496$

$= 11.623^k$

AISC 14TH ED. PG. 7-22, 7-23

BLIND BOLT M20 TENSILE CAPACITY OF 3/4" ϕ A325N BOLTS)

$= 29.8^k$

TENSION PULL OUT CAPACITY OF BOLT FROM POLE WALL

$\phi r_n = \phi F_u (0.6 \pi d_w t)$

d_w = dia. of part in contact with inner surface (washer dia)

$= 1.5^{IN}$

PROJECT	BU-841289_B+T_93496.033.01_OLD SAYBROOK
SUBJECT	GUY WIRE BRACKET ANAYSIS.
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$\phi R_n = 0.67 * 80 * (0.6 * \pi * 1.5 * \frac{5}{16})$

$= 47.38^k$

Governing tensile capacity $= 29.8^k$

$\frac{r_{ut}}{F_{nt}} = \frac{11.623^k}{29.8^k} =$ 39.00 /.

FOR SHEAR CAPACITY

POLE THICKNESS $= \frac{5}{16}"$, $F_y = 65^{ksi}$, $F_u = 80^{ksi}$

POLE BEARING CAPACITY $= \phi\, 2.4 * d_{hole} * t * F_u$ ← sleeve dia

$= 0.8 * 2.4 * 1.14173 * \frac{5}{16} * 80$

$= 54.8^k$

BLIND BOLT SHEAR CAPACITY (REV. H) $= 37^k$

GOVERNING CAPACITY $= 37^k$

SHEAR LOAD ON EACH BOLT $= \frac{151.43^k}{10} =$ 15.43 ^{k}

AISC 14TH ED. PG. 16.1-405

$\left[\frac{f_t}{\phi F_{nt}}\right] + \left[\frac{f_v}{\phi F_{nv}}\right] \le 1.3$

$\left[\frac{11.623}{29.8}\right] + \left[\frac{15.43}{37}\right] \le 1.3$

0.390 + 0.417 ≤ 1.3

0.807 ≤ 1.3

ok.

RATING $= \frac{0.807}{1.3} =$ 62.07 %

PROJECT	BU-841289_B+T_93496.033.01_OLD SAYBROOK.
SUBJECT	GUY WIRE BRACKET ANALYSIS
DATE	12/21/2021
PAGE	6 OF 6

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VERTICAL WELD CHECK: GUY LUG TO BRACKET.

FROM TABLE 8-4 (ANGLE 15°)

$e_y = al$

$a = \frac{2}{15} = 0.133 \approx 0.15$

$k = 0$

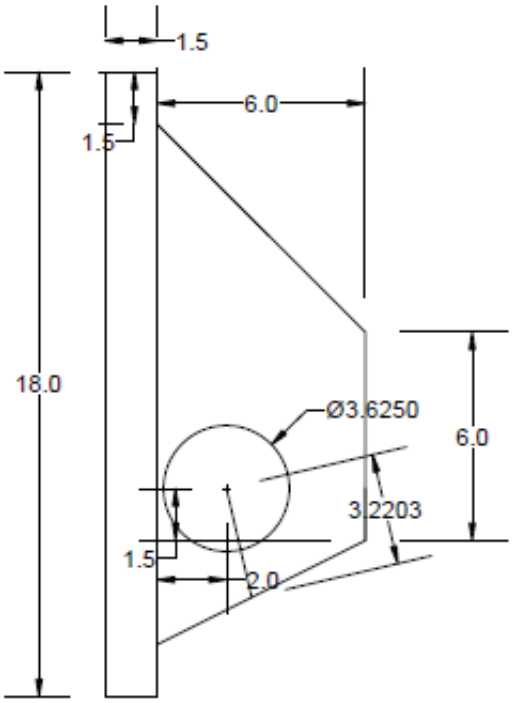
FROM TABLE $C = 3.68$

$\phi R_n = \phi C C_1 D l$

$= 0.75 * 3.68 * 1 * 12 * 15$

$= 496.8^k$

RATING = $\frac{155.416}{496.8^k} = 31.28$ %.



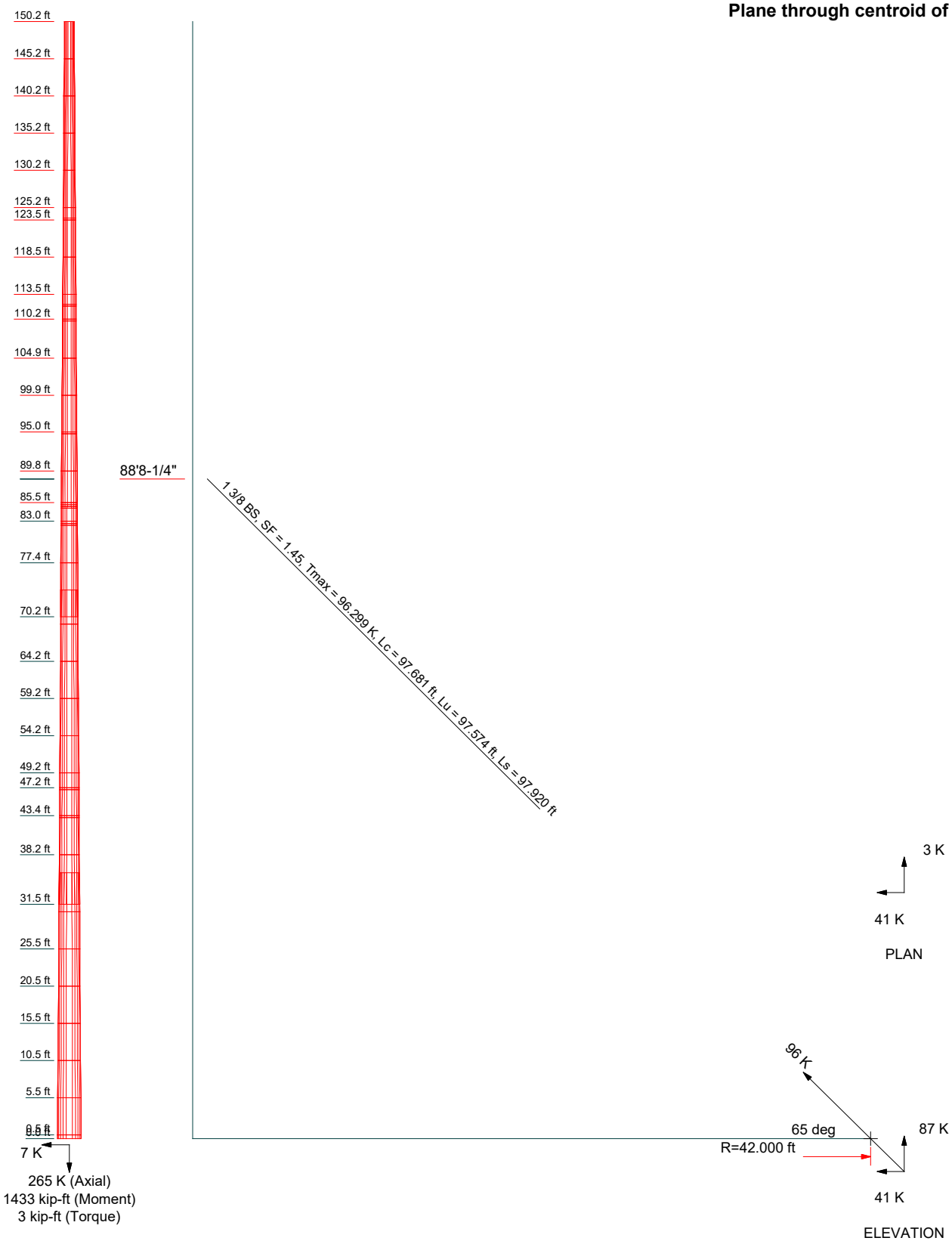
Guy Tensions and Tower Reactions

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

Maximum Values

Anchor 'C'@42 ft Azimuth 211 deg Elev 0 ft

Plane through centroid of tower



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

Job: 93496.033.01 - OLD SAYBROOK, CT (BU# 84128			
Project:			
Client: Crown Castle	Drawn by: Nithish Acharya	App'd:	
Code: TIA-222-H	Date: 12/21/21	Scale: NTS	
Path:		Dwg No. E-6	

Guyed Anchor Block Foundation

Checks capacity of anchor blocks for a guyed tower.

BU#:	841289
Site Name:	OLD SAYBROOK, CT
Order Number:	598184, Rev. 0
Location:	*Outer*

TIA-222 Revision:	H

Design Reactions		
Shear, **S**:	41.00	kips
Uplift, **Ua**:	87.00	kips
Resultant Force, **Rf**:	96.18	kips
Tower Height, **H**:	150.00	ft
Guy Anchor Radius, **R**:	42.00	ft
Resultant Angle to Horizontal, **θ**:	64.8	deg

Guy Anchor Properties		
Depth to Bottom of Deadman, **Da**:	8	ft
Anchor Width, **Wa**:	5	ft
Anchor Thickness, **Ta**:	2	ft
Anchor Length, **La**:	30	ft
Concrete Volume, **Vc**:	11.1	yd^3
Toe Width, **toe**:	0	ft
Guyed Anchor Top Rebar Size, **Sat**:	9	
No. of Bars in Top of Block:	12	
Guyed Anchor Front Rebar Size, **Saf**:	9	
No. of Bars in Front of Block:	3	
Stirrup Size:	4	
Anchor Shaft Diameter, **ds**:	1.75	in
Anchor Shaft Quantity. **n**:	2	
Anchor Shaft Area Override:		in^2
Shear Lag Factor, **u**:	1	

Material Properties		
Rebar Grade, **Fy**:	60	ksi
Concrete Strength, **F'c**:	4	ksi
Wt. Avg.Concrete Density, **δx**:	0.088	kcf
Clear Cover, **cc**:	3	in
Anchor Shaft Grade, **Fy'**:	50	ksi
Anchor Shaft Ultimate Strength, **Fu'**:	65	ksi

Design Checks	Capacity	Demand	Rating*	Check
Lateral Capacity (kips):	197.86	41.00	**19.7%**	**Pass**
Uplift Capacity (kips):	175.92	87.00	**47.1%**	**Pass**
*Lateral Flexural Capacity (ft*kips):*	740.25	153.75	**19.8%**	**Pass**
*Uplift Flexural Capacity (ft*kips):*	981.25	326.25	**31.7%**	**Pass**
Anchor Shaft (kips):	192.42	96.18	**47.6%**	**Pass**

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

Anchor Shaft Rating:	**47.6%**
Structural Rating:	**31.7%**
Soil Rating:	**47.1%**

Neglect Depth, **Neg**:	3.33	ft
Groundwater Level, **gw**:	2.7	ft

Soil Properties: No. of Soil Layers: 4

Layer	φ, deg	cu, ksf	δ, pcf		Ultimate fs (ksf)	N (blows/ft)
1	0	0.000	110	2.70	0.000	
2	0	0.000	47.6	3.33		
3	31	0.000	47.6	4.00		80
4	42	0.000	72.6	8.00		100

*key: φ = *Internal Angle of Friction*
cu = Cohesion / Undrained Shear Strength
δ = *Buoyant Soil Unit Weight*
d = Depth to Bottom of Layer
Ultimate fs = Geotechnical Report-provided skin friction / adhesion
N = SPT Blow Count

