July 13, 2021

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

Re: Notice of Exempt Modification New Cingular Wireless PCS LLC ("AT&T") Site CT5011
Noroton Heights Railroad Station, 150 Hollow Tree Ridge Rd, Darien CT 06820 (the "Property")
Latitude: 41.069091 N Longitude: 73.498998 W

Dear Ms. Bachman:

AT&T currently maintains three (3) antennas at the 85-foot level on the existing 90' electric transmission tower ("Tower") at the Noroton Heights Railroad Station, 150 Hollow Tree Ridge Road, Darien, CT. The Tower is owned by Eversource Energy ("Eversource") and the property is owned by the State of Connecticut. AT&T intends to modify its facility by replacing three (3) tower mounted amplifiers ("TMAs") with six (6) TMABPD7823VG12A TMAs. The height of AT&Ts existing antennas and proposed TMAs will remain at 85'. AT&T will also replace nine (9) remote radio units ("RRUs") with three (3) B5/B12 4449 & three (3) 8843 B2/B66A RRUs located at the equipment location at grade.

This modification includes B2, B5, and B12 hardware that is both 4G (LTE) and 5GNR capable through remote software configuration and either or both services may be turned on or off at various times.

The AT&T facility received CT Siting Council ("Council") approval in Petition 529A on September 25, 2002. The approval contained no conditions that could feasibly be violated by this modification, including facility height, or mounting restrictions. AT&Ts modification complies with the above-mentioned approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies ("R.C.S.A") §16-50j-73 for construction that constitutes an exempt modification pursuant to R.C.S.A §16-50j-72(b)(2). In accordance with to R.C.S.A §16-50j-73, a copy of this letter is being mailed to the Honorable Jayme Stevenson, First Selectman, Town of Darien, as elected official, Jeremy Ginsberg, Planning & Zoning Director, Town of Darien, the State of Connecticut, the property owner and Eversource, the tower owner.

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

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

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

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

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

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 foundation can support the proposed loading.

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

Sincerely,

Hollis M. Redding

Hollis M. Redding
SAI Communications, LLC
12 Industrial Way
Salem, NH 03079
Mobile: 860-834-6964
hredding@saigrp.com

Enclosures

Cc: Honorable Jayme Stevenson, First Selectman, Town of Darien, elected official
Jeremy Ginsberg, Planning & Zoning Director, Town of Darien
State of Connecticut, property owner
Eversource Energy, tower owner

Power Density

Existing Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%MPE
Other Carriers*							0%
AT&T UMTS	2	205	85	0.0236	850	0.5667	0.42%
AT&T LTE	2	366	85	0.0422	700	0.4667	0.90%
AT&T PCS UMTS	2	348	85	0.0401	1900	1.0000	0.40%
AT&T PCS GSM	2	348	85	0.0401	1900	1.0000	0.40%
AT&T PCS LTE	2	1791	85	0.2064	1900	1.0000	2.06%
Site Total							4.19%

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

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

Proposed Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%MPE
Other Carriers*							0%
AT&T UMTS	1	205	85	0.0118	850	0.5667	0.21%
AT&T LTE	1	1476	85	0.0851	700	0.4667	1.82%
AT&T LTE	3	3664	85	0.6334	1900	1.0000	6.33%
AT&T LTE	1	1000	85	0.0576	850	0.5667	1.02%
AT&T 5G	1	1000	85	0.0576	850	0.5667	1.02%
AT&T AWS	1	3837	85	0.2211	2100	1.0000	2.21%
Site Total							12.61%

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

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

PROJECT INFORMATION

SCOPE OF WORK:

ITEMS TO BE MOUNTED ON THE EXISTING TRANSMISSION TOWER:
- NEW AT&T TMAs: TMABPD7823VG12A (TYP. OF 2 PER SECTOR, TOTAL OF 6).

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:
- NEW AT&T RRUS: B5/B12 4449 (850/700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: 8843 B2/B66A (AWS/PCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T SURGE ARRESTOR: TSXDC-4310FM (TYP. OF 12 PER SECTOR, TOTAL OF 36).
- NEW AT&T DIPLEXER: CQX6192123T-DS-43 (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- ADD RBS 6630 FOR 5G.
- ADD IDLE.
- ADD BREAKER BUS BAR IN EXISTING POWER PLANT.
- ADD (3) DBCT108F1V92-1 (TYP. OF 1 PER SECTOR, TOTAL OF 3).

ITEMS TO BE REMOVED:
- EXISTING AT&T RRUS: RRUS-11 B12 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T RRUS: RRUS-12 B2 (PCS) (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- EXISTING AT&T TMAs: TMA2117F00V1-1 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T DIPLEXER: TPX-070821 (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- EXISTING XMU.

ITEMS TO REMAIN:
- (3) ANTENNAS, (12) COAX CABLES.

SITE ADDRESS:	NOROTON HEIGHTS RAILROAD STATION DARIEN, CT 06820
LATITUDE:	41.069091° N, 41° 04' 08.73" N
LONGITUDE:	73.498998° W, 73° 29' 56.39" W
TYPE OF SITE:	TRANSMISSION TOWER / OUTDOOR
STRUCTURE HEIGHT:	90'-0"±
RAD CENTER:	85'-0"±
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

SITE NUMBER: CT5011

SITE NAME: DARIEN- NOROTON HEIGHTS

FA CODE: 10070994

PACE ID: MRCTB048662, MRCTB048691

PROJECT: LTE_3C-5G NR 2021 UPGRADE

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	1
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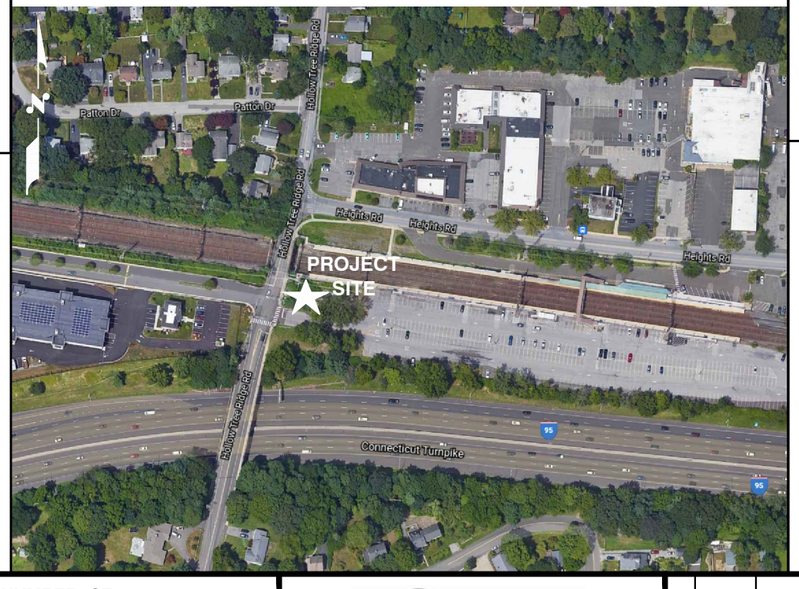
A-1	EQUIPMENT PLAN	1
A-2	ANTENNA LAYOUT & ELEVATION	1
A-3	DETAILS	1
G-1	GROUNDING DETAILS	1
RF-1	RF PLUMBING DIAGRAM	1

VICINITY MAP

DIRECTIONS TO SITE:

GET ON I-91 S FROM ENTERPRISE DR. HEAD SOUTHEAST TOWARD CAPITAL BLVD. TURN LEFT ONTO CAPITAL BLVD. USE THE LEFT LANE TO TURN LEFT ONTO STATE HWY 411. TURN LEFT TO MERGE ONTO I-91 S. FOLLOW I-91 S AND I-95 S TO LEDGE RD IN DARIEN. TAKE EXIT 10 FROM I-95 S. MERGE ONTO I-91 S. KEEP RIGHT TO STAY ON I-91 S. USE THE MIDDLE 2 LANES TO STAY ON I-91 S. USE THE LEFT 2 LANES TO MERGE ONTO I-95 S TOWARD N.Y. CITY. KEEP LEFT TO STAY ON I-95 S. TAKE EXIT 10 TOWARD NOROTON. CONTINUE ON LEDGE RD. TAKE HEIGHTS RD TO HOLLOW TREE RIDGE RD. CONTINUE ONTO LEDGE RD. TURN RIGHT ONTO NOROTON AVE. TURN LEFT ONTO HEIGHTS RD. TURN LEFT ONTO HOLLOW TREE RIDGE RD. DESTINATION WILL BE ON THE LEFT. DARIEN CONNECTICUT 06820



GENERAL NOTES

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

72 HOURS

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

UNDERGROUND SERVICE ALERT

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

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

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NOROTON HEIGHTS RAILROAD STATION
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at&t
500 ENTERPRISE DRIVE, SUITE 3A
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SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: GA

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

AT&T

TITLE SHEET
LTE_3C-5G NR 2021 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5011	T-1	1

GROUNDING NOTES

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

2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

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

4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

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

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

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

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

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

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

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

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

GENERAL NOTES

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

   CONTRACTOR – 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 2015 WITH 2018 CT STATE BUILDING CODE AMENDMENTS
    ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE (NFPA 70-2017)

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

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

    AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;

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

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

ABBREVIATIONS

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

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

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT5011
SITE NAME: DARIEN- NOROTON HEIGHTS

NOROTON HEIGHTS RAILROAD STATION
DARIEN, CT 06820
FAIRFIELD COUNTY

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

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

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

AT&T

GENERAL NOTES
LTE_3C-5G NR 2021 UPGRADE

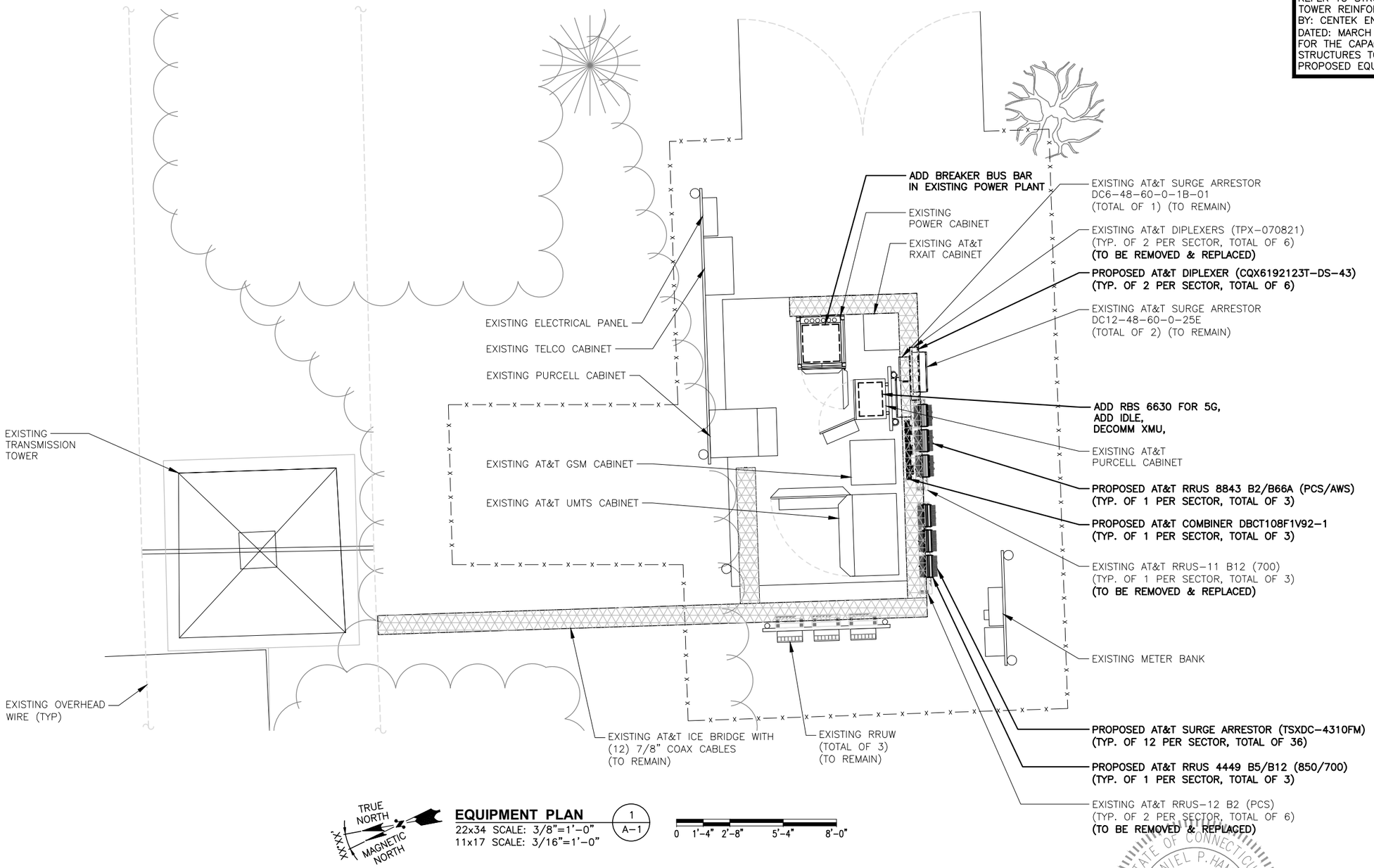
SITE NUMBER	DRAWING NUMBER	REV
CT5011	GN-1	1

NOTE:

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

NOTE:

REFER TO STRUCTURAL ANALYSIS AND TOWER REINFORCEMENT DESIGN BY: CENTEK ENGINEERING, DATED: MARCH 29, 2021 (REV.2), FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.



TRUE NORTH
MAGNETIC NORTH
XX°XX'

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

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

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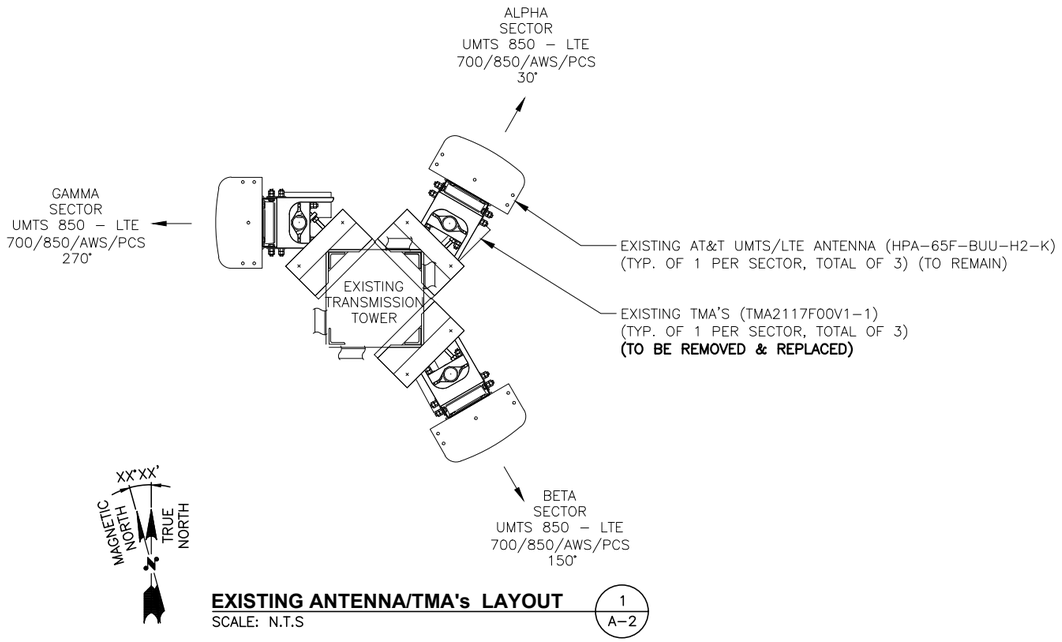
STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

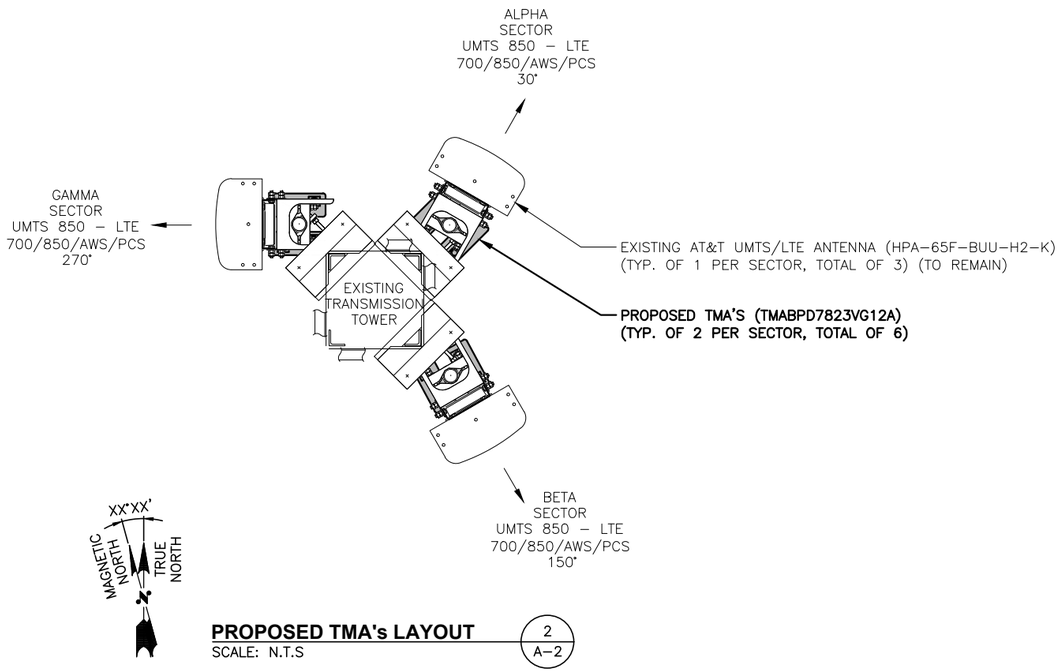
AT&T

COMPOUND & EQUIPMENT PLANS
LTE_3C-5G NR 2021 UPGRADE

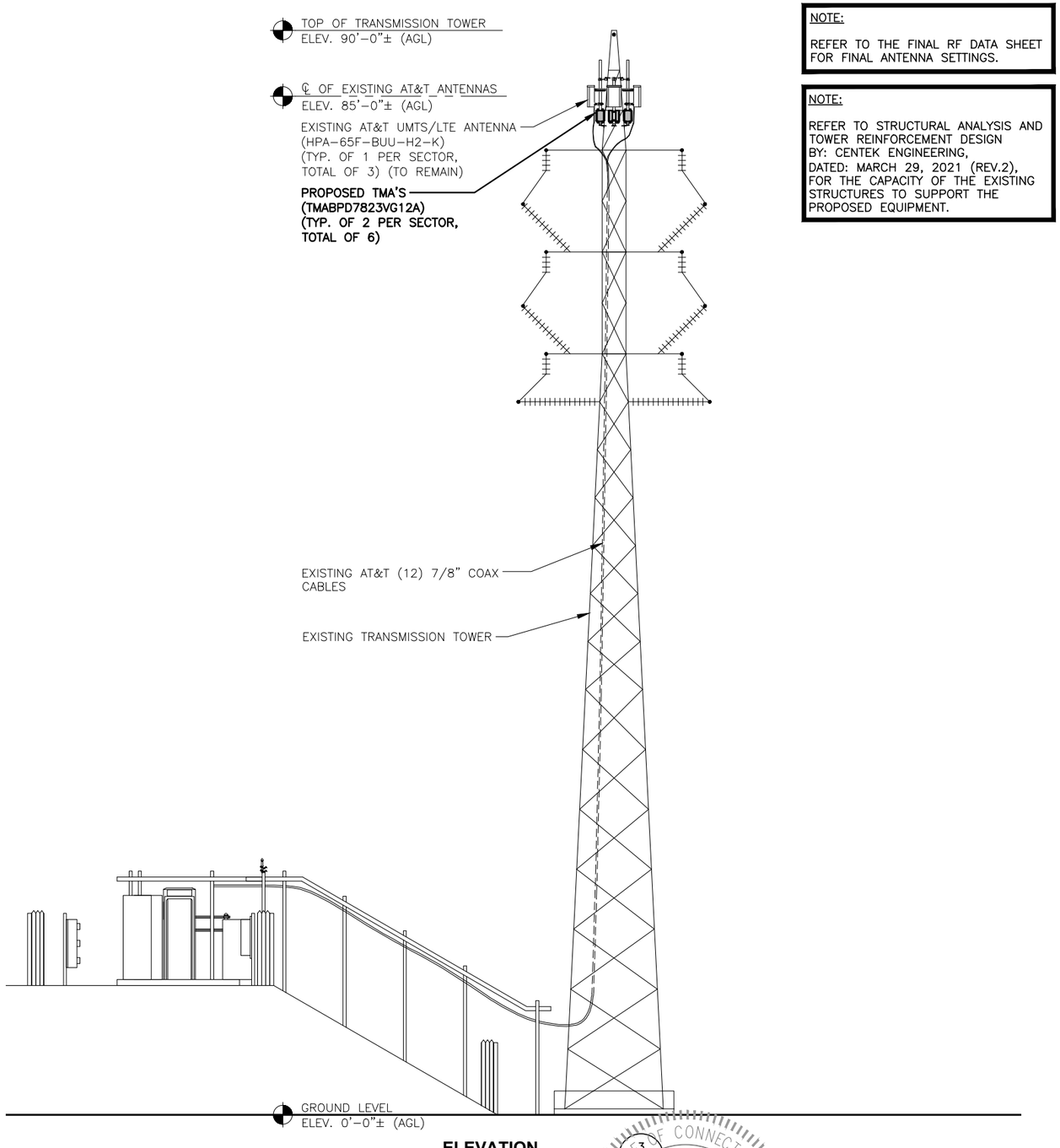
SITE NUMBER	DRAWING NUMBER	REV
CT5011	A-1	1



EXISTING ANTENNA/TMA's LAYOUT (1 / A–2)
SCALE: N.T.S



PROPOSED TMA's LAYOUT (2 / A–2)
SCALE: N.T.S



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

0 2'–8" 5'–4" 10'–8" 16'–0"

NOTE:

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

NOTE:

REFER TO STRUCTURAL ANALYSIS AND TOWER REINFORCEMENT DESIGN BY: CENTEK ENGINEERING, DATED: MARCH 29, 2021 (REV.2), FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

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

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT5011
SITE NAME: DARIEN- NOROTON HEIGHTS

NOROTON HEIGHTS RAILROAD STATION
DARIEN, CT 06820
FAIRFIELD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
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0	05/27/21	ISSUED FOR REVIEW	SG	HC	DPH
A	05/17/21	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

ANTENNA LAYOUT & ELEVATION
LTE_3C–5G NR 2021 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5011	A–2	1

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	EXISTING	UMTS 850 – LTE 700/850/AWS/PCS	HPA-65F-BUU-H2-K	21.4X14.4X7.3	85'-0"±	30°	(2)(P) TMABPD7823VG12A (2)(P)(G) CQX6192123T-DS-43	(1)(P)(G) 4449 B5/B12 (850/700) (1)(P)(G) 8843 B2/B66A (AWS/PCS)	17.9X13.2X10.4 14.9X13.2X10.9	(4) 7/8 COAX	(E)(G) (1) RAYCAP DC6-48-60-0-18-01
A2	–	–	–	–	–	–	–	–	–	–	
A3	–	–	–	–	–	–	–	–	–	–	
A4	–	–	–	–	–	–	–	–	–	–	
B1	EXISTING	UMTS 850 – LTE 700/850/AWS/PCS	HPA-65F-BUU-H2-K	21.4X14.4X7.3	85'-0"±	150°	(2)(P) TMABPD7823VG12A (2)(P)(G) CQX6192123T-DS-43	(1)(P)(G) 4449 B5/B12 (850/700) (1)(P)(G) 8843 B2/B66A (AWS/PCS)	17.9X13.2X10.4 14.9X13.2X10.9	(4) 7/8 COAX	(E)(G) (1) RAYCAP DC12-48-60-0-25E
B2	–	–	–	–	–	–	–	–	–	–	
B3	–	–	–	–	–	–	–	–	–	–	
B4	–	–	–	–	–	–	–	–	–	–	
C1	EXISTING	UMTS 850 – LTE 700/850/AWS/PCS	HPA-65F-BUU-H2-K	21.4X14.4X7.3	85'-0"±	270°	(2)(P) TMABPD7823VG12A (2)(P)(G) CQX6192123T-DS-43	(1)(P)(G) 4449 B5/B12 (850/700) (1)(P)(G) 8843 B2/B66A (AWS/PCS)	17.9X13.2X10.4 14.9X13.2X10.9	(4) 7/8 COAX	(E)(G) (1) RAYCAP DC12-48-60-0-25E
C2	–	–	–	–	–	–	–	–	–	–	
C3	–	–	–	–	–	–	–	–	–	–	
C4	–	–	–	–	–	–	–	–	–	–	

NOTE:

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

NOTE:

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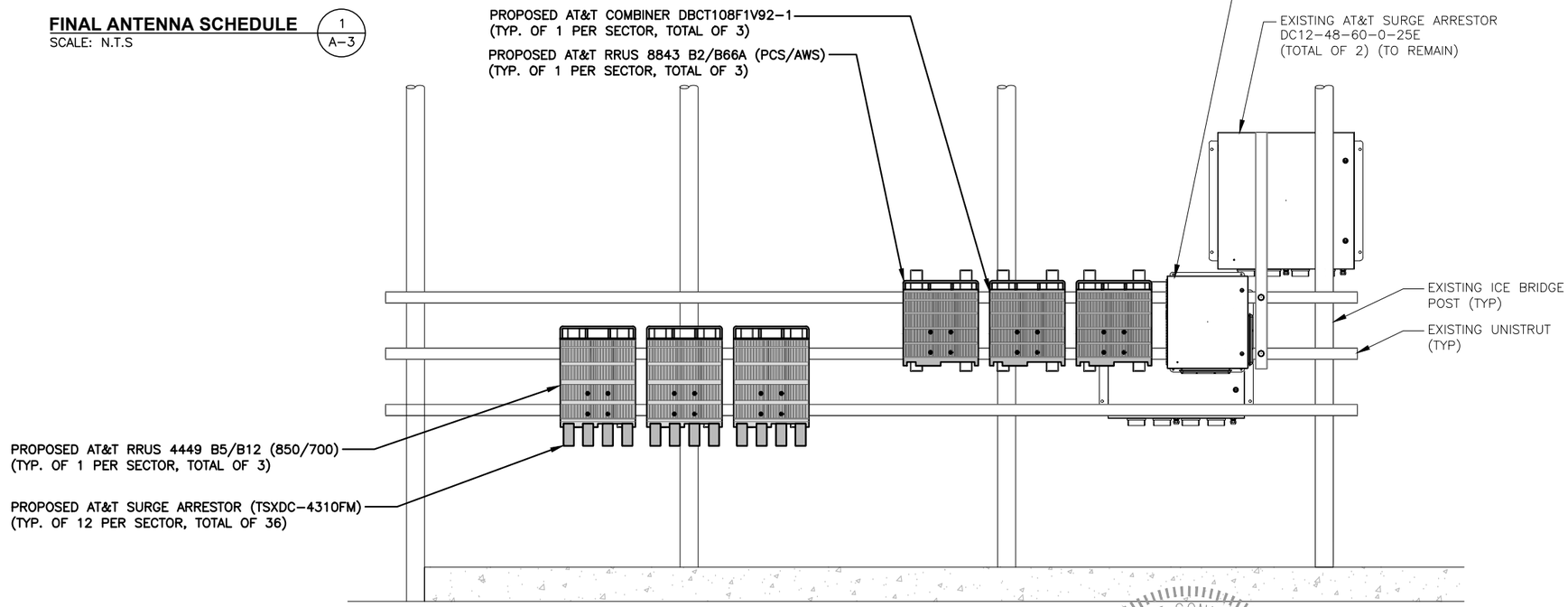
FINAL ANTENNA SCHEDULE (1 / A-3)
SCALE: N.T.S



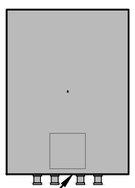
PROPOSED RRUS MOUNTING DETAIL (3 / A-3)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

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

RRU CHART

QUANTITY	MODEL	SIZE (L x W x D)
3(P)(G)	4449 (850/700)	17.9"x13.2"x10.4"
3(P)(G)	8843 (PCS/AWS)	14.9"x13.2"x10.9"
3(E)	RRUW	23.6"x13.8"x4.4"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS



NOTE:

SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

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

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

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

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

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

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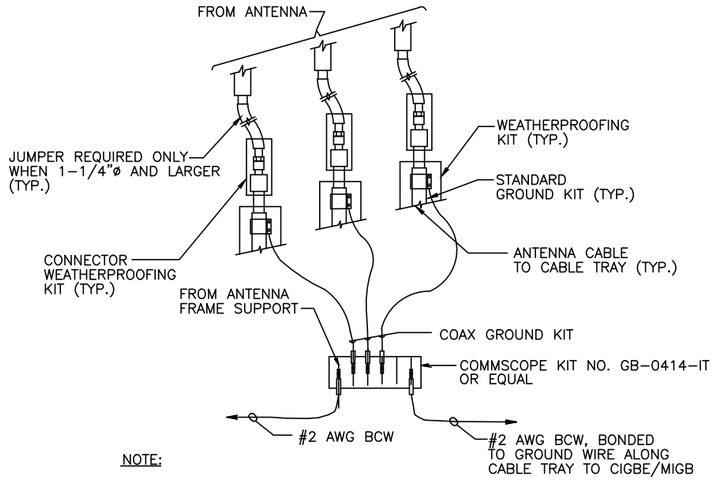
DETAILS
LTE_3C-5G NR 2021 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5011	A-3	1



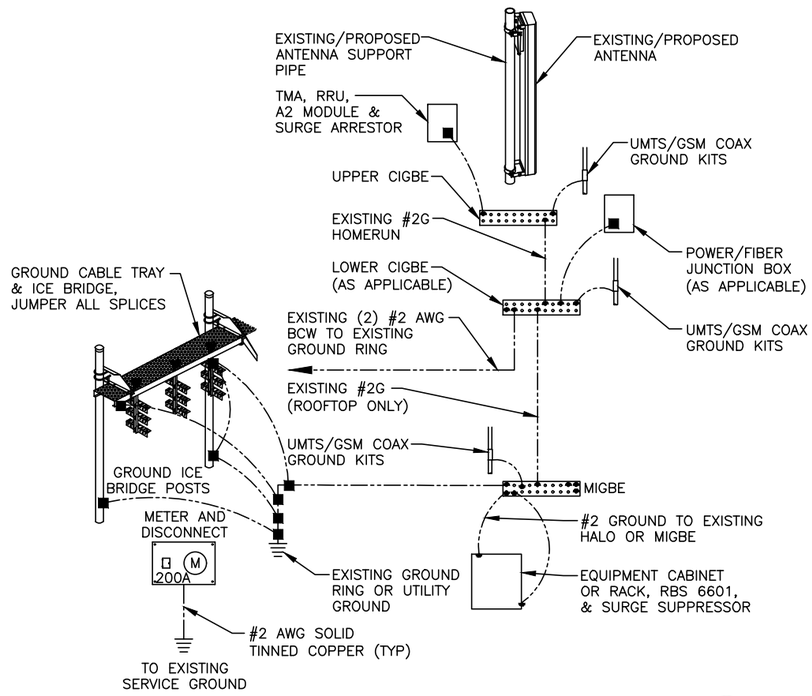
NOTE:

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

GROUND WIRE TO GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

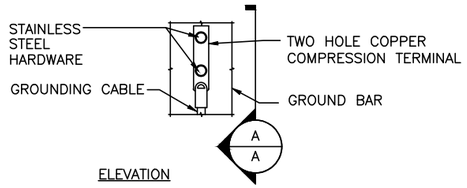
1 / G-1



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

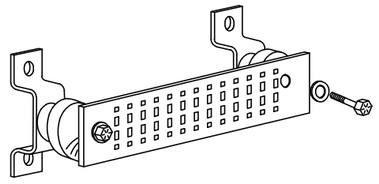
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

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

4 / G-1

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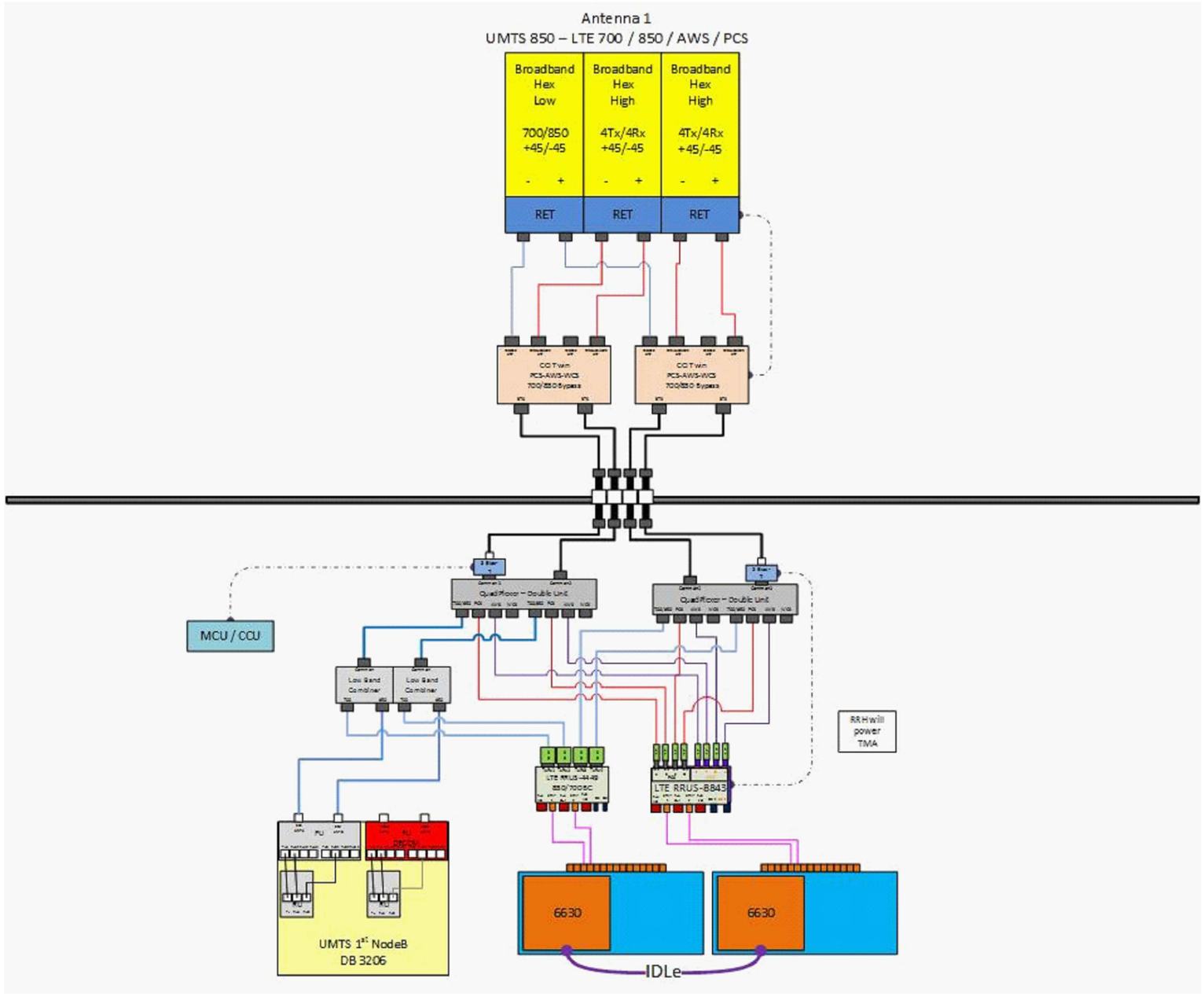
STATE OF CONNECTICUT · DANIEL P. HAMM · No. 24178 · LICENSED PROFESSIONAL ENGINEER

AT&T

GROUNDING DETAILS
LTE_3C-5G NR 2021 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5011	G-1	1



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

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

NOTE:

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

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

AT&T

RF PLUMBING DIAGRAM
LTE_3C–5G NR 2021 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5011	RF–1	1

CENTEK engineering

Centered on Solutions℠

Structural Analysis of Tower

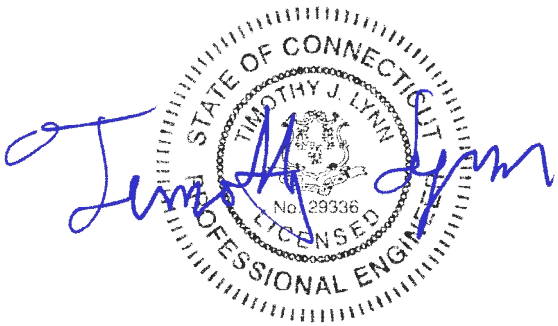
AT&T Site Ref: CT5011

Eversource Structure 1182
90' Electric Transmission Lattice Tower

Norton Heights Railroad Station
Darien, CT

CENTEK Project No. 20020.02

~~Date: December 7, 2020~~
Rev 2: March 29, 2021



Prepared for:
AT&T Mobility
500 Enterprise Drive, Suite 3A
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63-2 North Branford Road, Branford, CT 06405 203.488.0580 Fax 203.488.8587 www.CentekEng.com

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Introduction

The purpose of this report is to analyze the existing 90' utility tower located at the Noroton Heights Railroad Station in Darien, CT for the proposed antenna and equipment upgrade by AT&T.

The existing and proposed loads consist of the following:

- AT&T (Existing to Remain):
  Antennas: Three (3) CCI HPA-65F-BUU-H2 panel antennas leg mounted with a RAD center elevation of 85-ft above tower base.
  Coax Cables: Twelve (12) 7/8" ∅ coax cables running on a leg of the existing tower.
- AT&T (Existing to Remove):
  Antennas: Three (3) Kaelus TMA2117F00V1-1 TMAs leg mounted with a RAD center elevation of 85-ft above tower base.
- **AT&T (Proposed):**
  Antennas: Six (6) CCI TMABPD7823VG12A TMAs leg mounted with a RAD center elevation of 85-ft above tower base.

Primary assumptions used in the analysis

- Design steel stresses are defined by AISC-LRFD 14th edition for design of the antenna Mast and antenna supporting elements.
- ASCE Manual No. 10-97, "Design of Latticed Steel Transmission Structures", defines allowable steel stresses for evaluation of the utility tower.
- All utility tower members are adequately protected to prevent corrosion of steel members.
- All proposed antenna mounts are modeled as listed above.
- All coaxial cable will be installed as indicated in Section 4 of this report.
- Antenna Mast will be properly installed and maintained.
- No residual stresses exist due to incorrect tower erection.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All welds conform to the requirements of AWS D1.1.
- Antenna Mast and utility tower will be in plumb condition.
- Utility tower was properly installed and maintained and all members were properly designed, detailed, fabricated, and installed and have been properly maintained since erection.
- Any deviation from the analyzed loading will require a new analysis for verification of structural adequacy.

Analysis

Structural analysis of the existing utility tower structure was completed using the current version of PLS-Tower computer program licensed to CENTEK Engineering, Inc. The program contains a library of all AISC angle shapes and corresponding section properties are computed and applied directly within the program. The program's Steel Code Check option was also utilized.

The existing 90-ft tall lattice tower was analyzed for its ability to resist loads prescribed by the NESC standard. Maximum usage for the tower was calculated considering the additional forces from the antenna mast and associated appurtenances. Section 5 of this report details these gravity and lateral wind loads.

Design Basis

Our analysis was performed in accordance with TIA-222-G, ASCE Manual No. 10-97, "Design of Latticed Steel Transmission Structures", NESC C2-2017 and Eversource Design Criteria.

- UTILITY TOWER ANALYSIS

  The purpose of this analysis is to determine the adequacy of the existing utility structure to support the proposed antenna loads. The loading and design requirements were analyzed in accordance with the Eversource Design Criteria Table, NESC C2-2017 ~ Construction Grade B, and ASCE Manual No. 10-97, "Design of Latticed Steel Transmission Structures".

  Load cases considered:

  Load Case 1: NESC Heavy
  Wind Pressure…….. 4.0 psf
  Radial Ice Thickness……. 0.5"
  Vertical Overload Capacity Factor……. 1.50
  Wind Overload Capacity Factor……. 2.50
  Wire Tension Overload Capacity Factor…… 1.65

  Load Case 2: NESC Extreme
  Wind Speed (Tower and Equipment)…… 110 mph
  Wind Pressure (Wire Loads)…….. 23.0 psf
  Radial Ice Thickness……. 0.0"
  Vertical Overload Capacity Factor……. 1.00
  Wind Overload Capacity Factor……. 1.00
  Wire Tension Overload Capacity Factor…… 1.00

R e s u l t s

- UTILITY TOWER

This analysis finds that the subject utility structure is adequate to support the proposed antenna mast and related appurtenances. The tower stresses meet the requirements set forth by the ASCE Manual No. 10-97, "Design of Latticed Steel Transmission Structures", for the applied NESC Heavy and Hi-Wind load cases. The detailed analysis results are provided in Section 6 of this report. The analysis results are summarized as follows:

A maximum usage of **99.43%** occurs in the utility tower under the **NESC Extreme** loading condition.

TOWER SECTION:

The utility structure was found to be within allowable limits.

Tower Member	Stress Ratio (% of capacity)	Result
Angle g16Y	99.43%	**PASS**

- FOUNDATION AND ANCHORS

The existing foundation consists of one (1) 10-ft square x 11-ft-6-in long reinforced concrete.

BASE REACTIONS:

From PLS-Tower analysis of utility tower based on NESC/NU prescribed loads.

Load Case	Leg	Shear	Uplift	Compression
NESC Heavy Wind	Uplift Leg A	1.04 kips	12.24 kips	NA
	Uplift Leg B	5.88 kips	63.72 kips	NA
	Compression Leg A	6.86 kips	NA	77.09 kips
	Compression Leg B	2.52 kips	NA	28.25 kips
NESC Extreme Wind	Uplift Leg A	7.30 kips	75.41 kips	NA
	Uplift Leg B	6.38 kips	67.03 kips	NA
	Compression Leg A	7.62 kips	NA	77.36 kips
	Compression Leg B	7.24 kips	NA	79.91 kips

Note 1 – 10% increase to be applied to the above tower base reactions for foundation verification per OTRM 051

FOUNDATION:

The foundation was found to be within allowable limits.

Foundation	Design Limit	Required FS (1)	Proposed Loading FS (2)	Result
Reinf. Conc. Pier	OTM	1.0	1.05	**PASS**

Note 1: FS denotes Factor of Safety
Note 2: 10% increase to PLS base reactions used in foundation analysis per OTRM 051.

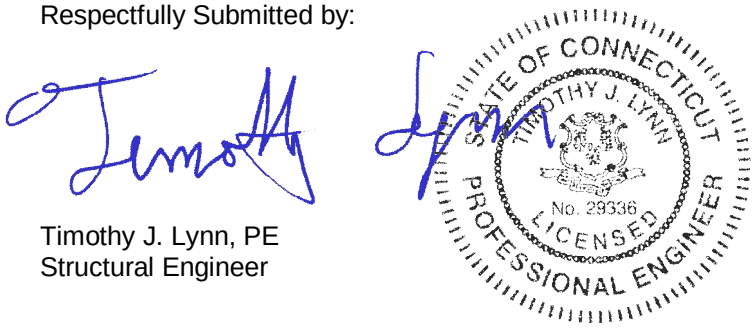
C o n c l u s i o n

This analysis shows that the subject utility tower **with the reinforcements detailed in section 4 of this report is adequate** to support the proposed equipment installation.

The analysis is based, in part on the information provided to this office by Eversource and AT&T. 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 are performed, results obtained, and recommendations made 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 ~ PLS-TOWER

PLS-TOWER is a Microsoft Windows program for the analysis and design of steel latticed towers used in electric power lines or communication facilities. Both self-supporting and guyed towers can be modeled. The program performs design checks of structures under user specified loads. For electric power structures it can also calculate maximum allowable wind and weight spans and interaction diagrams between different ratios of allowable wind and weight spans.

Modeling Features:

- Powerful graphics module (stress usages shown in different colors)
- Graphical selection of joints and members allows graphical editing and checking
- Towers can be shown as lines, wire frames or can be rendered as 3-d polygon surfaces
- Can extract geometry and connectivity information from a DXF CAD drawing
- CAD design drawings, title blocks, drawing borders or photos can be tied to structure model
- XML based post processor interface
- Steel Detailing Neutral File (SDNF) export to link with detailing packages
- Can link directly to line design program PLS-CADD
- Automatic generation of structure files for PLS-CADD
- Databases of steel angles, rounds, bolts, guys, etc.
- Automatic generation of joints and members by symmetries and interpolations
- Automated mast generation (quickly builds model for towers that have regular repeating sections) via graphical copy/paste
- Steel angles and rounds modeled either as truss, beam or tension-only elements
- Guys are easily handled (can be modeled as exact cable elements)

Analysis Features:

- Automatic handling of tension-only members
- Automatic distribution of loads in 2-part suspension insulators (v-strings, horizontal vees, etc.)
- Automatic calculation of tower dead, ice, and wind loads as well as drag coefficients according to:
- ASCE 74-1991, 2009
- NESC 2002, 2007, 2012, 2017
- IEC 60826:2003, 2017
- IS 802 : 1995, 2015
- ISEC-NCR-83
- EN50341-1:2001 and 2012 (CENELEC)
- EN50341-3-2:2001 (Belgium NNA)
- EN50341-3-9:2001, EN50341-2-9:2015, 2017 (UK NNA)
- EN50341-3-17:2001 (Portugal NNA)
- EN50341-2-22:2016 (Poland NNA)
- AS/NZS 7000:2010, 2016
- ESAA C(b)1-2003 (Austalia)
- TPNZ (New Zealand)
- REE (Spain)
- SP 16.13330.2011 (SNiP Russia)
- Minimization of problems caused by unstable joints and mechanisms
- Automatic bandwidth minimization and ability to solve large problems
- Design checks according to (PLS can add strength checks for other standards):
- ASCE 10
- AS 3995 (Australian Standard 3995)

- BS 8100 (British Standard 8100)
- EN50341-1 2001 and 2012 (CENELEC, both empirical and analytical methods are available)
- EN50341-2-9:2015, 2017 (UK NNA)
- ECCS 1985
- NGT-ECCS
- PN-90/B-03200
- EN50341-2-22:2016 (Poland NNA)
- SP 16.13330.2011 (SNiP Russia)
- EDF/RTE Resal
- IS 802 (India Standard 802)

Results Features:

- Design summaries printed for each group of members
- Easy to interpret text, spreadsheet and graphics design summaries
- Automatic determination of allowable wind and weight spans
- Automatic determination of interaction diagrams between allowable wind and weight spans
- Capability to batch run multiple tower configurations and consolidate the results
- Automated optimum angle member size selection and bolt quantity determination

Tool for interactive angle member sizing and bolt quantity determination.

Criteria for Design of PCS Facilities On or Extending Above Metal Electric Transmission Towers & Analysis of Transmission Towers Supporting PCS Masts (1)

Introduction

This criteria is the result from an evaluation of the methods and loadings specified by the separate standards, which are used in designing telecommunications towers and electric transmission towers. That evaluation is detailed elsewhere, but in summary; the methods and loadings are significantly different. This criteria specifies the manner in which the appropriate standard is used to design PCS facilities including masts and brackets (hereafter referred to as "masts"), and to evaluate the electric transmission towers to support PCS masts. The intent is to achieve an equivalent level of safety and security under the extreme design conditions expected in Connecticut and Massachusetts.

ANSI Standard TIA-222-G covering the design of telecommunications structures specifies a limit state design approach. This approach applies the loads from extreme weather loading conditions, and designs the structure so that the design strength exceeds the required strength.

