SAI Group
12 Industrial Way
Salem, NH 03079
603-421-0470

February 23, 2023

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

Notice of Exempt Modification – New Cingular Wireless PCS, LLC (AT&T)
315 Spencer Plains Road, Westbrook, CT 06498 – AT&T Site # CT2047
N 41.29238889
W -72.43036389

Dear Ms. Bachman:

AT&T currently maintains nine (6) antennas at the 148-foot level of the existing 180-foot Self Support Tower at 315 Spencer Plains Road, Westbrook. The tower is owned by the Connecticut Department of Emergency Services and Public Protection (DESPP) and the property is owned by the State of Connecticut. AT&T now intends to add three (3) Remote Radio Units (RRU). 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 on or off at various times. The existing antenna mounts will be modified as documented in the attached drawings.

AT&T Planned Modifications:

Remove: N/A

Remove and Replace:
(1) RAYCAP Surge Unit (REMOVE) - (1) RAYCAP DC9-48-60-24-8C-EV (REPLACE)

Install New:
(3) Ericsson 4478 B14 RRU
(1) DC Line

Existing to Remain:
(3) KATHREIN 840-370964K Antennas
(3) CCI DMP65R-BU4D Antennas
(3) Ericsson 8843 B2/B66A RRU
(3) Ericsson 4449 B5/B12 RRU
(1) Fiber Lines
(2) DC Lines
(6) Coax – 1-1/4”

This facility was approved by the Connecticut Siting Council, Petition #061 on September 16, 1980. Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Mr. John Hall, First Selectman of the Town of Westbrook, the Westbrook Town Planner and the property and tower owner.

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

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

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

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

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

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

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

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

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

Thank you for your consideration.

Sincerely,

Mark Roberts
Consultant for SAI
Mark.Roberts@QCDevelopment.net

Attachments

Cc: John Hall – First Selectman, Town of Westbrook
Peter Gillespie – Westbrook Planning & Zoning
State of Connecticut DESPP – Tower & Property Owner

Exhibit A

Original Facility Approval

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

1 CENTRAL PARK PLAZA • NEW BRITAIN, CONN. 06051

PHONE: 827-2604

PETITION NO. 61
Westbrook, Connecticut
March 31, 1982

Commissioner Boucher, Dr. Horsfall, and Duncan Reid made a final field inspection of the new telecommunication tower at the State Police Barracks in Westbrook.

This petition involved replacing an existing 60 foot monotube telecommunication tower with a 180 foot self-supporting lattice tower. Valley Shore Emergency Communications, Inc. is the owner-operator and shares the facility with the Department of Transportation and the Department of Public Safety. The tower supports three microwave "dish" antennas and four "stick" antennas. There is no equipment shelter; associated equipment is housed in the nearby State Police Garage. The facility is used for State Police communications, motorist aid call box communications, and local emergency communications.

The monotube tower has been dismantled and removed from the site. The new tower extends approximately 100 feet above the treeline and is visible from selected locations on nearby Route 166 and from several locations on I-95. Otherwise, it appears to be screened by trees and ridges. No significant adverse environmental impacts resulted from construction.

Final approval is recommended.

Duncan C. Reid
Environmentalist
4/1/82

Exhibit B

Property Card/Map
&
LOA

315 SPENCER PLAINS RD

Location	315 SPENCER PLAINS RD	**Mblu**	165/ / 015/ /
Acct#	S0513700	**Owner**	CONNECTICUT STATE OF
Assessment	$1,046,140	**Appraisal**	$1,494,470
PID	3667	**Building Count**	2

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$1,066,190	$428,280	$1,494,470
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$746,340	$299,800	$1,046,140

Owner of Record

Owner	CONNECTICUT STATE OF	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	315 SPENCER PLAINS RD WESTBROOK, CT 06498	**Book & Page**	46/350
		Sale Date	02/20/1958
		Instrument	25

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
CONNECTICUT STATE OF	$0		46/350	25	02/20/1958

Building Information

Building 1 : Section 1

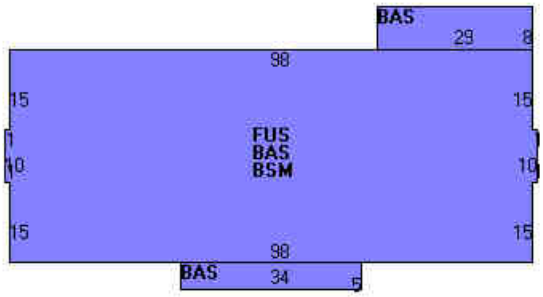
Year Built:	1958
Living Area:	8,282
Replacement Cost:	$1,462,483
Building Percent Good:	58
Replacement Cost Less Depreciation:	$848,240

Building Attributes	
Field	**Description**
Style:	Other State
Model	Comm/Ind
Grade	A
Stories:	1.0
Occupancy	1.00
Exterior Wall 1	Brick
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Drywall
Interior Wall 2	
Interior Floor 1	Linoleum
Interior Floor 2	Carpet
Heating Fuel	Oil
Heating Type	Hot Water
AC Percent	100
Foundation	Poured Conc
Bldg Use	Exempt Comm
Total Rooms	0
Total Bedrms	0
Total Fixtures	4
% Sprinklers	0
1st Floor Use:	
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	9.00
% Comn Wall	

Building Photo

(https://images.vgsi.com/photos2/WestbrookCTPhotos///0010/IMG_9499_1

Building Layout



(https://images.vgsi.com/photos2/WestbrookCTPhotos//Sketches/3667_36

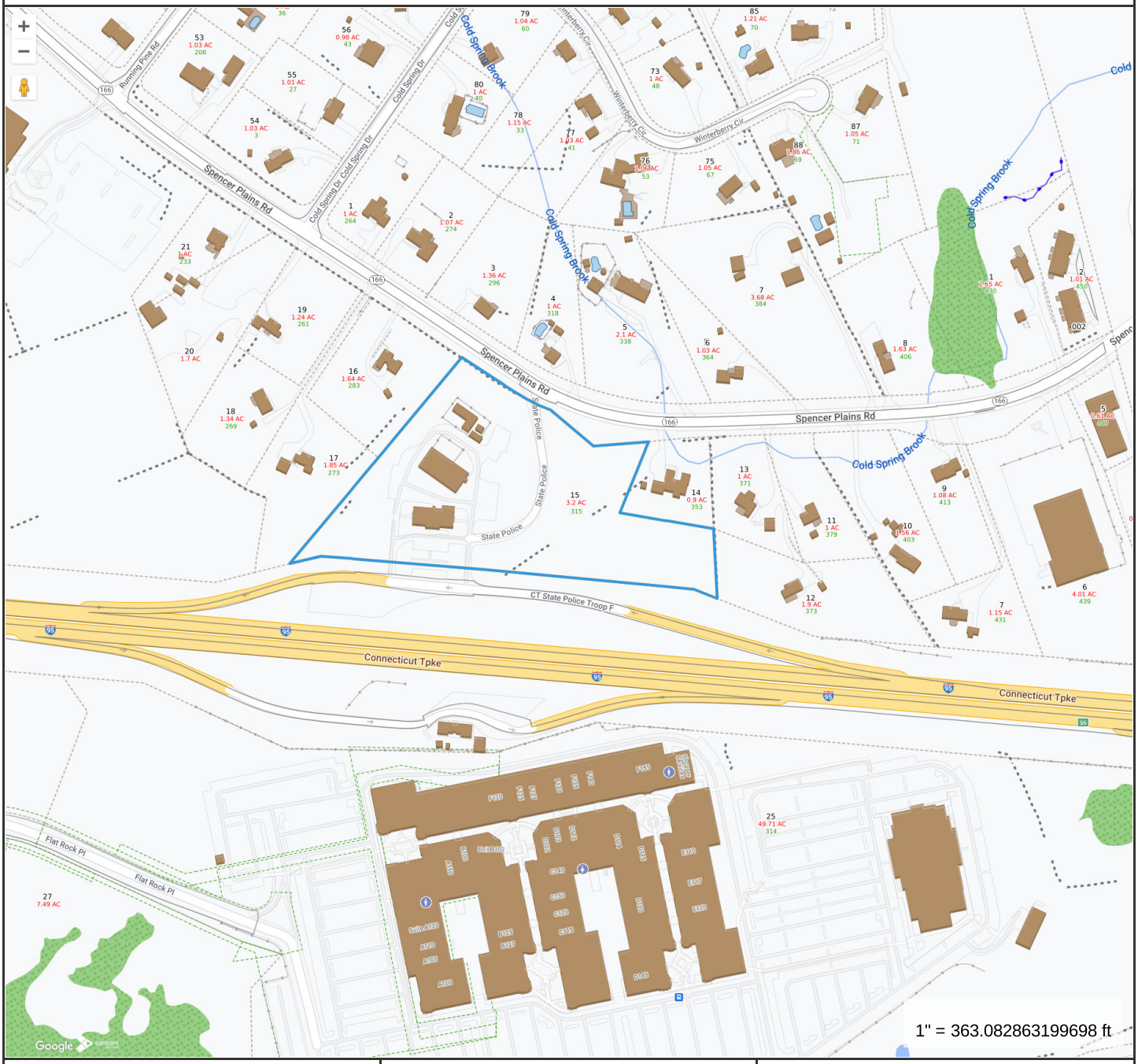
Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	4,342	4,342
FUS	Finished Upper Story	3,940	3,940
BSM	Basement	3,940	0
		12,222	8,282

Building 2 : Section 1

Year Built: 1958
Living Area: 5,832
Replacement Cost: $336,990
Building Percent Good: 58
Replacement Cost Less Depreciation: $195,450

Building Attributes : Bldg 2 of 2	
Field	**Description**

315 SPENCER PLAINS ROAD, WESTBROOK, CT



Property Information

Property ID	165-015
Location	315 SPENCER PLAINS RD
Owner	CONNECTICUT STATE OF

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

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

Geometry updated October 25, 2021
Data updated daily

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

STATE OF CONNECTICUT

DEPARTMENT OF EMERGENCY SERVICES AND PUBLIC PROTECTION
Division of Statewide Emergency Telecommunications

Letter of Authorization

March 8, 2023

Rachelle Lewis, Area Manager
AT&T Mobility
84 Deerfield Lane, Floor 2
Meriden, CT 06450

Re: Development Application Letter of Authorization - 315 Spencer Plains Road, Westbrook, CT 06498 (AT&T Site: CTL02047)

Dear Ms. Lewis,

Connecticut Department of Emergency Services and Public Protection (DESPP) owns the tower facility at 315 Spencer Plains Road, Westbrook, CT 06498. DESPP hereby authorizes New Cingular Wireless PCS, LLC (hereinafter referred to as "AT&T") and its agent, QC Development, to file applications for the sole purpose of gaining any zoning approval and building permit(s) to install new telecommunications equipment ("Equipment") on an existing Self-Support tower on the property. AT&T and its afore mentioned agent shall not have authority to agree to any stipulations associated with their business before the Building Department that results in a duty on the part of DESPP that the DESPP has not expressly permitted in writing.

AT&T shall not be permitted to install the Equipment on the property until AT&T provides a copy of its building permit from the Town and until AT&T complies with any and all requirements set forth in AT&T's lease with the DESPP.

Please contact me at 860-685-5107 or mark.gorka@ct.gov should you have any questions or concerns.

Sincerely,

Mark Gorka
Grants & Contracts Specialist
Connecticut DESPP / CTS Unit

1111 Country Club Road
Middletown, CT 06457
Phone: (860) 685-8080 / Fax: (860) 685-8362

Exhibit C

Construction Drawings

PROJECT INFORMATION

SCOPE OF WORK:

ITEMS TO BE MOUNTED ON THE EXISTING SELF SUPPORT :
- NEW AT&T RRUS: 4478 B14 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T DC & FIBER SURGE ARRESTOR DC9-48-60-24-8C-EV (TOTAL OF 1) WITH (1) AWG 6 DC TRUNK.
- INSTALL NEW 4X4 HSS STEEL TUBES STAND-OFFS SECURED TO THE EXISTING PIPE MASTS (TYP. OF 4 PER SECTOR, TOTAL OF 12)

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:
- NONE

ITEMS TO BE REMOVED:
- EXISTING AT&T DC & FIBER SURGE ARRESTOR DC6-48-60-18-8F (TOTAL OF 1).
- EXITING AT&T DIPLEXERS: CM1007-DBPXBC-003 (TOTAL OF 6).
- DECOMM UMTS LINE COMPONENTS.

ITEMS TO REMAIN:
- (6) ANTENNAS, (6) RRU'S, (6) COAX CABLES, (2) DC POWER & (1) FIBER.

SITE ADDRESS:	315 SPENCER PLAIN ROAD WESTBROOK, CT 06498
LATITUDE:	41.292436° N, 41° 17' 32.76" N
LONGITUDE:	72.430388° W, 72° 25' 49.39" W
TYPE OF SITE:	SELF SUPPORT / INDOOR
STRUCTURE HEIGHT:	180'-0"±
RAD CENTER:	148'-0"±
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

SITE NUMBER: CTL02047

SITE NAME: WESTBROOK-SPENCER RD

FA CODE: 10035035

PACE ID: MRCTB062149

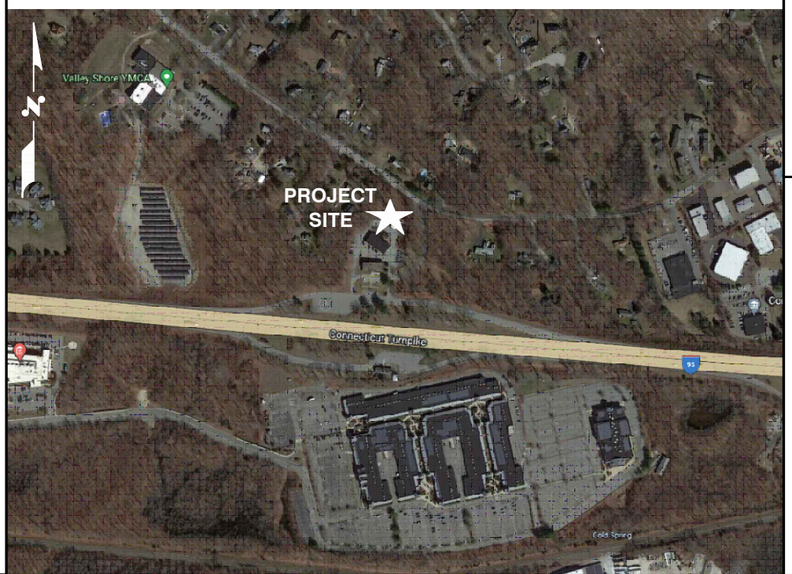
PROJECT: SITE OVERLAY.LTE.5TH CARRIER UPGRADE

DRAWING INDEX

VICINITY MAP

DIRECTIONS TO SITE:

FROM ROCKY HILL, CT: TAKE CT-99/MAIN ST CONTINUE TO FOLLOW MAIN ST 5.8 MI, TAKE THE RAMP ONTO CT-9 S 24.9 MI, TAKE THE EXIT ONTO GOVERNOR JOHN DAVIS LODGE TURNPIKE/I-95 S/US-1 S TOWARD NEW HAVEN/N.Y. CITY, CONTINUE TO FOLLOW GOVERNOR JOHN DAVIS LODGE TURNPIKE/I-95 S 3.4 MI, TAKE EXIT 66 FOR SPENCER PLAIN RD/CT-166 0.3 MI, TURN LEFT AT CT-166/SPENCER PLAIN RD.



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.
5. NOTE TO GENERAL CONTRACTOR: (PRIOR TO CONSTRUCTION COMPLETION)

   TEP NORTHEAST (TEP OPCO, LLC.) TO PERFORM POST/CLIMB AND INSPECTION TO CONFIRM PROPOSED INSTALLATION COMPLIES WITH THE RECORD STAMPED DRAWINGS AND STRUCTURAL REPORTS PRIOR TO SUBMITTING FCCA (FINAL CONSTRUCTION CONTROL AFFIDAVIT). GC IS RESPONSIBLE FOR COORDINATING INSPECTIONS WITH TEP NORTHEAST (TEP OPCO, LLC.) PRIOR TO CONSTRUCTION BEING COMPLETED.

72 HOURS

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

UNDERGROUND SERVICE ALERT

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

TEP NORTHEAST
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL02047
SITE NAME: WESTBROOK-SPENCER RD

315 SPENCER PLAIN ROAD
WESTBROOK, CT 06498
MIDDLESEX COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	03/24/23	ISSUED FOR CONSTRUCTION	JH	HC	DPH
1	11/17/22	ISSUED FOR CONSTRUCTION	GA	HC	DPH
A	10/19/22	ISSUED FOR REVIEW	GA	HC	DPH

SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: GA

AT&T

TITLE SHEET

SITE OVERLAY.LTE.5TH CARRIER UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02047	T-1	2

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

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

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

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

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

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

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

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

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

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

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

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

15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. 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 2021 WITH 2022 CT STATE BUILDING CODE AMENDMENTS
    ELECTRICAL CODE: 2020 NATIONAL ELECTRICAL CODE (NFPA 70-2020)

    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 (ANTENNA)	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		

TEP NORTHEAST
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL02047
SITE NAME: WESTBROOK-SPENCER RD

315 SPENCER PLAIN ROAD
WESTBROOK, CT 06498
MIDDLESEX COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	03/24/23	ISSUED FOR CONSTRUCTION	JH	HC	DPH
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A	10/19/22	ISSUED FOR REVIEW	GA	HC	DPH

SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: GA

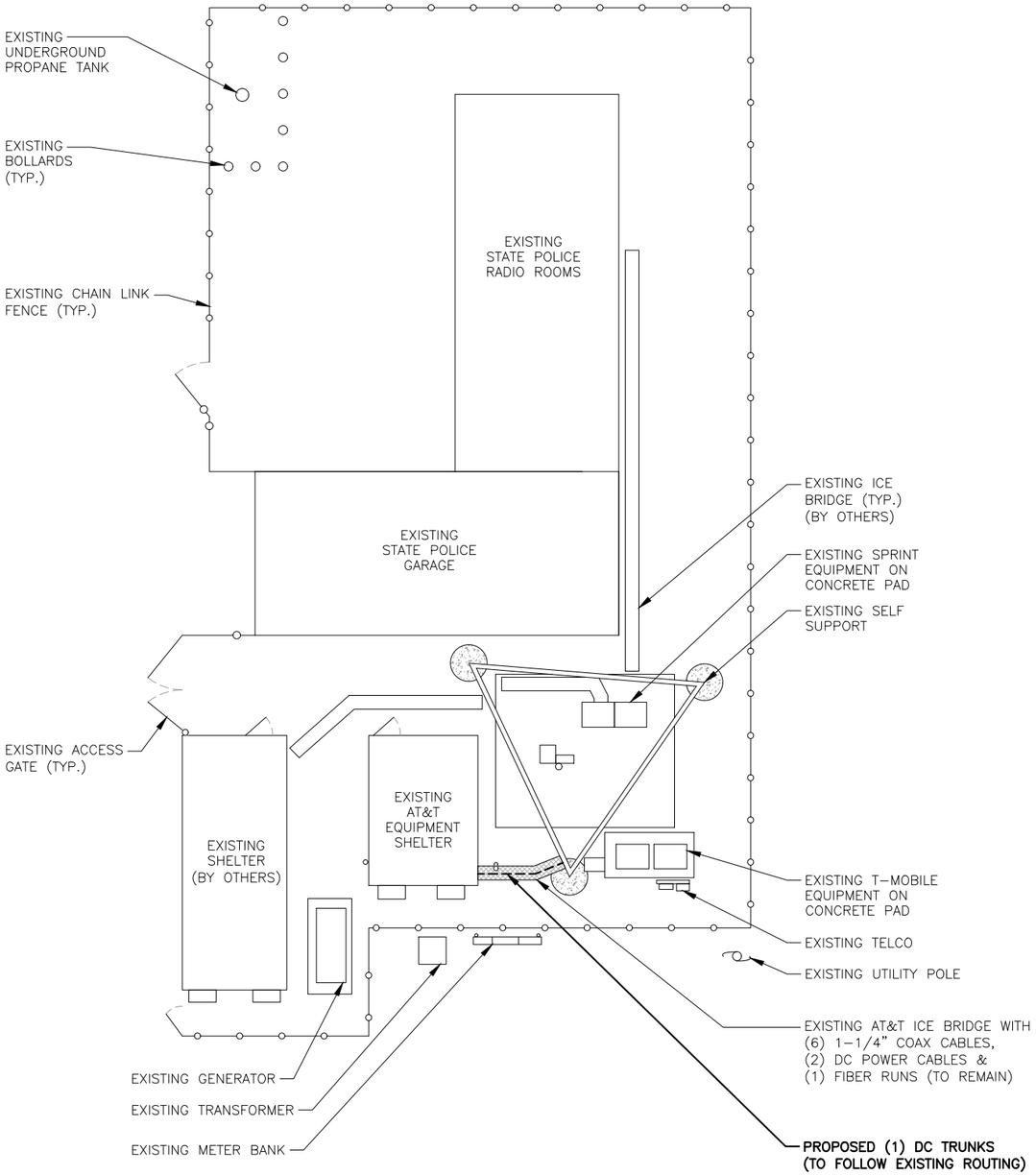
STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

GENERAL NOTES

SITE OVERLAY.LTE.5TH CARRIER UPGRADE

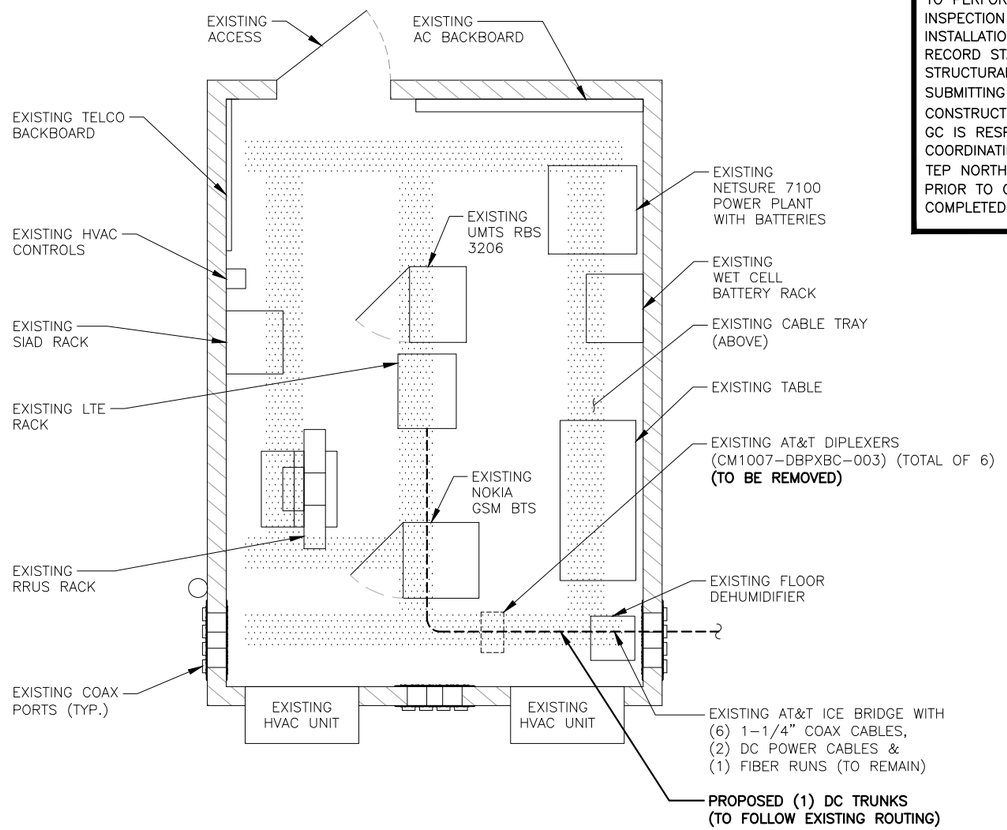
SITE NUMBER	DRAWING NUMBER	REV
CTL02047	GN-1	2



MAGNETIC NORTH 13°37' TRUE NORTH

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

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



MAGNETIC NORTH 13°37' TRUE NORTH

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

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

NOTE:

AN ANALYSIS FOR THE CAPACITY OF EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: TEP NORTHEAST.
DATED: MARCH 22, 2023 (REV.1)

NOTE:

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

NOTE:

REFER TO **STRUCTURAL ANALYSIS** BY: CENTEK ENGINEERING., DATED: NOVEMBER 8, 2022. FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE TO GENERAL CONTRACTOR: (PRIOR TO CONSTRUCTION COMPLETION)

TEP NORTHEAST (TEP OPCO, LLC.) TO PERFORM POST/CLIMB AND INSPECTION TO CONFIRM PROPOSED INSTALLATION COMPLIES WITH THE RECORD STAMPED DRAWINGS AND STRUCTURAL REPORTS PRIOR TO SUBMITTING FCCA (FINAL CONSTRUCTION CONTROL AFFIDAVIT). GC IS RESPONSIBLE FOR COORDINATING INSPECTIONS WITH TEP NORTHEAST (TEP OPCO, LLC.) PRIOR TO CONSTRUCTION BEING COMPLETED.

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FAX: (978) 336-5586

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL02047
SITE NAME: WESTBROOK-SPENCER RD

315 SPENCER PLAIN ROAD
WESTBROOK, CT 06498
MIDDLESEX COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	03/24/23	ISSUED FOR CONSTRUCTION	JH	HC	DPH
1	11/17/22	ISSUED FOR CONSTRUCTION	GA	HC	DPH
A	10/19/22	ISSUED FOR REVIEW	GA	HC	DPH

SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: GA

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

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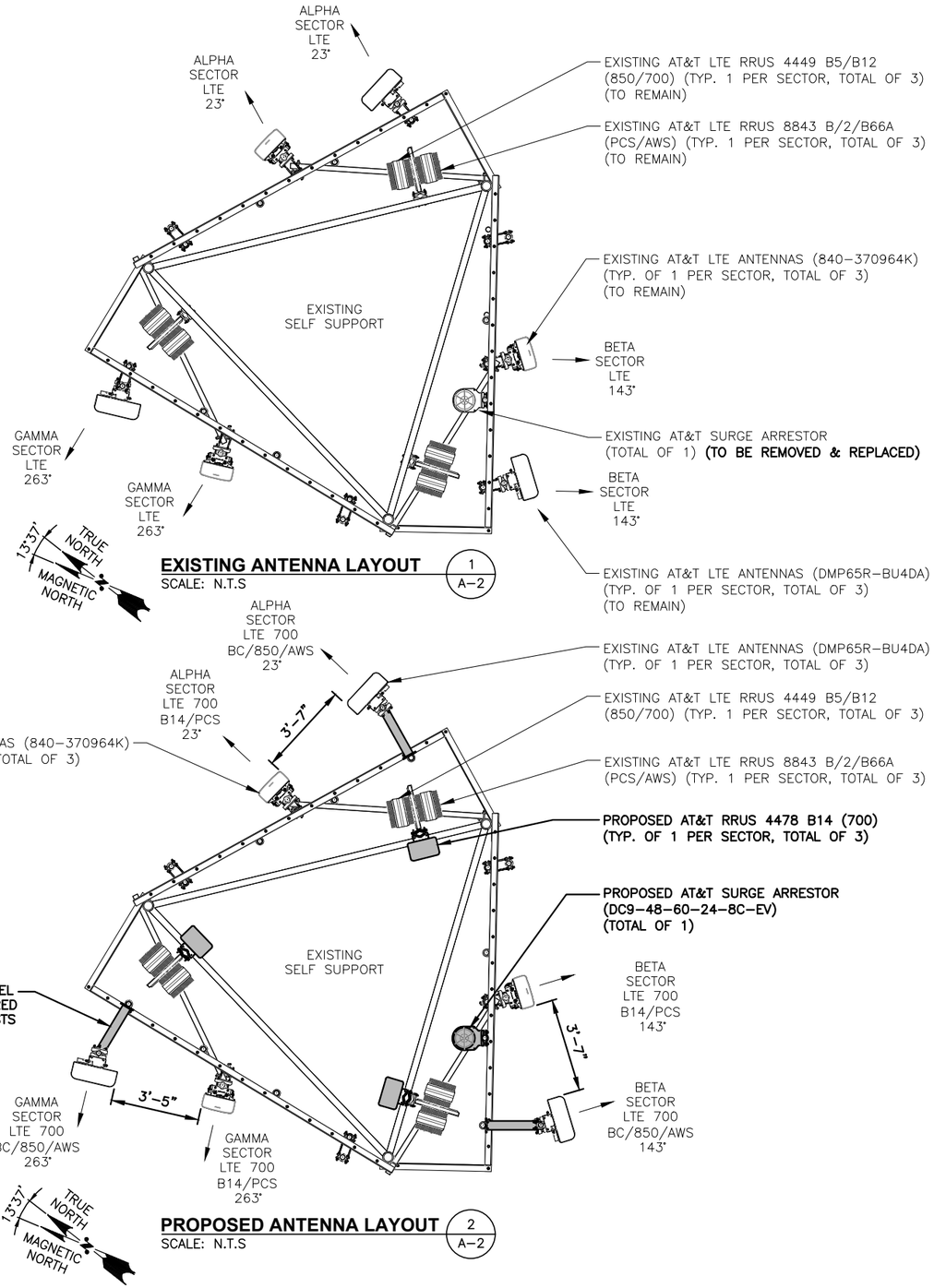
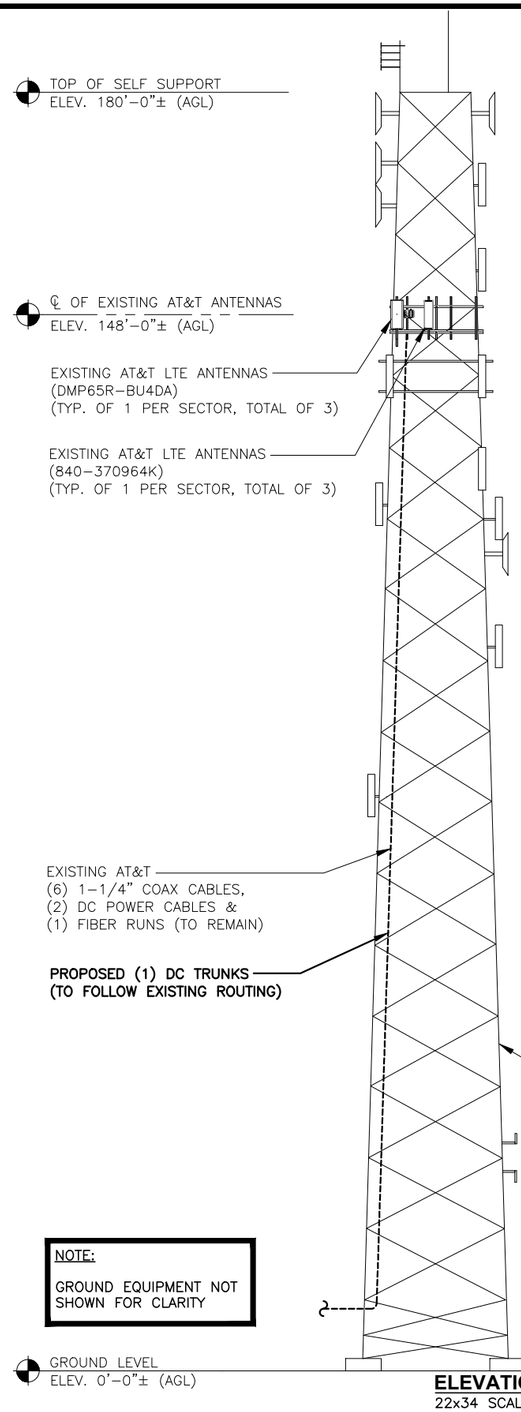
COMPOUND & EQUIPMENT PLANS
SITE OVERLAY.LTE.5TH CARRIER UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02047	A-1	2





NOTE:

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NOTE:

AN ANALYSIS FOR THE CAPACITY OF EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED
BY: TEP NORTHEAST.
DATED: MARCH 22, 2023 (REV.1)

NOTE:

REFER TO **STRUCTURAL ANALYSIS**
BY: CENTEK ENGINEERING.,
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SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: GA

STATE OF CONNECTICUT
No. 24178
LICENSED PROFESSIONAL ENGINEER

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ANTENNA LAYOUTS & ELEVATION
SITE OVERLAY.LTE.5TH CARRIER UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02047	A-2	2

ANTENNA SCHEDULE

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	–	–	–	–	–	–	–	–	–	–	(P) (1) RAYCAP DC9-48-60-24-8C-EV
A2	–	–	–	–	–	–	–	–	–	(2)(E) 1-1/4 COAX	
A3	EXISTING	LTE 700 B14/PCS	840-370964K	47.7X14.9X6.5	148'-0"±	23°	–	**(1)(P) 4478 B14 (700)** (1)(E) 8843 B2/B66A (PCS/AWS)	**18.1X13.4X8.3** –	(2)(E) DC POWER & (1) FIBER **(1)(P) DC POWER** (1)(E) Y-CABLE	
A4	EXISTING	LTE 700 BC/850/AWS	DMP65R-BU4DA	48.0X20.7X7.7	148'-0"±	23°	–	(1)(E) 4449 B5/B12 (850/700)	–	(1)(E) Y-CABLE	
B1	–	–	–	–	–	–	–	–	–	–	I
B2	–	–	–	–	–	–	–	–	–	(2)(E) 1-1/4 COAX	
B3	EXISTING	LTE 700 B14/PCS	840-370964K	47.7X14.9X6.5	148'-0"±	143°	–	**(1)(P) 4478 B14 (700)** (1)(E) 8843 B2/B66A (PCS/AWS)	**18.1X13.4X8.3** –	(1)(E) Y-CABLE	
B4	EXISTING	LTE 700 BC/850/AWS	DMP65R-BU4DA	48.0X20.7X7.7	148'-0"±	143°	–	(1)(E) 4449 B5/B12 (850/700)	–	(1)(E) Y-CABLE	
C1	–	–	–	–	–	–	–	–	–	–	I
C2	–	–	–	–	–	–	–	–	–	(2)(E) 1-1/4 COAX	
C3	EXISTING	LTE 700 B14/PCS	840-370964K	47.7X14.9X6.5	148'-0"±	263°	–	**(1)(P) 4478 B14 (700)** (1)(E) 8843 B2/B66A (PCS/AWS)	**18.1X13.4X8.3** –	(1)(E) Y-CABLE	
C4	EXISTING	LTE 700 BC/850/AWS	DMP65R-BU4DA	48.0X20.7X7.7	148'-0"±	263°	–	(1)(E) 4449 B5/B12 (850/700)	–	(1)(E) Y-CABLE	

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

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

NOTE:
AN ANALYSIS FOR THE CAPACITY OF EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED
BY: TEP NORTHEAST.
DATED: MARCH 22, 2023 (REV.1)

NOTE:
REFER TO **STRUCTURAL ANALYSIS**
BY: CENTEK ENGINEERING.,
DATED: NOVEMBER 8, 2022.
FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE TO GENERAL CONTRACTOR:
(PRIOR TO CONSTRUCTION COMPLETION)

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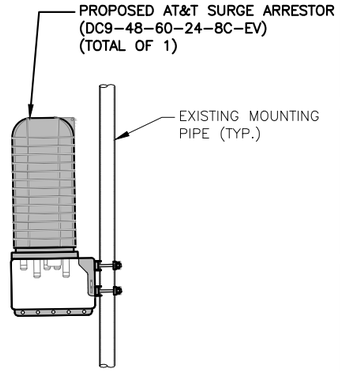


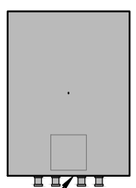
PROPOSED SURGE SUPPRESSOR MOUNTING DETAIL 5 / A-3
SCALE: N.T.S

RRU CHART

QUANTITY	MODEL	SIZE (L x W x D)
3(E)	4449 (850/700)	17.9"x13.2"x10.4"
3(E)	8843 (PCS/AWS)	14.9"x13.2"x10.9"
3(P)	**4478 B14 (700)**	**18.1"x13.4"x8.3"**

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

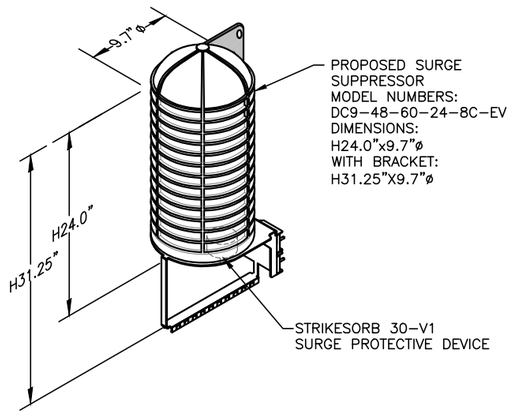
NOTE:
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER



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

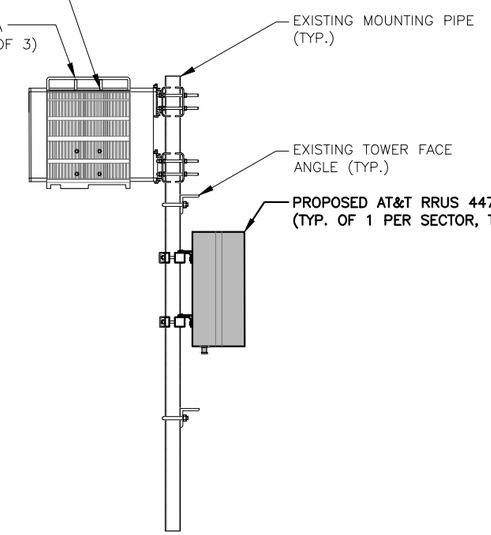
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

PROPOSED RRUS DETAIL 2 / A-3
SCALE: N.T.S

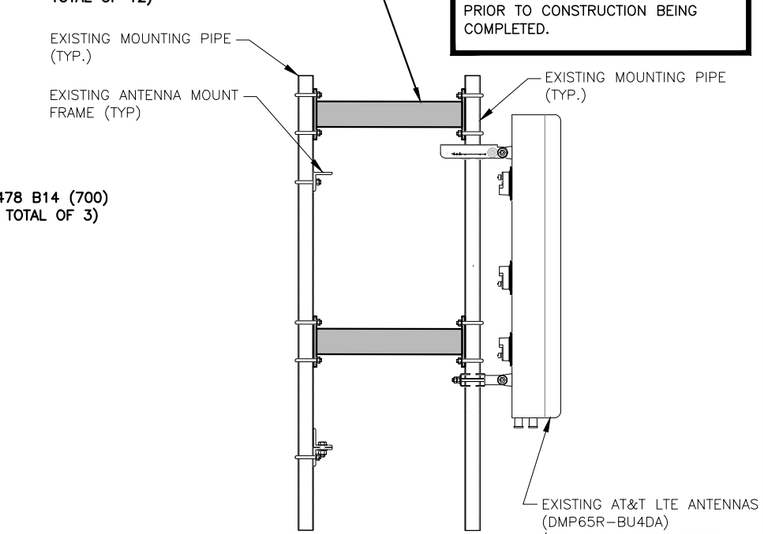


NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

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



PROPOSED LTE RRU MOUNTING DETAIL 4 / A-3
SCALE: N.T.S



EXISTING LTE ANTENNA MOUNTING DETAIL 6 / A-3
22x34 SCALE: 1" = 1'-0"
11x17 SCALE: 1/2" = 1'-0"

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

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1	11/17/22	ISSUED FOR CONSTRUCTION	GA	HC	DPH
A	10/19/22	ISSUED FOR REVIEW	GA	HC	DPH

SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: GA

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

AT&T

DETAILS

SITE OVERLAY.LTE.5TH CARRIER UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02047	A-3	2

STRUCTURAL NOTES:

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-H STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
3. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
4. STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
5. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
6. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
7. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
8. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
9. FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
10. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND DI.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL". 14TH EDITION.
11. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
12. UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
13. EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-270 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
15. LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
16. WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
17. ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
18. NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
19. SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

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

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

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

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

SPECIAL INSPECTION CHECKLIST

BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
N/A	ENGINEER OF RECORD APPROVED SHOP DRAWINGS [1]
N/A	MATERIAL SPECIFICATIONS REPORT [2]
N/A	FABRICATOR NDE INSPECTION
REQUIRED	PACKING SLIPS [3]
ADDITIONAL TESTING AND INSPECTIONS:	
DURING CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS [4]
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION [5]
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT
ADDITIONAL TESTING AND INSPECTIONS:	
AFTER CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS [6]
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
REQUIRED	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

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A	10/19/22	ISSUED FOR REVIEW	GA	HC	DPH

SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: GA

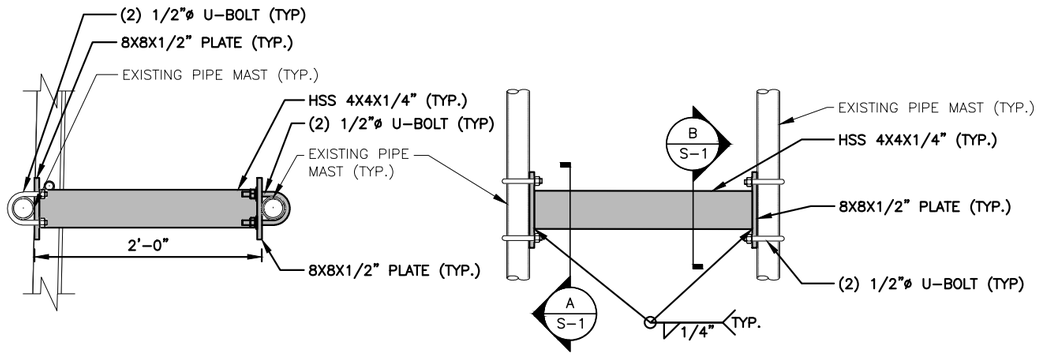
STATE OF CONNECTICUT · DANIEL P. HAMM · No. 24178 · LICENSED PROFESSIONAL ENGINEER

AT&T

STRUCTURAL NOTES

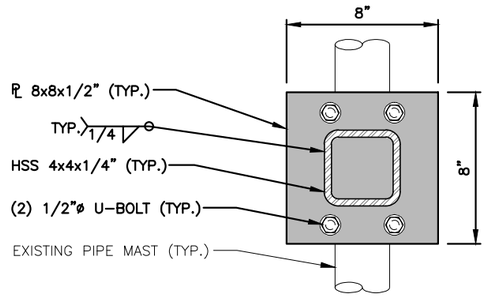
SITE OVERLAY.LTE.5TH CARRIER UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02047	SN-1	2

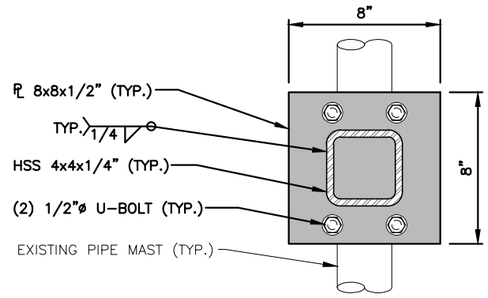


PLAN VIEW

SIDE VIEW



"A" DETAIL



"B" DETAIL

CONNECTION DETAIL (3 / S-1)
22x34 SCALE: 1-1/2"=1'-0"
11x17 SCALE: 3/4"=1'-0"
0 0'-4" 0'-8" 1'-4" 2'-0"

NOTE:

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

NOTE:

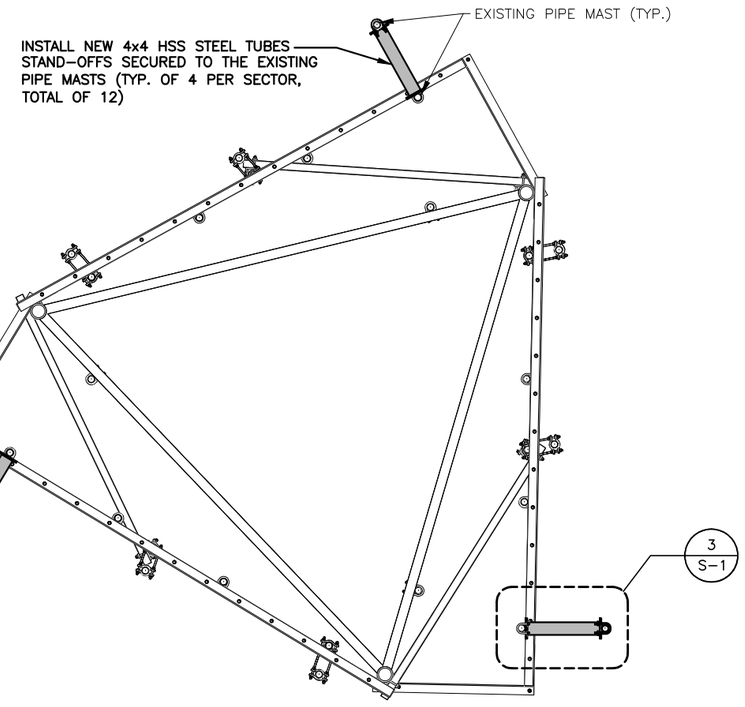
AN ANALYSIS FOR THE CAPACITY OF EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED
BY: TEP NORTHEAST.
DATED: MARCH 22, 2023 (REV.1)

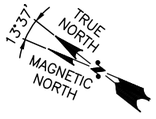
NOTE:

REFER TO **STRUCTURAL ANALYSIS**
BY: CENTEK ENGINEERING.,
DATED: NOVEMBER 8, 2022.
FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

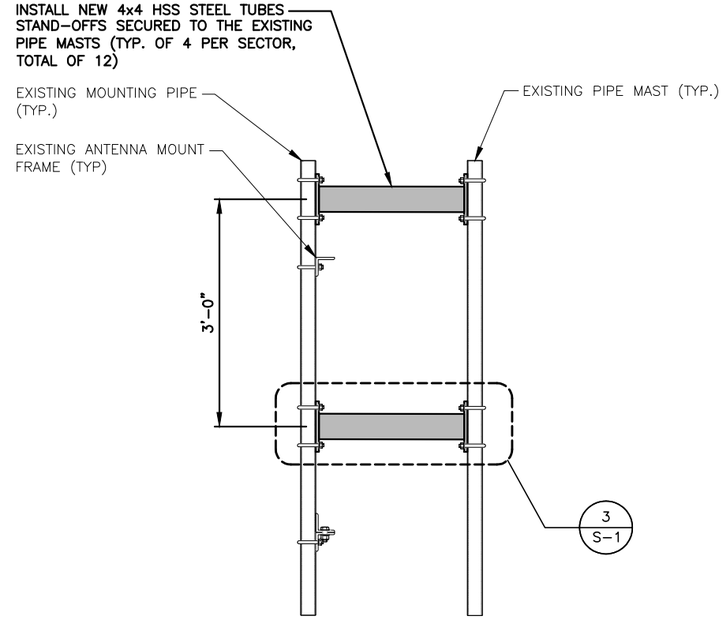
NOTE TO GENERAL CONTRACTOR: (PRIOR TO CONSTRUCTION COMPLETION)

TEP NORTHEAST (TEP OPCO, LLC.) TO PERFORM POST/CLIMB AND INSPECTION TO CONFIRM PROPOSED INSTALLATION COMPLIES WITH THE RECORD STAMPED DRAWINGS AND STRUCTURAL REPORTS PRIOR TO SUBMITTING FCCA (FINAL CONSTRUCTION CONTROL AFFIDAVIT). GC IS RESPONSIBLE FOR COORDINATING INSPECTIONS WITH TEP NORTHEAST (TEP OPCO, LLC.) PRIOR TO CONSTRUCTION BEING COMPLETED.





PROPOSED MOUNT MODIFICATIONS PLAN (1 / S-1)
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"
0 1'-0" 2'-0" 4'-0" 6'-0"



PROPOSED MOUNT MODIFICATIONS DETAIL (3 / S-1)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"
0 0'-6" 1'-0" 2'-0" 3'-0"

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

TEP NORTHEAST
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL02047
SITE NAME: WESTBROOK-SPENCER RD

315 SPENCER PLAIN ROAD
WESTBROOK, CT 06498
MIDDLESEX COUNTY

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

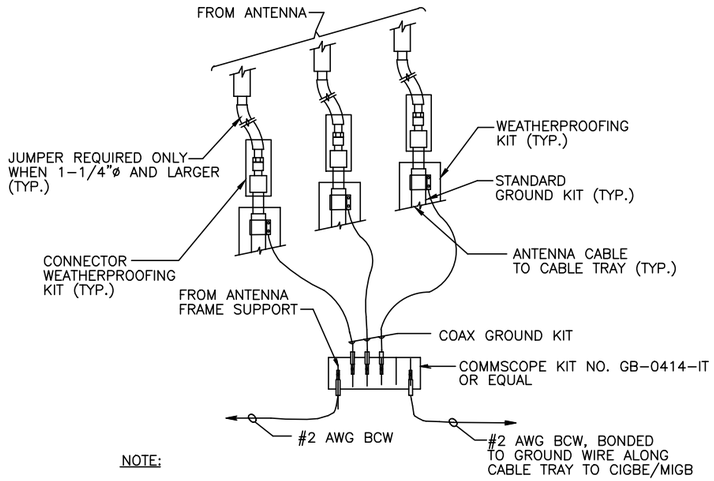
NO.	DATE	REVISIONS	BY	CHK	APP'D
2	03/24/23	ISSUED FOR CONSTRUCTION	VN	HC	DPH
1	11/17/22	ISSUED FOR CONSTRUCTION	GA	HC	DPH
A	10/19/22	ISSUED FOR REVIEW	GA	HC	DPH

SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: GA

AT&T

MOUNT MODIFICATION DESIGN
SITE OVERLAY.LTE.5TH CARRIER UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02047	S-1	2



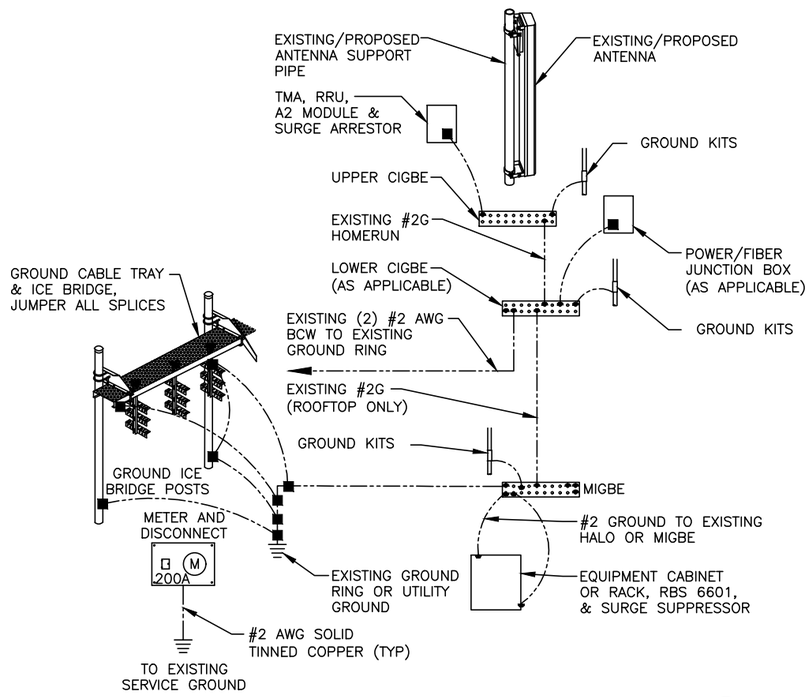
NOTE:

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

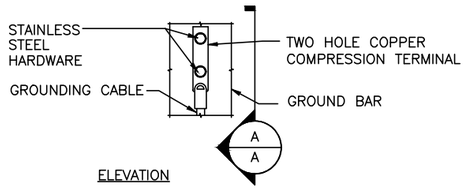
1 / G-1



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

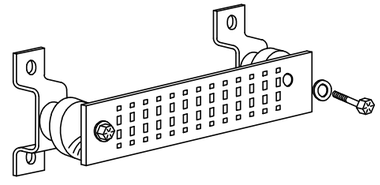
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

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

TEP NORTHEAST
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SAI
12 INDUSTRIAL WAY
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at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP
2	03/24/23	ISSUED FOR CONSTRUCTION	YN	HC	DPH
1	11/17/22	ISSUED FOR CONSTRUCTION	GA	HC	DPH
A	10/19/22	ISSUED FOR REVIEW	GA	HC	DPH

SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: GA

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

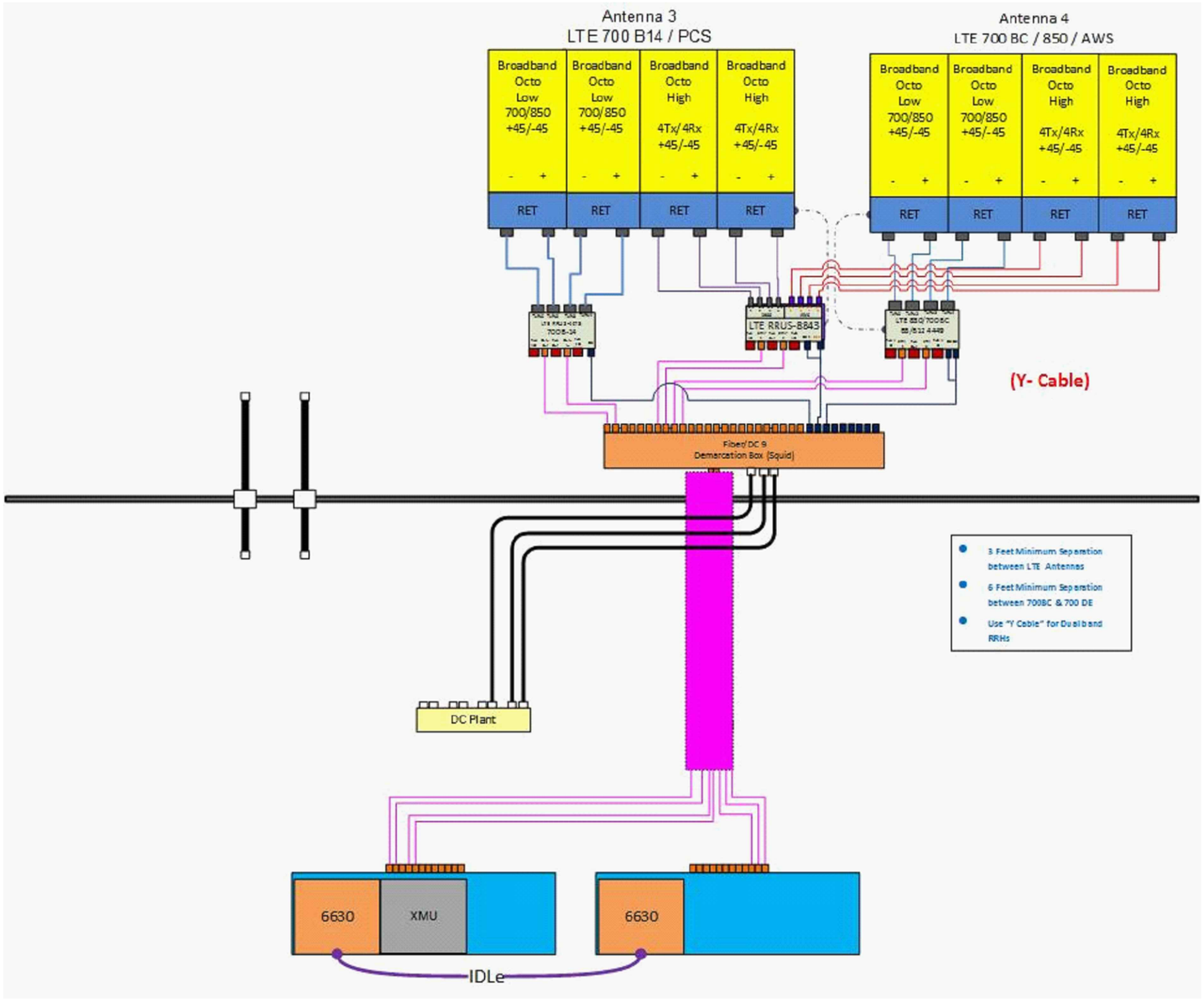
AT&T

GROUNDING DETAILS
SITE OVERLAY.LTE.5TH CARRIER UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02047	G-1	2

NOTE:

REV: 2
DATED: 07/25/2022
RFDS ID: 5064353



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

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

NOTE:

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

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NO.	DATE	REVISIONS	BY	CHK	APP'D
2	03/24/23	ISSUED FOR CONSTRUCTION	YH	HC	DPH
1	11/17/22	ISSUED FOR CONSTRUCTION	GA	HC	DPH
A	10/19/22	ISSUED FOR REVIEW	GA	HC	DPH

SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: GA

AT&T

RF PLUMBING DIAGRAM
SITE OVERLAY.LTE.5TH CARRIER UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL02047	RF–1	2

Exhibit D

Structural Analysis Report

CENTEK engineering

Centered on Solutions℠

Structural Analysis Report

180' Existing Lattice Tower

Proposed AT&T
Antenna Upgrade

AT&T Site Ref: CT2047

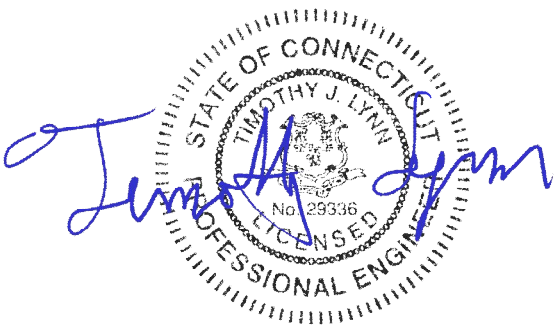
CSP Tower Ref: #36

315 Spencer Plains Road
Westbrook, CT

CENTEK Project No. 22007.11

Date: November 8, 2022

Max Stress Ratio = 82%



Prepared for:
AT&T Mobility
500 Enterprise Drive, Suite 3A
Rocky Hill, CT 06067

Table of Contents

Introduction

The purpose of this report is to summarize the results of the non-linear, P-Δ structural analysis of the antenna upgrade proposed by AT&T on the existing lattice tower located in Westbrook, Connecticut.

The host tower is a 180-ft, three legged, lattice tower originally designed and manufactured by Stainless, Inc. project no. 358811 dated 6/14/94. The tower geometry, structure member sizes and foundation information were taken from a previous structural analysis report prepared by Centek job no. 22094.00 dated August 23, 2022. The tower has been previously reinforced multiple times. All previous reinforcements are assumed to be installed. See Primary Assumptions Section below for detailed reinforcement reference reports.

Antenna and appurtenance inventory was taken from the aforementioned structural analysis and a AT&T RFDS.

The tower consists of eight (8) vertical sections consisting of pipe legs conforming to ASTM A572 Gr. 50 and steel angle lateral bracing conforming to ASTM A36. The vertical tower sections are connected by bolted flange plates with the diagonal and horizontal bracing to pipe legs consisting of bolted connections. The width of the tower face is 10-ft 7-in at the top and 25-ft 0-in at the bottom.

Antenna and Appurtenance Summary

The existing and proposed loads considered in the analysis consist of the following:

- Tower:
  Antenna: One (1) lightning rod pipe mounted to the top of the tower.
- D&K-42, D&K53 – D&K55 (ST# 1-4):
  Antenna: One (1) 11’ Omni-directional antenna, one (1) 10’ 4-bay dipole antenna, one (1) 18’ 4-bay dipole antenna and one (1) 11’ Omni-directional antenna (inverted) mounted on (2) 6-ft side-arms with an elevation of 178.5-ft AGL.
  Cables: Two (2) 1-5/8”∅ and two (2) 7/8”∅ cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- (ST# 16):
  Antenna: One (1) junction box face mounted with an elevation of 178-ft AGL.
  Cables: One (1) 7/8”∅ cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- D&K-40, D&K-41, D&K-47, D&K-48, D&K-51, D&K-52, D&K-57, D&K-58 (ST# 5-12):
  Antenna: One (1) 14’ Omni-directional antenna, two (2) 16’ Omni-directional antennas, one (1) 10’ Omni-directional antenna, one (1) single dipole, two (2) 10’ 8-bay dipole antennas (inverted) and one (1) TTA pipe mounted on (4) 6-ft side-arms with an elevation of 177.5-ft AGL.
  Cables: Two (2) 1-1/4”∅, five (5) 7/8”∅ and one (1) 1/2”∅ cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- D&K-38, D&K39, D&K59 (ST# 13-15):
  Antenna: One (1) 16’ Omni-directional antennas and two (2) 16’ Omni-directional antennas (inverted) mounted on (1) 6-ft T-arm with an elevation of 177.5-ft AGL.
  Cables: Three (3) 1-5/8”∅ cables running on a leg/face of the existing tower as specified in Section 3 of this report.

- D&K-45 (ST# 17):
  Antenna: One (1) 6-ft microwave dish pipe mounted with an elevation of 178-ft AGL.
  Cables: One (1) 2" elliptical cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- D&K-44 (ST# 18):
  Antenna: One (1) 6-ft microwave dish pipe mounted with an elevation of 176-ft AGL.
  Cables: One (1) 2" elliptical cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- (ST# 20):
  Antenna: One (1) Telewave ANT150F2 antenna mounted on one (1) 3-ft sidearm with an elevation of 164-ft AGL.
  Cables: One (1) 7/8"∅ cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- Eversource (Existing):
  Antenna: One (1) Telewave ANT220F2 antenna mounted on one (1) USF-4U mount with an elevation of 159-ft AGL.
  Cables: One (1) 7/8"∅ cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- D&K-35 (ST# 31):
  Antenna: One (1) Telewave ANT450F6 antenna mounted on one (1) 2-ft sidearm with an elevation of 157-ft AGL.
  Cables: One (1) 7/8"∅ cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- D&K-32, D&K-33 (ST# 24-25):
  Antenna: One (1) 9' Omni-directional antenna and one (1) 14' Omni-directional antenna (inverted) mounted on (1) 3-ft side-arm with an elevation of 156-ft AGL.
  Cables: One (1) 1-5/8"∅ and one (1) 7/8"∅ cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- Valley Shore Regional 911 Center (Reserved):
  Antenna: One (1) Radiowaves HPD3-5W dish and one (1) RAD 400H/ODU/F58F/EXT mounted on (1) 1-ft side-arm with an elevation of 156-ft AGL
  Cables: One (1) RDCCBL-AIRMUX-UTP exthernet cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- D&K-34 (ST# 22):
  Antenna: One (1) Telewave ANT400D dipole antenna mounted on one (1) 2-ft sidearm with an elevation of 151-ft AGL.
  Cables: One (1) 7/8"∅ cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- Sprint (Existing):
  Antenna: Three (3) RFS APXVTM14 panel antennas, three (3) Commscope NNVV-65B-R4 panel antennas, three (3) 1900MHz 4X45W RRHs, six (6) 800MHz 2X50W RRHs and three (3) three (3) TD-RRH-8x20-25 RRHs mounted on three (3) 13-ft T-frames with a RAD center elevation of ±137-ft above grade level.
  Cables: Four (4) 1-1/4"∅ Hybriflex cables running on a leg/face of the existing tower as specified in Section 3 of this report.

- T-MOBILE (Existing):
  Antennas: Three (3) Commscope DBXNH-6565B panel antennas, six (6) TMAs, six (6) diplexers and three (3) Bias Tees mounted on three (3) side-arms with a RAD center elevation of ±130-ft above grade level.
  Cables: Twelve (12) 7/8" ∅ coax cables running on a face of the existing tower as specified in Section 3 of this report.
- D&K-9 (ST# 45):
  Antenna: One (1) Decibel DB210-c dipole antenna mounted on one (1) side-arm with an elevation of 125-ft AGL.
  Cables: One (1) 7/8"∅ cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- Eversource (Existing):
  Antenna: One (1) Comprod 871F-70 dipole antenna mounted on one (1) USF-4U mount with an elevation of 121-ft AGL.
  Cables: One (1) 7/8"∅ cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- D&K-10 (ST# 46):
  Antenna: One (1) 19.5"x19.5" panel antenna mounted on one (1) side-arm with an elevation of 123-ft AGL.
  Cables: One (1) 7/8"∅ cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- D&K-8 (ST# 47):
  Antenna: One (1) Kathrein PRF-950 grid dish mounted on (1) 2-ft side-arm with an elevation of 111-ft AGL
  Cables: One (1) 7/8"∅ cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- D&K-6, D&K-7 (ST# 48-49):
  Antenna: One (1) 20' 4-bay dipole antenna and one (1) 3-ft yagi antenna mounted on (1) 1-ft side-arm with an elevation of 82.5-ft AGL
  Cables: Two (2) 7/8"∅ cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- Sprint (Existing):
  Antenna: One (1) GPS mounted on (1) 1-ft side-arm with an elevation of 81-ft AGL
  Cables: One (1) 1-1/4"∅ cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- D&K-3, D&K-4 (ST# 51-52):
  Antenna: Two (2) DB803M-XC Omni-directional antennas (one upright and one inverted) mounted on (1) 4-ft side-arm with an elevation of 32-ft AGL
  Cables: Two (2) 1/2"∅ cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- D&K-1, D&K-2 (ST# 53-54):
  Antenna: One (1) 3' Omni-directional antenna and one (1) 3' yagi mounted on (1) 4-ft side-arm with an elevation of 18-ft AGL
  Cables: Two (2) 1/2"∅ cable running on a leg/face of the existing tower as specified in Section 3 of this report.

- AT&T (Existing to Remain):
  Antenna: Three (3) CCI DMP65R-BU4D panel antennas, three (3) Kathrein 840-370964 panel antennas, three (3) Ericsson 4449 B5/B12 remote radio heads and three (3) Ericsson 8843 B2/B66A remote radio heads mounted on three (3) 13-ft Sector Frames with a RAD center elevation of ±148-ft above grade level.
  Coax Cable: Six (6) 1-1/4" ∅ cables, one (1) fiber cable and two (2) DC cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- **AT&T (Existing to Remove):**
  Antenna: One (1) Raycap surge arrestor.
- **AT&T (Proposed):**
  Antenna: Three (3) Ericsson 4478 B14 remote radio heads and one (1) Raycap DC9 surge arrestor mounted on three (3) 13-ft Sector Frames with a RAD center elevation of ±148-ft above grade level.
  Coax Cable: One (1) DC cable running on a leg/face of the existing tower as specified in Section 3 of this report.

Primary Assumptions Used in the Analysis

- The tower structure's theoretical capacity not including any assessment of the condition of the tower.
- The tower carries the horizontal and vertical loads due to the weight of antennas, ice load and wind.
- Tower is properly installed and maintained.
- Tower is in plumb condition.
- Tower loading for antennas and mounts as listed in this report.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All welds are fabricated with ER-70S-6 electrodes.
- All members are assumed to be as specified in the original tower design documents.
- All members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
- All member protective coatings are in good condition.
- All tower members were properly designed, detailed, fabricated, installed and have been properly maintained since erection.
- Any deviation from the analyzed antenna loading will require a new analysis for verification of structural adequacy.
- All coax cables should be routed as specified in section 3 of this report.
- **All previous reinforcements per the below listed structural analysis and modification reports are assumed to be installed.**
  - **Structural report prepared by URS Corp for T-Mobile, NU and AT&T project no. SAI-063 / 36924430 dated 6/16/11.**
  - **Structural report prepared by AECOM for T-Mobile project no. NSS-015 / 36931360 dated 5/22/15.**
  - **Structural report prepared by AECOM for AT&T project no. SAI-100 / 60553539 dated 9/29/17.**
  - **Structural report prepared by AECOM for Sprint project no. ASM-009 / 60577720 dated 9/17/18.**

Analysis

The existing tower was analyzed using a comprehensive computer program entitled tnxTower. The program analyzes the tower, considering the worst case loading condition. The tower is considered as loaded by concentric forces along the tower, and the model assumes that the tower members are subjected to bending, axial, and shear forces.

The existing tower was analyzed for the controlling basic wind speed (3-second gust) with no ice and the applicable wind and ice combination to determine stresses in members as per guidelines of TIA-222-H entitled "Structural Standard for Antenna Support Structures and Antennas", the American Institute of Steel Construction (AISC) and the Manual of Steel Construction; Load and Resistance Factor Design (LRFD).

The controlling wind speed is determined by evaluating the local available wind speed data as provided in Appendix P of the CSBC[1] and the wind speed data available in the TIA-222-H Standard.

Tower Loading

Tower loading was determined by the basic wind speed as applied to projected surface areas with modification factors per TIA-222-H, gravity loads of the tower structure and its components, and the application of 1.0" radial ice on the tower structure and its components.

Load Cases:	Load Case 1; 135 mph (Risk Cat III) wind speed w/ no ice plus gravity load – used in calculation of tower stresses and rotation.	*[Appendix P of the 2022 CT Building Code]*
	Load Case 2; 50 mph wind speed w/ 1.00" radial ice plus gravity load – used in calculation of tower stresses.	*[Annex B of TIA-222-H]*
	Load Case 3; 90 mph wind speed w/ 0.5" radial ice plus gravity load – used in calculation of tower twist and sway.	*[TIA-222-F used for calculation of tower twist and sway per the requirements of the CSP]*

[1] The 2021 International Building Code as amended by the 2022 Connecticut State Building Code (CSBC).

Tower Capacity

Tower stresses were calculated utilizing the structural analysis software tnxTower.

- Calculated stresses **were found to be within allowable limits**.

Tower Section	Elevation	Stress Ratio (percentage of capacity)	Result
Leg (T14)	0.0' - 12.5'	80.1%	**PASS**
Diagonal (T10)	50.0' – 75.0'	81.5%	**PASS**
Horizonta (T11)	37.5' - 50.0'	72.4%	**PASS**

- The tower combined deflection **was found to be within allowable limits**.

Deflection Criteria	Proposed (degrees)	Allowable (degrees)	Result
Sway (Tilt)	0.5914	n/a	**n/a**
Twist	0.1065	n/a	**n/a**
Combined	0.6979	0.75	**PASS**

TIA-222-F standard used for calculation of tower twist and sway per the requirements of the CSP.

Foundation and Anchors

The existing foundation consists of a three (3) 4-ft ∅ x 11-ft long reinforced concrete piers concentrically bearing on three (3) 16.25-ft square x 2-ft thick reinforced concrete pads. The sub grade conditions used in the foundation analysis were derived from aforementioned structural analysis. The base of the tower is connected to the foundation by means of (9) 1"∅ anchor bolts per leg embedded into the concrete foundation structure.

- The tower reactions developed from the governing Load Case were used in the verification of the foundation and anchor bolts:

Load Effect	Proposed Tower Reactions
Leg Shear	50 kips
Leg Compression	430 kips
Leg Tension	368 kips
Base Moment	8,837 ft-kips
Base Shear	87 kips

- The anchor bolts were found to be within allowable limits.

Tower Section	Component	Stress Ratio (percentage of capacity)	Result
Anchor Bolts	Combined Compression and Shear	64%	**PASS**

- The foundation was found to be within allowable limits.

Foundation	Design Limit	(percentage of capacity)	Result
Reinforced Concrete Pad and Piers	Uplift	65%	**PASS**
	Bearing	74%	**PASS**
	Concrete Strength	80%	**PASS**

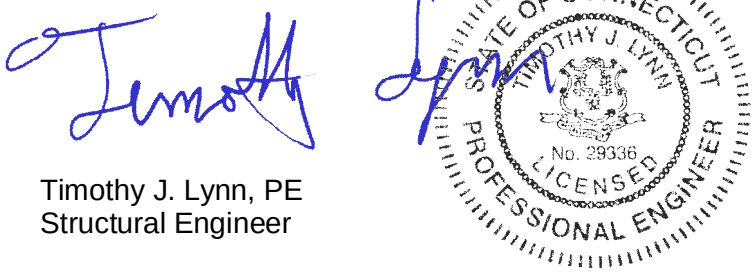
Conclusion

This analysis shows that the subject tower **is adequate** to support the proposed antenna configuration with the below recommendations.

The analysis is based, in part, on the information provided to this office by AT&T and the CT State Police. If the existing conditions are different than the information in this report, Centek Engineering, Inc. must be contacted for resolution of any potential issues.

Please feel free to call with any questions or comments.