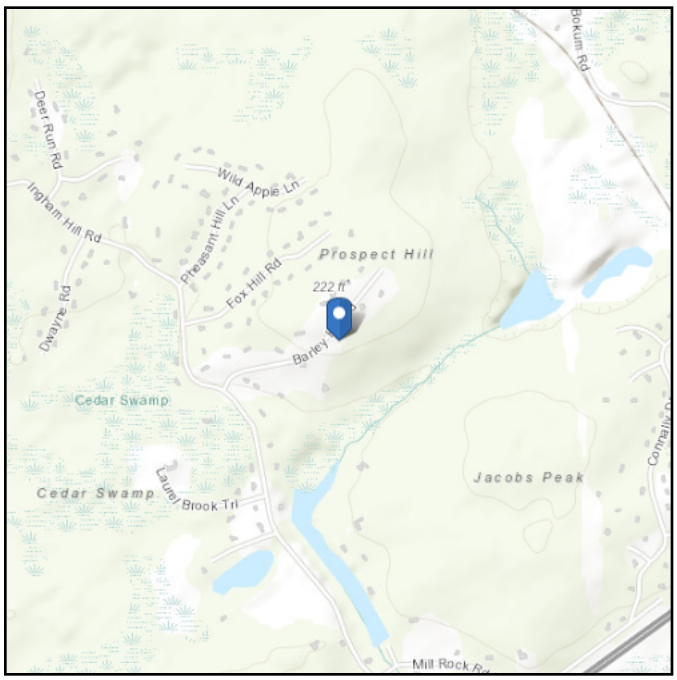
Version 4.0.0

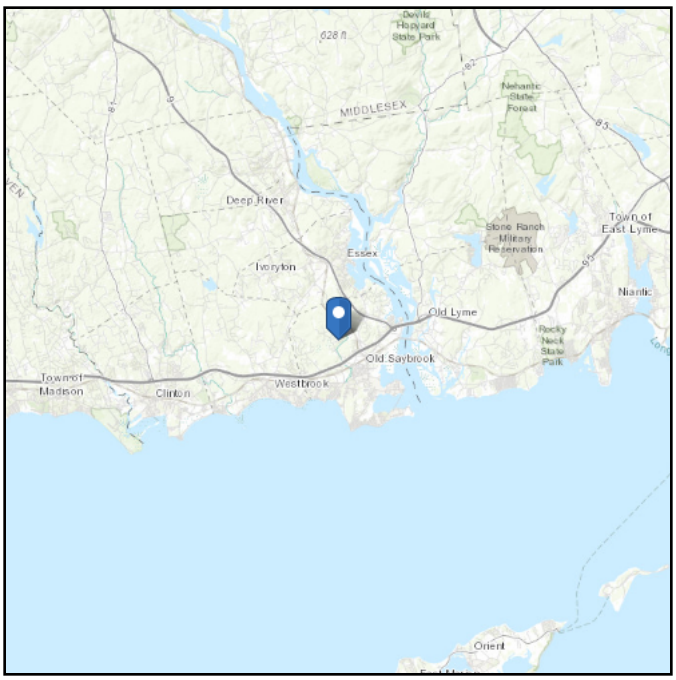
ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 133.08 ft (NAVD 88)
Latitude: 41.309875
Longitude: -72.397536





Wind

Results:

Wind Speed	125 Vmph
10-year MRI	76 Vmph
25-year MRI	85 Vmph
50-year MRI	96 Vmph
100-year MRI	102 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Mon Dec 20 2021

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

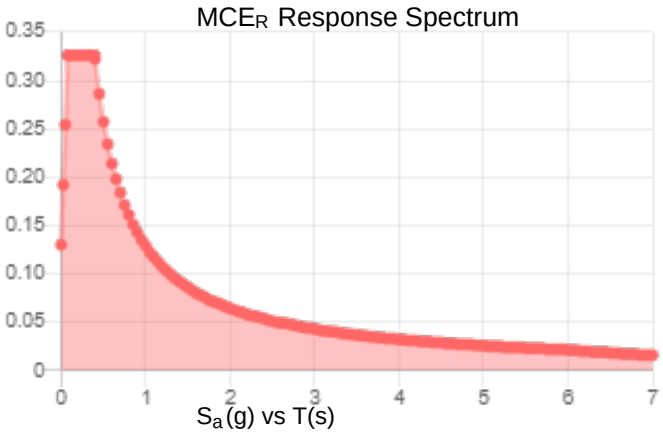
Seismic

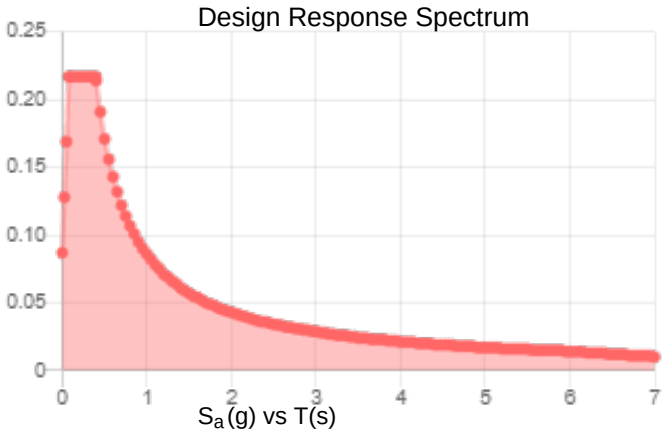
Site Soil Class: D - Default (see Section 11.4.3)

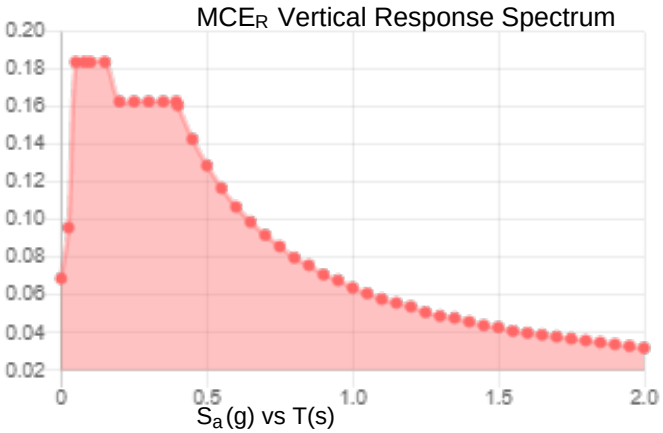
Results:

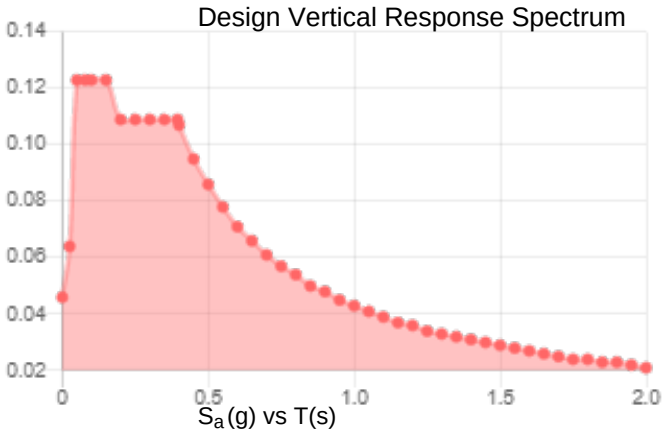
S_S :	0.204	S_{D1} :	0.086
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.114
F_v :	2.4	PGA_M :	0.179
S_{MS} :	0.326	F_{PGA} :	1.573
S_{M1} :	0.129	I_e :	1
S_{DS} :	0.217	C_v :	0.707

Seismic Design Category B









Data Accessed: **Mon Dec 20 2021**

Date Source:

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Mon Dec 20 2021

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

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

EXHIBIT 4

November 22, 2021

Centerline Communications
750 West Center Street, Suite #301
West Bridgewater, MA 02379

RE:		
	Site Number:	CT2019 (BWE)
	FA Number:	10034982
	PACE Number:	MRCTB052909
	PT Number:	2051A10QY7
	Site Name:	OLD SAYBROOK
	Site Address:	170 Ingham Hill Road Old Saybrook, CT 06475

To Whom It May Concern:

Hudson Design Group LLC (HDG) has been authorized by Centerline Communications to perform a mount analysis on the existing AT&T antenna/RRH mount to determine their capability of supporting the following additional loading:

- (2) OPA65R-BU4BA Antennas (48.0"x11.7"x10.1"– Wt. = 43 lbs. /each)
- (1) OPA65R-BU8BA Antennas (95.9"x11.7"x8.4" – Wt. = 69 lbs. /each)
- (3) SBNHH-1D65A Antennas (55.6"x11.9"x7.1" - Wt. = 34 lbs. /each)
- (2) QS46512-2 Antennas (52.0"x12.0"x10.8" – Wt. = 75 lbs. /each)
- (1) 800-10799 Antennas (106.0"x14.8"x6.7"– Wt. = 108 lbs. /each)
- (3) B5/B12 4449 RRH's (17.9"x13.2"x9.4" – Wt. = 73 lbs. /each)
- (3) 4426 B66 RRH's (14.9"x13.2"x5.8" – Wt. = 49 lbs. /each)
- (3) RRUS-E2 B29 RRH's (20.4"x18.5"x7.5" – Wt. = 53 lbs. /each)
- (3) RRUS-32 B30 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (3) Squid Surge Arrestor (24.0"x9.7" Φ – Wt. = 33 lbs. /each)
- **(3) 4415 B25 RRH's (16.5"x13.4"x5.9" – Wt. = 46 lbs. /each)**

  **Proposed equipment shown in bold.*

Mount fabrication drawings prepared by SitePro1 P/N MM01, dated May 10, 2010, were used to perform this analysis. HDG's subconsultant, ProVertic LLC, conducted a survey climb and mapping of the existing AT&T antenna mounts on March 3, 2016. HDG conducted a ground audit of the existing AT&T antenna mounts on September 22, 2020.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-H, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2015 with 2018 Connecticut State Building Code, and AT&T Mount Technical Directive – R13.
- HDG considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-H and Appendix N of the Connecticut State Building Code, the max basic wind speed for this site is equal to 135 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 1.0 in. An escalated ice thickness of 1.24 in was used for this analysis.
- HDG considers this site to be exposure category B; tower is located in an urban/suburban or wooded area with numerous closely spaced obstructions.
- HDG considers this site to be topographic category 3; tower is located at the upper half of a hill.
- HDG considers this site to have a spectral response acceleration parameter at short periods, S_S, of 0.164 and a spectral response acceleration parameter at a period of 1 second, S_1, of 0.059.
- The existing mount is secured to the existing monopole with a ring mount. The connection is considered OK by visual inspection.

Based on our evaluation, we have determined that the existing mounts **ARE CAPABLE** of supporting the proposed installation.

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing (BWE) RRH Mount Rating	6	LC1	39%	**PASS**

Reference Documents:

- Fabrication drawings prepared by SitePro1 P/N MM01, dated May 10, 2010.

This determination was based on the following limitations and assumptions:

1. HDG is not responsible for any modifications completed prior to and hereafter which HDG was not directly involved.
2. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.
3. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
4. The existing mounts have been adequately secured to the tower structure per the mount manufacturer's specifications.
5. All components pertaining to AT&T's mount must be tightened and re-plumbed prior to the installation of new appurtenances.
6. HDG performed a localized analysis on the mount itself and not on the supporting tower structure.

Please feel free to contact our office should you have any questions.

Respectfully Submitted,
Hudson Design Group LLC

Michael Cabral
Vice President

Daniel P. Hamm, PE
Principal

FIELD PHOTOS:






HUDSON
Design Group LLC

Wind & Ice
Calculations

Date: 11/22/2021
Project Name: OLD SAYBROOK
Project No.: CT2019
Designed By: KM **Checked By:** MSC

HUDSON Design Group LLC

2.6.5.2 Velocity Pressure Coeff:

$K_z = 2.01\ (z/z_g)^{2/\alpha}$

z=	149	(ft)
z_g=	1200	(ft)
α=	7.0	
K_z=	**1.107**	

Kzmin ≤ Kz ≤ 2.01

Table 2-4

Exposure	Z_g	α	K_{zmin}	K_c
B	1200 ft	7.0	0.70	0.9
C	900 ft	9.5	0.85	1.0
D	700 ft	11.5	1.03	1.1

2.6.6.2 Topographic Factor:

Table 2-5

Topo. Category	K_t	f
2	0.43	1.25
3	0.53	2.0
4	0.72	1.5

$K_{zt} = [1+(K_c\ K_t/K_h)]^2$

$K_h = e^{(f*z/H)}$

K_{zt}=	**1.206862533**	
K_h=	4.8390556	
K_c=	0.9	(from Table 2-4)
K_t=	0.53	(from Table 2-5)
f=	2	(from Table 2-5)
z=	149	
z_s=	220	(Mean elevation of base of structure above sea level)
H=	189	(Ht. of the crest above surrounding terrain)
K_{zt}=	1.21	(from 2.6.6.2.1)
K_e=	0.99	(from 2.6.8)

(If Category 1 then K_{zt}=1.0)

Category=	**3**

2.6.10 Design Ice Thickness

Max Ice Thickness =	t_i =	1.00 in
Importance Factor =	I=	1.00 (from Table 2-3)
	K_{iz} =	1.16 (from Sec. 2.6.10)

$t_{iz} = t_i * I * K_{iz} * (K_{zt})^{0.35}$

t_{iz} = 1.24 in

Date: 11/22/2021
Project Name: OLD SAYBROOK
Project No.: CT2019
Designed By: KM Checked By: MSC

HUDSON Design Group LLC

2.6.9 Gust Effect Factor

2.6.9.1 Self Supporting Lattice Structures

G_h = 1.0 Latticed Structures > 600 ft

G_h = 0.85 Latticed Structures 450 ft or less

G_h = 0.85 + 0.15 [h/150 - 3.0] h= ht. of structure

h=	156	G_h=	0.85

2.6.9.2 Guyed Masts G_h= 0.85

2.6.9.3 Pole Structures G_h= 1.1

2.6.9 Appurtenances G_h= 1.0

2.6.9.4 Structures Supported on Other Structures
(Cantilivered tubular or latticed spines, pole, structures on buildings (ht. : width ratio > 5)

