May 16, 2023

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

Regarding: Notice of Exempt Modification – AT&T Site CT2080 / FA# 10035053
Address: 26 Washington Street, New London, CT 06320

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC ("AT&T") currently maintains a wireless telecommunications facility on an existing +/- 223' lattice tower on rooftop at the above-referenced address, latitude 41.35388, longitude -72.09786. Said lattice tower is operated by EIP Communications I, LLC.

AT&T desires to modify its existing telecommunications facility by swapping five (5) antennas, swapping twelve (12) diplexers, adding three (3) antennas, adding six (6) remote radio units (RRUS), and removing six (6) TMAs as more particularly detailed and described on the enclosed Construction Drawings prepared by TEP Northeast, last revised November 1, 2022. The centerline height of the existing antennas is and will remain at 102 feet. This modification may include B2, B5, B17, B14, B29, B30, B66, & n77 hardware that is 4G(LTE) and/or 5GNR capable through remote software configuration and either or both services may be turned 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 Michael Passero, Mayor of the City of New London, as elected official, Felix J. Reyes, Director of the Office of Development & Planning, of the City of New London, Michelle Johnson Scovish, Zoning Enforcement Officer, of the City of New London, EIP Communications I, LLC, as tower operator, and SNET as property owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2). 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 April 13, 2023, and prepared by Tower Engineering Professionals, 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,

William Hurley
Site Acquisition Specialist
Centerline Communications, LLC
750 West Center Street, Suite 301
West Bridgewater, MA 02379
whurley@clinellc.com

Enclosures:
Exhibit 1 – Construction Drawings
Exhibit 2 – Property Card and GIS
Exhibit 3 – Original Building Permit Application from the City of New London
Exhibit 4 – Structural Analysis Report
Exhibit 5 – Antenna Mount Structural Analysis Report
Exhibit 6 – RF Emissions Analysis Report Evaluation
Exhibit 7 – Notice Delivery Confirmations

Cc: The Honorable Michael Passero, Mayor, City of New London, elected official
Felix J. Reyes, Director of the Office of Development & Planning, City of New London
Michelle Johnson Scovish, Zoning Enforcement Officer, City of New London
EIP Communications I, LLC, as tower operator
SNET, as property owner

Exhibit 1

PROJECT INFORMATION

SCOPE OF WORK:	ITEMS TO BE MOUNTED ON THE EXISTING ROOF TOP: • NEW AT&T ANTENNAS: AIR6449 B77D (TYP. OF 1 PER SECTOR, TOTAL OF 3)(STACKED). • NEW AT&T ANTENNAS: AIR6419 B77G (TYP. OF 1 PER SECTOR, TOTAL OF 3)(STACKED). • NEW AT&T LTE ANTENNAS: MS-MBA-3.2-H4-L4 (TYP. OF 1 PER ALPHA & BETA SECTOR, TOTAL OF 2). • NEW AT&T DIPLEXERS: DBC0051F3V51-2 (TYP. OF 6 PER ALPHA & BETA SECTORS, TOTAL OF 12). • NEW AT&T RRUS: 4449 B5/B12 (850/700) (TYP. OF 1 PER ALPHA & BETA SECTOR, TOTAL OF 2). • NEW AT&T RRUS: 8843 B2/B66A (PCS/AWS) (TYP. OF 2 PER ALPHA & BETA SECTOR, TOTAL OF 4). • ADD AT&T (12) Y-CABLES. • ADD (2) 18 PAIR FIBER (TYP. OF 1 PER ALPHA & BETA SECTORS, TOTAL OF 2). ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION: • INSTALL 6648+IDLE XCEDE WITH 6675 SIDEHAUL SWITCH WITH E5 XCEDE CABLES (Y TYPE). • FINAL= (1)6601/ (1)6630/ (1)XMU03, (1)6630 MIXED-MODE/6675, (1)6648+IDLE XCEDE. • INSTALL (4) -48V RECTIFIERS. • INSTALL (12) VERTIV UPCONVERTERS. ITEMS TO BE REMOVED: • EXISTING AT&T ANTENNAS: 7770 (TYP. OF 1 PER SECTOR, TOTAL OF 3). • EXISTING AT&T ANTENNAS: 800-10964 (TYP. OF 1 PER ALPHA & BETA SECTOR, TOTAL OF 2). • EXISTING AT&T TMA'S: LGP-21401 (TYP. OF 2 PER SECTOR, TOTAL OF 6). • EXISTING AT&T DIPLEXERS: LGP-21901 (TYP. OF 4 PER SECTOR, TOTAL OF 12). • EXISTING (2) FIBER TRUNKS (TYP. OF 1 PER ALPHA & BETA SECTORS, TOTAL OF 2). • EXISTING (6) 1-5/8 COAX CABLES. ITEMS TO REMAIN: • (7) ANTENNAS, (15) RRU'S, (6) SURGE ARRESTOR, (6) COAX CABLES, (12) DC POWER & (4) FIBER.
SITE ADDRESS:	26 WASHINGTON STREET NEW LONDON, CT 06320
LATITUDE:	41.35388° N, 41° 21' 13.972" N
LONGITUDE:	72.09786° W, 72° 5' 52.296" W
TYPE OF SITE:	ROOF TOP / INDOOR EQUIPMENT
STRUCTURE HEIGHT:	223'-0"±
RAD CENTER:	105'-0"± & 191'-0"±
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	B
GN-1	GENERAL NOTES	B
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A-2	EXISTING ANTENNA PLAN	B
A-3	PROPOSED ANTENNA PLAN	B
A-4	ELEVATION	B
A-5	DETAILS	B
A-6	DETAILS	B
G-1	GROUNDING DETAILS	B
RF-1	RF PLUMBING DIAGRAM	B
RF-2	RF PLUMBING DIAGRAM	B

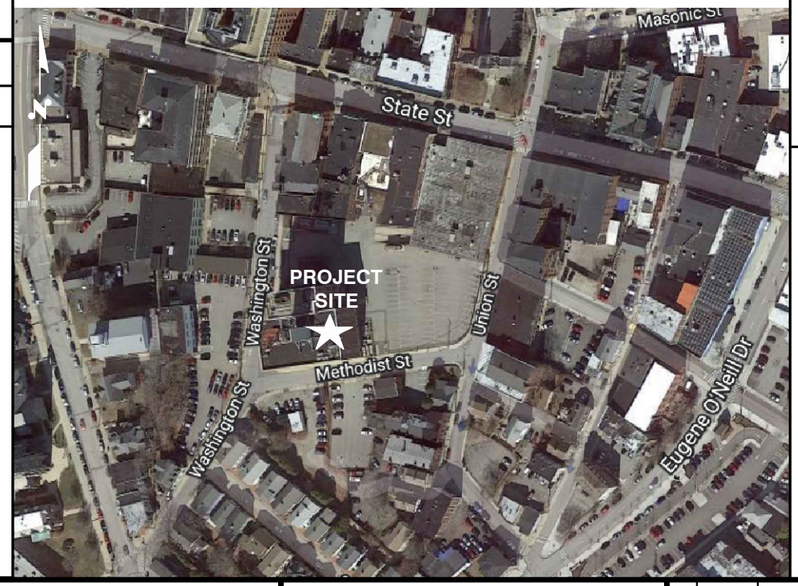
SITE NUMBER: CTL02080
SITE NAME: NEW LONDON-WASHINGTON ST
FA CODE: 10035053
PACE ID: MRCTB055349,MRCTB053938,MRCTB056340, MRCTB053932,MRCTB051961,MRCTB052394
PROJECT: 5G NR 1SR CBAND, 5G NR RADIO, SPLIT SECTOR LTE, 2022 UPGRADE

ISSUED FOR PERMITTING

VICINITY MAP

DIRECTIONS TO SITE:

DEPART RT-30 W / COCHITUATE RD TOWARD BURR ST 0.3 MI. TURN BACK ON RT-30 E / COCHITUATE RD 0.3 MI. TAKE RAMP RIGHT FOR I-90 WEST TOWARD SPRINGFIELD / WORCESTER 27.4 MI. AT EXIT 10, TAKE RAMP RIGHT FOR I-395 SOUTH TOWARD NORWICH CT ENTERING CONNECTICUT 62.0 MI. AT EXIT 5, TAKE RAMP LEFT FOR MONTVILLE CONNECTOR TOWARD NEW LONDON 1.2 MI. KEEP STRAIGHT ONTO CT-32 / MOHEGAN AVE 4.3 MI. ROAD NAME CHANGES TO EUGENE ONEILL DR 0.3 MI. TURN RIGHT ONTO GOVERNOR WINTHROP BLVD 0.1 MI. TURN LEFT ONTO MERIDIAN ST 361 FT. TURN LEFT ONTO STATE ST, AND THEN IMMEDIATELY TURN RIGHT ONTO WASHINGTON ST 420 FT. ARRIVE AT 26 WASHINGTON ST



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

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

TEP NORTHEAST
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
TEL: (978) 557-5553

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AT&T

TITLE SHEET
5G NR 1SR CBAND, 5G NR RADIO, SPLIT SECTOR LTE, 2022 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02080	T-1	B

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	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	RET	ANTENNA RETENTION		

TEP NORTHEAST
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
TEL: (978) 557-5553

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NEW LONDON COUNTY

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A	09/13/22	ISSUED FOR REVIEW	MR	AT	DPH

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

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

AT&T

GENERAL NOTES
5G NR 1SR CBAND, 5G NR RADIO, SPLIT SECTOR LTE, 2022 UPGRADE

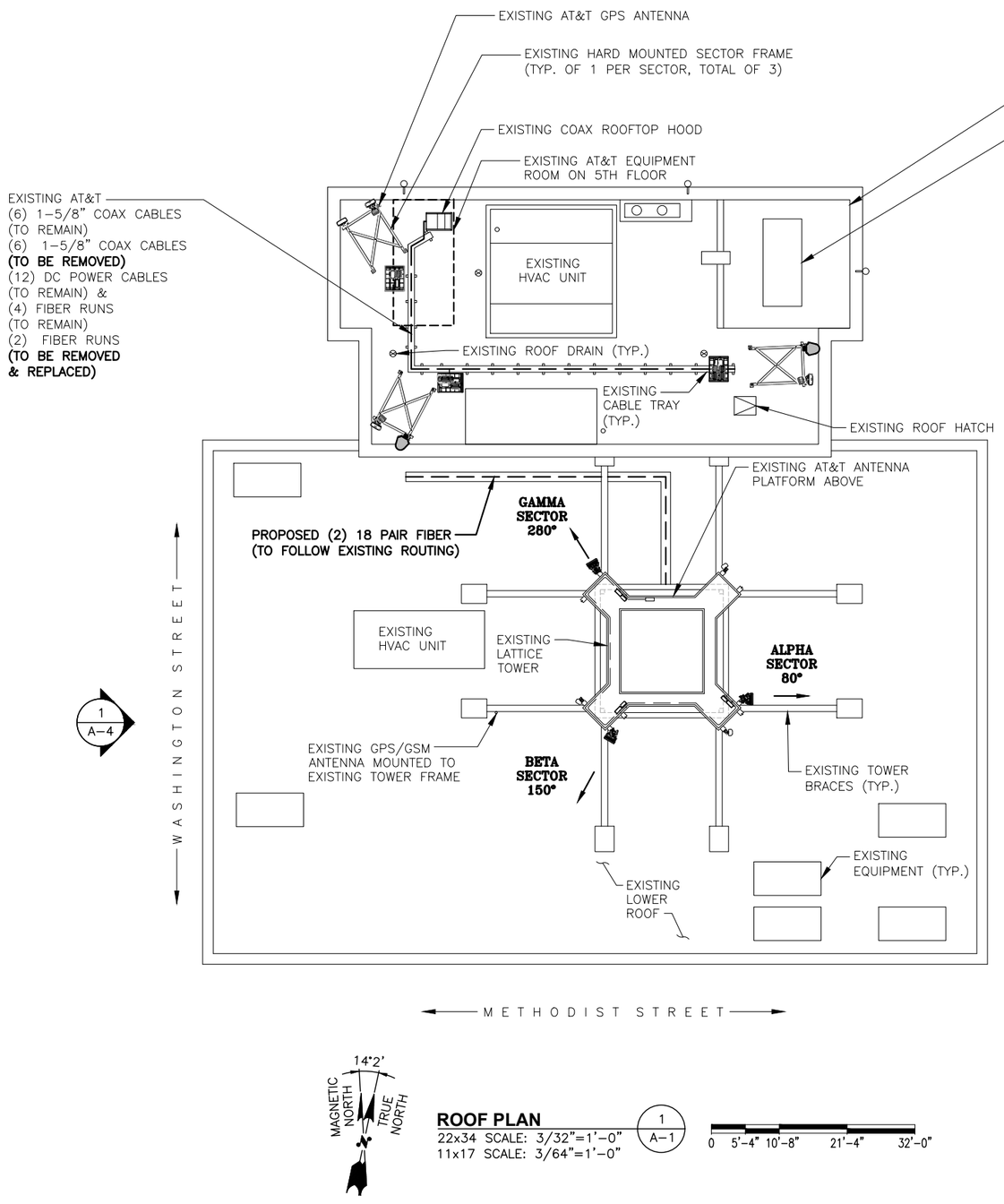
SITE NUMBER	DRAWING NUMBER	REV
CTL02080	GN-1	B

NOTE:

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

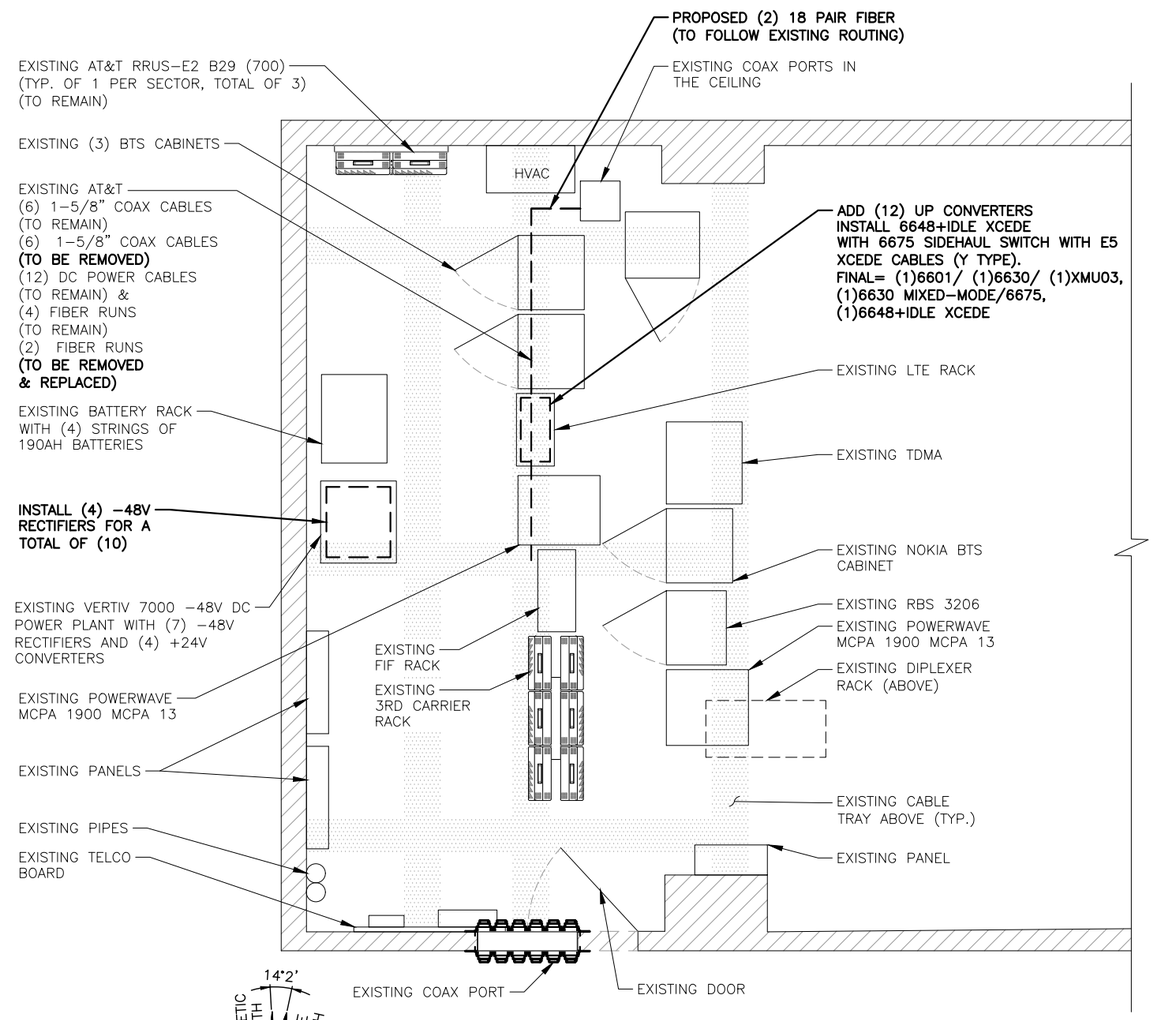
NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.



ROOF PLAN 1 A-1
22x34 SCALE: 3/32"=1'-0"
11x17 SCALE: 3/64"=1'-0"

0 5'-4" 10'-8" 21'-4" 32'-0"



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

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

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

AT&T

ROOFTOP & EQUIPMENT PLANS
5G NR 1SR CBAND, 5G NR RADIO, SPLIT SECTOR
LTE, 2022 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
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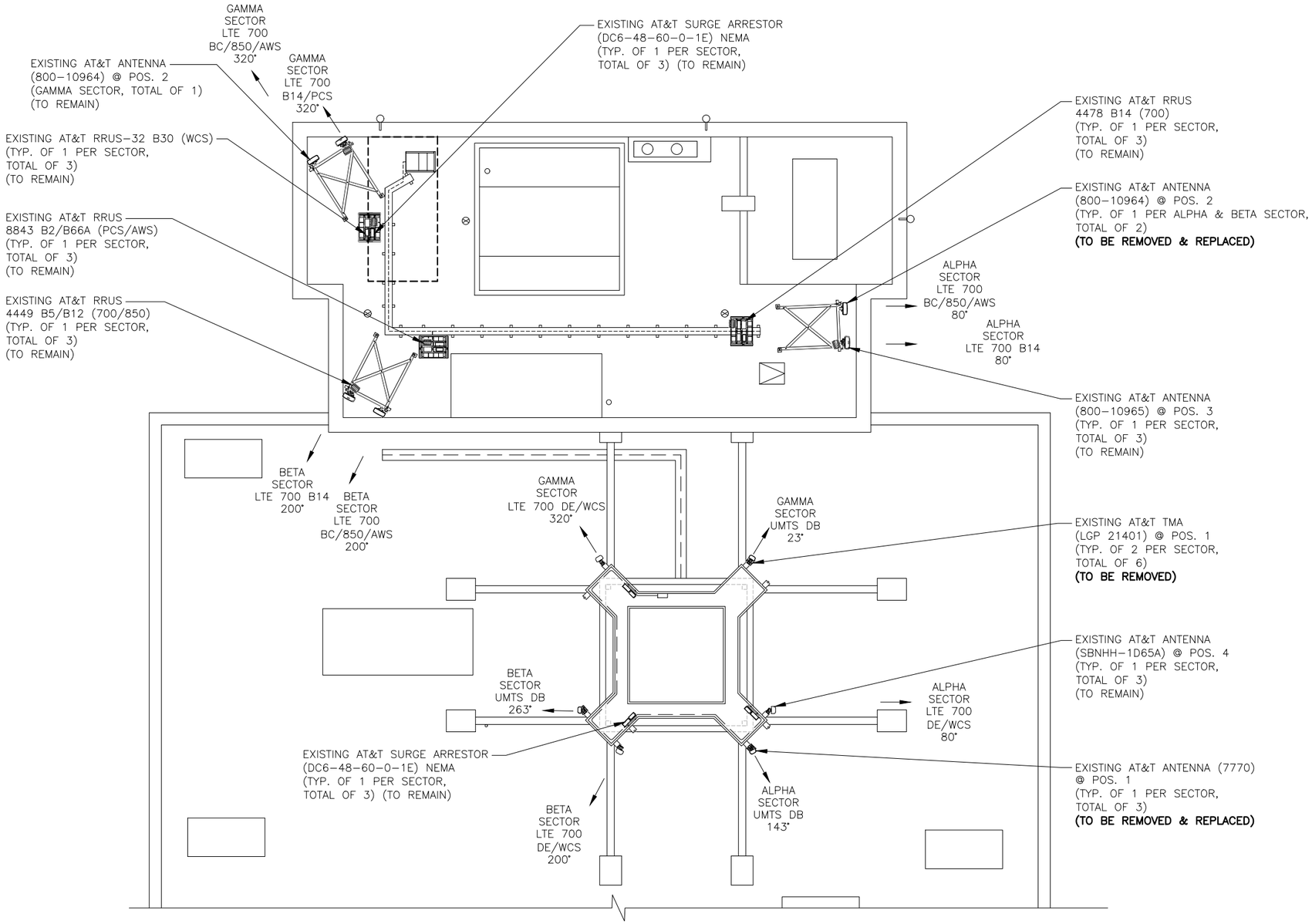

EXISTING ANTENNA PLAN (1 / A-2)
SCALE: N.T.S

NOTE:

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

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

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EXISTING ANTENNA PLAN
5G NR 1SR CBAND, 5G NR RADIO, SPLIT SECTOR
LTE, 2022 UPGRADE

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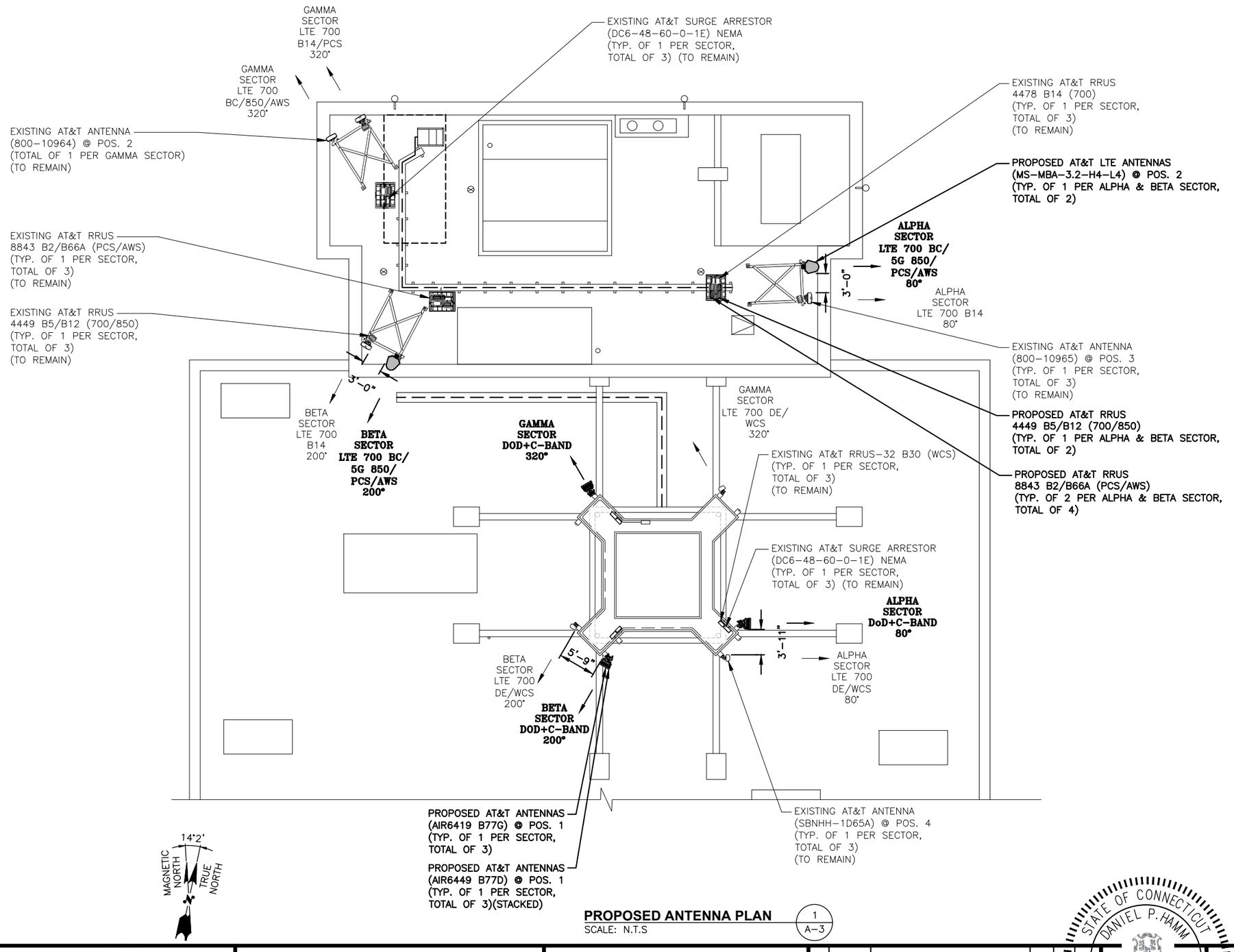

PROPOSED ANTENNA PLAN

SCALE: N.T.S

1 / A-3

TEP NORTHEAST
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
TEL: (978) 557-5553

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

SITE NUMBER: CTL02080
SITE NAME: NEW LONDON-WASHINGTON ST

26 WASHINGTON STREET
NEW LONDON, CT 06320
NEW LONDON COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
B	11/01/22	ISSUED FOR PERMITTING	EP	AT	DPH
A	09/13/22	ISSUED FOR REVIEW	MR	AT	DPH

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

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

AT&T

PROPOSED ANTENNA PLAN
5G NR 1SR CBAND, 5G NR RADIO, SPLIT SECTOR
LTE, 2022 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02080	A-3	B

NOTE:

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

NOTE:

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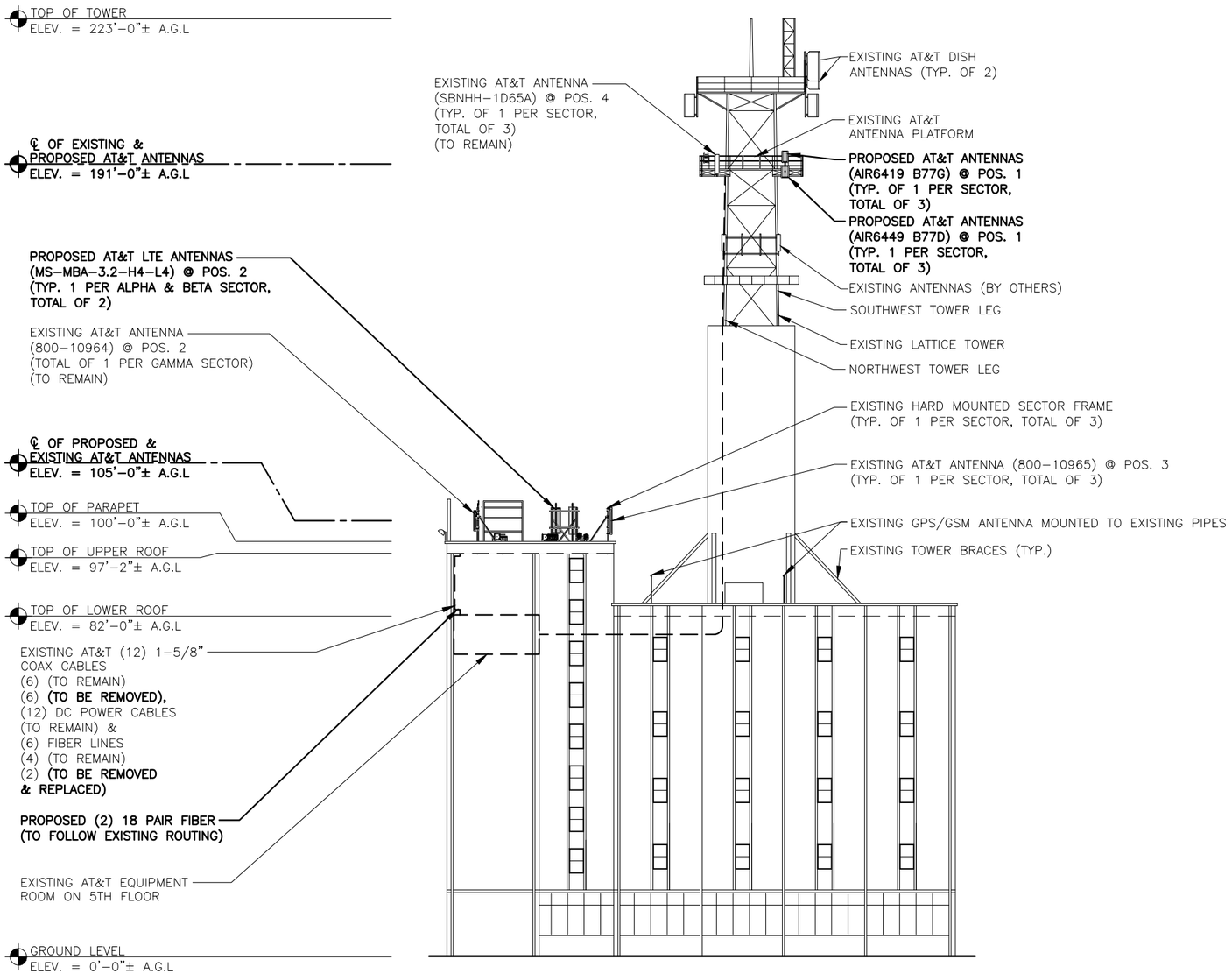

ELEVATION (1 / A-4)
22x34 SCALE: 1/16"=1'-0"
11x17 SCALE: 1/32"=1'-0"

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

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

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

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ELEVATION
5G NR 1SR CBAND, 5G NR RADIO, SPLIT SECTOR
LTE, 2022 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02080	A-4	B