ANSI Standard C2-2017 (National Electrical Safety Code) covering the design of electric transmission metal structures is based upon an ultimate strength/yield stress design approach. This approach applies a multiplier (overload capacity factor) to the loads possible from extreme weather loading conditions, and designs the structure so that it does not exceed its ultimate strength (yield stress).

Each standard defines the details of how loads are to be calculated differently. Most of the NU effort in "unifying" both codes was to establish what level of strength each approach would provide, and then increasing the appropriate elements of each to achieve a similar level of security under extreme weather loadings.

Two extreme weather conditions are considered. The first is an extreme wind condition (hurricane) based upon a 50-year recurrence (2% annual probability). The second is a winter condition combining wind and ice loadings.

The following sections describe the design criteria for any PCS mast extending above the top of an electric transmission tower, and the analysis criteria for evaluating the loads on the transmission tower from such a mast from the lower portions of such a mast, and loads on the pre-existing electric lower portions of such a mast, and loads on the pre-existing electric transmission tower and the conductors it supports.

Note 1: Prepared from documentation provide from Northeast Utilities.

P C S M a s t

The PCS facility (mast, external cable/trays, including the initial and any planned future support platforms, antennas, etc. extending the full height above the top level of the electric transmission structure) shall be designed in accordance with the provisions of TIA 222-G:

E L E C T R I C T R A N S M I S S I O N T O W E R

The electric transmission tower shall be analyzed using yield stress theory in accordance with the attached table titled “Eversource Design Criteria”. This specifies uniform loadings (different from the TIA loadings) on the each of the following components of the installed facility:

- PCS mast for its total height above ground level, including the initial and planned future support platforms, antennas, etc. above the top of an electric transmission structure.
- Conductors are related devices and hardware.
- Electric transmission structure. The loads from the PCS facility and from the electric conductors shall be applied to the structure at conductor and PCS mast attachment points, where those load transfer to the tower.

The uniform loadings and factors specified for the above components in the table are based upon the National Electrical Safety Code 2017 Edition Extreme Wind (Rule 250C) and Combined Ice and Wind (Rule 250B-Heavy) Loadings. These provide equivalent loadings compared to TIA and its loads and factors with the exceptions noted above. (Note that the NESC does not require the projected wind surfaces of structures and equipment to be increased by the ice covering.)

In the event that the electric transmission tower is not sufficient to support the additional loadings of the PCS mast, reinforcement will be necessary to upgrade the strength of the overstressed members.

Attachment A
Eversource Design Criteria

		Attachment A ES Design Criteria	Basic Wind Speed	Pressure	Height Factor	Gust Factor	Load or Stress Factor	Force Coef. - Shape Factor
			V (MPH)	Q (PSF)	Kz	Gh		
Ice Condition	TIA/EIA	Antenna Mount	TIA	TIA (0.75Wi)	TIA	TIA	TIA, Section 3.1.1.1 disallowed for connection design	TIA
	NESC Heavy	Tower/Pole Analysis with antennas extending above top of Tower/Pole (Yield Stress)	-----	4	1	1	2.5	1.6 Flat Surfaces 1.3 Round Surfaces
		Tower/Pole Analysis with antennas below top of Tower/Pole (on two faces)	-----	4	1	1	2.5	1.6 Flat Surfaces 1.3 Round Surfaces
		Conductors:	Conductor Loads Provided by ES					
High Wind Condition	TIA/EIA	Antenna Mount	85	TIA	TIA	TIA	TIA, Section 3.1.1.1 disallowed for connection design	TIA
	NESC Extreme Wind	Tower/Pole Analysis with antennas extending above top of Tower/Pole	For wind speed use OTRM 060 Map 1, Rule 250C: Extreme Wind Loading Apply a 1.25 x Gust Response Factor to all telecommunication equipment projected above top of tower/pole and apply a 1.0 x Gust Response Factor to the tower/pole structure					1.6 Flat Surfaces 1.3 Round Surfaces
		Tower/Pole Analysis with antennas below top of Tower/Pole	For wind speed use OTRM 060 Map 1, Rule 250C: Extreme Wind Loading Height above ground is based on overall height to top of tower/pole					1.6 Flat Surfaces 1.3 Round Surfaces
		Conductors:	Conductor Loads Provided by ES					
NESC Extreme Ice with Wind Condition*		Tower/Pole Analysis with antennas extending above top of Tower/Pole	For wind speed use OTRM 060 Map 1, Rule 250D: Extreme Ice with Wind Loading 4 PSF Wind Load 1.25 x Gust Response Factor Apply a 1.25 x Gust Response Factor to all telecommunication equipment projected above top of tower/pole and apply a 1.0 x Gust Response Factor to the tower/pole structure					1.6 Flat Surfaces 1.3 Round Surfaces
		Tower/Pole Analysis with antennas below top of Tower/Pole	For wind speed use OTRM 060 Map 1, Rule 250D: Extreme Ice with Wind Loading 4 PSF Wind Load Height above ground is based on overall height to top of tower/pole					1.6 Flat Surfaces 1.3 Round Surfaces
		Conductors:	Conductor Loads Provided by ES					
		*Only for structures installed after 2007						

determined from NESC applied loading conditions (not TIA Loads) on the structure and mount as specified below, and shall include the wireless communication mast and antenna loads per NESC criteria)

The strength reduction factor obtained from the field investigation shall be applied to the members or connections that are showing signs of deterioration from their original condition With the written approval of Eversource Transmission Line Engineering on a case by case the existing structures may be analyzed initially using the current NESC code, then it is permitted to use the original design code with the original conductor load should the existing tower fail the current NESC code.

The structure shall be analyzed using yield stress theory in accordance with Attachment A, "Eversource Design Criteria." This specifies uniform loadings (different from the TIA loadings) on each of the following components of the installed facility:

a) Wireless communication mast for its total height above ground level, including the initial and any planned future equipment (Support Platforms, Antennas, TMA's etc.) above the top of an electric transmission structure.

b) Conductors and related devices and hardware (wire loads will be provided by Eversource).

c) Electric Transmission Structure

i) The loads from the wireless communication equipment components based on NESC and Eversource Criteria in Attachment A, and from the electric conductors shall be applied to the structure at conductor and wireless communication mast attachment points, where those loads transfer to the tower. ii)

ii) Shape Factor Multiplier:

NESC Structure Shape	Cd
Polyround (for polygonal steel poles)	1.3
Flat	1.6
Open Lattice	3.2
Pole with Coaxial Cable	See Below Table

iii) When Coaxial Cables are mounted alongside the pole structure, the shape multiplier shall be:

Mount Type	Cable Cd	Pole Cd
Coaxial Cables on outside periphery (One layer)	1.45	1.45
Coaxial Cables mounted on stand offs	1.6	1.6

d) The uniform loadings and factors specified for the above components in Attachment A, "Eversource Design Criteria" are based upon the National Electric Safety Code 2007 Edition Extreme Wind (Rule 250C) and Combined Ice and Wind (Rule 250B-Heavy) Loadings. These provide equivalent loadings compared to the TIA and its loads and factors with the exceptions noted above.

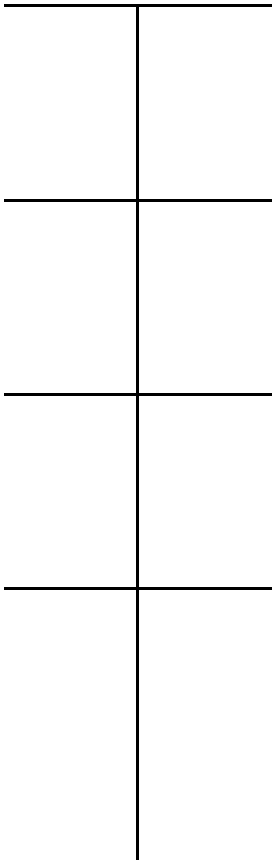
Project: 1880/1608 Line, Structure 1182
Date: 11/3/20
Engineer: JS
Purpose: Calculate wire loads for existing AT&T site.

Shield Wires:
4/0 copper, sagged in PLS-CADD

Conductors:
1590 kcmil 45/7 "Lapwing," sagged in PLS-CADD

NESC 250B

1880 Line			**1608 Line**	
Shield Wire	**V**	952		
	T	635		
	L	0		
Top Phase:	**V**	2755	2706	**V**
	T	1053	1216	**T**
	L	-656	-207	**L**
Mid Phase:	**V**	2810	2824	**V**
	T	1070	1255	**T**
	L	-2453	1984	**L**
Bot Phase:	**V**	2914	2862	**V**
	T	1083	1228	**T**
	L	6430	1667	**L**



Project: 1880/1608 Line, Structure 1182
Date: 11/3/20
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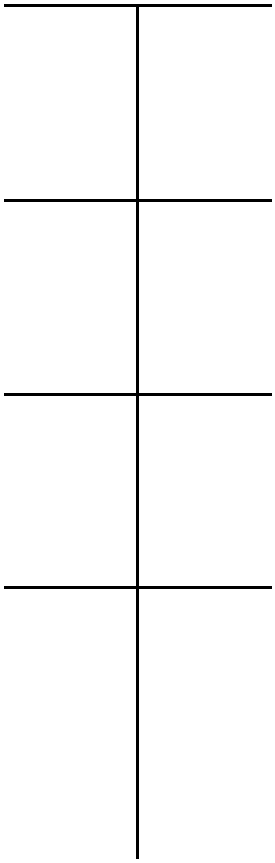
Purpose: Calculate wire loads for existing AT&T site.

Shield Wires:
4/0 copper, sagged in PLS-CADD

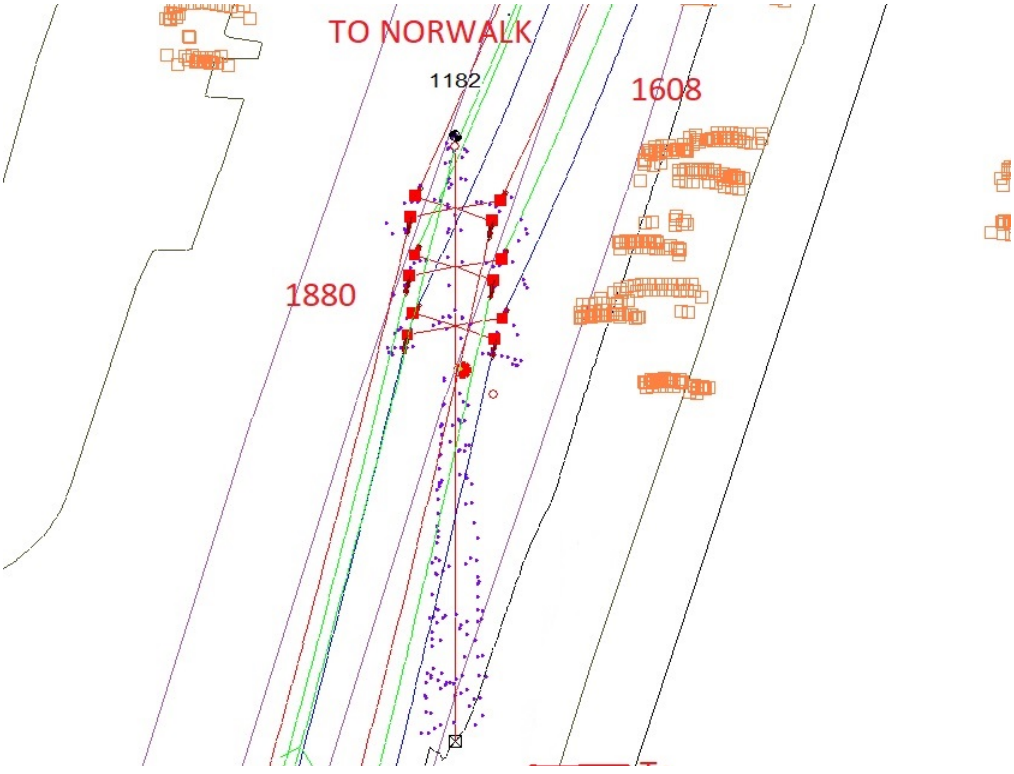
Conductors:
1590 kcmil 45/7 "Lapwing," sagged in PLS-CADD

NESC 250C

1880 Line			**1608 Line**	
Shield Wire	**V**	358		
	T	458		
	L	0		
Top Phase:	**V**	1289	1268	**V**
	T	1346	1428	**T**
	L	-666	-465	**L**
Mid Phase:	**V**	1319	1325	**V**
	T	1354	1439	**T**
	L	-1295	237	**L**
Bot Phase:	**V**	1366	1347	**V**
	T	1361	1429	**T**
	L	1762	150	**L**



View of Structure 1182 looking east



TOWER REINFORCEMENT DESIGN

EVERSOURCE STRUCT. NO. 1182
AT&T SITE REF: CT5011
NOROTON HEIGHT RR STATION
DARIEN, CT 06820

VICINITY MAP

NORTH

PROJECT SUMMARY

SITE ADDRESS:	NOROTON HEIGHTS RR STATION DARIEN, CT 06820
PROJECT COORDINATES:	LAT: 41°–04'–08.73"N LON: 73°–29'–56.39"W ELEV:±72' AMSL
EVERSOURCE STRUCT NO:	1182
EVERSOURCE CONTACT:	RICH BADON (860)728–4852
AT&T SITE REF.:	CT5011
AT&T CONTACT:	TIM BURKS (860)989–0001
ANTENNA CL HEIGHT:	85'–0" AGL
ENGINEER OF RECORD:	CENTEK ENGINEERING, INC. 63–2 NORTH BRANFORD ROAD BRANFORD, CT 06405
CENTEK CONTACT:	TIMOTHY LYNN, PE (203)433–7507

SHEET INDEX

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DARIEN, CT 06820

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SCALE: AS SHOWN
JOB NO. 20020.02

TITLE SHEET

SHEET NO.
T-1
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DESIGN BASIS

1. GOVERNING CODE: 2015 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2018 CT STATE SUPPLEMENT.

2. ASCE MANUAL NO. 10–97 – "DESIGN OF LATTICED STEEL TRANSMISSION STRUCTURES", NESC C2–2017 AND NORTHEAST UTILITIES DESIGN CRITERIA.

3. DESIGN CRITERIA

   WIND LOAD: (UTILITY TOWER & FOUNDATION)
   BASIC WIND SPEED (V) =110 MPH (3–SECOND GUST)
   BASED ON NESC C2–2017 SECTION 25 RULE 250C.

GENERAL NOTES

1. REFER TO STRUCTURAL ANALYSIS AND REINFORCEMENT DESIGN PREPARED BY CENTEK ENGINEERING, INC., FOR AT&T DATED 12/7/2020.

2. TOWER GEOMETRY AND STRUCTURE MEMBER SIZES WERE OBTAINED FROM THE ORIGINAL TOWER DESIGN DOCUMENTS PREPARED BY BETHLEHEM STEEL COMPANY CONTRACT NO. 7374–1 CIRCA 1937.

3. THE TEMPORARY DETACHMENT AND/OR REPLACEMENT OF TOWER MEMBERS SHALL BE DONE ONE AT A TIME AND SHALL BE CONDUCTED ON DAYS WITH LESS THAN 15 MPH WIND PRESENT. NO MEMBER SHALL BE LEFT DISCONNECTED FOR THE NEXT WORKING DAY.

4. ALL STEEL REINFORCEMENT SHOWN HEREIN APPLIES TO ALL SIDES OF THE TOWER.

5. ALL REPLACEMENT STEEL MEMBERS SHALL BE INSTALLED WITH A325–N BOLTS (SIZE TO MATCH EXISTING). UNLESS OTHERWISE NOTED BELOW.

6. THE TOWER STRUCTURE IS DESIGNED TO BE SELF–SUPPORTING AND STABLE AFTER REINFORCEMENTS ARE COMPLETE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE & SEQUENCE AND TO INSURE THE SAFETY OF THE TOWER STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES PROVIDING AND MAINTAINING ADEQUATE SHORING, BRACING, UNDERPINNING, TEMPORARY ANCHORS, GUYING, BARRICADES, ETC. AS MAY BE REQUIRED FOR THE PROTECTION OF EXISTING PROPERTY, CONSTRUCTION WORKERS, AND FOR PUBLIC SAFETY. MAINTAIN EXISTING SITE OPERATIONS AND COORDINATE WORK WITH TOWER OWNER.

7. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE GOVERNING BUILDING CODE.

8. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS SCOPE OF WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.

9. BEFORE BEGINNING THE WORK, THE CONTRACTOR IS RESPONSIBLE FOR MAKING SUCH INVESTIGATIONS CONCERNING PHYSICAL CONDITIONS (SURFACE AND SUBSURFACE) AT OR CONTIGUOUS TO THE SITE WHICH MAY AFFECT PERFORMANCE AND COST OF THE WORK. THIS INCLUDES VERIFYING ALL DIMENSIONS, ELEVATIONS, ANGLES, AND EXISTING CONDITIONS AT THE SITE, PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA. CONTRACTOR SHALL TAKE FIELD MEASUREMENTS NECESSARY TO ASSURE PROPER FIT OF ALL FINISHED WORK.

10. TOWER REINFORCEMENTS SHALL BE CONDUCTED BY FIELD CREWS EXPERIENCED IN THE ASSEMBLY AND ERECTION OF TRANSMISSION STRUCTURES. ALL SAFETY PROCEDURES, RIGGING AND ERECTION METHODS SHALL BE STANDARD TO THE INDUSTRY AND IN COMPLIANCE WITH OSHA.

11. EXISTING COAXIAL CABLES AND ALL ACCESSORIES SHALL BE RELOCATED AS NECESSARY AND REINSTALLED BY THE CONTRACTOR WITHOUT INTERRUPTION IN SERVICE WHERE THEY ARE IN CONFLICT WITH THE TOWER REINFORCEMENT WORK.

12. IF ANY FIELD CONDITIONS EXIST WHICH PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL PROCEED WITH AFFECTED WORK AFTER CONFLICT IS SATISFACTORILY RESOLVED.

13. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.

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DANIELS, CT 06820

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DESIGN BASIS AND GENERAL NOTES

SHEET NO.
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STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL IS DESIGNED BY LOAD RESISTANCE FACTOR DESIGN (LRFD).

2. MATERIAL SPECIFICATIONS

   A. STRUCTURAL STEEL (W SHAPES)---ASTM A992 (FY = 50 KSI)
   B. STRUCTURAL STEEL (OTHER SHAPES)---ASTM A36 (FY = 36 KSI).
   C. STRUCTURAL HSS (RECTANGULAR SHAPES)---ASTM A500 GRADE B, (FY = 46 KSI)
   D. STRUCTURAL HSS (ROUND SHAPES)---ASTM A500 GRADE B, (FY = 42 KSI)
   E. PIPE---ASTM A53 GRADE B (FY = 35 KSI)

3. FASTENER SPECIFICATIONS

   A. CONNECTION BOLTS---ASTM A325-N, UNLESS OTHERWISE SCHEDULED.
   B. U-BOLTS---ASTM A307
   C. ANCHOR RODS---ASTM F1554
   D. WELDING ELECTRODES---ASTM E70XX FOR A36 & A572_GR50 STEELS, ASTM E80XX FOR A572_GR65 STEEL.

4. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING: SECTION PROFILES, SIZES, CONNECTION ATTACHMENTS, REINFORCING, ANCHORAGE, SIZE AND TYPE OF FASTENERS AND ACCESSORIES. INCLUDE ERECTION DRAWINGS, ELEVATIONS AND DETAILS.

5. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST PROVISIONS OF AISC MANUAL OF STEEL CONSTRUCTION.

6. PROVIDE ALL PLATES, CLIP ANGLES, CLOSURE PIECES, STRAP ANCHORS, MISCELLANEOUS PIECES AND HOLES REQUIRED TO COMPLETE THE STRUCTURE.

7. FIT AND SHOP ASSEMBLE FABRICATIONS IN THE LARGEST PRACTICAL SECTIONS FOR DELIVERY TO SITE.

8. INSTALL FABRICATIONS PLUMB AND LEVEL, ACCURATELY FITTED, AND FREE FROM DISTORTIONS OR DEFECTS.

9. AFTER ERECTION OF STRUCTURES, TOUCHUP ALL WELDS, ABRASIONS AND NON-GALVANIZED SURFACES WITH A 95% ORGANIC ZINC RICH PAINT IN ACCORDANCE WITH ASTM 780.

10. ALL STEEL MATERIAL (EXPOSED TO WEATHER) SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT DIPPED GALVANIZED) COATINGS" ON IRONS AND STEEL PRODUCTS.

11. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE".

12. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES APPEARANCE AND QUALITY OF WELDS, AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING THE SCHEDULED ELECTRODES AND WELDING SHALL CONFORM TO AISC AND D1.1 WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLET J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION" 14TH EDITION. AT THE COMPLETION OF WELDING, ALL DAMAGE TO GALVANIZED COATING SHALL BE REPAIRED.

13. THE ENGINEER SHALL BE NOTIFIED OF ANY INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON CONFORMING MATERIALS OR CONDITIONS TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER REVIEW.

14. CONNECTION ANGLES SHALL HAVE A MINIMUM THICKNESS OF 1/4 INCHES.

15. STRUCTURAL CONNECTION BOLTS SHALL CONFORM TO ASTM A325. ALL BOLTS SHALL BE 3/4" DIAMETER MINIMUM AND SHALL HAVE A MINIMUM OF TWO BOLTS, UNLESS OTHERWISE ON THE DRAWINGS.

16. LOCK WASHER ARE NOT PERMITTED FOR A325 BOLTED STEEL ASSEMBLIES.

17. SHOP CONNECTIONS SHALL BE WELDED OR HIGH STRENGTH BOLTED.

18. MILL BEARING ENDS OF COLUMNS, STIFFENERS, AND OTHER BEARING SURFACES TO TRANSFER LOAD OVER ENTIRE CROSS SECTION.

19. FABRICATE BEAMS WITH MILL CAMBER UP.

20. LEVEL AND PLUMB INDIVIDUAL MEMBERS OF THE STRUCTURE TO AN ACCURACY OF 1:500, BUT NOT TO EXCEED 1/4" IN THE FULL HEIGHT OF THE COLUMN.

21. COMMENCEMENT OF STRUCTURAL STEEL WORK WITHOUT NOTIFYING THE ENGINEER OF ANY DISCREPANCIES WILL BE CONSIDERED ACCEPTANCE OF PRECEDING WORK.

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STRUCTURAL STEEL NOTES

SHEET NO.
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MODIFICATION INSPECTION REPORT REQUIREMENTS

PRE-CONSTUCTION		DURING CONSTRUCTION		POST-CONSTRUCTION	
SCHEDULED ITEM	REPORT ITEM	SCHEDULED ITEM	REPORT ITEM	SCHEDULED ITEM	REPORT ITEM
X	EOR MODIFICATION INSPECTION DRAWING	–	FOUNDATIONS	X	MODIFICATION INSPECTOR RECORD REDLINE DRAWING
X	EOR APPROVED SHOP DRAWINGS	–	EARTHWORK: BACKFILL MATERIAL & COMPACTION	–	POST–INSTALLED ANCHOR ROD PULL–OUT TEST
–	EOR APPROVED POST–INSTALLED ANCHOR MPII	–	REBAR & FORMWORK GEOMETRY VERIFICATION	X	PHOTOGRAPHS
–	FABRICATION INSPECTION	–	CONCRETE TESTING		
–	FABRICATOR CERTIFIED WELDER INSPECTION	X	STEEL INSPECTION		
X	MATERIAL CERTIFICATIONS	–	POST INSTALLED ANCHOR ROD VERIFICATION		
		–	BASE PLATE GROUT VERIFICATION		
		–	CONTRACTOR'S CERTIFIED WELD INSPECTION		
		X	ON–SITE COLD GALVANIZING VERIFICATION		
		X	CONTRACTOR AS–BUILT REDLINE DRAWINGS		

NOTES:
1. REFER TO MODIFICATION INSPECTION NOTES FOR ADDITIONAL REQUIREMENTS
2. "X" DENOTES DOCUMENT REQUIRED FOR INCLUSION IN MODIFICATION INSPECTION FINAL REPORT.
3. "–" DENOTES DOCUMENT NOT REQUIRED FOR INCLUSION IN MODIFICATION INSPECTION FINAL REPORT.
4. EOR – ENGINEER OF RECORD
4. MPII – "MANUFACTURER'S PRINTED INSTALLATION GUIDELINES"

GENERAL

1. THE MODIFICATION INSPECTION IS A VISUAL INSPECTION OF STRUCTURAL MODIFICATIONS, TO INCLUDE A REVIEW AND COMPILATION OF SPECIFIED SUBMITTALS AND CONSTRUCTION INSPECTIONS, AS AN ASSURANCE OF COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS PREPARED UNDER THE DIRECTION OF THE ENGINEER OF RECORD (EOR).

2. THE MODIFICATION INSPECTION IS TO CONFIRM INSTALLATION CONFIGURATION AND GENERAL WORKMANSHIP AND IS NOT A REVIEW OF THE MODIFICATION DESIGN. OWNERSHIP OF THE MODIFICATION DESIGN EFFECTIVENESS AND INTENT RESIDES WITH THE ENGINEER OF RECORD.

3. TO ENSURE COMPLIANCE WITH THE MODIFICATION INSPECTION REQUIREMENTS THE GENERAL CONTRACTOR (GC) AND THE MODIFICATION INSPECTOR (MI) COMMENCE COMMUNICATION UPON AUTHORIZATION TO PROCEED BY THE CLIENT. EACH PARTY SHALL BE PROACTIVE IN CONTACTING THE OTHER. THE EOR SHALL BE CONTACTED IF SPECIFIC GC/MI CONTACT INFORMATION IS NOT MADE AVAILABLE.

4. THE GC SHALL PROVIDE THE MI WITH A MINIMUM OF 5 BUSINESS DAYS NOTICE OF IMPENDING INSPECTIONS.

5. WHEN POSSIBLE, THE GC AND MI SHALL BE ON SITE DURING THE MODIFICATION INSPECTION TO HAVE ANY NOTED DEFICIENCIES ADDRESSED DURING THE INITIAL MODIFICATION INSPECTION.

MODIFICATION INSPECTOR (MI)

1. THE MI SHALL CONTACT THE GC UPON AUTHORIZATION BY THE CLIENT TO:

   – REVIEW THE MODIFICATION INSPECTION REPORT REQUIREMENTS.
   – WORK WITH THE GC IN DEVELOPMENT OF A SCHEDULE FOR ON–SITE INSPECTIONS.
   – DISCUSS CRITICAL INSPECTIONS AND PROJECT CONCERNS.

2. THE MI IS RESPONSIBLE FOR COLLECTION OF ALL INSPECTION AND TEST REPORTS, REVIEWING REPORTS FOR ADHERENCE TO THE CONTRACT DOCUMENTS, CONDUCTING ON–SITE INSPECTIONS AND COMPILATION & SUBMISSION OF THE MODIFICATION INSPECTION REPORT TO THE CLIENT AND THE EOR.

GENERAL CONTRACTOR (GC)

1. THE GC IS REQUIRED TO CONTACT THE GC UPON AUTHORIZATION TO PROCEED WITH CONSTRUCTION BY THE CLIENT TO:

   – REVIEW THE MODIFICATION INSPECTION REPORT REQUIREMENTS.
   – WORK WITH THE MI IN DEVELOPMENT OF A SCHEDULE FOR ON–SITE INSPECTIONS.
   – DISCUSS CRITICAL INSPECTIONS AND PROJECT CONCERNS.

2. THE GC IS RESPONSIBLE FOR COORDINATING AND SCHEDULING IN ADVANCE ALL REQUIRED INSPECTIONS AND TESTS WITH THE MI.

CORRECTION OF FAILING MODIFICATION INSPECTION

1. SHOULD THE STRUCTURAL MODIFICATION NOT COMPLY WITH THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS, THE GC SHALL WORK WITH THE MODIFICATION INSPECTOR IN A VIABLE REMEDIATION PLAN AS FOLLOWS:

   – CORRECT ALL DEFICIENCIES TO COMPLY WITH THE CONTRACT DOCUMENTS AND COORDINATE WITH THE MI FOR A FOLLOW UP INSPECTION.
   – WITH CLIENT AUTHORIZATION, THE GC MAY WORK WITH THE EOR TO REANALYZE THE MODIFICATION USING THE AS–BUILT CONDITION.

REQUIRED PHOTOGRAPHS

1. THE GC AND MI SHALL AT MINIMUM PHOTO DOCUMENT THE FOLLOWING FOR INCLUSION IN THE MODIFICATION INSPECTION REPORT:

   – PRE–CONSTRUCTION: GENERAL CONDITION OF THE SITE.
   – DURING CONSTRUCTION: RAW MATERIALS, CRITICAL DETAILS, WELD PREPARATION, BOLT INSTALLATION & TORQUE, FINAL INSTALLED CONDITION & SURFACE COATING REPAIRS.
   – POST–CONSTRUCTION: FINAL CONDITION OF THE SITE

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
1	3/29/21	TJL	CFC	ISSUED FOR CONSTRUCTION
0	12/7/20	TJL	CFC	ISSUED FOR REVIEW

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AT&T MOBILITY

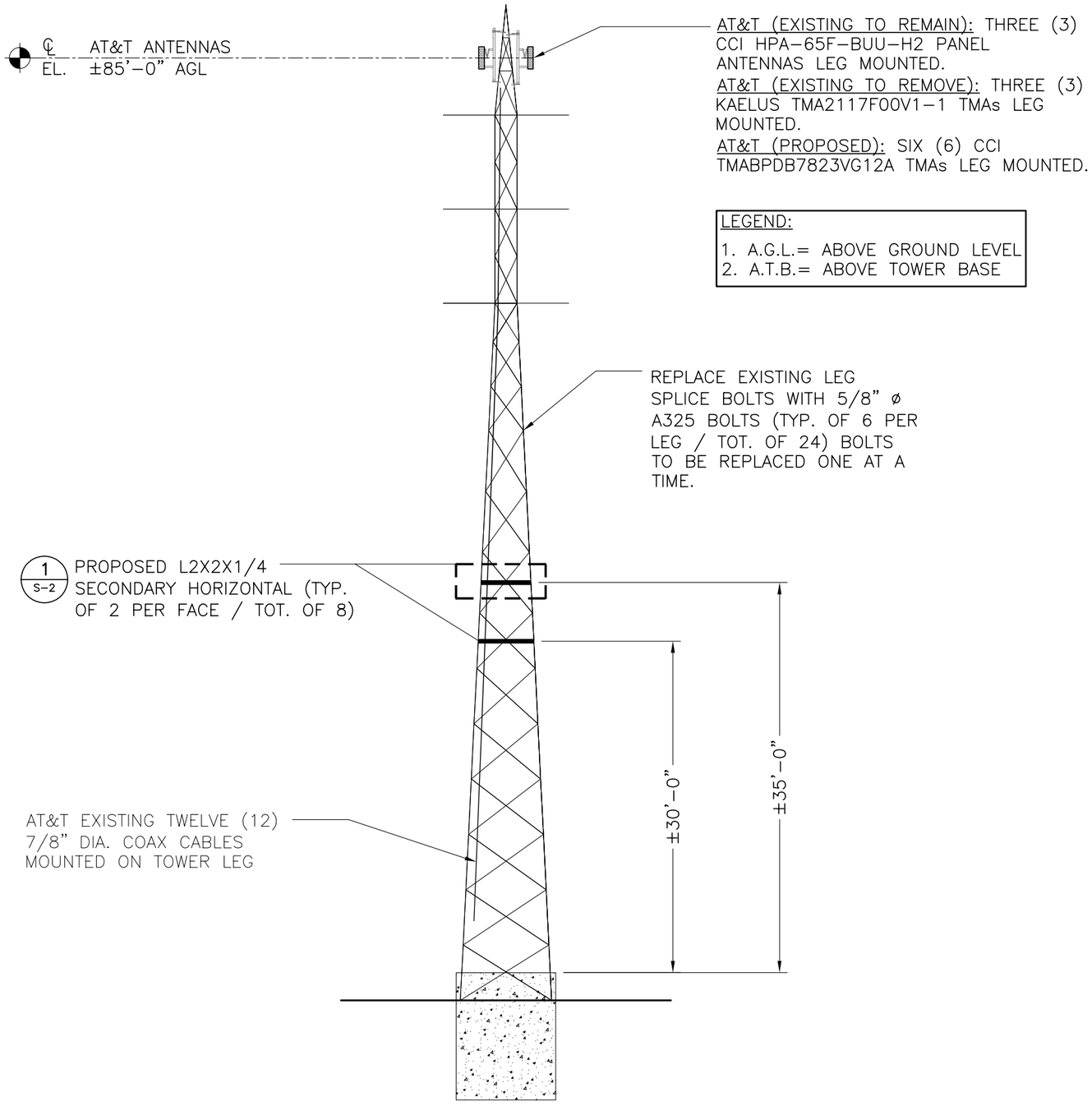
CT5011
EVERSOURCE STRUCTURE 1182

NORWICH HEIGHTS RAILROAD STATION
DARIEN, CT 06820

DATE:	12/07/20
SCALE:	AS SHOWN
JOB NO.	20020.02

MODIFICATION INSPECTION REQUIREMENTS

SHEET NO.
MI-1
Sheet No. 4 of 8



1 S-1 TOWER & ANTENNA MAST ELEVATION

SCALE: NOT TO SCALE

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
1	3/29/21	TJL	CFC	ISSUED FOR CONSTRUCTION
0	12/7/20	TJL	CFC	ISSUED FOR REVIEW

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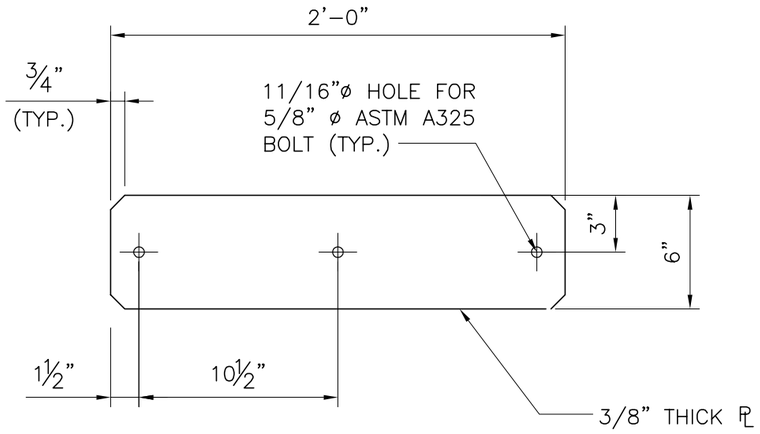
JOB NO.	20020.02

TOWER ELEVATION AND FEEDLINE PLAN

SHEET NO.
S-1
Sheet No. 8 of 8

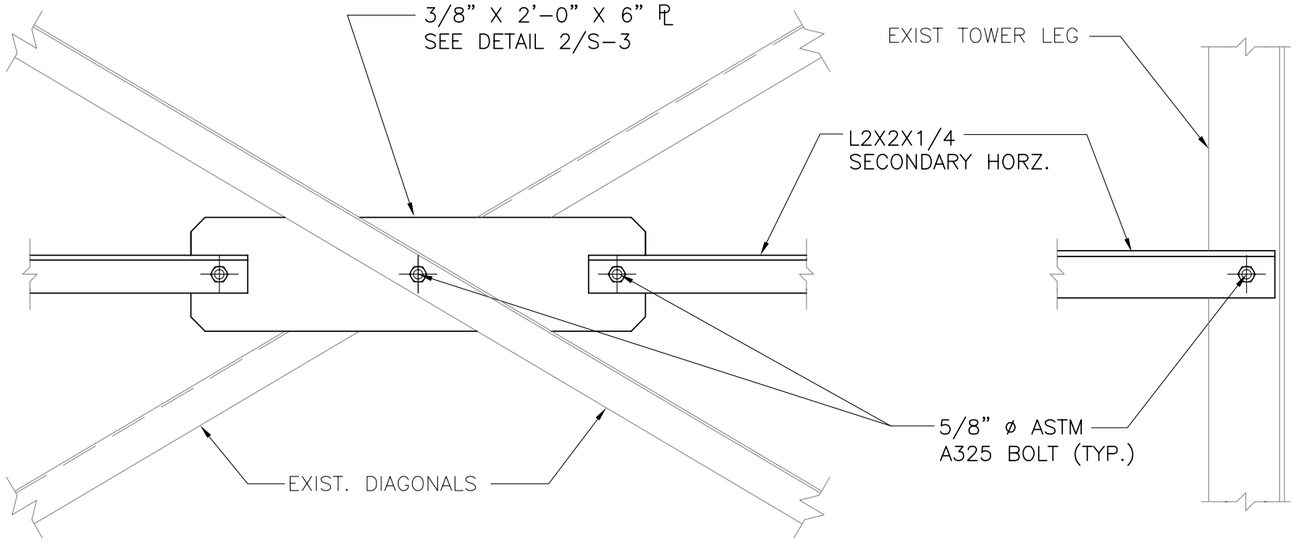
1. APPLY COLD GALVANIZING TO ALL FIELD DRILLED BOLT HOLES IN EXISTING STEEL PRIOR TO INSTALLATION OF BOLTS

2. FOR ALL BOLT HOLES IN NEW AND EXISTING STEEL MEMBERS MAINTAIN A MIN. 7/8" EDGE / END DISTANCE FOR 5/8" ø BOLTS



2/S-2 PLATE P1 DETAIL

SCALE: 1-1/2" = 1'-0"



1/S-2 SECONDARY HORIZONTAL ELEVATION

SCALE: 1-1/2" = 1'-0"

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
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TOWER REINFORCEMENT DETAILS

SHEET NO.
S-2
Sheet No. 6 of 6

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Subject: Load Analysis of AT&T Equipment on Structure #1182

Location: Darien, CT

Rev. 2: 3/29/21 Prepared by: T.J.L Checked by: C.F.C.
Job No. 20020.02

Basic Components

Heavy Wind Pressure =	p := 4.00	psf	(User Input NESC 2017 Figure 250-1 & Table 250-1)
Basic Windspeed =	V := 110	mph	(User Input NESC 2017 Figure 250-2(e))
Radial Ice Thickness =	Ir := 0.50	in	(User Input)
Radial Ice Density =	Id := 57.0	pcf	(User Input)

Factors for Extreme Wind Calculation

Elevation of Top of Mast Above Grade =	TME := 90	ft	(User Input)
Multiplier Gust Response Factor =	m := 1.0		(User Input - Only for NESC Extreme wind case all equipment below top of tower)
NESC Factor =	kv := 1.43		(User Input from NESC 2017 Table 250-3 equation)
Importance Factor =	I := 1.0		(User Input from NESC 2017 Section 250.C.2)

Velocity Pressure Coefficient = $Kz := 2.01 \cdot \left(\frac{TME}{900}\right)^{\frac{2}{9.5}} = 1.238$ (NESC 2017 Table 250-2)

Exposure Factor = $Es := 0.346 \left[\frac{33}{(0.67 \cdot TME)}\right]^{\frac{1}{7}} = 0.317$ (NESC 2017 Table 250-3)

Response Term = $Bs := \frac{1}{\left(1 + 0.375 \cdot \frac{TME}{220}\right)} = 0.867$ (NESC 2017 Table 250-3)

Gust Response Factor = $Grf := \frac{\left[1 + \left(2.7 \cdot Es \cdot Bs^{\frac{1}{2}}\right)\right]}{kv^2} = 0.879$ (NESC 2017 Table 250-3)

Wind Pressure = $qz := 0.00256 \cdot Kz \cdot V^2 \cdot Grf \cdot I = 33.7$ psf (NESC 2017 Section 250.C.2)

Shape Factors

Shape Factor for Round Members =	$Cd_R := 1.3$	(User Input)
Shape Factor for Flat Members =	$Cd_F := 1.6$	(User Input)
Shape Factor for Coax Cables Attached to Outside of Pole =	$Cd_{coax} := 1.45$	(User Input)

Overload Factors

Overload Factors for Wind Loads:

NESC Heavy Loading =	**2.5**	(User Input)	Apply in Risa-3D Analysis
NESC Extreme Loading =	**1.0**	(User Input)	Apply in Risa-3D Analysis

Overload Factors for Vertical Loads:

NESC Heavy Loading =	**1.5**	(User Input)	Apply in Risa-3D Analysis
NESC Extreme Loading =	**1.0**	(User Input)	Apply in Risa-3D Analysis

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Subject:	Load Analysis of AT&T Equipment on Structure #1182
Location:	Darien, CT
Rev. 2: 3/29/21	Prepared by: T.J.L Checked by: C.F.C. Job No. 20020.02

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	CCI HPA-65F-BUU-H2			
Antenna Shape =	Flat		(User Input)	
Antenna Height =	$L_{ant} := 21.4$	in	(User Input)	
Antenna Width =	$W_{ant} := 14.4$	in	(User Input)	
Antenna Thickness =	$T_{ant} := 7.3$	in	(User Input)	
Antenna Weight =	$WT_{ant} := 15.2$	lbs	(User Input)	
Number of Antennas =	$N_{ant} := 1$		(User Input)	Per Leg -Total of 3

Gravity Load (without ice)

Weight of All Antennas =	$Wt_{ant1} := WT_{ant} \cdot N_{ant} = 15$	lbs

Gravity Load (ice only)

Volume of Each Antenna =	$V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 2250$	cu in
Volume of Ice on Each Antenna =	$V_{ice} := \left(L_{ant} + 2 \cdot Ir\right)\left(W_{ant} + 2 \cdot Ir\right)\left(T_{ant} + 2 \cdot Ir\right) - V_{ant} = 614$	cu in
Weight of Ice on Each Antenna =	$W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 20$	lbs
Weight of Ice on All Antennas =	$Wt_{ice.ant1} := W_{ICEant} \cdot N_{ant} = 20$	lbs

Wind Load (NESC Heavy)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna w/ Ice =	$SA_{ICEant} := \frac{\left(L_{ant} + 2 \cdot Ir\right) \cdot \left(W_{ant} + 2 \cdot Ir\right)}{144} = 2.4$	sf
Antenna Projected Surface Area w/ Ice =	$A_{ICEant} := SA_{ICEant} \cdot N_{ant} = 2.4$	sf
Total Antenna Wind Force w/ Ice =	$Fi_{ant1} := p \cdot Cd_F \cdot A_{ICEant} = 15$	lbs

Wind Load (NESC Extreme)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 2.1$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 2.1$	sf
Total Antenna Wind Force =	$F_{ant1} := qz \cdot Cd_F \cdot A_{ant} \cdot m = 115$	lbs

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	CCI TMABPD7823VG12A			
Antenna Shape =	Flat		(User Input)	
Antenna Height =	$L_{ant} := 10.63$	in	(User Input)	
Antenna Width =	$W_{ant} := 11.04$	in	(User Input)	
Antenna Thickness =	$T_{ant} := 3.75$	in	(User Input)	
Antenna Weight =	$WT_{ant} := 25$	lbs	(User Input)	
Number of Antennas =	$N_{ant} := 2$		(User Input)	Per Leg -Total of 6

Gravity Load (without ice)

Weight of All Antennas = $Wt_{ant2} := WT_{ant} \cdot N_{ant} = 50$ lbs

Gravity Load (ice only)

Volume of Each Antenna = $V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 440$ cu in

Volume of Ice on Each Antenna = $V_{ice} := \left(L_{ant} + 2 \cdot Ir\right)\left(W_{ant} + 2 \cdot Ir\right)\left(T_{ant} + 2 \cdot Ir\right) - V_{ant} = 225$ cu in

Weight of Ice on Each Antenna = $W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 7$ lbs

Weight of Ice on All Antennas = $Wt_{ice.ant2} := W_{ICEant} \cdot N_{ant} = 15$ lbs

Wind Load (NESC Heavy)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna w/ Ice = $SA_{ICEant} := \frac{\left(L_{ant} + 2 \cdot Ir\right) \cdot \left(W_{ant} + 2 \cdot Ir\right)}{144} = 1$ sf

Antenna Projected Surface Area w/ Ice = $A_{ICEant} := SA_{ICEant} \cdot N_{ant} = 1.9$ sf

Total Antenna Wind Force w/ Ice = $Fi_{ant2} := p \cdot Cd_F \cdot A_{ICEant} = 12$ lbs

Wind Load (NESC Extreme)

Assumes Maximum Possible Wind Pressure Applied to all Antennas Simultaneously

Surface Area for One Antenna = $SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 0.8$ sf

Antenna Projected Surface Area = $A_{ant} := SA_{ant} \cdot N_{ant} = 1.6$ sf

Total Antenna Wind Force = $F_{ant2} := qz \cdot Cd_F \cdot A_{ant} \cdot m = 88$ lbs

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Subject: Load Analysis of AT&T Equipment on Structure #1182

Location: Darien, CT

Rev. 2: 3/29/21 Prepared by: T.J.L Checked by: C.F.C.
Job No. 20020.02

Development of Wind & Ice Load on Antenna Mounts

Existing Mount Data:

Mount Type:	Valmont Adjustable Slope Wireless Mount p/n 1709			
Mount Shape =	Round		(User Input)	
Pipe Mount Length =	$L_{mnt} := 60$	in	(User Input)	
2 inch Pipe Mount Linear Weight =	$W_{mnt} := 3.66$	plf	(User Input)	
Pipe Mount Outside Diameter =	$D_{mnt} := 2.375$	in	(User Input)	
Number of Mounting Pipes =	$N_{mnt} := 1$		(User Input)	Per Leg -Total of 3
Mount Weight =	$W_{smnt} := 73$	lbs	(User Input)	

Wind Load (NESC Extreme)

Mount Projected Surface Area = $A_{mnt} := \frac{(D_{mnt} \cdot L_{mnt})}{144} = 0.99$ sf

Total Mount Wind Force = $F_{mnt} := qz \cdot Cd_R \cdot A_{mnt} \cdot m = 43$ lbs

Wind Load (NESC Heavy)

Mount Projected Surface Area w/ Ice = $A_{ICEmnt} := \frac{(L_{mnt} + 2 \cdot Ir) \cdot (D_{mnt} + 2 \cdot Ir)}{144} = 1.43$ sf

Total Mount Wind Force = $Fi_{mnt} := p \cdot Cd_R \cdot A_{ICEmnt} = 7$ lbs

Gravity Loads (without ice)

Weight Each Pipe Mount = $WT_{mnt} := W_{mnt} \cdot \frac{L_{mnt}}{12} = 18$ lbs

Weight of All Mounts = $Wgt_{mnt} := WT_{mnt} \cdot N_{mnt} + W_{smnt} = 91$ lbs

Gravity Load (ice only)

Volume of Each Pipe = $V_{mnt} := \frac{\pi}{4} \cdot D_{mnt}^{2} \cdot L_{mnt} = 266$ cu in

Volume of Ice on Each Pipe = $V_{ice} := \left[\frac{\pi}{4} \cdot \left[(D_{mnt} + 1)^2\right] \cdot (L_{mnt} + 1)\right] - V_{mnt} = 280$ cu in

Weight of Ice each mount (incl, hardware) = $W_{ICEmnt} := \frac{V_{ice}}{1728} \cdot Id = 9$ lbs

Weight of Ice on All Mounts = $Wgt_{ice.mnt} := (W_{ICEmnt} \cdot N_{mnt} + 5) = 14$ lbs

Total Equipment Loads:

NESC Heavy Wind Vertical =	$\left(Wt_{ant1} + Wt_{ice.ant1} + Wt_{ant2} + Wt_{ice.ant2} + Wgt_{mnt} + Wgt_{ice.mnt}\right)\cdot 1.5 = 309$	lbs
NESC Heavy Wind Trasnsverse =	$\left(Fi_{ant1} + Fi_{ant2} + Fi_{mnt}\right)\cdot 2.5 = 88$	lbs
NESC Extreme Wind Vertical =	$\left(Wt_{ant1} + Wt_{ant2} + Wgt_{mnt}\right) = 157$	lbs
NESC Extreme Wind Trasnsverse =	$\left(F_{ant1} + F_{ant2} + F_{mnt}\right) = 247$	lbs

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Subject:	Coax Cable on Tower # 1182
Location:	Darien, CT
Rev. 1: 1/7/21	Prepared by: T.J.L Checked by: C.F.C. Job No. 20020.02

Coax Cable on Tower

Basic Components

Heavy Wind Pressure =	$p := 4.00 \cdot psf$		(User Input NESC 2012 Figure 250-1 & Table 250-1)
Basic Windspeed =	$V := 110$	mph	(User Input NESC 2012 Figure 250-2(e))
Radial Ice Thickness =	$Ir := 0.50in$		(User Input)
Radial Ice Density =	$Id := 57.0 \cdot pcf$		(User Input)

Factors for Extreme Wind Calculation

Elevation of Cables Above Grade =	$TME := 90$	ft	(User Input)
NESC Factor =	$kv := 1.43$		(User Input from NESC 2012 Table 250-3 equation)
Importance Factor =	$I := 1.0$		(User Input from NESC 2012 Section 250.C.2)

Velocity Pressure Coefficient =

$$Kz := 2.01 \cdot \left(\frac{0.67TME}{900}\right)^{\frac{2}{9.5}} = 1.138$$

(NESC 2012 Table 250-2)

Exposure Factor =

$$Es := 0.346\left[\frac{33}{(0.67 \cdot TME)}\right]^{\frac{1}{7}} = 0.317$$

(NESC 2012 Table 250-3)

Response Term =

$$Bs := \frac{1}{\left(1 + 0.375 \cdot \frac{TME}{220}\right)} = 0.867$$

(NESC 2012 Table 250-3)

Gust Response Factor =

$$Grf := \frac{\left[1 + \left(2.7 \cdot Es \cdot Bs^{\frac{1}{2}}\right)\right]}{kv^2} = 0.879$$

(NESC 2012 Table 250-3)

Wind Pressure =

$$qz := 0.00256 \cdot Kz \cdot V^2 \cdot Grf \cdot I = 31 \quad psf$$

(NESC 2012 Section 250.C.