Respectfully Submitted by:



Timothy J. Lynn, PE
Structural Engineer

Standard Conditions for Furnishing of Professional Engineering Services on Existing Structures

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessarily limited to:

- Information supplied by the client regarding the structure itself, its foundations, the soil conditions, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from the field and/or drawings in the possession of Centek Engineering, Inc. or generated by field inspections or measurements of the structure.
- It is the responsibility of the client to ensure that the information provided to Centek Engineering, Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated. It is therefore assumed that its capacity has not significantly changed from the “as new” condition.
- All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest revision of ANSI/ASCE10 & ANSI/EIA-222
- All services performed, results obtained, and recommendations made are in accordance with generally accepted engineering principles and practices. Centek Engineering, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAM

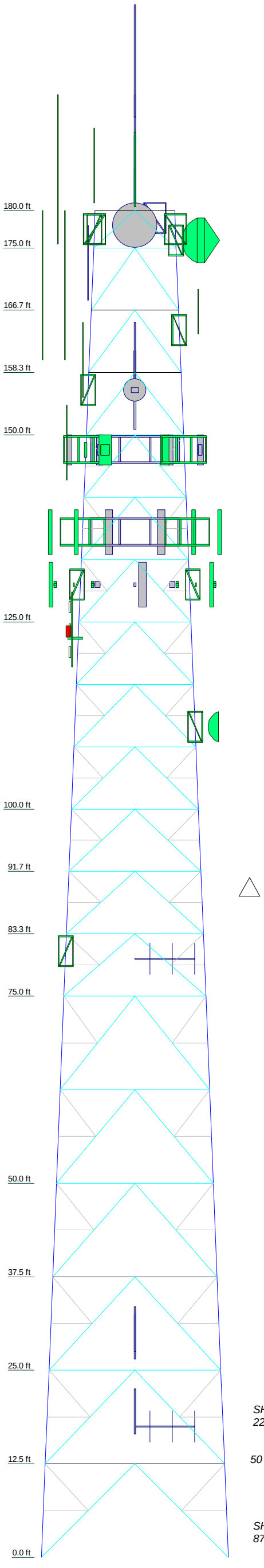
tnxTower, is an integrated structural analysis and design software package for Designed specifically for the telecommunications industry, tnxTower, formerly RISA Tower, automates much of the tower analysis and design required by the TIA/EIA 222 Standard.

tnxTower Features:

- tnxTower can analyze and design 3- and 4-sided guyed towers, 3- and 4-sided self-supporting towers and either round or tapered ground mounted poles with or without guys.
- The program analyzes towers using the TIA-222-H standard or any of the previous TIA/EIA standards back to RS-222 (1959). Steel design is checked using the AISC ASD or the AISC LRFD specifications.
- Linear and non-linear (P-delta) analyses can be used in determining displacements and forces in the structure. Wind pressures and forces are automatically calculated.
- Extensive graphics plots include material take-off, shear-moment, leg compression, displacement, twist, feed line, guy anchor and stress plots.
- tnxTower contains unique features such as True Cable behavior, hog rod take-up, foundation stiffness and much more.

Section	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14
Legs	Stainless P5x0.250				Stainless P5x0.300	Stainless P5x0.400	A	1/3 Pipe w/ 5"x0.5 Stainless		Stainless P6.875x0.400			Stainless P6.875x0.500	
Leg Grade					A513-50			A500-42				A572-60		
Diagonals	2L2 1/2x2x3/16x3/8				2L2 1/2x2x5/16x3/8		2L3x2 1/2x1/4x3/8			2L3 1/2x3 1/2x5/16x3/8	2L3 1/2x3x5/16x3/8		2L3 1/2x3 1/2x5/16x3/8	
Diagonal Grade						A36							A529-50	
Top Girts	L2 1/2x2 1/2x3/16	N.A.	L2 1/2x2 1/2x3/16	N.A.	L3x2 1/2x1/4	L3x3x5/16	L2x2x3/16	L2x2x3/16	L2 1/2x2x3/16	L4x4x1/4	L2 1/2x2 1/2x3/16	L2 1/2x2 1/2x3/16	N.A.	2L4x4x5/16
Horizontals	L3x3x1/4	N.A.	B	N.A.	L3x2 1/2x1/4	L3x3x5/16	L2x2x3/16	L2x2x3/16	L2 1/2x2x3/16	L4x4x1/4	L2 1/2x2 1/2x3/16	L2 1/2x2 1/2x3/16	L4x4x3/8	N.A.
Red. Horizontals	N.A.		N.A.			L3x3x5/16	L2x2x3/16	L2x2x3/16	L2 1/2x2x3/16	L4x4x1/4	L2 1/2x2 1/2x3/16		L2 1/2x2 1/2x3/16	
Red. Diagonals	N.A.		N.A.			L3x3x5/16	L2x2x3/16	L2x2x3/16	L2 1/2x2x3/16	L4x4x1/4	L2 1/2x2 1/2x3/16		L2 1/2x2 1/2x3/16	
Inner Bracing	N.A.		N.A.			L3x3x1/4	L2x2x3/16	L2x2x3/16	L2 1/2x2x3/16	L4x4x1/4	L2 1/2x2 1/2x3/16		L3x3x1/4	
Face Width (ft)	10.599	11	11.6667	12.3333	13	15	17	17.6667	18.3333	19	21	22	23	24
# Panels @ (ft)	1 @ 5				12 @ 8.33333							6 @ 12.5		
Weight (K)	0.6	0.8	0.8	0.8	4.0	4.8	2.0	2.2	2.2	6.3	3.4	4.0	3.9	4.4

Total Weight (K) 39.9



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod 2"x15' (DNK-56 (L.R.))	200	8843 B2/B66A (ATI - Existing)	148
2" Dia 10' Omni (DNK-52 (St# 10))	186	4478 B14 (ATI - Proposed)	148
3" Dia 20' Omni (DNK-59 (St# 13))	185.5	4478 B14 (ATI - Proposed)	148
3" Dia 12' Omni (DNK-48 (St# 8))	185.5	4478 B14 (ATI - Proposed)	148
3" Dia 20' Omni (DNK-57 (St# 6))	185.5	DC9 (ATI - Proposed)	148
2" Dia 10' Omni (DNK-53 (St# 3))	185	Pirod 12' PCS T-Frame (1) 104569 (Sprint)	137
10' - 2 Bay Dipole (DNK-54 (St# 2))	185	Pirod 12' PCS T-Frame (1) 104569 (Sprint)	137
1" Dia 8' Omni (DNK-58 (St# 5))	182.5	Pirod 12' PCS T-Frame (1) 104569 (Sprint)	137
1 Bay Dipole ANT400D (DNK-51 (St# 11))	181	APXVTM14-C-120 Panel Antenna (Sprint)	137
20' 4-Bay Dipole (DNK-55 (St# 1))	181	APXVTM14-C-120 Panel Antenna (Sprint)	137
6' Side-Arm(1) (Mts for St# 4-1 Antennas)	179	APXVTM14-C-120 Panel Antenna (Sprint)	137
6' Side-Arm(1) (Mts for St# 4-1 Antennas)	179	NNVV-65B-R4 Panel Antenna (Sprint)	137
11"x8"x12" Junction Box ((St# 16))	178	NNVV-65B-R4 Panel Antenna (Sprint)	137
6' w/Radome (DNK-45 (St# 17))	178	NNVV-65B-R4 Panel Antenna (Sprint)	137
Pirod 6' Side Mount Standoff (1) (DNK-38,39 (St# 13,14,15,16))	177.5	ALU TD-RRH-8x20-25 (Sprint)	137
		ALU TD-RRH-8x20-25 (Sprint)	137
432E-83I-01T TTA Unit (DNK-47 (St# 9))	177.5	ALU TD-RRH-8x20-25 (Sprint)	137
6' Side-Arm(1) (Mts for St# 5-12 Antennas)	177.5	(2) ALU 800MHz 2x50W (Sprint)	137
6' Side-Arm(1) (Mts for St# 5-12 Antennas)	177.5	(2) ALU 800MHz 2x50W (Sprint)	137
6' Side-Arm(1) (Mts for St# 5-12 Antennas)	177.5	(2) ALU 800MHz 2x50W (Sprint)	137
6' Side-Arm(1) (Mts for St# 5-12 Antennas)	177.5	ALU 4x45-1900 MHz RRH Unit (Sprint)	137
1' Side Arm (DNK-44 (St# 18))	176	ALU 4x45-1900 MHz RRH Unit (Sprint)	137
1' Side Arm (DNK-45 (St# 17))	176	ALU 4x45-1900 MHz RRH Unit (Sprint)	137
6' w/Radome (DNK-44 (St# 18))	176	ATSBT-TOP-FM-4G (T-Mobile)	130
(inverted) 2" Dia 10' Omni (DNK-42 (St# 4))	173	DBXNH-6565B (T-Mobile)	130
(Inverted) 3" Dia 20' Omni (DNK-38 (St# 15))	170	DBXNH-6565B (T-Mobile)	130
(Inverted) 3" Dia 20' Omni (DNK-39 (St# 14))	170	DBXNH-6565B (T-Mobile)	130
(inverted) 10' 8 Bay Di-Pole (DNK-41 (St# 12))	170	(2) TMA 10"x8"x5" (T-Mobile)	130
(inverted) 10' 8 Bay Di-Pole (DNK-40 (St# 7))	170	(2) TMA 10"x8"x5" (T-Mobile)	130
Telewave 150F2 Omni ((St # 20))	166.5	(2) CBC1923Q-43 Diplexer (T-Mobile)	130
Pirod 4' Side Mount Standoff (1) ((St # 20))	164	(2) CBC1923Q-43 Diplexer (T-Mobile)	130
Telewave ANT220F2 - Omni Antenna (Eversource)	162	(2) CBC1923Q-43 Diplexer (T-Mobile)	130
ANT450F6 (DNK-35 (St# 21))	161	ATSBT-TOP-FM-4G (T-Mobile)	130
3" Dia 9' Omni (DNK-33 (St# 24))	160	ATSBT-TOP-FM-4G (T-Mobile)	130
Sitepro1 USF-4U Mount Assembly (Ca = 1.4 assumed) (Eversource)	159	2' Sidearm (T-Mobile)	130
		2' Sidearm (T-Mobile)	130
2' Sidearm (DNK-35 (St# 21))	157	2' Sidearm (T-Mobile)	130
1' Side Arm	156	(2) TMA 10"x8"x5" (T-Mobile)	130
Pirod 4' Side Mount Standoff (1) (DNK-32, 33 (St# 24,25))	156	1' Side Arm (DNK-9 (St# 45))	125
		Decibel DB210-C Dipole (Single) (DNK-9 (St# 45))	125
400H/ODU/F58F/EXT (Valley Shore)	156	Comprod 871F-70 Dipole (Eversource)	124
10'6"x4" Pipe Mount (DNK-34 (St# 22))	156	19.5"x19.5" Panel Antenna (DNK-10 (St# 46))	123
HPD3-5W (Proposed)	156	1' Side Arm (DNK-10 (St# 46))	123
1 Bay Dipole ANT400D (DNK-34 (St# 22))	151	Sitepro1 USF-4U Mount Assembly (Ca = 1.4 assumed) (Eversource)	121
2" Dia 14' Omni (inverted) (DNK-32 (St# 25))	149		
13-ft Sector Frame (ATI - Existing)	148	2' Sidearm (DNK-8 (St# 47))	111
13-ft Sector Frame (ATI - Existing)	148	4' Paraflector [PRF-950] (DNK-8 (St# 47))	111
13-ft Sector Frame (ATI - Existing)	148	1' Side Arm (Un-used Mount)	102
DMP65R-BU4D (ATI - Existing)	148	20' 4-Bay Dipole (DNK-7 (St# 48))	89.5
840-370964 (ATI - Existing)	148	1' Side Arm (DNK-6,7 (St# 48,49))	82.5
DMP65R-BU4D (ATI - Existing)	148	1' Side Arm (DNK-5 (St# 50))	81
840-370964 (ATI - Existing)	148	GPS (DNK-5 (St# 50))	81
DMP65R-BU4D (ATI - Existing)	148	3' Yagi (DNK-6 (St# 49))	81
840-370964 (ATI - Existing)	148	1.5" Dia 3' Omni (DNK-4 (St# 51))	34 - 27
4449 B5/B12 (ATI - Existing)	148	1.5" Dia 3' Omni (inverted) (DNK-3 (St# 52))	29.5
4449 B5/B12 (ATI - Existing)	148	4' Side Mount Standoff (1) (DNK-3,4 (St# 51,52))	26
4449 B5/B12 (ATI - Existing)	148	1.5" Dia 3' Omni (DNK-2 (St# 53))	19.5
8843 B2/B66A (ATI - Existing)	148	4' Side Mount Standoff (1) (DNK 1,2 (St# 53,54))	18
8843 B2/B66A (ATI - Existing)	148	3' Yagi (DNK-1 (St# 54))	17.5

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	Stainless P5x0.500	B	L2 1/2x2 1/2x3/16

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A513-50	50 ksi	66 ksi	A572-60	60 ksi	75 ksi
A36	36 ksi	58 ksi	A529-50	50 ksi	65 ksi
A500-42	42 ksi	58 ksi			

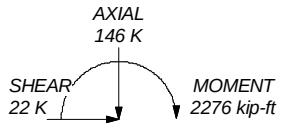
TOWER DESIGN NOTES

1. Tower designed for Exposure C to the TIA-222-H Standard.
2. Tower designed for a 135 mph basic wind in accordance with the TIA-222-H Standard.
3. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category III.
6. Topographic Category 1 with Crest Height of 0.000 ft
7. TOWER RATING: 81.5%

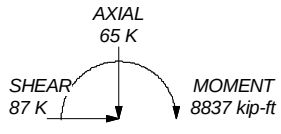
ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 430 K
SHEAR: 50 K

UPLIFT: -368 K
SHEAR: 44 K



TORQUE 13 kip-ft
50 mph WIND - 1.000 in ICE



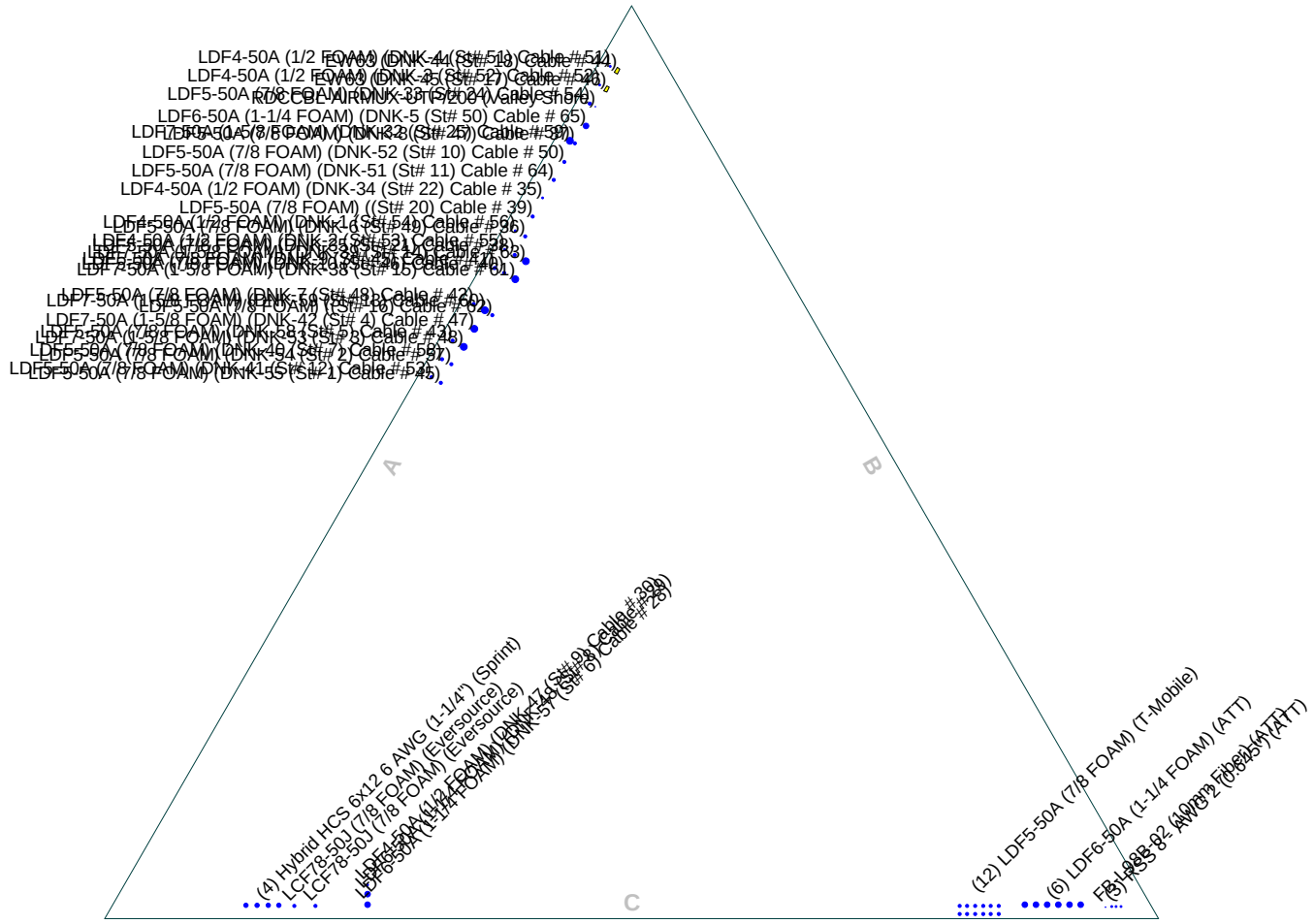
TORQUE 37 kip-ft
REACTIONS - 135 mph WIND

Centek Engineering Inc.
63-2 North Branford Rd.
Branford, CT 06405
Phone: (203) 488-0580
FAX: (203) 488-8587

Job: 22007.11 - CT2047			
Project: 180-ft Lattice Tower (CSP #36)			
Client: AT&T	Drawn by: TJL	App'd:	
Code: TIA-222-H	Date: 11/08/22	Scale: NTS	
Path: J:\Jobs\2200700.W\11_CT2047\05_Structural\Calcs\tnxtower\180-ft Lattice Tower CSP #36.eri		Dwg No. E-1	

Feed Line Plan

Round Flat App In Face App Out Face

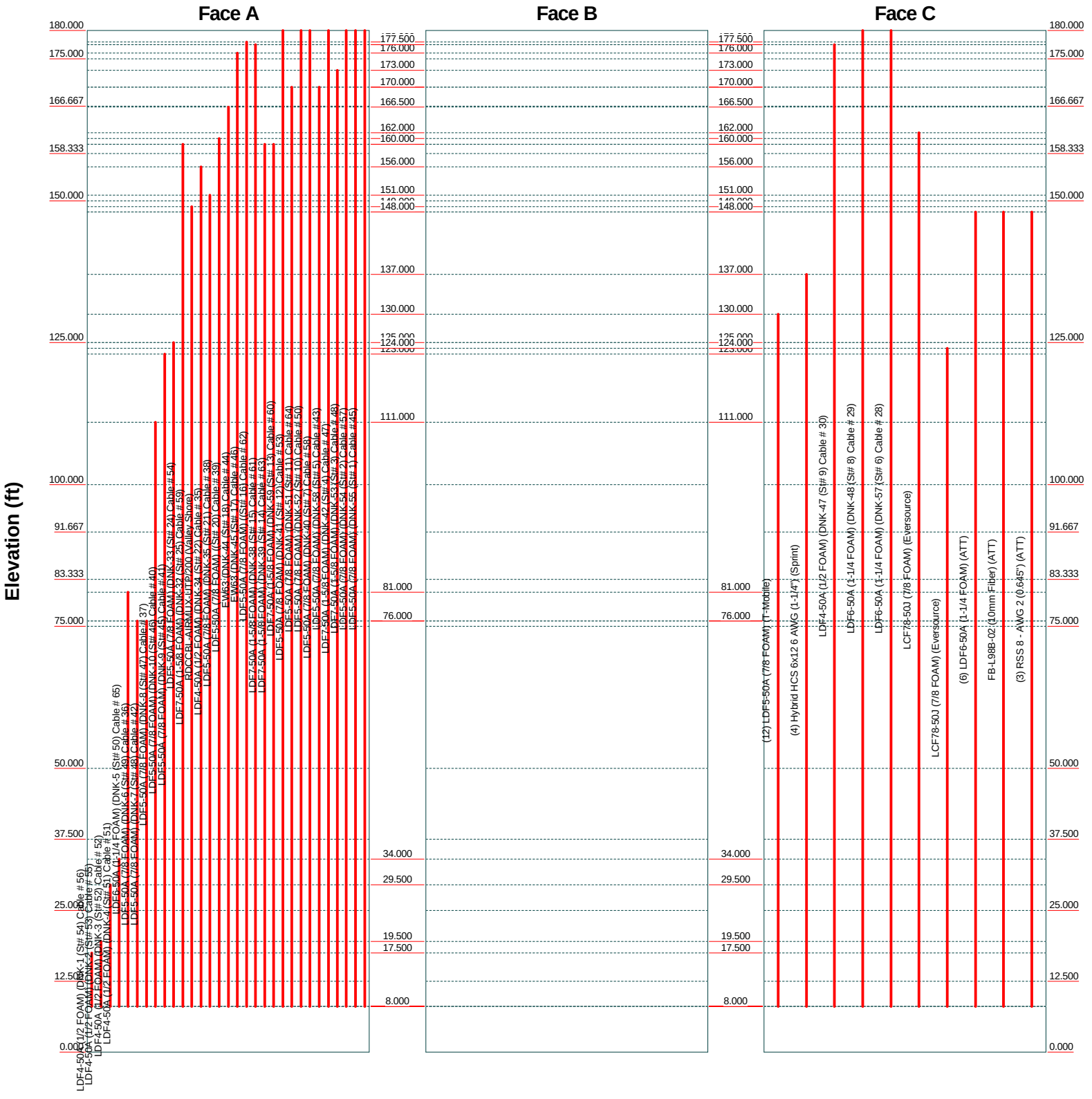


Centek Engineering Inc.
63-2 North Branford Rd.
Branford, CT 06405
Phone: (203) 488-0580
FAX: (203) 488-8587

Job: ***22007.11 - CT2047***		
Project: ***180-ft Lattice Tower (CSP #36)***		
Client: AT&T	Drawn by: TJL	App'd:
Code: TIA-222-H	Date: 11/08/22	Scale: NTS
Path: J:\Jobs\2200700.W\11_CT2047\05_Structural\Calcs\tnxtower\180-ft Lattice Tower CSP #36.eri		Dwg No. E-7

Feed Line Distribution Chart
0' - 180'

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



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Job:	***22007.11 - CT2047***		
Project:	***180-ft Lattice Tower (CSP #36)***		
Client: AT&T		Drawn by: TJL	App'd:
Code: TIA-222-H		Date: 11/08/22	Scale: NTS
Path: J:\Jobs\2200700.W\11_CT2047\05_Structural\Calcs\tnxtower\180-ft Lattice Tower CSP #36.eri			Dwg No. E-7

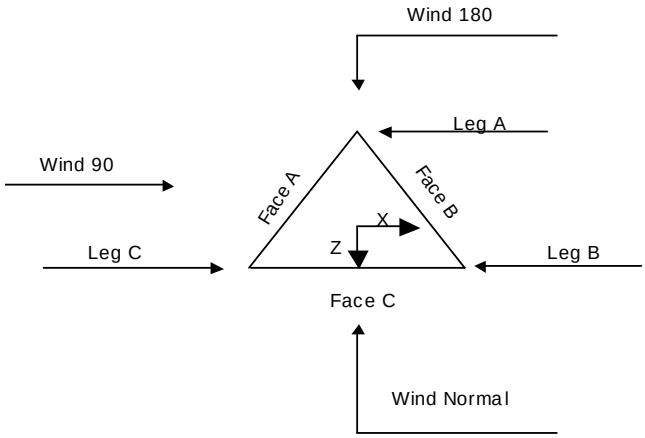
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 180.000 ft above the ground line.
The base of the tower is set at an elevation of 0.000 ft above the ground line.
The face width of the tower is 10.599 ft at the top and 25.000 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: 0.000 ft.
Basic wind speed of 135 mph.
Risk Category III.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.000 ft.
Nominal ice thickness of 1.000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Deflections calculated using a wind speed of 60 mph.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned	√	Calculate Redundant Bracing Forces
	Consider Moments - Diagonals		Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression
√	Use Code Stress Ratios	√	Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice		Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz		Use Azimuth Dish Coefficients	√	Include Angle Block Shear Check
	Use Special Wind Profile		Project Wind Area of Appurt.		Use TIA-222-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



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	180.000-175.000			10.599	1	5.000
T2	175.000-166.667			11.000	1	8.333
T3	166.667-158.333			11.667	1	8.333
T4	158.333-150.000			12.333	1	8.333
T5	150.000-125.000			13.000	1	25.000
T6	125.000-100.000			15.000	1	25.000
T7	100.000-91.667			17.000	1	8.333
T8	91.667-83.333			17.667	1	8.333
T9	83.333-75.000			18.333	1	8.333
T10	75.000-50.000			19.000	1	25.000
T11	50.000-37.500			21.000	1	12.500
T12	37.500-25.000			22.000	1	12.500
T13	25.000-12.500			23.000	1	12.500
T14	12.500-0.000			24.000	1	12.500

Tower Section Geometry *(cont'd)*

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
T1	180.000-175.000	5.000	K Brace Down	No	Yes	0.000	0.000

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
T2	175.000-166.667	8.333	K Brace Down	No	Yes	0.000	0.000
T3	166.667-158.333	8.333	K Brace Down	No	Yes	0.000	0.000
T4	158.333-150.000	8.333	K Brace Down	No	Yes	0.000	0.000
T5	150.000-125.000	8.333	K1 Down	No	Yes	0.000	0.000
T6	125.000-100.000	8.333	K1 Down	No	Yes	0.000	0.000
T7	100.000-91.667	8.333	K1 Down	No	Yes	0.000	0.000
T8	91.667-83.333	8.333	K1 Down	No	Yes	0.000	0.000
T9	83.333-75.000	8.333	K1 Down	No	Yes	0.000	0.000
T10	75.000-50.000	12.500	K1 Down	No	Yes	0.000	0.000
T11	50.000-37.500	12.500	K1 Down	No	Yes	0.000	0.000
T12	37.500-25.000	12.500	K1 Down	No	Yes	0.000	0.000
T13	25.000-12.500	12.500	K1 Down	No	Yes	0.000	0.000
T14	12.500-0.000	12.500	K1 Down	No	Yes	0.000	0.000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 180.000-175.000	Pipe	Stainless P5x0.250	A513-50 (50 ksi)	Double Angle	2L2 1/2x2x3/16x3/8	A36 (36 ksi)
T2 175.000-166.667	Pipe	Stainless P5x0.250	A513-50 (50 ksi)	Double Angle	2L2 1/2x2x3/16x3/8	A36 (36 ksi)
T3 166.667-158.333	Pipe	Stainless P5x0.250	A513-50 (50 ksi)	Double Angle	2L2 1/2x2x3/16x3/8	A36 (36 ksi)
T4 158.333-150.000	Pipe	Stainless P5x0.250	A513-50 (50 ksi)	Double Angle	2L2 1/2x2x3/16x3/8	A36 (36 ksi)
T5 150.000-125.000	Pipe	Stainless P5x0.300	A513-50 (50 ksi)	Double Angle	2L2 1/2x2x5/16x3/8	A36 (36 ksi)
T6 125.000-100.000	Pipe	Stainless P5x0.400	A513-50 (50 ksi)	Double Angle	2L3x2 1/2x1/4x3/8	A36 (36 ksi)
T7 100.000-91.667	Pipe	Stainless P5x0.500	A513-50 (50 ksi)	Double Angle	2L3x2 1/2x1/4x3/8	A36 (36 ksi)
T8 91.667-83.333	Arbitrary Shape	1/3 Pipe w/ 5"x0.5 Stainless	A500-42 (42 ksi)	Double Angle	2L3x2 1/2x1/4x3/8	A36 (36 ksi)
T9 83.333-75.000	Arbitrary Shape	1/3 Pipe w/ 5"x0.5 Stainless	A500-42 (42 ksi)	Double Angle	2L3x2 1/2x1/4x3/8	A36 (36 ksi)
T10 75.000-50.000	Pipe	Stainless P6.875x0.400	A572-60 (60 ksi)	Double Equal Angle	2L3 1/2x3 1/2x5/16x3/8	A36 (36 ksi)
T11 50.000-37.500	Pipe	Stainless P6.875x0.500	A572-60 (60 ksi)	Double Angle	2L3 1/2x3x5/16x3/8	A36 (36 ksi)
T12 37.500-25.000	Pipe	Stainless P6.875x0.500	A572-60 (60 ksi)	Double Angle	2L3 1/2x3 1/2x5/16x3/8	A529-50 (50 ksi)
T13 25.000-12.500	Pipe	Stainless P6.875x0.500	A572-60 (60 ksi)	Double Angle	2L3 1/2x3 1/2x5/16x3/8	A529-50 (50 ksi)
T14 12.500-0.000	Pipe	Stainless P6.875x0.500	A572-60 (60 ksi)	Double Angle	2L3 1/2x3 1/2x5/16x3/8	A529-50 (50 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 180.000-175.000	Single Angle	L3x3x1/4	A36 (36 ksi)	Pipe		A36 (36 ksi)
T3 166.667-158.333	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)	Pipe		A36 (36 ksi)
T4 158.333-150.000	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)	Pipe		A36 (36 ksi)
T12 37.500-25.000	Double Equal Angle	2L4x4x1/4	A36 (36 ksi)	Pipe		A36 (36 ksi)
T14 12.500-0.000	Double Equal Angle	2L4x4x5/16	A36 (36 ksi)	Pipe		A36 (36 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
T1 180.000-175.000	None	Pipe		A36 (36 ksi)	Single Angle	L1x1x1/8	A36 (36 ksi)
T2 175.000-166.667	None	Pipe		A36 (36 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T3 166.667-158.333	None	Pipe		A36 (36 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T4 158.333-150.000	None	Pipe		A36 (36 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T5 150.000-125.000	None	Pipe		A36 (36 ksi)	Single Angle	L3x2 1/2x1/4	A36 (36 ksi)
T6 125.000-100.000	None	Pipe		A36 (36 ksi)	Single Angle	L3x3x5/16	A36 (36 ksi)
T7 100.000-91.667	None	Pipe		A36 (36 ksi)	Double Equal Angle	2L3x3x1/4	A36 (36 ksi)
T8 91.667-83.333	None	Pipe		A36 (36 ksi)	Double Angle	2L3x3x1/4	A36 (36 ksi)
T9 83.333-75.000	None	Pipe		A36 (36 ksi)	Double Angle	2L3x3x1/4	A36 (36 ksi)
T10 75.000-50.000	None	Pipe		A36 (36 ksi)	Single Angle	L4x4x1/4	A36 (36 ksi)
T11 50.000-37.500	None	Pipe		A36 (36 ksi)	Single Angle	L4x4x1/4	A36 (36 ksi)
T12 37.500-25.000	None	Pipe		A36 (36 ksi)	Single Angle	L4x4x1/4	A36 (36 ksi)
T13 25.000-12.500	None	Pipe		A36 (36 ksi)	Single Angle	L4x4x3/8	A529-50 (50 ksi)
T14 12.500-0.000	None	Pipe		A36 (36 ksi)	Single Angle	L4x4x5/16	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
T5 150.000-125.000	Solid Round		A36 (36 ksi)	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)
T6 125.000-100.000	Solid Round		A36 (36 ksi)	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)
T7 100.000-91.667	Solid Round		A36 (36 ksi)	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)
T8 91.667-83.333	Solid Round		A36 (36 ksi)	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)
T9 83.333-75.000	Solid Round		A36 (36 ksi)	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)
T10 75.000-50.000	Solid Round		A36 (36 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T11 50.000-37.500	Solid Round		A36 (36 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T12 37.500-25.000	Solid Round		A36 (36 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T13 25.000-12.500	Solid Round		A36 (36 ksi)	Single Angle	L3x3x1/4	A36 (36 ksi)
T14 12.500-0.000	Solid Round		A36 (36 ksi)	Single Angle	L3x3x1/4	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Redundant Bracing Grade		Redundant Type	Redundant Size	K Factor
T5 150.000-125.000	A36 (36 ksi)	Horizontal (1)	Single Angle	L2x2x3/16	1
		Diagonal (1)	Single Angle	L2x2x3/16	1
T6 125.000-100.000	A36 (36 ksi)	Horizontal (1)	Single Angle	L2x2x3/16	1
		Diagonal (1)	Single Angle	L2x2x3/16	1
T7 100.000-91.667	A36 (36 ksi)	Horizontal (1)	Single Angle	L2x2x3/16	1
		Diagonal (1)	Single Angle	L2x2x3/16	1
T8 91.667-83.333	A36 (36 ksi)	Horizontal (1)	Single Angle	L2x2x3/16	1
		Diagonal (1)	Single Angle	L2x2x3/16	1
T9 83.333-75.000	A36 (36 ksi)	Horizontal (1)	Single Angle	L2x2x3/16	1
		Diagonal (1)	Single Angle	L2x2x3/16	1
T10 75.000-50.000	A36 (36 ksi)	Horizontal (1)	Single Angle	L2 1/2x2 1/2x3/16	1
		Diagonal (1)	Single Angle	L2 1/2x2 1/2x3/16	1
T11 50.000-37.500	A36 (36 ksi)	Horizontal (1)	Single Angle	L2 1/2x2 1/2x3/16	1
		Diagonal (1)	Single Angle	L2 1/2x2 1/2x3/16	1
T12 37.500-25.000	A36 (36 ksi)	Horizontal (1)	Single Angle	L2 1/2x2 1/2x3/16	1
		Diagonal (1)	Single Angle	L2 1/2x2 1/2x3/16	1
T13 25.000-12.500	A36 (36 ksi)	Horizontal (1)	Single Angle	L2 1/2x2 1/2x3/16	1
		Diagonal (1)	Single Angle	L2 1/2x2 1/2x3/16	1
T14 12.500-0.000	A36 (36 ksi)	Horizontal (1)	Single Angle	L2 1/2x2 1/2x3/16	1
		Diagonal (1)	Single Angle	L2 1/2x2 1/2x3/16	1

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 180.000-175.000	0.000	0.000	A36 (36 ksi)	1	1	1	29.736	Third-Pt	Third-Pt
T2 175.000-166.667	0.000	0.000	A36 (36 ksi)	1	1	1	40.696	Third-Pt	Third-Pt
T3 166.667-158.333	0.000	0.000	A36 (36 ksi)	1	1	1	41.476	Third-Pt	Third-Pt
T4 158.333-150.000	0.000	0.000	A36 (36 ksi)	1	1	1	42.280	Third-Pt	Third-Pt
T5 150.000-125.000	0.000	0.000	A36 (36 ksi)	1	1	1	33.639	Third-Pt	Third-Pt
T6 125.000-100.000	0.000	0.000	A36 (36 ksi)	1	1	1	47.620	Third-Pt	Third-Pt
T7 100.000-91.667	0.000	0.000	A36 (36 ksi)	1	1	1	48.580	Third-Pt	Third-Pt
T8 91.667-83.333	0.000	0.000	A36 (36 ksi)	1	1	1	37.170	Third-Pt	Third-Pt
T9 83.333-75.000	0.000	0.000	A36 (36 ksi)	1	1	1	37.917	Third-Pt	Third-Pt
T10 75.000-50.000	0.000	0.000	A36 (36 ksi)	1	1	1	65.308	Third-Pt	Third-Pt
T11 50.000-37.500	0.000	0.000	A36 (36 ksi)	1	1	1	24.980	Third-Pt	Third-Pt
T12 37.500-25.000	0.000	0.000	A36 (36 ksi)	1	1	1	67.952	Third-Pt	Third-Pt
T13 25.000-12.500	0.000	0.000	A36 (36 ksi)	1	1	1	51.990	Third-Pt	Third-Pt
T14 12.500-0.000	0.000	0.000	A36 (36 ksi)	1	1	1	53.040	Mid-Pt	Third-Pt

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 180.000-175.000	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 175.000-166.667	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 166.667-158.333	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 158.333-150.0	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1

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
00										
T5	Yes	No	1	1	1	1	1	1	1	1
150.000-125.000				1	1	1	1	1	1	1
T6	Yes	No	1	1	1	1	1	1	1	1
125.000-100.000				1	1	1	1	1	1	1
T7	Yes	No	1	1	1	1	1	1	1	1
100.000-91.667				1	1	1	1	1	1	1
T8	Yes	No	1	1	1	1	1	1	1	1
91.667-83.333				1	1	1	1	1	1	1
T9	Yes	No	1	1	1	1	1	1	1	1
83.333-75.000				1	1	1	1	1	1	1
T10	Yes	No	1	1	1	1	1	1	1	1
75.000-50.000				1	1	1	1	1	1	1
T11	Yes	No	1	1	1	1	1	1	1	1
50.000-37.500				1	1	1	1	1	1	1
T12	Yes	No	1	1	1	1	1	1	1	1
37.500-25.000				1	1	1	1	1	1	1
T13	Yes	No	1	1	1	1	1	1	1	1
25.000-12.500				1	1	1	1	1	1	1
T14	Yes	No	1	1	1	1	1	1	1	1
12.500-0.000				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 Net Width Deduct in	Leg U	Diagonal Net Width Deduct in	Diagonal U	Top Girt Net Width Deduct in	Top Girt U	Bottom Girt Net Width Deduct in	Bottom Girt U	Mid Girt Net Width Deduct in	Mid Girt U	Long Horizontal Net Width Deduct in	Long Horizontal U	Short Horizontal Net Width Deduct in	Short Horizontal U
T1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
180.000-175.000														
T2	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
175.000-166.667														
T3	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
166.667-158.333														
T4	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
158.333-150.000														
T5	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
150.000-125.000														
T6	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
125.000-100.000														

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
T7 100.000-91.667	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T8 91.667-83.333	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T9 83.333-75.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T10 75.000-50.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T11 50.000-37.500	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T12 37.500-25.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T13 25.000-12.500	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T14 12.500-0.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	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 180.000-175.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T2 175.000-166.667	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T3 166.667-158.333	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T4 158.333-150.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T5 150.000-125.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T6 125.000-100.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T7 100.000-91.667	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T8 91.667-83.333	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T9 83.333-75.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T10 75.000-50.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T11 50.000-37.500	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	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
T12 37.500-25.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T13 25.000-12.500	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T14 12.500-0.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	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 180.000-175.000	Flange	0.750 A325X	0	0.750 A325X	1	0.625 A325X	2	0.625 A325N	0	0.625 A325N	0	0.625 A325X	2	0.625 A325N	0
T2 175.000-166.667	Flange	0.750 A325X	6	0.750 A325X	1	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0	0.625 A325X	2	0.625 A325N	0
T3 166.667-158.333	Flange	0.750 A325X	0	0.750 A325X	1	0.625 A325X	2	0.000 A325N	0	0.625 A325N	0	0.625 A325X	2	0.625 A325N	0
T4 158.333-150.000	Flange	0.750 A325X	0	0.750 A325X	1	0.625 A325X	2	0.625 A325N	0	0.625 A325N	0	0.625 A325X	2	0.625 A325N	0
T5 150.000-125.000	Flange	0.750 A325X	6	0.750 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0	0.625 A325X	2	0.625 A325N	0
T6 125.000-100.000	Flange	0.750 A325X	6	0.750 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0	0.625 A325X	2	0.625 A325N	0
T7 100.000-91.667	Flange	1.000 A325X	6	0.750 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0	0.625 A325X	2	0.625 A325N	0
T8 91.667-83.333	Flange	0.750 A325X	0	0.750 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0	0.625 A325X	2	0.625 A325N	0
T9 83.333-75.000	Flange	0.750 A325X	0	0.750 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0	0.625 A325X	2	0.625 A325N	0
T10 75.000-50.000	Flange	1.000 A325X	8	0.750 A325X	1	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0	0.625 A325X	2	0.625 A325N	0
T11 50.000-37.500	Flange	1.000 A325X	8	1.000 A325X	1	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0	0.625 A325X	2	0.625 A325N	0
T12 37.500-25.000	Flange	1.000 A325X	0	1.000 A325X	1	0.625 A325X	2	0.000 A325N	0	0.625 A325N	0	0.625 A325X	2	0.625 A325N	0
T13 25.000-12.500	Flange	1.000 A325X	8	1.000 A325X	1	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0	0.625 A325X	2	0.625 A325N	0
T14 12.500-0.000	Flange	1.000 A325X	0	1.000 A325X	1	0.625 A325X	2	0.000 A325N	0	0.625 A325N	0	0.625 A325X	2	0.625 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
* Stainless Inc. Tower Mapping (12/11/2019)													
LDF4-50A (1/2 FOAM) (DNK-1 (St# 54) Cable # 56)	A	No	No	Ar (CaAa)	17.500 - 8.000	-3.000	0.26	1	1	0.630	0.630		0.150
LDF4-50A (1/2 FOAM) (DNK-2 (St# 53) Cable # 55)	A	No	No	Ar (CaAa)	19.500 - 8.000	-3.000	0.24	1	1	0.630	0.630		0.150
LDF4-50A (1/2 FOAM) (DNK-3 (St# 52) Cable # 52)	A	No	No	Ar (CaAa)	29.500 - 8.000	-3.000	0.42	1	1	0.630	0.630		0.150
LDF4-50A (1/2 FOAM) (DNK-4 (St# 51) Cable # 51)	A	No	No	Ar (CaAa)	34.000 - 8.000	-3.000	0.44	1	1	0.630	0.630		0.150
LDF6-50A (1-1/4 FOAM) (DNK-5 (St# 50) Cable # 65)	A	No	No	Ar (CaAa)	81.000 - 8.000	-5.000	0.38	1	1	1.550	1.550		0.660
LDF5-50A (7/8 FOAM) (DNK-6 (St# 49) Cable # 36)	A	No	No	Ar (CaAa)	76.000 - 8.000	-6.000	0.26	1	1	1.090	1.090		0.330
LDF5-50A (7/8 FOAM) (DNK-7 (St# 48) Cable # 42)	A	No	No	Ar (CaAa)	76.000 - 8.000	-3.000	0.18	1	1	1.090	1.090		0.330
LDF5-50A (7/8 FOAM) (DNK-8 (St# 47) Cable # 37)	A	No	No	Ar (CaAa)	111.000 - 8.000	-5.000	0.36	1	1	1.090	1.090		0.330
LDF5-50A (7/8 FOAM) (DNK-10 (St# 46) Cable # 40)	A	No	No	Ar (CaAa)	123.000 - 8.000	-6.000	0.22	1	1	1.090	1.090		0.330
LDF5-50A (7/8 FOAM) (DNK-9 (St# 45) Cable # 41)	A	No	No	Ar (CaAa)	125.000 - 8.000	-3.000	0.22	1	1	1.090	1.090		0.330
* TMW													

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
Proposed 5-1-2019 LDF5-50A (7/8 FOAM) (T-Mobile) * TMW	C	No	No	Ar (CaAa)	130.000 - 8.000	-3.000	-0.33	12	6	1.090	1.090		0.330
Proposed 5-1-2019 * Sprint Hybrid HCS 6x12 6 AWG (1-1/4") (Sprint) * Sprint *AT&T	C	No	No	Ar (CaAa)	137.000 - 8.000	-3.000	0.35	4	4	1.540	1.540		1.700
LDF5-50A (7/8 FOAM) (DNK-33 (St# 24) Cable # 54)	A	No	No	Ar (CaAa)	160.000 - 8.000	-3.000	0.4	1	1	1.090	1.090		0.330
LDF7-50A (1-5/8 FOAM) (DNK-32 (St# 25) Cable # 59)	A	No	No	Ar (CaAa)	149.000 - 8.000	-3.000	0.36	1	1	1.980	1.980		0.820
RDCCBL-AIRMUX-UTP/200 (Valley Shore)	A	No	No	Ar (CaAa)	156.000 - 8.000	-5.000	0.4	1	1	0.500	0.500		0.100
LDF4-50A (1/2 FOAM) (DNK-34 (St# 22) Cable # 35)	A	No	No	Ar (CaAa)	151.000 - 8.000	-5.000	0.3	1	1	0.630	0.630		0.150
LDF5-50A (7/8 FOAM) (DNK-35 (St# 21) Cable # 38)	A	No	No	Ar (CaAa)	161.000 - 8.000	-6.000	0.24	1	1	1.090	1.090		0.330
LDF5-50A (7/8 FOAM) ((St# 20) Cable # 39)	A	No	No	Ar (CaAa)	166.500 - 8.000	-5.000	0.28	1	1	1.090	1.090		0.330
EW63 (DNK-44 (St# 18) Cable # 44)	A	No	No	Af (CaAa)	176.000 - 8.000	-5.000	0.44	1	1	1.574	1.574		0.510
EW63 (DNK-45 (St# 17) Cable # 46)	A	No	No	Af (CaAa)	178.000 - 8.000	-5.000	0.42	1	1	1.574	1.574		0.510
LDF5-50A (7/8 FOAM) ((St# 16) Cable # 62)	A	No	No	Ar (CaAa)	177.500 - 8.000	-9.000	0.18	1	1	1.090	1.090		0.330
LDF7-50A (1-5/8 FOAM) (DNK-38 (St# 15) Cable # 61)	A	No	No	Ar (CaAa)	160.000 - 8.000	-9.000	0.22	1	1	1.980	1.980		0.820

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
LDF7-50A (1-5/8 FOAM) (DNK-39 (St# 14) Cable # 63)	A	No	No	Ar (CaAa)	160.000 - 8.000	-9.000	0.24	1	1	1.980	1.980		0.820
LDF7-50A (1-5/8 FOAM) (DNK-59 (St# 13) Cable # 60)	A	No	No	Ar (CaAa)	180.000 - 8.000	-6.000	0.18	1	1	1.980	1.980		0.820
LDF5-50A (7/8 FOAM) (DNK-41 (St# 12) Cable # 53)	A	No	No	Ar (CaAa)	170.000 - 8.000	-3.000	0.1	1	1	1.090	1.090		0.330
LDF5-50A (7/8 FOAM) (DNK-51 (St# 11) Cable # 64)	A	No	No	Ar (CaAa)	180.000 - 8.000	-5.000	0.32	1	1	1.090	1.090		0.330
LDF5-50A (7/8 FOAM) (DNK-52 (St# 10) Cable # 50)	A	No	No	Ar (CaAa)	180.000 - 8.000	-5.000	0.34	1	1	1.090	1.090		0.330
LDF4-50A (1/2 FOAM) (DNK-47 (St# 9) Cable # 30)	C	No	No	Ar (CaAa)	177.500 - 8.000	-9.000	0.25	1	1	0.630	0.630		0.150
LDF6-50A (1-1/4 FOAM) (DNK-48 (St# 8) Cable # 29)	C	No	No	Ar (CaAa)	180.000 - 8.000	-6.000	0.25	1	1	1.550	1.550		0.660
LDF5-50A (7/8 FOAM) (DNK-40 (St# 7) Cable # 58)	A	No	No	Ar (CaAa)	170.000 - 8.000	-3.000	0.12	1	1	1.090	1.090		0.330
LDF6-50A (1-1/4 FOAM) (DNK-57 (St# 6) Cable # 28)	C	No	No	Ar (CaAa)	180.000 - 8.000	-3.000	0.25	1	1	1.550	1.550		0.660
LDF5-50A (7/8 FOAM) (DNK-58 (St# 5) Cable # 43)	A	No	No	Ar (CaAa)	180.000 - 8.000	-3.000	0.14	1	1	1.090	1.090		0.330
LDF7-50A (1-5/8 FOAM) (DNK-42 (St# 4) Cable # 47)	A	No	No	Ar (CaAa)	173.000 - 8.000	-6.000	0.16	1	1	1.980	1.980		0.820
LDF7-50A (1-5/8 FOAM) (DNK-53 (St# 3) Cable # 48)	A	No	No	Ar (CaAa)	180.000 - 8.000	-6.000	0.14	1	1	1.980	1.980		0.820
LDF5-50A (7/8 FOAM) (DNK-54 (St# 2) Cable # 57)	A	No	No	Ar (CaAa)	180.000 - 8.000	-6.000	0.12	1	1	1.090	1.090		0.330
LDF5-50A (7/8 FOAM) (DNK-55 (St#	A	No	No	Ar (CaAa)	180.000 - 8.000	-6.000	0.1	1	1	1.090	1.090		0.330

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) Cable # 45)													
LCF78-50J (7/8 FOAM) (Eversource)	C	No	No	Ar (CaAa)	162.000 - 8.000	-3.000	0.32	1	1	1.100	1.100		0.530
LCF78-50J (7/8 FOAM) (Eversource) *AT&T	C	No	No	Ar (CaAa)	124.000 - 8.000	-3.000	0.3	1	1	1.100	1.100		0.530
LDF6-50A (1-1/4 FOAM) (ATT)	C	No	No	Ar (CaAa)	148.000 - 8.000	-3.000	-0.4	6	6	1.550	1.550		0.660
FB-L98B-02 (10mm Fiber) (ATT)	C	No	No	Ar (CaAa)	148.000 - 8.000	-3.000	-0.45	1	1	0.394	0.394		0.300
RSS 8 - AWG 2 (0.645") (ATT)	C	No	No	Ar (CaAa)	148.000 - 8.000	-3.000	-0.46	3	3	0.645	0.645		0.300

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C_AA_A ft^2/ft	Weight plf
* TMW Proposed 5-1-2019 * Sprint								

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	180.000-175.000	A	0.000	0.000	6.027	0.000	0.019
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	1.708	0.000	0.007
T2	175.000-166.667	A	0.000	0.000	15.103	0.000	0.046
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	3.108	0.000	0.012
T3	166.667-158.333	A	0.000	0.000	18.612	0.000	0.058
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	3.512	0.000	0.014
T4	158.333-150.000	A	0.000	0.000	22.977	0.000	0.074
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	4.025	0.000	0.017
T5	150.000-125.000	A	0.000	0.000	75.420	0.000	0.245
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	52.753	0.000	0.270
T6	125.000-100.000	A	0.000	0.000	82.049	0.000	0.265
		B	0.000	0.000	0.000	0.000	0.000

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C	0.000	0.000	91.887	0.000	0.461
T7	100.000-91.667	A	0.000	0.000	27.931	0.000	0.090
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	30.666	0.000	0.154
T8	91.667-83.333	A	0.000	0.000	27.931	0.000	0.090
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	30.666	0.000	0.154
T9	83.333-75.000	A	0.000	0.000	29.079	0.000	0.095
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	30.666	0.000	0.154
T10	75.000-50.000	A	0.000	0.000	93.118	0.000	0.303
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	91.997	0.000	0.461
T11	50.000-37.500	A	0.000	0.000	46.559	0.000	0.152
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	45.998	0.000	0.231
T12	37.500-25.000	A	0.000	0.000	47.410	0.000	0.154
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	45.998	0.000	0.231
T13	25.000-12.500	A	0.000	0.000	48.890	0.000	0.157
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	45.998	0.000	0.231
T14	12.500-0.000	A	0.000	0.000	17.895	0.000	0.057
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	16.559	0.000	0.083

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	180.000-175.000	A	1.361	0.000	0.000	17.321	0.000	0.209
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	5.109	0.000	0.064
T2	175.000-166.667	A	1.356	0.000	0.000	41.220	0.000	0.492
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	9.886	0.000	0.120
T3	166.667-158.333	A	1.349	0.000	0.000	52.106	0.000	0.620
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	11.245	0.000	0.136
T4	158.333-150.000	A	1.342	0.000	0.000	65.106	0.000	0.775
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	12.969	0.000	0.156
T5	150.000-125.000	A	1.326	0.000	0.000	214.428	0.000	2.533
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	153.887	0.000	1.846
T6	125.000-100.000	A	1.300	0.000	0.000	233.896	0.000	2.715
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	230.954	0.000	2.943
T7	100.000-91.667	A	1.279	0.000	0.000	79.106	0.000	0.907
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	76.682	0.000	0.969
T8	91.667-83.333	A	1.268	0.000	0.000	78.643	0.000	0.896
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	76.443	0.000	0.962
T9	83.333-75.000	A	1.255	0.000	0.000	81.294	0.000	0.922
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	76.183	0.000	0.954

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T10	75.000-50.000	A	1.226	0.000	0.000	258.607	0.000	2.880
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	226.737	0.000	2.806
T11	50.000-37.500	A	1.183	0.000	0.000	126.404	0.000	1.374
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	112.043	0.000	1.363
T12	37.500-25.000	A	1.144	0.000	0.000	127.701	0.000	1.350
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	110.836	0.000	1.327
T13	25.000-12.500	A	1.087	0.000	0.000	130.291	0.000	1.321
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	109.082	0.000	1.276
T14	12.500-0.000	A	0.974	0.000	0.000	45.062	0.000	0.423
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	38.018	0.000	0.424

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	180.000-175.000	-3.145	-5.167	-5.512	-7.909
T2	175.000-166.667	-4.508	-10.163	-7.279	-12.977
T3	166.667-158.333	-5.571	-12.103	-8.781	-15.570
T4	158.333-150.000	-6.394	-14.764	-9.702	-19.168
T5	150.000-125.000	0.376	-6.791	0.240	-8.655
T6	125.000-100.000	2.739	-2.023	0.805	-4.766
T7	100.000-91.667	2.711	-2.483	0.669	-5.525
T8	91.667-83.333	2.396	-2.285	0.624	-5.405
T9	83.333-75.000	2.313	-3.087	0.476	-6.530
T10	75.000-50.000	2.344	-4.787	-0.066	-8.793
T11	50.000-37.500	2.373	-5.019	-0.033	-8.987
T12	37.500-25.000	2.355	-5.701	-0.013	-10.275
T13	25.000-12.500	2.215	-6.613	-0.168	-11.916
T14	12.500-0.000	1.010	-3.501	0.015	-6.722

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	34	EW63	175.00 - 176.00	0.6000	0.6000
T1	35	EW63	175.00 - 178.00	0.6000	0.6000
T1	36	LDF5-50A (7/8 FOAM)	175.00 - 177.50	0.6000	0.6000
T1	39	LDF7-50A (1-5/8 FOAM)	175.00 - 180.00	0.6000	0.6000
T1	41	LDF5-50A (7/8 FOAM)	175.00 - 180.00	0.6000	0.6000
T1	42	LDF5-50A (7/8 FOAM)	175.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	43	LDF4-50A (1/2 FOAM)	180.00 175.00 - 177.50	0.6000	0.6000
T1	44	LDF6-50A (1-1/4 FOAM)	175.00 - 180.00	0.6000	0.6000
T1	46	LDF6-50A (1-1/4 FOAM)	175.00 - 180.00	0.6000	0.6000
T1	47	LDF5-50A (7/8 FOAM)	175.00 - 180.00	0.6000	0.6000
T1	49	LDF7-50A (1-5/8 FOAM)	175.00 - 180.00	0.6000	0.6000
T1	50	LDF5-50A (7/8 FOAM)	175.00 - 180.00	0.6000	0.6000
T1	51	LDF5-50A (7/8 FOAM)	175.00 - 180.00	0.6000	0.6000
T2	34	EW63	166.67 - 175.00	0.6000	0.6000
T2	35	EW63	166.67 - 175.00	0.6000	0.6000
T2	36	LDF5-50A (7/8 FOAM)	166.67 - 175.00	0.6000	0.6000
T2	39	LDF7-50A (1-5/8 FOAM)	166.67 - 175.00	0.6000	0.6000
T2	40	LDF5-50A (7/8 FOAM)	166.67 - 170.00	0.6000	0.6000
T2	41	LDF5-50A (7/8 FOAM)	166.67 - 175.00	0.6000	0.6000
T2	42	LDF5-50A (7/8 FOAM)	166.67 - 175.00	0.6000	0.6000
T2	43	LDF4-50A (1/2 FOAM)	166.67 - 175.00	0.6000	0.6000
T2	44	LDF6-50A (1-1/4 FOAM)	166.67 - 175.00	0.6000	0.6000
T2	45	LDF5-50A (7/8 FOAM)	166.67 - 170.00	0.6000	0.6000
T2	46	LDF6-50A (1-1/4 FOAM)	166.67 - 175.00	0.6000	0.6000
T2	47	LDF5-50A (7/8 FOAM)	166.67 - 175.00	0.6000	0.6000
T2	48	LDF7-50A (1-5/8 FOAM)	166.67 - 173.00	0.6000	0.6000
T2	49	LDF7-50A (1-5/8 FOAM)	166.67 - 175.00	0.6000	0.6000
T2	50	LDF5-50A (7/8 FOAM)	166.67 - 175.00	0.6000	0.6000
T2	51	LDF5-50A (7/8 FOAM)	166.67 - 175.00	0.6000	0.6000
T3	27	LDF5-50A (7/8 FOAM)	158.33 - 160.00	0.6000	0.6000
T3	31	LDF5-50A (7/8 FOAM)	158.33 - 161.00	0.6000	0.6000
T3	32	LDF5-50A (7/8 FOAM)	158.33 - 166.50	0.6000	0.6000
T3	34	EW63	158.33 - 166.67	0.6000	0.6000
T3	35	EW63	158.33 - 166.67	0.6000	0.6000
T3	36	LDF5-50A (7/8 FOAM)	158.33 - 166.67	0.6000	0.6000
T3	37	LDF7-50A (1-5/8 FOAM)	158.33 - 160.00	0.6000	0.6000
T3	38	LDF7-50A (1-5/8 FOAM)	158.33 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T3	39	LDF7-50A (1-5/8 FOAM)	160.00 - 166.67	0.6000	0.6000
T3	40	LDF5-50A (7/8 FOAM)	158.33 - 166.67	0.6000	0.6000
T3	41	LDF5-50A (7/8 FOAM)	158.33 - 166.67	0.6000	0.6000
T3	42	LDF5-50A (7/8 FOAM)	158.33 - 166.67	0.6000	0.6000
T3	43	LDF4-50A (1/2 FOAM)	158.33 - 166.67	0.6000	0.6000
T3	44	LDF6-50A (1-1/4 FOAM)	158.33 - 166.67	0.6000	0.6000
T3	45	LDF5-50A (7/8 FOAM)	158.33 - 166.67	0.6000	0.6000
T3	46	LDF6-50A (1-1/4 FOAM)	158.33 - 166.67	0.6000	0.6000
T3	47	LDF5-50A (7/8 FOAM)	158.33 - 166.67	0.6000	0.6000
T3	48	LDF7-50A (1-5/8 FOAM)	158.33 - 166.67	0.6000	0.6000
T3	49	LDF7-50A (1-5/8 FOAM)	158.33 - 166.67	0.6000	0.6000
T3	50	LDF5-50A (7/8 FOAM)	158.33 - 166.67	0.6000	0.6000
T3	51	LDF5-50A (7/8 FOAM)	158.33 - 166.67	0.6000	0.6000
T3	52	LCF78-50J (7/8 FOAM)	158.33 - 162.00	0.6000	0.6000
T4	27	LDF5-50A (7/8 FOAM)	150.00 - 158.33	0.6000	0.6000
T4	29	RDCCBL-AIRMUX-UTP/200	150.00 - 156.00	0.6000	0.6000
T4	30	LDF4-50A (1/2 FOAM)	150.00 - 151.00	0.6000	0.6000
T4	31	LDF5-50A (7/8 FOAM)	150.00 - 158.33	0.6000	0.6000
T4	32	LDF5-50A (7/8 FOAM)	150.00 - 158.33	0.6000	0.6000
T4	34	EW63	150.00 - 158.33	0.6000	0.6000
T4	35	EW63	150.00 - 158.33	0.6000	0.6000
T4	36	LDF5-50A (7/8 FOAM)	150.00 - 158.33	0.6000	0.6000
T4	37	LDF7-50A (1-5/8 FOAM)	150.00 - 158.33	0.6000	0.6000
T4	38	LDF7-50A (1-5/8 FOAM)	150.00 - 158.33	0.6000	0.6000
T4	39	LDF7-50A (1-5/8 FOAM)	150.00 - 158.33	0.6000	0.6000
T4	40	LDF5-50A (7/8 FOAM)	150.00 - 158.33	0.6000	0.6000
T4	41	LDF5-50A (7/8 FOAM)	150.00 - 158.33	0.6000	0.6000
T4	42	LDF5-50A (7/8 FOAM)	150.00 - 158.33	0.6000	0.6000
T4	43	LDF4-50A (1/2 FOAM)	150.00 - 158.33	0.6000	0.6000
T4	44	LDF6-50A (1-1/4 FOAM)	150.00 - 158.33	0.6000	0.6000
T4	45	LDF5-50A (7/8 FOAM)	150.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T4	46	LDF6-50A (1-1/4 FOAM)	158.33 150.00 -	0.6000	0.6000
T4	47	LDF5-50A (7/8 FOAM)	158.33 150.00 -	0.6000	0.6000
T4	48	LDF7-50A (1-5/8 FOAM)	158.33 150.00 -	0.6000	0.6000
T4	49	LDF7-50A (1-5/8 FOAM)	158.33 150.00 -	0.6000	0.6000
T4	50	LDF5-50A (7/8 FOAM)	158.33 150.00 -	0.6000	0.6000
T4	51	LDF5-50A (7/8 FOAM)	158.33 150.00 -	0.6000	0.6000
T4	52	LCF78-50J (7/8 FOAM)	158.33 150.00 -	0.6000	0.6000
T5	13	LDF5-50A (7/8 FOAM)	158.33 125.00 -	0.6000	0.6000
T5	18	Hybrid HCS 6x12 6 AWG (1-1/4")	130.00 125.00 -	0.6000	0.6000
T5	27	LDF5-50A (7/8 FOAM)	137.00 125.00 -	0.6000	0.6000
T5	28	LDF7-50A (1-5/8 FOAM)	150.00 125.00 -	0.6000	0.6000
T5	29	RDCCBL-AIRMUX-UTP/200	149.00 125.00 -	0.6000	0.6000
T5	30	LDF4-50A (1/2 FOAM)	150.00 125.00 -	0.6000	0.6000
T5	31	LDF5-50A (7/8 FOAM)	150.00 125.00 -	0.6000	0.6000
T5	32	LDF5-50A (7/8 FOAM)	150.00 125.00 -	0.6000	0.6000
T5	34	EW63	150.00 125.00 -	0.6000	0.6000
T5	35	EW63	150.00 125.00 -	0.6000	0.6000
T5	36	LDF5-50A (7/8 FOAM)	150.00 125.00 -	0.6000	0.6000
T5	37	LDF7-50A (1-5/8 FOAM)	150.00 125.00 -	0.6000	0.6000
T5	38	LDF7-50A (1-5/8 FOAM)	150.00 125.00 -	0.6000	0.6000
T5	39	LDF7-50A (1-5/8 FOAM)	150.00 125.00 -	0.6000	0.6000
T5	40	LDF5-50A (7/8 FOAM)	150.00 125.00 -	0.6000	0.6000
T5	41	LDF5-50A (7/8 FOAM)	150.00 125.00 -	0.6000	0.6000
T5	42	LDF5-50A (7/8 FOAM)	150.00 125.00 -	0.6000	0.6000
T5	43	LDF4-50A (1/2 FOAM)	150.00 125.00 -	0.6000	0.6000
T5	44	LDF6-50A (1-1/4 FOAM)	150.00 125.00 -	0.6000	0.6000
T5	45	LDF5-50A (7/8 FOAM)	150.00 125.00 -	0.6000	0.6000
T5	46	LDF6-50A (1-1/4 FOAM)	150.00 125.00 -	0.6000	0.6000
T5	47	LDF5-50A (7/8 FOAM)	150.00 125.00 -	0.6000	0.6000
T5	48	LDF7-50A (1-5/8 FOAM)	150.00 125.00 -	0.6000	0.6000
T5	49	LDF7-50A (1-5/8 FOAM)	150.00 125.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T5	50	LDF5-50A (7/8 FOAM)	150.00 125.00 - 150.00	0.6000	0.6000
T5	51	LDF5-50A (7/8 FOAM)	125.00 - 150.00	0.6000	0.6000
T5	52	LCF78-50J (7/8 FOAM)	125.00 - 150.00	0.6000	0.6000
T5	56	LDF6-50A (1-1/4 FOAM)	125.00 - 148.00	0.6000	0.6000
T5	57	FB-L98B-02 (10mm Fiber)	125.00 - 148.00	0.6000	0.6000
T5	58	RSS 8 - AWG 2 (0.645")	125.00 - 148.00	0.6000	0.6000
T6	9	LDF5-50A (7/8 FOAM)	100.00 - 111.00	0.6000	0.6000
T6	10	LDF5-50A (7/8 FOAM)	100.00 - 123.00	0.6000	0.6000
T6	11	LDF5-50A (7/8 FOAM)	100.00 - 125.00	0.6000	0.6000
T6	13	LDF5-50A (7/8 FOAM)	100.00 - 125.00	0.6000	0.6000
T6	18	Hybrid HCS 6x12 6 AWG (1-1/4")	100.00 - 125.00	0.6000	0.6000
T6	27	LDF5-50A (7/8 FOAM)	100.00 - 125.00	0.6000	0.6000
T6	28	LDF7-50A (1-5/8 FOAM)	100.00 - 125.00	0.6000	0.6000
T6	29	RDCCBL-AIRMUX-UTP/200	100.00 - 125.00	0.6000	0.6000
T6	30	LDF4-50A (1/2 FOAM)	100.00 - 125.00	0.6000	0.6000
T6	31	LDF5-50A (7/8 FOAM)	100.00 - 125.00	0.6000	0.6000
T6	32	LDF5-50A (7/8 FOAM)	100.00 - 125.00	0.6000	0.6000
T6	34	EW63	100.00 - 125.00	0.6000	0.6000
T6	35	EW63	100.00 - 125.00	0.6000	0.6000
T6	36	LDF5-50A (7/8 FOAM)	100.00 - 125.00	0.6000	0.6000
T6	37	LDF7-50A (1-5/8 FOAM)	100.00 - 125.00	0.6000	0.6000
T6	38	LDF7-50A (1-5/8 FOAM)	100.00 - 125.00	0.6000	0.6000
T6	39	LDF7-50A (1-5/8 FOAM)	100.00 - 125.00	0.6000	0.6000
T6	40	LDF5-50A (7/8 FOAM)	100.00 - 125.00	0.6000	0.6000
T6	41	LDF5-50A (7/8 FOAM)	100.00 - 125.00	0.6000	0.6000
T6	42	LDF5-50A (7/8 FOAM)	100.00 - 125.00	0.6000	0.6000
T6	43	LDF4-50A (1/2 FOAM)	100.00 - 125.00	0.6000	0.6000
T6	44	LDF6-50A (1-1/4 FOAM)	100.00 - 125.00	0.6000	0.6000
T6	45	LDF5-50A (7/8 FOAM)	100.00 - 125.00	0.6000	0.6000
T6	46	LDF6-50A (1-1/4 FOAM)	100.00 - 125.00	0.6000	0.6000
T6	47	LDF5-50A (7/8 FOAM)	100.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			125.00		
T6	48	LDF7-50A (1-5/8 FOAM)	100.00 - 125.00	0.6000	0.6000
T6	49	LDF7-50A (1-5/8 FOAM)	100.00 - 125.00	0.6000	0.6000
T6	50	LDF5-50A (7/8 FOAM)	100.00 - 125.00	0.6000	0.6000
T6	51	LDF5-50A (7/8 FOAM)	100.00 - 125.00	0.6000	0.6000
T6	52	LCF78-50J (7/8 FOAM)	100.00 - 125.00	0.6000	0.6000
T6	53	LCF78-50J (7/8 FOAM)	100.00 - 124.00	0.6000	0.6000
T6	56	LDF6-50A (1-1/4 FOAM)	100.00 - 125.00	0.6000	0.6000
T6	57	FB-L98B-02 (10mm Fiber)	100.00 - 125.00	0.6000	0.6000
T6	58	RSS 8 - AWG 2 (0.645")	100.00 - 125.00	0.6000	0.6000
T7	9	LDF5-50A (7/8 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	10	LDF5-50A (7/8 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	11	LDF5-50A (7/8 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	13	LDF5-50A (7/8 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	18	Hybrid HCS 6x12 6 AWG (1-1/4")	91.67 - 100.00	0.6000	0.6000
T7	27	LDF5-50A (7/8 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	28	LDF7-50A (1-5/8 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	29	RDCCBL-AIRMUX-UTP/200	91.67 - 100.00	0.6000	0.6000
T7	30	LDF4-50A (1/2 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	31	LDF5-50A (7/8 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	32	LDF5-50A (7/8 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	34	EW63	91.67 - 100.00	0.6000	0.6000
T7	35	EW63	91.67 - 100.00	0.6000	0.6000
T7	36	LDF5-50A (7/8 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	37	LDF7-50A (1-5/8 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	38	LDF7-50A (1-5/8 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	39	LDF7-50A (1-5/8 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	40	LDF5-50A (7/8 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	41	LDF5-50A (7/8 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	42	LDF5-50A (7/8 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	43	LDF4-50A (1/2 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	44	LDF6-50A (1-1/4 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	45	LDF5-50A (7/8 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	46	LDF6-50A (1-1/4 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	47	LDF5-50A (7/8 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	48	LDF7-50A (1-5/8 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	49	LDF7-50A (1-5/8 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	50	LDF5-50A (7/8 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	51	LDF5-50A (7/8 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	52	LCF78-50J (7/8 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	53	LCF78-50J (7/8 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	56	LDF6-50A (1-1/4 FOAM)	91.67 - 100.00	0.6000	0.6000
T7	57	FB-L98B-02 (10mm Fiber)	91.67 - 100.00	0.6000	0.6000
T7	58	RSS 8 - AWG 2 (0.645")	91.67 - 100.00	0.6000	0.6000
T8	9	LDF5-50A (7/8 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	10	LDF5-50A (7/8 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	11	LDF5-50A (7/8 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	13	LDF5-50A (7/8 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	18	Hybrid HCS 6x12 6 AWG (1-1/4")	83.33 - 91.67	0.6000	0.6000
T8	27	LDF5-50A (7/8 FOAM)	83.33 - 91.67	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T8	28	LDF7-50A (1-5/8 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	29	RDCCBL-AIRMUX-UTP/200	83.33 - 91.67	0.6000	0.6000
T8	30	LDF4-50A (1/2 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	31	LDF5-50A (7/8 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	32	LDF5-50A (7/8 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	34	EW63	83.33 - 91.67	0.6000	0.6000
T8	35	EW63	83.33 - 91.67	0.6000	0.6000
T8	36	LDF5-50A (7/8 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	37	LDF7-50A (1-5/8 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	38	LDF7-50A (1-5/8 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	39	LDF7-50A (1-5/8 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	40	LDF5-50A (7/8 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	41	LDF5-50A (7/8 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	42	LDF5-50A (7/8 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	43	LDF4-50A (1/2 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	44	LDF6-50A (1-1/4 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	45	LDF5-50A (7/8 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	46	LDF6-50A (1-1/4 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	47	LDF5-50A (7/8 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	48	LDF7-50A (1-5/8 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	49	LDF7-50A (1-5/8 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	50	LDF5-50A (7/8 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	51	LDF5-50A (7/8 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	52	LCF78-50J (7/8 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	53	LCF78-50J (7/8 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	56	LDF6-50A (1-1/4 FOAM)	83.33 - 91.67	0.6000	0.6000
T8	57	FB-L98B-02 (10mm Fiber)	83.33 - 91.67	0.6000	0.6000
T8	58	RSS 8 - AWG 2 (0.645")	83.33 - 91.67	0.6000	0.6000
T9	6	LDF6-50A (1-1/4 FOAM)	75.00 - 81.00	0.6000	0.6000
T9	7	LDF5-50A (7/8 FOAM)	75.00 - 76.00	0.6000	0.6000
T9	8	LDF5-50A (7/8 FOAM)	75.00 - 76.00	0.6000	0.6000
T9	9	LDF5-50A (7/8 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	10	LDF5-50A (7/8 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	11	LDF5-50A (7/8 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	13	LDF5-50A (7/8 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	18	Hybrid HCS 6x12 6 AWG (1-1/4")	75.00 - 83.33	0.6000	0.6000
T9	27	LDF5-50A (7/8 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	28	LDF7-50A (1-5/8 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	29	RDCCBL-AIRMUX-UTP/200	75.00 - 83.33	0.6000	0.6000
T9	30	LDF4-50A (1/2 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	31	LDF5-50A (7/8 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	32	LDF5-50A (7/8 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	34	EW63	75.00 - 83.33	0.6000	0.6000
T9	35	EW63	75.00 - 83.33	0.6000	0.6000
T9	36	LDF5-50A (7/8 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	37	LDF7-50A (1-5/8 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	38	LDF7-50A (1-5/8 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	39	LDF7-50A (1-5/8 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	40	LDF5-50A (7/8 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	41	LDF5-50A (7/8 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	42	LDF5-50A (7/8 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	43	LDF4-50A (1/2 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	44	LDF6-50A (1-1/4 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	45	LDF5-50A (7/8 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	46	LDF6-50A (1-1/4 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	47	LDF5-50A (7/8 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	48	LDF7-50A (1-5/8 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	49	LDF7-50A (1-5/8 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	50	LDF5-50A (7/8 FOAM)	75.00 - 83.33	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T9	51	LDF5-50A (7/8 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	52	LCF78-50J (7/8 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	53	LCF78-50J (7/8 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	56	LDF6-50A (1-1/4 FOAM)	75.00 - 83.33	0.6000	0.6000
T9	57	FB-L98B-02 (10mm Fiber)	75.00 - 83.33	0.6000	0.6000
T9	58	RSS 8 - AWG 2 (0.645")	75.00 - 83.33	0.6000	0.6000
T10	6	LDF6-50A (1-1/4 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	7	LDF5-50A (7/8 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	8	LDF5-50A (7/8 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	9	LDF5-50A (7/8 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	10	LDF5-50A (7/8 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	11	LDF5-50A (7/8 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	13	LDF5-50A (7/8 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	18	Hybrid HCS 6x12 6 AWG (1-1/4")	50.00 - 75.00	0.6000	0.6000
T10	27	LDF5-50A (7/8 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	28	LDF7-50A (1-5/8 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	29	RDCCBL-AIRMUX-UTP/200	50.00 - 75.00	0.6000	0.6000
T10	30	LDF4-50A (1/2 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	31	LDF5-50A (7/8 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	32	LDF5-50A (7/8 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	34	EW63	50.00 - 75.00	0.6000	0.6000
T10	35	EW63	50.00 - 75.00	0.6000	0.6000
T10	36	LDF5-50A (7/8 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	37	LDF7-50A (1-5/8 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	38	LDF7-50A (1-5/8 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	39	LDF7-50A (1-5/8 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	40	LDF5-50A (7/8 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	41	LDF5-50A (7/8 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	42	LDF5-50A (7/8 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	43	LDF4-50A (1/2 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	44	LDF6-50A (1-1/4 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	45	LDF5-50A (7/8 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	46	LDF6-50A (1-1/4 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	47	LDF5-50A (7/8 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	48	LDF7-50A (1-5/8 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	49	LDF7-50A (1-5/8 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	50	LDF5-50A (7/8 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	51	LDF5-50A (7/8 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	52	LCF78-50J (7/8 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	53	LCF78-50J (7/8 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	56	LDF6-50A (1-1/4 FOAM)	50.00 - 75.00	0.6000	0.6000
T10	57	FB-L98B-02 (10mm Fiber)	50.00 - 75.00	0.6000	0.6000
T10	58	RSS 8 - AWG 2 (0.645")	50.00 - 75.00	0.6000	0.6000
T11	6	LDF6-50A (1-1/4 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	7	LDF5-50A (7/8 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	8	LDF5-50A (7/8 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	9	LDF5-50A (7/8 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	10	LDF5-50A (7/8 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	11	LDF5-50A (7/8 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	13	LDF5-50A (7/8 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	18	Hybrid HCS 6x12 6 AWG (1-1/4")	37.50 - 50.00	0.6000	0.6000
T11	27	LDF5-50A (7/8 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	28	LDF7-50A (1-5/8 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	29	RDCCBL-AIRMUX-UTP/200	37.50 - 50.00	0.6000	0.6000
T11	30	LDF4-50A (1/2 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	31	LDF5-50A (7/8 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	32	LDF5-50A (7/8 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	34	EW63	37.50 - 50.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T11	35	EW63	37.50 - 50.00	0.6000	0.6000
T11	36	LDF5-50A (7/8 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	37	LDF7-50A (1-5/8 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	38	LDF7-50A (1-5/8 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	39	LDF7-50A (1-5/8 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	40	LDF5-50A (7/8 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	41	LDF5-50A (7/8 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	42	LDF5-50A (7/8 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	43	LDF4-50A (1/2 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	44	LDF6-50A (1-1/4 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	45	LDF5-50A (7/8 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	46	LDF6-50A (1-1/4 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	47	LDF5-50A (7/8 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	48	LDF7-50A (1-5/8 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	49	LDF7-50A (1-5/8 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	50	LDF5-50A (7/8 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	51	LDF5-50A (7/8 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	52	LCF78-50J (7/8 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	53	LCF78-50J (7/8 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	56	LDF6-50A (1-1/4 FOAM)	37.50 - 50.00	0.6000	0.6000
T11	57	FB-L98B-02 (10mm Fiber)	37.50 - 50.00	0.6000	0.6000
T11	58	RSS 8 - AWG 2 (0.645")	37.50 - 50.00	0.6000	0.6000
T12	4	LDF4-50A (1/2 FOAM)	25.00 - 29.50	0.6000	0.6000
T12	5	LDF4-50A (1/2 FOAM)	25.00 - 34.00	0.6000	0.6000
T12	6	LDF6-50A (1-1/4 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	7	LDF5-50A (7/8 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	8	LDF5-50A (7/8 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	9	LDF5-50A (7/8 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	10	LDF5-50A (7/8 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	11	LDF5-50A (7/8 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	13	LDF5-50A (7/8 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	18	Hybrid HCS 6x12 6 AWG (1-1/4")	25.00 - 37.50	0.6000	0.6000
T12	27	LDF5-50A (7/8 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	28	LDF7-50A (1-5/8 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	29	RDCCBL-AIRMUX-UTP/200	25.00 - 37.50	0.6000	0.6000
T12	30	LDF4-50A (1/2 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	31	LDF5-50A (7/8 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	32	LDF5-50A (7/8 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	34	EW63	25.00 - 37.50	0.6000	0.6000
T12	35	EW63	25.00 - 37.50	0.6000	0.6000
T12	36	LDF5-50A (7/8 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	37	LDF7-50A (1-5/8 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	38	LDF7-50A (1-5/8 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	39	LDF7-50A (1-5/8 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	40	LDF5-50A (7/8 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	41	LDF5-50A (7/8 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	42	LDF5-50A (7/8 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	43	LDF4-50A (1/2 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	44	LDF6-50A (1-1/4 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	45	LDF5-50A (7/8 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	46	LDF6-50A (1-1/4 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	47	LDF5-50A (7/8 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	48	LDF7-50A (1-5/8 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	49	LDF7-50A (1-5/8 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	50	LDF5-50A (7/8 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	51	LDF5-50A (7/8 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	52	LCF78-50J (7/8 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	53	LCF78-50J (7/8 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	56	LDF6-50A (1-1/4 FOAM)	25.00 - 37.50	0.6000	0.6000
T12	57	FB-L98B-02 (10mm Fiber)	25.00 - 37.50	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T12	58	RSS 8 - AWG 2 (0.645")	25.00 - 37.50	0.6000	0.6000
T13	2	LDF4-50A (1/2 FOAM)	12.50 - 17.50	0.6000	0.6000
T13	3	LDF4-50A (1/2 FOAM)	12.50 - 19.50	0.6000	0.6000
T13	4	LDF4-50A (1/2 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	5	LDF4-50A (1/2 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	6	LDF6-50A (1-1/4 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	7	LDF5-50A (7/8 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	8	LDF5-50A (7/8 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	9	LDF5-50A (7/8 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	10	LDF5-50A (7/8 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	11	LDF5-50A (7/8 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	13	LDF5-50A (7/8 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	18	Hybrid HCS 6x12 6 AWG (1-1/4")	12.50 - 25.00	0.6000	0.6000
T13	27	LDF5-50A (7/8 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	28	LDF7-50A (1-5/8 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	29	RDCCBL-AIRMUX-UTP/200	12.50 - 25.00	0.6000	0.6000
T13	30	LDF4-50A (1/2 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	31	LDF5-50A (7/8 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	32	LDF5-50A (7/8 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	34	EW63	12.50 - 25.00	0.6000	0.6000
T13	35	EW63	12.50 - 25.00	0.6000	0.6000
T13	36	LDF5-50A (7/8 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	37	LDF7-50A (1-5/8 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	38	LDF7-50A (1-5/8 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	39	LDF7-50A (1-5/8 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	40	LDF5-50A (7/8 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	41	LDF5-50A (7/8 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	42	LDF5-50A (7/8 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	43	LDF4-50A (1/2 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	44	LDF6-50A (1-1/4 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	45	LDF5-50A (7/8 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	46	LDF6-50A (1-1/4 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	47	LDF5-50A (7/8 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	48	LDF7-50A (1-5/8 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	49	LDF7-50A (1-5/8 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	50	LDF5-50A (7/8 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	51	LDF5-50A (7/8 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	52	LCF78-50J (7/8 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	53	LCF78-50J (7/8 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	56	LDF6-50A (1-1/4 FOAM)	12.50 - 25.00	0.6000	0.6000
T13	57	FB-L98B-02 (10mm Fiber)	12.50 - 25.00	0.6000	0.6000
T13	58	RSS 8 - AWG 2 (0.645")	12.50 - 25.00	0.6000	0.6000
T14	2	LDF4-50A (1/2 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	3	LDF4-50A (1/2 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	4	LDF4-50A (1/2 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	5	LDF4-50A (1/2 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	6	LDF6-50A (1-1/4 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	7	LDF5-50A (7/8 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	8	LDF5-50A (7/8 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	9	LDF5-50A (7/8 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	10	LDF5-50A (7/8 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	11	LDF5-50A (7/8 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	13	LDF5-50A (7/8 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	18	Hybrid HCS 6x12 6 AWG (1-1/4")	8.00 - 12.50	0.6000	0.6000
T14	27	LDF5-50A (7/8 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	28	LDF7-50A (1-5/8 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	29	RDCCBL-AIRMUX-UTP/200	8.00 - 12.50	0.6000	0.6000
T14	30	LDF4-50A (1/2 FOAM)	8.00 - 12.50	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T14	31	LDF5-50A (7/8 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	32	LDF5-50A (7/8 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	34	EW63	8.00 - 12.50	0.6000	0.6000
T14	35	EW63	8.00 - 12.50	0.6000	0.6000
T14	36	LDF5-50A (7/8 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	37	LDF7-50A (1-5/8 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	38	LDF7-50A (1-5/8 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	39	LDF7-50A (1-5/8 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	40	LDF5-50A (7/8 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	41	LDF5-50A (7/8 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	42	LDF5-50A (7/8 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	43	LDF4-50A (1/2 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	44	LDF6-50A (1-1/4 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	45	LDF5-50A (7/8 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	46	LDF6-50A (1-1/4 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	47	LDF5-50A (7/8 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	48	LDF7-50A (1-5/8 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	49	LDF7-50A (1-5/8 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	50	LDF5-50A (7/8 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	51	LDF5-50A (7/8 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	52	LCF78-50J (7/8 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	53	LCF78-50J (7/8 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	56	LDF6-50A (1-1/4 FOAM)	8.00 - 12.50	0.6000	0.6000
T14	57	FB-L98B-02 (10mm Fiber)	8.00 - 12.50	0.6000	0.6000
T14	58	RSS 8 - AWG 2 (0.645")	8.00 - 12.50	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
* Stainless Inc. Tower Mapping (12/11/2019)									
3' Yagi	A	From Leg	4.000	0.0000	17.500	No Ice	2.083	2.083	0.031
(DNK-1 (St# 54))			0.000			1/2" Ice	3.787	3.787	0.053
			0.000			1" Ice	5.517	5.517	0.085
1.5" Dia 3' Omni	A	From Leg	4.000	0.0000	19.500	No Ice	0.944	0.944	0.022
(DNK-2 (St# 53))			0.000			1/2" Ice	1.393	1.393	0.033
			0.000			1" Ice	1.782	1.782	0.047
4' Side Mount Standoff (1)	A	From Leg	0.000	0.0000	18.000	No Ice	2.720	2.720	0.050
(DNK 1,2 (St# 53,54))			0.000			1/2" Ice	4.910	4.910	0.089
			0.000			1" Ice	7.100	7.100	0.128
1.5" Dia 3' Omni (inverted)	A	From Leg	4.000	0.0000	29.500	No Ice	0.944	0.944	0.022
(DNK-3 (St# 52))			0.000			1/2" Ice	1.393	1.393	0.033
			0.000			1" Ice	1.782	1.782	0.047
1.5" Dia 3' Omni	A	From Leg	4.000	0.0000	27.000 - 34.000	No Ice	0.944	0.944	0.022
(DNK-4 (St# 51))			0.000			1/2" Ice	1.393	1.393	0.033
			0.000			1" Ice	1.782	1.782	0.047
4' Side Mount Standoff (1)	A	From Leg	0.000	0.0000	26.000	No Ice	2.720	2.720	0.050
(DNK-3,4 (St# 51,52))			0.000			1/2" Ice	4.910	4.910	0.089
			0.000			1" Ice	7.100	7.100	0.128