ANTENNA SCHEDULE

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	AZIMUTH	TMA/ COMBINER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	**PROPOSED**	**DOD+C-BAND**	**AIR 6419 B77G AIR 6449 B77D**	**31.1"X16.1X7.3" 30.4"X15.9"X8.1"**	**191'-0"±**	**80°**	–	–	–	–	(E) (2) RAYCAP DC6-48-60-0-1E NEMA
A2	**PROPOSED**	**LTE 700 BC/ 5G 850/ PCS/ AWS**	**MS-MBA-3.2-H4-L4**	**72"X24"X25"**	**105'-0"±**	**80°**	–	(E)(1) 4449 B5/B12 (850/700) (E)(1) 8843 B2/B66A (AWS/PCS) **(P)(1) 4449 B5/B12 (850/700)** **(P)(2) 8843 B2/B66A (AWS/PCS)**	– – **17.9"X13.9"X9.4"** **14.9"x13.2"x10.9"**	(2) 1-5/8" COAX **(P)(5) Y-CABLES**	
A3	EXISTING	LTE 700 B14	800-10965	78.7"X20"X6.9"	105'-0"±	80°	–	(E)(1) 4478 B14 (700)	–	(E)(4) DC CABLES (E)(1) FIBER **(P)(1) 18 PAIR FIBER**	
A4	EXISTING	LTE 700 DE/ WCS	SBNHH-1D65A	55"X11.9"X7.1"	191'-0"±	80°	–	(E)(1) RRUS-E2 B29 (700) (E)(1) RRUS-32 B30 (WCS)	–	–	
B1	**PROPOSED**	**DOD+C-BAND**	**AIR 6419 B77G AIR 6449 B77D**	**31.1"X16.1X7.3" 30.4"X15.9"X8.1"**	**191'-0"±**	**200°**	–	–	–	–	(E) (2) RAYCAP DC6-48-60-0-1E NEMA
B2	**PROPOSED**	**LTE 700 BC/ 5G 850/ PCS/ AWS**	**MS-MBA-3.2-H4-L4**	**72"X24"X25"**	**105'-0"±**	**200°**	–	(E)(1) 4449 B5/B12 (850/700) (E)(1) 8843 B2/B66A (AWS/PCS) **(P)(1) 4449 B5/B12 (850/700)** **(P)(2) 8843 B2/B66A (AWS/PCS)**	– – **17.9"X13.9"X9.4"** **14.9"x13.2"x10.9"**	(2) 1-5/8" COAX **(P)(5) Y-CABLES**	
B3	EXISTING	LTE 700 B14	800-10965	78.7"X20"X6.9"	105'-0"±	200°	–	(E)(1) 4478 B14 (700)	–	(E)(4) DC CABLES (E)(1) FIBER **(P)(1) 18 PAIR FIBER**	
B4	EXISTING	LTE 700 DE/ WCS	SBNHH-1D65A	55"X11.9"X7.1"	191'-0"±	200°	–	(E)(1) RRUS-E2 B29 (700) (E)(1) RRUS-32 B30 (WCS)	–	–	
C1	**PROPOSED**	**DOD+C-BAND**	**AIR 6419 B77G AIR 6449 B77D**	**31.1"X16.1X7.3" 30.4"X15.9"X8.1"**	**191'-0"±**	**320°**	–	–	–	–	(E) (2) RAYCAP DC6-48-60-0-1E NEMA
C2	EXISTING	LTE 700 BC/ 850/ AWS	800-10964	59"X20"X6.9"	105'-0"±	320°	–	(E)(1) 4449 B5/B12 (850/700) (E)(1) 8843 B2/B66A (AWS/PCS)	–	(2) 1-5/8" COAX **(P)(2) Y-CABLES**	
C3	EXISTING	LTE 700 B14	800-10965	78.7"X20"X6.9"	105'-0"±	320°	–	(E)(1) 4478 B14 (700)	–	(E)(4) DC CABLES (E)(2) FIBER	
C4	EXISTING	LTE 700 DE/ WCS	SBNHH-1D65A	55"X11.9"X7.1"	191'-0"±	320°	–	(E)(1) RRUS-E2 B29 (700) (E)(1) RRUS-32 B30 (WCS)	–	–	

NOTE:

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

NOTE:

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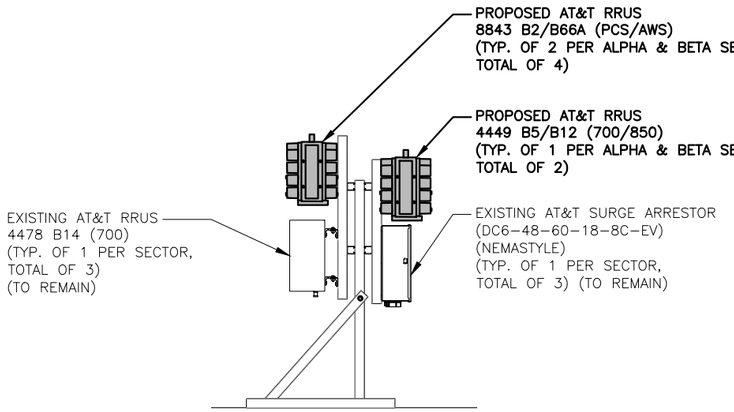
RRU CHART

QUANTITY	MODEL	SIZE (L x W x D)
P(2)	**4449 B5/B12 (850/700)**	**17.9"x13.2"x10.4"**
P(4)	**8843 B2/B66A (PCS/AWS)**	**14.9"x13.2"x10.9"**
E(3)	4449 B5/B12 (850/700)	17.9"x13.2"x10.4"
E(3)	8843 B2/B66A (PCS/AWS)	14.9"x13.2"x10.9"
E(3)	4478 B14 (700)	18.1"x13.4"x8.3"
E(3)	RRUS-32 B30(WCS)	27.2"x12.1"x7.0"
E(3)	RRUS-E2 B29 (700)	20.4"x18.5"x7.5"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

FINAL ANTENNA CONFIGURATION (1 / A-5)

SCALE: N.T.S



PROPOSED RRUS MOUNTING DETAIL (ALPHA & BETA SECTOR)

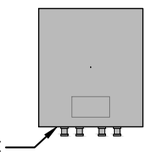
(2 / A-5)

22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"

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

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-5)

SCALE: N.T.S

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

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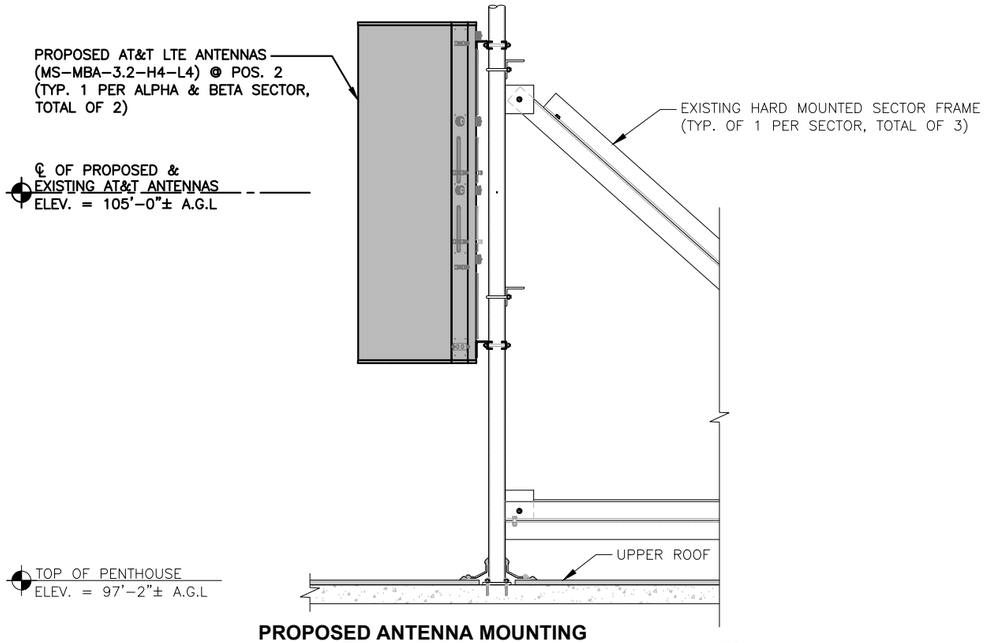
DETAILS
5G NR 1SR CBAND, 5G NR RADIO, SPLIT SECTOR
LTE, 2022 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02080	A-5	B



PROPOSED ANTENNA MOUNTING DETAIL (ALPHA & BETA SECTOR) — 1 / A-6

22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0" 0 8" 1'-4" 2'-8" 4'-0"

NOTE:

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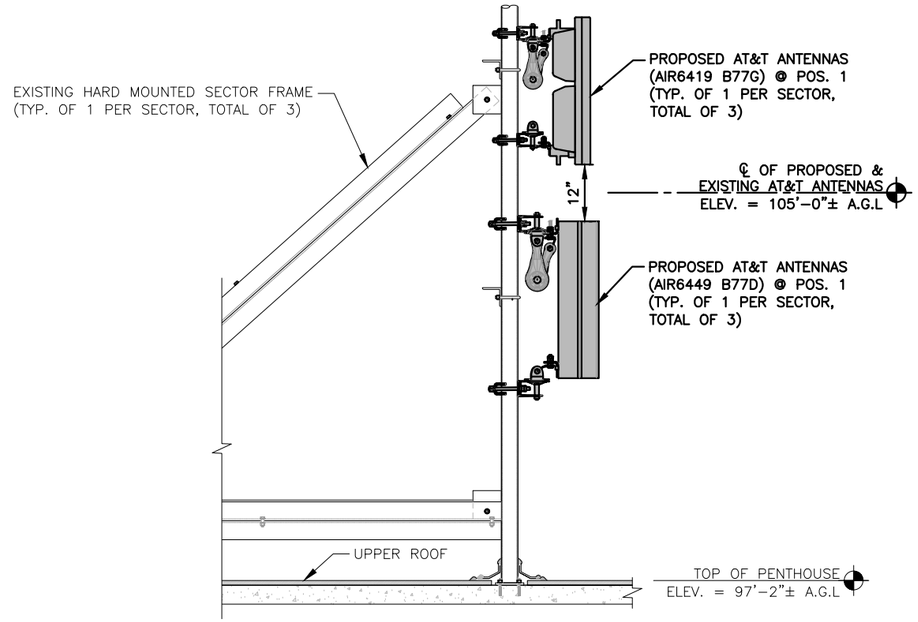
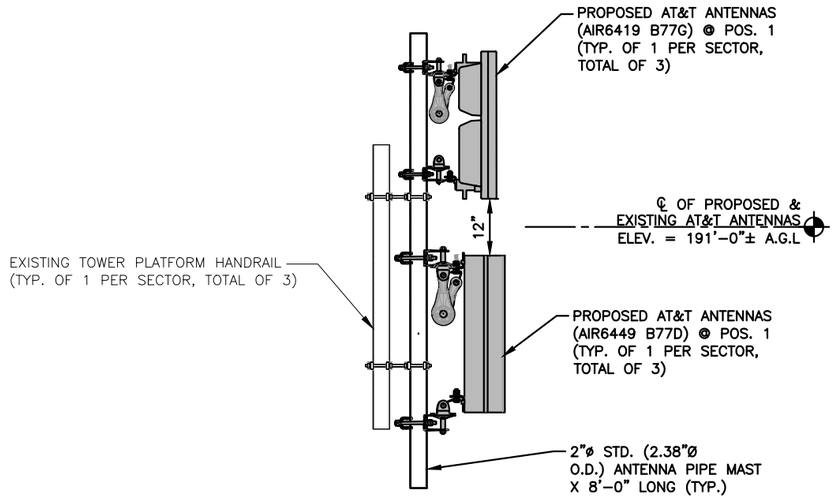


PROPOSED ANTENNA MOUNTING DETAIL (ALPHA & BETA SECTOR) — 2 / A-6

22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0" 0 8" 1'-4" 2'-8" 4'-0"



PROPOSED DoD+C-BAND ANTENNA MOUNTING DETAIL — 3 / A-6

22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0" 0 8" 1'-4" 2'-8" 4'-0"

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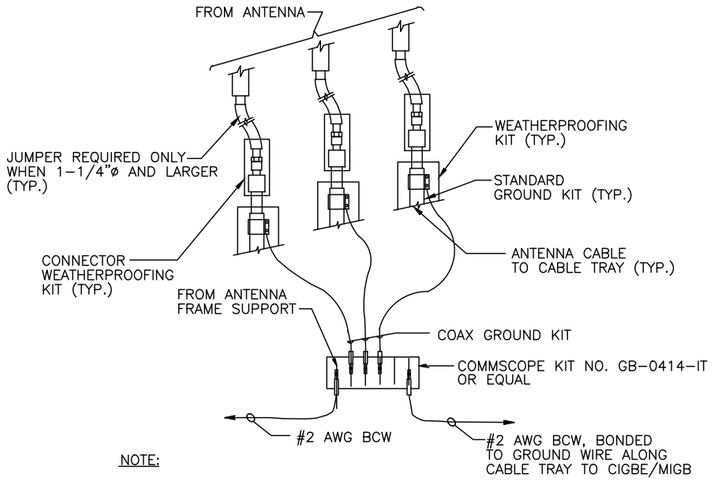
STATE OF CONNECTICUT
DANIEL P. HAMM
No. 21178
LICENSED PROFESSIONAL ENGINEER

AT&T

DETAILS
5G NR 1SR CBAND, 5G NR RADIO, SPLIT SECTOR
LTE, 2022 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02080	A-6	B



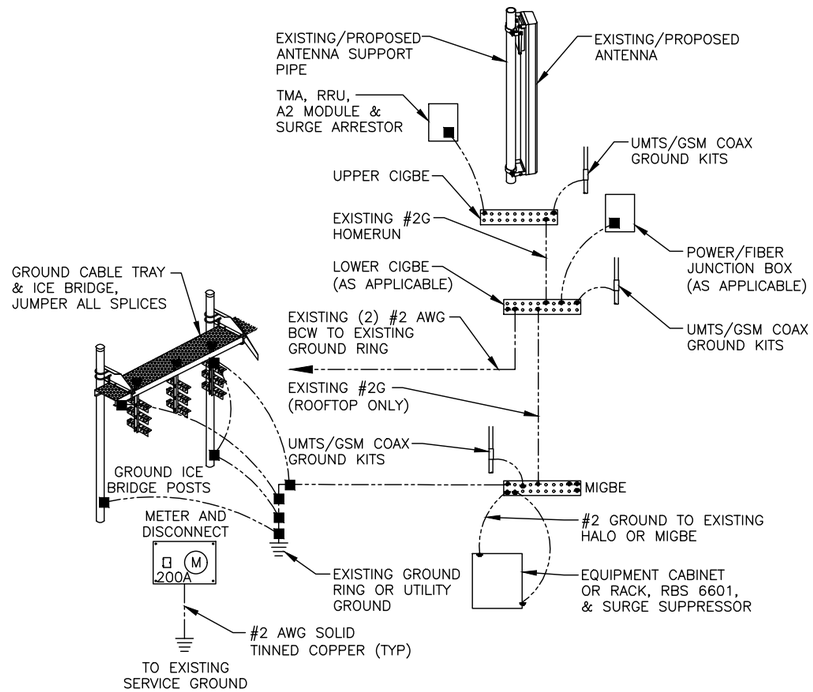
NOTE:

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

GROUND WIRE TO GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

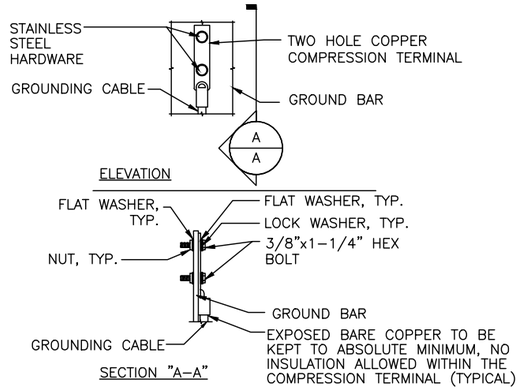
1 / G-1



GROUNDING RISER DIAGRAM

SCALE: N.T.S

2 / G-1



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

SCALE: N.T.S

3 / G-1

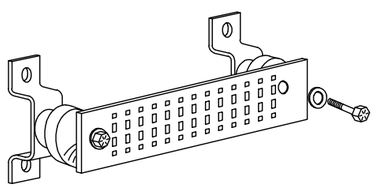
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" – SURGE PRODUCERS

CABLE ENTRY PORTS (HATCH PLATES) (#2 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)

SCALE: N.T.S

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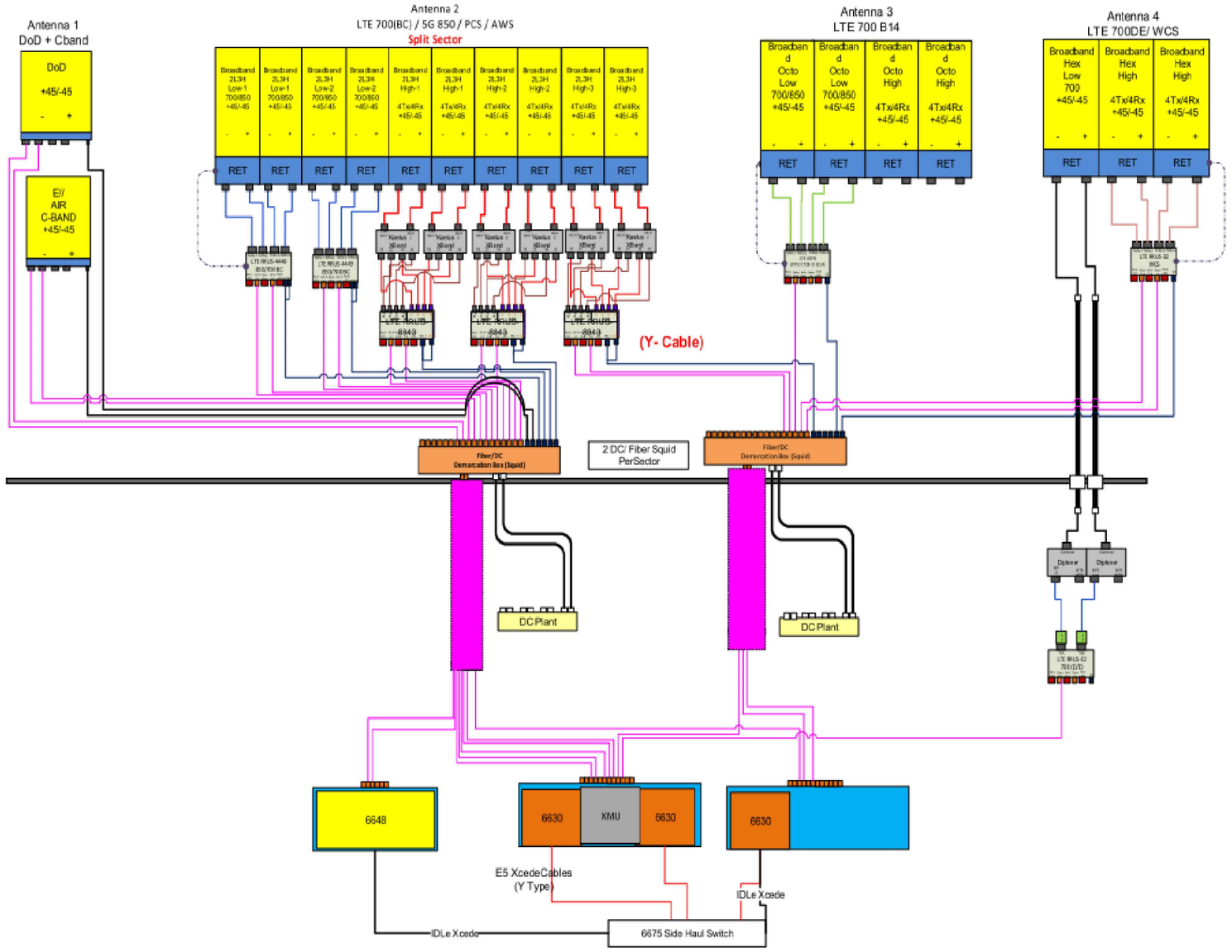
GROUNDING DETAILS
5G NR 1SR CBAND, 5G NR RADIO, SPLIT SECTOR
LTE, 2022 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02080	G-1	B



RF PLUMBING DIAGRAM
(ALPHA & BETA SECTOR) (1 / RF–1)
SCALE: N.T.S

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

NOTE:
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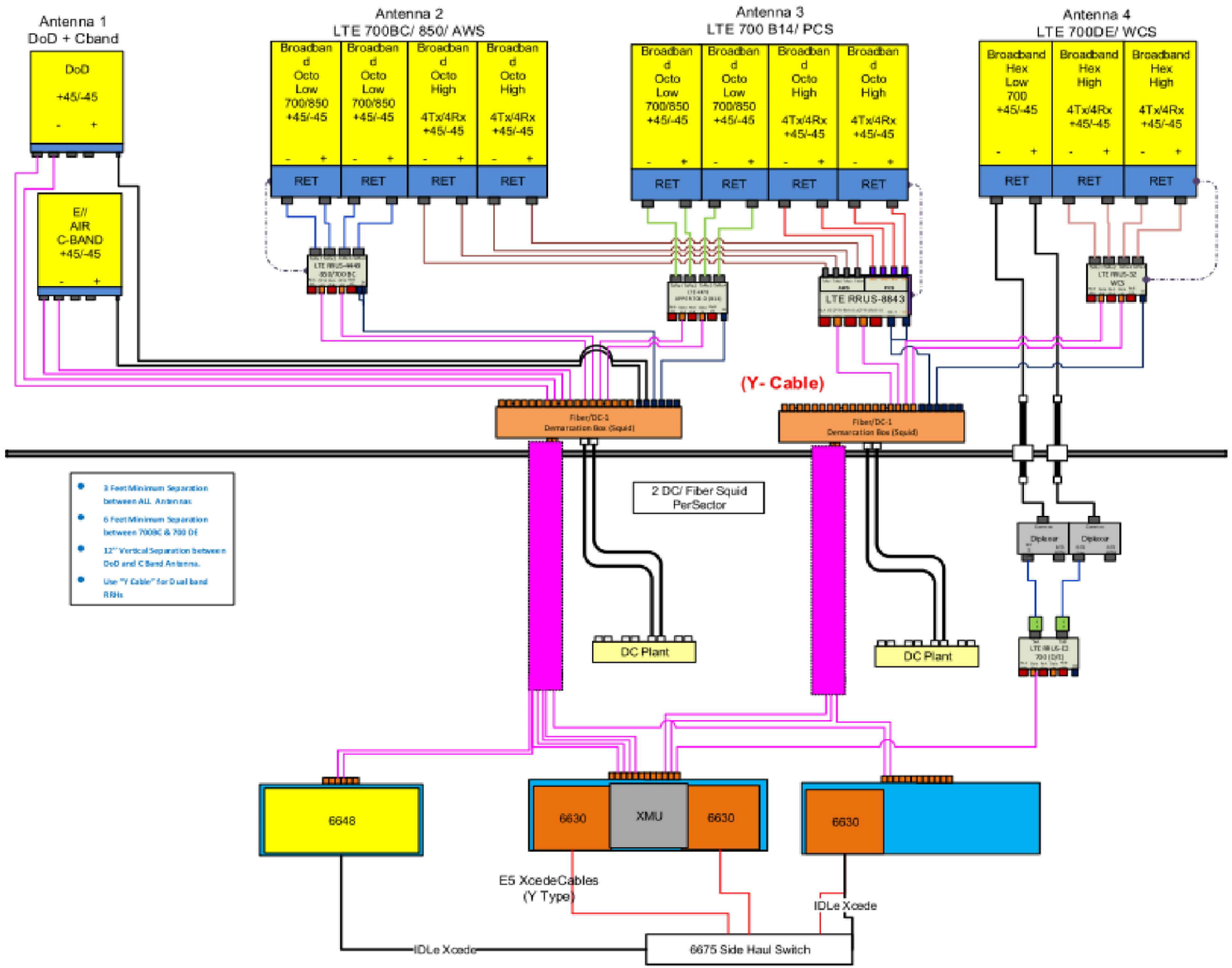
RF PLUMBING DIAGRAM
5G NR 1SR CBAND, 5G NR RADIO, SPLIT SECTOR
LTE, 2022 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02080	RF–1	B



RF PLUMBING DIAGRAM
(GAMMA SECTOR)
SCALE: N.T.S

1
RF–2

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

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RF PLUMBING DIAGRAM
5G NR 1SR CBAND, 5G NR RADIO, SPLIT SECTOR LTE, 2022 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02080	RF–2	B

Exhibit 2

26 WASHINGTON ST

Location	26 WASHINGTON ST	**Mblu**	F12/ 144/ 9/ /
Acct#	F12 0144 0009	**Owner**	SOUTHERN NEW ENGLAND TEL CO
Assessment	$2,135,560	**Appraisal**	$3,050,800
PID	4665	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$2,662,500	$388,300	$3,050,800
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$1,863,750	$271,810	$2,135,560

Owner of Record

Owner	SOUTHERN NEW ENGLAND TEL CO	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	401 MERRITT SEVEN NORWALK, CT 06851	**Book & Page**	294/ 611
		Sale Date	01/01/1700

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
SOUTHERN NEW ENGLAND TEL CO	$0		294/ 611	01/01/1700

Building Information

Building 1 : Section 1

Year Built:	1961
Living Area:	66,688
Replacement Cost:	$5,256,121
Building Percent Good:	48
Replacement Cost Less Depreciation:	$2,522,900

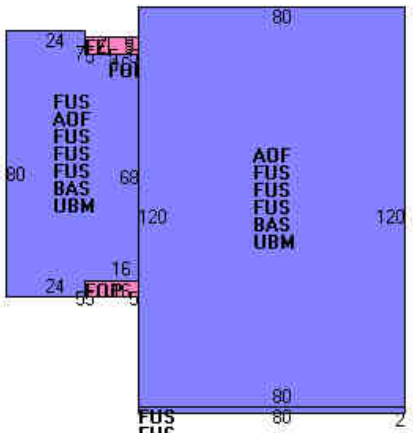
Building Attributes	
Field	**Description**

STYLE	Telephone Bldg
MODEL	Commercial
Grade	Average
Stories:	5
Occupancy	1
Exterior Wall 1	Brick Veneer
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Vinyl/Asphalt
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Hot Water
AC Type	Central
Bldg Use	OTH MTR SS
Total Rooms	
Total Bedrms	00
Total Baths	0
Conv Type	
1st Floor Use:	3380
Heat/AC	HEAT/AC SPLIT
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	16
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos/NewLondonCTPhotos//\00\01\16

Building Layout



(http://images.vgsi.com/photos/NewLondonCTPhotos//Sketches/

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
FUS	Upper Story, Finished	41,472	41,472
AOF	Office, (Average)	12,608	12,608
BAS	First Floor	12,608	12,608
FEP	Porch, Enclosed, Finished	35	0
FOP	Porch, Open, Finished	285	0
UBM	Basement, Unfinished	12,768	0
		79,776	66,688

Extra Features

Extra Features				Legend
Code	**Description**	**Size**	**Value**	**Bldg #**
ELS1	Pass Stops	6 UNITS	$10,800	1
ELV1	Elevator, Pass	1 UNITS	$38,400	1

SPR1	SPRINKLERS-WET	9600 S.F.	$4,600	1

Land

Land Use

Use Code	3380
Description	OTH MTR SS
Zone	CBD2
Neighborhood	CBD2
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	1.55
Frontage	0
Depth	0
Assessed Value	$271,810
Appraised Value	$388,300

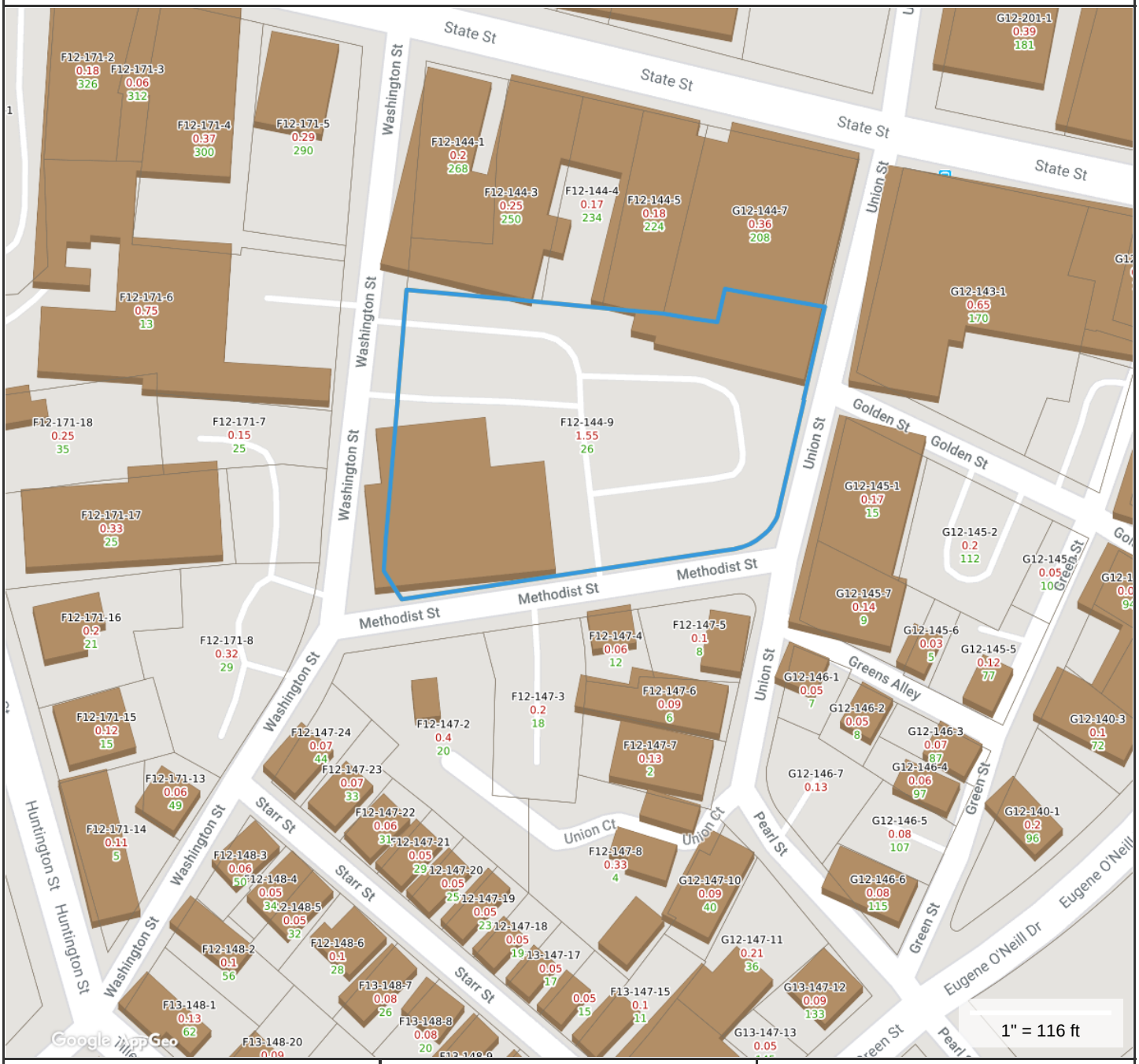
Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
PAV1	PAVING-ASPHALT			54000 S.F.	$81,000	1
FN2	FENCE-5' CHAIN			248 L.F.	$3,000	1
GT1	GATE			5 UNITS	$1,800	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$2,662,500	$388,300	$3,050,800
2017	$2,239,400	$310,600	$2,550,000
2016	$2,239,400	$310,600	$2,550,000

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$1,863,750	$271,810	$2,135,560
2017	$1,567,580	$217,420	$1,785,000
2016	$1,567,580	$217,420	$1,785,000



Property Information

Property ID	95-F12-144-9
Location	26 WASHINGTON ST
Owner	SOUTHERN NEW ENGLAND TEL CO

SCCOG

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

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

Geometry updated 05/31/2017
Data updated 10/1/2013

Exhibit 3

Final Inspection ..... Date December 21, 1966

APPLICATION FOR BUILDING PERMIT

Estimated Cost $ 100,000.00

Fee . . . . . $ 400.00

Occupancy Fee $ .....

Additional Cost $ .....

Nº 3615

TO: THE BUILDING DIVISION, Dept. Public Works - City of New London, Conn.

The undersigned, hereby applies for a permit to do work according to the following specifications:

No. 26 Washington Street Lot No. ..... Side of Street ..... Zone .....

Owner of Building SNETCO Address .....

Builder Topper & Griggs; Brown Construction Address Plainfield; Norwich

Architect ..... Address .....

Size Main Bldg.: Ft. Front Overall ..... Ft. Deep Overall ..... Net Area ..... Garages .....

No. of Families ..... No. of Stories ..... Construction ..... No. of rooms: 1st ..... 2nd ..... 3rd .....