Shape Factors

Shape Factor for Round Members =	$Cd_R := 1.3$	(User Input)
Shape Factor for Flat Members =	$Cd_F := 1.6$	(User Input)
Shape Factor for Coax Cables Attached to Outside of Pole =	$Cd_{coax} := 1.6$	(User Input)

Overload Factors

Overload Factor for NESC Heavy Wind Transverse Load =	$OF_{HWT} := 2.5$	*(User Input)*
Overload Factor for NESC Heavy Wind Vertical Load =	$OF_{HWV} := 1.5$	*(User Input)*
Overload Factor for NESC Extreme Wind Transverse Load =	$OF_{EWT} := 1.0$	*(User Input)*
Overload Factor for NESC Extreme Wind Vertical Load =	$OF_{EWV} := 1.0$	*(User Input)*

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Subject:	Coax Cable on Tower # 1182
Location:	Darien, CT
Rev. 1: 1/7/21	Prepared by: T.J.L Checked by: C.F.C. Job No. 20020.02

Distance Between Coax Cable Attach Points =

$$Coax_{Span} := \begin{pmatrix} 4.125 \\ 10.5 \\ 10.125 \\ 8.5 \\ 10.25 \\ 10.5 \\ 10 \\ 10 \\ 10 \end{pmatrix} \cdot ft \quad \textit{(User Input)}$$

Diameter of Coax Cable =

$$D_{coax} := 1.11 \cdot in \quad \textit{(User Input)}$$

Weight of Coax Cable =

$$W_{coax} := 0.54 \cdot plf \quad \textit{(User Input)}$$

Number of Coax Cables =

$$N_{coax} := 12 \quad \textit{(User Input)}$$

Number of Projected Coax Cables =

$$NP_{coax} := 6 \quad \textit{(User Input)}$$

Number of External Coax Cables =

$$NX_{coax} := 12 \quad \textit{(User Input)}$$

Wind Area without Ice =

$$A := \left(NP_{coax} \cdot D_{coax}\right) = 6.66 \cdot in$$

Wind Area with Ice =

$$A_{ice} := \left(NP_{coax} \cdot D_{coax} + 2 \cdot Ir\right) = 7.66 \cdot in$$

Ice Area per Liner Ft =

$$Ai_{coax} := \frac{\pi}{4} \cdot \left[\left(D_{coax} + 2 \cdot Ir\right)^2 - D_{coax}^2\right] = 0.018\,ft^2$$

Weight of Ice on All Coax Cables =

$$W_{ice} := Ai_{coax} \cdot Id \cdot NX_{coax} = 12.013 \cdot plf$$

Heavy Wind Vertical Load =

$$Heavy\_WInd_{Vert} := \overrightarrow{\left[\left(N_{coax} \cdot W_{coax} + W_{ice}\right) \cdot Coax_{Span} \cdot OF_{HWV}\right]}$$

Heavy Wind Transverse Load =

$$Heavy\_Wind_{Trans} := \overrightarrow{\left(p \cdot A_{ice} \cdot Cd_{coax} \cdot Coax_{Span} \cdot OF_{HWT}\right)}$$

$$Heavy\_WInd_{Vert} = \begin{pmatrix} 114 \\ 291 \\ 281 \\ 236 \\ 284 \\ 291 \\ 277 \\ 277 \\ 277 \end{pmatrix} lb \qquad Heavy\_Wind_{Trans} = \begin{pmatrix} 42 \\ 107 \\ 103 \\ 87 \\ 105 \\ 107 \\ 102 \\ 102 \\ 102 \end{pmatrix} lb$$

Extreme Wind Vertical Load =

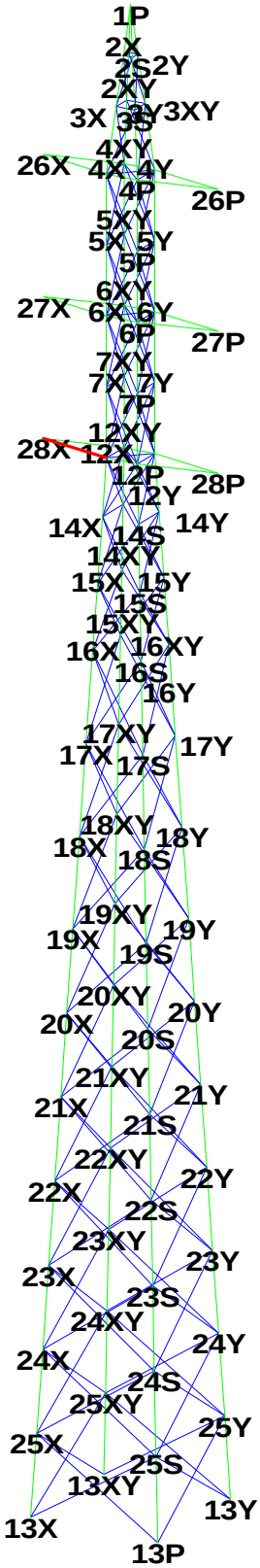
$$Extreme\_Wind_{Vert} := \overrightarrow{\left(N_{coax} \cdot W_{coax} \cdot Coax_{Span} \cdot OF_{EWV}\right)}$$

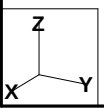
Extreme Wind Transverse Load =

$$Extreme\_Wind_{Trans} := \overrightarrow{\left[\left(qz \cdot psf \cdot A \cdot Cd_{coax}\right) \cdot Coax_{Span} \cdot OF_{EWT}\right]}$$

$$Extreme\_WInd_{Vert} = \begin{pmatrix} 27 \\ 68 \\ 66 \\ 55 \\ 66 \\ 68 \\ 65 \\ 65 \\ 65 \end{pmatrix} lb \qquad Extreme\_Wind_{Trans} = \begin{pmatrix} 114 \\ 289 \\ 279 \\ 234 \\ 282 \\ 289 \\ 275 \\ 275 \\ 275 \end{pmatrix} lb$$

Centek Engineering Inc, Project: "darien - 1182 reinforced"
Tower Version 12.50, 11:21:34 AM Monday, December 07, 2020
Undeformed geometry displayed





Project Name : 20020.02 - Darien, CT
Project Notes: Structure # 1182 / AT&T 5011
Project File : J:\Jobs\2002000.SI\02_CT5011 Darien-Noroton Heights\Structural\Backup Documentation\Calcs\Rev (2)\PLS Tower\darien - 1182 reinforced.tow
Date run : 3:45:02 PM Monday, March 29, 2021
by : Tower Version 12.50
Licensed to : Centek Engineering Inc

Successfully performed nonlinear analysis

Member "g80P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g80X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g80XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g80Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g81P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g81Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g82P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g82X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g82XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g82Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g83P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g83Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g84P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g84X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g84XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g84Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g85P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g85Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g94P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g94X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g95P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g95X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g96P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g96X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??

The model has 24 warnings. ??

Member check option: ASCE 10
Connection rupture check: ASCE 10
Crossing diagonal check: ASCE 10 [Alternate Unsupported RLOUT = 1]
Included angle check: None
Climbing load check: None
Redundant members checked with: Actual Force

Loads from file: j:\jobs\2002000.si\02_ct5011 darien-noroton heights\structural\backup documentation\calcs\rev (2)\pls tower\darien - 1182.lca

*** Analysis Results:

Maximum element usage is 99.43% for Angle "g16Y" in load case "NESC Extreme"
Maximum insulator usage is 14.33% for Clamp "6" in load case "NESC Heavy"

Summary of Joint Support Reactions For All Load Cases:

Load Case	Joint Label	Long. Force (kips)	Tran. Force (kips)	Vert. Force (kips)	Shear Force (kips)	Tran. Moment (ft-k)	Long. Moment (ft-k)	Bending Moment (ft-k)	Vert. Moment (ft-k)	Found. Usage %
NESC Heavy	13P	-4.77	-4.93	-77.09	6.86	0.47	-0.53	0.71	0.01	0.00
NESC Heavy	13X	0.54	-0.89	12.24	1.04	0.03	0.12	0.13	-0.03	0.00
NESC Heavy	13XY	-4.18	-4.14	63.72	5.88	0.39	-0.44	0.59	0.01	0.00
NESC Heavy	13Y	1.65	-1.90	-28.25	2.52	0.12	0.27	0.29	0.01	0.00
NESC Extreme	13P	-4.79	-5.93	-77.36	7.62	0.49	-0.61	0.78	-0.01	0.00
NESC Extreme	13X	4.61	-5.66	75.41	7.30	0.57	0.53	0.78	-0.01	0.00
NESC Extreme	13XY	-4.29	-4.72	67.03	6.38	0.39	-0.51	0.65	0.01	0.00
NESC Extreme	13Y	4.76	-5.46	-79.91	7.24	0.48	0.59	0.76	0.01	0.00

Summary of Joint Support Reactions For All Load Cases in Direction of Leg:

Load Case	Support Joint	Origin Joint	Leg Member	Leg Dir.	Force In Leg (kips)	Residual Shear Perpendicular To Leg (kips)	Residual Shear Horizontal To Leg - Res. (kips)	Residual Shear Horizontal To Leg - Long. (kips)	Residual Shear Horizontal To Leg - Tran. (kips)	Total Long. Force (kips)	Total Tran. Force (kips)	Total Vert. Force (kips)
NESC Heavy	13P	25S	g24P		77.379	1.453	1.456	0.951	1.103	-4.77	-4.93	-77.09
NESC Heavy	13X	25X	g24X		-12.282	0.290	0.290	0.070	0.281	0.54	-0.89	12.24
NESC Heavy	13XY	25XY	g24XY		-63.971	1.407	1.410	1.018	0.976	-4.18	-4.14	63.72
NESC Heavy	13Y	25Y	g24Y		28.358	0.560	0.562	-0.250	0.503	1.65	-1.90	-28.25
NESC Extreme	13P	25S	g24P		77.699	2.293	2.298	0.957	2.089	-4.79	-5.93	-77.36
NESC Extreme	13X	25X	g24X		-75.738	2.099	2.104	-0.868	1.916	4.61	-5.66	75.41
NESC Extreme	13XY	25XY	g24XY		-67.315	1.693	1.697	0.967	1.394	-4.29	-4.72	67.03
NESC Extreme	13Y	25Y	g24Y		80.224	1.693	1.696	-0.791	1.500	4.76	-5.46	-79.91

Overturning Moment Summary For All Load Cases:

Load Case	Transverse Moment (ft-k)	Longitudinal Moment (ft-k)	Resultant Moment (ft-k)
NESC Heavy	747.851	413.781	854.690
NESC Extreme	1236.347	-45.114	1237.170

Sections Information:

Section	Top Joint	Bottom Joint	Member	Tran. Face	Tran. Face	Tran. Face	Long. Face	Long. Face	Long. Face

Label	Z (ft)	Z Count (ft)	Count	Top Width (ft)	Bot Width (ft)	Gross Area (ft^2)	Top Width (ft)	Bot Width (ft)	Gross Area (ft^2)
1	90.000	59.500	39	124	0.00	2.35	51.608	0.00	2.35	109.983
2	59.500	40.500	20	48	2.35	4.23	62.504	2.35	4.23	62.504
3	40.500	0.000	36	96	4.23	8.25	252.763	4.23	8.25	252.763

*** Overall summary for all load cases - Usage = Maximum Stress / Allowable Stress
Printed capacities do not include the strength factor entered for each load case.
The Group Summary reports on the member and load case that resulted in maximum usage
which may not necessarily be the same as that which produces maximum force.

Group Summary (Compression Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage Cont-rol %	Max Comp. Use In Comp. %	Comp. Control Member	Comp. Force (kips)	Comp. Control Load Case	L/R Capacity (kips)	Comp. Connect. Shear Capacity (kips)	Comp. Connect. Bearing Capacity (kips)	RLX	RLY	RLZ	L/R Comp. (ft)	KL/R No. Of Member	Angle Length Curve No. Bolts	Comp.
Leg1	**L2.5x2.5x1/4**	**SAE**	**2.5X2.5X0.25**	**33.0**	**15.05**	**Comp 15.05**	**g3P**	**-4.250**	**NESC Ext**	**28.236**	**36.400**	**56.250**	**1.000**	**1.000**	**1.000**	**98.73**	**98.73**	**4.040**	**1**	**4**	**A potentially damaging moment exists in the following members (make sure your system is well triangulated to minimize moments): g3P g3X g3XY g3Y ??**
Leg2	**L4x4x1/4**	**SAE**	**4X4X0.25**	**33.0**	**99.08**	**Comp 99.08**	**g14Y**	**-56.734**	**NESC Ext**	**57.260**	**100.800**	**84.375**	**1.000**	**1.000**	**1.000**	**60.53**	**60.53**	**4.010**	**1**	**6**	**A potentially damaging moment exists in the following members (make sure your system is well triangulated to minimize moments): g4P g4X g4XY g4Y g5P g5X g5XY g5Y g6P g6X g6XY g6Y g78P g78X g78XY g78Y g12P g12X g12XY g12Y ??**
Leg3	L4x4x5/16	SAE	4X4X0.3125	33.0	99.43	Comp 99.43	g16Y	-62.870	NESC Ext	63.228	0.000	0.000	1.000	1.000	1.000	83.64	83.64	5.514	1	0	
Leg4	L4x4x3/8	SAE	4X4X0.375	33.0	96.31	Comp 96.31	g22Y	-75.631	NESC Ext	78.530	91.000	210.937	1.000	1.000	1.000	76.33	76.33	5.012	1	10	
Leg5	L5x5x5/16	SAE	5X5X0.3125	33.0	88.06	Comp 88.06	g24Y	-78.758	NESC Ext	89.437	91.000	175.781	1.000	1.000	1.000	60.51	60.51	5.012	1	10	
Diag1	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	25.16	Tens 13.01	g27P	-1.183	NESC Ext	12.655	9.100	10.547	1.000	1.000	1.000	110.08	115.04	3.146	3	1	
Diag2	L2x1.5x1/4	SAU	2X1.5X0.25	33.0	86.57	Cross 86.57	g87Y	-12.476	NESC Hea	14.412	18.200	28.125	0.500	1.000	0.500	130.47	126.44	4.697	6	2	
Diag3	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	94.54	Comp 94.54	g50Y	-8.603	NESC Hea	13.824	9.100	10.547	1.000	0.545	0.545	92.15	106.07	4.124	3	1	
Horz1	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	9.25	Tens 4.74	g77P	-0.431	NESC Ext	17.529	9.100	10.547	1.000	1.000	1.000	20.99	70.50	0.600	3	1	
Horz2	L2.5x2x3/16	SAU	2.5X2X0.1875	33.0	76.24	Tens 53.87	g79X	-4.902	NESC Ext	20.749	9.100	10.547	1.000	1.000	1.000	56.21	88.10	2.000	3	1	
ARM	**CH5x6.7**	**Ch**	**C5x6.7**	**33.0**	**80.04**	**Comp 80.04**	**g84P**	**-14.568**	**NESC Hea**	**34.709**	**18.200**	**21.375**	**1.000**	**1.000**	**1.000**	**117.20**	**118.60**	**4.776**	**3**	**2**	**A potentially damaging moment exists in the following members (make sure your system is well triangulated to minimize moments): g80P g80X g80XY g80Y g81P g81Y g82P g82X g82XY g82Y g83P g83Y g84P g84X g84XY g84Y g85P g85Y ??**
InnBrace	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	45.57	Tens 20.72	g93P	-1.885	NESC Hea	13.392	9.100	10.547	1.000	1.000	1.000	98.95	109.48	2.828	3	1	
Horz3	CH7x9.8	Ch	C7x9.8	33.0	36.11	Tens 19.50	g96X	-5.325	NESC Ext	39.583	27.300	35.437	1.000	1.000	1.000	48.73	84.37	2.347	3	3	
Diag3R	L2x2x1/4	SAE	2X2X0.25	36.0	0.00	0.00		0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.000	0	0	

Group Summary (Tension Portion):

Group No.	Group Label	Angle Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Usage Control	Max Cont-rol Tens. %	Tension In Member	Tension Force (kips)	Tension Control Load Case	Net Section Capacity (kips)	Tension Connect. Shear Capacity (kips)	Tension Connect. Bearing Capacity (kips)	Tension Connect. Rupture Capacity (kips)	Length Tens. Member (ft)	No. Of Bolts	Hole Diameter (in)
Leg1	**L2.5x2.5x1/4**	**SAE**	**2.5X2.5X0.25**	**33.0**	**15.05**	**Comp**	**12.06**	**g3XY**	**3.245NESC Ext**	**26.895**	**36.400**	**56.250**	**62.500**	**4.040**	**4**	**2.000**
0.75 A potentially damaging moment exists in the following members (make sure your system is well triangulated to minimize moments): g3P g3X g3XY g3Y ??																		
Leg2	**L4x4x1/4**	**SAE**	**4X4X0.25**	**33.0**	**99.08**	**Comp**	**94.23**	**g14X**	**49.634NESC Ext**	**52.676**	**100.800**	**84.375**	**93.750**	**4.010**	**6**	**2.000**		
0.6875 A potentially damaging moment exists in the following members (make sure your system is well triangulated to minimize moments): g4P g4X g4XY g4Y g5P g5X g5XY g5Y g6P g6X g6XY g6Y g78P g78X g78XY g78Y g12P g12X g12XY g12Y ??																		
Leg3	L4x4x5/16	SAE	4X4X0.3125	33.0	99.43	Comp	95.39	g18X	60.790NESC Ext	63.731	91.000	175.781	195.312	5.012	10	2.000		
0.75																		
Leg4	L4x4x3/8	SAE	4X4X0.375	33.0	96.31	Comp	92.43	g22X	70.079NESC Ext	75.817	91.000	210.937	220.588	5.012	10	2.000		
0.75																		
Leg5	L5x5x5/16	SAE	5X5X0.3125	33.0	88.06	Comp	87.79	g24X	74.201NESC Ext	84.521	91.000	175.781	195.312	5.012	10	2.000		
0.75																		
Diag1	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	25.16	Tens	25.16	g25P	1.645NESC Ext	14.237	9.100	10.547	6.539	3.146	1	1.000		
0.75																		
Diag2	L2x1.5x1/4	SAU	2X1.5X0.25	33.0	86.57	Cross	65.60	g87XY	11.940NESC Hea	18.488	18.200	28.125	25.000	4.697	2	1.000		
0.75																		
Diag3	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	94.54	Comp	86.95	g50X	7.030NESC Ext	14.237	9.100	10.547	8.086	4.124	1	1.000		
0.75																		
Horz1	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	9.25	Tens	9.25	g89Y	0.605NESC Hea	14.237	9.100	10.547	6.539	1.200	1	1.000		
0.75																		
Horz2	L2.5x2x3/16	SAU	2.5X2X0.1875	33.0	76.24	Tens	76.24	g79P	5.575NESC Ext	17.096	9.100	10.547	7.312	2.000	1	1.000		
0.75																		
ARM	**CH5x6.7**	**Ch**	**C5x6.7**	**33.0**	**80.04**	**Comp**	**73.99**	**g84Y**	**13.465NESC Hea**	**50.044**	**18.200**	**21.375**	**21.375**	**4.776**	**2**	**2.000**		
0.75 A potentially damaging moment exists in the following members (make sure your system is well triangulated to minimize moments): g80P g80X g80XY g80Y g81P g81Y g82P g82X g82XY g82Y g83P g83Y g84P g84X g84XY g84Y g85P g85Y ??																		
InnBrace	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	45.57	Tens	45.57	g93X	2.980NESC Hea	14.237	9.100	10.547	6.539	2.828	1	1.000		
0.75																		
Horz3	CH7x9.8	Ch	C7x9.8	33.0	36.11	Tens	36.11	g95P	5.687NESC Ext	71.206	27.300	35.437	15.750	2.000	3	3.000		
0.75																		
Diag3R	L2x2x1/4	SAE	2X2X0.25	36.0	0.00		0.00		0.000		0.000	0.000	0.000	0.000	0	0.000		
0																		

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Usage %	Element Label	Element Type
NESC Heavy	94.54	g50Y	Angle
NESC Extreme	99.43	g16Y	Angle

Summary of Insulator Usages:

Insulator Label	Insulator Type	Maximum Usage %	Load Case	Weight (lbs)
1	Clamp	6.04	NESC Heavy	0.0
2	Clamp	6.14	NESC Heavy	0.0
3	Clamp	7.42	NESC Heavy	0.0
4	Clamp	7.84	NESC Heavy	0.0
5	Clamp	7.14	NESC Heavy	0.0
6	Clamp	14.33	NESC Heavy	0.0
9	Clamp	0.19	NESC Extreme	0.0
10	Clamp	0.26	NESC Heavy	0.0
12	Clamp	0.27	NESC Heavy	0.0
13	Clamp	0.21	NESC Extreme	0.0
14	Clamp	0.28	NESC Heavy	0.0
15	Clamp	0.30	NESC Extreme	0.0
16	Clamp	0.30	NESC Heavy	0.0
17	Clamp	0.31	NESC Heavy	0.0
18	Clamp	0.35	NESC Heavy	0.0
19	Clamp	2.37	NESC Heavy	0.0
20	Clamp	0.78	NESC Extreme	0.0
21	Clamp	0.78	NESC Extreme	0.0
22	Clamp	0.78	NESC Extreme	0.0
23	Clamp	0.42	NESC Extreme	0.0
24	Clamp	0.87	NESC Heavy	0.0
25	Clamp	0.86	NESC Heavy	0.0
26	Clamp	0.69	NESC Extreme	0.0
27	Clamp	0.88	NESC Heavy	0.0
28	Clamp	0.89	NESC Heavy	0.0
29	Clamp	0.89	NESC Heavy	0.0
30	Clamp	0.90	NESC Heavy	0.0
31	Clamp	0.93	NESC Heavy	0.0