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
GPS	C	From Leg	1.000	0.0000	81.000	No Ice	1.000	1.000	0.010
(DNK-5 (St# 50))			0.000			1/2" Ice	1.500	1.500	0.015
			0.000			1" Ice	2.000	2.000	0.020
1' Side Arm	C	From Leg	0.000	0.0000	81.000	No Ice	2.500	2.500	0.055
(DNK-5 (St# 50))			0.000			1/2" Ice	3.363	3.363	0.073
			0.000			1" Ice	4.226	4.226	0.091
3' Yagi	A	From Leg	1.000	0.0000	81.000	No Ice	2.083	2.083	0.031
(DNK-6 (St# 49))			0.000			1/2" Ice	3.787	3.787	0.053
			-1.000			1" Ice	5.517	5.517	0.085
20' 4-Bay Dipole	A	From Leg	0.000	0.0000	89.500	No Ice	4.000	4.000	0.055
(DNK-7 (St# 48))			0.000			1/2" Ice	6.000	6.000	0.100
			1.000			1" Ice	8.000	8.000	0.145
1' Side Arm	A	From Leg	0.500	0.0000	82.500	No Ice	2.500	2.500	0.055
(DNK-6,7 (St# 48,49))			0.000			1/2" Ice	3.363	3.363	0.073
			0.000			1" Ice	4.226	4.226	0.091
1' Side Arm	A	From Leg	0.000	0.0000	102.000	No Ice	2.500	2.500	0.055
(Un-used Mount)			0.000			1/2" Ice	3.363	3.363	0.073
			0.000			1" Ice	4.226	4.226	0.091
19.5"x19.5" Panel Antenna	C	From Leg	1.500	0.0000	123.000	No Ice	1.200	0.131	0.010
(DNK-10 (St# 46))			0.000			1/2" Ice	1.337	0.208	0.016
			0.000			1" Ice	1.481	0.290	0.024
1' Side Arm	C	From Leg	0.500	0.0000	123.000	No Ice	2.500	2.500	0.055
(DNK-10 (St# 46))			0.000			1/2" Ice	3.363	3.363	0.073
			0.000			1" Ice	4.226	4.226	0.091
2' Sidearm	B	From Leg	0.000	0.0000	111.000	No Ice	3.900	3.900	0.087
(DNK-8 (St# 47))			0.000			1/2" Ice	4.400	4.400	0.097
			0.000			1" Ice	4.900	4.900	0.107
Decibel DB210-C Dipole	A	From Leg	1.500	0.0000	125.000	No Ice	0.800	0.800	0.005
(Single)			0.000			1/2" Ice	1.440	1.440	0.007
(DNK-9 (St# 45))			0.000			1" Ice	2.080	2.080	0.009
1' Side Arm	A	From Leg	0.500	0.0000	125.000	No Ice	2.500	2.500	0.055
(DNK-9 (St# 45))			0.000			1/2" Ice	3.363	3.363	0.073
			0.000			1" Ice	4.226	4.226	0.091
* Stainless Inc. Tower Mapping (12/11/2019)									
2" Dia 14' Omni (inverted)	C	From Leg	3.000	0.0000	149.000	No Ice	2.000	2.000	0.010
(DNK-32 (St# 25))			0.000			1/2" Ice	3.030	3.030	0.025
			0.000			1" Ice	4.060	4.060	0.040
Pirod 4' Side Mount Standoff	C	From Leg	0.000	0.0000	156.000	No Ice	2.720	2.720	0.050
(1)			0.000			1/2" Ice	4.910	4.910	0.089
(DNK-32, 33 (St# 24,25))			0.000			1" Ice	7.100	7.100	0.128
3" Dia 9' Omni	C	From Leg	1.000	0.0000	160.000	No Ice	4.000	4.000	0.055
(DNK-33 (St# 24))			0.000			1/2" Ice	6.000	6.000	0.100
			0.000			1" Ice	8.000	8.000	0.145
1' Side Arm	A	From Leg	0.000	0.0000	156.000	No Ice	2.500	2.500	0.055
			0.000			1/2" Ice	3.363	3.363	0.073
			0.000			1" Ice	4.226	4.226	0.091
1 Bay Dipole ANT400D	A	From Leg	0.000	0.0000	151.000	No Ice	1.879	0.518	0.013
(DNK-34 (St# 22))			0.000			1/2" Ice	2.093	0.742	0.028
			0.000			1" Ice	2.317	0.984	0.045
10'6"x4" Pipe Mount	A	From Leg	0.000	0.0000	156.000	No Ice	3.088	3.088	0.114
(DNK-34 (St# 22))			0.000			1/2" Ice	5.615	5.615	0.147
			0.000			1" Ice	6.252	6.252	0.187
ANT450F6	A	From Leg	0.000	0.0000	161.000	No Ice	1.900	1.900	0.008
(DNK-35 (St# 21))			0.000			1/2" Ice	2.728	2.728	0.022
			0.000			1" Ice	3.401	3.401	0.042
2' Sidearm	A	From Leg	0.000	0.0000	157.000	No Ice	3.900	3.900	0.087

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(DNK-35 (St# 21))			0.000			1/2" Ice	4.400	4.400	0.097
			0.000			1" Ice	4.900	4.900	0.107
Telewave 150F2 Omni	B	From Leg	3.000	0.0000	166.500	No Ice	1.281	1.281	0.016
((St # 20))			0.000			1/2" Ice	1.598	1.598	0.026
			0.000			1" Ice	1.911	1.911	0.040
Pirod 4' Side Mount Standoff	B	From Leg	0.000	0.0000	164.000	No Ice	2.720	2.720	0.050
(1)			0.000			1/2" Ice	4.910	4.910	0.089
((St # 20))			0.000			1" Ice	7.100	7.100	0.128
1' Side Arm	B	From Leg	0.000	0.0000	176.000	No Ice	2.500	2.500	0.055
(DNK-44 (St# 18))			0.000			1/2" Ice	3.363	3.363	0.073
			0.000			1" Ice	4.226	4.226	0.091
1' Side Arm	A	From Leg	0.000	0.0000	176.000	No Ice	2.500	2.500	0.055
(DNK-45 (St# 17))			0.000			1/2" Ice	3.363	3.363	0.073
			0.000			1" Ice	4.226	4.226	0.091
11"x8"x12" Junction Box	A	From Face	0.000	0.0000	178.000	No Ice	0.733	1.100	0.025
((St# 16))			0.000			1/2" Ice	0.843	1.231	0.036
			0.000			1" Ice	0.959	1.370	0.050
(Inverted) 3" Dia 20' Omni	C	From Leg	6.000	0.0000	170.000	No Ice	4.000	4.000	0.055
(DNK-38 (St# 15))			-3.000			1/2" Ice	6.000	6.000	0.100
			0.000			1" Ice	8.000	8.000	0.145
(Inverted) 3" Dia 20' Omni	C	From Leg	6.000	0.0000	170.000	No Ice	4.000	4.000	0.055
(DNK-39 (St# 14))			3.000			1/2" Ice	6.000	6.000	0.100
			0.000			1" Ice	8.000	8.000	0.145
Pirod 6' Side Mount Standoff	C	From Leg	0.000	0.0000	177.500	No Ice	4.970	4.970	0.070
(1)			0.000			1/2" Ice	6.120	6.120	0.130
(DNK-38,39 (St# 13,14,15,16))			0.000			1" Ice	7.270	7.270	0.190
3" Dia 20' Omni	C	From Leg	6.000	0.0000	185.500	No Ice	4.000	4.000	0.055
(DNK-59 (St# 13))			0.000			1/2" Ice	6.000	6.000	0.100
			0.000			1" Ice	8.000	8.000	0.145
(inverted) 10' 8 Bay Di-Pole	C	From Face	4.000	0.0000	170.000	No Ice	4.000	4.000	0.055
(DNK-41 (St# 12))			-6.000			1/2" Ice	6.000	6.000	0.100
			0.000			1" Ice	8.000	8.000	0.145
1 Bay Dipole ANT400D	C	From Leg	1.000	0.0000	181.000	No Ice	1.879	0.518	0.013
(DNK-51 (St# 11))			0.000			1/2" Ice	2.093	0.742	0.028
			0.000			1" Ice	2.317	0.984	0.045
2" Dia 10' Omni	C	From Leg	0.500	0.0000	186.000	No Ice	2.000	2.000	0.010
(DNK-52 (St# 10))			0.000			1/2" Ice	3.030	3.030	0.025
			0.000			1" Ice	4.060	4.060	0.040
432E-83I-01T TTA Unit	B	From Face	0.500	0.0000	177.500	No Ice	2.850	0.973	0.025
(DNK-47 (St# 9))			0.000			1/2" Ice	3.059	1.111	0.045
			0.000			1" Ice	3.276	1.255	0.067
3" Dia 12' Omni	C	From Face	0.500	0.0000	185.500	No Ice	2.000	2.000	0.010
(DNK-48 (St# 8))			0.000			1/2" Ice	3.030	3.030	0.025
			0.000			1" Ice	4.060	4.060	0.040
(inverted) 10' 8 Bay Di-Pole	C	From Face	4.000	0.0000	170.000	No Ice	4.000	4.000	0.055
(DNK-40 (St# 7))			6.000			1/2" Ice	6.000	6.000	0.100
			0.000			1" Ice	8.000	8.000	0.145
3" Dia 20' Omni	A	From Leg	6.000	0.0000	185.500	No Ice	4.000	4.000	0.055
(DNK-57 (St# 6))			0.000			1/2" Ice	6.000	6.000	0.100
			0.000			1" Ice	8.000	8.000	0.145
1" Dia 8' Omni	A	From Leg	2.000	0.0000	182.500	No Ice	2.000	2.000	0.005
(DNK-58 (St# 5))			0.000			1/2" Ice	3.030	3.030	0.018
			0.000			1" Ice	4.060	4.060	0.031
6' Side-Arm(1)	B	From Leg	0.000	0.0000	177.500	No Ice	10.600	10.600	0.140
(Mts for St# 5-12 Antennas)			0.000			1/2" Ice	15.400	15.400	0.212
			0.000			1" Ice	20.200	20.200	0.284

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
6' Side-Arm(1)	C	From Leg	0.000	0.0000	177.500	No Ice	10.600	10.600	0.140
(Mts for St# 5-12 Antennas)			0.000			1/2" Ice	15.400	15.400	0.212
			0.000			1" Ice	20.200	20.200	0.284
6' Side-Arm(1)	C	From Face	0.000	-45.0000	177.500	No Ice	10.600	10.600	0.140
(Mts for St# 5-12 Antennas)			0.000			1/2" Ice	15.400	15.400	0.212
			0.000			1" Ice	20.200	20.200	0.284
6' Side-Arm(1)	C	From Face	0.000	45.0000	177.500	No Ice	10.600	10.600	0.140
(Mts for St# 5-12 Antennas)			0.000			1/2" Ice	15.400	15.400	0.212
			0.000			1" Ice	20.200	20.200	0.284
(inverted) 2" Dia 10' Omni	A	From Face	4.000	0.0000	173.000	No Ice	2.000	2.000	0.010
(DNK-42 (St# 4))			0.000			1/2" Ice	3.030	3.030	0.025
			0.000			1" Ice	4.060	4.060	0.040
2" Dia 10' Omni	A	From Leg	0.500	0.0000	185.000	No Ice	2.000	2.000	0.010
(DNK-53 (St# 3))			0.000			1/2" Ice	3.030	3.030	0.025
			0.000			1" Ice	4.060	4.060	0.040
10' - 2 Bay Dipole	A	From Leg	0.500	0.0000	185.000	No Ice	1.408	1.408	0.010
(DNK-54 (St# 2))			0.000			1/2" Ice	1.556	1.556	0.028
			0.000			1" Ice	1.712	1.712	0.048
20' 4-Bay Dipole	A	From Leg	0.500	0.0000	181.000	No Ice	4.000	4.000	0.055
(DNK-55 (St# 1))			0.000			1/2" Ice	6.000	6.000	0.100
			0.000			1" Ice	8.000	8.000	0.145
Lightning Rod 2"x15'	A	From Leg	0.000	0.0000	200.000	No Ice	3.000	3.000	0.080
(DNK-56 (L.R.))			0.000			1/2" Ice	4.525	4.525	0.103
			0.000			1" Ice	6.067	6.067	0.136
6' Side-Arm(1)	A	From Leg	0.000	0.0000	179.000	No Ice	10.600	10.600	0.140
(Mts for St# 4-1 Antennas)			0.000			1/2" Ice	15.400	15.400	0.212
			0.000			1" Ice	20.200	20.200	0.284
6' Side-Arm(1)	B	From Face	0.000	45.0000	179.000	No Ice	10.600	10.600	0.140
(Mts for St# 4-1 Antennas)			0.000			1/2" Ice	15.400	15.400	0.212
			0.000			1" Ice	20.200	20.200	0.284
Telewave ANT220F2 - Omni	C	From Leg	4.000	0.0000	162.000	No Ice	1.022	1.022	0.014
Antenna			0.000			1/2" Ice	1.290	1.290	0.023
(Eversource)			0.000			1" Ice	1.560	1.560	0.035
Sitepro1 USF-4U Mount	C	From Leg	0.000	0.0000	159.000	No Ice	2.483	5.145	0.165
Assembly (Ca = 1.4 assumed)			0.000			1/2" Ice	3.247	6.910	0.318
(Eversource)			0.000			1" Ice	4.029	8.675	0.474
Comprod 871F-70 Dipole	C	From Leg	1.000	0.0000	124.000	No Ice	1.700	0.468	0.013
(Eversource)			0.000			1/2" Ice	1.894	0.672	0.027
			0.000			1" Ice	2.097	0.890	0.044
Sitepro1 USF-4U Mount	C	From Leg	0.000	0.0000	121.000	No Ice	2.483	5.145	0.165
Assembly (Ca = 1.4 assumed)			0.000			1/2" Ice	3.247	6.910	0.318
(Eversource)			0.000			1" Ice	4.029	8.675	0.474
2' Sidearm	A	From Leg	0.500	0.0000	130.000	No Ice	3.900	3.900	0.087
(T-Mobile)			0.000			1/2" Ice	4.400	4.400	0.097
			0.000			1" Ice	4.900	4.900	0.107
2' Sidearm	B	From Leg	0.500	0.0000	130.000	No Ice	3.900	3.900	0.087
(T-Mobile)			0.000			1/2" Ice	4.400	4.400	0.097
			0.000			1" Ice	4.900	4.900	0.107
2' Sidearm	C	From Leg	0.500	0.0000	130.000	No Ice	3.900	3.900	0.087
(T-Mobile)			0.000			1/2" Ice	4.400	4.400	0.097
			0.000			1" Ice	4.900	4.900	0.107
(2) TMA 10"x8"x5"	A	From Leg	1.000	0.0000	130.000	No Ice	0.667	0.417	0.020
(T-Mobile)			0.000			1/2" Ice	0.770	0.504	0.026
			0.000			1" Ice	0.881	0.598	0.034
(2) TMA 10"x8"x5"	B	From Leg	1.000	0.0000	130.000	No Ice	0.667	0.417	0.020
(T-Mobile)			0.000			1/2" Ice	0.770	0.504	0.026
			0.000			1" Ice	0.881	0.598	0.034

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) TMA 10"x8"x5"	C	From Leg	1.000	0.0000	130.000	No Ice	0.667	0.417	0.020
(T-Mobile)			0.000			1/2" Ice	0.770	0.504	0.026
			0.000			1" Ice	0.881	0.598	0.034
(2) CBC1923Q-43 Diplexer	A	From Leg	1.000	0.0000	130.000	No Ice	0.322	0.127	0.008
(T-Mobile)			0.000			1/2" Ice	0.398	0.174	0.011
			0.000			1" Ice	0.481	0.229	0.016
(2) CBC1923Q-43 Diplexer	B	From Leg	1.000	0.0000	130.000	No Ice	0.322	0.127	0.008
(T-Mobile)			0.000			1/2" Ice	0.398	0.174	0.011
			0.000			1" Ice	0.481	0.229	0.016
(2) CBC1923Q-43 Diplexer	C	From Leg	1.000	0.0000	130.000	No Ice	0.322	0.127	0.008
(T-Mobile)			0.000			1/2" Ice	0.398	0.174	0.011
			0.000			1" Ice	0.481	0.229	0.016
ATSBT-TOP-FM-4G	A	From Leg	1.000	0.0000	130.000	No Ice	0.174	0.095	0.050
(T-Mobile)			0.000			1/2" Ice	0.229	0.140	0.052
			0.000			1" Ice	0.292	0.193	0.054
ATSBT-TOP-FM-4G	B	From Leg	1.000	0.0000	130.000	No Ice	0.174	0.095	0.050
(T-Mobile)			0.000			1/2" Ice	0.229	0.140	0.052
			0.000			1" Ice	0.292	0.193	0.054
ATSBT-TOP-FM-4G	C	From Leg	1.000	0.0000	130.000	No Ice	0.174	0.095	0.050
(T-Mobile)			0.000			1/2" Ice	0.229	0.140	0.052
			0.000			1" Ice	0.292	0.193	0.054
DBXNH-6565B	A	From Leg	4.000	0.0000	130.000	No Ice	8.173	5.405	0.050
(T-Mobile)			1.000			1/2" Ice	8.633	5.863	0.101
			0.000			1" Ice	9.100	6.327	0.157
DBXNH-6565B	B	From Leg	4.000	0.0000	130.000	No Ice	8.173	5.405	0.050
(T-Mobile)			1.000			1/2" Ice	8.633	5.863	0.101
			0.000			1" Ice	9.100	6.327	0.157
DBXNH-6565B	C	From Leg	4.000	0.0000	130.000	No Ice	8.173	5.405	0.050
(T-Mobile)			1.000			1/2" Ice	8.633	5.863	0.101
			0.000			1" Ice	9.100	6.327	0.157
Pirod 12' PCS T-Frame (1)	A	From Leg	0.000	0.0000	137.000	No Ice	12.293	7.486	0.565
104569			0.000			1/2" Ice	18.973	10.444	0.588
(Sprint)			0.000			1" Ice	25.347	13.160	0.650
Pirod 12' PCS T-Frame (1)	B	From Leg	0.000	0.0000	137.000	No Ice	12.293	7.486	0.565
104569			0.000			1/2" Ice	18.973	10.444	0.588
(Sprint)			0.000			1" Ice	25.347	13.160	0.650
Pirod 12' PCS T-Frame (1)	C	From Leg	0.000	0.0000	137.000	No Ice	12.293	7.486	0.565
104569			0.000			1/2" Ice	18.973	10.444	0.588
(Sprint)			0.000			1" Ice	25.347	13.160	0.650
APXVTM14-C-120 Panel	A	From Leg	3.000	0.0000	137.000	No Ice	6.342	3.607	0.072
Antenna			-3.500			1/2" Ice	6.716	3.967	0.112
(Sprint)			0.000			1" Ice	7.097	4.333	0.156
APXVTM14-C-120 Panel	B	From Leg	3.000	0.0000	137.000	No Ice	6.342	3.607	0.072
Antenna			-3.500			1/2" Ice	6.716	3.967	0.112
(Sprint)			0.000			1" Ice	7.097	4.333	0.156
APXVTM14-C-120 Panel	C	From Leg	3.000	0.0000	137.000	No Ice	6.342	3.607	0.072
Antenna			-3.500			1/2" Ice	6.716	3.967	0.112
(Sprint)			0.000			1" Ice	7.097	4.333	0.156
NNVV-65B-R4 Panel	A	From Leg	3.000	0.0000	137.000	No Ice	12.271	5.750	0.085
Antenna			3.500			1/2" Ice	12.766	6.207	0.157
(Sprint)			0.000			1" Ice	13.268	6.671	0.236
NNVV-65B-R4 Panel	B	From Leg	3.000	0.0000	137.000	No Ice	12.271	5.750	0.085
Antenna			3.500			1/2" Ice	12.766	6.207	0.157
(Sprint)			0.000			1" Ice	13.268	6.671	0.236
NNVV-65B-R4 Panel	C	From Leg	3.000	0.0000	137.000	No Ice	12.271	5.750	0.085
Antenna			3.500			1/2" Ice	12.766	6.207	0.157
(Sprint)			0.000			1" Ice	13.268	6.671	0.236

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
ALU TD-RRH-8x20-25	A	From Leg	3.000	0.0000	137.000	No Ice	4.030	1.526	0.076
(Sprint)			3.500			1/2" Ice	4.281	1.705	0.103
			0.000			1" Ice	4.540	1.891	0.134
ALU TD-RRH-8x20-25	B	From Leg	3.000	0.0000	137.000	No Ice	4.030	1.526	0.076
(Sprint)			3.500			1/2" Ice	4.281	1.705	0.103
			0.000			1" Ice	4.540	1.891	0.134
ALU TD-RRH-8x20-25	C	From Leg	3.000	0.0000	137.000	No Ice	4.030	1.526	0.076
(Sprint)			3.500			1/2" Ice	4.281	1.705	0.103
			0.000			1" Ice	4.540	1.891	0.134
(2) ALU 800MHz 2x50W	A	From Leg	3.000	0.0000	137.000	No Ice	2.058	1.932	0.064
(Sprint)			3.500			1/2" Ice	2.240	2.109	0.086
			0.000			1" Ice	2.429	2.293	0.111
(2) ALU 800MHz 2x50W	B	From Leg	3.000	0.0000	137.000	No Ice	2.058	1.932	0.064
(Sprint)			3.500			1/2" Ice	2.240	2.109	0.086
			0.000			1" Ice	2.429	2.293	0.111
(2) ALU 800MHz 2x50W	C	From Leg	3.000	0.0000	137.000	No Ice	2.058	1.932	0.064
(Sprint)			3.500			1/2" Ice	2.240	2.109	0.086
			0.000			1" Ice	2.429	2.293	0.111
ALU 4x45-1900 MHz RRH	A	From Leg	3.000	0.0000	137.000	No Ice	2.500	2.500	0.070
Unit			-3.500			1/2" Ice	2.709	2.709	0.095
(Sprint)			0.000			1" Ice	2.926	2.926	0.124
ALU 4x45-1900 MHz RRH	B	From Leg	3.000	0.0000	137.000	No Ice	2.500	2.500	0.070
Unit			-3.500			1/2" Ice	2.709	2.709	0.095
(Sprint)			0.000			1" Ice	2.926	2.926	0.124
ALU 4x45-1900 MHz RRH	C	From Leg	3.000	0.0000	137.000	No Ice	2.500	2.500	0.070
Unit			-3.500			1/2" Ice	2.709	2.709	0.095
(Sprint)			0.000			1" Ice	2.926	2.926	0.124
13-ft Sector Frame	A	From Leg	0.000	0.0000	148.000	No Ice	12.000	12.000	0.350
(AT&T - Existing)			0.000			1/2" Ice	16.000	16.000	0.525
			0.000			1" Ice	20.000	20.000	0.700
13-ft Sector Frame	B	From Leg	0.000	0.0000	148.000	No Ice	12.000	12.000	0.350
(AT&T - Existing)			0.000			1/2" Ice	16.000	16.000	0.525
			0.000			1" Ice	20.000	20.000	0.700
13-ft Sector Frame	C	From Leg	0.000	0.0000	148.000	No Ice	12.000	12.000	0.350
(AT&T - Existing)			0.000			1/2" Ice	16.000	16.000	0.525
			0.000			1" Ice	20.000	20.000	0.700
DMP65R-BU4D	A	From Face	4.000	0.0000	148.000	No Ice	8.000	3.506	0.068
(AT&T - Existing)			4.000			1/2" Ice	8.381	3.810	0.119
			0.000			1" Ice	8.770	4.121	0.174
840-370964	A	From Face	4.000	0.0000	148.000	No Ice	6.077	3.039	0.065
(AT&T - Existing)			-4.000			1/2" Ice	6.415	3.343	0.103
			0.000			1" Ice	6.761	3.646	0.147
DMP65R-BU4D	B	From Face	4.000	0.0000	148.000	No Ice	8.000	3.506	0.068
(AT&T - Existing)			4.000			1/2" Ice	8.381	3.810	0.119
			0.000			1" Ice	8.770	4.121	0.174
840-370964	B	From Face	4.000	0.0000	148.000	No Ice	6.077	3.039	0.065
(AT&T - Existing)			-4.000			1/2" Ice	6.415	3.343	0.103
			0.000			1" Ice	6.761	3.646	0.147
DMP65R-BU4D	C	From Face	4.000	0.0000	148.000	No Ice	8.000	3.506	0.068
(AT&T - Existing)			4.000			1/2" Ice	8.381	3.810	0.119
			0.000			1" Ice	8.770	4.121	0.174
840-370964	C	From Face	4.000	0.0000	148.000	No Ice	6.077	3.039	0.065
(AT&T - Existing)			-4.000			1/2" Ice	6.415	3.343	0.103
			0.000			1" Ice	6.761	3.646	0.147
4449 B5/B12	A	From Face	4.000	0.0000	148.000	No Ice	1.968	1.408	0.071
(AT&T - Existing)			4.000			1/2" Ice	2.144	1.564	0.090
			0.000			1" Ice	2.328	1.727	0.111

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
4449 B5/B12	B	From Face	4.000	0.0000	148.000	No Ice	1.968	1.408	0.071
(AT&T - Existing)			4.000			1/2" Ice	2.144	1.564	0.090
			0.000			1" Ice	2.328	1.727	0.111
4449 B5/B12	C	From Face	4.000	0.0000	148.000	No Ice	1.968	1.408	0.071
(AT&T - Existing)			4.000			1/2" Ice	2.144	1.564	0.090
			0.000			1" Ice	2.328	1.727	0.111
8843 B2/B66A	A	From Face	4.000	0.0000	148.000	No Ice	1.639	1.353	0.072
(AT&T - Existing)			4.000			1/2" Ice	1.799	1.500	0.090
			0.000			1" Ice	1.966	1.655	0.110
8843 B2/B66A	B	From Face	4.000	0.0000	148.000	No Ice	1.639	1.353	0.072
(AT&T - Existing)			4.000			1/2" Ice	1.799	1.500	0.090
			0.000			1" Ice	1.966	1.655	0.110
8843 B2/B66A	C	From Face	4.000	0.0000	148.000	No Ice	1.639	1.353	0.072
(AT&T - Existing)			4.000			1/2" Ice	1.799	1.500	0.090
			0.000			1" Ice	1.966	1.655	0.110
4478 B14	A	From Face	4.000	0.0000	148.000	No Ice	1.843	1.059	0.060
(AT&T - Proposed)			4.000			1/2" Ice	2.012	1.197	0.076
			0.000			1" Ice	2.190	1.342	0.094
4478 B14	B	From Face	4.000	0.0000	148.000	No Ice	1.843	1.059	0.060
(AT&T - Proposed)			4.000			1/2" Ice	2.012	1.197	0.076
			0.000			1" Ice	2.190	1.342	0.094
4478 B14	C	From Face	4.000	0.0000	148.000	No Ice	1.843	1.059	0.060
(AT&T - Proposed)			4.000			1/2" Ice	2.012	1.197	0.076
			0.000			1" Ice	2.190	1.342	0.094
DC9	C	From Leg	0.000	0.0000	148.000	No Ice	1.909	1.909	0.020
(AT&T - Proposed)			0.000			1/2" Ice	2.098	2.098	0.039
			0.000			1" Ice	2.294	2.294	0.062
400H/ODU/F58F/EXT	A	From Leg	1.000	0.0000	156.000	No Ice	0.705	0.202	0.006
(Valley Shore)			0.000			1/2" Ice	0.813	0.265	0.011
			0.000			1" Ice	0.928	0.337	0.018

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
6' w/Radome	A	Paraboloid	From	0.500	Worst		178.000	6.000	No Ice	28.274	0.380
(DNK-45 (St# 17))		w/Radome	Leg	0.000					1/2" Ice	29.065	0.450
				0.000					1" Ice	29.856	0.520
6' w/Radome	B	Paraboloid	From	1.000	Worst		176.000	6.000	No Ice	28.274	0.380
(DNK-44 (St# 18))		w/Radome	Leg	0.000					1/2" Ice	29.065	0.450
				0.000					1" Ice	29.856	0.520
4' Paraflector	B	Grid	From	2.000	Worst		111.000	4.000	No Ice	16.000	0.034
[PRF-950]			Leg	0.000					1/2" Ice	16.674	0.048
(DNK-8 (St# 47))				0.000					1" Ice	17.347	0.062
HPD3-5W	A	Paraboloid w/o	From	2.000	Worst		156.000	3.000	No Ice	7.069	0.080
(Proposed)		Radome	Leg	0.000					1/2" Ice	7.467	0.118
				0.000					1" Ice	7.865	0.157

222-H Verification Constants

Constant	Value
K_d	0.85
Ice Thickness Importance Factor	1.15
Z_g	900
α	9.5
K_{zmin}	0.85
K_c	n/a
K_t	1
f	1
K_e	1

222-H Section Verification ArRr By Element

Section Elevation ft	Elem. Num.	Size	C	C w/Ice	Face	e	e w/Ice	A_r ft^2	A_r w/Ice ft^2	A_rR_r ft^2	A_rR_r w/Ice ft^2
T1 180.000-175.000	1	Stainless P5x0.250	67.221	38.448	C	0.173	0.306	2.086	3.221	0.979	1.935
	1	Stainless P5x0.250	67.221	38.448	A	0.173	0.306	2.086	3.221	0.979	1.935
	2	Stainless P5x0.250	67.221	38.448	C	0.173	0.306	2.086	3.221	0.979	1.935
	2	Stainless P5x0.250	67.221	38.448	B	0.173	0.306	2.086	3.221	0.979	1.935
	3	Stainless P5x0.250	67.221	38.448	B	0.173	0.306	2.086	3.221	0.979	1.935
	3	Stainless P5x0.250	67.221	38.448	A	0.173	0.306	2.086	3.221	0.979	1.935
					A		Sum:	4.171	6.441	1.957	3.871
					B			4.171	6.441	1.957	3.871
					C			4.171	6.441	1.957	3.871
T2 175.000-166.667	13	Stainless P5x0.250	66.951	38.241	C	0.135	0.239	3.476	5.361	1.582	3.122
	13	Stainless P5x0.250	66.951	38.241	A	0.135	0.239	3.476	5.361	1.582	3.122
	14	Stainless P5x0.250	66.951	38.241	C	0.135	0.239	3.476	5.361	1.582	3.122
	14	Stainless P5x0.250	66.951	38.241	B	0.135	0.239	3.476	5.361	1.582	3.122
	15	Stainless P5x0.250	66.951	38.241	B	0.135	0.239	3.476	5.361	1.582	3.122
	15	Stainless P5x0.250	66.951	38.241	A	0.135	0.239	3.476	5.361	1.582	3.122
					A		Sum:	6.952	10.721	3.165	6.244
					B			6.952	10.721	3.165	6.244
					C			6.952	10.721	3.165	6.244
T3 166.667-158.333	25	Stainless P5x0.250	66.599	37.974	C	0.13	0.23	3.476	5.351	1.581	3.106
	25	Stainless P5x0.250	66.599	37.974	A	0.13	0.23	3.476	5.351	1.581	3.106
	26	Stainless P5x0.250	66.599	37.974	C	0.13	0.23	3.476	5.351	1.581	3.106
	26	Stainless P5x0.250	66.599	37.974	B	0.13	0.23	3.476	5.351	1.581	3.106
	27	Stainless P5x0.250	66.599	37.974	B	0.13	0.23	3.476	5.351	1.581	3.106
	27	Stainless P5x0.250	66.599	37.974	A	0.13	0.23	3.476	5.351	1.581	3.106
					A		Sum:	6.952	10.702	3.161	6.212
					B			6.952	10.702	3.161	6.212
					C			6.952	10.702	3.161	6.212
T4 158.333-150.000	37	Stainless P5x0.250	66.231	37.695	C	0.126	0.222	3.476	5.341	1.580	3.091
	37	Stainless P5x0.250	66.231	37.695	A	0.126	0.222	3.476	5.341	1.580	3.091
	38	Stainless P5x0.250	66.231	37.695	C	0.126	0.222	3.476	5.341	1.580	3.091

Section Elevation ft	Elem. Num.	Size	C	C w/Ice	Face	e	e w/Ice	A_r ft^2	A_r w/Ice ft^2	A_rR_r ft^2	A_rR_r w/Ice ft^2
	38	Stainless P5x0.250	66.231	37.695	B	0.126	0.222	3.476	5.341	1.580	3.091
	39	Stainless P5x0.250	66.231	37.695	B	0.126	0.222	3.476	5.341	1.580	3.091
	39	Stainless P5x0.250	66.231	37.695	A	0.126	0.222	3.476	5.341	1.580	3.091
					A		Sum:	6.952	10.683	3.161	6.183
					B			6.952	10.683	3.161	6.183
					C			6.952	10.683	3.161	6.183
T5	49	Stainless P5x0.300	65.438	37.095	C	0.145	0.265	10.428	15.960	4.847	9.400
150.000-125.000											
	49	Stainless P5x0.300	65.438	37.095	A	0.145	0.265	10.428	15.960	4.847	9.400
	50	Stainless P5x0.300	65.438	37.095	C	0.145	0.265	10.428	15.960	4.847	9.400
	50	Stainless P5x0.300	65.438	37.095	B	0.145	0.265	10.428	15.960	4.847	9.400
	51	Stainless P5x0.300	65.438	37.095	B	0.145	0.265	10.428	15.960	4.847	9.400
	51	Stainless P5x0.300	65.438	37.095	A	0.145	0.265	10.428	15.960	4.847	9.400
					A		Sum:	20.856	31.921	9.694	18.799
					B			20.856	31.921	9.694	18.799
					C			20.856	31.921	9.694	18.799
T6	124	Stainless P5x0.400	64.071	36.07	C	0.142	0.254	10.428	15.850	4.891	9.288
125.000-100.000											
	124	Stainless P5x0.400	64.071	36.07	A	0.142	0.254	10.428	15.850	4.891	9.288
	125	Stainless P5x0.400	64.071	36.07	C	0.142	0.254	10.428	15.850	4.891	9.288
	125	Stainless P5x0.400	64.071	36.07	B	0.142	0.254	10.428	15.850	4.891	9.288
	126	Stainless P5x0.400	64.071	36.07	B	0.142	0.254	10.428	15.850	4.891	9.288
	126	Stainless P5x0.400	64.071	36.07	A	0.142	0.254	10.428	15.850	4.891	9.288
					A		Sum:	20.856	31.701	9.783	18.576
					B			20.856	31.701	9.783	18.576
					C			20.856	31.701	9.783	18.576
T7	199	Stainless P5x0.500	62.998	35.273	C	0.137	0.244	3.476	5.255	1.639	3.066
100.000-91.667											
	199	Stainless P5x0.500	62.998	35.273	A	0.137	0.244	3.476	5.255	1.639	3.066
	200	Stainless P5x0.500	62.998	35.273	C	0.137	0.244	3.476	5.255	1.639	3.066
	200	Stainless P5x0.500	62.998	35.273	B	0.137	0.244	3.476	5.255	1.639	3.066
	201	Stainless P5x0.500	62.998	35.273	B	0.137	0.244	3.476	5.255	1.639	3.066
	201	Stainless P5x0.500	62.998	35.273	A	0.137	0.244	3.476	5.255	1.639	3.066
					A		Sum:	6.952	10.509	3.277	6.132
					B			6.952	10.509	3.277	6.132
					C			6.952	10.509	3.277	6.132
T8					A		Sum:	0.000	0.000	0.000	0.000
91.667-83.333					B			0.000	0.000	0.000	0.000
					C			0.000	0.000	0.000	0.000
T9					A		Sum:	0.000	0.000	0.000	0.000
83.333-75.000					B			0.000	0.000	0.000	0.000
					C			0.000	0.000	0.000	0.000
T10	280	Stainless P6.875x0.400	82.811	41.608	C	0.135	0.212	14.338	19.451	5.898	11.217
75.000-50.000											
	280	Stainless P6.875x0.400	82.811	41.608	A	0.135	0.212	14.338	19.451	5.898	11.217
	281	Stainless P6.875x0.400	82.811	41.608	C	0.135	0.212	14.338	19.451	5.898	11.217
	281	Stainless P6.875x0.400	82.811	41.608	B	0.135	0.212	14.338	19.451	5.898	11.217
	282	Stainless P6.875x0.400	82.811	41.608	B	0.135	0.212	14.338	19.451	5.898	11.217
	282	Stainless P6.875x0.400	82.811	41.608	A	0.135	0.212	14.338	19.451	5.898	11.217
					A		Sum:	28.676	38.903	11.795	22.434
					B			28.676	38.903	11.795	22.434
					C			28.676	38.903	11.795	22.434
T11	331	Stainless	79.76	39.706	C	0.13	0.202	7.169	9.636	2.930	5.538

Section Elevation ft	Elem. Num.	Size	C	C w/Ice	Face	e	e w/Ice	A_r ft^2	A_r w/Ice ft^2	A_rR_r ft^2	A_rR_r w/Ice ft^2
50.000-37.500		P6.875x0.500									
	331	Stainless	79.76	39.706	A	0.13	0.202	7.169	9.636	2.930	5.538
		P6.875x0.500									
	332	Stainless	79.76	39.706	C	0.13	0.202	7.169	9.636	2.930	5.538
		P6.875x0.500									
	332	Stainless	79.76	39.706	B	0.13	0.202	7.169	9.636	2.930	5.538
		P6.875x0.500									
	333	Stainless	79.76	39.706	B	0.13	0.202	7.169	9.636	2.930	5.538
		P6.875x0.500									
	333	Stainless	79.76	39.706	A	0.13	0.202	7.169	9.636	2.930	5.538
		P6.875x0.500									
					A		Sum:	14.338	19.272	5.860	11.077
					B			14.338	19.272	5.860	11.077
					C			14.338	19.272	5.860	11.077
T12	358	Stainless	76.984	38	C	0.127	0.195	7.169	9.554	2.949	5.480
37.500-25.000		P6.875x0.500									
	358	Stainless	76.984	38	A	0.127	0.195	7.169	9.554	2.949	5.480
		P6.875x0.500									
	359	Stainless	76.984	38	C	0.127	0.195	7.169	9.554	2.949	5.480
		P6.875x0.500									
	359	Stainless	76.984	38	B	0.127	0.195	7.169	9.554	2.949	5.480
		P6.875x0.500									
	360	Stainless	76.984	38	B	0.127	0.195	7.169	9.554	2.949	5.480
		P6.875x0.500									
	360	Stainless	76.984	38	A	0.127	0.195	7.169	9.554	2.949	5.480
		P6.875x0.500									
					A		Sum:	14.338	19.109	5.898	10.960
					B			14.338	19.109	5.898	10.960
					C			14.338	19.109	5.898	10.960
T13	385	Stainless	72.954	35.563	C	0.124	0.187	7.169	9.436	3.058	5.401
25.000-12.500		P6.875x0.500									
	385	Stainless	72.954	35.563	A	0.124	0.187	7.169	9.436	3.058	5.401
		P6.875x0.500									
	386	Stainless	72.954	35.563	C	0.124	0.187	7.169	9.436	3.058	5.401
		P6.875x0.500									
	386	Stainless	72.954	35.563	B	0.124	0.187	7.169	9.436	3.058	5.401
		P6.875x0.500									
	387	Stainless	72.954	35.563	B	0.124	0.187	7.169	9.436	3.058	5.401
		P6.875x0.500									
	387	Stainless	72.954	35.563	A	0.124	0.187	7.169	9.436	3.058	5.401
		P6.875x0.500									
					A		Sum:	14.338	18.871	6.115	10.802
					B			14.338	18.871	6.115	10.802
					C			14.338	18.871	6.115	10.802
T14	412	Stainless	71.307	33.891	C	0.121	0.177	7.169	9.200	3.098	5.252
12.500-0.000		P6.875x0.500									
	412	Stainless	71.307	33.891	A	0.121	0.177	7.169	9.200	3.098	5.252
		P6.875x0.500									
	413	Stainless	71.307	33.891	C	0.121	0.177	7.169	9.200	3.098	5.252
		P6.875x0.500									
	413	Stainless	71.307	33.891	B	0.121	0.177	7.169	9.200	3.098	5.252
		P6.875x0.500									
	414	Stainless	71.307	33.891	B	0.121	0.177	7.169	9.200	3.098	5.252
		P6.875x0.500									
	414	Stainless	71.307	33.891	A	0.121	0.177	7.169	9.200	3.098	5.252
		P6.875x0.500									
					A		Sum:	14.338	18.400	6.197	10.504
					B			14.338	18.400	6.197	10.504
					C			14.338	18.400	6.197	10.504

222-H Section Verification Tables - No Ice

Section Elevation	z_{wind}	z_{ice}	K_z	K_h	K_{zt}	t_z	q_z	Face	e	A_rR_r
ft	ft	ft				in	ksf			ft^2
T1 180.000-175.000	177.500		1.428	1	1		0.057	A	0.173	1.957
								B	0.173	1.957
								C	0.173	1.957
T2 175.000-166.667	170.833		1.417	1	1		0.056	A	0.135	3.165
								B	0.135	3.165
								C	0.135	3.165
T3 166.667-158.333	162.500		1.402	1	1		0.056	A	0.13	3.161
								B	0.13	3.161
								C	0.13	3.161
T4 158.333-150.000	154.167		1.386	1	1		0.055	A	0.126	3.161
								B	0.126	3.161
								C	0.126	3.161
T5 150.000-125.000	137.500		1.353	1	1		0.054	A	0.145	9.694
								B	0.145	9.694
								C	0.145	9.694
T6 125.000-100.000	112.500		1.297	1	1		0.051	A	0.142	9.783
								B	0.142	9.783
								C	0.142	9.783
T7 100.000-91.667	95.833		1.254	1	1		0.050	A	0.137	3.277
								B	0.137	3.277
								C	0.137	3.277
T8 91.667-83.333	87.500		1.231	1	1		0.049	A	0.137	0.000
								B	0.137	0.000
								C	0.137	0.000
T9 83.333-75.000	79.167		1.205	1	1		0.048	A	0.135	0.000
								B	0.135	0.000
								C	0.135	0.000
T10 75.000-50.000	62.500		1.146	1	1		0.045	A	0.135	11.795
								B	0.135	11.795
								C	0.135	11.795
T11 50.000-37.500	43.750		1.063	1	1		0.042	A	0.13	5.860
								B	0.13	5.860
								C	0.13	5.860
T12 37.500-25.000	31.250		0.991	1	1		0.039	A	0.127	5.898
								B	0.127	5.898
								C	0.127	5.898
T13 25.000-12.500	18.750		0.89	1	1		0.035	A	0.124	6.115
								B	0.124	6.115
								C	0.124	6.115
T14 12.500-0.000	6.250		0.85	1	1		0.034	A	0.121	6.197
								B	0.121	6.197
								C	0.121	6.197

222-H Section Verification Tables - Ice

Section Elevation	z_{wind}	z_{ice}	K_z	K_h	K_{zt}	t_z	q_z	Face	e	A_rR_r
ft	ft	ft				in	ksf			ft^2

Section Elevation	z_{wind}	z_{ice}	K_z	K_h	K_{zt}	t_z	q_z	Face	e	A_rR_r
ft	ft	ft				in	ksf			ft^2
T1 180.000-175.000	177.500	177.500	1.428	1	1	1.361	0.008	A	0.306	7.207
								B	0.306	7.207
								C	0.306	7.207
T2 175.000-166.667	170.833	170.833	1.417	1	1	1.356	0.008	A	0.239	10.217
								B	0.239	10.217
								C	0.239	10.217
T3 166.667-158.333	162.500	162.500	1.402	1	1	1.349	0.008	A	0.23	10.294
								B	0.23	10.294
								C	0.23	10.294
T4 158.333-150.000	154.167	154.167	1.386	1	1	1.342	0.008	A	0.222	10.373
								B	0.222	10.373
								C	0.222	10.373
T5 150.000-125.000	137.500	137.500	1.353	1	1	1.326	0.007	A	0.265	38.684
								B	0.265	38.684
								C	0.265	38.684
T6 125.000-100.000	112.500	112.500	1.297	1	1	1.300	0.007	A	0.254	39.908
								B	0.254	39.908
								C	0.254	39.908
T7 100.000-91.667	95.833	95.833	1.254	1	1	1.279	0.007	A	0.244	13.529
								B	0.244	13.529
								C	0.244	13.529
T8 91.667-83.333	87.500	87.500	1.231	1	1	1.268	0.007	A	0.234	7.516
								B	0.234	7.516
								C	0.234	7.516
T9 83.333-75.000	79.167	79.167	1.205	1	1	1.255	0.007	A	0.229	7.642
								B	0.229	7.642
								C	0.229	7.642
T10 75.000-50.000	62.500	62.500	1.146	1	1	1.226	0.006	A	0.212	39.901
								B	0.212	39.901
								C	0.212	39.901
T11 50.000-37.500	43.750	43.750	1.063	1	1	1.183	0.006	A	0.202	19.902
								B	0.202	19.902
								C	0.202	19.902
T12 37.500-25.000	31.250	31.250	0.991	1	1	1.144	0.005	A	0.195	19.754
								B	0.195	19.754
								C	0.195	19.754
T13 25.000-12.500	18.750	18.750	0.89	1	1	1.087	0.005	A	0.187	19.404
								B	0.187	19.404
								C	0.187	19.404
T14 12.500-0.000	6.250	6.250	0.85	1	1	0.974	0.005	A	0.177	18.429
								B	0.177	18.429
								C	0.177	18.429

222-H Section Verification Tables - Service

Section Elevation	z_{wind}	z_{ice}	K_z	K_h	K_{zt}	t_z	q_z	Face	e	A_rR_r
ft	ft	ft				in	ksf			ft^2
T1 180.000-175.000	177.500		1.428	1	1		0.011	A	0.173	2.379
								B	0.173	2.379
								C	0.173	2.379
T2 175.000-166.667	170.833		1.417	1	1		0.011	A	0.135	3.936
								B	0.135	3.936
								C	0.135	3.936
T3 166.667-158.333	162.500		1.402	1	1		0.011	A	0.13	3.933
								B	0.13	3.933

Section Elevation ft	z_{wind} ft	z_{ice} ft	K_z	K_h	K_{zt}	t_z in	q_z ksf	Face	e	A_rR_r ft²
								C	0.13	3.933
T4 158.333-150.000	154.167		1.386	1	1		0.011	A	0.126	3.931
								B	0.126	3.931
								C	0.126	3.931
T5 150.000-125.000	137.500		1.353	1	1		0.011	A	0.145	11.826
								B	0.145	11.826
								C	0.145	11.826
T6 125.000-100.000	112.500		1.297	1	1		0.010	A	0.142	11.821
								B	0.142	11.821
								C	0.142	11.821
T7 100.000-91.667	95.833		1.254	1	1		0.010	A	0.137	3.937
								B	0.137	3.937
								C	0.137	3.937
T8 91.667-83.333	87.500		1.231	1	1		0.010	A	0.137	0.000
								B	0.137	0.000
								C	0.137	0.000
T9 83.333-75.000	79.167		1.205	1	1		0.009	A	0.135	0.000
								B	0.135	0.000
								C	0.135	0.000
T10 75.000-50.000	62.500		1.146	1	1		0.009	A	0.135	16.237
								B	0.135	16.237
								C	0.135	16.237
T11 50.000-37.500	43.750		1.063	1	1		0.008	A	0.13	8.112
								B	0.13	8.112
								C	0.13	8.112
T12 37.500-25.000	31.250		0.991	1	1		0.008	A	0.127	8.109
								B	0.127	8.109
								C	0.127	8.109
T13 25.000-12.500	18.750		0.89	1	1		0.007	A	0.124	8.107
								B	0.124	8.107
								C	0.124	8.107
T14 12.500-0.000	6.250		0.85	1	1		0.007	A	0.121	8.104
								B	0.121	8.104
								C	0.121	8.104

Tower Pressures - No Ice

G_H = 0.850

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	177.500	1.428	0.057	56.082	A	5.526	4.171	4.171	43.02	6.027	0.000
180.000-175.0					B	5.526	4.171		43.02	0.000	0.000
00					C	5.526	4.171		43.02	1.708	0.000
T2	170.833	1.417	0.056	97.919	A	6.293	6.952	6.952	52.49	15.103	0.000
175.000-166.6					B	6.293	6.952		52.49	0.000	0.000
67					C	6.293	6.952		52.49	3.108	0.000
T3	162.500	1.402	0.056	103.475	A	6.518	6.952	6.952	51.61	18.612	0.000
166.667-158.3					B	6.518	6.952		51.61	0.000	0.000
33					C	6.518	6.952		51.61	3.512	0.000
T4	154.167	1.386	0.055	109.031	A	6.746	6.952	6.952	50.75	22.977	0.000
158.333-150.0					B	6.746	6.952		50.75	0.000	0.000
00					C	6.746	6.952		50.75	4.025	0.000
T5	137.500	1.353	0.054	360.425	A	31.437	20.856	20.856	39.88	75.420	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
150.000-125.000					B	31.437	20.856		39.88	0.000	0.000
					C	31.437	20.856		39.88	52.753	0.000
T6	112.500	1.297	0.051	410.425	A	37.501	20.856	20.856	35.74	82.049	0.000
125.000-100.000					B	37.501	20.856		35.74	0.000	0.000
					C	37.501	20.856		35.74	91.887	0.000
T7	95.833	1.254	0.050	147.919	A	13.268	6.952	6.952	34.38	27.931	0.000
100.000-91.667					B	13.268	6.952		34.38	0.000	0.000
					C	13.268	6.952		34.38	30.666	0.000
T8	87.500	1.231	0.049	154.157	A	21.130	0.000	7.473	35.37	27.931	0.000
91.667-83.333					B	21.130	0.000		35.37	0.000	0.000
					C	21.130	0.000		35.37	30.666	0.000
T9	79.167	1.205	0.048	159.712	A	21.520	0.000	7.473	34.73	29.079	0.000
83.333-75.000					B	21.520	0.000		34.73	0.000	0.000
					C	21.520	0.000		34.73	30.666	0.000
T10	62.500	1.146	0.045	514.334	A	40.858	28.676	28.676	41.24	93.118	0.000
75.000-50.000					B	40.858	28.676		41.24	0.000	0.000
					C	40.858	28.676		41.24	91.997	0.000
T11	43.750	1.063	0.042	275.917	A	21.483	14.338	14.338	40.03	46.559	0.000
50.000-37.500					B	21.483	14.338		40.03	0.000	0.000
					C	21.483	14.338		40.03	45.998	0.000
T12	31.250	0.991	0.039	288.417	A	22.193	14.338	14.338	39.25	47.410	0.000
37.500-25.000					B	22.193	14.338		39.25	0.000	0.000
					C	22.193	14.338		39.25	45.998	0.000
T13	18.750	0.89	0.035	300.917	A	22.909	14.338	14.338	38.49	48.890	0.000
25.000-12.500					B	22.909	14.338		38.49	0.000	0.000
					C	22.909	14.338		38.49	45.998	0.000
T14	6.250	0.85	0.034	313.417	A	23.630	14.338	14.338	37.76	17.895	0.000
12.500-0.000					B	23.630	14.338		37.76	0.000	0.000
					C	23.630	14.338		37.76	16.559	0.000

Tower Pressure - With Ice

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z ksf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	177.500	1.428	0.008	1.361	57.217	A	5.526	11.995	6.441	36.77	17.321	0.000
180.000-175.000						B	5.526	11.995		36.77	0.000	0.000
						C	5.526	11.995		36.77	5.109	0.000
T2	170.833	1.417	0.008	1.356	99.804	A	6.293	17.545	10.721	44.98	41.220	0.000
175.000-166.667						B	6.293	17.545		44.98	0.000	0.000
						C	6.293	17.545		44.98	9.886	0.000
T3	162.500	1.402	0.008	1.349	105.350	A	6.518	17.735	10.702	44.13	52.106	0.000
166.667-158.333						B	6.518	17.735		44.13	0.000	0.000
						C	6.518	17.735		44.13	11.245	0.000
T4	154.167	1.386	0.008	1.342	110.895	A	6.746	17.923	10.683	43.30	65.106	0.000
158.333-150.000						B	6.746	17.923		43.30	0.000	0.000
						C	6.746	17.923		43.30	12.969	0.000
T5	137.500	1.353	0.007	1.326	365.956	A	31.437	65.685	31.921	32.87	214.428	0.000
150.000-125.000						B	31.437	65.685		32.87	0.000	0.000
						C	31.437	65.685		32.87	153.887	0.000
T6	112.500	1.297	0.007	1.300	415.846	A	37.501	68.105	31.701	30.02	233.896	0.000
125.000-100.000						B	37.501	68.105		30.02	0.000	0.000
						C	37.501	68.105		30.02	230.954	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T7	95.833	1.254	0.007	1.279	149.698	A	13.268	23.188	10.509	28.83	79.106	0.000
100.000-91.667						B	13.268	23.188		28.83	0.000	0.000
						C	13.268	23.188		28.83	76.682	0.000
T8	87.500	1.231	0.007	1.268	155.919	A	23.480	12.933	9.823	26.98	78.643	0.000
91.667-83.333						B	23.480	12.933		26.98	0.000	0.000
						C	23.480	12.933		26.98	76.443	0.000
T9	79.167	1.205	0.007	1.255	161.457	A	23.847	13.171	9.800	26.47	81.294	0.000
83.333-75.000						B	23.847	13.171		26.47	0.000	0.000
						C	23.847	13.171		26.47	76.183	0.000
T10	62.500	1.146	0.006	1.226	519.446	A	40.858	69.193	38.903	35.35	258.607	0.000
75.000-50.000						B	40.858	69.193		35.35	0.000	0.000
						C	40.858	69.193		35.35	226.737	0.000
T11	43.750	1.063	0.006	1.183	278.384	A	21.483	34.627	19.272	34.35	126.404	0.000
50.000-37.500						B	21.483	34.627		34.35	0.000	0.000
						C	21.483	34.627		34.35	112.043	0.000
T12	31.250	0.991	0.005	1.144	290.802	A	22.193	34.439	19.109	33.74	127.701	0.000
37.500-25.000						B	22.193	34.439		33.74	0.000	0.000
						C	22.193	34.439		33.74	110.836	0.000
T13	18.750	0.89	0.005	1.087	303.183	A	22.909	33.900	18.871	33.22	130.291	0.000
25.000-12.500						B	22.909	33.900		33.22	0.000	0.000
						C	22.909	33.900		33.22	109.082	0.000
T14	6.250	0.85	0.005	0.974	315.447	A	23.630	32.283	18.400	32.91	45.062	0.000
12.500-0.000						B	23.630	32.283		32.91	0.000	0.000
						C	23.630	32.283		32.91	38.018	0.000

Tower Pressure - Service

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	177.500	1.428	0.011	56.082	A	5.526	4.171	4.171	43.02	6.027	0.000
180.000-175.0					B	5.526	4.171		43.02	0.000	0.000
00					C	5.526	4.171		43.02	1.708	0.000
T2	170.833	1.417	0.011	97.919	A	6.293	6.952	6.952	52.49	15.103	0.000
175.000-166.6					B	6.293	6.952		52.49	0.000	0.000
67					C	6.293	6.952		52.49	3.108	0.000
T3	162.500	1.402	0.011	103.475	A	6.518	6.952	6.952	51.61	18.612	0.000
166.667-158.3					B	6.518	6.952		51.61	0.000	0.000
33					C	6.518	6.952		51.61	3.512	0.000
T4	154.167	1.386	0.011	109.031	A	6.746	6.952	6.952	50.75	22.977	0.000
158.333-150.0					B	6.746	6.952		50.75	0.000	0.000
00					C	6.746	6.952		50.75	4.025	0.000
T5	137.500	1.353	0.011	360.425	A	31.437	20.856	20.856	39.88	75.420	0.000
150.000-125.0					B	31.437	20.856		39.88	0.000	0.000
00					C	31.437	20.856		39.88	52.753	0.000
T6	112.500	1.297	0.010	410.425	A	37.501	20.856	20.856	35.74	82.049	0.000
125.000-100.0					B	37.501	20.856		35.74	0.000	0.000
00					C	37.501	20.856		35.74	91.887	0.000
T7	95.833	1.254	0.010	147.919	A	13.268	6.952	6.952	34.38	27.931	0.000
100.000-91.66					B	13.268	6.952		34.38	0.000	0.000
7					C	13.268	6.952		34.38	30.666	0.000
T8	87.500	1.231	0.010	154.157	A	21.130	0.000	7.473	35.37	27.931	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
91.667-83.333					B	21.130	0.000		35.37	0.000	0.000
					C	21.130	0.000		35.37	30.666	0.000
T9	79.167	1.205	0.009	159.712	A	21.520	0.000	7.473	34.73	29.079	0.000
83.333-75.000					B	21.520	0.000		34.73	0.000	0.000
					C	21.520	0.000		34.73	30.666	0.000
T10	62.500	1.146	0.009	514.334	A	40.858	28.676	28.676	41.24	93.118	0.000
75.000-50.000					B	40.858	28.676		41.24	0.000	0.000
					C	40.858	28.676		41.24	91.997	0.000
T11	43.750	1.063	0.008	275.917	A	21.483	14.338	14.338	40.03	46.559	0.000
50.000-37.500					B	21.483	14.338		40.03	0.000	0.000
					C	21.483	14.338		40.03	45.998	0.000
T12	31.250	0.991	0.008	288.417	A	22.193	14.338	14.338	39.25	47.410	0.000
37.500-25.000					B	22.193	14.338		39.25	0.000	0.000
					C	22.193	14.338		39.25	45.998	0.000
T13	18.750	0.89	0.007	300.917	A	22.909	14.338	14.338	38.49	48.890	0.000
25.000-12.500					B	22.909	14.338		38.49	0.000	0.000
					C	22.909	14.338		38.49	45.998	0.000
T14	6.250	0.85	0.007	313.417	A	23.630	14.338	14.338	37.76	17.895	0.000
12.500-0.000					B	23.630	14.338		37.76	0.000	0.000
					C	23.630	14.338		37.76	16.559	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.026	0.592	A	0.173	2.689	0.057	1	1	7.483	1.192	238.419	C
180.000-175.0			B	0.173	2.689		1	1	7.483			
00			C	0.173	2.689		1	1	7.483			
T2	0.058	0.755	A	0.135	2.826	0.056	1	1	9.457	1.798	215.800	C
175.000-166.6			B	0.135	2.826		1	1	9.457			
67			C	0.135	2.826		1	1	9.457			
T3	0.072	0.768	A	0.13	2.846	0.056	1	1	9.680	1.929	231.471	C
166.667-158.3			B	0.13	2.846		1	1	9.680			
33			C	0.13	2.846		1	1	9.680			
T4	0.090	0.781	A	0.126	2.863	0.055	1	1	9.906	2.083	249.922	C
158.333-150.0			B	0.126	2.863		1	1	9.906			
00			C	0.126	2.863		1	1	9.906			
T5	0.515	3.995	A	0.145	2.79	0.054	1	1	41.130	8.743	349.720	C
150.000-125.0			B	0.145	2.79		1	1	41.130			
00			C	0.145	2.79		1	1	41.130			
T6	0.726	4.822	A	0.142	2.8	0.051	1	1	47.284	10.355	414.210	C
125.000-100.0			B	0.142	2.8		1	1	47.284			
00			C	0.142	2.8		1	1	47.284			
T7	0.244	1.971	A	0.137	2.821	0.050	1	1	16.545	3.460	415.211	C
100.000-91.66			B	0.137	2.821		1	1	16.545			
7			C	0.137	2.821		1	1	16.545			
T8	0.244	2.178	A	0.137	2.82	0.049	1	1	21.130	3.930	471.561	C
91.667-83.333			B	0.137	2.82		1	1	21.130			
			C	0.137	2.82		1	1	21.130			
T9	0.248	2.218	A	0.135	2.828	0.048	1	1	21.520	3.928	471.374	C
83.333-75.000			B	0.135	2.828		1	1	21.520			
			C	0.135	2.828		1	1	21.520			
T10	0.764	6.256	A	0.135	2.827	0.045	1	1	52.653	10.044	401.746	C
75.000-50.000			B	0.135	2.827		1	1	52.653			
			C	0.135	2.827		1	1	52.653			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T11	0.382	3.352	A	0.13	2.847	0.042	1	1	27.344	4.782	382.527	C
50.000-37.500			B	0.13	2.847		1	1	27.344			
			C	0.13	2.847		1	1	27.344			
T12	0.384	3.953	A	0.127	2.859	0.039	1	1	28.091	4.554	364.327	C
37.500-25.000			B	0.127	2.859		1	1	28.091			
			C	0.127	2.859		1	1	28.091			
T13	0.388	3.858	A	0.124	2.87	0.035	1	1	29.024	4.206	336.483	C
25.000-12.500			B	0.124	2.87		1	1	29.024			
			C	0.124	2.87		1	1	29.024			
T14	0.140	4.407	A	0.121	2.881	0.034	1	1	29.826	3.054	244.322	C
12.500-0.000			B	0.121	2.881		1	1	29.826			
			C	0.121	2.881		1	1	29.826			
Sum Weight:	4.283	39.907						OTM	5584.074 kip-ft	64.058		