G_h=	1.35	**Gh=**	**1.00**

2.6.11.2 Design Wind Force on Appurtenances

$F = q_z * G_h * (EPA)_A$

$q_z = 0.00256 * K_z * K_{zt} * K_s * K_e * K_d * V_{max}^2$

		K_z=	1.107	(from 2.6.5.2)
		K_{zt}=	1.2	(from 2.6.6.2.1)
		K_s=	1.0	(from 2.6.7)
q_z=	**58.77**	K_e=	0.99	(from 2.6.8)
$q_{z\ (ice)}$=	**8.06**	K_d=	0.95	(from Table 2-2)
$q_{z\ (30)}$=	**2.90**	V_{max}=	135	mph (Ultimate Wind Speed)
		$V_{max\ (ice)}$=	50	mph
		V_{30}=	30	mph

Table 2-2

Structure Type	Wind Direction Probability Factor, Kd
Latticed structures with triangular, square or rectangular cross sections	0.85
Tubular pole structures, latticed structures with other cross sections, appurtenances	0.95
Tubular pole structures supporting antennas enclosed within a cylindrical shroud	1.00

Date: 11/22/2021
Project Name: OLD SAYBROOK
Project No.: CT2019
Designed By: KM Checked By: MSC

HUDSON Design Group LLC

Determine Ca:

Table 2-9

Force Coefficients (Ca) for Appurtenances				
Member Type		Aspect Ratio ≤ 2.5	Aspect Ratio = 7	Aspect Ratio ≥ 25
		Ca	Ca	Ca
Flat		1.2	1.4	2.0
Square/Rectangular HSS		1.2 - 2.8(r_s) ≥ 0.85	1.4 - 4.0(r_s) ≥ 0.90	2.0 - 6.0(r_s) ≥ 1.25
Round	**C < 39** (Subcritical)	0.7	0.8	1.2
	39 ≤ C ≤ 78 (Transitional)	$4.14/(C^{0.485})$	$3.66/(C^{0.415})$	$46.8/(C^{-1.0})$
	C > 78 (Supercritical)	0.5	0.6	0.6

Aspect Ratio is the overall length/width ratio in the plane normal to the wind direction.
(Aspect ratio is independent of the spacing between support points of a linear appurtenance,

Note: Linear interpolation may be used for aspect ratios other than those shown.

Ice Thickness = **1.24** in | **Angle =** **0 (deg)** | **Equivalent Angle =** **180 (deg)**

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
800-10799 Antenna	106.0	14.8	6.7	10.89	7.16	1.41	**900**	**148**	**44**
SBNHH-1D65A Antenna	55.6	11.9	7.1	4.59	4.67	1.30	**350**	**61**	**17**
OPA65R-BU8BA Antenna	95.9	11.7	10.1	7.79	8.20	1.44	**659**	**112**	**33**
QS46512-2 Antenna	52.0	12.0	10.8	4.33	4.33	1.28	**326**	**57**	**16**
OPA65R-BU4BA Antenna	48.0	11.7	10.1	3.90	4.10	1.27	**291**	**51**	**14**
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	2.25	1.20	**161**	**29**	**8**
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.10	1.20	**185**	**32**	**9**
4415 B25 RRH	16.5	5.9	13.4	0.68	2.80	1.21	**48**	**11**	**2**
B5/B12 4449 RRH	17.9	9.4	13.2	1.17	1.90	1.20	**82**	**16**	**4**
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	**67**	**13**	**3**
HSS 4x4	4.0	12.0	-	0.33	0.33	1.25	**24**		
2" Pipe	2.4	12.0	-	0.20	0.20	1.20	**14**		

Date: 11/22/2021
Project Name: OLD SAYBROOK
Project No.: CT2019
Designed By: KM Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle = 30 (deg) | Ice Thickness = 1.24 in. | Equivalent Angle = 210 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
800-10799 Antenna	106.0	14.8	6.7	10.89	4.93	7.16	15.82	1.41	1.69	900	491	798
SBNHH-1D65A Antenna	55.6	11.9	7.1	4.59	2.74	4.67	7.83	1.30	1.43	350	230	320
OPA65R-BU8BA Antenna	95.9	11.7	10.1	7.79	6.73	8.20	9.50	1.44	1.48	659	586	641
QS46512-2 Antenna	52.0	12.0	10.8	4.33	3.90	4.33	4.81	1.28	1.30	326	299	319
OPA65R-BU4BA Antenna	48.0	11.7	10.1	3.90	3.37	4.10	4.75	1.27	1.30	291	257	283
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	161	98	145
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	185	76	158
4415 B25 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	48	108	63
B5/B12 4449 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	82	116	91

WIND LOADS WITH ICE:

800-10799 Antenna	108.5	17.3	9.2	13.02	6.92	6.28	11.81	1.37	1.56	144	87	129
SBNHH-1D65A Antenna	58.1	14.4	9.6	5.80	3.87	4.04	6.06	1.27	1.36	59	42	55
OPA65R-BU8BA Antenna	98.4	14.2	12.6	9.69	8.60	6.94	7.82	1.40	1.43	109	99	107
QS46512-2 Antenna	54.5	14.5	13.3	5.48	5.03	3.76	4.10	1.26	1.27	55	52	54
OPA65R-BU4BA Antenna	50.5	14.2	12.6	4.97	4.41	3.56	4.01	1.25	1.27	50	45	49
RRUS-32 B30 RRH	29.7	14.6	9.5	3.01	1.95	2.04	3.13	1.20	1.23	29	19	27
RRUS-E2 B29 RRH	22.9	21.0	10.0	3.33	1.59	1.09	2.29	1.20	1.20	32	15	28
4415 B25 RRH	19.0	8.4	15.9	1.11	2.09	2.26	1.20	1.20	1.20	11	20	13
B5/B12 4449 RRH	20.4	11.9	15.7	1.68	2.22	1.72	1.30	1.20	1.20	16	21	18

WIND LOADS AT 30 MPH:

800-10799 Antenna	106.0	14.8	6.7	10.89	4.93	7.16	15.82	1.41	1.69	44	24	39
SBNHH-1D65A Antenna	55.6	11.9	7.1	4.59	2.74	4.67	7.83	1.30	1.43	17	11	16
OPA65R-BU8BA Antenna	95.9	11.7	10.1	7.79	6.73	8.20	9.50	1.44	1.48	33	29	32
QS46512-2 Antenna	52.0	12.0	10.8	4.33	3.90	4.33	4.81	1.28	1.30	16	15	16
OPA65R-BU4BA Antenna	48.0	11.7	10.1	3.90	3.37	4.10	4.75	1.27	1.30	14	13	14
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	8	5	7
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	9	4	8
4415 B25 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	5	3
B5/B12 4449 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	4	6	4

Date: 11/22/2021
Project Name: OLD SAYBROOK
Project No.: CT2019
Designed By: KM Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle = 60 (deg) | Ice Thickness = 1.24 in. | Equivalent Angle = 240 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
800-10799 Antenna	106.0	14.8	6.7	10.89	4.93	7.16	15.82	1.41	1.69	900	491	593
SBNHH-1D65A Antenna	55.6	11.9	7.1	4.59	2.74	4.67	7.83	1.30	1.43	350	230	260
OPA65R-BU8BA Antenna	95.9	11.7	10.1	7.79	6.73	8.20	9.50	1.44	1.48	659	586	605
QS46512-2 Antenna	52.0	12.0	10.8	4.33	3.90	4.33	4.81	1.28	1.30	326	299	306
OPA65R-BU4BA Antenna	48.0	11.7	10.1	3.90	3.37	4.10	4.75	1.27	1.30	291	257	266
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	161	98	114
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	185	76	103
4415 B25 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	48	108	93
B5/B12 4449 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	82	116	107

WIND LOADS WITH ICE:

800-10799 Antenna	108.5	17.3	9.2	13.02	6.92	6.28	11.81	1.37	1.56	144	87	101
SBNHH-1D65A Antenna	58.1	14.4	9.6	5.80	3.87	4.04	6.06	1.27	1.36	59	42	47
OPA65R-BU8BA Antenna	98.4	14.2	12.6	9.69	8.60	6.94	7.82	1.40	1.43	109	99	101
QS46512-2 Antenna	54.5	14.5	13.3	5.48	5.03	3.76	4.10	1.26	1.27	55	52	53
OPA65R-BU4BA Antenna	50.5	14.2	12.6	4.97	4.41	3.56	4.01	1.25	1.27	50	45	46
RRUS-32 B30 RRH	29.7	14.6	9.5	3.01	1.95	2.04	3.13	1.20	1.23	29	19	22
RRUS-E2 B29 RRH	22.9	21.0	10.0	3.33	1.59	1.09	2.29	1.20	1.20	32	15	20
4415 B25 RRH	19.0	8.4	15.9	1.11	2.09	2.26	1.20	1.20	1.20	11	20	18
B5/B12 4449 RRH	20.4	11.9	15.7	1.68	2.22	1.72	1.30	1.20	1.20	16	21	20

WIND LOADS AT 30 MPH:

800-10799 Antenna	106.0	14.8	6.7	10.89	4.93	7.16	15.82	1.41	1.69	44	24	29
SBNHH-1D65A Antenna	55.6	11.9	7.1	4.59	2.74	4.67	7.83	1.30	1.43	17	11	13
OPA65R-BU8BA Antenna	95.9	11.7	10.1	7.79	6.73	8.20	9.50	1.44	1.48	33	29	30
QS46512-2 Antenna	52.0	12.0	10.8	4.33	3.90	4.33	4.81	1.28	1.30	16	15	15
OPA65R-BU4BA Antenna	48.0	11.7	10.1	3.90	3.37	4.10	4.75	1.27	1.30	14	13	13
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	8	5	6
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	9	4	5
4415 B25 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	5	5
B5/B12 4449 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	4	6	5

Date: 11/22/2021
Project Name: OLD SAYBROOK
Project No.: CT2019
Designed By: KM Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	90	(deg)	Ice Thickness =	1.24	in.	Equivalent Angle =	270	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
800-10799 Antenna	106.0	14.8	6.7	10.89	4.93	7.16	15.82	1.41	1.69	900	491	491
SBNHH-1D65A Antenna	55.6	11.9	7.1	4.59	2.74	4.67	7.83	1.30	1.43	350	230	230
OPA65R-BU8BA Antenna	95.9	11.7	10.1	7.79	6.73	8.20	9.50	1.44	1.48	659	586	586
QS46512-2 Antenna	52.0	12.0	10.8	4.33	3.90	4.33	4.81	1.28	1.30	326	299	299
OPA65R-BU4BA Antenna	48.0	11.7	10.1	3.90	3.37	4.10	4.75	1.27	1.30	291	257	257
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	161	98	98
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	185	76	76
4415 B25 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	48	108	108
B5/B12 4449 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	82	116	116

WIND LOADS WITH ICE:

800-10799 Antenna	108.5	17.3	9.2	13.02	6.92	6.28	11.81	1.37	1.56	144	87	87
SBNHH-1D65A Antenna	58.1	14.4	9.6	5.80	3.87	4.04	6.06	1.27	1.36	59	42	42
OPA65R-BU8BA Antenna	98.4	14.2	12.6	9.69	8.60	6.94	7.82	1.40	1.43	109	99	99
QS46512-2 Antenna	54.5	14.5	13.3	5.48	5.03	3.76	4.10	1.26	1.27	55	52	52
OPA65R-BU4BA Antenna	50.5	14.2	12.6	4.97	4.41	3.56	4.01	1.25	1.27	50	45	45
RRUS-32 B30 RRH	29.7	14.6	9.5	3.01	1.95	2.04	3.13	1.20	1.23	29	19	19
RRUS-E2 B29 RRH	22.9	21.0	10.0	3.33	1.59	1.09	2.29	1.20	1.20	32	15	15
4415 B25 RRH	19.0	8.4	15.9	1.11	2.09	2.26	1.20	1.20	1.20	11	20	20
B5/B12 4449 RRH	20.4	11.9	15.7	1.68	2.22	1.72	1.30	1.20	1.20	16	21	21

WIND LOADS AT 30 MPH:

800-10799 Antenna	106.0	14.8	6.7	10.89	4.93	7.16	15.82	1.41	1.69	44	24	24
SBNHH-1D65A Antenna	55.6	11.9	7.1	4.59	2.74	4.67	7.83	1.30	1.43	17	11	11
OPA65R-BU8BA Antenna	95.9	11.7	10.1	7.79	6.73	8.20	9.50	1.44	1.48	33	29	29
QS46512-2 Antenna	52.0	12.0	10.8	4.33	3.90	4.33	4.81	1.28	1.30	16	15	15
OPA65R-BU4BA Antenna	48.0	11.7	10.1	3.90	3.37	4.10	4.75	1.27	1.30	14	13	13
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	8	5	5
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	9	4	4
4415 B25 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	5	5
B5/B12 4449 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	4	6	6