*** Weight of structure (lbs):
Weight of Angles*Section DLF: 5535.7
Total: 5535.7

*** End of Report

```
*****************************************************************************
*                                                                           *
* TOWER - Analysis and Design -  Copyright Power Line Systems, Inc. 1986-2011 *
*                                                                           *
*****************************************************************************

Project Name : 20020.02 - Darien, CT
Project Notes: Structure # 1182 / AT&T 5011
Project File : J:\Jobs\2002000.SI\02_CT5011 Darien-Noroton Heights\Structural\Backup Documentation\Calcs\Rev (2)\PLS Tower\darien - 1182
reinforced.tow
Date run     : 3:45:02 PM Monday, March 29, 2021
by           : Tower Version 12.50
Licensed to  : Centek Engineering Inc

Successfully performed nonlinear analysis

Member "g80P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g80X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g80XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g80Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g81P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g81Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g82P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g82X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g82XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g82Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g83P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g83Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g84P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g84X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g84XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g84Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g85P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g85Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g94P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g94X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
Member "g95P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge
and spacing distances will be checked. ??
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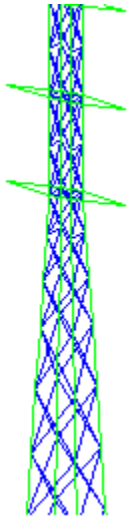
Member "g95X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g96P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
Member "g96X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
The model has 24 warnings. ??



Nonlinear convergence parameters: Use Standard Parameters
Member check option: ASCE 10
Connection rupture check: ASCE 10
Crossing diagonal check: ASCE 10 [Alternate Unsupported RLOUT = 1]
Included angle check: None
Climbing load check: None
Redundant members checked with: Actual Force

Joints Geometry:

Joint Label	Symmetry Code	X Coord. (ft)	Y Coord. (ft)	Z Coord. (ft)	X Disp. Rest.	Y Disp. Rest.	Z Disp. Rest.	X Rot. Rest.	Y Rot. Rest.	Z Rot. Rest.
1P	None	0	0	90	Free	Free	Free	Free	Free	Free
4P	XY-Symmetry	1	1	80	Free	Free	Free	Free	Free	Free
5P	XY-Symmetry	1	1	75.75	Free	Free	Free	Free	Free	Free
6P	XY-Symmetry	1	1	71.5	Free	Free	Free	Free	Free	Free
7P	XY-Symmetry	1	1	67.25	Free	Free	Free	Free	Free	Free
12P	XY-Symmetry	1	1	63	Free	Free	Free	Free	Free	Free
13P	XY-Symmetry	4.125	4.125	0	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
26P	X-Symmetry	0	5.67	80	Free	Free	Free	Free	Free	Free
27P	X-Symmetry	0	5.67	71.5	Free	Free	Free	Free	Free	Free
28P	X-Symmetry	0	5.67	63	Free	Free	Free	Free	Free	Free
4X	X-GenXY	1	-1	80	Free	Free	Free	Free	Free	Free
4XY	XY-GenXY	-1	-1	80	Free	Free	Free	Free	Free	Free
4Y	Y-GenXY	-1	1	80	Free	Free	Free	Free	Free	Free
5X	X-GenXY	1	-1	75.75	Free	Free	Free	Free	Free	Free

5XY	XY-GenXY	-1	-1	75.75	Free	Free	Free	Free	Free	Free
5Y	Y-GenXY	-1	1	75.75	Free	Free	Free	Free	Free	Free
6X	X-GenXY	1	-1	71.5	Free	Free	Free	Free	Free	Free
6XY	XY-GenXY	-1	-1	71.5	Free	Free	Free	Free	Free	Free
6Y	Y-GenXY	-1	1	71.5	Free	Free	Free	Free	Free	Free
7X	X-GenXY	1	-1	67.25	Free	Free	Free	Free	Free	Free
7XY	XY-GenXY	-1	-1	67.25	Free	Free	Free	Free	Free	Free
7Y	Y-GenXY	-1	1	67.25	Free	Free	Free	Free	Free	Free
12X	X-GenXY	1	-1	63	Free	Free	Free	Free	Free	Free
12XY	XY-GenXY	-1	-1	63	Free	Free	Free	Free	Free	Free
12Y	Y-GenXY	-1	1	63	Free	Free	Free	Free	Free	Free
13X	X-GenXY	4.125	-4.125	0	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
13XY	XY-GenXY	-4.125	-4.125	0	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
13Y	Y-GenXY	-4.125	4.125	0	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
26X	X-Gen	0	-5.67	80	Free	Free	Free	Free	Free	Free
27X	X-Gen	0	-5.67	71.5	Free	Free	Free	Free	Free	Free
28X	X-Gen	0	-5.67	63	Free	Free	Free	Free	Free	Free

Secondary Joints:

Joint Label	Symmetry Code	Origin Joint	End Joint	Fraction	Elevation X (ft)	Disp. Y Rest.	Disp. Z Rest.	Disp. X Rot. Rest.	Rot. Y Rest.	Rot. Z Rest.
2S	XY-Symmetry	1P	4P	0	87	Free	Free	Free	Free	Free	Free
3S	XY-Symmetry	1P	4P	0	84	Free	Free	Free	Free	Free	Free
14S	XY-Symmetry	12P	13P	0	59.5	Free	Free	Free	Free	Free	Free
15S	XY-Symmetry	12P	13P	0	55.5	Free	Free	Free	Free	Free	Free
16S	XY-Symmetry	12P	13P	0	51.5	Free	Free	Free	Free	Free	Free
17S	XY-Symmetry	12P	13P	0	46	Free	Free	Free	Free	Free	Free
18S	XY-Symmetry	12P	13P	0	40.5	Free	Free	Free	Free	Free	Free
19S	XY-Symmetry	12P	13P	0	35	Free	Free	Free	Free	Free	Free
20S	XY-Symmetry	12P	13P	0	30	Free	Free	Free	Free	Free	Free
21S	XY-Symmetry	12P	13P	0	25	Free	Free	Free	Free	Free	Free
22S	XY-Symmetry	12P	13P	0	20	Free	Free	Free	Free	Free	Free
23S	XY-Symmetry	12P	13P	0	15	Free	Free	Free	Free	Free	Free
24S	XY-Symmetry	12P	13P	0	10	Free	Free	Free	Free	Free	Free
25S	XY-Symmetry	12P	13P	0	5	Free	Free	Free	Free	Free	Free
2X	X-GenXY	1P	4P	0	87	Free	Free	Free	Free	Free	Free
2XY	XY-GenXY	1P	4P	0	87	Free	Free	Free	Free	Free	Free
2Y	Y-GenXY	1P	4P	0	87	Free	Free	Free	Free	Free	Free
3X	X-GenXY	1P	4P	0	84	Free	Free	Free	Free	Free	Free
3XY	XY-GenXY	1P	4P	0	84	Free	Free	Free	Free	Free	Free
3Y	Y-GenXY	1P	4P	0	84	Free	Free	Free	Free	Free	Free
14X	X-GenXY	12P	13P	0	59.5	Free	Free	Free	Free	Free	Free
14XY	XY-GenXY	12P	13P	0	59.5	Free	Free	Free	Free	Free	Free
14Y	Y-GenXY	12P	13P	0	59.5	Free	Free	Free	Free	Free	Free
15X	X-GenXY	12P	13P	0	55.5	Free	Free	Free	Free	Free	Free
15XY	XY-GenXY	12P	13P	0	55.5	Free	Free	Free	Free	Free	Free
15Y	Y-GenXY	12P	13P	0	55.5	Free	Free	Free	Free	Free	Free
16X	X-GenXY	12P	13P	0	51.5	Free	Free	Free	Free	Free	Free
16XY	XY-GenXY	12P	13P	0	51.5	Free	Free	Free	Free	Free	Free
16Y	Y-GenXY	12P	13P	0	51.5	Free	Free	Free	Free	Free	Free
17X	X-GenXY	12P	13P	0	46	Free	Free	Free	Free	Free	Free
17XY	XY-GenXY	12P	13P	0	46	Free	Free	Free	Free	Free	Free
17Y	Y-GenXY	12P	13P	0	46	Free	Free	Free	Free	Free	Free
18X	X-GenXY	12P	13P	0	40.5	Free	Free	Free	Free	Free	Free
18XY	XY-GenXY	12P	13P	0	40.5	Free	Free	Free	Free	Free	Free
18Y	Y-GenXY	12P	13P	0	40.5	Free	Free	Free	Free	Free	Free

19X	X-GenXY	12P	13P	0	35	Free	Free	Free	Free	Free	Free
19XY	XY-GenXY	12P	13P	0	35	Free	Free	Free	Free	Free	Free
19Y	Y-GenXY	12P	13P	0	35	Free	Free	Free	Free	Free	Free
20X	X-GenXY	12P	13P	0	30	Free	Free	Free	Free	Free	Free
20XY	XY-GenXY	12P	13P	0	30	Free	Free	Free	Free	Free	Free
20Y	Y-GenXY	12P	13P	0	30	Free	Free	Free	Free	Free	Free
21X	X-GenXY	12P	13P	0	25	Free	Free	Free	Free	Free	Free
21XY	XY-GenXY	12P	13P	0	25	Free	Free	Free	Free	Free	Free
21Y	Y-GenXY	12P	13P	0	25	Free	Free	Free	Free	Free	Free
22X	X-GenXY	12P	13P	0	20	Free	Free	Free	Free	Free	Free
22XY	XY-GenXY	12P	13P	0	20	Free	Free	Free	Free	Free	Free
22Y	Y-GenXY	12P	13P	0	20	Free	Free	Free	Free	Free	Free
23X	X-GenXY	12P	13P	0	15	Free	Free	Free	Free	Free	Free
23XY	XY-GenXY	12P	13P	0	15	Free	Free	Free	Free	Free	Free
23Y	Y-GenXY	12P	13P	0	15	Free	Free	Free	Free	Free	Free
24X	X-GenXY	12P	13P	0	10	Free	Free	Free	Free	Free	Free
24XY	XY-GenXY	12P	13P	0	10	Free	Free	Free	Free	Free	Free
24Y	Y-GenXY	12P	13P	0	10	Free	Free	Free	Free	Free	Free
25X	X-GenXY	12P	13P	0	5	Free	Free	Free	Free	Free	Free
25XY	XY-GenXY	12P	13P	0	5	Free	Free	Free	Free	Free	Free
25Y	Y-GenXY	12P	13P	0	5	Free	Free	Free	Free	Free	Free

The model contains 31 primary and 56 secondary joints for a total of 87 joints.

Steel Material Properties:

Steel Material Label	Modulus of Elasticity (ksi)	Yield Stress Fy (ksi)	Ultimate Stress Fu (ksi)	Member Stress All. Hyp. 1 (ksi)	Member Stress All. Hyp. 2 (ksi)	Member Rupture Hyp. 1 (ksi)	Member Rupture Hyp. 2 (ksi)	Member Bearing Hyp. 1 (ksi)	Member Bearing Hyp. 2 (ksi)
A 36	2.9e+004	36	58	0	0	0	0	0	0
A7	2.9e+004	33	60	0	0	0	0	0	0

Bolt Properties:

Bolt Label	Bolt Diameter (in)	Hole Diameter (in)	Ultimate Shear Capacity (kips)	Default End Distance (in)	Default Bolt Spacing (in)	Shear Capacity Hyp. 1 (kips)	Shear Capacity Hyp. 2 (kips)
5/8 A394	0.625	0.75	9.1	1.125	1.5	0	0
5/8 A325	0.625	0.6875	16.8	1.25	1.5	0	0

Number Bolts Used By Type:

Bolt Type	Number Bolts
5/8 A394	386
5/8 A325	24

Angle Properties:

Angle Type	Angle Size	Long Leg (in)	Short Leg (in)	Thick. (in)	Unit Weight (lbs/ft)	Gross Area (in^2)	w/t Ratio	Radius of Gyration Rx (in)	Radius of Gyration Ry (in)	Radius of Gyration Rz (in)	Number of Angles	Wind Width (in)	Short Edge Dist. (in)	Long Edge Dist. (in)	Optimize Cost Factor	Section Modulus (in^3)

SAE	5X5X0.3125	5	5	0.3125	10.3	3.03	13.4	1.57	1.57	0.994	1	5	2.5	0	1.0000	0
SAE	4X4X0.375	4	4	0.375	9.8	2.86	8.67	1.23	1.23	0.788	1	4	2	0	1.0000	0
SAE	4X4X0.3125	4	4	0.3125	8.2	2.4	10.6	1.24	1.24	0.791	1	4	2	0	1.0000	0
SAE	4X4X0.25	4	4	0.25	6.6	1.94	13.5	1.25	1.25	0.795	1	4	2	0	1.0000	0
SAE	2.5X2.5X0.25	2.5	2.5	0.25	4.1	1.19	7.75	0.769	0.769	0.491	1	2.5	1.25	0	1.0000	0
SAE	2X2X0.25	2	2	0.25	3.19	0.94	5	0.609	0.609	0.391	1	2	1	0	1.0000	0
SAE	1.75X1.75X0.1875	1.75	1.75	0.1875	2.12	0.62	6	0.537	0.537	0.343	1	1.75	0.875	0	1.0000	0
SAU	2.5X2X0.1875	2.5	2	0.1875	2.75	0.81	10.67	0.793	0.6	0.427	1	2.5	1	0	1.0000	0
SAU	2X1.5X0.25	2	1.5	0.25	2.77	0.81	6	0.623	0.432	0.32	1	2	0.75	0	1.0000	0
Ch	C5x6.7	5	1.75	0.19	6.7	1.97	18.42	0.489	1.95	0.489	1	5	0	0	1.0000	0
Ch	C7x9.8	7	2.09	0.21	9.8	2.87	25	0.578	2.72	0.578	1	7	0	0	1.0000	0

Angle Groups:

Group Label	Group Description	Angle Type	Angle Size	Material Type	Element Type	Group Type	Optimize Group	Allow. Add. Angle Width For Optimize (in)
Leg1	L2.5x2.5x1/4	SAE	2.5X2.5X0.25	A7	Beam	Leg	None	0.000
Leg2	L4x4x1/4	SAE	4X4X0.25	A7	Beam	Leg	None	0.000
Leg3	L4x4x5/16	SAE	4X4X0.3125	A7	Beam	Leg	None	0.000
Leg4	L4x4x3/8	SAE	4X4X0.375	A7	Beam	Leg	None	0.000
Leg5	L5x5x5/16	SAE	5X5X0.3125	A7	Beam	Leg	None	0.000
Diag1	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	A7	Truss	Other	None	0.000
Diag2	L2x1.5x1/4	SAU	2X1.5X0.25	A7	Truss	Crossing Diagonal	None	0.000
Diag3	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	A7	Truss	Crossing Diagonal	None	0.000
Horz1	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	A7	Truss	Other	None	0.000
Horz2	L2.5x2x3/16	SAU	2.5X2X0.1875	A7	Truss	Other	None	0.000
ARM	CH5x6.7	Ch	C5x6.7	A7	Beam	Other	None	0.000
InnBrace	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	A7	Truss	Other	None	0.000
Horz3	CH7x9.8	Ch	C7x9.8	A7	Truss	Other	None	0.000
Diag3R	L2x2x1/4	SAE	2X2X0.25	A 36	Truss	Crossing Diagonal	None	0.000

Aggregate Angle Information:

Note: Estimate of surface area reported for painting purposes, not wind loading.

Angle Type	Angle Size	Material Type	Total Length (ft)	Total Surface Area (ft^2)	Total Weight (lbs)
SAE	2.5X2.5X0.25	A7	40.40	33.67	165.63
SAE	4X4X0.25	A7	114.11	152.15	753.15
SAE	4X4X0.3125	A7	86.21	114.95	706.93
SAE	4X4X0.375	A7	80.20	106.93	785.93
SAE	5X5X0.3125	A7	40.10	66.83	413.01
SAE	1.75X1.75X0.1875	A7	789.11	460.31	1672.90
SAU	2X1.5X0.25	A7	150.31	87.68	416.35
SAU	2.5X2X0.1875	A7	12.00	9.00	33.00
Ch	C5x6.7	A7	69.31	77.97	464.38
Ch	C7x9.8	A7	12.69	19.23	124.41

Sections:
The adjustment factors below only apply to dead load and wind areas that are calculated for members in the model.
They do not apply to equipment or to manually input dead load and drag areas.

Section	Joint	Dead	Transverse	Longitudinal	Transverse	Longitudinal	Af Flat Ar Round	Transverse	Longitudinal	SAPS Angle	SAPS Round Force

Label	Defining Section Bottom	Load Adjust. Factor	Drag x Area Factor For Face	Drag x Area Factor For Face	Area Factor (CD From Code)	Area Factor (CD From Code)	Factor For Face EIA Only	Factor For Face EIA Only	Drag x Area Factor For All	Drag x Area Factor For All	Drag x Area Factor	Drag x Area Factor	Solid Face
1	14X	1.000	3.200	3.200	1.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	None
2	18X	1.000	3.200	3.200	1.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	None
3	13X	1.000	3.200	3.200	1.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	None

Angle Member Connectivity:

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ	Bolt Type	# Bolts	# Bolt Holes	# Shear Planes	Connect Leg	Short Edge Dist. (in)	Long Edge Dist. (in)	End Dist. (in)	Bolt Spacing (in)	Shear Path Length (in)	Tension Path Length (in)	Rest. Coef.
g1P	Leg1		XY-Symmetry	1P	2S	1	4	1	1	1	5/8 A394	0	2	0		0	0	0	0	0	0	0
g1X	Leg1		X-GenXY	1P	2X	1	4	1	1	1	5/8 A394	0	2	0		0	0	0	0	0	0	0
g1XY	Leg1		XY-GenXY	1P	2XY	1	4	1	1	1	5/8 A394	0	2	0		0	0	0	0	0	0	0
g1Y	Leg1		Y-GenXY	1P	2Y	1	4	1	1	1	5/8 A394	0	2	0		0	0	0	0	0	0	0
g2P	Leg1		XY-Symmetry	2S	3S	1	4	1	1	1	5/8 A394	0	2	0		0	0	0	0	0	0	0
g2X	Leg1		X-GenXY	2X	3X	1	4	1	1	1	5/8 A394	0	2	0		0	0	0	0	0	0	0
g2XY	Leg1		XY-GenXY	2XY	3XY	1	4	1	1	1	5/8 A394	0	2	0		0	0	0	0	0	0	0
g2Y	Leg1		Y-GenXY	2Y	3Y	1	4	1	1	1	5/8 A394	0	2	0		0	0	0	0	0	0	0
g3P	Leg1		XY-Symmetry	3S	4P	1	4	1	1	1	5/8 A394	4	2	1	Both	1.15625	0	1.25	3	0	0	0
g3X	Leg1		X-GenXY	3X	4X	1	4	1	1	1	5/8 A394	4	2	1	Both	1.15625	0	1.25	3	0	0	0
g3XY	Leg1		XY-GenXY	3XY	4XY	1	4	1	1	1	5/8 A394	4	2	1	Both	1.15625	0	1.25	3	0	0	0
g3Y	Leg1		Y-GenXY	3Y	4Y	1	4	1	1	1	5/8 A394	4	2	1	Both	1.15625	0	1.25	3	0	0	0
g4P	Leg2		XY-Symmetry	4P	5P	1	4	1	1	1	5/8 A394	0	2	0		0	0	0	0	0	0	0
g4X	Leg2		X-GenXY	4X	5X	1	4	1	1	1	5/8 A394	0	2	0		0	0	0	0	0	0	0
g4XY	Leg2		XY-GenXY	4XY	5XY	1	4	1	1	1	5/8 A394	0	2	0		0	0	0	0	0	0	0
g4Y	Leg2		Y-GenXY	4Y	5Y	1	4	1	1	1	5/8 A394	0	2	0		0	0	0	0	0	0	0
g5P	Leg2		XY-Symmetry	5P	6P	1	4	1	1	1	5/8 A394	0	2	0		0	0	0	0	0	0	0
g5X	Leg2		X-GenXY	5X	6X	1	4	1	1	1	5/8 A394	0	2	0		0	0	0	0	0	0	0
g5XY	Leg2		XY-GenXY	5XY	6XY	1	4	1	1	1	5/8 A394	0	2	0		0	0	0	0	0	0	0
g5Y	Leg2		Y-GenXY	5Y	6Y	1	4	1	1	1	5/8 A394	0	2	0		0	0	0	0	0	0	0

0	0	0																		
	g6P	Leg2	XY-Symmetry	6P	7P	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0
0	0	0																		
	g6X	Leg2	X-GenXY	6X	7X	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0
0	0	0																		
	g6XY	Leg2	XY-GenXY	6XY	7XY	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0
0	0	0																		
	g6Y	Leg2	Y-GenXY	6Y	7Y	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0
0	0	0																		
	g78P	Leg2	XY-Symmetry	7P	12P	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0
0	0	0																		
	g78X	Leg2	X-GenXY	7X	12X	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0
0	0	0																		
	g78XY	Leg2	XY-GenXY	7XY	12XY	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0
0	0	0																		
	g78Y	Leg2	Y-GenXY	7Y	12Y	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0
0	0	0																		
	g12P	Leg2	XY-Symmetry	12P	14S	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0
0	0	0																		
	g12X	Leg2	X-GenXY	12X	14X	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0
0	0	0																		
	g12XY	Leg2	XY-GenXY	12XY	14XY	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0
0	0	0																		
	g12Y	Leg2	Y-GenXY	12Y	14Y	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0
0	0	0																		
	g13P	Leg2	XY-Symmetry	14S	15S	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0
0	0	0																		
	g13X	Leg2	X-GenXY	14X	15X	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0
0	0	0																		
	g13XY	Leg2	XY-GenXY	14XY	15XY	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0
0	0	0																		
	g13Y	Leg2	Y-GenXY	14Y	15Y	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0
0	0	0																		
	g14P	Leg2	XY-Symmetry	15S	16S	1	4	1	1	1	5/8	A325	6	2	1	Both	1.75	0	1.25	4
0	0	0																		
	g14X	Leg2	X-GenXY	15X	16X	1	4	1	1	1	5/8	A325	6	2	1	Both	1.75	0	1.25	4
0	0	0																		
	g14XY	Leg2	XY-GenXY	15XY	16XY	1	4	1	1	1	5/8	A325	6	2	1	Both	1.75	0	1.25	4
0	0	0																		
	g14Y	Leg2	Y-GenXY	15Y	16Y	1	4	1	1	1	5/8	A325	6	2	1	Both	1.75	0	1.25	4
0	0	0																		
	g15P	Leg3	XY-Symmetry	16S	17S	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0
0	0	0																		
	g15X	Leg3	X-GenXY	16X	17X	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0
0	0	0																		
	g15XY	Leg3	XY-GenXY	16XY	17XY	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0
0	0	0																		
	g15Y	Leg3	Y-GenXY	16Y	17Y	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0
0	0	0																		
	g16P	Leg3	XY-Symmetry	17S	18S	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0
0	0	0																		
	g16X	Leg3	X-GenXY	17X	18X	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0
0	0	0																		
	g16XY	Leg3	XY-GenXY	17XY	18XY	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0
0	0	0																		
	g16Y	Leg3	Y-GenXY	17Y	18Y	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0
0	0	0																		
	g17P	Leg3	XY-Symmetry	18S	19S	1	4	0.5	0.5	0.5	5/8	A394	0	2	0		0	0	0	0
0	0	0																		

g17X	Leg3	X-GenXY	18X	19X	1	4	0.5	0.5	0.5	5/8	A394	0	2	0		0	0	0	0	0	0
g17XY	Leg3	XY-GenXY	18XY	19XY	1	4	0.5	0.5	0.5	5/8	A394	0	2	0		0	0	0	0	0	0
g17Y	Leg3	Y-GenXY	18Y	19Y	1	4	0.5	0.5	0.5	5/8	A394	0	2	0		0	0	0	0	0	0
g18P	Leg3	XY-Symmetry	19S	20S	1	4	0.5	0.5	0.5	5/8	A394	10	2	1	Both	1.375	0	1.25	2.25	0	0
g18X	Leg3	X-GenXY	19X	20X	1	4	0.5	0.5	0.5	5/8	A394	10	2	1	Both	1.375	0	1.25	2.25	0	0
g18XY	Leg3	XY-GenXY	19XY	20XY	1	4	0.5	0.5	0.5	5/8	A394	10	2	1	Both	1.375	0	1.25	2.25	0	0
g18Y	Leg3	Y-GenXY	19Y	20Y	1	4	0.5	0.5	0.5	5/8	A394	10	2	1	Both	1.375	0	1.25	2.25	0	0
g19P	Leg4	XY-Symmetry	20S	21S	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0	0	0
g19X	Leg4	X-GenXY	20X	21X	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0	0	0
g19XY	Leg4	XY-GenXY	20XY	21XY	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0	0	0
g19Y	Leg4	Y-GenXY	20Y	21Y	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0	0	0
g20P	Leg4	XY-Symmetry	21S	22S	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0	0	0
g20X	Leg4	X-GenXY	21X	22X	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0	0	0
g20XY	Leg4	XY-GenXY	21XY	22XY	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0	0	0
g20Y	Leg4	Y-GenXY	21Y	22Y	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0	0	0
g21P	Leg4	XY-Symmetry	22S	23S	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0	0	0
g21X	Leg4	X-GenXY	22X	23X	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0	0	0
g21XY	Leg4	XY-GenXY	22XY	23XY	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0	0	0
g21Y	Leg4	Y-GenXY	22Y	23Y	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0	0	0
g22P	Leg4	XY-Symmetry	23S	24S	1	4	1	1	1	5/8	A394	10	2	1	Both	1	0	1.25	2.5	0	0
g22X	Leg4	X-GenXY	23X	24X	1	4	1	1	1	5/8	A394	10	2	1	Both	1	0	1.25	2.5	0	0
g22XY	Leg4	XY-GenXY	23XY	24XY	1	4	1	1	1	5/8	A394	10	2	1	Both	1	0	1.25	2.5	0	0
g22Y	Leg4	Y-GenXY	23Y	24Y	1	4	1	1	1	5/8	A394	10	2	1	Both	1	0	1.25	2.5	0	0
g23P	Leg5	XY-Symmetry	24S	25S	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0	0	0
g23X	Leg5	X-GenXY	24X	25X	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0	0	0
g23XY	Leg5	XY-GenXY	24XY	25XY	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0	0	0
g23Y	Leg5	Y-GenXY	24Y	25Y	1	4	1	1	1	5/8	A394	0	2	0		0	0	0	0	0	0
g24P	Leg5	XY-Symmetry	25S	13P	1	4	1	1	1	5/8	A394	10	2	1	Both	1.65625	0	1.25	2.875	0	0
g24X	Leg5	X-GenXY	25X	13X	1	4	1	1	1	5/8	A394	10	2	1	Both	1.65625	0	1.25	2.875	0	0
g24XY	Leg5	XY-GenXY	25XY	13XY	1	4	1	1	1	5/8	A394	10	2	1	Both	1.65625	0	1.25	2.875		

0	0	0																			
	g24Y	Leg5	Y-GenXY	25Y	13Y	1	4	1	1	1	5/8	A394	10	2	1	Both	1.65625	0	1.25	2.875	
0	0	0																			
	g25P	Diag1	None	2S	3X	3	4	1	1	1	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g26P	Diag1	None	2X	3XY	3	4	1	1	1	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g27P	Diag1	None	2XY	3Y	3	4	1	1	1	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g28P	Diag1	None	2Y	3S	3	4	1	1	1	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g29P	Diag1	None	3S	4X	3	4	1	1	1	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g30P	Diag1	None	3X	4XY	3	4	1	1	1	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g31P	Diag1	None	3XY	4Y	3	4	1	1	1	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g32P	Diag1	None	3Y	4P	3	4	1	1	1	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g33P	Diag2	XY-Symmetry	4X	5P	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.4375	
0	0	0																			
	g33X	Diag2	X-GenXY	4P	5X	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.4375	
0	0	0																			
	g33XY	Diag2	XY-GenXY	4Y	5XY	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.4375	
0	0	0																			
	g33Y	Diag2	Y-GenXY	4XY	5Y	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.4375	
0	0	0																			
	g34P	Diag2	XY-Symmetry	4P	5Y	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.4375	
0	0	0																			
	g34X	Diag2	X-GenXY	4X	5XY	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.4375	
0	0	0																			
	g34XY	Diag2	XY-GenXY	4XY	5X	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.4375	
0	0	0																			
	g34Y	Diag2	Y-GenXY	4Y	5P	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.4375	
0	0	0																			
	g35P	Diag2	XY-Symmetry	5X	6P	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.4375	
0	0	0																			
	g35X	Diag2	X-GenXY	5P	6X	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.4375	
0	0	0																			
	g35XY	Diag2	XY-GenXY	5Y	6XY	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.4375	
0	0	0																			
	g35Y	Diag2	Y-GenXY	5XY	6Y	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.4375	
0	0	0																			
	g36P	Diag2	XY-Symmetry	5P	6Y	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.4375	
0	0	0																			
	g36X	Diag2	X-GenXY	5X	6XY	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.4375	
0	0	0																			
	g36XY	Diag2	XY-GenXY	5XY	6X	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.4375	
0	0	0																			
	g36Y	Diag2	Y-GenXY	5Y	6P	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.4375	
0	0	0																			
	g37P	Diag2	XY-Symmetry	6X	7P	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.4375	
0	0	0																			
	g37X	Diag2	X-GenXY	6P	7X	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.4375	
0	0	0																			
	g37XY	Diag2	XY-GenXY	6Y	7XY	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.4375	
0	0	0																			
	g37Y	Diag2	Y-GenXY	6XY	7Y	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.4375	
0	0	0																			

g38P	Diag2	XY-Symmetry	6P	7Y	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.4375	0	0	0
g38X	Diag2	X-GenXY	6X	7XY	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.4375	0	0	0
g38XY	Diag2	XY-GenXY	6XY	7X	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.4375	0	0	0
g38Y	Diag2	Y-GenXY	6Y	7P	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.4375	0	0	0
g86P	Diag2	XY-Symmetry	7X	12P	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.5	0	0	0
g86X	Diag2	X-GenXY	7P	12X	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.5	0	0	0
g86XY	Diag2	XY-GenXY	7Y	12XY	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.5	0	0	0
g86Y	Diag2	Y-GenXY	7XY	12Y	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	2.5	0	0	0
g87P	Diag2	XY-Symmetry	7P	12Y	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	3.6875	0	0	0
g87X	Diag2	X-GenXY	7X	12XY	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	3.6875	0	0	0
g87XY	Diag2	XY-GenXY	7XY	12X	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	3.6875	0	0	0
g87Y	Diag2	Y-GenXY	7Y	12P	2	5	0.5	0.75	0.5	5/8	A394	2	1	1	Long only	0.875	0	1	3.6875	0	0	0
g49P	Diag3	XY-Symmetry	12X	14S	2	4	0.773	0.545	0.545	5/8	A394	1	1	1	Short only	1	0	1	0	0	0	0
g49X	Diag3	X-GenXY	12P	14X	2	4	0.773	0.545	0.545	5/8	A394	1	1	1	Short only	1	0	1	0	0	0	0
g49XY	Diag3	XY-GenXY	12Y	14XY	2	4	0.773	0.545	0.545	5/8	A394	1	1	1	Short only	1	0	1	0	0	0	0
g49Y	Diag3	Y-GenXY	12XY	14Y	2	4	0.773	0.545	0.545	5/8	A394	1	1	1	Short only	1	0	1	0	0	0	0
g50P	Diag3	XY-Symmetry	12P	14Y	2	4	0.773	0.545	0.545	5/8	A394	1	1	1	Short only	1	0	1	0	0	0	0
g50X	Diag3	X-GenXY	12X	14XY	2	4	0.773	0.545	0.545	5/8	A394	1	1	1	Short only	1	0	1	0	0	0	0
g50XY	Diag3	XY-GenXY	12XY	14X	2	4	0.773	0.545	0.545	5/8	A394	1	1	1	Short only	1	0	1	0	0	0	0
g50Y	Diag3	Y-GenXY	12Y	14S	2	4	0.773	0.545	0.545	5/8	A394	1	1	1	Short only	1	0	1	0	0	0	0
g51P	Diag3	XY-Symmetry	14X	15S	2	4	0.773	0.545	0.545	5/8	A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g51X	Diag3	X-GenXY	14S	15X	2	4	0.773	0.545	0.545	5/8	A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g51XY	Diag3	XY-GenXY	14Y	15XY	2	4	0.773	0.545	0.545	5/8	A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g51Y	Diag3	Y-GenXY	14XY	15Y	2	4	0.773	0.545	0.545	5/8	A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g52P	Diag3	XY-Symmetry	14S	15Y	2	4	0.773	0.545	0.545	5/8	A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g52X	Diag3	X-GenXY	14X	15XY	2	4	0.773	0.545	0.545	5/8	A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g52XY	Diag3	XY-GenXY	14XY	15X	2	4	0.773	0.545	0.545	5/8	A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g52Y	Diag3	Y-GenXY	14Y	15S	2	4	0.773	0.545	0.545	5/8	A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g53P	Diag3	XY-Symmetry	15X	16S	2	4	0.769	0.539	0.539	5/8	A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g53X	Diag3	X-GenXY	15S	16X	2	4	0.769	0.539	0.539	5/8	A394	1	1	1	Short only	0.75	0	1	0	0	0	0

0	0	0																			
g53XY	Diag3	XY-GenXY	15Y	16XY	2	4	0.769	0.539	0.539	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g53Y	Diag3	Y-GenXY	15XY	16Y	2	4	0.769	0.539	0.539	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g54P	Diag3	XY-Symmetry	15S	16Y	2	4	0.769	0.539	0.539	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g54X	Diag3	X-GenXY	15X	16XY	2	4	0.769	0.539	0.539	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g54XY	Diag3	XY-GenXY	15XY	16X	2	4	0.769	0.539	0.539	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g54Y	Diag3	Y-GenXY	15Y	16S	2	4	0.769	0.539	0.539	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g55P	Diag3	XY-Symmetry	16X	17S	2	4	0.773	0.545	0.545	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g55X	Diag3	X-GenXY	16S	17X	2	4	0.773	0.545	0.545	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g55XY	Diag3	XY-GenXY	16Y	17XY	2	4	0.773	0.545	0.545	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g55Y	Diag3	Y-GenXY	16XY	17Y	2	4	0.773	0.545	0.545	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g56P	Diag3	XY-Symmetry	16S	17Y	2	4	0.773	0.545	0.545	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g56X	Diag3	X-GenXY	16X	17XY	2	4	0.773	0.545	0.545	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g56XY	Diag3	XY-GenXY	16XY	17X	2	4	0.773	0.545	0.545	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g56Y	Diag3	Y-GenXY	16Y	17S	2	4	0.773	0.545	0.545	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g57P	Diag3	XY-Symmetry	17X	18S	2	4	0.769	0.537	0.537	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g57X	Diag3	X-GenXY	17S	18X	2	4	0.769	0.537	0.537	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g57XY	Diag3	XY-GenXY	17Y	18XY	2	4	0.769	0.537	0.537	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g57Y	Diag3	Y-GenXY	17XY	18Y	2	4	0.769	0.537	0.537	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g58P	Diag3	XY-Symmetry	17S	18Y	2	4	0.769	0.537	0.537	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g58X	Diag3	X-GenXY	17X	18XY	2	4	0.769	0.537	0.537	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g58XY	Diag3	XY-GenXY	17XY	18X	2	4	0.769	0.537	0.537	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g58Y	Diag3	Y-GenXY	17Y	18S	2	4	0.769	0.537	0.537	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g59P	Diag3	XY-Symmetry	18X	19S	2	4	0.766	0.531	0.531	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g59X	Diag3	X-GenXY	18S	19X	2	4	0.766	0.531	0.531	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g59XY	Diag3	XY-GenXY	18Y	19XY	2	4	0.766	0.531	0.531	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g59Y	Diag3	Y-GenXY	18XY	19Y	2	4	0.766	0.531	0.531	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g60P	Diag3	XY-Symmetry	18S	19Y	2	4	0.766	0.531	0.531	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g60X	Diag3	X-GenXY	18X	19XY	2	4	0.766	0.531	0.531	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
g60XY	Diag3	XY-GenXY	18XY	19X	2	4	0.766	0.531	0.531	5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			

g60Y	Diag3	Y-GenXY	18Y	19S	2	4	0.766	0.531	0.531	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g61P	Diag3	XY-Symmetry	19X	20S	2	4	0.763	0.527	0.527	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g61X	Diag3	X-GenXY	19S	20X	2	4	0.763	0.527	0.527	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g61XY	Diag3	XY-GenXY	19Y	20XY	2	4	0.763	0.527	0.527	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g61Y	Diag3	Y-GenXY	19XY	20Y	2	4	0.763	0.527	0.527	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g62P	Diag3	XY-Symmetry	19S	20Y	2	4	0.763	0.527	0.527	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g62X	Diag3	X-GenXY	19X	20XY	2	4	0.763	0.527	0.527	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g62XY	Diag3	XY-GenXY	19XY	20X	2	4	0.763	0.527	0.527	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g62Y	Diag3	Y-GenXY	19Y	20S	2	4	0.763	0.527	0.527	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g63P	Diag3	XY-Symmetry	20X	21S	2	4	0.762	0.524	0.524	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g63X	Diag3	X-GenXY	20S	21X	2	4	0.762	0.524	0.524	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g63XY	Diag3	XY-GenXY	20Y	21XY	2	4	0.762	0.524	0.524	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g63Y	Diag3	Y-GenXY	20XY	21Y	2	4	0.762	0.524	0.524	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g64P	Diag3	XY-Symmetry	20S	21Y	2	4	0.762	0.524	0.524	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g64X	Diag3	X-GenXY	20X	21XY	2	4	0.762	0.524	0.524	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g64XY	Diag3	XY-GenXY	20XY	21X	2	4	0.762	0.524	0.524	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g64Y	Diag3	Y-GenXY	20Y	21S	2	4	0.762	0.524	0.524	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g65P	Diag3	XY-Symmetry	21X	22S	2	4	0.761	0.522	0.522	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g65X	Diag3	X-GenXY	21S	22X	2	4	0.761	0.522	0.522	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g65XY	Diag3	XY-GenXY	21Y	22XY	2	4	0.761	0.522	0.522	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g65Y	Diag3	Y-GenXY	21XY	22Y	2	4	0.761	0.522	0.522	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g66P	Diag3	XY-Symmetry	21S	22Y	2	4	0.761	0.522	0.522	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g66X	Diag3	X-GenXY	21X	22XY	2	4	0.761	0.522	0.522	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g66XY	Diag3	XY-GenXY	21XY	22X	2	4	0.761	0.522	0.522	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g66Y	Diag3	Y-GenXY	21Y	22S	2	4	0.761	0.522	0.522	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g67P	Diag3	XY-Symmetry	22X	23S	2	4	0.76	0.52	0.52	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g67X	Diag3	X-GenXY	22S	23X	2	4	0.76	0.52	0.52	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g67XY	Diag3	XY-GenXY	22Y	23XY	2	4	0.76	0.52	0.52	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g67Y	Diag3	Y-GenXY	22XY	23Y	2	4	0.76	0.52	0.52	5/8 A394	1	1	1	Short only	0.75	0	1	0	0	0	0
g68P	Diag3	XY-Symmetry	22S	23Y	2	4	0.76	0.52	0.52	5/8 A394	1	1	1	Short only	0.75	0	1	0			

0	0	0																			
	g68X	Diag3	X-GenXY	22X	23XY	2	4	0.76	0.52	0.52	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g68XY	Diag3	XY-GenXY	22XY	23X	2	4	0.76	0.52	0.52	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g68Y	Diag3	Y-GenXY	22Y	23S	2	4	0.76	0.52	0.52	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g69P	Diag3	XY-Symmetry	23X	24S	2	4	0.759	0.518	0.518	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g69X	Diag3	X-GenXY	23S	24X	2	4	0.759	0.518	0.518	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g69XY	Diag3	XY-GenXY	23Y	24XY	2	4	0.759	0.518	0.518	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g69Y	Diag3	Y-GenXY	23XY	24Y	2	4	0.759	0.518	0.518	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g70P	Diag3	XY-Symmetry	23S	24Y	2	4	0.759	0.518	0.518	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g70X	Diag3	X-GenXY	23X	24XY	2	4	0.759	0.518	0.518	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g70XY	Diag3	XY-GenXY	23XY	24X	2	4	0.759	0.518	0.518	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g70Y	Diag3	Y-GenXY	23Y	24S	2	4	0.759	0.518	0.518	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g71P	Diag3	XY-Symmetry	24X	25S	2	4	0.758	0.517	0.517	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g71X	Diag3	X-GenXY	24S	25X	2	4	0.758	0.517	0.517	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g71XY	Diag3	XY-GenXY	24Y	25XY	2	4	0.758	0.517	0.517	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g71Y	Diag3	Y-GenXY	24XY	25Y	2	4	0.758	0.517	0.517	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g72P	Diag3	XY-Symmetry	24S	25Y	2	4	0.758	0.517	0.517	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g72X	Diag3	X-GenXY	24X	25XY	2	4	0.758	0.517	0.517	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g72XY	Diag3	XY-GenXY	24XY	25X	2	4	0.758	0.517	0.517	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g72Y	Diag3	Y-GenXY	24Y	25S	2	4	0.758	0.517	0.517	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g73P	Diag3	XY-Symmetry	25X	13P	2	4	0.758	0.517	0.517	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g73X	Diag3	X-GenXY	25S	13X	2	4	0.758	0.517	0.517	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g73XY	Diag3	XY-GenXY	25Y	13XY	2	4	0.758	0.517	0.517	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g73Y	Diag3	Y-GenXY	25XY	13Y	2	4	0.758	0.517	0.517	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g74P	Diag3	XY-Symmetry	25S	13Y	2	4	0.758	0.517	0.517	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g74X	Diag3	X-GenXY	25X	13XY	2	4	0.758	0.517	0.517	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g74XY	Diag3	XY-GenXY	25XY	13X	2	4	0.758	0.517	0.517	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g74Y	Diag3	Y-GenXY	25Y	13P	2	4	0.758	0.517	0.517	5/8	A394	1	1	1	Short only	0.75	0	1	0	
0	0	0																			
	g75P	Horz2	X-Symmetry	4P	4Y	3	4	1	1	1	5/8	A394	1	1	1	Short only	0.875	0	1	0	
0	0	0																			
	g75X	Horz2	X-Gen	4X	4XY	3	4	1	1	1	5/8	A394	1	1	1	Short only	0.875	0	1	0	
0	0	0																			

g76P	Horz2	X-Symmetry	6P	6Y	3	4	1	1	1	5/8	A394	1	1	1	Short only	0.875	0	1	0	0	0
g76X	Horz2	X-Gen	6X	6XY	3	4	1	1	1	5/8	A394	1	1	1	Short only	0.875	0	1	0	0	0
g79P	Horz2	X-Symmetry	12P	12Y	3	4	1	1	1	5/8	A394	1	1	1	Short only	0.875	0	1	0	0	0
g79X	Horz2	X-Gen	12X	12XY	3	4	1	1	1	5/8	A394	1	1	1	Short only	0.875	0	1	0	0	0
g80P	ARM	XY-Symmetry	26X	4X	3	5	1	1	1	5/8	A394	2	2	1	Long only	1.75	4.25	2.125	0	0	0
g80X	ARM	X-GenXY	26P	4P	3	5	1	1	1	5/8	A394	2	2	1	Long only	1.75	4.25	2.125	0	0	0
g80XY	ARM	XY-GenXY	26P	4Y	3	5	1	1	1	5/8	A394	2	2	1	Long only	1.75	4.25	2.125	0	0	0
g80Y	ARM	Y-GenXY	26X	4XY	3	5	1	1	1	5/8	A394	2	2	1	Long only	1.75	4.25	2.125	0	0	0
g81P	ARM	Y-Symmetry	4X	4P	3	5	1	1	1	5/8	A394	2	2	1	Long only	1.75	4.25	2.125	0	0	0
g81Y	ARM	Y-Gen	4XY	4Y	3	5	1	1	1	5/8	A394	2	2	1	Long only	1.75	4.25	2.125	0	0	0
g82P	ARM	XY-Symmetry	27X	6X	3	5	1	1	1	5/8	A394	2	2	1	Long only	1.75	4.25	2.125	0	0	0
g82X	ARM	X-GenXY	27P	6P	3	5	1	1	1	5/8	A394	2	2	1	Long only	1.75	4.25	2.125	0	0	0
g82XY	ARM	XY-GenXY	27P	6Y	3	5	1	1	1	5/8	A394	2	2	1	Long only	1.75	4.25	2.125	0	0	0
g82Y	ARM	Y-GenXY	27X	6XY	3	5	1	1	1	5/8	A394	2	2	1	Long only	1.75	4.25	2.125	0	0	0
g83P	ARM	Y-Symmetry	6X	6P	3	5	1	1	1	5/8	A394	2	2	1	Long only	1.75	4.25	2.125	0	0	0
g83Y	ARM	Y-Gen	6XY	6Y	3	5	1	1	1	5/8	A394	2	2	1	Long only	1.75	4.25	2.125	0	0	0
g84P	ARM	XY-Symmetry	28X	12X	3	5	1	1	1	5/8	A394	2	2	1	Long only	1.75	4.25	2.125	0	0	0
g84X	ARM	X-GenXY	28P	12P	3	5	1	1	1	5/8	A394	2	2	1	Long only	1.75	4.25	2.125	0	0	0
g84XY	ARM	XY-GenXY	28P	12Y	3	5	1	1	1	5/8	A394	2	2	1	Long only	1.75	4.25	2.125	0	0	0
g84Y	ARM	Y-GenXY	28X	12XY	3	5	1	1	1	5/8	A394	2	2	1	Long only	1.75	4.25	2.125	0	0	0
g85P	ARM	Y-Symmetry	12X	12P	3	5	1	1	1	5/8	A394	2	2	1	Long only	1.75	4.25	2.125	0	0	0
g85Y	ARM	Y-Gen	12XY	12Y	3	5	1	1	1	5/8	A394	2	2	1	Long only	1.75	4.25	2.125	0	0	0
g77P	Horz1	Y-Symmetry	2X	2S	3	4	1	1	1	5/8	A394	1	1	1	Short only	0.75	0	1	0	0	0
g77Y	Horz1	Y-Gen	2XY	2Y	3	4	1	1	1	5/8	A394	1	1	1	Short only	0.75	0	1	0	0	0
g88P	Horz1	X-Symmetry	2S	2Y	3	4	1	1	1	5/8	A394	1	1	1	Short only	0.75	0	1	0	0	0
g88X	Horz1	X-Gen	2X	2XY	3	4	1	1	1	5/8	A394	1	1	1	Short only	0.75	0	1	0	0	0
g89P	Horz1	Y-Symmetry	3X	3S	3	4	1	1	1	5/8	A394	1	1	1	Short only	0.75	0	1	0	0	0
g89Y	Horz1	Y-Gen	3XY	3Y	3	4	1	1	1	5/8	A394	1	1	1	Short only	0.75	0	1	0	0	0
g90P	Horz1	X-Symmetry	3S	3Y	3	4	1	1	1	5/8	A394	1	1	1	Short only	0.75	0	1	0	0	0
g90X	Horz1	X-Gen	3X	3XY	3	4	1	1	1	5/8	A394	1	1	1	Short only	0.75	0	1	0	0	0

0	0	0																			
	g91P	InnBrace	X-Symmetry	4X	4Y	3	4	1	1	1 5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
	g91X	InnBrace	X-Gen	4P	4XY	3	4	1	1	1 5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
	g92P	InnBrace	X-Symmetry	6X	6Y	3	4	1	1	1 5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
	g92X	InnBrace	X-Gen	6P	6XY	3	4	1	1	1 5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