Size of Lot ..... Dist. from Street Line ..... Dist. from Side Street Line .....

Purpose of this Permit Construct microwave tower as per plans on file

Sewer ☐ Septic ☐

Exhibit 4

April 13, 2023

Andy Dykstra
Everest Infrastructure Partners
Two Allegheny Center, Nova Tower 2, Suite 1002
Pittsburgh, PA 15212
(412) 489-0348

Tower Engineering Professionals
326 Tryon Road
Raleigh, NC 27603
(919) 661-6351
Structures@tepgroup.net

Subject: **Structural Analysis Report**

Carrier Designation:	***AT&T Mobility* Reconfiguration**	
	Carrier Site Number:	ct2080
	Carrier Site Name:	NEW LONDON
Client Designation:	**Site Number:**	638284
	Site Name:	New London CO
Engineering Firm Designation:	**TEP Project Number:**	263245.837969
Site Data:	**26 Washington St, New London, New London County, CT 06320** **Latitude *41° 21' 13.88"*, Longitude *-72° 5' 52.50"*** **126.0 ± Foot - Self-Support Tower and Rooftop**	

Dear Andy Dykstra,

Tower Engineering Professionals is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above-mentioned tower.

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

LC1: Existing + Proposed + Reserved Loading **Sufficient Capacity**
Note: See Table 1 for the existing, proposed, and reserved loading

Structure Capacity	Platform Capacity
73.9%	49.0%

The analysis has been performed in accordance with the ANSI/TIA-222-H Structural Standard for Antenna Supporting Structures, Antennas, and Small Wind Turbine Support Structures and the 2022 Connecticut State Building Code.

All modifications and equipment proposed in this report shall be installed in accordance with the appurtenances listed in Table 1 for the determined available structural capacity to be effective.

We at *Tower Engineering Professionals* appreciate the opportunity of providing our continuing professional services to you and *Everest Infrastructure Partners.* If you have any questions or need further assistance on this or any other projects please give us a call.

Structural analysis prepared by: Austin J. Wilson / SDJ

Respectfully submitted by:

Aaron T. Rucker, P.E.

04/14/2023

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 126 ft self-supporting tower mapped by Hightower Solutions, Inc. in July of 2015. The tower is located on the roof of a 78-ft building. All information provided to TEP was to be assumed accurate and complete.

2) ANALYSIS CRITERIA

TIA-222 Revision:	ANSI/TIA-222-H
Type of Analysis:	Comprehensive
Risk Category:	II
Wind Speed:	130 mph (Ultimate)
Exposure Category:	C
Topographic Procedure:	Method 1 (Kzt = 1.0)
Ice Thickness:	1.00 in
Wind Speed with Ice:	50 mph
Seismic Design Category:	B
Seismic Ss:	0.191
Seismic S1:	0.052
Service Wind Speed:	60 mph

Per Sections 1103.1 and 1103.2 of the 2018 International Existing Building Code the main gravity and lateral force resisting system of the building structure does not require analysis/modification as the demand-capacity ratio with the additional antennas and equipment is no more than 5 percent and 10 percent greater respectively than the demand-capacity ratio with the additional antennas and equipment ignored.

Table 1 - Existing, Proposed, and Reserved Antenna and Cable Information

Existing/ Proposed/ Reserved	Mount Level (ft)	Ant CL (ft)	Qty	Antenna Model	Mount Type	Qty Coax	Coax Size	Coax Location	Owner/ Tenant
Proposed	***191.0***	***191.0***	***3***	***Ericsson AIR6419 B77G***	Platform	***-***	***-***	***-***	***AT&T***
			3	***Ericsson AIR6449 B77D***					
Existing	191.0	191.0	3	Andrew SBNH-1D65A		6 4 2	1-5/8 3/4" DC 3/8" Fiber	AB Face	AT&T
			2	Raycap DC6-48-60-18-8F					
To Be Removed	*191.0*	*191.0*	*3*	*Powerwave 7770*	*-*	*6*	*1-5/8*	*AB Face*	*AT&T*
			6	*Powerwave LGP21401*					
Reserved	***185.0***	***185.0***	***3***	***JMA Wireless MX08FRO665-21***	***(3) SitePro1 VFA8-SD Sector Frames***	***1***	***Hybrid***	***AB Face***	***Dish***
			3	***Fujitsu TA08025-B605***					
			3	***Fujitsu TA08025-B604***					
			1	***Raycap RDIDC-9181-PF-48***					
	160.0	***160.0***	***1***	***Rosenberger GPS Unit***	-	-	-	-	
Existing	170.0	170.0	3	Commscope NNVV-65B-R4	Pipe Mount	3 6 3	Hybrid 3/4 3/8	AB Face	Sprint
			3	Nokia AAHC					
			6	Alcatel Lucent 800 MHz 2x50W MHz RRUs					
			3	Alcatel Lucent 1900 MHz 4x45W RRUs					
			3	Combiners					

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Source
Tower Mapping Report	Hightower Solutions, Inc., dated July 1, 2015	EIP
Tower Inspection Report	Tower Engineering Professionals, Inc., dated May 11, 2021 TEP No. 263245.513113	TEP
Lease Exhibits	Nexius, dated June 14, 2021 A&E Project No. BOBOS01005A Rev A.	EIP
Previous Structural Analysis	Tower Engineering Professionals, Inc., dated February 21, 2022 TEP No. 263245.661074	TEP
Construction Drawings	Tower Engineering Professionals, Inc., dated November 1, 2022 Site No. CTL02080	TEP
Correspondence	Correspondence in reference to the existing, proposed, and reserved loading.	EIP

3.1) Analysis Method

RISA-3D (version 17.0.4), 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.

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 B.

3.2) Analysis Assumptions

1) The tower and foundation were built and maintained in accordance with the manufacturer's specification.
2) The configuration of existing antennas, transmission cables, mounts and other appurtenances are as specified in the tower mapping report by TEP.
3) Unless specified by the client or tower mapping, the location of the existing and proposed coax is assumed by TEP and listed in Table 1.
4) All tower components are in sufficient condition to carry their full design capacity.
5) Serviceability with respect to antenna twist, tilt, roll, or lateral translation, is not checked and is left to the carrier or tower owner to ensure conformance.
6) All antenna mounts and mounting hardware are structurally sufficient to carry the full design capacity requirements of appurtenance wind area and weight as provided by the original manufacturer specifications. It is the carrier's responsibility to ensure compliance to the structural limitations of the existing and/or proposed antenna mounts. TEP did not analyze antennas supporting mounts as part of this structural analysis report.
7) TEP assumes that the welds at the leg splices in the shrouded portion of the tower develop the full capacity of the member and can adequately transfer load between the sections.

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

4) ANALYSIS RESULTS

Table 3 - Section Capacity (Summary)[1]

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Tower Legs	-	73.9	Pass
1	Tower Diagonals	-	59.9	Pass
1	Tower Horizontals	-	52.9	Pass
1	Tower Internals	-	61.5	Pass
1	Tower Platform	-	49.0	Pass
2	Tower Connections	-	36.0	Pass

Structure Rating (max from all components) =	73.9%

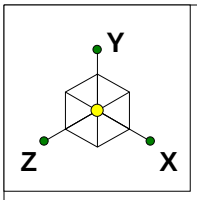
Notes:
1) See additional documentation in Appendix A – RISA 3-D Output for calculations supporting the % capacity listed.
2) See additional documentation in "Appendix B - Additional Calculations" for calculations supporting the % capacity listed.

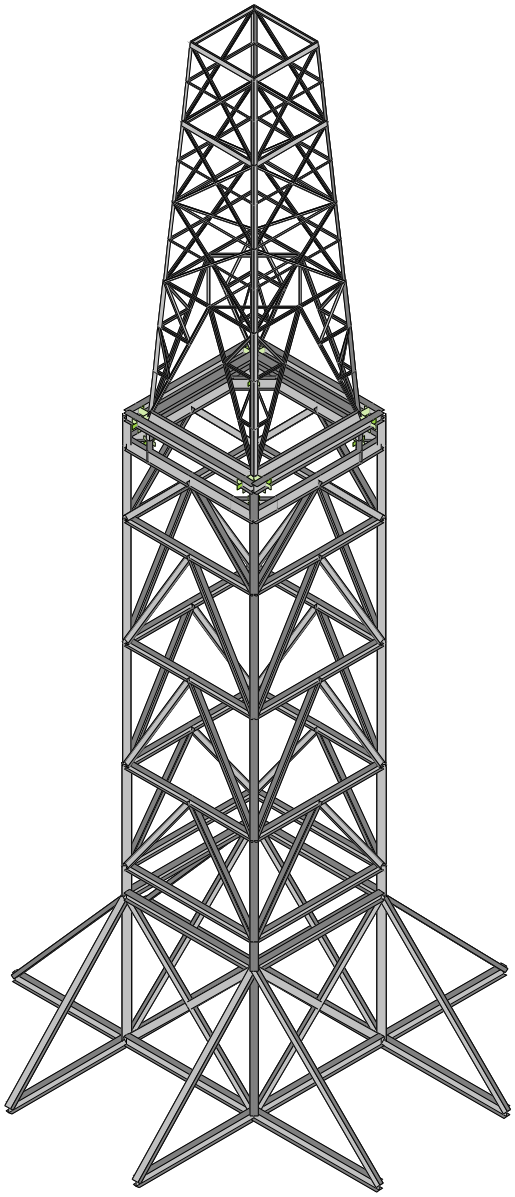
4.1) Recommendations

1) If the load differs from that described in Table 1 of this report or the provisions of this analysis are found to be invalid, another structural analysis should be performed.
2) The structure and supporting rooftop have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

APPENDIX A

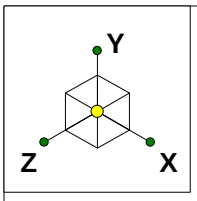
RISA 3D TOWER OUTPUT

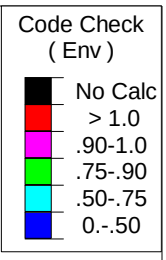


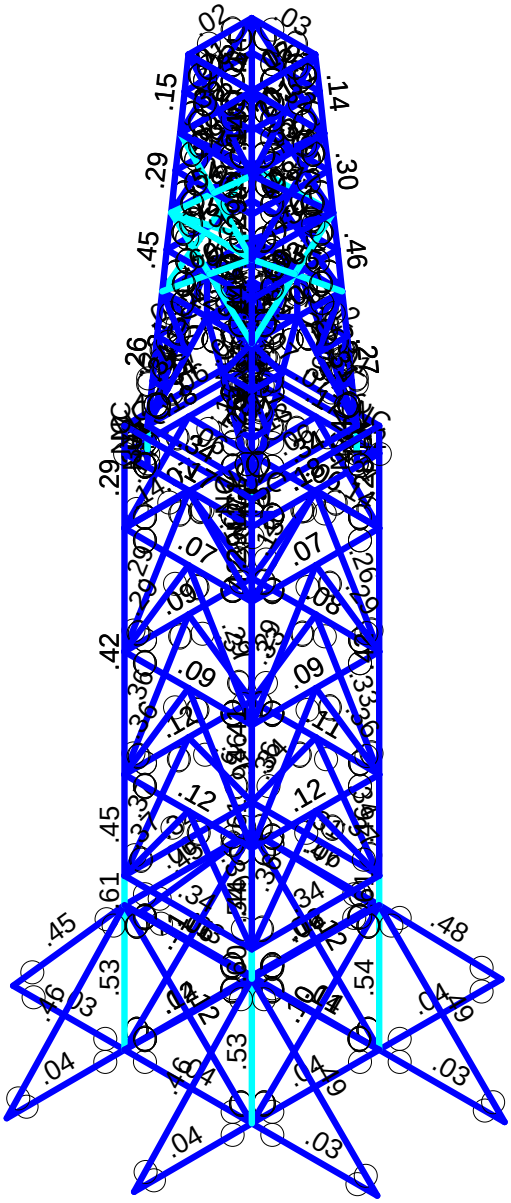


Envelope Only Solution

Tower Engineering Profess...	638284 - New London	SK - 1
AJW		Apr 13, 2023 at 4:01 PM
TEP No. 263245.837969		638284 New London.rt3







Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Tower Engineering Profess...		SK - 2
AJW	638284 - New London	Apr 13, 2023 at 4:16 PM
TEP No. 263245.837969		638284 New London.rt3

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	No
Max Iterations for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	24
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Standard Solver

Hot Rolled Steel Code	AISC 15th(360-16): LRFD
Adjust Stiffness?	No
RISAConnection Code	None
Cold Formed Steel Code	None
Wood Code	None
Wood Temperature	< 100F
Concrete Code	None
Masonry Code	None
Aluminum Code	None - Building
Stainless Steel Code	None

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	No
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

Company : Tower Engineering Professionals
Designer : AJW
Job Number : TEP No. 263245.837969
Model Name : 638284 - New London

Apr 13, 2023
4:17 PM
Checked By: SDJ

(Global) Model Settings, Continued

Seismic Code	ASCE 7-16
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	1
Cd X	1
Rho Z	1
Rho X	1

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E...	Density[k/f...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36	29000	11194	.295	.65	.49	36	1.5	58	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	TWR_LEG_T1	L5x5x1/2	Column	Single An...	A36	Typical	4.75	11.3	11.3	.417
2	TWR_TOP_GIRT_T1	C8X11.5	Beam	Channel	A36	Typical	3.37	1.31	32.5	.13
3	TWR_DIAG_T1	2L2 1/2x2x3/16x3/8	Column	None	A36	Typical	1.617	1.379	1.017	.019
4	TWR_STEP_T1	L2 1/2x2x3/16	Beam	Single An...	A36	Typical	.809	.291	.509	.01
5	TWR_LEG_T2	L5x5x1/2	Column	Single An...	A36	Typical	4.75	11.3	11.3	.417
6	TWR_TOP_GIRT_T2	C7X9.8	Beam	Channel	A36	Typical	2.87	.957	21.2	.1
7	TWR_DIAG_T2	2L2 1/2x2x3/16x3/8	Column	None	A36	Typical	1.617	1.379	1.017	.019
8	TWR_STEP_T2	L2 1/2x2x3/16	Beam	Single An...	A36	Typical	.809	.291	.509	.01
9	TWR_LEG_T3	L5x5x1/2	Column	Single An...	A36	Typical	4.75	11.3	11.3	.417
10	TWR_TOP_GIRT_T3	L3x3x1/4	Beam	Single An...	A36	Typical	1.44	1.23	1.23	.031
11	TWR_DIAG_T3	2L2 1/2x2x3/16x3/8	Column	None	A36	Typical	1.617	1.379	1.017	.019
12	TWR_STEP_T3	L2 1/2x2x3/16	Beam	Single An...	A36	Typical	.809	.291	.509	.01
13	TWR_LEG_T4	L6x6x7/8	Column	Single An...	A36	Typical	9.73	31.9	31.9	2.51
14	TWR_TOP_GIRT_T4	2L2 1/2x2 1/2x1/4x3/...	Beam	None	A36	Typical	2.375	2.968	1.406	.049
15	TWR_INNER_SUPP_...	L3x3x3/16	Beam	Single An...	A36	Typical	1.09	.96	.96	.014
16	TWR_DIAG_T4	2L2 1/2x3 1/2x3/8x3/8	Column	None	A36	Typical	4.22	12.775	2.18	.198
17	TWR_RED_HORZ_T4	2L2 1/2x2 1/2x3/16x3...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
18	TWR_RED_HORZ_2...	2L2 1/2x2 1/2x3/16x3...	Beam	None	A36	Typical	1.8	2.499	1.09	.021
19	TWR_RED_DIAG_T4	L 2.5 x 2 x 3/16 LLV	Column	Single An...	A36	Typical	.809	.291	.509	.01
20	TWR_RED_DIAG_2_...	L3x3x3/16	Column	Single An...	A36	Typical	1.09	.96	.96	.014

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
21	TWR_LEG_T5	HSS6x6x5/8	Column	Tube	A36	Typical	11.7	55.2	55.2	94.9
22	TWR_TOP_GIRT_T5	W12X53	Beam	Wide Fla...	A36	Typical	15.6	95.8	425	1.58
23	TWR_LEG_T6	W10X77	Column	Wide Fla...	A36	Typical	22.7	154	455	5.11
24	TWR_TOP_GIRT_T6	W18X65	Beam	Wide Fla...	A36	Typical	19.1	54.8	1070	2.73
25	TWR_DIAG_T6	W8X31	Column	Wide Fla...	A36	Typical	9.13	37.1	110	.536
26	TWR_LEG_T7	W10X77	Column	Wide Fla...	A36	Typical	22.7	154	455	5.11
27	TWR_TOP_GIRT_T7	W10X39	Beam	Wide Fla...	A36	Typical	11.5	45	209	.976
28	TWR_HORZ_T7	W10X39	Beam	Wide Fla...	A36	Typical	11.5	45	209	.976
29	TWR_DIAG_T7	W8X31	Column	Wide Fla...	A36	Typical	9.13	37.1	110	.536
30	TWR_LEG_T8	W10X112	Column	Wide Fla...	A36	Typical	32.9	236	716	15.1
31	TWR_TOP_GIRT_T8	W10X39	Beam	Wide Fla...	A36	Typical	11.5	45	209	.976
32	TWR_DIAG_T8	W8X31	Column	Wide Fla...	A36	Typical	9.13	37.1	110	.536
33	TWR_LEG_T9	W10X112	Column	Wide Fla...	A36	Typical	32.9	236	716	15.1
34	TWR_TOP_GIRT_T9	W10X39	Beam	Wide Fla...	A36	Typical	11.5	45	209	.976
35	TWR_LEG_T10	W10X112	Column	Wide Fla...	A36	Typical	32.9	236	716	15.1
36	TWR_TOP_GIRT_T10	W10X77	Beam	Wide Fla...	A36	Typical	22.7	154	455	5.11
37	TWR_DIAG_T10	HSS10x6x3/8	Column	Tube	A36	Typical	10.4	61.8	137	139
38	Platform Member	W14X61	Column	Wide Fla...	A36	Typical	17.9	107	640	2.19
39	Platform Member 2	W14X82	Column	Wide Fla...	A36	Typical	24	148	881	5.07
40	Platform Kicker	HSS10X6X6	Column	Tube	A36	Typical	10.4	61.8	137	139
41	TWR_SUPPORT_1	W8X13	Column	Wide Fla...	A36	Typical	3.84	2.73	39.6	.087
42	TWR_SUPPORT_2	W16X50	Column	Wide Fla...	A36	Typical	14.7	37.2	659	1.52

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	CF1A	8CU1.25X057	Beam	None	A653 SS G...	Typical	.581	.057	4.41	.00063

Material Takeoff

	Material	Size	Pieces	Length[ft]	Weight[K]
1	General				
2	RIGID	RIGID_GMA_GMB	20	19.4	0
3	Total General		20	19.4	0
4					
5	Hot Rolled Steel				
6	A36	2L2 1/2x2 1/2x1/4x3/16	4	52.3	.4
7	A36	2L2 1/2x2 1/2x3/16x3/8	16	52.3	.3
8	A36	2L2 1/2x2x3/16x3/8	24	358.6	2
9	A36	2L2 1/2x3 1/2x3/8x3/8	8	148.5	2.1
10	A36	C7X9.8	4	42	.4
11	A36	C8X11.5	4	36.8	.4
12	A36	HSS10x6x3/8	8	207.4	7.3
13	A36	HSS10X6X6	8	200.7	7.1
14	A36	HSS6x6x5/8	4	12	.5
15	A36	L 2.5 x 2 x 3/16 LLV	8	47.5	.1
16	A36	L2 1/2x2x3/16	12	133.2	.4
17	A36	L3x3x1/4	4	47.1	.2
18	A36	L3x3x3/16	13	105.4	.4
19	A36	L5x5x1/2	12	119.5	1.9
20	A36	L6x6x7/8	4	67.9	2.2

Company : Tower Engineering Professionals
Designer : AJW
Job Number : TEP No. 263245.837969
Model Name : 638284 - New London

Apr 13, 2023
4:17 PM
Checked By: SDJ

Material Takeoff (Continued)

	Material	Size	Pieces	Length[ft]	Weight[K]
21	A36	W10X112	12	138.5	15.5
22	A36	W10X39	16	296	11.6
23	A36	W10X77	12	249.5	19.3
24	A36	W12X53	8	134.7	7.1
25	A36	W14X61	10	176	10.7
26	A36	W14X82	2	36.3	3
27	A36	W16X50	4	18.9	.9
28	A36	W18X65	4	74	4.8
29	A36	W8X13	4	9.4	.1
30	A36	W8X31	32	519.9	16.2
31	Total HR Steel		237	3284.4	115.1

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N113	Reaction	Reaction	Reaction			
2	N114	Reaction	Reaction	Reaction			
3	N115	Reaction	Reaction	Reaction			
4	N116	Reaction	Reaction	Reaction			
5	N161	Reaction	Reaction	Reaction			
6	N162	Reaction	Reaction	Reaction			
7	N163	Reaction	Reaction	Reaction			
8	N164	Reaction	Reaction	Reaction			
9	N165	Reaction	Reaction	Reaction			
10	N166	Reaction	Reaction	Reaction			
11	N167	Reaction	Reaction	Reaction			
12	N168	Reaction	Reaction	Reaction			

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribu...	Area(M...	Surface...
1	Dead	None		-1		92	495	68		
2	No Ice Wind 0 deg	None				48	606	148		
3	No Ice Wind (pattern 1) 0 deg	None				48	606	148		
4	No Ice Wind (pattern 2) 0 deg	None				48	606	148		
5	No Ice Wind 45 deg	None				96	602	216		
6	No Ice Wind (pattern 1) 45 deg	None				96	602	216		
7	No Ice Wind (pattern 2) 45 deg	None				96	602	216		
8	No Ice Wind 90 deg	None				48	614	148		
9	No Ice Wind (pattern 1) 90 deg	None				48	614	148		
10	No Ice Wind (pattern 2) 90 deg	None				48	614	148		
11	No Ice Wind 135 deg	None				96	606	200		
12	No Ice Wind (pattern 1) 135 de	None				96	606	200		
13	No Ice Wind (pattern 2) 135 de	None				96	598	200		
14	No Ice Wind 180 deg	None				48	606	148		
15	No Ice Wind (pattern 1) 180 de	None				48	606	148		
16	No Ice Wind (pattern 2) 180 de	None				48	606	148		
17	No Ice Wind 225 deg	None				96	602	216		
18	No Ice Wind (pattern 1) 225 de	None				96	602	216		
19	No Ice Wind (pattern 2) 225 de	None				96	602	216		
20	No Ice Wind 270 deg	None				48	614	148		

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribu...	Area(M...	Surface...
21	No Ice Wind (pattern 1) 270 de	None				48	614	148		
22	No Ice Wind (pattern 2) 270 de	None				48	614	148		
23	No Ice Wind 315 deg	None				96	606	200		
24	No Ice Wind (pattern 1) 315 de	None				96	606	200		
25	No Ice Wind (pattern 2) 315 de	None				96	598	200		
26	Ice	None				92	498	279		
27	Temperature Drop	None						213		
28	Ice Wind 0 deg	None				48	596	148		
29	Ice Wind 45 deg	None				96	592	216		
30	Ice Wind 90 deg	None				48	604	132		
31	Ice Wind 135 deg	None				96	592	168		
32	Ice Wind 180 deg	None				48	596	148		
33	Ice Wind 225 deg	None				96	592	216		
34	Ice Wind 270 deg	None				48	604	132		
35	Ice Wind 315 deg	None				96	592	168		
36	Service Wind 0 deg	None				48	594	100		
37	Service Wind 45 deg	None				96	564	216		
38	Service Wind 90 deg	None				48	602	88		
39	Service Wind 135 deg	None				96	568	168		
40	Service Wind 180 deg	None				48	594	100		
41	Service Wind 225 deg	None				96	564	216		
42	Service Wind 270 deg	None				48	602	88		
43	Service Wind 315 deg	None				96	568	168		
44	Superimposed Self Weight	None						213		
45	Platform 0	None							1	
46	Platform 90	None							1	
47	Platform 180	None							1	
48	Platform 270	None							1	
49	Platform 45	None							2	
50	Platform 135	None							2	
51	Platform 225	None							2	
52	Platform 315	None							2	
53	BLC 45 Transient Area Loads	None						26		
54	BLC 49 Transient Area Loads	None						52		
55	BLC 46 Transient Area Loads	None						26		
56	BLC 50 Transient Area Loads	None						52		
57	BLC 47 Transient Area Loads	None						26		
58	BLC 51 Transient Area Loads	None						52		
59	BLC 48 Transient Area Loads	None						26		
60	BLC 52 Transient Area Loads	None						52		

Load Combinations

	Description	So..	P...	S...	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..
1	Dead Only	Yes			1	1	44	1	45	1	0	0	0	0	0	0	0
2	1.2 Dead+1.0 Wind 0 d...	Yes			1	1.2	2	1	44	1.2	45	1	0	0	0	0	0
3	1.2D+1.0W (pattern 1) ...	Yes			1	1.2	3	1	44	1.2	45	1	0	0	0	0	0
4	1.2D+1.0W (pattern 2) ...	Yes			1	1.2	4	1	44	1.2	45	1	0	0	0	0	0
5	0.9 Dead+1.0 Wind 0 d...	Yes			1	.9	2	1	44	.9	45	1	0	0	0	0	0
6	1.2 Dead+1.0 Wind 45 ...	Yes			1	1.2	5	1	44	1.2	49	1	0	0	0	0	0
7	1.2D+1.0W (pattern 1) ...	Yes			1	1.2	6	1	44	1.2	49	1	0	0	0	0	0

Company : Tower Engineering Professionals
Designer : AJW
Job Number : TEP No. 263245.837969
Model Name : 638284 - New London

Apr 13, 2023
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Load Combinations (Continued)

	Description	So..	P...	S...	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..
8	1.2D+1.0W (pattern 2) ...	Yes			1	1.2	7	1	44	1.2	49	1	0	0	0	0	0
9	0.9 Dead+1.0 Wind 45 ...	Yes			1	.9	5	1	44	.9	49	1	0	0	0	0	0
10	1.2 Dead+1.0 Wind 90 ...	Yes			1	1.2	8	1	44	1.2	46	1	0	0	0	0	0
11	1.2D+1.0W (pattern 1) ...	Yes			1	1.2	9	1	44	1.2	46	1	0	0	0	0	0
12	1.2D+1.0W (pattern 2) ...	Yes			1	1.2	10	1	44	1.2	46	1	0	0	0	0	0
13	0.9 Dead+1.0 Wind 90 ...	Yes			1	.9	8	1	44	.9	46	1	0	0	0	0	0
14	1.2 Dead+1.0 Wind 135...	Yes			1	1.2	11	1	44	1.2	50	1	0	0	0	0	0
15	1.2D+1.0W (pattern 1) ...	Yes			1	1.2	12	1	44	1.2	50	1	0	0	0	0	0
16	1.2D+1.0W (pattern 2) ...	Yes			1	1.2	13	1	44	1.2	50	1	0	0	0	0	0
17	0.9 Dead+1.0 Wind 135...	Yes			1	.9	11	1	44	.9	50	1	0	0	0	0	0
18	1.2 Dead+1.0 Wind 180...	Yes			1	1.2	14	1	44	1.2	47	1	0	0	0	0	0
19	1.2D+1.0W (pattern 1) ...	Yes			1	1.2	15	1	44	1.2	47	1	0	0	0	0	0
20	1.2D+1.0W (pattern 2) ...	Yes			1	1.2	16	1	44	1.2	47	1	0	0	0	0	0
21	0.9 Dead+1.0 Wind 180...	Yes			1	.9	14	1	44	.9	47	1	0	0	0	0	0
22	1.2 Dead+1.0 Wind 225...	Yes			1	1.2	17	1	44	1.2	51	1	0	0	0	0	0
23	1.2D+1.0W (pattern 1) ...	Yes			1	1.2	18	1	44	1.2	51	1	0	0	0	0	0
24	1.2D+1.0W (pattern 2) ...	Yes			1	1.2	19	1	44	1.2	51	1	0	0	0	0	0
25	0.9 Dead+1.0 Wind 225...	Yes			1	.9	17	1	44	.9	51	1	0	0	0	0	0
26	1.2 Dead+1.0 Wind 270...	Yes			1	1.2	20	1	44	1.2	48	1	0	0	0	0	0
27	1.2D+1.0W (pattern 1) ...	Yes			1	1.2	21	1	44	1.2	48	1	0	0	0	0	0
28	1.2D+1.0W (pattern 2) ...	Yes			1	1.2	22	1	44	1.2	48	1	0	0	0	0	0
29	0.9 Dead+1.0 Wind 270...	Yes			1	.9	20	1	44	.9	48	1	0	0	0	0	0
30	1.2 Dead+1.0 Wind 315...	Yes			1	1.2	23	1	44	1.2	52	1	0	0	0	0	0
31	1.2D+1.0W (pattern 1) ...	Yes			1	1.2	24	1	44	1.2	52	1	0	0	0	0	0
32	1.2D+1.0W (pattern 2) ...	Yes			1	1.2	25	1	44	1.2	52	1	0	0	0	0	0
33	0.9 Dead+1.0 Wind 315...	Yes			1	.9	23	1	44	.9	52	1	0	0	0	0	0
34	1.2 Dead+1.0 Ice+1.0 T...	Yes			1	1.2	26	1	27	1	44	1.2	45	1	0	0	0
35	1.2 Dead+1.0 Wind 0 d...	Yes			1	1.2	28	1	26	1	27	1	44	1.2	45	1	0
36	1.2 Dead+1.0 Wind 45 ...	Yes			1	1.2	29	1	26	1	27	1	44	1.2	49	1	0
37	1.2 Dead+1.0 Wind 90 ...	Yes			1	1.2	30	1	26	1	27	1	44	1.2	46	1	0
38	1.2 Dead+1.0 Wind 135...	Yes			1	1.2	31	1	26	1	27	1	44	1.2	50	1	0
39	1.2 Dead+1.0 Wind 180...	Yes			1	1.2	32	1	26	1	27	1	44	1.2	47	1	0
40	1.2 Dead+1.0 Wind 225...	Yes			1	1.2	33	1	26	1	27	1	44	1.2	51	1	0
41	1.2 Dead+1.0 Wind 270...	Yes			1	1.2	34	1	26	1	27	1	44	1.2	48	1	0
42	1.2 Dead+1.0 Wind 315...	Yes			1	1.2	35	1	26	1	27	1	44	1.2	52	1	0
43	Dead+Wind 0 deg - Ser...	Yes			1	1	36	1	44	1	45	1	0	0	0	0	0
44	Dead+Wind 45 deg - Se...	Yes			1	1	37	1	44	1	45	1	0	0	0	0	0
45	Dead+Wind 90 deg - Se...	Yes			1	1	38	1	44	1	45	1	0	0	0	0	0
46	Dead+Wind 135 deg - ...	Yes			1	1	39	1	44	1	45	1	0	0	0	0	0
47	Dead+Wind 180 deg - ...	Yes			1	1	40	1	44	1	45	1	0	0	0	0	0
48	Dead+Wind 225 deg - ...	Yes			1	1	41	1	44	1	45	1	0	0	0	0	0
49	Dead+Wind 270 deg - ...	Yes			1	1	42	1	44	1	45	1	0	0	0	0	0
50	Dead+Wind 315 deg - ...	Yes			1	1	43	1	44	1	45	1	0	0	0	0	0