Tower Forces - No Ice - Wind 45 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.026	0.592	A	0.173	2.689	0.057	0.825	1	6.516	1.067	213.383	C
180.000-175.0			B	0.173	2.689		0.825	1	6.516			
00			C	0.173	2.689		0.825	1	6.516			
T2	0.058	0.755	A	0.135	2.826	0.056	0.825	1	8.356	1.650	197.963	C
175.000-166.6			B	0.135	2.826		0.825	1	8.356			
67			C	0.135	2.826		0.825	1	8.356			
T3	0.072	0.768	A	0.13	2.846	0.056	0.825	1	8.539	1.776	213.064	C
166.667-158.3			B	0.13	2.846		0.825	1	8.539			
33			C	0.13	2.846		0.825	1	8.539			
T4	0.090	0.781	A	0.126	2.863	0.055	0.825	1	8.726	1.925	230.967	C
158.333-150.0			B	0.126	2.863		0.825	1	8.726			
00			C	0.126	2.863		0.825	1	8.726			
T5	0.515	3.995	A	0.145	2.79	0.054	0.825	1	35.629	8.043	321.714	C
150.000-125.0			B	0.145	2.79		0.825	1	35.629			
00			C	0.145	2.79		0.825	1	35.629			
T6	0.726	4.822	A	0.142	2.8	0.051	0.825	1	40.721	9.551	382.059	C
125.000-100.0			B	0.142	2.8		0.825	1	40.721			
00			C	0.142	2.8		0.825	1	40.721			
T7	0.244	1.971	A	0.137	2.821	0.050	0.825	1	14.223	3.183	381.975	C
100.000-91.66			B	0.137	2.821		0.825	1	14.223			
7			C	0.137	2.821		0.825	1	14.223			
T8	0.244	2.178	A	0.137	2.82	0.049	0.825	1	17.432	3.497	419.664	C
91.667-83.333			B	0.137	2.82		0.825	1	17.432			
			C	0.137	2.82		0.825	1	17.432			
T9	0.248	2.218	A	0.135	2.828	0.048	0.825	1	17.754	3.495	419.458	C
83.333-75.000			B	0.135	2.828		0.825	1	17.754			
			C	0.135	2.828		0.825	1	17.754			
T10	0.764	6.256	A	0.135	2.827	0.045	0.825	1	45.503	9.263	370.504	C
75.000-50.000			B	0.135	2.827		0.825	1	45.503			
			C	0.135	2.827		0.825	1	45.503			
T11	0.382	3.352	A	0.13	2.847	0.042	0.825	1	23.584	4.398	351.830	C
50.000-37.500			B	0.13	2.847		0.825	1	23.584			
			C	0.13	2.847		0.825	1	23.584			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T12	0.384	3.953	A	0.127	2.859	0.039	0.825	1	24.207	4.183	334.658	C
37.500-25.000			B	0.127	2.859		0.825	1	24.207			
			C	0.127	2.859		0.825	1	24.207			
T13	0.388	3.858	A	0.124	2.87	0.035	0.825	1	25.015	3.861	308.874	C
25.000-12.500			B	0.124	2.87		0.825	1	25.015			
			C	0.124	2.87		0.825	1	25.015			
T14	0.140	4.407	A	0.121	2.881	0.034	0.825	1	25.691	2.713	217.019	C
12.500-0.000			B	0.121	2.881		0.825	1	25.691			
			C	0.121	2.881		0.825	1	25.691			
Sum Weight:	4.283	39.907						OTM	5116.057 kip-ft	58.604		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.026	0.592	A	0.173	2.689	0.057	0.8	1	6.378	1.049	209.807	C
180.000-175.0			B	0.173	2.689		0.8	1	6.378			
00			C	0.173	2.689		0.8	1	6.378			
T2	0.058	0.755	A	0.135	2.826	0.056	0.8	1	8.199	1.628	195.415	C
175.000-166.6			B	0.135	2.826		0.8	1	8.199			
67			C	0.135	2.826		0.8	1	8.199			
T3	0.072	0.768	A	0.13	2.846	0.056	0.8	1	8.376	1.754	210.434	C
166.667-158.3			B	0.13	2.846		0.8	1	8.376			
33			C	0.13	2.846		0.8	1	8.376			
T4	0.090	0.781	A	0.126	2.863	0.055	0.8	1	8.557	1.902	228.259	C
158.333-150.0			B	0.126	2.863		0.8	1	8.557			
00			C	0.126	2.863		0.8	1	8.557			
T5	0.515	3.995	A	0.145	2.79	0.054	0.8	1	34.843	7.943	317.713	C
150.000-125.0			B	0.145	2.79		0.8	1	34.843			
00			C	0.145	2.79		0.8	1	34.843			
T6	0.726	4.822	A	0.142	2.8	0.051	0.8	1	39.784	9.437	377.466	C
125.000-100.0			B	0.142	2.8		0.8	1	39.784			
00			C	0.142	2.8		0.8	1	39.784			
T7	0.244	1.971	A	0.137	2.821	0.050	0.8	1	13.892	3.144	377.227	C
100.000-91.66			B	0.137	2.821		0.8	1	13.892			
7			C	0.137	2.821		0.8	1	13.892			
T8	0.244	2.178	A	0.137	2.82	0.049	0.8	1	16.904	3.435	412.250	C
91.667-83.333			B	0.137	2.82		0.8	1	16.904			
			C	0.137	2.82		0.8	1	16.904			
T9	0.248	2.218	A	0.135	2.828	0.048	0.8	1	17.216	3.434	412.041	C
83.333-75.000			B	0.135	2.828		0.8	1	17.216			
			C	0.135	2.828		0.8	1	17.216			
T10	0.764	6.256	A	0.135	2.827	0.045	0.8	1	44.482	9.151	366.041	C
75.000-50.000			B	0.135	2.827		0.8	1	44.482			
			C	0.135	2.827		0.8	1	44.482			
T11	0.382	3.352	A	0.13	2.847	0.042	0.8	1	23.047	4.343	347.444	C
50.000-37.500			B	0.13	2.847		0.8	1	23.047			
			C	0.13	2.847		0.8	1	23.047			
T12	0.384	3.953	A	0.127	2.859	0.039	0.8	1	23.653	4.130	330.420	C
37.500-25.000			B	0.127	2.859		0.8	1	23.653			
			C	0.127	2.859		0.8	1	23.653			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T13	0.388	3.858	A	0.124	2.87	0.035	0.8	1	24.442	3.812	304.929	C
25.000-12.500			B	0.124	2.87		0.8	1	24.442			
			C	0.124	2.87		0.8	1	24.442			
T14	0.140	4.407	A	0.121	2.881	0.034	0.8	1	25.100	2.664	213.118	C
12.500-0.000			B	0.121	2.881		0.8	1	25.100			
			C	0.121	2.881		0.8	1	25.100			
Sum Weight:	4.283	39.907						OTM	5049.198 kip-ft	57.825		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.026	0.592	A	0.173	2.689	0.057	0.85	1	6.654	1.085	216.960	C
180.000-175.0			B	0.173	2.689		0.85	1	6.654			
00			C	0.173	2.689		0.85	1	6.654			
T2	0.058	0.755	A	0.135	2.826	0.056	0.85	1	8.513	1.671	200.511	C
175.000-166.6			B	0.135	2.826		0.85	1	8.513			
67			C	0.135	2.826		0.85	1	8.513			
T3	0.072	0.768	A	0.13	2.846	0.056	0.85	1	8.702	1.797	215.693	C
166.667-158.3			B	0.13	2.846		0.85	1	8.702			
33			C	0.13	2.846		0.85	1	8.702			
T4	0.090	0.781	A	0.126	2.863	0.055	0.85	1	8.895	1.947	233.675	C
158.333-150.0			B	0.126	2.863		0.85	1	8.895			
00			C	0.126	2.863		0.85	1	8.895			
T5	0.515	3.995	A	0.145	2.79	0.054	0.85	1	36.415	8.143	325.715	C
150.000-125.0			B	0.145	2.79		0.85	1	36.415			
00			C	0.145	2.79		0.85	1	36.415			
T6	0.726	4.822	A	0.142	2.8	0.051	0.85	1	41.659	9.666	386.652	C
125.000-100.0			B	0.142	2.8		0.85	1	41.659			
00			C	0.142	2.8		0.85	1	41.659			
T7	0.244	1.971	A	0.137	2.821	0.050	0.85	1	14.555	3.223	386.723	C
100.000-91.66			B	0.137	2.821		0.85	1	14.555			
7			C	0.137	2.821		0.85	1	14.555			
T8	0.244	2.178	A	0.137	2.82	0.049	0.85	1	17.960	3.559	427.078	C
91.667-83.333			B	0.137	2.82		0.85	1	17.960			
			C	0.137	2.82		0.85	1	17.960			
T9	0.248	2.218	A	0.135	2.828	0.048	0.85	1	18.292	3.557	426.874	C
83.333-75.000			B	0.135	2.828		0.85	1	18.292			
			C	0.135	2.828		0.85	1	18.292			
T10	0.764	6.256	A	0.135	2.827	0.045	0.85	1	46.524	9.374	374.967	C
75.000-50.000			B	0.135	2.827		0.85	1	46.524			
			C	0.135	2.827		0.85	1	46.524			
T11	0.382	3.352	A	0.13	2.847	0.042	0.85	1	24.121	4.453	356.215	C
50.000-37.500			B	0.13	2.847		0.85	1	24.121			
			C	0.13	2.847		0.85	1	24.121			
T12	0.384	3.953	A	0.127	2.859	0.039	0.85	1	24.762	4.236	338.897	C
37.500-25.000			B	0.127	2.859		0.85	1	24.762			
			C	0.127	2.859		0.85	1	24.762			
T13	0.388	3.858	A	0.124	2.87	0.035	0.85	1	25.588	3.910	312.818	C
25.000-12.500			B	0.124	2.87		0.85	1	25.588			
			C	0.124	2.87		0.85	1	25.588			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T14	0.140	4.407	A	0.121	2.881	0.034	0.85	1	26.282	2.761	220.919	C
12.500-0.000			B	0.121	2.881		0.85	1	26.282			
			C	0.121	2.881		0.85	1	26.282			
Sum Weight:	4.283	39.907						OTM	5182.917 kip-ft	59.383		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.272	1.547	A	0.306	2.28	0.008	1	1	12.733	0.281	56.111	C
180.000-175.0			B	0.306	2.28		1	1	12.733			
00			C	0.306	2.28		1	1	12.733			
T2	0.612	1.967	A	0.239	2.471	0.008	1	1	16.510	0.468	56.178	C
175.000-166.6			B	0.239	2.471		1	1	16.510			
67			C	0.239	2.471		1	1	16.510			
T3	0.756	2.001	A	0.23	2.498	0.008	1	1	16.812	0.519	62.235	C
166.667-158.3			B	0.23	2.498		1	1	16.812			
33			C	0.23	2.498		1	1	16.812			
T4	0.931	2.035	A	0.222	2.523	0.008	1	1	17.119	0.577	69.259	C
158.333-150.0			B	0.222	2.523		1	1	17.119			
00			C	0.222	2.523		1	1	17.119			
T5	4.379	9.462	A	0.265	2.392	0.007	1	1	70.121	2.433	97.306	C
150.000-125.0			B	0.265	2.392		1	1	70.121			
00			C	0.265	2.392		1	1	70.121			
T6	5.658	11.004	A	0.254	2.426	0.007	1	1	77.410	2.800	111.988	C
125.000-100.0			B	0.254	2.426		1	1	77.410			
00			C	0.254	2.426		1	1	77.410			
T7	1.876	4.236	A	0.244	2.457	0.007	1	1	26.797	0.924	110.883	C
100.000-91.66			B	0.244	2.457		1	1	26.797			
7			C	0.244	2.457		1	1	26.797			
T8	1.858	4.599	A	0.234	2.488	0.007	1	1	30.996	0.968	116.187	C
91.667-83.333			B	0.234	2.488		1	1	30.996			
			C	0.234	2.488		1	1	30.996			
T9	1.876	4.668	A	0.229	2.501	0.007	1	1	31.489	0.965	115.825	C
83.333-75.000			B	0.229	2.501		1	1	31.489			
			C	0.229	2.501		1	1	31.489			
T10	5.686	12.372	A	0.212	2.557	0.006	1	1	80.759	2.638	105.529	C
75.000-50.000			B	0.212	2.557		1	1	80.759			
			C	0.212	2.557		1	1	80.759			
T11	2.737	6.404	A	0.202	2.591	0.006	1	1	41.386	1.231	98.462	C
50.000-37.500			B	0.202	2.591		1	1	41.386			
			C	0.202	2.591		1	1	41.386			
T12	2.677	7.182	A	0.195	2.614	0.005	1	1	41.947	1.158	92.633	C
37.500-25.000			B	0.195	2.614		1	1	41.947			
			C	0.195	2.614		1	1	41.947			
T13	2.596	6.803	A	0.187	2.639	0.005	1	1	42.313	1.050	84.017	C
25.000-12.500			B	0.187	2.639		1	1	42.313			
			C	0.187	2.639		1	1	42.313			
T14	0.847	7.270	A	0.177	2.674	0.005	1	1	42.059	0.638	51.033	C
12.500-0.000			B	0.177	2.674		1	1	42.059			
			C	0.177	2.674		1	1	42.059			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
Sum Weight:	32.761	81.551						OTM	1480.770 kip-ft	16.649		

Tower Forces - With Ice - Wind 45 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.272	1.547	A	0.306	2.28	0.008	0.825	1	11.766	0.266	53.199	C
180.000-175.0			B	0.306	2.28		0.825	1	11.766			
00			C	0.306	2.28		0.825	1	11.766			
T2	0.612	1.967	A	0.239	2.471	0.008	0.825	1	15.409	0.450	54.038	C
175.000-166.6			B	0.239	2.471		0.825	1	15.409			
67			C	0.239	2.471		0.825	1	15.409			
T3	0.756	2.001	A	0.23	2.498	0.008	0.825	1	15.672	0.500	60.019	C
166.667-158.3			B	0.23	2.498		0.825	1	15.672			
33			C	0.23	2.498		0.825	1	15.672			
T4	0.931	2.035	A	0.222	2.523	0.008	0.825	1	15.939	0.558	66.968	C
158.333-150.0			B	0.222	2.523		0.825	1	15.939			
00			C	0.222	2.523		0.825	1	15.939			
T5	4.379	9.462	A	0.265	2.392	0.007	0.825	1	64.619	2.350	94.012	C
150.000-125.0			B	0.265	2.392		0.825	1	64.619			
00			C	0.265	2.392		0.825	1	64.619			
T6	5.658	11.004	A	0.254	2.426	0.007	0.825	1	70.847	2.704	108.168	C
125.000-100.0			B	0.254	2.426		0.825	1	70.847			
00			C	0.254	2.426		0.825	1	70.847			
T7	1.876	4.236	A	0.244	2.457	0.007	0.825	1	24.475	0.891	106.912	C
100.000-91.66			B	0.244	2.457		0.825	1	24.475			
7			C	0.244	2.457		0.825	1	24.475			
T8	1.858	4.599	A	0.234	2.488	0.007	0.825	1	26.887	0.910	109.207	C
91.667-83.333			B	0.234	2.488		0.825	1	26.887			
			C	0.234	2.488		0.825	1	26.887			
T9	1.876	4.668	A	0.229	2.501	0.007	0.825	1	27.316	0.907	108.847	C
83.333-75.000			B	0.229	2.501		0.825	1	27.316			
			C	0.229	2.501		0.825	1	27.316			
T10	5.686	12.372	A	0.212	2.557	0.006	0.825	1	73.608	2.541	101.652	C
75.000-50.000			B	0.212	2.557		0.825	1	73.608			
			C	0.212	2.557		0.825	1	73.608			
T11	2.737	6.404	A	0.202	2.591	0.006	0.825	1	37.626	1.183	94.631	C
50.000-37.500			B	0.202	2.591		0.825	1	37.626			
			C	0.202	2.591		0.825	1	37.626			
T12	2.677	7.182	A	0.195	2.614	0.005	0.825	1	38.063	1.111	88.913	C
37.500-25.000			B	0.195	2.614		0.825	1	38.063			
			C	0.195	2.614		0.825	1	38.063			
T13	2.596	6.803	A	0.187	2.639	0.005	0.825	1	38.304	1.007	80.535	C
25.000-12.500			B	0.187	2.639		0.825	1	38.304			
			C	0.187	2.639		0.825	1	38.304			
T14	0.847	7.270	A	0.177	2.674	0.005	0.825	1	37.924	0.594	47.557	C
12.500-0.000			B	0.177	2.674		0.825	1	37.924			
			C	0.177	2.674		0.825	1	37.924			
Sum Weight:	32.761	81.551						OTM	1423.570 kip-ft	15.974		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.272	1.547	A	0.306	2.28	0.008	0.8	1	11.628	0.264	52.783	C
180.000-175.0			B	0.306	2.28		0.8	1	11.628			
00			C	0.306	2.28		0.8	1	11.628			
T2	0.612	1.967	A	0.239	2.471	0.008	0.8	1	15.252	0.448	53.733	C
175.000-166.6			B	0.239	2.471		0.8	1	15.252			
67			C	0.239	2.471		0.8	1	15.252			
T3	0.756	2.001	A	0.23	2.498	0.008	0.8	1	15.509	0.498	59.702	C
166.667-158.3			B	0.23	2.498		0.8	1	15.509			
33			C	0.23	2.498		0.8	1	15.509			
T4	0.931	2.035	A	0.222	2.523	0.008	0.8	1	15.770	0.555	66.641	C
158.333-150.0			B	0.222	2.523		0.8	1	15.770			
00			C	0.222	2.523		0.8	1	15.770			
T5	4.379	9.462	A	0.265	2.392	0.007	0.8	1	63.833	2.339	93.542	C
150.000-125.0			B	0.265	2.392		0.8	1	63.833			
00			C	0.265	2.392		0.8	1	63.833			
T6	5.658	11.004	A	0.254	2.426	0.007	0.8	1	69.910	2.691	107.622	C
125.000-100.0			B	0.254	2.426		0.8	1	69.910			
00			C	0.254	2.426		0.8	1	69.910			
T7	1.876	4.236	A	0.244	2.457	0.007	0.8	1	24.143	0.886	106.345	C
100.000-91.66			B	0.244	2.457		0.8	1	24.143			
7			C	0.244	2.457		0.8	1	24.143			
T8	1.858	4.599	A	0.234	2.488	0.007	0.8	1	26.300	0.902	108.210	C
91.667-83.333			B	0.234	2.488		0.8	1	26.300			
			C	0.234	2.488		0.8	1	26.300			
T9	1.876	4.668	A	0.229	2.501	0.007	0.8	1	26.720	0.899	107.850	C
83.333-75.000			B	0.229	2.501		0.8	1	26.720			
			C	0.229	2.501		0.8	1	26.720			
T10	5.686	12.372	A	0.212	2.557	0.006	0.8	1	72.587	2.527	101.099	C
75.000-50.000			B	0.212	2.557		0.8	1	72.587			
			C	0.212	2.557		0.8	1	72.587			
T11	2.737	6.404	A	0.202	2.591	0.006	0.8	1	37.089	1.176	94.083	C
50.000-37.500			B	0.202	2.591		0.8	1	37.089			
			C	0.202	2.591		0.8	1	37.089			
T12	2.677	7.182	A	0.195	2.614	0.005	0.8	1	37.508	1.105	88.381	C
37.500-25.000			B	0.195	2.614		0.8	1	37.508			
			C	0.195	2.614		0.8	1	37.508			
T13	2.596	6.803	A	0.187	2.639	0.005	0.8	1	37.731	1.000	80.038	C
25.000-12.500			B	0.187	2.639		0.8	1	37.731			
			C	0.187	2.639		0.8	1	37.731			
T14	0.847	7.270	A	0.177	2.674	0.005	0.8	1	37.333	0.588	47.060	C
12.500-0.000			B	0.177	2.674		0.8	1	37.333			
			C	0.177	2.674		0.8	1	37.333			
Sum Weight:	32.761	81.551						OTM	1415.398 kip-ft	15.877		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.272	1.547	A	0.306	2.28	0.008	0.85	1	11.904	0.268	53.615	C
180.000-175.0			B	0.306	2.28		0.85	1	11.904			
00			C	0.306	2.28		0.85	1	11.904			
T2	0.612	1.967	A	0.239	2.471	0.008	0.85	1	15.566	0.453	54.344	C
175.000-166.6			B	0.239	2.471		0.85	1	15.566			
67			C	0.239	2.471		0.85	1	15.566			
T3	0.756	2.001	A	0.23	2.498	0.008	0.85	1	15.834	0.503	60.335	C
166.667-158.3			B	0.23	2.498		0.85	1	15.834			
33			C	0.23	2.498		0.85	1	15.834			
T4	0.931	2.035	A	0.222	2.523	0.008	0.85	1	16.107	0.561	67.296	C
158.333-150.0			B	0.222	2.523		0.85	1	16.107			
00			C	0.222	2.523		0.85	1	16.107			
T5	4.379	9.462	A	0.265	2.392	0.007	0.85	1	65.405	2.362	94.483	C
150.000-125.0			B	0.265	2.392		0.85	1	65.405			
00			C	0.265	2.392		0.85	1	65.405			
T6	5.658	11.004	A	0.254	2.426	0.007	0.85	1	71.785	2.718	108.713	C
125.000-100.0			B	0.254	2.426		0.85	1	71.785			
00			C	0.254	2.426		0.85	1	71.785			
T7	1.876	4.236	A	0.244	2.457	0.007	0.85	1	24.807	0.896	107.480	C
100.000-91.66			B	0.244	2.457		0.85	1	24.807			
7			C	0.244	2.457		0.85	1	24.807			
T8	1.858	4.599	A	0.234	2.488	0.007	0.85	1	27.474	0.918	110.205	C
91.667-83.333			B	0.234	2.488		0.85	1	27.474			
			C	0.234	2.488		0.85	1	27.474			
T9	1.876	4.668	A	0.229	2.501	0.007	0.85	1	27.912	0.915	109.844	C
83.333-75.000			B	0.229	2.501		0.85	1	27.912			
			C	0.229	2.501		0.85	1	27.912			
T10	5.686	12.372	A	0.212	2.557	0.006	0.85	1	74.630	2.555	102.206	C
75.000-50.000			B	0.212	2.557		0.85	1	74.630			
			C	0.212	2.557		0.85	1	74.630			
T11	2.737	6.404	A	0.202	2.591	0.006	0.85	1	38.163	1.190	95.178	C
50.000-37.500			B	0.202	2.591		0.85	1	38.163			
			C	0.202	2.591		0.85	1	38.163			
T12	2.677	7.182	A	0.195	2.614	0.005	0.85	1	38.618	1.118	89.444	C
37.500-25.000			B	0.195	2.614		0.85	1	38.618			
			C	0.195	2.614		0.85	1	38.618			
T13	2.596	6.803	A	0.187	2.639	0.005	0.85	1	38.877	1.013	81.033	C
25.000-12.500			B	0.187	2.639		0.85	1	38.877			
			C	0.187	2.639		0.85	1	38.877			
T14	0.847	7.270	A	0.177	2.674	0.005	0.85	1	38.514	0.601	48.053	C
12.500-0.000			B	0.177	2.674		0.85	1	38.514			
			C	0.177	2.674		0.85	1	38.514			
Sum Weight:	32.761	81.551						OTM	1431.741 kip-ft	16.070		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.026	0.592	A	0.173	2.689	0.011	1	1	7.904	0.246	49.249	C
180.000-175.0			B	0.173	2.689		1	1	7.904			
00			C	0.173	2.689		1	1	7.904			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T2	0.058	0.755	A	0.135	2.826	0.011	1	1	10.229	0.376	45.095	C
175.000-166.6			B	0.135	2.826		1	1	10.229			
67			C	0.135	2.826		1	1	10.229			
T3	0.072	0.768	A	0.13	2.846	0.011	1	1	10.452	0.402	48.183	C
166.667-158.3			B	0.13	2.846		1	1	10.452			
33			C	0.13	2.846		1	1	10.452			
T4	0.090	0.781	A	0.126	2.863	0.011	1	1	10.677	0.432	51.812	C
158.333-150.0			B	0.126	2.863		1	1	10.677			
00			C	0.126	2.863		1	1	10.677			
T5	0.515	3.995	A	0.145	2.79	0.011	1	1	43.263	1.781	71.225	C
150.000-125.0			B	0.145	2.79		1	1	43.263			
00			C	0.145	2.79		1	1	43.263			
T6	0.726	4.822	A	0.142	2.8	0.010	1	1	49.322	2.095	83.791	C
125.000-100.0			B	0.142	2.8		1	1	49.322			
00			C	0.142	2.8		1	1	49.322			
T7	0.244	1.971	A	0.137	2.821	0.010	1	1	17.205	0.699	83.883	C
100.000-91.66			B	0.137	2.821		1	1	17.205			
7			C	0.137	2.821		1	1	17.205			
T8	0.244	2.178	A	0.137	2.82	0.010	1	1	21.130	0.776	93.148	C
91.667-83.333			B	0.137	2.82		1	1	21.130			
			C	0.137	2.82		1	1	21.130			
T9	0.248	2.218	A	0.135	2.828	0.009	1	1	21.520	0.776	93.111	C
83.333-75.000			B	0.135	2.828		1	1	21.520			
			C	0.135	2.828		1	1	21.520			
T10	0.764	6.256	A	0.135	2.827	0.009	1	1	57.094	2.080	83.190	C
75.000-50.000			B	0.135	2.827		1	1	57.094			
			C	0.135	2.827		1	1	57.094			
T11	0.382	3.352	A	0.13	2.847	0.008	1	1	29.596	0.990	79.193	C
50.000-37.500			B	0.13	2.847		1	1	29.596			
			C	0.13	2.847		1	1	29.596			
T12	0.384	3.953	A	0.127	2.859	0.008	1	1	30.303	0.941	75.303	C
37.500-25.000			B	0.127	2.859		1	1	30.303			
			C	0.127	2.859		1	1	30.303			
T13	0.388	3.858	A	0.124	2.87	0.007	1	1	31.016	0.865	69.175	C
25.000-12.500			B	0.124	2.87		1	1	31.016			
			C	0.124	2.87		1	1	31.016			
T14	0.140	4.407	A	0.121	2.881	0.007	1	1	31.734	0.634	50.749	C
12.500-0.000			B	0.121	2.881		1	1	31.734			
			C	0.121	2.881		1	1	31.734			
Sum Weight:	4.283	39.907						OTM	1139.443 kip-ft	13.092		

Tower Forces - Service - Wind 45 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.026	0.592	A	0.173	2.689	0.011	0.825	1	6.937	0.222	44.304	C
180.000-175.0			B	0.173	2.689		0.825	1	6.937			
00			C	0.173	2.689		0.825	1	6.937			
T2	0.058	0.755	A	0.135	2.826	0.011	0.825	1	9.128	0.346	41.572	C
175.000-166.6			B	0.135	2.826		0.825	1	9.128			
67			C	0.135	2.826		0.825	1	9.128			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T3	0.072	0.768	A	0.13	2.846	0.011	0.825	1	9.311	0.371	44.547	C
166.667-158.3			B	0.13	2.846		0.825	1	9.311			
33			C	0.13	2.846		0.825	1	9.311			
T4	0.090	0.781	A	0.126	2.863	0.011	0.825	1	9.497	0.401	48.068	C
158.333-150.0			B	0.126	2.863		0.825	1	9.497			
00			C	0.126	2.863		0.825	1	9.497			
T5	0.515	3.995	A	0.145	2.79	0.011	0.825	1	37.762	1.642	65.693	C
150.000-125.0			B	0.145	2.79		0.825	1	37.762			
00			C	0.145	2.79		0.825	1	37.762			
T6	0.726	4.822	A	0.142	2.8	0.010	0.825	1	42.759	1.936	77.441	C
125.000-100.0			B	0.142	2.8		0.825	1	42.759			
00			C	0.142	2.8		0.825	1	42.759			
T7	0.244	1.971	A	0.137	2.821	0.010	0.825	1	14.883	0.644	77.318	C
100.000-91.66			B	0.137	2.821		0.825	1	14.883			
7			C	0.137	2.821		0.825	1	14.883			
T8	0.244	2.178	A	0.137	2.82	0.010	0.825	1	17.432	0.691	82.897	C
91.667-83.333			B	0.137	2.82		0.825	1	17.432			
			C	0.137	2.82		0.825	1	17.432			
T9	0.248	2.218	A	0.135	2.828	0.009	0.825	1	17.754	0.690	82.856	C
83.333-75.000			B	0.135	2.828		0.825	1	17.754			
			C	0.135	2.828		0.825	1	17.754			
T10	0.764	6.256	A	0.135	2.827	0.009	0.825	1	49.944	1.925	77.019	C
75.000-50.000			B	0.135	2.827		0.825	1	49.944			
			C	0.135	2.827		0.825	1	49.944			
T11	0.382	3.352	A	0.13	2.847	0.008	0.825	1	25.836	0.914	73.130	C
50.000-37.500			B	0.13	2.847		0.825	1	25.836			
			C	0.13	2.847		0.825	1	25.836			
T12	0.384	3.953	A	0.127	2.859	0.008	0.825	1	26.419	0.868	69.442	C
37.500-25.000			B	0.127	2.859		0.825	1	26.419			
			C	0.127	2.859		0.825	1	26.419			
T13	0.388	3.858	A	0.124	2.87	0.007	0.825	1	27.007	0.797	63.721	C
25.000-12.500			B	0.124	2.87		0.825	1	27.007			
			C	0.124	2.87		0.825	1	27.007			
T14	0.140	4.407	A	0.121	2.881	0.007	0.825	1	27.599	0.567	45.356	C
12.500-0.000			B	0.121	2.881		0.825	1	27.599			
			C	0.121	2.881		0.825	1	27.599			
Sum Weight:	4.283	39.907						OTM	1046.996 kip-ft	12.015		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.026	0.592	A	0.173	2.689	0.011	0.8	1	6.799	0.218	43.598	C
180.000-175.0			B	0.173	2.689		0.8	1	6.799			
00			C	0.173	2.689		0.8	1	6.799			
T2	0.058	0.755	A	0.135	2.826	0.011	0.8	1	8.970	0.342	41.069	C
175.000-166.6			B	0.135	2.826		0.8	1	8.970			
67			C	0.135	2.826		0.8	1	8.970			
T3	0.072	0.768	A	0.13	2.846	0.011	0.8	1	9.148	0.367	44.028	C
166.667-158.3			B	0.13	2.846		0.8	1	9.148			
33			C	0.13	2.846		0.8	1	9.148			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T4	0.090	0.781	A	0.126	2.863	0.011	0.8	1	9.328	0.396	47.533	C
158.333-150.0			B	0.126	2.863		0.8	1	9.328			
00			C	0.126	2.863		0.8	1	9.328			
T5	0.515	3.995	A	0.145	2.79	0.011	0.8	1	36.976	1.623	64.903	C
150.000-125.0			B	0.145	2.79		0.8	1	36.976			
00			C	0.145	2.79		0.8	1	36.976			
T6	0.726	4.822	A	0.142	2.8	0.010	0.8	1	41.822	1.913	76.533	C
125.000-100.0			B	0.142	2.8		0.8	1	41.822			
00			C	0.142	2.8		0.8	1	41.822			
T7	0.244	1.971	A	0.137	2.821	0.010	0.8	1	14.552	0.636	76.380	C
100.000-91.66			B	0.137	2.821		0.8	1	14.552			
7			C	0.137	2.821		0.8	1	14.552			
T8	0.244	2.178	A	0.137	2.82	0.010	0.8	1	16.904	0.679	81.432	C
91.667-83.333			B	0.137	2.82		0.8	1	16.904			
			C	0.137	2.82		0.8	1	16.904			
T9	0.248	2.218	A	0.135	2.828	0.009	0.8	1	17.216	0.678	81.391	C
83.333-75.000			B	0.135	2.828		0.8	1	17.216			
			C	0.135	2.828		0.8	1	17.216			
T10	0.764	6.256	A	0.135	2.827	0.009	0.8	1	48.923	1.903	76.138	C
75.000-50.000			B	0.135	2.827		0.8	1	48.923			
			C	0.135	2.827		0.8	1	48.923			
T11	0.382	3.352	A	0.13	2.847	0.008	0.8	1	25.299	0.903	72.263	C
50.000-37.500			B	0.13	2.847		0.8	1	25.299			
			C	0.13	2.847		0.8	1	25.299			
T12	0.384	3.953	A	0.127	2.859	0.008	0.8	1	25.864	0.858	68.605	C
37.500-25.000			B	0.127	2.859		0.8	1	25.864			
			C	0.127	2.859		0.8	1	25.864			
T13	0.388	3.858	A	0.124	2.87	0.007	0.8	1	26.434	0.787	62.942	C
25.000-12.500			B	0.124	2.87		0.8	1	26.434			
			C	0.124	2.87		0.8	1	26.434			
T14	0.140	4.407	A	0.121	2.881	0.007	0.8	1	27.008	0.557	44.586	C
12.500-0.000			B	0.121	2.881		0.8	1	27.008			
			C	0.121	2.881		0.8	1	27.008			
Sum Weight:	4.283	39.907						OTM	1033.789 kip-ft	11.861		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.026	0.592	A	0.173	2.689	0.011	0.85	1	7.076	0.225	45.011	C
180.000-175.0			B	0.173	2.689		0.85	1	7.076			
00			C	0.173	2.689		0.85	1	7.076			
T2	0.058	0.755	A	0.135	2.826	0.011	0.85	1	9.285	0.351	42.076	C
175.000-166.6			B	0.135	2.826		0.85	1	9.285			
67			C	0.135	2.826		0.85	1	9.285			
T3	0.072	0.768	A	0.13	2.846	0.011	0.85	1	9.474	0.376	45.067	C
166.667-158.3			B	0.13	2.846		0.85	1	9.474			
33			C	0.13	2.846		0.85	1	9.474			
T4	0.090	0.781	A	0.126	2.863	0.011	0.85	1	9.665	0.405	48.603	C
158.333-150.0			B	0.126	2.863		0.85	1	9.665			
00			C	0.126	2.863		0.85	1	9.665			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T5	0.515	3.995	A	0.145	2.79	0.011	0.85	1	38.548	1.662	66.483	C
150.000-125.0			B	0.145	2.79		0.85	1	38.548			
00			C	0.145	2.79		0.85	1	38.548			
T6	0.726	4.822	A	0.142	2.8	0.010	0.85	1	43.697	1.959	78.348	C
125.000-100.0			B	0.142	2.8		0.85	1	43.697			
00			C	0.142	2.8		0.85	1	43.697			
T7	0.244	1.971	A	0.137	2.821	0.010	0.85	1	15.215	0.652	78.256	C
100.000-91.66			B	0.137	2.821		0.85	1	15.215			
7			C	0.137	2.821		0.85	1	15.215			
T8	0.244	2.178	A	0.137	2.82	0.010	0.85	1	17.960	0.703	84.361	C
91.667-83.333			B	0.137	2.82		0.85	1	17.960			
			C	0.137	2.82		0.85	1	17.960			
T9	0.248	2.218	A	0.135	2.828	0.009	0.85	1	18.292	0.703	84.321	C
83.333-75.000			B	0.135	2.828		0.85	1	18.292			
			C	0.135	2.828		0.85	1	18.292			
T10	0.764	6.256	A	0.135	2.827	0.009	0.85	1	50.966	1.948	77.901	C
75.000-50.000			B	0.135	2.827		0.85	1	50.966			
			C	0.135	2.827		0.85	1	50.966			
T11	0.382	3.352	A	0.13	2.847	0.008	0.85	1	26.373	0.925	73.996	C
50.000-37.500			B	0.13	2.847		0.85	1	26.373			
			C	0.13	2.847		0.85	1	26.373			
T12	0.384	3.953	A	0.127	2.859	0.008	0.85	1	26.974	0.878	70.280	C
37.500-25.000			B	0.127	2.859		0.85	1	26.974			
			C	0.127	2.859		0.85	1	26.974			
T13	0.388	3.858	A	0.124	2.87	0.007	0.85	1	27.579	0.806	64.500	C
25.000-12.500			B	0.124	2.87		0.85	1	27.579			
			C	0.124	2.87		0.85	1	27.579			
T14	0.140	4.407	A	0.121	2.881	0.007	0.85	1	28.190	0.577	46.127	C
12.500-0.000			B	0.121	2.881		0.85	1	28.190			
			C	0.121	2.881		0.85	1	28.190			
Sum Weight:	4.283	39.907						OTM	1060.202 kip-ft	12.169		

Force Totals

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M_x kip-ft	Sum of Overturning Moments, M_z kip-ft	Sum of Torques kip-ft
Leg Weight	13.087					
Bracing Weight	26.820					
Total Member Self-Weight	39.907			-3.755	4.865	
Total Weight	53.954			-3.755	4.865	
Wind 0 deg - No Ice		0.000	-87.213	-9079.420	4.865	3.549
Wind 30 deg - No Ice		41.270	-71.481	-7516.099	-4332.389	-15.344
Wind 45 deg - No Ice		57.813	-57.813	-6090.281	-6081.661	-23.538
Wind 60 deg - No Ice		70.132	-40.491	-4274.149	-7391.675	-30.127
Wind 90 deg - No Ice		82.539	0.000	-3.755	-8669.643	-36.836
Wind 120 deg - No Ice		75.529	43.607	4534.078	-7854.891	-33.676
Wind 135 deg - No Ice		60.017	60.017	6271.879	-6270.769	-28.557
Wind 150 deg - No Ice		41.270	71.481	7508.590	-4332.389	-21.492
Wind 180 deg - No Ice		0.000	80.981	8537.035	4.865	-3.549
Wind 210 deg - No Ice		-41.270	71.481	7508.590	4342.119	15.344
Wind 225 deg - No Ice		-57.813	57.813	6082.772	6091.392	23.538

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M_x kip-ft	Sum of Overturning Moments, M_z kip-ft	Sum of Torques kip-ft
Wind 240 deg - No Ice		-75.529	43.607	4534.078	7864.622	30.127
Wind 270 deg - No Ice		-82.539	0.000	-3.755	8679.373	36.836
Wind 300 deg - No Ice		-70.132	-40.491	-4274.149	7401.406	33.676
Wind 315 deg - No Ice		-57.813	-57.813	-6090.281	6091.392	28.557
Wind 330 deg - No Ice		-41.270	-71.481	-7516.099	4342.119	21.492
Member Ice	41.644					
Total Weight Ice	135.465			-39.572	16.536	
Wind 0 deg - Ice		0.000	-22.130	-2345.995	16.536	-2.447
Wind 30 deg - Ice		10.775	-18.664	-1994.533	-1112.162	-8.852
Wind 45 deg - Ice		15.171	-15.171	-1630.013	-1573.906	-11.252
Wind 60 deg - Ice		18.496	-10.679	-1160.098	-1924.273	-12.885
Wind 90 deg - Ice		21.551	0.000	-39.572	-2240.860	-13.465
Wind 120 deg - Ice		19.165	11.065	1113.640	-1980.886	-10.437
Wind 135 deg - Ice		15.443	15.443	1573.982	-1597.018	-7.791
Wind 150 deg - Ice		10.775	18.664	1915.390	-1112.162	-4.613
Wind 180 deg - Ice		0.000	21.358	2201.480	16.536	2.447
Wind 210 deg - Ice		-10.775	18.664	1915.390	1145.233	8.852
Wind 225 deg - Ice		-15.171	15.171	1550.869	1606.977	11.252
Wind 240 deg - Ice		-19.165	11.065	1113.640	2013.957	12.885
Wind 270 deg - Ice		-21.551	0.000	-39.572	2273.931	13.465
Wind 300 deg - Ice		-18.496	-10.679	-1160.098	1957.344	10.437
Wind 315 deg - Ice		-15.171	-15.171	-1630.013	1606.977	7.791
Wind 330 deg - Ice		-10.775	-18.664	-1994.533	1145.233	4.613
Total Weight	53.954			-3.755	4.865	
Wind 0 deg - Service		0.000	-17.681	-1836.799	2.379	0.701
Wind 30 deg - Service		8.379	-14.513	-1522.800	-873.753	-3.086
Wind 45 deg - Service		11.741	-11.741	-1234.994	-1227.320	-4.727
Wind 60 deg - Service		14.246	-8.225	-868.220	-1492.251	-6.046
Wind 90 deg - Service		16.758	0.000	-5.295	-1749.885	-7.386
Wind 120 deg - Service		15.312	8.841	910.457	-1583.750	-6.747
Wind 135 deg - Service		12.176	12.176	1261.758	-1264.674	-5.718
Wind 150 deg - Service		8.379	14.513	1512.209	-873.753	-4.300
Wind 180 deg - Service		0.000	16.450	1720.555	2.379	-0.701
Wind 210 deg - Service		-8.379	14.513	1512.209	878.510	3.086
Wind 225 deg - Service		-11.741	11.741	1224.404	1232.077	4.727
Wind 240 deg - Service		-15.312	8.841	910.457	1588.508	6.046
Wind 270 deg - Service		-16.758	0.000	-5.295	1754.642	7.386
Wind 300 deg - Service		-14.246	-8.225	-868.220	1497.009	6.747
Wind 315 deg - Service		-11.741	-11.741	-1234.994	1232.077	5.718
Wind 330 deg - Service		-8.379	-14.513	-1522.800	878.510	4.300

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 45 deg - No Ice
7	0.9 Dead+1.0 Wind 45 deg - No Ice
8	1.2 Dead+1.0 Wind 60 deg - No Ice
9	0.9 Dead+1.0 Wind 60 deg - No Ice
10	1.2 Dead+1.0 Wind 90 deg - No Ice
11	0.9 Dead+1.0 Wind 90 deg - No Ice

Comb. No.	Description
12	1.2 Dead+1.0 Wind 120 deg - No Ice
13	0.9 Dead+1.0 Wind 120 deg - No Ice
14	1.2 Dead+1.0 Wind 135 deg - No Ice
15	0.9 Dead+1.0 Wind 135 deg - No Ice
16	1.2 Dead+1.0 Wind 150 deg - No Ice
17	0.9 Dead+1.0 Wind 150 deg - No Ice
18	1.2 Dead+1.0 Wind 180 deg - No Ice
19	0.9 Dead+1.0 Wind 180 deg - No Ice
20	1.2 Dead+1.0 Wind 210 deg - No Ice
21	0.9 Dead+1.0 Wind 210 deg - No Ice
22	1.2 Dead+1.0 Wind 225 deg - No Ice
23	0.9 Dead+1.0 Wind 225 deg - No Ice
24	1.2 Dead+1.0 Wind 240 deg - No Ice
25	0.9 Dead+1.0 Wind 240 deg - No Ice
26	1.2 Dead+1.0 Wind 270 deg - No Ice
27	0.9 Dead+1.0 Wind 270 deg - No Ice
28	1.2 Dead+1.0 Wind 300 deg - No Ice
29	0.9 Dead+1.0 Wind 300 deg - No Ice
30	1.2 Dead+1.0 Wind 315 deg - No Ice
31	0.9 Dead+1.0 Wind 315 deg - No Ice
32	1.2 Dead+1.0 Wind 330 deg - No Ice
33	0.9 Dead+1.0 Wind 330 deg - No Ice
34	1.2 Dead+1.0 Ice
35	1.2 Dead+1.0 Wind 0 deg+1.0 Ice
36	1.2 Dead+1.0 Wind 30 deg+1.0 Ice
37	1.2 Dead+1.0 Wind 45 deg+1.0 Ice
38	1.2 Dead+1.0 Wind 60 deg+1.0 Ice
39	1.2 Dead+1.0 Wind 90 deg+1.0 Ice
40	1.2 Dead+1.0 Wind 120 deg+1.0 Ice
41	1.2 Dead+1.0 Wind 135 deg+1.0 Ice
42	1.2 Dead+1.0 Wind 150 deg+1.0 Ice
43	1.2 Dead+1.0 Wind 180 deg+1.0 Ice
44	1.2 Dead+1.0 Wind 210 deg+1.0 Ice
45	1.2 Dead+1.0 Wind 225 deg+1.0 Ice
46	1.2 Dead+1.0 Wind 240 deg+1.0 Ice
47	1.2 Dead+1.0 Wind 270 deg+1.0 Ice
48	1.2 Dead+1.0 Wind 300 deg+1.0 Ice
49	1.2 Dead+1.0 Wind 315 deg+1.0 Ice
50	1.2 Dead+1.0 Wind 330 deg+1.0 Ice
51	Dead+Wind 0 deg - Service
52	Dead+Wind 30 deg - Service
53	Dead+Wind 45 deg - Service
54	Dead+Wind 60 deg - Service
55	Dead+Wind 90 deg - Service
56	Dead+Wind 120 deg - Service
57	Dead+Wind 135 deg - Service
58	Dead+Wind 150 deg - Service
59	Dead+Wind 180 deg - Service
60	Dead+Wind 210 deg - Service
61	Dead+Wind 225 deg - Service
62	Dead+Wind 240 deg - Service
63	Dead+Wind 270 deg - Service
64	Dead+Wind 300 deg - Service
65	Dead+Wind 315 deg - Service
66	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	180 - 175	Leg	Max Tension	9	0.417	-0.872	-0.052
			Max. Compression	35	-2.698	0.192	0.042
			Max. Mx	28	-0.163	1.497	0.135
			Max. My	26	-1.195	-0.012	1.696
			Max. Vy	18	-1.326	0.000	0.000
			Max. Vx	26	-1.811	0.000	0.000
		Diagonal	Max Tension	23	2.182	0.000	0.000
			Max. Compression	22	-2.304	0.000	0.000
			Max. Mx	34	-0.151	0.091	0.000
			Max. My	34	-0.124	0.000	-0.003
			Max. Vy	34	0.049	0.000	0.000
			Max. Vx	34	0.002	0.000	0.000
		Top Girt	Max Tension	9	1.946	0.012	0.004
			Max. Compression	24	-1.994	0.000	0.000
			Max. Mx	48	-0.349	0.055	0.013
			Max. My	48	-0.349	0.055	0.013
			Max. Vy	48	0.051	0.055	0.013
			Max. Vx	48	0.003	0.000	0.000
T2	175 - 166.667	Leg	Max Tension	9	2.293	-0.872	-0.052
			Max. Compression	2	-4.324	0.237	0.198
			Max. Mx	8	2.096	-0.877	-0.052
			Max. My	32	-0.790	-0.021	0.932
			Max. Vy	3	0.311	0.862	0.085
			Max. Vx	32	0.410	-0.021	0.932
		Diagonal	Max Tension	17	5.741	0.000	0.000
			Max. Compression	16	-5.848	0.000	0.000
			Max. Mx	34	-0.097	0.132	0.000
			Max. My	34	-0.082	0.000	-0.005
			Max. Vy	34	-0.052	0.000	0.000
			Max. Vx	34	0.002	0.000	0.000
		Horizontal	Max Tension	30	3.507	0.000	0.000
			Max. Compression	15	-3.497	0.012	0.004
			Max. Mx	48	-0.111	0.047	0.016
			Max. My	48	-0.192	0.047	0.016
			Max. Vy	48	0.041	0.047	0.016
			Max. Vx	35	-0.004	0.000	0.000
T3	166.667 - 158.333	Leg	Max Tension	9	9.311	-0.229	-0.054
			Max. Compression	24	-12.445	0.465	-0.262
			Max. Mx	12	-12.333	0.467	0.215
			Max. My	26	-1.741	-0.006	-0.629
			Max. Vy	13	-0.305	0.466	0.216
			Max. Vx	2	-0.368	-0.229	0.365
		Diagonal	Max Tension	21	6.126	0.000	0.000
			Max. Compression	20	-6.238	0.000	0.000
			Max. Mx	34	-0.086	0.141	0.000
			Max. My	34	-0.076	0.000	-0.005
			Max. Vy	34	-0.055	0.000	0.000
			Max. Vx	34	0.002	0.000	0.000
		Top Girt	Max Tension	20	3.680	0.000	0.000
			Max. Compression	21	-3.642	0.000	0.000
			Max. Mx	48	-0.027	0.054	0.017
			Max. My	35	0.118	0.051	0.017
			Max. Vy	48	-0.043	0.054	0.017
			Max. Vx	35	0.004	0.000	0.000
T4	158.333 - 150	Leg	Max Tension	19	17.252	-0.445	-0.047
			Max. Compression	2	-21.729	0.535	0.071
			Max. Mx	18	16.194	-0.636	-0.071
			Max. My	26	-2.550	-0.060	-1.192
			Max. Vy	12	0.388	0.467	0.215
			Max. Vx	26	-0.656	-0.006	-0.629

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Diagonal	Max Tension	21	7.818	0.000	0.000
			Max. Compression	20	-7.935	0.000	0.000
			Max. Mx	34	-0.134	0.151	0.000
			Max. My	34	-0.065	0.000	-0.006
			Max. Vy	34	0.057	0.000	0.000
			Max. Vx	34	0.002	0.000	0.000
		Top Girt	Max Tension	6	4.872	0.017	0.007
			Max. Compression	23	-4.838	0.000	0.000
			Max. Mx	48	-0.091	0.061	0.018
			Max. My	48	-0.091	0.061	0.018
			Max. Vy	48	0.046	0.061	0.018
			Max. Vx	35	-0.004	0.000	0.000
T5	150 - 125	Leg	Max Tension	29	51.460	0.071	-0.055
			Max. Compression	2	-63.846	-0.853	0.056
			Max. Mx	2	-63.822	1.229	-0.028
			Max. My	26	-5.565	-0.188	-1.401
			Max. Vy	2	1.772	0.991	-0.026
			Max. Vx	26	-1.100	-0.060	-1.192
		Diagonal	Max Tension	21	15.350	-0.011	-0.004
			Max. Compression	20	-15.721	0.000	0.000
			Max. Mx	24	-1.135	-0.069	0.005
			Max. My	35	-0.130	-0.049	0.011
			Max. Vy	35	0.049	-0.049	0.011
			Max. Vx	48	0.003	0.000	0.000
		Horizontal	Max Tension	6	10.174	0.033	-0.005
			Max. Compression	23	-10.165	0.000	0.000
			Max. Mx	48	-0.199	0.107	0.002
			Max. My	12	1.797	0.013	-0.019
			Max. Vy	48	0.064	0.107	0.002
			Max. Vx	12	-0.003	0.013	-0.019
		Redund Horz 1 Bracing	Max Tension	26	1.472	0.000	0.000
			Max. Compression	27	-1.380	0.000	0.000
			Max. Mx	34	0.228	-0.015	0.000
			Max. My	34	0.225	0.000	0.000
			Max. Vy	34	0.017	0.000	0.000
			Max. Vx	34	0.000	0.000	0.000
		Redund Diag 1 Bracing	Max Tension	26	1.116	0.000	0.000
			Max. Compression	27	-1.090	0.000	0.000
			Max. Mx	34	-0.027	-0.022	0.000
			Max. My	34	-0.025	0.000	-0.001
			Max. Vy	34	0.016	0.000	0.000
			Max. Vx	34	0.001	0.000	0.000
		Inner Bracing	Max Tension	13	0.004	0.000	0.000
			Max. Compression	18	-0.008	0.000	0.000
			Max. Mx	34	-0.006	-0.068	0.000
			Max. Vy	34	-0.038	0.000	0.000
T6	125 - 100	Leg	Max Tension	29	106.305	0.881	-0.048
			Max. Compression	24	-125.305	-1.397	-0.072
			Max. Mx	24	-125.258	1.951	0.038
			Max. My	26	-8.623	-0.215	-1.420
			Max. Vy	24	0.895	1.708	0.078
			Max. Vx	20	-0.657	-0.207	1.276
		Diagonal	Max Tension	5	17.202	-0.046	0.004
			Max. Compression	4	-17.650	0.000	0.000
			Max. Mx	14	3.854	-0.107	-0.005
			Max. My	35	-0.390	-0.065	-0.013
			Max. Vy	50	0.060	-0.068	0.013
			Max. Vx	35	-0.004	0.000	0.000
		Horizontal	Max Tension	4	12.306	0.066	-0.001

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	5	-12.215	0.049	-0.001
			Max. Mx	48	0.002	0.156	0.004
			Max. My	12	1.185	0.026	-0.029
			Max. Vy	48	-0.085	0.156	0.004
			Max. Vx	12	-0.004	0.025	-0.028
		Redund Horz 1 Bracing	Max Tension	6	1.327	0.000	0.000
			Max. Compression	15	-1.144	0.000	0.000
			Max. Mx	34	0.255	-0.020	0.000
			Max. My	34	0.279	0.000	0.000
			Max. Vy	34	-0.019	0.000	0.000
			Max. Vx	34	0.000	0.000	0.000
		Redund Diag 1 Bracing	Max Tension	23	0.886	0.000	0.000
			Max. Compression	6	-0.920	0.000	0.000
			Max. Mx	34	-0.032	-0.027	0.000
			Max. My	34	-0.030	0.000	-0.001
			Max. Vy	34	0.019	0.000	0.000
			Max. Vx	34	0.001	0.000	0.000
		Inner Bracing	Max Tension	13	0.006	0.000	0.000
			Max. Compression	18	-0.011	0.000	0.000
			Max. Mx	34	-0.008	-0.087	0.000
			Max. Vy	34	0.043	0.000	0.000
T7	100 - 91.6667	Leg	Max Tension	29	125.712	0.998	-0.070
			Max. Compression	24	-147.198	-1.418	-0.072
			Max. Mx	24	-147.132	1.975	0.057
			Max. My	26	-9.442	-0.210	-1.438
			Max. Vy	2	0.867	1.974	-0.005
			Max. Vx	26	0.605	-0.210	-1.438
		Diagonal	Max Tension	5	17.681	-0.054	0.004
			Max. Compression	14	-18.217	0.000	0.000
			Max. Mx	20	8.817	-0.104	0.006
			Max. My	48	-0.718	-0.036	-0.013
			Max. Vy	50	-0.062	-0.074	0.013
			Max. Vx	35	0.004	0.000	0.000
		Horizontal	Max Tension	4	12.936	-0.113	0.003
			Max. Compression	15	-12.844	-0.099	-0.011
			Max. Mx	48	-0.145	-0.240	-0.007
			Max. My	12	0.269	-0.055	0.053
			Max. Vy	48	-0.126	-0.240	-0.007
			Max. Vx	12	0.007	-0.055	0.053
		Redund Horz 1 Bracing	Max Tension	6	1.422	0.000	0.000
			Max. Compression	25	-1.243	0.000	0.000
			Max. Mx	34	0.278	-0.021	0.000
			Max. My	34	0.275	0.000	0.000
			Max. Vy	34	0.020	0.000	0.000
			Max. Vx	34	-0.000	0.000	0.000
		Redund Diag 1 Bracing	Max Tension	25	0.932	0.000	0.000
			Max. Compression	6	-0.940	0.000	0.000
			Max. Mx	34	-0.020	-0.028	0.000
			Max. My	34	-0.018	0.000	-0.001
			Max. Vy	34	0.019	0.000	0.000
			Max. Vx	34	-0.001	0.000	0.000
		Inner Bracing	Max Tension	13	0.011	0.000	0.000
			Max. Compression	8	-0.017	0.000	0.000
			Max. Mx	34	-0.009	-0.093	0.000
			Max. Vy	34	0.044	0.000	0.000
T8	91.6667 - 83.3333	Leg	Max Tension	29	145.319	1.029	-0.075

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	24	-169.605	-1.301	-0.087
			Max. Mx	24	-169.504	1.873	0.065
			Max. My	26	-10.458	-0.213	-1.694
			Max. Vy	24	-0.887	1.873	0.065
			Max. Vx	26	0.704	-0.213	-1.694
		Diagonal	Max Tension	5	18.215	-0.035	0.004
			Max. Compression	14	-18.865	0.000	0.000
			Max. Mx	14	4.852	-0.091	-0.006
			Max. My	35	-0.336	-0.077	0.013
			Max. Vy	50	0.064	-0.077	0.013
			Max. Vx	48	0.004	0.000	0.000
		Horizontal	Max Tension	4	13.598	-0.120	0.003
			Max. Compression	15	-13.522	-0.102	-0.011
			Max. Mx	48	-0.114	-0.249	-0.007
			Max. My	12	0.246	-0.071	0.054
			Max. Vy	48	0.130	-0.249	-0.007
			Max. Vx	12	-0.007	-0.071	0.054
		Redund Horz 1 Bracing	Max Tension	6	1.436	0.000	0.000
			Max. Compression	25	-1.274	0.000	0.000
			Max. Mx	34	0.271	-0.023	0.000
			Max. My	34	0.268	0.000	0.001
			Max. Vy	34	-0.020	0.000	0.000
			Max. Vx	34	0.000	0.000	0.000
		Redund Diag 1 Bracing	Max Tension	24	0.936	0.000	0.000
			Max. Compression	6	-0.923	0.000	0.000
			Max. Mx	34	-0.003	-0.029	0.000
			Max. My	34	-0.002	0.000	-0.001
			Max. Vy	34	0.020	0.000	0.000
			Max. Vx	34	-0.001	0.000	0.000
		Inner Bracing	Max Tension	13	0.010	0.000	0.000
			Max. Compression	8	-0.017	0.000	0.000
			Max. Mx	34	-0.009	-0.100	0.000
			Max. Vy	34	0.045	0.000	0.000
T9	83.3333 - 75	Leg	Max Tension	29	164.916	0.914	-0.077
			Max. Compression	24	-192.150	-2.513	-0.100
			Max. Mx	24	-192.150	-2.513	-0.100
			Max. My	26	-11.498	-0.361	-2.849
			Max. Vy	2	1.205	2.229	-0.003
			Max. Vx	26	1.008	-0.361	-2.849
		Diagonal	Max Tension	5	19.053	-0.040	0.005
			Max. Compression	14	-19.829	0.000	0.000
			Max. Mx	14	5.314	-0.095	-0.006
			Max. My	48	-1.186	-0.052	0.014
			Max. Vy	50	-0.066	-0.082	0.014
			Max. Vx	35	0.004	0.000	0.000
		Horizontal	Max Tension	4	14.467	-0.129	0.003
			Max. Compression	15	-14.380	-0.109	-0.011
			Max. Mx	48	-0.086	-0.266	-0.007
			Max. My	12	1.289	-0.077	0.056
			Max. Vy	48	0.134	-0.266	-0.007
			Max. Vx	12	-0.007	-0.077	0.056
		Redund Horz 1 Bracing	Max Tension	30	1.894	0.000	0.000
			Max. Compression	13	-1.716	0.000	0.000
			Max. Mx	34	0.320	-0.024	0.000
			Max. My	34	0.335	0.000	0.001
			Max. Vy	34	0.021	0.000	0.000
			Max. Vx	34	-0.000	0.000	0.000
		Redund Diag 1	Max Tension	13	1.216	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Bracing					
			Max. Compression	30	-1.207	0.000	0.000
			Max. Mx	34	-0.045	-0.031	0.000
			Max. My	34	-0.026	0.000	0.001
			Max. Vy	34	-0.020	0.000	0.000
			Max. Vx	34	-0.001	0.000	0.000
		Inner Bracing	Max Tension	13	0.010	0.000	0.000
			Max. Compression	8	-0.017	0.000	0.000
			Max. Mx	34	-0.009	-0.106	0.000
			Max. Vy	34	-0.046	0.000	0.000
T10	75 - 50	Leg	Max Tension	29	213.864	4.376	-0.105
			Max. Compression	24	-248.816	-6.208	-0.092
			Max. Mx	24	-248.778	7.612	0.080
			Max. My	26	-12.554	-0.563	-3.195
			Max. Vy	24	2.303	7.612	0.080
			Max. Vx	26	-0.872	-0.563	-3.195
		Diagonal	Max Tension	17	25.707	-0.248	0.012
			Max. Compression	14	-27.001	0.000	0.000
			Max. Mx	30	18.019	-0.351	0.015
			Max. My	35	-0.529	-0.154	-0.030
			Max. Vy	49	-0.100	-0.178	0.030
			Max. Vx	48	0.006	0.000	0.000
		Horizontal	Max Tension	16	16.068	0.111	-0.002
			Max. Compression	15	-16.257	0.112	0.012
			Max. Mx	48	0.028	0.285	0.008
			Max. My	12	1.658	-0.003	-0.057
			Max. Vy	48	-0.120	0.285	0.008
			Max. Vx	12	-0.007	-0.007	-0.057
		Redund Horz 1 Bracing	Max Tension	20	2.872	0.000	0.000
			Max. Compression	21	-2.513	0.000	0.000
			Max. Mx	34	0.467	-0.034	0.000
			Max. My	34	0.486	0.000	0.001
			Max. Vy	34	0.027	0.000	0.000
			Max. Vx	34	-0.001	0.000	0.000
		Redund Diag 1 Bracing	Max Tension	21	2.143	0.000	0.000
			Max. Compression	20	-2.211	0.000	0.000
			Max. Mx	34	-0.128	-0.050	0.000
			Max. My	34	-0.115	0.000	-0.002
			Max. Vy	34	0.026	0.000	0.000
			Max. Vx	34	0.001	0.000	0.000
		Inner Bracing	Max Tension	13	0.009	0.000	0.000
			Max. Compression	8	-0.018	0.000	0.000
			Max. Mx	34	-0.012	-0.135	0.000
			Max. Vy	34	0.054	0.000	0.000
T11	50 - 37.5	Leg	Max Tension	29	244.661	4.961	-0.107
			Max. Compression	24	-284.597	-5.655	-0.133
			Max. Mx	24	-284.322	7.546	0.094
			Max. My	26	-15.408	-0.590	-3.995
			Max. Vy	24	-2.285	7.546	0.094
			Max. Vx	26	1.026	-0.590	-3.995
		Diagonal	Max Tension	17	26.051	-0.185	0.011
			Max. Compression	14	-27.363	0.000	0.000
			Max. Mx	30	18.270	-0.282	0.015
			Max. My	48	-0.767	-0.078	0.029
			Max. Vy	49	0.098	-0.172	0.029
			Max. Vx	46	-0.006	0.000	0.000
		Horizontal	Max Tension	16	16.827	0.119	-0.003
			Max. Compression	15	-16.957	0.113	0.012
			Max. Mx	48	-0.275	0.292	0.007

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	12	0.309	0.024	-0.057
			Max. Vy	48	-0.121	0.292	0.007
			Max. Vx	12	0.006	0.024	-0.057
		Redund Horz 1 Bracing	Max Tension	20	2.963	0.000	0.000
			Max. Compression	21	-2.600	0.000	0.000
			Max. Mx	34	0.472	-0.036	0.000
			Max. My	34	0.488	0.000	0.001
			Max. Vy	34	0.028	0.000	0.000
			Max. Vx	34	-0.001	0.000	0.000
		Redund Diag 1 Bracing	Max Tension	21	2.133	0.000	0.000
			Max. Compression	20	-2.199	0.000	0.000
			Max. Mx	34	-0.118	-0.053	0.000
			Max. My	34	-0.107	0.000	-0.002
			Max. Vy	34	0.026	0.000	0.000
			Max. Vx	34	-0.001	0.000	0.000
		Inner Bracing	Max Tension	13	0.008	0.000	0.000
			Max. Compression	8	-0.017	0.000	0.000
			Max. Mx	34	-0.012	-0.145	0.000
			Max. Vy	34	0.055	0.000	0.000
T12	37.5 - 25	Leg	Max Tension	29	275.013	4.423	-0.153
			Max. Compression	24	-320.138	-6.745	-0.122
			Max. Mx	24	-320.067	8.180	0.090
			Max. My	26	-16.473	-0.590	-3.995
			Max. Vy	24	2.483	8.180	0.090
			Max. Vx	26	-1.024	-0.590	-3.995
		Diagonal	Max Tension	17	26.747	-0.265	0.013
			Max. Compression	14	-28.279	0.000	0.000
			Max. Mx	30	16.681	-0.353	0.017
			Max. My	48	-1.841	-0.085	0.031
			Max. Vy	49	0.107	-0.199	0.031
			Max. Vx	46	-0.006	0.000	0.000
		Top Girt	Max Tension	16	17.723	-0.258	0.006
			Max. Compression	15	-17.889	-0.243	-0.019
			Max. Mx	48	0.127	-0.527	-0.011
			Max. My	12	1.669	-0.063	0.099
			Max. Vy	48	-0.205	-0.527	-0.011
			Max. Vx	12	0.011	-0.063	0.099
		Redund Horz 1 Bracing	Max Tension	20	3.123	0.000	0.000
			Max. Compression	21	-2.746	0.000	0.000
			Max. Mx	34	0.490	-0.039	0.000
			Max. My	34	0.503	0.000	0.001
			Max. Vy	34	0.028	0.000	0.000
			Max. Vx	34	-0.001	0.000	0.000
		Redund Diag 1 Bracing	Max Tension	21	2.209	0.000	0.000
			Max. Compression	20	-2.254	0.000	0.000
			Max. Mx	34	-0.105	-0.055	0.000
			Max. My	34	-0.096	0.000	-0.002
			Max. Vy	34	-0.027	0.000	0.000
			Max. Vx	34	0.001	0.000	0.000
		Inner Bracing	Max Tension	13	0.014	0.000	0.000
			Max. Compression	8	-0.026	0.000	0.000
			Max. Mx	34	-0.014	-0.155	0.000
			Max. Vy	34	0.056	0.000	0.000
T13	25 - 12.5	Leg	Max Tension	29	305.472	5.362	-0.141
			Max. Compression	2	-356.182	-6.678	-0.020
			Max. Mx	2	-356.035	8.784	0.011
			Max. My	26	-18.934	-0.642	-4.148

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	24	2.585	8.783	0.108
			Max. Vx	26	1.064	-0.642	-4.148
		Diagonal	Max Tension	17	27.268	-0.262	0.013
			Max. Compression	14	-28.839	0.000	0.000
			Max. Mx	30	18.880	-0.362	0.017
			Max. My	35	-0.488	-0.184	0.031
			Max. Vy	49	-0.109	-0.206	0.031
			Max. Vx	38	-0.006	0.000	0.000
		Horizontal	Max Tension	16	18.482	0.207	-0.005
			Max. Compression	15	-18.530	0.191	0.010
			Max. Mx	48	-0.229	0.410	0.004
			Max. My	12	1.689	0.065	-0.056
			Max. Vy	48	-0.154	0.410	0.004
			Max. Vx	12	0.006	0.065	-0.056
		Redund Horz 1 Bracing	Max Tension	20	3.294	0.000	0.000
			Max. Compression	33	-2.901	0.000	0.000
			Max. Mx	34	0.508	-0.041	0.000
			Max. My	34	0.519	0.000	0.001
			Max. Vy	34	-0.028	0.000	0.000
			Max. Vx	34	0.001	0.000	0.000
		Redund Diag 1 Bracing	Max Tension	33	2.276	0.000	0.000
			Max. Compression	20	-2.315	0.000	0.000
			Max. Mx	34	-0.105	-0.056	0.000
			Max. My	34	-0.096	0.000	-0.002
			Max. Vy	34	0.027	0.000	0.000
			Max. Vx	34	-0.001	0.000	0.000
		Inner Bracing	Max Tension	13	0.005	0.000	0.000
			Max. Compression	8	-0.017	0.000	0.000
			Max. Mx	34	-0.013	-0.214	0.000
			Max. Vy	34	0.074	0.000	0.000
T14	12.5 - 0	Leg	Max Tension	29	336.511	5.276	-0.162
			Max. Compression	2	-393.121	0.000	0.000
			Max. Mx	2	-393.009	7.816	0.010
			Max. My	26	-20.279	-0.642	-4.148
			Max. Vy	2	-2.388	7.816	0.010
			Max. Vx	26	-0.969	-0.642	-4.148
		Diagonal	Max Tension	17	27.225	-0.309	0.014
			Max. Compression	14	-28.715	0.000	0.000
			Max. Mx	30	18.298	-0.409	0.018
			Max. My	43	-1.409	-0.084	0.031
			Max. Vy	49	0.109	-0.216	0.031
			Max. Vx	40	-0.006	0.000	0.000
		Top Girt	Max Tension	16	19.030	-0.377	0.009
			Max. Compression	15	-19.260	-0.345	-0.016
			Max. Mx	48	-0.427	-0.664	-0.008
			Max. My	12	0.518	-0.131	0.100
			Max. Vy	48	-0.237	-0.664	-0.008
			Max. Vx	12	0.011	-0.131	0.100
		Redund Horz 1 Bracing	Max Tension	14	2.315	0.000	0.000
			Max. Compression	33	-2.039	0.000	0.000
			Max. Mx	34	0.355	-0.041	0.000
			Max. My	34	0.340	0.000	0.001
			Max. Vy	34	0.027	0.000	0.000
			Max. Vx	34	-0.001	0.000	0.000
		Redund Diag 1 Bracing	Max Tension	32	1.644	0.000	0.000
			Max. Compression	15	-1.584	0.000	0.000
			Max. Mx	34	0.022	-0.055	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Inner Bracing	Max. My	34	0.033	0.000	-0.002
			Max. Vy	34	0.026	0.000	0.000
			Max. Vx	34	0.001	0.000	0.000
			Max Tension	13	0.011	0.000	0.000
			Max. Compression	18	-0.025	0.000	0.000
			Max. Mx	34	-0.015	-0.218	0.000
			Max. Vy	34	-0.073	0.000	0.000

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	24	429.655	42.841	-25.542
	Max. H_x	24	429.655	42.841	-25.542
	Max. H_z	7	-357.616	-35.425	23.819
	Min. Vert	9	-367.826	-37.510	22.456
	Min. H_x	9	-367.826	-37.510	22.456
	Min. H_z	24	429.655	42.841	-25.542
Leg B	Max. Vert	12	429.188	-42.797	-25.607
	Max. H_x	29	-368.177	37.471	22.532
	Max. H_z	31	-357.966	35.369	23.924
	Min. Vert	29	-368.177	37.471	22.532
	Min. H_x	12	429.188	-42.797	-25.607
	Min. H_z	14	406.655	-39.138	-26.219
Leg A	Max. Vert	2	429.734	0.079	49.874
	Max. H_x	27	16.342	10.122	1.200
	Max. H_z	2	429.734	0.079	49.874
	Min. Vert	19	-367.767	-0.084	-43.712
	Min. H_x	10	21.790	-10.128	1.600
	Min. H_z	19	-367.767	-0.084	-43.712

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	53.954	0.000	0.000	-3.754	4.865	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	64.744	-0.000	-87.213	-8836.763	5.838	3.550
0.9 Dead+1.0 Wind 0 deg - No Ice	48.558	-0.000	-87.213	-8835.637	4.379	3.550
1.2 Dead+1.0 Wind 30 deg - No Ice	64.744	41.270	-71.481	-7318.286	-4216.775	-15.344
0.9 Dead+1.0 Wind 30 deg - No Ice	48.558	41.270	-71.481	-7317.159	-4218.234	-15.344
1.2 Dead+1.0 Wind 45 deg - No Ice	64.744	57.813	-57.813	-5930.570	-5920.226	-23.537
0.9 Dead+1.0 Wind 45 deg - No Ice	48.558	57.813	-57.813	-5929.444	-5921.686	-23.537
1.2 Dead+1.0 Wind 60 deg - No Ice	64.744	70.132	-40.491	-4162.613	-7196.216	-30.126
0.9 Dead+1.0 Wind 60 deg - No	48.558	70.132	-40.491	-4161.487	-7197.675	-30.126