	g93P	InnBrace	X-Symmetry	12X	12Y	3	4	1	1	1 5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
	g93X	InnBrace	X-Gen	12P	12XY	3	4	1	1	1 5/8	A394	1	1	1	Short only	0.75	0	1	0		
0	0	0																			
	g94P	Horz3	X-Symmetry	5P	5Y	3	5	1	1	1 5/8	A394	3	3	1	Long only	1.625	5.625	0.9375	0.875		
0	0	0																			
	g94X	Horz3	X-Gen	5X	5XY	3	5	1	1	1 5/8	A394	3	3	1	Long only	1.625	5.625	0.9375	0.875		
0	0	0																			
	g95P	Horz3	X-Symmetry	7P	7Y	3	5	1	1	1 5/8	A394	3	3	1	Long only	1.625	5.625	0.9375	0.875		
0	0	0																			
	g95X	Horz3	X-Gen	7X	7XY	3	5	1	1	1 5/8	A394	3	3	1	Long only	1.625	5.625	0.9375	0.875		
0	0	0																			
	g96P	Horz3	X-Symmetry	14S	14Y	3	5	1	1	1 5/8	A394	3	3	1	Long only	1.625	5.625	0.9375	0.875		
0	0	0																			
	g96X	Horz3	X-Gen	14X	14XY	3	5	1	1	1 5/8	A394	3	3	1	Long only	1.625	5.625	0.9375	0.875		
0	0	0																			

Member Capacities and Overrides:

Member Label	Group Label	Design Comp. Override	Comp. Control Criterion	Design Tension Override	Tension Control Criterion	L/r Length (ft)	L/r Comp. Capacity (kips)	Connection Shear Capacity (kips)	Connection Bearing Capacity (kips)	Net Section Tension Capacity (kips)	Rupture Tension Capacity (kips)	RTE End Dist. Capacity (kips)	RTE Edge Dist. Capacity (kips)	Override Comp. Capacity (kips)	Warnings or Errors
g1P	Leg1	33.063	L/r	26.895	Net Sect	74	3.03	33.063	0.000	0.000	26.895	0.000	0.000	0.000	0.000
		0.000	Automatic												
g1X	Leg1	33.063	L/r	26.895	Net Sect	74	3.03	33.063	0.000	0.000	26.895	0.000	0.000	0.000	0.000
		0.000	Automatic												
g1XY	Leg1	33.063	L/r	26.895	Net Sect	74	3.03	33.063	0.000	0.000	26.895	0.000	0.000	0.000	0.000
		0.000	Automatic												
g1Y	Leg1	33.063	L/r	26.895	Net Sect	74	3.03	33.063	0.000	0.000	26.895	0.000	0.000	0.000	0.000
		0.000	Automatic												
g2P	Leg1	33.063	L/r	26.895	Net Sect	74	3.03	33.063	0.000	0.000	26.895	0.000	0.000	0.000	0.000
		0.000	Automatic												
g2X	Leg1	33.063	L/r	26.895	Net Sect	74	3.03	33.063	0.000	0.000	26.895	0.000	0.000	0.000	0.000
		0.000	Automatic												
g2XY	Leg1	33.063	L/r	26.895	Net Sect	74	3.03	33.063	0.000	0.000	26.895	0.000	0.000	0.000	0.000
		0.000	Automatic												
g2Y	Leg1	33.063	L/r	26.895	Net Sect	74	3.03	33.063	0.000	0.000	26.895	0.000	0.000	0.000	0.000
		0.000	Automatic												

g3P	Leg1	28.236	L/r 26.895	Net Sect	99	4.04	28.236	36.400	56.250	26.895	62.500	0.000	0.000	0.000
0.000		0.000	Automatic											
g3X	Leg1	28.236	L/r 26.895	Net Sect	99	4.04	28.236	36.400	56.250	26.895	62.500	0.000	0.000	0.000
0.000		0.000	Automatic											
g3XY	Leg1	28.236	L/r 26.895	Net Sect	99	4.04	28.236	36.400	56.250	26.895	62.500	0.000	0.000	0.000
0.000		0.000	Automatic											
g3Y	Leg1	28.236	L/r 26.895	Net Sect	99	4.04	28.236	36.400	56.250	26.895	62.500	0.000	0.000	0.000
0.000		0.000	Automatic											
g4P	Leg2	56.426	L/r 51.645	Net Sect	64	4.25	56.426	0.000	0.000	51.645	0.000	0.000	0.000	0.000
0.000		0.000	Automatic											
g4X	Leg2	56.426	L/r 51.645	Net Sect	64	4.25	56.426	0.000	0.000	51.645	0.000	0.000	0.000	0.000
0.000		0.000	Automatic											
g4XY	Leg2	56.426	L/r 51.645	Net Sect	64	4.25	56.426	0.000	0.000	51.645	0.000	0.000	0.000	0.000
0.000		0.000	Automatic											
g4Y	Leg2	56.426	L/r 51.645	Net Sect	64	4.25	56.426	0.000	0.000	51.645	0.000	0.000	0.000	0.000
0.000		0.000	Automatic											
g5P	Leg2	56.426	L/r 51.645	Net Sect	64	4.25	56.426	0.000	0.000	51.645	0.000	0.000	0.000	0.000
0.000		0.000	Automatic											
g5X	Leg2	56.426	L/r 51.645	Net Sect	64	4.25	56.426	0.000	0.000	51.645	0.000	0.000	0.000	0.000
0.000		0.000	Automatic											
g5XY	Leg2	56.426	L/r 51.645	Net Sect	64	4.25	56.426	0.000	0.000	51.645	0.000	0.000	0.000	0.000
0.000		0.000	Automatic											
g5Y	Leg2	56.426	L/r 51.645	Net Sect	64	4.25	56.426	0.000	0.000	51.645	0.000	0.000	0.000	0.000
0.000		0.000	Automatic											
g6P	Leg2	56.426	L/r 51.645	Net Sect	64	4.25	56.426	0.000	0.000	51.645	0.000	0.000	0.000	0.000
0.000		0.000	Automatic											
g6X	Leg2	56.426	L/r 51.645	Net Sect	64	4.25	56.426	0.000	0.000	51.645	0.000	0.000	0.000	0.000
0.000		0.000	Automatic											
g6XY	Leg2	56.426	L/r 51.645	Net Sect	64	4.25	56.426	0.000	0.000	51.645	0.000	0.000	0.000	0.000
0.000		0.000	Automatic											
g6Y	Leg2	56.426	L/r 51.645	Net Sect	64	4.25	56.426	0.000	0.000	51.645	0.000	0.000	0.000	0.000
0.000		0.000	Automatic											
g78P	Leg2	56.426	L/r 51.645	Net Sect	64	4.25	56.426	0.000	0.000	51.645	0.000	0.000	0.000	0.000
0.000		0.000	Automatic											
g78X	Leg2	56.426	L/r 51.645	Net Sect	64	4.25	56.426	0.000	0.000	51.645	0.000	0.000	0.000	0.000
0.000		0.000	Automatic											
g78XY	Leg2	56.426	L/r 51.645	Net Sect	64	4.25	56.426	0.000	0.000	51.645	0.000	0.000	0.000	0.000
0.000		0.000	Automatic											
g78Y	Leg2	56.426	L/r 51.645	Net Sect	64	4.25	56.426	0.000	0.000	51.645	0.000	0.000	0.000	0.000
0.000		0.000	Automatic											
g12P	Leg2	58.844	L/r 51.645	Net Sect	53	3.51	58.844	0.000	0.000	51.645	0.000	0.000	0.000	0.000
0.000		0.000	Automatic											
g12X	Leg2	58.844	L/r 51.645	Net Sect	53	3.51	58.844	0.000	0.000	51.645	0.000	0.000	0.000	0.000
0.000		0.000	Automatic											
g12XY	Leg2	58.844	L/r 51.645	Net Sect	53	3.51	58.844	0.000	0.000	51.645	0.000	0.000	0.000	0.000
0.000		0.000	Automatic											
g12Y	Leg2	58.844	L/r 51.645	Net Sect	53	3.51	58.844	0.000	0.000	51.645	0.000	0.000	0.000	0.000
0.000		0.000	Automatic											
g13P	Leg2	57.260	L/r 51.645	Net Sect	61	4.01	57.260	0.000	0.000	51.645	0.000	0.000	0.000	0.000
0.000		0.000	Automatic											
g13X	Leg2	57.260	L/r 51.645	Net Sect	61	4.01	57.260	0.000	0.000	51.645	0.000	0.000	0.000	0.000
0.000		0.000	Automatic											
g13XY	Leg2	57.260	L/r 51.645	Net Sect	61	4.01	57.260	0.000	0.000	51.645	0.000	0.000	0.000	0.000
0.000		0.000	Automatic											
g13Y	Leg2	57.260	L/r 51.645	Net Sect	61	4.01	57.260	0.000	0.000	51.645	0.000	0.000	0.000	0.000
0.000		0.000	Automatic											
g14P	Leg2	57.260	L/r 52.676	Net Sect	61	4.01	57.260	100.800	84.375	52.676	93.750	0.000	0.000	0.000
0.000		0.000	Automatic											
g14X	Leg2	57.260	L/r 52.676	Net Sect	61	4.01	57.260	100.800	84.375	52.676	93.750	0.000	0.000	0.000

0.000		0.000	Automatic												
g14XY	Leg2	57.260	L/r 52.676	Net Sect	61	4.01	57.260	100.800	84.375	52.676	93.750	0.000	0.000	0.000	
0.000		0.000	Automatic												
g14Y	Leg2	57.260	L/r 52.676	Net Sect	61	4.01	57.260	100.800	84.375	52.676	93.750	0.000	0.000	0.000	
0.000		0.000	Automatic												
g15P	Leg3	63.228	L/r 63.731	Net Sect	84	5.51	63.228	0.000	0.000	63.731	0.000	0.000	0.000	0.000	
0.000		0.000	Automatic												
g15X	Leg3	63.228	L/r 63.731	Net Sect	84	5.51	63.228	0.000	0.000	63.731	0.000	0.000	0.000	0.000	
0.000		0.000	Automatic												
g15XY	Leg3	63.228	L/r 63.731	Net Sect	84	5.51	63.228	0.000	0.000	63.731	0.000	0.000	0.000	0.000	
0.000		0.000	Automatic												
g15Y	Leg3	63.228	L/r 63.731	Net Sect	84	5.51	63.228	0.000	0.000	63.731	0.000	0.000	0.000	0.000	
0.000		0.000	Automatic												
g16P	Leg3	63.228	L/r 63.731	Net Sect	84	5.51	63.228	0.000	0.000	63.731	0.000	0.000	0.000	0.000	
0.000		0.000	Automatic												
g16X	Leg3	63.228	L/r 63.731	Net Sect	84	5.51	63.228	0.000	0.000	63.731	0.000	0.000	0.000	0.000	
0.000		0.000	Automatic												
g16XY	Leg3	63.228	L/r 63.731	Net Sect	84	5.51	63.228	0.000	0.000	63.731	0.000	0.000	0.000	0.000	
0.000		0.000	Automatic												
g16Y	Leg3	63.228	L/r 63.731	Net Sect	84	5.51	63.228	0.000	0.000	63.731	0.000	0.000	0.000	0.000	
0.000		0.000	Automatic												
g17P	Leg3	75.207	L/r 63.731	Net Sect	42	5.51	75.207	0.000	0.000	63.731	0.000	0.000	0.000	0.000	
0.000		0.000	Automatic												
g17X	Leg3	75.207	L/r 63.731	Net Sect	42	5.51	75.207	0.000	0.000	63.731	0.000	0.000	0.000	0.000	
0.000		0.000	Automatic												
g17XY	Leg3	75.207	L/r 63.731	Net Sect	42	5.51	75.207	0.000	0.000	63.731	0.000	0.000	0.000	0.000	
0.000		0.000	Automatic												
g17Y	Leg3	75.207	L/r 63.731	Net Sect	42	5.51	75.207	0.000	0.000	63.731	0.000	0.000	0.000	0.000	
0.000		0.000	Automatic												
g18P	Leg3	75.900	L/r 63.731	Net Sect	38	5.01	75.900	91.000	175.781	63.731	195.312	0.000	0.000	0.000	
0.000		0.000	Automatic												
g18X	Leg3	75.900	L/r 63.731	Net Sect	38	5.01	75.900	91.000	175.781	63.731	195.312	0.000	0.000	0.000	
0.000		0.000	Automatic												
g18XY	Leg3	75.900	L/r 63.731	Net Sect	38	5.01	75.900	91.000	175.781	63.731	195.312	0.000	0.000	0.000	
0.000		0.000	Automatic												
g18Y	Leg3	75.900	L/r 63.731	Net Sect	38	5.01	75.900	91.000	175.781	63.731	195.312	0.000	0.000	0.000	
0.000		0.000	Automatic												
g19P	Leg4	78.530	L/r 75.817	Net Sect	76	5.01	78.530	0.000	0.000	75.817	0.000	0.000	0.000	0.000	
0.000		0.000	Automatic												
g19X	Leg4	78.530	L/r 75.817	Net Sect	76	5.01	78.530	0.000	0.000	75.817	0.000	0.000	0.000	0.000	
0.000		0.000	Automatic												
g19XY	Leg4	78.530	L/r 75.817	Net Sect	76	5.01	78.530	0.000	0.000	75.817	0.000	0.000	0.000	0.000	
0.000		0.000	Automatic												
g19Y	Leg4	78.530	L/r 75.817	Net Sect	76	5.01	78.530	0.000	0.000	75.817	0.000	0.000	0.000	0.000	
0.000		0.000	Automatic												
g20P	Leg4	78.530	L/r 75.817	Net Sect	76	5.01	78.530	0.000	0.000	75.817	0.000	0.000	0.000	0.000	
0.000		0.000	Automatic												
g20X	Leg4	78.530	L/r 75.817	Net Sect	76	5.01	78.530	0.000	0.000	75.817	0.000	0.000	0.000	0.000	
0.000		0.000	Automatic												
g20XY	Leg4	78.530	L/r 75.817	Net Sect	76	5.01	78.530	0.000	0.000	75.817	0.000	0.000	0.000	0.000	
0.000		0.000	Automatic												
g20Y	Leg4	78.530	L/r 75.817	Net Sect	76	5.01	78.530	0.000	0.000	75.817	0.000	0.000	0.000	0.000	
0.000		0.000	Automatic												
g21P	Leg4	78.530	L/r 75.817	Net Sect	76	5.01	78.530	0.000	0.000	75.817	0.000	0.000	0.000	0.000	
0.000		0.000	Automatic												
g21X	Leg4	78.530	L/r 75.817	Net Sect	76	5.01	78.530	0.000	0.000	75.817	0.000	0.000	0.000	0.000	
0.000		0.000	Automatic												
g21XY	Leg4	78.530	L/r 75.817	Net Sect	76	5.01	78.530	0.000	0.000	75.817	0.000	0.000	0.000	0.000	
0.000		0.000	Automatic												

g21Y	Leg4	78.530	L/r	75.817	Net Sect	76	5.01	78.530	0.000	0.000	75.817	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g22P	Leg4	78.530	L/r	75.817	Net Sect	76	5.01	78.530	91.000	210.937	75.817	220.588	0.000	0.000	0.000
0.000		0.000		Automatic											
g22X	Leg4	78.530	L/r	75.817	Net Sect	76	5.01	78.530	91.000	210.937	75.817	220.588	0.000	0.000	0.000
0.000		0.000		Automatic											
g22XY	Leg4	78.530	L/r	75.817	Net Sect	76	5.01	78.530	91.000	210.937	75.817	220.588	0.000	0.000	0.000
0.000		0.000		Automatic											
g22Y	Leg4	78.530	L/r	75.817	Net Sect	76	5.01	78.530	91.000	210.937	75.817	220.588	0.000	0.000	0.000
0.000		0.000		Automatic											
g23P	Leg5	89.437	L/r	84.521	Net Sect	61	5.01	89.437	0.000	0.000	84.521	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g23X	Leg5	89.437	L/r	84.521	Net Sect	61	5.01	89.437	0.000	0.000	84.521	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g23XY	Leg5	89.437	L/r	84.521	Net Sect	61	5.01	89.437	0.000	0.000	84.521	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g23Y	Leg5	89.437	L/r	84.521	Net Sect	61	5.01	89.437	0.000	0.000	84.521	0.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g24P	Leg5	89.437	L/r	84.521	Net Sect	61	5.01	89.437	91.000	175.781	84.521	195.312	0.000	0.000	0.000
0.000		0.000		Automatic											
g24X	Leg5	89.437	L/r	84.521	Net Sect	61	5.01	89.437	91.000	175.781	84.521	195.312	0.000	0.000	0.000
0.000		0.000		Automatic											
g24XY	Leg5	89.437	L/r	84.521	Net Sect	61	5.01	89.437	91.000	175.781	84.521	195.312	0.000	0.000	0.000
0.000		0.000		Automatic											
g24Y	Leg5	89.437	L/r	84.521	Net Sect	61	5.01	89.437	91.000	175.781	84.521	195.312	0.000	0.000	0.000
0.000		0.000		Automatic											
g25P	Diag1	9.100	Shear	6.539	Rupture	110	3.15	12.655	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g26P	Diag1	9.100	Shear	6.539	Rupture	110	3.15	12.655	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g27P	Diag1	9.100	Shear	6.539	Rupture	110	3.15	12.655	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g28P	Diag1	9.100	Shear	6.539	Rupture	110	3.15	12.655	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g29P	Diag1	7.745	L/r	6.539	Rupture	151	4.33	7.745	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g30P	Diag1	7.745	L/r	6.539	Rupture	151	4.33	7.745	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g31P	Diag1	7.745	L/r	6.539	Rupture	151	4.33	7.745	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g32P	Diag1	7.745	L/r	6.539	Rupture	151	4.33	7.745	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g33P	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	24.937	0.000	0.000	0.000
0.000		0.000		Automatic											
g33X	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	24.937	0.000	0.000	0.000
0.000		0.000		Automatic											
g33XY	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	24.937	0.000	0.000	0.000
0.000		0.000		Automatic											
g33Y	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	24.937	0.000	0.000	0.000
0.000		0.000		Automatic											
g34P	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	24.937	0.000	0.000	0.000
0.000		0.000		Automatic											
g34X	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	24.937	0.000	0.000	0.000
0.000		0.000		Automatic											
g34XY	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	24.937	0.000	0.000	0.000
0.000		0.000		Automatic											
g34Y	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	24.937	0.000	0.000	0.000
0.000		0.000		Automatic											
g35P	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	24.937	0.000	0.000	0.000

0.000		0.000		Automatic											
g35X	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	24.937	0.000	0.000	0.000
0.000		0.000		Automatic											
g35XY	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	24.937	0.000	0.000	0.000
0.000		0.000		Automatic											
g35Y	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	24.937	0.000	0.000	0.000
0.000		0.000		Automatic											
g36P	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	24.937	0.000	0.000	0.000
0.000		0.000		Automatic											
g36X	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	24.937	0.000	0.000	0.000
0.000		0.000		Automatic											
g36XY	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	24.937	0.000	0.000	0.000
0.000		0.000		Automatic											
g36Y	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	24.937	0.000	0.000	0.000
0.000		0.000		Automatic											
g37P	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	24.937	0.000	0.000	0.000
0.000		0.000		Automatic											
g37X	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	24.937	0.000	0.000	0.000
0.000		0.000		Automatic											
g37XY	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	24.937	0.000	0.000	0.000
0.000		0.000		Automatic											
g37Y	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	24.937	0.000	0.000	0.000
0.000		0.000		Automatic											
g38P	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	24.937	0.000	0.000	0.000
0.000		0.000		Automatic											
g38X	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	24.937	0.000	0.000	0.000
0.000		0.000		Automatic											
g38XY	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	24.937	0.000	0.000	0.000
0.000		0.000		Automatic											
g38Y	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	24.937	0.000	0.000	0.000
0.000		0.000		Automatic											
g86P	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	25.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g86X	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	25.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g86XY	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	25.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g86Y	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	25.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g87P	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	25.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g87X	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	25.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g87XY	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	25.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g87Y	Diag2	18.200	Shear	18.200	Shear	98	4.70	18.494	18.200	28.125	18.488	25.000	0.000	0.000	0.000
0.000		0.000		Automatic											
g49P	Diag3	9.100	Shear	8.086	Rupture	79	4.12	15.792	9.100	10.547	14.237	8.086	0.000	0.000	0.000
0.000		0.000		Automatic											
g49X	Diag3	9.100	Shear	8.086	Rupture	79	4.12	15.792	9.100	10.547	14.237	8.086	0.000	0.000	0.000
0.000		0.000		Automatic											
g49XY	Diag3	9.100	Shear	8.086	Rupture	79	4.12	15.792	9.100	10.547	14.237	8.086	0.000	0.000	0.000
0.000		0.000		Automatic											
g49Y	Diag3	9.100	Shear	8.086	Rupture	79	4.12	15.792	9.100	10.547	14.237	8.086	0.000	0.000	0.000
0.000		0.000		Automatic											
g50P	Diag3	9.100	Shear	8.086	Rupture	79	4.12	15.792	9.100	10.547	14.237	8.086	0.000	0.000	0.000
0.000		0.000		Automatic											
g50X	Diag3	9.100	Shear	8.086	Rupture	79	4.12	15.792	9.100	10.547	14.237	8.086	0.000	0.000	0.000
0.000		0.000		Automatic											

g50XY	Diag3	9.100	Shear	8.086	Rupture	79	4.12	15.792	9.100	10.547	14.237	8.086	0.000	0.000	0.000
0.000		0.000		Automatic											
g50Y	Diag3	9.100	Shear	8.086	Rupture	79	4.12	15.792	9.100	10.547	14.237	8.086	0.000	0.000	0.000
0.000		0.000		Automatic											
g51P	Diag3	9.100	Shear	6.539	Rupture	90	4.75	14.812	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g51X	Diag3	9.100	Shear	6.539	Rupture	90	4.75	14.812	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g51XY	Diag3	9.100	Shear	6.539	Rupture	90	4.75	14.812	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g51Y	Diag3	9.100	Shear	6.539	Rupture	90	4.75	14.812	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g52P	Diag3	9.100	Shear	6.539	Rupture	90	4.75	14.812	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g52X	Diag3	9.100	Shear	6.539	Rupture	90	4.75	14.812	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g52XY	Diag3	9.100	Shear	6.539	Rupture	90	4.75	14.812	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g52Y	Diag3	9.100	Shear	6.539	Rupture	90	4.75	14.812	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g53P	Diag3	9.100	Shear	6.539	Rupture	94	4.97	14.529	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g53X	Diag3	9.100	Shear	6.539	Rupture	94	4.97	14.529	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g53XY	Diag3	9.100	Shear	6.539	Rupture	94	4.97	14.529	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g53Y	Diag3	9.100	Shear	6.539	Rupture	94	4.97	14.529	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g54P	Diag3	9.100	Shear	6.539	Rupture	94	4.97	14.529	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g54X	Diag3	9.100	Shear	6.539	Rupture	94	4.97	14.529	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g54XY	Diag3	9.100	Shear	6.539	Rupture	94	4.97	14.529	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g54Y	Diag3	9.100	Shear	6.539	Rupture	94	4.97	14.529	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g55P	Diag3	9.100	Shear	6.539	Rupture	124	6.48	11.460	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g55X	Diag3	9.100	Shear	6.539	Rupture	124	6.48	11.460	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g55XY	Diag3	9.100	Shear	6.539	Rupture	124	6.48	11.460	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g55Y	Diag3	9.100	Shear	6.539	Rupture	124	6.48	11.460	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g56P	Diag3	9.100	Shear	6.539	Rupture	124	6.48	11.460	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g56X	Diag3	9.100	Shear	6.539	Rupture	124	6.48	11.460	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g56XY	Diag3	9.100	Shear	6.539	Rupture	124	6.48	11.460	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g56Y	Diag3	9.100	Shear	6.539	Rupture	124	6.48	11.460	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g57P	Diag3	9.100	Shear	6.539	Rupture	127	6.78	10.885	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g57X	Diag3	9.100	Shear	6.539	Rupture	127	6.78	10.885	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g57XY	Diag3	9.100	Shear	6.539	Rupture	127	6.78	10.885	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g57Y	Diag3	9.100	Shear	6.539	Rupture	127	6.78	10.885	9.100	10.547	14.237	6.539	0.000	0.000	0.000

0.000		0.000		Automatic											
g58P	Diag3	9.100	Shear	6.539	Rupture	127	6.78	10.885	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g58X	Diag3	9.100	Shear	6.539	Rupture	127	6.78	10.885	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g58XY	Diag3	9.100	Shear	6.539	Rupture	127	6.78	10.885	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g58Y	Diag3	9.100	Shear	6.539	Rupture	127	6.78	10.885	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g59P	Diag3	9.100	Shear	6.539	Rupture	132	7.11	10.158	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g59X	Diag3	9.100	Shear	6.539	Rupture	132	7.11	10.158	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g59XY	Diag3	9.100	Shear	6.539	Rupture	132	7.11	10.158	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g59Y	Diag3	9.100	Shear	6.539	Rupture	132	7.11	10.158	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g60P	Diag3	9.100	Shear	6.539	Rupture	132	7.11	10.158	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g60X	Diag3	9.100	Shear	6.539	Rupture	132	7.11	10.158	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g60XY	Diag3	9.100	Shear	6.539	Rupture	132	7.11	10.158	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g60Y	Diag3	9.100	Shear	6.539	Rupture	132	7.11	10.158	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g61P	Diag3	9.100	Shear	6.539	Rupture	131	7.09	10.372	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g61X	Diag3	9.100	Shear	6.539	Rupture	131	7.09	10.372	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g61XY	Diag3	9.100	Shear	6.539	Rupture	131	7.09	10.372	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g61Y	Diag3	9.100	Shear	6.539	Rupture	131	7.09	10.372	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g62P	Diag3	9.100	Shear	6.539	Rupture	131	7.09	10.372	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g62X	Diag3	9.100	Shear	6.539	Rupture	131	7.09	10.372	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g62XY	Diag3	9.100	Shear	6.539	Rupture	131	7.09	10.372	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g62Y	Diag3	9.100	Shear	6.539	Rupture	131	7.09	10.372	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g63P	Diag3	9.100	Shear	6.539	Rupture	137	7.45	9.505	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g63X	Diag3	9.100	Shear	6.539	Rupture	137	7.45	9.505	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g63XY	Diag3	9.100	Shear	6.539	Rupture	137	7.45	9.505	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g63Y	Diag3	9.100	Shear	6.539	Rupture	137	7.45	9.505	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g64P	Diag3	9.100	Shear	6.539	Rupture	137	7.45	9.505	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g64X	Diag3	9.100	Shear	6.539	Rupture	137	7.45	9.505	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g64XY	Diag3	9.100	Shear	6.539	Rupture	137	7.45	9.505	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g64Y	Diag3	9.100	Shear	6.539	Rupture	137	7.45	9.505	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g65P	Diag3	8.683	L/r	6.539	Rupture	143	7.83	8.683	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											

g65X	Diag3	8.683	L/r	6.539	Rupture	143	7.83	8.683	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g65XY	Diag3	8.683	L/r	6.539	Rupture	143	7.83	8.683	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g65Y	Diag3	8.683	L/r	6.539	Rupture	143	7.83	8.683	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g66P	Diag3	8.683	L/r	6.539	Rupture	143	7.83	8.683	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g66X	Diag3	8.683	L/r	6.539	Rupture	143	7.83	8.683	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g66XY	Diag3	8.683	L/r	6.539	Rupture	143	7.83	8.683	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g66Y	Diag3	8.683	L/r	6.539	Rupture	143	7.83	8.683	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g67P	Diag3	7.944	L/r	6.539	Rupture	149	8.22	7.944	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g67X	Diag3	7.944	L/r	6.539	Rupture	149	8.22	7.944	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g67XY	Diag3	7.944	L/r	6.539	Rupture	149	8.22	7.944	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g67Y	Diag3	7.944	L/r	6.539	Rupture	149	8.22	7.944	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g68P	Diag3	7.944	L/r	6.539	Rupture	149	8.22	7.944	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g68X	Diag3	7.944	L/r	6.539	Rupture	149	8.22	7.944	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g68XY	Diag3	7.944	L/r	6.539	Rupture	149	8.22	7.944	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g68Y	Diag3	7.944	L/r	6.539	Rupture	149	8.22	7.944	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g69P	Diag3	7.282	L/r	6.539	Rupture	156	8.61	7.282	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g69X	Diag3	7.282	L/r	6.539	Rupture	156	8.61	7.282	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g69XY	Diag3	7.282	L/r	6.539	Rupture	156	8.61	7.282	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g69Y	Diag3	7.282	L/r	6.539	Rupture	156	8.61	7.282	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g70P	Diag3	7.282	L/r	6.539	Rupture	156	8.61	7.282	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g70X	Diag3	7.282	L/r	6.539	Rupture	156	8.61	7.282	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g70XY	Diag3	7.282	L/r	6.539	Rupture	156	8.61	7.282	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g70Y	Diag3	7.282	L/r	6.539	Rupture	156	8.61	7.282	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g71P	Diag3	6.664	L/r	6.539	Rupture	163	9.02	6.664	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g71X	Diag3	6.664	L/r	6.539	Rupture	163	9.02	6.664	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g71XY	Diag3	6.664	L/r	6.539	Rupture	163	9.02	6.664	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g71Y	Diag3	6.664	L/r	6.539	Rupture	163	9.02	6.664	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g72P	Diag3	6.664	L/r	6.539	Rupture	163	9.02	6.664	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g72X	Diag3	6.664	L/r	6.539	Rupture	163	9.02	6.664	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g72XY	Diag3	6.664	L/r	6.539	Rupture	163	9.02	6.664	9.100	10.547	14.237	6.539	0.000	0.000	0.000

0.000 0.000 Automatic
g72Y Diag3 6.664 L/r 6.539 Rupture 163 9.02 6.664 9.100 10.547 14.237 6.539 0.000 0.000 0.000
0.000 0.000 Automatic
g73P Diag3 6.088 L/r 6.539 Rupture 171 9.44 6.088 9.100 10.547 14.237 6.539 0.000 0.000 0.000
0.000 0.000 Automatic
g73X Diag3 6.088 L/r 6.539 Rupture 171 9.44 6.088 9.100 10.547 14.237 6.539 0.000 0.000 0.000
0.000 0.000 Automatic
g73XY Diag3 6.088 L/r 6.539 Rupture 171 9.44 6.088 9.100 10.547 14.237 6.539 0.000 0.000 0.000
0.000 0.000 Automatic
g73Y Diag3 6.088 L/r 6.539 Rupture 171 9.44 6.088 9.100 10.547 14.237 6.539 0.000 0.000 0.000
0.000 0.000 Automatic
g74P Diag3 6.088 L/r 6.539 Rupture 171 9.44 6.088 9.100 10.547 14.237 6.539 0.000 0.000 0.000
0.000 0.000 Automatic
g74X Diag3 6.088 L/r 6.539 Rupture 171 9.44 6.088 9.100 10.547 14.237 6.539 0.000 0.000 0.000
0.000 0.000 Automatic
g74XY Diag3 6.088 L/r 6.539 Rupture 171 9.44 6.088 9.100 10.547 14.237 6.539 0.000 0.000 0.000
0.000 0.000 Automatic
g74Y Diag3 6.088 L/r 6.539 Rupture 171 9.44 6.088 9.100 10.547 14.237 6.539 0.000 0.000 0.000
0.000 0.000 Automatic
g75P Horz2 9.100 Shear 7.312 Rupture 56 2.00 20.749 9.100 10.547 17.096 7.312 0.000 0.000 0.000
0.000 0.000 Automatic
g75X Horz2 9.100 Shear 7.312 Rupture 56 2.00 20.749 9.100 10.547 17.096 7.312 0.000 0.000 0.000
0.000 0.000 Automatic
g76P Horz2 9.100 Shear 7.312 Rupture 56 2.00 20.749 9.100 10.547 17.096 7.312 0.000 0.000 0.000
0.000 0.000 Automatic
g76X Horz2 9.100 Shear 7.312 Rupture 56 2.00 20.749 9.100 10.547 17.096 7.312 0.000 0.000 0.000
0.000 0.000 Automatic
g79P Horz2 9.100 Shear 7.312 Rupture 56 2.00 20.749 9.100 10.547 17.096 7.312 0.000 0.000 0.000
0.000 0.000 Automatic
g79X Horz2 9.100 Shear 7.312 Rupture 56 2.00 20.749 9.100 10.547 17.096 7.312 0.000 0.000 0.000
0.000 0.000 Automatic
g80P ARM 18.200 Shear 18.200 Shear 117 4.78 34.709 18.200 21.375 50.044 21.375 0.000 0.000 0.000
0.000 0.000 Automatic Member "g80P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
g80X ARM 18.200 Shear 18.200 Shear 117 4.78 34.709 18.200 21.375 50.044 21.375 0.000 0.000 0.000
0.000 0.000 Automatic Member "g80X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
g80XY ARM 18.200 Shear 18.200 Shear 117 4.78 34.709 18.200 21.375 50.044 21.375 0.000 0.000 0.000
0.000 0.000 Automatic Member "g80XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
g80Y ARM 18.200 Shear 18.200 Shear 117 4.78 34.709 18.200 21.375 50.044 21.375 0.000 0.000 0.000
0.000 0.000 Automatic Member "g80Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
g81P ARM 18.200 Shear 18.200 Shear 49 2.00 42.628 18.200 21.375 50.044 21.375 0.000 0.000 0.000
0.000 0.000 Automatic Member "g81P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
g81Y ARM 18.200 Shear 18.200 Shear 49 2.00 42.628 18.200 21.375 50.044 21.375 0.000 0.000 0.000
0.000 0.000 Automatic Member "g81Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
g82P ARM 18.200 Shear 18.200 Shear 117 4.78 34.709 18.200 21.375 50.044 21.375 0.000 0.000 0.000
0.000 0.000 Automatic Member "g82P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
g82X ARM 18.200 Shear 18.200 Shear 117 4.78 34.709 18.200 21.375 50.044 21.375 0.000 0.000 0.000
0.000 0.000 Automatic Member "g82X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??
g82XY ARM 18.200 Shear 18.200 Shear 117 4.78 34.709 18.200 21.375 50.044 21.375 0.000 0.000 0.000
0.000 0.000 Automatic Member "g82XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??

g82Y	ARM	18.200	Shear	18.200	Shear	117	4.78	34.709	18.200	21.375	50.044	21.375	0.000	0.000	0.000
0.000		0.000		Automatic	Member "g82Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??										
g83P	ARM	18.200	Shear	18.200	Shear	49	2.00	42.628	18.200	21.375	50.044	21.375	0.000	0.000	0.000
0.000		0.000		Automatic	Member "g83P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??										
g83Y	ARM	18.200	Shear	18.200	Shear	49	2.00	42.628	18.200	21.375	50.044	21.375	0.000	0.000	0.000
0.000		0.000		Automatic	Member "g83Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??										
g84P	ARM	18.200	Shear	18.200	Shear	117	4.78	34.709	18.200	21.375	50.044	21.375	0.000	0.000	0.000
0.000		0.000		Automatic	Member "g84P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??										
g84X	ARM	18.200	Shear	18.200	Shear	117	4.78	34.709	18.200	21.375	50.044	21.375	0.000	0.000	0.000
0.000		0.000		Automatic	Member "g84X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??										
g84XY	ARM	18.200	Shear	18.200	Shear	117	4.78	34.709	18.200	21.375	50.044	21.375	0.000	0.000	0.000
0.000		0.000		Automatic	Member "g84XY" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??										
g84Y	ARM	18.200	Shear	18.200	Shear	117	4.78	34.709	18.200	21.375	50.044	21.375	0.000	0.000	0.000
0.000		0.000		Automatic	Member "g84Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??										
g85P	ARM	18.200	Shear	18.200	Shear	49	2.00	42.628	18.200	21.375	50.044	21.375	0.000	0.000	0.000
0.000		0.000		Automatic	Member "g85P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??										
g85Y	ARM	18.200	Shear	18.200	Shear	49	2.00	42.628	18.200	21.375	50.044	21.375	0.000	0.000	0.000
0.000		0.000		Automatic	Member "g85Y" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??										
g77P	Horz1	9.100	Shear	6.539	Rupture	21	0.60	17.529	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g77Y	Horz1	9.100	Shear	6.539	Rupture	21	0.60	17.529	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g88P	Horz1	9.100	Shear	6.539	Rupture	21	0.60	17.529	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g88X	Horz1	9.100	Shear	6.539	Rupture	21	0.60	17.529	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g89P	Horz1	9.100	Shear	6.539	Rupture	42	1.20	16.592	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g89Y	Horz1	9.100	Shear	6.539	Rupture	42	1.20	16.592	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g90P	Horz1	9.100	Shear	6.539	Rupture	42	1.20	16.592	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g90X	Horz1	9.100	Shear	6.539	Rupture	42	1.20	16.592	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g91P	InnBrace	9.100	Shear	6.539	Rupture	99	2.83	13.392	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g91X	InnBrace	9.100	Shear	6.539	Rupture	99	2.83	13.392	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g92P	InnBrace	9.100	Shear	6.539	Rupture	99	2.83	13.392	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g92X	InnBrace	9.100	Shear	6.539	Rupture	99	2.83	13.392	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g93P	InnBrace	9.100	Shear	6.539	Rupture	99	2.83	13.392	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g93X	InnBrace	9.100	Shear	6.539	Rupture	99	2.83	13.392	9.100	10.547	14.237	6.539	0.000	0.000	0.000
0.000		0.000		Automatic											
g94P	Horz3	27.300	Shear	15.750	Rupture	42	2.00	39.929	27.300	35.437	71.206	15.750	0.000	0.000	0.000
0.000		0.000		Automatic	Member "g94P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??										

g94X Horz3 27.300 Shear 15.750 Rupture 42 2.00 39.929 27.300 35.437 71.206 15.750 0.000 0.000 0.000 0.000 0.000 Automatic Member "g94X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??

g95P Horz3 27.300 Shear 15.750 Rupture 42 2.00 39.929 27.300 35.437 71.206 15.750 0.000 0.000 0.000 0.000 0.000 Automatic Member "g95P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??

g95X Horz3 27.300 Shear 15.750 Rupture 42 2.00 39.929 27.300 35.437 71.206 15.750 0.000 0.000 0.000 0.000 0.000 Automatic Member "g95X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??

g96P Horz3 27.300 Shear 15.750 Rupture 49 2.35 39.583 27.300 35.437 71.206 15.750 0.000 0.000 0.000 0.000 0.000 Automatic Member "g96P" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??

g96X Horz3 27.300 Shear 15.750 Rupture 49 2.35 39.583 27.300 35.437 71.206 15.750 0.000 0.000 0.000 0.000 0.000 Automatic Member "g96X" will not be checked for block shear since more than one gage line exists (long edge distance (g) greater than zero); however, end, edge and spacing distances will be checked. ??

The model contains 268 angle members.

Sum of Unfactored Dead Load and Drag Areas From Equipment, Input and Calculated:

Joint Label	Dead Load (kips)	X-Drag Area (ft^2)	Y-Drag Area (ft^2)
1P	0.0248	1.256	1.256
4P	0.0684	3.701	2.749
5P	0.0639	2.908	3.491
6P	0.0825	4.443	3.470
7P	0.0639	2.908	3.491
12P	0.0758	4.129	3.156
13P	0.0458	2.096	2.096
26P	0.032	1.946	0.417
27P	0.032	1.946	0.417
28P	0.032	1.946	0.417
4X	0.0684	3.722	2.728
4XY	0.0684	3.701	2.749
4Y	0.0684	3.722	2.728
5X	0.0639	2.908	3.491
5XY	0.0639	2.908	3.491
5Y	0.0639	2.908	3.491
6X	0.0825	4.443	3.470
6XY	0.0825	4.443	3.470
6Y	0.0825	4.443	3.470
7X	0.0639	2.908	3.491
7XY	0.0639	2.908	3.491
7Y	0.0639	2.908	3.491
12X	0.0758	4.129	3.156
12XY	0.0758	4.129	3.156
12Y	0.0758	4.129	3.156
13X	0.0458	2.096	2.096
13XY	0.0458	2.096	2.096
13Y	0.0458	2.096	2.096
26X	0.032	1.946	0.417
27X	0.032	1.946	0.417
28X	0.032	1.946	0.417
2S	0.017	0.900	0.892
3S	0.025	1.354	1.342
14S	0.0551	2.445	3.130
15S	0.0471	2.627	2.627

16S	0.0601	3.113	3.113
17S	0.0733	3.605	3.605
18S	0.0747	3.651	3.651
19S	0.0733	3.554	3.554
20S	0.076	3.459	3.459
21S	0.0815	3.512	3.512
22S	0.0831	3.568	3.568
23S	0.0848	3.625	3.625
24S	0.0878	3.893	3.893
25S	0.0908	4.162	4.162
2X	0.017	0.892	0.900
2XY	0.017	0.900	0.892
2Y	0.017	0.892	0.900
3X	0.025	1.342	1.354
3XY	0.025	1.354	1.342
3Y	0.025	1.342	1.354
14X	0.0551	2.445	3.130
14XY	0.0551	2.445	3.130
14Y	0.0551	2.445	3.130
15X	0.0471	2.627	2.627
15XY	0.0471	2.627	2.627
15Y	0.0471	2.627	2.627
16X	0.0601	3.113	3.113
16XY	0.0601	3.113	3.113
16Y	0.0601	3.113	3.113
17X	0.0733	3.605	3.605
17XY	0.0733	3.605	3.605
17Y	0.0733	3.605	3.605
18X	0.0747	3.651	3.651
18XY	0.0747	3.651	3.651
18Y	0.0747	3.651	3.651
19X	0.0733	3.554	3.554
19XY	0.0733	3.554	3.554
19Y	0.0733	3.554	3.554
20X	0.076	3.459	3.459
20XY	0.076	3.459	3.459
20Y	0.076	3.459	3.459
21X	0.0815	3.512	3.512
21XY	0.0815	3.512	3.512
21Y	0.0815	3.512	3.512
22X	0.0831	3.568	3.568
22XY	0.0831	3.568	3.568
22Y	0.0831	3.568	3.568
23X	0.0848	3.625	3.625
23XY	0.0848	3.625	3.625
23Y	0.0848	3.625	3.625
24X	0.0878	3.893	3.893
24XY	0.0878	3.893	3.893
24Y	0.0878	3.893	3.893
25X	0.0908	4.162	4.162
25XY	0.0908	4.162	4.162
25Y	0.0908	4.162	4.162
Total	5.54	267.548	254.103

Unadjusted Dead Load and Drag Areas by Section:

Section Label	Unfactored Dead Load (kips)	X-Drag Area All (ft^2)	Y-Drag Area All (ft^2)	X-Drag Area Face (ft^2)	Y-Drag Area Face (ft^2)

1	1.930	98.867	85.422	40.844	32.872
2	0.963	49.853	49.853	19.378	19.378
3	2.643	118.828	118.828	47.587	47.587
Total	5.536	267.548	254.103	107.809	99.836

Angle Member Weights and Surface Areas by Section:

Section Label	Unfactored Weight (kips)	Factored Weight (kips)	Unfactored Surface Area (ft^2)	Factored Surface Area (ft^2)
1	1.930	1.930	387.710	387.710
2	0.963	0.963	208.806	208.806
3	2.643	2.643	532.204	532.204
Total	5.536	5.536	1128.720	1128.720

Section Joint Information:

Section Label	Joint Label	Joint Elevation (ft)
1	1P	90.000
1	2S	87.000
1	2X	87.000
1	2XY	87.000
1	2Y	87.000
1	3S	84.000
1	3X	84.000
1	3XY	84.000
1	3Y	84.000
1	4P	80.000
1	4X	80.000
1	4XY	80.000