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N113	max	22.595	22	297.99	22	13.447	36	0	50	0	50	0	50
2		min	-14.013	36	-198.904	9	-20.473	22	0	1	0	1	0	1
3	N114	max	14.593	33	301.148	14	13.071	42	0	50	0	50	0	50
4		min	-23.224	14	-198.826	33	-21.347	10	0	1	0	1	0	1

Envelope Joint Reactions (Continued)

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
5	N115	max	13.59	25	308.237	6	21.215	6	0	50	0	50	0	50
6		min	-22.915	6	-197.73	25	-12.819	40	0	1	0	1	0	1
7	N116	max	22.419	30	300.817	30	20.921	30	0	50	0	50	0	50
8		min	-13.875	38	-193.632	17	-14.054	37	0	1	0	1	0	1
9	N161	max	37.185	33	46.674	14	1.116	50	0	50	0	50	0	50
10		min	-45.397	14	-35.95	33	-1.116	10	0	1	0	1	0	1
11	N162	max	36.436	25	46.818	6	1.116	50	0	50	0	50	0	50
12		min	-45.541	6	-35.201	25	-1.116	10	0	1	0	1	0	1
13	N163	max	45.068	22	51.454	22	.809	50	0	50	0	50	0	50
14		min	-37.02	9	-40.473	9	-.809	10	0	1	0	1	0	1
15	N164	max	44.618	30	50.949	30	.809	50	0	50	0	50	0	50
16		min	-35.677	17	-38.964	17	-.809	10	0	1	0	1	0	1
17	N165	max	.849	41	48.571	22	37.445	9	0	50	0	50	0	50
18		min	-.6	6	-38.478	9	-45.067	22	0	1	0	1	0	1
19	N166	max	.849	41	48.693	14	37.268	33	0	50	0	50	0	50
20		min	-.6	6	-38.291	33	-45.182	14	0	1	0	1	0	1
21	N167	max	.869	41	49.064	6	46.826	6	0	50	0	50	0	50
22		min	-.614	6	-37.587	25	-37.68	25	0	1	0	1	0	1
23	N168	max	.869	41	48.452	30	46.231	30	0	50	0	50	0	50
24		min	-.614	6	-37.27	17	-37.371	17	0	1	0	1	0	1
25	Totals:	max	191.376	29	434.485	42	199.494	2						
26		min	-172.639	10	217.524	17	-197.54	21						

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear C..	Loc.....	L..	phi*Pn...	phi*Pn...	phi*Mn...	phi*Mn...		Eqn
1	M116	HSS6x6x5/8	.739	2.5	6	.211	2.5	z 6	368.388	379.08	62.64	62.64	1	H1-1a
2	M114	HSS6x6x5/8	.724	2.5	22	.210	2.5	y 26	368.388	379.08	62.64	62.64	1	H1-1a
3	M117	HSS6x6x5/8	.720	2.5	30	.216	2.5	z 30	368.388	379.08	62.64	62.64	1	H1-1a
4	M115	HSS6x6x5/8	.714	2.5	14	.212	2.5	y 14	368.388	379.08	62.64	62.64	1	H1-1a
5	M185	W10X112	.615	3.75	2	.263	0	y 30	1050.2...	1065.96	186.84	396.9	1	H1-1a
6	M184	W10X112	.609	3.75	2	.264	0	y 6	1050.2...	1065.96	186.84	396.9	1	H1-1a
7	M182	W10X112	.607	3.75	18	.261	0	y 22	1050.2...	1065.96	186.84	396.9	1	H1-1a
8	M183	W10X112	.600	3.75	10	.261	0	y 14	1050.2...	1065.96	186.84	396.9	1	H1-1a
9	M49	2L2 1/2x2x3/1...	.599	8.285	28	.003	8.285	y 36	22.545	52.397	2.723	1.91	1	H1-1a
10	M50	2L2 1/2x2x3/1...	.581	8.285	12	.003	8.285	y 42	22.545	52.397	2.723	1.91	1	H1-1a
11	M55	2L2 1/2x2x3/1...	.549	3.645	32	.003	8.285	y 38	22.545	52.397	2.723	1.91	1	H1-1a
12	M45	L3x3x1/4	.548	0	5	.005	11....	z 42	5.572	46.656	.653	2.38	1	H2-1
13	M52	2L2 1/2x2x3/1...	.547	3.645	8	.003	8.285	y 40	22.545	52.397	2.723	1.91	1	H1-1a
14	M192	W10X112	.542	18.167	2	.044	18....	y 6	752.088	1065.96	186.84	382.534	1	H1-1a
15	M29	2L2 1/2x2x3/1...	.540	7.774	28	.003	7.774	y 35	24.724	52.397	2.723	1.928	1	H1-1a
16	M193	W10X112	.540	18.167	2	.044	18....	y 30	752.088	1065.96	186.84	382.534	1	H1-1a
17	M190	W10X112	.532	18.167	18	.044	18....	y 9	752.088	1065.96	186.84	382.534	1	H1-1a
18	M191	W10X112	.530	18.167	18	.044	18....	y 33	752.088	1065.96	186.84	382.534	1	H1-1a
19	M47	L3x3x1/4	.529	0	21	.005	11....	z 42	5.572	46.656	.653	2.38	1	H2-1
20	M30	2L2 1/2x2x3/1...	.526	7.774	12	.003	7.774	y 35	24.724	52.397	2.723	1.928	1	H1-1a
21	M56	2L2 1/2x2x3/1...	.521	3.645	20	.003	8.285	y 36	22.545	52.397	2.723	1.91	1	H1-1a
22	M51	2L2 1/2x2x3/1...	.504	3.645	20	.003	8.285	y 42	22.545	52.397	2.723	1.91	1	H1-1a
23	M35	2L2 1/2x2x3/1...	.499	7.774	4	.003	7.774	y 38	24.724	52.397	2.723	1.928	1	H1-1a
24	M253	HSS10X6X6	.490	11.775	6	.008	0	z 50	145.171	336.96	63.99	91.26	1...	H1-1a
25	M252	HSS10X6X6	.489	11.775	14	.008	0	z 50	145.171	336.96	63.99	91.26	1...	H1-1a

Company : Tower Engineering Professionals
Designer : AJW
Job Number : TEP No. 263245.837969
Model Name : 638284 - New London

Apr 13, 2023
4:17 PM
Checked By: SDJ

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear C..	Loc.....	L..	phi*Pn...	phi*Pn...	phi*Mn...	phi*Mn...		Eqn
26	M248	HSS10X6X6	.480	11.878	6	.010	0	z 39	148.527	336.96	63.99	91.26	1...	H1-1a
27	M36	2L2 1/2x2x3/1...	.475	7.774	20	.003	7.774	y 36	24.724	52.397	2.723	1.928	1	H1-1a
28	M249	HSS10X6X6	.474	11.878	30	.010	0	z 39	148.527	336.96	63.99	91.26	1...	H1-1a
29	M32	2L2 1/2x2x3/1...	.471	7.774	4	.003	7.774	y 40	24.724	52.397	2.723	1.928	1	H1-1a
30	M43	L5x5x1/2	.462	2.386	6	.005	0	y 30	124.114	153.9	3.676	20.148	1	H2-1
31	M247	HSS10X6X6	.459	11.716	14	.009	0	z 35	151.864	336.96	63.99	91.26	1...	H1-1a
32	M246	HSS10X6X6	.458	11.716	22	.009	0	z 35	151.864	336.96	63.99	91.26	1...	H1-1a
33	M168	W10X112	.457	0	6	.047	12....	y 22	898.704	1065.96	186.84	393.708	1	H1-1a
34	M169	W10X112	.456	0	30	.047	12....	y 14	898.704	1065.96	186.84	393.708	1	H1-1a
35	M250	HSS10X6X6	.451	11.399	22	.008	0	z 38	158.461	336.96	63.99	91.26	1...	H1-1a
36	M41	L5x5x1/2	.450	2.697	24	.006	0	y 14	124.114	153.9	3.676	20.148	1	H2-1
37	M251	HSS10X6X6	.446	11.399	30	.008	0	z 38	158.461	336.96	63.99	91.26	1...	H1-1a
38	M166	W10X112	.445	0	22	.047	12....	y 6	898.704	1065.96	186.84	393.708	1	H1-1a
39	M42	L5x5x1/2	.445	7.261	16	.005	0	z 22	124.114	153.9	3.676	20.148	1	H2-1
40	M167	W10X112	.445	0	14	.047	12....	y 30	898.704	1065.96	186.84	393.708	1	H1-1a
41	M44	L5x5x1/2	.442	2.282	30	.005	0	z 6	124.114	153.9	3.676	20.148	1	H2-1
42	M31	2L2 1/2x2x3/1...	.441	7.774	20	.003	7.774	y 42	24.724	52.397	2.723	1.928	1	H1-1a
43	M53	2L2 1/2x2x3/1...	.429	3.645	8	.003	8.285	y 40	22.545	52.397	2.723	1.91	1	H1-1a
44	M46	L3x3x1/4	.428	0	29	.005	11....	z 42	5.572	46.656	.653	2.38	1	H2-1
45	M140	W10X77	.424	0	6	.031	0	y 22	562.72	735.48	123.93	254.349	1	H1-1a
46	M48	L3x3x1/4	.424	0	13	.005	11....	z 42	5.572	46.656	.653	2.38	1	H2-1
47	M141	W10X77	.420	0	30	.031	0	y 14	562.72	735.48	123.93	254.349	1	H1-1a
48	M73	L3x3x3/16	.418	6.531	42	.007	13....	z 42	3.56	35.316	-1.851	1.585	1	H2-1
49	M138	W10X77	.415	0	22	.031	0	y 6	562.72	735.48	123.93	254.349	1	H1-1a
50	M139	W10X77	.413	0	14	.031	0	y 30	562.72	735.48	123.93	254.349	1	H1-1a
51	M54	2L2 1/2x2x3/1...	.404	3.645	32	.003	8.285	y 38	22.545	52.397	2.723	1.91	1	H1-1a
52	M9	2L2 1/2x2x3/1...	.382	7.434	28	.003	7.434	y 35	26.824	52.397	2.723	1.945	1	H1-1a
53	M180	W8X31	.373	7.204	2	.005	15....	y 42	186.57	295.812	38.07	73.013	1	H1-1a
54	M177	W8X31	.369	7.204	2	.005	15....	y 42	186.57	295.812	38.07	73.013	1	H1-1a
55	M181	W8X31	.368	7.204	18	.005	15....	y 42	186.57	295.812	38.07	73.013	1	H1-1a
56	M10	2L2 1/2x2x3/1...	.368	7.434	12	.003	7.434	y 35	26.824	52.397	2.723	1.945	1	H1-1a
57	M156	W8X31	.367	8.265	2	.005	0	y 42	161.274	295.812	38.07	70.149	1	H1-1a
58	M174	W8X31	.365	7.204	26	.005	15....	y 42	186.57	295.812	38.07	73.013	1	H1-1a
59	M175	W8X31	.365	7.204	10	.005	15....	y 42	186.57	295.812	38.07	73.013	1	H1-1a
60	M176	W8X31	.364	7.204	18	.005	15....	y 42	186.57	295.812	38.07	73.013	1	H1-1a
61	M151	W8X31	.362	8.265	2	.005	18....	y 42	161.274	295.812	38.07	70.149	1	H1-1a
62	M157	W8X31	.362	8.265	18	.005	0	y 42	161.274	295.812	38.07	70.149	1	H1-1a
63	M147	W8X31	.359	8.265	26	.005	0	y 42	161.274	295.812	38.07	70.149	1	H1-1a
64	M148	W8X31	.357	8.265	10	.005	0	y 42	161.274	295.812	38.07	70.149	1	H1-1a
65	M150	W8X31	.356	8.265	18	.005	0	y 42	161.274	295.812	38.07	70.149	1	H1-1a
66	M15	2L2 1/2x2x3/1...	.350	7.434	32	.003	7.434	y 38	26.824	52.397	2.723	1.945	1	H1-1a
67	M33	2L2 1/2x2x3/1...	.347	3.42	8	.003	7.774	y 40	24.724	52.397	2.723	1.928	1	H1-1a
68	M118_1	W12X53	.344	0	40	.285	1.542	y 22	380.494	505.44	78.57	196.109	1	H1-1b
69	M178	W8X31	.342	7.204	10	.005	15....	y 42	186.57	295.812	38.07	73.013	1	H1-1a
70	M186	W10X39	.341	18.5	10	.062	18.5	y 10	191.993	372.6	46.44	106.113	1	H1-1b
71	M189	W10X39	.341	0	2	.062	0	y 2	191.993	372.6	46.44	106.113	1	H1-1b
72	M179	W8X31	.341	7.204	26	.005	15....	y 42	186.57	295.812	38.07	73.013	1	H1-1a
73	M121_1	W12X53	.340	18.5	40	.281	1.542	y 30	380.494	505.44	78.57	196.109	1	H1-1b
74	M119_1	W12X53	.339	0	38	.287	16....	y 6	380.494	505.44	78.57	196.109	1	H1-1b
75	M74	2L2 1/2x3 1/2...	.338	12.379	26	.001	12....	y 24	77.93	136.728	14.966	4.797	1	H1-1a
76	M120_1	W12X53	.336	0	36	.287	1.542	y 6	380.494	505.44	78.57	196.109	1	H1-1b
77	M187	W10X39	.335	18.5	2	.061	18.5	y 2	191.993	372.6	46.44	106.113	1	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear C..	Loc.....	L..	phi*Pn...	phi*Pn...	phi*Mn...	phi*Mn.....		Eqn
78	M79	2L2 1/2x3 1/2...	.333	12.379	10	.001	12....	y	16	77.93	136.728	14.966	4.797	1	H1-1a
79	M153	W8X31	.330	8.265	10	.005	0	y	42	161.274	295.812	38.07	70.149	1	H1-1a
80	M154	W8X31	.329	8.265	26	.005	0	y	42	161.274	295.812	38.07	70.149	1	H1-1a
81	M34	2L2 1/2x2x3/1...	.327	7.774	28	.003	7.774	y	38	24.724	52.397	2.723	1.928	1	H1-1a
82	M104	2L2 1/2x3 1/2...	.321	12.379	2	.001	12....	y	32	77.93	136.728	14.966	4.797	1	H1-1a
83	M16	2L2 1/2x2x3/1...	.321	7.434	20	.003	7.434	y	36	26.824	52.397	2.723	1.945	1	H1-1a
84	M12	2L2 1/2x2x3/1...	.318	7.434	8	.003	7.434	y	40	26.824	52.397	2.723	1.945	1	H1-1a
85	M188	W10X39	.310	0	10	.057	0	y	10	191.993	372.6	46.44	106.113	1	H1-1b
86	M109	2L2 1/2x3 1/2...	.307	12.379	18	.001	12....	y	24	77.93	136.728	14.966	4.797	1	H1-1a
87	M89	2L2 1/2x3 1/2...	.306	12.379	2	.001	12....	y	8	77.93	136.728	14.966	4.797	1	H1-1a
88	M164	W8X31	.300	8.265	2	.005	18....	y	42	161.274	295.812	38.07	70.149	1	H1-1a
89	M216	W16X50	.299	2.357	40	.201	4.714	y	22	445.606	476.28	44.01	248.4	1..	H1-1b
90	M217	W16X50	.298	2.357	38	.199	2.357	y	14	445.606	476.28	44.01	248.4	1..	H1-1b
91	M23	L5x5x1/2	.296	6.016	6	.031	9.958	z	18	123.805	153.9	3.676	20.13	1	H2-1
92	M21	L5x5x1/2	.295	6.016	22	.031	9.958	y	10	123.805	153.9	3.676	20.13	1	H2-1
93	M161	W8X31	.295	8.265	2	.005	18....	y	42	161.274	295.812	38.07	70.149	1	H1-1a
94	M165	W8X31	.294	8.265	18	.005	0	y	42	161.274	295.812	38.07	70.149	1	H1-1a
95	M123	W10X77	.294	12.917	14	.177	9.418	y	38	666.098	735.48	123.93	263.52	1	H1-1b
96	M122	W10X77	.293	12.917	22	.177	9.418	y	40	666.098	735.48	123.93	263.52	1	H1-1b
97	M84	2L2 1/2x3 1/2...	.291	12.379	18	.001	12....	y	16	77.93	136.728	14.966	4.797	1	H1-1a
98	M158	W8X31	.291	8.265	26	.005	0	y	42	161.274	295.812	38.07	70.149	1	H1-1a
99	M159	W8X31	.290	8.265	10	.005	18....	y	42	161.274	295.812	38.07	70.149	1	H1-1a
100	M22	L5x5x1/2	.289	6.016	16	.031	9.958	z	26	123.805	153.9	3.676	20.13	1	H2-1
101	M215	W16X50	.289	2.357	42	.201	4.714	y	30	445.606	476.28	44.01	248.4	1..	H1-1b
102	M214	W16X50	.289	2.357	36	.205	2.357	y	6	445.606	476.28	44.01	248.4	1..	H1-1b
103	M160	W8X31	.289	8.265	18	.005	18....	y	42	161.274	295.812	38.07	70.149	1	H1-1a
104	M124	W10X77	.285	12.917	6	.175	9.418	y	6	666.098	735.48	123.93	263.52	1	H1-1b
105	M24	L5x5x1/2	.283	6.016	32	.027	9.958	y	18	123.805	153.9	3.676	20.13	1	H2-1
106	M125	W10X77	.282	12.917	30	.175	9.418	y	42	666.098	735.48	123.93	263.52	1	H1-1b
107	M11	2L2 1/2x2x3/1...	.270	7.434	20	.003	7.434	y	42	26.824	52.397	2.723	1.945	1	H1-1a
108	M63	L6x6x7/8	.266	12.206	8	.007	0	y	30	263.993	315.252	9.123	48.188	1	H2-1
109	M61	L6x6x7/8	.262	12.206	24	.009	0	y	14	263.993	315.252	9.123	48.188	1	H2-1
110	M162	W8X31	.262	8.265	10	.005	18....	y	42	161.274	295.812	38.07	70.149	1	H1-1a
111	M163	W8X31	.261	8.265	26	.005	18....	y	42	161.274	295.812	38.07	70.149	1	H1-1a
112	M62	L6x6x7/8	.259	12.206	16	.009	0	z	22	263.993	315.252	9.123	48.188	1	H2-1
113	M64	L6x6x7/8	.257	12.206	32	.007	0	z	6	263.993	315.252	9.123	48.188	1	H2-1
114	M94	2L2 1/2x3 1/2...	.232	12.379	10	.001	12....	y	8	77.93	136.728	14.966	4.797	1	H1-1a
115	M65	2L2 1/2x2 1/2...	.231	6.667	26	.003	6.531	y	39	44.567	76.95	4.943	3.042	1	H1-1a
116	M99	2L2 1/2x3 1/2...	.230	12.379	26	.001	12....	y	32	77.93	136.728	14.966	4.797	1	H1-1a
117	M68	2L2 1/2x2 1/2...	.224	6.667	2	.003	6.531	y	41	44.567	76.95	4.943	3.042	1	H1-1a
118	M72	L3x3x3/16	.208	4.618	36	.005	9.237	z	41	7.12	35.316	-1.851	1.802	1	H2-1
119	M71	L3x3x3/16	.208	4.618	39	.005	9.237	z	39	7.12	35.316	-1.851	1.802	1	H2-1
120	M69	L3x3x3/16	.208	4.618	40	.005	9.237	z	39	7.12	35.316	-1.851	1.802	1	H2-1
121	M70	L3x3x3/16	.208	4.618	35	.005	9.237	z	41	7.12	35.316	-1.851	1.802	1	H2-1
122	M13	2L2 1/2x2x3/1...	.199	0	8	.003	7.434	y	40	26.824	52.397	2.723	1.945	1	H1-1b*
123	M66	2L2 1/2x2 1/2...	.196	0	5	.003	6.531	y	37	44.567	76.95	4.943	3.042	1	H1-1b*
124	M127	W18X65	.177	15.224	6	.087	18.5	y	6	493.623	618.84	60.75	340.956	1	H1-1b
125	M129	W18X65	.176	3.276	30	.087	18.5	y	22	493.623	618.84	60.75	340.956	1	H1-1b
126	M126	W18X65	.173	3.276	22	.083	18.5	y	14	493.623	618.84	60.75	340.956	1	H1-1b
127	M128	W18X65	.167	3.276	6	.085	18.5	y	30	493.623	618.84	60.75	340.956	1	H1-1b
128	M77	L 2.5 x 2 x 3/1...	.151	0	16	.001	0	z	42	6.564	26.212	.264	1.19	1	H2-1
129	M1	L5x5x1/2	.151	4.979	22	.006	0	y	10	123.42	153.9	3.676	20.108	1	H2-1

RISA A NEMETSCHEK COMPANY
Company : Tower Engineering Professionals
Designer : AJW
Job Number : TEP No. 263245.837969
Model Name : 638284 - New London
Apr 13, 2023
4:17 PM
Checked By: SDJ

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear C..	Loc.....	L..	phi*Pn...	phi*Pn...	phi*Mn...	phi*Mn.....		Eqn
130	M14	2L2 1/2x2x3/1...	.149	0	32	.003	7.434	y	38	26.824	52.397	2.723	1.945	1	H1-1b*
131	M67	2L2 1/2x2 1/2...	.148	0	25	.003	6.531	y	35	44.567	76.95	4.943	3.042	1	H1-1b*
132	M112	L 2.5 x 2 x 3/1...	.147	0	26	.001	5.938	z	42	6.564	26.212	.264	1.19	1	H2-1
133	M82	L 2.5 x 2 x 3/1...	.146	0	24	.001	0	z	42	6.564	26.212	.264	1.19	1	H2-1
134	M136	W8X31	.145	0	30	.005	13.2	y	42	213.722	295.812	38.07	76.129	1	H1-1b*
135	M133	W8X31	.145	0	6	.005	0	y	42	213.722	295.812	38.07	76.129	1	H1-1b*
136	M131	W8X31	.144	0	14	.005	13.2	y	42	213.722	295.812	38.07	76.129	1	H1-1b*
137	M2	L5x5x1/2	.144	4.875	14	.006	0	z	26	123.42	153.9	3.676	20.108	1	H2-1
138	M3	L5x5x1/2	.143	4.875	6	.005	0	z	18	123.42	153.9	3.676	20.108	1	H2-1
139	M130	W8X31	.143	0	22	.005	13.2	y	42	213.722	295.812	38.07	76.129	1	H1-1b*
140	M87	L 2.5 x 2 x 3/1...	.143	0	10	.001	0	z	42	6.564	26.212	.264	1.19	1	H2-1
141	M25	C7X9.8	.143	0	5	.004	10....	y	42	13.634	92.988	2.669	11.139	1	H1-1b*
142	M27	C7X9.8	.140	0	21	.004	10....	y	42	13.634	92.988	2.669	11.139	1	H1-1b*
143	M4	L5x5x1/2	.137	4.875	32	.005	0	y	18	123.42	153.9	3.676	20.108	1	H2-1
144	M137	W8X31	.137	0	18	.005	13.2	y	42	213.722	295.812	38.07	76.129	1	H1-1b*
145	M134	W8X31	.136	0	6	.005	13.2	y	42	213.722	295.812	38.07	76.129	1	H1-1b*
146	M132	W8X31	.133	0	18	.005	13.2	y	42	213.722	295.812	38.07	76.129	1	H1-1b*
147	M135	W8X31	.133	0	30	.005	13.2	y	42	213.722	295.812	38.07	76.129	1	H1-1b*
148	M173	W10X39	.124	9.443	5	.010	9.25	y	26	315.685	372.6	46.44	124.357	1	H1-1b*
149	M171	W10X39	.123	0	5	.010	9.25	y	10	315.685	372.6	46.44	124.357	1	H1-1b*
150	M170	W10X39	.121	9.443	29	.011	9.25	y	18	315.685	372.6	46.44	124.357	1	H1-1b*
151	M210	W8X13	.121	0	40	.003	2.357	y	30	117.26	124.416	5.805	30.78	1..	H1-1b*
152	M211	W8X13	.121	0	38	.003	2.357	y	6	117.26	124.416	5.805	30.78	1..	H1-1b*
153	M212	W8X13	.120	0	36	.002	2.357	y	30	117.26	124.416	5.805	30.78	1..	H1-1b*
154	M213	W8X13	.120	0	42	.002	2.357	y	6	117.26	124.416	5.805	30.78	1..	H1-1b*
155	M202	HSS10x6x3/8	.118	12.964	2	.008	0	z	45	271.932	336.96	63.99	91.26	1	H1-1b
156	M203	HSS10x6x3/8	.117	12.964	2	.008	0	z	13	271.932	336.96	63.99	91.26	1	H1-1b
157	M199	HSS10x6x3/8	.117	0	14	.008	0	z	13	271.932	336.96	63.99	91.26	1	H1-1b*
158	M102	L 2.5 x 2 x 3/1...	.117	0	5	.001	5.938	z	42	6.564	26.212	.264	1.19	1	H2-1
159	M198	HSS10x6x3/8	.115	12.964	18	.008	0	z	19	271.932	336.96	63.99	91.26	1	H1-1b
160	M204	HSS10x6x3/8	.115	12.964	26	.008	0	z	41	271.932	336.96	63.99	91.26	1	H1-1b
161	M172	W10X39	.113	9.443	13	.011	9.25	y	2	315.685	372.6	46.44	124.357	1	H1-1b*
162	M205	HSS10x6x3/8	.111	12.964	26	.008	0	z	29	271.932	336.96	63.99	91.26	1	H1-1b
163	M97	L 2.5 x 2 x 3/1...	.108	0	5	.001	0	z	42	6.564	26.212	.264	1.19	1	H2-1
164	M201	HSS10x6x3/8	.107	0	6	.008	0	z	41	271.932	336.96	63.99	91.26	1	H1-1b*
165	M200	HSS10x6x3/8	.104	0	10	.008	0	z	29	271.932	336.96	63.99	91.26	1	H1-1b*
166	M26	C7X9.8	.103	0	29	.004	10....	y	42	13.634	92.988	2.669	11.139	1	H1-1b*
167	M28	C7X9.8	.098	0	13	.004	10....	y	42	13.634	92.988	2.669	11.139	1	H1-1b*
168	M155	W10X39	.091	9.443	5	.011	9.25	y	26	315.685	372.6	46.44	124.357	1	H1-1b*
169	M149	W10X39	.090	0	5	.011	9.25	y	10	315.685	372.6	46.44	124.357	1	H1-1b*
170	M146	W10X39	.089	9.443	29	.012	9.25	y	18	315.685	372.6	46.44	124.357	1	H1-1b*
171	M152	W10X39	.081	9.443	13	.012	9.25	y	2	315.685	372.6	46.44	124.357	1	H1-1b*
172	M39	L2 1/2x2x3/16	.077	0	28	.004	5.55	z	38	19.031	26.212	.264	1.219	1	H2-1
173	M38	L2 1/2x2x3/16	.076	11.1	20	.004	5.55	z	40	19.031	26.212	.264	1.219	1	H2-1
174	M40	L2 1/2x2x3/16	.076	0	20	.004	5.55	z	36	19.031	26.212	.264	1.219	1	H2-1
175	M37	L2 1/2x2x3/16	.075	0	12	.004	5.55	z	42	19.031	26.212	.264	1.219	1	H2-1
176	M98	L3x3x3/16	.075	3.462	40	.002	0	z	42	12.668	35.316	-1.851	2.062	1	H2-1
177	M108	L3x3x3/16	.075	3.462	38	.002	0	z	42	12.668	35.316	-1.851	2.062	1	H2-1
178	M78	L3x3x3/16	.074	3.462	36	.002	0	z	42	12.668	35.316	-1.851	2.062	1	H2-1
179	M88	L3x3x3/16	.074	3.462	41	.002	0	z	42	12.668	35.316	-1.851	2.062	1	H2-1
180	M107	L 2.5 x 2 x 3/1...	.074	0	24	.001	0	z	42	6.564	26.212	.264	1.19	1	H2-1
181	M145	W10X39	.068	9.443	5	.009	9.25	y	26	315.685	372.6	46.44	124.357	1	H1-1b*