Date: 11/22/2021
Project Name: OLD SAYBROOK
Project No.: CT2019
Designed By: KM Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	120	(deg)	Ice Thickness =	1.24	in.	Equivalent Angle =	300	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
800-10799 Antenna	106.0	14.8	6.7	10.89	4.93	7.16	15.82	1.41	1.69	900	491	593
SBNHH-1D65A Antenna	55.6	11.9	7.1	4.59	2.74	4.67	7.83	1.30	1.43	350	230	260
OPA65R-BU8BA Antenna	95.9	11.7	10.1	7.79	6.73	8.20	9.50	1.44	1.48	659	586	605
QS46512-2 Antenna	52.0	12.0	10.8	4.33	3.90	4.33	4.81	1.28	1.30	326	299	306
OPA65R-BU4BA Antenna	48.0	11.7	10.1	3.90	3.37	4.10	4.75	1.27	1.30	291	257	266
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	161	98	114
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	185	76	103
4415 B25 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	48	108	93
B5/B12 4449 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	82	116	107

WIND LOADS WITH ICE:

800-10799 Antenna	108.5	17.3	9.2	13.02	6.92	6.28	11.81	1.37	1.56	144	87	101
SBNHH-1D65A Antenna	58.1	14.4	9.6	5.80	3.87	4.04	6.06	1.27	1.36	59	42	47
OPA65R-BU8BA Antenna	98.4	14.2	12.6	9.69	8.60	6.94	7.82	1.40	1.43	109	99	101
QS46512-2 Antenna	54.5	14.5	13.3	5.48	5.03	3.76	4.10	1.26	1.27	55	52	53
OPA65R-BU4BA Antenna	50.5	14.2	12.6	4.97	4.41	3.56	4.01	1.25	1.27	50	45	46
RRUS-32 B30 RRH	29.7	14.6	9.5	3.01	1.95	2.04	3.13	1.20	1.23	29	19	22
RRUS-E2 B29 RRH	22.9	21.0	10.0	3.33	1.59	1.09	2.29	1.20	1.20	32	15	20
4415 B25 RRH	19.0	8.4	15.9	1.11	2.09	2.26	1.20	1.20	1.20	11	20	18
B5/B12 4449 RRH	20.4	11.9	15.7	1.68	2.22	1.72	1.30	1.20	1.20	16	21	20

WIND LOADS AT 30 MPH:

800-10799 Antenna	106.0	14.8	6.7	10.89	4.93	7.16	15.82	1.41	1.69	44	24	29
SBNHH-1D65A Antenna	55.6	11.9	7.1	4.59	2.74	4.67	7.83	1.30	1.43	17	11	13
OPA65R-BU8BA Antenna	95.9	11.7	10.1	7.79	6.73	8.20	9.50	1.44	1.48	33	29	30
QS46512-2 Antenna	52.0	12.0	10.8	4.33	3.90	4.33	4.81	1.28	1.30	16	15	15
OPA65R-BU4BA Antenna	48.0	11.7	10.1	3.90	3.37	4.10	4.75	1.27	1.30	14	13	13
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	8	5	6
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	9	4	5
4415 B25 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	5	5
B5/B12 4449 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	4	6	5

Date: 11/22/2021
Project Name: OLD SAYBROOK
Project No.: CT2019
Designed By: KM Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	150	(deg)	Ice Thickness =	1.24	in.	Equivalent Angle =	330	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
800-10799 Antenna	106.0	14.8	6.7	10.89	4.93	7.16	15.82	1.41	1.69	900	491	798
SBNHH-1D65A Antenna	55.6	11.9	7.1	4.59	2.74	4.67	7.83	1.30	1.43	350	230	320
OPA65R-BU8BA Antenna	95.9	11.7	10.1	7.79	6.73	8.20	9.50	1.44	1.48	659	586	641
QS46512-2 Antenna	52.0	12.0	10.8	4.33	3.90	4.33	4.81	1.28	1.30	326	299	319
OPA65R-BU4BA Antenna	48.0	11.7	10.1	3.90	3.37	4.10	4.75	1.27	1.30	291	257	283
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	161	98	145
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	185	76	158
4415 B25 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	48	108	63
B5/B12 4449 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	82	116	91

WIND LOADS WITH ICE:

800-10799 Antenna	108.5	17.3	9.2	13.02	6.92	6.28	11.81	1.37	1.56	144	87	129
SBNHH-1D65A Antenna	58.1	14.4	9.6	5.80	3.87	4.04	6.06	1.27	1.36	59	42	55
OPA65R-BU8BA Antenna	98.4	14.2	12.6	9.69	8.60	6.94	7.82	1.40	1.43	109	99	107
QS46512-2 Antenna	54.5	14.5	13.3	5.48	5.03	3.76	4.10	1.26	1.27	55	52	54
OPA65R-BU4BA Antenna	50.5	14.2	12.6	4.97	4.41	3.56	4.01	1.25	1.27	50	45	49
RRUS-32 B30 RRH	29.7	14.6	9.5	3.01	1.95	2.04	3.13	1.20	1.23	29	19	27
RRUS-E2 B29 RRH	22.9	21.0	10.0	3.33	1.59	1.09	2.29	1.20	1.20	32	15	28
4415 B25 RRH	19.0	8.4	15.9	1.11	2.09	2.26	1.20	1.20	1.20	11	20	13
B5/B12 4449 RRH	20.4	11.9	15.7	1.68	2.22	1.72	1.30	1.20	1.20	16	21	18

WIND LOADS AT 30 MPH:

800-10799 Antenna	106.0	14.8	6.7	10.89	4.93	7.16	15.82	1.41	1.69	44	24	39
SBNHH-1D65A Antenna	55.6	11.9	7.1	4.59	2.74	4.67	7.83	1.30	1.43	17	11	16
OPA65R-BU8BA Antenna	95.9	11.7	10.1	7.79	6.73	8.20	9.50	1.44	1.48	33	29	32
QS46512-2 Antenna	52.0	12.0	10.8	4.33	3.90	4.33	4.81	1.28	1.30	16	15	16
OPA65R-BU4BA Antenna	48.0	11.7	10.1	3.90	3.37	4.10	4.75	1.27	1.30	14	13	14
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	8	5	7
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	9	4	8
4415 B25 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	5	3
B5/B12 4449 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	4	6	4

Date: 11/22/2021
Project Name: OLD SAYBROOK
Project No.: CT2019
Designed By: KM **Checked By:** MSC

HUDSON Design Group LLC

ICE WEIGHT CALCULATIONS

Thickness of ice: 1.24 in.
Density of ice: 56 pcf

800-10799 Antenna

Weight of ice based on total radial SF area:

Height (in):	106.0	
Width (in):	14.8	
Depth (in):	6.7	
Total weight of ice on object:		234 lbs
Weight of object:	108.0	lbs
Combined weight of ice and object:		342 lbs

SBNHH-1D65A Antenna

Weight of ice based on total radial SF area:

Height (in):	55.6	
Width (in):	11.9	
Depth (in):	7.1	
Total weight of ice on object:		106 lbs
Weight of object:	34.0	lbs
Combined weight of ice and object:		140 lbs

OPA65R-BU8BA Antenna

Weight of ice based on total radial SF area:

Height (in):	95.9	
Width (in):	11.7	
Depth (in):	8.4	
Total weight of ice on object:		189 lbs
Weight of object:	69.0	lbs
Combined weight of ice and object:		258 lbs

QS46512-2 Antenna

Weight of ice based on total radial SF area:

Height (in):	52.0	
Width (in):	12.0	
Depth (in):	10.8	
Total weight of ice on object:		114 lbs
Weight of object:	75.0	lbs
Combined weight of ice and object:		189 lbs

OPA65R-BU4BA Antenna

Weight of ice based on total radial SF area:

Height (in):	48.0	
Width (in):	11.7	
Depth (in):	10.1	
Total weight of ice on object:		101 lbs
Weight of object:	43.0	lbs
Combined weight of ice and object:		144 lbs

RRUS-32 B30 RRH

Weight of ice based on total radial SF area:

Height (in):	27.2	
Width (in):	12.1	
Depth (in):	7.0	
Total weight of ice on object:		52 lbs
Weight of object:	60.0	lbs
Combined weight of ice and object:		112 lbs

RRUS-E2 B29 RRH

Weight of ice based on total radial SF area:

Height (in):	20.4	
Width (in):	18.5	
Depth (in):	7.5	
Total weight of ice on object:		55 lbs
Weight of object:	53.0	lbs
Combined weight of ice and object:		108 lbs

4415 B25 RRH

Weight of ice based on total radial SF area:

Height (in):	16.5	
Width (in):	13.4	
Depth (in):	5.9	
Total weight of ice on object:		33 lbs
Weight of object:	46.0	lbs
Combined weight of ice and object:		79 lbs

B5/B12 4449 RRH

Weight of ice based on total radial SF area:

Height (in):	17.9	
Width (in):	13.2	
Depth (in):	9.4	
Total weight of ice on object:		39 lbs
Weight of object:	73.0	lbs
Combined weight of ice and object:		112 lbs

Squid Surge Arrestor

Weight of ice based on total radial SF area:

Depth (in):	24.0	
Diameter(in):	9.7	
Total weight of ice on object:		33 lbs
Weight of object:	33	lbs
Combined weight of ice and object:		66 lbs

HSS 4x4

Weight of ice based on total radial SF area:

Height (in):	4	
Width (in):	4	
Per foot weight of ice on object:		10 plf

2" pipe

Per foot weight of ice:

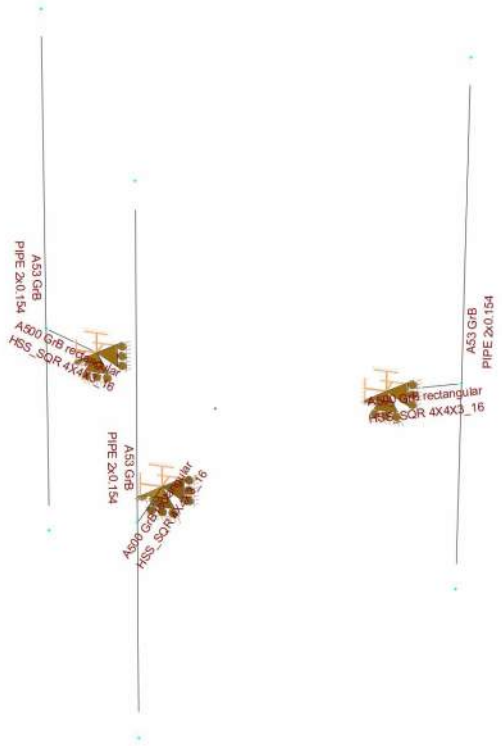
diameter (in):	2.38	
Per foot weight of ice on object:		5 plf

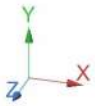
HUDSON
Design Group LLC

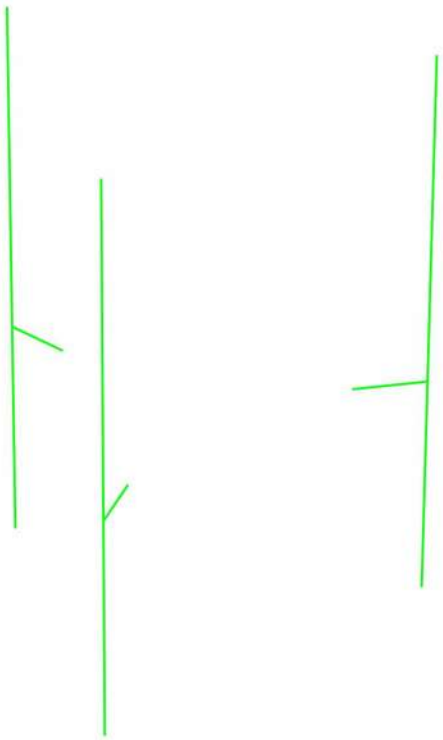
Mount Calculations
(Existing Conditions)

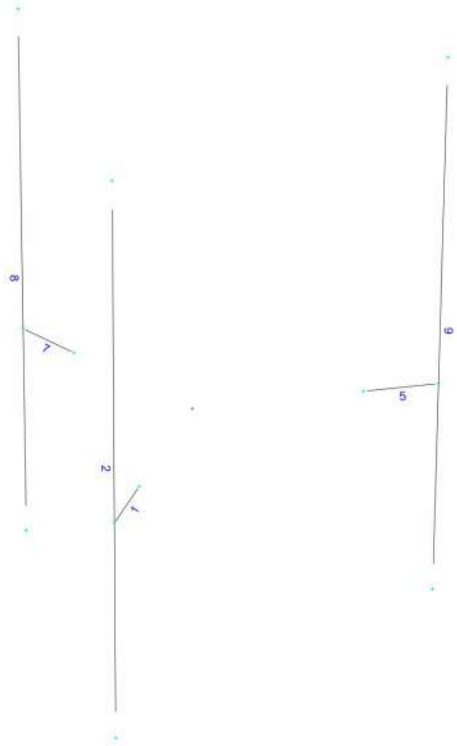

Y
X
Z

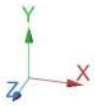
Current Date: 11/22/2021 11:45 AM
Units system: English
File name: Z:\Shared\Work2.0\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT2019\BWE\CT2019 (BWE).retx