1	4Y	80.000
1	5P	75.750
1	5X	75.750
1	5XY	75.750
1	5Y	75.750
1	6P	71.500
1	6X	71.500
1	6XY	71.500
1	6Y	71.500
1	7P	67.250
1	7X	67.250
1	7XY	67.250
1	7Y	67.250
1	12P	63.000
1	12X	63.000
1	12XY	63.000
1	12Y	63.000
1	14S	59.500
1	14X	59.500
1	14XY	59.500
1	14Y	59.500
1	26X	80.000
1	26P	80.000
1	27X	71.500

1	27P	71.500
1	28X	63.000
1	28P	63.000
2	14S	59.500
2	15S	55.500
2	14X	59.500
2	15X	55.500
2	14XY	59.500
2	15XY	55.500
2	14Y	59.500
2	15Y	55.500
2	16S	51.500
2	16X	51.500
2	16XY	51.500
2	16Y	51.500
2	17S	46.000
2	17X	46.000
2	17XY	46.000
2	17Y	46.000
2	18S	40.500
2	18X	40.500
2	18XY	40.500
2	18Y	40.500
3	18S	40.500
3	19S	35.000
3	18X	40.500
3	19X	35.000
3	18XY	40.500
3	19XY	35.000
3	18Y	40.500
3	19Y	35.000
3	20S	30.000
3	20X	30.000
3	20XY	30.000
3	20Y	30.000
3	21S	25.000
3	21X	25.000
3	21XY	25.000
3	21Y	25.000
3	22S	20.000
3	22X	20.000
3	22XY	20.000
3	22Y	20.000
3	23S	15.000
3	23X	15.000
3	23XY	15.000
3	23Y	15.000
3	24S	10.000
3	24X	10.000
3	24XY	10.000
3	24Y	10.000
3	25S	5.000
3	25X	5.000
3	25XY	5.000
3	25Y	5.000
3	13P	0.000
3	13X	0.000
3	13XY	0.000
3	13Y	0.000

Sections Information:

Section Label	Top Z (ft)	Bottom Z (ft)	Joint Count	Member Count	Tran. Face Top Width (ft)	Tran. Face Bot Width (ft)	Tran. Face Gross Area (ft^2)	Long. Face Top Width (ft)	Long. Face Bot Width (ft)	Long. Face Gross Area (ft^2)
1	90.000	59.500	39	124	0.00	2.35	51.608	0.00	2.35	109.983
2	59.500	40.500	20	48	2.35	4.23	62.504	2.35	4.23	62.504
3	40.500	0.000	36	96	4.23	8.25	252.763	4.23	8.25	252.763

*** Insulator Data

Clamp Properties:

Label	Stock Number	Holding Capacity (lbs)
C-EX1		5e+004

Clamp Insulator Connectivity:

Clamp Label	Structure And Tip Attach	Property Set	Min. Required Vertical Load (uplift) (lbs)
1	26P	C-EX1	No Limit
2	26X	C-EX1	No Limit
3	27P	C-EX1	No Limit
4	27X	C-EX1	No Limit
5	28P	C-EX1	No Limit
6	28X	C-EX1	No Limit
9	3XY	C-EX1	No Limit
10	5XY	C-EX1	No Limit
12	12XY	C-EX1	No Limit
13	15XY	C-EX1	No Limit
14	17XY	C-EX1	No Limit
15	19XY	C-EX1	No Limit
16	21XY	C-EX1	No Limit
17	23XY	C-EX1	No Limit
18	25XY	C-EX1	No Limit
19	1P	C-EX1	No Limit
20	2S	C-EX1	No Limit
21	2X	C-EX1	No Limit
22	2Y	C-EX1	No Limit
23	3X	C-EX1	No Limit
24	5X	C-EX1	No Limit
25	12X	C-EX1	No Limit
26	15X	C-EX1	No Limit
27	17X	C-EX1	No Limit
28	19X	C-EX1	No Limit
29	21X	C-EX1	No Limit
30	23X	C-EX1	No Limit
31	25X	C-EX1	No Limit

*** Loads Data

Loads from file: j:\jobs\2002000.si\02_ct5011 darien-noroton heights\structural\backup documentation\calcs\rev (2)\pls tower\darien - 1182.lca

Insulator dead and wind loads are already included in the point loads printed below.

Loading Method Parameters:

Structure Height Summary (used for calculating wind/ice adjust with height):

Z of ground for wind height adjust	0.00 (ft)	and structure Z coordinate that will be put on the centerline ground profile in PLS-CADD.
Ground elevation shift	0.00 (ft)	
Z of ground with shift	0.00 (ft)	
Z of structure top (highest joint)	90.00 (ft)	
Structure height	90.00 (ft)	
Structure height above ground	90.00 (ft)	
Tower Shape	Rectangular	

Load distributed evenly among joints in section for section based load cases

Vector Load Cases:

Load Case Description	Dead Load Factor	Wind Area Factor	SF for Steel Poles and Tubular Arms and Towers	SF for Guys and Cables	SF for Insuls.	SF For Found.	Point Loads	Wind/Ice Model	Trans. Wind Pressure (psf)	Longit. Wind Pressure (psf)	Ice Thick. (in)	Ice Density (lbs/ft^3)	Temperature (deg F)	Joint Displ.
NESC Heavy	1.5000	2.5000	1.00000	1.0000	1.0000	1.0000	19 loads	Wind on Face	4	0	0.000	0.000	0.0	
NESC Extreme	1.0000	1.0000	1.00000	1.0000	1.0000	1.0000	19 loads	NESC 2012	31	0	0.000	0.000	0.0	

Point Loads for Load Case "NESC Heavy":

Joint Label	Vertical Load (lbs)	Transverse Load (lbs)	Longitudinal Load (lbs)	Load Comment
1P	952	635	0	Shield Wire (4/0 Cu)
26P	2706	1216	-207	Conductor (Lapwing)
26X	2755	1053	-656	Conductor (Lapwing)
27P	2824	1255	1984	Conductor (Lapwing)
27X	2810	1070	-2453	Conductor (Lapwing)
28P	2862	1228	1667	Conductor (Lapwing)
28X	2914	1083	6430	Conductor (Lapwing)
3X	114	42	0	Coax Cable
5X	291	107	0	Coax Cable
12X	281	103	0	Coax Cable
15X	236	87	0	Coax Cable
17X	284	105	0	Coax Cable
19X	291	107	0	Coax Cable
21X	277	102	0	Coax Cable
23X	277	102	0	Coax Cable
25X	277	102	0	Coax Cable
2S	309	88	0	AT&T Antenna
2X	309	88	0	AT&T Antenna
2Y	309	88	0	AT&T Antenna

Section Load Case Information (Standard) for "NESC Heavy":

Section Label	Z of Top (ft)	Z of Bottom (ft)	Ave. Elev. Above Ground (ft)	Res. Adj. Wind Pres. (psf)	Tran Adj. Wind Pres. (psf)	Tran Drag Coef	Tran Wind Load (lbs)	Long Adj. Wind Pres. (psf)	Long Drag Coef	Long Wind Load (lbs)	Ice Weight (lbs)	Total Weight (lbs)
1	90.00	59.50	74.75	10.00	10.00	3.200	1051.9	0.00	3.200	0.0	0	2895
2	59.50	40.50	50.00	10.00	10.00	3.200	620.1	0.00	3.200	0.0	0	1445
3	40.50	0.00	20.25	10.00	10.00	3.200	1522.8	0.00	3.200	0.0	0	3964

Point Loads for Load Case "NESC Extreme":

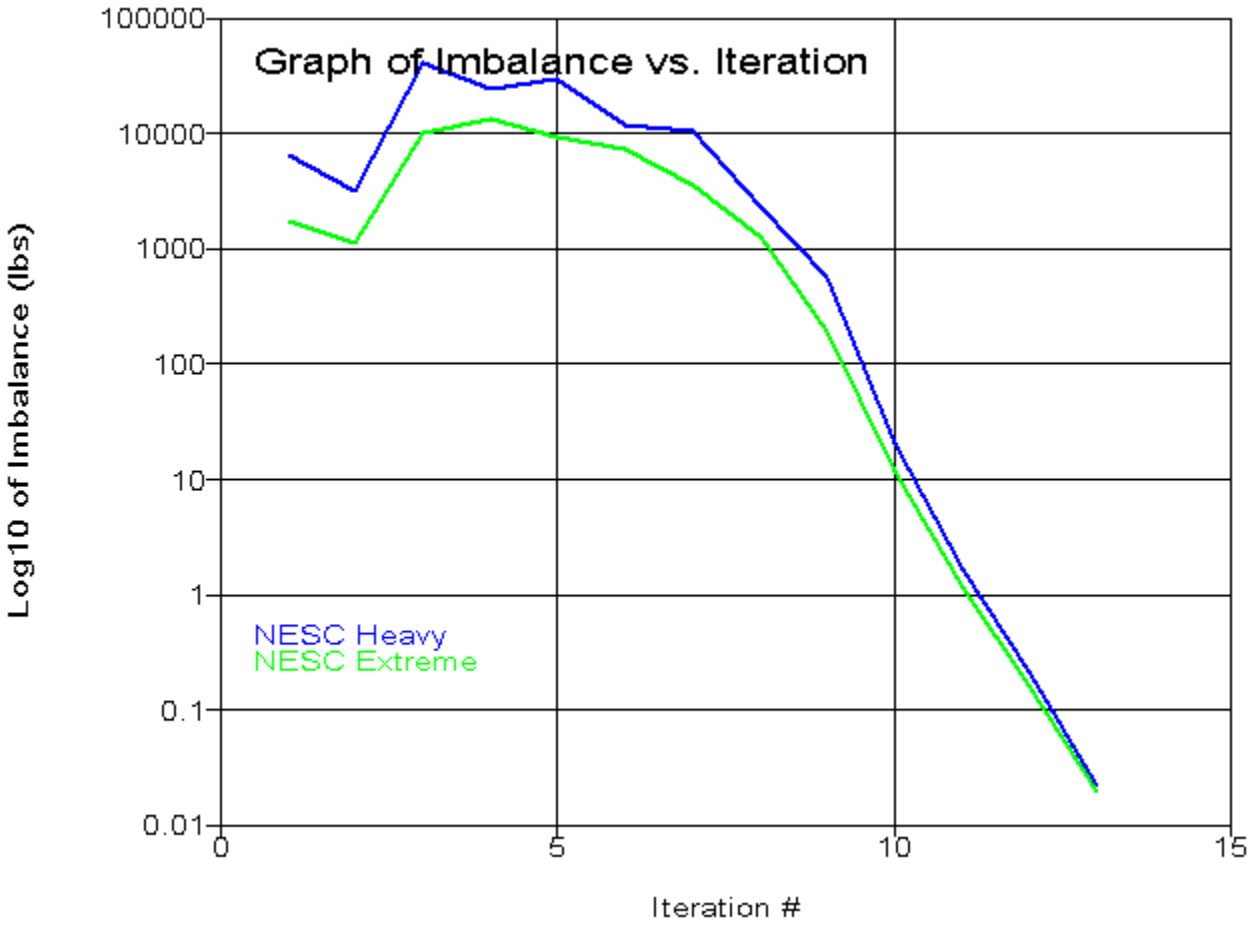
Joint Label	Vertical Load (lbs)	Transverse Load (lbs)	Longitudinal Load (lbs)	Load Comment
1P	358	458	0	Shield Wire (4/0 Cu)
26P	1268	1428	-465	Conductor (Lapwing)
26X	1289	1346	-666	Conductor (Lapwing)
27P	1325	1439	237	Conductor (Lapwing)
27X	1319	1354	-1295	Conductor (Lapwing)
28P	1347	1429	150	Conductor (Lapwing)
28X	1366	1361	1762	Conductor (Lapwing)
3X	27	114	0	Coax Cable
5X	68	289	0	Coax Cable
12X	66	279	0	Coax Cable
15X	55	234	0	Coax Cable
17X	66	282	0	Coax Cable
19X	68	289	0	Coax Cable
21X	65	275	0	Coax Cable
23X	65	275	0	Coax Cable
25X	65	275	0	Coax Cable
2S	157	247	0	AT&T Antenna
2X	157	247	0	AT&T Antenna
2Y	157	247	0	AT&T Antenna

Section Load Case Information (Code) for "NESC Extreme":

Section Label	Z of Top (ft)	Z of Bottom (ft)	Ave. Elev. Above Ground (ft)	Res. Adj. Wind Pres. (psf)	Tran Adj. Wind Pres. (psf)	Tran Angle Face Area (ft^2)	Tran Gross Area (ft^2)	Tran Soli-dity Ratio	Tran Angle Drag Coef	Tran Wind Load (lbs)	Long Adj. Wind Pres. (psf)	Long Angle Face Area (ft^2)	Long Gross Area (ft^2)	Long Soli-dity Ratio	Long Angle Drag Coef	Long Wind Load (lbs)	Ice Weight (lbs)	Total Weight (lbs)
1	90.00	59.50	74.75	30.99	30.99	32.87	51.61	0.637	3.200	3259.3	0.00	40.84	109.98	0.371	3.200	0.0	0	1930
2	59.50	40.50	50.00	30.99	30.99	19.38	62.50	0.310	3.200	1921.4	0.00	19.38	62.50	0.310	3.200	0.0	0	963
3	40.50	0.00	20.25	30.99	30.99	47.59	252.76	0.188	3.200	4718.4	0.00	47.59	252.76	0.188	3.200	0.0	0	2643

*** Analysis Results:

Maximum element usage is 99.43% for Angle "g16Y" in load case "NESC Extreme"
Maximum insulator usage is 14.33% for Clamp "6" in load case "NESC Heavy"



Angle Forces For All Load Cases:
Positive for tension - negative for compression

Group Label	Angle Label	Max. Usage For All LC %	Max. Tens. For All LC (kips)	Max. Comp. For All LC (kips)	LC 1 (kips)	LC 2 (kips)
Leg1	g1P	5.02	0.000	-1.661	-1.661	-1.199
Leg1	g1X	4.87	1.310	0.000	1.310	1.170
Leg1	g1XY	5.09	1.369	0.000	1.357	1.369
Leg1	g1Y	5.95	0.000	-1.967	-1.967	-1.726

Leg1	g2P	9.06	0.000	-2.997	-2.603	-2.997
Leg1	g2X	3.62	0.973	0.000	0.973	0.919
Leg1	g2XY	9.09	2.445	0.000	1.721	2.445
Leg1	g2Y	6.84	0.000	-2.263	-2.263	-1.917
Leg1	g3P	15.05	0.000	-4.250	-2.973	-4.250
Leg1	g3X	9.14	2.457	0.000	1.517	2.457
Leg1	g3XY	12.06	3.245	0.000	1.868	3.245
Leg1	g3Y	10.80	0.000	-3.049	-2.634	-3.049
Leg2	g4P	8.88	0.000	-5.009	-4.091	-5.009
Leg2	g4X	10.35	5.344	0.000	2.533	5.344
Leg2	g4XY	7.17	3.704	0.000	1.410	3.704
Leg2	g4Y	10.99	0.000	-6.200	-4.526	-6.200
Leg2	g5P	15.49	0.000	-8.740	-6.810	-8.740
Leg2	g5X	21.06	10.876	0.000	6.354	10.876
Leg2	g5XY	14.40	7.439	0.000	3.277	7.439
Leg2	g5Y	21.07	0.000	-11.887	-7.894	-11.887
Leg2	g6P	24.70	0.000	-13.939	-10.642	-13.939
Leg2	g6X	35.86	18.519	0.000	9.583	18.519
Leg2	g6XY	21.13	10.913	0.000	5.418	10.913
Leg2	g6Y	36.61	0.000	-20.656	-15.224	-20.656
Leg2	g78P	35.98	0.000	-20.301	-14.316	-20.301
Leg2	g78X	54.98	28.395	0.000	15.346	28.395
Leg2	g78XY	31.67	16.355	0.000	9.890	16.355
Leg2	g78Y	52.75	0.000	-29.767	-22.098	-29.767
Leg2	g12P	47.53	0.000	-27.970	-22.167	-27.970
Leg2	g12X	72.77	37.582	0.000	19.675	37.582
Leg2	g12XY	46.39	23.956	0.000	16.405	23.956
Leg2	g12Y	66.99	0.000	-39.421	-26.379	-39.421
Leg2	g13P	63.43	0.000	-36.322	-34.609	-36.322
Leg2	g13X	84.69	43.738	0.000	18.601	43.738
Leg2	g13XY	61.79	31.911	0.000	24.744	31.911
Leg2	g13Y	85.02	0.000	-48.684	-28.382	-48.684
Leg2	g14P	80.01	0.000	-45.812	-45.812	-45.023
Leg2	g14X	94.23	49.634	0.000	17.896	49.634
Leg2	g14XY	76.30	40.194	0.000	32.809	40.194
Leg2	g14Y	99.08	0.000	-56.734	-30.165	-56.734
Leg3	g15P	78.17	0.000	-49.425	-49.425	-46.463
Leg3	g15X	80.30	51.176	0.000	16.660	51.176
Leg3	g15XY	67.66	43.121	0.000	38.318	43.121
Leg3	g15Y	91.10	0.000	-57.599	-26.386	-57.599
Leg3	g16P	90.27	0.000	-57.076	-57.076	-52.496
Leg3	g16X	86.97	55.426	0.000	15.478	55.426
Leg3	g16XY	75.81	48.313	0.000	43.975	48.313
Leg3	g16Y	99.43	0.000	-62.870	-27.066	-62.870
Leg3	g17P	80.57	0.000	-60.595	-60.595	-55.530
Leg3	g17X	90.58	57.727	0.000	14.753	57.727
Leg3	g17XY	80.35	51.207	0.000	47.958	51.207
Leg3	g17Y	86.22	0.000	-64.840	-25.781	-64.840
Leg3	g18P	85.00	0.000	-64.518	-64.518	-59.440
Leg3	g18X	95.39	60.790	0.000	14.045	60.790
Leg3	g18XY	85.29	54.359	0.000	51.339	54.359
Leg3	g18Y	89.53	0.000	-67.950	-26.062	-67.950
Leg4	g19P	85.44	0.000	-67.094	-67.094	-62.449
Leg4	g19X	83.27	63.130	0.000	13.668	63.130
Leg4	g19XY	74.82	56.727	0.000	53.946	56.727
Leg4	g19Y	89.06	0.000	-69.941	-25.951	-69.941
Leg4	g20P	88.40	0.000	-69.424	-69.424	-65.357
Leg4	g20X	86.47	65.561	0.000	13.189	65.561
Leg4	g20XY	77.71	58.921	0.000	56.195	58.921

Leg4	g20Y	91.71	0.000	-72.021	-26.236	-72.021
Leg4	g21P	91.22	0.000	-71.632	-71.632	-68.375
Leg4	g21X	89.65	67.971	0.000	12.993	67.971
Leg4	g21XY	80.57	61.085	0.000	58.321	61.085
Leg4	g21Y	94.30	0.000	-74.051	-26.585	-74.051
Leg4	g22P	93.17	0.000	-73.164	-73.164	-70.792
Leg4	g22X	92.43	70.079	0.000	12.634	70.079
Leg4	g22XY	82.82	62.792	0.000	59.951	62.792
Leg4	g22Y	96.31	0.000	-75.631	-26.913	-75.631
Leg5	g23P	84.20	0.000	-75.305	-75.305	-73.955
Leg5	g23X	85.96	72.651	0.000	12.571	72.651
Leg5	g23XY	76.87	64.968	0.000	61.909	64.968
Leg5	g23Y	87.02	0.000	-77.827	-27.572	-77.827
Leg5	g24P	84.97	0.000	-75.994	-75.994	-75.704
Leg5	g24X	87.79	74.201	0.000	12.265	74.201
Leg5	g24XY	78.11	66.022	0.000	62.857	66.022
Leg5	g24Y	88.06	0.000	-78.758	-27.826	-78.758
Diag1	g25P	25.16	1.645	0.000	0.604	1.645
Diag1	g26P	0.68	0.044	-0.027	-0.027	0.044
Diag1	g27P	13.01	0.000	-1.183	-0.438	-1.183
Diag1	g28P	0.72	0.000	-0.066	-0.066	-0.019
Diag1	g29P	20.01	1.309	0.000	0.360	1.309
Diag1	g30P	0.58	0.008	-0.045	-0.045	0.008
Diag1	g31P	10.66	0.000	-0.826	-0.145	-0.826
Diag1	g32P	0.35	0.000	-0.027	-0.023	-0.027
Diag2	g33P	18.15	0.000	-3.304	-2.148	-3.304
Diag2	g33X	12.16	2.213	0.000	0.662	2.213
Diag2	g33XY	17.67	3.215	0.000	1.943	3.215
Diag2	g33Y	19.43	0.000	-3.536	-3.069	-3.536
Diag2	g34P	15.02	0.000	-2.164	-1.005	-2.164
Diag2	g34X	3.11	0.508	-0.566	-0.566	0.508
Diag2	g34XY	12.49	2.274	0.000	1.866	2.274
Diag2	g34Y	10.91	0.000	-1.573	-1.573	-1.253
Diag2	g35P	19.62	0.000	-3.570	-2.233	-3.570
Diag2	g35X	16.90	3.075	0.000	1.054	3.075
Diag2	g35XY	17.55	3.194	0.000	2.028	3.194
Diag2	g35Y	23.02	0.000	-4.190	-3.657	-4.190
Diag2	g36P	24.72	0.000	-3.562	-1.877	-3.562
Diag2	g36X	10.02	1.823	0.000	0.114	1.823
Diag2	g36XY	20.51	3.732	0.000	2.866	3.732
Diag2	g36Y	18.47	0.000	-2.662	-2.485	-2.662
Diag2	g37P	20.16	3.670	-3.238	3.670	-3.238
Diag2	g37X	23.32	2.710	-4.245	-4.245	2.710
Diag2	g37XY	60.11	10.939	0.000	10.939	7.862
Diag2	g37Y	63.76	0.000	-11.604	-11.604	-7.879
Diag2	g38P	27.70	2.619	-3.992	2.619	-3.992
Diag2	g38X	31.14	0.681	-5.668	-5.668	0.681
Diag2	g38XY	56.91	10.358	0.000	10.358	8.505
Diag2	g38Y	58.67	0.000	-10.679	-10.679	-6.818
Diag2	g86P	19.66	3.579	-2.919	3.579	-2.919
Diag2	g86X	22.30	3.365	-4.058	-4.058	3.365
Diag2	g86XY	60.34	10.983	0.000	10.983	7.518
Diag2	g86Y	64.41	0.000	-11.723	-11.723	-8.518
Diag2	g87P	44.72	1.005	-6.445	1.005	-6.445
Diag2	g87X	21.65	3.163	-3.940	-3.940	3.163
Diag2	g87XY	65.60	11.940	0.000	11.940	10.986
Diag2	g87Y	86.57	0.000	-12.476	-12.476	-9.375
Diag3	g49P	41.59	0.000	-3.785	-3.785	-3.101
Diag3	g49X	22.97	1.858	-0.012	-0.012	1.858

Diag3 g49XY	20.47	1.655	-0.187	-0.187	1.655
Diag3 g49Y	48.42	0.000	-4.406	-4.406	-4.339
Diag3 g50P	75.15	0.000	-6.839	-1.499	-6.839
Diag3 g50X	86.95	7.030	0.000	6.810	7.030
Diag3 g50XY	72.39	5.854	0.000	0.796	5.854
Diag3 g50Y	94.54	0.000	-8.603	-8.603	-7.269
Diag3 g51P	33.80	0.000	-3.076	-2.644	-3.076
Diag3 g51X	27.84	1.820	0.000	0.957	1.820
Diag3 g51XY	38.68	2.529	0.000	1.221	2.529
Diag3 g51Y	33.80	0.000	-3.076	-2.352	-3.076
Diag3 g52P	27.72	1.112	-2.522	1.112	-2.522
Diag3 g52X	68.69	4.491	0.000	4.491	3.369
Diag3 g52XY	33.77	2.208	-1.074	-1.074	2.208
Diag3 g52Y	54.90	0.000	-4.996	-4.996	-2.981
Diag3 g53P	22.92	0.000	-2.085	-0.876	-2.085
Diag3 g53X	38.41	2.512	0.000	2.176	2.512
Diag3 g53XY	39.20	2.564	0.000	1.982	2.564
Diag3 g53Y	23.81	0.000	-2.167	-1.036	-2.167
Diag3 g54P	55.27	3.614	0.000	3.614	1.850
Diag3 g54X	19.39	1.268	-1.107	1.268	-1.107
Diag3 g54XY	33.45	0.000	-3.044	-3.044	-1.955
Diag3 g54Y	22.52	1.472	-1.167	-1.167	1.472
Diag3 g55P	30.47	0.000	-2.773	-2.173	-2.773
Diag3 g55X	30.81	2.014	0.000	0.811	2.014
Diag3 g55XY	31.28	2.045	0.000	1.047	2.045
Diag3 g55Y	30.28	0.000	-2.756	-1.966	-2.756
Diag3 g56P	21.41	1.400	-0.953	1.400	-0.953
Diag3 g56X	41.07	2.686	0.000	2.686	1.407
Diag3 g56XY	16.91	0.619	-1.539	-1.539	0.619
Diag3 g56Y	34.53	0.000	-3.142	-3.142	-1.383
Diag3 g57P	25.79	0.000	-2.347	-1.113	-2.347
Diag3 g57X	32.74	2.141	0.000	1.475	2.141
Diag3 g57XY	31.13	2.036	0.000	1.362	2.036
Diag3 g57Y	21.80	0.000	-1.984	-1.184	-1.984
Diag3 g58P	34.00	2.224	0.000	2.224	0.855
Diag3 g58X	20.17	1.319	-0.259	1.319	-0.259
Diag3 g58XY	22.05	0.000	-2.007	-2.007	-0.849
Diag3 g58Y	13.96	0.487	-1.271	-1.271	0.487
Diag3 g59P	25.42	0.000	-2.313	-1.322	-2.313
Diag3 g59X	31.01	2.028	0.000	0.817	2.028
Diag3 g59XY	26.90	1.759	0.000	0.946	1.759
Diag3 g59Y	23.18	0.000	-2.110	-1.279	-2.110
Diag3 g60P	16.50	1.079	-0.224	1.079	-0.224
Diag3 g60X	23.68	1.548	0.000	1.548	0.525
Diag3 g60XY	13.18	0.070	-1.199	-1.199	0.070
Diag3 g60Y	18.21	0.000	-1.657	-1.657	-0.560
Diag3 g61P	24.92	0.000	-2.267	-0.995	-2.267
Diag3 g61X	29.53	1.931	0.000	0.925	1.931
Diag3 g61XY	25.60	1.674	0.000	0.955	1.674
Diag3 g61Y	19.27	0.000	-1.753	-0.989	-1.753
Diag3 g62P	18.20	1.190	0.000	1.190	0.336
Diag3 g62X	15.43	1.009	0.000	1.009	0.036
Diag3 g62XY	13.41	0.000	-1.220	-1.220	-0.311
Diag3 g62Y	10.36	0.046	-0.943	-0.943	0.046
Diag3 g63P	22.73	0.000	-2.068	-0.931	-2.068
Diag3 g63X	29.93	1.957	0.000	0.785	1.957
Diag3 g63XY	23.92	1.564	0.000	0.825	1.564
Diag3 g63Y	18.91	0.000	-1.721	-1.013	-1.721
Diag3 g64P	12.81	0.838	0.000	0.838	0.068

Diag3	g64X	15.39	1.007	0.000	1.007	0.162
Diag3	g64XY	10.75	0.000	-0.978	-0.978	-0.125
Diag3	g64Y	10.41	0.000	-0.947	-0.947	-0.206
Diag3	g65P	25.99	0.000	-2.257	-0.974	-2.257
Diag3	g65X	29.69	1.942	0.000	0.734	1.942
Diag3	g65XY	23.70	1.550	0.000	0.863	1.550
Diag3	g65Y	19.11	0.000	-1.659	-0.902	-1.659
Diag3	g66P	11.14	0.729	0.000	0.729	0.087
Diag3	g66X	13.66	0.894	0.000	0.894	0.169
Diag3	g66XY	10.14	0.000	-0.881	-0.881	-0.072
Diag3	g66Y	9.22	0.000	-0.801	-0.801	-0.168
Diag3	g67P	26.42	0.000	-2.099	-0.783	-2.099
Diag3	g67X	30.93	2.022	0.000	0.811	2.022
Diag3	g67XY	23.58	1.542	0.000	0.764	1.542
Diag3	g67Y	20.63	0.000	-1.639	-0.965	-1.639
Diag3	g68P	11.31	0.739	0.000	0.739	0.253
Diag3	g68X	11.32	0.740	-0.031	0.740	-0.031
Diag3	g68XY	11.23	0.000	-0.892	-0.892	-0.236
Diag3	g68Y	7.27	0.013	-0.577	-0.577	0.013
Diag3	g69P	31.85	0.000	-2.319	-1.022	-2.319
Diag3	g69X	30.28	1.980	0.000	0.592	1.980
Diag3	g69XY	22.89	1.497	0.000	0.859	1.497
Diag3	g69Y	22.49	0.000	-1.638	-0.818	-1.638
Diag3	g70P	5.79	0.378	-0.159	0.378	-0.159
Diag3	g70X	13.12	0.858	0.000	0.858	0.340
Diag3	g70XY	8.52	0.164	-0.620	-0.620	0.164
Diag3	g70Y	10.44	0.000	-0.760	-0.760	-0.384
Diag3	g71P	32.12	0.000	-2.140	-0.594	-2.140
Diag3	g71X	32.65	2.135	0.000	0.943	2.135
Diag3	g71XY	23.94	1.565	0.000	0.660	1.565
Diag3	g71Y	23.84	0.000	-1.589	-1.026	-1.589
Diag3	g72P	12.50	0.817	0.000	0.817	0.601
Diag3	g72X	9.43	0.435	-0.411	0.435	-0.411
Diag3	g72XY	14.41	0.000	-0.961	-0.961	-0.563
Diag3	g72Y	5.89	0.385	-0.164	-0.164	0.385
Diag3	g73P	39.73	0.000	-2.419	-1.284	-2.419
Diag3	g73X	30.81	2.014	0.000	0.347	2.014
Diag3	g73XY	22.43	1.467	0.000	1.002	1.467
Diag3	g73Y	27.67	0.000	-1.684	-0.673	-1.684
Diag3	g74P	18.51	0.000	-0.738	-0.138	-0.738
Diag3	g74X	16.25	1.062	0.000	1.062	0.913
Diag3	g74XY	12.10	0.791	-0.202	-0.202	0.791
Diag3	g74Y	25.53	0.000	-1.018	-1.018	-0.930
Horz2	g75P	23.55	1.722	0.000	1.651	1.722
Horz2	g75X	13.02	0.038	-1.185	0.038	-1.185
Horz2	g76P	54.67	3.998	0.000	3.286	3.998
Horz2	g76X	36.94	0.000	-3.361	-1.418	-3.361
Horz2	g79P	76.24	5.575	0.000	4.394	5.575
Horz2	g79X	53.87	0.000	-4.902	-2.519	-4.902
ARM	g80P	5.80	1.055	0.000	1.055	0.713
ARM	g80X	9.62	1.752	0.000	1.376	1.752
ARM	g80XY	1.44	0.000	-0.261	-0.173	-0.261
ARM	g80Y	11.87	0.000	-2.160	-2.160	-2.142
ARM	g81P	10.29	1.873	0.000	1.873	1.480
ARM	g81Y	3.94	0.000	-0.718	-0.437	-0.718
ARM	g82P	26.85	4.887	0.000	4.887	2.040
ARM	g82X	18.25	0.269	-3.321	-3.321	0.269
ARM	g82XY	25.29	4.602	0.000	4.602	1.253
ARM	g82Y	32.76	0.000	-5.962	-5.962	-3.481

ARM	g83P	6.69	1.218	0.000	0.937	1.218
ARM	g83Y	4.53	0.000	-0.825	-0.305	-0.825
ARM	g84P	80.04	0.000	-14.568	-14.568	-4.652
ARM	g84X	17.36	0.267	-3.159	-3.159	0.267
ARM	g84XY	24.18	4.401	0.000	4.401	1.258
ARM	g84Y	73.99	13.465	0.000	13.465	3.188
ARM	g85P	40.37	0.000	-7.347	-7.347	-1.839
ARM	g85Y	53.56	9.747	0.000	9.747	2.844
Horz1	g77P	4.74	0.000	-0.431	-0.367	-0.431
Horz1	g77Y	3.74	0.244	-0.106	-0.106	0.244
Horz1	g88P	0.81	0.000	-0.074	-0.074	-0.041
Horz1	g88X	0.86	0.000	-0.079	-0.079	-0.047
Horz1	g89P	5.31	0.347	-0.263	0.347	-0.263
Horz1	g89Y	9.25	0.605	0.000	0.605	0.547
Horz1	g90P	2.52	0.165	0.000	0.165	0.083
Horz1	g90X	2.70	0.176	0.000	0.176	0.071
InnBrace	g91P	9.53	0.623	0.000	0.623	0.175
InnBrace	g91X	3.81	0.249	0.000	0.249	0.151
InnBrace	g92P	37.81	2.473	0.000	2.473	0.975
InnBrace	g92X	18.23	0.000	-1.659	-1.659	-0.669
InnBrace	g93P	20.72	0.000	-1.885	-1.885	-0.907
InnBrace	g93X	45.57	2.980	0.000	2.980	1.322
Horz3	g94P	12.65	1.993	0.000	1.339	1.993
Horz3	g94X	6.86	0.000	-1.874	-1.076	-1.874
Horz3	g95P	36.11	5.687	0.000	4.124	5.687
Horz3	g95X	18.43	0.000	-5.032	-2.791	-5.032
Horz3	g96P	32.39	5.101	0.000	3.364	5.101
Horz3	g96X	19.50	0.000	-5.325	-3.504	-5.325

*** Analysis Results for Load Case No. 1 "NESC Heavy" - Number of iterations in SAPS 13

Equilibrium Joint Positions and Rotations for Load Case "NESC Heavy":

Joint Label	X-Displ (ft)	Y-Displ (ft)	Z-Displ (ft)	X-Rot (deg)	Y-Rot (deg)	Z-Rot (deg)	X-Pos (ft)	Y-Pos (ft)	Z-Pos (ft)
1P	0.2945	0.8057	-0.01181	-1.0275	0.2624	-0.4346	0.2945	0.8057	89.99
4P	0.2586	0.6254	-0.031	-1.4790	0.4109	-0.5352	1.259	1.625	79.97
5P	0.2399	0.5541	-0.03005	-0.7375	0.1664	-0.5168	1.24	1.554	75.72
6P	0.2213	0.4848	-0.02893	-1.2904	0.3721	-0.5003	1.221	1.485	71.47
7P	0.199	0.4205	-0.02759	-0.6708	0.2294	-0.3145	1.199	1.42	67.22
12P	0.176	0.3601	-0.02601	-1.1419	0.4067	-0.1275	1.176	1.36	62.97
13P	0	0	0	0.0000	0.0000	0.0000	4.125	4.125	0
26P	0.292	0.6014	-0.5696	-8.7456	0.3094	-0.4436	0.292	6.271	79.43
27P	0.254	0.4603	-0.5676	-8.8082	0.3054	-0.4498	0.254	6.13	70.93
28P	0.1754	0.3293	-0.5579	-8.7713	0.2994	-0.0251	0.1754	5.999	62.44
4X	0.2431	0.6257	0.002436	-0.3925	0.4114	-0.3745	1.243	-0.3743	80
4XY	0.2432	0.6413	0.01079	-0.3814	0.0515	-0.5097	-0.7568	-0.3587	80.01
4Y	0.2585	0.6409	-0.02257	-1.5033	0.0780	-0.3671	-0.7415	1.641	79.98
5X	0.2253	0.5549	0.002871	-1.1982	0.1608	-0.3486	1.225	-0.4451	75.75
5XY	0.2254	0.5698	0.01132	-1.2059	0.3095	-0.4878	-0.7746	-0.4302	75.76
5Y	0.2399	0.5695	-0.02159	-0.7285	0.3131	-0.3528	-0.7601	1.569	75.73
6X	0.2071	0.485	0.003004	-0.5020	0.3546	-0.3364	1.207	-0.515	71.5
6XY	0.2073	0.4996	0.01169	-0.5318	0.0884	-0.4642	-0.7927	-0.5004	71.51
6Y	0.221	0.4993	-0.02037	-1.3425	0.1285	-0.3254	-0.779	1.499	71.48
7X	0.1917	0.4208	0.002793	-1.0353	0.1062	-0.1239	1.192	-0.5792	67.25
7XY	0.1917	0.4273	0.01193	-1.1766	0.2237	-0.2544	-0.8083	-0.5727	67.26
7Y	0.1989	0.4283	-0.01857	-0.7878	0.3488	-0.1454	-0.8011	1.428	67.23
12X	0.1753	0.3606	0.002093	-0.4383	0.3798	0.0767	1.175	-0.6394	63
12XY	0.1755	0.3603	0.01174	-0.4452	0.1496	-0.0461	-0.8245	-0.6397	63.01
12Y	0.1756	0.3604	-0.01629	-1.1898	0.1838	0.0459	-0.8244	1.36	62.98
13X	0	0	0	0.0000	0.0000	0.0000	4.125	-4.125	0
13XY	0	0	0	0.0000	0.0000	0.0000	-4.125	-4.125	0
13Y	0	0	0	0.0000	0.0000	0.0000	-4.125	4.125	0
26X	0.2044	0.6535	-0.4237	7.6754	0.1786	-0.4634	0.2044	-5.016	79.58
27X	0.1694	0.5122	-0.4215	7.6701	0.1784	-0.4654	0.1694	-5.158	71.08
28X	0.1795	0.3818	-0.4395	7.9205	0.2760	0.1050	0.1795	-5.288	62.56
2S	0.2829	0.7503	-0.01782	-1.0282	0.2663	-0.4552	0.5829	1.05	86.98
3S	0.2723	0.6962	-0.02356	-0.8550	0.2019	-0.4645	0.8723	1.296	83.98
14S	0.1569	0.3118	-0.02758	-0.6410	0.2634	-0.1039	1.331	1.485	59.47
15S	0.1382	0.2643	-0.02807	-0.6708	0.2961	-0.0961	1.51	1.636	55.47
16S	0.1168	0.2203	-0.02774	-0.5706	0.2848	-0.0843	1.687	1.791	51.47
17S	0.09298	0.1703	-0.0272	-0.4755	0.2406	-0.0729	1.936	2.014	45.97
18S	0.07001	0.1273	-0.02573	-0.4027	0.2181	-0.0617	2.186	2.243	40.47
19S	0.05171	0.09228	-0.02342	-0.3233	0.1776	-0.0508	2.441	2.481	34.98
20S	0.03704	0.06629	-0.02069	-0.2616	0.1461	-0.0413	2.674	2.703	29.98
21S	0.02594	0.04548	-0.01815	-0.2091	0.1155	-0.0333	2.911	2.93	24.98
22S	0.01665	0.02903	-0.01519	-0.1606	0.0884	-0.0253	3.15	3.162	19.98
23S	0.01006	0.01658	-0.01178	-0.1213	0.0701	-0.0174	3.391	3.398	14.99
24S	0.004696	0.007695	-0.008041	-0.0681	0.0323	-0.0097	3.634	3.637	9.992
25S	0.002549	0.002841	-0.004079	-0.0451	0.0289	-0.0048	3.88	3.88	4.996
2X	0.2784	0.7505	-0.007458	-0.9718	0.2604	-0.4240	0.5784	0.4505	86.99
2XY	0.2784	0.7545	-0.0047	-0.9773	0.2405	-0.4468	-0.02159	0.4545	87
2Y	0.2829	0.7544	-0.01515	-1.0408	0.2353	-0.4254	-0.01706	1.054	86.98
3X	0.2631	0.6963	-0.003135	-1.1158	0.1990	-0.4253	0.8631	0.09634	84
3XY	0.2631	0.7052	0.002054	-1.1055	0.2771	-0.4471	-0.3369	0.1052	84

3Y	0.2723	0.7051	-0.01839	-0.8443	0.2656	-0.4329	-0.3277	1.305	83.98
14X	0.1569	0.3132	0.00267	-0.8652	0.3022	0.0537	1.33	-0.8604	59.5
14XY	0.157	0.3135	0.01431	-0.8518	0.3273	-0.0303	-1.017	-0.8601	59.51
14Y	0.1569	0.3118	-0.01574	-0.6344	0.3672	0.0242	-1.017	1.485	59.48
15X	0.1343	0.262	0.003148	-0.6450	0.3128	0.0524	1.506	-1.11	55.5
15XY	0.1376	0.263	0.01637	-0.6329	0.2688	-0.0331	-1.234	-1.109	55.52
15Y	0.1327	0.2644	-0.01451	-0.6796	0.3017	0.0265	-1.239	1.636	55.49
16X	0.1151	0.2197	0.003285	-0.5777	0.2722	0.0479	1.686	-1.351	51.5
16XY	0.1175	0.2217	0.01734	-0.5644	0.2739	-0.0320	-1.453	-1.349	51.52
16Y	0.1139	0.22	-0.01334	-0.5781	0.2716	0.0222	-1.456	1.79	51.49
17X	0.08932	0.1678	0.003569	-0.4942	0.2518	0.0414	1.933	-1.676	46
17XY	0.09339	0.1705	0.01833	-0.4887	0.2359	-0.0279	-1.75	-1.673	46.02
17Y	0.08712	0.1699	-0.0121	-0.4790	0.2547	0.0186	-1.756	2.013	45.99
18X	0.06816	0.1253	0.003599	-0.4010	0.2079	0.0369	2.184	-1.991	40.5
18XY	0.07108	0.1283	0.01824	-0.3992	0.2103	-0.0254	-2.045	-1.988	40.52
18Y	0.06618	0.1269	-0.01084	-0.4053	0.2032	0.0151	-2.05	2.243	40.49
19X	0.04966	0.09031	0.003389	-0.3271	0.1743	0.0308	2.439	-2.299	35
19XY	0.05266	0.09306	0.01724	-0.3303	0.1747	-0.0211	-2.336	-2.296	35.02
19Y	0.04756	0.092	-0.009458	-0.3238	0.1709	0.0119	-2.341	2.481	34.99
20X	0.03636	0.06483	0.003062	-0.2611	0.1428	0.0254	2.673	-2.572	30
20XY	0.03815	0.06711	0.01562	-0.2642	0.1442	-0.0176	-2.599	-2.57	30.02
20Y	0.03467	0.06621	-0.008133	-0.2639	0.1378	0.0097	-2.602	2.703	29.99
21X	0.02483	0.04419	0.002741	-0.2130	0.1199	0.0201	2.91	-2.841	25
21XY	0.02677	0.04614	0.01402	-0.2149	0.1163	-0.0141	-2.858	-2.839	25.01
21Y	0.02329	0.0453	-0.006976	-0.2133	0.1160	0.0080	-2.862	2.93	24.99
22X	0.01576	0.02768	0.002347	-0.1664	0.0956	0.0148	3.149	-3.105	20
22XY	0.01732	0.02939	0.01195	-0.1655	0.0904	-0.0107	-3.116	-3.104	20.01
22Y	0.01458	0.02863	-0.005747	-0.1676	0.0921	0.0066	-3.118	3.162	19.99
23X	0.008474	0.01522	0.001837	-0.1186	0.0677	0.0097	3.389	-3.366	15
23XY	0.01035	0.01675	0.009407	-0.1242	0.0711	-0.0072	-3.371	-3.364	15.01
23Y	0.007461	0.01587	-0.004395	-0.1211	0.0630	0.0048	-3.373	3.397	15
24X	0.00381	0.006725	0.001271	-0.0797	0.0504	0.0037	3.633	-3.622	10
24XY	0.004912	0.007697	0.006505	-0.0729	0.0370	-0.0035	-3.624	-3.621	10.01
24Y	0.003241	0.007162	-0.002978	-0.0792	0.0499	0.0041	-3.626	3.636	9.997
25X	0.000213	0.001196	0.0006524	-0.0374	0.0209	0.0022	3.877	-3.876	5.001
25XY	0.0023	0.002583	0.003351	-0.0449	0.0297	-0.0019	-3.875	-3.874	5.003
25Y	-0.0003525	0.001566	-0.001496	-0.0403	0.0166	0.0016	-3.877	3.879	4.999

Joint Support Reactions for Load Case "NESC Heavy":

Joint Label	X Force (kips)	X Usage %(kips)	Y Force (kips)	Y Usage %	H-Shear Usage %	Z Force (kips)	Comp. Usage %	Uplift Usage %	Result. Force (kips)	Result. Usage %	X Moment (ft-k)	X-M. Usage %	Y Moment (ft-k)	Y-M. Usage %	H-Bend-M Usage %	Z Moment (ft-k)	Z-M. Usage %	Max. Usage %
13P	-4.77	0.0	-4.93	0.0	0.0	-77.09	0.0	0.0	77.39	0.0	0.47	0.0	-0.5	0.0	0.0	0.01	0.0	0.0
13X	0.54	0.0	-0.89	0.0	0.0	12.24	0.0	0.0	12.29	0.0	0.03	0.0	0.1	0.0	0.0	-0.03	0.0	0.0
13XY	-4.18	0.0	-4.14	0.0	0.0	63.72	0.0	0.0	63.99	0.0	0.39	0.0	-0.4	0.0	0.0	0.01	0.0	0.0
13Y	1.65	0.0	-1.90	0.0	0.0	-28.25	0.0	0.0	28.36	0.0	0.12	0.0	0.3	0.0	0.0	0.01	0.0	0.0

Joint Displacements, Loads and Member Forces on Joints for Load Case "NESC Heavy":

Joint Label	X External Load (kips)	Y External Load (kips)	Z External Load (kips)	X Member Force (kips)	Y Member Force (kips)	Z Member Force (kips)	X Disp. (ft)	Y Disp. (ft)	Z Disp. (ft)
1P	0.0000	0.6551	-0.9893	0.0000	-0.6551	0.9893	0.2945	0.8057	-0.0118
4P	0.0000	0.0000	-0.1025	-0.0000	0.0000	0.1025	0.2586	0.6254	-0.0310
5P	0.0000	0.0000	-0.0958	0.0000	0.0000	0.0958	0.2399	0.5541	-0.0301

6P	0.0000	0.0000	-0.1238	-0.0000	0.0000	0.1238	0.2213	0.4848	-0.0289
7P	0.0000	0.0000	-0.0958	0.0000	0.0000	0.0958	0.1990	0.4205	-0.0276
12P	0.0000	0.0000	-0.1137	-0.0000	0.0000	0.1137	0.1760	0.3601	-0.0260
13P	0.0000	0.0000	-0.0687	4.7745	4.9270	-77.0189	0.0000	0.0000	0.0000
26P	-0.2070	1.2160	-2.7540	0.2070	-1.2160	2.7540	0.2920	0.6014	-0.5696
27P	1.9840	1.2550	-2.8720	-1.9840	-1.2550	2.8720	0.2540	0.4603	-0.5676
28P	1.6670	1.2280	-2.9100	-1.6670	-1.2280	2.9100	0.1754	0.3293	-0.5579
4X	0.0000	0.0553	-0.1025	0.0000	-0.0553	0.1025	0.2431	0.6257	0.0024
4XY	0.0000	0.0653	-0.1025	0.0000	-0.0653	0.1025	0.2432	0.6413	0.0108
4Y	0.0000	0.0000	-0.1025	-0.0000	0.0000	0.1025	0.2585	0.6409	-0.0226
5X	0.0000	0.1961	-0.3868	-0.0000	-0.1960	0.3868	0.2253	0.5549	0.0029
5XY	0.0000	0.0891	-0.0958	-0.0000	-0.0890	0.0958	0.2254	0.5698	0.0113
5Y	0.0000	0.0000	-0.0958	0.0000	-0.0000	0.0958	0.2399	0.5695	-0.0216
6X	0.0000	0.0771	-0.1238	0.0000	-0.0771	0.1238	0.2071	0.4850	0.0030
6XY	0.0000	0.0771	-0.1238	0.0000	-0.0770	0.1238	0.2073	0.4996	0.0117
6Y	0.0000	0.0000	-0.1238	-0.0000	0.0000	0.1238	0.2210	0.4993	-0.0204
7X	0.0000	0.0891	-0.0958	-0.0000	-0.0890	0.0958	0.1917	0.4208	0.0028
7XY	0.0000	0.0891	-0.0958	-0.0000	-0.0890	0.0958	0.1917	0.4273	0.0119
7Y	0.0000	0.0000	-0.0958	0.0000	-0.0000	0.0958	0.1989	0.4283	-0.0186
12X	0.0000	0.1732	-0.3947	0.0000	-0.1732	0.3947	0.1753	0.3606	0.0021
12XY	0.0000	0.0702	-0.1137	0.0000	-0.0702	0.1137	0.1755	0.3603	0.0117
12Y	0.0000	0.0000	-0.1137	-0.0000	0.0000	0.1137	0.1756	0.3604	-0.0163
13X	0.0000	0.0554	-0.0687	-0.5369	0.8331	12.3104	0.0000	0.0000	0.0000
13XY	0.0000	0.0554	-0.0687	4.1788	4.0806	63.7849	0.0000	0.0000	0.0000
13Y	0.0000	0.0000	-0.0687	-1.6514	1.9042	-28.1830	0.0000	0.0000	0.0000
26X	-0.6560	1.0663	-2.8030	0.6560	-1.0663	2.8030	0.2044	0.6535	-0.4237
27X	-2.4530	1.0833	-2.8580	2.4530	-1.0833	2.8580	0.1694	0.5122	-0.4215
28X	6.4300	1.0963	-2.9620	-6.4300	-1.0963	2.9620	0.1795	0.3818	-0.4395
2S	0.0000	0.0880	-0.3345	0.0000	-0.0880	0.3345	0.2829	0.7503	-0.0178
3S	0.0000	0.0000	-0.0374	0.0000	0.0000	0.0374	0.2723	0.6962	-0.0236
14S	0.0000	0.0000	-0.0827	0.0000	0.0000	0.0827	0.1569	0.3118	-0.0276
15S	0.0000	0.0000	-0.0706	0.0000	0.0000	0.0706	0.1382	0.2643	-0.0281
16S	0.0000	0.0000	-0.0902	0.0000	0.0000	0.0902	0.1168	0.2203	-0.0277
17S	0.0000	0.0000	-0.1100	0.0000	0.0000	0.1100	0.0930	0.1703	-0.0272
18S	0.0000	0.0000	-0.1120	0.0000	0.0000	0.1120	0.0700	0.1273	-0.0257
19S	0.0000	0.0000	-0.1099	0.0000	0.0000	0.1099	0.0517	0.0923	-0.0234
20S	0.0000	0.0000	-0.1139	0.0000	0.0000	0.1139	0.0370	0.0663	-0.0207
21S	0.0000	0.0000	-0.1223	-0.0000	0.0000	0.1223	0.0259	0.0455	-0.0182
22S	0.0000	0.0000	-0.1247	-0.0000	0.0000	0.1247	0.0166	0.0290	-0.0152
23S	0.0000	0.0000	-0.1272	-0.0000	0.0000	0.1272	0.0101	0.0166	-0.0118
24S	0.0000	0.0000	-0.1316	0.0000	0.0000	0.1316	0.0047	0.0077	-0.0080
25S	0.0000	0.0000	-0.1361	-0.0000	0.0000	0.1361	0.0025	0.0028	-0.0041
2X	0.0000	0.1168	-0.3345	0.0000	-0.1168	0.3345	0.2784	0.7505	-0.0075
2XY	0.0000	0.0215	-0.0255	0.0000	-0.0215	0.0255	0.2784	0.7545	-0.0047
2Y	0.0000	0.0880	-0.3345	0.0000	-0.0880	0.3345	0.2829	0.7544	-0.0151
3X	0.0000	0.0783	-0.1514	-0.0000	-0.0783	0.1514	0.2631	0.6963	-0.0031
3XY	0.0000	0.0336	-0.0374	-0.0000	-0.0336	0.0374	0.2631	0.7052	0.0021
3Y	0.0000	0.0000	-0.0374	0.0000	0.0000	0.0374	0.2723	0.7051	-0.0184
14X	0.0000	0.0826	-0.0827	-0.0000	-0.0826	0.0827	0.1569	0.3132	0.0027
14XY	0.0000	0.0826	-0.0827	-0.0000	-0.0826	0.0827	0.1570	0.3135	0.0143
14Y	0.0000	0.0000	-0.0827	0.0000	-0.0000	0.0827	0.1569	0.3118	-0.0157
15X	0.0000	0.1524	-0.3066	0.0000	-0.1524	0.3066	0.1343	0.2620	0.0031
15XY	0.0000	0.0654	-0.0706	0.0000	-0.0654	0.0706	0.1376	0.2630	0.0164
15Y	0.0000	0.0000	-0.0706	0.0000	0.0000	0.0706	0.1327	0.2644	-0.0145
16X	0.0000	0.0774	-0.0902	0.0000	-0.0774	0.0902	0.1151	0.2197	0.0033
16XY	0.0000	0.0774	-0.0902	0.0000	-0.0774	0.0902	0.1175	0.2217	0.0173
16Y	0.0000	0.0000	-0.0902	0.0000	0.0000	0.0902	0.1139	0.2200	-0.0133
17X	0.0000	0.1947	-0.3940	0.0000	-0.1947	0.3940	0.0893	0.1678	0.0036
17XY	0.0000	0.0897	-0.1100	0.0000	-0.0897	0.1100	0.0934	0.1705	0.0183

17Y	0.0000	0.0000	-0.1100	0.0000	0.0000	0.1100	0.0871	0.1699	-0.0121
18X	0.0000	0.0911	-0.1120	0.0000	-0.0911	0.1120	0.0682	0.1253	0.0036
18XY	0.0000	0.0911	-0.1120	0.0000	-0.0911	0.1120	0.0711	0.1283	0.0182
18Y	0.0000	0.0000	-0.1120	0.0000	0.0000	0.1120	0.0662	0.1269	-0.0108
19X	0.0000	0.1962	-0.4009	0.0000	-0.1962	0.4009	0.0497	0.0903	0.0034
19XY	0.0000	0.0892	-0.1099	0.0000	-0.0892	0.1099	0.0527	0.0931	0.0172
19Y	0.0000	0.0000	-0.1099	0.0000	0.0000	0.1099	0.0476	0.0920	-0.0095
20X	0.0000	0.0873	-0.1139	0.0000	-0.0873	0.1139	0.0364	0.0648	0.0031
20XY	0.0000	0.0873	-0.1139	0.0000	-0.0873	0.1139	0.0382	0.0671	0.0156
20Y	0.0000	0.0000	-0.1139	0.0000	0.0000	0.1139	0.0347	0.0662	-0.0081
21X	0.0000	0.1910	-0.3993	0.0000	-0.1910	0.3993	0.0248	0.0442	0.0027
21XY	0.0000	0.0890	-0.1223	0.0000	-0.0890	0.1223	0.0268	0.0461	0.0140
21Y	0.0000	0.0000	-0.1223	0.0000	0.0000	0.1223	0.0233	0.0453	-0.0070
22X	0.0000	0.0908	-0.1247	0.0000	-0.0908	0.1247	0.0158	0.0277	0.0023
22XY	0.0000	0.0908	-0.1247	0.0000	-0.0908	0.1247	0.0173	0.0294	0.0119
22Y	0.0000	0.0000	-0.1247	-0.0000	0.0000	0.1247	0.0146	0.0286	-0.0057
23X	0.0000	0.1947	-0.4042	0.0000	-0.1947	0.4042	0.0085	0.0152	0.0018
23XY	0.0000	0.0927	-0.1272	0.0000	-0.0927	0.1272	0.0103	0.0168	0.0094
23Y	0.0000	0.0000	-0.1272	-0.0000	0.0000	0.1272	0.0075	0.0159	-0.0044
24X	0.0000	0.1012	-0.1316	0.0000	-0.1012	0.1316	0.0038	0.0067	0.0013
24XY	0.0000	0.1012	-0.1316	0.0000	-0.1012	0.1316	0.0049	0.0077	0.0065
24Y	0.0000	0.0000	-0.1316	-0.0000	0.0000	0.1316	0.0032	0.0072	-0.0030
25X	0.0000	0.2118	-0.4131	0.0000	-0.2118	0.4131	0.0002	0.0012	0.0007
25XY	0.0000	0.1098	-0.1361	0.0000	-0.1098	0.1361	0.0023	0.0026	0.0034
25Y	0.0000	0.0000	-0.1361	0.0000	0.0000	0.1361	-0.0004	0.0016	-0.0015

Crossing Diagonal Check for Load Case "NESC Heavy" (RLOUT controls):

Comp. Member Label	Tens. Member Label	Connect Leg for Comp. Member	Force In Comp. Member (kips)	Force In Tens. Member (kips)	Original Supported L/R Cap. (kips)	Original Supported RLX	Original Supported RLY	Original Supported RLZ	Original Supported L/R	Original Supported KL/R	Original Supported Curve No.	Alternate Unsupported L/R Cap. (kips)	Alternate Unsupported RLOUT	Alternate Unsupported L/R	Alternate Unsupported KL/R	Alternate Unsupported Curve No.
g34P	g34Y	Long only	-1.00	-1.57	18.49	0.500	0.750	0.500	97.86	103.39	2	14.41	1.000	130.47	126.44	6
g34Y	g34P	Long only	-1.57	-1.00	18.49	0.500	0.750	0.500	97.86	103.39	2	14.41	1.000	130.47	126.44	6
g36P	g36Y	Long only	-1.88	-2.49	18.49	0.500	0.750	0.500	97.86	103.39	2	14.41	1.000	130.47	126.44	6
g36Y	g36P	Long only	-2.49	-1.88	18.49	0.500	0.750	0.500	97.86	103.39	2	14.41	1.000	130.47	126.44	6
g87Y	g87P	Long only	-12.48	1.00	18.49	0.500	0.750	0.500	97.86	103.39	2	14.41	1.000	130.47	126.44	6
g49P	g49X	Short only	-3.78	-0.01	15.79	0.773	0.545	0.545	78.63	88.97	2	13.82	1.000	92.15	106.07	3
g49X	g49P	Short only	-0.01	-3.78	15.79	0.773	0.545	0.545	78.63	88.97	2	13.82	1.000	92.15	106.07	3
g49XY	g49Y	Short only	-0.19	-4.41	15.79	0.773	0.545	0.545	78.63	88.97	2	13.82	1.000	92.15	106.07	3
g49Y	g49XY	Short only	-4.41	-0.19	15.79	0.773	0.545	0.545	78.63	88.97	2	13.82	1.000	92.15	106.07	3
g50P	g50Y	Short only	-1.50	-8.60	15.79	0.773	0.545	0.545	78.63	88.97	2	13.82	1.000	92.15	106.07	3
g50Y	g50P	Short only	-8.60	-1.50	15.79	0.773	0.545	0.545	78.63	88.97	2	13.82	1.000	92.15	106.07	3
g74P	g74Y	Short only	-0.14	-1.02	6.09	0.758	0.517	0.517	170.73	170.73	4	3.99	1.000	210.93	210.93	4
g74Y	g74P	Short only	-1.02	-0.14	6.09	0.758	0.517	0.517	170.73	170.73	4	3.99	1.000	210.93	210.93	4

Summary of Clamp Capacities and Usages for Load Case "NESC Heavy":

Clamp Label	Force (kips)	Input Holding Capacity (kips)	Factored Holding Capacity (kips)	Usage %
1	3.018	50.00	50.00	6.04
2	3.070	50.00	50.00	6.14

3	3.709	50.00	50.00	7.42
4	3.919	50.00	50.00	7.84
5	3.571	50.00	50.00	7.14
6	7.164	50.00	50.00	14.33
9	0.050	50.00	50.00	0.10
10	0.131	50.00	50.00	0.26
12	0.134	50.00	50.00	0.27
13	0.096	50.00	50.00	0.19
14	0.142	50.00	50.00	0.28
15	0.142	50.00	50.00	0.28
16	0.151	50.00	50.00	0.30
17	0.157	50.00	50.00	0.31
18	0.175	50.00	50.00	0.35
19	1.187	50.00	50.00	2.37
20	0.346	50.00	50.00	0.69
21	0.354	50.00	50.00	0.71
22	0.346	50.00	50.00	0.69
23	0.170	50.00	50.00	0.34
24	0.434	50.00	50.00	0.87
25	0.431	50.00	50.00	0.86
26	0.342	50.00	50.00	0.68
27	0.439	50.00	50.00	0.88
28	0.446	50.00	50.00	0.89
29	0.443	50.00	50.00	0.89
30	0.449	50.00	50.00	0.90
31	0.464	50.00	50.00	0.93

*** Analysis Results for Load Case No. 2 "NESC Extreme" - Number of iterations in SAPS 13

Equilibrium Joint Positions and Rotations for Load Case "NESC Extreme":

Joint Label	X-Displ (ft)	Y-Displ (ft)	Z-Displ (ft)	X-Rot (deg)	Y-Rot (deg)	Z-Rot (deg)	X-Pos (ft)	Y-Pos (ft)	Z-Pos (ft)
1P	-0.1063	1.258	-0.01559	-1.5393	-0.1341	-0.1263	-0.1063	1.258	89.98
4P	-0.07638	0.9896	-0.03488	-1.7410	-0.0883	-0.1594	0.9236	1.99	79.97
5P	-0.06425	0.8789	-0.03304	-1.3724	-0.2035	-0.1507	0.9358	1.879	75.72
6P	-0.05226	0.7711	-0.03099	-1.6145	-0.1005	-0.1494	0.9477	1.771	71.47
7P	-0.04218	0.6667	-0.02864	-1.2787	-0.1711	-0.0842	0.9578	1.667	67.22
12P	-0.03315	0.5697	-0.02599	-1.4159	-0.0581	-0.0244	0.9669	1.57	62.97
13P	0	0	0	0.0000	0.0000	0.0000	4.125	4.125	0
26P	-0.06495	0.9798	-0.375	-5.0904	-0.1639	-0.1284	-0.06495	6.65	79.62
27P	-0.04121	0.7612	-0.3693	-5.1072	-0.1556	-0.1307	-0.04121	6.431	71.13
28P	-0.03377	0.5582	-0.3519	-4.9868	-0.1215	0.0154	-0.03377	6.228	62.65
4X	-0.08138	0.9903	0.01683	-1.2103	-0.0840	-0.1358	0.9186	-0.009736	80.02
4XY	-0.08126	0.995	0.01097	-1.2226	-0.2666	-0.1449	-1.081	-0.004973	80.01
4Y	-0.07651	0.9943	-0.04068	-1.7324	-0.2560	-0.1012	-1.077	1.994	79.96
5X	-0.06888	0.8802	0.01787	-1.5985	-0.2062	-0.1283	0.9311	-0.1198	75.77
5XY	-0.06882	0.8843	0.01215	-1.5936	-0.1315	-0.1405	-1.069	-0.1157	75.76
5Y	-0.06428	0.8839	-0.03876	-1.3777	-0.1292	-0.0942	-1.064	1.884	75.71
6X	-0.0569	0.7716	0.01845	-1.2279	-0.1057	-0.1244	0.9431	-0.2284	71.52
6XY	-0.0566	0.776	0.01299	-1.2494	-0.2396	-0.1277	-1.057	-0.224	71.51
6Y	-0.05259	0.7754	-0.03646	-1.6165	-0.2230	-0.0832	-1.053	1.775	71.46
7X	-0.0442	0.6682	0.01833	-1.4577	-0.2131	-0.0529	0.9558	-0.3318	67.27
7XY	-0.04408	0.669	0.01353	-1.5000	-0.1549	-0.0586	-1.044	-0.331	67.26
7Y	-0.04231	0.67	-0.03358	-1.3230	-0.1079	-0.0219	-1.042	1.67	67.22
12X	-0.03331	0.5703	0.01733	-1.0715	-0.0663	0.0142	0.9667	-0.4297	63.02
12XY	-0.03289	0.5696	0.01347	-1.0884	-0.1773	0.0150	-1.033	-0.4304	63.01
12Y	-0.03362	0.5692	-0.03012	-1.4354	-0.1778	0.0428	-1.034	1.569	62.97
13X	0	0	0	0.0000	0.0000	0.0000	4.125	-4.125	0
13XY	0	0	0	0.0000	0.0000	0.0000	-4.125	-4.125	0
13Y	0	0	0	0.0000	0.0000	0.0000	-4.125	4.125	0
26X	-0.09266	0.9942	-0.1045	2.5901	-0.1848	-0.1457	-0.09266	-4.676	79.9
27X	-0.06781	0.7755	-0.1054	2.6261	-0.1794	-0.1472	-0.06781	-4.895	71.39
28X	-0.02964	0.5722	-0.1285	2.9423	-0.1182	0.0489	-0.02964	-5.098	62.87
2S	-0.0984	1.177	-0.02168	-1.5451	-0.1410	-0.1321	0.2016	1.477	86.98
3S	-0.08943	1.096	-0.0275	-1.4655	-0.1875	-0.1320	0.5106	1.696	83.97
14S	-0.02684	0.4956	-0.02682	-1.1030	-0.1418	-0.0145	1.147	1.669	59.47
15S	-0.01728	0.4208	-0.02675	-1.0204	-0.0888	-0.0127	1.355	1.793	55.47
16S	-0.01416	0.3538	-0.02614	-0.8943	-0.0525	-0.0095	1.556	1.924	51.47
17S	-0.007121	0.2745	-0.02546	-0.7549	-0.0557	-0.0071	1.836	2.118	45.97
18S	-0.004789	0.2077	-0.02409	-0.6385	-0.0251	-0.0049	2.111	2.324	40.48
19S	-0.001813	0.1516	-0.02203	-0.5210	-0.0201	-0.0035	2.387	2.54	34.98
20S	-0.001355	0.1105	-0.01958	-0.4263	-0.0122	-0.0028	2.636	2.747	29.98
21S	0.0001287	0.07615	-0.01731	-0.3484	-0.0131	-0.0026	2.885	2.961	24.98
22S	0.0005212	0.04921	-0.0146	-0.2730	-0.0117	-0.0024	3.133	3.182	19.99
23S	0.001503	0.0279	-0.01142	-0.2050	-0.0001	-0.0022	3.382	3.409	14.99
24S	0.0009327	0.01326	-0.007864	-0.1289	-0.0159	-0.0028	3.63	3.642	9.992
25S	0.002179	0.003832	-0.004032	-0.0780	0.0084	-0.0012	3.879	3.881	4.996
2X	-0.09989	1.177	-0.005877	-1.5145	-0.1364	-0.1346	0.2001	0.877	86.99
2XY	-0.09988	1.178	-0.007247	-1.5243	-0.1554	-0.1264	-0.3999	0.8776	86.99