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear C...	Loc.....	L...	phi*Pn...	phi*Pn...	phi*Mn...	phi*Mn.....		Eqn
182	M103	L3x3x3/16	.067	3.462	38	.002	6.925	z 42	12.668	35.316	-1.851	2.062	1	H2-1
183	M113	L3x3x3/16	.067	3.462	36	.002	6.925	z 42	12.668	35.316	-1.851	2.062	1	H2-1
184	M83	L3x3x3/16	.066	3.462	35	.002	6.925	z 42	12.668	35.316	-1.851	2.062	1	H2-1
185	M143	W10X39	.066	0	5	.009	9.25	y 10	315.685	372.6	46.44	124.357	1	H1-1b*
186	M93	L3x3x3/16	.066	3.462	40	.002	6.925	z 42	12.668	35.316	-1.851	2.062	1	H2-1
187	M120	W12X53	.066	7.583	2	.011	.158	y 28	380.494	505.44	78.57	196.109	1	H1-1b
188	M92	L 2.5 x 2 x 3/1...	.066	0	16	.001	0	z 42	6.564	26.212	.264	1.19	1	H2-1
189	M142	W10X39	.065	0	13	.009	9.25	y 18	315.685	372.6	46.44	124.357	1	H1-1b*
190	M118	W12X53	.064	7.267	18	.007	.79	y 12	380.494	505.44	78.57	196.109	1	H1-1b
191	M194	W10X77	.062	0	35	.009	0	y 42	501.741	735.48	123.93	248.375	1	H1-1b*
192	M196	W10X77	.062	0	39	.009	0	y 42	501.741	735.48	123.93	248.375	1	H1-1b*
193	M197	W10X77	.061	0	37	.009	0	y 42	501.741	735.48	123.93	248.375	1	H1-1b*
194	M195	W10X77	.061	0	41	.009	0	y 42	501.741	735.48	123.93	248.375	1	H1-1b*
195	M121	W12X53	.061	9.637	26	.010	0	y 24	380.494	505.44	78.57	196.109	1	H1-1b
196	M119	W12X53	.060	6.003	10	.011	14....	y 20	380.494	505.44	78.57	196.109	1	H1-1b
197	M144	W10X39	.060	0	25	.009	9.25	y 2	315.685	372.6	46.44	124.357	1	H1-1b*
198	M236	W14X61	.042	9.25	39	.006	0	y 27	375.749	579.96	88.56	275.127	1...	H1-1b
199	M237	W14X61	.042	9.25	39	.007	0	y 27	375.749	579.96	88.56	275.127	1...	H1-1b
200	M244	W14X61	.042	9.25	41	.007	0	y 19	375.749	579.96	88.56	275.127	1...	H1-1b
201	M245	W14X61	.042	9.25	41	.006	0	y 19	375.749	579.96	88.56	275.127	1...	H1-1b
202	M242	W14X61	.038	8.833	41	.006	0	y 42	390.389	579.96	88.56	275.4	1...	H1-1b
203	M243	W14X61	.038	8.833	41	.006	0	y 42	390.389	579.96	88.56	275.4	1...	H1-1b
204	M240	W14X61	.036	8.583	41	.006	0	y 42	399.107	579.96	88.56	275.4	1...	H1-1b
205	M241	W14X61	.036	8.583	41	.006	0	y 42	399.107	579.96	88.56	275.4	1...	H1-1b
206	M234	W14X82	.033	9.083	39	.006	0	y 42	518.273	777.6	120.96	375.3	1...	H1-1b
207	M235	W14X82	.033	9.083	39	.006	0	y 42	518.273	777.6	120.96	375.3	1...	H1-1b
208	M238	W14X61	.032	8.083	39	.005	0	y 42	416.341	579.96	88.56	275.4	1...	H1-1b
209	M239	W14X61	.032	8.083	39	.005	0	y 42	416.341	579.96	88.56	275.4	1...	H1-1b
210	M5	C8X11.5	.026	0	5	.003	9.208	y 42	24.237	109.188	3.353	17.026	1	H1-1b*
211	M7	C8X11.5	.026	0	21	.003	9.208	y 42	24.237	109.188	3.353	17.026	1	H1-1b*
212	M8	C8X11.5	.023	4.604	41	.003	9.208	y 42	24.237	109.188	3.353	17.026	1	H1-1b
213	M6	C8X11.5	.023	4.604	37	.003	9.208	y 42	24.237	109.188	3.353	17.026	1	H1-1b
214	M59	L2 1/2x2x3/16	.020	8.13	17	.004	6.194	z 37	17.591	26.212	.264	1.149	1	H2-1
215	M58	L2 1/2x2x3/16	.020	4.516	29	.004	6.194	z 39	17.591	26.212	.264	1.149	1	H2-1
216	M60	L2 1/2x2x3/16	.019	8.13	8	.004	6.194	z 36	17.591	26.212	.264	1.149	1	H2-1
217	M57	L2 1/2x2x3/16	.018	8.13	32	.004	6.194	z 37	17.591	26.212	.264	1.149	1	H2-1
218	M101	2L2 1/2x2 1/2...	.016	2.177	38	.002	0	y 42	43.589	58.32	4.017	2.611	1	H1-1b
219	M96	2L2 1/2x2 1/2...	.016	2.177	40	.002	0	y 42	43.589	58.32	4.017	2.611	1	H1-1b
220	M111	2L2 1/2x2 1/2...	.016	2.177	36	.002	0	y 42	43.589	58.32	4.017	2.611	1	H1-1b
221	M106	2L2 1/2x2 1/2...	.016	2.177	38	.002	0	y 42	43.589	58.32	4.017	2.611	1	H1-1b
222	M81	2L2 1/2x2 1/2...	.016	2.177	35	.002	0	y 42	43.589	58.32	4.017	2.611	1	H1-1b
223	M76	2L2 1/2x2 1/2...	.016	2.177	36	.002	0	y 42	43.589	58.32	4.017	2.611	1	H1-1b
224	M86	2L2 1/2x2 1/2...	.016	2.177	41	.002	0	y 42	43.589	58.32	4.017	2.611	1	H1-1b
225	M91	2L2 1/2x2 1/2...	.016	2.177	40	.002	0	y 42	43.589	58.32	4.017	2.611	1	H1-1b
226	M75	2L2 1/2x2 1/2...	.015	0	32	.001	0	y 42	44.407	58.32	4.017	2.611	1	H1-1b*
227	M80	2L2 1/2x2 1/2...	.015	0	8	.001	0	y 42	44.407	58.32	4.017	2.611	1	H1-1b*
228	M85	2L2 1/2x2 1/2...	.014	0	29	.001	0	y 42	44.407	58.32	4.017	2.611	1	H1-1b*
229	M110	2L2 1/2x2 1/2...	.014	0	13	.001	0	y 42	44.407	58.32	4.017	2.611	1	H1-1b*
230	M100	2L2 1/2x2 1/2...	.011	0	21	.001	0	y 42	44.407	58.32	4.017	2.611	1	H1-1b*
231	M95	2L2 1/2x2 1/2...	.010	0	21	.001	0	y 42	44.407	58.32	4.017	2.611	1	H1-1b*
232	M105	2L2 1/2x2 1/2...	.009	0	8	.001	0	y 42	44.407	58.32	4.017	2.611	1	H1-1b*
233	M18	L2 1/2x2x3/16	.009	3.781	23	.003	4.905	z 40	20.413	26.212	.264	1.244	1	H2-1

Company : Tower Engineering Professionals
Designer : AJW
Job Number : TEP No. 263245.837969
Model Name : 638284 - New London

Apr 13, 2023
4:17 PM
Checked By: SDJ

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear C...	Loc.....	L...	phi*Pn...	phi*Pn...	phi*Mn...	phi*Mn.....		Eqn
234	M90	2L2 1/2x2 1/2...	.008	0	32	.001	0	y 42	44.407	58.32	4.017	2.611	1	H1-1b*
235	M17	L2 1/2x2x3/16	.008	3.576	41	.003	4.905	z 42	20.413	26.212	.264	1.244	1	H2-1
236	M19	L2 1/2x2x3/16	.006	6.131	26	.003	4.905	z 38	20.413	26.212	.264	1.244	1	H2-1
237	M20	L2 1/2x2x3/16	.006	6.233	13	.003	4.905	z 36	20.413	26.212	.264	1.244	1	H2-1

Envelope None Cold Formed Steel Code Checks

Member	Shape	Code Check	Loc[ft]	LC	Shea...	Loc[ft]	Dir	LC	Pn[k]	Tn[k]	Mnyy[...	Mnzz[...	Cb	Cmyy	Cmzz	Eqn
No Data to Print ...																

APPENDIX B

ADDITIONAL CALCULATIONS

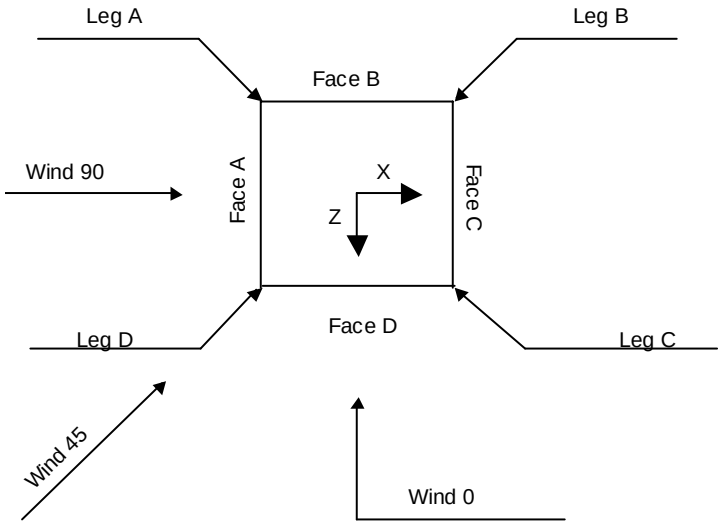
Tower Input Data

The main tower is a 4x free standing tower with an overall height of 204.75 ft above the ground line.
The base of the tower is set at an elevation of 79.58 ft above the ground line.
The face width of the tower is 9.21 ft at the top and 18.50 ft at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower base elevation above sea level: 108.60 ft.
Basic wind speed of 130 mph.
Risk Category II.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.00 ft.
Nominal ice thickness of 1.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Pressures are calculated at each section.
Stress ratio used in tower member 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



Square Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	204.75-194.83			9.21	1	9.92
T2	194.83-184.92			10.49	1	9.92
T3	184.92-175.00			11.78	1	9.92
T4	175.00-158.08			13.06	1	16.92
T5	158.08-154.58			15.17	1	3.50
T6	154.58-145.17			18.50	1	9.42
T7	145.17-114.21			18.50	1	30.96
T8	114.21-101.50			18.50	1	12.71
T9	101.50-97.75			18.50	1	3.75
T10	97.75-79.58			18.50	1	18.17

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	204.75-194.83	9.92	X Brace	No	Yes	0.0000	0.0000
T2	194.83-184.92	9.92	X Brace	No	Yes	0.0000	0.0000
T3	184.92-175.00	9.92	X Brace	No	Yes	0.0000	0.0000
T4	175.00-158.08	16.92	K2 Down	No	Yes	0.0000	0.0000
T5	158.08-154.58	3.50	X Brace	No	Yes	0.0000	0.0000
T6	154.58-145.17	9.42	K Brace Down	No	Yes	0.0000	0.0000
T7	145.17-114.21	15.48	K Brace Down	No	Yes	0.0000	0.0000
T8	114.21-101.50	12.71	K Brace Down	No	Yes	0.0000	0.0000
T9	101.50-97.75	3.75	X Brace	No	Yes	0.0000	0.0000

Tower Section	*Tower Elevation* *ft*	*Diagonal Spacing* *ft*	*Bracing Type*	*Has K Brace End Panels*	*Has Horizontals*	*Top Girt Offset* *in*	*Bottom Girt Offset* *in*
T10	97.75-79.58	18.17	X Brace	No	No	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation *ft*	*Leg Type*	*Leg Size*	*Leg Grade*	*Diagonal Type*	*Diagonal Size*	*Diagonal Grade*
T1 204.75-194.83	Single Angle	L5x5x1/2	A36 (36 ksi)	Double Angle	2L2 1/2x2x3/16x3/8	A36 (36 ksi)
T2 194.83-184.92	Single Angle	L5x5x1/2	A36 (36 ksi)	Double Angle	2L2 1/2x2x3/16x3/8	A36 (36 ksi)
T3 184.92-175.00	Single Angle	L5x5x1/2	A36 (36 ksi)	Double Angle	2L2 1/2x2x3/16x3/8	A36 (36 ksi)
T4 175.00-158.08	Single Angle	L6x6x7/8	A36 (36 ksi)	Double Angle	2L2 1/2x3 1/2x3/8x3/8	A36 (36 ksi)
T5 158.08-154.58	Tube	HSS6x6x5/8	A36 (36 ksi)	Double Angle		A36 (36 ksi)
T6 154.58-145.17	Wide Flange	W10x77	A36 (36 ksi)	Wide Flange	W8x31	A36 (36 ksi)
T7 145.17-114.21	Wide Flange	W10x77	A36 (36 ksi)	Wide Flange	W8x31	A36 (36 ksi)
T8 114.21-101.50	Wide Flange	W10x112	A36 (36 ksi)	Wide Flange	W8x31	A36 (36 ksi)
T9 101.50-97.75	Wide Flange	W10x112	A36 (36 ksi)	Tube		A36 (36 ksi)
T10 97.75-79.58	Wide Flange	W10x112	A36 (36 ksi)	Tube	HSS10x6x3/8	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation *ft*	*Top Girt Type*	*Top Girt Size*	*Top Girt Grade*	*Bottom Girt Type*	*Bottom Girt Size*	*Bottom Girt Grade*
T1 204.75-194.83	Channel	C8x11.5	A36 (36 ksi)	Equal Angle		A572-50 (50 ksi)
T2 194.83-184.92	Channel	C7x9.8	A36 (36 ksi)	Equal Angle		A572-50 (50 ksi)
T3 184.92-175.00	Equal Angle	L3x3x1/4	A36 (36 ksi)	Equal Angle		A572-50 (50 ksi)
T4 175.00-158.08	Double Equal Angle	2L2 1/2x2 1/2x1/4x3/16	A36 (36 ksi)	Wide Flange		A572-50 (50 ksi)
T5 158.08-154.58	Wide Flange	W12x53	A36 (36 ksi)	Wide Flange		A572-50 (50 ksi)
T6 154.58-145.17	Wide Flange	W18x65	A36 (36 ksi)	Wide Flange		A572-50 (50 ksi)
T7 145.17-114.21	Wide Flange	W10x39	A36 (36 ksi)	Wide Flange		A572-50 (50 ksi)
T8 114.21-101.50	Wide Flange	W10x39	A36 (36 ksi)	Wide Flange		A572-50 (50 ksi)
T9 101.50-97.75	Wide Flange	W10x39	A36 (36 ksi)	Wide Flange		A572-50 (50 ksi)
T10 97.75-79.58	Wide Flange	W10x77	A36	Wide Flange		A572-50

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
			(36 ksi)			(50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T4 175.00-158.08	None	Flat Bar		A36 (36 ksi)	Double Equal Angle	2L2 1/2x2 1/2x3/16x3/8	A36 (36 ksi)
T6 154.58-145.17	None	Flat Bar		A36 (36 ksi)	Wide Flange	W18x65	A36 (36 ksi)
T7 145.17-114.21	None	Flat Bar		A36 (36 ksi)	Wide Flange	W10x39	A36 (36 ksi)
T8 114.21-101.50	None	Flat Bar		A36 (36 ksi)	Wide Flange	W10x39	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T1 204.75-194.83	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)	Channel		A36 (36 ksi)
T2 194.83-184.92	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)	Channel		A36 (36 ksi)
T3 184.92-175.00	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)	Channel		A36 (36 ksi)
T4 175.00-158.08	Double Angle		A36 (36 ksi)	Single Angle	L3x3x3/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Redundant Bracing Grade		Redundant Type	Redundant Size	K Factor
T4 175.00-158.08	A36 (36 ksi)	Horizontal (1)	Double Angle	2L2 1/2x2 1/2x3/16x3/8	1
		Horizontal (2)		2L2 1/2x2 1/2x3/16x3/8	
		Diagonal (1)	Single Angle	L 2.5 x 2 x 3/16 LLV	1
		Diagonal (2)		L3x3x3/16	

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 204.75-194.83	0.00	0.3750	A36 (36 ksi)	1.03	1	1.05	20.0000	36.0000	36.0000
T2 194.83-184.92	0.00	0.3750	A36 (36 ksi)	1.03	1	1.05	20.0000	36.0000	36.0000
T3 184.92-175.00	0.00	0.3750	A36 (36 ksi)	1.03	1	1.05	20.0000	36.0000	36.0000
T4 175.00-158.08	0.00	0.3750	A36 (36 ksi)	1.03	1	1.05	23.0000	18.5000	17.0000
T5 158.08-154.58	0.00	0.0000	A36 (36 ksi)	1.03	1	1.05	36.0000	36.0000	36.0000
T6 154.58-145.17	0.00	0.5000	A36 (36 ksi)	0	0	1.05	36.0000	36.0000	36.0000
T7 145.17-114.21	0.00	0.5000	A36 (36 ksi)	0	0	1.05	36.0000	36.0000	36.0000
T8 114.21-101.50	0.00	0.0000	A36 (36 ksi)	0	0	1.05	36.0000	36.0000	36.0000
T9 101.50-97.75	0.00	0.5000	A36 (36 ksi)	0	0	1.05	36.0000	36.0000	36.0000
T10 97.75-79.58	0.00	0.6250	A36 (36 ksi)	0	0	1.05	36.0000	36.0000	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1	Yes	No	1	1	1	1	1	1	1	1
204.75-194.83				1	1	1	1	1	0.5	1
T2	Yes	No	1	1	1	1	1	1	1	1
194.83-184.92				1	1	1	1	1	0.5	1
T3	Yes	No	1	1	1	1	1	1	1	1
184.92-175.00				1	1	1	1	1	0.5	1
T4	Yes	No	1	1	1	1	1	1	1	1
175.00-158.08				1	1	1	1	1	1	1
T5	Yes	No	1	1	1	1	1	1	1	1
158.08-154.58				1	1	1	1	1	1	1
T6	Yes	No	1	1	1	1	1	1	1	1
154.58-145.17				1	1	1	1	1	1	1
T7	Yes	No	1	1	1	1	1	1	1	1
145.17-114.21				1	1	1	1	1	1	1
T8	Yes	No	1	1	1	1	1	1	1	1
114.21-101.50				1	1	1	1	1	1	1
T9	Yes	No	1	1	1	1	1	1	1	1
101.50-97.75				1	1	1	1	1	1	1
T10	Yes	No	1	1	1	1	1	1	1	1
97.75-79.58				1	1	1	1	1	1	1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 204.75-194.83	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T2 194.83-184.92	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T3 184.92-175.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T4 175.00-158.08	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T5 158.08-154.58	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T6 154.58-145.17	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T7 145.17-114.21	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T8 114.21-101.50	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T9 101.50-97.75	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T10 97.75-79.58	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 204.75-194.83	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 194.83-184.92	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 184.92-175.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 175.00-158.08	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 158.08-154.58	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 154.58-145.17	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 145.17-114.21	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 114.21-101.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 101.50-97.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 97.75-79.58	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 204.75-194.83	Flange	0.8750 A325N	0	0.7500 A325N	2	0.7500 A325N	2	0.0000 A325X	0	0.6250 A325N	0	0.0000 A325N	0	0.7500 A325N	2
T2 194.83-184.92	Flange	0.8750 A325N	0	0.7500 A325N	2	0.7500 A325N	2	0.0000 A325X	0	0.6250 A325N	0	0.0000 A325N	0	0.7500 A325N	2
T3 184.92-175.00	Sleeve DS	0.8750 A325N	8	0.7500 A325N	2	0.7500 A325N	2	0.0000 A325X	0	0.6250 A325N	0	0.0000 A325N	0	0.7500 A325N	2
T4 175.00-158.08	Sleeve DS	0.8750 A325N	8	0.7500 A325N	4	0.7500 A325N	2	0.0000 A325X	0	0.6250 A325N	0	0.0000 A325N	0	0.7500 A325N	0
T5 158.08-154.58	Flange	0.7500 A325N	0	0.7500 A325N	0	0.7500 A325N	0 *	0.0000 A325X	0	0.6250 A325N	0	0.0000 A325N	0	0.7500 A325N	0
T6 154.58-145.17	Sleeve SS	0.8750 A325N	0	0.8750 A325N	8	0.8570 A325N	6	0.0000 A325X	0	0.6250 A325N	0	0.8750 A325N	6	0.7500 A325N	0
T7 145.17-114.21	Sleeve SS	0.8750 A325N	0	0.8750 A325N	8	0.8750 A325N	6	0.0000 A325X	0	0.6250 A325N	0	0.8750 A325N	6	0.7500 A325N	0
T8 114.21-101.50	Sleeve SS	0.8750 A325N	0	0.8750 A325N	8	0.8750 A325N	6	0.0000 A325X	0	0.6250 A325N	0	0.8750 A325N	6	0.7500 A325N	0
T9 101.50-97.75	Flange	0.7500 A325N	0	0.8750 A325N	0	0.8750 A325N	6	0.0000 A325X	0	0.6250 A325N	0	0.0000 A325N	0	0.7500 A325N	0
T10 97.75-79.58	Flange	0.7500 A325N	0	0.8750 A325N	8	0.8750 A325N	6	0.0000 A325X	0	0.6250 A325N	0	0.0000 A325N	0	0.7500 A325N	0

* Out-of-plane partial restraint assumed

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 204.75-194.83	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 194.83-184.92	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 184.92-175.00	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T4 175.00-158.08	0.7500 A325N	2	0.7500 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T5 158.08-154.58	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T6 154.58-145.17	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T7 145.17-114.21	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T8 114.21-101.50	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T9 101.50-97.75	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T10 97.75-79.58	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
1" Metal Conduit	D	No	No	Ar (CaAa)	154.58 - 84.58	-12.000 0	0.28	1	1	1.0000	1.0000		1.13
1" Metal Conduit	D	No	No	Ar (CaAa)	204.75 - 154.58	-12.000 0	0.28	1	1	1.0000	1.0000		1.13
EW63	D	No	No	Ar (CaAa)	154.58 - 84.58	-12.000 0	0.4	2	2	1.5742	2.0100		0.51
EW63	D	No	No	Ar (CaAa)	204.75 - 154.58	-12.000 0	0.4	2	2	1.5742	2.0100		0.51
Feedline Ladder (Af)	B	No	No	Af (CaAa)	154.58 - 79.58	-12.000 0	-0.15	1	1	3.0000	3.0000		8.40
Feedline Ladder (Af) **	B	No	No	Af (CaAa)	198.58 - 154.58	-12.000 0	-0.35	1	1	3.0000	3.0000		8.40
LDF7-50A(1-5/8)	B	No	No	Ar (CaAa)	154.58 - 84.58	-18.000 0	-0.2	6	6	0.5000	1.9800		0.82
LDF7-50A(1-5/8)	B	No	No	Ar (CaAa)	194.58 - 154.58	-18.000 0	-0.3	6	6	0.5000	1.9800		0.82
LMR-240 (3/4 FOAM)	B	No	No	Ar (CaAa)	194.58 - 84.58	-18.000 0	-0.25	4	4	0.2500	0.2400		0.04
LDF2-50A(3/8) **	B	No	No	Ar (CaAa)	194.58 - 79.58	-12.000 0	-0.34	2	2	0.4400	0.4400		0.08
MLE Hybrid 9Power/18Fiber RL 2(1 5/8")	B	No	No	Ar (CaAa)	154.58 - 84.58	-12.000 0	-0.1	1	1	1.6250	1.6250		1.07
MLE Hybrid 9Power/18Fiber RL 2(1 5/8")	B	No	No	Ar (CaAa)	184.98 - 154.58	-12.000 0	-0.2	1	1	1.6250	1.6250		1.07
1/4 Coax	B	No	No	Ar (CaAa)	154.58 - 84.58	-12.000 0	-0.1	1	1	0.2500	0.2500		0.10
1/4 Coax **	B	No	No	Ar (CaAa)	159.98 - 154.58	-12.000 0	-0.1	1	1	0.2500	0.2500		0.10
MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	B	No	No	Ar (CaAa)	154.58 - 84.58	-12.000 0	0	3	3	0.5000	1.2500		0.68
MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	B	No	No	Ar (CaAa)	169.58 - 154.58	-12.000 0	-0.1	3	3	0.5000	1.2500		0.68
3/4" Coax	B	No	No	Ar (CaAa)	154.58 - 84.58	-12.000 0	0	6	6	0.7500	0.7500		3.00
3/4" Coax	B	No	No	Ar (CaAa)	169.58 - 154.58	-12.000 0	-0.01	6	6	0.7500	0.7500		3.00
3/8" Coax	B	No	No	Ar (CaAa)	154.58 - 84.58	-12.000 0	0	3	3	0.3750	0.3750		0.07
3/8" Coax **	B	No	No	Ar (CaAa)	169.58 - 154.58	-12.000 0	-0.1	3	3	0.3750	0.3750		0.07

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#		C_AA_A ft^2/ft	Weight plf
Safety Line 3/8	D	No	No	CaAa (In Face)	154.58 - 79.58	-18.000	-0.4	1	No	0.04	0.22
						0			Ice	0.14	0.75
									1/2" Ice	0.24	1.28
									1" Ice		
Safety Line 3/8	D	No	No	CaAa (In Face)	204.75 - 154.58	-18.000	-0.4	1	No	0.04	0.22
						0			Ice	0.14	0.75
									1/2" Ice	0.24	1.28
									1" Ice		
Climbing Ladder (Flat)	D	No	No	CaAa (In Face)	154.58 - 79.58	-18.000	-0.4	1	No	0.64	4.81
						0			Ice	0.75	6.97
									1/2" Ice	0.86	9.48
									1" Ice		
Climbing Ladder (Flat)	D	No	No	CaAa (In Face)	204.75 - 154.58	-18.000	-0.4	1	No	0.64	4.81
						0			Ice	0.75	6.97
									1/2" Ice	0.86	9.48
									1" Ice		
**											

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 lb
T1	204.75-194.83	A	0.000	0.000	0.000	0.000	0
		B	0.000	0.000	1.875	0.000	32
		C	0.000	0.000	0.000	0.000	0
		D	0.000	0.000	11.697	0.000	71
T2	194.83-184.92	A	0.000	0.000	0.000	0.000	0
		B	0.000	0.000	18.232	0.000	134
		C	0.000	0.000	0.000	0.000	0
		D	0.000	0.000	11.697	0.000	71
T3	184.92-175.00	A	0.000	0.000	0.000	0.000	0
		B	0.000	0.000	20.175	0.000	146
		C	0.000	0.000	0.000	0.000	0
		D	0.000	0.000	11.697	0.000	71
T4	175.00-158.08	A	0.000	0.000	0.000	0.000	0
		B	0.000	0.000	45.246	0.000	482
		C	0.000	0.000	0.000	0.000	0
		D	0.000	0.000	19.953	0.000	121
T5	158.08-154.58	A	0.000	0.000	0.000	0.000	0
		B	0.000	0.000	10.490	0.000	123
		C	0.000	0.000	0.000	0.000	0
		D	0.000	0.000	4.128	0.000	25
T6	154.58-145.17	A	0.000	0.000	0.000	0.000	0
		B	0.000	0.000	28.222	0.000	330
		C	0.000	0.000	0.000	0.000	0
		D	0.000	0.000	11.107	0.000	68
T7	145.17-114.21	A	0.000	0.000	0.000	0.000	0
		B	0.000	0.000	92.782	0.000	1086

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 lb
		C	0.000	0.000	0.000	0.000	0
		D	0.000	0.000	36.515	0.000	222
T8	114.21-101.50	A	0.000	0.000	0.000	0.000	0
		B	0.000	0.000	38.087	0.000	446
		C	0.000	0.000	0.000	0.000	0
		D	0.000	0.000	14.989	0.000	91
T9	101.50-97.75	A	0.000	0.000	0.000	0.000	0
		B	0.000	0.000	11.239	0.000	132
		C	0.000	0.000	0.000	0.000	0
		D	0.000	0.000	4.423	0.000	27
T10	97.75-79.58	A	0.000	0.000	0.000	0.000	0
		B	0.000	0.000	42.401	0.000	505
		C	0.000	0.000	0.000	0.000	0
		D	0.000	0.000	18.918	0.000	120

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 lb
T1	204.75-194.83	A	1.018	0.000	0.000	0.000	0.000	0
		B		0.000	0.000	2.638	0.000	55
		C		0.000	0.000	0.000	0.000	0
		D		0.000	0.000	24.695	0.000	235
T2	194.83-184.92	A	1.013	0.000	0.000	0.000	0.000	0
		B		0.000	0.000	37.695	0.000	413
		C		0.000	0.000	0.000	0.000	0
		D		0.000	0.000	24.646	0.000	234
T3	184.92-175.00	A	1.007	0.000	0.000	0.000	0.000	0
		B		0.000	0.000	42.010	0.000	460
		C		0.000	0.000	0.000	0.000	0
		D		0.000	0.000	24.594	0.000	233
T4	175.00-158.08	A	0.999	0.000	0.000	0.000	0.000	0
		B		0.000	0.000	104.458	0.000	1230
		C		0.000	0.000	0.000	0.000	0
		D		0.000	0.000	41.828	0.000	395
T5	158.08-154.58	A	0.993	0.000	0.000	0.000	0.000	0
		B		0.000	0.000	25.426	0.000	302
		C		0.000	0.000	0.000	0.000	0
		D		0.000	0.000	8.633	0.000	81
T6	154.58-145.17	A	0.989	0.000	0.000	0.000	0.000	0
		B		0.000	0.000	68.306	0.000	809
		C		0.000	0.000	0.000	0.000	0
		D		0.000	0.000	23.189	0.000	218
T7	145.17-114.21	A	0.975	0.000	0.000	0.000	0.000	0
		B		0.000	0.000	223.432	0.000	2636
		C		0.000	0.000	0.000	0.000	0
		D		0.000	0.000	75.814	0.000	710
T8	114.21-101.50	A	0.957	0.000	0.000	0.000	0.000	0
		B		0.000	0.000	91.136	0.000	1069
		C		0.000	0.000	0.000	0.000	0
		D		0.000	0.000	30.904	0.000	288
T9	101.50-97.75	A	0.949	0.000	0.000	0.000	0.000	0
		B		0.000	0.000	26.819	0.000	314
		C		0.000	0.000	0.000	0.000	0
		D		0.000	0.000	9.092	0.000	84
T10	97.75-79.58	A	0.938	0.000	0.000	0.000	0.000	0
		B		0.000	0.000	99.699	0.000	1177

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 lb
		C		0.000	0.000	0.000	0.000	0
		D		0.000	0.000	37.153	0.000	346

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	204.75-194.83	0.2974	3.1084	-0.8818	4.9906
T2	194.83-184.92	-4.1838	1.2153	-7.7656	0.6372
T3	184.92-175.00	-5.2463	0.6397	-9.2635	-0.6812
T4	175.00-158.08	-5.9187	-0.4001	-10.1753	-3.7442
T5	158.08-154.58	-4.0265	-0.6287	-8.1567	-4.3133
T6	154.58-145.17	-65.0557	-96.6977	-64.9323	-95.9573
T7	145.17-114.21	-65.0557	-96.6976	-64.9277	-95.9589
T8	114.21-101.50	-65.0557	-96.6976	-64.9218	-95.9609
T9	101.50-97.75	-65.0557	-96.6976	-64.9193	-95.9618
T10	97.75-79.58	-66.6579	-97.1084	-66.5192	-96.4295