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Ice						
1.2 Dead+1.0 Wind 90 deg - No Ice	64.744	82.539	-0.000	-4.505	-8439.388	-36.836
0.9 Dead+1.0 Wind 90 deg - No Ice	48.558	82.539	-0.000	-3.379	-8440.848	-36.836
1.2 Dead+1.0 Wind 120 deg - No Ice	64.744	75.529	43.607	4411.624	-7643.121	-33.676
0.9 Dead+1.0 Wind 120 deg - No Ice	48.558	75.529	43.607	4412.750	-7644.581	-33.676
1.2 Dead+1.0 Wind 135 deg - No Ice	64.744	60.017	60.017	6104.008	-6102.675	-28.557
0.9 Dead+1.0 Wind 135 deg - No Ice	48.558	60.017	60.017	6105.134	-6104.134	-28.557
1.2 Dead+1.0 Wind 150 deg - No Ice	64.744	41.270	71.481	7309.275	-4216.775	-21.492
0.9 Dead+1.0 Wind 150 deg - No Ice	48.558	41.270	71.481	7310.401	-4218.234	-21.492
1.2 Dead+1.0 Wind 180 deg - No Ice	64.744	0.000	80.981	8311.710	5.838	-3.550
0.9 Dead+1.0 Wind 180 deg - No Ice	48.558	0.000	80.981	8312.837	4.379	-3.550
1.2 Dead+1.0 Wind 210 deg - No Ice	64.744	-41.270	71.481	7309.275	4228.451	15.344
0.9 Dead+1.0 Wind 210 deg - No Ice	48.558	-41.270	71.481	7310.401	4226.992	15.344
1.2 Dead+1.0 Wind 225 deg - No Ice	64.744	-57.813	57.813	5921.559	5931.903	23.537
0.9 Dead+1.0 Wind 225 deg - No Ice	48.558	-57.813	57.813	5922.686	5930.443	23.537
1.2 Dead+1.0 Wind 240 deg - No Ice	64.744	-75.529	43.607	4411.624	7654.798	30.126
0.9 Dead+1.0 Wind 240 deg - No Ice	48.558	-75.529	43.607	4412.750	7653.338	30.126
1.2 Dead+1.0 Wind 270 deg - No Ice	64.744	-82.539	0.000	-4.505	8451.064	36.836
0.9 Dead+1.0 Wind 270 deg - No Ice	48.558	-82.539	0.000	-3.379	8449.605	36.836
1.2 Dead+1.0 Wind 300 deg - No Ice	64.744	-70.132	-40.491	-4162.613	7207.892	33.676
0.9 Dead+1.0 Wind 300 deg - No Ice	48.558	-70.132	-40.491	-4161.487	7206.433	33.676
1.2 Dead+1.0 Wind 315 deg - No Ice	64.744	-57.813	-57.813	-5930.570	5931.903	28.557
0.9 Dead+1.0 Wind 315 deg - No Ice	48.558	-57.813	-57.813	-5929.444	5930.443	28.557
1.2 Dead+1.0 Wind 330 deg - No Ice	64.744	-41.270	-71.481	-7318.286	4228.451	21.492
0.9 Dead+1.0 Wind 330 deg - No Ice	48.558	-41.270	-71.481	-7317.159	4226.992	21.492
1.2 Dead+1.0 Ice	146.256	0.000	0.000	-40.323	17.508	0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice	146.256	0.000	-22.130	-2276.283	17.508	-2.447
1.2 Dead+1.0 Wind 30 deg+1.0 Ice	146.256	10.775	-18.664	-1935.938	-1076.926	-8.852
1.2 Dead+1.0 Wind 45 deg+1.0 Ice	146.256	15.171	-15.171	-1582.536	-1524.706	-11.252
1.2 Dead+1.0 Wind 60 deg+1.0 Ice	146.256	18.496	-10.679	-1126.908	-1864.513	-12.885
1.2 Dead+1.0 Wind 90 deg+1.0 Ice	146.256	21.551	0.000	-40.323	-2171.360	-13.465
1.2 Dead+1.0 Wind 120	146.256	19.165	11.065	1077.657	-1918.891	-10.437

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
deg+1.0 Ice						
1.2 Dead+1.0 Wind 135 deg+1.0 Ice	146.256	15.443	15.443	1524.090	-1546.906	-7.791
1.2 Dead+1.0 Wind 150 deg+1.0 Ice	146.256	10.775	18.664	1855.293	-1076.926	-4.613
1.2 Dead+1.0 Wind 180 deg+1.0 Ice	146.256	0.000	21.358	2132.848	17.508	2.447
1.2 Dead+1.0 Wind 210 deg+1.0 Ice	146.256	-10.775	18.664	1855.293	1111.942	8.852
1.2 Dead+1.0 Wind 225 deg+1.0 Ice	146.256	-15.171	15.171	1501.891	1559.721	11.252
1.2 Dead+1.0 Wind 240 deg+1.0 Ice	146.256	-19.165	11.065	1077.657	1953.906	12.885
1.2 Dead+1.0 Wind 270 deg+1.0 Ice	146.256	-21.551	0.000	-40.323	2206.376	13.465
1.2 Dead+1.0 Wind 300 deg+1.0 Ice	146.256	-18.496	-10.679	-1126.908	1899.528	10.437
1.2 Dead+1.0 Wind 315 deg+1.0 Ice	146.256	-15.171	-15.171	-1582.536	1559.721	7.791
1.2 Dead+1.0 Wind 330 deg+1.0 Ice	146.256	-10.775	-18.664	-1935.938	1111.942	4.613
Dead+Wind 0 deg - Service	53.954	0.000	-17.681	-1785.798	4.865	0.701
Dead+Wind 30 deg - Service	53.954	8.379	-14.513	-1480.842	-847.932	-3.086
Dead+Wind 45 deg - Service	53.954	11.741	-11.741	-1200.781	-1192.162	-4.727
Dead+Wind 60 deg - Service	53.954	14.246	-8.225	-843.809	-1450.153	-6.046
Dead+Wind 90 deg - Service	53.954	16.758	0.000	-3.754	-1700.728	-7.386
Dead+Wind 120 deg - Service	53.954	15.312	8.841	887.268	-1538.430	-6.747
Dead+Wind 135 deg - Service	53.954	12.176	12.176	1229.312	-1228.201	-5.718
Dead+Wind 150 deg - Service	53.954	8.379	14.513	1473.333	-847.932	-4.300
Dead+Wind 180 deg - Service	53.954	0.000	16.450	1676.355	4.865	-0.701
Dead+Wind 210 deg - Service	53.954	-8.379	14.513	1473.333	857.662	3.086
Dead+Wind 225 deg - Service	53.954	-11.741	11.741	1193.272	1201.892	4.727
Dead+Wind 240 deg - Service	53.954	-15.312	8.841	887.268	1548.161	6.046
Dead+Wind 270 deg - Service	53.954	-16.758	0.000	-3.754	1710.458	7.386
Dead+Wind 300 deg - Service	53.954	-14.246	-8.225	-843.809	1459.883	6.747
Dead+Wind 315 deg - Service	53.954	-11.741	-11.741	-1200.781	1201.892	5.718
Dead+Wind 330 deg - Service	53.954	-8.379	-14.513	-1480.842	857.662	4.300

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.000	-53.954	0.000	0.000	53.954	0.000	0.000%
2	0.000	-64.744	-87.213	0.000	64.744	87.213	0.000%
3	0.000	-48.558	-87.213	0.000	48.558	87.213	0.000%
4	41.270	-64.744	-71.481	-41.270	64.744	71.481	0.000%
5	41.270	-48.558	-71.481	-41.270	48.558	71.481	0.000%
6	57.813	-64.744	-57.813	-57.813	64.744	57.813	0.000%
7	57.813	-48.558	-57.813	-57.813	48.558	57.813	0.000%
8	70.132	-64.744	-40.491	-70.132	64.744	40.491	0.000%
9	70.132	-48.558	-40.491	-70.132	48.558	40.491	0.000%
10	82.539	-64.744	0.000	-82.539	64.744	0.000	0.000%
11	82.539	-48.558	0.000	-82.539	48.558	0.000	0.000%
12	75.529	-64.744	43.607	-75.529	64.744	-43.607	0.000%
13	75.529	-48.558	43.607	-75.529	48.558	-43.607	0.000%
14	60.017	-64.744	60.017	-60.017	64.744	-60.017	0.000%
15	60.017	-48.558	60.017	-60.017	48.558	-60.017	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
16	41.270	-64.744	71.481	-41.270	64.744	-71.481	0.000%
17	41.270	-48.558	71.481	-41.270	48.558	-71.481	0.000%
18	0.000	-64.744	80.981	-0.000	64.744	-80.981	0.000%
19	0.000	-48.558	80.981	-0.000	48.558	-80.981	0.000%
20	-41.270	-64.744	71.481	41.270	64.744	-71.481	0.000%
21	-41.270	-48.558	71.481	41.270	48.558	-71.481	0.000%
22	-57.813	-64.744	57.813	57.813	64.744	-57.813	0.000%
23	-57.813	-48.558	57.813	57.813	48.558	-57.813	0.000%
24	-75.529	-64.744	43.607	75.529	64.744	-43.607	0.000%
25	-75.529	-48.558	43.607	75.529	48.558	-43.607	0.000%
26	-82.539	-64.744	0.000	82.539	64.744	-0.000	0.000%
27	-82.539	-48.558	0.000	82.539	48.558	-0.000	0.000%
28	-70.132	-64.744	-40.491	70.132	64.744	40.491	0.000%
29	-70.132	-48.558	-40.491	70.132	48.558	40.491	0.000%
30	-57.813	-64.744	-57.813	57.813	64.744	57.813	0.000%
31	-57.813	-48.558	-57.813	57.813	48.558	57.813	0.000%
32	-41.270	-64.744	-71.481	41.270	64.744	71.481	0.000%
33	-41.270	-48.558	-71.481	41.270	48.558	71.481	0.000%
34	0.000	-146.256	0.000	-0.000	146.256	0.000	0.000%
35	0.000	-146.256	-22.130	-0.000	146.256	22.130	0.000%
36	10.775	-146.256	-18.664	-10.775	146.256	18.664	0.000%
37	15.171	-146.256	-15.171	-15.171	146.256	15.171	0.000%
38	18.496	-146.256	-10.679	-18.496	146.256	10.679	0.000%
39	21.551	-146.256	0.000	-21.551	146.256	0.000	0.000%
40	19.165	-146.256	11.065	-19.165	146.256	-11.065	0.000%
41	15.443	-146.256	15.443	-15.443	146.256	-15.443	0.000%
42	10.775	-146.256	18.664	-10.775	146.256	-18.664	0.000%
43	0.000	-146.256	21.358	-0.000	146.256	-21.358	0.000%
44	-10.775	-146.256	18.664	10.775	146.256	-18.664	0.000%
45	-15.171	-146.256	15.171	15.171	146.256	-15.171	0.000%
46	-19.165	-146.256	11.065	19.165	146.256	-11.065	0.000%
47	-21.551	-146.256	0.000	21.551	146.256	-0.000	0.000%
48	-18.496	-146.256	-10.679	18.496	146.256	10.679	0.000%
49	-15.171	-146.256	-15.171	15.171	146.256	15.171	0.000%
50	-10.775	-146.256	-18.664	10.775	146.256	18.664	0.000%
51	0.000	-53.954	-17.681	0.000	53.954	17.681	0.000%
52	8.379	-53.954	-14.513	-8.379	53.954	14.513	0.000%
53	11.741	-53.954	-11.741	-11.741	53.954	11.741	0.000%
54	14.246	-53.954	-8.225	-14.246	53.954	8.225	0.000%
55	16.758	-53.954	0.000	-16.758	53.954	0.000	0.000%
56	15.312	-53.954	8.841	-15.312	53.954	-8.841	0.000%
57	12.176	-53.954	12.176	-12.176	53.954	-12.176	0.000%
58	8.379	-53.954	14.513	-8.379	53.954	-14.513	0.000%
59	0.000	-53.954	16.450	0.000	53.954	-16.450	0.000%
60	-8.379	-53.954	14.513	8.379	53.954	-14.513	0.000%
61	-11.741	-53.954	11.741	11.741	53.954	-11.741	0.000%
62	-15.312	-53.954	8.841	15.312	53.954	-8.841	0.000%
63	-16.758	-53.954	0.000	16.758	53.954	0.000	0.000%
64	-14.246	-53.954	-8.225	14.246	53.954	8.225	0.000%
65	-11.741	-53.954	-11.741	11.741	53.954	11.741	0.000%
66	-8.379	-53.954	-14.513	8.379	53.954	14.513	0.000%

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	180 - 175	2.960	51	0.1211	0.0135
T2	175 - 166.667	2.832	51	0.1209	0.0127
T3	166.667 - 158.333	2.615	51	0.1206	0.0119
T4	158.333 - 150	2.399	62	0.1195	0.0117
T5	150 - 125	2.186	62	0.1173	0.0105
T6	125 - 100	1.577	62	0.1060	0.0076
T7	100 - 91.6667	1.040	62	0.0885	0.0055
T8	91.6667 - 83.3333	0.884	62	0.0822	0.0049
T9	83.3333 - 75	0.736	62	0.0767	0.0044
T10	75 - 50	0.599	62	0.0707	0.0038
T11	50 - 37.5	0.277	51	0.0477	0.0024
T12	37.5 - 25	0.158	51	0.0371	0.0017
T13	25 - 12.5	0.073	51	0.0255	0.0012
T14	12.5 - 0	0.018	56	0.0131	0.0006

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
200.000	Lightning Rod 2"x15'	51	2.960	0.1211	0.0135	121556
186.000	2" Dia 10' Omni	51	2.960	0.1211	0.0135	121556
185.500	3" Dia 20' Omni	51	2.960	0.1211	0.0135	121556
185.000	2" Dia 10' Omni	51	2.960	0.1211	0.0135	121556
182.500	1" Dia 8' Omni	51	2.960	0.1211	0.0135	121556
181.000	1 Bay Dipole ANT400D	51	2.960	0.1211	0.0135	121556
179.000	6' Side-Arm(1)	51	2.935	0.1210	0.0133	121556
178.000	6' w/Radome	51	2.909	0.1210	0.0132	121556
177.500	Pirod 6' Side Mount Standoff (1)	51	2.896	0.1210	0.0131	121556
176.000	6' w/Radome	51	2.858	0.1209	0.0129	121556
173.000	(inverted) 2" Dia 10' Omni	51	2.780	0.1209	0.0125	140705
170.000	(Inverted) 3" Dia 20' Omni	51	2.702	0.1208	0.0122	494850
166.500	Telewave 150F2 Omni	51	2.611	0.1206	0.0119	342805
164.000	Pirod 4' Side Mount Standoff (1)	51	2.546	0.1204	0.0119	300252
162.000	Telewave ANT220F2 - Omni Antenna	62	2.494	0.1201	0.0119	361060
161.000	ANT450F6	62	2.468	0.1200	0.0119	407484
160.000	3" Dia 9' Omni	62	2.442	0.1198	0.0118	448969
159.000	Sitepro1 USF-4U Mount Assembly (Ca = 1.4 assumed)	62	2.417	0.1196	0.0118	470937
157.000	2' Sidearm	62	2.365	0.1192	0.0116	415201
156.000	HPD3-5W	62	2.339	0.1190	0.0115	360753
151.000	1 Bay Dipole ANT400D	62	2.211	0.1176	0.0107	188208
149.000	2" Dia 14' Omni (inverted)	62	2.161	0.1170	0.0104	166266
148.000	13-ft Sector Frame	62	2.135	0.1167	0.0102	160034
137.000	Pirod 12' PCS T-Frame (1) 104569	62	1.862	0.1123	0.0088	130522
130.000	2' Sidearm	62	1.694	0.1088	0.0081	117536
125.000	Decibel DB210-C Dipole (Single)	62	1.577	0.1060	0.0076	108312
124.000	Comprod 871F-70 Dipole	62	1.554	0.1054	0.0075	105945
123.000	19.5"x19.5" Panel Antenna	62	1.531	0.1048	0.0074	103432
121.000	Sitepro1 USF-4U Mount Assembly (Ca = 1.4 assumed)	62	1.485	0.1036	0.0072	98300
111.000	4' Paraflector [PRF-950]	62	1.265	0.0968	0.0063	77896
102.000	1' Side Arm	62	1.079	0.0901	0.0056	66339
89.500	20' 4-Bay Dipole	62	0.845	0.0807	0.0048	102838
82.500	1' Side Arm	62	0.722	0.0762	0.0044	86991
81.000	GPS	62	0.697	0.0752	0.0042	75519

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
34.000	1.5" Dia 3' Omni	51	0.131	0.0339	0.0016	52107
30.500	1.5" Dia 3' Omni	51	0.107	0.0307	0.0014	60983
29.500	1.5" Dia 3' Omni (inverted)	51	0.100	0.0298	0.0014	64128
27.000	1.5" Dia 3' Omni	51	0.085	0.0274	0.0013	71793
26.000	4' Side Mount Standoff (1)	51	0.079	0.0264	0.0012	73514
19.500	1.5" Dia 3' Omni	51	0.045	0.0201	0.0009	54883
18.000	4' Side Mount Standoff (1)	56	0.038	0.0187	0.0008	50188
17.500	3' Yagi	56	0.036	0.0182	0.0008	48796

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	180 - 175	14.663	2	0.5980	0.0664
T2	175 - 166.667	14.031	2	0.5978	0.0628
T3	166.667 - 158.333	12.956	2	0.5968	0.0587
T4	158.333 - 150	11.888	24	0.5910	0.0576
T5	150 - 125	10.830	24	0.5804	0.0517
T6	125 - 100	7.813	24	0.5250	0.0375
T7	100 - 91.6667	5.153	24	0.4387	0.0271
T8	91.6667 - 83.3333	4.379	24	0.4073	0.0245
T9	83.3333 - 75	3.648	24	0.3802	0.0219
T10	75 - 50	2.966	24	0.3505	0.0191
T11	50 - 37.5	1.373	2	0.2365	0.0121
T12	37.5 - 25	0.781	2	0.1836	0.0086
T13	25 - 12.5	0.361	2	0.1262	0.0059
T14	12.5 - 0	0.090	12	0.0650	0.0028

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
200.000	Lightning Rod 2"x15'	2	14.663	0.5980	0.0664	25333
186.000	2" Dia 10' Omni	2	14.663	0.5980	0.0664	25333
185.500	3" Dia 20' Omni	2	14.663	0.5980	0.0664	25333
185.000	2" Dia 10' Omni	2	14.663	0.5980	0.0664	25333
182.500	1" Dia 8' Omni	2	14.663	0.5980	0.0664	25333
181.000	1 Bay Dipole ANT400D	2	14.663	0.5980	0.0664	25333
179.000	6' Side-Arm(1)	2	14.537	0.5980	0.0657	25333
178.000	6' w/Radome	2	14.411	0.5979	0.0649	25333
177.500	Pirod 6' Side Mount Standoff (1)	2	14.348	0.5979	0.0646	25333
176.000	6' w/Radome	2	14.158	0.5979	0.0635	25333
173.000	(inverted) 2" Dia 10' Omni	2	13.775	0.5978	0.0615	29478
170.000	(Inverted) 3" Dia 20' Omni	2	13.387	0.5975	0.0598	109741
166.500	Telewave 150F2 Omni	2	12.935	0.5967	0.0587	67986
164.000	Pirod 4' Side Mount Standoff (1)	2	12.613	0.5955	0.0584	58571
162.000	Telewave ANT220F2 - Omni Antenna	24	12.356	0.5942	0.0583	71413
161.000	ANT450F6	24	12.229	0.5934	0.0582	81495
160.000	3" Dia 9' Omni	24	12.101	0.5926	0.0581	91142

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
159.000	Sitepro1 USF-4U Mount Assembly (Ca = 1.4 assumed)	24	11.973	0.5917	0.0579	97118
157.000	2' Sidearm	24	11.718	0.5896	0.0570	87411
156.000	HPD3-5W	24	11.591	0.5885	0.0564	76069
151.000	1 Bay Dipole ANT400D	24	10.956	0.5819	0.0526	39170
149.000	2" Dia 14' Omni (inverted)	24	10.705	0.5789	0.0509	34545
148.000	13-ft Sector Frame	24	10.579	0.5773	0.0502	33214
137.000	Pirod 12' PCS T-Frame (1) 104569	24	9.227	0.5559	0.0432	26754
130.000	2' Sidearm	24	8.393	0.5388	0.0397	23949
125.000	Decibel DB210-C Dipole (Single)	24	7.813	0.5250	0.0375	21993
124.000	Comprod 871F-70 Dipole	24	7.698	0.5221	0.0370	21500
123.000	19.5"x19.5" Panel Antenna	24	7.584	0.5191	0.0365	20979
121.000	Sitepro1 USF-4U Mount Assembly (Ca = 1.4 assumed)	24	7.358	0.5130	0.0356	19919
111.000	4' Paraflector [PRF-950]	24	6.266	0.4796	0.0312	15746
102.000	1' Side Arm	24	5.348	0.4464	0.0278	13402
89.500	20' 4-Bay Dipole	24	4.185	0.4000	0.0238	20793
82.500	1' Side Arm	24	3.578	0.3775	0.0216	17645
81.000	GPS	24	3.451	0.3725	0.0211	15300
34.000	1.5" Dia 3' Omni	2	0.647	0.1682	0.0078	10509
30.500	1.5" Dia 3' Omni	2	0.527	0.1521	0.0071	12291
29.500	1.5" Dia 3' Omni (inverted)	2	0.495	0.1475	0.0069	12924
27.000	1.5" Dia 3' Omni	2	0.419	0.1357	0.0063	14468
26.000	4' Side Mount Standoff (1)	2	0.390	0.1310	0.0061	14815
19.500	1.5" Dia 3' Omni	2	0.221	0.0997	0.0045	11076
18.000	4' Side Mount Standoff (1)	12	0.187	0.0924	0.0042	10131
17.500	3' Yagi	12	0.177	0.0900	0.0040	9851

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	180	Diagonal	A325X	0.750	1	2.182	17.944	0.122 ✔	1	Member Block Shear
		Top Girt	A325X	0.625	2	0.973	10.263	0.095 ✔	1	Member Block Shear
T2	175	Leg	A325X	0.750	6	0.382	30.101	0.013 ✔	1	Bolt Tension
		Diagonal	A325X	0.750	1	5.741	17.944	0.320 ✔	1	Member Block Shear
		Horizontal	A325X	0.625	2	1.754	7.188	0.244 ✔	1	Member Block Shear
T3	166.667	Diagonal	A325X	0.750	1	6.126	17.944	0.341 ✔	1	Member Block Shear
		Top Girt	A325X	0.625	2	1.840	7.188	0.256 ✔	1	Member Block Shear
T4	158.333	Diagonal	A325X	0.750	1	7.818	17.944	0.436 ✔	1	Member Block Shear
		Top Girt	A325X	0.625	2	2.436	7.188	0.339 ✔	1	Member Block Shear
T5	150	Leg	A325X	0.750	6	4.317	30.101	0.143 ✔	1	Bolt Tension
		Diagonal	A325X	0.750	1	15.350	29.906	0.513 ✔	1	Member Block Shear
		Horizontal	A325X	0.625	2	5.087	10.263	0.496 ✔	1	Member Block

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T6	125	Leg	A325X	0.750	6	11.530	30.101	0.383 ✓	1	Shear Bolt Tension
		Diagonal	A325X	0.750	1	17.202	25.230	0.682 ✓	1	Member Bearing
		Horizontal	A325X	0.625	2	6.153	12.829	0.480 ✓	1	Member Block Shear
T7	100	Leg	A325X	1.000	6	20.952	54.517	0.384 ✓	1	Bolt Tension
		Diagonal	A325X	0.750	1	17.682	25.230	0.701 ✓	1	Member Bearing
		Horizontal	A325X	0.625	2	6.468	20.527	0.315 ✓	1	Member Block Shear
T8	91.6667	Diagonal	A325X	0.750	1	18.215	25.230	0.722 ✓	1	Member Bearing
		Horizontal	A325X	0.625	2	6.799	20.527	0.331 ✓	1	Member Block Shear
T9	83.3333	Diagonal	A325X	0.750	1	19.053	25.230	0.755 ✓	1	Member Bearing
		Horizontal	A325X	0.625	2	7.233	20.527	0.352 ✓	1	Member Block Shear
T10	75	Leg	A325X	1.000	8	22.967	54.517	0.421 ✓	1	Bolt Tension
		Diagonal	A325X	0.750	1	25.707	31.538	0.815 ✓	1	Member Bearing
		Horizontal	A325X	0.625	2	8.034	11.623	0.691 ✓	1	Member Block Shear
T11	50	Leg	A325X	1.000	8	30.583	54.517	0.561 ✓	1	Bolt Tension
		Diagonal	A325X	1.000	1	26.051	40.676	0.640 ✓	1	Member Block Shear
		Horizontal	A325X	0.625	2	8.414	11.623	0.724 ✓	1	Member Block Shear
T12	37.5	Diagonal	A325X	1.000	1	26.747	45.703	0.585 ✓	1	Member Block Shear
		Top Girt	A325X	0.625	2	8.861	23.245	0.381 ✓	1	Member Block Shear
T13	25	Leg	A325X	1.000	8	38.184	54.517	0.700 ✓	1	Bolt Tension
		Diagonal	A325X	1.000	1	27.268	45.703	0.597 ✓	1	Member Block Shear
		Horizontal	A325X	0.625	2	9.265	17.257	0.537 ✓	1	Bolt Shear
T14	12.5	Diagonal	A325X	1.000	1	27.226	45.703	0.596 ✓	1	Member Block Shear
		Top Girt	A325X	0.625	2	9.515	29.057	0.327 ✓	1	Member Block Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 175	Stainless P5x0.250	5.005	5.005	35.7 K=1.00	3.731	-2.698	152.928	0.018 [1] ✓

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	175 - 166.667	Stainless P5x0.250	8.342	8.342	59.5 K=1.00	3.731	-4.324	129.561	0.033 [1] ✔
T3	166.667 - 158.333	Stainless P5x0.250	8.342	8.342	59.5 K=1.00	3.731	-12.445	129.561	0.096 [1] ✔
T4	158.333 - 150	Stainless P5x0.250	8.342	8.342	59.5 K=1.00	3.731	-21.729	129.561	0.168 [1] ✔
T5	150 - 125	Stainless P5x0.300	25.027	4.171	30.1 K=1.00	4.430	-63.846	186.589	0.342 [1] ✔
T6	125 - 100	Stainless P5x0.400	25.027	4.171	30.7 K=1.00	5.781	-125.305	242.845	0.516 [1] ✔
T7	100 - 91.6667	Stainless P5x0.500	8.342	4.171	31.3 K=1.00	7.069	-147.198	296.141	0.497 [1] ✔
T8	91.6667 - 83.3333	1/3 Pipe w/ 5"x0.5 Stainless	8.342	4.171	32.1 K=1.00	9.027	-169.605	320.254	0.530 [1] ✔
T9	83.3333 - 75	1/3 Pipe w/ 5"x0.5 Stainless	8.342	4.171	32.1 K=1.00	9.027	-192.150	320.254	0.600 [1] ✔
T10	75 - 50	Stainless P6.875x0.400	25.027	6.257	32.7 K=1.00	8.137	-248.816	399.956	0.622 [1] ✔
T11	50 - 37.5	Stainless P6.875x0.500	12.513	6.257	33.2 K=1.00	10.014	-284.597	490.874	0.580 [1] ✔
T12	37.5 - 25	Stainless P6.875x0.500	12.513	6.257	33.2 K=1.00	10.014	-320.138	490.874	0.652 [1] ✔
T13	25 - 12.5	Stainless P6.875x0.500	12.513	6.257	33.2 K=1.00	10.014	-356.182	490.874	0.726 [1] ✔
T14	12.5 - 0	Stainless P6.875x0.500	12.513	6.257	33.2 K=1.00	10.014	-393.121	490.874	0.801 [1] ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 175	2L2 1/2x2x3/16x3/8	7.434	6.882	113.4 K=1.00	1.620	-2.304	32.407	0.071 [1] ✔
T2	175 - 166.667	2L2 1/2x2x3/16x3/8	10.174	9.540	156.4 K=1.00	1.620	-5.848	18.117	0.323 [1] ✔
T3	166.667 - 158.333	2L2 1/2x2x3/16x3/8	10.369	9.748	159.7 K=1.00	1.620	-6.238	17.421	0.358 [1] ✔
T4	158.333 - 150	2L2 1/2x2x3/16x3/8	10.570	9.961	163.0 K=1.00	1.620	-7.935	16.746	0.474 [1] ✔
T5	150 - 125	2L2 1/2x2x5/16x3/8	11.213	10.631	156.4 K=1.00	2.620	-15.721	30.219	0.520 [1] ✔
T6	125 - 100	2L3x2 1/2x1/4x3/8	11.905	11.343	150.5 K=1.00	2.630	-17.650	32.035	0.551 [1] ✔
T7	100 - 91.6667	2L3x2 1/2x1/4x3/8	12.145	11.588	153.7 K=1.00	2.630	-18.217	30.775	0.592 [1] ✔
T8	91.6667 - 83.3333	2L3x2 1/2x1/4x3/8	12.390	11.838	144.1 K=1.00	2.630	-18.865	34.813	0.542 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T9	83.3333 - 75	2L3x2 1/2x1/4x3/8	12.639	12.091	147.1 K=1.00	2.630	-19.829	33.452	0.593 [1]
T10	75 - 50	2L3 1/2x3 1/2x5/16x3/8	16.327	15.611	150.6 K=1.00	4.180	-27.000	51.371	0.526 [1]
T11	50 - 37.5	2L 'a' > 60.591 in - 291 2L3 1/2x3x5/16x3/8	16.653	15.887	146.7 K=1.00	3.870	-27.363	49.786	0.550 [1]
T12	37.5 - 25	2L3 1/2x3 1/2x5/16x3/8	16.988	16.231	156.6 K=1.00	4.180	-28.279	47.602	0.594 [1]
T13	25 - 12.5	2L 'a' > 62.998 in - 370 2L3 1/2x3 1/2x5/16x3/8	17.330	16.583	145.4 K=1.00	4.180	-28.839	54.945	0.525 [1]
T14	12.5 - 0	2L3 1/2x3 1/2x5/16x3/8	17.680	16.942	148.5 K=1.00	4.180	-28.715	52.756	0.544 [1]

[1] P_u / ϕP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	175 - 166.667	L2 1/2x2 1/2x3/16	11.000	5.094	122.7 K=0.99	0.902	-3.497	17.101	0.205 [1]
T5	150 - 125	L3x2 1/2x1/4	14.333	6.760	145.7 K=0.95	1.310	-10.165	17.668	0.575 [1]
T6	125 - 100	L3x3x5/16	16.333	7.760	149.1 K=0.94	1.780	-12.215	22.924	0.533 [1]
T7	100 - 91.6667	2L3x3x1/4	17.000	8.094	104.4 K=1.00	2.880	-12.844	68.122	0.189 [1]
T8	91.6667 - 83.3333	2L3x3x1/4	17.667	8.427	108.7 K=1.00	2.880	-13.522	65.133	0.208 [1]
T9	83.3333 - 75	2L3x3x1/4	18.333	8.760	113.0 K=1.00	2.880	-14.380	62.023	0.232 [1]
T10	75 - 50	L4x4x1/4	20.000	9.516	138.0 K=0.96	1.940	-16.257	29.137	0.558 [1]
T11	50 - 37.5	L4x4x1/4	21.000	10.016	143.8 K=0.95	1.940	-16.957	26.853	0.631 [1]
T13	25 - 12.5	L4x4x3/8	23.000	11.016	156.4 K=0.93	2.860	-18.529	33.454	0.554 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 175	L3x3x1/4	10.599	4.893	109.6 K=1.10	1.440	-1.994	32.261	0.062 [1] ✔
T3	166.667 - 158.333	L2 1/2x2 1/2x3/16	11.667	5.427	128.9 K=0.98	0.902	-3.642	15.549	0.234 [1] ✔
T4	158.333 - 150	L2 1/2x2 1/2x3/16	12.333	5.760	135.0 K=0.97	0.902	-4.838	14.163	0.342 [1] ✔
T12	37.5 - 25	2L4x4x1/4	22.000	10.516	100.9 K=1.00	3.880	-17.889	93.171	0.192 [1] ✔
T14	12.5 - 0	2L4x4x5/16	24.000	11.516	111.4 K=1.00	4.800	-19.260	105.319	0.183 [1] ✔

[1] P_u / ϕP_n controls

Redundant Horizontal (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T5	150 - 125	L2x2x3/16	3.417	3.208	108.9 K=1.11	0.715	-1.380	16.149	0.085 [1] ✔
T6	125 - 100	L2x2x3/16	4.083	3.875	119.0 K=1.01	0.715	-2.172	14.276	0.152 [1] ✔
T7	100 - 91.6667	L2x2x3/16	4.250	4.042	123.1 K=1.00	0.715	-2.552	13.476	0.189 [1] ✔
T8	91.6667 - 83.3333	L2x2x3/16	4.417	4.208	128.2 K=1.00	0.715	-2.940	12.457	0.236 [1] ✔
T9	83.3333 - 75	L2x2x3/16	4.583	4.375	133.2 K=1.00	0.715	-3.331	11.526	0.289 [1] ✔
T10	75 - 50	L2 1/2x2 1/2x3/16	5.000	4.714	117.1 K=1.03	0.902	-4.313	18.463	0.234 [1] ✔
T11	50 - 37.5	L2 1/2x2 1/2x3/16	5.250	4.964	120.3 K=1.00	0.902	-4.933	17.688	0.279 [1] ✔
T12	37.5 - 25	L2 1/2x2 1/2x3/16	5.500	5.214	126.4 K=1.00	0.902	-5.549	16.162	0.343 [1] ✔
T13	25 - 12.5	L2 1/2x2 1/2x3/16	5.750	5.464	132.4 K=1.00	0.902	-6.174	14.717	0.420 [1] ✔
T14	12.5 - 0	L2 1/2x2 1/2x3/16	6.000	5.714	138.5 K=1.00	0.902	-6.814	13.457	0.506 [1] ✔

[1] P_u / ϕP_n controls

Redundant Diagonal (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T5	150 - 125	L2x2x3/16	5.285	4.957	151.0	0.715	-1.090	8.980	0.121 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T6	125 - 100	L2x2x3/16	5.719	5.415	164.9 K=1.00	0.715	-1.521	7.523	0.202 [1]
T7	100 - 91.6667	L2x2x3/16	5.835	5.537	168.6 K=1.00	0.715	-1.752	7.196	0.243 [1]
T8	91.6667 - 83.3333	L2x2x3/16	5.953	5.661	172.4 K=1.00	0.715	-1.981	6.885	0.288 [1]
T9	83.3333 - 75	L2x2x3/16	6.073	5.786	176.2 K=1.00	0.715	-2.207	6.589	0.335 [1]
T10	75 - 50	L2 1/2x2 1/2x3/16	7.851	7.378	178.9 K=1.00	0.902	-3.386	8.070	0.420 [1]
T11	50 - 37.5	L2 1/2x2 1/2x3/16	8.005	7.547	183.0 K=1.00	0.902	-3.761	7.713	0.488 [1]
T12	37.5 - 25	L2 1/2x2 1/2x3/16	8.164	7.718	187.1 K=1.00	0.902	-4.119	7.374	0.559 [1]
T13	25 - 12.5	L2 1/2x2 1/2x3/16	8.327	7.893	191.3 K=1.00	0.902	-4.470	7.051	0.634 [1]
T14	12.5 - 0	L2 1/2x2 1/2x3/16	8.494	8.071	195.7 K=1.00	0.902	-4.823	6.744	0.715 [1]

[1] P_u / ϕP_n controls

Inner Bracing Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T5	150 - 125	L2 1/2x2x3/16	7.167	7.167	201.4 K=1.00	0.809	-0.008	5.708	0.001 [1]
T6	125 - 100	L2 1/2x2x3/16	8.167	8.167	229.5 K=1.00	0.809	-0.011	4.396	0.002 [1]
T7	100 - 91.6667	L2 1/2x2x3/16	8.500	8.500	238.9 K=1.00	0.809	-0.017	4.058	0.004 [1]
T8	91.6667 - 83.3333	L2 1/2x2x3/16	8.833	8.833	248.2 K=1.00	0.809	-0.017	3.757	0.004 [1]
T9	83.3333 - 75	L2 1/2x2x3/16	9.167	9.167	257.6 K=1.00	0.809	-0.017	3.489	0.005 [1]
T10	75 - 50	KL/R > 250 (C) - 279 L2 1/2x2 1/2x3/16	10.000	10.000	242.4 K=1.00	0.902	-0.018	4.393	0.004 [1]
T11	50 - 37.5	L2 1/2x2 1/2x3/16	10.500	10.500	254.5 K=1.00	0.902	-0.017	3.985	0.004 [1]
T12	37.5 - 25	KL/R > 250 (C) - 357 L2 1/2x2 1/2x3/16	11.000	11.000	266.7 K=1.00	0.902	-0.026	3.631	0.007 [1]
T13	25 - 12.5	KL/R > 250 (C) - 384 L3x3x1/4	11.500	11.500	233.1 K=1.00	1.440	-0.017	7.585	0.002 [1]
T14	12.5 - 0	L3x3x1/4	12.000	12.000	243.2 K=1.00	1.440	-0.025	6.966	0.004 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 175	Stainless P5x0.250	5.005	5.005	35.7	3.731	0.417	167.879	0.002 [1] ✔
T2	175 - 166.667	Stainless P5x0.250	8.342	8.342	59.5	3.731	2.293	167.879	0.014 [1] ✔
T3	166.667 - 158.333	Stainless P5x0.250	8.342	8.342	59.5	3.731	9.311	167.879	0.055 [1] ✔
T4	158.333 - 150	Stainless P5x0.250	8.342	8.342	59.5	3.731	17.252	167.879	0.103 [1] ✔
T5	150 - 125	Stainless P5x0.300	25.027	4.171	30.1	4.430	51.460	199.334	0.258 [1] ✔
T6	125 - 100	Stainless P5x0.400	25.027	4.171	30.7	5.781	106.305	260.124	0.409 [1] ✔
T7	100 - 91.6667	Stainless P5x0.500	8.342	4.171	31.3	7.069	125.712	318.086	0.395 [1] ✔
T8	91.6667 - 83.3333	1/3 Pipe w/ 5"x0.5 Stainless	8.342	4.171	32.1	9.027	145.319	341.202	0.426 [1] ✔
T9	83.3333 - 75	1/3 Pipe w/ 5"x0.5 Stainless	8.342	4.171	32.1	9.027	164.916	341.202	0.483 [1] ✔
T10	75 - 50	Stainless P6.875x0.400	25.027	6.257	32.7	8.137	213.864	439.383	0.487 [1] ✔
T11	50 - 37.5	Stainless P6.875x0.500	12.513	6.257	33.2	10.014	244.661	540.747	0.452 [1] ✔
T12	37.5 - 25	Stainless P6.875x0.500	12.513	6.257	33.2	10.014	275.013	540.747	0.509 [1] ✔
T13	25 - 12.5	Stainless P6.875x0.500	12.513	6.257	33.2	10.014	305.472	540.747	0.565 [1] ✔
T14	12.5 - 0	Stainless P6.875x0.500	12.513	6.257	33.2	10.014	336.511	540.747	0.622 [1] ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 175	2L2 1/2x2x3/16x3/8	7.434	6.882	108.2	0.969	2.182	42.147	0.052 [1] ✔
T2	175 - 166.667	2L2 1/2x2x3/16x3/8	10.174	9.540	148.5	0.969	5.741	42.147	0.136 [1] ✔
T3	166.667 - 158.333	2L2 1/2x2x3/16x3/8	10.369	9.748	151.6	0.969	6.126	42.147	0.145 [1] ✔
T4	158.333 - 150	2L2 1/2x2x3/16x3/8	10.570	9.961	154.8	0.969	7.818	42.147	0.185 [1] ✔
T5	150 - 125	2L2 1/2x2x5/16x3/8	11.213	10.631	138.0	1.555	15.350	67.636	0.227 [1] ✔
T6	125 - 100	2L3x2 1/2x1/4x3/8	11.905	11.343	123.3	1.644	17.202	71.530	0.240 [1] ✔
T7	100 - 91.6667	2L3x2 1/2x1/4x3/8	12.145	11.588	125.9	1.644	17.682	71.530	0.247 [1] ✔
T8	91.6667 - 83.3333	2L3x2 1/2x1/4x3/8	12.390	11.838	128.6	1.644	18.215	71.530	0.255 [1] ✔
T9	83.3333 - 75	2L3x2 1/2x1/4x3/8	12.639	12.091	131.3	1.644	19.053	71.530	0.266 [1] ✔
T10	75 - 50	2L3 1/2x3 1/2x5/16x3/8	16.327	15.611	119.1	2.725	25.707	118.531	0.217 [1] ✔
T11	50 - 37.5	2L 'a' > 60.591 in - 294 2L3 1/2x3x5/16x3/8	16.653	15.887	144.2	2.375	26.051	103.319	0.252 [1] ✔
T12	37.5 - 25	2L3 1/2x3 1/2x5/16x3/8	16.988	16.231	124.2	2.608	26.747	127.123	0.210 [1] ✔
T13	25 - 12.5	2L 'a' > 62.998 in - 373 2L3 1/2x3 1/2x5/16x3/8	17.330	16.583	126.9	2.608	27.268	127.123	0.214 [1] ✔
T14	12.5 - 0	2L3 1/2x3 1/2x5/16x3/8	17.680	16.942	129.6	2.608	27.226	127.123	0.214 [1] ✔

[1] P_u / ϕP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	175 - 166.667	L2 1/2x2 1/2x3/16	11.000	5.094	122.4	0.571	3.507	24.840	0.141 [1] ✔
T5	150 - 125	L3x2 1/2x1/4	14.333	6.760	111.1	0.842	10.174	36.622	0.278 [1] ✔
T6	125 - 100	L3x3x5/16	16.333	7.760	103.6	1.159	12.306	50.426	0.244 [1] ✔
T7	100 - 91.6667	2L3x3x1/4	17.000	8.094	107.0	1.879	12.936	81.726	0.158 [1] ✔
T8	91.6667 - 83.3333	2L3x3x1/4	17.667	8.427	111.3	1.879	13.598	81.726	0.166 [1] ✔
T9	83.3333 - 75	2L3x3x1/4	18.333	8.760	115.6	1.879	14.467	81.726	0.177 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T10	75 - 50	L4x4x1/4	20.000	9.516	93.3	1.314	16.068	57.175	0.281 [1] ✔
T11	50 - 37.5	L4x4x1/4	21.000	10.016	98.1	1.314	16.828	57.175	0.294 [1] ✔
T13	25 - 12.5	L4x4x3/8	23.000	11.016	109.4	1.934	18.482	94.285	0.196 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 175	L3x3x1/4	10.599	4.893	98.5	0.939	1.946	40.863	0.048 [1] ✔
T3	166.667 - 158.333	L2 1/2x2 1/2x3/16	11.667	5.427	130.1	0.571	3.680	24.840	0.148 [1] ✔
T4	158.333 - 150	L2 1/2x2 1/2x3/16	12.333	5.760	137.9	0.571	4.872	24.840	0.196 [1] ✔
T12	37.5 - 25	2L4x4x1/4	22.000	10.516	102.8	2.629	17.723	114.351	0.155 [1] ✔
T14	12.5 - 0	2L4x4x5/16	24.000	11.516	113.4	3.248	19.030	141.307	0.135 [1] ✔

[1] P_u / ϕP_n controls

Redundant Horizontal (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T5	150 - 125	L2x2x3/16	3.417	3.208	62.4	0.715	1.472	23.166	0.064 [1] ✔
T6	125 - 100	L2x2x3/16	4.083	3.875	75.4	0.715	2.172	23.166	0.094 [1] ✔
T7	100 - 91.6667	L2x2x3/16	4.250	4.042	78.6	0.715	2.552	23.166	0.110 [1] ✔
T8	91.6667 - 83.3333	L2x2x3/16	4.417	4.208	81.8	0.715	2.940	23.166	0.127 [1] ✔
T9	83.3333 - 75	L2x2x3/16	4.583	4.375	85.1	0.715	3.331	23.166	0.144 [1] ✔
T10	75 - 50	L2 1/2x2 1/2x3/16	5.000	4.714	72.7	0.902	4.313	29.225	0.148 [1] ✔
T11	50 - 37.5	L2 1/2x2 1/2x3/16	5.250	4.964	76.6	0.902	4.933	29.225	0.169 [1] ✔
T12	37.5 - 25	L2 1/2x2 1/2x3/16	5.500	5.214	80.4	0.902	5.549	29.225	0.190 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T13	25 - 12.5	L2 1/2x2 1/2x3/16	5.750	5.464	84.3	0.902	6.174	29.225	0.211 [1]
T14	12.5 - 0	L2 1/2x2 1/2x3/16	6.000	5.714	88.1	0.902	6.814	29.225	0.233 [1]

[1] P_u / ϕP_n controls

Redundant Diagonal (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T5	150 - 125	L2x2x3/16	5.285	4.957	96.4	0.715	1.116	23.166	0.048 [1]
T6	125 - 100	L2x2x3/16	5.496	5.192	101.0	0.715	1.592	23.166	0.069 [1]
T7	100 - 91.6667	L2x2x3/16	5.835	5.537	107.7	0.715	1.752	23.166	0.076 [1]
T8	91.6667 - 83.3333	L2x2x3/16	5.953	5.661	110.1	0.715	1.981	23.166	0.086 [1]
T9	83.3333 - 75	L2x2x3/16	6.073	5.786	112.5	0.715	2.207	23.166	0.095 [1]
T10	75 - 50	L2 1/2x2 1/2x3/16	7.703	7.230	111.5	0.902	3.497	29.225	0.120 [1]
T11	50 - 37.5	L2 1/2x2 1/2x3/16	8.005	7.547	116.4	0.902	3.761	29.225	0.129 [1]
T12	37.5 - 25	L2 1/2x2 1/2x3/16	8.164	7.718	119.1	0.902	4.119	29.225	0.141 [1]
T13	25 - 12.5	L2 1/2x2 1/2x3/16	8.327	7.893	121.7	0.902	4.470	29.225	0.153 [1]
T14	12.5 - 0	L2 1/2x2 1/2x3/16	8.494	8.071	124.5	0.902	4.823	29.225	0.165 [1]

[1] P_u / ϕP_n controls

Inner Bracing Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T5	150 - 125	L2 1/2x2x3/16	7.167	7.167	143.4	0.809	0.004	26.212	0.000 [1]
T6	125 - 100	L2 1/2x2x3/16	7.500	7.500	150.1	0.809	0.006	26.212	0.000 [1]
T7	100 - 91.6667	L2 1/2x2x3/16	8.500	8.500	170.1	0.809	0.011	26.212	0.000 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T8	91.6667 - 83.3333	L2 1/2x2x3/16	8.833	8.833	176.7	0.809	0.010	26.212	0.000 [1]
T9	83.3333 - 75	L2 1/2x2x3/16	9.167	9.167	183.4	0.809	0.010	26.212	0.000 [1]
T10	75 - 50	L2 1/2x2 1/2x3/16	9.500	9.500	146.5	0.902	0.009	29.225	0.000 [1]
T11	50 - 37.5	L2 1/2x2 1/2x3/16	10.500	10.500	162.0	0.902	0.008	29.225	0.000 [1]
T12	37.5 - 25	L2 1/2x2 1/2x3/16	11.000	11.000	169.7	0.902	0.014	29.225	0.000 [1]
T13	25 - 12.5	L3x3x1/4	11.500	11.500	148.4	1.440	0.005	46.656	0.000 [1]
T14	12.5 - 0	L3x3x1/4	12.000	12.000	154.8	1.440	0.011	46.656	0.000 [1]

[1] P_u / ϕP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	180 - 175	Leg	Stainless P5x0.250	1	-1.823	152.928	2.9	Pass
		Leg	Stainless P5x0.250	2	-2.030	152.928	3.1	Pass
		Leg	Stainless P5x0.250	3	-2.698	152.928	3.6	Pass
T2	175 - 166.667	Leg	Stainless P5x0.250	13	-4.152	129.561	3.2	Pass
		Leg	Stainless P5x0.250	14	-4.293	129.561	3.3	Pass
		Leg	Stainless P5x0.250	15	-4.324	129.561	3.3	Pass
T3	166.667 - 158.333	Leg	Stainless P5x0.250	25	-12.445	129.561	9.6	Pass
		Leg	Stainless P5x0.250	26	-12.333	129.561	9.5	Pass
		Leg	Stainless P5x0.250	27	-12.321	129.561	9.5	Pass
T4	158.333 - 150	Leg	Stainless P5x0.250	37	-21.436	129.561	16.5	Pass
		Leg	Stainless P5x0.250	38	-21.229	129.561	16.4	Pass
		Leg	Stainless P5x0.250	39	-21.729	129.561	16.8	Pass
T5	150 - 125	Leg	Stainless P5x0.300	49	-63.624	186.589	34.1	Pass
		Leg	Stainless P5x0.300	50	-63.388	186.589	34.0	Pass
		Leg	Stainless P5x0.300	51	-63.846	186.589	34.2	Pass
T6	125 - 100	Leg	Stainless P5x0.400	124	-125.305	242.845	51.6	Pass
		Leg	Stainless P5x0.400	125	-124.929	242.845	51.4	Pass
		Leg	Stainless P5x0.400	126	-125.269	242.845	51.6	Pass
T7	100 - 91.6667	Leg	Stainless P5x0.500	199	-147.198	296.141	49.7	Pass
		Leg	Stainless P5x0.500	200	-146.821	296.141	49.6	Pass
		Leg	Stainless P5x0.500	201	-147.133	296.141	49.7	Pass
T8	91.6667 - 83.3333	Leg	1/3 Pipe w/ 5"x0.5 Stainless	226	-169.605	320.254	53.0	Pass
		Leg	1/3 Pipe w/ 5"x0.5 Stainless	227	-169.228	320.254	52.8	Pass
		Leg	1/3 Pipe w/ 5"x0.5 Stainless	228	-169.579	320.254	53.0	Pass
T9	83.3333 - 75	Leg	1/3 Pipe w/ 5"x0.5 Stainless	253	-192.150	320.254	60.0	Pass
		Leg	1/3 Pipe w/ 5"x0.5 Stainless	254	-191.690	320.254	59.9	Pass
		Leg	1/3 Pipe w/ 5"x0.5 Stainless	255	-192.127	320.254	60.0	Pass
T10	75 - 50	Leg	Stainless P6.875x0.400	280	-248.816	399.956	62.2	Pass
		Leg	Stainless P6.875x0.400	281	-248.345	399.956	62.1	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
		Leg	Stainless P6.875x0.400	282	-248.726	399.956	62.2	Pass
T11	50 - 37.5	Leg	Stainless P6.875x0.500	331	-284.597	490.874	58.0	Pass
		Leg	Stainless P6.875x0.500	332	-284.120	490.874	57.9	Pass
		Leg	Stainless P6.875x0.500	333	-284.475	490.874	58.0	Pass
T12	37.5 - 25	Leg	Stainless P6.875x0.500	358	-320.138	490.874	65.2	Pass
		Leg	Stainless P6.875x0.500	359	-319.655	490.874	65.1	Pass
		Leg	Stainless P6.875x0.500	360	-320.118	490.874	65.2	Pass
T13	25 - 12.5	Leg	Stainless P6.875x0.500	385	-356.085	490.874	72.5	Pass
		Leg	Stainless P6.875x0.500	386	-355.594	490.874	72.4	Pass
		Leg	Stainless P6.875x0.500	387	-356.182	490.874	72.6	Pass
T14	12.5 - 0	Leg	Stainless P6.875x0.500	412	-393.039	490.874	80.1	Pass
		Leg	Stainless P6.875x0.500	413	-392.555	490.874	80.0	Pass
		Leg	Stainless P6.875x0.500	414	-393.121	490.874	80.1	Pass
T1	180 - 175	Diagonal	2L2 1/2x2x3/16x3/8	7	-1.230	32.407	3.8 6.2 (b)	Pass
		Diagonal	2L2 1/2x2x3/16x3/8	8	-1.230	32.407	3.8 6.2 (b)	Pass
		Diagonal	2L2 1/2x2x3/16x3/8	9	-2.219	32.407	6.8 11.6 (b)	Pass
		Diagonal	2L2 1/2x2x3/16x3/8	10	-2.195	32.407	6.8 11.7 (b)	Pass
		Diagonal	2L2 1/2x2x3/16x3/8	11	-2.284	32.407	7.0 12.2 (b)	Pass
		Diagonal	2L2 1/2x2x3/16x3/8	12	-2.304	32.407	7.1 12.1 (b)	Pass
T2	175 - 166.667	Diagonal	2L2 1/2x2x3/16x3/8	17	-4.948	18.117	27.3	Pass
		Diagonal	2L2 1/2x2x3/16x3/8	18	-4.933	18.117	27.2	Pass
		Diagonal	2L2 1/2x2x3/16x3/8	20	-5.848	18.117	32.3	Pass
		Diagonal	2L2 1/2x2x3/16x3/8	21	-5.843	18.117	32.3	Pass
		Diagonal	2L2 1/2x2x3/16x3/8	23	-5.386	18.117	29.7	Pass
		Diagonal	2L2 1/2x2x3/16x3/8	24	-5.406	18.117	29.8	Pass
T3	166.667 - 158.333	Diagonal	2L2 1/2x2x3/16x3/8	31	-5.992	17.421	34.4	Pass
		Diagonal	2L2 1/2x2x3/16x3/8	32	-5.987	17.421	34.4	Pass
		Diagonal	2L2 1/2x2x3/16x3/8	33	-6.114	17.421	35.1	Pass
		Diagonal	2L2 1/2x2x3/16x3/8	34	-6.117	17.421	35.1	Pass
		Diagonal	2L2 1/2x2x3/16x3/8	35	-6.235	17.421	35.8	Pass
		Diagonal	2L2 1/2x2x3/16x3/8	36	-6.238	17.421	35.8	Pass
T4	158.333 - 150	Diagonal	2L2 1/2x2x3/16x3/8	43	-6.561	16.746	39.2	Pass
		Diagonal	2L2 1/2x2x3/16x3/8	44	-6.568	16.746	39.2	Pass
		Diagonal	2L2 1/2x2x3/16x3/8	45	-7.416	16.746	44.3	Pass
		Diagonal	2L2 1/2x2x3/16x3/8	46	-7.345	16.746	43.9	Pass
		Diagonal	2L2 1/2x2x3/16x3/8	47	-7.928	16.746	47.3	Pass
		Diagonal	2L2 1/2x2x3/16x3/8	48	-7.935	16.746	47.4	Pass
T5	150 - 125	Diagonal	2L2 1/2x2x5/16x3/8	53	-13.954	30.219	46.2	Pass
		Diagonal	2L2 1/2x2x5/16x3/8	56	-13.960	30.219	46.2	Pass
		Diagonal	2L2 1/2x2x5/16x3/8	60	-15.208	30.219	50.3	Pass
		Diagonal	2L2 1/2x2x5/16x3/8	63	-15.105	30.219	50.0	Pass
		Diagonal	2L2 1/2x2x5/16x3/8	67	-15.713	30.219	52.0	Pass
		Diagonal	2L2 1/2x2x5/16x3/8	70	-15.721	30.219	52.0	Pass
		Diagonal	2L2 1/2x2x5/16x3/8	77	-12.069	31.150	38.7 39.4 (b)	Pass
		Diagonal	2L2 1/2x2x5/16x3/8	80	-12.076	31.150	38.8 39.4 (b)	Pass
		Diagonal	2L2 1/2x2x5/16x3/8	84	-13.144	31.150	42.2 42.9 (b)	Pass
		Diagonal	2L2 1/2x2x5/16x3/8	87	-13.130	31.150	42.1 42.9 (b)	Pass
		Diagonal	2L2 1/2x2x5/16x3/8	91	-13.820	31.150	44.4 45.2 (b)	Pass
		Diagonal	2L2 1/2x2x5/16x3/8	94	-13.828	31.150	44.4	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	øP$_{allow}$ K	% Capacity	Pass Fail
							45.2 (b)	
		Diagonal	2L2 1/2x2x5/16x3/8	101	-9.410	32.093	29.3	Pass
							30.6 (b)	
		Diagonal	2L2 1/2x2x5/16x3/8	104	-9.418	32.093	29.3	Pass
							30.6 (b)	
		Diagonal	2L2 1/2x2x5/16x3/8	108	-10.454	32.093	32.6	Pass
							33.8 (b)	
		Diagonal	2L2 1/2x2x5/16x3/8	111	-10.374	32.093	32.3	Pass
							33.9 (b)	
		Diagonal	2L2 1/2x2x5/16x3/8	115	-11.131	32.093	34.7	Pass
							36.3 (b)	
		Diagonal	2L2 1/2x2x5/16x3/8	118	-11.138	32.093	34.7	Pass
							36.3 (b)	
T6	125 - 100	Diagonal	2L3x2 1/2x1/4x3/8	128	-16.465	32.035	51.4	Pass
							63.5 (b)	
		Diagonal	2L3x2 1/2x1/4x3/8	131	-16.476	32.035	51.4	Pass
							63.5 (b)	
		Diagonal	2L3x2 1/2x1/4x3/8	135	-17.574	32.035	54.9	Pass
							67.3 (b)	
		Diagonal	2L3x2 1/2x1/4x3/8	138	-17.433	32.035	54.4	Pass
							67.4 (b)	
		Diagonal	2L3x2 1/2x1/4x3/8	142	-17.650	32.035	55.1	Pass
							68.2 (b)	
		Diagonal	2L3x2 1/2x1/4x3/8	145	-17.648	32.035	55.1	Pass
							68.2 (b)	
		Diagonal	2L3x2 1/2x1/4x3/8	152	-15.690	32.865	47.7	Pass
							60.5 (b)	
		Diagonal	2L3x2 1/2x1/4x3/8	155	-15.703	32.865	47.8	Pass
							60.5 (b)	
		Diagonal	2L3x2 1/2x1/4x3/8	159	-16.754	32.865	51.0	Pass
							64.2 (b)	
		Diagonal	2L3x2 1/2x1/4x3/8	162	-16.617	32.865	50.6	Pass
							64.2 (b)	
		Diagonal	2L3x2 1/2x1/4x3/8	166	-17.114	32.865	52.1	Pass
							66.1 (b)	
		Diagonal	2L3x2 1/2x1/4x3/8	169	-17.112	32.865	52.1	Pass
							66.1 (b)	
		Diagonal	2L3x2 1/2x1/4x3/8	176	-14.728	33.703	43.7	Pass
							56.8 (b)	
		Diagonal	2L3x2 1/2x1/4x3/8	179	-14.746	33.703	43.8	Pass
							56.8 (b)	
		Diagonal	2L3x2 1/2x1/4x3/8	183	-15.828	33.703	47.0	Pass
							60.4 (b)	
		Diagonal	2L3x2 1/2x1/4x3/8	186	-15.650	33.703	46.4	Pass
							60.5 (b)	
		Diagonal	2L3x2 1/2x1/4x3/8	190	-16.538	33.703	49.1	Pass
							63.9 (b)	
		Diagonal	2L3x2 1/2x1/4x3/8	193	-16.535	33.703	49.1	Pass
							63.9 (b)	
T7	100 - 91.6667	Diagonal	2L3x2 1/2x1/4x3/8	203	-17.043	30.775	55.4	Pass
							65.5 (b)	
		Diagonal	2L3x2 1/2x1/4x3/8	206	-17.054	30.775	55.4	Pass
							65.5 (b)	
		Diagonal	2L3x2 1/2x1/4x3/8	210	-18.217	30.775	59.2	Pass
							69.5 (b)	
		Diagonal	2L3x2 1/2x1/4x3/8	213	-18.059	30.775	58.7	Pass
							69.6 (b)	
		Diagonal	2L3x2 1/2x1/4x3/8	217	-18.200	30.775	59.1	Pass
							70.1 (b)	
		Diagonal	2L3x2 1/2x1/4x3/8	220	-18.198	30.775	59.1	Pass
							70.1 (b)	

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	øP$_{allow}$ K	% Capacity	Pass Fail
T8	91.6667 - 83.3333	Diagonal	2L3x2 1/2x1/4x3/8	230	-17.539	34.813	50.4 67.5 (b)	Pass
		Diagonal	2L3x2 1/2x1/4x3/8	233	-17.550	34.813	50.4 67.4 (b)	Pass
		Diagonal	2L3x2 1/2x1/4x3/8	237	-18.865	34.813	54.2 71.9 (b)	Pass
		Diagonal	2L3x2 1/2x1/4x3/8	240	-18.677	34.813	53.7 72.0 (b)	Pass
		Diagonal	2L3x2 1/2x1/4x3/8	244	-18.744	34.813	53.8 72.2 (b)	Pass
		Diagonal	2L3x2 1/2x1/4x3/8	247	-18.744	34.813	53.8 72.2 (b)	Pass
T9	83.3333 - 75	Diagonal	2L3x2 1/2x1/4x3/8	257	-18.345	33.452	54.8 70.5 (b)	Pass
		Diagonal	2L3x2 1/2x1/4x3/8	260	-18.358	33.452	54.9 70.4 (b)	Pass
		Diagonal	2L3x2 1/2x1/4x3/8	264	-19.829	33.452	59.3 75.1 (b)	Pass
		Diagonal	2L3x2 1/2x1/4x3/8	267	-19.523	33.452	58.4 75.1 (b)	Pass
		Diagonal	2L3x2 1/2x1/4x3/8	271	-19.636	33.452	58.7 75.5 (b)	Pass
		Diagonal	2L3x2 1/2x1/4x3/8	274	-19.635	33.452	58.7 75.5 (b)	Pass
T10	75 - 50	Diagonal	2L3 1/2x3 1/2x5/16x3/8	284	-24.887	51.371	48.4 76.5 (b)	Pass
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	287	-24.902	51.371	48.5 76.4 (b)	Pass
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	291	-27.000	51.371	52.6 81.5 (b)	Pass
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	294	-26.475	51.371	51.5 81.5 (b)	Pass
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	298	-26.460	51.371	51.5 81.4 (b)	Pass
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	301	-26.457	51.371	51.5 81.4 (b)	Pass
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	308	-24.035	52.611	45.7 74.0 (b)	Pass
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	311	-24.050	52.611	45.7 73.9 (b)	Pass
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	315	-26.049	52.611	49.5 78.8 (b)	Pass
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	318	-25.582	52.611	48.6 78.9 (b)	Pass
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	322	-25.644	52.611	48.7 79.0 (b)	Pass
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	325	-25.642	52.611	48.7 79.0 (b)	Pass
T11	50 - 37.5	Diagonal	2L3 1/2x3x5/16x3/8	335	-25.220	49.786	50.7 60.1 (b)	Pass
		Diagonal	2L3 1/2x3x5/16x3/8	338	-25.235	49.786	50.7 60.1 (b)	Pass
		Diagonal	2L3 1/2x3x5/16x3/8	342	-27.363	49.786	55.0 64.0 (b)	Pass
		Diagonal	2L3 1/2x3x5/16x3/8	345	-26.814	49.786	53.9 64.0 (b)	Pass
		Diagonal	2L3 1/2x3x5/16x3/8	349	-26.735	49.786	53.7 63.8 (b)	Pass
		Diagonal	2L3 1/2x3x5/16x3/8	352	-26.732	49.786	53.7 63.8 (b)	Pass
T12	37.5 - 25	Diagonal	2L3 1/2x3 1/2x5/16x3/8	364	-26.007	47.602	54.6	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
							54.8 (b)	
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	367	-26.022	47.602	54.7	Pass
							54.8 (b)	
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	370	-28.279	47.602	59.4	Pass
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	373	-27.694	47.602	58.2	Pass
							58.5 (b)	
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	376	-27.562	47.602	57.9	Pass
							58.2 (b)	
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	379	-27.559	47.602	57.9	Pass
							58.2 (b)	
T13	25 - 12.5	Diagonal	2L3 1/2x3 1/2x5/16x3/8	389	-26.320	54.945	47.9	Pass
							55.5 (b)	
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	392	-26.336	54.945	47.9	Pass
							55.5 (b)	
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	396	-28.839	54.945	52.5	Pass
							59.6 (b)	
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	399	-28.208	54.945	51.3	Pass
							59.7 (b)	
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	403	-28.036	54.945	51.0	Pass
							59.2 (b)	
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	406	-28.039	54.945	51.0	Pass
							59.2 (b)	
T14	12.5 - 0	Diagonal	2L3 1/2x3 1/2x5/16x3/8	418	-26.314	52.756	49.9	Pass
							55.3 (b)	
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	421	-26.330	52.756	49.9	Pass
							55.3 (b)	
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	424	-28.715	52.756	54.4	Pass
							59.5 (b)	
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	427	-28.244	52.756	53.5	Pass
							59.6 (b)	
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	430	-28.052	52.756	53.2	Pass
							59.1 (b)	
		Diagonal	2L3 1/2x3 1/2x5/16x3/8	433	-28.055	52.756	53.2	Pass
							59.1 (b)	
T2	175 - 166.667	Horizontal	L2 1/2x2 1/2x3/16	16	-3.026	17.101	17.7	Pass
							20.8 (b)	
		Horizontal	L2 1/2x2 1/2x3/16	19	-3.497	17.101	20.5	Pass
							24.4 (b)	
		Horizontal	L2 1/2x2 1/2x3/16	22	-3.324	17.101	19.4	Pass
							23.0 (b)	
T5	150 - 125	Horizontal	L3x2 1/2x1/4	52	-8.889	17.668	50.3	Pass
		Horizontal	L3x2 1/2x1/4	59	-9.999	17.668	56.6	Pass
		Horizontal	L3x2 1/2x1/4	66	-10.165	17.668	57.5	Pass
		Horizontal	L3x2 1/2x1/4	76	-6.997	19.156	36.5	Pass
		Horizontal	L3x2 1/2x1/4	83	-8.015	19.156	41.8	Pass
		Horizontal	L3x2 1/2x1/4	90	-8.246	19.156	43.0	Pass
		Horizontal	L3x2 1/2x1/4	100	-5.581	20.840	26.8	Pass
		Horizontal	L3x2 1/2x1/4	107	-6.507	20.840	31.2	Pass
		Horizontal	L3x2 1/2x1/4	114	-6.795	20.840	32.6	Pass
							32.9 (b)	
T6	125 - 100	Horizontal	L3x3x5/16	127	-11.363	22.924	49.6	Pass
		Horizontal	L3x3x5/16	134	-12.186	22.924	53.2	Pass
		Horizontal	L3x3x5/16	141	-12.215	22.924	53.3	Pass
		Horizontal	L3x3x5/16	151	-10.524	24.603	42.8	Pass
		Horizontal	L3x3x5/16	158	-11.344	24.603	46.1	Pass
		Horizontal	L3x3x5/16	165	-11.663	24.603	47.4	Pass
		Horizontal	L3x3x5/16	175	-9.725	26.472	36.7	Pass
							38.1 (b)	
		Horizontal	L3x3x5/16	182	-10.640	26.472	40.2	Pass
							41.0 (b)	
		Horizontal	L3x3x5/16	189	-11.013	26.472	41.6	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
							43.1 (b)	
T7	100 - 91.6667	Horizontal	2L3x3x1/4	202	-11.955	68.122	17.6	Pass
							29.4 (b)	
		Horizontal	2L3x3x1/4	209	-12.844	68.122	18.9	Pass
							31.3 (b)	
		Horizontal	2L3x3x1/4	216	-12.840	68.122	18.8	Pass
							31.5 (b)	
T8	91.6667 - 83.3333	Horizontal	2L3x3x1/4	229	-12.531	65.133	19.2	Pass
							30.9 (b)	
		Horizontal	2L3x3x1/4	236	-13.522	65.133	20.8	Pass
							33.0 (b)	
		Horizontal	2L3x3x1/4	243	-13.451	65.133	20.7	Pass
							33.1 (b)	
T9	83.3333 - 75	Horizontal	2L3x3x1/4	256	-13.288	62.023	21.4	Pass
							32.8 (b)	
		Horizontal	2L3x3x1/4	263	-14.380	62.023	23.2	Pass
							35.1 (b)	
		Horizontal	2L3x3x1/4	270	-14.294	62.023	23.0	Pass
							35.2 (b)	
T10	75 - 50	Horizontal	L4x4x1/4	283	-14.934	29.137	51.3	Pass
							64.6 (b)	
		Horizontal	L4x4x1/4	290	-16.257	29.137	55.8	Pass
							69.1 (b)	
		Horizontal	L4x4x1/4	297	-15.969	29.137	54.8	Pass
							69.1 (b)	
		Horizontal	L4x4x1/4	307	-14.174	31.725	44.7	Pass
							61.6 (b)	
		Horizontal	L4x4x1/4	314	-15.387	31.725	48.5	Pass
							65.9 (b)	
		Horizontal	L4x4x1/4	321	-15.206	31.725	47.9	Pass
							66.0 (b)	
T11	50 - 37.5	Horizontal	L4x4x1/4	334	-15.616	26.853	58.2	Pass
							67.7 (b)	
		Horizontal	L4x4x1/4	341	-16.957	26.853	63.1	Pass
							72.4 (b)	
		Horizontal	L4x4x1/4	348	-16.651	26.853	62.0	Pass
							72.1 (b)	
T13	25 - 12.5	Horizontal	L4x4x3/8	388	-16.946	33.454	50.7	Pass
		Horizontal	L4x4x3/8	395	-18.529	33.454	55.4	Pass
		Horizontal	L4x4x3/8	402	-18.135	33.454	54.2	Pass
T1	180 - 175	Top Girt	L3x3x1/4	4	-1.204	32.261	3.7	Pass
							5.8 (b)	
		Top Girt	L3x3x1/4	5	-1.947	32.261	6.0	Pass
							9.3 (b)	
		Top Girt	L3x3x1/4	6	-1.994	32.261	6.2	Pass
							9.5 (b)	
T3	166.667 - 158.333	Top Girt	L2 1/2x2 1/2x3/16	28	-3.497	15.549	22.5	Pass
							24.6 (b)	
		Top Girt	L2 1/2x2 1/2x3/16	29	-3.623	15.549	23.3	Pass
							25.1 (b)	
		Top Girt	L2 1/2x2 1/2x3/16	30	-3.642	15.549	23.4	Pass
							25.6 (b)	
T4	158.333 - 150	Top Girt	L2 1/2x2 1/2x3/16	40	-3.962	14.163	28.0	Pass
		Top Girt	L2 1/2x2 1/2x3/16	41	-4.631	14.163	32.7	Pass
		Top Girt	L2 1/2x2 1/2x3/16	42	-4.838	14.163	34.2	Pass
T12	37.5 - 25	Top Girt	2L4x4x1/4	361	-16.447	93.171	17.7	Pass
							35.6 (b)	
		Top Girt	2L4x4x1/4	362	-17.889	93.171	19.2	Pass
							38.1 (b)	
		Top Girt	2L4x4x1/4	363	-17.518	93.171	18.8	Pass
							37.9 (b)	