2Y	-0.0984	1.177	-0.02317	-1.5522	-0.1600	-0.1223	-0.3984	1.477	86.98
3X	-0.09235	1.096	0.003985	-1.5877	-0.1859	-0.1470	0.5076	0.4963	84
3XY	-0.09235	1.098	0.000752	-1.5697	-0.1516	-0.1238	-0.6923	0.4985	84

3Y	-0.08943	1.098	-0.03075	-1.4521	-0.1559	-0.1270	-0.6894	1.698	83.97
14X	-0.02737	0.4976	0.01964	-1.1945	-0.0665	0.0031	1.146	-0.676	59.52
14XY	-0.02722	0.4952	0.01618	-1.2176	-0.0902	0.0187	-1.201	-0.6784	59.52
14Y	-0.02698	0.495	-0.03088	-1.1053	-0.0489	0.0326	-1.201	1.669	59.47
15X	-0.02518	0.421	0.02116	-1.0113	-0.0425	0.0050	1.347	-0.9511	55.52
15XY	-0.01912	0.4179	0.01809	-1.0161	-0.0882	0.0135	-1.391	-0.9542	55.52
15Y	-0.02452	0.4188	-0.03057	-1.0416	-0.0645	0.0307	-1.397	1.791	55.47
16X	-0.02005	0.3547	0.0217	-0.8862	-0.0560	0.0070	1.55	-1.216	51.52
16XY	-0.01609	0.351	0.01894	-0.8995	-0.0457	0.0091	-1.587	-1.219	51.52
16Y	-0.01812	0.3509	-0.02963	-0.8979	-0.0673	0.0257	-1.589	1.921	51.47
17X	-0.01716	0.2754	0.02229	-0.7639	-0.0296	0.0053	1.826	-1.568	46.02
17XY	-0.01018	0.2705	0.01981	-0.7649	-0.0509	0.0078	-1.853	-1.573	46.02
17Y	-0.01519	0.2713	-0.02857	-0.7613	-0.0337	0.0220	-1.858	2.115	45.97
18X	-0.01268	0.2078	0.02187	-0.6357	-0.0378	0.0062	2.103	-1.908	40.52
18XY	-0.007602	0.2035	0.01958	-0.6347	-0.0271	0.0046	-2.124	-1.913	40.52
18Y	-0.0101	0.2037	-0.02677	-0.6378	-0.0409	0.0178	-2.126	2.32	40.47
19X	-0.009866	0.1523	0.02046	-0.5253	-0.0285	0.0051	2.379	-2.237	35.02
19XY	-0.004731	0.1477	0.01841	-0.5194	-0.0236	0.0036	-2.394	-2.241	35.02
19Y	-0.007701	0.1481	-0.02422	-0.5187	-0.0268	0.0145	-2.397	2.537	34.98
20X	-0.006821	0.1103	0.01849	-0.4255	-0.0241	0.0044	2.63	-2.527	30.02
20XY	-0.003617	0.1067	0.01664	-0.4191	-0.0178	0.0026	-2.641	-2.53	30.02
20Y	-0.004692	0.1069	-0.02134	-0.4202	-0.0208	0.0118	-2.642	2.744	29.98
21X	-0.005224	0.07672	0.01652	-0.3485	-0.0154	0.0030	2.88	-2.808	25.02
21XY	-0.00186	0.07329	0.01488	-0.3415	-0.0185	0.0025	-2.887	-2.812	25.01
21Y	-0.003736	0.07354	-0.01869	-0.3405	-0.0103	0.0098	-2.889	2.958	24.98
22X	-0.00362	0.04896	0.01408	-0.2745	-0.0093	0.0017	3.129	-3.084	20.01
22XY	-0.0007897	0.04664	0.01265	-0.2661	-0.0170	0.0024	-3.134	-3.086	20.01
22Y	-0.00244	0.04683	-0.01565	-0.2656	-0.0039	0.0080	-3.135	3.18	19.98
23X	-0.002868	0.0283	0.01106	-0.2039	-0.0135	0.0007	3.378	-3.353	15.01
23XY	0.0004808	0.02627	0.009939	-0.1964	-0.0057	0.0021	-3.38	-3.355	15.01
23Y	-0.00234	0.02653	-0.01213	-0.1967	-0.0094	0.0059	-3.383	3.407	14.99
24X	-0.001526	0.01305	0.007665	-0.1291	0.0063	-0.0013	3.627	-3.616	10.01
24XY	0.0005282	0.01205	0.006858	-0.1234	-0.0180	0.0028	-3.628	-3.617	10.01
24Y	-0.001166	0.0122	-0.0083	-0.1215	0.0115	0.0047	-3.63	3.641	9.992
25X	-0.002024	0.004025	0.003941	-0.0761	-0.0111	-0.0006	3.875	-3.873	5.004
25XY	0.001814	0.003301	0.00352	-0.0693	0.0059	0.0011	-3.875	-3.874	5.004
25Y	-0.00217	0.003609	-0.004218	-0.0706	-0.0092	0.0021	-3.879	3.881	4.996

Joint Support Reactions for Load Case "NESC Extreme":

Joint Label	X Force (kips)	X Usage %(kips)	Y Force (kips)	Y Usage %	H-Shear Usage %	Z Force (kips)	Comp. Usage %	Uplift Usage %	Result. Force (kips)	Result. Usage %	X Moment (ft-k)	X-M. Usage %	Y Moment (ft-k)	Y-M. Usage %	H-Bend-M Usage %	Z Moment (ft-k)	Z-M. Usage %	Max. Usage %
13P	-4.79	0.0	-5.93	0.0	0.0	-77.36	0.0	0.0	77.73	0.0	0.49	0.0	-0.6	0.0	0.0	-0.01	0.0	0.0
13X	4.61	0.0	-5.66	0.0	0.0	75.41	0.0	0.0	75.77	0.0	0.57	0.0	0.5	0.0	0.0	-0.01	0.0	0.0
13XY	-4.29	0.0	-4.72	0.0	0.0	67.03	0.0	0.0	67.34	0.0	0.39	0.0	-0.5	0.0	0.0	0.01	0.0	0.0
13Y	4.76	0.0	-5.46	0.0	0.0	-79.91	0.0	0.0	80.24	0.0	0.48	0.0	0.6	0.0	0.0	0.01	0.0	0.0

Joint Displacements, Loads and Member Forces on Joints for Load Case "NESC Extreme":

Joint Label	X External Load (kips)	Y External Load (kips)	Z External Load (kips)	X Member Force (kips)	Y Member Force (kips)	Z Member Force (kips)	X Disp. (ft)	Y Disp. (ft)	Z Disp. (ft)
1P	0.0000	0.5416	-0.4075	0.0000	-0.5416	0.4075	-0.1063	1.2577	-0.0156
4P	0.0000	0.0836	-0.0495	0.0000	-0.0836	0.0495	-0.0764	0.9896	-0.0349
5P	0.0000	0.0836	-0.0495	-0.0000	-0.0836	0.0495	-0.0642	0.8789	-0.0330

6P	0.0000	0.0836	-0.0495	0.0000	-0.0836	0.0495	-0.0523	0.7711	-0.0310
7P	0.0000	0.0836	-0.0495	-0.0000	-0.0836	0.0495	-0.0422	0.6667	-0.0286
12P	0.0000	0.0836	-0.0495	0.0000	-0.0836	0.0495	-0.0331	0.5697	-0.0260
13P	0.0000	0.1311	-0.0734	4.7943	5.7954	-77.2849	0.0000	0.0000	0.0000
26P	-0.4650	1.5116	-1.3175	0.4650	-1.5116	1.3175	-0.0650	0.9798	-0.3750
27P	0.2370	1.5226	-1.3745	-0.2370	-1.5226	1.3745	-0.0412	0.7612	-0.3693
28P	0.1500	1.5126	-1.3965	-0.1500	-1.5126	1.3965	-0.0338	0.5582	-0.3519
4X	0.0000	0.0836	-0.0495	-0.0000	-0.0836	0.0495	-0.0814	0.9903	0.0168
4XY	0.0000	0.0836	-0.0495	-0.0000	-0.0836	0.0495	-0.0813	0.9950	0.0110
4Y	0.0000	0.0836	-0.0495	0.0000	-0.0836	0.0495	-0.0765	0.9943	-0.0407
5X	0.0000	0.3726	-0.1175	-0.0000	-0.3726	0.1175	-0.0689	0.8802	0.0179
5XY	0.0000	0.0836	-0.0495	0.0000	-0.0836	0.0495	-0.0688	0.8843	0.0122
5Y	0.0000	0.0836	-0.0495	0.0000	-0.0836	0.0495	-0.0643	0.8839	-0.0388
6X	0.0000	0.0836	-0.0495	-0.0000	-0.0836	0.0495	-0.0569	0.7716	0.0185
6XY	0.0000	0.0836	-0.0495	-0.0000	-0.0836	0.0495	-0.0566	0.7760	0.0130
6Y	0.0000	0.0836	-0.0495	0.0000	-0.0836	0.0495	-0.0526	0.7754	-0.0365
7X	0.0000	0.0836	-0.0495	-0.0000	-0.0836	0.0495	-0.0442	0.6682	0.0183
7XY	0.0000	0.0836	-0.0495	0.0000	-0.0836	0.0495	-0.0441	0.6690	0.0135
7Y	0.0000	0.0836	-0.0495	0.0000	-0.0836	0.0495	-0.0423	0.6700	-0.0336
12X	0.0000	0.3626	-0.1155	-0.0000	-0.3626	0.1155	-0.0333	0.5703	0.0173
12XY	0.0000	0.0836	-0.0495	-0.0000	-0.0836	0.0495	-0.0329	0.5696	0.0135
12Y	0.0000	0.0836	-0.0495	-0.0000	-0.0836	0.0495	-0.0336	0.5692	-0.0301
13X	0.0000	0.1311	-0.0734	-4.6084	5.5260	75.4882	0.0000	0.0000	0.0000
13XY	0.0000	0.1311	-0.0734	4.2925	4.5879	67.1070	0.0000	0.0000	0.0000
13Y	0.0000	0.1311	-0.0734	-4.7554	5.3334	-79.8404	0.0000	0.0000	0.0000
26X	-0.6660	1.4296	-1.3385	0.6660	-1.4296	1.3385	-0.0927	0.9942	-0.1045
27X	-1.2950	1.4376	-1.3685	1.2950	-1.4376	1.3685	-0.0678	0.7755	-0.1054
28X	1.7620	1.4446	-1.4155	-1.7620	-1.4446	1.4155	-0.0296	0.5722	-0.1285
2S	0.0000	0.3306	-0.2065	-0.0000	-0.3306	0.2065	-0.0984	1.1768	-0.0217
3S	0.0000	0.0836	-0.0495	-0.0000	-0.0836	0.0495	-0.0894	1.0958	-0.0275
14S	0.0000	0.1796	-0.0976	-0.0000	-0.1796	0.0976	-0.0268	0.4956	-0.0268
15S	0.0000	0.0961	-0.0482	-0.0000	-0.0961	0.0482	-0.0173	0.4208	-0.0268
16S	0.0000	0.0961	-0.0482	0.0000	-0.0961	0.0482	-0.0142	0.3538	-0.0261
17S	0.0000	0.0961	-0.0482	-0.0000	-0.0961	0.0482	-0.0071	0.2745	-0.0255
18S	0.0000	0.2271	-0.1216	0.0000	-0.2271	0.1216	-0.0048	0.2077	-0.0241
19S	0.0000	0.1311	-0.0734	-0.0000	-0.1311	0.0734	-0.0018	0.1516	-0.0220
20S	0.0000	0.1311	-0.0734	0.0000	-0.1311	0.0734	-0.0014	0.1105	-0.0196
21S	0.0000	0.1311	-0.0734	0.0000	-0.1311	0.0734	0.0001	0.0761	-0.0173
22S	0.0000	0.1311	-0.0734	0.0000	-0.1311	0.0734	0.0005	0.0492	-0.0146
23S	0.0000	0.1311	-0.0734	-0.0000	-0.1311	0.0734	0.0015	0.0279	-0.0114
24S	0.0000	0.1311	-0.0734	0.0000	-0.1311	0.0734	0.0009	0.0133	-0.0079
25S	0.0000	0.1311	-0.0734	-0.0000	-0.1311	0.0734	0.0022	0.0038	-0.0040
2X	0.0000	0.3306	-0.2065	-0.0000	-0.3306	0.2065	-0.0999	1.1770	-0.0059
2XY	0.0000	0.0836	-0.0495	0.0000	-0.0836	0.0495	-0.0999	1.1776	-0.0072
2Y	0.0000	0.3306	-0.2065	0.0000	-0.3306	0.2065	-0.0984	1.1774	-0.0232
3X	0.0000	0.1976	-0.0765	-0.0000	-0.1976	0.0765	-0.0924	1.0963	0.0040
3XY	0.0000	0.0836	-0.0495	0.0000	-0.0836	0.0495	-0.0923	1.0985	0.0008
3Y	0.0000	0.0836	-0.0495	-0.0000	-0.0836	0.0495	-0.0894	1.0981	-0.0307
14X	0.0000	0.1796	-0.0976	0.0000	-0.1796	0.0976	-0.0274	0.4976	0.0196
14XY	0.0000	0.1796	-0.0976	0.0000	-0.1796	0.0976	-0.0272	0.4952	0.0162
14Y	0.0000	0.1796	-0.0976	0.0000	-0.1796	0.0976	-0.0270	0.4950	-0.0309
15X	0.0000	0.3301	-0.1032	0.0000	-0.3301	0.1032	-0.0252	0.4210	0.0212
15XY	0.0000	0.0961	-0.0482	-0.0000	-0.0961	0.0482	-0.0191	0.4179	0.0181
15Y	0.0000	0.0961	-0.0482	0.0000	-0.0961	0.0482	-0.0245	0.4188	-0.0306
16X	0.0000	0.0961	-0.0482	-0.0000	-0.0961	0.0482	-0.0201	0.3547	0.0217
16XY	0.0000	0.0961	-0.0482	0.0000	-0.0961	0.0482	-0.0161	0.3510	0.0189
16Y	0.0000	0.0961	-0.0482	-0.0000	-0.0961	0.0482	-0.0181	0.3509	-0.0296
17X	0.0000	0.3781	-0.1142	0.0000	-0.3781	0.1142	-0.0172	0.2754	0.0223
17XY	0.0000	0.0961	-0.0482	-0.0000	-0.0961	0.0482	-0.0102	0.2705	0.0198

17Y	0.0000	0.0961	-0.0482	0.0000	-0.0961	0.0482	-0.0152	0.2713	-0.0286
18X	0.0000	0.2271	-0.1216	-0.0000	-0.2271	0.1216	-0.0127	0.2078	0.0219
18XY	0.0000	0.2271	-0.1216	-0.0000	-0.2271	0.1216	-0.0076	0.2035	0.0196
18Y	0.0000	0.2271	-0.1216	-0.0000	-0.2271	0.1216	-0.0101	0.2037	-0.0268
19X	0.0000	0.4201	-0.1414	-0.0000	-0.4201	0.1414	-0.0099	0.1523	0.0205
19XY	0.0000	0.1311	-0.0734	-0.0000	-0.1311	0.0734	-0.0047	0.1477	0.0184
19Y	0.0000	0.1311	-0.0734	-0.0000	-0.1311	0.0734	-0.0077	0.1481	-0.0242
20X	0.0000	0.1311	-0.0734	-0.0000	-0.1311	0.0734	-0.0068	0.1103	0.0185
20XY	0.0000	0.1311	-0.0734	-0.0000	-0.1311	0.0734	-0.0036	0.1067	0.0166
20Y	0.0000	0.1311	-0.0734	-0.0000	-0.1311	0.0734	-0.0047	0.1069	-0.0213
21X	0.0000	0.4061	-0.1384	-0.0000	-0.4061	0.1384	-0.0052	0.0767	0.0165
21XY	0.0000	0.1311	-0.0734	-0.0000	-0.1311	0.0734	-0.0019	0.0733	0.0149
21Y	0.0000	0.1311	-0.0734	0.0000	-0.1311	0.0734	-0.0037	0.0735	-0.0187
22X	0.0000	0.1311	-0.0734	0.0000	-0.1311	0.0734	-0.0036	0.0490	0.0141
22XY	0.0000	0.1311	-0.0734	-0.0000	-0.1311	0.0734	-0.0008	0.0466	0.0127
22Y	0.0000	0.1311	-0.0734	-0.0000	-0.1311	0.0734	-0.0024	0.0468	-0.0156
23X	0.0000	0.4061	-0.1384	-0.0000	-0.4061	0.1384	-0.0029	0.0283	0.0111
23XY	0.0000	0.1311	-0.0734	-0.0000	-0.1311	0.0734	0.0005	0.0263	0.0099
23Y	0.0000	0.1311	-0.0734	0.0000	-0.1311	0.0734	-0.0023	0.0265	-0.0121
24X	0.0000	0.1311	-0.0734	0.0000	-0.1311	0.0734	-0.0015	0.0131	0.0077
24XY	0.0000	0.1311	-0.0734	-0.0000	-0.1311	0.0734	0.0005	0.0120	0.0069
24Y	0.0000	0.1311	-0.0734	-0.0000	-0.1311	0.0734	-0.0012	0.0122	-0.0083
25X	0.0000	0.4061	-0.1384	-0.0000	-0.4061	0.1384	-0.0020	0.0040	0.0039
25XY	0.0000	0.1311	-0.0734	0.0000	-0.1311	0.0734	0.0018	0.0033	0.0035
25Y	0.0000	0.1311	-0.0734	0.0000	-0.1311	0.0734	-0.0022	0.0036	-0.0042

Crossing Diagonal Check for Load Case "NESC Extreme" (RLOUT controls):

Comp. Member Label	Tens. Member Label	Connect Leg for Comp. Member	Force In Comp. Member (kips)	Force In Tens. Member (kips)	Original Supported L/R Cap. (kips)	RLX	RLY	RLZ	L/R	KL/R	Curve No.	Alternate Unsupported L/R Cap. (kips)	RLOUT	L/R	KL/R	Curve No.
g34P	g34Y	Long only	-2.16	-1.25	18.49	0.500	0.750	0.500	97.86	103.39	2	14.41	1.000	130.47	126.44	6
g34Y	g34P	Long only	-1.25	-2.16	18.49	0.500	0.750	0.500	97.86	103.39	2	14.41	1.000	130.47	126.44	6
g36P	g36Y	Long only	-3.56	-2.66	18.49	0.500	0.750	0.500	97.86	103.39	2	14.41	1.000	130.47	126.44	6
g36Y	g36P	Long only	-2.66	-3.56	18.49	0.500	0.750	0.500	97.86	103.39	2	14.41	1.000	130.47	126.44	6
g38P	g38Y	Long only	-3.99	-6.82	18.49	0.500	0.750	0.500	97.86	103.39	2	14.41	1.000	130.47	126.44	6
g38Y	g38P	Long only	-6.82	-3.99	18.49	0.500	0.750	0.500	97.86	103.39	2	14.41	1.000	130.47	126.44	6
g87P	g87Y	Long only	-6.45	-9.37	18.49	0.500	0.750	0.500	97.86	103.39	2	14.41	1.000	130.47	126.44	6
g87Y	g87P	Long only	-9.37	-6.45	18.49	0.500	0.750	0.500	97.86	103.39	2	14.41	1.000	130.47	126.44	6
g50P	g50Y	Short only	-6.84	-7.27	15.79	0.773	0.545	0.545	78.63	88.97	2	13.82	1.000	92.15	106.07	3
g50Y	g50P	Short only	-7.27	-6.84	15.79	0.773	0.545	0.545	78.63	88.97	2	13.82	1.000	92.15	106.07	3
g52P	g52Y	Short only	-2.52	-2.98	14.81	0.773	0.545	0.545	90.48	97.86	2	12.93	1.000	106.04	113.02	3
g52Y	g52P	Short only	-2.98	-2.52	14.81	0.773	0.545	0.545	90.48	97.86	2	12.93	1.000	106.04	113.02	3
g54X	g54XY	Short only	-1.11	-1.96	14.53	0.769	0.539	0.539	93.71	100.29	2	12.59	1.000	111.05	115.53	3
g54XY	g54X	Short only	-1.96	-1.11	14.53	0.769	0.539	0.539	93.71	100.29	2	12.59	1.000	111.05	115.53	3
g56P	g56Y	Short only	-0.95	-1.38	11.46	0.773	0.545	0.545	123.54	123.54	4	8.47	1.000	144.78	144.78	4
g56Y	g56P	Short only	-1.38	-0.95	11.46	0.773	0.545	0.545	123.54	123.54	4	8.47	1.000	144.78	144.78	4
g58X	g58XY	Short only	-0.26	-0.85	10.88	0.769	0.537	0.537	127.42	127.42	4	7.73	1.000	151.56	151.56	4
g58XY	g58X	Short only	-0.85	-0.26	10.88	0.769	0.537	0.537	127.42	127.42	4	7.73	1.000	151.56	151.56	4
g60P	g60Y	Short only	-0.22	-0.56	10.16	0.766	0.531	0.531	132.17	132.17	4	7.02	1.000	158.99	158.99	4
g60Y	g60P	Short only	-0.56	-0.22	10.16	0.766	0.531	0.531	132.17	132.17	4	7.02	1.000	158.99	158.99	4
g62XY	g62X	Short only	-0.31	0.04	10.37	0.763	0.527	0.527	130.79	130.79	4	7.06	1.000	158.52	158.52	4
g68X	g68XY	Short only	-0.03	-0.24	7.94	0.760	0.520	0.520	149.46	149.46	4	5.27	1.000	183.58	183.58	4
g68XY	g68X	Short only	-0.24	-0.03	7.94	0.760	0.520	0.520	149.46	149.46	4	5.27	1.000	183.58	183.58	4
g70P	g70Y	Short only	-0.16	-0.38	7.28	0.759	0.518	0.518	156.11	156.11	4	4.79	1.000	192.49	192.49	4
g70Y	g70P	Short only	-0.38	-0.16	7.28	0.759	0.518	0.518	156.11	156.11	4	4.79	1.000	192.49	192.49	4

g72X	g72XY	Short only	-0.41	-0.56	6.66	0.758	0.517	0.517	163.19	163.19	4	4.37	1.000	201.61	201.61	4
g72XY	g72X	Short only	-0.56	-0.41	6.66	0.758	0.517	0.517	163.19	163.19	4	4.37	1.000	201.61	201.61	4
g74P	g74Y	Short only	-0.74	-0.93	6.09	0.758	0.517	0.517	170.73	170.73	4	3.99	1.000	210.93	210.93	4
g74Y	g74P	Short only	-0.93	-0.74	6.09	0.758	0.517	0.517	170.73	170.73	4	3.99	1.000	210.93	210.93	4

Summary of Clamp Capacities and Usages for Load Case "NESC Extreme":

Clamp Label	Force (kips)	Input Holding Capacity (kips)	Factored Holding Capacity (kips)	Usage %
1	2.058	50.00	50.00	4.12
2	2.069	50.00	50.00	4.14
3	2.065	50.00	50.00	4.13
4	2.370	50.00	50.00	4.74
5	2.064	50.00	50.00	4.13
6	2.682	50.00	50.00	5.36
9	0.097	50.00	50.00	0.19
10	0.097	50.00	50.00	0.19
12	0.097	50.00	50.00	0.19
13	0.107	50.00	50.00	0.21
14	0.107	50.00	50.00	0.21
15	0.150	50.00	50.00	0.30
16	0.150	50.00	50.00	0.30
17	0.150	50.00	50.00	0.30
18	0.150	50.00	50.00	0.30
19	0.678	50.00	50.00	1.36
20	0.390	50.00	50.00	0.78
21	0.390	50.00	50.00	0.78
22	0.390	50.00	50.00	0.78
23	0.212	50.00	50.00	0.42
24	0.391	50.00	50.00	0.78
25	0.381	50.00	50.00	0.76
26	0.346	50.00	50.00	0.69
27	0.395	50.00	50.00	0.79
28	0.443	50.00	50.00	0.89
29	0.429	50.00	50.00	0.86
30	0.429	50.00	50.00	0.86
31	0.429	50.00	50.00	0.86

*** Overall summary for all load cases - Usage = Maximum Stress / Allowable Stress
Printed capacities do not include the strength factor entered for each load case.
The Group Summary reports on the member and load case that resulted in maximum usage
which may not necessarily be the same as that which produces maximum force.

Group Summary (Compression Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Max Cont-rol Comp. %	Comp. Use In Member	Comp. Control Member	Comp. Force (kips)	Comp. Control Load Case	L/R Capacity (kips)	Comp. Connect. Shear Capacity (kips)	Comp. Connect. Bearing Capacity (kips)	RLX	RLY	RLZ	L/R (ft)	KL/R Comp.	Length Member	Curve No.	No. Of Bolts
Leg1	L2.5x2.5x1/4	SAE	2.5X2.5X0.25	33.0	15.05	Comp 15.05	g3P	-4.250	NESC Ext	28.236	36.400	56.250	1.000	1.000	1.000	98.73	98.73	4.040	1	4	A potentially damaging moment exists in the following members (make sure your system is well triangulated to minimize moments): g3P g3X g3XY g3Y ??
Leg2	L4x4x1/4	SAE	4X4X0.25	33.0	99.08	Comp 99.08	g14Y	-56.734	NESC Ext	57.260	100.800	84.375	1.000	1.000	1.000	60.53	60.53	4.010	1	6	A potentially damaging moment exists in the following members (make sure your system is well triangulated to minimize moments): g4P g4X g4XY g4Y g5P g5X g5XY g5Y g6P g6X g6XY g6Y g78P g78X g78XY g78Y g12P g12X g12XY g12Y ??
Leg3	L4x4x5/16	SAE	4X4X0.3125	33.0	99.43	Comp 99.43	g16Y	-62.870	NESC Ext	63.228	0.000	0.000	1.000	1.000	1.000	83.64	83.64	5.514	1	0	
Leg4	L4x4x3/8	SAE	4X4X0.375	33.0	96.31	Comp 96.31	g22Y	-75.631	NESC Ext	78.530	91.000	210.937	1.000	1.000	1.000	76.33	76.33	5.012	1	10	
Leg5	L5x5x5/16	SAE	5X5X0.3125	33.0	88.06	Comp 88.06	g24Y	-78.758	NESC Ext	89.437	91.000	175.781	1.000	1.000	1.000	60.51	60.51	5.012	1	10	
Diag1	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	25.16	Tens 13.01	g27P	-1.183	NESC Ext	12.655	9.100	10.547	1.000	1.000	1.000	110.08	115.04	3.146	3	1	
Diag2	L2x1.5x1/4	SAU	2X1.5X0.25	33.0	86.57	Cross 86.57	g87Y	-12.476	NESC Hea	14.412	18.200	28.125	0.500	1.000	0.500	130.47	126.44	4.697	6	2	
Diag3	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	94.54	Comp 94.54	g50Y	-8.603	NESC Hea	13.824	9.100	10.547	1.000	0.545	0.545	92.15	106.07	4.124	3	1	
Horz1	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	9.25	Tens 4.74	g77P	-0.431	NESC Ext	17.529	9.100	10.547	1.000	1.000	1.000	20.99	70.50	0.600	3	1	
Horz2	L2.5x2x3/16	SAU	2.5X2X0.1875	33.0	76.24	Tens 53.87	g79X	-4.902	NESC Ext	20.749	9.100	10.547	1.000	1.000	1.000	56.21	88.10	2.000	3	1	
ARM	CH5x6.7	Ch	C5x6.7	33.0	80.04	Comp 80.04	g84P	-14.568	NESC Hea	34.709	18.200	21.375	1.000	1.000	1.000	117.20	118.60	4.776	3	2	A potentially damaging moment exists in the following members (make sure your system is well triangulated to minimize moments): g80P g80X g80XY g80Y g81P g81Y g82P g82X g82XY g82Y g83P g83Y g84P g84X g84XY g84Y g85P g85Y ??
InnBrace	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	45.57	Tens 20.72	g93P	-1.885	NESC Hea	13.392	9.100	10.547	1.000	1.000	1.000	98.95	109.48	2.828	3	1	
Horz3	CH7x9.8	Ch	C7x9.8	33.0	36.11	Tens 19.50	g96X	-5.325	NESC Ext	39.583	27.300	35.437	1.000	1.000	1.000	48.73	84.37	2.347	3	3	
Diag3R	L2x2x1/4	SAE	2X2X0.25	36.0	0.00	0.00		0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.000	0	0	

Group Summary (Tension Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Max Tension Comp. %	Tension Use In Member	Tension Control Member	Tension Force (kips)	Net Section Control Load Case	Tension Capacity (kips)	Tension Connect. Shear Capacity (kips)	Tension Connect. Bearing Capacity (kips)	Tension Length (ft)	No. Hole	No.

Label	Desc.	Type	Size	Strength (ksi)	Usage %	Cont-rol	Use In Tens. %	Control Member	Force	Control Load Case	Section Capacity (kips)	Connect. Shear Capacity (kips)	Connect. Bearing Capacity (kips)	Connect. Rupture Capacity (kips)	Tens. Member (ft)	Of Bolts Tens.	Of Holes	Diameter (in)
Leg1	**L2.5x2.5x1/4**	**SAE**	**2.5X2.5X0.25**	**33.0**	**15.05**	**Comp**	**12.06**	**g3XY**	**3.245**	**NESC Ext**	**26.895**	**36.400**	**56.250**	**62.500**	**4.040**		**4**	**2.000**
0.75 A potentially damaging moment exists in the following members (make sure your system is well triangulated to minimize moments): g3P g3X g3XY g3Y ??																		
Leg2	**L4x4x1/4**	**SAE**	**4X4X0.25**	**33.0**	**99.08**	**Comp**	**94.23**	**g14X**	**49.634**	**NESC Ext**	**52.676**	**100.800**	**84.375**	**93.750**	**4.010**		**6**	**2.000**
0.6875 A potentially damaging moment exists in the following members (make sure your system is well triangulated to minimize moments): g4P g4X g4XY g4Y g5P g5X g5XY g5Y g6P g6X g6XY g6Y g78P g78X g78XY g78Y g12P g12X g12XY g12Y ??																		
Leg3	L4x4x5/16	SAE	4X4X0.3125	33.0	99.43	Comp	95.39	g18X	60.790	NESC Ext	63.731	91.000	175.781	195.312	5.012		10	2.000
0.75																		
Leg4	L4x4x3/8	SAE	4X4X0.375	33.0	96.31	Comp	92.43	g22X	70.079	NESC Ext	75.817	91.000	210.937	220.588	5.012		10	2.000
0.75																		
Leg5	L5x5x5/16	SAE	5X5X0.3125	33.0	88.06	Comp	87.79	g24X	74.201	NESC Ext	84.521	91.000	175.781	195.312	5.012		10	2.000
0.75																		
Diag1	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	25.16	Tens	25.16	g25P	1.645	NESC Ext	14.237	9.100	10.547	6.539	3.146		1	1.000
0.75																		
Diag2	L2x1.5x1/4	SAU	2X1.5X0.25	33.0	86.57	Cross	65.60	g87XY	11.940	NESC Hea	18.488	18.200	28.125	25.000	4.697		2	1.000
0.75																		
Diag3	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	94.54	Comp	86.95	g50X	7.030	NESC Ext	14.237	9.100	10.547	8.086	4.124		1	1.000
0.75																		
Horz1	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	9.25	Tens	9.25	g89Y	0.605	NESC Hea	14.237	9.100	10.547	6.539	1.200		1	1.000
0.75																		
Horz2	L2.5x2x3/16	SAU	2.5X2X0.1875	33.0	76.24	Tens	76.24	g79P	5.575	NESC Ext	17.096	9.100	10.547	7.312	2.000		1	1.000
0.75																		
ARM	**CH5x6.7**	**Ch**	**C5x6.7**	**33.0**	**80.04**	**Comp**	**73.99**	**g84Y**	**13.465**	**NESC Hea**	**50.044**	**18.200**	**21.375**	**21.375**	**4.776**		**2**	**2.000**
0.75 A potentially damaging moment exists in the following members (make sure your system is well triangulated to minimize moments): g80P g80X g80XY g80Y g81P g81Y g82P g82X g82XY g82Y g83P g83Y g84P g84X g84XY g84Y g85P g85Y ??																		
InnBrace	L1.75x1.75x3/16	SAE	1.75X1.75X0.1875	33.0	45.57	Tens	45.57	g93X	2.980	NESC Hea	14.237	9.100	10.547	6.539	2.828		1	1.000
0.75																		
Horz3	CH7x9.8	Ch	C7x9.8	33.0	36.11	Tens	36.11	g95P	5.687	NESC Ext	71.206	27.300	35.437	15.750	2.000		3	3.000
0.75																		
Diag3R	L2x2x1/4	SAE	2X2X0.25	36.0	0.00		0.00		0.000		0.000	0.000	0.000	0.000	0.000		0	0.000
0																		

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Usage %	Element Label	Element Type
NESC Heavy	94.54	g50Y	Angle
NESC Extreme	99.43	g16Y	Angle

Summary of Insulator Usages:

Insulator	Insulator	Maximum	Load Case	Weight

Label	Type	Usage %		(lbs)
1	Clamp	6.04	NESC Heavy	0.0
2	Clamp	6.14	NESC Heavy	0.0
3	Clamp	7.42	NESC Heavy	0.0
4	Clamp	7.84	NESC Heavy	0.0
5	Clamp	7.14	NESC Heavy	0.0
6	Clamp	14.33	NESC Heavy	0.0
9	Clamp	0.19	NESC Extreme	0.0
10	Clamp	0.26	NESC Heavy	0.0
12	Clamp	0.27	NESC Heavy	0.0
13	Clamp	0.21	NESC Extreme	0.0
14	Clamp	0.28	NESC Heavy	0.0
15	Clamp	0.30	NESC Extreme	0.0
16	Clamp	0.30	NESC Heavy	0.0
17	Clamp	0.31	NESC Heavy	0.0
18	Clamp	0.35	NESC Heavy	0.0
19	Clamp	2.37	NESC Heavy	0.0
20	Clamp	0.78	NESC Extreme	0.0
21	Clamp	0.78	NESC Extreme	0.0
22	Clamp	0.78	NESC Extreme	0.0
23	Clamp	0.42	NESC Extreme	0.0
24	Clamp	0.87	NESC Heavy	0.0
25	Clamp	0.86	NESC Heavy	0.0
26	Clamp	0.69	NESC Extreme	0.0
27	Clamp	0.88	NESC Heavy	0.0
28	Clamp	0.89	NESC Heavy	0.0
29	Clamp	0.89	NESC Heavy	0.0
30	Clamp	0.90	NESC Heavy	0.0
31	Clamp	0.93	NESC Heavy	0.0

Loads At Insulator Attachments For All Load Cases:

Load Case	Insulator Label	Insulator Type	Structure Attach Label	Structure Attach Load X (kips)	Structure Attach Load Y (kips)	Structure Attach Load Z (kips)	Structure Attach Load Res. (kips)
NESC Heavy	1	Clamp	26P	-0.207	1.216	2.754	3.018
NESC Heavy	2	Clamp	26X	-0.656	1.066	2.803	3.070
NESC Heavy	3	Clamp	27P	1.984	1.255	2.872	3.709
NESC Heavy	4	Clamp	27X	-2.453	1.083	2.858	3.919
NESC Heavy	5	Clamp	28P	1.667	1.228	2.910	3.571
NESC Heavy	6	Clamp	28X	6.430	1.096	2.962	7.164
NESC Heavy	9	Clamp	3XY	0.000	0.034	0.037	0.050
NESC Heavy	10	Clamp	5XY	0.000	0.089	0.096	0.131
NESC Heavy	12	Clamp	12XY	0.000	0.070	0.114	0.134
NESC Heavy	13	Clamp	15XY	0.000	0.065	0.071	0.096
NESC Heavy	14	Clamp	17XY	0.000	0.090	0.110	0.142
NESC Heavy	15	Clamp	19XY	0.000	0.089	0.110	0.142
NESC Heavy	16	Clamp	21XY	0.000	0.089	0.122	0.151
NESC Heavy	17	Clamp	23XY	0.000	0.093	0.127	0.157
NESC Heavy	18	Clamp	25XY	0.000	0.110	0.136	0.175
NESC Heavy	19	Clamp	1P	0.000	0.655	0.989	1.187
NESC Heavy	20	Clamp	2S	0.000	0.088	0.335	0.346
NESC Heavy	21	Clamp	2X	0.000	0.117	0.335	0.354
NESC Heavy	22	Clamp	2Y	0.000	0.088	0.335	0.346
NESC Heavy	23	Clamp	3X	0.000	0.078	0.151	0.170
NESC Heavy	24	Clamp	5X	0.000	0.196	0.387	0.434

NESC Heavy	25	Clamp	12X	0.000	0.173	0.395	0.431
NESC Heavy	26	Clamp	15X	0.000	0.152	0.307	0.342
NESC Heavy	27	Clamp	17X	0.000	0.195	0.394	0.439
NESC Heavy	28	Clamp	19X	0.000	0.196	0.401	0.446
NESC Heavy	29	Clamp	21X	0.000	0.191	0.399	0.443
NESC Heavy	30	Clamp	23X	0.000	0.195	0.404	0.449
NESC Heavy	31	Clamp	25X	0.000	0.212	0.413	0.464
NESC Extreme	1	Clamp	26P	-0.465	1.512	1.317	2.058
NESC Extreme	2	Clamp	26X	-0.666	1.430	1.338	2.069
NESC Extreme	3	Clamp	27P	0.237	1.523	1.374	2.065
NESC Extreme	4	Clamp	27X	-1.295	1.438	1.368	2.370
NESC Extreme	5	Clamp	28P	0.150	1.513	1.396	2.064
NESC Extreme	6	Clamp	28X	1.762	1.445	1.415	2.682
NESC Extreme	9	Clamp	3XY	0.000	0.084	0.049	0.097
NESC Extreme	10	Clamp	5XY	0.000	0.084	0.049	0.097
NESC Extreme	12	Clamp	12XY	0.000	0.084	0.049	0.097
NESC Extreme	13	Clamp	15XY	0.000	0.096	0.048	0.107
NESC Extreme	14	Clamp	17XY	0.000	0.096	0.048	0.107
NESC Extreme	15	Clamp	19XY	0.000	0.131	0.073	0.150
NESC Extreme	16	Clamp	21XY	0.000	0.131	0.073	0.150
NESC Extreme	17	Clamp	23XY	0.000	0.131	0.073	0.150
NESC Extreme	18	Clamp	25XY	0.000	0.131	0.073	0.150
NESC Extreme	19	Clamp	1P	0.000	0.542	0.407	0.678
NESC Extreme	20	Clamp	2S	0.000	0.331	0.206	0.390
NESC Extreme	21	Clamp	2X	0.000	0.331	0.206	0.390
NESC Extreme	22	Clamp	2Y	0.000	0.331	0.206	0.390
NESC Extreme	23	Clamp	3X	0.000	0.198	0.076	0.212
NESC Extreme	24	Clamp	5X	0.000	0.373	0.117	0.391
NESC Extreme	25	Clamp	12X	0.000	0.363	0.115	0.381
NESC Extreme	26	Clamp	15X	0.000	0.330	0.103	0.346
NESC Extreme	27	Clamp	17X	0.000	0.378	0.114	0.395
NESC Extreme	28	Clamp	19X	0.000	0.420	0.141	0.443
NESC Extreme	29	Clamp	21X	0.000	0.406	0.138	0.429
NESC Extreme	30	Clamp	23X	0.000	0.406	0.138	0.429
NESC Extreme	31	Clamp	25X	0.000	0.406	0.138	0.429

Overturning Moments For User Input Concentrated Loads:

Moments are static equivalents based on central axis of 0,0 (i.e. a single pole).

Load Case	Total Tran. Load (kips)	Total Long. Load (kips)	Total Vert. Load (kips)	Transverse Overturning Moment (ft-k)	Longitudinal Overturning Moment (ft-k)	Torsional Moment (ft-k)
NESC Heavy	8.661	6.765	21.078	604.191	412.623	1.167
NESC Extreme	11.868	-0.277	9.288	799.256	-44.455	4.345

*** Weight of structure (lbs):
Weight of Angles*Section DLF: 5535.7
Total: 5535.7

*** End of Report

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Subject:	Foundation Analysis Tower # 1182
Location:	Darien, CT
Rev. 2: 3/29/21	Prepared by: T.J.L. Checked by: C.F.C. Job No. 20020.02

Foundation Analysis

Input Data:

Reactions at Tower Legs:

Uplift Leg A =	$Uplift_A := 75.41 \cdot 1.1 \cdot kips = 83 \cdot kips$	(User Input)
Uplift Leg B =	$Uplift_B := 67.03 \cdot 1.1 \cdot kips = 73.7 \cdot kips$	(User Input)
Compression Leg A =	$Comp_A := 77.36 \cdot 1.1 \cdot kips = 85.1 \cdot kips$	(User Input)
Compression Leg B =	$Comp_B := 79.91 \cdot 1.1 \cdot kips = 87.9 \cdot kips$	(User Input)
Total Shear =	$Shear := 28.54 \cdot 1.1 \cdot kips = 31.4 \cdot kips$	(User Input)

Tower Properties:

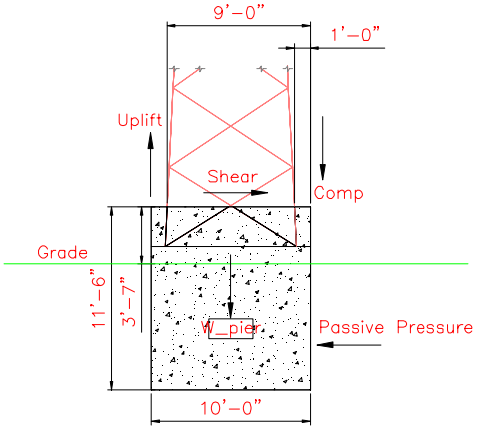
Tower Height =	$H_t := 90 \cdot ft$	(User Input)
Distance to Uplift Legs =	$D_{uplift} := 9 \cdot ft$	(User Input)
Distance to Compression Legs =	$D_{comp} := 1 \cdot ft$	(User Input)

Foundation Properties:

Pier Height =	$P_H := 11.5 \cdot ft$	(User Input)
Pier Width =	$P_w := 10 \cdot ft$	(User Input)
Pier Projection Above Grade =	$P_P := 3.58 \cdot ft$	(User Input)
Pad Width =	$Pad_w := 0 \cdot ft$	(User Input)
Pad Thickness =	$Pad_t := 0 \cdot ft$	(User Input)
Concrete Unit Weight =	$\gamma c := 150 \cdot pcf$	(User Input)

Subgrade Properties:

Internal Friction Angle of Soil =	$\Phi_s := 30 \cdot deg$	(User Input)
Allowable Soil Bearing Capacity =	$q_s := 3000 \cdot psf$	(User Input)
Unit Weight of Soil =	$\gamma_{soil} := 100 \cdot pcf$	(User Input)
Distance to Centroid of Soil =	$D_{soil} := 0 \cdot ft$	(User Input)



Calculated Data:

Volume of the Concrete Pad = $V_{pad} := Pad_w^2 \cdot Pad_t = 0 \cdot ft^3$

Volume of the Concrete Pier = $V_{pier} := P_H \cdot P_w^2 = 1150 \cdot ft^3$

Weight of Concrete Pad = $W_{pad} := V_{pad} \cdot \gamma c = 0 \cdot kips$

Weight of Concrete Pier = $W_{pier} := V_{pier} \cdot \gamma c = 173 \cdot kips$

Total Weight of Concrete = $W_{conc} := W_{pier} + W_{pad} = 173 \cdot kips$

Coefficient of Lateral Soil Pressure = $K_p := \frac{1 + \sin(\Phi_s)}{1 - \sin(\Phi_s)} = 3$

Passive Pressure = $P_{top} := 0 = 0 \cdot ksf$

$P_{bot} := K_p \cdot \gamma_{soil} \cdot (P_H - P_P) = 2.376 \cdot ksf$

$P_{ave} := \frac{P_{top} + P_{bot}}{2} = 1.188 \cdot ksf$

$A_p := P_w \cdot (P_H - P_P) = 79.2 ft^2$

Ultimate Shear = $S_u := P_{ave} \cdot A_p = 94.1 \cdot kip$

Total Uplift = $Tot_{uplift} := Uplift_A + Uplift_B = 157 \cdot kips$

Total Compression = $Tot_{comp} := Comp_A + Comp_B = 173 \cdot kips$

Overturning Moment = $OTM := Tot_{uplift} \cdot D_{uplift} + Shear \cdot (P_H - 2.5 \cdot ft) = 1693 \cdot k \cdot ft$

Resisting Moment = $RM := Tot_{comp} \cdot D_{comp} + W_{conc} \cdot \frac{P_w}{2} + 3 \cdot S_u \cdot \frac{(P_H - P_P)}{3} = 1781 \cdot k \cdot ft$

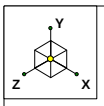
Check Overturning:

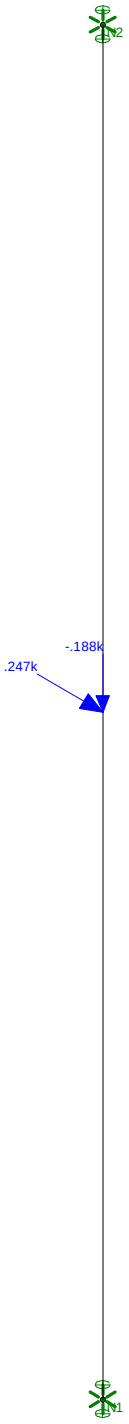
Required Factor of Safety = $F_S := 1.0$

$ActualFS := \frac{RM}{OTM} = 1.05$

$Overturning\_Check := if\left(\frac{RM}{OTM} \geq F_S, "OK", "Overstressed"\right)$

Overturning_Check = "OK"



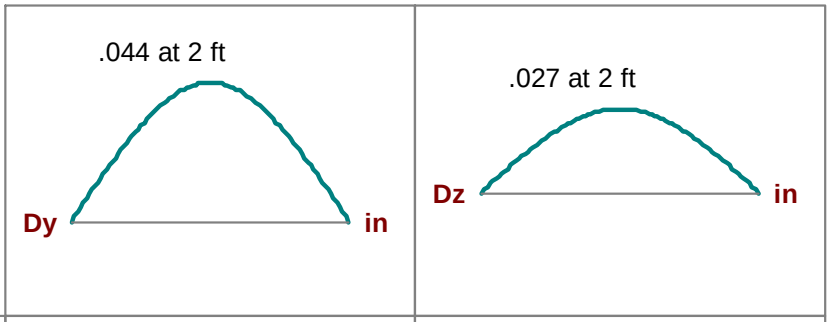


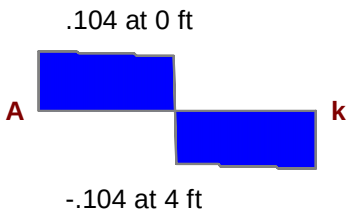
Loads: LC 2, IBC 16-4 (a)

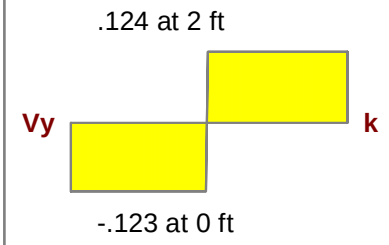
CENTEK Engineering, Inc.		
TJL	Structure #1182	Jan 7, 2021 at 3:26 PM
20020.02 / AT&T CT5011	Loads on Leg Member	Moment Diagram.r3d

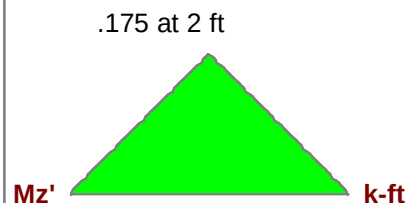
Column: ***M1***

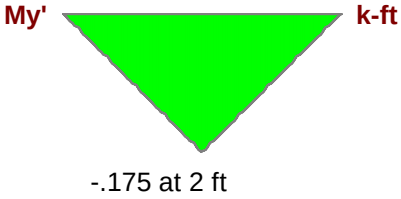
Shape: **L2.5x2.5x4**
Material: **A36 Gr.36**
Length: **4 ft**
I Joint: **N1**
J Joint: **N2**
LC 2: IBC 16-4 (a)
Code Check: **0.016 (shear)**
Report Based On 97 Sections

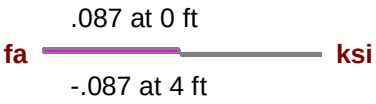


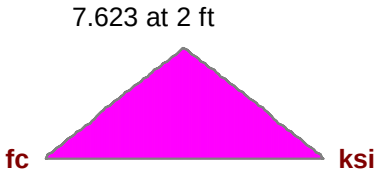


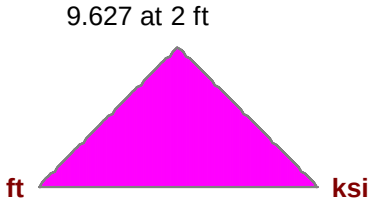












AISC 9th: ASD Code Check

-- Code Check based on Axial Only --

Max Bending Check	**0.007**	Max Shear Check	**0.016 (y)**
Location	**0 ft**	Location	**2 ft**
Equation	**H1-1**	Max Defl Ratio	**L/1082**

NonCompact

Fy	**36 ksi**
Fa	**13.03 ksi**
Ft	**21.6 ksi**
Fby	**NA**
Fbz	**NA**
Fvy	**14.4 ksi**
Fvz	**14.4 ksi**
Cb	**1**

	y-y'	z-z'
Cm	**.85**	**.85**
Lb	**4 ft**	**4 ft**
KL/r	**99.585**	**49.755**
Sway	**No**	**No**
L Comp Flange	**4 ft**	

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:	Local Member Stress Analysis
Location:	Darien, CT
Rev. 2: 3/29/21	Prepared by: T.J.L. Checked by: C.F.C. Job No. 20020.02

Local Stress Check:

Maximum Design Reactions at Brace:

Compression Force =	Compression := 5.1·kips	(User Input from PLS-Tower)
Tension Force =	Tension := 3.3·kips	(User Input from PLS-Tower)
Moment =	M_x := 0.175·ft·kips	(User Input)
Moment =	M_y := 0.175·ft·kips	(User Input)

Member Properties:

Member Type =	L2.5x2.5x1/4	
Member Width =	w := 2.5·in	(User Input)
Member Thickness =	t := 0.25·in	(User Input)
Member Area =	A := 1.19·in^2	(User Input)
Moment of Inertia =	I_x := 0.692·in^4	(User Input)
Moment of Inertia =	I_y := 0.692·in^4	(User Input)
Section Modulus x-dir =	S_x := 0.387·in^3	(User Input)
Section Modulus y-dir =	S_y := 0.387·in^3	(User Input)
Unbraced Length =	L := 4·ft	(User Input)
Effective Length Coefficient =	K := 1	(User Input)
Radius of Gyration =	r_x := 0.764·in	(User Input)
Radius of Gyration =	r_y := 0.764·in	(User Input)
Yield Stress =	F_y := 33·ksi	(User Input)
Modulus of Elasticity =	E := 29000·ksi	(User Input)
	k_{des} := 0.5·in	

Calculate Design Compression Stress: (Per ASCE 10-97 Section 3.6 and 3.7)

Width Thickness Ratio = $w\_t := \frac{w - k_{des}}{t} = 8$

Yield Stress =

$$F_y := \begin{cases} F_y & \text{if } w\_t < \frac{80}{\sqrt{f_y}} \\ \left[1.677 - 0.677 \cdot \frac{w\_t}{\left(\frac{80}{\sqrt{f_y}}\right)}\right] \cdot F_y & \text{if } \frac{80}{\sqrt{f_y}} \le w\_t \le \frac{144}{\sqrt{f_y}} \\ \frac{0.0332 \cdot \pi^2 \cdot E}{(w\_t)^2} & \text{if } w\_t > \frac{144}{\sqrt{f_y}} \end{cases} = 33 \cdot ksi$$

(3.7-1) (3.7-2) (3.7-3)

Column Slenderness Ratio = $C_c := \pi \cdot \sqrt{\frac{2 \cdot E}{F_y}} = 131.706$ (3.6-3)

Design Axial Compressive Stress =

$$F_a := \begin{cases} \left[1 - 0.5\left(\frac{\frac{K \cdot L}{r_x}}{C_c}\right)^2\right] \cdot F_y & \text{if } \frac{K \cdot L}{r_x} \le C_c \\ \frac{\pi^2 \cdot E}{\left(\frac{K \cdot L}{r_x}\right)^2} & \text{if } \frac{K \cdot L}{r_x} > C_c \end{cases} = 29.2 \cdot ksi$$

(3.6-1) (3.6-2)

Calculate Allowable Bending Moment: (Per ASCE 10-97 Section 3.14.8)

$b := w - \frac{t}{2} = 2.375 \cdot in$

Elastic Critical Moment = $M_e := \frac{\left(0.66 \cdot E \cdot b^4 \cdot t\right)}{(K \cdot L)^2} \cdot \left[\sqrt{1 + \frac{0.81 \cdot (K \cdot L)^2 \cdot t^2}{b^4}} + 1\right] = 208.8 \cdot kips \cdot in$ (3.14-7)

Moment Causing Compressive Yield = $M_{xc} := F_y \cdot S_x = 12.771 \cdot in \cdot kips$ (3.14-9)

Moment Causing Compressive Yield = $M_{yc} := F_y \cdot S_y = 12.771 \cdot kips \cdot in$ (3.14-9)

Lateral Bukling Moment =

$$M_b := \begin{cases} M_e & \text{if } M_e \le 0.5 \cdot M_{yc} \\ M_{yc} \cdot \left(1 - \frac{M_{yc}}{4 \cdot M_e}\right) & \text{if } M_e > 0.5 \cdot M_{yc} \end{cases} = 12.6 \cdot kips \cdot in$$

(3.14-5)

Allowable Moment =

$$M_a := \begin{pmatrix} M_{yc} & \text{if } M_{yc} \le M_b \\ M_b & \end{pmatrix} = 12.6 \cdot kips \cdot in$$

(3.14-6)

Check Combined Axial Compression and Bending: (Per ASCE 10-97 Section 3.12)

Bending Coefficient = $C_m := 0.85$ (for restrained ends)

Applied Axial Compression = $P := Compression = 5.1 \cdot kips$

Design Axial Compression = $P_a := F_a \cdot A = 34.8 \cdot kips$

Axial Compression at Yield = $P_y := F_y \cdot A = 39.27 \cdot kips$

Euler Bukling Load = $P_{ex} := \frac{\pi^2 \cdot E \cdot I_x}{(K \cdot L)^2} = 86 \cdot kips$

Euler Bukling Load = $P_{ey} := \frac{\pi^2 \cdot E \cdot I_y}{(K \cdot L)^2} = 86 \cdot kips$

$$Condition1 := if\left[\frac{P}{P_a} + \frac{C_m \cdot M_x}{M_{xc}} \cdot \left[\frac{1}{\left(1 - \frac{P}{P_{ex}}\right)}\right] + \frac{C_m \cdot M_y}{M_{yc}} \cdot \left[\frac{1}{\left(1 - \frac{P}{P_{ey}}\right)}\right] \le 1.00, "OK", "Overstressed"\right] \quad (3.12\text{-}1)$$

$$\frac{P}{P_a} + \frac{C_m \cdot M_x}{M_{xc}} \cdot \left[\frac{1}{\left(1 - \frac{P}{P_{ex}}\right)}\right] + \frac{C_m \cdot M_y}{M_{yc}} \cdot \left[\frac{1}{\left(1 - \frac{P}{P_{ey}}\right)}\right] = 0.444 \quad Condition1 = "OK" \quad (3.12\text{-}2)$$

$$Condition2 := if\left(\frac{P}{P_y} + \frac{M_x}{M_{xc}} + \frac{M_y}{M_{yc}} \le 1.00, "OK", "Overstressed"\right)$$

$$\frac{P}{P_y} + \frac{M_x}{M_{xc}} + \frac{M_y}{M_{yc}} = 0.459 \quad Condition2 = "OK"$$

Section 1 - RFDS GENERAL INFORMATION

RFDS NAME:	CT105011	DATE:	8/3/2020	RF DESIGN ENG:	Mohammed Rahman	RF PERF ENG:		RFDS PROGRAM TYPE:	2021 LTE Next Carrier
ISSUE:	Bronze Standard	Approved? (Y/N):	Yes	RF DESIGN PHONE:	860-997-9698	RF PERF PHONE:		RFDS TECHNOLOGY:	LTE
REVISION:	Final	RF MANAGER:	John Benedetto	RF DESIGN EMAIL:	MR673A@ATT.COM	RF PERF EMAIL:		STATE/STATUS:	Final/Approved
						ADDITIONAL WORKFLOW NOTIFICATIONS:		RFDS ID:	4090497
						RFDS VERSION	3.00	Created By:	mr673a
						UMTS FREQUENCY	850	Created:	8/3/2020
						LTE FREQUENCY	700,850,1900,AWS,WCS	EXPIRATION DATE:	
						5G FREQUENCY	850	ESTIMATED SQIN:	
	LTE 3C AWS J, 5G NR 1DR-1 850 & 1900 A3 & A5 &E 4TX4RX Software					IPLAN JOB # 1:	NER-RCTB-20-02819	PRD || SUB GRP #1	LTE Next Carrier || LTE 3C
						IPLAN JOB # 2:	NER-RCTB-20-02864	PRD || SUB GRP #2	5G NR Radio || 5G NR 1DR-1
						IPLAN JOB # 3:	NER-RCTB-20-02881	PRD || SUB GRP #3	Antenna Modifications|| 4TX4RX Software Retrofit
						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	

Section 2 - LOCATION INFORMATION

USID:	24475	FA LOCATION CODE:	10070994	LOCATION NAME:	DARIEN- NOROTON HEIGHTS	ORACLE PRJT # 1:	2051A0WGQV	PACE JOB #1:	MRCTB048662
REGION:	NORTHEAST	MARKET CLUSTER:	NEW ENGLAND	MARKET:	CONNECTICUT	ORACLE PRJT # 2:	2051A0WGWH	PACE JOB #2:	MRCTB048691
ADDRESS:	NOROTON HEIGHTS RAILROAD STATION	CITY:	DARIEN	STATE:	CT	ORACLE PRJT # 3:	2051A0WH89	PACE JOB #3:	MRCTB048681
ZIP CODE:	06820	COUNTY:	FAIRFIELD	LONG (DEC. DEG.):	-73.4989989	ORACLE PRJT # 4:		PACE JOB #4:	
LATITUDE (D-M-S):	41d 4m 8.73084s	LONGITUDE (D-M-S):	-73d -29m -56.39604s	LAT (DEC. DEG.):	41.0690919	ORACLE PRJT # 5:		PACE JOB #5:	
						ORACLE PRJT # 6:		PACE JOB #6:	
						ORACLE PRJT # 7:		PACE JOB #7:	
						ORACLE PRJT # 8:		PACE JOB #8:	
						BORDER CELL WITH CONTOUR COORD:		SEARCH RING NAME:	
						AM STUDY REQ'D (Y/N):	No	SEARCH RING ID:	
DIRECTIONS, ACCESS AND EQUIPMENT LOCATION:	FROM I-95 HEADING SOUTH (NEW YORK) TAKE EXIT 10 AND TURN RIGHT ONTO LEDGE ROAD THEN LEFT TO NOROTON AVENUE. TURN LEFT TO HOLLOW RIDGE ROAD AND LEFT AGAIN TO PARKING AREA. SITE IS ON YOUR LEFT BESIDE THE METRO NORTH PLATFORM AND AFTER THE HOLLOW RIDGE BRID					FREQ COORD:		BTA:	MSA / RSA:
								LAC(UMTS):	05099
						RF DISTRICT:	TBD		
						RF ZONE:	TBD	RNC(UMTS):	BRIDGEPORT CT RNC001
								MME POOL ID(LTE):	FF01
						PARENT NAME(UMTS):	BRPTCT04RNC001		

Section 3 - LICENSE COVERAGE/FILING INFORMATION

CGSA - NO FILING TRIGGERED (Yes/No):	No	CGSA LOSS:		PCS REDUCED - UPS ZIP:		CGSA CALL SIGNS:	J_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?:	Yes	GROUND ELEVATION (ft):		STRUCTURE TYPE:	UTILITY	MARKET LOCATION 700 MHz Band:	
ADDITIONAL REGULATORY?:	Yes	HEIGHT OVERALL (ft):	90.00	FCC ASR NUMBER:	NR	MARKET LOCATION 850 MHz Band:	
SUB-LEASE RIGHTS?:	Yes	STRUCTURE HEIGHT (ft):	90.00			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_MIAMI		0		
SECTOR B				INTRADO_MIAMI		0		
SECTOR C				INTRADO_MIAMI		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_MIAMI		0		
SECTOR B				INTRADO_MIAMI		0		
SECTOR C				INTRADO_MIAMI		0		
SECTOR D								
SECTOR E								
SECTOR F								
OMNI								

Section 6/7 - BBU INFORMATION - existing

	BBU 1	BBU 2
BBU ID:	336080	360164
TECHNOLOGY:	UMTS	LTE
BBU NAME:	CTV5011	CTL05011
CELL ID / BCF:	CTU5011	CTL05011
BTA/TID:	321W	321L
4-9 DIGIT SITE ID:	5011	5011
COW OR TOY?:	No	No
CELL SITE TYPE:	SECTORIZED	SECTORIZED
SITE TYPE:	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL
BTS LOCATION ID:	INTERNAL	INTERNAL
BASE STATION TYPE:	OVERLAY	BASE
EQUIPMENT NAME:	DARIEN- NOROTON HEIGHTS	DARIEN- NOROTON HEIGHTS
DISASTER PRIORITY:	3	3
EQUIPMENT VENDOR:	ERICSSON	ERICSSON
EQUIPMENT TYPE (Model):	3106 OUTDOOR	8601 INDOOR MU
BASEBAND CONFIGURATION :		
MARKET STATE CODE:		CT
NODE B NUMBER:	0	5011
SIDEHAUL SWITCH VENDOR:		
SIDEHAUL SWITCH MODEL:		
SIDEHAUL SWITCH NAME:		