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	2	1" Metal Conduit	194.83 - 204.75	0.6000	0.6000
T1	4	EW63	194.83 - 204.75	0.6000	0.6000
T1	6	Feedline Ladder (Af)	194.83 - 198.58	0.6000	0.6000
T1	30	Safety Line 3/8	194.83 - 204.75	0.6000	0.6000
T1	32	Climbing Ladder (Flat)	194.83 - 204.75	0.6000	0.6000
T2	2	1" Metal Conduit	184.92 - 194.83	0.6000	0.6000
T2	4	EW63	184.92 - 194.83	0.6000	0.6000
T2	6	Feedline Ladder (Af)	184.92 - 194.83	0.6000	0.6000
T2	11	LDF7-50A(1-5/8)	184.92 - 194.58	0.6000	0.6000
T2	12	LMR-240 (3/4 FOAM)	184.92 - 194.58	0.6000	0.6000
T2	13	LDF2-50A(3/8)	184.92 - 194.58	0.6000	0.6000
T2	19	MLE Hybrid 9Power/18Fiber RL 2(1 5/8")	184.92 - 184.98	0.6000	0.6000
T2	30	Safety Line 3/8	184.92 - 194.83	0.6000	0.6000
T2	32	Climbing Ladder (Flat)	184.92 - 194.83	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T3	2	1" Metal Conduit	175.00 - 184.92	0.6000	0.6000
T3	4	EW63	175.00 - 184.92	0.6000	0.6000
T3	6	Feedline Ladder (Af)	175.00 - 184.92	0.6000	0.6000
T3	11	LDF7-50A(1-5/8)	175.00 - 184.92	0.6000	0.6000
T3	12	LMR-240 (3/4 FOAM)	175.00 - 184.92	0.6000	0.6000
T3	13	LDF2-50A(3/8)	175.00 - 184.92	0.6000	0.6000
T3	19	MLE Hybrid 9Power/18Fiber RL 2(1 5/8")	175.00 - 184.92	0.6000	0.6000
T3	30	Safety Line 3/8	175.00 - 184.92	0.6000	0.6000
T3	32	Climbing Ladder (Flat)	175.00 - 184.92	0.6000	0.6000
T4	2	1" Metal Conduit	158.08 - 175.00	0.6000	0.6000
T4	4	EW63	158.08 - 175.00	0.6000	0.6000
T4	6	Feedline Ladder (Af)	158.08 - 175.00	0.6000	0.6000
T4	11	LDF7-50A(1-5/8)	158.08 - 175.00	0.6000	0.6000
T4	12	LMR-240 (3/4 FOAM)	158.08 - 175.00	0.6000	0.6000
T4	13	LDF2-50A(3/8)	158.08 - 175.00	0.6000	0.6000
T4	19	MLE Hybrid 9Power/18Fiber RL 2(1 5/8")	158.08 - 175.00	0.6000	0.6000
T4	21	1/4 Coax	158.08 - 159.98	0.6000	0.6000
T4	24	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	158.08 - 169.58	0.6000	0.6000
T4	26	3/4" Coax	158.08 - 169.58	0.6000	0.6000
T4	28	3/8" Coax	158.08 - 169.58	0.6000	0.6000
T4	30	Safety Line 3/8	158.08 - 175.00	0.6000	0.6000
T4	32	Climbing Ladder (Flat)	158.08 - 175.00	0.6000	0.6000
T5	2	1" Metal Conduit	154.58 - 158.08	0.6000	0.6000
T5	4	EW63	154.58 - 158.08	0.6000	0.6000
T5	6	Feedline Ladder (Af)	154.58 - 158.08	0.6000	0.6000
T5	11	LDF7-50A(1-5/8)	154.58 - 158.08	0.6000	0.6000
T5	12	LMR-240 (3/4 FOAM)	154.58 - 158.08	0.6000	0.6000
T5	13	LDF2-50A(3/8)	154.58 - 158.08	0.6000	0.6000
T5	19	MLE Hybrid 9Power/18Fiber RL 2(1 5/8")	154.58 - 158.08	0.6000	0.6000
T5	21	1/4 Coax	154.58 - 158.08	0.6000	0.6000
T5	24	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	154.58 - 158.08	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T5	26	3/4" Coax	154.58 - 158.08	0.6000	0.6000
T5	28	3/8" Coax	154.58 - 158.08	0.6000	0.6000
T5	30	Safety Line 3/8	154.58 - 158.08	0.6000	0.6000
T5	32	Climbing Ladder (Flat)	154.58 - 158.08	0.6000	0.6000
T6	1	1" Metal Conduit	145.17 - 154.58	0.0000	0.0000
T6	3	EW63	145.17 - 154.58	0.0000	0.0000
T6	5	Feedline Ladder (Af)	145.17 - 154.58	0.0000	0.0000
T6	10	LDF7-50A(1-5/8)	145.17 - 154.58	0.0000	0.0000
T6	12	LMR-240 (3/4 FOAM)	145.17 - 154.58	0.6000	0.6000
T6	13	LDF2-50A(3/8)	145.17 - 154.58	0.6000	0.6000
T6	18	MLE Hybrid 9Power/18Fiber RL 2(1 5/8")	145.17 - 154.58	0.0000	0.0000
T6	20	1/4 Coax	145.17 - 154.58	0.0000	0.0000
T6	23	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	145.17 - 154.58	0.0000	0.0000
T6	25	3/4" Coax	145.17 - 154.58	0.0000	0.0000
T6	27	3/8" Coax	145.17 - 154.58	0.0000	0.0000
T6	29	Safety Line 3/8	145.17 - 154.58	0.0000	0.0000
T6	31	Climbing Ladder (Flat)	145.17 - 154.58	0.0000	0.0000
T7	1	1" Metal Conduit	114.21 - 145.17	0.0000	0.0000
T7	3	EW63	114.21 - 145.17	0.0000	0.0000
T7	5	Feedline Ladder (Af)	114.21 - 145.17	0.0000	0.0000
T7	10	LDF7-50A(1-5/8)	114.21 - 145.17	0.0000	0.0000
T7	12	LMR-240 (3/4 FOAM)	114.21 - 145.17	0.6000	0.6000
T7	13	LDF2-50A(3/8)	114.21 - 145.17	0.6000	0.6000
T7	18	MLE Hybrid 9Power/18Fiber RL 2(1 5/8")	114.21 - 145.17	0.0000	0.0000
T7	20	1/4 Coax	114.21 - 145.17	0.0000	0.0000
T7	23	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	114.21 - 145.17	0.0000	0.0000
T7	25	3/4" Coax	114.21 - 145.17	0.0000	0.0000
T7	27	3/8" Coax	114.21 - 145.17	0.0000	0.0000
T7	29	Safety Line 3/8	114.21 - 145.17	0.0000	0.0000
T7	31	Climbing Ladder (Flat)	114.21 - 145.17	0.0000	0.0000
T8	1	1" Metal Conduit	101.50 - 114.21	0.0000	0.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T8	3	EW63	101.50 - 114.21	0.0000	0.0000
T8	5	Feedline Ladder (Af)	101.50 - 114.21	0.0000	0.0000
T8	10	LDF7-50A(1-5/8)	101.50 - 114.21	0.0000	0.0000
T8	12	LMR-240 (3/4 FOAM)	101.50 - 114.21	0.6000	0.6000
T8	13	LDF2-50A(3/8)	101.50 - 114.21	0.6000	0.6000
T8	18	MLE Hybrid 9Power/18Fiber RL 2(1 5/8")	101.50 - 114.21	0.0000	0.0000
T8	20	1/4 Coax	101.50 - 114.21	0.0000	0.0000
T8	23	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	101.50 - 114.21	0.0000	0.0000
T8	25	3/4" Coax	101.50 - 114.21	0.0000	0.0000
T8	27	3/8" Coax	101.50 - 114.21	0.0000	0.0000
T8	29	Safety Line 3/8	101.50 - 114.21	0.0000	0.0000
T8	31	Climbing Ladder (Flat)	101.50 - 114.21	0.0000	0.0000
T9	1	1" Metal Conduit	97.75 - 101.50	0.0000	0.0000
T9	3	EW63	97.75 - 101.50	0.0000	0.0000
T9	5	Feedline Ladder (Af)	97.75 - 101.50	0.0000	0.0000
T9	10	LDF7-50A(1-5/8)	97.75 - 101.50	0.0000	0.0000
T9	12	LMR-240 (3/4 FOAM)	97.75 - 101.50	0.6000	0.6000
T9	13	LDF2-50A(3/8)	97.75 - 101.50	0.6000	0.6000
T9	18	MLE Hybrid 9Power/18Fiber RL 2(1 5/8")	97.75 - 101.50	0.0000	0.0000
T9	20	1/4 Coax	97.75 - 101.50	0.0000	0.0000
T9	23	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	97.75 - 101.50	0.0000	0.0000
T9	25	3/4" Coax	97.75 - 101.50	0.0000	0.0000
T9	27	3/8" Coax	97.75 - 101.50	0.0000	0.0000
T9	29	Safety Line 3/8	97.75 - 101.50	0.0000	0.0000
T9	31	Climbing Ladder (Flat)	97.75 - 101.50	0.0000	0.0000
T10	1	1" Metal Conduit	84.58 - 97.75	0.0000	0.0000
T10	3	EW63	84.58 - 97.75	0.0000	0.0000
T10	5	Feedline Ladder (Af)	79.58 - 97.75	0.0000	0.0000
T10	10	LDF7-50A(1-5/8)	84.58 - 97.75	0.0000	0.0000
T10	12	LMR-240 (3/4 FOAM)	84.58 - 97.75	0.6000	0.6000
T10	13	LDF2-50A(3/8)	79.58 - 97.75	0.6000	0.6000
T10	18	MLE Hybrid 9Power/18Fiber RL 2(1 5/8")	84.58 - 97.75	0.0000	0.0000
T10	20	1/4 Coax	84.58 - 97.75	0.0000	0.0000
T10	23	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	84.58 - 97.75	0.0000	0.0000
T10	25	3/4" Coax	84.58 - 97.75	0.0000	0.0000
T10	27	3/8" Coax	84.58 - 97.75	0.0000	0.0000
T10	29	Safety Line 3/8	79.58 - 97.75	0.0000	0.0000
T10	31	Climbing Ladder (Flat)	79.58 - 97.75	0.0000	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* *lb*
10' L x 3.5' W Vertical Truss Frame	C	From Face	0.00 8.00 5.00	0.0000	204.75	No Ice 1/2" Ice 1" Ice	55.00 60.00 65.00	55.00 60.00 65.00	750 1000 1250
10' L x 3.5' W Vertical Truss Frame	D	From Face	0.00 8.00 5.00	0.0000	204.75	No Ice 1/2" Ice 1" Ice	55.00 60.00 65.00	55.00 60.00 65.00	750 1000 1250
12" x 24" Beacon	B	From Face	0.00 0.00 12.00	0.0000	204.75	No Ice 1/2" Ice 1" Ice	1.00 1.58 1.77	1.00 1.58 1.77	30 50 72
8-FT Extension Mount	B	From Face	0.00 0.00 4.00	0.0000	204.75	No Ice 1/2" Ice 1" Ice	10.07 11.36 12.65	10.07 11.36 12.65	259 325 391
5/8" x 4' Lightning Rod	B	From Face	0.00 0.00 11.50	0.0000	204.75	No Ice 1/2" Ice 1" Ice	0.25 0.66 0.97	0.25 0.66 0.97	4 7 12
**									
26x26 Top Platform Mount	C	None		0.0000	204.75	No Ice 1/2" Ice 1" Ice	190.00 220.00 250.00	190.00 220.00 250.00	10000 15500 21000
3.5" dia x 10' Pipe	D	From Face	8.00 0.00 0.00	0.0000	198.58	No Ice 1/2" Ice 1" Ice	3.14 4.54 5.30	3.14 4.54 5.30	76 101 132
AIR 6419 B77G w/ 2.9" x 8' MP	B	From Leg	6.00 0.00 4.50	0.0000	194.58	No Ice 1/2" Ice 1" Ice	5.73 6.56 7.16	4.32 5.36 6.06	90 144 205
AIR 6419 B77G w/ 2.9" x 8' MP	C	From Leg	6.00 0.00 4.50	0.0000	194.58	No Ice 1/2" Ice 1" Ice	5.73 6.56 7.16	4.32 5.36 6.06	90 144 205
AIR 6419 B77G w/ 2.9" x 8' MP	D	From Leg	6.00 0.00 4.50	0.0000	194.58	No Ice 1/2" Ice 1" Ice	5.73 6.56 7.16	4.32 5.36 6.06	90 144 205
AIR 6449 B77D	B	From Leg	6.00 0.00 -0.50	0.0000	194.58	No Ice 1/2" Ice 1" Ice	4.02 4.28 4.55	2.14 2.35 2.57	82 111 144
AIR 6449 B77D	C	From Leg	6.00 0.00 -0.50	0.0000	194.58	No Ice 1/2" Ice 1" Ice	4.02 4.28 4.55	2.14 2.35 2.57	82 111 144
AIR 6449 B77D	D	From Leg	6.00 0.00 -0.50	0.0000	194.58	No Ice 1/2" Ice 1" Ice	4.02 4.28 4.55	2.14 2.35 2.57	82 111 144
SBNHH-1D65A w/ Mount Pipe	B	From Leg	6.00 0.00 2.00	0.0000	194.58	No Ice 1/2" Ice 1" Ice	6.29 6.74 7.20	5.59 6.31 7.03	68 126 191
SBNHH-1D65A w/ Mount Pipe	C	From Leg	6.00 0.00 2.00	0.0000	194.58	No Ice 1/2" Ice 1" Ice	6.29 6.74 7.20	5.59 6.31 7.03	68 126 191
SBNHH-1D65A w/ Mount Pipe	D	From Leg	6.00 0.00 2.00	0.0000	194.58	No Ice 1/2" Ice 1" Ice	6.29 6.74 7.20	5.59 6.31 7.03	68 126 191
(2) 2.4" Dia x 6-ft Pipe	A	From Leg	6.00 0.00 2.00	0.0000	194.58	No Ice 1/2" Ice 1" Ice	1.43 1.93 2.30	1.43 1.93 2.30	22 33 48
(2) 2.4" Dia x 6-ft Pipe	B	From Leg	6.00 0.00	0.0000	194.58	No Ice 1/2" Ice	1.43 1.93	1.43 1.93	22 33

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 lb
			2.00			1" Ice	2.30	2.30	48
(2) 2.4" Dia x 6-ft Pipe	C	From Leg	6.00	0.0000	194.58	No Ice	1.43	1.43	22
			0.00			1/2" Ice	1.93	1.93	33
			2.00			1" Ice	2.30	2.30	48
(2) 2.4" Dia x 6-ft Pipe	D	From Leg	6.00	0.0000	194.58	No Ice	1.43	1.43	22
			0.00			1/2" Ice	1.93	1.93	33
			2.00			1" Ice	2.30	2.30	48
DC6-48-60-18-8F	B	From Leg	6.00	0.0000	194.58	No Ice	0.85	0.85	19
			0.00			1/2" Ice	1.36	1.36	36
			2.00			1" Ice	1.53	1.53	55
DC6-48-60-18-8F	C	From Leg	6.00	0.0000	194.58	No Ice	0.85	0.85	19
			0.00			1/2" Ice	1.36	1.36	36
			2.00			1" Ice	1.53	1.53	55
**									
10-ft x 3" Pole Mount	C	From Face	8.00	0.0000	204.75	No Ice	3.00	3.00	58
			0.00			1/2" Ice	4.03	4.03	80
			10.00			1" Ice	5.03	5.03	108
**									
Pipe Mount [PM 601-1]	D	From Face	8.00	0.0000	204.75	No Ice	1.32	1.32	65
			0.00			1/2" Ice	1.58	1.58	77
			10.00			1" Ice	1.84	1.84	93
**									
Face Walkway	A	From Face	2.00	0.0000	192.18	No Ice	35.72	35.72	1000
			0.00			1/2" Ice	45.00	45.00	1250
			0.00			1" Ice	54.28	54.28	1500
Face Walkway	B	From Face	2.00	0.0000	192.18	No Ice	35.72	35.72	1000
			0.00			1/2" Ice	45.00	45.00	1250
			0.00			1" Ice	54.28	54.28	1500
Face Walkway	C	From Face	2.00	0.0000	192.18	No Ice	35.72	35.72	1000
			0.00			1/2" Ice	45.00	45.00	1250
			0.00			1" Ice	54.28	54.28	1500
Face Walkway	D	From Face	2.00	0.0000	192.18	No Ice	35.72	35.72	1000
			0.00			1/2" Ice	45.00	45.00	1250
			0.00			1" Ice	54.28	54.28	1500
(2) 4' L x 6' W Rest Platform	A	From Leg	2.00	0.0000	192.18	No Ice	8.05	14.00	475
			0.00			1/2" Ice	10.00	17.50	600
			0.00			1" Ice	11.95	21.00	725
(2) 4' L x 6' W Rest Platform	B	From Leg	2.00	0.0000	192.18	No Ice	8.05	14.00	475
			0.00			1/2" Ice	10.00	17.50	600
			0.00			1" Ice	11.95	21.00	725
(2) 4' L x 6' W Rest Platform	C	From Leg	2.00	0.0000	192.18	No Ice	8.05	14.00	475
			0.00			1/2" Ice	10.00	17.50	600
			0.00			1" Ice	11.95	21.00	725
(2) 4' L x 6' W Rest Platform	D	From Leg	2.00	0.0000	192.18	No Ice	8.05	14.00	475
			0.00			1/2" Ice	10.00	17.50	600
			0.00			1" Ice	11.95	21.00	725
**									
SitePro VFA8-SD (1)	B	From Leg	2.00	-15.0000	184.98	No Ice	9.60	8.60	473
			0.00			1/2" Ice	14.50	13.30	587
			0.00			1" Ice	19.40	18.00	701
SitePro VFA8-SD (1)	C	From Leg	2.00	15.0000	184.98	No Ice	9.60	8.60	473
			0.00			1/2" Ice	14.50	13.30	587
			0.00			1" Ice	19.40	18.00	701
SitePro VFA8-SD (1)	D	From Leg	2.00	45.0000	184.98	No Ice	9.60	8.60	473
			0.00			1/2" Ice	14.50	13.30	587
			0.00			1" Ice	19.40	18.00	701
MX08FRO665-21 w/ Mount	B	From Leg	4.00	-15.0000	184.98	No Ice	12.73	7.53	90

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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 lb
Pipe			0.00			1/2" Ice	13.33	8.72	182
			0.00			1" Ice	13.89	9.62	283
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.00	15.0000	184.98	No Ice	12.73	7.53	90
			0.00			1/2" Ice	13.33	8.72	182
			0.00			1" Ice	13.89	9.62	283
MX08FRO665-21 w/ Mount Pipe	D	From Leg	4.00	45.0000	184.98	No Ice	12.73	7.53	90
			0.00			1/2" Ice	13.33	8.72	182
			0.00			1" Ice	13.89	9.62	283
TA08025-B605 w/ Mount Pipe	B	From Leg	4.00	-15.0000	184.98	No Ice	3.09	2.55	97
			0.00			1/2" Ice	3.66	3.19	131
			0.00			1" Ice	4.14	3.71	169
TA08025-B605 w/ Mount Pipe	C	From Leg	4.00	15.0000	184.98	No Ice	3.09	2.55	97
			0.00			1/2" Ice	3.66	3.19	131
			0.00			1" Ice	4.14	3.71	169
TA08025-B605 w/ Mount Pipe	D	From Leg	4.00	45.0000	184.98	No Ice	3.09	2.55	97
			0.00			1/2" Ice	3.66	3.19	131
			0.00			1" Ice	4.14	3.71	169
TA08025-B604 w/ Mount Pipe	B	From Leg	4.00	-15.0000	184.98	No Ice	3.09	2.41	86
			0.00			1/2" Ice	3.66	3.04	118
			0.00			1" Ice	4.14	3.54	155
TA08025-B604 w/ Mount Pipe	C	From Leg	4.00	15.0000	184.98	No Ice	3.09	2.41	86
			0.00			1/2" Ice	3.66	3.04	118
			0.00			1" Ice	4.14	3.54	155
TA08025-B604 w/ Mount Pipe	D	From Leg	4.00	45.0000	184.98	No Ice	3.09	2.41	86
			0.00			1/2" Ice	3.66	3.04	118
			0.00			1" Ice	4.14	3.54	155
RDIDC-9181-PF-48	C	From Leg	4.00	15.0000	184.98	No Ice	2.01	1.17	22
			0.00			1/2" Ice	2.19	1.31	40
			0.00			1" Ice	2.37	1.46	60
GPS Passive Antenna	C	From Leg	0.00	0.0000	159.98	No Ice	0.02	0.02	0
			0.00			1/2" Ice	0.04	0.04	1
			0.00			1" Ice	0.08	0.08	2
**									
3.5" Dia. x 16" (Horizontal Pipe)	A	From Face	0.00	0.0000	168.08	No Ice	0.11	0.11	6
			0.00			1/2" Ice	0.22	0.22	10
			0.00			1" Ice	0.29	0.29	15
3.5" Dia. x 16" (Horizontal Pipe)	A	From Face	0.00	0.0000	166.58	No Ice	0.11	0.11	6
			0.00			1/2" Ice	0.22	0.22	10
			0.00			1" Ice	0.29	0.29	15
3.5" Dia. x 16" (Horizontal Pipe)	C	From Face	0.00	0.0000	168.08	No Ice	0.11	0.11	6
			0.00			1/2" Ice	0.22	0.22	10
			0.00			1" Ice	0.29	0.29	15
3.5" Dia. x 16" (Horizontal Pipe)	C	From Face	0.00	0.0000	166.58	No Ice	0.11	0.11	6
			0.00			1/2" Ice	0.22	0.22	10
			0.00			1" Ice	0.29	0.29	15
3.5" Dia. x 16" (Horizontal Pipe)	D	From Face	0.00	0.0000	168.08	No Ice	0.11	0.11	6
			0.00			1/2" Ice	0.22	0.22	10
			0.00			1" Ice	0.29	0.29	15
3.5" Dia. x 16" (Horizontal Pipe)	D	From Face	0.00	0.0000	166.58	No Ice	0.11	0.11	6
			0.00			1/2" Ice	0.22	0.22	10
			0.00			1" Ice	0.29	0.29	15
1900MHZ 4X45W-65MHZ	A	From Leg	2.00	0.0000	170.08	No Ice	2.31	2.23	60
			0.00			1/2" Ice	2.52	2.43	83
			0.00			1" Ice	2.73	2.64	109
1900MHZ 4X45W-65MHZ	C	From Leg	2.00	0.0000	170.08	No Ice	2.31	2.23	60
			0.00			1/2" Ice	2.52	2.43	83
			0.00			1" Ice	2.73	2.64	109

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 lb
1900MHZ 4X45W-65MHZ	D	From Leg	2.00	0.0000	170.08	No Ice	2.31	2.23	60
			0.00			1/2" Ice	2.52	2.43	83
			0.00			1" Ice	2.73	2.64	109
(2) 800MHZ 2X50W RRH	A	From Leg	2.00	0.0000	166.88	No Ice	2.13	1.77	53
			0.00			1/2" Ice	2.32	1.95	74
			0.00			1" Ice	2.51	2.13	98
(2) 800MHZ 2X50W RRH	C	From Leg	2.00	0.0000	166.88	No Ice	2.13	1.77	53
			0.00			1/2" Ice	2.32	1.95	74
			0.00			1" Ice	2.51	2.13	98
(2) 800MHZ 2X50W RRH	C	From Leg	2.00	0.0000	166.88	No Ice	2.13	1.77	53
			0.00			1/2" Ice	2.32	1.95	74
			0.00			1" Ice	2.51	2.13	98
NNVV-65B-R4 w/ Mount Pipe	A	From Leg	2.00	0.0000	173.08	No Ice	12.51	7.41	103
			0.00			1/2" Ice	13.11	8.60	194
			0.00			1" Ice	13.67	9.50	293
NNVV-65B-R4 w/ Mount Pipe	C	From Leg	2.00	0.0000	173.08	No Ice	12.51	7.41	103
			0.00			1/2" Ice	13.11	8.60	194
			0.00			1" Ice	13.67	9.50	293
NNVV-65B-R4 w/ Mount Pipe	D	From Leg	2.00	0.0000	173.08	No Ice	12.51	7.41	103
			0.00			1/2" Ice	13.11	8.60	194
			0.00			1" Ice	13.67	9.50	293
AAHC w/ Mount Pipe	A	From Leg	2.00	0.0000	173.58	No Ice	4.41	2.69	115
			0.00			1/2" Ice	4.73	3.08	156
			0.00			1" Ice	5.06	3.49	202
AAHC w/ Mount Pipe	C	From Leg	2.00	0.0000	173.58	No Ice	4.41	2.69	115
			0.00			1/2" Ice	4.73	3.08	156
			0.00			1" Ice	5.06	3.49	202
AAHC w/ Mount Pipe	D	From Leg	2.00	0.0000	173.58	No Ice	4.41	2.69	115
			0.00			1/2" Ice	4.73	3.08	156
			0.00			1" Ice	5.06	3.49	202
Combiner (12"x6"x2")	A	From Leg	2.00	0.0000	164.58	No Ice	0.60	0.23	10
			0.00			1/2" Ice	0.70	0.30	14
			0.00			1" Ice	0.81	0.39	20
Combiner (12"x6"x2")	C	From Leg	2.00	0.0000	164.58	No Ice	0.60	0.23	10
			0.00			1/2" Ice	0.70	0.30	14
			0.00			1" Ice	0.81	0.39	20
Combiner (12"x6"x2")	D	From Leg	2.00	0.0000	164.58	No Ice	0.60	0.23	10
			0.00			1/2" Ice	0.70	0.30	14
			0.00			1" Ice	0.81	0.39	20
**									
Tower Panel 33'x18.5'	A	None		0.0000	112.58 - 79.58	No Ice	1282.05	1282.05	25100
						1/2" Ice	1400.00	1400.00	36500
						1" Ice	1517.95	1517.95	47900
Tower Panel 31'x18.5'	A	None		0.0000	143.58 - 112.58	No Ice	1204.35	1204.35	23500
						1/2" Ice	1350.00	1350.00	34000
						1" Ice	1495.65	1495.65	44500
Tower Panel 15'x18.5'	A	None		0.0000	154.58 - 143.58	No Ice	582.75	582.75	11390
						1/2" Ice	650.00	650.00	16500
						1" Ice	717.25	717.25	21610
**									
HSS4"x7"x0.365"x18.5-ft Long	A	From Face	0.50	0.0000	87.58	No Ice	12.33	21.58	500
			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft Long	B	From Face	0.50	0.0000	87.58	No Ice	12.33	21.58	500
			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	C	From Face	0.50	0.0000	87.58	No Ice	12.33	21.58	500

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 lb
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	D	From Face	0.50	0.0000	87.58	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
**									
HSS4"x7"x0.365"x18.5-ft	A	From Face	0.50	0.0000	91.83	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	B	From Face	0.50	0.0000	91.83	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	C	From Face	0.50	0.0000	91.83	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	D	From Face	0.50	0.0000	91.83	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
**									
HSS4"x7"x0.365"x18.5-ft	A	From Face	0.50	0.0000	96.83	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	B	From Face	0.50	0.0000	96.83	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	C	From Face	0.50	0.0000	96.83	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	D	From Face	0.50	0.0000	96.83	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
**									
HSS4"x7"x0.365"x18.5-ft	A	From Face	0.50	0.0000	102.08	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	B	From Face	0.50	0.0000	102.08	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	C	From Face	0.50	0.0000	102.08	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	D	From Face	0.50	0.0000	102.08	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
**									
HSS4"x7"x0.365"x18.5-ft	A	From Face	0.50	0.0000	106.66	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	B	From Face	0.50	0.0000	106.66	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	C	From Face	0.50	0.0000	106.66	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	D	From Face	0.50	0.0000	106.66	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691

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 lb
**									
HSS4"x7"x0.365"x18.5-ft Long	A	From Face	0.50 0.00 0.00	0.0000	111.83	No Ice 1/2" Ice 1" Ice	12.33 14.43 16.54	21.58 23.71 25.85	500 588 691
HSS4"x7"x0.365"x18.5-ft Long	B	From Face	0.50 0.00 0.00	0.0000	111.83	No Ice 1/2" Ice 1" Ice	12.33 14.43 16.54	21.58 23.71 25.85	500 588 691
HSS4"x7"x0.365"x18.5-ft Long	C	From Face	0.50 0.00 0.00	0.0000	111.83	No Ice 1/2" Ice 1" Ice	12.33 14.43 16.54	21.58 23.71 25.85	500 588 691
HSS4"x7"x0.365"x18.5-ft Long	D	From Face	0.50 0.00 0.00	0.0000	111.83	No Ice 1/2" Ice 1" Ice	12.33 14.43 16.54	21.58 23.71 25.85	500 588 691
**									
HSS4"x7"x0.365"x18.5-ft Long	A	From Face	0.50 0.00 0.00	0.0000	117.83	No Ice 1/2" Ice 1" Ice	12.33 14.43 16.54	21.58 23.71 25.85	500 588 691
HSS4"x7"x0.365"x18.5-ft Long	B	From Face	0.50 0.00 0.00	0.0000	117.83	No Ice 1/2" Ice 1" Ice	12.33 14.43 16.54	21.58 23.71 25.85	500 588 691
HSS4"x7"x0.365"x18.5-ft Long	C	From Face	0.50 0.00 0.00	0.0000	117.83	No Ice 1/2" Ice 1" Ice	12.33 14.43 16.54	21.58 23.71 25.85	500 588 691
HSS4"x7"x0.365"x18.5-ft Long	D	From Face	0.50 0.00 0.00	0.0000	117.83	No Ice 1/2" Ice 1" Ice	12.33 14.43 16.54	21.58 23.71 25.85	500 588 691
**									
HSS4"x7"x0.365"x18.5-ft Long	A	From Face	0.50 0.00 0.00	0.0000	123.08	No Ice 1/2" Ice 1" Ice	12.33 14.43 16.54	21.58 23.71 25.85	500 588 691
HSS4"x7"x0.365"x18.5-ft Long	B	From Face	0.50 0.00 0.00	0.0000	123.08	No Ice 1/2" Ice 1" Ice	12.33 14.43 16.54	21.58 23.71 25.85	500 588 691
HSS4"x7"x0.365"x18.5-ft Long	C	From Face	0.50 0.00 0.00	0.0000	123.08	No Ice 1/2" Ice 1" Ice	12.33 14.43 16.54	21.58 23.71 25.85	500 588 691
HSS4"x7"x0.365"x18.5-ft Long	D	From Face	0.50 0.00 0.00	0.0000	123.08	No Ice 1/2" Ice 1" Ice	12.33 14.43 16.54	21.58 23.71 25.85	500 588 691
**									
HSS4"x7"x0.365"x18.5-ft Long	A	From Face	0.50 0.00 0.00	0.0000	128.33	No Ice 1/2" Ice 1" Ice	12.33 14.43 16.54	21.58 23.71 25.85	500 588 691
HSS4"x7"x0.365"x18.5-ft Long	B	From Face	0.50 0.00 0.00	0.0000	128.33	No Ice 1/2" Ice 1" Ice	12.33 14.43 16.54	21.58 23.71 25.85	500 588 691
HSS4"x7"x0.365"x18.5-ft Long	C	From Face	0.50 0.00 0.00	0.0000	128.33	No Ice 1/2" Ice 1" Ice	12.33 14.43 16.54	21.58 23.71 25.85	500 588 691
HSS4"x7"x0.365"x18.5-ft Long	D	From Face	0.50 0.00 0.00	0.0000	128.33	No Ice 1/2" Ice 1" Ice	12.33 14.43 16.54	21.58 23.71 25.85	500 588 691
**									
HSS4"x7"x0.365"x18.5-ft Long	A	From Face	0.50 0.00 0.00	0.0000	133.58	No Ice 1/2" Ice 1" Ice	12.33 14.43 16.54	21.58 23.71 25.85	500 588 691
HSS4"x7"x0.365"x18.5-ft	B	From Face	0.50	0.0000	133.58	No Ice	12.33	21.58	500

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 lb
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	C	From Face	0.50	0.0000	133.58	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	D	From Face	0.50	0.0000	133.58	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
**									
HSS4"x7"x0.365"x18.5-ft	A	From Face	0.50	0.0000	138.83	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	B	From Face	0.50	0.0000	138.83	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	C	From Face	0.50	0.0000	138.83	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	D	From Face	0.50	0.0000	138.83	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
**									
HSS4"x7"x0.365"x18.5-ft	A	From Face	0.50	0.0000	144.00	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	B	From Face	0.50	0.0000	144.00	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	C	From Face	0.50	0.0000	144.00	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	D	From Face	0.50	0.0000	144.00	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
**									
HSS4"x7"x0.365"x18.5-ft	A	From Face	0.50	0.0000	148.16	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	B	From Face	0.50	0.0000	148.16	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	C	From Face	0.50	0.0000	148.16	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	D	From Face	0.50	0.0000	148.16	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
**									
HSS4"x7"x0.365"x18.5-ft	A	From Face	0.50	0.0000	153.33	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	B	From Face	0.50	0.0000	153.33	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691
HSS4"x7"x0.365"x18.5-ft	C	From Face	0.50	0.0000	153.33	No Ice	12.33	21.58	500
Long			0.00			1/2" Ice	14.43	23.71	588
			0.00			1" Ice	16.54	25.85	691

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 lb
HSS4"x7"x0.365"x18.5-ft Long **	D	From Face	0.50 0.00 0.00	0.0000	153.33	No Ice 1/2" Ice 1" Ice	12.33 14.43 16.54	21.58 23.71 25.85	500 588 691
HSS4"x7"x0.365"x18.5-ft Long	A	From Face	0.50 0.00 0.00	0.0000	154.58	No Ice 1/2" Ice 1" Ice	12.33 14.43 16.54	21.58 23.71 25.85	500 588 691
HSS4"x7"x0.365"x18.5-ft Long	B	From Face	0.50 0.00 0.00	0.0000	154.58	No Ice 1/2" Ice 1" Ice	12.33 14.43 16.54	21.58 23.71 25.85	500 588 691
HSS4"x7"x0.365"x18.5-ft Long	C	From Face	0.50 0.00 0.00	0.0000	154.58	No Ice 1/2" Ice 1" Ice	12.33 14.43 16.54	21.58 23.71 25.85	500 588 691
HSS4"x7"x0.365"x18.5-ft Long	D	From Face	0.50 0.00 0.00	0.0000	154.58	No Ice 1/2" Ice 1" Ice	12.33 14.43 16.54	21.58 23.71 25.85	500 588 691