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T14	12.5 - 0	Top Girt	2L4x4x5/16	415	-17.460	105.319	16.6 30.3 (b)	Pass
		Top Girt	2L4x4x5/16	416	-19.260	105.319	18.3 32.7 (b)	Pass
		Top Girt	2L4x4x5/16	417	-18.719	105.319	17.8 32.5 (b)	Pass
T5	150 - 125	Redund Horz 1 Bracing	L2x2x3/16	54	-1.103	15.696	7.0	Pass
		Redund Horz 1 Bracing	L2x2x3/16	57	-1.099	15.696	7.0	Pass
		Redund Horz 1 Bracing	L2x2x3/16	61	-1.099	15.696	7.0	Pass
		Redund Horz 1 Bracing	L2x2x3/16	64	-1.107	15.696	7.1	Pass
		Redund Horz 1 Bracing	L2x2x3/16	68	-1.107	15.696	7.1	Pass
		Redund Horz 1 Bracing	L2x2x3/16	71	-1.103	15.696	7.0	Pass
		Redund Horz 1 Bracing	L2x2x3/16	78	-1.378	16.149	8.5	Pass
		Redund Horz 1 Bracing	L2x2x3/16	81	-1.380	16.149	8.5	Pass
		Redund Horz 1 Bracing	L2x2x3/16	85	-1.352	16.149	8.4	Pass
		Redund Horz 1 Bracing	L2x2x3/16	88	-1.348	16.149	8.3	Pass
		Redund Horz 1 Bracing	L2x2x3/16	92	-1.301	16.149	8.1	Pass
		Redund Horz 1 Bracing	L2x2x3/16	95	-1.304	16.149	8.1	Pass
		Redund Horz 1 Bracing	L2x2x3/16	102	-1.103	16.591	6.6	Pass
		Redund Horz 1 Bracing	L2x2x3/16	105	-1.099	16.591	6.6	Pass
		Redund Horz 1 Bracing	L2x2x3/16	109	-1.099	16.591	6.6	Pass
		Redund Horz 1 Bracing	L2x2x3/16	112	-1.107	16.591	6.7	Pass
		Redund Horz 1 Bracing	L2x2x3/16	116	-1.107	16.591	6.7	Pass
		Redund Horz 1 Bracing	L2x2x3/16	119	-1.103	16.591	6.6	Pass
T6	125 - 100	Redund Horz 1 Bracing	L2x2x3/16	129	-2.172	14.276	15.2	Pass
		Redund Horz 1 Bracing	L2x2x3/16	132	-2.166	14.276	15.2	Pass
		Redund Horz 1 Bracing	L2x2x3/16	136	-2.166	14.276	15.2	Pass
		Redund Horz 1 Bracing	L2x2x3/16	139	-2.171	14.276	15.2	Pass
		Redund Horz 1 Bracing	L2x2x3/16	143	-2.171	14.276	15.2	Pass
		Redund Horz 1 Bracing	L2x2x3/16	146	-2.172	14.276	15.2	Pass
		Redund Horz 1 Bracing	L2x2x3/16	153	-2.172	14.760	14.7	Pass
		Redund Horz 1 Bracing	L2x2x3/16	156	-2.166	14.760	14.7	Pass
		Redund Horz 1 Bracing	L2x2x3/16	160	-2.166	14.760	14.7	Pass
		Redund Horz 1	L2x2x3/16	163	-2.171	14.760	14.7	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
		Bracing Redund Horz 1	L2x2x3/16	167	-2.171	14.760	14.7	Pass
		Bracing Redund Horz 1	L2x2x3/16	170	-2.172	14.760	14.7	Pass
		Bracing Redund Horz 1	L2x2x3/16	177	-2.172	15.233	14.3	Pass
		Bracing Redund Horz 1	L2x2x3/16	180	-2.166	15.233	14.2	Pass
		Bracing Redund Horz 1	L2x2x3/16	184	-2.166	15.233	14.2	Pass
		Bracing Redund Horz 1	L2x2x3/16	187	-2.171	15.233	14.3	Pass
		Bracing Redund Horz 1	L2x2x3/16	191	-2.171	15.233	14.3	Pass
		Bracing Redund Horz 1	L2x2x3/16	194	-2.172	15.233	14.3	Pass
T7	100 - 91.6667	Bracing Redund Horz 1	L2x2x3/16	204	-2.552	13.476	18.9	Pass
		Bracing Redund Horz 1	L2x2x3/16	207	-2.545	13.476	18.9	Pass
		Bracing Redund Horz 1	L2x2x3/16	211	-2.545	13.476	18.9	Pass
		Bracing Redund Horz 1	L2x2x3/16	214	-2.550	13.476	18.9	Pass
		Bracing Redund Horz 1	L2x2x3/16	218	-2.550	13.476	18.9	Pass
		Bracing Redund Horz 1	L2x2x3/16	221	-2.552	13.476	18.9	Pass
T8	91.6667 - 83.3333	Bracing Redund Horz 1	L2x2x3/16	231	-2.940	12.457	23.6	Pass
		Bracing Redund Horz 1	L2x2x3/16	234	-2.933	12.457	23.5	Pass
		Bracing Redund Horz 1	L2x2x3/16	238	-2.933	12.457	23.5	Pass
		Bracing Redund Horz 1	L2x2x3/16	241	-2.940	12.457	23.6	Pass
		Bracing Redund Horz 1	L2x2x3/16	245	-2.940	12.457	23.6	Pass
		Bracing Redund Horz 1	L2x2x3/16	248	-2.940	12.457	23.6	Pass
T9	83.3333 - 75	Bracing Redund Horz 1	L2x2x3/16	258	-3.331	11.526	28.9	Pass
		Bracing Redund Horz 1	L2x2x3/16	261	-3.323	11.526	28.8	Pass
		Bracing Redund Horz 1	L2x2x3/16	265	-3.323	11.526	28.8	Pass
		Bracing Redund Horz 1	L2x2x3/16	268	-3.330	11.526	28.9	Pass
		Bracing Redund Horz 1	L2x2x3/16	272	-3.330	11.526	28.9	Pass
		Bracing Redund Horz 1	L2x2x3/16	275	-3.331	11.526	28.9	Pass
T10	75 - 50	Bracing Redund Horz 1	L2 1/2x2 1/2x3/16	285	-4.313	18.463	23.4	Pass
		Bracing Redund Horz 1	L2 1/2x2 1/2x3/16	288	-4.305	18.463	23.3	Pass
		Bracing Redund Horz 1	L2 1/2x2 1/2x3/16	292	-4.305	18.463	23.3	Pass
		Bracing Redund Horz 1	L2 1/2x2 1/2x3/16	295	-4.311	18.463	23.4	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	299	-4.311	18.463	23.4	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	302	-4.313	18.463	23.4	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	309	-4.313	19.178	22.5	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	312	-4.305	19.178	22.4	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	316	-4.305	19.178	22.4	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	319	-4.311	19.178	22.5	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	323	-4.311	19.178	22.5	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	326	-4.313	19.178	22.5	Pass
T11	50 - 37.5	Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	336	-4.933	17.688	27.9	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	339	-4.925	17.688	27.8	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	343	-4.925	17.688	27.8	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	346	-4.931	17.688	27.9	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	350	-4.931	17.688	27.9	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	353	-4.933	17.688	27.9	Pass
T12	37.5 - 25	Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	365	-5.549	16.162	34.3	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	368	-5.541	16.162	34.3	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	371	-5.541	16.162	34.3	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	374	-5.549	16.162	34.3	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	377	-5.549	16.162	34.3	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	380	-5.549	16.162	34.3	Pass
T13	25 - 12.5	Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	390	-6.173	14.717	41.9	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	393	-6.164	14.717	41.9	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	397	-6.164	14.717	41.9	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	400	-6.174	14.717	42.0	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	404	-6.174	14.717	42.0	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	407	-6.173	14.717	41.9	Pass
T14	12.5 - 0	Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	419	-6.813	13.457	50.6	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	422	-6.805	13.457	50.6	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	425	-6.805	13.457	50.6	Pass
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	428	-6.814	13.457	50.6	Pass
		Redund Horz 1	L2 1/2x2 1/2x3/16	431	-6.814	13.457	50.6	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
		Bracing						
		Redund Horz 1 Bracing	L2 1/2x2 1/2x3/16	434	-6.813	13.457	50.6	Pass
T5	150 - 125	Redund Diag 1 Bracing	L2x2x3/16	55	-0.829	8.614	9.6	Pass
		Redund Diag 1 Bracing	L2x2x3/16	58	-0.826	8.614	9.6	Pass
		Redund Diag 1 Bracing	L2x2x3/16	62	-0.826	8.614	9.6	Pass
		Redund Diag 1 Bracing	L2x2x3/16	65	-0.832	8.614	9.7	Pass
		Redund Diag 1 Bracing	L2x2x3/16	69	-0.832	8.614	9.7	Pass
		Redund Diag 1 Bracing	L2x2x3/16	72	-0.829	8.614	9.6	Pass
		Redund Diag 1 Bracing	L2x2x3/16	79	-1.090	8.980	12.1	Pass
		Redund Diag 1 Bracing	L2x2x3/16	82	-1.088	8.980	12.1	Pass
		Redund Diag 1 Bracing	L2x2x3/16	86	-1.065	8.980	11.9	Pass
		Redund Diag 1 Bracing	L2x2x3/16	89	-1.069	8.980	11.9	Pass
		Redund Diag 1 Bracing	L2x2x3/16	93	-1.033	8.980	11.5	Pass
		Redund Diag 1 Bracing	L2x2x3/16	96	-1.031	8.980	11.5	Pass
		Redund Diag 1 Bracing	L2x2x3/16	103	-0.880	9.356	9.4	Pass
		Redund Diag 1 Bracing	L2x2x3/16	106	-0.876	9.356	9.4	Pass
		Redund Diag 1 Bracing	L2x2x3/16	110	-0.876	9.356	9.4	Pass
		Redund Diag 1 Bracing	L2x2x3/16	113	-0.883	9.356	9.4	Pass
		Redund Diag 1 Bracing	L2x2x3/16	117	-0.883	9.356	9.4	Pass
		Redund Diag 1 Bracing	L2x2x3/16	120	-0.880	9.356	9.4	Pass
T6	125 - 100	Redund Diag 1 Bracing	L2x2x3/16	130	-1.521	7.523	20.2	Pass
		Redund Diag 1 Bracing	L2x2x3/16	133	-1.517	7.523	20.2	Pass
		Redund Diag 1 Bracing	L2x2x3/16	137	-1.517	7.523	20.2	Pass
		Redund Diag 1 Bracing	L2x2x3/16	140	-1.521	7.523	20.2	Pass
		Redund Diag 1 Bracing	L2x2x3/16	144	-1.521	7.523	20.2	Pass
		Redund Diag 1 Bracing	L2x2x3/16	147	-1.521	7.523	20.2	Pass
		Redund Diag 1 Bracing	L2x2x3/16	154	-1.555	7.847	19.8	Pass
		Redund Diag 1 Bracing	L2x2x3/16	157	-1.550	7.847	19.8	Pass
		Redund Diag 1 Bracing	L2x2x3/16	161	-1.550	7.847	19.8	Pass
		Redund Diag 1 Bracing	L2x2x3/16	164	-1.554	7.847	19.8	Pass
		Redund Diag 1 Bracing	L2x2x3/16	168	-1.554	7.847	19.8	Pass

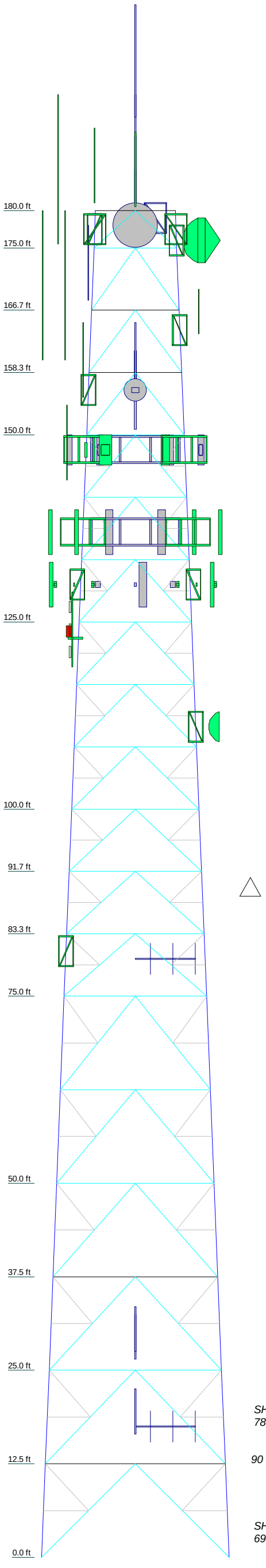
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
		Redund Diag 1 Bracing	L2x2x3/16	171	-1.555	7.847	19.8	Pass
		Redund Diag 1 Bracing	L2x2x3/16	178	-1.592	8.183	19.5	Pass
		Redund Diag 1 Bracing	L2x2x3/16	181	-1.587	8.183	19.4	Pass
		Redund Diag 1 Bracing	L2x2x3/16	185	-1.587	8.183	19.4	Pass
		Redund Diag 1 Bracing	L2x2x3/16	188	-1.591	8.183	19.4	Pass
		Redund Diag 1 Bracing	L2x2x3/16	192	-1.591	8.183	19.4	Pass
		Redund Diag 1 Bracing	L2x2x3/16	195	-1.592	8.183	19.5	Pass
T7	100 - 91.6667	Redund Diag 1 Bracing	L2x2x3/16	205	-1.752	7.196	24.3	Pass
		Redund Diag 1 Bracing	L2x2x3/16	208	-1.747	7.196	24.3	Pass
		Redund Diag 1 Bracing	L2x2x3/16	212	-1.747	7.196	24.3	Pass
		Redund Diag 1 Bracing	L2x2x3/16	215	-1.751	7.196	24.3	Pass
		Redund Diag 1 Bracing	L2x2x3/16	219	-1.751	7.196	24.3	Pass
		Redund Diag 1 Bracing	L2x2x3/16	222	-1.752	7.196	24.3	Pass
T8	91.6667 - 83.3333	Redund Diag 1 Bracing	L2x2x3/16	232	-1.981	6.885	28.8	Pass
		Redund Diag 1 Bracing	L2x2x3/16	235	-1.977	6.885	28.7	Pass
		Redund Diag 1 Bracing	L2x2x3/16	239	-1.977	6.885	28.7	Pass
		Redund Diag 1 Bracing	L2x2x3/16	242	-1.981	6.885	28.8	Pass
		Redund Diag 1 Bracing	L2x2x3/16	246	-1.981	6.885	28.8	Pass
		Redund Diag 1 Bracing	L2x2x3/16	249	-1.981	6.885	28.8	Pass
T9	83.3333 - 75	Redund Diag 1 Bracing	L2x2x3/16	259	-2.207	6.589	33.5	Pass
		Redund Diag 1 Bracing	L2x2x3/16	262	-2.201	6.589	33.4	Pass
		Redund Diag 1 Bracing	L2x2x3/16	266	-2.201	6.589	33.4	Pass
		Redund Diag 1 Bracing	L2x2x3/16	269	-2.206	6.589	33.5	Pass
		Redund Diag 1 Bracing	L2x2x3/16	273	-2.206	6.589	33.5	Pass
		Redund Diag 1 Bracing	L2x2x3/16	276	-2.207	6.589	33.5	Pass
T10	75 - 50	Redund Diag 1 Bracing	L2 1/2x2 1/2x3/16	286	-3.386	8.070	42.0	Pass
		Redund Diag 1 Bracing	L2 1/2x2 1/2x3/16	289	-3.380	8.070	41.9	Pass
		Redund Diag 1 Bracing	L2 1/2x2 1/2x3/16	293	-3.380	8.070	41.9	Pass
		Redund Diag 1 Bracing	L2 1/2x2 1/2x3/16	296	-3.385	8.070	41.9	Pass
		Redund Diag 1 Bracing	L2 1/2x2 1/2x3/16	300	-3.385	8.070	41.9	Pass
		Redund Diag 1	L2 1/2x2 1/2x3/16	303	-3.386	8.070	42.0	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	310	-3.497	8.405	41.6	Pass
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	313	-3.491	8.405	41.5	Pass
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	317	-3.491	8.405	41.5	Pass
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	320	-3.496	8.405	41.6	Pass
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	324	-3.496	8.405	41.6	Pass
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	327	-3.497	8.405	41.6	Pass
T11	50 - 37.5	Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	337	-3.761	7.713	48.8	Pass
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	340	-3.755	7.713	48.7	Pass
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	344	-3.755	7.713	48.7	Pass
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	347	-3.760	7.713	48.7	Pass
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	351	-3.760	7.713	48.7	Pass
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	354	-3.761	7.713	48.8	Pass
T12	37.5 - 25	Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	366	-4.119	7.374	55.9	Pass
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	369	-4.112	7.374	55.8	Pass
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	372	-4.112	7.374	55.8	Pass
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	375	-4.118	7.374	55.8	Pass
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	378	-4.118	7.374	55.8	Pass
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	381	-4.119	7.374	55.9	Pass
T13	25 - 12.5	Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	391	-4.469	7.051	63.4	Pass
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	394	-4.463	7.051	63.3	Pass
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	398	-4.463	7.051	63.3	Pass
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	401	-4.470	7.051	63.4	Pass
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	405	-4.470	7.051	63.4	Pass
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	408	-4.469	7.051	63.4	Pass
T14	12.5 - 0	Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	420	-4.822	6.744	71.5	Pass
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	423	-4.817	6.744	71.4	Pass
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	426	-4.817	6.744	71.4	Pass
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	429	-4.823	6.744	71.5	Pass
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	432	-4.823	6.744	71.5	Pass
		Bracing Redund Diag 1	L2 1/2x2 1/2x3/16	435	-4.822	6.744	71.5	Pass
		Bracing						

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T5	150 - 125	Inner Bracing	L2 1/2x2x3/16	73	-0.008	5.708	0.4	Pass
		Inner Bracing	L2 1/2x2x3/16	74	-0.008	5.708	0.4	Pass
		Inner Bracing	L2 1/2x2x3/16	75	-0.008	5.708	0.4	Pass
		Inner Bracing	L2 1/2x2x3/16	97	-0.008	6.279	0.4	Pass
		Inner Bracing	L2 1/2x2x3/16	98	-0.008	6.279	0.4	Pass
		Inner Bracing	L2 1/2x2x3/16	99	-0.008	6.279	0.4	Pass
		Inner Bracing	L2 1/2x2x3/16	121	-0.007	6.939	0.4	Pass
		Inner Bracing	L2 1/2x2x3/16	122	-0.007	6.939	0.4	Pass
		Inner Bracing	L2 1/2x2x3/16	123	-0.007	6.939	0.4	Pass
T6	125 - 100	Inner Bracing	L2 1/2x2x3/16	148	-0.011	4.396	0.5	Pass
		Inner Bracing	L2 1/2x2x3/16	149	-0.011	4.396	0.5	Pass
		Inner Bracing	L2 1/2x2x3/16	150	-0.011	4.396	0.5	Pass
		Inner Bracing	L2 1/2x2x3/16	172	-0.011	4.778	0.4	Pass
		Inner Bracing	L2 1/2x2x3/16	173	-0.011	4.778	0.4	Pass
		Inner Bracing	L2 1/2x2x3/16	174	-0.011	4.778	0.4	Pass
		Inner Bracing	L2 1/2x2x3/16	196	-0.011	5.212	0.4	Pass
		Inner Bracing	L2 1/2x2x3/16	197	-0.011	5.212	0.4	Pass
		Inner Bracing	L2 1/2x2x3/16	198	-0.011	5.212	0.4	Pass
T7	100 - 91.6667	Inner Bracing	L2 1/2x2x3/16	223	-0.017	4.058	0.5	Pass
		Inner Bracing	L2 1/2x2x3/16	224	-0.017	4.058	0.5	Pass
		Inner Bracing	L2 1/2x2x3/16	225	-0.017	4.058	0.5	Pass
T8	91.6667 - 83.3333	Inner Bracing	L2 1/2x2x3/16	250	-0.017	3.757	0.5	Pass
		Inner Bracing	L2 1/2x2x3/16	251	-0.017	3.757	0.5	Pass
		Inner Bracing	L2 1/2x2x3/16	252	-0.017	3.757	0.5	Pass
T9	83.3333 - 75	Inner Bracing	L2 1/2x2x3/16	277	-0.017	3.489	0.5	Pass
		Inner Bracing	L2 1/2x2x3/16	278	-0.017	3.489	0.5	Pass
		Inner Bracing	L2 1/2x2x3/16	279	-0.017	3.489	0.5	Pass
T10	75 - 50	Inner Bracing	L2 1/2x2 1/2x3/16	304	-0.018	4.393	0.6	Pass
		Inner Bracing	L2 1/2x2 1/2x3/16	305	-0.018	4.393	0.6	Pass
		Inner Bracing	L2 1/2x2 1/2x3/16	306	-0.018	4.393	0.6	Pass
		Inner Bracing	L2 1/2x2 1/2x3/16	328	-0.018	4.867	0.6	Pass
		Inner Bracing	L2 1/2x2 1/2x3/16	329	-0.018	4.867	0.6	Pass
		Inner Bracing	L2 1/2x2 1/2x3/16	330	-0.018	4.867	0.6	Pass
T11	50 - 37.5	Inner Bracing	L2 1/2x2 1/2x3/16	355	-0.017	3.985	0.6	Pass
		Inner Bracing	L2 1/2x2 1/2x3/16	356	-0.017	3.985	0.6	Pass
		Inner Bracing	L2 1/2x2 1/2x3/16	357	-0.017	3.985	0.6	Pass
T12	37.5 - 25	Inner Bracing	L2 1/2x2 1/2x3/16	382	-0.026	3.631	0.7	Pass
		Inner Bracing	L2 1/2x2 1/2x3/16	383	-0.026	3.631	0.7	Pass
		Inner Bracing	L2 1/2x2 1/2x3/16	384	-0.026	3.631	0.7	Pass
T13	25 - 12.5	Inner Bracing	L3x3x1/4	409	-0.017	7.585	0.5	Pass
		Inner Bracing	L3x3x1/4	410	-0.017	7.585	0.5	Pass
		Inner Bracing	L3x3x1/4	411	-0.017	7.585	0.5	Pass
T14	12.5 - 0	Inner Bracing	L3x3x1/4	436	-0.025	6.966	0.5	Pass
		Inner Bracing	L3x3x1/4	437	-0.025	6.966	0.5	Pass
		Inner Bracing	L3x3x1/4	438	-0.025	6.966	0.5	Pass
							Summary	
						Leg (T14)	80.1	Pass
						Diagonal (T10)	81.5	Pass
						Horizontal (T11)	72.4	Pass
						Top Girt (T12)	38.1	Pass
						Redund Horz 1 Bracing (T14)	50.6	Pass
						Redund Diag 1 Bracing	71.5	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
						(T14) Inner Bracing (T12)	0.7	Pass
						Bolt Checks	81.5	Pass
						RATING =	**81.5**	**Pass**

Section	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14
Legs	Stainless P5x0.250				Stainless P5x0.300	Stainless P5x0.400	A	1/3 Pipe w/ 5"x0.5 Stainless		Stainless P6.875x0.500				
Leg Grade					A513-50			A500-42					A572-60	
Diagonals	2L2 1/2x2x3/16x3/8				2L2 1/2x2x5/16x3/8		2L3x2 1/2x1/4x3/8			2L3 1/2x3 1/2x5/16x3/8			2L3 1/2x3 1/2x5/16x3/8	
Diagonal Grade						A36							A529-50	
Top Girts	L3x3x1/4	N.A.	L2 1/2x2 1/2x3/16							L4x4x1/4			2L4x4x1/4	2L4x4x5/16
Horizontals	N.A.	B	N.A.	N.A.	L3x2 1/2x1/4	L3x3x5/16	2L3x3x1/4						N.A.	N.A.
Red. Horizontals	N.A.		N.A.			L2x2x3/16				L2 1/2x2 1/2x3/16			L2 1/2x2 1/2x3/16	
Red. Diagonals	N.A.		N.A.			L2x2x3/16				L2 1/2x2 1/2x3/16			L2 1/2x2 1/2x3/16	
Inner Bracing	N.A.		N.A.			L2 1/2x2x3/16				L2 1/2x2 1/2x3/16			L3x3x1/4	
Face Width (ft)	10.599	11	11.6667	12.3333	13	15	17	17.6667	18.3333	19	21	22	23	24
# Panels @ (ft)	1 @ 5				12 @ 8.33333							6 @ 12.5		
Weight (K)	0.6	0.8	0.8	0.8	4.0	4.8	2.0	2.2	2.2	6.3	3.4	4.0	3.9	4.4



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod 2"x15' (DNK-56 (L.R.))	200	8843 B2/B66A (ATI - Existing)	148
2" Dia 10' Omni (DNK-52 (St# 10))	186	4478 B14 (ATI - Proposed)	148
3" Dia 20' Omni (DNK-59 (St# 13))	185.5	4478 B14 (ATI - Proposed)	148
3" Dia 12' Omni (DNK-48 (St# 8))	185.5	4478 B14 (ATI - Proposed)	148
3" Dia 20' Omni (DNK-57 (St# 6))	185.5	DC9 (ATI - Proposed)	148
2" Dia 10' Omni (DNK-53 (St# 3))	185	Pirod 12' PCS T-Frame (1) 104569 (Sprint)	137
10' - 2 Bay Dipole (DNK-54 (St# 2))	185	Pirod 12' PCS T-Frame (1) 104569 (Sprint)	137
1" Dia 8' Omni (DNK-58 (St# 5))	182.5	Pirod 12' PCS T-Frame (1) 104569 (Sprint)	137
1 Bay Dipole ANT400D (DNK-51 (St# 11))	181	APXVTM14-C-120 Panel Antenna (Sprint)	137
20' 4-Bay Dipole (DNK-55 (St# 1))	181	APXVTM14-C-120 Panel Antenna (Sprint)	137
6' Side-Arm(1) (Mts for St# 4-1 Antennas)	179	APXVTM14-C-120 Panel Antenna (Sprint)	137
6' Side-Arm(1) (Mts for St# 4-1 Antennas)	179	NNVV-65B-R4 Panel Antenna (Sprint)	137
11"x8"x12" Junction Box ((St# 16))	178	NNVV-65B-R4 Panel Antenna (Sprint)	137
6' w/Radome (DNK-45 (St# 17))	178	NNVV-65B-R4 Panel Antenna (Sprint)	137
Pirod 6' Side Mount Standoff (1) (DNK-38,39 (St# 13,14,15,16))	177.5	ALU TD-RRH-8x20-25 (Sprint)	137
		ALU TD-RRH-8x20-25 (Sprint)	137
432E-83I-01T TTA Unit (DNK-47 (St# 9))	177.5	ALU TD-RRH-8x20-25 (Sprint)	137
6' Side-Arm(1) (Mts for St# 5-12 Antennas)	177.5	(2) ALU 800MHz 2x50W (Sprint)	137
6' Side-Arm(1) (Mts for St# 5-12 Antennas)	177.5	(2) ALU 800MHz 2x50W (Sprint)	137
6' Side-Arm(1) (Mts for St# 5-12 Antennas)	177.5	(2) ALU 800MHz 2x50W (Sprint)	137
6' Side-Arm(1) (Mts for St# 5-12 Antennas)	177.5	ALU 4x45-1900 MHz RRH Unit (Sprint)	137
1' Side Arm (DNK-44 (St# 18))	176	ALU 4x45-1900 MHz RRH Unit (Sprint)	137
1' Side Arm (DNK-45 (St# 17))	176	ALU 4x45-1900 MHz RRH Unit (Sprint)	137
6' w/Radome (DNK-44 (St# 18))	176	ATSBT-TOP-FM-4G (T-Mobile)	130
(inverted) 2" Dia 10' Omni (DNK-42 (St# 4))	173	DBXNH-6565B (T-Mobile)	130
(Inverted) 3" Dia 20' Omni (DNK-38 (St# 15))	170	DBXNH-6565B (T-Mobile)	130
(Inverted) 3" Dia 20' Omni (DNK-39 (St# 14))	170	DBXNH-6565B (T-Mobile)	130
(inverted) 10' 8 Bay Di-Pole (DNK-41 (St# 12))	170	(2) TMA 10"x8"x5" (T-Mobile)	130
(inverted) 10' 8 Bay Di-Pole (DNK-40 (St# 7))	170	(2) TMA 10"x8"x5" (T-Mobile)	130
Telewave 150F2 Omni ((St # 20))	166.5	(2) CBC1923Q-43 Diplexer (T-Mobile)	130
Pirod 4' Side Mount Standoff (1) ((St # 20))	164	(2) CBC1923Q-43 Diplexer (T-Mobile)	130
Telewave ANT220F2 - Omni Antenna (Eversource)	162	(2) CBC1923Q-43 Diplexer (T-Mobile)	130
ANT450F6 (DNK-35 (St# 21))	161	ATSBT-TOP-FM-4G (T-Mobile)	130
3" Dia 9' Omni (DNK-33 (St# 24))	160	ATSBT-TOP-FM-4G (T-Mobile)	130
Sitepro1 USF-4U Mount Assembly (Ca = 1.4 assumed) (Eversource)	159	2' Sidearm (T-Mobile)	130
		2' Sidearm (T-Mobile)	130
2' Sidearm (DNK-35 (St# 21))	157	2' Sidearm (T-Mobile)	130
1' Side Arm (DNK-37 (St# 23))	156	(2) TMA 10"x8"x5" (T-Mobile)	130
Pirod 4' Side Mount Standoff (1) (DNK-32, 33 (St# 24,25))	156	1' Side Arm (DNK-9 (St# 45))	125
		Decibel DB210-C Dipole (Single) (DNK-9 (St# 45))	125
400H/ODU/F58F/EXT (Valley Shore)	156	Comprod 871F-70 Dipole (Eversource)	124
10'6"x4" Pipe Mount (DNK-34 (St# 22))	156	19.5"x19.5" Panel Antenna (DNK-10 (St# 46))	123
HPD3-5W (Proposed)	156	1' Side Arm (DNK-10 (St# 46))	123
1 Bay Dipole ANT400D (DNK-34 (St# 22))	151	Sitepro1 USF-4U Mount Assembly (Ca = 1.4 assumed) (Eversource)	121
2" Dia 14' Omni (inverted) (DNK-32 (St# 25))	149		
13-ft Sector Frame (ATI - Existing)	148	2' Sidearm (DNK-8 (St# 47))	111
13-ft Sector Frame (ATI - Existing)	148	4' Paraflector [PRF-950] (DNK-8 (St# 47))	111
13-ft Sector Frame (ATI - Existing)	148	1' Side Arm (Un-used Mount)	102
DMP65R-BU4D (ATI - Existing)	148	20' 4-Bay Dipole (DNK-7 (St# 48))	89.5
840-370964 (ATI - Existing)	148	1' Side Arm (DNK-6,7 (St# 48,49))	82.5
DMP65R-BU4D (ATI - Existing)	148	1' Side Arm (DNK-5 (St# 50))	81
840-370964 (ATI - Existing)	148	GPS (DNK-5 (St# 50))	81
DMP65R-BU4D (ATI - Existing)	148	3' Yagi (DNK-6 (St# 49))	81
840-370964 (ATI - Existing)	148	1.5" Dia 3' Omni (DNK-4 (St# 51))	34 - 27
4449 B5/B12 (ATI - Existing)	148	1.5" Dia 3' Omni (inverted) (DNK-3 (St# 52))	29.5
4449 B5/B12 (ATI - Existing)	148	4' Side Mount Standoff (1) (DNK-3,4 (St# 51,52))	26
4449 B5/B12 (ATI - Existing)	148	1.5" Dia 3' Omni (DNK-2 (St# 53))	19.5
8843 B2/B66A (ATI - Existing)	148	4' Side Mount Standoff (1) (DNK 1,2 (St# 53,54))	18
8843 B2/B66A (ATI - Existing)	148	3' Yagi (DNK-1 (St# 54))	17.5

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	Stainless P5x0.500	B	L2 1/2x2 1/2x3/16

MATERIAL STRENGTH

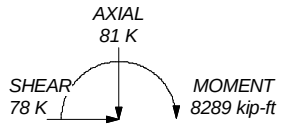
GRADE	Fy	Fu	GRADE	Fy	Fu
A513-50	50 ksi	66 ksi	A572-60	60 ksi	75 ksi
A36	36 ksi	58 ksi	A529-50	50 ksi	65 ksi
A500-42	42 ksi	58 ksi			

TOWER DESIGN NOTES

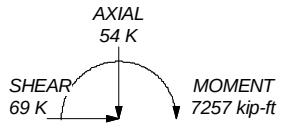
1. Tower designed for a 95 mph basic wind in accordance with the TIA/EIA-222-F Standard.
2. Tower is also designed for a 90 mph basic wind with 0.50 in ice.
3. Deflections are based upon a 90 mph wind.

MAX. CORNER REACTIONS AT BASE:
DOWN: 410 K
SHEAR: 45 K

UPLIFT: -346 K
SHEAR: 40 K



TORQUE 61 kip-ft
90 mph WIND - 0.500 in ICE



TORQUE 43 kip-ft
REACTIONS - 95 mph WIND

Centek Engineering Inc.
63-2 North Branford Rd.
Branford, CT 06405
Phone: (203) 488-0580
FAX: (203) 488-8587

Job: 22007.11 - CT2047			
Project: 180-ft Lattice Tower (CSP #36)			
Client: AT&T	Drawn by: TJL	App'd:	
Code: TIA/EIA-222-F	Date: 11/08/22	Scale: NTS	
Path: J:\Jobs\2200700.WI\11_CT2047\05_Structural\Calcs\tnxtower\Twist and Sway\180-ft Lattice Tower CSP #36.eri		Dwg No. E-1	

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 45 deg - No Ice
5	Dead+Wind 60 deg - No Ice
6	Dead+Wind 90 deg - No Ice
7	Dead+Wind 120 deg - No Ice
8	Dead+Wind 135 deg - No Ice
9	Dead+Wind 150 deg - No Ice
10	Dead+Wind 180 deg - No Ice
11	Dead+Wind 210 deg - No Ice
12	Dead+Wind 225 deg - No Ice
13	Dead+Wind 240 deg - No Ice
14	Dead+Wind 270 deg - No Ice
15	Dead+Wind 300 deg - No Ice
16	Dead+Wind 315 deg - No Ice
17	Dead+Wind 330 deg - No Ice
18	Dead+Ice
19	Dead+Wind 0 deg+Ice
20	Dead+Wind 30 deg+Ice
21	Dead+Wind 45 deg+Ice
22	Dead+Wind 60 deg+Ice
23	Dead+Wind 90 deg+Ice
24	Dead+Wind 120 deg+Ice
25	Dead+Wind 135 deg+Ice
26	Dead+Wind 150 deg+Ice
27	Dead+Wind 180 deg+Ice
28	Dead+Wind 210 deg+Ice
29	Dead+Wind 225 deg+Ice
30	Dead+Wind 240 deg+Ice
31	Dead+Wind 270 deg+Ice
32	Dead+Wind 300 deg+Ice
33	Dead+Wind 315 deg+Ice
34	Dead+Wind 330 deg+Ice
35	Dead+Wind 0 deg - Service
36	Dead+Wind 30 deg - Service
37	Dead+Wind 45 deg - Service
38	Dead+Wind 60 deg - Service
39	Dead+Wind 90 deg - Service
40	Dead+Wind 120 deg - Service
41	Dead+Wind 135 deg - Service
42	Dead+Wind 150 deg - Service
43	Dead+Wind 180 deg - Service
44	Dead+Wind 210 deg - Service
45	Dead+Wind 225 deg - Service
46	Dead+Wind 240 deg - Service
47	Dead+Wind 270 deg - Service
48	Dead+Wind 300 deg - Service
49	Dead+Wind 315 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	180 - 175	11.211	35	0.4633	0.0712
T2	175 - 166.667	10.722	35	0.4631	0.0685
T3	166.667 - 158.333	9.890	35	0.4623	0.0663
T4	158.333 - 150	9.062	46	0.4578	0.0645
T5	150 - 125	8.242	46	0.4495	0.0577
T6	125 - 100	5.901	46	0.4054	0.0418
T7	100 - 91.6667	3.856	46	0.3358	0.0297
T8	91.6667 - 83.3333	3.266	46	0.3108	0.0268
T9	83.3333 - 75	2.711	46	0.2893	0.0238
T10	75 - 50	2.196	46	0.2660	0.0208
T11	50 - 37.5	1.004	35	0.1778	0.0131
T12	37.5 - 25	0.566	35	0.1374	0.0092
T13	25 - 12.5	0.258	35	0.0941	0.0062
T14	12.5 - 0	0.062	40	0.0483	0.0029

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
200.000	Lightning Rod 2"x15'	35	11.211	0.4633	0.0712	32626
186.000	2" Dia 10' Omni	35	11.211	0.4633	0.0712	32626
185.500	3" Dia 20' Omni	35	11.211	0.4633	0.0712	32626
185.000	2" Dia 10' Omni	35	11.211	0.4633	0.0712	32626
182.500	1" Dia 8' Omni	35	11.211	0.4633	0.0712	32626
181.000	1 Bay Dipole ANT400D	35	11.211	0.4633	0.0712	32626
179.000	6' Side-Arm(1)	35	11.114	0.4632	0.0706	32626
178.000	6' w/Radome	35	11.016	0.4632	0.0700	32626
177.500	Pirod 6' Side Mount Standoff (1)	35	10.967	0.4632	0.0698	32626
176.000	6' w/Radome	35	10.820	0.4631	0.0690	32626
173.000	(inverted) 2" Dia 10' Omni	35	10.524	0.4630	0.0677	37803
170.000	(Inverted) 3" Dia 20' Omni	35	10.224	0.4629	0.0669	134417
166.500	Telewave 150F2 Omni	35	9.873	0.4622	0.0663	92107
164.000	Pirod 4' Side Mount Standoff (1)	35	9.623	0.4613	0.0660	77714
162.000	Telewave ANT220F2 - Omni Antenna	46	9.425	0.4603	0.0657	93346
161.000	ANT450F6	46	9.326	0.4597	0.0655	105629
160.000	3" Dia 9' Omni	46	9.227	0.4590	0.0652	117335
159.000	Sitepro1 USF-4U Mount Assembly (Ca = 1.4 assumed)	46	9.128	0.4583	0.0648	124734
157.000	2' Sidearm	46	8.930	0.4567	0.0637	114479
156.000	HPD3-5W	46	8.831	0.4558	0.0630	101235
151.000	1 Bay Dipole ANT400D	46	8.340	0.4507	0.0586	54523
149.000	2" Dia 14' Omni (inverted)	46	8.144	0.4483	0.0568	47794
148.000	13-ft Sector Frame	46	8.047	0.4470	0.0560	45630
137.000	Pirod 12' PCS T-Frame (1) 104569	46	6.997	0.4301	0.0483	33512
130.000	2' Sidearm	46	6.350	0.4165	0.0444	28779
125.000	Decibel DB210-C Dipole (Single)	46	5.901	0.4054	0.0418	25973
124.000	Comprod 871F-70 Dipole	46	5.812	0.4030	0.0413	25394
123.000	19.5"x19.5" Panel Antenna	46	5.724	0.4006	0.0408	24810
121.000	Sitepro1 USF-4U Mount Assembly (Ca = 1.4 assumed)	46	5.549	0.3957	0.0397	23667
111.000	4' Paraflector [PRF-950]	46	4.708	0.3687	0.0346	19133
102.000	1' Side Arm	46	4.004	0.3420	0.0305	16504
89.500	20' 4-Bay Dipole	46	3.118	0.3050	0.0260	25465
82.500	1' Side Arm	46	2.658	0.2872	0.0235	21794
81.000	GPS	46	2.562	0.2832	0.0230	19099

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
34.000	1.5" Dia 3' Omni	35	0.467	0.1257	0.0083	14026
30.500	1.5" Dia 3' Omni	35	0.379	0.1136	0.0075	16247
29.500	1.5" Dia 3' Omni (inverted)	35	0.355	0.1101	0.0073	17025
27.000	1.5" Dia 3' Omni	35	0.300	0.1012	0.0067	18905
26.000	4' Side Mount Standoff (1)	35	0.278	0.0977	0.0065	19326
19.500	1.5" Dia 3' Omni	35	0.156	0.0742	0.0048	14781
18.000	4' Side Mount Standoff (1)	40	0.132	0.0687	0.0044	13597
17.500	3' Yagi	40	0.124	0.0669	0.0042	13243

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	180 - 175	14.278	19	0.5914	0.1065
T2	175 - 166.667	13.653	19	0.5911	0.1030
T3	166.667 - 158.333	12.591	19	0.5898	0.0993
T4	158.333 - 150	11.534	19	0.5840	0.0958
T5	150 - 125	10.487	19	0.5732	0.0855
T6	125 - 100	7.508	19	0.5158	0.0612
T7	100 - 91.6667	4.907	19	0.4273	0.0434
T8	91.6667 - 83.3333	4.156	19	0.3956	0.0394
T9	83.3333 - 75	3.450	19	0.3683	0.0353
T10	75 - 50	2.794	19	0.3386	0.0310
T11	50 - 37.5	1.277	19	0.2263	0.0198
T12	37.5 - 25	0.720	19	0.1749	0.0141
T13	25 - 12.5	0.328	19	0.1198	0.0096
T14	12.5 - 0	0.079	24	0.0615	0.0045

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
200.000	Lightning Rod 2"x15'	19	14.278	0.5914	0.1065	26714
186.000	2" Dia 10' Omni	19	14.278	0.5914	0.1065	26714
185.500	3" Dia 20' Omni	19	14.278	0.5914	0.1065	26714
185.000	2" Dia 10' Omni	19	14.278	0.5914	0.1065	26714
182.500	1" Dia 8' Omni	19	14.278	0.5914	0.1065	26714
181.000	1 Bay Dipole ANT400D	19	14.278	0.5914	0.1065	26714
179.000	6' Side-Arm(1)	19	14.154	0.5913	0.1058	26714
178.000	6' w/Radome	19	14.029	0.5913	0.1051	26714
177.500	Pirod 6' Side Mount Standoff (1)	19	13.967	0.5912	0.1047	26714
176.000	6' w/Radome	19	13.779	0.5911	0.1037	26714
173.000	(inverted) 2" Dia 10' Omni	19	13.400	0.5910	0.1019	30956
170.000	(Inverted) 3" Dia 20' Omni	19	13.017	0.5907	0.1005	110229
166.500	Telewave 150F2 Omni	19	12.570	0.5898	0.0993	76130
164.000	Pirod 4' Side Mount Standoff (1)	19	12.251	0.5886	0.0986	62900
162.000	Telewave ANT220F2 - Omni Antenna	19	11.998	0.5872	0.0979	74416
161.000	ANT450F6	19	11.871	0.5864	0.0975	83069
160.000	3" Dia 9' Omni	19	11.745	0.5856	0.0969	90616

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
159.000	Sitepro1 USF-4U Mount Assembly (Ca = 1.4 assumed)	19	11.618	0.5847	0.0963	94304
157.000	2' Sidearm	19	11.366	0.5826	0.0945	83308
156.000	HPD3-5W	19	11.240	0.5814	0.0934	72872
151.000	1 Bay Dipole ANT400D	19	10.612	0.5747	0.0868	39156
149.000	2" Dia 14' Omni (inverted)	19	10.363	0.5716	0.0842	34465
148.000	13-ft Sector Frame	19	10.239	0.5699	0.0829	33039
137.000	Pirod 12' PCS T-Frame (1) 104569	19	8.902	0.5478	0.0712	25521
130.000	2' Sidearm	19	8.079	0.5302	0.0652	22401
125.000	Decibel DB210-C Dipole (Single)	19	7.508	0.5158	0.0612	20422
124.000	Comprod 871F-70 Dipole	19	7.395	0.5128	0.0604	19989
123.000	19.5"x19.5" Panel Antenna	19	7.283	0.5097	0.0596	19545
121.000	Sitepro1 USF-4U Mount Assembly (Ca = 1.4 assumed)	19	7.061	0.5034	0.0580	18662
111.000	4' Paraflector [PRF-950]	19	5.992	0.4690	0.0504	15133
102.000	1' Side Arm	19	5.096	0.4351	0.0445	13079
89.500	20' 4-Bay Dipole	19	3.969	0.3882	0.0384	19989
82.500	1' Side Arm	19	3.382	0.3655	0.0349	17112
81.000	GPS	19	3.260	0.3605	0.0341	14990
34.000	1.5" Dia 3' Omni	19	0.594	0.1600	0.0128	11020
30.500	1.5" Dia 3' Omni	19	0.482	0.1446	0.0116	12767
29.500	1.5" Dia 3' Omni (inverted)	19	0.452	0.1401	0.0112	13380
27.000	1.5" Dia 3' Omni	19	0.381	0.1289	0.0104	14862
26.000	4' Side Mount Standoff (1)	19	0.354	0.1243	0.0100	15195
19.500	1.5" Dia 3' Omni	19	0.198	0.0945	0.0074	11617
18.000	4' Side Mount Standoff (1)	24	0.168	0.0875	0.0068	10684
17.500	3' Yagi	24	0.158	0.0852	0.0066	10406

CENTEK engineering
Centered on Solutions℠ www.centekeng.com
63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

Subject:	Anchor Bolt Analysis
Location:	180-ft Lattice Tower Westbrook, CT
Rev. 0: 11/8/22	Prepared by: T.J.L. Checked by: C.F.C. Job No. 22007.11

Anchor Bolt Analysis:

Input Data:

Tower Reactions:

Tension Force =	Tension := 368·kips	(Input From tnxTower)
Compression Force =	Compression := 430·kips	(Input From tnxTower)
Shear Force =	Shear := 50·kips	(Input From tnxTower)

Anchor Bolt Data:

ASTM 36		(Assumed Conservative Grade)
Number of Anchor Bolts =	N := 9	(User Input)
Bolt Ultimate Strength =	F_u := 58·ksi	(User Input)
Bolt Yield Strength =	F_y := 36·ksi	(User Input)
Bolt Modulus =	E := 29000·ksi	(User Input)
Diameter of Anchor Bolts =	D := 1.75·in	(User Input)
Threads per Inch =	n := 5	(User Input)
Length from Top of Pier to Bottom of Leveling Nut =	L_{ar} := 0·in	(User Input)

Anchor Bolt Analysis:

Calculated Anchor Bolt Properties:

Gross Area of Bolt = $A_g := \frac{\pi}{4} \cdot D^2 = 2.405 \cdot in^2$

Net Area of Bolt = $A_n := \frac{\pi}{4} \cdot \left(D - \frac{0.9743 \cdot in}{n} \right)^2 = 1.899 \cdot in^2$

Net Diameter = $D_n := \frac{2 \cdot \sqrt{A_n}}{\sqrt{\pi}} = 1.555 \cdot in$

Radius of Gyration of Bolt = $r := \frac{D_n}{4} = 0.389 \cdot in$

Elastic Section Modulus of Bolt = $S_x := \frac{\pi \cdot D_n^3}{32} = 0.369 \cdot in^3$

Plastic Section Modulus of Bolt = $Z_x := \frac{D_n^3}{6} = 0.627 \cdot in^3$

Anchor Bolt Design Strength:

Resistance Factor for Flexure = $\phi_f := 0.9$

Resistance Factor for Compression = $\phi_c := 0.9$

Resistance Factor for Tension = $\phi_t := 0.75$

Resistance Factor for Shear = $\phi_v := 0.75$

Design Tensile Strength = $\Phi R_{nt} := \phi_t \cdot F_u \cdot A_n = 82.6 \cdot k$

Design Compression Strength = $\Phi R_{nc} := \phi_c \cdot F_y \cdot A_g = 77.9 \cdot k$

Design Shear Strength (Tension) = $\Phi R_{nv} := \phi_v \cdot 0.5 F_u \cdot A_g = 52.3 \cdot k$

Design Shear Strength (Compression) = $\Phi R_{nvc} := \phi_c \cdot 0.6 F_y \cdot A_g \cdot 0.75 = 35.1 \cdot k$

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Branford, CT 06405 F: (203) 488-8587

Subject:	Anchor Bolt Analysis
Location:	180-ft Lattice Tower Westbrook, CT
Rev. 0: 11/8/22	Prepared by: T.J.L. Checked by: C.F.C. Job No. 22007.11

Check Anchor Bolt Tension Force:

Maximum Tensile Force = $P_{ut} := \frac{Tension}{N} = 40.9 \cdot kips$

Maximum Compressive Force = $P_{uc} := \frac{Compression}{N} = 47.8 \cdot kips$

Maximum Shear Force = $V_u := \frac{Shear}{N} = 5.6 \cdot kips$

Condition1 = $Condition1 := if\left[\left[\left(\frac{P_{ut}}{\Phi R_{nt}}\right)^2 + \left(\frac{V_u}{\Phi R_{nv}}\right)^2\right] \le 1.00, "OK", "Overstressed"\right]$

Condition1 = "OK"

Condition2 = $Condition2 := if\left[\left[\left(\frac{P_{uc}}{\Phi R_{nc}}\right) + \left(\frac{V_u}{\Phi R_{nvc}}\right)^2\right] \le 1.00, "OK", "Overstressed"\right]$

Condition2 = "OK"

Bolt % of Capacity = $\max\left[\left(\frac{P_{ut}}{\Phi R_{nt}}\right)^2 + \left(\frac{V_u}{\Phi R_{nv}}\right)^2, \left(\frac{P_{uc}}{\Phi R_{nc}}\right) + \left(\frac{V_u}{\Phi R_{nvc}}\right)^2\right] = 63.8 \cdot \%$

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Subject:	PAD AND PIER
Location:	180-ft Lattice Tower Westbrook, CT
Rev. 0: 11/8/22	Prepared by: T.J.L. Checked by: C.F.C. Job No. 22007.11

Pad & Pier Foundation

Input Data:

Max. Loads at Tower Leg:

Uplift =	Uplift := 368·kips	(User Input from tnxTower)
Compression =	Comp := 430·kips	(User Input from tnxTower)
Max Shear =	Shear := 50·kips	(User Input from tnxTower)

Pier and Pad Properties:

Pier Height =	$P_H := 11 \cdot ft$	(User Input)
Pier Projection Above Grade =	$P_P := 1 \cdot ft$	(User Input)
Pier Diameter =	$P_d := 4 \cdot ft$	(User Input)
Pad Thickness =	$PD_t := 2 \cdot ft$	(User Input)
Pad Width =	$PD_w := 16.25 \cdot ft$	(User Input)
Reinforcemnet Bar Diameter =	$d_{bar} := 1 \cdot in$	(User Input)
Number of Reinforcemnet Bars =	$N_{bar} := 20$	(User Input)
Reinforcemnet Bar Strength =	$f_y := 60 \cdot ksi$	(User Input)
Eccentricity of Anchor Bolts from CL of Pier =	$OS_{bolts} := 9 \cdot in$	(User Input)

Subgrade Properties:

Concrete Unit Weight =	$\gamma c := 150 \cdot pcf$	(User Input)
Water Unit Weight =	$\gamma w := 62.4 \cdot pcf$	(User Input)
Soil Unit Weight =	$\gamma s := 110 \cdot pcf$	(User Input)
Uplift Angle =	$\phi := 34 \cdot deg$	(User Input)
Soil Bearing Capacity =	$q_u := 6 \cdot ksf$	(User Input)
Distance to Water Table =	$D_{wt} := 20 \cdot ft$	(User Input)
Concrete Compressive Strength =	$f_c := 3 \cdot ksi$	(User Input)

Calculated Data:

Active Pressure =

$$K_a := \frac{(1 - \sin(\phi))}{(1 + \sin(\phi))} = 0.283$$

$$P_a := \frac{1}{2}\cdot\left(P_H + PD_t\right)^2\cdot P_d\cdot\gamma s\cdot K_a = 10.51\cdot kips$$

Passive Pressure =

$$K_p := \frac{(1 + \sin(\phi))}{(1 - \sin(\phi))} = 3.537$$

$$P_p := \frac{1}{2}\cdot\left(P_H + PD_t\right)^2\cdot P_d\cdot\gamma s\cdot K_p = 131.51\cdot kips$$

Area of Reinforcement Bar =

$$A_{bar} := \frac{\pi\cdot d_{bar}^{\,2}}{4} = 0.785\cdot in^2$$

Area of Pier =

$$A_{pier} := \pi\cdot\frac{P_d^{\,2}}{4} = 12.57\,ft^2$$

Cross Sectional Area of Pad =

$$A_{pad} := PD_w^{\,2} = 264.06\,ft^2$$

Section Modulus of Pad =

$$S_{pad} := \frac{PD_w\cdot PD_w^{\,2}}{6} = 715.2\cdot ft^3$$

Volume of Concrete =

$$V_{Conc} := P_H\cdot\left(A_{pier}\right) + A_{pad}\cdot PD_t = 666.4\cdot ft^3$$

$$H_s := P_H - P_P = 10\,ft$$

$$B_1 := PD_w^{\,2} = 264.1\,ft^2$$

$$B_2 := \left(2\cdot\tan(\phi)\cdot H_s + PD_w\right)^2 = 884.5\,ft^2$$

Volume of Soil =

$$V_{Soil} := \left[\frac{\left(H_s\right)}{3}\cdot\left(B_1 + B_2 + \sqrt{B_1\cdot B_2}\right)\right] - \left(H_s\cdot A_{pier}\right) = 5313.7\cdot ft^3$$

Mass of Soil Above Footing =

$$Mass_{Soil.AF} := \left(PD_w^{\,2} - A_{pier}\right)\cdot H_s\cdot\gamma s = 276.6\cdot kips$$

Mass of Soil Tot =

$$Mass_{Soil.Tot} := V_{Soil}\cdot\gamma s = 584.5\cdot kips$$

Mass of Concrete =

$$Mass_{Conc} := V_{Conc}\cdot\gamma c = 100\cdot kips$$

Total Mass =

$$Mass_{Tot} := 0.9Mass_{Soil.AF} + 0.75\left(Mass_{Soil.Tot} - Mass_{Soil.AF}\right) + 0.9Mass_{Conc} = 569.84\cdot kips$$

Check Uplift:

Required Factor of Safety =

$F_S := 1$

$ActualFS := \frac{Mass_{Tot}}{Uplift} = 1.55$

$Uplift\_Check := if\left(\frac{Mass_{Tot}}{Uplift} \geq F_S, "OK", "Overstressed"\right)$

Uplift_Check = "OK"

Check Bearing:

$P_{tot} := Comp + 1.2 \cdot Mass_{Conc} + 1.2 Mass_{Soil.AF} = 882 \cdot kips$

$Bearing := \frac{P_{tot}}{A_{pad}} = 3.34 \cdot ksf$

$Bearing\_Check := if\left(Bearing \leq 0.75 q_u, "OK", "No Good"\right)$

Bearing_Check = "OK"

Check Punching Shear:

$$p_u := \frac{\left(Comp + 1.2 A_{pier} \cdot P_H \cdot \gamma c\right)}{A_{pad}} + \frac{\left[Shear \cdot \left(P_H + PD_t\right) + Comp \cdot OS_{bolts} + \left(P_a - P_p\right)\frac{\left(P_H + PD_t\right)}{3}\right]}{S_{pad}} = 2.35 \cdot ksf$$

$d := PD_t - \left(3 \cdot in + d_{bar}\right) = 1.667\,ft$

$b_o := \left(P_d + d\right) \cdot \pi = 17.802\,ft$

$Aout_{bo} := A_{pad} - \pi \cdot \frac{\left(P_d + d\right)^2}{4} = 238.842\,ft^2$

$V_u := Aout_{bo} \cdot p_u = 561.11 \cdot kips$

$\phi V_c := 0.75 \cdot 4 \cdot \sqrt{\left(f_c \cdot \frac{lb}{in^2}\right)} \cdot b_o \cdot d = 702.1 \cdot kips$

$Punching\_Shear\_Check := if\left(V_u \leq \phi V_c, "OK", "No Good"\right)$

Punching_Shear_Check = "OK"

Check Beam Shear:

$$V_u := p_u \cdot PD_w \cdot \left[\frac{\left(PD_w - P_d\right)}{2} - \frac{d}{2} \right] = 202 \cdot kips$$

$$\phi V_c := 0.75 \cdot 2 \cdot \sqrt{\left(f_c \cdot \frac{lb}{in^2} \right)} \cdot PD_w \cdot d = 320.4 \cdot kips$$

$$Beam\_Shear\_Check := if\left(V_u \le \phi V_c, "OK", "No\ Good"\right)$$

Beam_Shear_Check = "OK"

Check Bending:

$$As_{provided} := N_{bar} \cdot A_{bar} = 15.708 \cdot in^2$$

$$M_{req} := \frac{p_u \cdot PD_w \cdot \left(\frac{\left(PD_w - P_d\right)}{2} \right)^2}{2} = 716.098 \cdot kip \cdot ft$$

$$a := \frac{As_{provided} \cdot f_y}{0.85 \cdot f_c \cdot PD_w} = 1.895 \cdot in$$

$$M_{Avail} := 0.9 \cdot As_{provided} \cdot f_y \cdot \left(d - \frac{a}{2} \right) = 1347 \cdot kip \cdot ft$$

$$Bending\_Check := if\left(M_{Avail} > M_{req}, "OK", "No\ Good"\right)$$

Bending_Check = "OK"

Section 1 - RFDS GENERAL INFORMATION

RFDS NAME:	CT2047	DATE:	3/12/2022	RF DESIGN ENG:	Parminder Singh	RF PERF ENG:	Folarin Ayo	RFDS PROGRAM TYPE:	2022 LTE Next Carrier
ISSUE:	Bronze Standard	Approved? (Y/N):	Yes	RF DESIGN PHONE:	510-493-3024	RF PERF PHONE:		RFDS TECHNOLOGY:	LTE
REVISION:	Preliminary	RF MANAGER:	John Benedetto	RF DESIGN EMAIL:	sp656b@att.com	RF PERF EMAIL:		STATE/STATUS:	Final/Approved
						ADDITIONAL WORKFLOW NOTIFICATIONS:		RFDS ID:	5064353
						RFDS VERSION:	2.00	Created By: sp656b	Updated By: sp656b
						UMTS FREQUENCY:		Created: 3/12/2022	Updated: 7/22/2022
						LTE FREQUENCY:	700,850,1900,AWS,WCS	Estimated SQIN: 7,731	Expiration:
						5G FREQUENCY:	850	RER Initiative:	Calculation ID: 20220722135856687 1
INITIATIVE PROJECT	LTE 5C 700 B14 & LTE PCS BWE SOFTWARE CARRIER					IPLAN JOB # 1:	ER_-RCTB-22-00473	PRD || SUB GRP #1	LTE Multi Carrier || BWE Software Carrier
						IPLAN JOB # 2:	ER_-RCTB-22-00277	PRD || SUB GRP #2	LTE Next Carrier || LTE 5C
						IPLAN JOB # 3:		PRD || SUB GRP #3	
						IPLAN JOB # 4:		PRD || SUB GRP #4	
						IPLAN JOB # 5:		PRD || SUB GRP #5	
						IPLAN JOB # 6:		PRD || SUB GRP #6	
						IPLAN JOB # 7:		PRD || SUB GRP #7	
						IPLAN JOB # 8:		PRD || SUB GRP #8	
						IPLAN JOB # 9:		PRD || SUB GRP #9	
						IPLAN JOB #10:		PRD || SUB GRP #10	
						IPLAN JOB # 11:		PRD || SUB GRP #11	
						IPLAN JOB # 12:		PRD || SUB GRP #12	
						IPLAN JOB # 13:		PRD || SUB GRP #13	
						IPLAN JOB # 14:		PRD || SUB GRP #14	
						IPLAN JOB # 15:		PRD || SUB GRP #15	
						IPLAN JOB # 16:		PRD || SUB GRP #16	

Section 2 - LOCATION INFORMATION

USID:	59410	FA LOCATION CODE:	10035035	LOCATION NAME:	WESTBROOK-SPENCER RD	ORACLE PRJT # 1:	2051A14678	PACE JOB #1:	MRCTB062351
REGION:	NORTHEAST	MARKET CLUSTER:	NEW ENGLAND	MARKET:	CONNECTICUT	ORACLE PRJT # 2:	2051A147KN	PACE JOB #2:	MRCTB062149
ADDRESS:	315 SPENCER PLAIN ROAD	CITY:	WESTBROOK	STATE:	CT	ORACLE PRJT # 3:		PACE JOB #3:	
ZIP CODE:	06498	COUNTY:	MIDDLESEX	LONG (DEC. DEG.):	-72.4303881	ORACLE PRJT # 4:		PACE JOB #4:	
LATITUDE (D-M-S):	41d 17m32.76996s	LONGITUDE (D-M-S):	-72d -25m-49.39716s	LAT (DEC. DEG.):	41.2924361	ORACLE PRJT # 5:		PACE JOB #5:	
						ORACLE PRJT # 6:		PACE JOB #6:	
						ORACLE PRJT # 7:		PACE JOB #7:	
						ORACLE PRJT # 8:		PACE JOB #8:	
						ORACLE PRJT # 9:		PACE JOB #9:	
						ORACLE PRJT # 10:		PACE JOB #10:	
						ORACLE PRJT # 11:		PACE JOB #11:	
						ORACLE PRJT # 12:		PACE JOB #12:	
						ORACLE PRJT # 13:		PACE JOB #13:	
						ORACLE PRJT # 14:		PACE JOB #14:	
						ORACLE PRJT # 15:		PACE JOB #15:	
						ORACLE PRJT # 16:		PACE JOB #16:	
						BORDER CELL WITH CONTOUR COORD:		SEARCH RING NAME:	
						AM STUDY REQ'D (Y/N):	No	SEARCH RING ID:	
DIRECTIONS, ACCESS AND EQUIPMENT LOCATION:	CT 2047 WESTBROOK-SPENCER PLAINS RD I-95 EAST TO EXIT 65 (RT. 153). TURN LEFT ONTO RT. 153 AND CONTINUE TO CAUTION LIGHT. TURN RIGHT AND FOLLOW SIGNS TO STATE POLICE BARRACKS. POWER CO: EVERSOURCE 1800-286-2000 METER# 88-643-289 SHELTER DOOR COMBO 3534 GATE COMBO 5000					FREQ COORD:		BTA:	MSA / RSA:
								LAC(UMTS):	05996
						RF DISTRICT:	TBD		
						RF ZONE:	TBD	RNC(UMTS):	MIDDLETOWN RNC02
								MME POOL ID(LTE):	FF01
						PARENT NAME(UMTS):	MDTWCTNIRNC002		

Section 3 - LICENSE COVERAGE/FILING INFORMATION

CGSA - NO FILING TRIGGERED (Yes/No):	No	CGSA LOSS:		PCS REDUCED - UPS ZIP:		CGSA CALL SIGNS:	z_KNLB312,z_KNLB312,z_KNLB312
CGSA - MINOR FILING NEEDED (Yes/No):	No	CGSA EXT AGMT NEEDED:		PCS POPS REDUCED:			
CGSA - MAJOR FILING NEEDED (Yes/No):	Yes	CGSA SCORECARD UPDATED:					

Section 4 - TOWER/REGULATORY INFORMATION

STRUCTURE AT&T OWNED?:	No	GROUND ELEVATION (ft):		STRUCTURE TYPE:	SELF SUPPORT	MARKET LOCATION 700 MHz Band:	
ADDITIONAL REGULATORY?:	No	HEIGHT OVERALL (ft):	0.00	FCC ASR NUMBER:		MARKET LOCATION 850 MHz Band:	
SUB-LEASE RIGHTS?:	No	STRUCTURE HEIGHT (ft):	181.00			MARKET LOCATION 1900 MHz Band:	
LIGHTING TYPE:	NOT REQUIRED					MARKET LOCATION AWS Band:	
						MARKET LOCATION WCS Band:	
						MARKET LOCATION Future Band:	

Section 5 - E-911 INFORMATION - existing

	PSAP NAME:	PSAP ID:	E911 PHASE:	MPC SVC PROVIDER:	LMU REQUIRED:	ESRN:	DATE LIVE PH1:	DATE LIVE PH2:
SECTOR A E-911				INTRADO		0		
SECTOR B				INTRADO		0		
SECTOR C				INTRADO		0		
SECTOR D								
SECTOR E								
SECTOR F								
OMNI								

Section 5 - E-911 INFORMATION - final

	PSAP NAME:	PSAP ID:	E911 PHASE:	MPC SVC PROVIDER:	LMU REQUIRED:	ESRN:	DATE LIVE PH1:	DATE LIVE PH2:
SECTOR A E-911				INTRADO		0		
SECTOR B				INTRADO		0		
SECTOR C				INTRADO		0		
SECTOR D								
SECTOR E								
SECTOR F								
OMNI								

Section 6/7 - BBU INFORMATION - existing

	BBU 1	BBU 2	BBU 3	BBU 4
BBU ID:	300970	197246	350903	875387
TECHNOLOGY:	UMTS	UMTS	LTE	5G
BBU NAME:	CTU2047	CTV2047	CTL02047	CTCN002047
BBU USID:	59410	59410	59410	59410
CELL ID / BCF:	CTV2047	CTV2047	CTL02047	CTCN002047
BTA/TID:	184W	184U	184L	184N
4-9 DIGIT SITE ID:	2047	2047	2047	14002047
COW OR TOY?:	No	No	No	No
CELL SITE TYPE:	SECTORIZED	SECTORIZED	SECTORIZED	SECTORIZED
SITE TYPE:	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL
BTS LOCATION ID:	INTERNAL	INTERNAL	INTERNAL	INTERNAL
BASE STATION TYPE:	OVERLAY	OVERLAY	BASE	BASE
EQUIPMENT NAME:	WESTBROOK-SPENCER RD	WESTBROOK-SPENCER RD	WESTBROOK-SPENCER RD	WESTBROOK-SPENCER RD
DISASTER PRIORITY:	0	0	3	3
EQUIPMENT VENDOR:	ERICSSON	ERICSSON	ERICSSON	ERICSSON
EQUIPMENT TYPE (Model):			6601 INDOOR MU	BASEBAND 6630
BASEBAND CONFIGURATION :				
MARKET STATE CODE:			CT	CTC
NODE B NUMBER:	0	0	2047	2047
SIDEHAUL SWITCH VENDOR:				
SIDEHAUL SWITCH MODEL:				
SIDEHAUL SWITCH NAME:				
SIDEHAUL SWITCH ADDITIONAL CARDS:				
CSS - CTS COMMON ID:	CTU2047	CTV2047	CTL02047	CTCN002047
CSS - SECONDARY FUNCTION ID:				

Section 6/7 - BBU INFORMATION - final

	BBU 1	BBU 2
BBU ID:	350903	875387
TECHNOLOGY:	LTE	LTE,5G
BBU NAME:	CTL02047	CTL06047R,CTCN002047
BBU USID:	59410	59410
CELL ID / BCF:	CTL02047	CTCN002047
BTA/TID:	184L	184N
4-9 DIGIT SITE ID:	2047	14002047
COW OR TOY?:	No	No
CELL SITE TYPE:	SECTORIZED	SECTORIZED
SITE TYPE:	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL
BTS LOCATION ID:	INTERNAL	INTERNAL
BASE STATION TYPE:	BASE	BASE
EQUIPMENT NAME:	WESTBROOK-SPENCER RD	WESTBROOK-SPENCER RD
DISASTER PRIORITY:	3	3
EQUIPMENT VENDOR:	ERICSSON	ERICSSON
EQUIPMENT TYPE (Model):	BASEBAND 6630	BASEBAND 6630
BASEBAND CONFIGURATION :	1x6601 / 1x6630 / 1xXMU03	xxxxx / 1x6630 Mixed-Mode / xxxxx + 1
MARKET STATE CODE:	CT	CT,CTC
NODE B NUMBER:	2047	6047,2047
SIDEHAUL SWITCH VENDOR:		
SIDEHAUL SWITCH MODEL:		
SIDEHAUL SWITCH NAME:		
SIDEHAUL SWITCH ADDITIONAL CARDS:		
CSS - CTS COMMON ID:	CTL02047	CTCN002047
CSS - SECONDARY FUNCTION ID:		

Section 7b - Radio INFORMATION - existing

Section 7b - Radio INFORMATION - final

Section 8 - RBS/SECTOR ASSOCIATION - existing

	BBU 1	BBU 2	BBU 3	BBU 4
CTS Common ID	CTU2047	CTV2047	CTL02047	CTCN002047
Soft Sector IDs	CTU20477	CTV20471	CTL02047_2A_2	CTCN002047_N005A_1
	CTU20478	CTV20472	CTL02047_2B_2	CTCN002047_N005B_1
	CTU20479	CTV20473	CTL02047_2C_2	CTCN002047_N005C_1
		CTV2047A	CTL02047_7A_1	
		CTV2047B	CTL02047_7B_1	
		CTV2047C	CTL02047_7C_1	
			CTL02047_8A_1	
			CTL02047_8B_1	
			CTL02047_8C_1	
			CTL02047_9A_1	
			CTL02047_9A_2	
			CTL02047_9B_1	
			CTL02047_9B_2	
			CTL02047_9C_1	
			CTL02047_9C_2	

Section 8 - RBS/SECTOR ASSOCIATION - final

	BBU 1	BBU 2
CTS Common ID	CTL02047	CTL06047R,CTCN002047
Soft Sector IDs	CTL02047_7A_1	CTCN002047_N005A_1
	CTL02047_7A_3_F	CTCN002047_N005B_1
	CTL02047_7B_1	CTCN002047_N005C_1
	CTL02047_7B_3_F	CTL06047_2A_2
	CTL02047_7C_1	CTL06047_2B_2
	CTL02047_7C_3_F	CTL06047_2C_2
		CTL06047_9A_1
		CTL06047_9A_2
		CTL06047_9B_1
		CTL06047_9B_2
		CTL06047_9C_1
		CTL06047_9C_2

Section 9 - SOFT SECTOR ID - existing

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 1900	LTE 4TH AWS	LTE 5TH 700	5G 1ST 850
USEID (excluding Hard Sector)	59410.850.3G.1	59410.1900.3G.2	59410.850.3G.2								
SECTOR A SOFT SECTOR ID	CTV20471	CTU20477	CTV2047A	CTL02047_7A_1	CTL02047_8A_1	CTL02047_9A_1	CTL02047_2A_2	CTL02047_9A_2			CTCN002047_N005A_1
SECTOR B	CTV20472	CTU20478	CTV2047B	CTL02047_7B_1	CTL02047_8B_1	CTL02047_9B_1	CTL02047_2B_2	CTL02047_9B_2			CTCN002047_N005B_1
SECTOR C	CTV20473	CTU20479	CTV2047C	CTL02047_7C_1	CTL02047_8C_1	CTL02047_9C_1	CTL02047_2C_2	CTL02047_9C_2			CTCN002047_N005C_1
SECTOR D											
SECTOR E											
SECTOR F											
OMNI											

Section 9 - SOFT SECTOR ID - final

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 1900	LTE 4TH AWS	LTE 5TH 700	5G 1ST 850
USEID (excluding Hard Sector)											
SECTOR A SOFT SECTOR ID				CTL02047_7A_1		CTL06047_9A_1		CTL06047_9A_2	CTL06047_2A_2	CTL02047_7A_3_F	CTCN002047_N005A_1
SECTOR B				CTL02047_7B_1		CTL06047_9B_1		CTL06047_9B_2	CTL06047_2B_2	CTL02047_7B_3_F	CTCN002047_N005B_1
SECTOR C				CTL02047_7C_1		CTL06047_9C_1		CTL06047_9C_2	CTL06047_2C_2	CTL02047_7C_3_F	CTCN002047_N005C_1
SECTOR D											
SECTOR E											
SECTOR F											
OMNI											

Section 9 - Cell Number - existing

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 1900	LTE 4TH AWS	LTE 5TH 700	5G 1ST 850
USEID (excluding Hard Sector)	59410.850.3G.1	59410.1900.3G.2	59410.850.3G.2								
SECTOR A CELL NUMBER				15	1	8	192	178			25
SECTOR B				16	2	9	193	179			49
SECTOR C				17	3	10	194	180			73
SECTOR D											
SECTOR E											
SECTOR F											
OMNI											

Section 9 - Cell Number - final

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 1900	LTE 4TH AWS	LTE 5TH 700	5G 1ST 850
USEID (excluding Hard Sector)											
SECTOR A CELL NUMBER				15		8		178	192	171	25
SECTOR B				16		9		179	193	172	49
SECTOR C				17		10		180	194	173	73
SECTOR D											
SECTOR E											
SECTOR F											
OMNI											

Section 10 - CID/SAC - existing

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 1900	LTE 4TH AWS	LTE 5TH 700	5G 1ST 850
SECTOR A CID/SAC	20471	20477	60471								
SECTOR B	20472	20478	60472								
SECTOR C	20473	20479	60473								
SECTOR D											
SECTOR E											
SECTOR F											
OMNI											

Section 10 - CID/SAC - final

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 1900	LTE 4TH AWS	LTE 5TH 700	5G 1ST 850
SECTOR A CID/SAC											
SECTOR B											
SECTOR C											
SECTOR D											
SECTOR E											
SECTOR F											
OMNI											

Section 11 - CURRENT RADIO COUNTS existing

Section 12 - CURRENT T1 COUNTS existing

Section 13 - NEW/PROPOSED RADIO COUNTS

Section 14 - NEW/PROPOSED T1 COUNTS

Section 15A - CURRENT TOWER CONFIGURATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL			840-370964K	DMP65R-BU4DA			
ANTENNA VENDOR			Kathrein	CCI			
ANTENNA SIZE (H x W x D)			47.7X14.9X6.5	48.0X20.7X7.7			
ANTENNA WEIGHT			52 9	67.9			
AZIMUTH			23	23			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)			148	148			
ANTENNA TIP HEIGHT			150	150			
MECHANICAL DOWNTILT			2	0			
FEEDER AMOUNT			2				
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)			Internal	Internal			
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)			2 CM1007-DBPXBC-003				
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)			1 860-10006				
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)			1 DC6-48-60-18-8F				
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)				1 4449 B5/B12			
RRH - 850 band (QTY/MODEL)				with another band			
RRH - 1900 band (QTY/MODEL)			1 8843 B2/B66A				
RRH - AWS band (QTY/MODEL)				with another band			
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)			1 Y-Cable	1 Y-Cable			
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1							
Local Market Note 2							
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 3	PORT 1			CTV20471	CTV20471		UMTS 850	370964K_850_09	13.5	145	9	None	Andrew 1-5/8 (850)	168.043022						278.61		5	
	PORT 3			CTL02047_9A_1	CTL02047_9A_1		LTE 1900	370964K_1930MHz_06DT	15.9	23	6	Top	Fiber	0						3664.3757		6	
	PORT 4			CTL02047_9A_2	CTL02047_9A_2		LTE 1900	370964K_1930MHz_06DT	15.9	23	6	Top	Fiber	0						3664.3757		6	
ANTENNA POSITION 4	PORT 1			CTL02047_7A_1	CTL02047_7A_1		LTE 700	BU4D_725MHz_02DT	11.2	23	2	Top	Fiber	0						1475.7065		7	
	PORT 2			CTL02047_8A_1	CTL02047_8A_1		LTE 850	BU4D_850MHz_02DT	12.4	23	2	Top	Fiber	0						1000		7	
	PORT 3			CTL02047_2A_2	CTL02047_2A_2		LTE AWS	BU4D_2170MHz_06DT	16.6	23	6	Top	Fiber	0						3837.0724		8	
	PORT 5			CTCN002047_N005A_1	CTCN002047_N005A_1		5G 850	BU4D_850MHz_02DT	12.4	23	2	Top	Fiber	0						1000		7	