CSS - CTS COMMON ID:	CTV5011	CTL05011
CSS - SECONDARY FUNCTION ID:		

Section 6/7 - BBU INFORMATION - final

	BBU 1	BBU 2	BBU 3
BBU ID:	336080	360164	831163
TECHNOLOGY:	UMTS	LTE	LTE,5G
BBU NAME:	CTV5011	CTL05011	CTL04011R,CTCN005011
CELL ID / BCF:	CTU5011	CTL05011	CTCN005011
BTA/TID:	321W	321L	321L
4-9 DIGIT SITE ID:	5011	5011	54011
COW OR TOY?:	No	No	No
CELL SITE TYPE:	SECTORIZED	SECTORIZED	SECTORIZED
SITE TYPE:	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL
BTS LOCATION ID:	INTERNAL	INTERNAL	GROUND
BASE STATION TYPE:	OVERLAY	BASE	BASE
EQUIPMENT NAME:	DARIEN- NOROTON HEIGHTS	DARIEN- NOROTON HEIGHTS	CTL04011R
DISASTER PRIORITY:	3	3	3
EQUIPMENT VENDOR:	ERICSSON	ERICSSON	ERICSSON
EQUIPMENT TYPE (Model):	3106 OUTDOOR	8601 INDOOR MU	2102 COMPACT
BASEBAND CONFIGURATION :		xxxx / 1x6630 / xxxx	xxxx / 1x6630 / xxxx + IDLe
MARKET STATE CODE:		CT	CT,CTC
NODE B NUMBER:	0	5011	4011,5011
SIDEHAUL SWITCH VENDOR:			
SIDEHAUL SWITCH MODEL:			
SIDEHAUL SWITCH NAME:			
CSS - CTS COMMON ID:	CTV5011	CTL05011	CTCN005011
CSS - SECONDARY FUNCTION ID:			CTL04011R

Section 8 - RBS/SECTOR ASSOCIATION - existing

	BBU 1	BBU 2
CTS Common ID	CTV5011	CTL05011
Soft Sector IDs	CTV50111	CTL05011_7A_1
	CTV50112	CTL05011_7B_1
	CTV50113	CTL05011_7C_1
		CTL05011_8A_1
		CTL05011_8A_2
		CTL05011_8B_1
		CTL05011_8B_2
		CTL05011_8C_1
		CTL05011_8C_2

Section 8 - RBS/SECTOR ASSOCIATION - final

	BBU 1	BBU 2	BBU 3
CTS Common ID	CTV5011	CTL05011	CTL04018R,CTCN005011
Soft Sector IDs	CTV50111	CTL05011_7A_1	CTCN005011_N005A_1
	CTV50112	CTL05011_7B_1	CTCN005011_N005B_1
	CTV50113	CTL05011_7C_1	CTCN005011_N005C_1
		CTL05011_8A_1	CTL04011_2A_2
		CTL05011_8B_1	CTL04011_2B_2
		CTL05011_8C_1	CTL04011_2C_2
			CTL04011_9A_1
			CTL04011_9A_2
			CTL04011_9A_3
			CTL04011_9B_1
			CTL04011_9B_2
			CTL04011_9B_3
			CTL04011_9C_1
			CTL04011_9C_2
			CTL04011_9C_3

Section 9 - SOFT SECTOR ID - existing

	UMTS 1ST 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 2ND 1900	LTE 4TH AWS	LTE 5TH 1900	5G 1ST 850
USEID (excluding Hard Sector)	24475.850.3G.2							
SECTOR A SOFT SECTOR ID	CTV50111	CTL05011_7A_1		CTL05011_9A_1	CTL05011_9A_2			
SECTOR B	CTV50112	CTL05011_7B_1		CTL05011_9B_1	CTL05011_9B_2			
SECTOR C	CTV50113	CTL05011_7C_1		CTL05011_9C_1	CTL05011_9C_2			
SECTOR D								
SECTOR E								
SECTOR F								
OMNI								

Section 9 - SOFT SECTOR ID - final

	UMTS 1ST 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 2ND 1900	LTE 4TH AWS	LTE 5TH 1900	5G 1ST 850
USEID (excluding Hard Sector)	24475.850.3G.2							
SECTOR A SOFT SECTOR ID	CTV50111	CTL05011_7A_1	CTL05011_8A_1	CTL04011_9A_1	CTL04011_9A_2	CTL04011_2A_2	CTL04011_9A_3	CTCN005011_N005A_1
SECTOR B	CTV50112	CTL05011_7B_1	CTL05011_8B_1	CTL04011_9B_1	CTL04011_9B_2	CTL04011_2B_2	CTL04011_9B_3	CTCN005011_N005B_1
SECTOR C	CTV50113	CTL05011_7C_1	CTL05011_8C_1	CTL04011_9C_1	CTL04011_9C_2	CTL04011_2C_2	CTL04011_9C_3	CTCN005011_N005C_1
SECTOR D								
SECTOR E								
SECTOR F								
OMNI								

Section 9 - Cell Number - existing

	UMTS 1ST 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 2ND 1900	LTE 4TH AWS	LTE 5TH 1900	5G 1ST 850
USEID (excluding Hard Sector)	24475.850.3G.2							
SECTOR A CELL NUMBER		15		8	178			
SECTOR B		16		9	179			
SECTOR C		17		10	180			
SECTOR D								
SECTOR E								
SECTOR F								
OMNI								

Section 9 - Cell Number - final

	UMTS 1ST 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 2ND 1900	LTE 4TH AWS	LTE 5TH 1900	5G 1ST 850
USEID (excluding Hard Sector)	24475.850.3G.2							
SECTOR A CELL NUMBER		15	1	8	178	192	203	25
SECTOR B		16	2	9	179	193	204	49
SECTOR C		17	3	10	180	194	205	73
SECTOR D								
SECTOR E								
SECTOR F								
OMNI								

Section 10 - CID/SAC - existing

	UMTS 1ST 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 2ND 1900	LTE 4TH AWS	LTE 5TH 1900	5G 1ST 850
SECTOR A CID/SAC	50111							
SECTOR B	50112							
SECTOR C	50113							
SECTOR D								
SECTOR E								
SECTOR F								
OMNI								

Section 10 - CID/SAC - final

	UMTS 1ST 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 2ND 1900	LTE 4TH AWS	LTE 5TH 1900	5G 1ST 850
SECTOR A CID/SAC	50111							
SECTOR B	50112							
SECTOR C	50113							
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	HPA-65F-BUU-H2-K						
ANTENNA VENDOR	CCI Products						
ANTENNA SIZE (H x W x D)	21.4X14.4X7.3						
ANTENNA WEIGHT	13.8						
AZIMUTH	30						
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	85						
ANTENNA TIP HEIGHT	86						
MECHANICAL DOWNTILT	0						
FEEDER AMOUNT	4						
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)	1	1000860					
DIPLEXER (QTY/MODEL)	2	TPX-070821					
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)	1	860-10006					
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	1	TMA2117F00V1-1					
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2	782 10253					
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	RRUS-11 B12					
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)	2	RRUS-12 B2					
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)	6	APTDC-BDFDM-DBW					
Additional Component 2 (QTY/MODEL)	1	DTMABP7819VG12A					
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 1	PORT 1		24475.A.850.3G.1	CTV50111_	CTV50111		UMTS 850	65-14-00T-ST_850MHz_00	12.4		0	None	7/8 ANDREW LDF5-50A	120.030726								1	
	PORT 2		24475.A.700.4G.1	CTL05011_7A_1	CTL05011_7A_1		LTE 700	65-14-00T-ST_725MHz_00	12.69		0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						1475.7065		1	
	PORT 7		24475.A.1900.4G.1	CTL05011_9A_1	CTL05011_9A_1		LTE 1900	65-14-00T-ST_1930MHz_0	12.69		0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						3664.3757		2	
	PORT 8			CTL05011_9A_2	CTL05011_9A_2		LTE 1900	H2_1930MHz_0 5DT	13		0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						3864.3757		2	

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	HPA-65F-BUU-H2-K						
ANTENNA VENDOR	CCI Products						
ANTENNA SIZE (H x W x D)	21.4X14.4X7.3						
ANTENNA WEIGHT	13.8						
AZIMUTH	150						
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	85						
ANTENNA TIP HEIGHT	86						
MECHANICAL DOWNTILT	0						
FEEDER AMOUNT	4						
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)	1 1000860						
DIPLEXER (QTY/MODEL)	2 TPX-070821						
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	1 TMA2117F00V1-1						
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2 782 10253						
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 RRUS-11 B12						
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)	2 RRUS-12 B2						
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)	6 APTDC-BDFDM-DBW						
Additional Component 2 (QTY/MODEL)	1 DTMABP7819VG12A						
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)	RX/AIT 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(css-ng)
ANTENNA POSITION 1	PORT 1		24475.B.850.3G.1	CTV50112_	CTV50112		UMTS 850	65-14-00T-ST_850MHz_00	12.4		0	None	7/8 ANDREW LDF5-50A	120.030726								9	
	PORT 2		24475.B.700.4G.1	CTL05011_78_1	CTL05011_78_1		LTE 700	65-14-00T-ST_725MHz_00	12.69		0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						1475.7065		9	
	PORT 7		24475.B.1900.4G.1	CTL05011_9B_1	CTL05011_9B_1		LTE 1900	65-14-00T-ST_1930MHz_0	12.69		0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						3664.3757		10	
	PORT 8			CTL05011_9B_2	CTL05011_9B_2		LTE 1900	H2_1930MHz_0 5DT	13		0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						3864.3757		10	

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	HPA-65F-BUU-H2-K						
ANTENNA VENDOR	CCI Products						
ANTENNA SIZE (H x W x D)	21.4X14.4X7.3						
ANTENNA WEIGHT	13.8						
AZIMUTH	270						
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	85						
ANTENNA TIP HEIGHT	86						
MECHANICAL DOWNTILT	4						
FEEDER AMOUNT	4						
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)	1 1000860						
DIPLEXER (QTY/MODEL)	2 TPX-070821						
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	1 TMA2117F00V1-1						
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2 782 10253						
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 RRUS-11 B12						
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)	2 RRUS-12 B2						
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)	6 APTDC-BDFDM-DBW						
Additional Component 2 (QTY/MODEL)	1 DTMABP7819VG12A						
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 1	PORT 1		24475.C.850.3G.1	CTV50113	CTV50113		UMTS 850	65-14-00T-ST_850MHz_00	12.4		0	None	7/8 ANDREW LDF5-50A	120.030726								17	
	PORT 2		24475.C.700.4G.1	CTL05011_7C_1	CTL05011_7C_1		LTE 700	65-14-00T-ST_725MHz_00	12.69		0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						1475.7065		17	
	PORT 7		24475.C.1900.4G.1	CTL05011_9C_1	CTL05011_9C_1		LTE 1900	H2_1930MHz_0 0DT	13		0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						3664.3757		18	
	PORT 8			CTL05011_9C_2	CTL05011_9C_2		LTE 1900	H2_1930MHz_0 5DT	13		0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						3864.3757		18	

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 (w/wich antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Built-In						
SURGE ARRESTOR (QTY/MODEL)	12 TSXDC-4310FM						
DIPLEXER (QTY/MODEL)	1 KMTCV008100 20						
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	2 TMABP07823V G12A						
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)							
Additional Component 1 (QTY/MODEL)	1 DBCT108F1V92-1						
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Radio positions according to PD						
Local Market Note 2							
Local Market Note 3	xxxxx / 2x6630 / xxxxx + 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)	RXA/T 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 1	PORT 5		24475.A.850.4G.1	CTL05011_8A_1	CTL05011_8A_1		LTE 850	BUHA_850MHz_02DT	12.8	30	2	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						1000		1	
	PORT 6		24475.A.850.5G.1	CTCN005011_N005A_1	CTCN005011_N005A_1		5G 850	BUHA_850MHz_02DT	12.8	30	2	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						1000		1	
	PORT 7			CTL04011_9A_3	CTL04011_9A_3		LTE 1900	BUHA_1930MHz_00DT	14.5	30	0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						3864.3757		2	
	PORT 8		24475.A.AWS.4G.4	CTL04011_2A_2	CTL04011_2A_2		LTE AWS	BUHA_2170MHz_00DT	0	30	0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						3837.0724		2	

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 (w/hich antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Built-In						
SURGE ARRESTOR (QTY/MODEL)	12 TSXDC-4310FM						
DIPLEXER (QTY/MODEL)	1 KMTCV008100 20						
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	2 TMABP07823V G12A						
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)							
Additional Component 1 (QTY/MODEL)	1 DBCT108F1V92-1						
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	- Replace line elements with TMA/Quadplexer - Add LBC						
Local Market Note 2							
Local Market Note 3	xxxxx / 2x6630 / xxxxx + 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)	RXA/IT 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 1	PORT 5		24475.B.850.4G.1	CTL05011_8B_1	CTL05011_8B_1		LTE 850	BUHA_850MHz_02DT	12.8	150	2	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						1000		9	
	PORT 6		24475.B.850.5G.1	CTCN005011_N005B_1	CTCN005011_N005B_1		5G 850	BUHA_850MHz_02DT	12.8	150	2	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						1000		9	
	PORT 7			CTL04011_9B_3	CTL04011_9B_3		LTE 1900	BUHA_1930MHz_00DT	14.5	150	0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						3864.3757		10	
	PORT 8		24475.B.AWS.4G.4	CTL04011_2B_2	CTL04011_2B_2		LTE AWS	BUHA_2170MHz_00DT	15	150	0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						3837.0724		10	

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 (w/hich antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Built-In						
SURGE ARRESTOR (QTY/MODEL)	12 TSXDC-4310FM						
DIPLEXER (QTY/MODEL)	1 KMTCV008100 20						
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	2 TMABP07823V G12A						
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)							
Additional Component 1 (QTY/MODEL)	1 DBCT108F1V92-1						
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	- Replace line elements with TMA/Quadplexer - Add LBC						
Local Market Note 2							
Local Market Note 3	xxxxx / 2x6630 / xxxxx + 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)	RXA/IT 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 1	PORT 5		24475.C.850.4G.1	CTL05011_8C_1	CTL05011_8C_1		LTE 850	BUHA_850MHz_02DT	12.8	270	2	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						1000		17	
	PORT 6		24475.C.850.5G.1	CTCN005011_N005C_1	CTCN005011_N005C_1		5G 850	BUHA_850MHz_02DT	12.8	270	2	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						1000		17	
	PORT 7			CTL04011_9C_3	CTL04011_9C_3		LTE 1900	BUHA_1930MHz_00DT	14.5	270	0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						3864.3757		18	
	PORT 8		24475.C.AWS.4G.4	CTL04011_2C_2	CTL04011_2C_2		LTE AWS	BUHA_2170MHz_00DT	0	270	0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						3837.0724		18	

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	HPA-65F-BUU-H2-K						
ANTENNA VENDOR	CCI Products						
ANTENNA SIZE (H x W x D)	21.4X14.4X7.3						
ANTENNA WEIGHT	13.8						
AZIMUTH	30						
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	85						
ANTENNA TIP HEIGHT	86						
MECHANICAL DOWNTILT	0						
FEEDER AMOUNT	4						
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 (w/hich antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Built-In						
SURGE ARRESTOR (QTY/MODEL)	12 TSXDC-4310FM						
DIPLEXER (QTY/MODEL)	1 KMTCV008100 20						
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)	1 860-10006						
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	2 TMABP07823V G12A						
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2 782 1023						
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)							
Additional Component 1 (QTY/MODEL)	1 DBCT108F1V92-1						
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	- Replace line elements with TMA/Quadplexer - Add LBC						
Local Market Note 2							
Local Market Note 3	xxxxx / 2x6630 / xxxxx + IDLe						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Aloll)	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)	RXA/T KIT MODULE?	TRIPLEXER or LLC (Q'TY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	PORT 1	24475.A.850.3G.2	24475.A.850.3G.1	CTV50111	CTV50111		UMTS 850	BUAA_850MHz_02DT	12.8	30	2	None	7/8 ANDREW LDF5-50A	120.030726								1	
	PORT 2	24475.A.700.4G.1	24475.A.700.4G.1	CTL05011_7A_1	CTL05011_7A_1		LTE 700	BUAA_725MHz_02DT	12.7	30	2	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						1475.7065		1	
	PORT 3	24475.A.1900.4G.mp1	24475.A.1900.4G.1	CTL04011_9A_1	CTL04011_9A_1		LTE 1900	BUAA_1930MHz_00DT	14.5	30	0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						3864.3757		2	
	PORT 4	24475.A.1900.4G.mp2	24475.A.1900.4G.4	CTL04011_9A_2	CTL04011_9A_2		LTE 1900	BUAA_1930MHz_00DT	14.5	30	0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						3664.3757		2	
	PORT 5	24475.A.850.4G.mp1	24475.A.850.4G.1	CTL05011_8A_1	CTL05011_8A_1		LTE 850	BUAA_850MHz_02DT	12.8	30	2	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						1000		1	
	PORT 6	24475.A.850.5G.mp1	24475.A.850.5G.1	CTCN005011_N005A_1	CTCN005011_N005A_1		5G 850	BUAA_850MHz_02DT	12.8	30	2	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						1000		1	
	PORT 7	24475.A.1900.4G.mp5	24475.A.1900.4G.5	CTL04011_9A_3	CTL04011_9A_3		LTE 1900	BUAA_1930MHz_00DT	14.5	30	0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						3664.3757		2	
	PORT 8	24475.A.AWS.4G.mp4	24475.A.AWS.4G.4	CTL04011_2A_2	CTL04011_2A_2		LTE AWS	BUAA_2170MHz_00DT	0	30	0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						3837.0724		2	

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	HPA-65F-BUU-H2-K						
ANTENNA VENDOR	CCI Products						
ANTENNA SIZE (Ht x W x D)	21.4X14.4X7.3						
ANTENNA WEIGHT	13.8						
AZIMUTH	150						
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	85						
ANTENNA TIP HEIGHT	86						
MECHANICAL DOWNTILT	0						
FEEDER AMOUNT	4						
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)	Built-In						
SURGE ARRESTOR (QTY/MODEL)	12 TSXDC-4310FM						
DIPLEXER (QTY/MODEL)	1 KMTCVD08100 20						
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	2 TMABP07823V G12A						
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2 782 10253						
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)							
Additional Component 1 (QTY/MODEL)	1 OBCT108F1V92-1						
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	- Replace line elements with TMA/Quadplexer - Add LBC						
Local Market Note 2							
Local Market Note 3	xxxxx / 2x6630 / xxxxx + 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 1	PORT 1	24475.B.850.3G.2	24475.B.850.3G.1	CTV50112	CTV50112		UMTS 850	BUA_850MHz_02DT	12.8	150	2	None	7/8 ANDREW LDF5-50A	120.030726								9	
	PORT 2	24475.B.700.4G.1	24475.B.700.4G.1	CTL05011_7B_1	CTL05011_7B_1		LTE 700	BUAA_725MHz_02DT	12.7	150	2	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						1475.7065		9	
	PORT 3	24475.B.1900.4G.tmp1	24475.B.1900.4G.1	CTL04011_9B_1	CTL04011_9B_1		LTE 1900	BUAA_1930MHz_00DT	14.5	150	0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						3664.3757		10	
	PORT 4	24475.B.1900.4G.tmp2	24475.B.1900.4G.4	CTL04011_9B_2	CTL04011_9B_2		LTE 1900	BUAA_1930MHz_00DT	14.5	150	0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						3864.3757		10	
	PORT 5	24475.B.850.4G.tmp1	24475.B.850.4G.1	CTL05011_8B_1	CTL05011_8B_1		LTE 850	BUAA_850MHz_02DT	12.8	150	2	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						1000		9	
	PORT 6	24475.B.850.5G.tmp1	24475.B.850.5G.1	CTCN005011_N005B_1	CTCN005011_N005B_1		5G 850	BUAA_850MHz_02DT	12.8	150	2	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						1000		9	
	PORT 7	24475.B.1900.4G.tmp5	24475.B.1900.4G.5	CTL04011_9B_3	CTL04011_9B_3		LTE 1900	BUAA_1930MHz_00DT	14.5	150	0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						3664.3757		10	
	PORT 8	24475.B.AWS.4G.tmp4	24475.B.AWS.4G.4	CTL04011_2B_2	CTL04011_2B_2		LTE AWS	BUAA_2170MHz_00DT	15	150	0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						3837.0724		10	

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	HPA-65F-BUU-H2-K						
ANTENNA VENDOR	CCI Products						
ANTENNA SIZE (H x W x D)	21.4X14.4X7.3						
ANTENNA WEIGHT	13.8						
AZIMUTH	270						
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	85						
ANTENNA TIP HEIGHT	86						
MECHANICAL DOWNTILT	4						
FEEDER AMOUNT	4						
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)	Built-In						
SURGE ARRESTOR (QTY/MODEL)	12 TSXDC-4310FM						
DIPLEXER (QTY/MODEL)	1 KMTCVD008100 20						
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	2 TMABP07823V G12A						
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2 782 10253						
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)							
Additional Component 1 (QTY/MODEL)	1 OBCT108F1V92-1						
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	- Replace line elements with TMA/Quadplexer - Add LBC						
Local Market Note 2							
Local Market Note 3	xxxxx / 2x6630 / xxxxx + 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 1	PORT 1	24475.C.850.3G.2	24475.C.850.3G.1	CTV50113	CTV50113		UMTS 850	BUA_850MHz_02DT	12.8	270	2	None	7/8 ANDREW LDF5-50A	120.030726								17	
	PORT 2	24475.C.700.4G.1	24475.C.700.4G.1	CTL05011_7C_1	CTL05011_7C_1		LTE 700	BUAA_725MHz_02DT	12.7	270	2	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						1475.7065		17	
	PORT 3	24475.C.1900.4G.tmp1	24475.C.1900.4G.1	CTL04011_9C_1	CTL04011_9C_1		LTE 1900	BUAA_1930MHz_00DT	14.5	270	0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						3664.3757		18	
	PORT 4	24475.C.1900.4G.tmp2	24475.C.1900.4G.4	CTL04011_9C_2	CTL04011_9C_2		LTE 1900	BUAA_1930MHz_00DT	14.5	270	0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						3864.3757		18	
	PORT 5	24475.C.850.4G.tmp1	24475.C.850.4G.1	CTL05011_8C_1	CTL05011_8C_1		LTE 850	BUAA_850MHz_02DT	12.8	270	2	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						1000		17	
	PORT 6	24475.C.850.5G.tmp1	24475.C.850.5G.1	CTCN005011_N005C_1	CTCN005011_N005C_1		5G 850	BUAA_850MHz_02DT	12.8	270	2	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						1000		17	
	PORT 7	24475.C.1900.4G.tmp5	24475.C.1900.4G.5	CTL04011_9C_3	CTL04011_9C_3		LTE 1900	BUAA_1930MHz_00DT	14.5	270	0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						3664.3757		18	
	PORT 8	24475.C.AWS.4G.tmp4	24475.C.AWS.4G.4	CTL04011_2C_2	CTL04011_2C_2		LTE AWS	BUAA_2170MHz_00DT	0	270	0	BOTTOM	7/8 ANDREW LDF5-50A	120.030726						3837.0724		18	

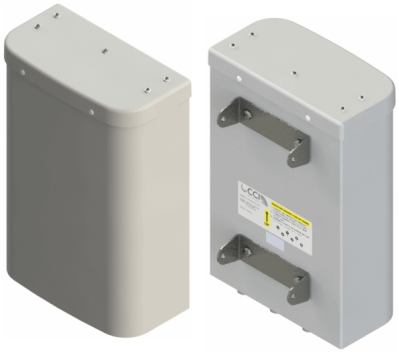
Antennas

MultiPort Series

DATA SHEET

HexPort Dual-Band Antenna

HPA-65F-BUU-H2



- High Band Ports include WCS Band
- Four High Band ports with two Low Band ports in one antenna
- Sharp elevation beam
- Excellent elevation side-lobe performance
- Excellent MIMO performance due to array spacing
- Excellent PIM Performance
- A multi-network solution in one radome
- Reduces tower loading
- Frees up space for tower mounted E-nodes
- Single radome with six ports

Overview

The CCI Hexport Multi-Band Antenna Array has four high band ports and two low band ports, our hexport antenna is ready for 4X4 high band MIMO. Modern networks demand high performance, consequently CCI has incorporated several new and innovative design techniques to provide an antenna with excellent side-lobe performance, sharp elevation beams, and high front to back ratio.
Multiple networks can now be connected to a single antenna, reducing tower loading and leasing expense, while decreasing deployment time and installation cost.
Full band capability for SMR800 and PCS 1900 MHz coverage in a single enclosure.

CCI antennas are designed and produced to ISO 9001 standards for reliability and quality in our state-of-the-art manufacturing facilities.

Applications

- 4x4 MIMO for the high band and 2x2 MIMO for the low band
- Adding additional capacity without adding additional antennas
- Adding WCS Band without increasing antenna count

MultiPort Series

HexPort Dual-Band Antenna

HPA-65F-BUU-H2

SPECIFICATIONS

Electrical

Ports	2 x Low Band Ports which cover the full range from 698-894 MHz		4 x High Band Ports which cover the full range from 1710-2360 MHz			
Frequency Range	698-806 MHz	824-894 MHz	1850-1990 MHz	1710-1755/2110-2170 MHz		2305-2360 MHz
Gain	10.0 dBi	10.5 dBi	12.8 dBi	12.6 dBi	13.6 dBi	14.0 dBi
Azimuth Beamwidth (-3dB)	65°	62°	64°	66°	60°	59°
Elevation Beamwidth (-3dB)	40.0°	35.8°	17.5°	17.8°	15.8°	14.3°
Electrical Downtilt	4°	4°	3°	3°	3°	3°
Elevation Sidelobes (1st Upper)	< -15 dB	< -13 dB	< -13 dB	< -17 dB	< -13 dB	< -17 dB
Front-to-Back Ratio @180°	> 28 dB	> 28 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB
Cross-Polar Port-to-Port Isolation	> 20 dB	> 20 dB	> 23 dB	> 23 dB	> 23 dB	> 23 dB
Voltage Standing Wave Ratio (VSWR)	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1
Passive Intermodulation (2x20W)	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc
Input Power Continuous Wave (CW)	500 watts	500 watts	300 watts	300 watts	300 watts	300 watts
Polarization	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°
Input Impedance	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms
Lightning Protection	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground

Mechanical

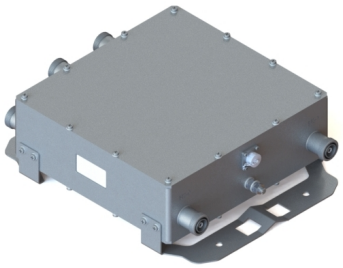
Dimensions (LxWxD)	21.4x14.4x7.3 in (544x366x185 mm)
Survival Wind Speed	> 150 mph (> 241 kph)
Front Wind Load	66 lbs (293 N) @ 100 mph (161 kph)
Side Wind Load	34 lbs (150 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	2.6 ft^2 (0.2 m^2)
Weight *	15.2 lbs (6.9 kg)
Connector	6 x 7-16 DIN female long neck
Mounting Pole	2 to 5 in (5 to 12 cm)

** Weight excludes mounting*

Triple Band Twin TMA (AWS/PCS/WCS) with AWS-3 and 700/850 Bypass

DATA SHEET

TMABPD7823VG12A



- Triple Band Twin TMA (AWS/PCS/WCS) which includes AWS-3 and 700/850 Bypass
- Each TMA has independent gain control of 6 to 12dB
- Fail-safe bypass mode and multi-strike lightning protection
- Small lightweight unit offers high reliability of >500K Hours MTBF
- Highly linear amplifier with low intermodulation

Overview

CCI's Triple Band Twin TMA (AWS/PCS/WCS), which includes AWS-3 and 700/850 bypass, contains two triple band TMA's in a single housing. Each TMA in the housing is fully duplexed and shares a single LNA for all three bands. The bypass path provides excellent isolation to the TMA path. Separate antenna ports for the bypass path and TMA path are combined onto a single BTS port. The Twin TMA's low noise, highly linear amplifiers improve the uplink sensitivity and the receive performance of the base station. The TMA is fully compliant with the AISG 2.0 specification and supports CDMA, EDGE/GSM, UMTS and LTE BTS equipment. The unit is ideally suited for sites upgraded to quad-band using the existing infrastructure. The TMA allows the sharing of feeder lines for all bands thus reducing tower loading, leasing, and installation costs. The input and output connectors are located inline for ease of installation in space constrained areas such as uni-pole structures and stealth antennas.

Technical Description:

The TMA system is an outdoor triple band twin tower mount unit which provides low noise amplification of PCS, AWS, AWS-3, and WCS uplink signals combined with 700/850 bypassed signals from separate antenna ports to a common BTS port. The tower mount unit consists of 14 band-pass filters, two redundant low noise amplifiers (LNA) with bypass failure circuitry, two bias tees, AISG control circuitry, and lightning protection circuitry all housed in an IP67 enclosure suited to long life masthead mounting. The AWS, PCS and WCS paths are dual duplexed to separate the low power uplink signals from the high power down link signals at the BTS and antenna ports. The AWS, PCS, and WCS uplink signals are amplified with a dedicated ultra-low noise PHEMT LNA with adjustable gain control. The unit provides protection against lightning strikes via a multistage surge protection circuit. DC power and AISG 2.0 control is provided via the BTS feeder cable. The unit operates in current window alarm (CWA) mode until a valid AISG message is detected, at which point it automatically switches to AISG mode. Once in AISG mode, the unit can only switch back to CWA mode with the receipt of an AISG CCI vendor defined command. In CWA mode, the unit requires 12VDC at each BTS port and follows typical current window convention. In AISG mode, the unit will accept 10-30 VDC from either BTS port. In AISG mode, the unit does not require an AISG 2.0 compatible site control unit (SCU) and may also be powered by a standard power distribution unit (PDU).
An optional Site Control Unit (SCU) is available to power up to 32 AISG modules per sector and to provide the monitoring and alarm functions for the system. The SCU is housed in a single (1U) 1.75" x 19" rack and contains dual redundant power supplies capable of being "hot swapped" that provide a regulated DC supply voltage on the RF coax for the tower mount amplifiers.

SPECIFICATIONS

Triple Band Twin TMA (AWS/PCS/WCS) with AWS-3 and 700/850 Bypass

TMABPD7823VG12A

Environmental

Operating Temperature	-40˚C to +65˚C
Ingress Protection	IP67
MTBF	>500,000 hours
Lightning Protection	8/20us, ±10KA max, 10 strikes each per IEC61000-4-5

Mechanical

Connectors	6 x 7-16 DIN female 1 x AISG
Dimensions enclosure (HxWxD)	10.63 x 11.04 x 3.75 in. (270.0 x 280.3 x 95.2 mm)
Dimensions with brackets (HxWxD)	14.22 x 11.56 x 4.24 in. (361.8 x 293.5 x 107.6 mm)
Weight enclosure	25.0 lbs (11.3 kg)
Weight with brackets	26.0 lbs (11.8 kg)
Mounting	Pole/Wall mounting bracket

PARID: 29144
STATE OF CONNECTICUT DOT OFFICE OF RAILS

150 HOLLOW TREE RIDGE ROAD

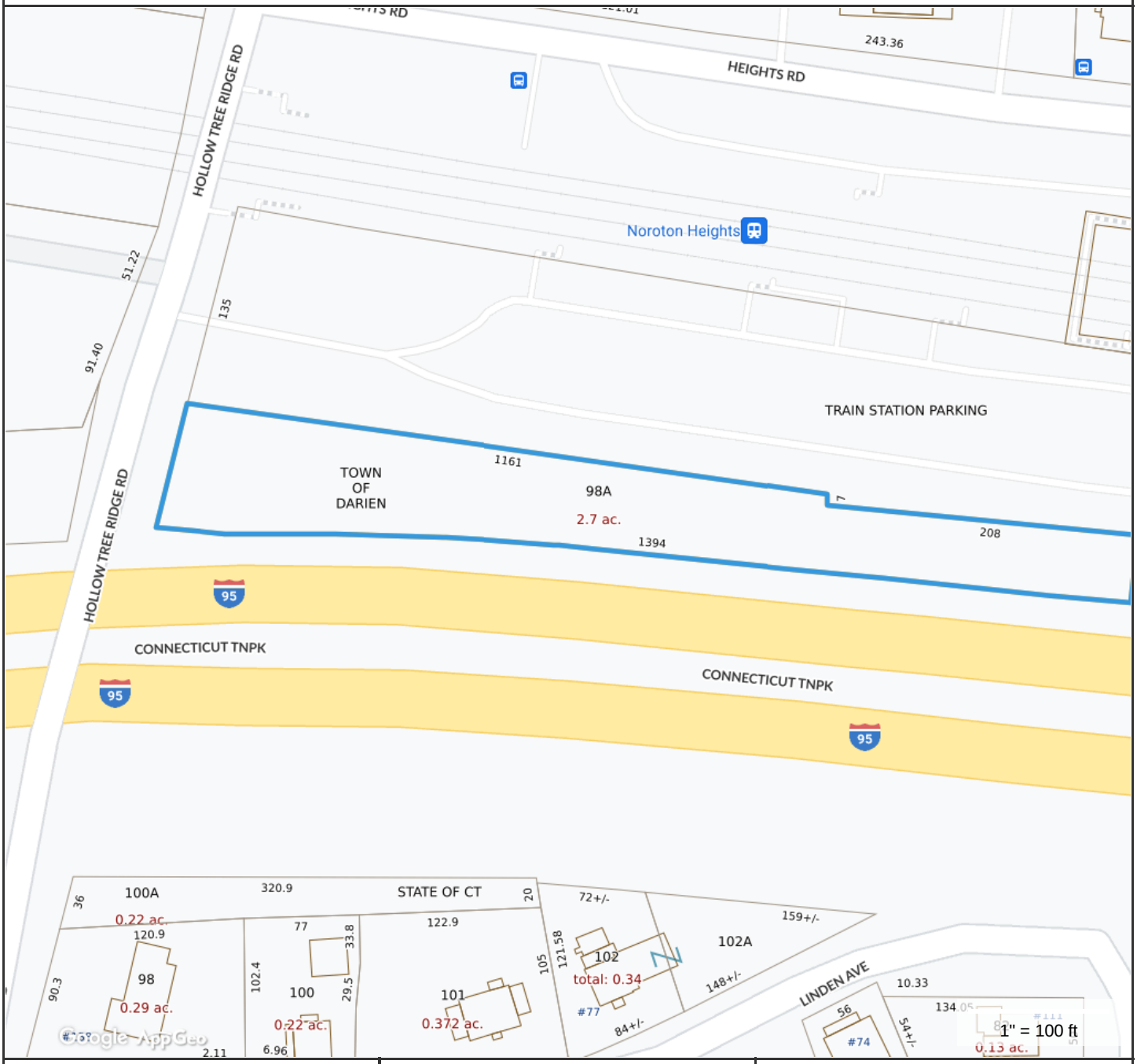
Parcel

Map/Lot	44 98A
Address	150 HOLLOW TREE RIDGE ROAD
Unit	
Neighborhood	3030
Class	300
Land Use Code	901-STATE
Living Units	
Acres	2.7
Zoning	PR
Notes	PARKING LOT FOR TRAIN STATION SEE LEASE NOTES BELOW-2005,AH

Owners

Owner		Address	City	State	Zip
STATE OF CONNECTICUT DOT	OFFICE OF RAILS	50 UNION AVENUE THIRD FLOOR WEST	NEW HAVEN	CT	06519

150 Hollow Tree Ridge Rd Tax Map



Property Information

Property ID	29144
Location	150 HOLLOW TREE RIDGE ROAD
Owner	STATE OF CONNECTICUT DOT

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town of Darien, 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 3/15/2021
Data updated 3/11/2021

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

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@po.state.ct.us
Web Site: www.state.ct.us/csc/index.htm

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

October 1, 2002

Christopher B. Fisher, Esq.
Cuddy & Feder & Worby LLP
90 Maple Avenue
White Plains, NY 10601-5196

RE: **PETITION NO. 529A** - AT&T Wireless petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed replacement tower at an existing Connecticut Light and Power facility located at Norton Heights Train Station, Darien, Connecticut.

Dear Attorney Fisher:

At a public meeting held on September 25, 2002, the Connecticut Siting Council (Council) considered and ruled that this proposal would not have a substantial adverse environmental effect, and pursuant to General Statutes § 16-50k would not require a Certificate of Environmental Compatibility and Public Need.

This decision is under the exclusive jurisdiction of the Council and is not applicable to any other modification or construction. All work is to be implemented as specified in the petition, dated August 28, 2002.

Enclosed for your information is a copy of the staff report on this project.

Very truly yours,

MAG/RM

Mortimer A. Gelston
Chairman

MAG/RM/laf

Enclosure: Staff Report dated September 25, 2002

c: Honorable Robert F. Harrel, Jr., First Selectman, Town of Darien
David J. Keating, Office Administrator, Town of Darien

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Petition No. 529A
AT&T Wireless PCS, LLC
Darien, Connecticut
Staff Report
September 25, 2002

On September 11, 2002, Connecticut Siting Council (Council) member Brian O'Neill and Robert Mercier of Council staff met with AT&T Wireless PCS, Inc. (AT&T) representatives Peter Carbone and Christopher Fisher at the Noroton Heights Railroad Station in Darien for inspection of CL&P electric transmission structure number 1180. AT&T, with the agreement of CL&P, proposes to replace the existing lattice structure with a monopole adapted for electric transmission and telecommunication use and is petitioning the Council for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need (Certificate) is required for the replacement.

On November 7, 2001 the Council issued a declaratory ruling for Petition 529 that no Certificate was required for the proposed modification of the existing 90-foot lattice CL&P tower. The Petition, filed by AT&T, proposed to extend the tower by ten feet to accommodate three panel antennas and to install equipment cabinets within a fenced compound. Subsequent to the Council's approval, CL&P determined the tower would not be structurally adequate to support line loads associated with a planned line re-conductoring and antennas for telecommunications use.

Under this Petition, AT&T proposes to replace the existing CL&P 90-foot lattice structure with a 110-foot monopole 20 feet east of its existing location. The monopole would be designed to support the electric transmission lines, three AT&T panel antennas at the 110-foot level and a second telecommunications carrier at the 100-foot level. The total height of the structure would be approximately 113 feet, including the AT&T antennas. If approved, tower construction would be completed in 2003. As a temporary measure, AT&T proposes to install three panel antennas at the 85-foot level of the existing lattice tower in order to provide coverage to an approximate one mile coverage gap on I-95. The lattice tower and temporary antennas would be removed once construction of the monopole facility is complete.

Equipment cabinets will be located on a concrete pad within a 20-foot by 30-foot graveled compound area enclosed with an 8-foot high stockade fence. The compound location is the same as proposed in the original Petition and will serve the temporary antennas and proposed monopole facility. An underground conduit from an existing utility pole will provide power and telephone service to the site. The Town verbally requested vegetative screening around the base of the tower.

The proposed site is located at the Noroton Railroad Station. The zoning designation of this site is Parking Residential (PR). The surrounding landscape is comprised of transmission towers, high voltage lines, right-of-way, the railroad station, Interstate 95 and commercial uses.

The worst-case power density for the telecommunications operations at the site has been calculated to be 0.08% of the applicable standard for uncontrolled environments.

AT&T contends that the proposed replacement of the CL&P structure would not cause a substantial adverse environmental impact and would prevent the construction of a new tower in the area.

EVERSOURCE ENERGY

56 Prospect Street,
Hartford, CT 06103

P.O. Box 270
Hartford, CT 06141-0270
(860) 665-5000

July 6, 2021

Mr. Tim Burks
SAI Communications
12 Industrial Way
Salem, NH 03079

RE: AT&T Antenna Site CT5011, Norton Heights, Darien CT, Eversource Structure 1182

Dear Mr. Burks:

Based on our reviews of the site drawings, the structural analysis and foundation review provided by Centek Engineering, along with a third party review performed by Paul J. Ford and Company, we accept the proposed modification.

Please work with Christopher Gelinas of Eversource Real Estate to process the site lease amendment. Please do not hesitate to contact us with questions or concerns. Christopher can be contacted at 860-665-2008, and I can be contacted at (203) 623-0409.

Sincerely,

Richard Badon

Richard Badon
Transmission Line Engineering

Ref: 2021-0329 - CT5011 Structural Analysis Rev2 (20020.02)
CT5011_LTE_3C-5G CD_Rev1 & Structural Rev2 S1 & S2

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TOWN OF DARIEN
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DARIEN CT 06820-5344

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SAI GROUP
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MERIDEN CT 06450-4723

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STATE OF CONNECTICUT
50 UNION AVE
FL 3
NEW HAVEN CT 06519-1755

USPS TRACKING #

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SHIP TO: CHRIS GELINAS
EVERSOURCE
107 SELDEN ST
BERLIN CT 06037-1616

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SHIP TO: MELANIE BACHMAN EXECUTIVE DIRECTOR
CT SITING COUNCIL
10 FRANKLIN SQ
NEW BRITAIN CT 06051-2655

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Hollis Redding Honorable Jayme Stevenson 1st Selectman & Jeremy Ginsberg P&Z Director Copies

From: auto-reply@usps.com
Sent: Tuesday, July 13, 2021 6:02 PM
To: Hollis Redding
Subject: USPS® Expected Delivery by Friday, July 16, 2021 arriving by 9:00pm 9405503699300442780927

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Hello **HOLLIS REDDING**,

USPS is now in possession of your item as of 1:27 pm on July 13, 2021 in MERIDEN, CT 06450.

Tracking Number: **9405503699300442780927**

Expected Delivery By

Fri
16
July

By 9:00pm

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Hollis Redding State of CT Office of Rails DOT Copy (Property Owner)

From: auto-reply@usps.com
Sent: Tuesday, July 13, 2021 6:02 PM
To: Hollis Redding
Subject: USPS® Expected Delivery by Wednesday, July 14, 2021 arriving by 9:00pm 9405503699300442780934

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USPS is now in possession of your item as of 1:27 pm on July 13, 2021 in MERIDEN, CT 06450.

Tracking Number: **9405503699300442780934**

Expected Delivery By

Wed
14
July

By 9:00pm

Tracking & Delivery Options

My Account

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Hollis Redding Eversource Copy (Tower Owner)

From: auto-reply@usps.com
Sent: Tuesday, July 13, 2021 6:02 PM
To: Hollis Redding
Subject: USPS® Expected Delivery by Wednesday, July 14, 2021 arriving by 9:00pm 9405503699300442780941

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Hello **HOLLIS REDDING**,

USPS is now in possession of your item as of 1:27 pm on July 13, 2021 in MERIDEN, CT 06450.

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Expected Delivery By

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14
July

By 9:00pm

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To: Hollis Redding
Subject: USPS® Expected Delivery by Wednesday, July 14, 2021 arriving by 9:00pm 9405503699300442780965

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Tracking Number: **9405503699300442780965**

Expected Delivery By

Wed
14
July

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Tracking & Delivery Options

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SITE ACQUISITION, LLC
12 INDUSTRIAL WAY
SALEM, NH 03079

BANK OF AMERICA 54-49/114

77283

Pay: **********Six hundred twenty-five dollars and no cents

DATE	CHECK NO.	AMOUNT
June 18, 2021	77283	$********625.00

PAY TO THE ORDER OF
Connecticut Siting Council
10 Franklin Sq
New Britain, CT 06051

⑈077283⑈ ⑆011400495⑆ 000089877441⑈

CONN03 Connecticut Siting Council

SAI
SITE ACQUISITION, LLC

77283

DATE	INVOICE NO.	DESCRIPTION	INVOICE AMOUNT	DEDUCTION	BALANCE
6-18-21	CR061821	CT5011 CSC FILING FE	625.00		625.00
CHECK DATE	6-18-21	CHECK NUMBER 77283	TOTALS	625.00		625.00