Design status
Not designed
Error on design
Design O.K.
With warnings
Y
X
Z


8
7
2
1
6
5


Y
X
Z

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Load data

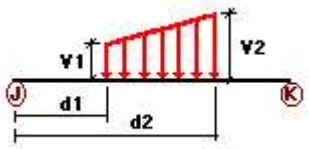
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

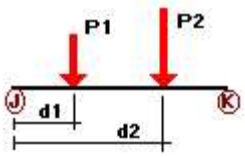
Condition	Description	Comb.	Category
DL	Dead Load	No	DL
W0	Wind Load 0/60/120 deg	No	WIND
W30	Wind Load 30/90/150 deg	No	WIND
Di	Ice Load	No	LL
Wi0	Ice Wind Load 0/60/120 deg	No	WIND
Wi30	Ice Wind Load 30/90/150 deg	No	WIND
WL0	WL 30 mph 0/60/120 deg	No	WIND
WL30	WL 30 mph 30/90/150 deg	No	WIND

Distributed force on members



Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
W0	2	z	-0.014	-0.014	0.00	No	100.00	Yes
	5	z	-0.024	-0.024	0.00	No	100.00	Yes
	6	z	-0.014	-0.014	0.00	No	100.00	Yes
	7	z	-0.024	-0.024	0.00	No	100.00	Yes
	8	z	-0.014	-0.014	0.00	No	100.00	Yes
W30	1	x	-0.024	-0.024	0.00	No	100.00	Yes
	2	x	-0.014	-0.014	0.00	No	100.00	Yes
	6	x	-0.014	-0.014	0.00	No	100.00	Yes
	7	x	-0.024	-0.024	0.00	No	100.00	Yes
	8	x	-0.014	-0.014	0.00	No	100.00	Yes
Di	1	y	-0.01	-0.01	0.00	No	100.00	Yes
	2	y	-0.005	-0.005	0.00	No	100.00	Yes
	5	y	-0.01	-0.01	0.00	No	100.00	Yes
	6	y	-0.005	-0.005	0.00	No	100.00	Yes
	7	y	-0.01	-0.01	0.00	No	100.00	Yes
	8	y	-0.005	-0.005	0.00	No	100.00	Yes

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	2	y	-0.046	1.00	No
		y	-0.073	2.00	No
		y	-0.033	4.50	No
	6	y	-0.046	1.00	No
		y	-0.073	2.00	No
		y	-0.033	4.50	No
	8	y	-0.046	1.00	No
		y	-0.073	2.00	No
		y	-0.033	4.50	No
W0	2	z	-0.048	1.00	No
		z	-0.082	2.00	No
		z	-0.067	4.50	No
	6	z	-0.093	1.00	No
		z	-0.107	2.00	No
		z	-0.067	4.50	No
	8	z	-0.093	1.00	No
		z	-0.107	2.00	No
		z	-0.067	4.50	No
W30	2	x	-0.108	1.00	No
		x	-0.116	2.00	No
		x	-0.067	4.50	No
	6	x	-0.063	1.00	No
		x	-0.091	2.00	No
		x	-0.067	4.50	No
	8	x	-0.063	1.00	No
		x	-0.091	2.00	No
		x	-0.067	4.50	No
Di	2	y	-0.033	1.00	No
		y	-0.039	2.00	No
		y	-0.033	4.50	No
	6	y	-0.033	1.00	No
		y	-0.039	2.00	No
		y	-0.033	4.50	No
	8	y	-0.033	1.00	No
		y	-0.039	2.00	No
		y	-0.033	4.50	No
Wi0	2	z	-0.011	1.00	No
		z	-0.016	2.00	No
		z	-0.013	4.50	No
	6	z	-0.018	1.00	No
		z	-0.02	2.00	No
		z	-0.013	4.50	No
	8	z	-0.018	1.00	No
		z	-0.02	2.00	No
		z	-0.013	4.50	No
Wi30	2	x	-0.02	1.00	No
		x	-0.021	2.00	No
		x	-0.013	4.50	No
	6	x	-0.013	1.00	No
		x	-0.018	2.00	No
		x	-0.013	4.50	No
	8	x	-0.013	1.00	No
		x	-0.018	2.00	No
		x	-0.013	4.50	No

WL0	2	z	-0.002	1.00	No
		z	-0.004	2.00	No
		z	-0.003	4.50	No
	6	z	-0.005	1.00	No
		z	-0.005	2.00	No
		z	-0.003	4.50	No
	8	z	-0.005	1.00	No
		z	-0.005	2.00	No
		z	-0.003	4.50	No
WL30	2	x	-0.005	1.00	No
		x	-0.006	2.00	No
		x	-0.003	4.50	No
	6	x	-0.003	1.00	No
		x	-0.004	2.00	No
		x	-0.003	4.50	No
	8	x	-0.003	1.00	No
		x	-0.004	2.00	No
		x	-0.003	4.50	No

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	-1.00	0.00
W0	Wind Load 0/60/120 deg	No	0.00	0.00	0.00
W30	Wind Load 30/90/150 deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
Wi0	Ice Wind Load 0/60/120 deg	No	0.00	0.00	0.00
Wi30	Ice Wind Load 30/90/150 deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0/60/120 deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30/90/150 deg	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
W0	0.00	0.00	0.00
W30	0.00	0.00	0.00
Di	0.00	0.00	0.00
Wi0	0.00	0.00	0.00
Wi30	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00

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Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2DL+W0
LC2=1.2DL+W30
LC3=1.2DL-W0
LC4=1.2DL-W30
LC5=0.9DL+W0
LC6=0.9DL+W30
LC7=0.9DL-W0
LC8=0.9DL-W30
LC9=1.2DL+Di+Wi0
LC10=1.2DL+Di+Wi30
LC11=1.2DL+Di-Wi0
LC12=1.2DL+Di-Wi30
LC13=1.2DL
LC17=1.2DL+WL0
LC18=1.2DL+WL30
LC19=1.2DL-WL0
LC20=1.2DL-WL30

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	HSS_SQR 4X4X3_16	**1**	LC2 at 0.00%	0.05	OK	Eq. H1-1b
		5	LC1 at 0.00%	**0.05**	**OK**	Eq. H1-1b
		7	LC1 at 0.00%	0.05	OK	Eq. H1-1b
	PIPE 2x0.154	**2**	LC2 at 59.38%	0.32	OK	Eq. H1-1b
		6	LC1 at 59.38%	**0.39**	**OK**	Eq. H1-1b
		8	LC1 at 59.38%	0.39	OK	Eq. H1-1b

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Geometry data

GLOSSARY

Cb22, Cb33	: Moment gradient coefficients
Cm22, Cm33	: Coefficients applied to bending term in interaction formula
d0	: Tapered member section depth at J end of member
DJX	: Rigid end offset distance measured from J node in axis X
DJY	: Rigid end offset distance measured from J node in axis Y
DJZ	: Rigid end offset distance measured from J node in axis Z
DKX	: Rigid end offset distance measured from K node in axis X
DKY	: Rigid end offset distance measured from K node in axis Y
DKZ	: Rigid end offset distance measured from K node in axis Z
dL	: Tapered member section depth at K end of member
Ig factor	: Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members
K22	: Effective length factor about axis 2
K33	: Effective length factor about axis 3
L22	: Member length for calculation of axial capacity
L33	: Member length for calculation of axial capacity
LB pos	: Lateral unbraced length of the compression flange in the positive side of local axis 2
LB neg	: Lateral unbraced length of the compression flange in the negative side of local axis 2
RX	: Rotation about X
RY	: Rotation about Y
RZ	: Rotation about Z
TO	: 1 = Tension only member 0 = Normal member
TX	: Translation in X
TY	: Translation in Y
TZ	: Translation in Z

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
147	0.00	0.00	1.50	0
148	0.00	0.00	2.1667	0
149	0.00	3.00	2.1667	0
150	0.00	-2.00	2.1667	0
156	1.299	0.00	-0.75	0
157	1.8764	0.00	-1.0833	0
158	1.8764	3.00	-1.0833	0
159	1.8764	-2.00	-1.0833	0
160	-1.299	0.00	-0.75	0
161	-1.8764	0.00	-1.0833	0
162	-1.8764	3.00	-1.0833	0
163	-1.8764	-2.00	-1.0833	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
147	1	1	1	1	1	1
156	1	1	1	1	1	1
160	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
1	147	148		HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
2	149	150		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
5	156	157		HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
6	158	159		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
7	160	161		HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
8	162	163		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
6	0.00	2	-0.50	0.00	-0.866
8	0.00	2	-0.50	0.00	0.866

EXHIBIT 5

Radio Frequency Safety Survey Report Prediction (RFSSRP)

AT&T Wireless Monopole Facility

Site ID: CT2019 **Site Name:** OLD SAYBROOK **Address:** 170 INGHAM HILL ROAD, OLD SAYBROOK, NY 06475 **Latitude:** 41.309881 **Longitude:** -72.397527 **USID:** 59405 **FA**: 10034982	**Prepared for:** Centerline on Behalf of AT&T **Pace ID:** MRCTB052909 Report Writer: Elizabeth Sakelaris Date: March 4, 2022 Report Reviewer: Yasir Alqadhili

Statement of Compliance

AT&T will be compliant with FCC Regulations upon installation of recommended mitigation measures.

TABLE OF CONTENTS

1.0 GENERAL SUMMARY

Centerline Communications, LLC ("Centerline") has been contracted to provide a Radio Frequency (RF) Analysis for the following AT&T Mobility wireless monopole facility to determine whether the facility is in compliance with federal standards and regulations regarding RF emissions. This analysis includes theoretical emissions calculations, for all equipment for AT&T Mobility and any other wireless carriers on site.

1.1 SITE SUMMARY

Analysis Site Data	
Site USID:	59405
Site FA#:	10034982
Site Name:	OLD SAYBROOK
Site Address:	170 INGHAM HILL ROAD, OLD SAYBROOK NY 06475
Site Latitude:	41.309881
Site Longitude:	-72.397527
Facility Type:	Monopole
Compliance Summary	
Compliance Status:	Compliant Upon Mitigation Installation
Maximum Modeled AT&T MPE% on Walking Surface (General Public Limit):	0.05%
Maximum Modeled AT&T MPE% at Ground Level (General Public Limit):	0.05%
Site Survey Data	
Is Access Locked or Controlled? :	Unknown
Lock or Control Measures if Present:	Unknown
Parapet Height:	N/A
Site Data Information	
CD:	CT2019_BWE TOWER TOP RRH SWAP_CD_REVA_02.11.22
RFDS:	NEW-ENGLAND_CONNECTICUT_CTL02019_2021-LTE-MULTI-CARRIER_RRH-Change-out_dr701e_2051A10QY7_10034982_59405_08-10-2021_Final-RF-Approval_v1.00

Signage and barriers are the primary means of mitigating access to accessible areas of exposure. Below is a summary of existing and recommended signage at this AT&T facility.

Existing Signage and Barriers (AT&T Sectors)										
Location	Information	Notice	Notice 2	Caution	Caution 2	Caution 2B	Caution 2C	Warning	Warning 2	Barriers
Monopole Base	0	0	0	0	0	0	0	0	0	0

Recommended Signage and Barriers (AT&T Sectors) – Actions that MUST be Taken						
Location	Notice 2	Caution 2	Caution 2B	Caution 2C	Warning 2	Barriers
Monopole Base	0	0	1	0	0	0

Final Compliant Configuration (AT&T Sectors) – All Mitigation Items that MUST be in Place										
Location	Information	Notice	Notice 2	Caution	Caution 2	Caution 2B	Caution 2C	Warning	Warning 2	Barriers
Monopole Base	0	0	0	0	0	1	0	0	0	0

Alpha:

- No action required.

Beta:

- No action required.