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight lb
USR10P-59FP	C	Paraboloid w/Shroud (HP)	From Face	1.50 8.00 10.00	90.0000		204.75	10.54	No Ice 1/2" Ice 1" Ice	87.28 88.66 90.05	605 1000 2000
USR10P-59FP	D	Paraboloid w/Shroud (HP)	From Face	1.50 8.00 10.00	10.0000		204.75	10.54	No Ice 1/2" Ice 1" Ice	87.28 88.66 90.05	605 1000 2000

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load per Bolt lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	204.75	Diagonal	A325N	0.7500	2	4127	15701	0.263	1.05	Member Block Shear
		Secondary Horizontal	A325N	0.7500	2	140	7850	0.018	1.05	Member Block Shear
		Top Girt	A325N	0.7500	2	380	14738	0.026	1.05	Member Bearing
T2	194.833	Diagonal	A325N	0.7500	2	5689	15701	0.362	1.05	Member Block Shear
		Secondary Horizontal	A325N	0.7500	2	642	7850	0.082	1.05	Member Block Shear
		Top Girt	A325N	0.7500	2	1540	14068	0.109	1.05	Member Bearing
T3	184.917	Leg	A325N	0.8750	8	14222	43935	0.324	1.05	Bearing

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load per Bolt lb	Ratio Load / Allowable	Allowable Ratio	Criteria
		Diagonal	A325N	0.7500	2	5646	15701	0.360	1.05	Member Block Shear
		Secondary Horizontal	A325N	0.7500	2	428	7850	0.054	1.05	Member Block Shear
		Top Girt	A325N	0.7500	2	2271	11147	0.204	1.05	Member Block Shear
T4	175	Leg	A325N	0.8750	8	17920	54119	0.331	1.05	Bolt DS
		Diagonal	A325N	0.7500	4	6128	28221	0.217	1.05	Gusset Bearing
		Top Girt	A325N	0.7500	2	5325	20934	0.254	1.05	Member Block Shear
		Redund Horz 1 Bracing	A325N	0.7500	2	539	15701	0.034	1.05	Member Block Shear
		Redund Horz 2 Bracing	A325N	0.7500	2	539	15701	0.034	1.05	Member Block Shear
		Redund Diag 1 Bracing	A325N	0.7500	2	735	7850	0.094	1.05	Member Block Shear
		Redund Diag 2 Bracing	A325N	0.7500	2	428	8360	0.051	1.05	Member Block Shear
T6	154.583	Diagonal	A325N	0.8750	8	2562	27059	0.095	1.05	Bolt Shear
		Top Girt	A325N	0.8570	6	5073	25958	0.195	1.05	Bolt Shear
T7	145.167	Diagonal	A325N	0.8750	8	6963	27059	0.257	1.05	Bolt Shear
		Horizontal	A325N	0.8750	6	4734	27059	0.175	1.05	Bolt Shear
		Top Girt	A325N	0.8750	6	3989	27059	0.147	1.05	Bolt Shear
T8	114.208	Diagonal	A325N	0.8750	8	8188	26407	0.310	1.05	Member Bearing
		Top Girt	A325N	0.8750	6	6528	27059	0.241	1.05	Bolt Shear
T9	101.5	Top Girt	A325N	0.8750	6	2287	27059	0.085	1.05	Bolt Shear
T10	97.75	Diagonal	A325N	0.8750	8	9374	27059	0.346	1.05	Bolt Shear
		Top Girt	A325N	0.8750	6	6715	27059	0.248	1.05	Bolt Shear

Project Name:	New London CO	**Engineer:**	AJW
Project Number:	TEP No. 263245.837969	**Check:**	SDJ
Client Site Number:	638284	**Date:**	4/13/2023

Double Angle Kicker Connection Check

Input - Properties

Elevation:	0-18.17	ft - elevation of angle brace
F_y:	36.00	ksi - yield stress of angle brace
F_u:	58.00	ksi - tensile stress of angle brace
Member Size:	L3X3X1/2	- member considered (connecting leg first)
Type:	Double	- member type (single or double channel)
d_{bolt}:	0.875	in - bolt diameter
Type:	A325-N	- bolt type (X - threads excluded, N - threads included)
n:	10	- number of bolts in a single line
d_{hole}:	0.9375	in - drill hole diameter
Min. Edge:	1.125	in - minimum edge distance (center of hole to edge of member)
Bolt Spacing:	2.250	in - minimum bolt spacing (center to center)
Gage:	2.000	in - gage distance (heel of angle to center of hole)

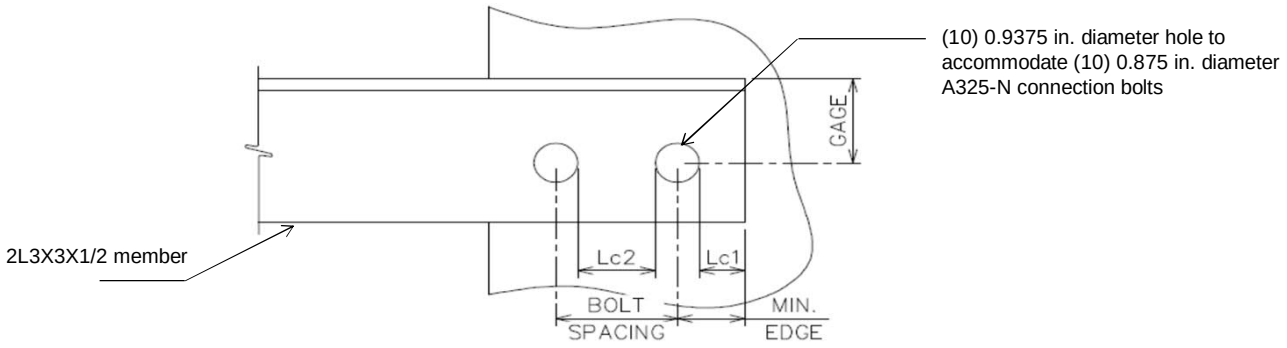
Input - Loads

Code:	TIA-H	- select version of the TIA
T_u:	55.486	kips - maximum leg tension load
P_u:	69.957	kips - maximum leg compression load
ASIF:	1.33	< = = DISREGARD
z	0.75	- shear lag coefficient
U_{bs}:	1.00	- shear lag coefficient for block shear
ϕ_t:	0.90	- tension yielding
ϕ_t:	0.75	- tension rupture
ϕ_{bs}:	0.75	- block shear
ϕ_{br}:	0.80	- bearing/tear out
ϕ_b:	0.75	- bolt shear
AISC Minimums?:	Yes	- Use AISC Minimums for Min. Edge, Bolt Spacing, and Gage?

Member Properties:

A_g:	2.750	in^2 - gross area of a single brace
A_e:	1.688	in^2 - net area of a single brace
A_{gv}:	10.594	in^2 - gross area subjected to shear of a single brace
A_{nv}:	5.844	in^2 - net area subjected to shear of a single brace
L_{c1}:	1.031	in - clear edge distance of a single brace
L_{c2}:	1.250	in - clear edge distance between bolts of a single brace

D:	3.00	in - width of brace
t:	0.5000	in - thickness of brace
Min. Edge:	1.500	in - minimum edge distance (center of hole to edge of member)
Bolt Spacing:	2.188	in - minimum edge distance (center of hole to edge of member)
Gage:	1.750	in - gage distance (heel of brace to center of hole)



Project Name:	New London CO	**Engineer:**	AJW
Project Number:	TEP No. 263245.837969	**Check:**	SDJ
Client Site Number:	638284	**Date:**	4/13/2023

Double Angle Kicker Connection Check

Member Capacity:

L3X3X1/2 Double Angle Member

Gross Allowable Tension = (0.9)(Fy)(Ag) = (0.9)(36 ksi)(1)(2.75 in2) = **178.20** kips

Net Allowable Tension = (0.75)(Fu)(Ae) = (0.75)(58 ksi)(1)(1.6875 in2) = **146.81** kips

L3X3X1/2 Double Angle Connection

Block Shear = (0.75)((0.6)(Fu)(Anv) + (Ubs)(Fu)(Ant)) = 2(0.75)((0.6)(58 ksi)(5.8438 in2) + (1)(58 ksi)(0.375 in2)) = **337.67** kips

Block Shear = (0.75)((0.6)(Fy)(Agv) + (Ubs)(Fu)(Ant)) = 2(0.75)((0.6)(36 ksi)(10.5938 in2) + (1)(58 ksi)(0.375 in2)) = **375.86**

Tension Bearing/Tear Out = (0.8)MIN((1.2)(Lc + dbolt/4)(t)(Fu) , (2.4)(dbolt)(t)(Fu)) =
ar Out = (2)0.8(MIN((1.2)(1.03125 in + 0.875 in/4)(0.5 in)(58),(2.4)(0.875 in)(0.5 in)(58 ksi)) + (n-1)MIN((1.2)(1.25 in + 0.875 in/4)(0.5 in)(58),(2.4)(0.875 in)(0.5 in)(58 ksi))) = **805.62** kips

Compression Bearing/Tear Out = (0.8)MIN((1.2)(Lc + dbolt/4)(t)(Fu) , (2.4)(dbolt)(t)(Fu)) =
Bearing/Tear Out = (2)0.8((2.4)(0.875 in)(0.5 in)(58 ksi) + (n-1)MIN((1.2)(1.25 in + 0.875 in/4)(0.5 in)(58),(2.4)(0.875 in)(0.5 in)(58 ksi))) = **833.46** kips

Bolt Capacity:

(10) A325-N Bolt

Allowable Load = (0.75)(0.625)(120 ksi)(0.8)(0.601 in2)(10)(2 shear planes) = **541.19** kips

Summary:

		Stress Ratio
Member Tension:	**55.49 < 146.81 (Pass)**	**36.0%**
Connection Tension:	**55.49 < 337.67 (Pass)**	15.6%
Connection Compression:	**69.96 < 833.46 (Pass)**	8.0%
Connection Bolts:	**69.96 < 541.19 (Pass)**	12.3%

Exhibit 5

(REVISED)
STRUCTURAL ANALYSIS REPORT

For

AT&T Site Number: CT2080

TEP Project Number: 350581

AT&T Site Name: NEW LONDON-WASHINGTON ST

26 Washington Street
New London, CT 06320

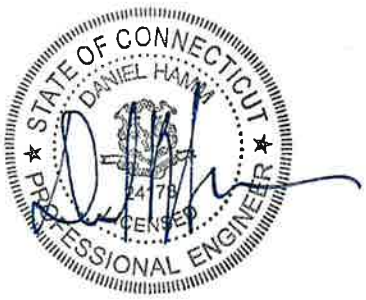
Antennas Mounted on Steel Frames on Roof

Prepared for:

CENTERLINE COMMUNICATIONS

at&t

Dated: February 28, 2023 (Rev.2)
December 6, 2022 (Rev.1)
November 30, 2022



Prepared by:

TEP NORTHEAST

(TEP OPCO, LLC)
45 Beechwood Drive
North Andover, MA 01845
(P) 978.557.5553
www.tepgroup.net

SCOPE OF WORK:

TEP Northeast (TEP NE) has been authorized by AT&T to conduct a structural evaluation of the structure supporting the proposed equipment located in the areas depicted in the latest TEP NE construction drawings.

This report represents this office's findings, conclusions and recommendations pertaining to the support of AT&T's proposed antennas listed below.

This office conducted an on-site visual survey of the above site on April 14, 2022.

The following documents were used for our reference:

- Construction Drawings prepared by Hudson Design Group LLC dated March 24, 2020.
- Structural Analysis prepared by Hudson Design Group LLC dated April 1, 2020.
- Rooftop Existing Condition Report prepared by ProVertic dated April 19,2022.

CONCLUSION SUMMARY:

Based on our evaluation, we have determined that the existing structure **IS CAPABLE** of supporting the proposed equipment loading.

	Member	Stress Ratio	Pass/Fail
Roof	4" Concrete Slab	75%	**PASS**

Based on our evaluation, we have determined that the existing mounts **ARE CAPABLE** of supporting the proposed equipment loading with the following modification:

- **Reinforce existing horizontal angles with proposed L3x3x3/8 steel angles (typ. of 2 per Alpha and Beta sector, total of 4).**

	Member	Controlling Load Case	Stress Ratio	Pass/Fail
Antenna Mount	5	LC3	88%	**PASS**

Based on our evaluation, we have determined that the existing connections **ARE CAPABLE** of supporting the proposed equipment loading.

	Member	Stress Ratio	Pass/Fail
Existing Connection	1/2" Epoxy anchor	47%	**PASS**

APPURTENANCE CONFIGURATION:

Appurtenances	Dimensions	Weight	**Elevation	Mount
(3) 800-10965 Antennas	78.7"x20.0"x6.9"	109 lbs	105'-0"	Steel Frame
(1) 800-10964 Antennas	59.0"x20.0"x6.9	95 lbs	105'-0"	Steel Frame
(3) 4478 B14 RRH's	18.1"x13.4"x8.3"	60 lbs	-	Ballast Sled
(3) 4449 B5/B12 RRH's	17.9"x13.2"x9.4"	73 lbs	-	Ballast Sled
(3) 8843 B2/B66A RRH's	14.9"x13.2"x10.9"	72 lbs	-	Ballast Sled
(3) RRUS-E2 B29 RRH's	20.4"x18.5"x7.5"	53 lbs	-	Equipment Room
(3) DC6-48-60-18 Surge Arrestors	20.1"x18.2"x6.4"	44 lbs	-	Ballast Sled
(2) MS-MBA-3.2-H4-L4 Antennas	72.0"x24.0"x26.0"	132 lbs	105'-0"	Steel Frame
(2) 4449 B5/B12 RRH's	17.9"x13.2"x9.4"	73 lbs	-	Ballast Sled
(4) 8843 B2/B66A RRH's	14.9"x13.2"x10.9"	72 lbs	-	Ballast Sled
(12) DBC0051F3V51-2 Diplexers	8.5"x5.0"x2.2"	8 lbs	-	Steel Frame

** Proposed equipment shown in bold.*
*** Elevation to antenna centerline.*

DESIGN CRITERIA:

International Building Code (IBC) 2021 with 2022 Connecticut State Building Code Amendments, and ASCE 7-16 (Minimum Design Loads for Buildings and Other Structures).		
Wind		
Reference Wind Speed:	130 mph	(2022 CSBC Appendix P)
Exposure Category:	D	(ASCE 7-16 Chapter 26)
Risk Category:	II	(ASCE 7-16 Table 1.5-1)
Snow		
Ground Snow, P_g:	30	(2022 CSBC Appendix P)
Importance Factor (I_s):	1.0	(ASCE 7-16 Table 1.5-2)
Exposure Factor (C_e):	0.9	(Fully Exposed, Table 7.3-1)
Thermal Factor (C_t):	1.0	(ASCE 7-16 Table 7.3-2)
Flat Roof Snow Load:	19 psf	(ASCE 7-16 Equation 7.3-1)
Min. Flat Roof Snow Load:	30 psf	
EIA/TIA-222-H Structural Standards for Steel Antenna Towers and Antenna Supporting Structures		
Wind		
City/Town:	New London	
County:	New London	
Wind Load:	130 mph	(TIA-222-H Figure B-2)
Ice		
Design Ice Thickness (t_i):	1.0 in	(TIA-222-H Figure B-9)
Structure Class:	II	(TIA-222-H Table 2-1)
Importance Factor (I_i):	1.0	(TIA-222-H Table 2-3)
Factored Thickness of Radial Ice (t_{iz}):	1.12 in	(TIA-222-H Sec. 2.6.10)

EXISTING ROOF CONSTRUCTION:

The existing roof construction is assumed to consists of loose laid ballast stone over a roofing membrane over a reinforced concrete slab supported by reinforced concrete beams and columns.

The existing roof structure was not accessible during the inspection. If field conditions differ from what is assumed in this report, then the engineer of record is to be notified immediately.

ANTENNA SUPPORT RECOMMENDATIONS:

The proposed antennas are to be installed on existing pipe masts installed on existing steel frames secured to the roof with epoxy anchors.

RRH SUPPORT RECOMMENDATIONS:

The proposed RRH's are to be mounted on existing unistrut components installed on existing non-penetrating ballast mounts located on the roof.

Limitations and Assumptions:

1. Reference the latest TEP NE construction drawings for all the equipment locations and details.
2. All detail requirements will be designed and furnished in the construction drawings.
3. 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.
4. TEP NE is not responsible for any modifications completed prior to and hereafter which TEP NE was not directly involved.
5. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer requirements.
6. If field conditions differ from what is assumed in this report, then the engineer of record is to be notified as soon as possible.

FIELD PHOTOS:

Photo 1: Sample photo illustrating the existing Alpha sector.

Photo 2: Sample photo illustrating the existing Beta sector.

FIELD PHOTOS (CONT.):

Photo 3: Sample photo illustrating the existing Gamma sector.

Photo 4: Sample photo illustrating the existing RRH's.

Wind and Ice
Calculations

Date: 11/23/2022
Project Name: NEW LONDON-WASHINGTON ST
Project No.: CT2080
Designed By: KSBM **Checked By:** MSC

TEP NORTHEAST

2.6.5.2 Velocity Pressure Coeff:

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

z=	105.00	(ft)
z_g=	700	(ft)
α=	11.5	
K_z=	**1.445**	

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**	
K_h=	1	
K_c=	1.1	(from Table 2-4)
K_t=	0	(from Table 2-5)
f=	0	(from Table 2-5)
z=	105.00	
z_s=	30	(Mean elevation of base of structure above sea level)
H=	0	(Ht. of the crest above surrounding terrain)
K_{zt}=	1.00	(from 2.6.6.2.1)
K_e=	1.00	(from 2.6.8)

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

Category= **1**

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} =	1.12	(from Sec. 2.6.10)

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

t_{iz} =	1.12	in

Date: 11/23/2022
Project Name: NEW LONDON-WASHINGTON ST
Project No.: CT2080
Designed By: KSBM Checked By: MSC

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=	97.17	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=	1.445	(from 2.6.5.2)
		K_{zt}=	1.0	(from 2.6.6.2.1)
		K_s=	1.0	(from 2.6.7)
q_z=	**59.33**	K_e=	1.00	(from 2.6.8)
$q_{z\ (ice)}$=	**8.78**	K_d=	0.95	(from Table 2-2)
$q_{z\ (30)}$=	**3.16**	V_{max}=	130	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: 11/23/2022
Project Name: NEW LONDON-WASHINGTON ST
Project No.: CT2080
Designed By: KSBM Checked By: MSC

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		$1.2 - 2.8(r_s) \geq 0.85$	$1.4 - 4.0(r_s) \geq 0.90$	$2.0 - 6.0(r_s) \geq 1.25$
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 = **1.12** in | **Angle =** **0 (deg)** | **Equivalent Angle =** **180 (deg)**

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)
MS-MBA-3.2-H4-L4 Antenna	72.0	24.0	26.0	12.00	3.00	1.22	**870**	**145**
800-10965 Antenna	78.7	20.0	6.9	10.93	3.94	1.26	**820**	**139**
800-10964 Antenna	59.0	20.0	6.9	8.19	2.95	1.22	**593**	**101**
4478 B14 RRH	18.1	13.4	8.3	1.68	1.35	1.20	**120**	**23**
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.36	1.20	**117**	**23**
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.20	**97**	**19**
DBC0051F3V51-2 Diplexer	8.5	5.0	4.5	0.30	1.70	1.20	**21**	**6**
DC6-48-60-18 Surge Arrestor	20.1	18.2	6.4	2.54	1.10	1.20	**181**	**33**
3x3 Angle	3.0	12.0		0.25	0.25	2.00	**30**	
2" Pipe	2.4	12.0		0.20	0.20	1.20	**14**	
3" Pipe	3.5	12.0		0.29	0.29	1.20	**21**	

Date: 11/23/2022
Project Name: NEW LONDON-WASHINGTON ST
Project No.: CT2080
Designed By: KSBM Checked By: MSC

TEP NORTHEAST

WIND LOADS

Angle =	90	(deg)	Ice Thickness =	1.12	in.	Equivalent Angle =	270	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio (normal)	Aspect Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
MS-MBA-3.2-H4-L4 Antenna	72.0	24.0	26.0	12.00	13.00	3.00	2.77	1.22	1.21	870	935	935
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	820	346	346
800-10964 Antenna	59.0	20.0	6.9	8.19	2.83	2.95	8.55	1.22	1.45	593	243	243
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	120	74	74
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	117	83	83
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	97	80	80
DBC0051F3V51-2 Diplexer	8.5	5.0	4.5	0.30	0.27	1.70	1.89	1.20	1.20	21	19	19
DC6-48-60-18 Surge Arrestor	20.1	18.2	6.4	2.54	0.89	1.10	3.14	1.20	1.23	181	65	65

WIND LOADS WITH ICE:

MS-MBA-3.2-H4-L4 Antenna	74.2	26.2	28.2	13.53	14.56	2.83	2.63	1.21	1.21	144	154	154
800-10965 Antenna	80.9	22.2	9.1	12.50	5.14	3.64	8.85	1.25	1.46	137	66	66
800-10964 Antenna	61.2	22.2	9.1	9.46	3.89	2.75	6.70	1.21	1.39	101	47	47
4478 B14 RRH	20.3	15.6	10.5	2.21	1.49	1.30	1.93	1.20	1.20	23	16	16
4449 B5/B12 RRH	20.1	15.4	11.6	2.16	1.63	1.30	1.73	1.20	1.20	23	17	17
8843 B2/B66A RRH	17.1	15.4	13.1	1.84	1.57	1.11	1.30	1.20	1.20	19	16	16
DBC0051F3V51-2 Diplexer	10.7	7.2	6.7	0.54	0.50	1.48	1.59	1.20	1.20	6	5	5
DC6-48-60-18 Surge Arrestor	22.3	20.4	8.6	3.17	1.34	1.09	2.58	1.20	1.20	33	14	14

Date: 11/23/2022
Project Name: NEW LONDON-WASHINGTON ST
Project No.: CT2080
Designed By: KSBM **Checked By:** MSC

ICE WEIGHT CALCULATIONS

Thickness of ice: 1.12 in.
Density of ice: 56 pcf

MS-MBA-3.2-H4-L4 Antenna

Weight of ice based on total radial SF area:

Height (in):	72.0	
Width (in):	24.0	
Depth (in):	26.0	
Total weight of ice on object:		300 lbs
Weight of object:	132.0 lbs	
Combined weight of ice and object:		432 lbs

800-10965 Antenna

Weight of ice based on total radial SF area:

Height (in):	78.7	
Width (in):	20.0	
Depth (in):	6.9	
Total weight of ice on object:		200 lbs
Weight of object:	109.0 lbs	
Combined weight of ice and object:		309 lbs

800-10964 Antenna

Weight of ice based on total radial SF area:

Height (in):	59.0	
Width (in):	20.0	
Depth (in):	6.9	
Total weight of ice on object:		150 lbs
Weight of object:	95.0 lbs	
Combined weight of ice and object:		245 lbs

4478 B14 RRH

Weight of ice based on total radial SF area:

Height (in):	18.1	
Width (in):	13.4	
Depth (in):	8.3	
Total weight of ice on object:		35 lbs
Weight of object:	60.0 lbs	
Combined weight of ice and object:		95 lbs

4449 B5/B12 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:		35 lbs
Weight of object:	73.0 lbs	
Combined weight of ice and object:		108 lbs

8843 B2/B66A RRH

Weight of ice based on total radial SF area:

Height (in):	14.9	
Width (in):	13.2	
Depth (in):	10.9	
Total weight of ice on object:		31 lbs
Weight of object:	72.0 lbs	
Combined weight of ice and object:		103 lbs

DBC0051F3V51-2 Diplexer

Weight of ice based on total radial SF area:

Height (in):	8.5	
Width (in):	5.0	
Depth (in):	4.5	
Total weight of ice on object:		8 lbs
Weight of object:	15.0 lbs	
Combined weight of ice and object:		23 lbs

DC6-48-60-18 Surge Arrestor

Weight of ice based on total radial SF area:

Height (in):	20.1	
Width (in):	18.2	
Depth (in):	6.4	
Total weight of ice on object:		47 lbs
Weight of object:	44.0 lbs	
Combined weight of ice and object:		91 lbs

2" pipe

Per foot weight of ice:

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

3" Pipe

Per foot weight of ice:

diameter (in):	3.5	
Per foot weight of ice on object:		6 plf

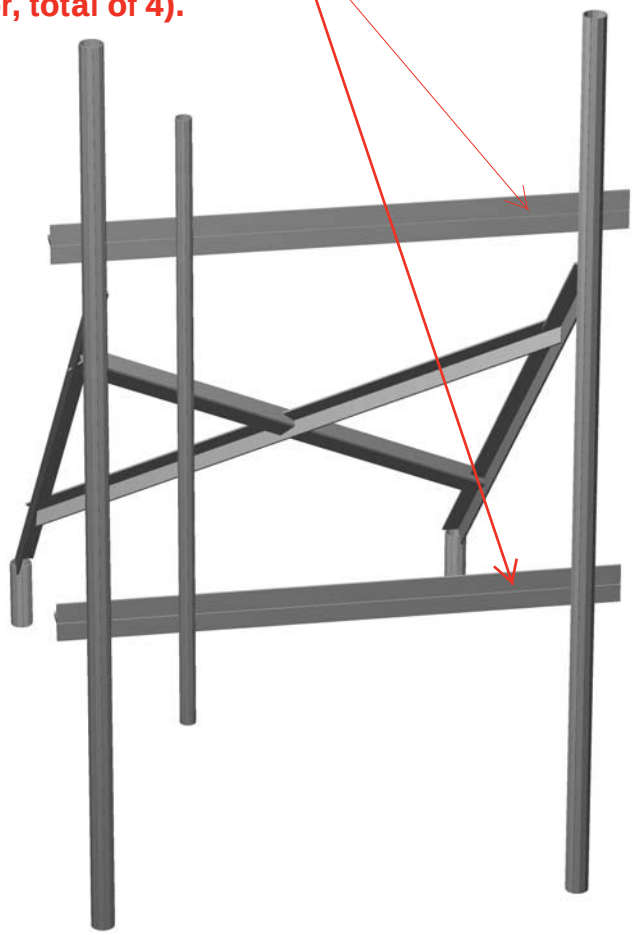
L 3x3 Angles

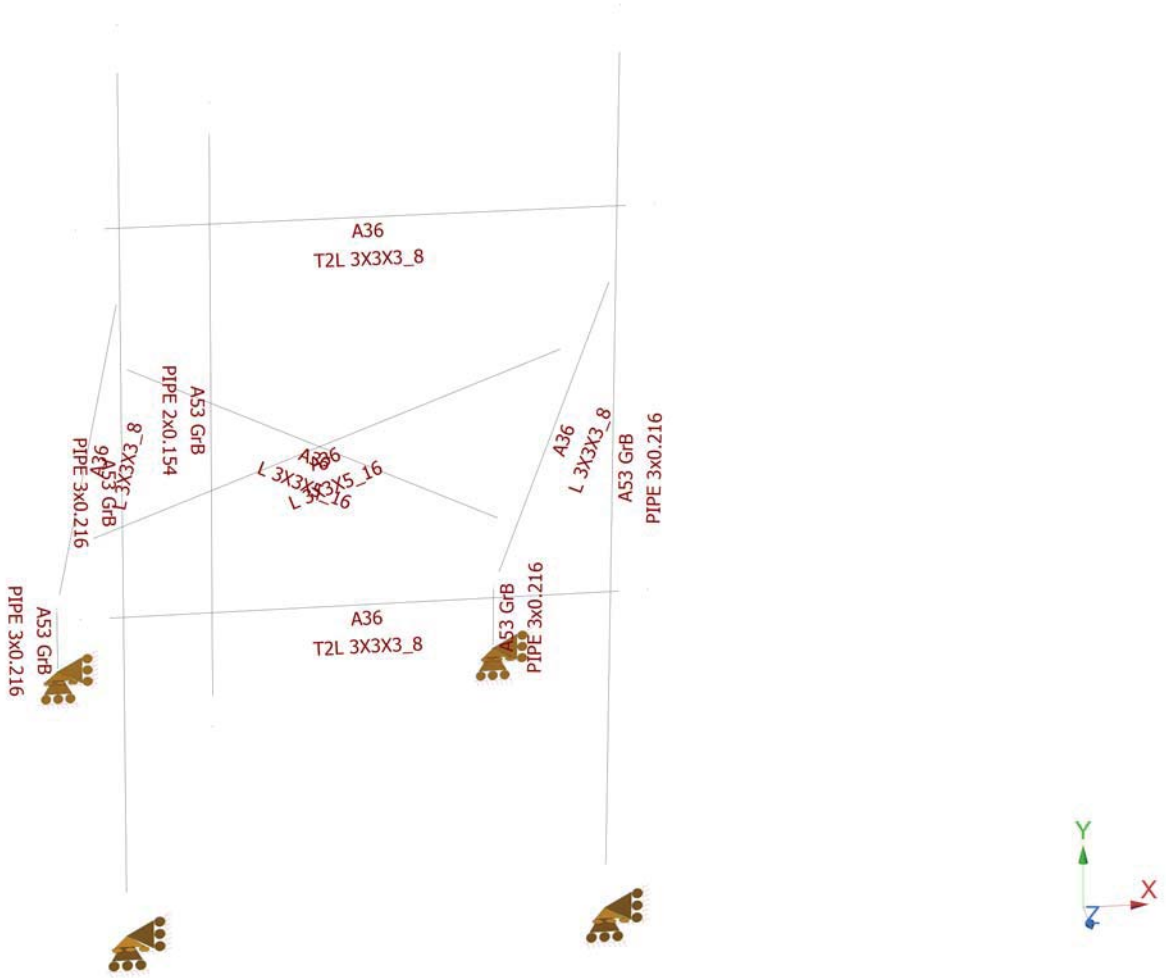
Weight of ice based on total radial SF area:

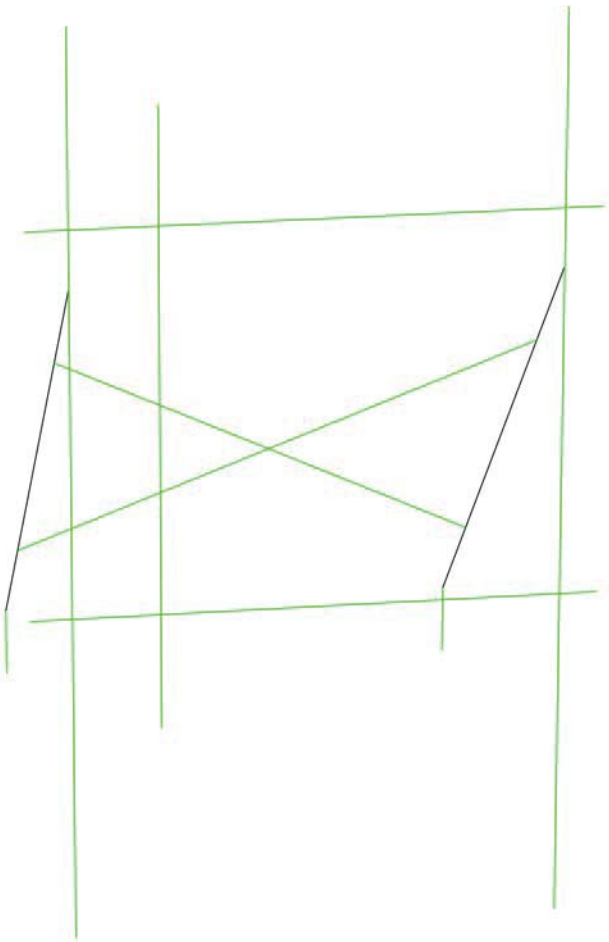
Height (in):	3	
Width (in):	3	
Per foot weight of ice on object:		7 plf

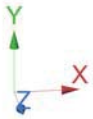
Antenna Mount
Calculations

Reinforce existing horizontal angles with proposed L3x3x3/8 steel angles (typ. of 2 per Alpha and Beta sector, total of 4).