Section 15B - CURRENT TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL			840-370964K	DMP65R-BU4DA			
ANTENNA VENDOR			Kathrein	CCI			
ANTENNA SIZE (H x W x D)			47.7X14.9X6.5	48.0X20.7X7.7			
ANTENNA WEIGHT			52 9	67.9			
AZIMUTH			143	143			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)			148	148			
ANTENNA TIP HEIGHT			150	150			
MECHANICAL DOWNTILT			0	0			
FEEDER AMOUNT			2				
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)			Internal	Internal			
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)			2 CM1007-DBPXBC-003				
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)				1 4449 B5/B12			
RRH - 850 band (QTY/MODEL)				with another band			
RRH - 1900 band (QTY/MODEL)			1 8843 B2/B66A				
RRH - AWS band (QTY/MODEL)				with another band			
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)			1 Y-Cable	1 Y-Cable			
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1							
Local Market Note 2							
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 3	PORT 1			CTV20472	CTV20472		UMTS 850	370964K_850_06	13.5	267	6	None	Andrew 1-5/8 (850)	168.043022						278.61		13	
	PORT 3			CTL02047_9B_1	CTL02047_9B_1		LTE 1900	370964K_1930MHz_06DT	15.9	143	6	Top	Fiber	0						3664.3757		14	
	PORT 4			CTL02047_9B_2	CTL02047_9B_2		LTE 1900	370964K_1930MHz_06DT	15.9	143	6	Top	Fiber	0						3664.3757		14	
ANTENNA POSITION 4	PORT 1			CTL02047_7B_1	CTL02047_7B_1		LTE 700	BU4D_725MHz_02DT	11.2	143	2	Top	Fiber	0						1475.7065		15	
	PORT 2			CTL02047_8B_1	CTL02047_8B_1		LTE 850	BU4D_850MHz_02DT	12.4	143	2	Top	Fiber	0						1000		15	
	PORT 3			CTL02047_2B_2	CTL02047_2B_2		LTE AWS	BU4D_2170MHz_06DT	0	143	6	Top	Fiber	0						3837.0724		16	
	PORT 5			CTCN002047_N005B_1	CTCN002047_N005B_1		5G 850	BU4D_850MHz_02DT	12.4	143	2	Top	Fiber	0						1000		15	

Section 15C - CURRENT TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL			840-370964K	DMP65R-BU4DA			
ANTENNA VENDOR			Kathrein	CCI			
ANTENNA SIZE (H x W x D)			47.7X14.9X6.5	48.0X20.7X7.7			
ANTENNA WEIGHT			52 9	67.9			
AZIMUTH			263	263			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)			148	148			
ANTENNA TIP HEIGHT			150	150			
MECHANICAL DOWNTILT			0	0			
FEEDER AMOUNT			2				
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)			Internal	Internal			
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)			2 CM1007-DBPXBC-003				
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)				1 4449 B5/B12			
RRH - 850 band (QTY/MODEL)				with another band			
RRH - 1900 band (QTY/MODEL)			1 8843 B2/B66A				
RRH - AWS band (QTY/MODEL)				with another band			
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)			1 Y-Cable	1 Y-Cable			
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1							
Local Market Note 2							
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 3	PORT 1			CTV20473	CTV20473		UMTS 850	370964K_850_06	13.5	26	6	None	Andrew 1-5/8 (850)	168.043022						278.61		21	
	PORT 2			CTL02047_9C_1	CTL02047_9C_1		LTE 1900	370964K_1930MHz_03DT	15.7	263	3	Top	Fiber	0						3664.3757		22	
	PORT 4			CTL02047_9C_2	CTL02047_9C_2		LTE 1900	370964K_1930MHz_03DT	15.7	263	3	Top	Fiber	0						3664.3757		22	
ANTENNA POSITION 4	PORT 1			CTL02047_7C_1	CTL02047_7C_1		LTE 700	BU4D_725MHz_06DT	11	263	6	Top	Fiber	0						1475.7065		23	
	PORT 2			CTL02047_8C_1	CTL02047_8C_1		LTE 850	BU4D_850MHz_06DT	12.5	263	6	Top	Fiber	0						1000		23	
	PORT 3			CTL02047_2C_2	CTL02047_2C_2		LTE AWS	BU4D_2170MHz_03DT	16.5	263	3	Top	Fiber	0						3837.0724		24	
	PORT 5			CTCN002047_N005C_1	CTCN002047_N005C_1		5G 850	BU4D_850MHz_06DT	12.5	263	6	Top	Fiber	0						1000		23	

Section 16A - PLANNED/PROPOSED TOWER CONFIGURATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?			Yes				
ANTENNA MAKE - MODEL							
ANTENNA VENDOR							
ANTENNA SIZE (H x W x D)							
ANTENNA WEIGHT							
AZIMUTH							
MAGNETIC DECLINATION							
RADIATION CENTER (feet)							
ANTENNA TIP HEIGHT							
MECHANICAL DOWNTILT							
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)							
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)							
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)			1 DC9-48-60-24-8C-EV				
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)			1 4478 B14				
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)							
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Arrange antenna and radio postions as per PD. Add LTE radios.Swap DC6 with DC 9 Fiber Squid.Decomm UMTS.						
Local Market Note 2							
Local Market Note 3	2x6630 / 1xXMJ + IDLe						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 3	PORT 1			CTL02047_7A_3_F	CTL02047_7A_3_F		LTE 700	370964K_777MHz_02DT	13.1	23	2	Top	Fiber	0						2951.413		5	

Section 16B - PLANNED/PROPOSED TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?			Yes				
ANTENNA MAKE - MODEL							
ANTENNA VENDOR							
ANTENNA SIZE (H x W x D)							
ANTENNA WEIGHT							
AZIMUTH							
MAGNETIC DECLINATION							
RADIATION CENTER (feet)							
ANTENNA TIP HEIGHT							
MECHANICAL DOWNTILT							
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)							
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)							
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)			1 4478 B14				
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)							
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Arrange antenna and radio postions as per PD. Add LTE radios.Swap DC6 with DC 9 Fiber Squid.Decomm UMTS.						
Local Market Note 2							
Local Market Note 3	2x6630 / 1xXMJ + IDLe						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 3	PORT 1			CTL02047_7B_3_F	CTL02047_7B_3_F		LTE 700	370964K_777MHz_02DT	13.1	143	2	Top	Fiber	0						2951.413		13	

Section 16C - PLANNED/PROPOSED TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?			Yes				
ANTENNA MAKE - MODEL							
ANTENNA VENDOR							
ANTENNA SIZE (H x W x D)							
ANTENNA WEIGHT							
AZIMUTH							
MAGNETIC DECLINATION							
RADIATION CENTER (feet)							
ANTENNA TIP HEIGHT							
MECHANICAL DOWNTILT							
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)							
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)							
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)			1 4478 B14				
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)							
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Arrange antenna and radio postions as per PD. Add LTE radios.Swap DC6 with DC 9 Fiber Squid.Decomm UMTS.						
Local Market Note 2							
Local Market Note 3	2x6630 / 1xXMJ + IDLe						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 3	PORT 1			CTL02047_7C_3_F	CTL02047_7C_3_F		LTE 700	370964K_777MHz_02DT	13.1	263	6	Top	Fiber	0						2951.413		21	

Section 16.5A - SCOPING TOWER CONFIGURATION - SECTOR A (OR OMNI)

Section 17A - FINAL TOWER CONFIGURATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL			840-370964K	DMP65R-BU4DA			
ANTENNA VENDOR			Kathrein	CCI			
ANTENNA SIZE (H x W x D)			47.7X14.9X6.5	48.0X20.7X7.7			
ANTENNA WEIGHT			52.9	67.9			
AZIMUTH			23	23			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)			148	148			
ANTENNA TIP HEIGHT			150	150			
MECHANICAL DOWNTILT			2	0			
FEEDER AMOUNT			2				
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)			Internal	Internal			
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)							
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)			1 DC9-48-60-24-8C-EV				
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)			1 4478 B14	1 4449 B5/B12			
RRH - 850 band (QTY/MODEL)				with another band			
RRH - 1900 band (QTY/MODEL)			1 8843 B2/B66A				
RRH - AWS band (QTY/MODEL)				with another band			
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)			1 Y-Cable	1 Y-Cable			
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Arrange antenna and radio postions as per PD. Add LTE radios.Swap DC6 with DC 9 Fiber Squid.Decomm UMTS.						
Local Market Note 2							
Local Market Note 3	2x6630 / 1xXMU + IDLe						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 3	PORT 1	59410.A.700.4G.1mp5		CTL02047_7A_3_F	CTL02047_7A_3_F		LTE 700	370964K_777MHz_02DT	13.1	23	2	Top	Fiber	0						2951.413		5	
	PORT 2	59410.A.1900.4G.tmp1		CTL06047_9A_1	CTL06047_9A_1		LTE 1900	370964K_1930MHz_06DT	15.9	23	6	Top	Fiber	0						3664.3757		6	
	PORT 4	59410.A.1900.4G.tmp2		CTL06047_9A_2	CTL06047_9A_2		LTE 1900	370964K_1930MHz_06DT	15.9	23	6	Top	Fiber	0						3664.3757		6	
ANTENNA POSITION 4	PORT 1	59410.A.700.4G.1		CTL02047_7A_1	CTL02047_7A_1		LTE 700	BU4D_725MHz_02DT	11.2	23	2	Top	Fiber	0						1475.7065		7	
	PORT 2	59410.A.850.5G.1		CTCN002047_N005A_1	CTCN002047_N005A_1		5G 850	BU4D_850MHz_02DT	12.4	23	2	Top	Fiber	0						1000		7	
	PORT 3	59410.A.AWS.4G.tmp4		CTL06047_2A_2	CTL06047_2A_2		LTE AWS	BU4D_2170MHz_02DT	16.5	23	2	Top	Fiber	0						3837.0724		8	

Section 17B - FINAL TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL			840-370964K	DMP65R-BU4DA			
ANTENNA VENDOR			Kathrein	CCI			
ANTENNA SIZE (H x W x D)			47.7X14.9X6.5	48.0X20.7X7.7			
ANTENNA WEIGHT			52 9	67.9			
AZIMUTH			143	143			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)			148	148			
ANTENNA TIP HEIGHT			150	150			
MECHANICAL DOWNTILT			0	0			
FEEDER AMOUNT			2				
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)			Internal	Internal			
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)							
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)			1 4478 B14	1 4449 B5/B12			
RRH - 850 band (QTY/MODEL)				with another band			
RRH - 1900 band (QTY/MODEL)			1 8843 B2/B66A				
RRH - AWS band (QTY/MODEL)				with another band			
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)			1 Y-Cable	1 Y-Cable			
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Arrange antenna and radio postions as per PD. Add LTE radios.Swap DC6 with DC 9 Fiber Squid.Decomm UMTS.						
Local Market Note 2							
Local Market Note 3	2x6630 / 1xXMU + IDLe						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 3	PORT 1	59410.B.700.4G.tmp5		CTL02047_7B_3_F	CTL02047_7B_3_F		LTE 700	370964K_777MHz_02DT	13.1	143	2	Top	Fiber	0						2951.413		13	
	PORT 2	59410.B.1900.4G.tmp1		CTL06047_9B_1	CTL06047_9B_1		LTE 1900	370964K_1930MHz_06DT	15.9	143	6	Top	Fiber	0						3664.3757		14	
	PORT 3	59410.B.1900.4G.tmp2		CTL06047_9B_2	CTL06047_9B_2		LTE 1900	370964K_1930MHz_06DT	15.9	143	6	Top	Fiber	0						3664.3757		14	
ANTENNA POSITION 4	PORT 1	59410.B.700.4G.1		CTL02047_7B_1	CTL02047_7B_1		LTE 700	BU4D_725MHz_02DT	11.2	143	2	Top	Fiber	0						1475.7065		15	
	PORT 2	59410.B.850.5G.1		CTCN002047_N005B_1	CTCN002047_N005B_1		5G 850	BU4D_850MHz_02DT	12.4	143	2	Top	Fiber	0						1000		15	
	PORT 3	59410.B.AWS.4G.tmp4		CTL06047_2B_2	CTL06047_2B_2		LTE AWS	BU4D_2170MHz_02DT	0	143	2	Top	Fiber	0						3837.0724		16	

Section 17C - FINAL TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL			840-370964K	DMP65R-BU4DA			
ANTENNA VENDOR			Kathrein	CCI			
ANTENNA SIZE (H x W x D)			47.7X14.9X6.5	48.0X20.7X7.7			
ANTENNA WEIGHT			52 9	67.9			
AZIMUTH			263	263			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)			148	148			
ANTENNA TIP HEIGHT			150	150			
MECHANICAL DOWNTILT			0	0			
FEEDER AMOUNT			2				
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)			Internal	Internal			
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)							
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)			1 4478 B14	1 4449 B5/B12			
RRH - 850 band (QTY/MODEL)				with another band			
RRH - 1900 band (QTY/MODEL)			1 8843 B2/B66A				
RRH - AWS band (QTY/MODEL)				with another band			
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)			1 Y-Cable	1 Y-Cable			
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Arrange antenna and radio postions as per PD. Add LTE radios.Swap DC6 with DC 9 Fiber Squid.Decomm UMTS.						
Local Market Note 2							
Local Market Note 3	2x6630 / 1xXMU + IDLe						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 3	PORT 1	59410.C.700.4G.3_F.tmp5		CTL02047_7C_3_F	CTL02047_7C_3_F		LTE 700	370964K_777MHz_02DT	13.1	263	6	Top	Fiber	0						2951.413		21	
	PORT 2	59410.C.1900.4G.tmp1		CTL06047_9C_1	CTL06047_9C_1		LTE 1900	370964K_1930MHz_03DT	15.7	263	3	Top	Fiber	0						3664.3757		22	
	PORT 3	59410.C.1900.4G.tmp2		CTL06047_9C_2	CTL06047_9C_2		LTE 1900	370964K_1930MHz_03DT	15.7	263	3	Top	Fiber	0						3664.3757		22	
ANTENNA POSITION 4	PORT 1	59410.C.700.4G.1_1		CTL02047_7C_1	CTL02047_7C_1		LTE 700	BU4D_725MHz_06DT	11	263	6	Top	Fiber	0						1475.7065		23	
	PORT 2	59410.C.850.5G.1		CTCN002047_N005C_1	CTCN002047_N005C_1		5G 850	BU4D_850MHz_06DT	12.5	263	6	Top	Fiber	0						1000		23	
	PORT 3	59410.C.AWS.4G.tmp4		CTL06047_2C_2	CTL06047_2C_2		LTE AWS	BU4D_2170MHz_06DT	16.6	263	6	Top	Fiber	0						3837.0724		24	

Exhibit E

Mount Analysis

October 17, 2022
March 22, 2023 (Rev. 1)

SAI Communications
12 Industrial Way
Salem NH, 03079

RE:		
	AT&T Site Number:	CT2047 (LTE 5C)
	FA Number:	10035035
	PACE Number:	MRCTB062149
	PT Number:	2051A147KN
	TEP Project Number:	368503
	AT&T Site Name:	WESTBROOK-SPENCER RD
	Site Address:	315 Spencer Plain Road Westbrook, CT 06498

To Whom It May Concern:

TEP Northeast (TEP NE) has been authorized by SAI Communications to perform a mount analysis on the existing AT&T antenna/RRH mounts to determine their capability of supporting the following additional loading:

- (3) 840-370964K Antennas (47.7"x14.9"x6.5" – Wt. = 53 lbs. /each)
- (3) DMP65R-BU4DA Antennas (48.0"x20.7"x7.7" – Wt. = 68 lbs. /each)
- (3) 8843 B2/B66A RRH's (14.9"x13.2"x10.9" – Wt. = 72 lbs. /each) (Tower Diagonal)
- (3) 4449 B5/B12 RRH's (17.9"x13.2"x9.4" – Wt. = 73 lbs. /each) (Tower Diagonal)
- **(3) 4478 B14 RRH's (18.1"x13.4"x8.3" – Wt. = 60 lbs. /each) (Tower Diagonal)**
- **(1) DC9-48-60-24-8C-EV Surge Arrestor (31.4"x10.2"Ø – Wt. = 29 lbs. /each) (Pos. 3)**

**Proposed equipment shown in bold.*

No original structural design documents or fabrication drawings were available for the existing mounts. ProVertic LLC, conducted a survey climb and mapping of the existing AT&T antenna mounts on June 21, 2016. TEP NE conducted a ground audit of the existing AT&T antenna mounts on March 11, 2022.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-H, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2021 with 2022 Connecticut State Building Code, and AT&T Mount Technical Directive – R22.

- TEP NE considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-H and Appendix P of the Connecticut State Building Code, the max basic wind speed for this site is equal to 125 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 1.0 in. An escalated ice thickness of 1.16 in was used for this analysis.

- TEP NE considers this site to be exposure category B; tower is located in an urban/suburban or wooded area with numerous closely spaced obstructions.

- TEP NE considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.

- TEP NE considers this site to have a spectral response acceleration parameter at short periods, S_S, of 0.203 and a spectral response acceleration parameter at a period of 1 second, S_1, of 0.053.

- The mounts have been analyzed with load combinations consisting of 500 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 4.

- The mounts have been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.

- The existing mounts are secured to the existing self supporting tower with ubolts tightened around the tower leg. TEP NE considers the threaded rods as the governing connection members.

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

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing (LTE 5C) Mount Rating	1	LC53	68%	**PASS**

Reference Documents:

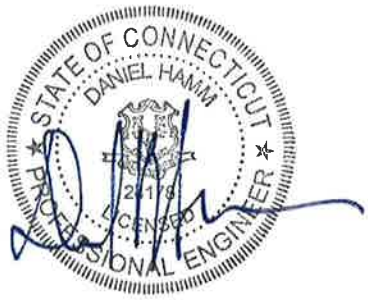
- Mapping report produced by ProVertic, LLC dated June 21, 2016.

This determination was based on the following limitations and assumptions:

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

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

Respectfully Submitted,
TEP Northeast



Michael Cabral
Director

Daniel P. Hamm, PE
Vice President

FIELD PHOTOS:






Wind & Ice
Calculations

Date: 3/22/2023
Project Name: WESTBROOK-SPENCER RD
Project No.: CT2047
Designed By: JC **Checked By:** MSC

2.6.5.2 Velocity Pressure Coeff:

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

	z=	148 (ft)
	z_g=	1200 (ft)
K_z= 1.105	α=	7.0

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

$K_{zt} = [1+(K_c\,K_t/K_h)]^2$ $\qquad K_h = e^{(f*z/H)}$

K_{zt}= 1	K_h=	1
	K_c=	0.9 (from Table 2-4)
(If Category 1 then K_{zt}=1.0)	K_t=	0 (from Table 2-5)
	f=	0 (from Table 2-5)
Category= 1	z=	148
	z_s=	94 (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)

2.6.10 Design Ice Thickness

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

$t_{iz} = t_i * I * K_{iz} * (K_{zt})^{0.35}$ $\qquad t_{iz}$ = 1.16 in

Date: 3/22/2023
Project Name: WESTBROOK-SPENCER RD
Project No.: CT2047
Designed By: JC 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=	180	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= $0.00256 * K_z * K_{zt} * K_s * K_e * K_d * V_{max}^2$

q_z=	**37.45**	K_z=	1.105	(from 2.6.5.2)
$q_{z\,(ice)}$=	**5.99**	K_{zt}=	1.0	(from 2.6.6.2.1)
$q_{z\,(30)}$=	**2.16**	K_s=	1.0	(from 2.6.7)
		K_e=	1.00	(from 2.6.8)
		K_d=	0.85	(from Table 2-2)
		V_{max}=	125	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: 3/22/2023
Project Name: WESTBROOK-SPENCER RD
Project No.: CT2047
Designed By: JC 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) ≥ 0.85	1.4 - 4.0(r_s) ≥ 0.90	2.0 - 6.0(r_s) ≥ 1.25
Round	**C < 39** (Subcritical)	0.7	0.8	1.2
	39 ≤ C ≤ 78 (Transitional)	$4.14/(C^{0.485})$	$3.66/(C^{0.415})$	$46.8/(C^{-1.0})$
	C > 78 (Supercritical)	0.5	0.6	0.6

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

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

Ice Thickness = **1.16** **in** | **Angle =** **0 (deg)** | **Equivalent Angle =** **180 (deg)**

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
840-370964K Antenna	47.7	14.9	6.5	4.94	3.20	1.23	**228**	**44**	**13**
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.32	1.20	**310**	**58**	**18**
4478 B14 RRH	18.1	13.4	8.3	1.68	1.35	1.20	**76**	**16**	**4**
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.20	**61**	**13**	**4**
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.36	1.20	**74**	**16**	**4**
Surge Arrestor	31.4	10.2	10.2	2.22	3.08	0.70	**58**	**12**	**3**
2" Pipe	2.4	12.0		0.20	0.20	1.20	**9**		
2x2 Angle	2.0	12.0		0.17	0.17	2.00	**12**		
3x3 Angle	3.0	12.0		0.25	0.25	2.00	**19**		
HSS 4x4	4.0	12.0		0.33	0.33	1.25	**16**		

Date: 3/22/2023
Project Name: WESTBROOK-SPENCER RD
Project No.: CT2047
Designed By: JC Checked By: MSC

WIND LOADS

Angle = 30 (deg) | Ice Thickness = 1.16 in. | Equivalent Angle = 210 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
840-370964K Antenna	47.7	14.9	6.5	4.94	2.15	3.20	7.34	1.23	1.41	228	114	199
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	310	131	265
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	76	47	68
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	61	51	59
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	74	53	68

WIND LOADS WITH ICE:

840-370964K Antenna	50.0	17.2	8.8	5.98	3.07	2.90	5.67	1.22	1.34	44	25	39
DMP65R-BU4DA Antenna	50.3	23.0	10.0	8.05	3.50	2.19	5.02	1.20	1.31	58	28	50
4478 B14 RRH	20.4	15.7	10.6	2.23	1.51	1.30	1.92	1.20	1.20	16	11	15
8843 B2/B66A RRH	17.2	15.5	13.2	1.86	1.58	1.11	1.30	1.20	1.20	13	11	13
4449 B5/B12 RRH	20.2	15.5	11.7	2.18	1.65	1.30	1.73	1.20	1.20	16	12	15

WIND LOADS AT 30 MPH:

840-370964K Antenna	47.7	14.9	6.5	4.94	2.15	3.20	7.34	1.23	1.41	13	7	11
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	18	8	15
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	4	3	4
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	3	3
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	4	3	4

Date: 3/22/2023
Project Name: WESTBROOK-SPENCER RD
Project No.: CT2047
Designed By: JC Checked By: MSC

WIND LOADS

Angle =	60	(deg)	Ice Thickness =	1.16	in.	Equivalent Angle =	240	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
840-370964K Antenna	47.7	14.9	6.5	4.94	2.15	3.20	7.34	1.23	1.41	228	114	142
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	310	131	176
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	76	47	54
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	61	51	53
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	74	53	58

WIND LOADS WITH ICE:

840-370964K Antenna	50.0	17.2	8.8	5.98	3.07	2.90	5.67	1.22	1.34	44	25	29
DMP65R-BU4DA Antenna	50.3	23.0	10.0	8.05	3.50	2.19	5.02	1.20	1.31	58	28	35
4478 B14 RRH	20.4	15.7	10.6	2.23	1.51	1.30	1.92	1.20	1.20	16	11	12
8843 B2/B66A RRH	17.2	15.5	13.2	1.86	1.58	1.11	1.30	1.20	1.20	13	11	12
4449 B5/B12 RRH	20.2	15.5	11.7	2.18	1.65	1.30	1.73	1.20	1.20	16	12	13

WIND LOADS AT 30 MPH:

840-370964K Antenna	47.7	14.9	6.5	4.94	2.15	3.20	7.34	1.23	1.41	13	7	8
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	18	8	10
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	4	3	3
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	3	3
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	4	3	3

Date: 3/22/2023
Project Name: WESTBROOK-SPENCER RD
Project No.: CT2047
Designed By: JC Checked By: MSC

WIND LOADS

Angle =	90	(deg)	Ice Thickness =	1.16	in.	Equivalent Angle =	270	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
840-370964K Antenna	47.7	14.9	6.5	4.94	2.15	3.20	7.34	1.23	1.41	228	114	114
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	310	131	131
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	76	47	47
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	61	51	51
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	74	53	53

WIND LOADS WITH ICE:

840-370964K Antenna	50.0	17.2	8.8	5.98	3.07	2.90	5.67	1.22	1.34	44	25	25
DMP65R-BU4DA Antenna	50.3	23.0	10.0	8.05	3.50	2.19	5.02	1.20	1.31	58	28	28
4478 B14 RRH	20.4	15.7	10.6	2.23	1.51	1.30	1.92	1.20	1.20	16	11	11
8843 B2/B66A RRH	17.2	15.5	13.2	1.86	1.58	1.11	1.30	1.20	1.20	13	11	11
4449 B5/B12 RRH	20.2	15.5	11.7	2.18	1.65	1.30	1.73	1.20	1.20	16	12	12

WIND LOADS AT 30 MPH:

840-370964K Antenna	47.7	14.9	6.5	4.94	2.15	3.20	7.34	1.23	1.41	13	7	7
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	18	8	8
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	4	3	3
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	3	3
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	4	3	3

Date: 3/22/2023
Project Name: WESTBROOK-SPENCER RD
Project No.: CT2047
Designed By: JC Checked By: MSC

WIND LOADS

Angle =	120	(deg)	Ice Thickness =	1.16	in.	Equivalent Angle =	300	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
840-370964K Antenna	47.7	14.9	6.5	4.94	2.15	3.20	7.34	1.23	1.41	228	114	142
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	310	131	176
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	76	47	54
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	61	51	53
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	74	53	58

WIND LOADS WITH ICE:

840-370964K Antenna	50.0	17.2	8.8	5.98	3.07	2.90	5.67	1.22	1.34	44	25	29
DMP65R-BU4DA Antenna	50.3	23.0	10.0	8.05	3.50	2.19	5.02	1.20	1.31	58	28	35
4478 B14 RRH	20.4	15.7	10.6	2.23	1.51	1.30	1.92	1.20	1.20	16	11	12
8843 B2/B66A RRH	17.2	15.5	13.2	1.86	1.58	1.11	1.30	1.20	1.20	13	11	12
4449 B5/B12 RRH	20.2	15.5	11.7	2.18	1.65	1.30	1.73	1.20	1.20	16	12	13

WIND LOADS AT 30 MPH:

840-370964K Antenna	47.7	14.9	6.5	4.94	2.15	3.20	7.34	1.23	1.41	13	7	8
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	18	8	10
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	4	3	3
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	3	3
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	4	3	3

Date: 3/22/2023
Project Name: WESTBROOK-SPENCER RD
Project No.: CT2047
Designed By: JC Checked By: MSC

WIND LOADS

Angle =	150	(deg)	Ice Thickness =	1.16	in.	Equivalent Angle =	330	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
840-370964K Antenna	47.7	14.9	6.5	4.94	2.15	3.20	7.34	1.23	1.41	228	114	199
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	310	131	265
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	76	47	68
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	61	51	59
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	74	53	68

WIND LOADS WITH ICE:

840-370964K Antenna	50.0	17.2	8.8	5.98	3.07	2.90	5.67	1.22	1.34	44	25	39
DMP65R-BU4DA Antenna	50.3	23.0	10.0	8.05	3.50	2.19	5.02	1.20	1.31	58	28	50
4478 B14 RRH	20.4	15.7	10.6	2.23	1.51	1.30	1.92	1.20	1.20	16	11	15
8843 B2/B66A RRH	17.2	15.5	13.2	1.86	1.58	1.11	1.30	1.20	1.20	13	11	13
4449 B5/B12 RRH	20.2	15.5	11.7	2.18	1.65	1.30	1.73	1.20	1.20	16	12	15

WIND LOADS AT 30 MPH:

840-370964K Antenna	47.7	14.9	6.5	4.94	2.15	3.20	7.34	1.23	1.41	13	7	11
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	18	8	15
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	4	3	4
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	3	3
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	4	3	4

Date: 3/22/2023
Project Name: WESTBROOK-SPENCER RD
Project No.: CT2047
Designed By: JC **Checked By:** MSC

ICE WEIGHT CALCULATIONS

Thickness of ice:	1.16	in.
Density of ice:	56	pcf

840-370964K Antenna

Weight of ice based on total radial SF area:

Height (in):	47.7	
Width (in):	14.9	
Depth (in):	6.5	
Total weight of ice on object:	98	lbs
Weight of object:	53.0	lbs
Combined weight of ice and object:	151	lbs

DMP65R-BU4DA Antenna

Weight of ice based on total radial SF area:

Height (in):	48.0	
Width (in):	20.7	
Depth (in):	7.7	
Total weight of ice on object:	132	lbs
Weight of object:	68.0	lbs
Combined weight of ice and object:	200	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:	36	lbs
Weight of object:	60.0	lbs
Combined weight of ice and object:	96	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:	32	lbs
Weight of object:	72.0	lbs
Combined weight of ice and object:	104	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:	37	lbs
Weight of object:	73.0	lbs
Combined weight of ice and object:	110	lbs

Squid Surge Arrestor

Weight of ice based on total radial SF area:

Depth (in):	31.4	
Diameter(in):	10.2	
Total weight of ice on object:	42	lbs
Weight of object:	29	lbs
Combined weight of ice and object:	71	lbs

2" Pipe

Per foot weight of ice:

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

L 2x2 Angles

Weight of ice based on total radial SF area:

Height (in):	2	
Width (in):	2	
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:	8	plf

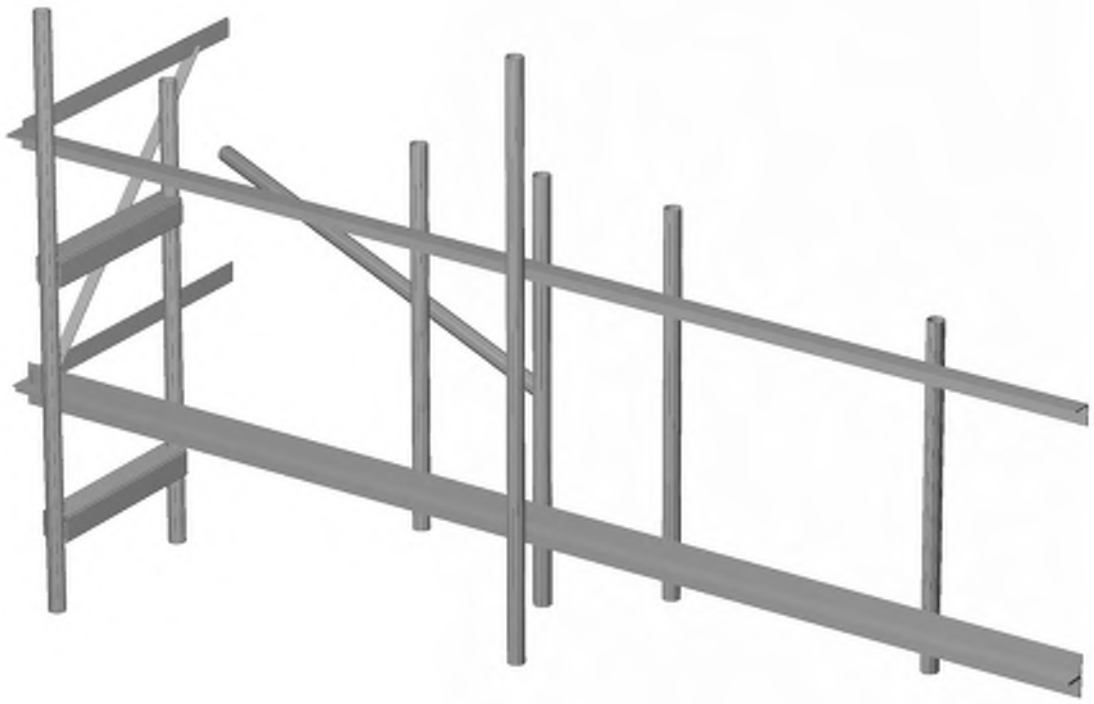
HSS 4x4

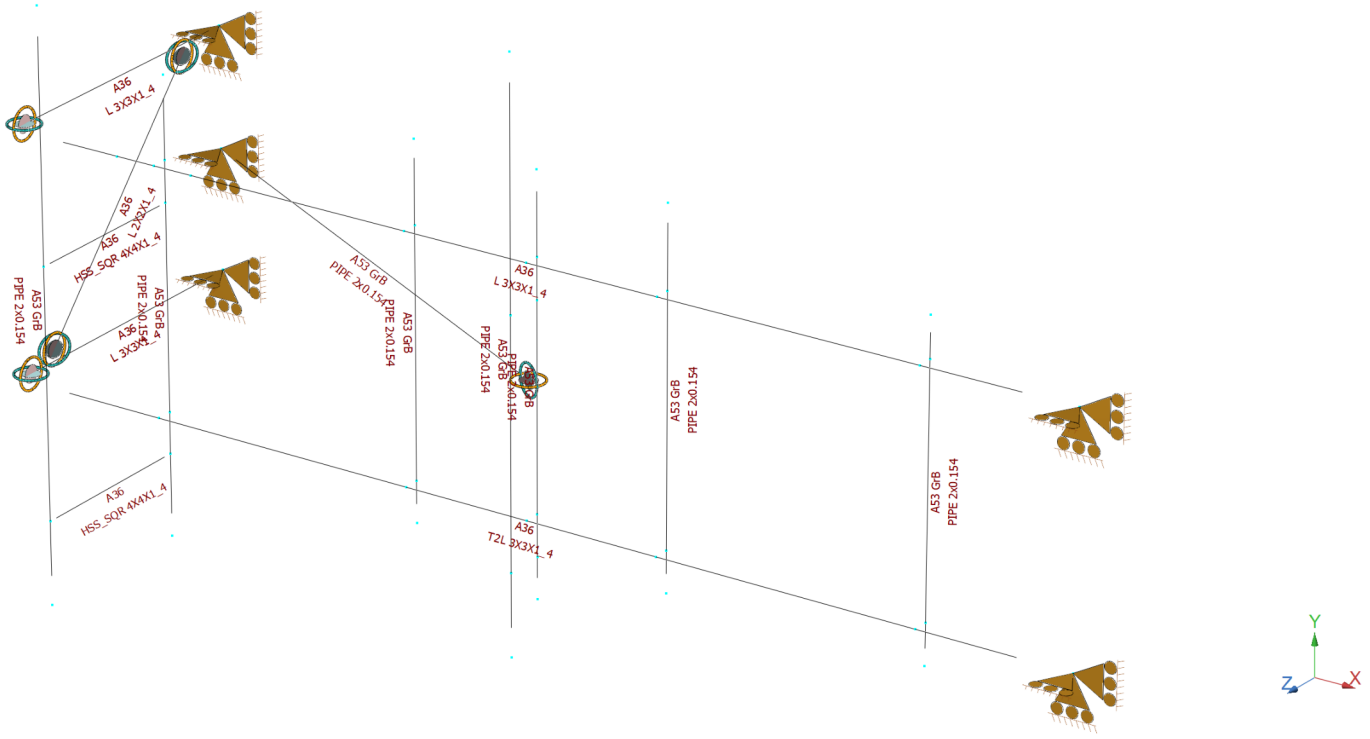
Weight of ice based on total radial SF area:

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

Mount Calculations
(Existing Conditions)

Current Date: 3/22/2023 11:39 AM
Units system: English

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A36
L 2X2X1_4
A36
HSS_SQR 4X4X1_4
A36
L 3X3X1_4
A53 GrB
PIPE 2x0.154
A53 GrB
PIPE 2x0.154
A53 GrB
PIPE 2x0.154
A53 GrB
PIPE 2x0.154
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PIPE 2x0.154
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PIPE 2x0.154
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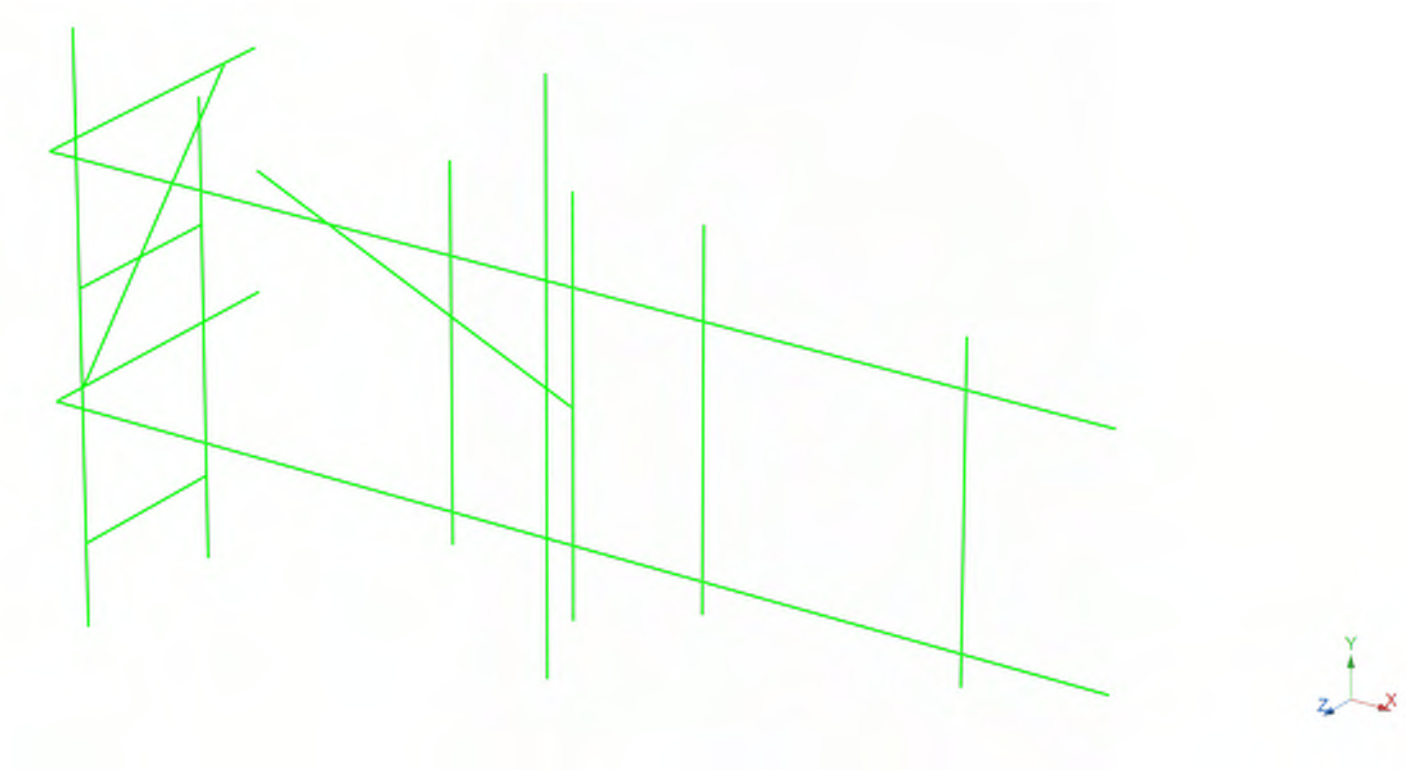
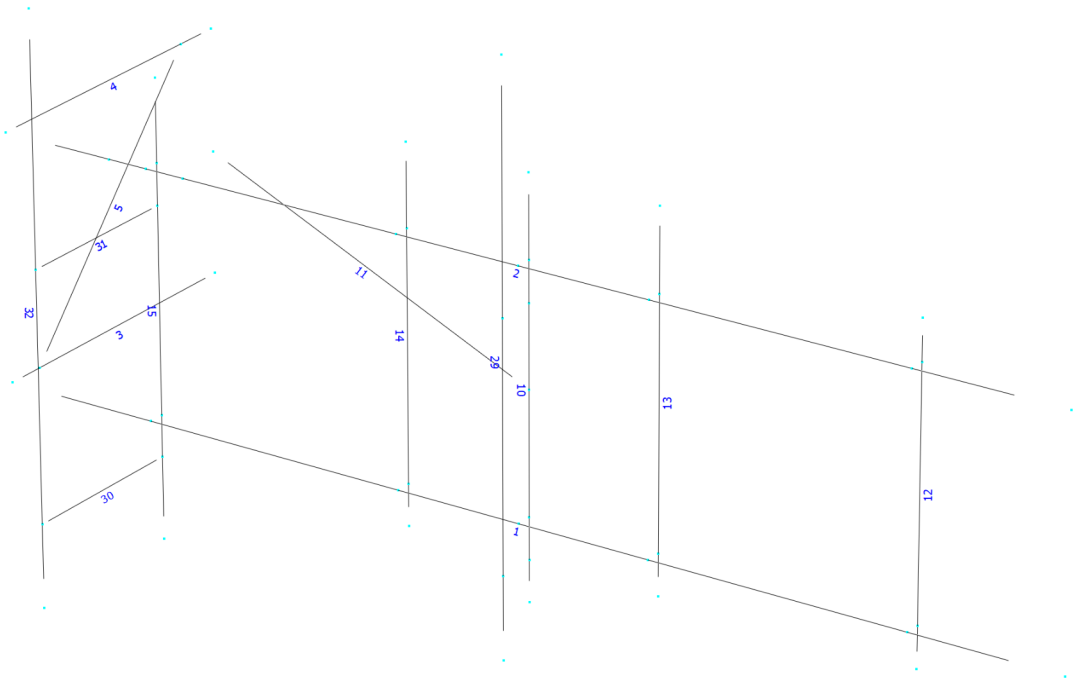
A36
T2L 3X3X1_4
Y
Z
X


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


4
5
16
11
2
32
15
3
14
29
10
13
30
1
12
Y
Z
X

Current Date: 3/22/2023 11:41 AM
Units system: English

Load data

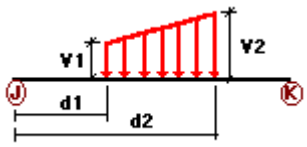
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
D	Dead Load	No	DL
Wo	Wind Load (NO ICE)	No	WIND
W30	WL 30deg	No	WIND
W60	WL 60deg	No	WIND
W90	WL 90deg	No	WIND
W120	WL 120deg	No	WIND
W150	WL 150deg	No	WIND
Di	Ice Load	No	LL
WI0	WL ICE 0deg	No	WIND
WI30	WL ICE 30deg	No	WIND
WI60	WL ICE 60deg	No	WIND
WI90	WL ICE 90deg	No	WIND
WI120	WL ICE 120deg	No	WIND
WI150	WL ICE 150deg	No	WIND
WL0	WL 30 mph 0deg	No	WIND
WL30	WL 30 mph 30deg	No	WIND
WL60	WL 30 mph 60deg	No	WIND
WL90	WL 30 mph 90deg	No	WIND
WL120	WL 30 mph 120deg	No	WIND
WL150	WL 30 mph 150deg	No	WIND
LL1	250 lb Live Load Center of Mount	No	LL
LL2	250 lb Live Load Right End of Mount	No	LL
LL3	250 lb Live Load Left End of Mount	No	LL
LLa1	500 lb Live Load Antenna 1	No	LL
LLa2	500 lb Live Load Antenna 2	No	LL
LLa3	500 lb Live Load Antenna 3	No	LL

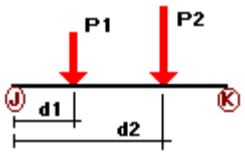
Distributed force on members



Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
Wo	1	z	-0.019	0.00	0.00	No	0.00	No
	2	z	-0.019	0.00	0.00	No	0.00	No
	5	z	-0.012	0.00	0.00	No	0.00	No
	11	z	-0.009	0.00	0.00	No	0.00	No
	12	z	-0.009	0.00	0.00	No	0.00	No
	13	z	-0.009	0.00	0.00	No	0.00	No
	14	z	-0.009	0.00	0.00	No	0.00	No
	29	z	-0.009	-0.009	0.00	No	2.00	No
		z	-0.009	-0.009	5.00	No	7.00	No
	32	z	-0.009	-0.009	0.00	No	2.00	No
		z	-0.009	-0.009	5.00	No	7.00	No
W30	1	z	-0.019	0.00	0.00	No	0.00	No
	2	z	-0.019	0.00	0.00	No	0.00	No
	3	z	-0.019	0.00	0.00	No	0.00	No
	4	z	-0.019	0.00	0.00	No	0.00	No
	5	z	-0.012	0.00	0.00	No	0.00	No
	10	z	-0.009	0.00	0.00	No	0.00	No
	11	z	-0.009	0.00	0.00	No	0.00	No
	12	z	-0.009	0.00	0.00	No	0.00	No
	13	z	-0.009	0.00	0.00	No	0.00	No
	14	z	-0.009	0.00	0.00	No	0.00	No
	29	z	-0.009	-0.009	0.00	No	2.00	No
		z	-0.009	-0.009	5.00	No	7.00	No
	30	z	-0.016	0.00	0.00	No	0.00	No
	31	z	-0.016	0.00	0.00	No	0.00	No
	32	z	-0.009	-0.009	0.00	No	2.00	No
		z	-0.009	-0.009	5.00	No	7.00	No
W60	1	x	-0.019	0.00	0.00	No	0.00	No
	2	x	-0.019	0.00	0.00	No	0.00	No
	3	x	-0.019	0.00	0.00	No	0.00	No
	4	x	-0.019	0.00	0.00	No	0.00	No
	5	x	-0.012	0.00	0.00	No	0.00	No
	10	x	-0.009	0.00	0.00	No	0.00	No
	11	x	-0.009	0.00	0.00	No	0.00	No
	12	x	-0.009	0.00	0.00	No	0.00	No
	13	x	-0.009	0.00	0.00	No	0.00	No
	14	x	-0.009	0.00	0.00	No	0.00	No
	15	x	-0.009	0.00	0.00	No	0.00	No
	29	x	-0.009	0.00	0.00	No	0.00	No
	30	x	-0.016	0.00	0.00	No	0.00	No
	31	x	-0.016	0.00	0.00	No	0.00	No
	32	x	-0.009	0.00	0.00	No	0.00	No
W90	3	x	-0.019	0.00	0.00	No	0.00	No
	4	x	-0.019	0.00	0.00	No	0.00	No
	5	x	-0.012	0.00	0.00	No	0.00	No
	10	x	-0.009	0.00	0.00	No	0.00	No
	11	x	-0.009	0.00	0.00	No	0.00	No
	12	x	-0.009	0.00	0.00	No	0.00	No
	13	x	-0.009	0.00	0.00	No	0.00	No
	14	x	-0.009	0.00	0.00	No	0.00	No
	15	x	-0.009	0.00	0.00	No	0.00	No
	29	x	-0.009	0.00	0.00	No	0.00	No
	30	x	-0.016	0.00	0.00	No	0.00	No
	31	x	-0.016	0.00	0.00	No	0.00	No
	32	x	-0.009	0.00	0.00	No	0.00	No
W120	1	x	-0.019	0.00	0.00	No	0.00	No
	2	x	-0.019	0.00	0.00	No	0.00	No
	3	x	-0.019	0.00	0.00	No	0.00	No
	4	x	-0.019	0.00	0.00	No	0.00	No
	5	x	-0.012	0.00	0.00	No	0.00	No

	10	x	-0.009	0.00	0.00	No	0.00	No
	11	x	-0.009	0.00	0.00	No	0.00	No
	12	x	-0.009	0.00	0.00	No	0.00	No
	13	x	-0.009	0.00	0.00	No	0.00	No
	14	x	-0.009	0.00	0.00	No	0.00	No
	15	x	-0.009	0.00	0.00	No	0.00	No
	29	x	-0.009	0.00	0.00	No	0.00	No
	30	x	-0.016	0.00	0.00	No	0.00	No
	31	x	-0.016	0.00	0.00	No	0.00	No
	32	x	-0.009	0.00	0.00	No	0.00	No
W150	1	z	0.019	0.00	0.00	No	0.00	No
	2	z	0.019	0.00	0.00	No	0.00	No
	3	z	0.019	0.00	0.00	No	0.00	No
	4	z	0.019	0.00	0.00	No	0.00	No
	5	z	0.012	0.00	0.00	No	0.00	No
	10	z	0.009	0.00	0.00	No	0.00	No
	11	z	0.009	0.00	0.00	No	0.00	No
	12	z	0.009	0.00	0.00	No	0.00	No
	13	z	0.009	0.00	0.00	No	0.00	No
	14	z	0.009	0.00	0.00	No	0.00	No
	15	z	0.009	0.00	0.00	No	0.00	No
	29	z	0.009	0.00	0.00	No	0.00	No
	30	z	0.016	0.00	0.00	No	0.00	No
	31	z	0.016	0.00	0.00	No	0.00	No
	32	z	0.009	0.00	0.00	No	0.00	No
Di	1	y	-0.008	0.00	0.00	No	0.00	No
	2	y	-0.008	0.00	0.00	No	0.00	No
	3	y	-0.008	0.00	0.00	No	0.00	No
	4	y	-0.008	0.00	0.00	No	0.00	No
	5	y	-0.006	0.00	0.00	No	0.00	No
	10	y	-0.005	0.00	0.00	No	0.00	No
	11	y	-0.005	0.00	0.00	No	0.00	No
	12	y	-0.005	0.00	0.00	No	0.00	No
	13	y	-0.005	0.00	0.00	No	0.00	No
	14	y	-0.005	0.00	0.00	No	0.00	No
	15	y	-0.005	0.00	0.00	No	0.00	No
	29	y	-0.005	0.00	0.00	No	0.00	No
	30	y	-0.01	0.00	0.00	No	0.00	No
	31	y	-0.01	0.00	0.00	No	0.00	No
	32	y	-0.005	0.00	0.00	No	0.00	No

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
D	14	y	-0.029	0.50	No
	29	y	-0.027	2.00	No
		y	-0.027	5.00	No
	32	y	-0.034	2.00	No
		y	-0.034	5.00	No

Wo	14	z	-0.058	0.50	No
	29	z	-0.114	2.00	No
		z	-0.114	5.00	No
			0.00	1.00	No
	32	z	-0.156	2.00	No
		z	-0.156	5.00	No
W30	14	3	-0.058	0.50	No
	29	3	-0.10	2.00	No
		3	-0.10	5.00	No
	32	3	-0.133	2.00	No
		3	-0.133	5.00	No
W60	14	3	-0.058	0.50	No
	29	3	-0.072	2.00	No
		3	-0.072	5.00	No
	32	3	-0.089	2.00	No
		3	-0.089	5.00	No
W90	14	x	-0.058	0.50	No
	29	x	-0.057	2.00	No
		x	-0.057	5.00	No
	32	x	-0.066	2.00	No
		x	-0.066	5.00	No
W120	14	2	-0.058	0.50	No
	29	2	-0.072	2.00	No
		2	-0.072	5.00	No
	32	2	-0.089	2.00	No
		2	-0.089	5.00	No
W150	14	2	-0.058	0.50	No
	29	2	-0.10	2.00	No
		2	-0.10	5.00	No
	32	2	-0.133	2.00	No
		2	-0.133	5.00	No
Di	14	y	-0.042	0.50	No
	29	y	-0.049	2.00	No
		y	-0.049	5.00	No
			0.00	1.00	No
	32	y	-0.066	2.00	No
		y	-0.066	5.00	No
WI0	14	z	-0.012	0.50	No
	29	z	-0.023	2.00	No
		z	-0.023	5.00	No
			0.00	1.00	No
	32	z	-0.029	2.00	No
		z	-0.029	5.00	No
WI30	14	3	-0.012	0.50	No
	29	3	-0.02	2.00	No
		3	-0.02	5.00	No
	32	3	-0.026	2.00	No
		3	-0.026	5.00	No
WI60	14	3	-0.012	0.50	No
	29	3	-0.015	2.00	No
		3	-0.015	5.00	No
	32	3	-0.018	2.00	No
		3	-0.018	5.00	No
WI90	14	x	-0.012	0.50	No
	29	x	-0.013	2.00	No
		x	-0.013	5.00	No
	32	x	-0.014	2.00	No
		x	-0.014	5.00	No
WI120	14	2	-0.012	0.50	No
	29	2	-0.015	2.00	No

		2	-0.015	5.00	No
	32	2	-0.018	2.00	No
		2	-0.018	5.00	No
WI150	14	2	-0.012	0.50	No
	29	2	-0.02	2.00	No
		2	-0.02	5.00	No
	32	2	-0.026	2.00	No
		2	-0.026	5.00	No
WL0	14	z	-0.003	0.50	No
	29	z	-0.007	2.00	No
		z	-0.007	5.00	No
			0.00	1.00	No
	32	z	-0.009	2.00	No
		z	-0.009	5.00	No
WL30	14	3	-0.003	0.50	No
	29	3	-0.006	2.00	No
		3	-0.006	5.00	No
	32	3	-0.008	2.00	No
		3	-0.008	5.00	No
WL60	14	3	-0.003	0.50	No
	29	3	-0.005	2.00	No
		3	-0.005	5.00	No
	32	3	-0.006	2.00	No
		3	-0.006	5.00	No
WL90	14	x	-0.003	0.50	No
	29	x	-0.004	2.00	No
		x	-0.004	5.00	No
	32	x	-0.004	2.00	No
		x	-0.004	5.00	No
WL120	14	2	-0.003	0.50	No
	29	2	-0.005	2.00	No
		2	-0.005	5.00	No
	32	2	-0.006	2.00	No
		2	-0.006	5.00	No
WL150	14	2	-0.003	0.50	No
	29	2	-0.006	2.00	No
		2	-0.006	5.00	No
	32	2	-0.008	2.00	No
		2	-0.008	5.00	No
LL1	2	y	-0.25	6.835	No
LL2	2	y	-0.25	0.00	No
LL3	2	y	-0.25	13.67	No
LLa1	29	y	-0.50	3.50	No
LLa2	32	y	-0.50	3.50	No
LLa3	14	y	-0.50	2.25	No

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
D	Dead Load	No	0.00	-1.00	0.00
Wo	Wind Load (NO ICE)	No	0.00	0.00	0.00
W30	WL 30deg	No	0.00	0.00	0.00
W60	WL 60deg	No	0.00	0.00	0.00
W90	WL 90deg	No	0.00	0.00	0.00

W120	WL 120deg	No	0.00	0.00	0.00
W150	WL 150deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
WI0	WL ICE 0deg	No	0.00	0.00	0.00
WI30	WL ICE 30deg	No	0.00	0.00	0.00
WI60	WL ICE 60deg	No	0.00	0.00	0.00
WI90	WL ICE 90deg	No	0.00	0.00	0.00
WI120	WL ICE 120deg	No	0.00	0.00	0.00
WI150	WL ICE 150deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30deg	No	0.00	0.00	0.00
WL60	WL 30 mph 60deg	No	0.00	0.00	0.00
WL90	WL 30 mph 90deg	No	0.00	0.00	0.00
WL120	WL 30 mph 120deg	No	0.00	0.00	0.00
WL150	WL 30 mph 150deg	No	0.00	0.00	0.00
LL1	250 lb Live Load Center of Mount	No	0.00	0.00	0.00
LL2	250 lb Live Load Right End of Mount	No	0.00	0.00	0.00
LL3	250 lb Live Load Left End of Mount	No	0.00	0.00	0.00
LLa1	500 lb Live Load Antenna 1	No	0.00	0.00	0.00
LLa2	500 lb Live Load Antenna 2	No	0.00	0.00	0.00
LLa3	500 lb Live Load Antenna 3	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
D	0.00	0.00	0.00
Wo	0.00	0.00	0.00
W30	0.00	0.00	0.00
W60	0.00	0.00	0.00
W90	0.00	0.00	0.00
W120	0.00	0.00	0.00
W150	0.00	0.00	0.00
Di	0.00	0.00	0.00
WI0	0.00	0.00	0.00
WI30	0.00	0.00	0.00
WI60	0.00	0.00	0.00
WI90	0.00	0.00	0.00
WI120	0.00	0.00	0.00
WI150	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
WL60	0.00	0.00	0.00
WL90	0.00	0.00	0.00
WL120	0.00	0.00	0.00
WL150	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LL3	0.00	0.00	0.00
LLa1	0.00	0.00	0.00
LLa2	0.00	0.00	0.00
LLa3	0.00	0.00	0.00

RAM Elements
CONNECT Edition

Current Date: 3/22/2023 11:42 AM
Units system: English

Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2D+Wo
LC2=1.2D+W30
LC3=1.2D+W60
LC4=1.2D+W90
LC5=1.2D+W120
LC6=1.2D+W150
LC7=1.2D-Wo
LC8=1.2D-W30
LC9=1.2D-W60
LC10=1.2D-W90
LC11=1.2D-W120
LC12=1.2D-W150
LC13=0.9D+Wo
LC14=0.9D+W30
LC15=0.9D+W60
LC16=0.9D+W90
LC17=0.9D+W120
LC18=0.9D+W150
LC19=0.9D-Wo
LC20=0.9D-W30
LC21=0.9D-W60
LC22=0.9D-W90
LC23=0.9D-W120
LC24=0.9D-W150
LC25=1.2D+Di+WI0
LC26=1.2D+Di+WI30
LC27=1.2D+Di+WI60
LC28=1.2D+Di+WI90
LC29=1.2D+Di+WI120
LC30=1.2D+Di+WI150
LC31=1.2D+Di-WI0
LC32=1.2D+Di-WI30
LC33=1.2D+Di-WI60
LC34=1.2D+Di-WI90
LC35=1.2D+Di-WI120
LC36=1.2D+Di-WI150
LC37=1.2D+1.6LL1
LC38=1.2D+1.6LL2
LC39=1.2D+1.6LL3
LC40=1.2D+WL0+1.6LLa1
LC41=1.2D+WL30+1.6LLa1
LC42=1.2D+WL60+1.6LLa1
LC43=1.2D+WL90+1.6LLa1
LC44=1.2D+WL120+1.6LLa1
LC45=1.2D+WL150+1.6LLa1
LC46=1.2D-WL0+1.6LLa1
LC47=1.2D-WL30+1.6LLa1
LC48=1.2D-WL60+1.6LLa1
LC49=1.2D-WL90+1.6LLa1
LC50=1.2D-WL120+1.6LLa1
LC51=1.2D-WL150+1.6LLa1
LC52=1.2D+WL0+1.6LLa2
LC53=1.2D+WL30+1.6LLa2
LC54=1.2D+WL60+1.6LLa2

LC55=1.2D+WL90+1.6LLa2
LC56=1.2D+WL120+1.6LLa2
LC57=1.2D+WL150+1.6LLa2
LC58=1.2D-WL0+1.6LLa2
LC59=1.2D-WL30+1.6LLa2
LC60=1.2D-WL60+1.6LLa2
LC61=1.2D-WL90+1.6LLa2
LC62=1.2D-WL120+1.6LLa2
LC63=1.2D-WL150+1.6LLa2
LC64=1.2D+WL0+1.6LLa3
LC65=1.2D+WL30+1.6LLa3
LC66=1.2D+WL60+1.6LLa3
LC67=1.2D+WL90+1.6LLa3
LC68=1.2D+WL120+1.6LLa3
LC69=1.2D+WL150+1.6LLa3
LC70=1.2D-WL0+1.6LLa3
LC71=1.2D-WL30+1.6LLa3
LC72=1.2D-WL60+1.6LLa3
LC73=1.2D-WL90+1.6LLa3
LC74=1.2D-WL120+1.6LLa3
LC75=1.2D-WL150+1.6LLa3
LC76=1.2D+WL0
LC77=1.2D+WL30
LC78=1.2D+WL60
LC79=1.2D+WL90
LC80=1.2D+WL120
LC81=1.2D+WL150
LC82=1.2D-WL0
LC83=1.2D-WL30
LC84=1.2D-WL60
LC85=1.2D-WL90
LC86=1.2D-WL120
LC87=1.2D-WL150

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	HSS_SQR 4X4X1_4	**30**	LC57 at 100.00%	0.06	OK	
		31	LC59 at 100.00%	**0.08**	**OK**	
	L 2X2X1_4	**5**	LC58 at 50.00%	**0.07**	**OK**	
	L 3X3X1_4	**2**	LC39 at 86.72%	**0.59**	**OK**	
		3	LC58 at 15.63%	0.33	OK	
		4	LC53 at 84.38%	0.40	OK	
	PIPE 2x0.154	**10**	LC6 at 50.00%	**0.61**	**OK**	
		11	LC24 at 100.00%	0.11	OK	
		12	LC51 at 12.50%	0.40	OK	
		13	LC75 at 87.50%	0.30	OK	
		14	LC51 at 22.92%	0.17	OK	
		15	LC57 at 26.25%	0.41	OK	
		29	LC8 at 43.75%	0.14	OK	
		32	LC52 at 85.42%	0.38	OK	
	T2L 3X3X1_4	**1**	LC53 at 86.46%	**0.68**	**OK**	

RAM Elements
CONNECT Edition

Current Date: 3/22/2023 11:42 AM
Units system: English

Geometry data

GLOSSARY

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

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
1	0.00	0.00	0.00	0
2	-13.67	0.00	0.00	0
3	0.00	3.00	0.00	0
4	-13.67	3.00	0.00	0
5	-13.67	0.00	-3.83	0
6	-13.67	3.00	-3.83	0
7	-13.67	0.00	-0.50	0
8	-13.67	3.00	-3.25	0
9	-1.92	0.00	0.00	0
10	-1.92	3.00	0.00	0
11	-5.17	0.00	0.00	0
12	-5.17	3.00	0.00	0
13	-8.42	0.00	0.00	0
14	-8.42	3.00	0.00	0
15	-11.75	0.00	0.00	0
16	-11.75	3.00	0.00	0
17	-6.835	-1.00	-0.20	0
18	-6.835	4.00	-0.20	0
19	-6.835	1.50	-0.20	0
20	-13.67	1.50	-3.83	0
21	-1.92	-0.50	-0.20	0
22	-1.92	3.50	-0.20	0
23	-5.17	-0.50	-0.20	0

24	-5.17	4.00	-0.20	0
25	-8.42	-0.50	-0.20	0
26	-8.42	4.00	-0.20	0
27	-11.75	-1.50	-0.20	0
28	-11.75	4.00	-0.20	0
29	-1.92	0.00	-0.20	0
30	-5.17	0.00	-0.20	0
31	-8.42	0.00	-0.20	0
32	-11.75	0.00	-0.20	0
33	-11.75	3.00	-0.20	0
34	-8.42	3.00	-0.20	0
35	-5.17	3.00	-0.20	0
36	-1.92	3.00	-0.20	0
39	-6.835	3.00	0.00	0
40	-6.835	3.00	-0.20	0
41	-6.835	0.00	0.00	0
42	-6.835	0.00	-0.20	0
43	-6.835	2.50	0.30	0
44	-6.835	2.50	-0.20	0
45	-6.835	-0.50	0.30	0
46	-6.835	-0.50	-0.20	0
47	-6.835	-1.50	0.30	0
48	-6.835	5.50	0.30	0
49	-11.75	-0.50	2.00	0
50	-11.75	-0.50	-0.20	0
51	-11.75	2.50	2.00	0
52	-11.75	2.50	-0.20	0
53	-11.75	-1.50	2.00	0
54	-11.75	5.50	2.00	0
57	-12.25	3.00	0.00	0
58	-11.25	3.00	0.00	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
1	1	1	1	0	0	0
3	1	1	1	0	0	0
5	1	1	1	0	0	0
6	1	1	1	0	0	0
20	1	1	1	0	0	0

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
1	1	2		T2L 3X3X1_4	A36	0.00	0.00	0.00
2	3	4		L 3X3X1_4	A36	0.00	0.00	0.00
3	2	5		L 3X3X1_4	A36	0.00	0.00	0.00
4	4	6		L 3X3X1_4	A36	0.00	0.00	0.00
5	7	8		L 2X2X1_4	A36	0.00	0.00	0.00
10	17	18		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

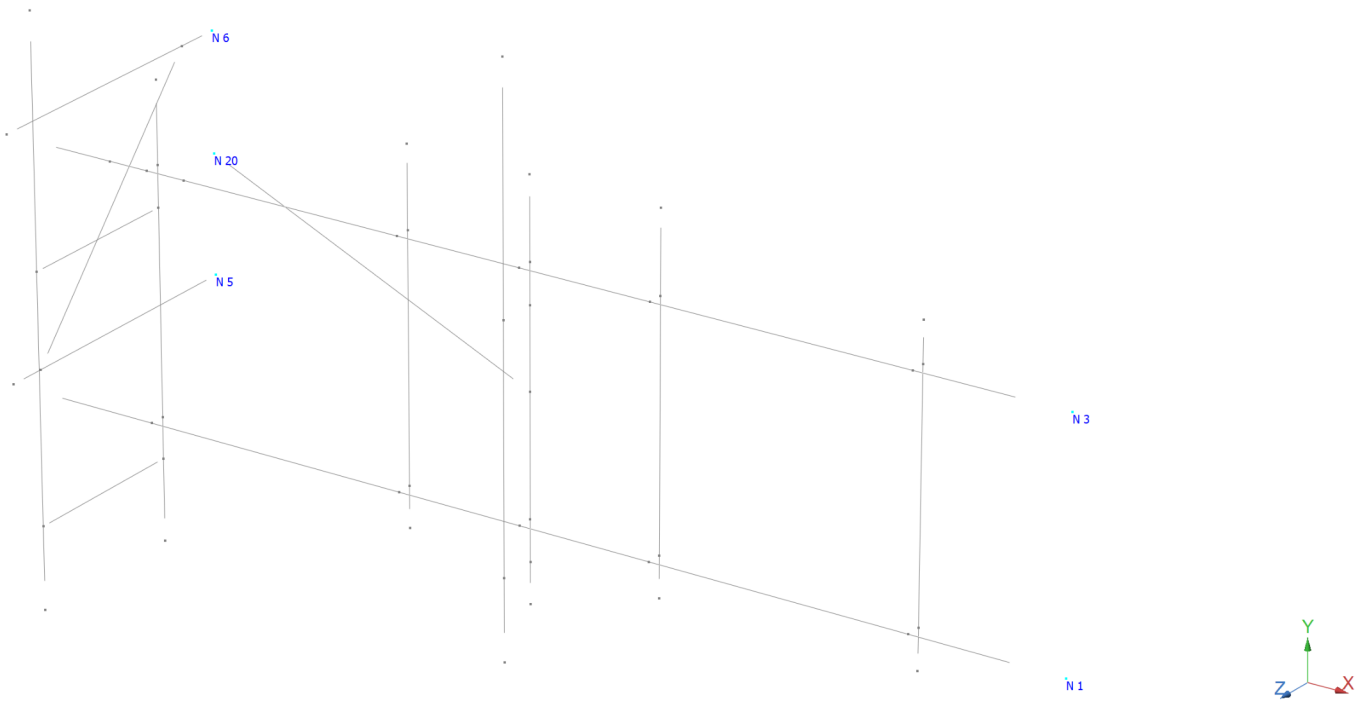
11	19	20	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
12	21	22	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
13	24	23	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
14	26	25	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
15	27	28	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
29	48	47	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
30	49	50	HSS_SQR 4X4X1_4	A36	0.00	0.00	0.00
31	51	52	HSS_SQR 4X4X1_4	A36	0.00	0.00	0.00
32	54	53	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
1	90.00	0	0.00	0.00	0.00
2	180.00	0	0.00	0.00	0.00
3	-90.00	0	0.00	0.00	0.00
4	-90.00	0	0.00	0.00	0.00
5	90.00	0	0.00	0.00	0.00
10	0.00	2	1.00	0.00	0.00
12	0.00	2	1.00	0.00	0.00
13	0.00	2	0.7071	0.00	-0.7071
14	0.00	2	0.7071	0.00	-0.7071
15	0.00	2	1.00	0.00	0.00
29	0.00	2	0.7071	0.00	-0.7071
32	0.00	2	0.7071	0.00	-0.7071

Hinges

	Node-J				Node-K						
Member	M33	M22	V3	V2	M33	M22	V3	V2	TOR	AXL	Axial rigidity
3	1	1	0	0	0	0	0	0	0	0	Full
4	1	1	0	0	0	0	0	0	0	0	Full
5	1	1	0	0	1	1	0	0	0	0	Full
11	1	1	0	0	0	0	0	0	0	0	Full

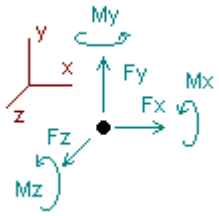

N 6
N 20
N 5
N 3
N 1
Y
Z
X

RAM Elements
CONNECT Edition

Current Date: 3/22/2023 11:42 AM
Units system: English

Analysis result

Reactions



Direction of positive forces and moments

	Forces [Kip]			Moments [Kip*ft]		
Node	**FX**	**FY**	**FZ**	**MX**	**MY**	**MZ**
Condition **LC1=1.2D+Wo**						
6	0.00034	0.47393	-0.24703	0.00000	0.00000	0.00000
1	-0.98601	0.18690	0.02824	0.00000	0.00000	0.00000
3	-0.50781	0.13466	0.10343	0.00000	0.00000	0.00000
5	-0.00033	-0.05867	0.69725	0.00000	0.00000	0.00000
20	1.49381	0.01248	0.82208	0.00000	0.00000	0.00000
SUM	0.00000	0.74931	1.40398	0.00000	0.00000	0.00000
Condition **LC2=1.2D+W30**						
6	0.00031	0.47965	-0.30174	0.00000	0.00000	0.00000
1	-0.69559	0.18292	0.04843	0.00000	0.00000	0.00000
3	-0.10690	0.13299	0.09837	0.00000	0.00000	0.00000
5	-0.00031	-0.05950	0.72392	0.00000	0.00000	0.00000
20	1.17301	0.01325	0.65253	0.00000	0.00000	0.00000
SUM	0.37052	0.74931	1.22150	0.00000	0.00000	0.00000
Condition **LC3=1.2D+W60**						
6	0.05742	0.48409	-0.45173	0.00000	0.00000	0.00000
1	0.07730	0.20447	-0.00695	0.00000	0.00000	0.00000
3	0.57932	0.10526	0.02176	0.00000	0.00000	0.00000
5	0.03925	-0.05994	0.63446	0.00000	0.00000	0.00000
20	0.15036	0.01543	0.07117	0.00000	0.00000	0.00000
SUM	0.90365	0.74931	0.26870	0.00000	0.00000	0.00000
Condition **LC4=1.2D+W90**						
6	0.05739	0.48858	-0.54895	0.00000	0.00000	0.00000
1	0.27621	0.20358	0.02023	0.00000	0.00000	0.00000
3	0.76485	0.10157	0.00698	0.00000	0.00000	0.00000
5	0.03928	-0.06055	0.63604	0.00000	0.00000	0.00000
20	-0.19879	0.01614	-0.11430	0.00000	0.00000	0.00000
SUM	0.93895	0.74931	0.00000	0.00000	0.00000	0.00000

Condition **LC5=1.2D+W120**

6	0.05737	0.49236	-0.64650	0.00000	0.00000	0.00000
1	0.46199	0.20328	0.04771	0.00000	0.00000	0.00000
3	0.88598	0.09793	-0.00814	0.00000	0.00000	0.00000
5	0.03931	-0.06107	0.63455	0.00000	0.00000	0.00000
20	-0.54100	0.01680	-0.29632	0.00000	0.00000	0.00000
SUM	0.90365	0.74931	-0.26870	0.00000	0.00000	0.00000

Condition **LC6=1.2D+W150**

6	0.00016	0.49999	-0.83399	0.00000	0.00000	0.00000
1	0.82263	0.22566	-0.00687	0.00000	0.00000	0.00000
3	1.19669	0.06684	-0.09091	0.00000	0.00000	0.00000
5	-0.00015	-0.06207	0.51571	0.00000	0.00000	0.00000
20	-1.64881	0.01888	-0.90894	0.00000	0.00000	0.00000
SUM	0.37052	0.74931	-1.32500	0.00000	0.00000	0.00000

Condition **LC7=1.2D-Wo**

6	0.00014	0.50007	-0.90886	0.00000	0.00000	0.00000
1	0.71102	0.22880	0.00853	0.00000	0.00000	0.00000
3	0.92253	0.06362	-0.10076	0.00000	0.00000	0.00000
5	-0.00013	-0.06204	0.49786	0.00000	0.00000	0.00000
20	-1.63356	0.01886	-0.90075	0.00000	0.00000	0.00000
SUM	0.00000	0.74931	-1.40398	0.00000	0.00000	0.00000

Condition **LC8=1.2D-W30**

6	0.00016	0.49438	-0.85542	0.00000	0.00000	0.00000
1	0.42668	0.23310	-0.01061	0.00000	0.00000	0.00000
3	0.52597	0.06465	-0.09373	0.00000	0.00000	0.00000
5	-0.00016	-0.06116	0.47327	0.00000	0.00000	0.00000
20	-1.32318	0.01834	-0.73502	0.00000	0.00000	0.00000
SUM	-0.37052	0.74931	-1.22150	0.00000	0.00000	0.00000