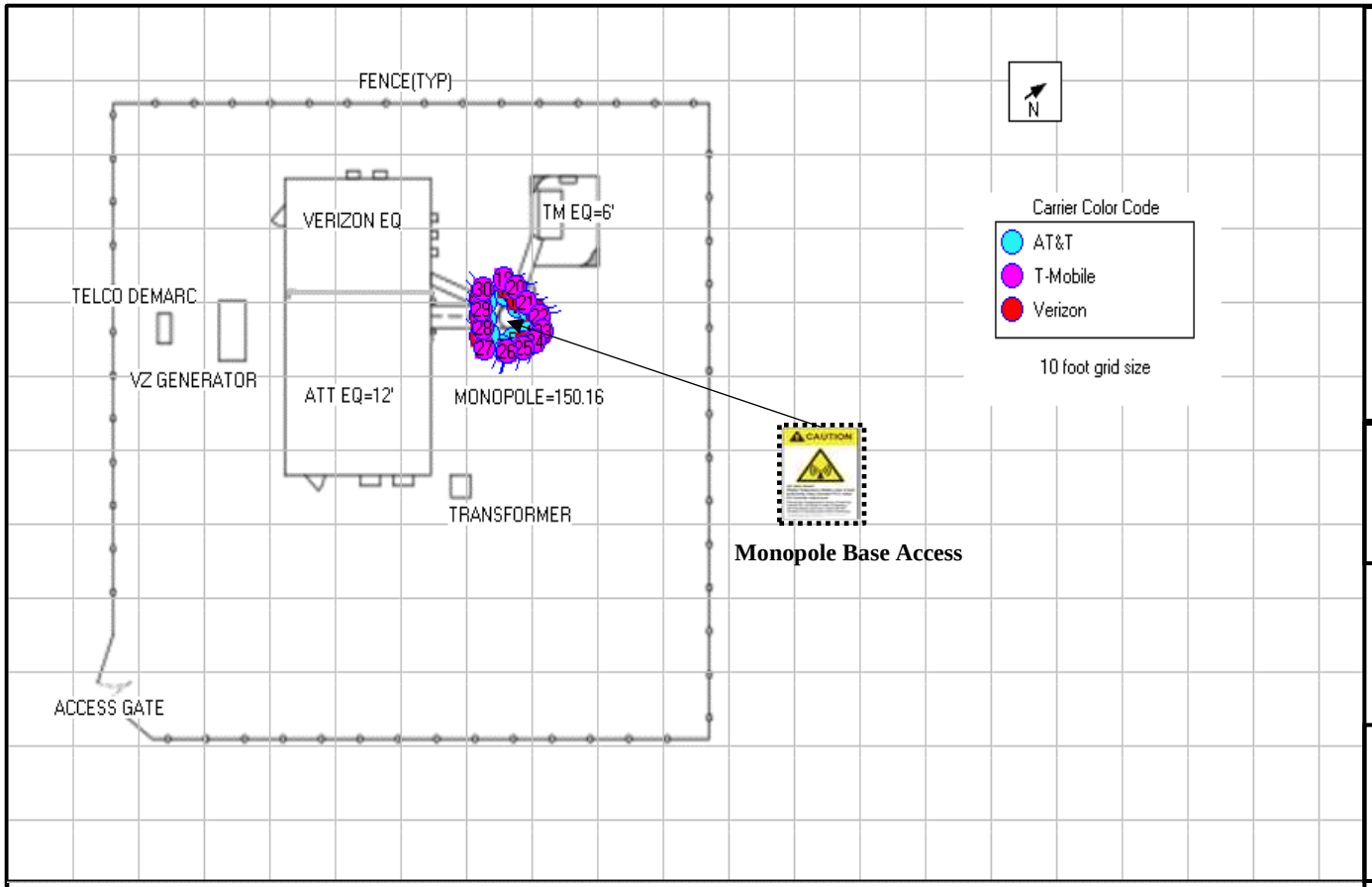
Gamma:

- No action required.

Monopole Base:

- Install (1) Caution 2B sign at the base of the Monopole's access.

2.0 SITE SCALE MAP



Operator Antenna Identifiers

- AT&T Mobility
- Verizon
- Clearwire
- Cricket
- T-Mobile
- Sprint
- US Cellular
- Metro PCS
- Unknown


INFO 1 Sign


Caution 1 Sign


INFO 2 Sign


Tower Caution Sign


Notice 1 Sign


Caution 2 Sign


Notice 2 Sign


Warning 2 Sign

Items to be Removed

Existing Sign

Proposed Sign

Existing Barrier

Proposed Barrier

Signage/ Mitigation Plan

OLD SAYBROOK / 10034982

3.0 ANTENNA INVENTORY

ANT ID	Operator	Antenna Make	Antenna Model	Type	Freq (MHz)	TPO (Watts)	# of TX	Azimuth (°)	BW (°)	Gain (dBd)	Total ERP (Watts)	Length (ft.)	Antenna Z Value (ft.) AGL**
1	AT&T	CCI	OPA-65R-BU4B	Panel	700	40	4	23	66	10.25	1694.81	4.0	147.0
1	AT&T	CCI	OPA-65R-BU4B	Panel	850	40	4	23	69	10.35	1734.28	4.0	147.0
2	AT&T	COMMSCOPE	SBNHH-1D65A	Panel	700	40	4	23	66	11.35	2183.33	4.6	146.7
2	AT&T	COMMSCOPE	SBNHH-1D65A	Panel	2100	60	4	23	62	15.13	7820.08	4.6	146.7
3	AT&T	QUINTEL	QS46512-2	Panel	700	40	2	23	63	10.95	995.61	4.3	146.8
3	AT&T	QUINTEL	QS46512-2	Panel	850	60	2	23	58	10.45	1331.01	4.3	146.8
3	AT&T	QUINTEL	QS46512-2	Panel	1900	40	4	23	67	13.35	3460.35	4.3	146.8
3	AT&T	QUINTEL	QS46512-2	Panel	2300	25	4	23	60	14.35	2722.70	4.3	146.8
4	AT&T	CCI	OPA-65R-BU4B	Panel	700	40	4	144	66	10.25	1694.81	4.0	147.0
4	AT&T	CCI	OPA-65R-BU4B	Panel	850	40	4	144	69	10.35	1734.28	4.0	147.0
5	AT&T	COMMSCOPE	SBNHH-1D65A	Panel	700	40	4	144	66	11.35	2183.33	4.6	146.7
5	AT&T	COMMSCOPE	SBNHH-1D65A	Panel	2100	60	4	144	62	15.01	7606.96	4.6	146.7
6	AT&T	KATHREIN	80010799	Panel	700	40	2	144	70	13.37	1738.16	8.8	144.6
6	AT&T	KATHREIN	80010799	Panel	850	60	2	144	65	14.22	3170.89	8.8	144.6
6	AT&T	KATHREIN	80010799	Panel	1900	40	4	144	61	14.83	4865.42	8.8	144.6
6	AT&T	KATHREIN	80010799	Panel	2300	25	4	144	66	14.21	2636.33	8.8	144.6
7	AT&T	CCI	OPA-65R-BU4B	Panel	700	40	4	262	66	10.15	1656.23	4.0	147.0
7	AT&T	CCI	OPA-65R-BU4B	Panel	850	40	4	262	69	10.25	1694.81	4.0	147.0
8	AT&T	COMMSCOPE	SBNHH-1D65A	Panel	700	40	4	262	66	11.4	2208.61	4.6	146.7
8	AT&T	COMMSCOPE	SBNHH-1D65A	Panel	2100	60	4	262	62	15.13	7820.08	4.6	146.7
9	AT&T	QUINTEL	QS46512-2	Panel	700	40	2	262	63	10.95	995.61	4.3	146.8
9	AT&T	QUINTEL	QS46512-2	Panel	850	60	2	262	58	10.45	1331.01	4.3	146.8
9	AT&T	QUINTEL	QS46512-2	Panel	1900	40	4	262	67	13.35	3460.35	4.3	146.8
9	AT&T	QUINTEL	QS46512-2	Panel	2300	25	4	262	60	14.35	2722.70	4.3	146.8
9	AT&T	QUINTEL	QS46512-2	Panel	2300	25	4	262	60	14.35	2722.70	4.3	146.8

10	Verizon	GENERIC	PANEL 6FT	Panel	850	40	4	20	66	12.62	2924.96	6.0	127.0
11	Verizon	GENERIC	PANEL 6FT	Panel	1900	40	4	20	66	15.84	6139.32	6.0	127.0
12	Verizon	GENERIC	PANEL 6FT	Panel	2100	40	4	20	63	16.39	6968.19	6.0	127.0
12	Verizon	GENERIC	PANEL 6FT	Panel	700	40	4	20	68	12.33	2736.02	6.0	127.0
13	Verizon	GENERIC	PANEL 6FT	Panel	850	40	4	140	66	12.62	2924.96	6.0	127.0
14	Verizon	GENERIC	PANEL 6FT	Panel	1900	40	4	140	66	15.84	6139.32	6.0	127.0
15	Verizon	GENERIC	PANEL 6FT	Panel	2100	40	4	140	63	16.39	6968.19	6.0	127.0
15	Verizon	GENERIC	PANEL 6FT	Panel	700	40	4	140	68	12.33	2736.02	6.0	127.0
16	Verizon	GENERIC	PANEL 6FT	Panel	850	40	4	260	66	12.62	2924.96	6.0	127.0
17	Verizon	GENERIC	PANEL 6FT	Panel	1900	40	4	260	66	15.84	6139.32	6.0	127.0
18	Verizon	GENERIC	PANEL 6FT	Panel	2100	40	4	260	63	16.39	6968.19	6.0	127.0
18	Verizon	GENERIC	PANEL 6FT	Panel	700	40	4	260	68	12.33	2736.02	6.0	112.0
19	T-Mobile	GENERIC	PANEL 6FT	Panel	1900	60	2	20	66	15.84	4604.49	6.0	112.0
20	T-Mobile	GENERIC	PANEL 6FT	Panel	600	60	2	20	68	12.33	2052.02	6.0	112.0
21	T-Mobile	GENERIC	PANEL 6FT	Panel	700	60	2	20	68	12.33	2052.02	6.0	112.0
22	T-Mobile	GENERIC	PANEL 6FT	Panel	2100	60	2	20	63	16.39	5226.14	6.0	112.0
23	T-Mobile	GENERIC	PANEL 6FT	Panel	1900	60	2	140	66	15.84	4604.49	6.0	112.0
24	T-Mobile	GENERIC	PANEL 6FT	Panel	600	60	2	140	68	12.33	2052.02	6.0	112.0
25	T-Mobile	GENERIC	PANEL 6FT	Panel	700	60	2	140	68	12.33	2052.02	6.0	112.0
26	T-Mobile	GENERIC	PANEL 6FT	Panel	2100	60	2	140	63	16.39	5226.14	6.0	112.0
27	T-Mobile	GENERIC	PANEL 6FT	Panel	1900	60	2	260	66	15.84	4604.49	6.0	112.0
28	T-Mobile	GENERIC	PANEL 6FT	Panel	600	60	2	260	68	12.33	2052.02	6.0	112.0
29	T-Mobile	GENERIC	PANEL 6FT	Panel	700	60	2	260	68	12.33	2052.02	6.0	112.0
30	T-Mobile	GENERIC	PANEL 6FT	Panel	2100	60	2	260	63	16.39	5226.14	6.0	112.0

*Table 1: Total Site Data Table (**AGL = Above Ground Level)*
Note: Z Value represents the bottom tip height of the antenna

75% TDD Cycle is assumed for all 4G/5G antennas

4.0 PREDICTED EMISSION LEVELS AND DISCUSSION

All calculations performed based upon the data listed for this facility have produced results that are within allowable limits for General Population limits for exposure to RF emissions as specified by federal standards.

AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document states that microwave dishes are compliant if they are mounted 20 feet or greater above any accessible walking or working surface.