A36
T2L 3X3X3_8
A53 GrB
PIPE 2x0.154
A53 GrB
PIPE 3x0.216
A36
L 3X3X3_8
A53 GrB
PIPE 3x0.216
A36
T2L 3X3X3_8
A53 GrB
PIPE 3x0.216
A53 GrB
PIPE 3x0.216
Y
X
Z

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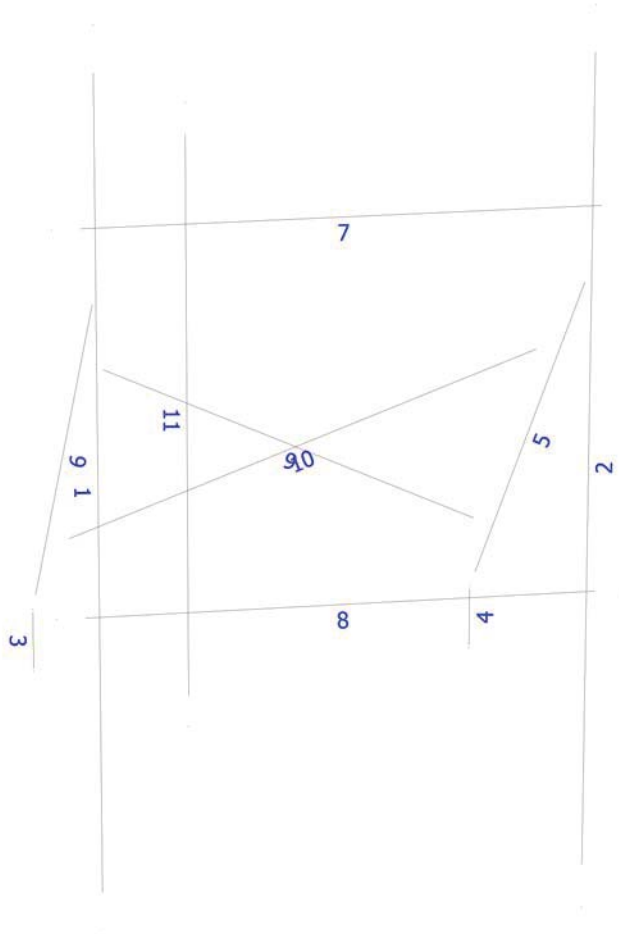
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11
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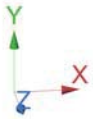
8
4


Y
X
Z

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Load data

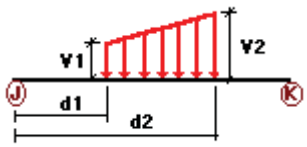
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
DL	Dead Load	No	DL
Wf	Wind Load (FRONT)	No	WIND
Ws	Wind Load (SIDE)	No	WIND
Wfice	Wind ICE (FRONT)	No	WIND
Wsice	Wind ICE (SIDE)	No	WIND
Di	Ice Load	No	LL

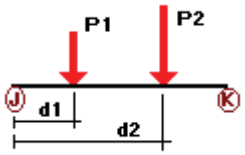
Distributed force on members



Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
Wf	1	z	-0.021	0.00	0.00	No	0.00	No
	2	z	-0.021	-0.021	7.00	No	100.00	Yes
	3	z	-0.021	0.00	0.00	No	0.00	No
	4	z	-0.021	0.00	0.00	No	0.00	No
	5	z	-0.03	0.00	0.00	No	0.00	No
	6	z	-0.03	0.00	0.00	No	0.00	No
	7	z	-0.03	0.00	0.00	No	0.00	No
	8	z	-0.03	0.00	0.00	No	0.00	No
	9	z	-0.03	0.00	0.00	No	0.00	No
	10	z	-0.03	0.00	0.00	No	0.00	No
Ws	1	x	-0.021	0.00	0.00	No	0.00	No
	2	x	-0.021	0.00	0.00	No	0.00	No
	3	x	-0.021	0.00	0.00	No	0.00	No
	4	x	-0.021	0.00	0.00	No	0.00	No
	5	x	-0.03	0.00	0.00	No	0.00	No
	6	x	-0.03	0.00	0.00	No	0.00	No
	9	x	-0.03	0.00	0.00	No	0.00	No
	10	x	-0.03	0.00	0.00	No	0.00	No
	11	x	-0.014	0.00	0.00	No	0.00	No
Di	1	y	-0.006	0.00	0.00	No	0.00	No
	2	y	-0.006	0.00	0.00	No	0.00	No
	3	y	-0.006	0.00	0.00	No	0.00	No
	4	y	-0.006	0.00	0.00	No	0.00	No
	5	y	-0.007	0.00	0.00	No	0.00	No

6	y	-0.007	0.00	0.00	No	0.00	No
7	y	-0.007	0.00	0.00	No	0.00	No
8	y	-0.007	0.00	0.00	No	0.00	No
9	y	-0.007	0.00	0.00	No	0.00	No
10	y	-0.007	0.00	0.00	No	0.00	No
11	y	-0.005	0.00	0.00	No	0.00	No

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	2	y	-0.066	1.50	No
		y	-0.066	6.50	No
		y	-0.03	25.00	Yes
		y	-0.03	35.00	Yes
		y	-0.03	45.00	Yes
	11	y	-0.055	0.50	No
		y	-0.055	6.00	No
		y	-0.073	60.00	Yes
Wf	2	z	-0.436	1.50	No
		z	-0.436	6.50	No
	11	z	-0.41	0.50	No
		z	-0.41	6.00	No
Ws	2	x	-0.468	1.50	No
		x	-0.468	6.50	No
		x	-0.019	25.00	Yes
		x	-0.019	35.00	Yes
		x	-0.019	45.00	Yes
	11	x	-0.174	0.50	No
		x	-0.174	6.00	No
		x	-0.083	60.00	Yes
Wfice	2	z	-0.073	1.50	No
		z	-0.073	6.50	No
	11	z	-0.07	0.50	No
		z	-0.07	6.00	No
Wsice	2	x	-0.078	1.50	No
		x	-0.078	6.50	No
		x	-0.005	25.00	Yes
		x	-0.005	35.00	Yes
		x	-0.005	45.00	Yes
	11	x	-0.033	0.50	No
		x	-0.033	6.00	No
		x	-0.017	60.00	Yes
Di	2	y	-0.15	1.50	No
		y	-0.15	6.50	No
		y	-0.016	25.00	Yes
		y	-0.016	35.00	Yes
		y	-0.016	45.00	Yes
	11	y	-0.10	0.50	No
		y	-0.10	6.00	No

	y	-0.035	60.00	Yes

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
Wf	Wind Load (FRONT)	No	0.00	0.00	0.00
Ws	Wind Load (SIDE)	No	0.00	0.00	0.00
Wfice	Wind ICE (FRONT)	No	0.00	0.00	0.00
Wsice	Wind ICE (SIDE)	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
Wf	0.00	0.00	0.00
Ws	0.00	0.00	0.00
Wfice	0.00	0.00	0.00
Wsice	0.00	0.00	0.00
Di	0.00	0.00	0.00

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CONNECT Edition

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Units system: English

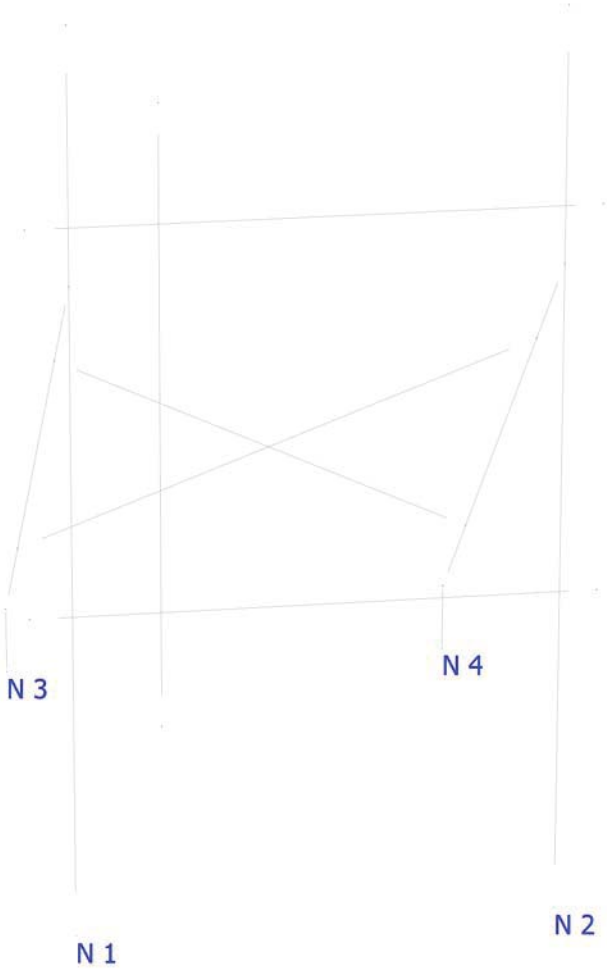
Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2DL+Wf
LC2=1.2DL+Ws
LC3=0.9DL+Wf
LC4=0.9DL+Ws
LC5=1.2DL+Wfice+Di
LC6=1.2DL+Wsice+Di
LC7=1.4DL
LC8=0.9DL

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	L 3X3X3_8	**5**	LC3 at 0.00%	**0.88**	**With warnings**	
		6	LC2 at 20.83%	0.68	With warnings	
	L 3X3X5_16	**9**	LC2 at 0.00%	0.19	OK	
		10	LC2 at 0.00%	**0.31**	**OK**	
	PIPE 2x0.154	**11**	LC2 at 81.25%	**0.65**	**OK**	
	PIPE 3x0.216	**1**	LC2 at 34.38%	**0.84**	**OK**	
		2	LC4 at 65.63%	0.83	OK	
		3	LC1 at 100.00%	0.24	OK	
		4	LC1 at 100.00%	0.28	OK	
	T2L 3X3X3_8	**7**	LC4 at 23.44%	0.25	OK	
		8	LC2 at 92.19%	**0.53**	**OK**	


N 3
N 4
N 1
N 2
Y
X
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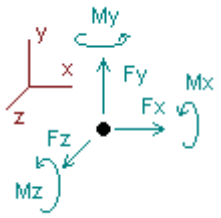
Units system: English

Analysis result

Envelope for nodal reactions

Note.- **Ic** is the controlling load condition



Direction of positive forces and moments

Envelope of nodal reactions for :
LC1=1.2DL+Wf
LC2=1.2DL+Ws
LC3=0.9DL+Wf
LC4=0.9DL+Ws
LC5=1.2DL+Wfice+Di
LC6=1.2DL+Wsice+Di
LC7=1.4DL
LC8=0.9DL

Node		Forces						Moments					
		Fx [Kip]	**Ic**	**Fy** [Kip]	**Ic**	**Fz** [Kip]	**Ic**	**Mx** [Kip*ft]	**Ic**	**My** [Kip*ft]	**Ic**	**Mz** [Kip*ft]	**Ic**
1	Max	1.079	LC2	3.181	LC2	0.220	LC3	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	0.002	LC8	-0.753	LC3	-0.015	LC6	0.00000	LC1	0.00000	LC1	0.00000	LC1
2	Max	1.185	LC4	0.964	LC5	0.292	LC3	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.009	LC5	-2.202	LC4	-0.020	LC6	0.00000	LC1	0.00000	LC1	0.00000	LC1
3	Max	0.338	LC2	1.232	LC1	1.348	LC1	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.091	LC3	0.072	LC8	0.010	LC8	0.00000	LC1	0.00000	LC1	0.00000	LC1
4	Max	0.551	LC4	1.507	LC1	1.545	LC1	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.011	LC7	-0.547	LC4	-0.490	LC4	0.00000	LC1	0.00000	LC1	0.00000	LC1

Date: 11/30/2022
Project Name: NEW LONDON-WASHINGTON ST
Project No.: CT2080
Designed By: KSBM **Checked By:** MSC

CHECK EPOXY ANCHOR CONNECTION CAPACITY → EXISTING CONNECTION

Reference: Hilti North American Product Technical Guide, 22nd Edition

Epoxy Type =	HIT-HY 200	
Anchor Diameter =	1/2	in.
Embedment Depth =	2-3/4	in.
f'c Concrete	3000	psi (Assumed)

	Allowable Loads (lbs)	Spacing Reduct. Factor	Edge Reduct. Factor	Conc. Thickness Reduct. Factor	Reduced Loads (lbs)	Allowable Steel Strength (lbs)
Tensile Load	2760	0.63	1	1	1738.8	6175
Shear Load	5945	0.58	1	0.58	1999.9	3210

TENSILE FORCES

Reactions in Y direction: 2202 lbs. (See Bentley Output)

SHEAR FORCES

Reactions in X direction: 1185 lbs. (See Bentley Output)
Reactions in Z direction: 292 lbs. (See Bentley Output)

Resultant: 1220 lbs.

No. of Supports = 1
No. of Anchors / Support = 4

Tension Design Load / Anchor =

f_t= 550.50 lbs. < 1738.8 lbs. **Therefore, OK !**

Shear Design Load / Anchor=

f_v= 305.11 lbs. < 1999.9 lbs. **Therefore, OK !**

CHECK COMBINED TENSION AND SHEAR

f_t / F_T	+	f_v / F_V	≤	1.0			
0.317	+	0.153	=	0.469	<	1.0	**Therefore, OK !**

Roof
Calculations

Date: 11/30/2022
Project Name: NEW LONDON-WASHINGTON ST
Project No.: CT2080
Designed By: KSBM **Checked By:** MSC

ONE WAY CONCRETE SLAB CHECK → WORST CASE

Slab Thickness, h:	4	in	
Cover:	0.75	in	(Assumed)
Reinforcing Steel Bars:	Unknown		
f'c of Concrete =	3000	psi	(Assumed)
fy of Steel Reinforcement =	40000	psi	(Assumed)
Span of Beam (ℓ) =	3	ft	

Minimum Slab Thickness:

$h_{min} = \ell / 20$ = 0.15 ft = 1.8 in ($h_{min} > h$)

h = 4 in

Minimum Allowable Reinforcing Steel:

Depth to Steel Reinforc., d:	3	in	
"Web" Thickness, b_w:	12	in	
Min. Allowable Steel, $A_{s,min}$:	0.18	in^2/ft	(ACI 10.5.1)
Assume Steel:	#4	Quantity:	1
Steel Area, A_s:	0.2	in^2/ft	($A_s > A_{s,min}$)
Ratio of reinforc. in section, ρ :	0.0055556		

Concrete Check:

ρ min. : 0.0055 (Table A.8 from Design of Reinforc.Concrete 8th Ed)

$M_u/(\Phi * b_w * d^2)$ = 210.5 psi (Table A.8 from Design of Reinforc.Concrete 8th Ed)

Allowable Moment: M_u = 20460.60 in-lbs = 1705.05 ft-lbs

Allowable Uniform Roof Loads: $M_u = (w * \ell^2) / 8 \rightarrow w = 8 * M_u / \ell^2$ = 1515.60 psf per 12" of Slab

Capacity Check:

Slab Weight:	150 pcf * h/12 =	50	psf
Dead Load:		15	psf
Snow Load:		30	psf
Total Roof Load:		95	psf
Available Roof Capacity, P_{allow}:		1420.60	psf
Available Load Capacity, P_{allow}:		4261.80	lbs
Applied Punching Load, P_{pr}:		3181	lbs (See Bentley Results)

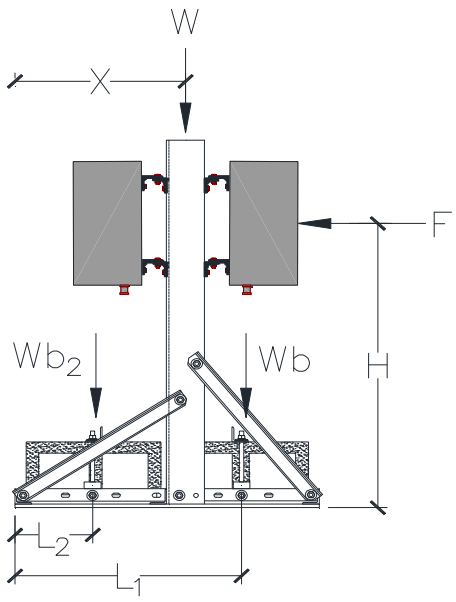
P_{pr}		P_{allow}		
	<		O.K!	
3181.00 lbs	**<**	**4261.80 lbs**	**O.K!**	**74.64 %**

RRH Ballast
Calculations

Date: 11/28/2022
Project Name: NEW LONDON-WASHINGTON ST
Project No.: CT2080
Designed By: KSBM **Checked By:** MSC

Calculate Total Ballast Required for Ballast Mount

Assume (2) RRH's as projected area



Force (F) =	237	lbs.
Height (H) =	2.4	ft
Weight of Appurtenances (W) =	393	lbs.
Frame Width/2 (X) =	1.3	ft
Length (L) =	2.2	ft
Length (L_2) =	0.83	ft
Ballast (Wb_2) =	4	
Safety Factor (SF) =	1.5	

Overturning at Ballast

ΣM = 0 = (F * H) - (W * X) - (Wb * L) ---> Wb = [(F*H*SF-W*X-Wb_2*L_2)/L]= **-2 lbs.**

Determine Number of Blocks Required

(assume 4"x8"x16" solid blocks @ 34 lbs. each)

Number of Blocks Required =	0	BLOCKS PER SIDE
Number of Existing Blocks =	4	BLOCKS PER SIDE
Number of Proposed Blocks =	**0**	**BLOCKS PER SIDE**

Exhibit 6

Radio Frequency Exposure Analysis Report

November 8, 2022

AT&T on behalf of AT&T

AT&T Site Name: NEW LONDON-WASHINGTON ST
Site Number: CTL02080
FA#: 10035053
USID: 65070

Site Address: 26 Washington Street, New London, CT 06320

Site Compliance Summary

AT&T Compliance Status:	Compliant at the Ground Level
Cumulative Calculated Power Density (Ground Level):	59.88156 µW/cm^2
Cumulative General Population % MPE (Ground Level):	6.74915%

November 8, 2022

Centerline
Attn: Mike Gentile, Site Acquisition - Project Manager
750 W Center St, Suite 301
West Bridgewater, MA 02379

RF Exposure Analysis for Site: **NEW LONDON-WASHINGTON ST**

Centerline Communications, LLC ("Centerline") was contracted to analyze the proposed AT&T facility at **26 Washington Street, New London, CT 06320** for the purpose of determining whether the predictive exposure from the proposed facility is within specified federal limits.

All information used in this report was analyzed as a percentage of the Maximum Permissible Exposure (% MPE) limits as detailed in 47 CFR § 1.1310 as well as Federal Communications Commission (FCC) OET Bulletin 65 Edition 97-01. The FCC MPE limits are typically expressed in units of milliwatts per square centimeter (mW/cm^2) or microwatts per square centimeter ($\mu W/cm^2$). The exposure limits vary depending upon the frequencies being utilized. The General Population/Uncontrolled MPE limit (in mW/cm^2) for frequencies between 300 and 1500 is defined as frequency (in MHz) divided by 1500 ($f_{MHz}/1500$). Frequencies between 1500 and 100,000 MHz have a General Population/Uncontrolled MPE limit of 1 mW/cm^2 (1000 $\mu W/cm^2$). The calculated power density at each sample point divided by the limit at each calculated frequency provides a result in % MPE. Summing the calculated % MPE from all contributors provides a cumulative % MPE at a particular sample point. Wireless carriers use different frequency bands with varying MPE limits; therefore, it is useful to report results in terms of % MPE as opposed to power density.

All results were compared to the FCC radio frequency exposure rules as detailed in 47 CFR § 1.1307(b) to determine compliance with the MPE limits for General Population/Uncontrolled environments as defined below.

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

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/ controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits, as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means. Additional details can be found in FCC OET 65.

Calculation Methodology

IXUS electromagnetic energy (EME) calculation software was used to assess all RF field levels presented in this study. IXUS software uses a fast and accurate EME calculation tool that allows for the determination of RF field strength in the vicinity of radio communication base stations and transmitters. At its core, the IXUS EME calculation module implements evaluation techniques detailed in the ITU-T K.61, CENELEC EN 50383, and IEC 62232 specifications and referenced in *C95.3 IEEE Recommended Practice for Measurements and Computations of Electric, Magnetic, and Electromagnetic Fields with Respect to Human Exposure to Such Fields, 0 Hz to 300 GHz*. The EME calculation result at any point in 3D space is achieved via a synthetic ray tracing technique, a conservative cylindrical envelope method, or through full-wave electromagnetic simulation. The ray tracing method is an advanced computation method described in IEC 622322 where the power is summed from elemental sources representing the individual components of the antenna which are selected by an analysis of published manufacturer datasheets and antenna pattern information. The selection of the solution method is determined by the particular antenna being considered.

Data & Results

The following table details the antennas and operating parameters for the AT&T antenna system as well as any other antenna systems at the site. This is based on antenna information provided by the client and data compiled from other sources where necessary. The data below was input into Roofmaster® to perform the theoretical exposure calculations at the ground level.

The theoretical calculations performed in IXUS® determine the cumulative exposure at all sample points at ground level (0-6' spatial average). The results from highest cumulative sample point at ground level surrounding the site are displayed in the table below. The contribution from directional antennas to the maximum cumulative totals varies greatly depending on location; therefore, the contribution from one antenna sector at the highest calculated exposure point may be greater or less than other sectors since sectorized directional antennas are pointed in different directions and there is not much overlapping exposure.

The contribution to the cumulative power density and % MPE for each antenna/frequency band is listed in the table. The cumulative power density and cumulative % MPE are displayed at the bottom of the table.

Maximum Calculated Cumulative Power Density (Location: Ground Level)

Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density (µW/cm²)	General Population MPE Limit (µW/cm²)	General Population % MPE
AT&T A 1	Ericsson AIR6419	3700	23.05	192.80	1.00	54.22	10943.58	1.50400	1000.00	0.15040
AT&T A 2	Ericsson AIR6449	3500	23.55	189.23	1.00	86.75	19645.79	1.53800	1000.00	0.15380
AT&T A 3	MATSING MS-MBA-3.2-H4-L4	700	11.35	105.00	1.00	120.00	1637.50	3.71280	466.67	0.79560
AT&T A 3	MATSING MS-MBA-3.2-H4-L4	850	11.35	105.00	1.00	120.00	1637.50	3.89130	566.67	0.68670
AT&T A 3	MATSING MS-MBA-3.2-H4-L4	1900	15.65	105.00	1.00	360.00	13222.16	22.91000	1000.00	2.29100
AT&T A 4	MATSING MS-MBA-3.2-H4-L4	2100	15.65	105.00	1.00	360.00	13222.16	25.01000	1000.00	2.50100
AT&T A 5	KATHREIN 80010965	700	12.65	105.00	1.00	120.00	2208.93	0.11760	466.67	0.02520
AT&T A 6	COMMSCOPE SBNHH-1D65A	700	11.45	191.00	1.00	60.00	837.82	0.03285	466.67	0.00704
AT&T A 6	COMMSCOPE SBNHH-1D65A	2300	15.45	191.00	1.00	75.00	2630.64	0.00127	1000.00	0.00013
AT&T B 7	Ericsson AIR6419	3700	23.05	192.80	1.00	54.22	10943.58	0.05612	1000.00	0.00561
AT&T B 8	Ericsson AIR6449	3500	23.55	189.23	1.00	86.75	19645.79	0.12230	1000.00	0.01223
AT&T B 9	MATSING MS-MBA-3.2-H4-L4	700	11.35	105.00	1.00	120.00	1637.50	0.01645	466.67	0.00353
AT&T B 9	MATSING MS-MBA-3.2-H4-L4	850	11.35	105.00	1.00	120.00	1637.50	0.01724	566.67	0.00304
AT&T B 9	MATSING MS-MBA-3.2-H4-L4	1900	15.65	105.00	1.00	360.00	13222.16	0.14230	1000.00	0.01423
AT&T B 10	MATSING MS-MBA-3.2-H4-L4	2100	15.65	105.00	1.00	360.00	13222.16	0.14230	1000.00	0.01423
AT&T B 11	KATHREIN 80010965	700	12.65	105.00	1.00	120.00	2208.93	0.00249	466.67	0.00053
AT&T B 12	COMMSCOPE SBNHH-1D65A	700	11.45	191.00	1.00	60.00	837.82	0.00129	466.67	0.00028
AT&T B 12	COMMSCOPE SBNHH-1D65A	2300	15.45	191.00	1.00	75.00	2630.64	0.00109	1000.00	0.00011
AT&T C 13	Ericsson AIR6419	3700	23.05	192.80	1.00	54.22	10943.58	0.02536	1000.00	0.00254
AT&T C 14	Ericsson AIR6449	3500	23.55	189.23	1.00	86.75	19645.79	0.03525	1000.00	0.00353
AT&T C 15	KATHREIN 80010964	700	13.65	105.00	1.00	90.00	2085.66	0.00038	466.67	0.00008
AT&T C 15	KATHREIN 80010964	850	13.85	105.00	1.00	90.00	2183.95	0.00038	566.67	0.00007
AT&T C 15	KATHREIN 80010964	2100	16.95	105.00	1.00	120.00	5945.40	0.00003	1000.00	0.00000
AT&T C 16	KATHREIN 80010965	700	12.65	105.00	1.00	60.00	1104.46	0.00014	466.67	0.00003
AT&T C 16	KATHREIN 80010965	1900	16.05	105.00	1.00	75.00	3020.38	0.00016	1000.00	0.00002
AT&T C 17	COMMSCOPE SBNHH-1D65A	700	11.45	191.00	1.00	60.00	837.82	0.00052	466.67	0.00011
AT&T C 17	COMMSCOPE SBNHH-1D65A	2300	15.45	191.00	1.00	75.00	2630.64	0.00014	1000.00	0.00001
AT&T 18	GENERIC MICROWAVE	6000	48	221.50	1.00	0.10	6309.57	0.00000	1000.00	0.00000
AT&T 19	GENERIC MICROWAVE	6000	48	221.50	1.00	0.10	6309.57	0.00000	1000.00	0.00000
							AT&T Totals	59.2817588		6.671038331
Verizon A 20	GENERIC PANEL	850	11.55	171.75	1.00	160.00	2286.23	0.07610	566.67	0.01343
Verizon A 20	GENERIC PANEL	1900	14.35	171.75	1.00	160.00	4356.32	0.23519	1000.00	0.02352
Verizon A 21	GENERIC PANEL	700	11.45	171.75	1.00	160.00	2234.19	0.10103	466.67	0.02165
Verizon A 21	GENERIC PANEL	2100	14.95	171.75	1.00	160.00	5001.73	0.16220	1000.00	0.01622
Verizon B 22	GENERIC PANEL	850	11.55	171.75	1.00	160.00	2286.23	0.00247	566.67	0.00044
Verizon B 22	GENERIC PANEL	1900	14.35	171.75	1.00	160.00	4356.32	0.00940	1000.00	0.00094
Verizon B 23	GENERIC PANEL	700	11.45	171.75	1.00	160.00	2234.19	0.00382	466.67	0.00082
Verizon B 23	GENERIC PANEL	2100	14.95	171.75	1.00	160.00	5001.73	0.00435	1000.00	0.00044
Verizon C 24	GENERIC PANEL	850	11.55	171.50	1.00	160.00	2286.23	0.00052	566.67	0.00009
Verizon C 24	GENERIC PANEL	1900	14.35	171.50	1.00	160.00	4356.32	0.00088	1000.00	0.00009
Verizon C 25	GENERIC PANEL	700	11.45	171.50	1.00	160.00	2286.23	0.00084	466.67	0.00018
Verizon C 25	GENERIC PANEL	2100	14.95	171.50	1.00	160.00	4356.32	0.00151	1000.00	0.00015
							Verizon Totals	0.59980		0.07811
							Cumulative Power Density:	**59.88156 µW/cm²**	**Cumulative % MPE:**	**6.74915%**

Summary

The theoretical calculations performed for this analysis yielded cumulative power density totals in areas at the ground level that are within the allowable federal limits for public exposure to RF energy. Therefore, the site is **Compliant** with FCC rules and regulations at the ground level.

Samuel Cosgove
RF EME Technical Writer
Centerline Communications, LLC

Exhibit 7

Proof of Delivery

Dear Customer,

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

Tracking Number
1Z9Y45030339418366

Weight
1.90 LBS

Service

UPS Ground

Shipped / Billed On
05/16/2023

Delivered On

05/19/2023 12:28 P.M.

Delivered To
181 STATE ST
NEW LONDON, CT, 06320, US

Received By

AYALA

Reference Number(s)
CT2080 CSC MAYOR

Please print for your records as photo and details are only available for a limited time.

Sincerely,

UPS

Tracking results provided by UPS: 05/19/2023 12:57 P.M. EST

Proof of Delivery

Dear Customer,

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

Tracking Number
1Z9Y45030323305972

Weight
1.90 LBS

Service

UPS Ground

Shipped / Billed On
05/16/2023

Delivered On

05/19/2023 12:28 P.M.

Delivered To
181 STATE ST
NEW LONDON, CT, 06320, US

Received By

AYALA

Reference Number(s)
CT2080 CSC PLAN

Please print for your records as photo and details are only available for a limited time.

Sincerely,

UPS

Tracking results provided by UPS: 05/19/2023 12:56 P.M. EST

Proof of Delivery

Dear Customer,

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

Tracking Number
1Z9Y45030321086589

Weight
1.90 LBS

Service

UPS Ground

Shipped / Billed On
05/16/2023

Delivered On

05/19/2023 12:28 P.M.

Delivered To
181 STATE ST
NEW LONDON, CT, 06320, US

Received By

AYALA

Reference Number(s)
CT2080 CSC ZEO

Please print for your records as photo and details are only available for a limited time.

Sincerely,

UPS

Tracking results provided by UPS: 05/19/2023 12:55 P.M. EST

Proof of Delivery

Dear Customer,

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

Tracking Number
1Z9Y45030331926803

Weight
1.90 LBS

Service

UPS Ground

Shipped / Billed On
05/16/2023

Delivered On

05/19/2023 1:16 P.M.

Delivered To
26 WASHINGTON ST
NEW LONDON, CT, 06320, US

Received By

STEVE

Reference Number(s)
CT2080 CSC EVEREST

Please print for your records as photo and details are only available for a limited time.

Sincerely,

UPS

Tracking results provided by UPS: 05/19/2023 2:15 P.M. EST

Proof of Delivery

Dear Customer,

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

Tracking Number
1Z9Y45030333660195

Weight
1.90 LBS

Service

UPS Ground

Shipped / Billed On
05/16/2023

Delivered On

05/19/2023 10:42 A.M.

Delivered To
401 MERRITT 7
NORWALK, CT, 06851, US

Received By

STACEY

Reference Number(s)
CT2080 CSC SNET

Please print for your records as photo and details are only available for a limited time.

Sincerely,

UPS

Tracking results provided by UPS: 05/19/2023 12:54 P.M. EST