Condition **LC9=1.2D-W60**

6	-0.05696	0.49007	-0.70669	0.00000	0.00000	0.00000
1	-0.34116	0.21182	0.04523	0.00000	0.00000	0.00000
3	-0.15666	0.09178	-0.01564	0.00000	0.00000	0.00000
5	-0.03972	-0.06066	0.56397	0.00000	0.00000	0.00000
20	-0.30914	0.01630	-0.15557	0.00000	0.00000	0.00000
SUM	-0.90365	0.74931	-0.26870	0.00000	0.00000	0.00000

Condition **LC10=1.2D-W90**

6	-0.05693	0.48559	-0.60967	0.00000	0.00000	0.00000
1	-0.54110	0.21265	0.01785	0.00000	0.00000	0.00000
3	-0.34317	0.09552	-0.00142	0.00000	0.00000	0.00000
5	-0.03975	-0.06003	0.56226	0.00000	0.00000	0.00000
20	0.04201	0.01558	0.03098	0.00000	0.00000	0.00000
SUM	-0.93895	0.74931	0.00000	0.00000	0.00000	0.00000

Condition **LC11=1.2D-W120**

6	-0.05689	0.48175	-0.51163	0.00000	0.00000	0.00000
1	-0.72913	0.21286	-0.00995	0.00000	0.00000	0.00000
3	-0.46592	0.09935	0.01282	0.00000	0.00000	0.00000
5	-0.03978	-0.05951	0.56285	0.00000	0.00000	0.00000
20	0.38808	0.01485	0.21460	0.00000	0.00000	0.00000
SUM	-0.90365	0.74931	0.26870	0.00000	0.00000	0.00000

Condition **LC12=1.2D-W150**

6	0.00033	0.47413	-0.32279	0.00000	0.00000	0.00000
1	-1.09933	0.18986	0.04300	0.00000	0.00000	0.00000
3	-0.78414	0.13150	0.09260	0.00000	0.00000	0.00000
5	-0.00032	-0.05862	0.68005	0.00000	0.00000	0.00000
20	1.51293	0.01244	0.83214	0.00000	0.00000	0.00000
SUM	-0.37052	0.74931	1.32500	0.00000	0.00000	0.00000

Condition **LC13=0.9D+Wo**

6	0.00027	0.35112	-0.10105	0.00000	0.00000	0.00000
1	-0.95279	0.13469	0.02354	0.00000	0.00000	0.00000
3	-0.56121	0.11015	0.10249	0.00000	0.00000	0.00000
5	-0.00026	-0.04328	0.54626	0.00000	0.00000	0.00000
20	1.51399	0.00930	0.83274	0.00000	0.00000	0.00000
SUM	0.00000	0.56198	1.40398	0.00000	0.00000	0.00000

Condition **LC14=0.9D+W30**

6	0.00024	0.35713	-0.15607	0.00000	0.00000	0.00000
1	-0.66234	0.13084	0.04372	0.00000	0.00000	0.00000
3	-0.16006	0.10828	0.09752	0.00000	0.00000	0.00000
5	-0.00023	-0.04416	0.57326	0.00000	0.00000	0.00000
20	1.19292	0.00990	0.66307	0.00000	0.00000	0.00000
SUM	0.37052	0.56198	1.22150	0.00000	0.00000	0.00000

Condition **LC15=0.9D+W60**

6	0.05734	0.36230	-0.30692	0.00000	0.00000	0.00000
1	0.11047	0.15261	-0.01171	0.00000	0.00000	0.00000
3	0.52666	0.08029	0.02109	0.00000	0.00000	0.00000
5	0.03934	-0.04476	0.48472	0.00000	0.00000	0.00000
20	0.16984	0.01154	0.08151	0.00000	0.00000	0.00000
SUM	0.90365	0.56198	0.26870	0.00000	0.00000	0.00000

Condition **LC16=0.9D+W90**

6	0.05731	0.36700	-0.40437	0.00000	0.00000	0.00000
1	0.30931	0.15180	0.01546	0.00000	0.00000	0.00000
3	0.71238	0.07653	0.00638	0.00000	0.00000	0.00000
5	0.03937	-0.04543	0.48655	0.00000	0.00000	0.00000
20	-0.17942	0.01207	-0.10401	0.00000	0.00000	0.00000
SUM	0.93895	0.56198	0.00000	0.00000	0.00000	0.00000

Condition **LC17=0.9D+W120**

6	0.05728	0.37097	-0.50213	0.00000	0.00000	0.00000
1	0.49501	0.15157	0.04291	0.00000	0.00000	0.00000
3	0.83367	0.07286	-0.00869	0.00000	0.00000	0.00000
5	0.03940	-0.04599	0.48526	0.00000	0.00000	0.00000
20	-0.52172	0.01257	-0.28606	0.00000	0.00000	0.00000
SUM	0.90365	0.56198	-0.26870	0.00000	0.00000	0.00000

Condition **LC18=0.9D+W150**

6	0.00008	0.37916	-0.69032	0.00000	0.00000	0.00000
1	0.85552	0.17414	-0.01172	0.00000	0.00000	0.00000
3	1.14478	0.04171	-0.09132	0.00000	0.00000	0.00000
5	-0.00007	-0.04713	0.36714	0.00000	0.00000	0.00000
20	-1.62979	0.01410	-0.89878	0.00000	0.00000	0.00000
SUM	0.37052	0.56198	-1.32500	0.00000	0.00000	0.00000

Condition **LC19=0.9D-Wo**

6	0.00007	0.37914	-0.76511	0.00000	0.00000	0.00000
1	0.74379	0.17722	0.00367	0.00000	0.00000	0.00000
3	0.87057	0.03864	-0.10120	0.00000	0.00000	0.00000
5	-0.00006	-0.04711	0.34918	0.00000	0.00000	0.00000
20	-1.61437	0.01408	-0.89050	0.00000	0.00000	0.00000
SUM	0.00000	0.56198	-1.40397	0.00000	0.00000	0.00000

Condition **LC20=0.9D-W30**

6	0.00009	0.37319	-0.71140	0.00000	0.00000	0.00000
1	0.45943	0.18139	-0.01548	0.00000	0.00000	0.00000
3	0.47380	0.03986	-0.09425	0.00000	0.00000	0.00000
5	-0.00008	-0.04618	0.32428	0.00000	0.00000	0.00000
20	-1.30375	0.01372	-0.72465	0.00000	0.00000	0.00000
SUM	-0.37052	0.56198	-1.22150	0.00000	0.00000	0.00000

Condition **LC21=0.9D-W60**

6	-0.05703	0.36817	-0.56183	0.00000	0.00000	0.00000
1	-0.30835	0.15989	0.04041	0.00000	0.00000	0.00000
3	-0.20933	0.06724	-0.01634	0.00000	0.00000	0.00000
5	-0.03965	-0.04552	0.41407	0.00000	0.00000	0.00000
20	-0.28929	0.01219	-0.14501	0.00000	0.00000	0.00000
SUM	-0.90365	0.56198	-0.26870	0.00000	0.00000	0.00000

Condition **LC22=0.9D-W90**

6	-0.05700	0.36347	-0.46456	0.00000	0.00000	0.00000
1	-0.50823	0.16064	0.01305	0.00000	0.00000	0.00000
3	-0.39603	0.07105	-0.00220	0.00000	0.00000	0.00000
5	-0.03969	-0.04483	0.41212	0.00000	0.00000	0.00000
20	0.06199	0.01165	0.04158	0.00000	0.00000	0.00000
SUM	-0.93895	0.56198	0.00000	0.00000	0.00000	0.00000

Condition **LC23=0.9D-W120**

6	-0.05696	0.35943	-0.36630	0.00000	0.00000	0.00000
1	-0.69617	0.16079	-0.01472	0.00000	0.00000	0.00000
3	-0.51894	0.07492	0.01199	0.00000	0.00000	0.00000
5	-0.03972	-0.04427	0.41249	0.00000	0.00000	0.00000
20	0.40814	0.01110	0.22524	0.00000	0.00000	0.00000
SUM	-0.90365	0.56198	0.26870	0.00000	0.00000	0.00000

Condition **LC24=0.9D-W150**

6	0.00026	0.35122	-0.17673	0.00000	0.00000	0.00000
1	-1.06623	0.13757	0.03827	0.00000	0.00000	0.00000
3	-0.83759	0.10715	0.09163	0.00000	0.00000	0.00000
5	-0.00024	-0.04323	0.52894	0.00000	0.00000	0.00000
20	1.53329	0.00926	0.84289	0.00000	0.00000	0.00000
SUM	-0.37052	0.56198	1.32500	0.00000	0.00000	0.00000

Condition **LC25=1.2D+Di+WI0**

6	0.00060	0.92384	-1.07173	0.00000	0.00000	0.00000
1	-0.32735	0.36996	0.03209	0.00000	0.00000	0.00000
3	0.33356	0.18041	0.00512	0.00000	0.00000	0.00000
5	-0.00060	-0.10878	1.15382	0.00000	0.00000	0.00000
20	-0.00620	0.03507	-0.00330	0.00000	0.00000	0.00000
SUM	0.00000	1.40050	0.11600	0.00000	0.00000	0.00000

Condition **LC26=1.2D+Di+WI30**

6	0.00059	0.92469	-1.08117	0.00000	0.00000	0.00000
1	-0.26403	0.36914	0.03573	0.00000	0.00000	0.00000
3	0.41953	0.18022	0.00361	0.00000	0.00000	0.00000
5	-0.00059	-0.10891	1.15890	0.00000	0.00000	0.00000
20	-0.08196	0.03536	-0.04353	0.00000	0.00000	0.00000
SUM	0.07354	1.40050	0.07354	0.00000	0.00000	0.00000

Condition **LC27=1.2D+Di+WI60**

6	0.00059	0.92489	-1.08940	0.00000	0.00000	0.00000
1	-0.26251	0.36914	0.03683	0.00000	0.00000	0.00000
3	0.41302	0.17998	0.00295	0.00000	0.00000	0.00000
5	-0.00059	-0.10892	1.15543	0.00000	0.00000	0.00000
20	-0.09535	0.03541	-0.05065	0.00000	0.00000	0.00000
SUM	0.05515	1.40050	0.05515	0.00000	0.00000	0.00000

Condition **LC28=1.2D+Di+WI90**

6	0.00058	0.92566	-1.10885	0.00000	0.00000	0.00000
1	-0.21975	0.36891	0.04246	0.00000	0.00000	0.00000
3	0.45407	0.17927	-0.00013	0.00000	0.00000	0.00000
5	-0.00058	-0.10901	1.15595	0.00000	0.00000	0.00000
20	-0.16832	0.03568	-0.08942	0.00000	0.00000	0.00000
SUM	0.06600	1.40050	0.00000	0.00000	0.00000	0.00000

Condition **LC29=1.2D+Di+WI120**

6	0.00058	0.92630	-1.12887	0.00000	0.00000	0.00000
1	-0.18279	0.36884	0.04819	0.00000	0.00000	0.00000
3	0.47642	0.17850	-0.00324	0.00000	0.00000	0.00000
5	-0.00058	-0.10909	1.15547	0.00000	0.00000	0.00000
20	-0.23847	0.03593	-0.12670	0.00000	0.00000	0.00000
SUM	0.05515	1.40050	-0.05515	0.00000	0.00000	0.00000

Condition **LC30=1.2D+Di+WI150**

6	0.00058	0.92662	-1.13373	0.00000	0.00000	0.00000
1	-0.16101	0.36853	0.04938	0.00000	0.00000	0.00000
3	0.50062	0.17845	-0.00363	0.00000	0.00000	0.00000
5	-0.00058	-0.10913	1.15583	0.00000	0.00000	0.00000
20	-0.26607	0.03604	-0.14137	0.00000	0.00000	0.00000
SUM	0.07354	1.40050	-0.07354	0.00000	0.00000	0.00000

Condition **LC31=1.2D+Di-WI0**

6	0.00057	0.92684	-1.15357	0.00000	0.00000	0.00000
1	-0.16511	0.36899	0.05295	0.00000	0.00000	0.00000
3	0.46154	0.17765	-0.00600	0.00000	0.00000	0.00000
5	-0.00057	-0.10912	1.14813	0.00000	0.00000	0.00000
20	-0.29642	0.03615	-0.15751	0.00000	0.00000	0.00000
SUM	0.00000	1.40050	-0.11600	0.00000	0.00000	0.00000

Condition **LC32=1.2D+Di-WI30**

6	0.00057	0.92599	-1.14417	0.00000	0.00000	0.00000
1	-0.22832	0.36982	0.04932	0.00000	0.00000	0.00000
3	0.37565	0.17782	-0.00445	0.00000	0.00000	0.00000
5	-0.00058	-0.10900	1.14311	0.00000	0.00000	0.00000
20	-0.22087	0.03587	-0.11734	0.00000	0.00000	0.00000
SUM	-0.07354	1.40050	-0.07354	0.00000	0.00000	0.00000

Condition **LC33=1.2D+Di-WI60**

6	0.00058	0.92579	-1.13594	0.00000	0.00000	0.00000
1	-0.22984	0.36981	0.04822	0.00000	0.00000	0.00000
3	0.38214	0.17806	-0.00380	0.00000	0.00000	0.00000
5	-0.00058	-0.10898	1.14658	0.00000	0.00000	0.00000
20	-0.20746	0.03582	-0.11022	0.00000	0.00000	0.00000
SUM	-0.05515	1.40050	-0.05515	0.00000	0.00000	0.00000

Condition **LC34=1.2D+Di-WI90**

6	0.00058	0.92503	-1.11650	0.00000	0.00000	0.00000
1	-0.27261	0.37004	0.04259	0.00000	0.00000	0.00000
3	0.34108	0.17878	-0.00073	0.00000	0.00000	0.00000
5	-0.00058	-0.10889	1.14607	0.00000	0.00000	0.00000
20	-0.13447	0.03555	-0.07143	0.00000	0.00000	0.00000
SUM	-0.06600	1.40050	0.00000	0.00000	0.00000	0.00000

Condition **LC35=1.2D+Di-WI120**

6	0.00059	0.92438	-1.09647	0.00000	0.00000	0.00000
1	-0.30962	0.37011	0.03685	0.00000	0.00000	0.00000
3	0.31869	0.17955	0.00236	0.00000	0.00000	0.00000
5	-0.00059	-0.10882	1.14653	0.00000	0.00000	0.00000
20	-0.06422	0.03529	-0.03411	0.00000	0.00000	0.00000
SUM	-0.05515	1.40050	0.05515	0.00000	0.00000	0.00000

Condition **LC36=1.2D+Di-WI150**

6	0.00059	0.92407	-1.09160	0.00000	0.00000	0.00000
1	-0.33145	0.37043	0.03566	0.00000	0.00000	0.00000
3	0.29445	0.17960	0.00274	0.00000	0.00000	0.00000
5	-0.00059	-0.10878	1.14615	0.00000	0.00000	0.00000
20	-0.03654	0.03519	-0.01941	0.00000	0.00000	0.00000
SUM	-0.07354	1.40050	0.07354	0.00000	0.00000	0.00000

Condition **LC37=1.2D+1.6LL1**

6	0.00043	0.70138	-0.80718	0.00000	0.00000	0.00000
1	-0.19178	0.35000	0.02408	0.00000	0.00000	0.00000
3	0.32274	0.17545	0.01241	0.00000	0.00000	0.00000
5	-0.00043	-0.09371	0.84025	0.00000	0.00000	0.00000
20	-0.13096	0.01619	-0.06957	0.00000	0.00000	0.00000
SUM	0.00000	1.14931	0.00000	0.00000	0.00000	0.00000

Condition **LC38=1.2D+1.6LL2**

6	0.00023	0.48707	-0.57930	0.00000	0.00000	0.00000
1	-0.13228	0.20807	0.01911	0.00000	0.00000	0.00000
3	0.21098	0.49859	0.00285	0.00000	0.00000	0.00000
5	-0.00023	-0.06029	0.59914	0.00000	0.00000	0.00000
20	-0.07870	0.01586	-0.04180	0.00000	0.00000	0.00000
SUM	0.00000	1.14931	0.00000	0.00000	0.00000	0.00000

Condition **LC39=1.2D+1.6LL3**

6	0.00089	0.88269	-1.01116	0.00000	0.00000	0.00000
1	-0.44935	0.24839	0.01067	0.00000	0.00000	0.00000
3	0.50007	0.12481	0.00333	0.00000	0.00000	0.00000
5	-0.00088	-0.12244	1.02409	0.00000	0.00000	0.00000
20	-0.05072	0.01585	-0.02694	0.00000	0.00000	0.00000
SUM	0.00000	1.14931	0.00000	0.00000	0.00000	0.00000

Condition **LC40=1.2D+WL0+1.6LLa1**

6	0.00067	0.91691	-1.06078	0.00000	0.00000	0.00000
1	-0.24137	0.49880	0.07086	0.00000	0.00000	0.00000
3	0.43514	0.24443	-0.00646	0.00000	0.00000	0.00000
5	-0.00067	-0.12758	1.13433	0.00000	0.00000	0.00000
20	-0.19376	0.01674	-0.10293	0.00000	0.00000	0.00000
SUM	0.00000	1.54931	0.03500	0.00000	0.00000	0.00000

Condition **LC41=1.2D+WL30+1.6LLa1**

6	0.00066	0.91711	-1.06358	0.00000	0.00000	0.00000
1	-0.22200	0.49852	0.07194	0.00000	0.00000	0.00000
3	0.46079	0.24442	-0.00693	0.00000	0.00000	0.00000
5	-0.00067	-0.12761	1.13570	0.00000	0.00000	0.00000
20	-0.21687	0.01686	-0.11521	0.00000	0.00000	0.00000
SUM	0.02192	1.54931	0.02192	0.00000	0.00000	0.00000

Condition **LC42=1.2D+WL60+1.6LLa1**

6	0.00066	0.91715	-1.06559	0.00000	0.00000	0.00000
1	-0.22183	0.49852	0.07219	0.00000	0.00000	0.00000
3	0.45911	0.24436	-0.00707	0.00000	0.00000	0.00000
5	-0.00067	-0.12761	1.13481	0.00000	0.00000	0.00000
20	-0.21960	0.01688	-0.11667	0.00000	0.00000	0.00000
SUM	0.01768	1.54931	0.01768	0.00000	0.00000	0.00000

Condition **LC43=1.2D+WL90+1.6LLa1**

6	0.00066	0.91734	-1.07184	0.00000	0.00000	0.00000
1	-0.20940	0.49844	0.07385	0.00000	0.00000	0.00000
3	0.47017	0.24415	-0.00801	0.00000	0.00000	0.00000
5	-0.00066	-0.12763	1.13445	0.00000	0.00000	0.00000
20	-0.24177	0.01700	-0.12845	0.00000	0.00000	0.00000
SUM	0.01900	1.54931	0.00000	0.00000	0.00000	0.00000

Condition **LC44=1.2D+WL120+1.6LLa1**

6	0.00066	0.91752	-1.07792	0.00000	0.00000	0.00000
1	-0.19667	0.49837	0.07557	0.00000	0.00000	0.00000
3	0.47902	0.24394	-0.00891	0.00000	0.00000	0.00000
5	-0.00066	-0.12765	1.13421	0.00000	0.00000	0.00000
20	-0.26467	0.01712	-0.14062	0.00000	0.00000	0.00000
SUM	0.01768	1.54931	-0.01768	0.00000	0.00000	0.00000

Condition **LC45=1.2D+WL150+1.6LLa1**

6	0.00066	0.91759	-1.07909	0.00000	0.00000	0.00000
1	-0.19166	0.49828	0.07585	0.00000	0.00000	0.00000
3	0.48453	0.24394	-0.00898	0.00000	0.00000	0.00000
5	-0.00066	-0.12765	1.13426	0.00000	0.00000	0.00000
20	-0.27095	0.01715	-0.14396	0.00000	0.00000	0.00000
SUM	0.02192	1.54931	-0.02192	0.00000	0.00000	0.00000

Condition **LC46=1.2D-WL0+1.6LLa1**

6	0.00066	0.91766	-1.08518	0.00000	0.00000	0.00000
1	-0.19295	0.49842	0.07691	0.00000	0.00000	0.00000
3	0.47311	0.24367	-0.00968	0.00000	0.00000	0.00000
5	-0.00066	-0.12765	1.13181	0.00000	0.00000	0.00000
20	-0.28015	0.01720	-0.14885	0.00000	0.00000	0.00000
SUM	0.00000	1.54931	-0.03500	0.00000	0.00000	0.00000

Condition **LC47=1.2D-WL30+1.6LLa1**

6	0.00066	0.91746	-1.08239	0.00000	0.00000	0.00000
1	-0.21231	0.49871	0.07583	0.00000	0.00000	0.00000
3	0.44746	0.24368	-0.00922	0.00000	0.00000	0.00000
5	-0.00066	-0.12762	1.13044	0.00000	0.00000	0.00000
20	-0.25706	0.01708	-0.13658	0.00000	0.00000	0.00000
SUM	-0.02192	1.54931	-0.02192	0.00000	0.00000	0.00000

Condition **LC48=1.2D-WL60+1.6LLa1**

6	0.00066	0.91742	-1.08038	0.00000	0.00000	0.00000
1	-0.21249	0.49871	0.07558	0.00000	0.00000	0.00000
3	0.44914	0.24374	-0.00908	0.00000	0.00000	0.00000
5	-0.00066	-0.12762	1.13133	0.00000	0.00000	0.00000
20	-0.25433	0.01706	-0.13513	0.00000	0.00000	0.00000
SUM	-0.01768	1.54931	-0.01768	0.00000	0.00000	0.00000

Condition **LC49=1.2D-WL90+1.6LLa1**

6	0.00066	0.91723	-1.07413	0.00000	0.00000	0.00000
1	-0.22492	0.49878	0.07391	0.00000	0.00000	0.00000
3	0.43808	0.24395	-0.00814	0.00000	0.00000	0.00000
5	-0.00066	-0.12760	1.13170	0.00000	0.00000	0.00000
20	-0.23216	0.01694	-0.12334	0.00000	0.00000	0.00000
SUM	-0.01900	1.54931	0.00000	0.00000	0.00000	0.00000

Condition **LC50=1.2D-WL120+1.6LLa1**

6	0.00066	0.91705	-1.06805	0.00000	0.00000	0.00000
1	-0.23765	0.49885	0.07220	0.00000	0.00000	0.00000
3	0.42922	0.24417	-0.00723	0.00000	0.00000	0.00000
5	-0.00067	-0.12759	1.13193	0.00000	0.00000	0.00000
20	-0.20925	0.01682	-0.11117	0.00000	0.00000	0.00000
SUM	-0.01768	1.54931	0.01768	0.00000	0.00000	0.00000

Condition **LC51=1.2D-WL150+1.6LLa1**

6	0.00066	0.91698	-1.06688	0.00000	0.00000	0.00000
1	-0.24267	0.49894	0.07192	0.00000	0.00000	0.00000
3	0.42372	0.24416	-0.00717	0.00000	0.00000	0.00000
5	-0.00067	-0.12758	1.13188	0.00000	0.00000	0.00000
20	-0.20297	0.01679	-0.10783	0.00000	0.00000	0.00000
SUM	-0.02192	1.54931	0.02192	0.00000	0.00000	0.00000

Condition **LC52=1.2D+WL0+1.6LLa2**

6	0.00087	1.24784	-1.83525	0.00000	0.00000	0.00000
1	-0.28080	0.31529	0.10746	0.00000	0.00000	0.00000
3	0.48183	0.14972	-0.04121	0.00000	0.00000	0.00000
5	-0.00087	-0.17998	1.91080	0.00000	0.00000	0.00000
20	-0.20102	0.01644	-0.10681	0.00000	0.00000	0.00000
SUM	0.00000	1.54931	0.03500	0.00000	0.00000	0.00000

Condition **LC53=1.2D+WL30+1.6LLa2**

6	0.00087	1.24808	-1.83807	0.00000	0.00000	0.00000
1	-0.26149	0.31504	0.10852	0.00000	0.00000	0.00000
3	0.50749	0.14968	-0.04168	0.00000	0.00000	0.00000
5	-0.00087	-0.18002	1.91220	0.00000	0.00000	0.00000
20	-0.22408	0.01652	-0.11906	0.00000	0.00000	0.00000
SUM	0.02192	1.54931	0.02192	0.00000	0.00000	0.00000

Condition **LC54=1.2D+WL60+1.6LLa2**

6	0.00086	1.24813	-1.84007	0.00000	0.00000	0.00000
1	-0.26133	0.31504	0.10877	0.00000	0.00000	0.00000
3	0.50581	0.14963	-0.04181	0.00000	0.00000	0.00000
5	-0.00086	-0.18002	1.91130	0.00000	0.00000	0.00000
20	-0.22680	0.01653	-0.12051	0.00000	0.00000	0.00000
SUM	0.01768	1.54931	0.01768	0.00000	0.00000	0.00000

Condition **LC55=1.2D+WL90+1.6LLa2**

6	0.00086	1.24835	-1.84634	0.00000	0.00000	0.00000
1	-0.24895	0.31497	0.11040	0.00000	0.00000	0.00000
3	0.51686	0.14941	-0.04274	0.00000	0.00000	0.00000
5	-0.00086	-0.18004	1.91094	0.00000	0.00000	0.00000
20	-0.24890	0.01661	-0.13226	0.00000	0.00000	0.00000
SUM	0.01900	1.54931	0.00000	0.00000	0.00000	0.00000

Condition **LC56=1.2D+WL120+1.6LLa2**

6	0.00086	1.24857	-1.85244	0.00000	0.00000	0.00000
1	-0.23629	0.31491	0.11208	0.00000	0.00000	0.00000
3	0.52570	0.14920	-0.04364	0.00000	0.00000	0.00000
5	-0.00086	-0.18007	1.91071	0.00000	0.00000	0.00000
20	-0.27174	0.01670	-0.14440	0.00000	0.00000	0.00000
SUM	0.01768	1.54931	-0.01768	0.00000	0.00000	0.00000

Condition **LC57=1.2D+WL150+1.6LLa2**

6	0.00086	1.24864	-1.85360	0.00000	0.00000	0.00000
1	-0.23129	0.31483	0.11236	0.00000	0.00000	0.00000
3	0.53121	0.14920	-0.04370	0.00000	0.00000	0.00000
5	-0.00086	-0.18008	1.91076	0.00000	0.00000	0.00000
20	-0.27800	0.01672	-0.14773	0.00000	0.00000	0.00000
SUM	0.02192	1.54931	-0.02192	0.00000	0.00000	0.00000

Condition **LC58=1.2D-WL0+1.6LLa2**

6	0.00086	1.24872	-1.85969	0.00000	0.00000	0.00000
1	-0.23261	0.31495	0.11339	0.00000	0.00000	0.00000
3	0.51978	0.14896	-0.04438	0.00000	0.00000	0.00000
5	-0.00086	-0.18007	1.90829	0.00000	0.00000	0.00000
20	-0.28717	0.01675	-0.15260	0.00000	0.00000	0.00000
SUM	0.00000	1.54931	-0.03500	0.00000	0.00000	0.00000

Condition **LC59=1.2D-WL30+1.6LLa2**

6	0.00086	1.24848	-1.85687	0.00000	0.00000	0.00000
1	-0.25191	0.31520	0.11233	0.00000	0.00000	0.00000
3	0.49412	0.14900	-0.04391	0.00000	0.00000	0.00000
5	-0.00086	-0.18004	1.90689	0.00000	0.00000	0.00000
20	-0.26413	0.01667	-0.14035	0.00000	0.00000	0.00000
SUM	-0.02192	1.54931	-0.02192	0.00000	0.00000	0.00000

Condition **LC60=1.2D-WL60+1.6LLa2**

6	0.00086	1.24843	-1.85487	0.00000	0.00000	0.00000
1	-0.25207	0.31520	0.11209	0.00000	0.00000	0.00000
3	0.49581	0.14905	-0.04378	0.00000	0.00000	0.00000
5	-0.00086	-0.18004	1.90779	0.00000	0.00000	0.00000
20	-0.26141	0.01666	-0.13890	0.00000	0.00000	0.00000
SUM	-0.01768	1.54931	-0.01768	0.00000	0.00000	0.00000

Condition **LC61=1.2D-WL90+1.6LLa2**

6	0.00086	1.24821	-1.84860	0.00000	0.00000	0.00000
1	-0.26445	0.31527	0.11045	0.00000	0.00000	0.00000
3	0.48475	0.14927	-0.04285	0.00000	0.00000	0.00000
5	-0.00086	-0.18001	1.90816	0.00000	0.00000	0.00000
20	-0.23931	0.01658	-0.12715	0.00000	0.00000	0.00000
SUM	-0.01900	1.54931	0.00000	0.00000	0.00000	0.00000

Condition **LC62=1.2D-WL120+1.6LLa2**

6	0.00086	1.24799	-1.84251	0.00000	0.00000	0.00000
1	-0.27712	0.31533	0.10877	0.00000	0.00000	0.00000
3	0.47591	0.14948	-0.04196	0.00000	0.00000	0.00000
5	-0.00086	-0.17999	1.90839	0.00000	0.00000	0.00000
20	-0.21646	0.01650	-0.11501	0.00000	0.00000	0.00000
SUM	-0.01768	1.54931	0.01768	0.00000	0.00000	0.00000

Condition **LC63=1.2D-WL150+1.6LLa2**

6	0.00086	1.24792	-1.84134	0.00000	0.00000	0.00000
1	-0.28212	0.31541	0.10849	0.00000	0.00000	0.00000
3	0.47039	0.14948	-0.04189	0.00000	0.00000	0.00000
5	-0.00086	-0.17998	1.90833	0.00000	0.00000	0.00000
20	-0.21019	0.01647	-0.11168	0.00000	0.00000	0.00000
SUM	-0.02192	1.54931	0.02192	0.00000	0.00000	0.00000

Condition **LC64=1.2D+WL0+1.6LLa3**

6	0.00077	1.00300	-1.08687	0.00000	0.00000	0.00000
1	-0.38198	0.43535	0.00002	0.00000	0.00000	0.00000
3	0.48221	0.23567	0.03848	0.00000	0.00000	0.00000
5	-0.00077	-0.14094	1.13661	0.00000	0.00000	0.00000
20	-0.10024	0.01623	-0.05324	0.00000	0.00000	0.00000
SUM	0.00000	1.54931	0.03500	0.00000	0.00000	0.00000

Condition **LC65=1.2D+WL30+1.6LLa3**

6	0.00077	1.00321	-1.08970	0.00000	0.00000	0.00000
1	-0.36256	0.43509	0.00110	0.00000	0.00000	0.00000
3	0.50789	0.23564	0.03805	0.00000	0.00000	0.00000
5	-0.00077	-0.14097	1.13803	0.00000	0.00000	0.00000
20	-0.12341	0.01635	-0.06556	0.00000	0.00000	0.00000
SUM	0.02192	1.54931	0.02192	0.00000	0.00000	0.00000

Condition **LC66=1.2D+WL60+1.6LLa3**

6	0.00077	1.00325	-1.09172	0.00000	0.00000	0.00000
1	-0.36239	0.43508	0.00134	0.00000	0.00000	0.00000
3	0.50620	0.23558	0.03791	0.00000	0.00000	0.00000
5	-0.00077	-0.14097	1.13715	0.00000	0.00000	0.00000
20	-0.12614	0.01636	-0.06700	0.00000	0.00000	0.00000
SUM	0.01768	1.54931	0.01768	0.00000	0.00000	0.00000

Condition **LC67=1.2D+WL90+1.6LLa3**

6	0.00077	1.00345	-1.09800	0.00000	0.00000	0.00000
1	-0.34994	0.43501	0.00299	0.00000	0.00000	0.00000
3	0.51725	0.23536	0.03698	0.00000	0.00000	0.00000
5	-0.00077	-0.14099	1.13681	0.00000	0.00000	0.00000
20	-0.14831	0.01648	-0.07879	0.00000	0.00000	0.00000
SUM	0.01900	1.54931	0.00000	0.00000	0.00000	0.00000

Condition **LC68=1.2D+WL120+1.6LLa3**

6	0.00076	1.00363	-1.10411	0.00000	0.00000	0.00000
1	-0.33720	0.43495	0.00469	0.00000	0.00000	0.00000
3	0.52609	0.23514	0.03609	0.00000	0.00000	0.00000
5	-0.00076	-0.14101	1.13661	0.00000	0.00000	0.00000
20	-0.17121	0.01660	-0.09095	0.00000	0.00000	0.00000
SUM	0.01768	1.54931	-0.01768	0.00000	0.00000	0.00000

Condition **LC69=1.2D+WL150+1.6LLa3**

6	0.00076	1.00370	-1.10529	0.00000	0.00000	0.00000
1	-0.33218	0.43486	0.00496	0.00000	0.00000	0.00000
3	0.53160	0.23514	0.03603	0.00000	0.00000	0.00000
5	-0.00076	-0.14102	1.13668	0.00000	0.00000	0.00000
20	-0.17750	0.01663	-0.09430	0.00000	0.00000	0.00000
SUM	0.02192	1.54931	-0.02192	0.00000	0.00000	0.00000

Condition **LC70=1.2D-WL0+1.6LLa3**

6	0.00076	1.00378	-1.11140	0.00000	0.00000	0.00000
1	-0.33350	0.43499	0.00601	0.00000	0.00000	0.00000
3	0.52014	0.23488	0.03531	0.00000	0.00000	0.00000
5	-0.00076	-0.14102	1.13423	0.00000	0.00000	0.00000
20	-0.18664	0.01668	-0.09915	0.00000	0.00000	0.00000
SUM	0.00000	1.54931	-0.03500	0.00000	0.00000	0.00000

Condition **LC71=1.2D-WL30+1.6LLa3**

6	0.00076	1.00357	-1.10856	0.00000	0.00000	0.00000
1	-0.35291	0.43525	0.00493	0.00000	0.00000	0.00000
3	0.49447	0.23492	0.03575	0.00000	0.00000	0.00000
5	-0.00076	-0.14099	1.13281	0.00000	0.00000	0.00000
20	-0.16348	0.01656	-0.08685	0.00000	0.00000	0.00000
SUM	-0.02192	1.54931	-0.02192	0.00000	0.00000	0.00000

Condition **LC72=1.2D-WL60+1.6LLa3**

6	0.00076	1.00352	-1.10655	0.00000	0.00000	0.00000
1	-0.35308	0.43525	0.00469	0.00000	0.00000	0.00000
3	0.49616	0.23497	0.03589	0.00000	0.00000	0.00000
5	-0.00076	-0.14099	1.13369	0.00000	0.00000	0.00000
20	-0.16076	0.01654	-0.08540	0.00000	0.00000	0.00000
SUM	-0.01768	1.54931	-0.01768	0.00000	0.00000	0.00000

Condition **LC73=1.2D-WL90+1.6LLa3**

6	0.00076	1.00333	-1.10027	0.00000	0.00000	0.00000
1	-0.36553	0.43532	0.00304	0.00000	0.00000	0.00000
3	0.48511	0.23519	0.03682	0.00000	0.00000	0.00000
5	-0.00077	-0.14097	1.13403	0.00000	0.00000	0.00000
20	-0.13858	0.01643	-0.07361	0.00000	0.00000	0.00000
SUM	-0.01900	1.54931	0.00000	0.00000	0.00000	0.00000

Condition **LC74=1.2D-WL120+1.6LLa3**

6	0.00077	1.00314	-1.09415	0.00000	0.00000	0.00000
1	-0.37827	0.43539	0.00134	0.00000	0.00000	0.00000
3	0.47627	0.23541	0.03771	0.00000	0.00000	0.00000
5	-0.00077	-0.14095	1.13423	0.00000	0.00000	0.00000
20	-0.11568	0.01631	-0.06145	0.00000	0.00000	0.00000
SUM	-0.01768	1.54931	0.01768	0.00000	0.00000	0.00000

Condition **LC75=1.2D-WL150+1.6LLa3**

6	0.00077	1.00307	-1.09298	0.00000	0.00000	0.00000
1	-0.38330	0.43548	0.00106	0.00000	0.00000	0.00000
3	0.47076	0.23542	0.03777	0.00000	0.00000	0.00000
5	-0.00077	-0.14094	1.13416	0.00000	0.00000	0.00000
20	-0.10938	0.01627	-0.05810	0.00000	0.00000	0.00000
SUM	-0.02192	1.54931	0.02192	0.00000	0.00000	0.00000

Condition **LC76=1.2D+WL0**

6	0.00024	0.48653	-0.56691	0.00000	0.00000	0.00000
1	-0.15643	0.20821	0.01614	0.00000	0.00000	0.00000
3	0.19190	0.09901	0.00440	0.00000	0.00000	0.00000
5	-0.00024	-0.06022	0.60021	0.00000	0.00000	0.00000
20	-0.03547	0.01577	-0.01884	0.00000	0.00000	0.00000
SUM	0.00000	0.74931	0.03500	0.00000	0.00000	0.00000

Condition **LC77=1.2D+WL30**

6	0.00024	0.48685	-0.56984	0.00000	0.00000	0.00000
1	-0.13704	0.20798	0.01721	0.00000	0.00000	0.00000
3	0.21765	0.09892	0.00399	0.00000	0.00000	0.00000
5	-0.00024	-0.06027	0.60173	0.00000	0.00000	0.00000
20	-0.05868	0.01582	-0.03117	0.00000	0.00000	0.00000
SUM	0.02192	0.74931	0.02192	0.00000	0.00000	0.00000

Condition **LC78=1.2D+WL60**

6	0.00024	0.48690	-0.57186	0.00000	0.00000	0.00000
1	-0.13688	0.20798	0.01745	0.00000	0.00000	0.00000
3	0.21596	0.09887	0.00385	0.00000	0.00000	0.00000
5	-0.00024	-0.06027	0.60085	0.00000	0.00000	0.00000
20	-0.06140	0.01583	-0.03261	0.00000	0.00000	0.00000
SUM	0.01768	0.74931	0.01768	0.00000	0.00000	0.00000

Condition **LC79=1.2D+WL90**

6	0.00023	0.48718	-0.57821	0.00000	0.00000	0.00000
1	-0.12449	0.20794	0.01909	0.00000	0.00000	0.00000
3	0.22707	0.09863	0.00294	0.00000	0.00000	0.00000
5	-0.00023	-0.06031	0.60058	0.00000	0.00000	0.00000
20	-0.08359	0.01587	-0.04440	0.00000	0.00000	0.00000
SUM	0.01900	0.74931	0.00000	0.00000	0.00000	0.00000

Condition **LC80=1.2D+WL120**

6	0.00023	0.48744	-0.58438	0.00000	0.00000	0.00000
1	-0.11180	0.20789	0.02077	0.00000	0.00000	0.00000
3	0.23597	0.09841	0.00206	0.00000	0.00000	0.00000
5	-0.00023	-0.06035	0.60043	0.00000	0.00000	0.00000
20	-0.10649	0.01592	-0.05657	0.00000	0.00000	0.00000
SUM	0.01768	0.74931	-0.01768	0.00000	0.00000	0.00000

Condition **LC81=1.2D+WL150**

6	0.00023	0.48753	-0.58558	0.00000	0.00000	0.00000
1	-0.10678	0.20781	0.02105	0.00000	0.00000	0.00000
3	0.24149	0.09839	0.00201	0.00000	0.00000	0.00000
5	-0.00023	-0.06036	0.60052	0.00000	0.00000	0.00000
20	-0.11279	0.01593	-0.05991	0.00000	0.00000	0.00000
SUM	0.02192	0.74931	-0.02192	0.00000	0.00000	0.00000

Condition **LC82=1.2D-WL0**

6	0.00023	0.48761	-0.59170	0.00000	0.00000	0.00000
1	-0.10814	0.20793	0.02208	0.00000	0.00000	0.00000
3	0.23005	0.09818	0.00130	0.00000	0.00000	0.00000
5	-0.00023	-0.06036	0.59807	0.00000	0.00000	0.00000
20	-0.12191	0.01595	-0.06476	0.00000	0.00000	0.00000
SUM	0.00000	0.74931	-0.03500	0.00000	0.00000	0.00000

Condition **LC83=1.2D-WL30**

6	0.00023	0.48730	-0.58877	0.00000	0.00000	0.00000
1	-0.12752	0.20816	0.02101	0.00000	0.00000	0.00000
3	0.20431	0.09827	0.00172	0.00000	0.00000	0.00000
5	-0.00023	-0.06032	0.59655	0.00000	0.00000	0.00000
20	-0.09872	0.01590	-0.05244	0.00000	0.00000	0.00000
SUM	-0.02192	0.74931	-0.02192	0.00000	0.00000	0.00000

Condition **LC84=1.2D-WL60**

6	0.00023	0.48724	-0.58675	0.00000	0.00000	0.00000
1	-0.12767	0.20816	0.02077	0.00000	0.00000	0.00000
3	0.20600	0.09832	0.00186	0.00000	0.00000	0.00000
5	-0.00023	-0.06031	0.59743	0.00000	0.00000	0.00000
20	-0.09600	0.01590	-0.05099	0.00000	0.00000	0.00000
SUM	-0.01768	0.74931	-0.01768	0.00000	0.00000	0.00000

Condition **LC85=1.2D-WL90**

6	0.00023	0.48697	-0.58040	0.00000	0.00000	0.00000
1	-0.14007	0.20820	0.01913	0.00000	0.00000	0.00000
3	0.19488	0.09855	0.00277	0.00000	0.00000	0.00000
5	-0.00023	-0.06027	0.59770	0.00000	0.00000	0.00000
20	-0.07381	0.01585	-0.03921	0.00000	0.00000	0.00000
SUM	-0.01900	0.74931	0.00000	0.00000	0.00000	0.00000

Condition **LC86=1.2D-WL120**

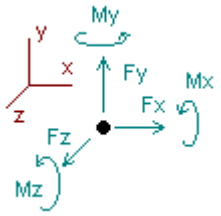
6	0.00024	0.48671	-0.57422	0.00000	0.00000	0.00000
1	-0.15277	0.20825	0.01745	0.00000	0.00000	0.00000
3	0.18599	0.09878	0.00364	0.00000	0.00000	0.00000
5	-0.00024	-0.06024	0.59785	0.00000	0.00000	0.00000
20	-0.05090	0.01581	-0.02703	0.00000	0.00000	0.00000
SUM	-0.01768	0.74931	0.01768	0.00000	0.00000	0.00000

Condition **LC87=1.2D-WL150**

6	0.00024	0.48661	-0.57302	0.00000	0.00000	0.00000
1	-0.15779	0.20833	0.01717	0.00000	0.00000	0.00000
3	0.18046	0.09879	0.00370	0.00000	0.00000	0.00000
5	-0.00024	-0.06022	0.59776	0.00000	0.00000	0.00000
20	-0.04459	0.01579	-0.02368	0.00000	0.00000	0.00000
SUM	-0.02192	0.74931	0.02192	0.00000	0.00000	0.00000

Envelope for nodal reactions

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



Direction of positive forces and moments

Envelope of nodal reactions for :

LC1=1.2D+Wo
LC2=1.2D+W30
LC3=1.2D+W60
LC4=1.2D+W90
LC5=1.2D+W120
LC6=1.2D+W150
LC7=1.2D-Wo
LC8=1.2D-W30
LC9=1.2D-W60
LC10=1.2D-W90
LC11=1.2D-W120
LC12=1.2D-W150
LC13=0.9D+Wo
LC14=0.9D+W30
LC15=0.9D+W60
LC16=0.9D+W90
LC17=0.9D+W120
LC18=0.9D+W150
LC19=0.9D-Wo
LC20=0.9D-W30
LC21=0.9D-W60
LC22=0.9D-W90
LC23=0.9D-W120
LC24=0.9D-W150
LC25=1.2D+Di+WI0
LC26=1.2D+Di+WI30
LC27=1.2D+Di+WI60
LC28=1.2D+Di+WI90
LC29=1.2D+Di+WI120
LC30=1.2D+Di+WI150
LC31=1.2D+Di-WI0
LC32=1.2D+Di-WI30
LC33=1.2D+Di-WI60
LC34=1.2D+Di-WI90
LC35=1.2D+Di-WI120
LC36=1.2D+Di-WI150
LC37=1.2D+1.6LL1
LC38=1.2D+1.6LL2
LC39=1.2D+1.6LL3
LC40=1.2D+WL0+1.6LLa1
LC41=1.2D+WL30+1.6LLa1
LC42=1.2D+WL60+1.6LLa1
LC43=1.2D+WL90+1.6LLa1
LC44=1.2D+WL120+1.6LLa1
LC45=1.2D+WL150+1.6LLa1
LC46=1.2D-WL0+1.6LLa1
LC47=1.2D-WL30+1.6LLa1
LC48=1.2D-WL60+1.6LLa1
LC49=1.2D-WL90+1.6LLa1
LC50=1.2D-WL120+1.6LLa1
LC51=1.2D-WL150+1.6LLa1

LC52=1.2D+WL0+1.6LLa2
LC53=1.2D+WL30+1.6LLa2
LC54=1.2D+WL60+1.6LLa2
LC55=1.2D+WL90+1.6LLa2
LC56=1.2D+WL120+1.6LLa2
LC57=1.2D+WL150+1.6LLa2
LC58=1.2D-WL0+1.6LLa2
LC59=1.2D-WL30+1.6LLa2
LC60=1.2D-WL60+1.6LLa2
LC61=1.2D-WL90+1.6LLa2
LC62=1.2D-WL120+1.6LLa2
LC63=1.2D-WL150+1.6LLa2
LC64=1.2D+WL0+1.6LLa3
LC65=1.2D+WL30+1.6LLa3
LC66=1.2D+WL60+1.6LLa3
LC67=1.2D+WL90+1.6LLa3
LC68=1.2D+WL120+1.6LLa3
LC69=1.2D+WL150+1.6LLa3
LC70=1.2D-WL0+1.6LLa3
LC71=1.2D-WL30+1.6LLa3
LC72=1.2D-WL60+1.6LLa3
LC73=1.2D-WL90+1.6LLa3
LC74=1.2D-WL120+1.6LLa3
LC75=1.2D-WL150+1.6LLa3
LC76=1.2D+WL0
LC77=1.2D+WL30
LC78=1.2D+WL60
LC79=1.2D+WL90
LC80=1.2D+WL120
LC81=1.2D+WL150
LC82=1.2D-WL0
LC83=1.2D-WL30
LC84=1.2D-WL60
LC85=1.2D-WL90
LC86=1.2D-WL120
LC87=1.2D-WL150

		Forces						Moments					
Node		**Fx** [Kip]	**lc**	**Fy** [Kip]	**lc**	**Fz** [Kip]	**lc**	**Mx** [Kip*ft]	**lc**	**My** [Kip*ft]	**lc**	**Mz** [Kip*ft]	**lc**
6	Max	0.057	LC3	1.249	LC58	-0.101	LC13	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.057	LC21	0.351	LC13	-1.860	LC58	0.00000	LC1	0.00000	LC1	0.00000	LC1
1	Max	0.856	LC18	0.499	LC51	0.113	LC58	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-1.099	LC12	0.131	LC14	-0.015	LC20	0.00000	LC1	0.00000	LC1	0.00000	LC1
3	Max	1.197	LC6	0.499	LC38	0.103	LC1	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.838	LC24	0.039	LC19	-0.101	LC19	0.00000	LC1	0.00000	LC1	0.00000	LC1
5	Max	0.039	LC17	-0.043	LC24	1.912	LC53	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.040	LC11	-0.180	LC57	0.324	LC20	0.00000	LC1	0.00000	LC1	0.00000	LC1
20	Max	1.533	LC24	0.036	LC31	0.843	LC24	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-1.649	LC6	0.009	LC24	-0.909	LC6	0.00000	LC1	0.00000	LC1	0.00000	LC1

Connection Check

Date: 3/22/2023
Project Name: WESTBROOK-SPENCER RD
Project No.: CT2047
Designed By: JC **Checked By:** MSC

CHECK CONNECTION CAPACITY (Worst Case)

Reference: AISC Steel Construction Manual 14th Edition (ASD)

Bolt Type = A36 1/2" U-Bolt

Allowable Tensile Load =

F_{Tall} = 4271 lbs.

Allowable Shear Load =

F_{Vall} = 2562 lbs.

TENSILE FORCES

Reaction **F =** 1860 lbs. (See Bentley Output)

SHEAR FORCES

Reactions in X direction: 57 lbs. (See Bentley Output)
Reactions in Y direction: 1249 lbs. (See Bentley Output)

Resultant: 1250 lbs.

No. of Supports = 1
No. of Bolts / Support = 2

Tension Design Load /Bolts =

f_t= 930.00 lbs. < 4271 lbs. **Therefore, OK !**

Shear Design Load / Bolts=

f_v= 625.15 lbs. < 2562 lbs. **Therefore, OK !**

CHECK COMBINED TENSION AND SHEAR

f_t / F_T	+	f_v / F_V	≤	1.0			
0.218	+	0.244	=	0.462	<	1.0	**Therefore, OK !**

Exhibit F

Power Density/RF Emissions Report

SAI Group
12 Industrial Way
Salem, NH 03079
(603) 421-0470
www.saigrp.com

Radio Frequency Exposure Theoretical Study

Prepared For:

AT&T Mobility

Site Name:	Westbrook-Spencer Rd
FA#:	10035035
Site ID:	CTL02047
Address:	315 Spencer Plain Rd, Westbrook, CT 06498

Prepared by: **SAI Group**
12 Industrial Way
Salem, NH 03079
(603) 421-0470

Date of Report: May 24, 2023

Statement of Compliance

AT&T's proposed antenna installation along with other existing antennas is calculated to be within *0.23%* of FCC Standard for General Public/Uncontrolled Maximum Permissible Exposure (MPE).

Table of Contents

1 General Summary

SAI Group was contracted by AT&T Mobility to conduct a Radio Frequency (RF) Analysis for a wireless facility located at 315 Spencer Plain Rd, Westbrook, CT to determine whether the radio facility is in compliance with Federal Communications Commission (FCC) regulations and standards regarding RF exposure.

RF exposure is calculated in accordance with FCC's suggested prediction methods.

2 Site Compliance Summary

Compliance Summary (General Public Limit)	
Site Compliance	Yes
Maximum Calculated %MPE at 0-6' Ground Level (Cumulative)	0.23% at about 460ft North from the tower.

3 RF Design Specifications

Table below shows the technical data used for the calculation of cumulative %MPE results.

Ant ID	Operator	Antenna Make	Antenna Model	Type	TX Freq (MHz)	Az (Deg)	Ant Gain (dBd)	Total ERP (Watts)	Z Rad Center (ft)
1	AT&T	KATHREIN	840370964	Panel	704	23	9.87	1553	148
1	AT&T	KATHREIN	840370964	Panel	1910	23	14.8	2416	148
1	AT&T	KATHREIN	840370964	Panel	1910	23	14.8	2416	148
2	AT&T	CCI	DMP65R-BU4DA	Panel	750	23	9.95	791	148
2	AT&T	CCI	DMP65R-BU4DA	Panel	850	23	10.25	1000	148
2	AT&T	CCI	DMP65R-BU4DA	Panel	2130	23	14.05	4066	148
3	AT&T	KATHREIN	840370964	Panel	704	143	9.87	1553	148
3	AT&T	KATHREIN	840370964	Panel	1910	143	14.8	2416	148
3	AT&T	KATHREIN	840370964	Panel	1910	143	14.8	2416	148
4	AT&T	CCI	DMP65R-BU4DA	Panel	750	143	9.95	791	148
4	AT&T	CCI	DMP65R-BU4DA	Panel	850	143	10.25	1000	148
4	AT&T	CCI	DMP65R-BU4DA	Panel	2130	143	14.05	4066	148
5	AT&T	KATHREIN	840370964	Panel	704	263	9.77	1517	148
5	AT&T	KATHREIN	840370964	Panel	1910	263	14.81	2422	148
5	AT&T	KATHREIN	840370964	Panel	1910	263	14.81	2422	148
6	AT&T	CCI	DMP65R-BU4DA	Panel	750	263	9.65	738	148
6	AT&T	CCI	DMP65R-BU4DA	Panel	850	263	10.35	1000	148
6	AT&T	CCI	DMP65R-BU4DA	Panel	2130	263	14.25	4257	148
7	T-Mobile	COMMSCOPE	DBXNH-6565B-VTM	Panel	1900	0	16.38	2607	130
7	T-Mobile	COMMSCOPE	DBXNH-6565B-VTM	Panel	2100	0	16.36	2595	130
7	T-Mobile	COMMSCOPE	DBXNH-6565B-VTM	Panel	2100	0	16.36	5190	130
7	T-Mobile	COMMSCOPE	DBXNH-6565B-VTM	Panel	700	0	12.44	526	130
8	T-Mobile	COMMSCOPE	DBXNH-6565B-VTM	Panel	1900	120	16.38	2607	130
8	T-Mobile	COMMSCOPE	DBXNH-6565B-VTM	Panel	2100	120	16.36	2595	130
8	T-Mobile	COMMSCOPE	DBXNH-6565B-VTM	Panel	2100	120	16.36	5190	130
8	T-Mobile	COMMSCOPE	DBXNH-6565B-VTM	Panel	700	120	12.44	526	130
9	T-Mobile	COMMSCOPE	DBXNH-6565B-VTM	Panel	1900	240	16.38	2607	130
9	T-Mobile	COMMSCOPE	DBXNH-6565B-VTM	Panel	2100	240	16.36	2595	130
9	T-Mobile	COMMSCOPE	DBXNH-6565B-VTM	Panel	2100	240	16.36	5190	130
9	T-Mobile	COMMSCOPE	DBXNH-6565B-VTM	Panel	700	240	12.44	526	130
10	SPRINT	RFS	APXVTM14 ALU-I20	Panel	2500	0	15.85	6225	137
11	SPRINT	COMMSCOPE	NNVV-65B-R4	Panel	850	0	12.54	376	137
11	SPRINT	COMMSCOPE	NNVV-65B-R4	Panel	850	0	12.54	1884	137
11	SPRINT	COMMSCOPE	NNVV-65B-R4	Panel	1900	0	14.92	2559	137
11	SPRINT	COMMSCOPE	NNVV-65B-R4	Panel	1900	0	14.92	2559	137
12	SPRINT	RFS	APXVTM14 ALU-I20	Panel	2500	80	15.85	6225	137
13	SPRINT	COMMSCOPE	NNVV-65B-R4	Panel	850	80	12.54	376	137
13	SPRINT	COMMSCOPE	NNVV-65B-R4	Panel	850	80	12.54	1884	137

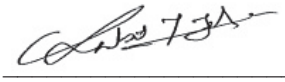
13	SPRINT	COMMSCOPE	NNVV-65B-R4	Panel	1900	80	14.92	2559	137
13	SPRINT	COMMSCOPE	NNVV-65B-R4	Panel	1900	80	14.92	2559	137
14	SPRINT	RFS	APXVTM14 ALU-I20	Panel	2500	180	15.85	6225	137
15	SPRINT	COMMSCOPE	NNVV-65B-R4	Panel	850	180	12.54	376	137
15	SPRINT	COMMSCOPE	NNVV-65B-R4	Panel	850	180	12.54	1884	137
15	SPRINT	COMMSCOPE	NNVV-65B-R4	Panel	1900	180	14.92	2559	137
15	SPRINT	COMMSCOPE	NNVV-65B-R4	Panel	1900	180	14.92	2559	137
16	EVERSOURCE	COMPROD	871F-70-220-025	Dipole	225	0	2.37	279	124
17	Unknown	GENERIC	MW-St Ranch Radome	Dish	5600	0	20.85	1289	177
18	Unknown	GENERIC	MW-Goose Radome	Dish	5600	0	20.85	1412	177
19	Unknown	GENERIC	Dispatch 1 Yagi	Dipole	79	0	8.2	292	155
20	Unknown	GENERIC	hear 4-dipole array	Dipole	150	0	2.5	171	81
21	Unknown	GENERIC	Dispatch 2 Yagi	Dipole	79	0	8.2	285	120
22	Unknown	GENERIC	scan corner reflector	Dipole	450	0	2.5	641	122
23	Unknown	GENERIC	hotline 2-dipole array	Dipole	79	0	8.2	280	102
24	Unknown	GENERIC	Fire dispatch yagi	Omni	30	0	0	467	180
25	Unknown	GENERIC	LB Aux Yagi	Dipole	79	0	8.2	616	180
26	Unknown	GENERIC	Med Base whip	Omni	450	0	12	187	180
27	Unknown	GENERIC	F 800MHz whip w/ref	Omni	850	0	8.96	1169	180
28	Unknown	GENERIC	MW-Goose Dish	Dish	2400	0	28.15	146	170
29	Unknown	GENERIC	MW-Killingworth Dish	Dish	2400	0	28.15	116	164

NOTE: The Z value indicates the distance of radiation center of the antenna height above the ground site level unless otherwise indicated. Effective Radiated Power (ERP) is provided by the operator or calculated based on SAI Group experience. SAI Group has assumed transmission parameters for “Unknown” RF emitters based on the latest CSC data available for the site. “Generic” antenna models have been used where existing antenna part numbers or radiation patterns are not available. The frequencies presented in this table may have been assumed in order to represent the approximate band of operation and to support a worst-case calculation of power density

4 Conclusion

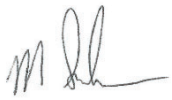
I certify to the best of my knowledge that the statements contained in this report are true and accurate. The theoretical computations contained are based on FCC recommended methods, with industry standard assumptions & formulas, and complies with FCC mandated Maximum Permissible RF Exposure requirements.

A comprehensive field survey was not performed prior to the generation of this report. If questions arise regarding the calculations herein, SAI Group recommends that a comprehensive field survey be performed to resolve any disputes.



Sanket Joshi
RF Engineer
SAI Group

May 24, 2023
Date



Matthew Smelcer
RF Engineering Manager

May 24, 2023
Date

Appendix A – FCC Rules and Regulations

In 1996, the Federal Communication Commission (FCC) adopted procedures and guidelines for evaluating of the effects of RF exposure. This guideline from the FCC Office of Engineering and Technology is Bulletin 65 ("OET Bulletin 65"), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996 the FCC periodically reviews these rules and regulations as per their congressional mandate.

Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following Tables and diagram:

Table 1. MPE Limits for General Population/ Uncontrolled Exposure

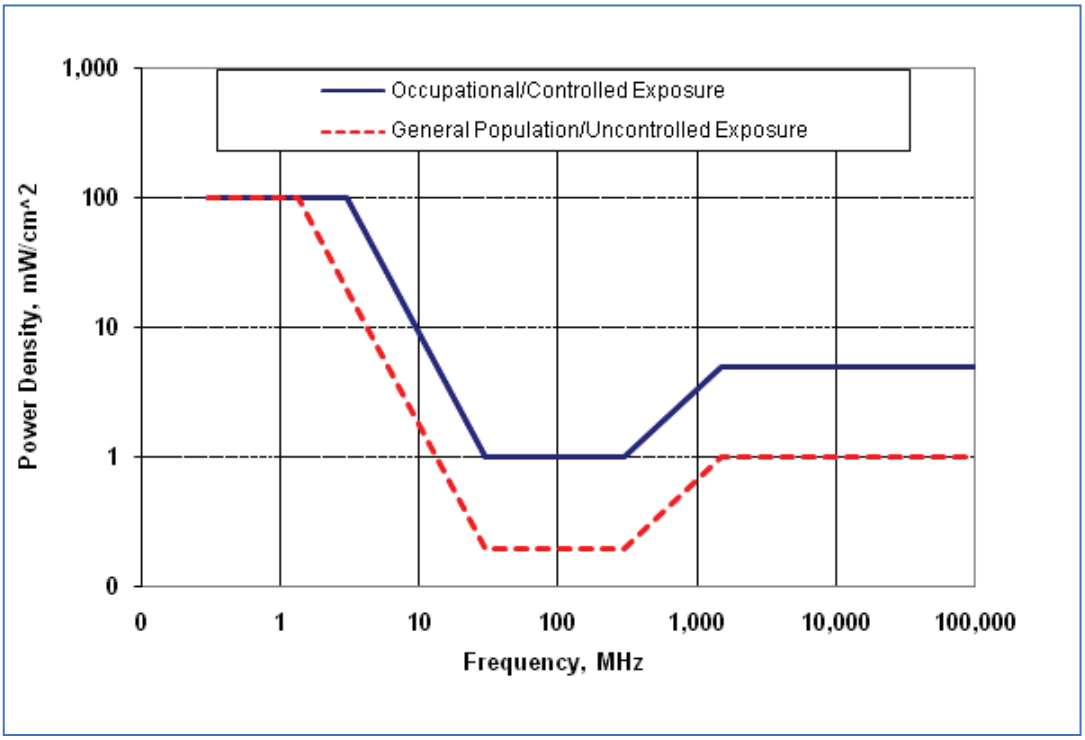
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time for $\|E\|^2$, $\|H\|^2$, or S (Minutes)
0.3 – 1.34	614	1.63	(100)*	30
1.34 -30	824/f	2.19/f	($180/f^2$)*	30
30 – 300	27.5	0.073	0.2	30
300 – 1500	--	--	f/1500	30
1500– 100,000	--	--	1.0	30
f = frequency in MHz		* = Plane wave equivalent power density		

General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can't exercise control over their exposure. A site is evaluated with General Public limits if there is no access controls or no RF warning signage present.

Table 2. MPE Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time for $\|E\|^2$, $\|H\|^2$, or S (Minutes)
0.3 – 3.0	614	1.63	(100)*	6
3.0 – 30	1842/f	4.89/f	($900/f^2$)*	6
30 – 300	61.4	0.163	1.0	6
300 – 1500	--	--	f/300	6
1500– 100,000	--	--	5.0	6
f = frequency in MHz		* = Plane wave equivalent power density		

Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where such occupational/controlled limits apply provided he or she is made aware of the potential for exposure. Typical criteria to remediate controlled environment are restricted access to the areas where antennas are located along with appropriate RF warning signage. A site with Controlled environment is evaluated with Occupational limits.



Maximum Permissible Exposures. Occupational/Controlled and General Population/Uncontrolled MPE's are functions of frequency.

Appendix B – Calculations Methodology and Assumptions

SAI Group has performed theoretical analysis using Waterford Consultants' RoofMaster™ 2020 Version 30.5.26.2022 which uses a cylindrical model for very conservative power density calculations within the near field of the antenna where the antenna pattern has not truly formed yet. The Cylindrical Model is used to determine the spatially averaged power density in the near field directly in front of an antenna. In order to implement this model in all directions, the calculations utilize the antenna manufacturer horizontal pattern data. Additionally, the model also incorporates factors that reduce the power density by inverse square of horizontal and vertical distances beyond the near field region.

RoofMaster™ uses far field model to calculate the spatial peak power density. The RoofMaster™ implementation of this model incorporated manufacturer's horizontal and vertical pattern data to determine the power density in all directions.

The calculations are based on worst-case assumptions that, all antennas are always operating at full power.

The site has been modeled with these assumptions to show the maximum RF energy density. Areas modeled with exposure greater than 100% of the General Public MPE level may not actually occur, but are shown as a prediction that could be realized.

Appendix C – Informative References

The following references can be followed for further information about RF Health and Safety.

FCC Radio Frequency Safety
http://www.fcc.gov/encyclopedia/radio-frequency-safety

FCC OET Bulletin 56
https://transition.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet56/oet56e4.pdf

FCC OET Bulletin 65
https://transition.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet65/oet65.pdf

National Council on Radiation Protection and Measurements (NCRP)
http://www.ncrponline.org

American National Standards Institute (ANSI)
http://www.ansi.org

Environmental Protection Agency (EPA)
https://www3.epa.gov/radtown/wireless-technology.html

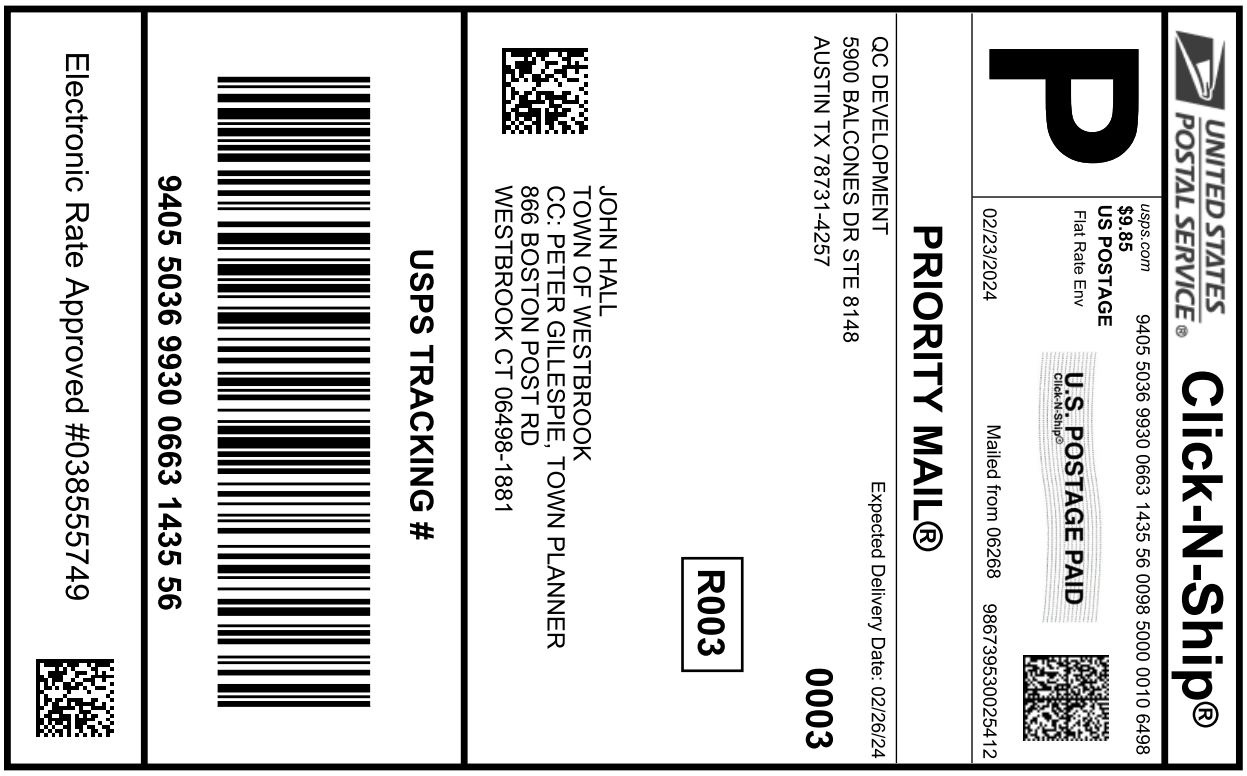
National Institutes of Health (NIH)
http://www.niehs.nih.gov/health/topics/agents/emf/

Occupational Safety and Health Agency (OSHA)
http://www.osha.gov/SLTC/radiofrequencyradiation/

International Commission on Non-Ionizing Radiation Protection (ICNIRP)
http://www.icnirp.org/

Exhibit G

Recipient Mailings



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0663 1435 56

Trans. #:	600191995
Print Date:	02/22/2024
Ship Date:	02/23/2024
Expected Delivery Date:	02/26/2024

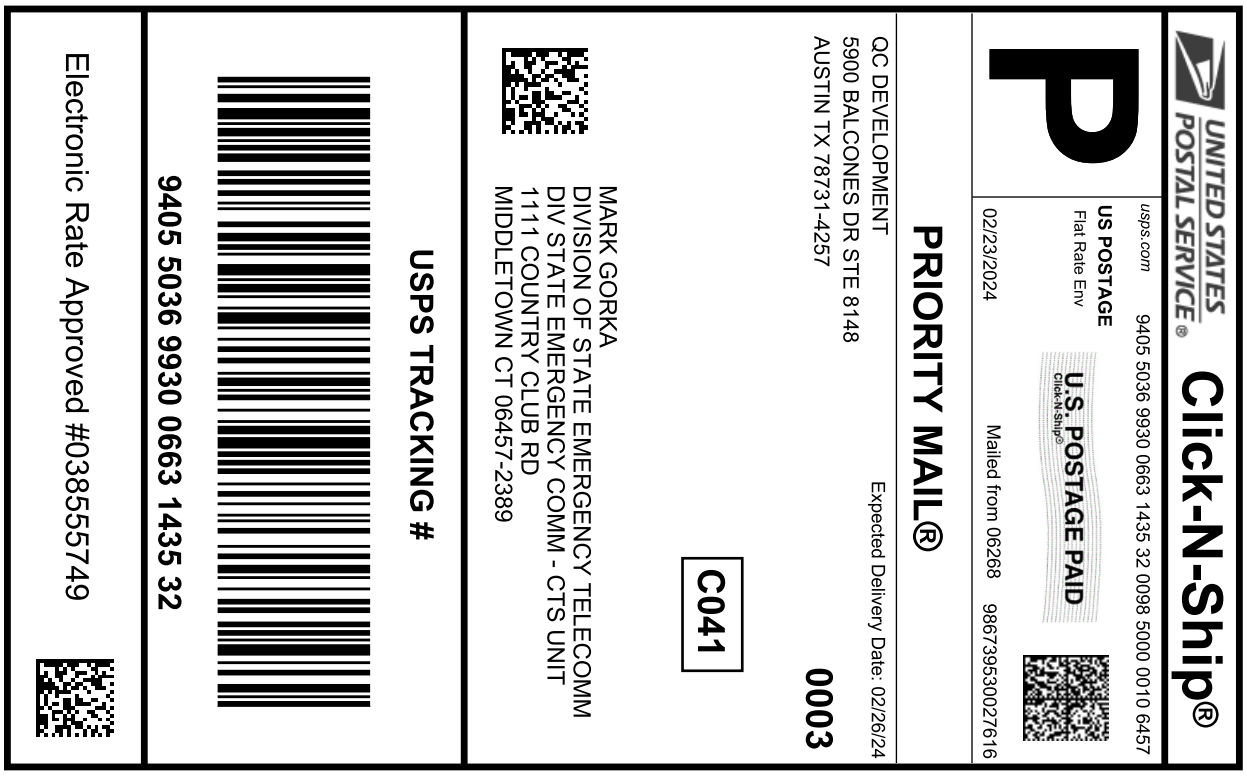
Priority Mail® Postage:	**$9.85**
Total:	**$9.85**

From: QC DEVELOPMENT
5900 BALCONES DR STE 8148
AUSTIN TX 78731-4257

To: JOHN HALL
TOWN OF WESTBROOK
CC: PETER GILLESPIE, TOWN PLANNER
866 BOSTON POST RD
WESTBROOK CT 06498-1881

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

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



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Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0663 1435 32

Trans. #:	600191995
Print Date:	02/22/2024
Ship Date:	02/23/2024
Expected Delivery Date:	02/26/2024

Priority Mail® Postage:	**$9.85**
Total:	**$9.85**

From: QC DEVELOPMENT
5900 BALCONES DR STE 8148
AUSTIN TX 78731-4257

To: MARK GORKA
DIVISION OF STATE EMERGENCY TELECOMM
DIV STATE EMERGENCY COMM - CTS UNIT
1111 COUNTRY CLUB RD
MIDDLETOWN CT 06457-2389

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

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Tracking Number:

9405503699300663143556

Copy Add to Informed Delivery (https://informeddelivery.usps.com/)

Latest Update

Your item was delivered to the front desk, reception area, or mail room at 12:26 pm on February 26, 2024 in WESTBROOK, CT 06498.

Feedback

Get More Out of USPS Tracking:

USPS Tracking Plus®

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Delivered, Front Desk/Reception/Mail Room

WESTBROOK, CT 06498
February 26, 2024, 12:26 pm

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What Do USPS Tracking Statuses Mean? (https://faq.usps.com/s/article/Where-is-my-package)

Text & Email Updates ⌄

USPS Tracking Plus® ⌄

Product Information ⌄

See Less ^

Track Another Package

Enter tracking or barcode numbers

USPS Tracking®

FAQs >

Remove ×

Tracking Number:

9405503699300663143532

Copy Add to Informed Delivery (https://informeddelivery.usps.com/)

Latest Update

Your item was delivered to the front desk, reception area, or mail room at 10:25 am on February 26, 2024 in MIDDLETOWN, CT 06457.

Feedback

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Delivered, Front Desk/Reception/Mail Room

MIDDLETOWN, CT 06457
February 26, 2024, 10:25 am

See All Tracking History

What Do USPS Tracking Statuses Mean? (https://faq.usps.com/s/article/Where-is-my-package)

Text & Email Updates ⌄

USPS Tracking Plus® ⌄

Product Information ⌄

See Less ^

Track Another Package

Enter tracking or barcode numbers