Maximum Predicted MPE Level on Site:	**% of MPE Limit:**	**Location:**
Accessible **General Population** MPE Limits:	**0.05%**	**Sector A**
Accessible **Occupational** MPE Limits:	**0.01%**	

Ground Level Assessment:	**% of MPE Limit:**
Ground Level **General Population** MPE Limits:	**0.05%**
Ground Level **Occupational** MPE Limits:	**0.01%**

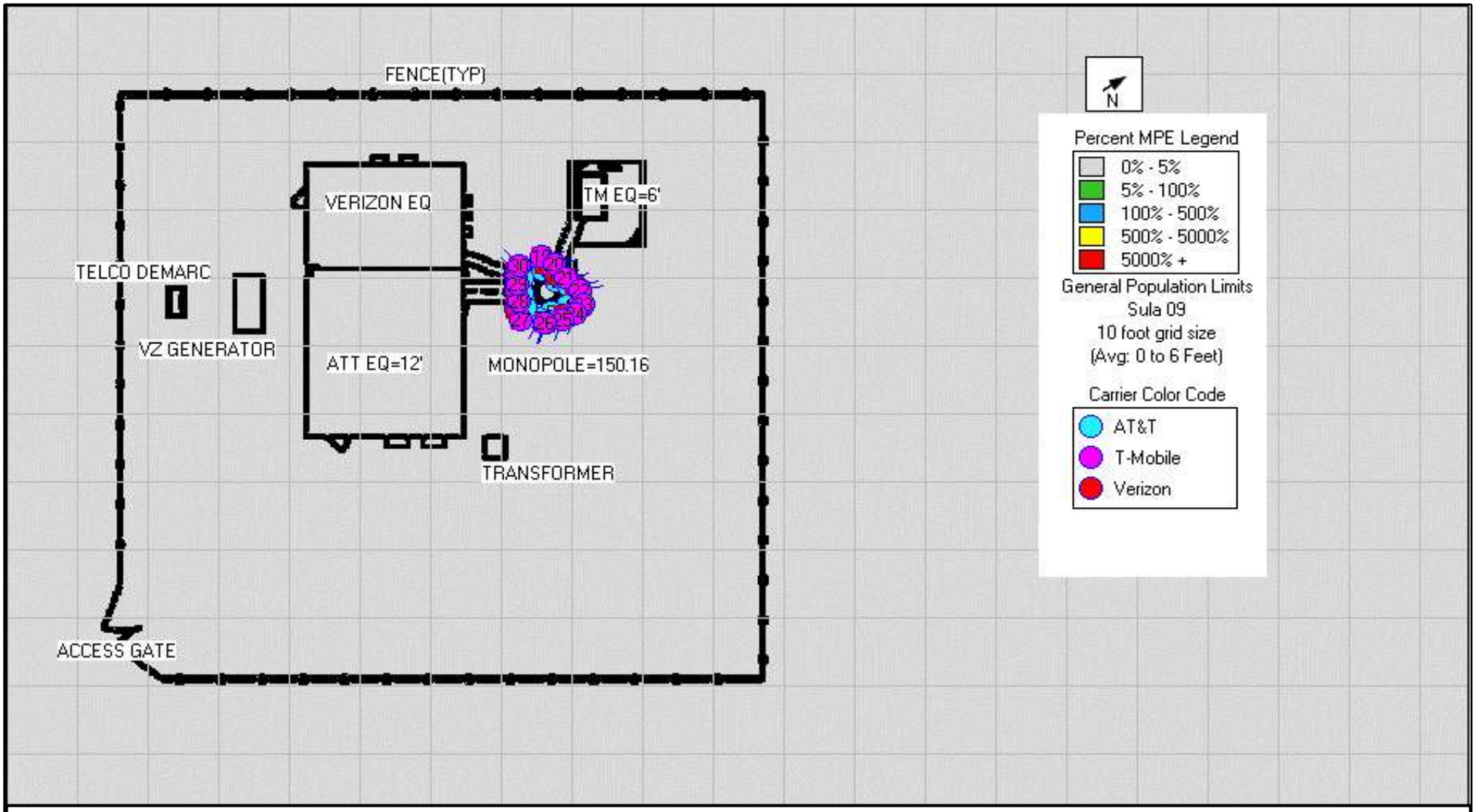
Sector A: Transmitting over Ground	**% of MPE Limit:**	***Distance from Antenna:**
Accessible **General Population** MPE Limits:	**0.05%**	**N/A**
Accessible **Occupational** MPE Limits:	**0.01%**	**N/A**

Sector B: Transmitting over Ground	**% of MPE Limit:**	***Distance from Antenna:**
Accessible **General Population** MPE Limits:	**0.04%**	**N/A**
Accessible **Occupational** MPE Limits:	**0.01%**	**N/A**

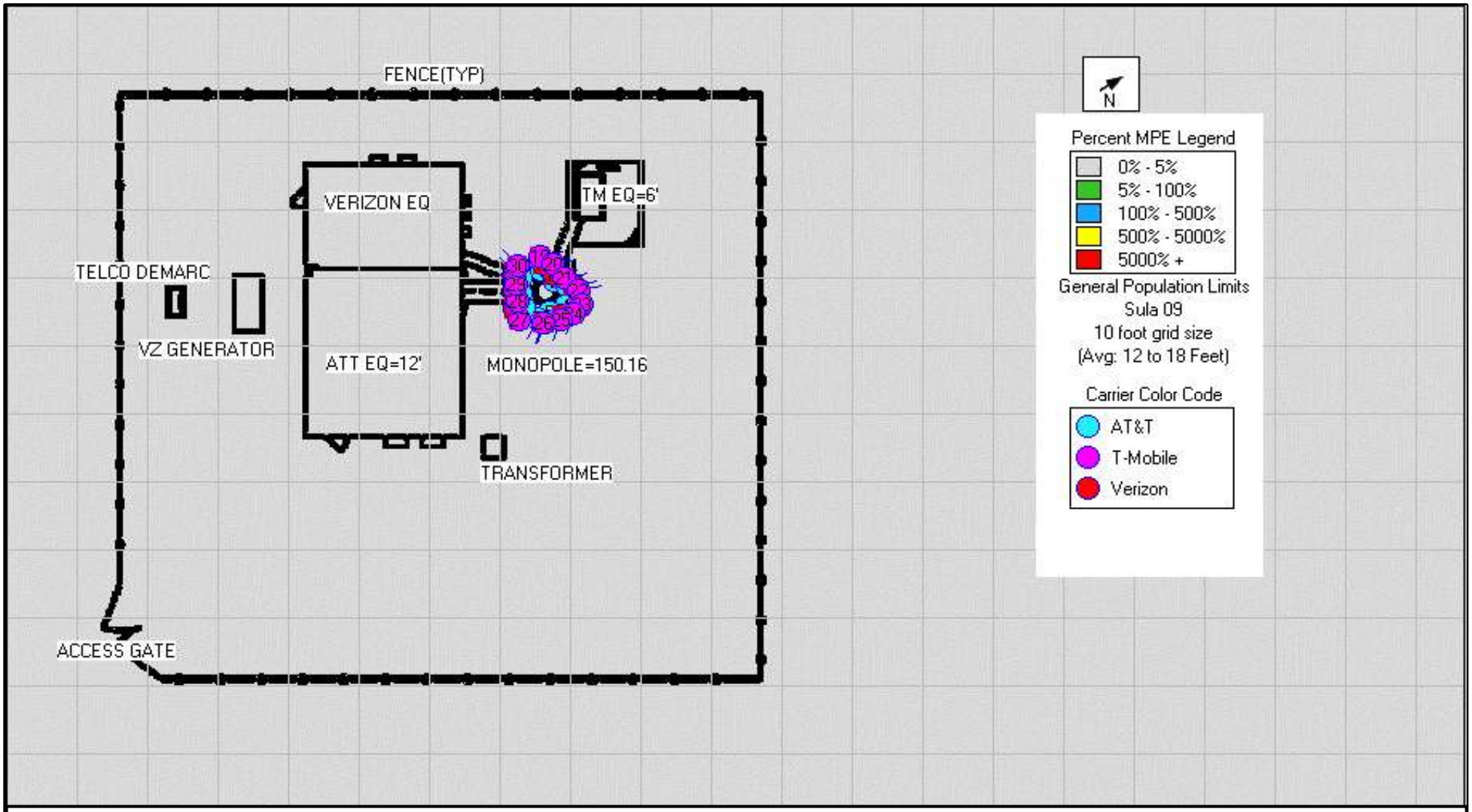
Sector C: Transmitting over Ground	**% of MPE Limit:**	***Distance from Antenna:**
Accessible **General Population** MPE Limits:	**0.04%**	**N/A**
Accessible **Occupational** MPE Limits:	**0.01%**	**N/A**

**Distance from Antenna is the distance that the MPE limits are exceeded from the front face of the antenna, outward across an accessible area.*

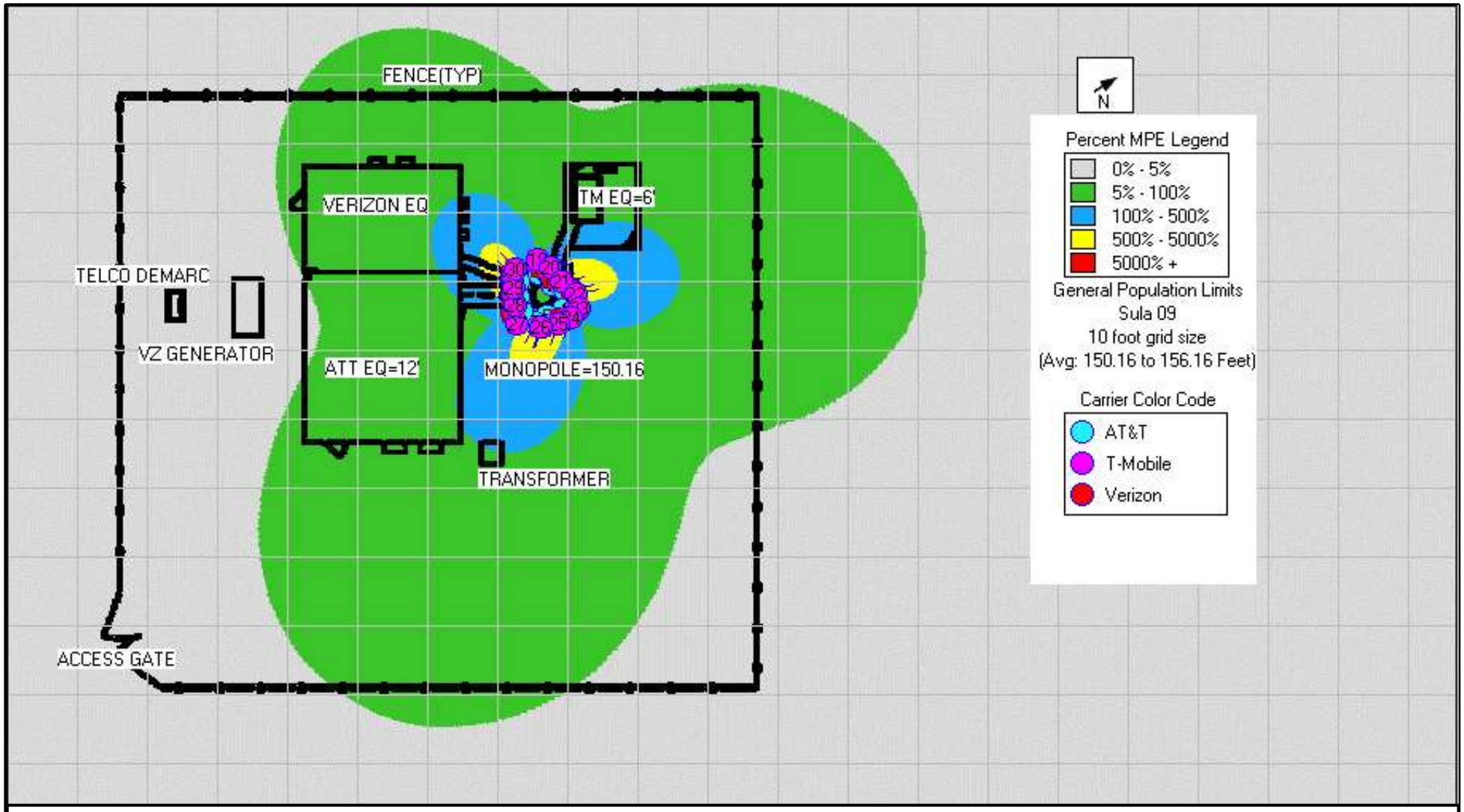
5.0 EMISSIONS DIAGRAMS



Emissions Thresholds for All Carriers (Ground 0.00ft.) OLD SAYBROOK / 10034982



Emissions Thresholds for All Carriers (AT&T EQ 12.00ft.) OLD SAYBROOK / 10034982



Emissions Thresholds for All Carriers (Monopole Top 156.16ft.) OLD SAYBROOK / 10034982

6.0 STATEMENT OF COMPLIANCE

Centerline conducted worst case modeling to determine whether the monopole facility located at 170 INGHAM HILL ROAD in OLD SAYBROOK, New York is in compliance with FCC Regulations.

6.1 STATEMENT OF AT&T MOBILITY COMPLIANCE

Based on the information analyzed, AT&T will be compliant with FCC Regulations once the mitigation measures recommended in this report are implemented.

6.2 RECOMMENDATIONS

Existing Signage and Barriers (AT&T Sectors)										
Location	Information	Notice	Notice 2	Caution	Caution 2	Caution 2B	Caution 2C	Warning	Warning 2	Barriers
Monopole Base	0	0	0	0	0	0	0	0	0	0

Recommended Signage and Barriers (AT&T Sectors) – Actions that MUST be Taken						
Location	Notice 2	Caution 2	Caution 2B	Caution 2C	Warning 2	Barriers
Monopole Base	0	0	1	0	0	0

Final Compliant Configuration (AT&T Sectors) – All Mitigation Items that MUST be in Place										
Location	Information	Notice	Notice 2	Caution	Caution 2	Caution 2B	Caution 2C	Warning	Warning 2	Barriers
Monopole Base	0	0	0	0	0	1	0	0	0	0

Alpha:

- No action required.

Beta:

- No action required.

Gamma:

- No action required.

Monopole Base:

- Install (1) Caution 2B sign at the base of the Monopole's access.

7.0 FALL ARREST AND PARAPET INFORMATION

As per AT&T barrier policy, rooftop edges that are protected with a 39-inch parapet wall or guardrail are safe for work activity within six (6) feet of the edge. OSHA has stated that an existing 39-inch guardrail or parapet provides sufficient protection for employees. The height of the top rail or equivalent component of guardrail systems in new construction shall be at least 42 inches above the walking or working surface. It should also be noted that the height of the parapet or guardrail may be reduced to no less than 30 inches at any point provided the sum of the depth (horizontal distance) of the top edge, and the height of the top edge (vertical distance from the work surface to the top edge of the top member, is at least 48 inches. If there is no reason for working atop the roof, then edge protection is not required. In addition, workers may use personnel lifts or temporary fall protection measures to perform work within 6 feet of the roof edge in place of permanent edge protection. Reference: 29 CFR 1910.28, 29 CFR 1910.23 (NPRM-1990); OSHA Letters of Interpretation 2/9/83 and 3/8/9

APPENDIX A: RF SIGNAGE

AT&T RF Signage

Sign	Description	Sign	Description
	**Information 1 Sign** Gives guidelines on how to proceed and who to contact regarding areas that may exceed either the FCC's General Population or Occupational emissions limits.		**Caution 2C Sign** Gives specific information on how to proceed and who to contact regarding antennas that are façade mounted, concealed or on stand-alone structures.
	**Blue Notice 1 Sign** Used to alert individuals that they are entering an area that may exceed the FCC's General Population emissions limit. Must be positioned such that persons approaching from any angle have ample warning to avoid the marked areas.		**Blue Notice 2 Sign** Used to alert individuals that they are entering an area that may exceed the FCC's General Population emissions limits. To be used on barriers or antenna sectors as a hybrid of the Information 1 and Blue Notice 1 signs.
	**Yellow Caution 1 Sign- Rooftop** Used to inform individuals that they are entering an area that may exceed the FCC's Occupational emissions limit. Must be positioned such that persons approaching from any angle have ample warning to avoid the marked areas.		**Yellow Caution 2 Sign- Rooftop** Used to alert individuals that they are entering an area that may exceed the FCC's Occupational emissions limit. To be used on barriers or antenna sectors as a hybrid of the Information 1 and Yellow Caution 1 signs.
	**Yellow Caution 2B Sign- Tower** Used to inform individuals that they are entering an area that may exceed the FCC's Occupational emissions limits. Must be placed at the base of the tower to warn tower climbers of potential for exposure.		**Warning 2 Sign** Used to inform individuals that they are entering an area that may exceed the FCC's Occupational emissions limit by a factor of 10 or greater. Must be positioned such that persons approaching from any angle have ample warning to avoid the marked areas.

APPENDIX B: FCC GUIDELINES AND EMISSIONS THRESHOLD LIMITS

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

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limit for the 700 and 800 MHz Bands is approximately 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively, and the general population exposure limit for the 1900 MHz PCS and 2100 MHz AWS bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/Controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure, have been properly trained in RF safety and can exercise control over their exposure. Occupational/Controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure, have been trained in RF safety and can exercise control over his or her exposure by leaving the area or by some other appropriate means. The Occupational/Controlled exposure limits all utilized frequency bands is five (5) times the FCC's General Public / Uncontrolled exposure limit.

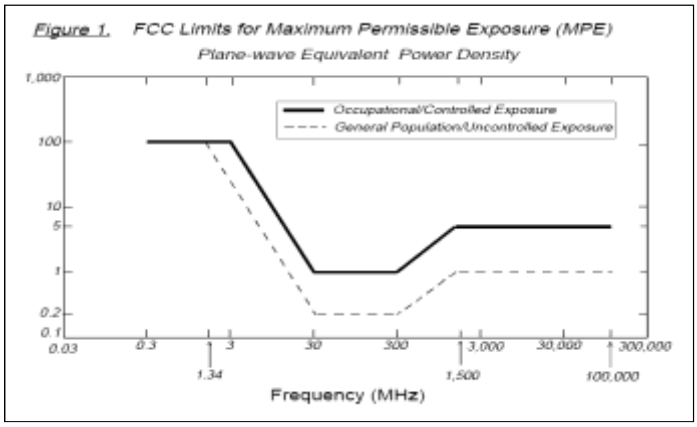
The FCC Mandates that if a site is found to be out of compliance with regard to emissions that any system operator contributing 5% or more to areas exceeding the FCC's allowable limits will be responsible for bringing the site into compliance.

Additional details can be found in FCC OET 65.

Table 1: Limits for Maximum Permissible Exposure (MPE)				
(A) Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/cm^2)**	**Averaging Time $[E]^2$, $[H]^2$, or S (minutes)**
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-I,500	--	--	f/300	6
1,500-100,000	--	--	5	6
(B) Limits for General Public/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/cm^2)**	**Averaging Time $[E]^2$, $[H]^2$, or S (minutes)**
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-I,500	--	--	f/1,500	30
1,500-100,000	--	--	1.0	30

f = Frequency in (MHz)

* Plane-wave equivalent power density



APPENDIX C: CALCULATION METHODOLOGY

Centerline Communications, LLC has performed theoretical modeling using Waterford Consultants' RoofMaster™ 2020 Version 25.8.16.2021 which uses a cylindrical model for conservative power density predictions within the near field of the antenna where the antenna pattern has not truly formed yet. Within this area power density values tend to decrease based upon an inverse distance function. At the point where it is appropriate for modeling to change from near-field calculations to far-field calculations the power decreases inversely with the square of the distance. This modeling technique is accurate with low antenna centerlines, such as rooftops, where persons can get close to the antennas and pass through fields in close proximity.

The modeling is based on worst-case assumptions for the number of antennas and transmitter power. No losses were included in the power calculations unless they were specifically provided for the project.

APPENDIX D: CERTIFICATIONS

I, Elizabeth Sakelaris, preparer of this report certify that I am fully trained and aware of the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation. I have been trained in the procedures and requirements outlined in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document.

Elizabeth Sakelaris

3/4/2022

I, Yasir Alqadhili, reviewer and approver of this report certify that I am fully trained and aware of the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation. I have been trained in the procedures and requirements outlined in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document.

Yasir Alqadhili

3/4/2022

APPENDIX E: PROPRIETARY STATEMENT

This report was prepared for the use of AT&T Mobility, LLC to meet requirements specified in AT&T's corporate RF safety guidelines. It was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same locale under like circumstances. The conclusions provided by Centerline Communications, LLC are based solely on the information provided by AT&T Mobility and all observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided to Centerline Communications, LLC so that our conclusions may be revised and modified, if necessary. This report has been prepared in accordance with Standard Conditions for Engagement and authorized proposal, both of which are integral parts of this report. No other warranty, expressed or implied, is made.

EXHIBIT 6

DOCKET NO. 51

AN APPLICATION SUBMITTED BY THE SOUTHERN NEW ENGLAND TELEPHONE COMPANY FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION, MAINTENANCE, AND OPERATION OF FACILITIES TO PROVIDE CELLULAR SERVICE IN HARTFORD AND MIDDLESEX COUNTIES.	:	CONNECTICUT SITING COUNCIL
	:	September 26, 1985

D E C I S I O N A N D O R D E R

Pursuant to the foregoing opinion, the Council hereby directs that a certificate of environmental compatibility and public need as required by section 16-50k of the General Statutes of Connecticut be issued to Southern New England Telephone Company (SNET) for the construction, operation, and maintenance of a telecommunications tower and associated equipment building to provide cellular service at sites in Old Saybrook and Enfield, Connecticut.

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

1. The towers shall be no taller than necessary to provide the proposed service, and in no event shall exceed
   a) 150' at the Old Saybrook site; and
   b) 150' at the Enfield site;
2. A fence not lower than eight feet shall surround each tower and its associated equipment building;
3. The applicant or its successor shall notify the Council if and when directional antennas or any other equipment is added to any of these facilities;
4. The applicant or its sucessor shall permit, in accordance with representations made by it during the proceeding, public or private entities to share space on the facilities, for due

consideration received, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing;

5. The facilities shall be constructed in accordance with all applicable federal, state, and municipal laws and regulations;
6. The applicant shall submit a development and management plan (D&M) for the Old Saybrook site pursuant to sections 16-50j-75 through 16-50j-77 of the regulations of state agencies, except that irrelevant items in section 16-50j-76 need only be identified as such. The D&M plan shall include erosion control measures, reseeding plans, and tree removal plans. The applicant shall comply with the reporting requirements of section 16-50j-77 for both sites;
7. Construction activities shall take place during daylight working hours;
8. This decision and order shall be void and the towers and associated equipment approved herein shall be dismantled and removed, or reapplication for any new use shall be made to the Connecticut Siting Council before any such new use is made, if the towers do not provide or permanently cease to provide cellular service following completion of construction;
9. This decision and order shall be void if all construction authorized is not completed within three years of the issuance of this decision.

Pursuant to section 16-50p of the General Statutes, we hereby direct that a copy of the opinion and decision and order be served on each person listed below. A notice of the issuance shall be published in the

Hartford Courant, the Middletown Press, and the Old Saybrook Pictorial.

The parties to this proceeding are

Southern New England Telephone Company (Applicant)
227 Church Street
New Haven, Connecticut 06506
Attn: Peter J. Tyrrell
Senior Attorney
Room 314

C E R T I F I C A T I O N

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

Dated at New Britain, Connecticut, this 26th day of September, 1985.

Council Members	Vote Cast
Gloria Dibble Pond Chairperson	Yes
Commissioner John Downey Designee: Commissioner Peter G. Boucher	Absent
Commissioner Stanley Pac Designee: Christopher Cooper	Yes
Owen L. Clark	Yes
Mortimer A. Gelston	Yes
James G. Horsfall	Yes
Pamela B. Katz	Yes
William H. Smith	Yes
Colin C. Tait	Absent

STATE OF CONNECTICUT)
: ss. New Britain, September 26, 1985
COUNTY OF HARTFORD)

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

ATTEST:

Christopher S. Wood, Executive Director
Connecticut Siting Council

EXHIBIT 7

Proof of Delivery

Dear Customer,

This notice serves as proof of delivery for the shipment listed below.

Tracking Number

1Z9Y45030315888957

Weight

1.00 LBS

Service

UPS Ground

Shipped / Billed On

03/08/2022

Delivered On

03/10/2022 11:51 A.M.

Delivered To

302 MAIN ST
OLD SAYBROOK, CT, 06475, US

Received By

FORTUNA

Left At

Receiver

Reference Number(s)

CT2019 CSC TO FIRST SELECTMAN

Thank you for giving us this opportunity to serve you. Details are only available for shipments delivered within the last 120 days. Please print for your records if you require this information after 120 days.

Sincerely,

UPS

Tracking results provided by UPS: 03/22/2022 12:41 P.M. EST

Proof of Delivery

Dear Customer,

This notice serves as proof of delivery for the shipment listed below.

Tracking Number

1Z9Y45030313681969

Weight

1.00 LBS

Service

UPS Ground

Shipped / Billed On

03/08/2022

Delivered On

03/09/2022 12:02 P.M.

Delivered To

302 MAIN ST
OLD SAYBROOK, CT, 06475, US

Received By

COSTA

Left At

Receiver

Reference Number(s)

CT2019 CSC TO ZEO

Thank you for giving us this opportunity to serve you. Details are only available for shipments delivered within the last 120 days. Please print for your records if you require this information after 120 days.

Sincerely,

UPS

Tracking results provided by UPS: 03/22/2022 12:40 P.M. EST

Proof of Delivery

Dear Customer,

This notice serves as proof of delivery for the shipment listed below.

Tracking Number
1Z9Y45030326123850

Weight
1.00 LBS

Service

UPS Ground

Shipped / Billed On
03/15/2022

Delivered On

03/17/2022 11:21 A.M.

Delivered To
3200 HORIZON DR
KING OF PRUSSIA, PA, 19406, US

Received By

CASTLE

Left At
Front Desk

Reference Number(s)
CT2019 CSC CROWN CASTLE

Thank you for giving us this opportunity to serve you. Details are only available for shipments delivered within the last 120 days. Please print for your records if you require this information after 120 days.

Sincerely,

UPS

Tracking results provided by UPS: 03/22/2022 12:39 P.M. EST

Proof of Delivery

Dear Customer,

This notice serves as proof of delivery for the shipment listed below.

Tracking Number

1Z9Y45030327148466

Weight

1.00 LBS

Service

UPS Ground

Shipped / Billed On

03/15/2022

Delivered On

03/16/2022 2:13 P.M.

Delivered To

170 INGHAM HILL RD
OLD SAYBROOK, CT, 06475, US

Received By

DRIVER RELEASE

Left At

Side Door

Reference Number(s)

CT2019 CSC TO LANDOWNER

Thank you for giving us this opportunity to serve you. Details are only available for shipments delivered within the last 120 days. Please print for your records if you require this information after 120 days.

Sincerely,

UPS

Tracking results provided by UPS: 03/22/2022 12:38 P.M. EST